Report on
Result of National Basic Health Research
(RISKESDAS) 2007

The National Institute of Health Research and Development,
Ministry of Health, Republic of Indonesia
2008

PREFACE

Assalamu'alaikum wr. wb.

We praise Allah for His gift, that we can finish the Report on Result of Basic Health Research (Riskesdas) that had been prepared in 2006 and was carried out in 2007 in 28 provinces and in 2008 another 5 provinces in East Indonesia Region.

Planning for Riskesdas was started in 2006, by a small team to develop the idea in a simple proposal, which later was gradually developed during discussions every Thursday – Friday at Bogor's Center for Research and Development of nutrition and food. Discussion was also included experts from public health, the specialist doctors union, academics from universities including health technical training schools. The discussions were intersectoral including Badan Pusat Statistik/BPS (BPS-Statistics Indonesia), health installations in the provinces and of course all the researchers from the National Institute of Health Research and Development (Balitbangkes). In every meeting, issues were repeatedly intensely debated, sometimes very emotionally, and yet it was all based on the good intention of giving the best for our nation. BPS field tested the forms in the district of Bogor and Sukabumi to improve the research instrument. Then came the launching of Riskesdas by the Minister of Health on 6 December 2006.

The data collection for Riskesdas was done in two stages, the first stage was begun in August 2007 and continued until January 2008 in 28 provinces, the second stage was in August - September 2008 in 5 provinces (NTT, Maluku, North Maluku, Papua and West Papua). We had mobilized 5,619 enumerators, all (502) researchers from Balitbangkes, 186 lectures from health technical schools, Local Governments in Province Regions and district/city, Provincial's labs, Hospitals and Universities were also involved. For public health, we had collected data concerning health status and utilization of primary health care units from 33 provinces and 440 districts/cities. For biomedical, we had collected 36,357 specimens from sample of household's member with age more than one year old that came from 540 urban census blocks of the elected 270 districts/cities.

The process of editing, entry, and data cleaning of Riskesdas data was started in early January 2008, at the same time there was a process of discussing work plans and strategy of analysis. Process of data management, data production and data analysis took quite a long time, energy and thought, so it is not a surprise if we had some complaints using Riskesdas's jargon and sometimes strong protest from various stakeholders.

Now we have available current data on primary health care and status from all district/city in Indonesia that cover almost all health status and health utilization indicators including biomedical data, which is very rich with various information that is important to planning and policy. We hope that the data can be used by everyone including the researchers that are studying for masters or doctoral degrees. We estimate that hundreds of doctors and thousands of master's thesis can be based on Riskesdas' data.

Please allow us to give highest appreciation and sincere gratitude for all the hard work and full dedication from all researchers who participated, Litkayasa and Balitbangkes' staffs, co-workers from BPS, experts from the Universities, specialist doctors from Specialist Doctors Union, lectures from health technical training schools, Operational Care Taker from the Health Section of the Provinces and district/city, all enumerators and all parties that participated to make Riskesdas successful. Our deepest sympathy

and our prayers for those people injured collecting Riskesdas data, including those people that died during this process.

We have given our maximal effort, yet as an initial step we are sure that we still have many things to be improved, weaknesses, and mistakes. Therefore we welcome for any critics, input and suggestion, for a more perfect Riskesdas 2 which hopefully can be done in the year 2010.

Billahit taufiq walhidayah, wassalamu'alaikum wr. wb.

Jakarta, December 2008

Director General
National Institute of Health Research and Development
Ministry of Health RI

Dr. Triono Soendoro, PhD

REMARKS

MINISTER OF HEALTH OF REPUBLIC OF INDONESIA

Assalamu ‘alaikum Wr. Wb

Praise the Almighty for his blessing and guidance, the Ministry of Health at this moment has successfully completed collecting community based health indicators and primary data covering all provinces and districts/cities prepared by means of Basic Health Research or Riskesdas.

Riskesdas has produced a series of information concerning community based health status specifically for each district, so that it becomes a meaningful input for planning activities and for formulating policies and more targeted, more effective as well as more efficient health interventions. Moreover, Riskesdas data which use Susenas Kor 2007 sampling become more complete to link with household socioeconomic data and health status, health utilization information.

I am warmly requesting all program implementers to make a use of Riskesdas data in working to design comprehensive policies and programs. Thus in utilizing target indicators and measurement phases/mechanism that will become more clear in accelerating the effort to improve health status at both the national and regional level.

I also respectfully invite experts from academicians, health observers or NIHRD researchers to analyze if it is possible to produce more accurate standards by means of Riskesdas for better health order in Indonesia considering most of our standards are generated from overseas country.

With the success of Riskedas in its first implementation, I am sure that in the future Riskesdas can be carried out more properly. Therefore, Riskesdas should be conducted gradually once in three years so that the achievement of health development target can be recognized in each region starting from districts/cities, provinces into national level.

For district/city level, evidence base planning will be more incisive if basic data can be representative at the sub district level. Therefore I appeal regional government either province or district/city to participate by adding Riskesdas sample so it will represents data at the sub district level.

I would like to congratulate and express my highest appreciation to NIHRD researchers, enumerators, and technical managers from NIHRD and Health Polytechnics, operational managers from Provincial Health Office as well as District Health Office, all staffs from Regional Health Laboratory and hospitals, experts from Universities and BPS-Statistics Indonesia and all parties involved in this Riskesdas. Your hard work has changed the health planning in this country and will accelerate the effort to achieve national development targets for the health sector.

Particularly to NIHRD researchers, please keep working to find new breakthroughs in research either in public health, clinical medicine or biomolecular and help in translating that research into policy by keep highly respecting our principles, of integrity, teamwork, transparency and accountability.

Billahit taufiq walhidayah, Wassalamu’alaikum Wr. Wb.

Jakarta, December 2008

Minister of Health of Republic of Indonesia

Dr. dr. Siti Fadilah Supari, Sp.JP(K).)

SUMMARY

A. Executive Summary

Primary Health Research (Riskesdas) 2007 is one of the 4 (four) grand strategy established by Ministry of Health, Surveillence. The function of surveillence is to support evidence-based health information systems by collecting basic data and health indicators. Some indicators are health status and health determinant factors which are generated from Henrik Blum concept that represent the picture of national, province and district region.

Research queries that become base in developing Riskesdas 2007 are: 1. What is the health status and health determinant factors at national, provincial and district area; 2. What is the linkage between poverty and health; and 3. Are there any specific health problems occurred?

In order to responds to those questions, some objectives were formulated which are providing basic data on health status and health determinant factors at household and individual level for the domains of: 1. Nutritional status; 2. Health service access and utilization; 3. Environmental sanitation; 3. Food consumption; 5. Communicable disease, non-communicable disease and genetic disease history; 6. Health care utilization; 7. Health Behavior; 8. Disability; 9. Mental health; 10. Immunization and growth monitoring; 11. Infant health; 12. Anthropometry measurement, blood pressure, mid-upper arm circumference, and waist circumference measurement; 13. Biomedical measurement; 14. Visus investigation; 15. Dental check up; 16. Various verbal autopsies on reported death in the household; and 17. Mortality.

The design of Riskesdas 2007 is a descriptive cross sectional survey. The population is all households in the entire Republic of Indonesia having equality probability of being included. The sample of household and household member in Riskesdas 2007 was designed identically with the list of household and household sample in Susenas (National Socioeconomic Survey) 2007. Various sampling error parameters including standard error, relative standard error, confidence interval, design effect and the number of measured sample are reported for each variable estimation.

Riskesdas 2007 collected information from 258,366 household sampled and 987,205 household member sampled for measuring many public health indicators. Riskesdas 2007 also collected 36,357 blood samples for measuring various biomedical variable from household member with age more than 1 year and domiciled in urban classification village. Particularly in Blood sugar measurement, as many as 19,144 sample were collected from household members whose age is more than 15. Regarding iodine rapid test, there were 257,065 household salt samples collected while in terms of iodine measurement in urine, 8,473 samples were collected from children age 6-12 years who lived in 30 districts/cities representing various levels of iodine consumption level. Biomedical examination shall be reported independently.

The limitation of Riskesdas covering non-random error such as: the establishment of new district, non reachable census block, household absence, different time in collecting data, estimation at district level which is not valid for all indicators, and biomedical data which only represents urban block census. Special consideration must be done for the 5 provinces (Papua, West Papua, Maluku, North Maluku, and NTT), that they were not done until 7 months after the first 28 provinces in August – September 2008 while the other 28 provinces were completed in 2007.

The results of this Riskesdas will be beneficial as input in developing health program policy as well as planning. By means of 900 variables, the result of Riskesdas 2007 has been utilized and can be utilized as well for developing advanced research and analysis,

developing new standard values towards various health indicators, analyzing causal-effect relationship, and statistical methodology.

Riskesdas has produced some health issues tragetting, for example severe malnutrition prevalence which exceeding national average (5.4%) found in 21 provinces and 216 districts/cities. On the other hand, referring to the result of severe malnutrition assessment and added by malnutrition assessment result in Riskesdas 2007 showed that 19 provinces have severe malnutrition prevalence and malnutrition prevalence above national prevalence which is 18.4%. However, the target of Midterm Development Plan for achieving nutrition improvement program projected by 20% and Millennium Development Goals target by 18.5% in 2015, have been accomplished in 2007.

Posyandu is the most visited place for under fives weighing which is 78.3%; under fives who were weighed regularly (4 times or more), weighed 1 - 3 times and never been weighed is 45.5%, 29.1% and 25.5% respectively. In terms of activities at Posyandu, it was reported that 47.6% receiving nutrient supplementation, 45.7% received food supplementation, 41.2% reported receiving medication, and 55.8% reported receiving immunization. Overall, immunization coverage on children aged 12 – 23 months by types from the highest until the lowest is BCG (86.9%), measles (81.6%), three times polio (71.0%), three times DPT (67.7%), and hepatitis B (62.8%).

In general, the proportion of low birth weight baby is 11.5% (according to the existing records), and pregnant mothers who maintained pregnancy check up is 84.5%. The most frequent examinations applied by pregnant mothers are blood pressure (97.1%) and body weighing (94.8%). Contrary, hemoglobin examination (33.8%) and urine examination (36.4%) are infrequently undertaken by pregnant mothers.

Particularly in NTT, Maluku, North Maluku, West Papua and Papua, as much as 60% delivery was done in home. The major birth attendant in urban area is midwives (61.7%) while in village it is traditional birth attendants (45.9%).

From communicable disease mapping, it is shown that malaria control program in Java-Bali was successful (prevalence < 0.5%). On the other hand, imbalanced malaria prevalence is clearly marked by 26.14% or nine times higher than national prevalence. It is also 145 times higher than the lowest prevalence (0.18%). To support malaria control, fast and accurate medication program is needed. Riskesdas 2007 describes public awareness in seeking medication and the access to malaria drugs in national scale which reached 47.7%. However, in some provinces, the malaria medication level in the first 24 hours is quite high. In case of diarrhea, oralit utilization in the first 24 hours is still below 50%, unless for under fives group in which prevalence is the highest, the oralit consumption is already above 50%. In addition, Riskesdas 2007 also shows epidemiological transition, for example the highest prevalence of DHF is no longer belong to children but among adults group (25-34 years).

The main result of Riskesdas 2007 describes the correlation with degenerative disease such as metabolic syndrome, stroke, hypertension, obesity and cardiac disease with socioeconomic status (education, poverty, etc). Hypertension for instance, is not related to socioeconomic (expenses quintiles) which is 30.5% in quintile 1 (the poorest) as compared to 33.0% in quintile 5 (the richest), and starts to increase in young ages between 15 - 17 years (8.3%). Otherwise, it is estimated that diabetes which is recorded from 356 districts/cities covering 24,417 people older than > 15 years, indicates higher risk in quintile 5 (7.1%) as compared with quintile 1 (4.1%). Similar is Impaired Glucose Tolerance, which affected 10.5% of quintile 5 but only 8.8% of quintile 1.

Disability prevalence shows significant increase from 12.7% (SKRT 2004) to 21.3% (Riskesdas 2007). Smoking in people older than 15 years, has increased from 32.0% (Susenas,2003) to 33.4% (Riskesdas 2007). There is no difference in terms of smoking behavior between low socioeconomic status and high socioeconomic status. The

proportion of initial smoke below the age 20 years, increased from 10,3% (SKRT, 2001) became 11.9% (Riskesdas, 2007).

The proportion of the population of Indonesia with low vision is marked as 4.8% (Asia is 5% - 9%), blindness is 0,9% and cataract prevalence is 1.8% which has risen from the 1.2% based on SKRT 2001. It is suspected that this increasing number of cataract case has correlation with the increase of life expectancy in 2005 – 2010 (69,1 years) as compared in 2000 – 2005 (66,2 years). The national prevalence estimate of emotional mental disorder of people aged ≧15 years is 11.6%.

There are 8 (eight) responsiveness domains for inpatient service and 7 (seven) for outpatient service. From inpatient responsiveness, 3 domains such as 'waiting time' is recorded as 84.8%, 'information distinct' is 85.4% and 'room cleanliness' is 82.9%. This condition is better than Surkesnas 2004 which resulted in 78.3% waiting time, 75.8% information distinct and 78.3% room cleanliness.

The cause of death for all ages has been shifted from communicable disease into non communicable disease. The major cause of perinatal death (0-7 days) is respiratory disorders (35.9%) and prematurity (32.3%) while for age 7 – 28 days the leading cause of mortality is sepsis neonatorum (20.5%) and congenital malformations (18.1%). Infant mortality is mainly caused by diarrhea (31.4%) and pneumonia (23.8%). In case of under fives mortality, the cause is similar with infant mortality that is diarrhea (25.2%) and pneumonia (15.5%) whereas for people aged > 5 years, the major cause of death is stroke both in rural and urban area.

B. Result Summary

Under five Nutritional Status

- The national prevalence for severe malnutrition is 5.4% and malnutrition is 13.0% for children under 60 months. Both prevalence indicates that either Midterm Development Goals in nutrition improvement program (20%) or Millennium Development Goals in 2015 (18.5%) has been accomplished by 2007. However, there are 19 provinces still have severe malnutrition prevalence as well as malnutrition prevalence exceeding national prevalence. They are Nanggroe Aceh Darussalam (NAD), North Sumatera, West Sumatera, Riau, Jambi, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, South Kalimantan, East Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua and Papua.
- Nationally, 10 districts/cities with highest severe malnutrition prevalence and malnutrition prevalence on children under fives respectively are Aceh Tenggara (48.7%), Rote Ndao (40.8%), Aru Islands (40.2%), South Central Timor (40.2%), Simeulue (39.7%), South West Aceh (39.1%), North Mamuju (39.1%), North Tapanuli (38.3%), Kupang (38.0%), and Buru (37.6%). Meanwhile, 10 districts/cities with the lowest severe malnutrition prevalence and malnutrition prevalence in children under fives are Tomohon (4.8%), Minahasa (6.0%), Madiun City (6.8%), Gianyar (6.8%), Tabanan (7.1%), Bantul (7.4%), Magelang City (8.2%), South Jakarta City (8.3%), and Bondowoso (8.7%).
- The national prevalence for over nutrition on children under fives is 4.3%. A number of 15 provinces have under fives over nutrition prevalence above national prevalence. They are North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Bangka Belitung, Riau Islands, DKI Jakarta, East Java, Bali, West Kalimantan, East Kalimantan, South Sulawesi, Maluku and Papua.

- At the same number, national prevalence for stunting among children 60 months or younger is 36,8%. There are 17 provinces above the national average of stunting, including NAD, North Sumatera, South Sumatera, Lampung, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku and West Papua.
- There are 10 districts/cities with highest risk of stunting among children less than 60 months: East Seram (67.4%), South Nias (67.1%), South East Aceh (66.8%), Simeulue (63.9%), North Tapanuli (61.2%), South West Aceh (60.9%), South Sorong (60.6%), North Central Timor (59.7%), and Kapuas Hulu (59.0%). On the other hand, 10 districts/cities with lowest risk of stunting are Sarmi (16.7%), Wajo (18.6%), Mojokerto City (19.0%), Tanjung Pinang City (19.3%), Batam City (20.2%), Kampar (20.4%), South Jakarta City (20.9%), Madiun City (21.0%), Bekasi City (21.5%), and East Luwu (21.7%).
- National wasting prevalence for under fives is 13.6% of which severe wasting prevalence is 6.2%.
- 25 provinces have a risk of wasting among children under 60 months above the national average, they are NAD, North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Riau Islands, DKI Jakarta, East Java, Banten, west Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.
- There 21 provinces have severe wasting risk in children less than 60 months above the national prevalence, they are NAD, North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, DKI Jakarta, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, south Kalimantan, East Kalimantan, Central Sulawesi, South Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, and Papua.
- At the national level, the 10 districts/cities with the highest severe wasting prevalence and wasting prevalence on children under fives namely South Solok (41.5%), Seruyan (41.1%), Manggarai (33.3%), South Tapanuli (31.9%), West Seram (31.0%) and North Aceh (29.9%). The 10 districts/cities with the lowest prevalence of severe wasting and wasting are Minahasa (0%), Tomohon City (2.6%), Sukabumi City (3.3%), Bogor City (4.0%), Bandung (4.6%), Salatiga City (4.9%), Magelang City (5.2%), Cianjur (5.4%), and Bangka (5.6%).
- National Prevalence for obesity under fives is 12.2%. A number of 18 provinces have obese under fives exceeding the national prevalence. They are North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Yogyakarta, East Java, Banten, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, East Kalimantan, West Sulawesi, Maluku, and North Maluku.

Nutritional Status for Children Aged 6-14 Years (School-aged)

- The national prevalence for wasting school aged children (boys) is 13.3% and 10.9% (girls).
- There are 16 provinces that have risk of wasting for school aged children (boys) above national prevalence. They are NAD, West Sumatera, Riau, Jambi, South Sumatera, Jakarta, Central Java, Banten, West Nusa Tenggara, East Nusa

Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, South Sulawesi, Southeast Sulawesi, Maluku.

- There are 19 provinces that have a risk of wasting for school aged children (girls) above the national prevalence. They are NAD, Riau, Jambi, South Sumatera, Lampung, Riau Islands, Jakarta, Central Java, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, South Sulawesi, Southeast Sulawesi, West Sulawesi, and Maluku.
- The national prevalence for obese school aged children is 9.5% for boys and 6.45% for girls.
- There are 16 provinces where the prevalence of obese children for school aged (boys) is above national prevalence, namely NAD, North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Bangka Belitung, Riau Islands, Jakarta, East Java, West Kalimantan, Central Kalimantan, East Kalimantan, North Maluku, and Papua.
- There are 17 provinces with obesity prevalence on school aged children (girls) is above the national prevalence which are NAD, North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Bangka Belitung, Riau Islands, Jakarta, East Java, Bali, West Kalimantan, East Kalimantan, North Sulawesi, Maluku and Papua.

Nutritional Status of People aged ≥ 15 years

- National prevalence for general obesity on people ≥ 15 years is 10.3%. As many as 12 provinces exceed the national prevalence: Riau Islands, Jakarta, West Java, East Java, East Kalimantan, North Sulawesi, Central Sulawesi, Gorontalo, North Maluku, West Papua and Papua.
- According to the difference by sex/gender, national prevalence for obesity (based on BMI) among man aged ≥ 15 years is 13.9% whereas for woman is 23.8%.
- National prevalence for central obesity (based on waist circuference) for people aged ≥ 15 is 18.8% but there are 17 provinces exceeding that number. They are North Sumatera, Bengkulu, Bangka Belitung, Riau Islands, Jakarta, West Java, East Java, Banten, Bali, East Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Gorontalo, North Maluku, West Papua and Papua.

Nutritional Status of Reproductive Aged Women (15-45 years of age)

- National prevalence of Chronic Energy Deficiency on reproductive aged women (based on LILA/Mid-Upper Arm Circumference which is adjusted by age) is 13.6%. There are 10 provinces where the prevalences of Chronic Energy Deficiency are above national prevalence. They are Jakarta, Central Java, Yogyakarta, East Java, East Nusa Tenggara, South Kalimantan, Southeast Sulawesi, Maluku, West Papua and Papua.

Energy and Protein Consumption

- National average of energy consumption per capita per day is 1.735,5 Kcal. Approximately 21 provinces have average below national standard. They are Riau, Jambi, South Sulawesi, Bengkulu, Lampung, Riau Islands, Jakarta, West Java, Central Java, Yogyakarta, Banten, Bali, west Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, South Sulawesi, Gorontalo and West Sulawesi.

- National average of protein consumption per capita per day is 55,5 grams but 16 provinces have average consumption below national standard. They are West Sumatera, South Sumatera, Bengkulu, Lampung, West Java, Central Java, Yogyakarta, Banten, Bali, West Nusa Tenggara, South Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Gorontalo, and West Sulawesi.

Iodized Salt Consumption

- Nationally, 62,3% households in Indonesia have sufficiently iodized salt. There are 6 provinces succeed in achieving Universal Salt Iodization target 2010 (90%) namely West Sumatera, Jambi, South Sumatera, Bangka Belitung, Gorontalo and West Papua.
- From 30 samples from districts/cities with percentage of iodized salt utilization based on national standard (30 – 80 ppm KIO_3) is 24.5%.
- Nationally, there are 10 districts/cities where the utilization percentage of iodized salt is the lowest, they are: Pidie (1.4%), Bireuen (5.5%), East Seram (10.0%), Rote Ndao (11.1%), Jenepeto (11.3%), Dompu (11.5%), East Flores (11.7%), Tabanan (11.9%), North Aceh (12.1%), and Bima (12.5%). On the other hand, the 10 highest districts are Nagan Raya (100%), Siak (100%), Mentawai Islands (100%), Merangin (100%), Waropen (100%), Tolikara (100%), Bangka (100%), Karo (99.8%), Musi Banyuasin (99.8%), and Rokan Hulu (99.8%).

Immunization Status

- The National percentage for BCG immunization on children aged 12 – 23 months is 86,9%. 14 provinces reported having coverage under the national level namely NAD, North Sumatera, West Sumatera, Jambi, Bangka Belitung, Banten, East Nusa Tenggara, West Kalimantan, Central Kalimantan, West Sulawesi, Maluku, North Maluku, West Papua and Papua.
- The National percentage for polio 3 immunization on children aged 12 – 23 months is 71.0%. It was reported that 17 provinces in which the coverage is under the national level. They are: NAD, North Sumatera, West Sumatera, Bangka Belitung, West Java, Banten, East Nusa Tenggara, West Kalimantan, Central Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua and Papua.
- The National percentage for DPT 3 immunization in children aged 12 – 23 months is 67.7%. There are 17 provinces where coverage is below the national average namely NAD, North Sumatera, West Sumatera, West Java, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, West Papua and Papua.
- National percentage for HB3 immunization aged 12 – 23 months is 62.8%. There are 17 provinces where percentage is below the national standard namely NAD, North Sumatera, Jakarta, West Sumatera, West Java, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, West Papua and Papua.
- Nationally, there are 10 districts/cities where the percentage of complete immunization is the lowest ones namely Waropen (0%), Tolikara (0%), Paniai (0%), Puncak Jaya (0%), Yahukimo (0%), Gayo Lues (1.8%), Bintang Mountains (2.3%), South Nias (4.2%), Asmat (4.6%), and Jayawijaya (4.7%). On the other side,

another 10 districts/cities where complete immunization prevalence is the highest that is Gianyar (93.0%), Keerom (86.1%), Grobogan (85.7%), Bontang City (81.6%), Bandung (81.5%), Wonogiri (80.0%), Metro City (80.0%), Berau (79.1%), Malinau (78.6%), and Wonosobo (78.5%).

Under Fives Growth Monitoring

- National percentage of under fives who have been weighed $\geq$ 4 times for the last 6 months is 45.4%. A number of 19 provinces having percentage under national standard. They are North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Bangka Belitung, Riau Islands, Banten, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, Maluku, West Papua, and Papua.
- Nationally, there are 10 districts/cities with lowest percentage of weighed under fives namely Maros (0.5%), Sindenreng Rappang (0.7%), Bone (1.3%), Pinrang (1.3%), Gowa (1.4%), Bantaeng (1.9%), Jeneponto (1.9%), Takalar (2.0%), Pangkajene Islands (2.6%), and Wajo (2.7%) while 10 districts/cities with highest weighed under fives prevalence are Thousand Islands (100,0%), Raja Ampat (96.3%), Lembata (93.9%), Keerom (88.1%), Sikka (86.2%), East Flores (85.9%), Wonogiri (84.8%), North Timor Tengah (84.0%), Karanganyar (83.7%), and Gunug Kidul (83.0%).

Vitamin A Capsule Distribution

- National prevalence for Vitamin A capsule distribution among children aged 6 – 59 months is 71.5%. There are 15 provinces with percentage under national standard namely North Sumatera, Riau, Central Kalimantan, Central Sulawesi, Southeast Sulawesi, West Sulawesi, Maluku, North Maluku, West Papua and Papua.
- Nationally, there 10 districts/cities where percentage of Vitamin A capsule acceptance on children aged 6 – 59 months is the lowest ones. They are Yakuhimo (5.3%), Paniai (16.5%), Buru (23.6%), Mamasa (26.4%), Sula Islands (26.9%), Tolikara (28.0%), Kapuas (32.8%), Labuhan Batu (34.9%), Dairi (35.8%), and Mandailing Natal (36.2%). On the other hand, the highest percentage are in another 10 district which are Landak (92.0%), Kulon Progo (92.4%), Sumedang (92.6%), Bintan (93.0%), Temanggung (93.3%), Surakarta City (93.8%), Semarang (94.0%), Keeron (94.9%), Sabang (96.8%), and the Thousand Islands (100.0%).

The Coverage of Maternal and Child Health Service

- The national prevalence for Low Birth Weight Babies (< 2.5 kilograms) is 11.5%. 16 provinces have Low Birth Weight prevalence higher than the national prevalence. They are South Sumatera, Bangka Belitung, West Java, Yogyakarta, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Maluku, North Maluku, West Papua and Papua.
- The highest percentage of delivery at home occurred in East Nusa Tenggara, North Maluku, West Papua and Papua (65.4% - 85.1%). Only small part of mother in those provinces choose to have delivery at polindes/poskesdes (0.5% - 3.5%).

Vector Borne Disease

- The National prevalence for filariasis (based on diagnosis result by health professionals and respondent complaints) is 0.11%. It was reported that 8 provinces have filariasis prevalences over the national standard. They are NAD, Riau, Bengkulu, DKI Jakarta, East Nusa Tenggara, Central Sulawesi, Gorontalo, West Papua and Papua.
- The National prevalence for Dengue Fever (based on diagnosis result based on health professionals and respondent complaints) is 0.62%. As many as 12 provinces have Dengue Fever Prevalence above national prevalence namely NAD, Riau, Bengkulu, DKI Jakarta, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, Southeast Sulawesi, West Sulawesi, North Maluku, West Papua and Papua.
- The national prevalence for malaria is 2.85% based on diagnosis result by health professionals and respondent compliants. There are 15 provinces where malaria prevalence is above the national average namely NAD, North Sumatera, Jambi, Bengkulu, Bengka Belitung, West Nusa Tenggara, Central Kalimantan, Central Sulawesi, Gorontalo, Maluku, North Maluku, West Papua and Papua.

Air Borne Disease

- The national prevalence for Acute Respiratory Infection in the last month (based on diagnosis result by health professionals and respondent compliants) is 25.5%. A number of 16 provinces have a prevalence of Acute Respiratory Infection above the national prevalence. They are NAD, West Sumatera, Bengkulu, Bengka Belitung, Riau Islands, Central Java, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, Gorontalo, Maluku, West Papua and Papua.
- Nationally, the 10 districts/cities with the highest prevalence for Acute Respiratory Infection are Kaimana (63.8%), West Manggarai (63.7%), Lembata (62.0%), Manggarai (61.1%), Bintang Mountains (59.5%), Ngada (58.6%), South Sorong (56.5%), Sikka (55.8%), Raja Ampat (55.8%), and Puncak Jaya (56.7%). On the other hand, the 10 districts/cities with lowest prevalence were: West Seram (3.9%), Denpasar City (4.1%), Pulang Pisau (6.3%), Ogan Komering Ulu (6.3%), Palembang City (6.8%), Pagar Alam City (7.1%), Langkat (7.7%), Pasuruan City (8.0%), and Pontianak (8.6%).
- National pneumonia prevalence (based on diagnosis result by health professionals and respondent compliants) is 2.13% in the last month. There are 14 provinces with prevalence above the national standard for pneumonia: NAD, West Sumatera, West Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, North Maluku, West Papua and Papua.
- National pulmonary TB prevalence (based on diagnosis result by health professionals and respondent compliant) is 0.99%. There are 17 provinces have pulmonary TB prevalence above national prevalence namely NAD, West Sumatera, Riau, DKI Jakarta, Central Java, Yogyakarta, Banten, West Nusa Tenggara, East Nusa Tenggara, South Sulawesi, Southeast Sulawesi, Gorontalo, West Papua, and Papua.
- National measles prevalence (based on diagnosis by health professionals and respondent compliant) is 1.18% but there are 13 provinces above that number. They are NAD, West Sumatera, Riau, Jambi, DKI Jakarta, Banten, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, Gorontalo, West Papua, and Papua.

Food Borne Disease

- National prevalence for typhoid (based on diagnosis result by health professionals and respondent compliant) is 1.60%. Some provinces with prevalence above national prevalence are NAD, Bengkulu, West Java, Central Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, East Kalimantan, Central Sulawesi, South Sulawesi, Gorontalo, West Papua, and Papua.
- National prevalence for hepatitis (based on diagnosis result by health professionals and respondent compliant) is 0.60%. There are 13 provinces have hepatitis prevalence above national prevalence. They are Nanggroe Aceh Darussalam, West Sumatera, Riau, West Nusa Tenggara, East Nusa Tenggara, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, North Maluku, West Papua, and Papua.
- National prevalence for diarrhea (based on diagnosis result by health professionals and respondent compliant) is 9.00%. There are 14 provinces have hepatitis prevalence above national prevalence. They are Nanggroe Aceh Darussalam, West Sumatera, Riau, West Java, Central Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, Gorontalo, West Papua, and Papua.

Non-communicable Disease

- National prevalence for arthritis (in the sample population over 15 years) is 30.0% (based on diagnosis result by health professionals and Symptoms). As many as 11 provinces have arthritis prevalence above national prevalence. They are NAD, West Sumatera, Bengkulu, West Java, Central Java, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, and West Papua.
- Nationally, the 10 districts/cities with the highest arthritis prevalence consist of Sampang (57.5%), Lembata (57.5%), Tasikmalaya (56.4%), Cianjur (56.1%), Garut (55.8%), Sumedang (55.2%), Manggarai (54.7%), Tolikara (53.1%), Majalengka (51.9%), and Jeneponto (51.9%). The 10 districts/cities with the lowest prevalence are Yakuhimo (0.1%), Ogan Komering Ulu (8.7%), Siak (9.9%), Binjai (10.5%), East Ogan Komering Ulu (10.7%), Karo (11.6%), East Barito (11.9%), Payakumbuh (11.9%), Makassar (12.0%).
- National Hypertension prevalence for respondents aged > 15 years is 29.8% (based on assessment). There are 10 provinces with prevalence over the national prevalence namely Riau, Bangka Belitung, Central Java, Yogyakarta, East Java, West Nusa Tenggara, Central Kalimantan, South Kalimantan, Central Sulawesi, and West Sulawesi.
- In national level, the 10 districts/cities where the hypertension prevalence is the highest. They are Natuna (53.3%), Mamasa (50.6%), Katingan (49.6%), Wonogiri (49.5%), South Hulu Sungai (48.2%), Rokan Hilir (47.7%), Kuantan Senggigi (46.3%), Bener Meriah (46.1%), Tapin (46.1%), and Salatiga (45.2%). The 10 districts/cities with the lowest prevalence are Jayawiyaja (6.8%), Teluk Wondama (9.4%), South Bengkulu (11.0%), Mentawai Islands (11.1%), Tolikara (12.5%), Yakuhimo (13.6%), Bintang Mountains (13.9%), Seluma (14.6%), Sarmi (14.6), and Tulang Bawang (15.9%).
- The national prevalence for stroke is 0.8% (based on diagnosis result by health professionals and symptoms). There are 11 provinces with stroke prevalence above national average namely NAD, West Suamtera, Riau Islands, Jakarta, West Java,

West Nusa Tenggara, South Kalimantan, North Sulawesi, Central Sulawesi, Gorontalo, and West Papua.

- The national prevalence for asthma is 4.0% (based on diagnosis based on health professionals and symptoms). There are 9 provinces where asthma prevalence is above national prevalence. They are NAD, West Java, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo and West Papua.
- The 10 districts/cities with highest prevalence were: West Aceh (13.6%), Buol (13.5%), Pohuwato (13.0%), West Sumba (11.5%), Boalemo (11.0%), South Sorong (10.6%), Kaimana (10.5%), Tana Toraja (9.5%), Banjar (9.2%). The 10 districts/cities with the lowest asthma prevalence were: Yakuhimo (0.2%), Langkat (0.5%), Central Lampung (0.5%), South Tapanuli (0.6%), North Lampung (0.6%), Kediri (0.6%), Soppeng (0.6%), Karo (0.7%), Serdang Bagadai (0.7%), and Binjai (0.7%).
- The National prevalence for cardiac/heart disease was 7.2% (based on diagnosis by health professionals and symptoms). 16 provinces have cardiac disease prevalence above national prevalence. They are NAD, West Sumatera, Riau, Riau Islands, Jakarta, West Java, Central Java, Yogayakarta, East Nusa Tenggara, South Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, and West Sulawesi.
- National prevalence for Diabetes Mellitus is 1.1% (based on diagnosis result by health professionals and symptoms). There are 17 provinces where the prevalence of Diabetes Mellitus is above national prevalence known as NAD, West Sumatera, Riau, Bangka Belitung, Riau Islands, Jakarta, East Java, West Nusa Tenggara, East Nusa Tenggara, East Kalimantan, North Sulawesi, Central Sulawesi, Gorontalo, and West Papua.
- National prevalence for tumor/cancer is 0.4% (based on diagnosis result by health professionals). A number of 9 provinces have prevalence more than national prevalence. They are West Sumatera, Jakarta, West Java, Central Java, Banten, Bali, North Sulawesi, and South Sulawesi.
- National prevalence for severe mental disorder is 0.5% (based on respondent's compliant and interviewer's observation). There are 7 provinces marked as province with severe mental disorder prevalence above national prevalence. They are NAD, West Sumatera, South Sumatera, Bangka Belitung, Riau Islands, Jakarta, West Nusa Tenggara.
- National prevalence for color blindness is 0.7% (based respondents' complaint). A number of 6 provinces have prevalence above national prevalence which listed as NAD, West Sumatera, South Sumatera, Bangka Belitung, Riau Islands, Jakarta, and West Nusa Tenggara.
- National Glaucoma prevalence is 0.5% (based respondents' complaint). There are 9 provinces with glaucoma prevalence above then national prevalence: NAD, West Sumatera, South Sumatera, Riau Islands, Jakarta, East Java, West Nusa Tenggara, Central Sulawesi, and Gorontalo.
- National prevalence for cleft lip/harelip is 0.2% (based on respondent's compliant and interviewer's observation). A number of 7 provinces were reported to have cleft lip prevalence above national prevalence. They are Nanggroe Aceh Darussalam, West Sumatera, Central Java, Yogyakarta, East Nusa Tenggara, Central Kalimantan, South Kalimantan, North Sulawesi, Central Sulawesi, and Gorontalo.

- National Rhinitis prevalence is 2.4% (based on respondents' complaint). There are 16 provinces with rhinitis prevalence above national prevalence listed as NAD, West Sumatera, South Sumatera, Bengkulu, Bangka Belitung, Riau Islands, Jakarta, West Java, Central Java, Yogyakarta, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi, and Gorontalo.
- National thalassemia prevalence is 0.1% (based on respondents' complaint). There are 8 provinces reported to have thalassemia prevalence above national prevalence namely NAD, South Sumatera, Riau Islands, Jakarta, West Nusa Tenggara, Gorontalo, Maluku, and West Papua.
- National prevalence for hemophilia is 0.7% (referring to compliant by respondent). There are 12 provinces with hemophilia prevalence above national prevalence namely Nanggroe Aceh Darussalam, West Sumatera, South Sumatera, Riau Islands, Jakarta, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, South Sulawesi, Gorontalo, West Papua and Papua.
- National prevalence for mental emotional disorder on people aged $\geq$ 15 years is 11.6% (Based on Self Reported Questionnaire). There are 14 provinces with prevalence of mental emotional disorder above national prevalence. They are Nanggroe Aceh Darussalam, West Sumatera, Riau, Bangka Belitung, Jakarta, West Java, Central Java, East Java, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, South Sulawesi, Gorontalo, and West Papua.
- Nationally, there are 10 districts/cities with highest prevalence of mental emotional disorder namely East Luwu (33.7%), Manggarai (32.4%), South Aceh (32.1%), Purwakarta (32.0%), East Belitung (31.0%), Banjarnegara (30.5%), Boalemo (29.9%), Cirebon (29.9%), and Malang (29.6%). On the other hand, 10 districts/cities where the prevalence of mental emotional disorder is the lowest are Yakuhimo (1.6%), Pulau Pisau (1.7%), Karimun (1.9%), Jayapura (1.9%), Sidoarjo (1.9%), Tabalong (2.1%), Central Maluku (2.4%), Kota Baru (2.4%), Kudus (2.4%), and Muaro Jambi (2.4%).
- National Low Vision prevalence is 4.8% (based on measurement, visus < 20/60 – 3/60). 8 provinces had low vision prevalence above national prevalence. They are Nanggroe Aceh Darussalam, Bengkulu, Central Java, Yogyakarta, East Java, East Nusa Tenggara, South Sulawesi, and West Sulawesi.
- The prevalence of blindness nationally is 0.9% (based on measurement, visus < 3/60). There are 11 provinces known to have blindness prevalence above national prevalence namely Nanggroe Aceh Darussalam, Bangkulu, Lampung, Riau Islands, West Java, Central Java, Bali, West Nusa Tenggara, East Nusa Tenggara, South Sulawesi, Gorontalo.
- National prevalence for cataract on people aged > 30 years is 1.8% (Based on diagnosis by health professionals). There are 12 provinces with prevalence of cataract above national prevalence listed as Nanggroe Aceh Darussalam, West Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Jakarta, Bali, West Nusa Tenggara, South Kalimantan, North Sulawesi, and West Papua.
- There are 10 districts/cities which have the highest cataract prevalence for people aged > 30 years namely South Aceh (53.2%), Boalemo (47.6%), South West Aceh (41.5%), Pidie (40.6%), Jeneponto (40.0%), Pasaman (39.2%), Southeast Maluku (38.5%), North Timor Tengah (36.7%), Kampar (35.6%), and North Luwu (35.5%). The10 districts/cities with the lowest prevalence are Yakuhimo (1.1%), Metro (1.6%), Magelang (2.1%), Karanganyar (2.3%), Madiun (2.6%), North Lampung (3.5%), Jombang (3.5%), Mojokerto (3.6%), Bondowoso (3.8%), and Karo (3.8%).

- Nationally, The percentage of cataract patients (age more than 30) having had a cataract operation is 18.0% (based on diagnosis by health professionals). A number of 16 provinces have percentage above national percentage. They are Nanggroe Aceh Darussalam, North Sumatera, Jambi, South Sumatera, Bengkulu, Lampung, Central Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Southeast Sulawesi, West Sulawesi, Maluku, West Papua, and Papua.
- National prevalence of dental-mouth problems is 23.5%. A number of 19 provinces have dental-mouth problems above national prevalence, namely Nanggroe Aceh Darusalam, Jambi, Bengkulu, Java Barat, Central Java, DI Yogyakarta, West Nusa Tenggara, East Nusa Tenggara, Central Kalimantan, South Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, and West Papua.
- National prevalence of daily teeth brushing is 91.1%. A number of 11 provinces have daily teeth brushing prevalence below national prevalence, namely Nanggroe Aceh Darussalam, Bali, West Nusa Tenggara, East Nusa Tenggara, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, North Maluku, West Papua and Papua.
- National prevalence of active caries is 43.4%. There are 14 provinces with prevalence of active caries above national prevalence, namely Riau, Jambi, South Sumatera, Bangka Belitung, DI Yogyakarta, East Java, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi, Southeast Sulawesi, and Maluku.

Biomedical Measurement (Anemia and Diabetes Mellitus)

- The average hemoglobin concentrate for adult woman was 13.00 g/dl. 17 provinces have average hemoglobin for adult woman below the national average number, namely North Sumatera, West Sumatera, Riau, Lampung, Bangka Belitung, DKI Jakarta, Central Java, DI Yogyakarta, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, South Sulawesi, Southeast Sulawesi, Gorontalo, Maluku, and North Maluku.
- The average hemoglobin concentrate for adult man was 14.67 g/dl. 21 provinces have average Hemoglobin concentratefor adult man below the national average, they are Nanggroe Aceh Darussalam, North Sumatera, West Sumatera, South Sumatera, Lampung, Bangka Belitung, Kepulauan Riau, DKI Jakarta, Central Java, DI Yogyakarta, West Nusa Tenggara, West Kalimantan, South Kalimantan, East Kalimantan, South Sulawesi, Southeast Sulawesi, Gorontalo, Maluku, North Maluku, West Papua and Papua.
- The national average of Hemoglobin concentrate for children aged < 14 years was 12,67 g/dl. 14 provinces had Hemoglobin concentrate for children aged < 14 years below the national average number, namely West Sumatera, Riau, Bangka Belitung, DKI Jakarta, West Java, Central Java, DI Yogyakarta, West Nusa Tenggara, West Kalimantan, East Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, and North Maluku.
- The national prevalence of Diabetes Mellitus (base on the result of glucose level measurement on people aged > 15 years living in the urban area) is 5.7%. 13 provinces have Diabetes Mellitus prevalence above the national prevalence, namely Nanggroe Aceh Darussalam, Riau, Lampung, Bangka Belitung, DKI Jakarta, Central Java, East Java, Banten, West Kalimantan, East Kalimantan, North Sulawesi, Gorontalo, and North Maluku.

- The national prevalence of impaired glucose tolerance (base on result of glucose level measurement on people aged > 15 years, living in urban area.) is 10.2%. 13 provinces have impaired glucose tolerance above the national average, namely Nanggroe Aceh Darussalam, North Sumatera, DKI Jakarta, Central Java, East Java, Banten, West Kalimantan, South Kalimantan, North Sulawesi, South Sulawesi, West Sulawesi, Maluku, and West Papua.

Injury and Disability

- The National Prevalence of Injury is 7.5% (base on the respondent's report, for various causes of injury). 14 provinces have injury prevalence above the national average, namely Bengkulu, Bangka Belitung, DKI Jakarta, West Java, Central Java, East Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, South Sulawesi, Gorontalo, and West Papua.
- The national Percentage of the 3 major injuries causes are falling down (58.0%), land transportation accident (25.9%) and wounding by sharp objects (20.6%).
- The National Prevalence for Disability for people aged > 15 years is 19.5%. 14 provinces have disability prevalence for people aged > 15 years above the national prevalence: West Sumatera, Bangka Belitung, West Java, Central Java, East Java, Bali, West Nusa Tenggara, Central Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, and West Sulawesi.
- The national prevalence of Disability for people aged > 15 years (based on *International Classification of Functioning, Disability and Health*) the major ones are far sighted (11.7%), or near sighted (11.5%).

Smoking Attitude

- National Percentage of smoking everyday on people aged > 10 years is 23.7%. A number of 17 province have smoked everyday prevalence for people aged > 10 years above the national average are: West Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Bangka Belitung, West Java, Central Java, DI Yogyakarta, East Java, Banten, West Nusa Tenggara, North Sulawesi, Central Sulawesi, Gorontalo, and North Maluku.
- Nationally, 85.4% smokers smoke in the house while they are together with other members of the family. Whereas kind of the most popular cigarette is the filtered "kretek/cigarette" (64.5%).
- The 10 district/city with the highest prevalence of smoking everyday for people aged > 10 years is Asmat (53.5%), Mappi (44.0%), Karo (40.6%), Boven Digul (36.8%), Temanggung (36.2%), Pegunungan Bintang (35.2%), Wonosobo (34.6%), Melawi (34.5%), Probolinggo (34.3%), and West Lampung (33.6%). The 10 district/city with the lowest prevalence of smoking everyday for people aged > 10 years is Puncak Jaya (8.9%), Kota Kupang (11.8%), Pontianak (13.3%), Manokwari (13.5%), Sidoarjo (14.8%), Buton (15.2%), Yapen Waropen (15.2%), Barru (15.4%), Ambon city (15.4%), and Tabalong (15.9%).

Fruit and vegetable consumption Attitude

- The national prevalence of lack of fruit and vegetable consumption for people aged > 10 year is 93.6%. 22 provinces have low fruit and vegetable consumption prevalence for people aged > 10 years as compared to the national prevalence:

Nanggroe Aceh Darussalam, North Sumatera, West Sumatera, Riau, South Sumatera, Bangka Belitung, Kepulauan Riau, DKI Jakarta, West Java, Banten, Bali, East Nusa Tenggara, West Kalimantan, South Kalimantan, South Sulawesi, West Sulawesi, Maluku, and North Maluku.

Alcoholic beverages drinking behavior

- The national prevalence of drinking alcohol within the last 12 months is 4.6%. A number of 15 provinces have prevalence for drinking alcoholic beverages within the last 12 months above national prevalence, namely North Sumatera, Kepulauan Riau, Bali, East Nusa Tenggara, West Kalimantan, Central Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, Maluku, North Maluku, West Papua, and Papua.

Physical activity behavior

- The national prevalence for low levels of physical activity among people aged > 10 years is 48.2%. 16 provinces have prevalence of low physical activity among people aged > 10 years above the national prevalence are: Nanggroe Aceh Darussalam, North Sumatera, West Sumatera, Riau, Jambi, Kepulauan Riau, DKI Jakarta, West Java, Banten, West Nusa Tenggara, South Kalimantan, East Kalimantan, North Sulawesi, South Sulawesi, Maluku, and West Papua.
- Nationally, the 10 districts/cities with the highest prevalence of low levels of physical activity for people aged > 10 year is the highest are: Pacitan (68.3%), Gunung Kidul (65.3%), Magetan (63.3%), East Ogan Komering Ulu (62.9%), Sekadau (62.8%), Humbang Hasundutan (62.5%), Bangli (62.4%), Tomohon city (61.9%), Dairi (61.8%), and Toba Samosir (61.7%). The 10 districts/cities with the lowest prevalence of low levels of physical activity among people aged > 10 years is: Padang city (11.9%), Lubuk Linggau city (12.0), Payakumbuh city (13.3%), Bukit Tinggi city (17.7%), Langsa (17.9%), Bungo (18.4%), Samarinda city (18.4%), East Aceh (19.0), Balikpapan city (19.1%), and West Seram (19.4%).

Knowledge and Attitude about Avian Flu

- The national [revalence of “having heard about Avian Flu” is 64.7%. A number of 14 provinces have prevalence of having heard about Avian Flu below the national prevalence: Nanggroe Aceh Darussalam, South Sumatera, Lampung, Bangka Belitung, Kepulauan Riau, DKI Jakarta, West Java, Central Java, DI Yogyakarta, Bali, South Kalimantan, East Kalimantan, North Sulawesi, and Central Sulawesi.
- The national prevalence of “well informed about Avian Flu” (among people having heard about Avian Flu) is 78.7%. 17 province had prevalence of being well informed about Avian Flu (among people who have heard about Avian Flu) below the national prevalence, namely West Sumatera, Riau, Bangka Belitung, West Java, DI Yogyakarta, East Java, East Nusa Tenggara, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Knowledge and behavior about HIV/AIDS

- The national prevalence of “having heard about HIV/AIDS” is 44.4%. 17 provinces have prevalence of having heard about HIV/AIDS below the national prevalence: Nanggroe Aceh Darussalam, West Sumatera, South Sumatera, Lampung, Central

Java, East Java, Banten, West Nusa Tenggara, East Nusa Tenggara, Central Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, North Maluku.

- The national prevalence of "being well informed about HIV/AIDS transmission (among people having heard about HIV/AIDS) is 13.9%. 16 province had a low prevalence of being well informed about HIV/AIDS transmission (among people having heard about HIV/AIDS) below the national prevalence: Bengkulu, Lampung, Bangka Belitung, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Banten, Bali, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi and South Sulawesi.

Hygiene Behavior

- The national prevalence of correct behavior for defecation is 71.1%. 17 provinces had right behavior for defecation below national prevalence, namely Nanggroe Aceh Darussalam, West Sumatera, Jambi, South Sumatera, Central Java, East Java, Banten, West Nusa Tenggara, Central Kalimantan, South Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, West Papua, and Papua.
- The national prevalence of correct right attitude toward hand washing is 23.2%. 15 provinces have a prevalence of correct right attitude toward hand washing below the national prevalence: Nanggroe Aceh Darussalam, North Sumatera, West Sumatera, Riau, Jambi, Bengkulu, Lampung, Bangka Belitung, west Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, South Sulawesi, Gorontalo, and West Sulawesi.

Pattern of Risky Foods consumption

- Nationally, the prevalence of risky foods which most consumed by people aged > 10 year are flavoring (77.8%), sweet (68.1%), and caffeine (36.5%).
- 22 provinces have people aged > 10 years consume flavoring above the national prevalence: South Sumatera, Bengkulu, Lampung, Bangka Belitung, Kepulauan Riau, DKI Jakarta, West Java, Central Java, East Java, Banten, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, and West Papua.

Clean and healthy life behavior

- The national prevalence of house holds with clean and healthy life behavior is 38.7%. The 22 provinces have prevalence of house holds with clean and healthy life behavior below the national prevalence are: Nanggroe Aceh Darussalam, West Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Kepulauan Riau, West Java, Banten, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.
- Nationally, 10 districts/cities with the lowest prevalence of clean and healthy life behavior are Raja Ampat (0%), Supiori (0%), Gayo Lues (1.3%), Kepulauan Mentawai (1.4%), Nias Selatan (1.8%), Jayawijaya (2.1%), Paniai (2.1%), Nagan Raya (2.2%), Nias (3.0%), and Timor Tengah Selatan (3.8%). The 10 district/cities with the highest prevalence of clean and healthy live behavior are Klungkung

(100%), Badung (100%), Sumedang (68.8%), Kota Batu (67.1%), Gianyar (66.7%), Soppeng (64.7%), Kota Tomohon (63.4%), Kota Kendari (62.1%), Sukoharjo (61.3%), and Kuningan (60.5%).

Access to health service (Hospital, Puskesmas, Pustu, Practised Doctor, midwife service)

- Nationally, 94.1% households are located within 5 km or less from one of health service facilities and 90.8% households can reach a health service facilities within 30 minutes or less.
- 18 provinces have households located more than 5 km from health service facility above the national average: namely Nanggroe Aceh Darussalam, West Sumatera, Riau, Jambi, Bangka Belitung, Banten, East Nusa Tenggara, West Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Access to Community health-based efforts (Posyandu, Poskesdes, Polindes)

- Nationally, 98.4% households are located in or less than 5 km from one of the community health-based efforts and 96.5% households can reach the community health-based efforts in or less than 30 minutes.
- 15 provinces have households located in or less than 5 km from one of the community health-based efforts above the national average: Nangroe Aceh Darussalam, North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Lampung, Bangka Belitung, East Nusa Tenggara, West Kalimantan, Central Kalimantan, West Sulawesi, Maluku, West Papua, and Papua.
- Nationally, 27.3% households utilize Posyandu, 62.5% households do not utilize Posyandu since they do not need it (no children under 60 months), and 10.3% households do not utilize Posyandu for other reasons.

Inpatient

- Nationally, the highest percentage of inpatient service utilization is by households is government's hospital (3.1%), Private hospital (2.0%) and Puskesmas (0.8%).
- 16 provinces have percentage of households that choose government's hospital for inpatient service below the national percentage: Nanggroe Aceh Darussalam, North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Lampung, Bangka Belitung, Kepulauan Riau, Banten, West Kalimantan, Central Kalimantan, South Kalimantan, Southeast Sulawesi, West Sulawesi, and Maluku.
- 6 provinces have percentage of households which choose Puskesmas for inpatient service above the national percentage, West Nusa Tenggara, East Nusa Tenggara, North Sulawesi, Central Sulawesi, West Papua, and Papua.
- Nationally, the main source of funding for inpatient service is from the household's own money (71.0%), Askes/Jamsostek (15.6%), and Askeskin/Surat Keterangan Tidak Mampu (statement letter of poverty) (14.3%).
- A number of 17 provinces have percentage of households using Askeskin/Surat Keterangan Tidak Mampu for inpatient funding above national percentage, namely Nanggroe Aceh Darussalam, North Sumatera, Lampung, DI Yogyakarta, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, North

Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, West Papua, and Papua.

Outpatient

- Nationally, the highest percentage chosen by households for outpatient service are birthing facility (14.8%), health personnel (13.9%), and government's hospital (1.6%).
- 14 provinces have percentage of households which choose health personnel as a service for outpatient above the national average: Nanggroe Aceh Darussalam, North Sumatera, West Sumatera, Jambi, Bengkulu, Lampung, Bangka Belitung, Central Java, DI Yogyakarta, East Java, Banten, Bali, North Sulawesi, Gorontalo.
- Nationally, the main source of funding used by households for outpatient service is from their own money (74.5%), Askeskin/Surat Keterangan Tidak Mampu (10.8%), and Askes/Jamsostek (9.8%).
- 13 provinces have percentage of households using Askeskin/Surat Keterangan Tidak Mampu for funding outpatient services above the national average: Nanggroe Aceh Darussalam, West Nusa Tenggara, East Nusa Tenggara, East Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Health Service Responsiveness

- Nationally, 3 aspects of Health Service responsiveness which obtain lowest good assessment from households are room cleanliness (82.9%), freedom to choose facility (84.5%), and waiting time (84.8%).
- 22 provinces have percentage of households which give good assessment of Room cleanliness below national average: Nanggroe Aceh Darussalam, West Sumatera Barat, Jambi, Sumatera Selatan, Bengkulu, Lampung, Bangka Belitung, Kepulauan, West Java, Banten, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, Central Sulawesi, Southeast Sulawesi, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Clean Water

- The national average of households clean water utilization of < 20 liters per person per day is 14.4%. A number of 20 provinces have clean water usage average per person per day < 20 liters below the national average, namely North Sumatera, South Sumatera, Bengkulu, Lampung, Bangka Belitung, DKI Jakarta, Central Java, DI Yogyakarta, East Java, Banten, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, South Sulawesi, North Maluku, and West Papua.

Defecation Facility

- The National percentage of households using their own latrines is 60.0%. A number of 20 provinces have percentage of households using their own latrines below the national average: Nanggroe Aceh Darussalam, West Sumatera, Bengkulu, Central Java, East Java, Banten, Bali, West Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast

Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Waste Water Disposal Facility

- The national average of households which do not have any waste water disposal facility is 24.9%. 23 provinces have percentage of households without and water disposal facility above national average and they are: Nanggroe Aceh Darussalam, Riau, Jambi, South Sumatera, Bangka Belitung, Kepulauan Riau, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Garbage Dump

- The National percentage of households with no garbage disposal in the household compound is 72.9%. 20 provinces have percentage of households with disposal within the household compound above the national percentage average: Nanggroe Aceh Darussalam, North Sumatera, Riau, Jambi, South Sumatera, Lampung, West Java, East Java, Banten, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua, and Papua.

Housing

- The National percentage of households with a dirt-floored house is 13.8%. 7 provinces have percentage of households with dirt-floored house above the national average, namely Lampung, Central Java, East Java, East Nusa Tenggara, Maluku, North Maluku, and Papua.

Livestock Rising

- Nationally, 39.4% households raise poultry, 11.6% raise medium livestock, 9.0% raise big livestock and 12.5% raise animals, such kind of dog, cat or rabbit. From the households which raise livestock, around 10-20% raise them in the house.

Mortality

- Review of national data for the last 12 years (1995–2007) shows that the process of epidemiological transition has moved in parallel with the demographic transition. Epidemiology transition is the shift of mortality from communicable disease to non communicable one. Demography transition is signed with displacement of mortality proportion from the structure of young people towards the older ones.
- The decrease of communicable disease, as primary cause of mortality in 2001-2007 is not too so big as compared to the previous period (1995-2001). On other hand, the proportion increase of noncommunicable disease for the period of 2001 and period of 2001-2007 are almost the same. Thus, the government especially ministry of health and health offices face a double responsibility; namely the threat of communicable disease which decreases slowly and tends to be constant, and also the increase of noncommunicable disease which is increasing quite fast.

- Further, the proportion of disease burden related to maternal mortality and perinatal mortality has not change during the last period (2001-2006). The efforts of improved qualified maternal health service improvement for pregnancy, delivery and childbirth period need to be improved continuously to decrease maternal and perinatal mortalities.

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GLOSSARY

	INDONESIA	ENGLISH
ART	**Anggota Rumah Tangga**	**Household Members**
AFP	**Kelumpuhan Lemah Akut**	**Acute Flaccid Paralysis**
ASKES	**Asuransi Kesehatan**	**Health insurance**
ASKESKIN	**Asuransi Kesehatan Miskin**	**Health Insurance for the poor**
BB	**Berat Badan**	**Body Weight**
BB/U	**Berat Badan Menurut Umur**	**Body Weight By Age**
BB/TB	**Berat Badan Menurut Tinggi Badan**	**Body Weight By Height**
BUMN	**Badan Usaha Milik Negara**	**Body Effort For Public ownership**
BALITA	**Bawah Lima Tahun**	**Under Five Years**
BABEL	**Bangka Belitung**	**Bangka Belitung {Province}**
BCG		**Bacillus Calmete Guerin**
BBLR	**Berat Bayi Lahir Rendah**	**Low Birth Weight Baby**
BATRA	**Pengobatan Tradisional**	**Traditional Therapy**
CPITN	***Masyarakat Periodental Indeks Memerlukan Perawatan***	***Community Periodental Index Treatment Needs***
D	**Hasil diagnosa**	**Diagnosis**
DG	**Diagnosis dan Gejala**	**Diagnosis and Symptom**
DM		**Diabetes Mellitus**
DDM		***Diagnosed Diabetes Mellitus***
D-T	***Kerusakan -Gigi***	***Decay - Teeth***
DKI	**Daerah Khusus Ibukota**	**Capital City**
DPT	**Diptheri Pertusis Tetanus**	**Diptheria Pertusis Tetanus**
DIY	**Daerah Istimewa Yogyakarta**	**Special Region of Yogyakarta**
DMF-T	***Pengisian Yang Hilang Kerusakan -Gigi***	***Decay Missing Filling - Teeth***
DEPKES	**Departemen Kesehatann**	**Ministry of Health**
F-T	***Menambal Gigi***	***Filling Teeth***
G	**Gejala klinis**	**Clincial Symptom**
HB	**Hemoglobin**	**Hemoglobin**
IDF	***Federasi Diabetes Internasional***	***International Diabetes Federation***
IMT	**Indeks Massa Tubuh**	**Body Mass Index**
ICF	***Penggolongan Internasional untuk fungsi, Cacat dan Kesehatan***	***International Classification of Functioning, Disability and Health***

ICCIDD	***Dewan Internasional untuk Kendali Kekurangan Yodium***	***International Council for the Control of Iodine Deficiency Disorders***
IU	***International Unit***	***International Unit***
JNC	**Panitia Komite Nasional**	***Joint National Committee***
JABAR	**Jawa Barat**	**West Java**
JATENG	**Jawa Tengah**	**Central Java**
JATIM	**Jawa Timur**	**East Java**
KEPRI	**Kepulauan Riau**	**Islands of Riau**
KALTIM	**Kalimantan Timur**	**East Kalimantan**
KALTENG	**Kalimantan Tengah**	**Central Kalimantan**
KALSEL	**Kalimantan Selatan**	**South Kalimantan**
KALBAR	**Kalimantan Barat**	**West Kalimantan**
KK	**Kepala Keluarga**	**Family head**
Kg	**Kilogram**	**Kilogram**
KEK	**Kurang Energi Kalori**	**Insufficient Calorie Energy**
KKAL	**Kilo Kalori**	**Kilo Calorie**
KEP	**Kurang Energi Protein**	**Insufficient Protein Energyly**
KMS	**Kartu Menuju Sehat**	**Health Card**
KIA	**Kesehatan Ibu dan Anak**	**Healthy Mother and Chlid**
KLB	**Kejadian Luar Biasa**	**Epidemic**
LP	**Lingkar Perut**	**Stomach Circumference**
LILA	**Lingkar Lengan Atas**	**Mid-arm Circumference**
mmHg	**Milimeter Air Raksa**	**Mercurial Milimeter**
mL	**Mili Liter**	**Milliliter**
MI	**Indeks yang hilang**	***Missing index***
M-T	**Gigi Yang Hilang**	***Missing Teeth***
MTI	**Indeks Gigi Yang Hilang**	***Missing Teeth Index***
MDG	**Tujuan Perkembangan Masa Depan**	***Millenium Development Goal***
Malut	**Maluku Utara**	**North Maluku**
Nakes	**Tenaga Kesehatan**	**Health Staf**
NAD	**Nanggroe Aceh Darussalam**	**Nanggroe Aceh Darussalam**
NTT	**Nusa Tenggara Timur**	**East Nusa Tenggara**
NTB	**Nusa Tenggara Barat**	**West Nusa Tenggara**
O	**Obat atau Oralit**	**Drug or Oralit**
Poskesdes	**Pos Kesehatan Desa**	**Village Health Post**
Polindes	**Pondok Bersalin Desa**	**Birthing house**
Pustu	**Puskesmas Pembantu**	**Sub-health center**

Puskesmas	**Pusat Kesehatan Masyarakat**	**Community Health Center**
PTI	**Indeks Melakukan Pengobatan**	***Performed Treatment Index***
POLRI	**Polisi Republik Indonesia**	**Police of Republic of Indonesia**
PNS	**Employee Negeri Sipil**	**Civil Servant**
PT	**Perguruan Tinggi**	**College/University**
PPI	**Panitia Pembina Ilmiah**	**Scientific Building Committee**
PD3I	**Penyakit yang Dapat Dicegah Dengan Imunisasi**	**Disease Preventable With Immunization**
PIN	**Pekan Imunisasi Nasional**	**National Immunization Week**
Posyandu	**Pos Pelayanan Terpadu**	**Ingrated Health Post**
PPM	**Bagian Per Juta**	***Part Per Million***
RS	**Rumah Sakit**	**Hospital**
RSB	**Rumah Sakit Bersalin**	**Maternal Hospital**
RTI	**Indeks Memerlukan Pengobatan**	***Required Treatment Index***
RPJM	**Rencana Pembangunan Jangka Menengah**	**Intermediate term Development Plan**
Riskesdas	**Riset Kesehatan Dasar**	**Basic Health Research**
SRQ	**Laporan Daftar Pertanyaan sendiri**	***Self Reporting Questionnaire***
SKTM	**Surat Keterangan Tidak Mampu**	**Letter of Poverty**
SPAL	**Saluran Pembuangan Air Limbah**	**Water Drainage Channel**
Sumbar	**Sumatera Barat**	**West Sumatera**
Sumsel	**Sumatera Selatan**	**South Sumatera**
Sulut	**Sulawesi Utara**	**North Sulawesi**
Sulbar	**Sulawesi Barat**	**West Sulawesi**
Sulsel	**Sulawesi Selatan**	**South Sulawesi**
Sulteng	**Sulawesi Tengah**	**Central Sulawesi**
Sultra	**Sulawesi Tenggara**	**South East Sulawesi**
SD	**Standar Deviasi**	**Standard Deviation**
SD	**Sekolah Dasar**	**Elementary school**
SLTP	**Sekolah Lanjutan Tingkat Pertama**	**Intermediate School**
SLTA	**Sekolah Lanjutan Tingkat Atas**	**High School**
TB	**Tinggi Badan**	**Body Height**
TB	**Tuberkulosis**	**Tuberculosis**
TB/U	**Tinggi Badan/Umur**	**Height Body / Age**
TT	**Tetanus Toxoid**	**Tetanus Toxoid**
TDM	**Total Diabetes Mellitus**	**Total Diabetes melitus**
TGT	**Toleransi Glukosa Terganggu**	**Glucose Tolerance Annoyed**
UNHCR	**Perserikatan Bangsa-Bangsa Komisaris Tinggi untuk Pengungsi-pengungsi**	***United Nations High Commissioner for Refugees***

UNICEF	**Perserikatan Bangsa-Bangsa Dana Anak-Anak**	***United Nations Children's Fund***
UCI	**Imuniasi Anak Universal**	***Universal Child Immunization***
UDDM	**Diabetes Melitus Undiagnosed**	***Undiagnosed Diabetes Mellitus***
WHO	**Organisasi Kesehatan Dunia**	**World Health Organization**
WUS	**Wanita Usia Subur**	**Fertile Age Woman**
µl	**Mikro Liter**	**Micro-Liter**

LIST OF ATTACHMENTS

1.1. Organization Structure of Riskesdas (Kepmenkes)
1.2. Ethical Agreement
2.1. Questionnaire of Riskesdas

CHAPTER 1. INTRODUCTION

1.1 Background

Basic Health Research (Riskesdas) is a policy tool for heath policy makers at various administration levels. To actualize the vision of “independent community to live healthy”, Ministry of Health of RI developed a mission: “making people healthy”. Riskesdas 2007 was commissioned by National Institute of Health Research and Development (NIHRD), as one of the main tools for the Ministry of Health to provide evidence-based health information. The implementation of Riskesdas 2007 is one efforts to develope one of the 4 (four) of Ministry of Health’s grand strategies, that is the function of evidence-based health information system in Indonesia. Database produced by Riskesdas 2007 consist of main health indicators of health status, nutrition status, health environment, health attitude, and various health service utilization aspects. This database, does in representative on the national level, but also some health indicators are representative for the district/city level.

Riskesdas 2007 was designed with tight quality control, sufficient sample size, and well coordinated data management. Riskesdas 2007 was also meant to develop researcher’s capacity in health and development and research agency areas, both at the central and region level, in order to be able to develop and conduct big survey and analyze complex data. In the design level, to improve the function of Riskesdes 2007, the comparability of various data collectors were measured at the individual as well as household levels. Valid, reliable and comparable information of Riskesdas 2007 can be used to measure various health status, input, process and outcome of the health system. Moreover, valid, reliable and comparable information of an observation and assessment process can contribute the availability of evidence at the national, provincial and district/city levels. Experience shows that comparability of household survey as Riskedas 2007 can be achieved efficiently through sophisticated instrument design and careful trial in its development. Riskesdas 2007 implementation acknowledges the importance of comparability, validity and reliability.

In accordance with Rules No. 32 year 2004 re. Local government, has more authority in health planning, at the district/city level. An appropriate and adequate health development plan needs community-based data that can represent the population (household and individual) at various administration levels.

Experience shows that various community-based survey such as Indonesian Demographic and Health Survey (IDHS/SDKI), National Socio-Economic Survey (Susenas), and Health and Household Survey (HHS/SKRT) only produce estimation that represent area of national or province levels. It can be said that the existing surveys are not sufficiently large for health planning at the district/city level. So far health status map has not been available (including biomedical data) and background factors in the district/city level. Thus, formulation and policy decision in the health sector, has not made based on the evidence-based community information.

Based on the above mentioned considerations, Balitbangkes implemented Riskesdas to provide community-based information of health status (including biomedical data) and other background factors with the representation at the district/city level.

1.2 Range of Riskesdas 2007

Riskesdas 2007 is community-based research with the samples taken from household and household's member which were selected proporinate to size of the district/city level. Riskesdas 2007 provides basic health information including biomedical, using the sample frame of Susenas (National Socio-Economic Survey) core.

Riskesdas 2007 covers bigger samples than previous health surveys, and covers wider health aspects. Compare to the previous community-based survey, representation level of Riskesdas are as follow:

Table 1.1
Riskesdas Indicators and Sample representation

Indicator	SDKI	SKRT	Susenas 2007	Riskesdas 2007
1. Sample	35.000	10.000	280.000	280.000
2. Mortality pattern	National	S/J/KTI	--	National
3. Behavior	--	S/J/KTI	District	District
4. Nutrition & Consumption Pattern	--	S/J/KTI	Province	District
5. Environment sanitation	--	S/J/KTI	District	District
6. Disease	--	S/J/KTI	--	Prov/Dist.
7. Injury & Accident	National	S/J/KTI	--	Prov/Dist.
8. Disability	--	S/J/KTI	--	Prov/Dist.
9. Dental & Mouth	--	--	--	Prov/Dist.
10. Biomedical	--	--	--	National urban

S: Sumatera, J: Java-Bali, KTI: Kawasan Timur Indonesia (Eastern Indonesia area)

1.3 Research Questions

Research questions in Riskesdas 2007 were developed based on health policy question which is very essential in relation with the efforts to improve community health level in Indonesia. According to the conceptual framework and planning needs, then the research questions that must be answered through Riskesdas were:

a. How is the community health status in national, province and district/city levels?

b. What and how are the factors of community health status in national, province and district/city levels?

c. What is the specific community health problem in every province and district/city?

1.4 Riskesdas Objectives

To answer above mentioned research questions, the objectives of Riskesdas 2007 are as follow:

a. Provide evidence-based information for health policy development formulations in various administrative levels.

b. Provide information for health planning including resources from various administrative levels.

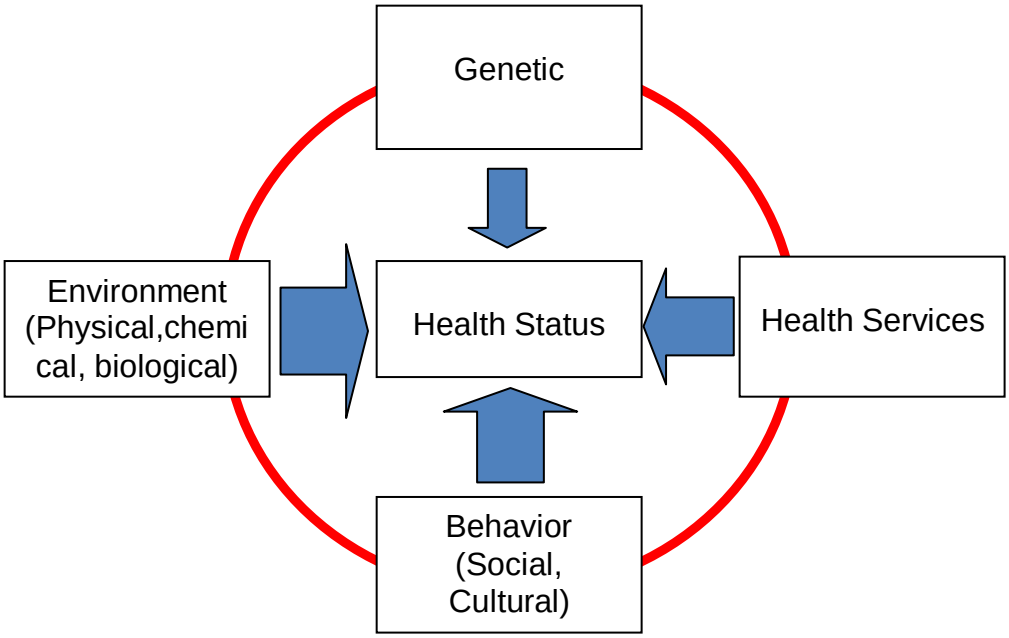
c. Provide status map and health problem in national, province and district/city levels.

d. Compare health status and related factors for inter provinces and inter districts/cities.

1.5 Conceptual Framework

The development of Riskesdas 2007 was based on the framework of Henrik Blum (1974, 1981). This concept is focused in the community health status which simultaneously influenced by four determined factors which interact one another. The four determined factors are: environment, behavior, health services, and genetic. Blum's framework can be seen in picture 1.1. below.

Picture 1.1
Factors influence health status (Blum 1974)



In Riskesdas 2007, not all indicators were well collected which is related with health status and the four determinate factors. Various indicators that have been questioned, measured or examined were as follow:

Health status covers the following variables:

- Mortality (pattern of all ages cause of death)
- Morbidity, covers prevalence of communicable and non communicable diseases
- Disability
- Nutrition status (based on the measurement of weight and height for all ages, measurement of stomach circle for adults, age 15 or above and measurement of mid-upper arms circumference for woman, 15-45 years.
- Mental health

a. Environment factor covers the following variables:

- Nutrition consumption covers consumption of energy, protein, vitamin and minerals
- Physical environment, covers drinking water, sanitation, pollution and garbage
- Social environment, covers education level, social-economy level, urban-rural comparison, and comparison between province, district/city.

b. Behavior factor covers the following variables:

- Smoke/tobacco and alcohol consumption behavior.
- Vegetables and fruit consumption behavior.
- Physical activity behavior.
- Teeth brushing.
- Hygiene attitude (washing hand, defecate)
- Knowledge, attitude and behavior to bird flu. HIV/AIDS

c. Health service cover the following variables:

- Access to health care, including community-based health efforts.
- Health service facility benefit.
- Health service responds.
- Maternal and child health program coverage (pregnancy check up, baby check up and immunization).

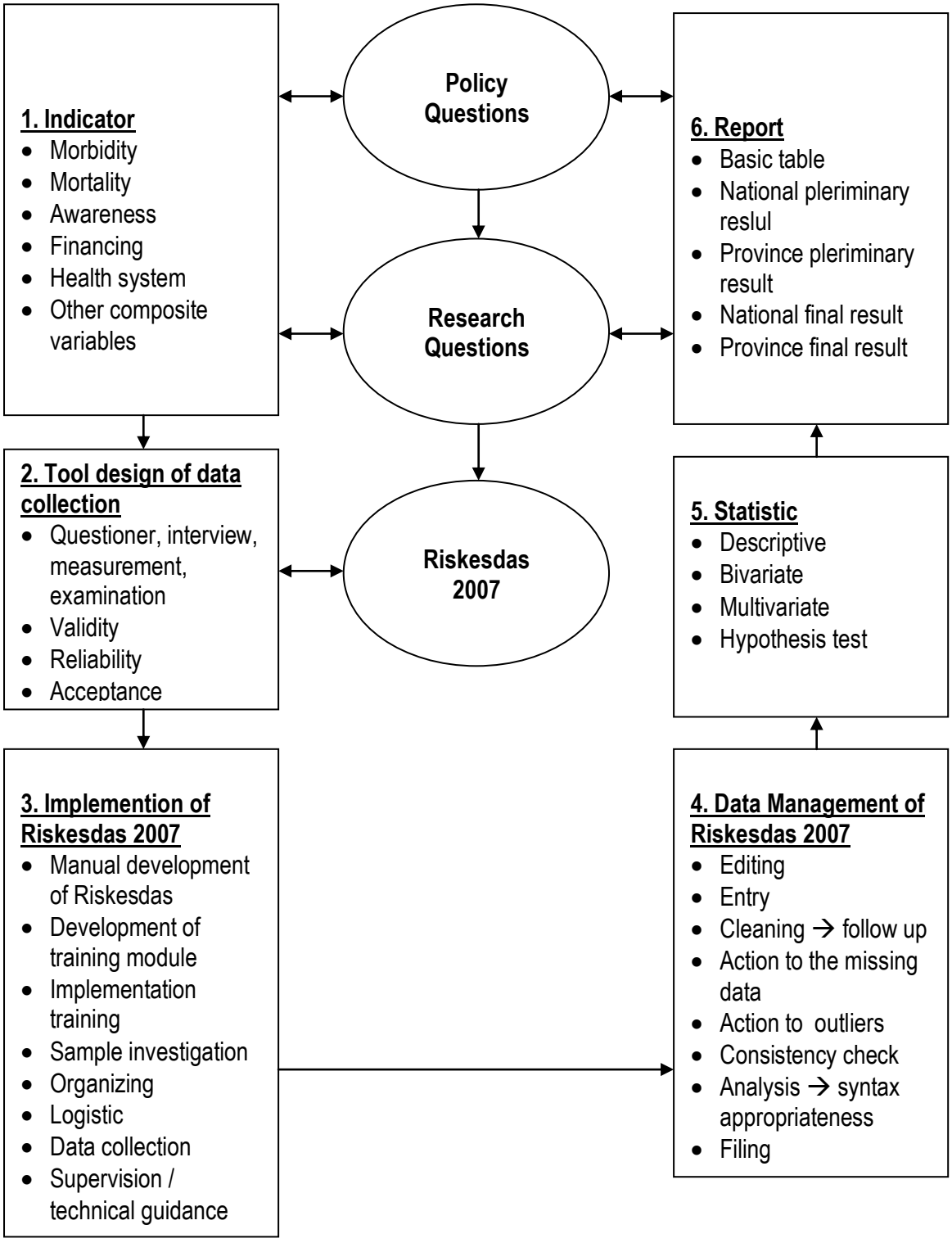
1.6 Flow of thinking of Riskesdas 2007

The flow of thinking (Picture 1.2) schematically describes six important phases in Riskesdas 2007. The six phases are strongly related with Riskesdas' basic idea to provide valid, reliable, comparable health data, and estimation representing household and individual at the district/city level. The cycles from Phase 1 to phase 6 describe system thinking that should run continuously. Thus, Riskesdes 2007 results should be able to answer policy question but also gives direction for the development of next policy questions.

To guarantee appropriateness and adequacy in the context of providing valid, reliable and comparable health data, for each phase of Riskesdas 2007 tight quality control efforts were undertaken. Substance of questions, measurement and examination of Riskesdas 2007 covers health data adapting part of questions from the World Health Survey developed by World Health Organization. Thus, various instruments developed for Riskesdas 2007 based on various existing instruments, often used by many nations in the world (61 countries). The mentioned instrument is developed, tested and used to measure some health aspect including input, process and outcome of health.

Picture 1.2

Flow of thinking of Riskesdas 2007



1.7 Organization of Riskesdas

Riskesdas is planned and implemented by all personnel of NIHRD and involving various parties, such as BPS-Statistics Indonesia, Professional organizations, Universities, Research Institutes, Local governments and Community participation. Based on the decree of Minister of health no. 877, 2006, Riskesdas 2007 organization is divided into various levels with details as follows: (see annex 1.1.):

a. Central level
b. Region level (four region)
c. Province level (33 Province)
d. District level (440 district/city)
e. Data collector team (adjusted with field needs)

Data collection of Riskesdas 2007 was planned to be done soon after the completion of Susenas 2007 data collection. Province list, Area coordinator and data collection schedule per area, listed as follows:

a. Region 1 coordinated by the Research and Development Center of Ecology and health Status, and responsible for the Provinces of Nanggroe Aceh Darussalam (NAD), North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Bangka Belitung, and Kepulauan Riau.

b. Region 2 coordinated by the Research and Development Center of Biomedical and Pharmacy, and responsible for the Provinces of DKI Jakarta, Banten, Java Tengah, DI Yogyakarta, West Kalimantan, Central Kalimantan, South Kalimantan, and West Kalimantan

c. Region 3 coordinated by the Research and Development Center of Health System and Policy, and responsible for the Provinces of East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, West Papua, and Papua

d. Region 4 coordinated by the Research and Development Center of Nutrition and Food, and responsible for the provinces of Bengkulu, Lampung, West Java, North Sulawesi, Central Sulawesi, Southeast Sulawesi, South Sulawesi, Gorontalo, and West Sulawesi.

1.8 The benefit of Riskesdas

Riskesdas gives benefit for health development plan which consist of:

- Provide database for various health indicators from various administrative levels.
- Stratification of health indicators according to social-economic status collected by Susenas 2007.
- Provide information to sustainable health development plan.

1.9 Ethical Agreement of Riskesdas

Riskesdas received the ethical agreement from health research ethical commission of NIHRD, Ministry of Health Republic of Indonesia. (Attachment 1.2))

CHAPTER 2. RISKESDAS METHODOLOGY

2.1 Design

Riskesdas was a cross-sectional study. Design of Riskesdas was mainly to describe health problem of the people all over Indonesia, in a comprehensive way, accurate and oriented to the interest of decision maker at all administrative levels. A variety of sampling error measurements were made including *standard error, relative standard error, confidence interval, design effect* and number of sample measured for every estimated variable. With this design, all users of Riskesdas can get a complete and detailed picture about all health problems that were questioned, measured or examined. Report of Riskesdas 2007 describes many health problems nationally and variability inter-provinces, while at the level of province, this design can describe health problems in the province level and variability inter-district/city.

As mentioned before, Riskesdas 2007 was designed to support development in health policy based on scientific evidence. The design of Riskesdas 2007 was developed by paying attention to the basic theory about relation of various determinations that affect society's health status. Riskesdas 2007 provides basic data that was collected through a national survey so we can use its result to arrange a health policy to the district/city level. Further, since the methodology used on this was actually similar to the one used on Susenas 2007 (further explanation can be viewed on the next section), the data from Riskesdas 2007 is easy linked with the one from Susenas 2007, or with other survey's data like poverty data that used the same methodology. Thus, the policy maker and decision maker in the field of health development can gain optimum benefit from the available data of Riskesdas 2007.

2.2 Location

Sample of Riskesdas 2007 in district/city was collected from 440 district/cities (from total 456 districts/cities) in the 33 (thirty three) provinces in Indonesia, with some notes as follows

a. There are 16 (sixteen) districts not included as sample on Riskesdas 2007 because those are new district which were not officially inagurated by the time we made plans for Riskesdas, and yet the Susenas 2007 has all the district/city. They are : 1) Pidie Jaya, 2) Subussalam (Nanggroe Aceh Darussalam province); 3) Batubara (North Sumatera province); 4) Empat Lawang (South Sumatera Province); 5) Bandung Barat (West Java province); 6) Kayong Utara (West Kalimantan Province); 7) Bolaang Mongondow Utara, 8) Kepulauan Siao Tagolandang Biaro, 9) Minahasa Tenggara, 10) Mobagu (North Sulawesi Province); 11) North Buton district, 12) Konawe Utara (Southeast Sulawesi Province); 13)Gorontalo Utara (Gorontalo Province); 14) Sumba Barat Daya, 15) Sumba Tengah, 16) Nagekeo (East Nusa Tenggara Province).

b. There are 2 (two) districts included as sample for Riskesdas 2007, and yet not included as sample for Susenas 2007, they are: 1) Puncak Jaya, and 2) Pegunungan Bintang (Papua Province).

2.3 Population and Sample

The population of Riskesdas 2007 is households from all over Republic of Indonesia. Sample of households and its inclusion in the Riskesdas 2007 is identical to the one on Susenas 2007. Thus, the calculation methodology and the sample collection on Riskesdas 2007 are identical with *two stage sampling* that was used on Susenas 2007. The following is a brief explanation about how to calculate and collect the mentioned sample.

2.3.1 Collection of Census Block Samples

As previously explained, Riskesdas used the whole sample chosen from Susenas 2007. From every district/city that includes in sample's frame will have a number of proportional census blocks against number of the households in related district/city. The possibility of a census block to be included in the sample within district/city is proportional against the number of household in a district/district (*probability proportional to size*). If there are more than 150 (a hundred and fifty) households in a census block, then to collect a sample we must have a census sub-block at this level.

In general, based on 17,357 (seventeen thousand three hundred and fifty seven) census block samples collected on Susenas 2007, Riskesdas was able to visit 17,150 census blocks in 438 district/cities. On Riskesdas, there were 15 census blocks from 2 districts in Papua that were released by Susenas 2007 (view table 2.1).

2.3.2 Collection of Household samples

From every chosen census block we choose 16 (sixteen) households randomly (*simple random sampling*), that will become household sample with the number of household in the related census block.

Overall, the number of household sample from 438 districts/cities from Susenas 2007 is 277,630 (two hundred and seventy seven thousand six hundred and thirty), and Riskesdas 2007 has collected 258,284 household samples. On Riskesdas 2007, 182 households were collected as additional from the two (2) districts in Papua (please view table 2.2).

2.3.3 Collection of Household's member sample

Next stage, all members in the chosen household sample selected on above two sample collection processes will generate the individual sample. Therefore, in those 438 districts/cities on Susenas 2007 we can have 1,134,225 (one million one hundred and thirty four thousand two hundred and twenty five) samples of household's member. Riskesdas 2007 was able to collect 972,989 same individuals to the ones on Susenas. On Riskesdas 2007, from the two (2) districts in Papua that were released out by Susenas, we collected 673 samples of household's member (please view Table 2.3).

2.3.4 Collection of Biomedical sample

The sample to use for biomedical measurement is the household's member with age above 1 (one) year old that lives in the census block classified as urban area. Nationally, the chosen sample of household's member come from 971 urban census blocks from 294 districts/cities in Susenas 2007. Riskesdas 2007 has collected 36.357 (thirty six thousand three hundred and fifty seven) household's members with age more than one (1) year old. From that amount, we could link it to the sample of household's member from Riskesdas for 26,919 that came from 272 district/town and 540 census blocks.

Especially for the blood sugar measurement, sample was taken from household's member with age more than 15 years old; there were 19,114 people included as samples.

2.3.5 Collection of Iodine sample

There are 2 (two) iodine measurements. First, the measurement of iodine level in salt that was consumed by household, and the second is the measurement of iodine in urine. The measurement of iodine in salt was meant to get number of household that use iodized salt. Meanwhile the measurement of iodine in urine was meant to value possibility of over-consumption on iodized salt. Measurement of iodine level in salt was done with quick test that used *"iodina"* to all household salt samples. On Riskesdas 2007 we had the quick test on 257,065 household samples from 438 districts/cities, and 182 households from two (2) districts in Papua.

For the second measurement, there were two (2) households that randomly chosen and have children of age 6 – 12 years old from the 16 RT (households) per census block in 30 districts that were representative nationally. From the chosen households, samples of the household's salt was taken, and also sample of urine from children of age 6 – 12 years old which then the samples were sent out to laboratories in Diponegoro University, Balai GAKI-Magelang, and Puslitbang Gizi and Makanan (Center for research and development of nutrition and food), Bogor.

The selection on 30 districts was based on result of the research on iodized salt consumption on Susenas 2005 by randomly selected 10 (ten) districts with high level on iodized salt consumption, 10 (ten) districts with medium level on iodized salt consumption and 10 (ten) districts with low level on iodized salt consumption. The elected 30 districts can be seen on sub. Chapter.2.5. Generally, 2,674 samples of iodized salt in the households were collected to be measured on the iodine level in the salt, and 8,473 of children with age 6-12 years old were measured for their iodine level in urine.

Table 2.1

Total of Census Block (BS) according to Susenas 2007 and Riskesdas 2007

Province	Total of BS-Susenas 2007	Total of BS-Riskesdas 2007	Total of BS which does not exist
N A D	687	683	4
North Sumatra	1054	1045	9
West Sumatra	692	689	3
Riau	434	426	8
Jambi	380	379	1
South Sumatra	540	538	2
Bengkulu	342	337	5
Lampung	438	424	14
Bangka Belitung	230	230	0
Kepulauan Riau	230	230	0
DKI Jakarta	427	409	18
West Java	1282	1267	15
Central Java	1578	1576	2
DI Yogyakarta	216	215	1
East Java	1872	1872	0
Banten	304	303	1
Bali	358	357	1
West Nusa Tenggara	360	360	0
East Nusa Tenggara	608	605	3
West Kalimantan	456	455	1
Central Kalimantan	534	533	1
South Kalimantan	494	471	23
East Kalimantan	474	461	13
North Sulawesi	354	325	29
Central Sulawesi	388	376	12
South Sulawesi	918	909	9
Southeast Sulawesi	416	416	0
Gorontalo	210	200	10
West Sulawesi	196	191	5
Maluku	215	215	0
North Maluku	209	208	1
West Papua Barat	146	144	2
Papua*)	315	301	14
Indonesia	**17357**	**17150**	**207**

*) Data from District of Puncak Jaya and Pegunungan Bintang in Papua province were not collected in Susenas 2007, but the data were collected in Riskesdas 2007 with total of 15 BS. Thus, 17.165 BS were collected successfully.

Table 2.2

Total of household (RT) samples per Province according to Susenas 2007 and Riskesdas, 2007

Province	Total of RT sample of Susenas 2007	Total of RT-sample of Riskesdas 2007	% RT samples of Riskesdas /Susenas
N A D	10,981	10,418	94.9
North Sumatra	16,861	16,386	97.2
West Sumatra	11,072	10,634	96.0
Riau	6,933	6,420	92.6
Jambi	6,078	5,806	95.5
South Sumatra	8,640	8,421	97.5
Bengkulu	5,472	5,064	92.5
Lampung	7,008	6,490	92.6
Bangka Belitung	3,680	3,498	95.1
Kepulauan Riau	3,680	3,402	92.4
DKI Jakarta	6,832	4,890	71.6
West Java	20,512	19,469	94.9
Central Java	25,248	24,578	97.3
DI Yogyakarta	3,456	3,241	93.8
East Java	29,952	28,563	95.4
Banten	4,864	4,431	91.1
Bali	5,728	5,430	94.8
West Nusa Tenggara	5,760	5,647	98.0
East Nusa Tenggara	9,728	9,206	94.6
West Kalimantan	7,294	6,769	92.8
Central Kalimantan	8,543	7,792	91.2
South Kalimantan	7,904	7,263	91.9
East Kalimantan	7,578	6,705	88.5
North Sulawesi	5,664	4,585	80.9
Central Sulawesi	6,208	5,447	87.7
South Sulawesi	14,687	13,831	94.2
Southeast Sulawesi	6,656	6,375	95.8
Gorontalo	3,359	3,090	92.0
West Sulawesi	3,134	2,664	85.0
Maluku	3,424	2,959	86.4
North Maluku	3,344	2,915	87.2
West Papua	2,329	1,821	78.2
Papua*)	5,021	4,074	81.1
Indonesia	**277,630**	**258,284**	**93.0**

*) Data from District of Puncak Jaya and Pegunungan Bintang in Papua province were not collected in Susenas 2007, but the data were collected in Riskesdas 2007 with total of 182 RT. Thus, total households collected were 258,366.

Table 2.3
Total of Household member (ART) samples per Province according to Susenas 2007 and Riskesdas, 2007

Province	Total of ART samples-Susenas 2007	Total of ART samples-Riskesdas 2007	% Samples of ART Riskesdas /Susenas
N A D	46.046	40.892	88.8
North Sumatra	74.648	69.256	92.8
West Sumatra	47.048	42.021	89.3
Riau	29.966	25.530	85.2
Jambi	24.856	22.435	90.3
South Sumatra	36.056	33.358	92.5
Bengkulu	22.557	19.044	84.4
Lampung	28.637	23.833	83.2
Bangka Belitung	14.687	13.645	92.9
Kepulauan Riau	14.870	12.514	84.2
DKI Jakarta	27.519	16.970	61.7
West Java	78.521	68.460	87.2
Central Java	95.269	87.119	91.4
DI Yogyakarta	11.465	10.164	88.7
East Java	110.412	100.966	91.4
Banten	20.848	17.276	82.9
Bali	22.064	20.603	93.4
West Nusa Tenggara	22.548	21.297	94.5
East Nusa Tenggara	45.591	38.002	83.4
West Kalimantan	45.954	39.250	85.4
Central Kalimantan	33.624	28.015	83.3
South Kalimantan	29.756	25.706	86.4
East Kalimantan	31.754	25.928	81.7
North Sulawesi	21.410	14.397	67.2
Central Sulawesi	26.553	21.512	81.0
South Sulawesi	63.646	54.570	85.7
Southeast Sulawesi	29.661	26.642	89.8
Gorontalo	13.570	11.245	82.9
West Sulawesi	14.156	10.349	73.1
Maluku	17.136	10.361	60.5
North Maluku	16.152	13.189	81.7
West Papua	9.952	6.898	69.3
Papua*)	21.486	15.085	70.2
Indonesia	**1.148.418**	**986.532**	**85.9**

*) Data from District of Puncak Jaya and Pegunungan Bintang in Papua province were not collected in Susenas 2007, but the data were collected in Riskesdas 2007 with total of 672 ART. Thus, total ART interviewed were 987,205 persons.

2.4 Variable

Various questions related to Indonesian health policy were operated to be research questions and finally developed to be variables collected by using several approaches. In Riskesdas 2007, there are around 900 variables spread out in 6 (six) kinds of questionnaires, with detail of main variables as follows:

a. Household questionnaire (RKD07.RT) consist of:
   - Block I about location information (9 variables);
   - Block II about household information (7 variables);
   - Block III about data collector information (6 variables);
   - Block IV about household members (12 variables);
   - Block V about mortality (10 variables);
   - Blok VI about access and utilization of health service (11 variables);
   - Blok VII about environment sanitation (17 variables);

b. Nutrition questionnaire (RKD07.GIZI), consist of:
   - Block VIII about household food 24 hours recall;

c. Individual questionnaire (RKD07.IND), consist of:
   - Block IX about individual interview information (4 variables);
   - Block X about individual information is categorized into:
     i. Block X-A about respondent identification (4 variables);
     ii. Block X-B about communicable disease, Noncommunicable disease, and hereditary disease history (50 variables);
     iii. Block X-C about response to health service
        - ✓ Inpatient service (11 variables)
        - ✓ Outpatient service (10 variables)
     iv. Block X-E about disability of all household members ≥ 15 year (23 variables);
     v. Block X-F about metal health for all household members ≥ 15 year (20 variables);
     vi. Block X-G about immunization and monitoring of growth for all household members 0-59 year (11 variables);
     vii. Block X-H about infant health (especially for baby < 12 month (7 variables);
     viii. Block X-I about reproduction health – additional question for 5 provinces: NTT, Maluku, North Maluku, West Papua, Papua (6 variables);
   - Block XI about measurement and observation (14 variables);

d. Questionnaire of verbal autopsy for age <29 days (RKD07.AV1), consist of:
   - Block I about location information (7 variables);
   - Block II about death information (6 variables);

- Block III about characteristics of neonatal mothers (5 variables);
- Block IVA about infant condition when the infant was born (6 variables);
- Block IVB about infant condition when the infant was sick (12 variables);
- Block V about health verbal autopsy of neonatal mother when she was pregnant and when she deliver the baby (2 variables);
- Block VIA about infant age 0-28 days including stillbirth (4 variables);
- Block VIB about mother condition (8 variables);

e. Verbal autopsy questionnaire for ages <29 days - < 5 years (RKD07.AV2), consist of:

- Block I about location information (7 variables);
- Block II about information of the death (7 variables);
- Block III about verbal autopsy of illness history of infant age 29 days – children <5 years (35 variables);
- Block IV about illness history resume of infant/children under five (6 variables)

f. Verbal autopsy Questioner for ages above 5 (RKD07.AV3), consist of:

- Block I about location information (7 variables);
- Block II about information of the death (7 variables);
- Block IIIA about verbal autopsy for age above 5 (44 variables);
- Block IIIB about verbal autopsy for woman age above 10 (4 variables);
- Block IIIC about verbal autopsy for woman has ever been married age 10-54 years (19 variables);
- Block IIID about verbal autopsy for man and woman above 15 (1 variables);
- Block IV about illness history resume for 5 above (5 variables).

Notes

Besides the above mentioned 6 questioners, there are two (2) forms used for quick test data collection, iodine in salt (Form Garam/salt) and data of iodine in the urine (Urine examination Form). See attachment 2.1 of Riskesdas 2007 questionnaire.

2.5 Data collection tools and Data collections methods

The implementation of Riskesdas 2007 uses various data collection tools and various data collection methods, with details as follows:

a. Household data collection was done with interview technique using questionnaire RKD07.RT

- Respondents of questionnaire RKD07.RT are head of household or house wives or household members who can give information.
- In questionnaire RKD07.RT there is a verification concerning the information from household member which can show how far Riskesdas 2007 samples is identical with Susenas 2007 samples;

- Information concerning mortality in the household is recalled since 1 July 2004, including stillbirth cases. To get further information about mortality cases in the last 12 months before interview held, further exploration through verbal autopsy using questionnaire RKD07.AV which is appropriate with the age of the mentioned household member who passed away.

b. Individual data collection in various age groups was done with interview techniques using questioner RKD07.IND

- In general, respondent of questionnaire RKD07.IND is for every household member. or household members less than 15 years, or in sick condition or old people, they were not interviewed directly, but the information was collected from another family member.
- **All ages of household members** become analysis unit for question regarding communicable disease, non communicable disease and hereditary disease as follows: acute respiratory channel infection, Pneumonia, Typhoid fewer, Malaria, Diarrhea, measles, tuberculosis, Dengue, Hepatitis, Filariasis, Asthma, Teeth and mouth, Injury, heart disease, Diabetes, Tumor/Cancer and hereditary disease, and measurement of weight, height/length of the body;
- **Household members ≥ 15 years old** become analysis unit of questions concerning joint disease, Hypertension, disability, mental health, blood pressure measurement, waist measurement, and mid-upper arm circumference measeurement (especially for reproductive women 15-45 years old, including pregnant woman);
- **Household members ≥ 30 years old** become analysis unit of question concerning Cataract;
- **Household members 0-59 months old** become analysis unit of question concerning immunization and growth monitoring;
- **Household members ≥ 10 years old** become analysis unit of question concerning knowledge, attitude and behavior related to Avian Flu, HIV/AIDS, Hygiene attitude, tobacco using, alcohol using, physical activity, and attitude related to fresh fruits and vegetables consumption;
- **Household members < 12 months old** become analysis unit of question concerning infant health.
- **Household members > 5 years old** become analysis unit of visus examination;
- **Household members ≥ 12 years old** become analysis unit of permanent teeth examination;
- **Household members 6-12 years old** become analysis unit of examination of iodine level in the urine.

c. Mortality data Collection with verbal autopsy technique by using questionnaire RKD07.AV1, RKD07.AV2 and RKD07.AV3;

Questionnaire model of Riskesdas-mortality 2007 (RKD07.AV1 – AV3) is designed to collect sign, symptom of sickness before a person die by using Verbal Autopsy technique (AV) through interview with the family who takes care of him/her when he/she was sick. There are (3) AV questionnaires used, namely: Questionnaire AV1 for neonatal 0-<28 days old (RKD.AV1), questionnaire AV2 for under five 28 days -<5 years old (RKD.AV2), questionnaire for above five (5) years old (RKD.AV3). This classification is meant to fulfill the practicability when the interview is conducted to keep directing on the specific causes of death in every Age group. The questionnaire is completed with special sheet to make resume of the patophysiology history of the

disease until the death accrued and diagnosis maintenance of cause of death, both sheets will be done by reviewer doctor refer to stipulations of the International Classification of Diseases 10 (ICD-10) of WHO.

d. Biomedical data collection is blood specimen which is taken from 33 provinces in Indonesia with population in the chosen urban census block according to Susenas 2007. Series of sampling are as follow :

   - From the chosen urban census block in Susenas 2007, is chosen 15% from the total of urban census block.
   - Total of the chosen urban census block is 971; with total sample are 15,536 households.

   Blood samples were taken from all household members who signed the *informed consent*. Blood sampling was not taken from the household member who is very ill, has bleeding history and uses blood thinner regularly.

   For check up of the amount of glucose in the blood, data were collected from household members ≥ 15 years old, except pregnant woman (ethical reason). The chosen respondent is given with 75 gram of oral glucose after fasting for 10-14 hours. Special for respondent who positively diagnosed suffered from Diabetes Mellitus (based on the doctor's confirmation), is only given 300 calories (medical and ethical reasons). Blood sampling is taken after 2 hours of the oral glucose giving. Leave the blood for 20-30 minutes, centrifuge the blood as soon as possible to make serum. The serum is soon examined by using automatic clinical chemistry equipment. The reference value (WHO, 100) used are as follow:

   - Normal (Non DM) < 140 mg/dl
   - Glucose tolerance disorder (TGT) 140 - < 200 mg/dl
   - Diabetes Mellitus (DM) $\underline{\geq}$ 200 mg/dl.

e. Data collection of household iodized salt consumption for all Riskesdas 2007 household samples is done with iodine rapid test using "iodina test".

f. National observation on the impact of iodized salt consumption is assessed base on the iodine amount in the urine, by collecting iodized salt in the household and at the same time checking up iodine amount in the urine in the same household members. Samples of 30 districts/cities are chosen for the observation based on the household consumption level of iodized salt of Susenas 2005 results:

   - **High** – covers Blitar district, Jember district, Bondowoso district, Nganjuk district, Pasuruan city, Klungkung district, Sikka district, Katingan district, Tarakan city and Jeneponto district;
   - **Medium** – covers Tangerang city, Grobogan district, Semarang district, Salatiga city, Semarang city, Bantul district, Donggala district, Kendari city, Konawe district and Gorontalo city);
   - **Bad** – covers Central Tapanuli district, Toba Samosir district, Karo district, South Solok district, Dumai city, Metro city, Karawang district, Tapin district, Balangan district and Mappi district.

Notes

The implementation of data collecting in Riskesdas 2007 can not be done simultaneously in mid 2007 so that the analysis needs some adjustment to make data comparability from a certain period into another period can be properly maintained each other. This situation is generated from the following conditions:

a. Transformation of internal budget policy within Ministry of Health in fiscal year 2007 produced some barriers in operational budget availability to collect data. Regional I and II coordinators were able to cash down the money before the mentioned budget policy transformation occurs so that data collecting can be done earlier (end of July 2007). On the other hand, regional III and IV coordinators can have it later so that data collecting time in regional III and IV is very varied (end of July 2007 – January 2008). Moreover in five (5) difficult provinces (Papua, West Papua, Maluku, North Maluku and East Nusa Tenggara), data collecting can only be done in August – September 2008.

b. The preparedness of region to get involve in conducting Riskesdas 2007 was very varied so that the implementation from one data collecting site to another site needs a complicated coordination and management in logistics.

c. Geographical condition from selected census block sample was extremely varied. In islands region and remote areas all over Indonesia, data collecting implementation in various situations strongly depended on the availability of transportation media, counterpart and adequate operational budget timely.

d. To collect biomedical data, intensive training is required for officers who were in charge in extracting and managing the specimen. The officer mentioned above is laboratory analyst or laboratory staffs from hospitals or regional laboratories. The training was done by researchers from Center for Health Research & Develop of Biomedical and Pharmacy as well as local health laboratories. This training was also done in every province.

2.6 Data Management

The management of Riskesdas data was implemented by Central Data Management Team who worked in coordinating Data Management Team from Regional Coordinator I – IV. The order of data management activity can be described as follow.

2.6.1 Editing

Editing is one of cycle chain which potentially capable to be the weakest link in collecting data Riskesdas 2007. Editing is initially done by the interviewer since data was collected from respondents' answers. On the spot situation, the interviewer worked together in one team consisted of three (3) interviewers and one team leader. The role of team leader is very critical in editing process. The leader of interviewer team must be able to manage their time for data collecting duty and editing as soon as finishing data collecting process in each census block. The attention focus of interviewer team leader is the completeness and consistency of respondents' answer collected from each questionnaire. This activity is supposed to be done as soon as questionnaire submission by the interviewer. The leader of interviewers should consulate all editing barriers faced by technical leader in districts and provinces.

Technical leaders in district level as well as province were responsible to supervise the implementation of data collecting, filled questionnaire checking and give assistance in solving the problems emerged in the field as well as undertake editing.

2.6.2 Entry

The data management team was responsible for data entry and possessed a strong drive to contribute extra energy to concentrate in transmitting data from questionnaire/form into digital form. The code book was prepared and used as reference if there was a problem in data entry. The questionnaire of Riskesdas 2007 contained some questions addressed to various respondents with different age groups. It is

possible to find skipped questions on the same questionnaire which technically requires precision of data entry officers to maintain consistency from one questions block to the next question block.

Data entry officers in Riskesdas are considered as part of data management team who must understand the content of Riskesdas questionnaire and data base being used. This knowledge and skill requirements become important to reduce entry error. The result of this data entry is turning into important part for data management officers who are responsible to conduct cleaning and data analysis.

2.6.3 Cleaning

The cleaning phase in data management is a process that significantly determines the quality of Riskesdas 2007. Data management teams were provided a specific guideline to carry out in Riskesdas data cleaning. The measures toward missing values, no responses, and outliers are very important in determining the accuracy and precision of the estimation produced by Riskesdas 2007.

Data cleaning officers were responsible to make reports regarding all process conducted in cleaning to be conveyed to Riskesdas analysis manager so that the number of final samples used for analysis reason can be identified. The size of numerator as well as denominator of a certain estimation which proceeding data cleaning process is a part of product report of Riskesdas 2007. If it comes a moment when data of Riskesdas 2007 can be accessed by public, then the information concerning imputation (data cleaning process) can reduce the emerge of questions regarding data quality.

2.7 The Weaknesses of Riskesdas

The weaknesses of Riskesdas 2007 were covering sorts of issues on non-random error. The large number of census block samples, household samples, household member samples, and the vast coverage area were considered as crucial factors in implementing data collecting of Riskesdas 2007. The organizing process of Riskesdas 2007 involved all members of the NIHRD, research centers, and local Universities as well.

Logistic procurement process for Riskesdas 2007 was very connected with budget availability. The alteration of budget policy in fiscal year 2007 added by long administrative procedure in the process of goods procurement has led to over due in data collecting activity. The delay in this phase has resulted in other delays in the next phases. Those delays gave meaningful contribution to various delays in Riskesdas 2007 as described follow:

a. The formation of new districts/cities as resulted from existing district/city that occurred after establishment of Riskesdas census block from Susenas 2007 so that it was not included in Riskesdas districts/cities samples (see Sub Chapter 2.2)

b. Uncovered census block due to unavailability of transportation media heading to the intended location or because nature condition which made it impossible such as high seas. Riskesdas was not successful in collecting 207 census blocks selected in the sample of Susenas 2007 as given in Table 2.1.

c. In fact, households available in DSRT of Susenas 2007 can't be found by the interviewer team of Riskesdas 2007. The total number of households that have been unsuccessfully visited in Riskesdas were 19,346 spread all over districts/cities (see Table 2.2)

d. Another possibility was the household members from selected households that can be visited by Riskesdas were not on the house when data collecting is in progress. It was recorded as many as 159,566 household members whose data can not be collected (see table 2.3).

e. The implementation of data collecting was covering different periods so that there was a possibility to have some estimation of seasonal transmitted disease in some provinces or districts/cities become under estimated or even over estimated.

f. The implementation of data collecting was covering different period so that the estimation of population size in a different period will also become different. In Riskesdas, the variable of data collecting date can be utilized when making analysis.

g. Although Riskesdas was designed to yield estimation until district/cities level, not all estimation could represent districts/cities especially in case of low frequent events. Rare event like this case can merely represent province level or even only national level.

h. Particularly for biomedical data, the estimation produced was only able to represent national urban levels.

i. For data concerning mortality, some weaknesses were using verbal autopsy technique influenced information quality given by respondents as well as interviewer quality to be able to dig out the causes of death. In addition, the possibility of under reporting, the precision of death time and death age as well will also influence the quality of collected data.

j. The budget limitation and the unsmooth realization time to cash down the money made Riskesdas data collection not simultaneous, with some provinces started in July 2007 while some others were started in February 2008 and even in August-September 2008 for 5 provinces (Papua, West Papua, Maluku, North Maluku, and East Nusa Tenggara).

2.8 Data Processing and Analysis

The most important issue in data processing and data analysis in Riskesdas 2007 was the identical samples between Riskesdas 2007 and Susenas 2007. Sampling design in Susenas 2007 was using two stage sampling. The result of this design required special treatment in which process using conventional statistic software such as SPSS. The statistic application provided in SPSS to process and analyze data like Riskesdas 2007 is SPSS Complex Samples. This application makes it possible to utilize two stage sampling design as implemented in Susenas 2007. By using SPSS Complex Sample in processing and analyzing Riskesdas data, the validity of analysis result can be optimized.

The results of data processing and analysis were presented in Riskesdas Result Chapter. Riskesdas which consisted of 6 questionnaires and 11 Analysis Topic Blocks will depend on respondent's answers and its total number towards Susenas 2007. The number of household samples and household members of Riskesdas 2007 which have been collected as given in table 2.2 and table 2.3 will finally decrease for analysis of each collected variable. Some of the causes were missing values or probably an error in both household outlier and household member outlier.

In this report, the entire analysis was done based on the amount of household samples and household member samples after missing values and outlier have been excluded. Table 2.4 gives the total number of household samples as well as household member samples in accordance with: 1) measurement variable from groups with age < 5 years,

children ≥ 6 years, 6 – 14 years, adults ≥ 15 years, adults ≥ 30 years, and reproductive aged women aged 25-45 years; 2) the interview variable regarding household consumption level; and 3) the variable of iodized salt testing resulted in household level. The all Riskesdas variables which approximately 900 in totals were given the same procedure in which excluded the missing values and outlier as well as credited based on the number of each sample.

The number of samples in Riskesdas 2007 was sufficient for analysis reason which has described national and provincial condition. However, for districts/cities analysis reason, the number of final sample used for each variable should be noticed particularly for districts/cities where the number of analyzed samples in Riskesdas 2007 was less than 80% of Susenas samples in 2007 (Table 2.4).

In table 2.5 – 2.16 we can see the details of districts/cities number in every province according to the number of household samples and household member samples to total number of samples in Susenas 2007.

Table 2.4
Total district according to the analyzed sample percentage of the variable of measurement/examination results, Riskesdas 2007

Variable of Measurement/examination in Riskesdas		Analyzed samples Percentage				Total District/City*)
		<70%	70-79.9%	80-89.9%	>90%	
Weight for age measurment of children under 5	Total dist.	25	25	56	332	438
	%	5.7	5.7	12.8	75.8	
Height for age measurement of children under 5	Total dist.	50	47	77	264	438
	%	11.4	10.7	17.6	60.3	
Weight and Height measurement (chidlren under 5)	Total dist.	55	47	95	241	438
	%	12.6	10.7	21.7	55.0	
Visus Examination (Children >=6 years)	Total dist.	98	151	169	20	438
	%	22.4	34.5	38.6	4.6	
BMI Measurement (Children 6-14 years)	Total dist.	45	58	122	213	438
	%	10.3	13.2	27.9	48.6	
BMI Measurement (Adult >=15 years)	Total dist.	59	87	187	105	438
	%	13.5	19.9	42.7	24.0	
Waist measurement (Adult >=15 years)	Total dist.	65	81	163	129	438
	%	14.8	18.5	37.2	29.5	
Mid-upper arm circumference (Woman 15-45 years old)	Total dist.	73	100	203	62	438
	%	16.7	22.8	46.3	14.2	
Blood pressure measurement (Adult >=18 years)	Total dist.	106	87	160	85	438
	%	24.2	19.9	36.5	19.4	
Cataract Examination (Adult >=30 years)	Total dist.	37	60	118	223	438
	%	8.4	13.7	26.9	50.9	
Assessment of Household consumption	Total dist.	111	95	129	103	438
	%	25.3	21.7	29.5	23.5	
Assessment of Iodized salt consumption in the household	Total dist.	11	27	73	327	438
	%	2.5	6.2	16.7	74.7	

*) The total of 438 districts/cities in Riskesdas 2007 district/city which is the same with samples of Susenas 2007

Table 2.5
Distribution of district/city by percentage of under five samples resulted by measuring body weight/age and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	2	1	1	17	21
North Sumatra	0	0	2	23	25
West Sumatra	1	0	1	17	19
Riau	0	0	2	9	11
Jambi	0	0	1	9	10
South Sumatra	0	0	3	11	14
Bengkulu	0	0	5	4	9
Lampung	2	1	1	6	10
Bangka Belitung	0	0	0	7	7
Kepulauan Riau	0	0	1	5	6
DKI Jakarta	1	2	2	1	6
West Java	0	0	1	24	25
Central Java	0	0	1	34	35
DI Yogyakarta	0	0	0	5	5
East Java	0	1	0	37	38
Banten	0	1	1	4	6
Bali	0	0	0	9	9
West Nusa Tenggara	0	0	0	9	9
East Nusa Tenggara	0	0	5	11	16
West Kalimantan	1	1	0	10	12
Central Kalimantan	0	1	3	10	14
South Kalimantan	1	0	0	12	13
East Kalimantan	1	0	4	8	13
North Sulawesi	2	5	2	0	9
Central Sulawesi	0	0	1	9	10
South Sulawesi	0	1	8	14	23
Southeast Sulawesi	0	0	1	9	10
Gorontalo	0	0	1	4	5
West Sulawesi	1	1	0	3	5
Maluku	4	3	1	0	8
North Maluku	2	4	1	1	8
West Papua	2	1	3	3	9
Papua	5	2	4	7	18
Indonesia	**25**	**25**	**56**	**332**	**438**

Table 2.6
Distribution of district/city by percentage of under five samples resulted by measuring body height/age and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	4	3	3	11	21
North Sumatra	2	0	4	19	25
West Sumatra	2	0	1	16	19
Riau	0	2	5	4	11
Jambi	0	1	1	8	10
South Sumatra	1	2	2	9	14
Bengkulu	0	4	3	2	9
Lampung	3	2	2	3	10
Bangka Belitung	0	0	0	7	7
Kepulauan Riau	1	0	2	3	6
DKI Jakarta	3	2	0	1	6
West Java	0	0	3	22	25
Central Java	0	1	1	33	35
DI Yogyakarta	0	0	0	5	5
East Java	0	1	3	34	38
Banten	1	1	1	3	6
Bali	0	0	1	8	9
West Nusa Tenggara	0	0	1	8	9
East Nusa Tenggara	1	1	6	8	16
West Kalimantan	1	2	3	6	12
Central Kalimantan	0	4	3	7	14
South Kalimantan	1	0	1	11	13
East Kalimantan	2	2	3	6	13
North Sulawesi	4	4	1	0	9
Central Sulawesi	0	0	4	6	10
South Sulawesi	2	4	10	7	23
Southeast Sulawesi	0	1	2	7	10
Gorontalo	0	1	0	4	5
West Sulawesi	1	1	3	0	5
Maluku	7	0	1	0	8
North Maluku	5	2	1	0	8
West Papua	3	3	2	1	9
Papua	6	3	4	5	18
Indonesia	**50**	**47**	**77**	**264**	**438**

Table 2.7
Distribution of district/city by percentage of under five samples resulted by measuring body height/age and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	4	1	7	9	21
North Sumatra	1	1	7	16	25
West Sumatra	2	0	3	14	19
Riau	2	2	6	1	11
Jambi	0	2	1	7	10
South Sumatra	3	1	3	7	14
Bengkulu	0	5	3	1	9
Lampung	3	2	3	2	10
Bangka Belitung	0	0	1	6	7
Kepulauan Riau	1	0	3	2	6
DKI Jakarta	4	1	0	1	6
West Java	0	1	4	20	25
Central Java	0	1	3	31	35
DI Yogyakarta	0	0	0	5	5
East Java	0	2	7	29	38
Banten	1	1	1	3	6
Bali	0	0	1	8	9
West Nusa Tenggara	0	0	1	8	9
East Nusa Tenggara	1	2	7	6	16
West Kalimantan	2	2	3	5	12
Central Kalimantan	1	3	4	6	14
South Kalimantan	1	0	2	10	13
East Kalimantan	2	2	3	6	13
North Sulawesi	3	5	1	0	9
Central Sulawesi	0	1	4	5	10
South Sulawesi	1	1	4	17	23
Southeast Sulawesi	0	2	2	6	10
Gorontalo	0	0	1	4	5
West Sulawesi	2	0	3	0	5
Maluku	7	0	1	0	8
North Maluku	5	2	1	0	8
West Papua	3	4	1	1	9
Papua	6	3	4	5	18
Indonesia	**55**	**47**	**95**	**241**	**438**

Table 2.8
Distribution of district/city by percentage of child ≥ 6 y.o. samples resulted by visus examination and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	2	6	12	1	21
North Sumatra	1	4	17	3	25
West Sumatra	3	11	4	1	19
Riau	3	5	3	0	11
Jambi	0	3	7	0	10
South Sumatra	1	3	5	5	14
Bengkulu	2	2	5	0	9
Lampung	4	3	3	0	10
Bangka Belitung	0	3	3	1	7
Kepulauan Riau	1	4	1	0	6
DKI Jakarta	5	0	1	0	6
West Java	5	12	8	0	25
Central Java	2	14	18	1	35
DI Yogyakarta	1	2	2	0	5
East Java	1	13	23	1	38
Banten	2	0	4	0	6
Bali	1	1	5	2	9
West Nusa Tenggara	0	1	8	0	9
East Nusa Tenggara	1	11	3	1	16
West Kalimantan	3	2	5	2	12
Central Kalimantan	2	5	7	0	14
South Kalimantan	2	2	9	0	13
East Kalimantan	4	8	1	0	13
North Sulawesi	7	2	0	0	9
Central Sulawesi	2	8	0	0	10
South Sulawesi	4	8	10	1	23
Southeast Sulawesi	0	7	3	0	10
Gorontalo	3	1	1	0	5
West Sulawesi	4	1	0	0	5
Maluku	6	1	1	0	8
North Maluku	5	3	0	0	8
West Papua	7	2	0	0	9
Papua	14	3	0	1	18
Indonesia	**98**	**151**	**169**	**20**	**438**

Table 2.9
Distribution of district/city by percentage of child 6-14 y.o. samples resulted by measuring weight/height and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	1	1	7	12	21
North Sumatra	0	2	1	22	25
West Sumatra	2	0	3	14	19
Riau	1	4	4	2	11
Jambi	0	0	6	4	10
South Sumatra	1	0	4	9	14
Bengkulu	0	2	4	3	9
Lampung	0	4	5	1	10
Bangka Belitung	0	0	1	6	7
Kepulauan Riau	0	1	4	1	6
DKI Jakarta	5	0	0	1	6
West Java	1	1	5	18	25
Central Java	1	0	4	30	35
DI Yogyakarta	0	1	2	2	5
East Java	0	1	8	29	38
Banten	1	1	1	3	6
Bali	0	0	2	7	9
West Nusa Tenggara	0	0	1	8	9
East Nusa Tenggara	0	3	7	6	16
West Kalimantan	2	2	4	4	12
Central Kalimantan	3	1	5	5	14
South Kalimantan	2	1	2	8	13
East Kalimantan	2	2	8	1	13
North Sulawesi	2	6	1	0	9
Central Sulawesi	0	2	8	0	10
South Sulawesi	0	3	13	7	23
Southeast Sulawesi	0	0	4	6	10
Gorontalo	0	2	1	2	5
West Sulawesi	2	3	0	0	5
Maluku	5	1	2	0	8
North Maluku	2	5	1	0	8
West Papua	3	4	1	1	9
Papua	9	5	3	1	18
Indonesia	**45**	**58**	**122**	**213**	**438**

Table 2.10
Distribution of district/city by percentage of adult ≥ 15 y.o. samples resulted by measuring Body Mass Index and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	1	3	8	9	21
North Sumatra	1	0	12	12	25
West Sumatra	2	1	8	8	19
Riau	1	3	5	2	11
Jambi	0	1	6	3	10
South Sumatra	0	1	4	9	14
Bengkulu	1	4	3	1	9
Lampung	0	3	7	0	10
Bangka Belitung	0	2	0	5	7
Kepulauan Riau	0	3	3	0	6
DKI Jakarta	5	0	1	0	6
West Java	1	4	19	1	25
Central Java	0	3	20	12	35
DI Yogyakarta	0	1	4	0	5
East Java	0	2	23	13	38
Banten	2	0	3	1	6
Bali	0	1	3	5	9
West Nusa Tenggara	0	0	1	8	9
East Nusa Tenggara	0	8	7	1	16
West Kalimantan	2	1	5	4	12
Central Kalimantan	2	4	6	2	14
South Kalimantan	1	2	6	4	13
East Kalimantan	3	4	6	0	13
North Sulawesi	5	3	1	0	9
Central Sulawesi	0	7	3	0	10
South Sulawesi	1	6	14	2	23
Southeast Sulawesi	0	4	4	2	10
Gorontalo	1	2	2	0	5
West Sulawesi	3	2	0	0	5
Maluku	6	1	1	0	8
North Maluku	4	3	1	0	8
West Papua	6	3	0	0	9
Papua	11	5	1	1	18
Indonesia	**59**	**87**	**187**	**105**	**438**

Table 2.11
Distribution of district/city by percentage of adult ≥ 15 y.o. samples resulted by measuring waist circumference and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	1	6	8	6	21
North Sumatra	1	1	13	10	25
West Sumatra	4	1	7	7	19
Riau	3	2	4	2	11
Jambi	0	1	7	2	10
South Sumatra	1	1	4	8	14
Bengkulu	1	4	4	0	9
Lampung	0	3	5	2	10
Bangka Belitung	0	0	2	5	7
Kepulauan Riau	1	3	2	0	6
DKI Jakarta	6	0	0	0	6
West Java	1	3	19	2	25
Central Java	0	1	16	18	35
DI Yogyakarta	0	1	1	3	5
East Java	0	1	12	25	38
Banten	2	0	1	3	6
Bali	0	1	2	6	9
West Nusa Tenggara	0	0	1	8	9
East Nusa Tenggara	0	7	8	1	16
West Kalimantan	3	1	5	3	12
Central Kalimantan	2	2	7	3	14
South Kalimantan	1	2	2	8	13
East Kalimantan	3	2	7	1	13
North Sulawesi	4	4	1	0	9
Central Sulawesi	0	7	3	0	10
South Sulawesi	1	6	13	3	23
Southeast Sulawesi	0	3	5	2	10
Gorontalo	1	2	2	0	5
West Sulawesi	2	3	0	0	5
Maluku	6	2	0	0	8
North Maluku	4	3	1	0	8
West Papua	6	3	0	0	9
Papua	11	5	1	1	18
Indonesia	**65**	**81**	**163**	**129**	**438**

Table 2.12
Distribution of district/city by percentage of woman 15-45 y.o. samples resulted by measuring mid-upper arm circumferencc and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	2	3	13	3	21
North Sumatra	1	3	16	5	25
West Sumatra	2	1	8	8	19
Riau	1	4	6	0	11
Jambi	0	2	6	2	10
South Sumatra	1	2	5	6	14
Bengkulu	2	3	4	0	9
Lampung	1	5	4	0	10
Bangka Belitung	0	1	2	4	7
Kepulauan Riau	0	3	3	0	6
DKI Jakarta	5	0	1	0	6
West Java	2	6	17	0	25
Central Java	0	4	25	6	35
DI Yogyakarta	0	2	3	0	5
East Java	1	3	25	9	38
Banten	2	0	4	0	6
Bali	0	1	2	6	9
West Nusa Tenggara	0	1	7	1	9
East Nusa Tenggara	1	11	4	0	16
West Kalimantan	3	1	6	2	12
Central Kalimantan	2	2	8	2	14
South Kalimantan	1	2	5	5	13
East Kalimantan	2	4	7	0	13
North Sulawesi	8	0	1	0	9
Central Sulawesi	0	8	2	0	10
South Sulawesi	1	9	12	1	23
Southeast Sulawesi	0	4	5	1	10
Gorontalo	1	2	2	0	5
West Sulawesi	3	2	0	0	5
Maluku	6	2	0	0	8
North Maluku	5	3	0	0	8
West Papua	6	3	0	0	9
Papua	14	3	0	1	18
Indonesia	**73**	**100**	**203**	**62**	**438**

Table 2.13

Distribution of district/city by percentage of adult ≥ 18 y.o. samples resulted by measuring blood pressure and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	3	3	6	9	21
North Sumatra	4	2	5	14	25
West Sumatra	2	2	6	9	19
Riau	4	1	5	1	11
Jambi	1	0	5	4	10
South Sumatra	1	1	2	10	14
Bengkulu	2	4	3	0	9
Lampung	1	7	2	0	10
Bangka Belitung	0	0	2	5	7
Kepulauan Riau	1	3	2	0	6
DKI Jakarta	5	1	0	0	6
West Java	3	5	16	1	25
Central Java	4	4	24	3	35
DI Yogyakarta	0	2	2	1	5
East Java	1	3	24	10	38
Banten	2	1	3	0	6
Bali	0	1	4	4	9
West Nusa Tenggara	0	0	2	7	9
East Nusa Tenggara	2	11	3	0	16
West Kalimantan	3	1	7	1	12
Central Kalimantan	3	4	7	0	14
South Kalimantan	3	1	5	4	13
East Kalimantan	5	4	4	0	13
North Sulawesi	8	1	0	0	9
Central Sulawesi	6	4	0	0	10
South Sulawesi	4	6	13	0	23
Southeast Sulawesi	1	3	5	1	10
Gorontalo	2	3	0	0	5
West Sulawesi	3	2	0	0	5
Maluku	6	1	1	0	8
North Maluku	6	1	1	0	8
West Papua	6	3	0	0	9
Papua	14	2	1	1	18
Indonesia	**106**	**87**	**160**	**85**	**438**

Table 2.14
Distribution of district/city by percentage of adult ≥ 30 y.o. samples resulted by cataract examination and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	1	1	2	17	21
North Sumatra	1	0	2	22	25
West Sumatra	1	2	4	12	19
Riau	0	2	2	7	11
Jambi	0	0	2	8	10
South Sumatra	0	1	3	10	14
Bengkulu	0	3	3	3	9
Lampung	0	3	5	2	10
Bangka Belitung	0	0	2	5	7
Kepulauan Riau	0	0	6	0	6
DKI Jakarta	5	0	0	1	6
West Java	1	3	11	10	25
Central Java	0	1	9	25	35
DI Yogyakarta	0	1	0	4	5
East Java	0	1	8	29	38
Banten	1	1	1	3	6
Bali	0	0	1	8	9
West Nusa Tenggara	0	0	0	9	9
East Nusa Tenggara	0	0	11	5	16
West Kalimantan	1	2	3	6	12
Central Kalimantan	2	1	5	6	14
South Kalimantan	1	2	1	9	13
East Kalimantan	1	3	5	4	13
North Sulawesi	3	5	1	0	9
Central Sulawesi	0	4	6	0	10
South Sulawesi	0	4	8	11	23
Southeast Sulawesi	0	1	5	4	10
Gorontalo	0	3	2	0	5
West Sulawesi	1	2	2	0	5
Maluku	5	1	1	1	8
North Maluku	2	4	2	0	8
West Papua	4	3	2	0	9
Papua	7	6	3	2	18
Indonesia	**37**	**60**	**118**	**223**	**438**

Table 2.15
Distribution of district/city by percentage of household samples resulted by Assessing energy and protein consumption and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	1	5	8	7	21
North Sumatra	2	3	11	9	25
West Sumatra	1	3	10	5	19
Riau	0	6	4	1	11
Jambi	2	6	2	0	10
South Sumatra	1	1	7	5	14
Bengkulu	0	1	4	4	9
Lampung	0	0	1	9	10
Bangka Belitung	0	1	4	2	7
Kepulauan Riau	1	4	0	1	6
DKI Jakarta	5	1	0	0	6
West Java	0	4	5	16	25
Central Java	6	4	8	17	35
DI Yogyakarta	1	3	1	0	5
East Java	27	10	1	0	38
Banten	4	0	0	2	6
Bali	3	5	1	0	9
West Nusa Tenggara	9	0	0	0	9
East Nusa Tenggara	6	3	7	0	16
West Kalimantan	1	3	5	3	12
Central Kalimantan	2	1	10	1	14
South Kalimantan	3	2	6	2	13
East Kalimantan	5	7	1	0	13
North Sulawesi	1	1	1	6	9
Central Sulawesi	2	3	5	0	10
South Sulawesi	0	3	11	9	23
Southeast Sulawesi	0	3	6	1	10
Gorontalo	0	0	3	2	5
West Sulawesi	0	2	2	1	5
Maluku	4	1	3	0	8
North Maluku	3	3	2	0	8
West Papua	6	3	0	0	9
Papua	15	3	0	0	18
Indonesia	**111**	**95**	**129**	**103**	**438**

Table 2.16
Distribution of district/city by percentage of household samples resulted by Assessing Iodized salt consumption and Province from Riskesdas 2007 compared to Susenas 2007

Province	Distribution of district by % of the analyzed sample				Total
	<70%	70-79.9%	80-89.9%	>=90%	
N A D	0	1	2	18	21
North Sumatra	0	0	1	24	25
West Sumatra	0	0	3	16	19
Riau	0	1	1	9	11
Jambi	0	0	0	10	10
South Sumatra	0	0	0	14	14
Bengkulu	0	0	2	7	9
Lampung	0	0	2	8	10
Bangka Belitung	0	0	1	6	7
Kepulauan Riau	0	0	1	5	6
DKI Jakarta	2	3	0	1	6
West Java	0	0	2	23	25
Central Java	0	0	2	33	35
DI Yogyakarta	0	0	2	3	5
East Java	1	1	1	35	38
Banten	0	1	1	4	6
Bali	0	0	2	7	9
West Nusa Tenggara	0	0	0	9	9
East Nusa Tenggara	0	0	2	14	16
West Kalimantan	0	2	1	9	12
Central Kalimantan	0	1	4	9	14
South Kalimantan	1	0	0	12	13
East Kalimantan	0	2	7	4	13
North Sulawesi	2	1	4	2	9
Central Sulawesi	0	0	7	3	10
South Sulawesi	0	0	4	19	23
Southeast Sulawesi	0	0	1	9	10
Gorontalo	0	1	1	3	5
West Sulawesi	0	1	3	1	5
Maluku	0	3	3	2	8
North Maluku	0	1	3	4	8
West Papua	2	3	4	0	9
Papua	3	5	6	4	18
Indonesia	**11**	**27**	**73**	**327**	**438**

CHAPTER 3. RESULT AND DISCUSSION

3.1.1 Under fives Nutritional Status

The Nutritional status of under five is measured based on their age, weight (BB) and height (TB). A child's weight is measured by a digital measurement tool with precision of 0.1 kg, length of the body is measured by a *length-board* with precision of 0.1 cm, and height of the body is measured by *microtoise* with a precision of 0.1 cm. Variables of BB and TB are represented in the form of three anthropometry indicators, they are: weight for age (WFA), height for age (HFA), and weight for height (WFH).

In order to determine the nutritional status of a child, the value of the body's weight and height for every child under five years was converted into a standardized value (Z-score) by using growth standards from WHO 2006. Nutritional status was assigned using the Z-score value from each indicator for children less than five years using the following categories:

a. Base on the indicator of weight/Age :

Severe malnutrition category	Z-score < -3.0
Moderate Malnutrition category	Z-score >=-3.0 s/d Z-score <-2.0
Good nutrition category	Z-score >=-2.0 s/d Z-score <=2.0
Over nutrition Category	Z-score > 2.0

b. Base on the indicator of Height/Age:

Stunting category	Z-score < -3.0
Short category	Z-score >=-3.0 s/d Z-score <-2.0
Normal category	Z-score >=-2.0

c. Base on indicator of Weight/Height:

Severe wasting category	Z-score < -3.0
Wasting category	Z-score >=-3.0 s/d Z-score <-2.0
Normal category	Z-score >=-2.0 s/d Z-score <=2.0
Obese category	Z-score > 2.0

The calculation of prevalence number is done as follows:

Severe malnutrition Prevalence = (Total severe malnutrition under five/total all under five) x 100%
Moderate Malnutrition Prevalence = (Total moderate malnutrition under five/total all under five) x 100%
Good nutrition Prevalence = (Total good nutrition under five/total all under five) x 100%
Over nutrition Prevalence = (Total over nutrition under five/total all under five) x 100%

a. Under Fives Nutritional Status based on Weight for age indicator (WAZ)

Table 3.1. Shows prevalence number of under fives according to the nutritional status based on WAZ indicator. This indicator gives a picture about general nutritional status, but is not specific. High or low of the prevalence severe and moderate malnutrition does not quite indicate whether a child under five is proportionate to size, and WAZ does not indicate whether undernutrition is a critical or acute nutritional problem.

Table 3.1
Percentage of under fives by WAZ* and Province, Riskesdas 2007

Province	Nutritional status category – WAZ			
	Severe manutrition	Moderate malnutrition	Good nutrition	Over nutrition
N A D	10.7	15.8	69.2	4.2
North Sumatra	8.4	14.3	72.7	4.5
West Sumatra	5.9	14.3	77.0	2.8
Riau	7.5	13.9	73.3	5.3
Jambi	6.3	12.6	75.8	5.3
South Sumatra	6.5	11.7	75.0	6.7
Bengkulu	4.8	11.9	77.2	6.0
Lampung	5.7	11.8	78.3	4.2
Bangka Belitung	4.6	13.7	76.4	5.4
Kepulauan Riau	3.0	9.4	81.5	6.1
DKI Jakarta	2.9	10.0	80.6	6.5
West Java	3.7	11.3	81.5	3.5
Central Java	4.0	12.0	80.4	3.6
DI Yogyakarta	2.4	8.5	85.0	4.0
East Java	4.8	12.6	78.0	4.5
Banten	4.4	12.2	79.9	3.4
Bali	3.2	8.2	83.9	4.7
West Nusa Tenggara	8.1	16.7	71.4	3.7
East Nusa Tenggara	9.4	24.2	64.4	2.0
West Kalimantan	8.5	14.0	72.5	5.0
Central Kalimantan	8.1	16.1	72.1	3.6
South Kalimantan	8.4	18.2	70.4	3.0
East Kalimantan	6.2	13.1	75.3	5.4
North Sulawesi	4.3	11.5	80.7	3.6
Central Sulawesi	8.9	18.7	69.4	3.0
South Sulawesi	5.1	12.5	73.1	9.3
Southeast Sulawesi	6.8	15.9	73.6	3.6
Gorontalo	8.2	17.2	71.3	3.3
West Sulawesi	10.0	15.4	72.1	2.4
Maluku	9.3	18.5	67.3	4.9
North Maluku	6.7	16.1	74.3	3.0
West Papua	6.8	16.4	74.2	2.7
Papua	6.6	14.6	73.4	5.3
Indonesia	**5.4**	**13.0**	**77.2**	**4.3**

*)WAZ= Weight for age z score from 2005 WHO growth reference curve

In general, severe malnutrition in Indonesia is 5.4% and moderate malnutrition is 13.0%. There are 21 provinces that still have severe malnutrition prevalence above the average national prevalence. The other twelve provinces are below national prevalence, they are all provinces in Java-Bali and other five provinces: ***Bengkulu***, ***Bangka Belitung***, ***Kepulauan Riau***, ***North Sulawesi*** and ***South Sulawesi***.

National prevalence for severe malnutrition and malnutrition is 18.4%. If we compare it against the target of achievement for nutrition improvement goals (RJPM) within the short term development plan for 2015 (20%) and the MDG's target for Indonesia which is

18.5%, then nationally those targets are already achieved. Yet that achievement is not equal across all of the 33 provinces.

In reference to the MDG's target, it can be seen that 14 provinces have already achieved the target, and for RPJM's target there are 16 provinces that already achieved the target. The 14 provinces that have already achieved both targets include: South Sumatera, Bangka Belitung, Bengkulu, Kepulauan Riau, Lampung, DKI Jakarta, West Java, Banten, Central Java, DI Yogyakarta, East Java, Bali, North Sulawesi and South Sulawesi. Two other provinces, Jambi and East Kalimantan have achieved the RPJM's target.

Overnutritional national prevalence is 4.3%. There are 15 provinces with prevalence of overnutrition above the average national prevalence; they are North Sumatera, Riau, Jambi, South Sumatera, Bengkulu, Bangka Belitung, Kepulauan Riau, DKI Jakarta, East Java, Bali, West Kalimantan, East Kalimantan, South Sulawesi, Maluku and Papua.

b.Under Fives Nutritional Status based on height for age indicator (HAZ)

Table 3.2 shows the distribution of height attainment for children under five years based on the indicator HAZ. This indicator describes chronic household food insecurity, and that stunting is due to poverty, compounded by improper care of the children, high disease burden because of poor hygiene and sanitation that occurs over a long period of time. Severe and moderate stunted in the next discussion will be merged into one category and is called **short**.

Stunting among children under five nationally is a serious nutritional problem with an average national prevalence of around 36.8%. Eighteen provinces having a prevalence of low height attainment above national average.

c.Under Fives Nutritional Status based on Weight for Height indicator (WHZ)

Table 3.3. shows the nutritional status of children under five years based on the on the indicator of WHZ. This indicator is generally accepted to describe nutritional status that is ***acute*** as a result of situation that has been happening in the recent past, such as decrease of appetite caused by sickness or diarrhea. Under those conditions a child's weight will decrease very fast thus it weight is not proportional to the child's height and the body mass of the child decreases.

The indicator WHZ can also be used as an indicator of obesity. This happens when the weight of a child is above greater than normally seen at that height. Obesity can happened as a result of improper eating or because of genetic predisposition. The problem of obesity in early age can increase the risk of various degenerative diseases in their adult age (*Barker* theory). One of the indicators used to determine whether a child needs nutrition rehabilitation is rather the child is **very thin** with a Z-score < -3.0 SD. The prevalence of very lean/wasted children under three years of age is still high nationally, 6.2%. There are 12 provinces that have prevalence of very thin/wasted children under three years of age below the number of national prevalence. These 12 "good" provinces are: Bangka Belitung, Riau Islands, West Java, Central Java, DI Yogyakarta, East Java, Bali, North Sulawesi, South Sulawesi, Southeast Sulawesi, North Maluku and Papua.

In the following discussion **wasted/thin** is used for a joint category of very thin and thin. Wasting is considered a ***significant public health problem*** when the wasting prevalence ***> 5%***. It becomes a ***serious public health problem*** when the wasting prevalence is between ***10.1% - 15.0%***, and considered an ***emergency situation*** when wasting prevalence is ***above 15.0%*** (UNHCR).

Nationally, wasting prevalence for children under five is 13.6%. This means that wasting

in Indonesia is a serious public health problem. More so, from 33 provinces, there 18 provinces which are in the ***emergency siutation*** (wasting prevalence >15%), 12 provinces are in the serious category (wasting prevalence 10-15%). There are only 3 (three) provinces not included in one of the serious category or the emergency critical category. They are: West Java, DI Yogyakarta and Bali.

Using WHZ we can also see the obesity prevalence among children under five years. In Table 3.3. we can see that obesity prevalence in Indonesia is 12.2%. Eighteen provinces have obesity problems among children under five years above national average

Table 3.2
Percentage of under fives by HAZ* and Province, Riskesdas 2007

Province	Nutritional status category- HAZ		
	Very Short	Short	Normal
N A D	26.9	17.7	55.4
North Sumatra	25.2	17.9	56.9
West Sumatra	17.1	19.4	63.5
Riau	18.0	15.0	67.0
Jambi	20.1	16.3	63.6
South Sumatra	28.1	16.6	55.3
Bengkulu	20.0	16.0	64.0
Lampung	22.6	16.1	61.3
Bangka Belitung	18.1	17.5	64.5
Kepulauan Riau	13.4	12.7	73.8
DKI Jakarta	13.7	13.0	73.3
West Java	15.7	19.7	64.5
Central Java	17.8	18.6	63.5
DI Yogyakarta	11.5	16.1	72.4
East Java	17.4	17.4	65.2
Banten	20.6	18.3	61.0
Bali	16.0	15.0	69.0
West Nusa Tenggara	23.8	19.9	56.3
East Nusa Tenggara	24.2	22.5	53.2
West Kalimantan	20.9	18.3	60.7
Central Kalimantan	23.5	19.3	57.3
South Kalimantan	20.9	20.9	58.2
East Kalimantan	17.9	17.3	64.8
North Sulawesi	14.6	16.6	68.8
Central Sulawesi	19.8	20.5	59.6
South Sulawesi	13.9	15.2	70.9
Southeast Sulawesi	21.6	18.9	59.5
Gorontalo	19.7	20.2	60.1
West Sulawesi	27.1	17.4	55.5
Maluku	25.9	19.9	54.2
North Maluku	25.4	14.8	59.8
West Papua	19.7	19.7	60.6
Papua	20.2	17.4	62.3
Indonesia	**18.8**	**18.0**	**63.2**

*) HAZ= Height for Age Z-score

.

Table 3.3
Percentage of Under fives by WHZ* and Province, Riskesdas 2007

Province	Nutritional status category-WHZ			
	Very thin	Thin	Normal	Obese
N A D	9.2	9.1	66.5	15.2
North Sumatra	9.1	7.9	66.8	16.2
West Sumatra	7.6	7.7	74.8	9.9
Riau	12.2	9.9	62.6	15.3
Jambi	10.6	8.6	66.4	14.4
South Sumatra	7.9	7.9	63.4	20.9
Bengkulu	7.3	6.9	71.4	14.4
Lampung	7.3	6.4	70.2	16.1
Bangka Belitung	4.8	6.0	78.5	10.7
Kepulauan Riau	5.4	8.1	76.2	10.3
DKI Jakarta	8.6	8.4	70.9	12.2
West Java	3.6	5.4	81.3	9.6
Central Java	4.7	7.1	76.8	11.4
DI Yogyakarta	3.8	5.2	78.5	12.5
East Java	5.8	7.9	73.8	12.5
Banten	6.6	7.5	70.3	15.6
Bali	4.4	5.6	76.9	13.1
West Nusa Tenggara	7.9	7.6	71.6	12.9
East Nusa Tenggara	9.5	10.5	73.0	7.0
West Kalimantan	8.1	9.3	68.7	13.9
Central Kalimantan	8.2	8.7	69.7	13.5
South Kalimantan	7.8	8.5	73.8	9.9
East Kalimantan	7.2	8.7	69.8	14.2
North Sulawesi	3.9	6.3	78.9	10.9
Central Sulawesi	6.5	9.0	77.0	7.5
South Sulawesi	5.7	8.0	75.9	10.4
Southeast Sulawesi	5.4	9.2	74.9	10.4
Gorontalo	8.3	8.4	76.6	6.8
West Sulawesi	8.7	8.1	70.8	12.4
Maluku	7.5	9.7	68.4	14.5
North Maluku	3.8	11.1	72.3	12.8
West Papua	6.5	9.9	75.0	8.6
Papua	5.4	7.0	77.1	10.5
Indonesia	**6.2**	**7.4**	**74.1**	**12.2**

*) WHZ= Weight for Height Z score

a. Under Fives Nutritional Status based on respondent's characteristic

In order to study the correlation of nutritional status for children under five years based on the anthropometric indicators of WAZ, HAZ and WHZ (as the dependent variables) with respondent's characteristic including age group, gender, head of household educational and employment background, expenduture per capita (as independent variables), cross tabulation was done for these predictors for the dependent variables.

Table 3.4. provides cross tabulation between nutritional status of under five children according to weight/age (WAZ) and respondent's family characteristics.

Table 3.4
Percentage of under five by nutritional status (WAZ)* and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Nutritional status category WAZ			
	Severe malnutrition	Moderate malnutrition	Good nutrition	Over nutrition
Age group (month)				
0 - 5	6.5	8.2	76.7	8.7
6 -11	4.8	8.1	82.2	4.9
12-23	5.0	11.3	78.8	4.9
24-35	5.9	14.5	75.7	3.9
36-47	6.3	14.8	75.4	3.6
48-60	4.9	14.2	77.2	3.7
Gender				
Male	5.8	13.3	76.3	4.6
Female	5.0	12.7	78.2	4.0
Education of head of household				
No schooling & unfinished Primary school	6.8	14.6	75.0	3.6
Finished Primary School	5.8	13.8	76.7	3.7
Finished Junior High School	5.5	13.3	76.9	4.3
Finished Senior High School	4.5	11.4	78.7	5.3
Finished University	3.4	8.9	80.7	7.0
Main job of head of household				
Jobless/Study/Housewife	4.7	12.4	78.9	4.0
National Armed Force/Police/Civil service/National company	3.8	9.5	80.0	6.7
Private employee	3.5	9.6	81.2	5.8
Entrepreneur/sales/service	4.7	12.3	78.1	4.9
Farmer/fisherman	7.4	14.8	73.8	3.9
Labor & other	5.2	13.8	77.8	3.1
Type of Residence				
Urban	4.2	11.7	79.3	4.9
Rural	6.4	14.0	75.7	3.9
Expenditure level per capita per month				
Quintile 1	6.7	15.4	74.1	3.9
Quintile 2	5.7	13.8	76.9	3.6
Quintile 3	5.2	12.9	77.7	4.2
Quintile 4	4.7	11.8	78.8	4.6
Quintile 5	4.1	9.6	80.4	5.9

*)WAZ= Weght for Age ZScore

We can see that generally WAZ has a relationship with several of the respondent's characteristic, these are

a. The older the child, the higher the prevalence of severe malnutrition, whereas the prevalence of over nutrition tends to decrease with age.

b. There is no significant difference on the prevalence of severe malnutrition, malnutrition, good nutrition or over nutrition, between boys and girls among children under five years.

c. The higher the educational background of head of household the lower the risk of severe malnutrition and moderate malnutrition prevalence, contrarily there is an increase of good and overnutrition.

d. The children of head of household with a regular income (Army/Police/state owned company and private employees) have a relatively lower risk of severe and moderate malnutrition.

e. The risk of severe and moderate malnutrition in urban area is relatively lower than risk in rural areas.

f. The higher expenditure per capita per month, the lower the risk of severe malnutrition and malnutrition among children under five, and the higher the level of good nutrition and over nutrition.

Table 3.5. Shows cross the result of cross tabulation between nutritional status according to height/age (HAZ) and the respondent's household characteristics. Similar to nutritional status by weight/age (WAZ), the correlation between nutritional status according to height/age (HAZ) and respondent's household characteristic show similar tendencies:

a. Based on age, we can not see a pattern of stunting by age among children less than five years of age.

b. Based on gender, we do not see a significant difference of stunting among children less than five years of age.

c. The higher the level of educational attainment of the head of household, the lower the risk of stunting among children under five years.

d. In the group of families with regular income (Army/Police/Civil service/state owned company and private company), the risk of stunting is relatively lower than among families with irregular income.

e. Stunting prevalence in the rural area is relatively higher than the risk among children in urban areas.

f. Stunting risk appears to decrease as expenditure level per capita increases.

Table 3.6. provides the result of cross tabulation between nutritional status WHZ by the weight/height and respondent's personal and household characteristic. This descriptive analysis of weight by height for by respondent's characteristic shows:

a. Risk of wasting tends to decrease with the increase of age.

b. There is no significant difference on wasting between boys and girls under five years of age.

c. There is no clear pattern of wasting based on the educational level of the breadwinner, however in families with head of household who have completed their university education, the risk of wasting is lower and risk of obesity is higher.

d. Risk of wasting among children less than five years with head of household whose work as a farmer/fisherman is relatively higher compared to the risk among children in house with head of household that have another kind of job. The highest risk of obesity among children under five years was found in the families where the head of household had a regular income (Army/Police/Civil service/state owned company and private company).

e. There is no significant difference of wasting between the rural and urban areas of Indonesia.

f. There is no pattern of wasting by the expenditure per capita per month, however obesity tended to increase as the families expenditure level increased.

Table 3.5
Percentage of Under five by Nutritional status (HAZ)* and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Nutritional status category HAZ		
	Very short	Short	Normal
Age group (month)			
0 - 5	17.1	14.0	68.9
6 -11	21.0	13.2	65.8
12-23	22.2	17.8	60.0
24-35	22.2	19.5	58.3
36-47	19.8	20.8	59.3
48-60	14.8	17.6	67.6
Gender			
Male	19.6	18.1	62.3
Female	17.9	17.9	64.2
Education of head of household			
No schooling & unfinished	21.0	19.2	59.8
Finished Primary School	20.3	19.5	60.2
Finished Junior High School	18.9	18.3	62.8
Finished Senior High School	16.7	15.7	67.6
Finished University	13.3	14.6	72.1
Main job of head of household			
Jobless/Study/Housewife	17.5	17.8	64.7
National Armed Force/Police/Civil	14.7	15.2	70.1
Private employee	14.7	15.2	70.1
Entrepreneur/sales/service	17.1	17.4	65.5
Farmer/fisherman	22.6	18.8	58.6
Labor & other	18.8	19.7	61.5
Type of Residence			
Urban	16.0	16.7	67.4
Rural	20.9	19.0	60.1
Expenditure level per capita per month			
Quintile 1	21.3	19.2	59.5
Quintile 2	19.9	19.0	61.1
Quintile 3	18.8	18.5	62.8
Quintile 4	17.0	17.1	65.9
Quintile 5	15.2	15.1	69.7

*)HAZ= Height by age z score

Table 3.6
Percentage of Under five by Nutritional status (WHZ)* and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Nutritional status category WHZ			
	Very thin	Thin	Normal	Overweight
Age group (month)				
0 - 5	8.3	7.0	64.8	19.9
6 -11	7.5	7.9	68.7	15.9
12-23	7.6	7.1	72.3	12.9
24-35	7.1	7.6	74.3	10.9
36-47	5.5	7.7	75.7	11.2
48-60	4.8	7.4	77.1	10.7
Gender				
Male	6.6	7.6	73.2	12.6
Female	5.8	7.3	75.1	11.8
Education of head of household				
No schooling & unfinished	6.6	7.5	74.5	11.4
Primary school				
Finished Primary School	6.0	7.7	74.3	11.9
Finished Junior High School	6.9	7.4	73.3	12.4
Finished Senior High School	6.5	7.5	73.1	12.9
Finished University	5.2	6.8	73.0	15.0
Main job of head of household				
Jobless/Study/Housewife	6.0	6.9	76.4	10.7
National Armed	4.7	7.0	73.9	14.4
Force/Police/Civil				
Private employee	6.2	7.0	72.9	13.8
Entrepreneur/sales/service	6.0	7.7	73.9	12.4
Farmer/fisherman	7.3	8.0	72.0	12.7
Labor & other	6.0	7.0	76.2	10.8
Type of Residence				
Urban	5.6	7.5	74.5	12.4
Rural	6.7	7.4	73.9	12.0
Expenditure level per capita per month				
Quintile 1	6.8	7.9	74.2	11.2
Quintile 2	6.2	7.7	74.3	11.8
Quintile 3	6.1	7.3	74.7	11.9
Quintile 4	5.9	7.1	74.2	12.8
Quintile 5	6.0	7.0	73.0	14.0

Table 3.7 below shows the joint prevalence of the three nutrition status indicators used, which Weight/Age (severe malnutrition and malnutrition), Height/Age (stunting), Weight/Height (wasting). The indicator of Height/Age is used to profile the chronic nutrition problem and Weight/Height is used to profile the acute nutrition problem.

Thirty provinces still face an acute nutrition problem and 18 provinces face a combined acute and chronic nutrition problem. Only three provinces, namely West Java, DI

Yogyakarta and Bali have chronic nutrition risk which is lower than national average and have acute nutrition problem that is not yet serious.

Table 3.7
Under fives Prevalence by Three indicators of Nutritional Status and Province, Riskesdas 2007

Province	WFA Severe & Moderate Malnutrition	HFA Chronicle (Stunting)	WFA Acute (Wasting)	Acute*	Chronicle**
N A D	26.5	44.6	18.3	√	√
North Sumatra	22.7	43.1	17.0	√	√
West Sumatra	20.2	36.5	15.3	√	
Riau	21.4	33.0	22.1	√	
Jambi	18.9	36.4	19.2	√	
South Sumatra	18.2	44.7	15.8	√	√
Bengkulu	16.7	36.0	14.2	√	
Lampung	17.5	38.7	13.7	√	√
Bangka Belitung	18.3	35.6	10.8	√	
Kepulauan Riau	12.4	26.1	13.5	√	
DKI Jakarta	12.9	26.7	17.0	√	
West Java	15.0	35.4	9.0		
Central Java	16.0	36.4	11.8	√	
DI Yogyakarta	10.9	27.6	9.0		
East Java	17.4	34.8	13.7	√	
Banten	16.6	38.9	14.1	√	√
Bali	11.4	31.0	10.0		
West Nusa Tenggara	24.8	43.7	15.5	√	√
East Nusa Tenggara	33.6	46.7	20.0	√	√
West Kalimantan	22.5	39.2	17.4	√	√
Central Kalimantan	24.2	42.8	16.9	√	√
South Kalimantan	26.6	41.8	16.3	√	√
East Kalimantan	19.3	35.2	15.9	√	
North Sulawesi	15.8	31.2	10.2	√	
Central Sulawesi	27.6	40.3	15.5	√	√
South Sulawesi	17.6	29.1	13.7	√	
Southeast Sulawesi	22.7	40.5	14.6	√	√
Gorontalo	25.4	39.9	16.7	√	√
West Sulawesi	25.4	44.5	16.8	√	√
Maluku	27.8	45.8	17.2	√	√
North Maluku	22.8	40.2	14.9	√	√
West Papua	23.2	39.4	16.4	√	√
Papua	21.2	37.6	12.4	√	√
Indonesia	**18.4**	**36.8**	**13.6**	√	

* Acute nutrition problem is when (Weight)/ (Height) >10% (UNHCR)
**Chronic nutrition problem is when (Height)/(Age) is above national prevalence

With regards to the sample of children less than five years, an analysis was performed to rank the 440 district/cities from the best to the worst. In table 2.5 for we can see that number of district/city where the sample in Riskesdas 2007 is >80% of the Susenas sample. We can choose nutrition indicators with prevalence/percentage that have the best representation. For example for ranking the nutrional status of children under five years of age we can use the indicator:

- *underweight* (combination of severe malnutrition + moderate malnutrition based on WAZ), if we just use only severe malnutrition the prevalence is too low (and the confidence intervals to wide), and it might not be representative for a district/town.
- *stunting* (combination of very short and short)
- *wasting* (combination of very thin and thin)

As a description, after ranking inter-district/cities based on underweight, we pulled out the best 10 and the worst 10 districts/cities for underweight as follows:

	The best			**The worst**	
1.	Tomohon city	4.8%	1.	Southeast Aceh	48.7%
2.	Minahasa	6.0%	2.	Rote Ndao	40.8%
3.	Madiun city	6.8%	3.	Kepulauan Aru	40.2%
4.	Gianyar	6.8%	4.	Timor Tengah Selatan	40.2%
5.	Tabanan	7.1%	5.	Simeulue	39.7%
6.	Bantul	7.4%	6.	South west Aceh	39.1%
7.	Badung	7.5%	7.	North Mamuju	39.1%
8.	Magelang city	8.2%	8.	North Tapanuli	38.3%
9.	South Jakarta city	8.3%	9.	Kupang	38.0%
10.	Bondowoso	8.7%	10.	Buru	37.6%

Based on stunting (Height)/ (Age) (Combination of very short + short), the results is as follows

	The Best			**The Worst**	
1.	Sarmi	16.7%	1.	Seram Bagian Timur	67.4%
2.	Wajo	18.6%	2.	Nias Selatan	67.1%
3.	Kota Mojokerto	19.0%	3.	Aceh Tenggara	66.8%
4.	Kota Tanjung Pinang	19.3%	4.	Simeulue	63.9%
5.	Kota Batam	20.2%	5.	Tapanuli Utara	61.2%
6.	Kampar	20.4%	6.	Aceh Barat Daya	60.9%
7.	Kota Jakarta Selatan	20.9%	7.	Sorong Selatan	60.6%
8.	Kota Madiun	21.0%	8.	Timor Tengah Utara	59.7%
9.	Kota Bekasi	21.5%	9.	Gayo Lues	59.5%
10.	Luwu Timur	21.7%	10.	Kapuas Hulu	59.0%

Based on wasting (weight/Height) (combination of very thin and thin) the results of the best and worse 10 districts/cities is as follow

	The best			**The worst**	
1.	Minahasa	0.0%	1.	South Solok	41.5%
2.	Tomohon city	2.6%	2.	Seruyan	41.1%
3.	Sukabumi city	3.3%	3.	Manggarai	33.3%

4.	Bogor city	4.0%	4.	South Tapanuli	31.9%
5.	Bandung	4.6%	5.	West Seram	31.0%
6.	Kota Salatiga	4.9%	6.	Asmat	30.9%
7.	Kota Magelang	5.2%	7.	Buru	30.3%
8.	Magelang	5.3%	8.	Nagan Raya	30.1%
9.	Cianjur	5.4%	9.	North Aceh	29.9%
10.	Bangka	5.6%	10.	Bengkalis	29.8%

3.1.2 Nutritional Status of 6 – 14 years old (School age)

Nutritional Status of 6-14 years old was measured based on the BMI (Body Mass Index) classified by Age and Gender. As a reference, if the BMI value was less than -2 Deviation Standard (SD) of the average values the child was specified as thin, and if BMI value was more than 2 Deviation Standard (SD) from of 2007 average value the child was specified as overweight (Table 3.8).

Table 3.8

Classification Standard of being Thin and Over weight according to Average BMI value, Age, and Gender, WHO 2007

Age (year)	Male			Female		
	Average BMI	-2SD	+2SD	Average BMI	-2SD	+2SD
6	15.3	13.0	18.5	15.3	12.7	19.2
7	15.5	13.2	19.0	15.4	12.7	19.8
8	15.7	13.3	19.7	15.7	12.9	20.6
9	16.1	13.5	20.5	16.1	13.1	21.5
10	16.4	13.7	21.4	16.6	13.5	22.6
11	16.9	14.1	22.5	17.3	13.9	23.7
12	17.5	14.5	23.6	18.0	14.4	24.9
13	18.2	14.9	24.8	18.8	14.9	26.2
14	19.0	15.5	25.9	19.6	15.5	27.3

Based on the WHO standard above, nationally thin prevalence is 13.3% for male and 10.9% for female. While overweight prevalence for male is 9.5% and female is 6.4%.

By province, East Nusa Tenggara has the highest thin prevalence for boys (23.1%) as well as for girls (19.1%). While the lowest thin prevalence is in Bali, which is 8.3% for boys and 6.9% for girls. (Table 3.9).

Five provinces with the highest prevalence of thin boys is NTT (23.1%), Maluku (18.4%), West Kalimantan (17.4%), NTB (17.1%), and Central Kalimantan (16.9%). While for thin girls it was the provinces of NTT (19.1%), Central Kalimantan (15.2%), Banten (14.3%), Riau (13.9%), South Sumatera and South Kalimantan, each of them is 13.8%.

Table 3.9
Thin and overweight Prevalence of children 6-14 years old by gender and Province, Riskesdas 2007

Province	Male		Female	
	Thin	Overweight	Thin	Overweight
N A D	14.2	13.8	12.4	12.0
North Sumatra	12.4	14.9	9.7	11.8
West Sumatra	13.7	6.4	10.5	5.1
Riau	15.4	15.1	13.9	9.2
Jambi	13.4	12.0	13.7	7.5
South Sumatra	14.9	16.0	13.8	11.0
Bengkulu	11.0	14.2	8.7	8.5
Lampung	12.6	11.6	11.1	8.3
Bangka Belitung	10.5	9.7	9.3	6.5
Kepulauan Riau	12.2	10.3	10.0	9.5
DKI Jakarta	14.9	12.0	10.6	8.4
West Java	10.9	7.4	8.3	4.6
Central Java	13.4	6.6	11.3	4.6
DI Yogyakarta	12.3	7.6	9.7	4.8
East Java	12.6	11.1	10.8	6.5
Banten	15.9	9.1	14.3	6.1
Bali	8.3	11.8	6.9	8.5
West Nusa Tenggara	17.1	9.3	10.7	6.3
East Nusa Tenggara	23.1	4.6	19.1	3.2
West Kalimantan	17.4	10.4	11.8	6.8
Central Kalimantan	16.9	9.7	15.2	6.3
South Kalimantan	15.8	7.6	13.8	4.8
East Kalimantan	12.7	11.4	10.7	8.0
North Sulawesi	9.6	9.2	7.4	8.0
Central Sulawesi	12.2	5.6	9.8	4.0
South Sulawesi	15.5	7.4	13.4	4.8
Southeast Sulawesi	14.5	6.2	11.5	4.5
Gorontalo	13.1	6.1	10.4	3.5
West Sulawesi	12.2	7.5	11.9	6.2
Maluku	18.4	7.8	12.9	6.8
North Maluku	13.2	10.0	10.7	6.1
West Papua	12.8	6.2	9.2	4.2
Papua	10.9	12.7	7.4	9.8
Indonesia	**13.3**	**9.5**	**10.9**	**6.4**

The highest Overweight Prevalence of 6 – 14 years old children is in South Sumatera for boys (16.0%) and is in NAD for girls (12.0%). The lowest Overweight prevalence of children 6 – 14 years old is founded in NTT, for both boys (4.6%) and girls (3.2%). Five provinces with high prevalence of overweight for boys was in South Sumatra (16%), Riau (15.1%), North Sumatra (14.9%), Bengkulu (14.2%), and Papua (12.7%). While for

overweight girls the provinces of NAD (12%), North Sumatera (11.8%), South Sumatra (11%), Papua (9.8%), and Kepulauan Riau (9.5%) had the highest prevalence.

Table 3.10 describes thin and overweight prevalence by respondent characteristic.

Table 3.10
Thin and Overweight Prevalence of children 6-14 years old by Characteristic, Riskesdas 2007

Respondent' s characteristic	Male		Female	
	Thin	Overweight	Thin	Overweight
Age				
6	13.9	15.0	10.9	11.0
7	13.6	13.5	10.4	10.6
8	14.3	13.3	10.1	9.1
9	13.3	12.1	12.0	7.9
10	13.5	10.0	11.8	6.6
11	13.4	8.8	12.2	4.7
12	13.5	5.6	12.3	3.5
13	12.6	3.8	10.3	2.5
14	11.7	2.5	8.2	1.5
Type of Residence				
Urban	12.9	10.6	10.0	7.1
Rural	13.7	8.8	11.6	6.0
Level of expenditure per Capita per month				
Quintile 1	14.5	8.1	12.6	5.7
Quintile 2	13.6	9.0	11.1	5.8
Quintile 3	14.2	9.3	10.7	6.1
Quintile 4	12.4	9.9	10.4	7.1
Quintile 5	11.3	12.3	9.0	8.3

It apprears that risk is related to age, Overweight prevalence decreases as the children gets older, for both boys and girls. While thin prevalence does not vary by age. According to location, thin prevalence is slightly higher in the rural areas as compared to the urban areas, on the contrary the prevalence of overweight is slightly higher in the city.

There is a positive association between the level of per capita household expenditure and overweight, both for male or female, while thinness is not associated with household expenditure level.

3.1.3 Nutritional Status of people aged above 15 years old

The nutritional status for people who are above 15 years old is determined by their Body Mass Index (BMI). Body Mass Index is measured based by the weight and height with the following formulation :

$$(\text{Weight})_{(kg)} / (\text{Height})_{(m)}^{2}.$$

Below are the BMI categories to assess nutritional status for people above 15 years old:

Thin category	BMI < 18.5
Normal category	BMI >=18.5 - <24.9
Overweight category	BMI >=25.0 - <27.0
Obese category	BMI >=27.0

Another indicator for nutritional status for people older than 15 years old is the size of the circumference of the waist to know whether there is a centric obesity. Circumference of the waist is measured by a tool made from *fiberglass* with a precision of 0.1 cm. There is a difference in centric obesity between males and females.

The nutritional status for a fertile aged woman 15 - 45 years old is valued by measuring mid-upper arm's circumference – (MUAC). MUAC measurement is done by using MUAC ribbon with a precision of 0.1 cm.

a. Adult Nutritional Status based on the indicator of Body Mass Index

Table 3.11 shows the BMI population prevalence status by province. The term of obesity is used for a combined category of over weight and obese.

The general obesity prevalence nationwide is 19.1% (8.8% overweight and 10.3% obese). There are 14 provinces with obesity prevalence above the national average prevalence. The five provinces with the lowest general obesity prevalence are Nusa Tenggara Timur, Nusa Tenggara Barat, West Kalimantan, West Sulawesi and South Sumatera. The five provinces with the highest general obesity prevalence are: East Kalimantan, North Maluku, Gorontalo, DKI Jakarta and North Sulawesi.

General obesity prevalence based on gender can be seen on Table 3.12. Nationally the general obesity prevalence for males is lower that for females (13.9% for male and 23.8% for female).

Table 3.13 shows the result of a cross tabulation of nutritional status for adults according to BMI with respondent characteristic. From this table we can see that :

a. The general obesity prevalence is higher in the city than in the village.
b. The more expenditures per capita per month in a household affects the general obesity prevalence to be increased, this is also valid for the prevalence on overweight and obese.

Table 3.11
Nutritional Status Percentage of Adult (Above 15)
By BMI and Province, Riskesdas 2007

Province	IMT Category			
	Thin	Normal	Overweight	Obese
N A D	13.6	69.8	7.9	8.7
North Sumatra	9.3	69.9	10.7	10.2
West Sumatra	15.9	67.8	7.9	8.4
Riau	12.1	69.3	9.3	9.4
Jambi	15.2	70.1	7.1	7.6
South Sumatra	14.9	73.6	6.5	4.9
Bengkulu	12.3	72.5	7.4	7.8
Lampung	14.7	70.3	7.7	7.3
Bangka Belitung	11.7	66.2	10.4	11.8
Kepulauan Riau	9.7	67.5	11.2	11.6
DKI Jakarta	12.5	60.6	11.9	15.0
West Java	14.6	63.3	9.3	12.8
Central Java	17.0	65.9	8.0	9.0
DI Yogyakarta	17.6	63.7	8.5	10.2
East Java	15.1	64.5	9.1	11.3
Banten	16.4	67.0	8.1	8.5
Bali	11.8	68.8	9.4	10.0
West Nusa Tenggara	17.9	68.2	6.7	7.1
East Nusa Tenggara	23.1	66.7	5.1	5.1
West Kalimantan	16.0	71.0	6.6	6.4
Central Kalimantan	14.0	70.8	7.5	7.7
South Kalimantan	18.9	64.4	7.8	8.9
East Kalimantan	9.8	66.7	11.6	11.9
North Sulawesi	6.5	60.3	14.1	19.1
Central Sulawesi	12.6	66.7	9.2	11.5
South Sulawesi	16.5	67.2	7.9	8.4
Southeast Sulawesi	13.7	71.2	7.2	7.9
Gorontalo	11.4	62.3	11.2	15.1
West Sulawesi	13.6	72.1	7.3	7.0
Maluku	15.0	68.4	7.2	9.4
North Maluku	10.6	64.9	10.1	14.3
West Papua	12.8	64.2	9.6	13.4
Papua	10.2	67.5	9.7	12.7
Indonesia	**14.8**	**66.1**	**8.8**	**10.3**

Table 3.12
General Obesity Prevalence of Adult (Above 15)
By Gender and Province, Riskesdas 2007

Province	General Obesity Prevalence (%)		
	Male	Female	Male and Female
N A D	11.9	20.9	16.6
North Sumatra	17.7	23.8	20.9
West Sumatra	10.5	21.3	16.3
Riau	14.9	22.6	18.7
Jambi	10.7	18.6	14.7
South Sumatra	8.4	14.5	11.4
Bengkulu	10.0	20.5	15.2
Lampung	10.1	20.3	15.0
Bangka Belitung	15.5	28.9	22.2
Kepulauan Riau	20.3	24.9	22.8
DKI Jakarta	22.7	30.7	26.9
West Java	14.4	29.2	22.1
Central Java	11.6	22.0	17.0
DI Yogyakarta	14.6	22.5	18.7
East Java	15.2	25.1	20.4
Banten	11.0	21.6	16.6
Bali	18.3	20.5	19.4
West Nusa Tenggara	8.9	18.1	13.8
East Nusa Tenggara	7.8	12.3	10.2
West Kalimantan	9.3	16.7	13.0
Central Kalimantan	11.6	18.7	15.2
South Kalimantan	12.4	20.6	16.7
East Kalimantan	19.9	27.3	23.5
North Sulawesi	27.2	38.9	33.2
Central Sulawesi	14.2	27.0	20.7
South Sulawesi	11.5	20.3	16.3
Southeast Sulawesi	11.8	18.1	15.1
Gorontalo	18.4	33.4	26.3
West Sulawesi	11.1	17.2	14.3
Maluku	13.4	19.4	16.6
North Maluku	19.4	29.0	24.4
West Papua	18.7	26.9	23.0
Papua	20.1	24.5	22.4
Indonesia	**13.9**	**23.8**	**19.1**

Table 3.13
Nutritional Status Percentage of Adult (Above 15)
By BMI and Respondent Characteristic , Riskesdas 2007

Respondent's Characteristic	BMI Category			
	Thin	Normal	Overweight	Obese
Education				
No schooling & unfinished Primary school	19.1	64.2	7.8	8.8
Finished Primary School	13.5	67.3	8.9	10.3
Finished Junior High School	15.8	67.2	7.7	9.2
Finished Senior High School	11.9	66.6	9.9	11.6
Finished University	7.7	63.8	12.7	15.9
Type of Residence				
Urban	13.4	62.8	10.4	13.4
Rural	15.9	68.8	7.5	7.8
Level of per capita household expenditure per month				
Quintile 1	17.7	67.9	7.1	7.3
Quintile 2	16.3	67.3	7.9	8.5
Quintile 3	15.2	66.4	8.7	9.7
Quintile 4	13.7	65.9	9.1	11.4
Quintile 5	12.0	63.9	10.7	13.5

b. Adult Nutritional Status based on Waist Circumference

Table 3.14 and Table 3.15 provide Central Obesity prevalence by province, gender and respondent's characteristic. Central Obesity is considered a risk factor which has strong associations with several degenerative diseases. Waist Circumference above 90 cm for males or above 80 cm for females is considered as central obesity (WHO Asia-Pacific, 2005).

Central Obesity prevalence at the national level is 18.8%. From 33 provinces, 17 of them have central obesity prevalence above national prevalence rate (Table 3.14).

Risk by age group, central obesity prevalence tends to increase up to 45-54 years old, then it gradually decreases.

The Central obesity prevalence of female (29%) is higher than male (7.7%). The central obesity prevalence rate by location in an urban area is higher (23.6%) than in rural areas (15.7%). It is also related to household expenditure. In households where the expenditure per capita per month is higher, the central obesity prevalence is also higher. Central obesity does not appear to be associated to education level. Risk by job/occupation, shows highest central obesity prevalence among housewives (Table 3.15)

Table 3.14
Central Obesity Prevalence of Adult above 15 years old by Province, Riskesdas 2007

Province	Central Obesity (M>90, F>80) *
N A D	14.6
North Sumatra	19.1
West Sumatra	18.2
Riau	15.4
Jambi	11.9
South Sumatra	10.0
Bengkulu	19.6
Lampung	13.8
Bangka Belitung	20.1
Kepulauan Riau	19.0
DKI Jakarta	27.9
West Java	23.1
Central Java	18.4
DI Yogyakarta	18.4
East Java	19.0
Banten	19.2
Bali	19.3
West Nusa Tenggara	13.7
East Nusa Tenggara	14.1
West Kalimantan	15.8
Central Kalimantan	16.0
South Kalimantan	17.5
East Kalimantan	23.5
North Sulawesi	31.5
Central Sulawesi	22.1
South Sulawesi	21.4
Southeast Sulawesi	17.1
Gorontalo	27.0
West Sulawesi	15.9
Maluku	15.6
North Maluku	25.0
West Papua	23.1
Papua	27.2
Indonesia	**18.8**

Notes: *) M=Male ; F=Female

Table 3.15
Central Obesity Prevalence of population above 15 years old by Respondent characteristic, Riskesdas 2007

Respondent's characteristic	Central Obesity (M>90, F>80) *
Age group (year)	
15-24	8.0
25-34	17.9
35-44	24.4
45-54	26.1
55-64	23.1
65-74	18.9
75+	15.8
Gender	
Male	7.7
Female	29.0
Education	
No schooling	19.0
Unfinished Primary school	19.3
Finished Primary School	18.7
Finished Junior High school	15.8
Finished Senior High school	19.3
Finished university	25.9
Job/Occupation	
Jobless	15.5
Student	7.0
Housewife	36.3
Employee	20.7
Entrepreneur	20.8
Farmer/Fisherman/Labor	10.7
Others	16.7
Type of Residence	
Urban	23.6
Rural	15.7
Expenditure level per capita	
Quintile 1	15.0
Quintile 2	16.8
Quintile 3	17.8
Quintile 4	19.9
Quintile 5	23.2

Notes: *) M=Male ; F=Female

c. Nutritional Status of reproductive aged woman 15-45 years old based on the Indicator of Mid-Upper Arm Circumference (MUAC)

Table 3.16, Table 3.17, and Table 3.18 show the distribution of mid upper arm Circumference. One standard deviation below the age adjust average is used as a cut off for the risk of Chronic Energy Deficiency for reproductive aged woman. Table 3.16 describes the National risk of Chronic Energy Deficiency prevalence by age. It shows that MUAC increases with age.

Table 3.16
MUAC's Average of Woman 15-45 years old, Riskesdas 2007

Age (year)	MUAC	
	Average(cm)	Deviation Standard (SD)
15	23.8	2.62
16	24.2	2.57
17	24.4	2.53
18	24.6	2.62
19	24.7	2.60
20	24.9	2.72
21	25.0	2.78
22	25.1	2.80
23	25.4	2.92
24	25.6	2.94
25	25.8	2.98
26	25.9	2.98
27	26.1	3.04
28	26.3	3.10
29	26.4	3.14
30	26.6	3.17
31	26.7	3.17
32	26.8	3.16
33	26.9	3.23
34	27.0	3.24
35	27.0	3.22
36	27.1	3.29
37	27.2	3.33
38	27.2	3.31
39	27.2	3.37
40	27.2	3.35
41	27.3	3.32
42	27.4	3.37
43	27.3	3.35
44	27.4	3.32
45	27.2	3.41

Table 3.17 shows prevalence of risk of Chronic Energy Deficiency MUAC < 1 SD for women aged 15 to 45 years old. There are 10 provinces with Chronic Energy Deficiency risk above the national avaerage (13.6%) namely DKI Jakarta, Central Java, DI

Yogyakarta, East Java, NTT, South Kalimantan, Southeast Sulawesi, West Papua, and Papua.

The risk of Chronic Energy Deficiency (CED) prevalence is calculated by counting MUAC < 1 SD smaller than average rate for each age between 15 to 45 years old. Table 3.17 shows the 10 provinces with risk of Chronic Energy Deficiency Prevalence above national rate.

Table 3.17
The Risk of CED Prevalence of Woman 15-45 Years old
By Province, Riskesdas 2007

Province	CED Risk (%)
N A D	12.3
North Sumatra	7.9
West Sumatra	10.8
Riau	10.1
Jambi	9.4
South Sumatra	12.1
Bengkulu	8.2
Lampung	10.9
Bangka Belitung	8.4
Kepulauan Riau	9.3
DKI Jakarta	16.6
West Java	12.0
Central Java	17.2
DI Yogyakarta	20.2
East Java	15.9
Banten	12.6
Bali	8.6
West Nusa Tenggara	12.4
East Nusa Tenggara	24.6
West Kalimantan	10.8
Central Kalimantan	12.2
South Kalimantan	14.0
East Kalimantan	11.2
North Sulawesi	5.8
Central Sulawesi	10.9
South Sulawesi	12.5
Southeast Sulawesi	14.5
Gorontalo	9.0
West Sulawesi	12.5
Maluku	15.1
North Maluku	11.1
West Papua	19.6
Papua	23.1
Indonesia	**13.6**

The risk of Chronic Energy Deficiency by respondent's characteristic can be seen in Table 3.18. They are:

a. The lowest educational level (uneducated and unfinished Elementary School) have the highest Chronic Energy Deficiency risk, much higher than the highest educational level who have finished university.

b. Nationally, CED Risk prevalence is higher in the rural areas than in urban areas.

c. Risk of Chronic Energy Deficiency tends to be high in the group with lowest levels of household expenditure. In the households with higher level of expenditure per capita spent per month, the risk of Chronic Energy Deficiency tends to be lower.

Table 3.18
The Risk of CED Prevalence of woman 15-45 year old
By Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Chronic Energy Deficiency
Education	
No schooling & Unfinished Primary school	15.8
Finished Elementary School	13.5
Finished Junior High School	12.6
Finished Senior High School	13.4
Finished University	12.5
Type of Residence	
Urban	13.0
Rural	14.1
Level of expenditure per capita	
Quintile 1	16.1
Quintile 2	14.4
Quintile 3	13.8
Quintile 4	12.4
Quintile 5	11.5

3.1.4 Energy and Protein Consumption

Household Prevalence of "deficit energy" and "deficit protein" consumption from Riskesdas 2007 data is based on the respondent's answer about food consumption by household member for the last 24 hours. The respondents are housewives or other household members that usually prepare food for the household.

Households with "deficit energy" are households which have energy consumption below the national energy consumption average of the Riskesdas 2007 data. A household is considered "deficit protein" if that household has protein consumption below the national protein consumption average of Riskesdas 2007 data.

Table 3.19 presents the average rate of energy and protein consumption per capita per day, and Table 3.20 and Table 3.21 are prevalence data of households with deficit

energy and deficit protein consumptions. The prevalence of household consuming energy and protein above average energy and protein consumption is not provided.

Data in Table 3.19 shows the average of consumption per capita per day of Indonesian population is 1735.5 Kkal for energy and 55.5 gram for protein. The lowest energy consumption rate is in West Sulawesi (1384.7 kkal) and province with the highest rate of energy consumption is West Java province and the lowest is East Java Province (2175.5 kkal). Province with the lowest protein consumption average is Bengkulu (45.8 gram) and Aceh province has the highest protein consumption (69.0 gram).

There are 11 Provinces with energy consumption average above national average, namely: NAD, North Sumatera, West Sumatera, East Java, NTT, Central Sulawesi, Southeast Sulawesi, Maluku, North Maluku, West Papua, and Papua. While 19 provinces have protein consumption average above the national average, namely : NAD, North Sumatera, West Sumatera, Riau, Jambi, South Sumatera, Bangka Belitung, Islands of Riau, DKI Jakarta, East Java, Bali, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, Southeast Sulawesi, Maluku, North Maluku, and West Papua.

Table 3.20 shows the percentage of households with deficit energy and deficit protein consumption with means below national average rate (1735.5 Kkal and 55.5 gram).

Nationally, the percentage of household with deficit energy consumption is 59.0 % and deficit protein consumption is 58.5 %. There are 21 provinces with the percentage of deficit energy consumption which are above than national average (59.0 %) namely Riau, Jambi, Bengkulu, Lampung, Bangka Belitung, DKI Jakarta, West Java, Central Java, DI Yogyakarta, Banten, Bali, NTB, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Sulawesi, South Sulawesi, Gorontalo, and West Sulawesi.

There are 16 provinces with the prevalence of deficit protein consumption above the national prevalence rate (58.5%) namely Province of Bengkulu, Lampung, West Java, Central Java, DI Yogyakarta, Banten, NTB, NTT, East Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Gorontalo, West Sulawesi, North Maluku, and Papua.

Table 3.21 shows that households in urban areas with deficit energy consumption is higher than household in the rural areas, contrary to the fact that the percentage of household in the rural areas with deficit protein consumption is higher than household in the urban areas.

The percentage of household with deficit energy and deficit protein consumption by household expenditure level per capita shows a specific pattern, the higher expenditure level of household per capita, the lower percentage of household with deficit energy and protein consumption.

Table 3.19
Energy and Protein Consumption Per capita per day
By Province, Riskesdas 2007

Province	Energy		Protein	
	Average	SD	Average	SD
N A D	1805.3	653.0	69.3	28.1
North Sumatra	1861.6	741.5	65.0	28.2
West Sumatra	1806.7	691.1	58.0	26.5
Riau	1602.3	641.8	60.0	28.1
Jambi	1683.7	677.3	59.8	28.6
South Sumatra	1682.3	602.5	56.3	24.8
Bengkulu	1371.6	485.0	45.9	21.3
Lampung	1375.7	460.2	47.7	21.1
Bangka Belitung	1692.8	618.2	66.6	28.1
Kepulauan Riau	1672.9	610.6	69.2	29.1
DKI Jakarta	1592.5	653.3	60.5	28.5
West Java	1636.7	615.7	53.8	24.3
Central Java	1703.3	705.1	51.3	24.5
DI Yogyakarta	1623.7	739.9	50.2	24.5
East Java	2182.4	923.1	57.6	28.3
Banten	1371.5	618.3	51.6	24.9
Bali	1706.5	609.9	56.5	24.8
West Nusa Tenggara	1644.7	678.6	52.4	25.3
East Nusa Tenggara	1884.6	772.0	51.3	26.3
West Kalimantan	1594.9	596.3	57.6	27.1
Central Kalimantan	1534.7	608.6	59.5	26.9
South Kalimantan	1532.2	615.3	58.7	25.6
East Kalimantan	1362.7	585.0	55.6	27.5
North Sulawesi	1381.3	493.8	45.6	18.7
Central Sulawesi	1764.2	709.2	53.7	24.4
South Sulawesi	1504.6	586.6	54.0	23.9
Southeast Sulawesi	1803.4	744.4	68.3	30.0
Gorontalo	1451.4	568.8	47.7	20.8
West Sulawesi	1385.6	506.8	53.4	22.5
Maluku	1828.1	781.6	56.7	27.2
North Maluku	1752.1	807.7	56.4	28.7
West Papua	1865.6	791.5	62.1	32.1
Papua	1823.2	922.7	53.8	30.5
Indonesia	**1735.5**	**748.1**	**55.5**	**26.4**

Table 3.20
Percentage of household with energy and protein consumption lower than National Average, Riskesdas 2007

Province	Percentage of household	
	Energy	Protein
N A D	51.4	35.6
North Sumatra	50.4	42.8
West Sumatra	53.6	54.0
Riau	64.8	51.2
Jambi	59.6	51.9
South Sumatra	61.4	56.1
Bengkulu	81.4	74.9
Lampung	82.3	72.5
Bangka Belitung	59.9	39.1
Kepulauan Riau	58.9	35.8
DKI Jakarta	63.9	50.3
West Java	63.1	61.1
Central Java	61.6	65.9
DI Yogyakarta	67.1	66.9
East Java	37.5	55.2
Banten	76.8	64.0
Bali	59.6	57.7
West Nusa Tenggara	62.9	63.1
East Nusa Tenggara	48.4	65.6
West Kalimantan	66.8	55.5
Central Kalimantan	69.8	51.5
South Kalimantan	69.3	53.0
East Kalimantan	78.4	59.1
North Sulawesi	80.5	75.9
Central Sulawesi	56.5	60.6
South Sulawesi	71.7	61.7
Southeast Sulawesi	53.8	38.8
Gorontalo	77.4	72.2
West Sulawesi	80.3	62.3
Maluku	53.8	57.2
North Maluku	57.7	58.6
West Papua	52.0	49.4
Papua	57.9	60.9
Indonesia	**59.0**	**58.5**

Remarks: Based on the consumption average rate of energy (1735.5 kkal) and Protein (55.5 gram) from Riskesdas 2007 data

Table 3.21
Percentage of household with energy and protein consumption lower than national average by area type and expenditure level of household per capita, Riskesdas 2007.

Respondent's characteristic	Percentage of household	
	Energy	Protein
Type of Residence		
Urban	61.4	56.1
Rural	57.3	60.4
Expenditure level Per Capita		
Quintile 1	64.1	66.8
Quintile 2	60.9	62.4
Quintile 3	59.0	59.3
Quintile 4	57.4	55.3
Quintile 5	53.7	48.0

Remarks: Based on the consumption average rate of Energy (1735.5 kkal) and Protein (55.5 gram) from Riskesdas 2007 data

3.1.5 Household Consumption of iodized Salt

The information concerning iodized salt consumption in Riskesdas 2007 comes from the questionnaire Block II No 7 which is determined by a "quick test" of iodized salt during the interview process. The "Quick test" is done by data collector personnel by using fast test kit (salt is dropped with test solution) in the salt used by the household.

A household is stated to have "sufficient iodized salt "≥30 ppm KIO_3" if the result of the quick test, the salt turns to blue/dark purple: "insufficient iodized salt" (≤30 ppm KIO_3)" if the salt turns to blue/light purple; and stated to have "non iodized salt" if the salt has no color.

In addition, salt samples consumed by households were collected from 30 districts/cities to check iodine content by titration in a lab. In the same time, urine of children 6-12 years old was collected for checking iodine content in the urine.

This report provides quick test result, and iodine content checking result in salt through the titration method as well as the urine analysis result. From the result of quick test, only rates of sufficiently iodized salt are provided (≥ 30 ppm KIO_3).

Table 3.22 shows the percentage of households having sufficient iodized salt (≥ 30 ppm KIO_3) by province. Nationally, only 62.3% Indonesian households have sufficient iodized salt. This achievement is still far from national target of 2010 as well as target of ICCIDD/UNICEF/WHO Universal Salt Iodization (USI) or "iodized salt for all" which is requires a minimum of 90% households using sufficiently iodized salt.

There are six provinces that have achieved the target of iodized salt for all, namely West Sumatera, Jambi, South Sumatera, Bangka Belitung, Gorontalo and West Papua.

Table 3.23 shows the percentage of households having sufficient iodized salt.(≥30 ppm) according to respondent's characteristic. Based on location, urban areas have higher percentages of household having sufficient iodized salt than in rural areas.

Table 3.22
Percentage of Household which has sufficient Iodized salt consumption By Province, Riskesdas 2007

Province	Households having sufficient iodized salt consumption(%)
N A D	47.3
North Sumatra	89.9
West Sumatra	90.3
Riau	82.8
Jambi	94.0
South Sumatra	93.0
Bengkulu	69.7
Lampung	76.8
Bangka Belitung	98.7
Kepulauan Riau	89.1
DKI Jakarta	68.7
West Java	58.3
Central Java	58.6
DI Yogyakarta	82.7
East Java	45.1
Banten	46.4
Bali	45.1
West Nusa Tenggara	27.9
East Nusa Tenggara	31.0
West Kalimantan	84.4
Central Kalimantan	88.7
South Kalimantan	76.2
East Kalimantan	83.8
North Sulawesi	89.2
Central Sulawesi	62.3
South Sulawesi	61.0
Southeast Sulawesi	43.5
Gorontalo	90.1
West Sulawesi	34.2
Maluku	45.1
North Maluku	83.0
West Papua	90.9
Papua	86.2
Indonesia	**62.3**

Observed by quintile of per capita household expenditure, the highest quintile has the highest percentage of sufficiently iodized salt. Also, according to education, head of households with higher education attainment have higher percentages of sufficient iodized salt. Based on employement household where the head of household has a permanent job such as civil service/Army/Police/employee of company owned by

government and private employee has higher levels of sufficienty iodized salt than households where the head of household has an impermanent job.

Table 3.23
Percentage of households having sufficient iodized salt consumption By Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Household having sufficient iodized salt consumption (%)
Education of Head of household	
Unfinished Elementary school & No schooling	50.9
Finished Elementary School	59.5
Finished Junior High School	68.8
Finished Senior High School	75.1
Finished University	80.8
Head of household's employment	
Does not work/Go to school/House wife	60.7
Civil service/Army/Police/state owned company	79.2
Private employee	75.7
Entrepreneur/merchant/service provider	67.1
Farmer/Fisherman	56.9
Labor/Others	56.5
Type of Residence	
Urban	70.4
Rural	56.3
Expenditure level per capita	
Quintile 1	56.7
Quintile 2	59.3
Quintile 3	61.8
Quintile 4	64.1
Quintile 5	70.0

The result of iodine content in salt consumed by the household using the titration method can be seen in table 3.24. The picture represented by 30 districts/cities suggests that iodine content in salt consumed by 75.5% of households fulfill the Indonesian National Standard (SNI): 30-80 ppm KIO3, and only 24.5% of the salt consumed by households, the iodine content does not fulfill meet the SNI standard.

Table 3.24
Percentage of household having iodized salt
< 30 ppm (part per million) in 30 district/city, Riskesdas 2007

DISTRICT/CITY	Percentage of household having iodized salt < 30 ppm
Tapanuli Tengah	77.6
Toba Samosir	68.3
Karo	72.5
South Solok	84.2
Kota Dumai	69.3
Kota Metro	66.7
Karawang	90.7
Grobogan	96.0
Semarang	72.7
Kota Salatiga	69.9
Kota Semarang	75.2
Bantul	56.8
Blitar	83.0
Jember	86.0
Bondowoso	63.2
Nganjuk	76.8
Kota Pasuruan	80.0
Kota Tangerang	75.3
Klungkung	100.0
Sikka	81.4
Katingan	41.9
Balangan	57.7
Tapin	59.2
Kota Tarakan	57.8
Donggala	50.0
Jeneponto	97.7
Kota Kendari	92.3
Konawe	84.6
Kota Gorontalo	67.1
Mappi	37.5
30 DISTRICTS/CITIES	**75.5**

From table 3.25 it can be seen, there are 12.9% children of 6-12 years old in 30 districts/cities with univary iodine level or iodine content < 100 µg/L. Iodine content in the urine is a good indicator of recent iodine intake (consumption). If more than 50% children of 6-12 years old have urine iodine content < 100 µg/L here is a big possibility that the population has a problem in *Iodine Deficiency Disorders*. None of the 30 districts/cities, have 50% of the children with urine < 100 µg/L.

Table 3.25
Percentage of child 6-12 years old with Iodine Expression in the Urine < 100 µg/L in 30 district/city, Riskesdas 2007

District/City	Percentage of child with EIU < 100 µg/L
Tapanuli Tengah	12.4
Toba Samosir	6.4
Karo	10.1
South Solok	4.4
Kota Dumai	7.4
Kota Metro	11.9
Karawang	12.7
Grobogan	8.0
Semarang	10.5
Kota Salatiga	5.7
Kota Semarang	9.8
Bantul	23.3
Blitar	10.5
Jember	20.3
Bondowoso	22.3
Nganjuk	8.9
Kota Pasuruan	5.7
Kota Tangerang	14.0
Klungkung	34.2
Sikka	15.9
Katingan	3.8
Balangan	13.1
Tapin	8.1
Kota Tarakan	10.6
Donggala	13.9
Jeneponto	23.4
Kota Kendari	13.4
Konawe	17.2
Kota Gorontalo	20.5
Mappi	16.9
30 DISTRICTS/CITIES	**12.9**

Table 3.26 shows that the median value of the iodine content in the urine of child aged 6-12 years in 30 districts/cities is 224 µg/L and is included in the category of 'above the recommended sufficiency value'. The median value between 100-199 µg/L indicates iodine intake in the population has been fulfilled the recommended sufficiency. Whereas the median value above 300 µg/L suggest over intake of Iodine.

Within the 30 districts/cities, the median value of iodine content in the urine of child aged 6-12 years, Salatiga city and Grobogan district are above 300 µg/L. It should be noted that Grobogan, has land and water which contain high iodine. While, there are 6 districts/cities with median value of the iodine content in the urine is between 100-199

µg/L namely Bantul, Bondowoso, Klungkung, Jeneponto, South Konawe and Gorontalo city.

Table 3.26
Median Value of Iodine expression in the urine of school children aged 6-12 years in 30 districts/cities, Riskesdas 2007

DISTRICT/CITY	MEDIAN VALUE OF EIU (µg/L)
Tapanuli Tengah	225
Toba Samosir	230
Karo	221
South Solok	229
Kota Dumai	237
Kota Metro	290
Karawang	229
Grobogan	365
Semarang	244
Kota Salatiga	304
Kota Semarang	288
Bantul	192
Blitar	208
Jember	214
Bondowoso	164
Nganjuk	246
Kota Pasuruan	236
Kota Tangerang	186
Klungkung	157
Sikka	209
Katingan	296
Balangan	270
Tapin	257
Kota Tarakan	219
Donggala	221
Jeneponto	181
Kota Kendari	213
Konawe	187
Kota Gorontalo	199
Mappi	211
30 DISTRICTS/CITIES	**224**

3.2 Maternal and Child Health

3.2.1 Immunization Status

The Ministry of Health is undertaking an Immunization Development Program (IDP) for children to help reduce childhood morbidity. Immunization programs for Immunizable Preventable Disease of children that are covered by the IDP consist of one BCG immunization, three DPT immunization, four polio immunization, one measles immunization and three Hepatitis B (HB) immunization.

BCG Immunization is given to babies under three months; polio immunization is for newborn babies, and another three doses are given four weeks apart, DPT/HB immunization is for babies aged two months, three months, four months with a minimum four week interval, and measles immunization is given at nine months.

In Riskesdas, the information concerning immunization coverage is asked to mothers who have children aged 0 – 59 months. There are three methods to collect information regarding immunization namely:

- Interview with under fives' mothers or family member who understand this issue,
- Child Health Card, and
- MCH Handbook record.

If one of those sources has clearly stated that a certain child has been immunized, it means that the child has already been immunized for the afore mentioned diseases.

In addition to immunization type, a complete immunized child is one that has received all types of immunization consisting of one BCG, three DPT, three polio, three HB and one measles immunization. Due to a different schedule of immunization, the analyzed immunization coverage is limited to children aged 12 – 23 months.

The immunization coverage for children aged 12 – 23 months can be seen in four tables (table 3.27 through table 3.30). Table 3.27 and table 3.28 show the coverage of each immunization type by province and respondent characteristics. Table 3.29 and table 3.30 describing complete immunization coverage by every immunization type received by children.

Not every child under five has complete immunization status. Many factors influenced this including if the mother forget whether her baby had been immunized or not, or the mother forget how many times immunization had been received, or if the mother wasn't sure precisely what type of immunization was received, or if the record in Child Health Card is incomplete/unfilled, or the record in MCH handbook is incomplete/unfilled, or the mother is incapable of showing the Child Health Card/MCH handbook due to its loss or not being saved properly by the mother, or the person being interviewed is not the infants mother or inaccurate data was collected by the interviewer.

As listed in table 3.27, it is generally seen that the immunization coverage by types listed from the highest to the lowest are BCG (86.9%), measles (81.6%), three polio (71.0%), three DPT (67.7%) and hepatitis B (62.8%). In terms of province, the lowest BCG immunization is occurred in West Sulawesi (73.2%) and the highest is in Yogyakarta (100.0%).

The more varied immunization coverage among provinces can be seen in three times polio which is the lowest is in West Sulawesi (47.9%) while the highest is in Yogyakarta

(96.1%). West Sulawesi has the lowest three times DPT immunization coverage (47.9%) whereas Yogyakarta has the highest coverage (89.8%).

Table 3.27
Percentage of children aged 12-23 months who obtain primary Immunization by Province, Riskesdas 2007

Province	Kind of Immunization				
	BCG	Polio 3	DPT 3	HB 3	Measles
NAD	77.4	63.7	58.5	53.8	69.5
North Sumatera	76.3	64.0	54.7	51.4	71.2
West Sumatera	83.1	69.4	64.2	67.9	75.4
Riau	88.9	71.2	70.7	65.7	84.1
Jambi	85.2	74.6	79.3	64.0	78.0
South Sumatera	88.8	74.3	71.6	64.7	83.5
Bengkulu	95.3	77.7	81.0	74.4	96.0
Lampung	93.3	78.8	77.2	70.7	90.3
Bangka Belitung	83.7	66.7	67.7	67.7	77.1
Kepulauan Riau	93.3	85.3	84.1	77.8	88.9
DKI Jakarta	96.3	71.3	68.6	62.3	85.4
West Java	87.3	67.5	61.8	59.8	78.9
Central Java	95.7	83.6	79.1	77.7	89.1
DI Yogyakarta	100.0	96.1	89.8	69.0	99.2
East Java	88.6	73.9	70.4	59.7	83.3
Banten	76.5	59.0	48.3	49.7	62.5
Bali	98.8	89.1	89.5	85.2	95.7
West Nusa Tenggara	96.4	74.9	66.3	52.5	94.1
East Nusa Tenggara	83.9	64.8	60.9	54.3	81.6
West Kalimantan	79.3	65.5	62.0	58.1	77.0
Central Kalimantan	82.1	66.8	64.6	60.3	77.3
South Kalimantan	90.4	75.1	71.8	67.1	81.7
East Kalimantan	93.1	83.2	79.8	77.7	90.8
North Sulawesi	94.4	81.4	79.6	73.2	85.9
Central Sulawesi	89.1	65.9	66.3	63.7	84.3
South Sulawesi	88.8	72.3	68.8	56.8	83.5
Southeast Sulawesi	93.6	67.9	67.4	62.8	85.4
Gorontalo	89.1	68.9	65.3	58.6	87.1
West Sulawesi	73.2	47.9	47.9	42.4	78.5
Maluku	73.5	57.3	55.3	51.0	72.1
North Maluku	85.5	64.2	72.8	68.6	85.5
West Papua	84.3	64.7	59.4	51.0	80.8
Papua	75.9	56.1	50.5	46.5	68.7
Indonesia	**86.9**	**71.0**	**67.7**	**62.8**	**81.6**

To accelerate the elimination of polio around the world, WHO made a recommendation to conduct National Immunization Week (PIN). Indonesia undertook PIN by giving one dose of polio in September 1995, 1996, and 1997. In 2002, PIN was reemerged by adding measles immunization in some regions. After an acute flaccid paralysis (AFP)

outbreak in 2005, PIN was reestablished by giving only three times/doses of polio in the months of September, October, and November. In 2006, it was conducted again for two times/doses of polio which was carried out in September and October 2006. Thus, it is possible for the number of polio immunizations to be greater than the recommended dose. However WHO declares that three times polio is sufficient as a polio primary immunization.

Hepatitis B immunization has the lowest coverage in West Sulawesi (42.4%) and the highest in Bali (85.2%). Hepatitis B immunization was initially given separately from DPT, but since 2004 it has been combined with DPT distribution becoming DPT/HB in which distributed completely for 20% of the target. In 2005, it reach 50% of the target and in 2006 100% of the target.

Even though DPT/HB vaccine has been distributed to all targets its implementation in districts depend on local stockpile which are still separate from province to province.

For measles immunization, the coverage also varies by province with the lowest coverage in Banten (62.5%) and the highest in Yogyakarta (99.2%). If measles immunization coverage is used as complete immunization indicator (it is the last vaccination given), Indonesia has generally achieved Universal Child Immunization (UCI). However, there still have 12 provinces that have net achieved these goals. (Table 3.27).

Table 3.28 shows the coverage of immunization based on child's, parents', and regional characteristics. There was no difference in each immunization coverage by sex but a difference was found in relation with regions. The coverage of each immunization was always 7.2 – 13.7% higher between in urban area than rural area.

Table 3.28 also shows a positive association between educational level, expenditure level per capita and immunization coverage. The higher education obtained by head of household or the higher expenditure level per capita per month, the higher coverage of immunization. The difference in child immunization coverage by educational background between head of households without formal educational background and head of households with university/college background was 17.1 – 25.4%. The difference of child immunization based on expenditure level per capita between the lowest (quintile 1) and the highest (quintile 5) was 8.7 – 12.2%.

In terms of immunization coverage by occupation, it seems that the highest coverage is among households where the head of household's job is a civil servant/military army/police while the lowest among those households where the head of households job was farmer/fisherman/labor.

Complete immunization coverage for all immunizations being received by children aged 12 – 23 months is presented in table 3.29. It can be seen that, complete immunization coverage was achieve as 46.2% which is almost same leves as incomplete immunization which was 45.3%.

A wide variation among provinces is seen with the lowest coverage in West Sulawesi (17.3%) and the highest coverage in Bali (73.9%). Besides a wide difference in complete immunization coverage among provinces, there was 8.5% children aged 12-23 months didn't receive any immunization at all. The highest percentage of children without receiving any immunization was in Maluku (21.5%) while the lowest was in Yogyakarta (0.0%) which means there was no children aged 12-23 months who didn't receive any immunization there although 35.4% of the children had incomplete immunization.

Table 3.30 showsthe coverage of complete immunization by characteristic of children, family and regions. The higher coverage was achived in urban areas (54.0%) as compared to rural areas (41.3%) and 11.1% of children aged 12-23 months in villages recieved no immunization at all.

Table 3.28
Percentage of children aged 12-23 months who obtain primary immunization by Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Kind of immunization				
	BCG	Polio 3	DPT 3	HB 3	Measles
Gender					
Male	87.3	71.0	67.7	63.2	82.0
Female	86.5	70.1	67.6	62.3	81.2
Type of Residence					
Urban	92.4	78.7	74.9	71.0	86.0
Rural	83.5	66.2	63.1	57.3	78.8
Education of Head of household					
No schooling	78.6	61.9	54.0	50.5	71.6
Unfinished Primary school	79.3	62.4	59.1	53.7	74.1
Finished Primary School	84.8	67.4	63.3	57.5	78.2
Finished Junior High school	88.4	71.6	68.2	62.8	82.3
Finished Senior High school	92.4	79.7	76.9	72.3	88.6
Finished university	95.7	82.6	81.8	75.9	93.1
Job of Head of household					
Jobless	86.7	71.7	64.9	58.5	80.8
House wife	91.0	76.1	69.1	66.8	85.7
Civil service/Police/Army	95.0	81.5	79.1	75.1	91.9
Entrepreneur	90.2	75.0	71.3	65.9	83.9
Farmer/Fisherman/Labor	83.0	66.5	62.9	57.1	77.4
Others	87.5	71.3	69.5	68.0	83.6
Level of expenditure per capita					
Quintile 1	83.0	66.6	62.9	58.7	78.1
Quintile 2	85.7	68.1	64.7	59.7	78.5
Quintile 3	87.2	72.8	69.1	63.2	83.1
Quintile 4	89.6	73.6	71.0	65.5	84.3
Quintile 5	91.9	77.6	74.7	70.9	86.8

There was positive association between head of household's educational background and expenditure level per capita with complete immunization coverage. The higher the level of education attained by head of household, the higer the coverage of complete immunization. It was also similiar to higher expenditure per capita which achieved the highest level of complete immunization coverage. The level of complete immunization among low educated head of households was 35.1% while head of households with the highest educational background was 60.4%. The coverage level of complete immunization at lowest quintile was 41.6% and highest quintile was 53.5%. Based on head of household's occupation, the highest coverage of complete immunization was found in families whose head of household worked as civil servant/military army/police (57.9%) and the lowest was found among children of farmer/fisherman/labor (41.1%).

There is a tendency for parent's with higher educational background, to have fewer children that didn't get immunization. Expenditure level per capita also showed the same tendency.

Children who didn't receive immunization were children of families with uneducated parents, living in rural areas, and children of "farmer/fisherman/labor", or in households at the lowest quintile of household expenditure.

Table 3.29
Percentage of children aged 12-23 Month who obtain Primary Immunization by Province, Riskesdas 2007

Province	Primary Immunization		
	Complete	Not Complete	None
NAD	35.1	52.0	13.0
North Sumatera	31.0	53.7	15.3
West Sumatera	45.9	42.7	11.4
Riau	47.4	46.4	6.3
Jambi	46.0	44.7	9.2
South Sumatera	47.1	44.3	8.6
Bengkulu	48.0	49.0	2.9
Lampung	51.9	43.1	5.1
Bangka Belitung	52.7	34.4	13.0
Kepulauan Riau	60.3	35.2	4.5
DKI Jakarta	45.7	52.8	1.5
West Java	41.4	53.3	5.3
Central Java	64.3	34.4	1.3
DI Yogyakarta	64.6	35.4	0.0
East Java	46.7	45.8	7.5
Banten	30.6	57.6	11.8
Bali	73.9	24.6	1.5
West Nusa Tenggara	38.0	59.4	2.7
East Nusa Tenggara	41.6	48.5	9.9
West Kalimantan	43.9	41.0	15.1
Central Kalimantan	47.9	38.3	13.8
South Kalimantan	57.0	35.7	7.3
East Kalimantan	62.0	32.7	5.3
North Sulawesi	58.2	36.2	5.6
Central Sulawesi	48.0	44.8	7.2
South Sulawesi	43.4	42.4	14.1
Southeast Sulawesi	44.6	47.6	7.9
Gorontalo	39.2	54.5	6.3
West Sulawesi	17.3	65.4	17.3
Maluku	40.4	38.2	21.5
North Maluku	55.9	32.8	11.3
West Papua	37.3	55.1	7.6
Papua	32.4	50.0	17.6
Indonesia	**46.2**	**45.3**	**8.5**

Notes: Complete Immunization: BCG, DPT minimum 3 times, Polio minimum 3 times, Hepatitis B minimum 3 times, measles, according to the confession and record of KMS/KIA.

Table 3.30
Percentage of children aged 12-23 months obtaining primary immunization by Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Primary Immunization		
	Complete	Not Complete	None
Gender			
Male	46.6	45.2	8.2
Female	45.7	45.4	8.9
Type of Residence			
Urban	54.0	41.5	4.5
Rural	41.3	47.7	11.1
Education of Head of			
No schooling	35.1	49.0	15.9
Unfinished Primary school	39.1	46.2	14.7
Finished Primary School	41.1	49.0	9.9
Finished Junior High school	46.7	46.2	7.1
Finished Senior High school	54.0	41.9	4.0
Finished university	60.4	36.6	2.9
Job of Head of household			
Jobless	44.0	48.8	7.2
House wife	51.3	44.1	4.7
Civil service/Police/Army	57.9	39.7	2.5
Entrepreneur	49.7	44.3	6.1
Farmer/Fisherman/Labor	41.1	47.3	11.6
Others	47.3	45.7	7.0
Level of expenditure per capita			
Quintile 1	41.6	47.1	11.3
Quintile 2	43.4	46.9	9.7
Quintile 3	47.3	44.6	8.1
Quintile 4	49.4	44.5	6.1
Quintile 5	53.5	41.0	5.5

Remarks: Complete Immunization: BCG, DPT minimum 3 times, Polio minimum 3 times, Hepatitis B minimum 3 times, measles, according to the confession and record of KMS/KIA.

3.2.2 Under five Growth Monitoring

For Children under five years of age growth monitoring is very important to early identify growth faltering. To help mothers understand the importance of constant weight gain, monthly weighing is extremely important. The weighing of children under fives can be done in many places like posyandu, polindes, puskesmas or at other outpatient health services.

In Riskesdas 2007, respondents were proposed a question asking the frequency of growth monitoring they have participated in the last 6 months. In this connection, they were classified into groups consist of "never been weighed in the last 6 months", 1-3 times weighing which means "random weighting", and 4-6 times which means "systematic weighing". The question concerning growth monitoring for children under five years was asked to the mothers or household members who knew the answer.

Table 3.31
Growth Monitoring of children under five years within the last 6 months
By Province, Riskesdas 2007

Province	Weighing Frequency		
	≥ 4 times	1-3 times	Never
NAD	47.4	35.6	17.0
North Sumatera	21.4	33.2	45.3
West Sumatera	46.9	30.8	22.3
Riau	34.7	37.8	27.6
Jambi	30.9	39.0	30.1
South Sumatera	31.5	28.9	39.6
Bengkulu	39.8	29.1	31.1
Lampung	37.7	26.8	35.4
Bangka Belitung	32.0	29.5	38.4
Kepulauan Riau	34.6	42.6	22.9
DKI Jakarta	57.6	32.3	10.1
West Java	56.0	29.4	14.6
Central Java	60.0	23.9	16.0
DI Yogyakarta	78.5	16.5	5.0
East Java	57.9	21.8	20.4
Banten	40.5	38.9	20.6
Bali	62.7	23.3	14.0
West Nusa Tenggara	58.2	28.7	13.1
East Nusa Tenggara	69.4	15.0	15.6
West Kalimantan	30.7	33.4	35.9
Central Kalimantan	26.9	36.6	36.5
South Kalimantan	35.1	38.5	26.4
East Kalimantan	46.2	28.9	24.9
North Sulawesi	57.5	34.0	8.5
Central Sulawesi	31.8	34.2	34.0
South Sulawesi	39.8	33.0	27.2
Southeast Sulawesi	39.8	21.9	38.3
Gorontalo	56.3	34.7	8.9
West Sulawesi	29.8	33.7	36.5
Maluku	45.1	17.2	37.7
North Maluku	52.7	18.9	28.4
West Papua	42.7	28.3	29.0
Papua	36.6	26.3	37.1
Indonesia	**45.4**	**29.1**	**25.5**

In table 3.31, it can be seen that in the last 6 months, children under five years who have routine body weighing (4 times or more) were being weighed 1-3 times and never been weighed respectively were 45.4%, 29.1%, and 25.5%. The coverage of growth monitoring varied by province with the lowest levels in North Sumatera (21.4%) and the highest in Yogyakarta (78.5%).

The coverage of growth monitoring of children under five is presented in table 3.32 by characteristic of children, household, and region.

Table 3.32
Percentage of Under Fives according to Weighing Frequency for the last 6 months and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Weighing Frequency (times)		
	never	1-3 times	≥ 4 times
Age (months)			
6 – 11	8.7	23.7	67.6
12 – 23	16.4	28.9	54.6
24 – 35	26.7	28.2	45.1
36 – 47	33.5	26.7	39.8
48 – 59	39.3	23.9	36.8
Gender			
Male	25.9	29.0	45.0
Female	25.1	29.1	45.8
Type of Residence			
Urban	21.3	31.2	47.5
Rural	28.2	27.7	44.1
Education of Head of household			
No schooling	33.3	24.5	42.2
Unfinished Primary school	29.5	26.5	44.0
Finished Primary School	26.8	27.8	45.3
Finished Junior High school	25.7	29.7	44.6
Finished Senior High school	22.1	31.9	46.1
Finished university	18.6	32.4	48.9
Job of Head of household			
Jobless	22.9	28.7	48.4
House wife	17.5	29.8	52.7
Civil service/Police/Army	19.7	32.1	48.2
Entrepreneur	23.8	31.3	44.9
Farmer/Fisherman/Labor	28.8	27.2	44.0
Others	23.6	30.9	45.5
Level of expenditure per capita			
Quintile 1	28.0	27.5	44.5
Quintile 2	26.7	28.1	45.1
Quintile 3	25.1	29.3	45.7
Quintile 4	23.6	30.3	46.1
Quintile 5	22.6	31.3	46.1

As children became older growth monitoring participation deceased. As age increased, the percentage of children who have never been weighed also increased. The coverage of growth monitoring among children under five years was not different by sex but it was slightly different by Location with routine growth monitoring (> 4 times) was higher in urgan areas (47.5%) than in rural areas (44.1%). The coverage of growth monitoring of under fives (≥ 4 times in 6 months) was different based on the head of household's educational background or even by household expenditure level per capita. The difference was only 6.7% for educational level and 1.6% for expenditure level per capita.

In table 3.33, it is seen that posyandu in general is the most visited place for growth monitoring (78.3%).

Table 3.33
Percentage of Children Under Five according to the Weighing Place for the Last 6 Months and Province, Riskesdas 2007

Province	Place of child Weighing				
	RS	Puskesmas	Polindes	Posyandu	others
NAD	2.1	11.9	4.0	76.9	5.0
North Sumatera	6.1	14.1	5.7	61.6	12.5
West Sumatera	2.1	7.7	3.2	83.0	4.0
Riau	4.5	9.6	5.5	67.3	13.1
Jambi	7.3	14.3	3.1	65.9	9.4
South Sumatera	6.3	15.5	6.4	66.2	5.6
Bengkulu	2.3	11.2	5.2	74.6	6.7
Lampung	1.8	4.9	1.8	85.0	6.5
Bangka Belitung	3.9	14.8	3.6	65.3	12.4
Kepulauan Riau	8.4	6.0	2.8	47.9	34.9
DKI Jakarta	7.2	12.7	1.4	67.2	11.4
West Java	2.8	2.8	1.4	87.0	6.0
Central Java	2.1	3.2	2.2	86.9	5.5
DI Yogyakarta	2.1	6.4	2.1	85.0	4.4
East Java	2.5	4.0	3.5	84.7	5.3
Banten	4.9	5.2	2.7	72.1	15.1
Bali	3.2	6.8	1.2	77.8	11.0
West Nusa Tenggara	2.1	3.3	1.2	91.3	2.1
East Nusa Tenggara	1.4	5.1	2.3	89.9	1.4
West Kalimantan	2.9	12.9	3.2	75.3	5.7
Central Kalimantan	1.6	24.5	2.1	60.9	10.9
South Kalimantan	2.7	16.4	1.0	68.6	11.3
East Kalimantan	4.0	13.1	0.8	74.1	8.0
North Sulawesi	4.2	9.4	0.9	78.9	6.6
Central Sulawesi	3.0	8.9	2.3	81.1	4.7
South Sulawesi	3.9	18.3	1.1	73.6	3.1
Southeast Sulawesi	1.6	3.5	1.2	92.6	1.1
Gorontalo	2.4	10.4	2.8	82.8	1.6
West Sulawesi	2.1	16.9	0.4	78.1	2.5
Maluku	1.8	7.2	3.0	86.6	1.3
North Maluku	0.7	2.3	1.1	95.2	0.7
West Papua	2.8	10.2	1.0	81.1	4.8
Papua	6.0	22.6	6.2	59.8	5.5
Indonesia	**3.2**	**8.6**	**2.8**	**78.3**	**7.0**

Posyandu as the site for growth monitoring for children under five years was common in North Maluku (95.2%) while the rarest was in the Islands of Riau (47.9%). The Puskesmas as a site for growth monitoring of children under five was quite high in Central Kalimantan (24.5%), Papua (22.6%), and South Sulawesi (18.3%).

Table 3.34 shows growth monitoring location for children under five years based on the characteristic of child, household, and types of region. It is seen that for every type of growth monitoring location, there was no pattern based on either age or sex.

Table 3.34
Percentage of Under Fives according to Weighing Place for the last 6 month and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Place of child weighing				
	RS	Puskesmas	Polindes	Posyandu	Others
Age (months)					
6 – 11	3.0	8.9	2.6	78.7	6.8
12 – 23	2.8	8.5	2.5	80.5	5.7
24 – 35	2.6	8.3	2.4	81.5	5.2
36 – 47	3.0	8.5	2.7	79.5	6.3
48 – 59	3.3	8.3	3.0	77.8	7.5
Gender					
Male	3.2	8.7	2.6	78.6	6.9
Female	3.2	8.5	3.0	78.1	7.2
Type of Residence					
Urban	4.9	9.8	1.9	71.3	12.1
Rural	2.1	7.8	3.4	83.1	3.6
Education of Head of					
No schooling	1.6	7.0	3.1	84.2	4.1
Unfinished Primary school	2.1	7.3	3.0	83.6	4.0
Finished Primary School	2.4	7.4	2.8	83.2	4.2
Finished Junior High	2.7	9.0	3.0	79.4	5.9
Finished Senior High	4.3	9.9	2.7	72.9	10.2
Finished university	7.3	10.8	2.3	62.6	17.0
Job of Head of household					
Jobless	3.7	8.1	2.6	78.3	7.3
House wife	4.8	5.1	1.8	80.8	7.5
Civil service/Police/Army	5.7	10.6	2.3	68.3	13.1
Entrepreneur	3.9	9.5	2.4	74.9	9.3
Farmer/Fisherman/Labor	2.1	7.6	3.3	83.3	3.7
Others	2.2	9.0	2.8	77.7	8.4
Level of expenditure per capita					
Quintile 1	2.1	8.0	2.6	83.2	4.1
Quintile 2	2.6	8.7	3.0	80.5	5.3
Quintile 3	2.7	9.1	2.9	78.4	6.9
Quintile 4	3.6	8.1	3.0	76.7	8.6
Quintile 5	5.8	8.9	2.5	70.3	12.4

According to characteristic of region, the growth monitoring for children under five years can also happen in hospitals and Puskesmas in urban areas more so than in rural areas. On the other hand, its occurance at Polindes and Posyandu was higher in rural areas as compared to urban areas. There was a negative association between head of household's educational background or expenditure level per capita and growth monitoring at the Posyandu. The highest utilization of Posyandu for growth monitoring were children of farmer/fisherman/labor, and housewives when compared to other jobs.

Table 3.35 shows the household ownership of a Child Health Card (KMS) by province. There was only 23.3% of under fives who owned KMS and could show it while there were 41.7% under five children who claimed to have a KMS but couldn't show during the interview. 35.0% of the children reporting not having a KMS. KMS ownership and ability

to show the KMS varied by province. It was the lowest in West Sulawesi (10.9%) and the highest in Jakarta (39.2%).

Table 3.35
Percentage of Under Fives according to KMS Ownership and Province, Riskesdas 2007

Province	KMS* Ownership		
	1	2	3
NAD	18.8	41.4	39.8
North Sumatera	18.9	48.3	32.7
West Sumatera	12.2	32.1	55.6
Riau	22.8	51.0	26.2
Jambi	27.6	44.6	27.8
South Sumatera	23.6	49.5	26.9
Bengkulu	28.2	49.4	22.4
Lampung	26.0	52.8	21.2
Bangka Belitung	22.7	35.9	41.4
Kepulauan Riau	27.8	49.6	22.6
DKI Jakarta	39.2	41.5	19.2
West Java	32.5	38.4	29.1
Central Java	28.8	31.9	39.3
DI Yogyakarta	34.4	22.6	43.0
East Java	25.0	31.8	43.2
Banten	22.8	38.3	38.9
Bali	24.1	29.9	45.9
West Nusa Tenggara	18.5	44.0	37.4
East Nusa Tenggara	18.9	55.1	25.9
West Kalimantan	16.8	37.6	45.6
Central Kalimantan	18.8	37.2	43.9
South Kalimantan	25.6	49.1	25.3
East Kalimantan	27.6	47.7	24.8
North Sulawesi	22.8	45.0	32.2
Central Sulawesi	23.6	45.0	31.4
South Sulawesi	22.2	42.9	34.9
Southeast Sulawesi	22.2	54.2	23.5
Gorontalo	20.3	32.1	47.6
West Sulawesi	10.9	43.4	45.6
Maluku	17.4	36.4	46.2
North Maluku	24.2	41.0	34.9
West Papua	31.6	34.5	33.8
Papua	16.8	38.8	44.5
Indonesia	**23.3**	**41.7**	**35.0**

* Remarks: 1 = Own KMS and can show it
2 = Own KMS, couldn't show it/kept by other
3 = Do not own KMS

Table 3.36 describes the characteristic of respondent and there is no difference in Child Health Card ownership by sex. By age group, the percentage of ownership of Child Health Card is highest among children under 12 months (36.7 – 42.6%) but only 12.4% among children aged 48 – 59 months. According to location type, urban areas have higher rates of ownership of Child Health Card (28.7%) than do rural area (20.0%).

Table 3.36
Percentage of KMS Ownership by children under five and Respondent's Characteristic, Riskesdas 2007

Respondent's characteristic	KMS* Ownership		
	1	2	3
Age (months)			
0 – 5	36.7	19.3	40.0
6 – 11	42.6	27.1	30.3
12 – 23	30.1	38.0	31.9
24 – 35	20.3	45.8	33.9
36 – 47	14.9	49.8	35.3
48 – 59	12.4	49.6	38.0
Gender			
Male	23.4	41.6	35.1
Female	23.2	41.9	35.0
Type of Residence			
Urban	28.7	43.5	27.9
Rural	20.0	40.7	39.3
Education of Head of household			
No schooling	18.2	33.3	48.6
Unfinished Primary school	20.5	36.4	43.1
Finished Primary School	22.3	39.3	38.4
Finished Junior High school	23.4	43.7	32.9
Finished Senior High school	25.4	46.6	28.0
Finished university	28.3	48.9	22.8
Job of Head of household			
Jobless	25.7	38.8	35.5
House wife	26.7	38.9	34.4
Civil service/Police/Army	27.4	48.6	23.9
Entrepreneur	25.0	43.5	31.4
Farmer/Fisherman/Labor	20.8	39.3	39.9
Others	24.5	40.9	34.6
Level of expenditure per capita			
Quintile 1	21.0	40.0	39.0
Quintile 2	22.4	40.3	37.3
Quintile 3	23.8	41.5	34.6
Quintile 4	25.4	43.3	31.3
Quintile 5	25.1	45.4	29.5

* Remarks: 1 = Owns KMS and can show it
2 = Owns KMS, couldn't show it/kept by other
3 = Doesn't own KMS

In terms of family characteristics, it can be seen that there is a positive correlation between education of head of household and Child Health Card ownership. The difference of Child Health Card ownership by from bottom to top education level is 10.1% while expenditure level per capita is 4.1%. No correlation found between Child Health Card ownership and head of household's occupation. Table 3.37 indicates that MCH handbook ownership is lower than Child Health Card ownership that is 13.0%.

Table 3.37
Percentage of Buku KIA Ownership on Under Fives by Province, Riskesdas 2007

Province	Ownership of buku KIA*		
	1	2	3
NAD	11.5	26.5	62.1
North Sumatera	2.4	14.7	82.9
West Sumatera	21.8	43.3	34.9
Riau	3.2	24.2	72.5
Jambi	12.2	27.5	60.3
South Sumatera	7.2	25.0	67.8
Bengkulu	17.0	36.5	46.5
Lampung	9.9	22.0	68.1
Bangka Belitung	16.6	27.6	55.8
Kepulauan Riau	4.5	7.3	88.2
DKI Jakarta	8.1	17.8	74.0
West Java	5.5	9.3	85.2
Central Java	30.7	28.6	40.7
DI Yogyakarta	42.7	22.2	35.1
East Java	22.3	26.1	51.6
Banten	4.6	14.2	81.3
Bali	25.2	33.1	41.7
West Nusa Tenggara	18.8	43.6	37.6
East Nusa Tenggara	5.2	18.1	76.6
West Kalimantan	15.3	33.8	50.9
Central Kalimantan	13.7	25.1	61.1
South Kalimantan	11.3	25.2	63.5
East Kalimantan	13.8	29.1	57.1
North Sulawesi	22.9	44.6	32.5
Central Sulawesi	9.6	17.0	73.4
South Sulawesi	11.1	32.7	56.2
Southeast Sulawesi	5.1	20.0	74.8
Gorontalo	25.7	37.7	36.6
West Sulawesi	7.7	34.9	57.4
Maluku	7.1	19.5	73.4
North Maluku	12.9	21.8	65.3
West Papua	8.2	9.7	82.0
Papua	4.8	16.8	78.5
Indonesia	**13.0**	**24.3**	**62.6**

* Remarks: 1 = Owns Buku KIA (MCH Book) and can show it
2 = Owns Buku KIA, couldn't show it/kept by other
3 = Doesn't own Buku KIA

The ownership of MCH handbook varie among provinces with the lowest coverage in North Sumatera (2.4%) and the highest is Yogyakarta (42.7%). In table 3.38 the MCH handbook ownership is broken down by characteristic of children, families, and regions.

Table 3.38
Leaflet of Under Fives According to Buku KIA Ownership and Respondent's Characteristic, Riskesdas 2007

Respondent's characteristic	Buku KIA* Ownership		
	1	2	3
Age (months)			
0 – 5	23.9	14.9	61.2
6 – 11	23.4	18.8	57.8
12 – 23	17.2	23.1	59.7
24 – 35	11.4	26.6	62.0
36 – 47	8.1	27.5	64.4
48 – 59	5.7	26.5	67.8
Gender			
Male	12.9	23.9	63.2
Female	13.2	24.8	62.1
Type of Residence			
Urban	13.4	22.9	63.7
Rural	12.8	25.1	62.0
Education of Head of household			
No schooling	12.5	20.8	66.7
Unfinished Primary school	13.3	22.1	64.6
Finished Primary School	13.4	23.6	62.9
Finished Junior High school	12.7	25.1	62.2
Finished Senior High school	12.8	26.0	61.2
Finished university	13.3	29.4	57.3
Job of Head of household			
Jobless	14.1	24.2	61.7
House wife	16.3	22.9	60.7
Civil service/Police/Army	12.9	26.8	60.3
Entrepreneur	13.1	24.8	62.1
Farmer/Fisherman/Labor	12.9	23.7	63.4
Others	14.1	24.3	61.6
Level of expenditure per capita			
Quintile 1	11.5	23.2	65.3
Quintile 2	13.2	23.2	63.6
Quintile 3	13.5	24.5	62.0
Quintile 4	13.8	25.1	61.1
Quintile 5	14.3	26.9	58.8

* Remarks: 1 = Owns Buku KIA and can show it
2 = Owns Buku KIA, couldn't show it/kept by other
3 = Doesn't own Buku KIA

The highest MCH handbook coverage is found among children less than 2 months of age group (23.4 – 23.9%) but there is no difference by gender. Also, there is no difference in MCH handbook ownership by region characteristics, education level as well as occupation of head of household including expenditure level per capita of the household..

3.2.3 Distribution of Vitamin A Capsule

Vitamin A capsule is given twice each year, once in February and again in August for children over 6 months of age. The red capsule (100.000 IU dose) is given for 6 - 11 months babies while the blue capsule (200.000 IU dose) is given to children 12 - 59 months.

Table 3.39
Percentage of Child aged 6-59 months receiving Vitamin A capsule according to Province, Riskesdas 2007

Province	Receive vitamin A
NAD	74.9
North Sumatera	51.0
West Sumatera	73.5
Riau	66.9
Jambi	73.1
South Sumatera	62.9
Bengkulu	62.4
Lampung	65.5
Bangka Belitung	69.7
Kepulauan Riau	67.6
DKI Jakarta	79.7
West Java	79.8
Central Java	82.3
DI Yogyakarta	84.7
East Java	73.8
Banten	72.3
Bali	81.2
West Nusa Tenggara	82.1
East Nusa Tenggara	74.2
West Kalimantan	73.0
Central Kalimantan	67.5
South Kalimantan	81.9
East Kalimantan	79.1
North Sulawesi	78.4
Central Sulawesi	69.2
South Sulawesi	74.2
Southeast Sulawesi	69.9
Gorontalo	77.3
West Sulawesi	65.6
Maluku	57.8
North Maluku	71.2
West Papua	61.6
Papua	59.9
Indonesia	**71.5**

The coverage of vitamin A capsule distribution for children 6 - 59 months is 71.5% The coverage varies among provinces with the lowest is in North Sumatera (51.0%) and the highest is in Yogyakarta (84.7%).

Table 3.40
Percentage of child aged 6-59 months receiving Vitamin A capsule according to respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Receive vitamin A capsule
Age (months)	
6 – 11	66.4
12 – 23	77.3
24 – 35	73.9
36 – 47	70.2
48 – 59	66.4
Gender	
Male	71.3
Female	71.7
Type of Residence	
Urban	74.4
Rural	69.7
Education of Head of household	
No schooling	64.2
Unfinished Primary school	67.5
Finished Primary School	70.8
Finished Junior High school	71.5
Finished Senior High school	74.4
Finished university	77.2
Job of Head of household	
Jobless	70.8
House wife	76.8
Civil service/Police/Army	76.6
Entrepreneur	72.5
Farmer/Fisherman/Labor	69.0
Others	75.4
Level of expenditure per capita	
Quintile 1	69.3
Quintile 2	70.5
Quintile 3	71.7
Quintile 4	73.5
Quintile 5	74.1

Table 3.40 shows the difference in coverage of vitamin A capsule by children, family, and regional characteristics. The coverage of vitamin A distribution by age group is varied enough that is reflected in the highest coverage at 12 – 23 months Age group (77.3%). In terms of gender, there is no difference found with vitamin A capsule distribution. Higher coverage is found in urban area (74.4%) compared with rural area (69.7%). By educational level of head of household and expenditure level per capita, there is a positive correlation found with vitamin A capsule coverage. The higher education level of head of household or the higher expenditure spent per capita, the higher vitamin A capsule coverage as well.

3.2.4 Coverage of Maternal and Child Health Care

In Riskesdas 2007, data related to delivery, number of prenatal and postnatal check ups, newborn babies body size, baby weighing, and neonatal check up was collected from mothers with babies.. That information was gathered by interviewing mothers who had babies aged 0 – 11 months and confirmed by the MCH handbook record/Child health Card record.

Table 3.41
Percentage of Mother according to the perception of Born Baby's size and Province, Riskesdas 2007

Province	Born baby's according the perception of mother		
	Small	Normal	Big
NAD	18.8	57.1	24.2
North Sumatera	15.5	61.2	23.3
West Sumatera	13.2	57.8	29.1
Riau	17.4	55.6	27.0
Jambi	12.3	68.5	19.2
South Sumatera	18.5	61.6	19.9
Bengkulu	6.7	72.0	21.3
Lampung	7.8	73.5	18.7
Bangka Belitung	16.6	47.3	36.1
Kepulauan Riau	12.5	52.4	35.1
DKI Jakarta	10.7	73.1	16.1
West Java	11.1	69.7	19.2
Central Java	10.5	70.8	18.7
DI Yogyakarta	14.0	75.0	11.0
East Java	13.2	71.5	15.3
Banten	13.3	76.9	9.8
Bali	7.1	78.8	14.1
West Nusa Tenggara	14.3	68.6	17.1
East Nusa Tenggara	21.0	59.4	19.6
West Kalimantan	10.1	75.2	14.7
Central Kalimantan	13.5	73.8	12.8
South Kalimantan	10.2	72.9	16.9
East Kalimantan	9.2	76.1	14.7
North Sulawesi	11.1	69.4	19.4
Central Sulawesi	14.4	65.4	20.2
South Sulawesi	20.3	62.6	17.1
Southeast Sulawesi	12.5	66.7	20.9
Gorontalo	14.8	57.0	28.2
West Sulawesi	16.4	71.7	11.8
Maluku	5.4	82.8	11.8
North Maluku	6.3	83.9	9.8
West Papua	10.7	71.1	18.2
Papua	20.2	64.0	15.9
Indonesia	**13.4**	**66.5**	**20.0**

The mother's perception concerning birth size of baby is shown in table 3.41, although baby birth weight is unknown. In general, it appears that 13.4% of mothers perceived that there newborn baby was small in size. As many as 66.5% of mothers perceived that the newborn born baby's size was normal and 20.0% perceived that the size was big. There is a variation in the percentage of small baby size among province in which the lowest percentage is found in Maluku (5.4%) while the highest was found in East Nusa Tenggara (21.0%).

The baby size by mother's perception can be seen in table 3.42 where mothers with baby girl perceived that the baby size is small (14.5%) compared to mothers with boy babies (12.4%). In connection with location, small size perception is higher in rural area (14.5%) than urban areas (11.8%).

Table 3.42
Percentage of Mother according to the perception of Born Baby and characteristic, Riskesdas 2007

Characteristic	Baby's size according to mother perception		
	Small	Normal	Big
Gender			
Male	12.4	66.1	21.5
Female	14.5	67.0	18.5
Type of Residence			
Urban	11.8	68.0	20.2
Rural	14.5	65.6	19.9
Education of Head of household			
No schooling	17.9	67.0	15.1
Unfinished Primary school	15.1	65.7	19.2
Finished Primary School	14.5	66.6	18.9
Finished Junior High school	13.2	65.5	21.3
Finished Senior High school	11.7	67.4	20.9
Finished university	7.9	67.4	24.7
Job of Head of household			
Jobless	13.6	69.4	17.0
House wife	12.3	64.7	23.0
Civil service/Police/Army	10.2	67.4	22.4
Entrepreneur	13.1	66.6	20.3
Farmer/Fisherman/Labor	14.6	66.5	19.0
Others	13.6	61.3	25.1
Level of expenditure per capita			
Quintile 1	14.9	65.5	19.5
Quintile 2	12.9	67.0	20.2
Quintile 3	13.0	67.5	19.6
Quintile 4	14.1	64.9	21.0
Quintile 5	11.7	68.2	20.2

This perception is not related to the occupation of head of household and household expenditure. However, a mother's perception on baby size is linked to educational level of head of household. Tthere is a tendency for a negative association which means higher education level of head of household, the lower the percentage of mothers with perception of that the newborn baby is small.

Birth weight is presented in table 3.43 shows that only half of babies have a birth weight record.

Table 3.43
Percentage of weight of New born Baby for the last 12 months by Province, Riskesdas 2007

Province	Weight of born baby (gram)		
	< 2500	2500-3999	>= 4000
NAD	11.5	82.7	5.8
North Sumatera	8.5	83.8	7.7
West Sumatera	8.3	82.3	9.4
Riau	7.6	84.9	7.6
Jambi	7.5	84.1	8.4
South Sumatera	19.5	77.3	3.2
Bengkulu	8.9	83.6	7.5
Lampung	10.3	83.4	6.3
Bangka Belitung	13.5	80.7	5.8
Kepulauan Riau	8.0	88.9	3.0
DKI Jakarta	10.6	86.4	3.0
West Java	11.8	80.9	7.3
Central Java	9.8	84.5	5.7
DI Yogyakarta	14.9	85.1	0.0
East Java	10.2	85.6	4.2
Banten	17.5	78.8	3.7
Bali	5.8	88.1	6.2
West Nusa Tenggara	12.8	75.5	11.7
East Nusa Tenggara	20.3	74.0	5.7
West Kalimantan	16.6	80.6	2.8
Central Kalimantan	16.2	80.8	2.9
South Kalimantan	12.4	82.0	5.5
East Kalimantan	11.5	84.0	4.5
North Sulawesi	7.9	83.5	8.7
Central Sulawesi	15.7	75.3	9.1
South Sulawesi	14.5	77.1	8.4
Southeast Sulawesi	11.1	78.7	10.2
Gorontalo	8.6	69.9	21.5
West Sulawesi	7.2	83.1	9.6
Maluku	15.7	74.5	9.8
North Maluku	10.3	87.2	2.6
West Papua	23.8	71.4	4.8
Papua	27.0	67.8	5.2
Indonesia	**11.5**	**82.2**	**6.3**

As for general, the proportion of Low Birth Weight is 11.5%. This proportion is equivalent to the percentage of mothers who perceived that birth size is small which is 13.4% (table 3.41).

The five provinces with highest Low Birth Weight; Papua (27.0%), West Papua (23.8%), East Nusa Tenggara (20.3%), South Sumatera (19.5%), and West Kalimantan (16.6%).

The five provinces with the lowest Low Birth Weight are Bali (5.8%), West Sulawesi (7.2%), Jambi (7.5%), Riau (7.6%), and North Sulawesi (7.9%).

In table 3.44 it can be see that Low Birth Weight is higher for female babies (13.0%) than male (10.0%), and a little bit higher in rural area (12.2%) than urban area (10.8%). According to household characteristic, the highest proportion of Low Birth Weight is at working family group (17.1%) and the lowest is in a group of family where head of household works as civil servant/military army/police force (8.7%). In addition, there is no tendency pattern to associate Low Birth Weight percentage with head of household's education level and expenditure level per capita.

Table 3.44

Percentage of weight of New Born Baby for the last 12 months According to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Weight of Born baby (gram)		
	< 2500	2500-3999	>= 4000
Gender			
Male	10.0	82.7	7.2
Female	13.0	81.5	5.4
Type of Residence			
Urban	10.8	84.1	5.2
Rural	12.2	80.5	7.3
Education of Head of household			
No schooling	13.6	80.2	6.2
Unfinished Primary school	14.0	80.2	5.8
Finished Primary School	11.8	80.7	7.5
Finished Junior High school	12.1	81.6	6.3
Finished Senior High school	9.4	85.1	5.5
Finished university	8.8	85.3	5.9
Job of Head of household			
Jobless	17.6	75.9	6.4
House wife	13.1	78.8	8.1
Civil service/Police/Army	8.7	86.0	5.3
Entrepreneur	11.0	83.4	5.6
Farmer/Fisherman/Labor	12.0	81.2	6.8
Others	11.7	80.3	8.0
Level of expenditure per capita			
Quintile 1	13.1	79.7	7.2
Quintile 2	10.7	83.0	6.3
Quintile 3	11.9	81.5	6.6
Quintile 4	11.3	83.1	5.6
Quintile 5	10.5	83.6	5.9

To gather some information related to pregnancy check up history for mothers having delivered in the last 12 months, questions on types of pregnancy check up were mentioned the mothers. Eight types of pregnancy check up were mentioned: a. Body height measurement; b. Blood pressure measurement; c. Fundal height examination; d. Iron tablet distribution; e. TT immunization distribution; f. Body weight measurement; g. Hemoglobin check; h. Urine check.

Pregnancy check up history for mothers is presented in table 3.45 which shows that generally 84.5% of mothers had routine check ups during their pregnancy. The lowest coverage of pregnancy check up occurred in Papua Province (67.0%) whereas the highest was in Jakarta and Yogyakarta (97.1%).

Table 3.45
Coverage of Pregnancy check up of mothers who have babies according to Province, Riskesdas 2007

Province	Pregnancy Check up
NAD	72.1
North Sumatera	74.7
West Sumatera	75.3
Riau	71.9
Jambi	71.4
South Sumatera	69.6
Bengkulu	90.9
Lampung	95.9
Bangka Belitung	85.2
Kepulauan Riau	91.2
DKI Jakarta	97.1
West Java	94.1
Central Java	95.6
DI Yogyakarta	97.1
East Java	90.3
Banten	87.1
Bali	95.8
West Nusa Tenggara	92.4
East Nusa Tenggara	87.5
West Kalimantan	80.2
Central Kalimantan	81.8
South Kalimantan	92.4
East Kalimantan	93.3
North Sulawesi	90.5
Central Sulawesi	84.9
South Sulawesi	90.2
Southeast Sulawesi	83.8
Gorontalo	89.4
West Sulawesi	79.6
Maluku	84.9
North Maluku	95.5
West Papua	77.0
Papua	67.0
Indonesia	**84.5**

Based on household characteristic and location (table 3.46), it appears that the coverage of pregnancy checkup is higher in urban area (94.1%) than in rural area (78.1%). The

highest pregnancy check-up coverage was found in families whose head of household's job was a civil servant (92.9%) and the lowest among families whose head of household worked as a farmer/fisherman/labor (78.2%).

Table 3.46
Coverage of Pregnancy check up of mothers who have babies according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Pregnancy examination
Type of Residence	
Urban	94.1
Rural	78.1
Education of Head of household	
No schooling	75.6
Unfinished Primary school	79.2
Finished Primary School	82.7
Finished Junior High school	83.3
Finished Senior High school	89.2
Finished university	94.4
Job of Head of household	
Jobless	86.4
House wife	86.9
Civil service/Police/Army	92.9
Entrepreneur	90.1
Farmer/Fisherman/Labor	78.2
Others	89.4
Level of expenditure per capita	
Quintile 1	79.5
Quintile 2	81.5
Quintile 3	85.9
Quintile 4	87.6
Quintile 5	90.3

There is a positive association between pregnancy check-up and the head of household's education level and household expenditure level per capita. The higher the education level of the head of household or the higher the household expenditure level per capita the higher the coverage of pregnancy check-up.

Table 3.47 shows that there are 8 variants of check up (as mentioned before) which were done by pregnant mother. Totally, the most frequent check up taken by pregnant mothers was blood pressure check (97.1%) and body weighing (94.8%). In contrast, the rarest pregnancy check up was hemoglobin check (33.8%) and urine check (36.4%). Every kind of check up by province can be seen in table 3.47.

Table 3.47
Percentage of Mothers who have babies according to kind of pregnancy check up and Province, Riskesdas 2007

Province	Kind of service*							
	a	b	c	d	e	F	g	h
NAD	55.6	97.3	92.5	89.5	86.5	92.5	38.4	40.1
North Sumatera	45.3	96.3	84.7	90.5	79.1	87.3	25.0	27.0
West Sumatera	64.5	97.3	87.2	89.7	81.4	95.2	38.6	35.7
Riau	56.2	98.5	88.1	89.8	81.9	95.1	34.7	38.6
Jambi	63.1	96.8	90.3	95.2	91.8	96.0	38.6	24.8
South Sumatera	65.9	97.8	87.6	90.2	83.2	96.3	34.4	38.7
Bengkulu	62.8	99.1	93.0	93.9	91.3	94.4	22.5	28.2
Lampung	52.3	98.6	91.1	93.2	91.9	97.9	15.7	22.9
Bangka Belitung	59.0	98.7	85.5	91.9	87.1	97.9	47.4	44.4
Kepulauan Riau	61.9	98.1	95.5	95.5	89.2	98.1	48.7	56.1
DKI Jakarta	65.1	95.7	86.3	85.3	77.7	97.9	57.3	48.5
West Java	51.8	97.6	82.5	91.5	86.5	96.5	35.2	42.6
Central Java	52.7	98.0	85.3	93.9	86.7	97.3	27.4	41.7
DI Yogyakarta	75.4	97.8	92.5	96.3	95.5	97.0	76.5	66.2
East Java	73.5	97.8	92.2	94.5	83.3	96.7	30.7	42.5
Banten	43.2	98.7	91.7	94.2	84.4	94.3	17.0	24.6
Bali	66.2	98.9	86.9	95.8	95.4	97.8	36.3	56.2
West Nusa Tenggara	71.3	97.9	90.2	95.4	91.8	94.5	42.7	45.7
East Nusa Tenggara	67.2	89.9	80.4	94.0	78.3	94.1	37.1	25.1
West Kalimantan	57.8	98.1	95.8	85.5	88.7	95.2	19.2	30.5
Central Kalimantan	57.8	96.6	89.7	94.4	86.5	94.5	34.5	32.0
South Kalimantan	52.3	95.5	83.2	93.4	89.2	95.5	32.0	26.9
East Kalimantan	62.1	97.9	94.9	95.1	90.3	95.7	41.9	47.0
North Sulawesi	79.5	100.0	98.4	96.1	95.3	99.2	41.3	38.6
Central Sulawesi	45.8	96.3	79.1	85.8	91.7	88.3	29.0	25.2
South Sulawesi	75.5	95.5	92.8	98.1	97.2	95.5	46.7	39.3
Southeast Sulawesi	42.8	96.7	87.6	91.1	84.2	86.9	13.8	14.6
Gorontalo	66.4	88.8	83.9	91.3	88.7	98.4	26.9	23.1
West Sulawesi	69.3	95.6	82.3	88.2	91.9	95.6	39.8	33.0
Maluku	75.9	100.0	96.3	95.0	92.5	93.6	56.4	37.2
North Maluku	77.5	97.1	98.0	98.1	97.0	97.1	47.0	47.0
West Papua	42.9	96.4	96.4	85.5	85.7	100.0	54.8	26.2
Papua	68.7	92.8	95.2	94.5	95.2	97.6	49.1	19.9
Indonesia	**58.9**	**97.1**	**88.2**	**92.2**	**86.3**	**94.8**	**33.8**	**36.4**

Kind of health service:
a = height measurement
b = Blood pressure measurement
c = Fundal height examination
d = Iron tablet distribution
e = TT immunization distribution
f = Weighing measurement
g = Hemoglobin check
h = Urine check

The types of medical examination by types of region is provided in table 3.48 where generally the coverage of every type of pregnancy check up was higher in urban areas than in rural. There was a positive link between head of household's education level and

types of pregnancy check up particularly in hemoglobin check and urine check. There is also a positive correlation between household expenditure level and body height measurement, hemoglobin check and urine check. Otherwise, there is no relationship between types of pregnancy check up and family's head of household's job.

Table 3.48
Percentage of Mothers having babies according to kind of pregnancy check up and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Kind of service*							
	a	b	c	d	e	f	g	h
Type of Residence								
Urban	63.1	98.1	89.9	93.5	87.6	97.1	43.8	46.8
Rural	55.6	96.3	86.8	91.2	85.3	93.0	25.8	28.2
Education of Head of household								
No schooling	54.8	94.8	90.0	89.6	84.8	92.4	28.1	32.3
Unfinished Primary school	55.0	95.4	85.3	91.1	83.3	92.8	25.5	29.7
Finished Primary School	59.8	97.1	87.2	92.3	85.6	94.8	30.1	35.0
Finished Junior High school	56.5	97.2	88.1	91.7	87.0	94.9	32.1	32.7
Finished Senior High school	61.0	98.0	89.5	92.9	87.9	96.0	39.8	41.9
Finished university	68.8	98.6	92.7	95.7	89.5	96.9	49.4	48.7
Job of Head of household								
Jobless	62.4	97.4	88.8	91.9	89.1	94.1	37.4	48.1
House wife	58.5	99.0	91.0	92.0	87.1	98.0	38.2	38.2
Civil service/Police/Army	63.9	98.3	90.2	94.7	88.5	97.5	43.8	45.0
Entrepreneur	60.8	97.4	88.6	92.4	86.3	95.5	36.8	40.2
Farmer/Fisherman/Labor	56.4	96.4	87.2	91.4	85.7	93.2	27.6	30.1
Others	57.9	96.7	86.9	90.9	84.4	97.2	38.0	41.1
Level of expenditure per capita								
Quintile 1	56.7	97.2	87.4	91.4	85.6	94.5	29.8	31.5
Quintile 2	57.6	97.0	86.6	90.7	85.0	93.6	32.6	36.6
Quintile 3	58.3	97.0	87.9	93.0	85.4	95.0	33.0	37.1
Quintile 4	59.6	96.9	88.9	93.5	87.4	94.7	35.7	37.1
Quintile 5	63.1	97.6	90.6	92.8	88.3	96.6	39.2	40.9

Kind of health service:

a = Body height measurement
b = Blood pressure measurement
c = Fundal height (stomach) examination
d = Iron tablet distribution
e = TT immunization distribution
f = Body Weighing
g = Hemoglobin check
h = Urine check

The more types of pregnancy check up received by a pregnant mother means indicates a higher quality of prenatal care (table 3.49). 61.8% mothers received 6 – 8 kinds of pregnancy check ups, 35.3% of mothers receive 3 – 5 kinds of check up, and only 2.8% experienced 1 – 2 kinds of check up during pregnancy.

The lowest percentage of mothers with complete pregnancy check up in relative (6 – 8 types) was in Southeast Sulawesi (41.0%) while the highest was in Yogyakarta (83.1%).

Table 3.49
Percentage of Mothers having babies according to various kinds of check ups they received and Province, Riskesdas 2007

Province	Pregnancy Check Up		
	1-2 kinds	3-5 kinds	6-8 kinds
NAD	3.9	34.1	62.0
North Sumatera	5.2	48.9	45.9
West Sumatera	3.6	33.5	62.9
Riau	3.0	38.4	58.6
Jambi	2.8	31.2	66.0
South Sumatera	1.3	39.8	58.8
Bengkulu	0.5	38.2	61.3
Lampung	2.5	39.4	58.1
Bangka Belitung	4.0	28.2	67.8
Kepulauan Riau	2.3	28.1	69.6
DKI Jakarta	3.1	28.9	68.0
West Java	2.3	37.0	60.7
Central Java	1.8	37.7	60.5
DI Yogyakarta	0.0	16.9	83.1
East Java	1.8	26.8	71.4
Banten	2.0	50.0	48.0
Bali	1.6	21.6	76.8
West Nusa Tenggara	2.8	20.1	77.1
East Nusa Tenggara	4.2	39.6	56.3
West Kalimantan	2.3	35.9	61.7
Central Kalimantan	4.5	31.8	63.6
South Kalimantan	3.4	39.8	56.7
East Kalimantan	2.2	29.4	68.3
North Sulawesi	0.0	20.8	79.2
Central Sulawesi	5.2	46.3	48.5
South Sulawesi	1.0	21.0	78.1
Southeast Sulawesi	3.2	55.8	41.0
Gorontalo	7.7	33.3	59.0
West Sulawesi	2.9	28.6	68.6
Maluku	0.0	24.7	75.3
North Maluku	0.0	24.5	75.5
West Papua	2.4	37.3	60.2
Papua	2.6	20.5	76.8
Indonesia	**2.8**	**35.3**	**61.8**

Table 3.50 presents the completeness of pregnancy check up by characteristic of location and household. Urban areas showed more complete pregnancy check up received by the mothers (69.4%) compared to rural areas (55.7%).

There was a positive correlation between pregnancy check up comprehensiveness and household expenditure level per capita, that is the higher per capita household

expenditure, the greater the likelyhood of pregnant mother having a comprehensive pregnancy check up.

Table 3.50
Percentage of Mothers having babies who had a pregnancy check up according to the types of check up received and respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Score of kind of pregnancy check up		
	1-2 kinds	3-5 kinds	6-8 kinds
Type of Area			
Urban	1.7	28.8	69.4
Rural	3.8	40.6	55.7
Education of Head of household			
No schooling	2.2	43.5	54.4
Unfinished Primary school	4.3	40.1	55.5
Finished Primary School	3.1	35.7	61.2
Finished Junior High school	2.5	39.5	58.1
Finished Senior High school	2.6	30.0	67.4
Finished university	0.9	25.5	73.6
Job of Head of household			
Jobless	3.7	28.7	67.6
House wife	1.6	34.2	64.2
Civil service/Police/Army	1.4	29.1	69.5
Entrepreneur	2.6	33.8	63.6
Farmer/Fisherman/Labor	3.3	38.9	57.7
Others	4.0	31.8	64.2
Level of expenditure per capita			
Quintile 1	2.9	38.8	58.3
Quintile 2	3.8	35.8	60.3
Quintile 3	3.1	35.3	61.6
Quintile 4	2.4	34.7	62.9
Quintile 5	1.8	31.2	67.0

Information concerning neonatal examination in Riskesdas was asked to the mother. In table 3.51 it is seen that 57.6% of neonates aged 0 – 7 days and 33.5% aged 8 – 28 days received medical examination by health professionals.

The lowest percentage of neonates examination was found in Papua (27.2%) whereas the highest coverage was in Yogyakarta (81.8%). Particularly for neonates examination aged 8 – 28 days, lowest percentage of neonatal examination is in West Kalimantan (19.8%) while the Yogyakarta is the highest (66.9%).

Table 3.51
Coverage of Neonates examination by Province, Riskesdas 2007

Province	Neonates examination	
	Age 0-7 days	Age 8-28 days
NAD	56.5	36.1
North Sumatera	66.7	28.5
West Sumatera	49.7	35.0
Riau	50.0	32.6
Jambi	53.8	30.2
South Sumatera	42.9	27.4
Bengkulu	70.3	28.3
Lampung	64.4	29.2
Bangka Belitung	45.1	22.7
Kepulauan Riau	64.2	44.9
DKI Jakarta	66.5	54.9
West Java	58.7	39.8
Central Java	65.6	35.2
DI Yogyakarta	81.8	66.9
East Java	63.9	41.2
Banten	43.7	28.1
Bali	49.1	39.9
West Nusa Tenggara	58.0	33.9
East Nusa Tenggara	42.2	34.1
West Kalimantan	50.1	19.8
Central Kalimantan	58.4	21.7
South Kalimantan	69.0	26.6
East Kalimantan	62.9	37.0
North Sulawesi	55.2	41.1
Central Sulawesi	59.4	29.0
South Sulawesi	54.5	25.6
Southeast Sulawesi	63.3	31.1
Gorontalo	44.7	25.4
West Sulawesi	47.3	30.5
Maluku	45.6	35.2
North Maluku	68.8	62.0
West Papua	39.8	26.5
Papua	27.2	23.8
Indonesia	**57.6**	**33.5**

Table 3.52 presents the description of neonatal examination by baby's characteristic, Location, and household attributes. It shows that there is no differentiation between neonates examination aged 0 – 7 days and 8 – 28 days by gender.

In terms of location, urban areas have higher rates of examination than rural area. There was a positive association between neonatal examination and head of household's

education and household expenditure level as well. It means that the higher the educational attainment of the head of households, the higher the coverage of neonates examination.

Table 3.52
Coverage of Neonates examination according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Neonates examination	
	Age 0-7 days	Age 8-28 days
Type of Area		
Urban	65.7	41.2
Rural	52.3	28.6
Gender type		
Male	57.0	33.3
Female	58.2	33.8
Education of Head of household		
No schooling	46.5	24.7
Unfinished Primary school	52.3	29.0
Finished Primary School	54.0	31.2
Finished Junior High school	59.5	33.5
Finished Senior High school	63.0	37.3
Finished university	69.9	46.8
Job of Head of household		
Jobless	64.0	41.4
House wife	60.4	36.5
Civil service/Police/Army	65.8	42.0
Entrepreneur	63.7	37.9
Farmer/Fisherman/Labor	51.5	27.9
Others	62.4	37.2
Level of expenditure per capita		
Quintile 1	50.8	28.5
Quintile 2	55.2	30.7
Quintile 3	59.1	32.2
Quintile 4	60.8	37.7
Quintile 5	65.1	40.9

In addition to the above in 5 provinces which are East Nusa Tenggara, North Maluku, West Papua, and Papua, Riskesdas collected data concerning place of delivery, number of pregnancy check up and delivery assistant. That information is given in table 3.53 until table 3.58.

Place of delivery is categorized into 7 namely: Government Hospital, Private Hospital, Puskesmas/Pustu, Polindes/Poskesdes, RB/RBIA/Clinic, house and others. As shown in table 3.53, generally in 5 these provinces, most of mothers (above 60%) havd delivery at home. The larges percentage of delivery at home was in Maluku (85.1%) while the smallest was in Papua (65.4%).

Table 3.53
Percentage of Mothers having babies according to place of delivery and Province, Riskesdas 2007

Province	Place of delivery						
	a	b	c	d	e	f	g
East Nusa Tenggara	6.9	2.2	6.5	3.5	3.0	77.1	0.7
Maluku	7.0	3.9	1.8	1.2	0.9	85.1	0.1
North Maluku	7.7	4.2	1.6	0.5	2.9	82.5	0.6
West Papua	14.5	3.0	7.5	0.9	2.1	71.2	0.8
Papua	18.0	4.2	4.0	1.4	5.0	65.4	2.0

Remarks:
a: Government hospital
b. Private hospital
c. Puskesmas/Pustu
d, polindes/ Poskesdes
e: Delivery hospital(RB)/ RBIA/ Clinic
f: Home
g: Others

In table 3.54, there is a significant difference in place of delivery in five provinces by type of residence. In urban areas, mothers preferred to go to a Government Hospital, Private Hospital, Puskesmas/Pustu, Polindes/Poskesdes, RB/RBIA/Clinic while in rural areas, the mothers choose to have delivery at home or at the Polindes/Poskesdes. A positive correlation found between head of household's educationand household expenditure level per capita and using a Government Hospital as the place of delivery. There is a negative association between delivery at home and head of household's education or household expenditure level per capita. The largest of mothers who had delivery at a government hospital are in the group of families whose head of households work as civil servant/National Army/Police.

The number of pregnancy check up during trimester 1, trimester 2, trimester 3 and all trimester together is given in table 3.55 which indicates that there is a wide variation of pregnancy check up between provinces. During trimester 1, mothers never having any examination ranges between 25.5% - 34.8% while it is recommended that they should have at least one check up during trimester 1 and 2. In trimester 3, there were 24.4% - 37.5% of mothers who had been examined more than the 2 times recommended. Minimally, it is recommended that mothers should have 4 routine check up during gestation which should be 1 time in trimester 1, 1 time minimally in trimester 2 and 2 times in trimester 3. In fact, there were only 30.9% - 50.7% of mothers having pregnancy check up for four times or more.

According to region type, the coverage of sufficient number of examinations during pregnancy either for each trimester or all trimester shows that more mothers in urban areas tended to follow recommended visits during their pregnancy than mothers in rural areas.

A positive association was demonstrated between the numbers of pregnancy check up in each trimester and the head of household's education or household expenditure level per capita.

Table 3.56 shows the first birth attendant and the last as well mothers with children under fives. Birth attendants are classified into 6 (six) group which are doctors, midwives, another health professionals, traditional birth attendants, family, and others. As shown in the table, there is a wide variation among provinces for each type of birth attendant. However, if it is compared between the first and the last assistant in each type, there is no significant difference. This means that generally the first delivery attendant was same as the last attendant. In terms of dominant delivery assistant, East Nusa Tenggara,

Maluku, and North Maluku having a majority traditional birth attendants while in Papua it was midwives and West Papua it was midwives and family.

As presented in table 3.57, midwives are the major source of assistants to delivery in urban areas cities both at the first stage of delivery (60.3%) and the final (61.7%) which were found in 5 provinces. On the other hand, traditional birth attendants were dominant in villages in the first stage delivery (43.7%) and the last stage of delivery (45.9%). The percentage of delivery by midwives and traditional birth attendants either as first or last assistant were larger than other types of delivery assistance but there was less variation by head of household's education level. Attendance by family was less if the breadwinder had a higher education level. If birth attendance is linked to expenditure level per capita, there is a clear pattern in which high household expenditure level leads to more delivery done by doctors or midwives. The lower the household expenditure level, the more likely the delivery is to be assisted by traditional birth attendants and family.

Table 3.54
Percentage of mothers having babies according to place of delivery and respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Place of delivery						
	a	b	c	d	e	f	g
Type of Residence							
Urban	29.7	8.1	6.9	2.0	8.4	43.9	1.0
Rural	4.2	1.6	4.6	2.3	1.5	84.9	0.8
Education of Head of							
No schooling	2.0	2.0	2.3	.5	1.0	91.8	0.3
Unfinished Primary school	3.7	1.2	4.5	4.4	1.4	84.2	0.7
Finished Primary School	4.3	1.6	4.0	2.4	1.4	85.3	1.0
Finished Junior High school	9.2	2.1	7.2	2.4	2.6	76.1	0.4
Finished Senior High	19.2	6.7	6.3	1.2	5.8	59.6	1.2
Finished university	35.1	7.7	7.9	1.3	11.5	35.1	1.3
Job of Head of household							
Jobless	12.3	3.4	6.4	1.5	0.5	71.9	3.9
House wife	18.3	4.3	6.1	-	2.6	68.7	-
Civil service/Police/Army	30.6	9.3	8.0	1.4	7.6	42.3	0.8
Entrepreneur	21.9	4.0	8.2	2.7	7.2	55.2	0.8
Farmer/Fisherman/Labor	3.0	1.5	4.1	2.5	1.4	86.8	0.7
Others	16.9	5.1	5.5	2.1	6.8	60.2	3.4
Level of expenditure per							
Quintile 1	5.3	1.2	4.0	2.2	1.2	85.5	0.6
Quintile 2	5.1	2.6	4.0	2.1	2.5	83.1	0.6
Quintile 3	8.7	3.0	5.6	2.2	2.5	77.2	0.8
Quintile 4	12.3	4.5	6.6	2.1	3.1	70.4	0.9
Quintile 5	20.7	4.8	6.7	2.7	6.7	56.6	1.7

Remarks: a: Government hospital
b. Private hospital
c. Puskesmas/Pustu
d, polindes/ Poskesdes
e: Delivery hospital(RB)/ RBIA/ Clinic
f: Home
g: Others

Table 3.55
Percentage of mothers having babies according to frequent of pregnancy check up and respondent's characteristic in five Provinces, Riskesdas 2007

Province/Respondent's characteristic	Three semesters-1			Three semesters -2			Three semesters -3				Three semesters 123		
	None	1 time	> 1 time	None	1 time	> 1 time	None	1 time	2 times	> 2 times	None	1-3 times	≥ 4 times
Province													
East Nusa Tenggara	25.5	33.3	41.2	15.2	21.6	63.2	16.5	21.3	24.7	37.5	11.0	38.3	50.7
Maluku	38.4	36.2	25.4	32.6	26.3	41.1	32.1	17.1	20.8	30.0	21.9	40.8	37.3
North Maluku	34.2	36.8	28.9	24.8	36.7	38.5	26.0	28.2	21.3	24.4	16.5	48.7	34.8
West Papua	50.7	19.6	29.7	34.8	21.2	44.1	35.6	15.0	23.6	25.8	21.4	47.6	30.9
Papua	41.4	29.5	29.2	30.5	20.2	49.3	26.8	16.9	21.1	35.2	20.4	39.1	40.5
Type of Residence													
Urban	18.8	27.3	53.9	11.2	17.3	71.4	9.6	15.1	23.9	51.5	5.9	32.3	61.7
Rural	36.7	33.2	30.1	25.5	25.0	49.5	26.3	21.5	23.1	29.0	17.8	43.0	39.2
Education of Head of													
No schooling	47.1	29.2	23.8	38.3	22.2	39.6	42.8	21.2	13.8	22.3	32.4	38.3	29.3
Unfinished Primary	38.3	32.8	28.9	26.6	23.0	50.5	28.5	21.2	20.9	29.3	19.0	43.2	37.8
Finished Primary School	36.3	32.7	31.0	24.3	26.3	49.4	23.9	22.2	25.5	28.4	16.9	43.6	39.6
Finished Junior High	29.8	35.0	35.1	18.7	23.2	58.1	20.3	19.2	23.7	36.8	10.5	42.7	46.8
Finished Senior High	23.2	31.5	45.3	13.4	21.2	65.4	12.9	17.9	26.6	42.6	8.1	36.0	55.9
Finished university	11.8	34.6	53.6	7.3	19.0	73.7	6.9	16.0	18.1	59.0	3.7	31.8	64.5
Job of Head of househousehold													
Jobless	31.4	28.8	39.7	23.6	15.3	61.1	25.7	18.9	20.9	34.5	14.1	44.8	41.1
House wife	28.1	30.2	41.7	20.4	29.6	50.0	15.5	15.5	26.8	42.3	15.0	29.0	56.0
Civil service/Police/Army	15.7	32.6	51.8	8.2	19.6	72.1	9.5	15.4	24.9	50.1	4.5	33.1	62.5
Entrepreneur	24.1	26.9	49.0	13.1	20.3	66.6	13.4	16.7	23.5	46.3	6.7	37.6	55.7
Farmer/Fisherman/Labor	37.1	33.8	29.1	25.7	25.0	49.3	26.3	22.2	22.6	28.8	18.3	43.1	38.6
Others	29.8	33.2	37.1	20.9	18.0	61.2	20.8	12.7	30.5	36.0	12.4	34.8	52.9
Level of expenditure per													
Quintile 1	38.9	28.4	32.7	28.6	22.6	48.8	28.9	19.9	21.3	29.9	21.2	39.5	39.3
Quintile 2	34.3	32.0	33.7	25.1	23.9	51.0	26.4	20.6	22.1	30.9	18.7	40.6	40.7
Quintile 3	33.2	33.0	33.9	22.8	22.9	54.2	22.4	20.6	23.6	33.4	14.5	43.1	42.5
Quintile 4	30.9	34.4	34.7	17.5	25.8	56.7	17.9	20.3	24.7	37.1	10.7	42.5	46.7
Quintile 5	22.0	32.9	45.0	15.2	21.2	63.6	15.3	17.8	26.3	40.6	8.8	36.0	55.1

Table 3.56
Percentage of Mother Having Babies according to the Delivery Assistant and Province, Riskesdas 2007

Province	First delivery assistant						Last delivery assistant					
	a	b	c	d	e	f	a	b	c	d	e	f
East Nusa Tenggara	4.1	36.5	1.2	46.2	11.5	0.5	3.7	38.2	1.3	43.4	12.4	0.9
Maluku	2.6	39.9	0.7	56.0	0.6	0.2	2.8	40.0	0.9	51.9	3.7	0.6
North Maluku	6.7	32.7	1.7	56.7	1.6	0.6	7.4	34.3	1.5	55.1	1.1	0.6
West Papua	3.6	47.1	1.6	21.4	22.3	3.9	4.2	50.2	1.4	20.4	19.8	3.9
Papua	10.3	35.3	2.0	12.7	35.2	4.5	9.2	36.8	3.8	14.1	31.0	5.1

Remarks:
a: Doctor
b: Nurse
c: Other health personnel
d: Traditional birth attendance
e: Family
f: Others

Table 3.57
Percentage of Mothers Having Babies according to the Delivery Assistant and Respondent's characteristic in five Provinces, Riskesdas 2007

Respondent's characteristic	First delivery assistant						Last delivery assistant					
	a	b	c	d	e	f	a	b	c	d	e	f
Type of Residence												
Urban	14.3	60.3	0.7	19.8	4.3	0.6	13.6	61.7	1.4	18.7	4.0	0.7
Rural	2.7	31.1	1.6	45.9	17.0	1.8	2.6	32.9	1.8	43.7	16.9	2.2
Education of Head of household												
No schooling	1.8	20.9	1.0	35.3	37.4	3.6	1.7	21.1	1.2	37.8	32.9	5.4
Unfinished Primary school	2.0	30.2	1.2	48.7	16.6	1.2	2.6	31.0	1.7	46.1	16.7	1.9
Finished Primary School	2.4	28.1	1.6	50.9	15.4	1.5	2.0	30.8	1.6	48.2	15.6	1.8
Finished Junior High school	4.5	41.0	1.7	40.1	11.1	1.7	4.8	43.3	1.4	37.9	10.6	2.1
Finished Senior High school	10.2	55.6	1.2	23.2	8.5	1.3	9.2	57.5	2.4	21.5	8.1	1.2
Finished university	20.0	62.1	0.9	13.2	3.7	0.2	18.9	63.5	2.0	12.8	2.5	0.2
Job of Head of household												
Jobless	4.3	34.8	1.0	39.6	18.8	1.4	5.1	38.9	1.0	37.4	15.2	2.5
House wife	5.2	53.9	2.6	22.6	13.9	1.7	7.0	43.0	6.1	19.3	24.6	0.0
Civil service/Police/Army	16.9	60.3	1.3	13.6	7.2	0.7	15.2	63.2	2.5	12.9	5.6	0.5
Entrepreneur	9.5	65.3	1.9	18.8	4.3	0.1	10.3	65.9	1.6	17.1	4.8	0.4
Farmer/Fisherman/Labor	2.1	27.9	1.3	49.1	17.7	1.9	1.9	29.9	1.6	47.0	17.1	2.5
Others	6.8	51.9	0.4	25.5	12.8	2.6	8.3	51.8	1.8	23.7	11.4	3.1
Level of expenditure per capita												
Quintile 1	2.9	29.3	1.3	46.7	18.0	1.8	2.9	30.4	1.9	44.5	18.0	2.3
Quintile 2	2.9	34.1	1.0	45.2	15.2	1.6	3.1	35.9	1.0	42.2	16.2	1.6
Quintile 3	4.9	35.9	1.6	41.6	14.3	1.7	4.9	38.4	1.7	38.9	13.9	2.2
Quintile 4	6.4	42.3	2.3	37.6	10.7	0.6	6.0	44.0	2.2	36.6	10.2	0.9
Quintile 5	10.7	51.5	0.6	28.4	7.6	1.2	9.9	52.5	1.5	27.7	6.9	1.4

Remarks: a: Doctor
b: Nurse
c: Other health personnel
d: Traditional birth attendance
e: Family
f: Others

3.3 Communicable Disease

Communicable disease reported in Riskesdas 2007 was restricted to some vector borne disease, air borne disease, and food or water borne disease. Filariasis, DHF, and malaria are included as vector borne disease while Acute Respiratory Infection Disease, Pneumonia, and measles are considered as air borne disease. Some examples of food and water borne disease are typhoid, hepatitis, and diarrhea.

The data provided is only prevalence of reported clinical disease collected by interview and official questionnaire (RKD07.IND) without laboratory confirmation. Respondents were given a question by health personnel whether they have ever been diagnosed to suffer from a certain disease (D: diagnosis). For those who said never, they were being asked again whether they have ever been suffered or still suffering from specific clinical symptom (G). In conclusion, disease prevalence is obtained from D or G (DG). The prevalence for acute disease and most frequent disease was questioned in range of the last one month whereas chronic disease prevalence was collected from the last 12 months (see questionnaire RKD07.IND: Block X no B01-22).

Specific for malaria, the proportion of malaria case which received medication by antimalaria drugs (O) was also calculated. Similar to malaria, those reporting diarrhea were also questions concerning the proportion of cases which received oralit medication (O).

3.3.1 Prevalence of Filariasis, Dengue High Fever and Malaria

Filariasis (elephantitus) is a chronic disease transmitted by mosquito to causes disablement and social stigma. Generally, this disease is identified after chronic clinical symptoms develop and disablement has occurred. For respondents who clearly stated "they had never been diagnosed to suffer from filariasis by health personnel" in the last 12 months, symptoms were mentioned: gland inflamed in gut, abscesses in the genital area, the breast and/or abscess in lower leg and upper leg.

Dengue High Fever is vector borne disease which frequently caused outbreaks and sometimes deaths. This disease is a seasonal disease which usually occurred in rainy season as the infecting agent vector (Aides aegypti and Aides albopictus) to live in puddles of clean water. To the respondent who stated "they have never been diagnosed to suffer from DHF" in the last 12 months, they were asked whether they have ever suffered from fever, headache with pain in upper stomach area, queasy with vomiting, periodic spiking temperatures, or red dots under skin and or nose bleeding, and feeling cold in the hand/leg.

Malaria is an infectious disease which attracts global attention. This disease is still a public health problem and frequently causes outbreak and has a major negative impact on the quality of life and local economy as well as causing death. It can be acute, latent or even chronic. As for respondents who stated that they "never been diagnosed to have malaria by health personnel" in the last 12 months they were asked whether they had been suffering from high fever with shivering (feeling cold), body temperature that go p and down periodically, sweating, headaches or without malaria symptoms but already taken antimalaria drug. For respondents who stated that they "have been diagnosed by health personnel", another question was proposed to them whether they received medication with drugs in the first 24 hours after suffering from high temperature.

Table 3.58 shows that in the last 12 months filariasis is seen all over Indonesia with clinical prevalence as high as 1.1% (range : 0.3% - 6.4%). There are 8 provinces with filariasis prevalence (DG) higher than the national average. They are Nanggroe Aceh

Darussalam (6.4%), West Papua (4.5%), Papua (2.9%), East Nusa Tenggara (2.6%), Riau Islands (1.5%), Jakarta and Central Sulawesi (1.4%), and Gorontalo (1.2%).

In the last 12 months, clinical DHF case was distributed all over Indonesia with a national prevalence (DG) of 0.6% (range : 0.3% - 2.5%). The prevalence of clinical DHF in 12 provinces was higher than the national prevalence. These provinces are are East Nusa Tenggara (2.5%), West Papua (2.0%), Bengkulu and Jakarta (1.2%), Central Sulawesi, West Sulawesi and NAD (1.1%), Southeast Sulawesi (1.0%), Papua (0.9%), Riau and North Maluku (0.8%), and West Sulawesi (0.7%).

In Jakarta, East Kalimantan, Banten, Central Java, Yogyakarta, South Kalimantan, East Java, the clinical DHF case was based more on health personnel's diagnosis while in some other provinces, it was only based on clinical symptoms in Bengkulu, Central Sulawesi, West Nusa Tenggara, Southeast Sulawesi, Papua, Riau and West Sulawesi. This is due to the fact that clinical DHF symptom are similar with symptoms of other infectious disease such as malaria and typhoid.

Malaria is spread all over Indonesia with diverse prevalence rate. In 11 provinces, malaria case is more likely to be detected based on health personnel's diagnosis (NAD, Jambi, South Sumatera, Bengkulu, Bangka Belitung, Riau Islands, West Nusa Tenggara, West Kalimantan, East Kalimantan, West Papua, and Papua). In the last 1 month, the national prevalence for clinical malaria case is 2,9% (range : 0,2% - 26,1%). Three provinces where the prevalence of clinical Malaria was the highest are West Papua (26,1%), Papua (18,4%), and NTT (12,0%).

As many as 15 provinces have clinical malaria prevalence above the national average and most of them were found in Eastern Indonesia. Provinces in Java and Bali have the lowest prevalence which was $\leq$ 0,5%. However, what should be noted that most of clinical malaria cases were not detected by health personnel's diagnosis. This data is beneficial in assessing the readiness of local people and to evaluate the implementation of malaria elimination in Java-Bali.

Respondents who were diagnosed as clinical malaria sufferers and received medication by malaria drug program in 24 hours after getting sick were only 47.7%. There were 8 provinces with medication proportion using the malaria drugs program which was quite high (> 50%). They are Papua, Riau Islands, Bengkulu, West Papua, Bangka Belitung, West Kalimantan, and East Kalimantan.

In NTT, although clinical malaria prevalence was high, less than 50% of the malaria case received medication from the malaria drugs program in 24 hours of getting sick. A very low medication proportion (< 35%) was found in Java which can hamper malaria elimination program. Contrarily, some provinces with low prevalence of clinical malaria (< 10%) were showing a high level of those ill using drugs from the malaria drugs program (> 50%). They are East Kalimantan, West Kalimantan, Riau Islands, Bengka Belitung, and Bengkulu.

Table 3.59 is a description of Filariasis, DHF, and Malaria by characteristic of respondent.

Clinical filariasis was found in all age groups and there was no difference in prevalence between boys and girls aged $\leq$ 5 years. Also no prevalence differentiation found in terms of per capita household expenditure. Clinical filariasis was higher in rural area where respondents are uneducated and unemployed. They worked as farmer/fisherman/labor.

Table 3.58
Prevalence of Filariasis, Dengue Fever (DHF), Malaria and Medicine usage of Malaria Program by Province, Riskesdas 2007

Province	Filariasis		DHF		Malaria		
	D	DG	D	DG	D	DG	O
NAD	0.35	0.64	0.50	1.10	1.89	3.66	36.41
North Sumatera	0.03	0.08	0.10	0.29	1.32	2.86	42.57
West Sumatera	0.04	0.08	0.12	0.59	0.55	1.65	46.33
Riau	0.04	0.07	0.21	0.78	0.85	2.03	43.55
Jambi	0.03	0.07	0.19	0.45	1.73	3.23	42.34
South Sumatera	0.01	0.07	0.16	0.37	1.01	1.63	44.69
Bengkulu	0.03	0.09	0.07	1.24	4.81	7.14	60.99
Lampung	0.01	0.03	0.07	0.16	0.27	1.42	30.67
Bangka Belitung	0.02	0.10	0.04	0.43	5.07	7.09	58.32
Kepulauan Riau	0.06	0.15	0.21	0.42	0.79	1.41	64.77
DKI Jakarta	0.08	0.14	0.84	1.15	0.10	0.51	26.44
West Java	0.04	0.05	0.22	0.41	0.07	0.42	24.46
Central Java	0.03	0.06	0.30	0.46	0.08	0.41	23.03
DI Yogyakarta	0.00	0.03	0.25	0.43	0.07	0.30	20.00
East Java	0.01	0.04	0.16	0.25	0.05	0.18	34.83
Banten	0.02	0.06	0.27	0.52	0.09	0.32	28.57
Bali	0.05	0.10	0.13	0.29	0.10	0.31	43.08
West Nusa Tenggara	0.04	0.09	0.18	1.10	2.22	3.75	48.37
East Nusa Tenggara	0.12	0.26	0.26	2.45	5.73	12.04	47.78
West Kalimantan	0.04	0.06	0.16	0.43	1.82	3.26	53.66
Central Kalimantan	0.04	0.06	0.11	0.30	1.51	3.37	49.41
South Kalimantan	0.02	0.04	0.17	0.27	0.31	1.41	27.35
East Kalimantan	0.02	0.03	0.33	0.54	1.06	1.67	51.28
North Sulawesi	0.03	0.07	0.15	0.38	0.45	2.12	43.10
Central Sulawesi	0.04	0.14	0.21	1.09	2.58	7.36	41.78
South Sulawesi	0.03	0.08	0.09	0.60	0.32	1.37	23.62
Southeast Sulawesi	0.04	0.11	0.15	0.96	0.88	2.16	36.36
Gorontalo	0.05	0.12	0.12	0.58	0.88	2.87	39.53
West Sulawesi	0.01	0.03	0.10	0.70	0.86	2.02	36.10
Maluku	0.00	0.09	0.09	0.42	2.87	6.06	39.90
North Maluku	0.06	0.09	0.18	0.77	3.31	7.23	49.27
West Papua	0.23	0.45	0.33	2.02	15.65	26.14	59.33
Papua	0.14	0.29	0.05	0.93	12.09	18.41	65.52
Indonesia	**0.05**	**0.11**	**0.20**	**0.62**	**1.39**	**2.85**	**47.68**

Table 3.59
Prevalence of Filariasis, Dengue Fever, Malaria and Medicine Usage of Malaria Program according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Filariasis		DBD		Malaria		
	D	DG	D	DG	D	DG	O
Age group (year)							
<1	0.01	0.02	0.12	0.25	0.50	1.02	57.23
1-4	0.02	0.05	0.25	0.53	1.43	2.64	57.80
5-14	0.04	0.07	0.34	0.68	1.37	2.69	50.19
15-24	0.03	0.10	0.20	0.63	1.31	2.62	46.03
25-34	0.06	0.11	0.17	0.70	1.59	3.20	47.89
35-44	0.04	0.12	0.12	0.57	1.53	3.09	46.96
45-54	0.06	0.15	0.12	0.59	1.48	3.12	46.19
55-64	0.08	0.14	0.11	0.59	1.31	2.97	42.38
65-74	0.10	0.16	0.08	0.59	1.19	2.70	39.22
>75	0.08	0.20	0.08	0.56	1.08	2.83	35.78
Gender							
Male	0.05	0.11	0.21	0.61	1.55	3.05	48.85
Female	0.05	0.10	0.19	0.63	1.26	2.66	46.40
Type of Residence							
Urban	0.03	0.07	0.27	0.56	0.83	1.46	53.72
Rural	0.06	0.13	0.16	0.65	1.75	3.69	46.25
Education Level							
No schooling	0.10	0.20	0.14	0.74	1.57	3.75	41.87
Unfinished Primary	0.06	0.15	0.19	0.74	1.57	3.54	43.32
Finished Primary	0.05	0.12	0.14	0.62	1.41	3.04	45.25
Finished Junior High	0.04	0.10	0.18	0.57	1.36	2.66	47.63
Finished Senior High	0.05	0.09	0.19	0.51	1.19	2.08	51.13
Finished university	0.07	0.10	0.24	0.66	1.10	1.83	54.29
Employment							
Jobless	0.08	0.15	0.15	0.64	1.14	2.49	41.65
Student	0.05	0.08	0.30	0.67	1.22	2.42	48.83
House wife	0.03	0.09	0.12	0.61	1.28	2.75	46.08
Employee	0.05	0.09	0.23	0.56	1.14	1.85	53.92
Entrepreneur	0.07	0.12	0.17	0.51	1.05	1.95	51.08
Farmer/Fisherman/Lab	0.07	0.16	0.12	0.68	1.88	4.13	43.74
Others	0.06	0.14	0.16	0.52	1.37	2.74	49.39
Level of expenditure per capita							
Quintile 1	0.05	0.11	0.17	0.59	1.42	3.05	44.44
Quintile 2	0.05	0.11	0.18	0.61	1.38	2.90	48.47
Quintile 3	0.05	0.10	0.19	0.62	1.38	2.83	47.73
Quintile 4	0.06	0.12	0.21	0.61	1.35	2.72	47.84
Quintile 5	0.05	0.09	0.24	0.66	1.35	2.52	49.78

DHF was previously known as a child's disease but recently it is also been found in adults. The highest prevalence was found in the age cohort 25 – 34 years (0.7%) while the lowest was found in babies (0.2%). There is no any difference seen on DHF prevalence between male and female. Clinical DHF is relatively higher in rural area but the detected cases based on health personnel's diagnosis are higher in urban area.

Findings suggest that clinical DHF which is relatively higher among household whose head of household has low education (without school experience and without Elementary School accomplishment) than among household with a head of household who has educational background and is also higher farmers/fisherman/labor. Clinical DHF prevalence also tends to rise for those people with higher household expenditure level per capita. This might be associated with the awareness level of the sufferer in recognizing disease and seeking medication being higher in households with higher expenditure level.

Malaria is evenly spread among all age groups but the prevalence among babies is relatively low and it is higher among productive age groups (25 – 54 years). The prevalence of this disease is also relatively higher among men than women. This is because men are more exposed to malaria mosquitos so that their risk is relatively higher. The prevalence of clinical malaria in rural area is 2 times higher than in urban area and tend to be higher among respondents with low education level, farmer/fisherman/labor and among households with low household expenditure level per capita.

Although clinical malaria prevalence in children (< 15 years) was lower than among adults the proportion of children ill using drugs from the malaria program was higher. This is indicates that their is alertness and attention in handling childhood malaria disease so that > 50% of the childhood clinical malaria obtained durgs from the malaria program within 24 hours getting sick. Medication with malarial drugs was also relatively higher ($\underline{\geq}$ 50%) in cities, among familes where the head of household had high education level, employees and entrepreneur, and among families with higher household expenditure level per capita.

3.3.2 The Prevalence of Acute Respiratory Infection (ARI), TB, and Measles

Acute Respiratory Infection is a common disease with mild to severe symptoms. ARI attacks pulmonary tissue and often severe ARI leads to pneumonia. Pneumonia is an infectious disease which becomes major cause of death particularly in children under five years. In Riskesdas, data related to mild ARI and pneumonia was collected. Respondents were asked whether they have ever been diagnosed to have ARI/pneumonia in the last one month. As a result, for those who replied they never had been diagnosed for the mentioned disease, they were also questioned concerning the occurence of ARI/pneumonia symptoms.

Pulmonary TB is one of the chronic infectious disease which has global spread. Particularly in Indonesia, this disease is a national priority in the disease control program since it can cause severe impact on the quality of life and economy as well as frequently causing death. Although confirmed diagnosis TB requires investigating positive sputum. Respondents were asked whether they have ever been diagnosed with TB by health personnel, and if they said no, another question was asked whether they had a cough for more than 2 weeks or bleeding cough with sputum.

Measles is known as immunizable disease that can be prevented. In Indonesia, pockets of measles are still found so that outbreaks commonly occurrs. For respondents who said they never had been diagnosed were asked if they had every had a high fever with red and sensitive eyes, with skin eruption especially in neck and chest.

The prevalence of Acute Respiratory Infection disease in the last 1 month was 25.5% (range: 17.5% - 41.1%). There are 16 provinces with prevalence above national prevalence. ARI cases were commonly detected based on symptoms except for South Sumatera where it more often diagnosed by health personnel. Pneumonia prevalence in the last 1 month was 2.1% (range: 0.8% - 5.6%).

Table 3.60
Prevalence of Acute Respiratory Infection, Pneumonia, TB, and Measles according to Province, Riskesdas 2007

Province	ARI		Pneumonia		TB		Measles	
	D	DG	D	DG	D	DG	D	DG
NAD	11.98	36.64	1.44	3.87	0.73	1.45	1.06	1.78
North Sumatera	8.26	22.39	0.65	1.60	0.18	0.48	0.59	0.85
West Sumatera	8.98	26.38	0.80	2.49	0.37	1.03	1.90	2.53
Riau	6.28	22.87	0.42	1.61	0.42	1.00	0.72	1.28
Jambi	7.54	22.65	0.37	1.29	0.34	0.75	0.91	1.27
South Sumatera	10.08	17.54	0.75	1.24	0.25	0.40	0.36	0.54
Bengkulu	14.50	29.84	0.73	2.04	0.33	0.86	0.54	0.99
Lampung	4.10	18.80	0.22	0.77	0.11	0.31	0.24	0.37
Bangka Belitung	10.38	30.32	0.43	1.29	0.12	0.49	0.32	0.52
Kepulauan Riau	9.88	25.78	0.39	1.22	0.38	0.83	0.50	0.78
DKI Jakarta	9.78	22.60	0.68	1.67	0.71	1.26	1.29	1.59
West Java	6.95	24.73	0.72	2.43	0.56	0.98	0.92	1.27
Central Java	8.74	29.08	0.53	2.12	0.63	1.47	0.70	1.14
DI Yogyakarta	8.22	22.65	0.44	1.81	0.36	1.58	0.37	0.64
East Java	6.38	20.55	0.36	1.06	0.24	0.54	0.41	0.63
Banten	7.98	28.39	0.56	2.36	1.13	2.01	1.01	1.58
Bali	5.64	21.49	0.42	1.76	0.29	0.53	0.26	0.44
West Nusa Tenggara	5.40	26.52	0.63	2.53	0.43	1.07	0.60	1.78
East Nusa Tenggara	12.04	41.36	0.84	4.41	0.40	2.05	0.43	1.71
West Kalimantan	5.94	17.97	0.37	1.10	0.43	0.82	0.50	0.77
Central Kalimantan	7.05	24.03	0.35	1.17	0.38	0.69	0.56	0.88
South Kalimantan	5.06	27.06	0.47	2.28	0.47	1.36	0.61	1.16
East Kalimantan	12.19	27.52	0.66	1.42	0.34	1.02	0.56	0.76
North Sulawesi	2.59	20.52	0.10	0.95	0.21	0.62	0.39	0.65
Central Sulawesi	5.67	28.36	0.58	2.98	0.31	1.22	1.20	2.77
South Sulawesi	4.20	22.90	0.47	2.92	0.23	1.03	0.58	1.32
Southeast Sulawesi	6.73	22.75	0.78	2.45	0.31	1.00	0.33	0.79
Gorontalo	9.68	33.99	0.84	4.53	0.24	1.11	2.04	3.20
West Sulawesi	4.44	22.47	0.23	1.41	0.23	0.58	0.18	0.50
Maluku	9.80	30.40	0.31	2.07	0.15	0.47	0.37	0.77
North Maluku	6.90	25.20	0.50	2.40	0.19	0.47	0.27	0.97
West Papua	19.48	36.20	2.09	5.59	1.02	2.55	1.08	2.81
Papua	18.52	30.56	2.98	5.13	0.89	1.73	1.01	1.63
Indonesia	**8.10**	**25.50**	**0.63**	**2.13**	**0.40**	**0.99**	**0.69**	**1.18**

There are 14 of 33 provinces that have ARI prevalence above the national average. Pneumonia case are commonly detected based on symptoms diagnosis except in South Sumatera and Papua. Provinces with high ARI prevalence also show high pneumonia prevalence like East Nusa Tenggara, Nanggroe Aceh Darussalam, West Papua, Gorontalo, and Papua.

Clinical pulmonary TB has spreading across Indonesia with prevalence in the last 12 months of 1.0%. Twelve provinces have a prevalence above national average with the highest risk in West Papua (2.5%) and the lowest in Lampung (0.3%). Most of TB cases (in 26 provinces) were detected based on symptoms except in South Sumatera, Jakarta, West Java, Banten, Bali, Central Kalimantan, and Papua.

The clinical measles prevalence in the last 12 months is 1.2% and the highest is in Gorontalo (3.2%) while the lowest is in Lampung and Bali (0.4%). Fourteen provinces have a higher prevalence than national average. Generally, measles case are detected based on diagnosis by health personnel except in Bengkulu, Lampung, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sulawesi, Maluku, North Maluku, and West Papua.

Table 3.61 is a description of ARI, pneumonia, TB, and measles by characteristic of respondent.

The highest ARI prevalence is found among children under five (< 35%) while the lowest is in age 15 – 24 years. The prevalence tends to steadily increase with age after than cohort. Male prevalence and female prevalence are similar and a little higher in rural areas. ARI prevalence tends to higher in familes with low education attainment and higher in households with low expenditure level as well.

The characteristic of pneumonia cases is similar with ARI cases except for risk by age as the age group $\geq$ 55 years (> 3%) has the highest risk. Clinical pneumonia is more common among males and risk is higher in households where the head of household has low education as well as among households with low expenditure level per capita.

The prevalence of pulmonary TB tends to increased as age increases and highest among those more than 65 years. Its prevalence is 2% higher for man as compared to women and three times higher in rural area but four times higher among those with low education.

The prevalence of measles is higher in children under five (3.4%) and relatively high under 15 year. The prevalence is the same among both genders and is also similar in urban and rural locations. The highest prevalence is found in the low education group and the same by household expenditure level per capita quintile.

Table 3.61
Prevalence of Acute Respiratory Infection, Pneumonia, TB, and Measles according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	ARI		Pneumonia		TB		Measles	
	D	DG	D	DG	D	DG	D	DG
Age group (year)								
<1	14.9	35.92	0.76	2.20	0.17	0.47	1.81	2.44
1-4	16.1	42.53	1.00	3.02	0.38	0.76	2.36	3.41
5-14	9.2	28.89	0.56	1.81	0.23	0.53	1.27	1.94
15-24	5.6	19.91	0.37	1.33	0.21	0.60	0.42	0.79
25-34	6.1	20.71	0.47	1.59	0.32	0.83	0.29	0.60
35-44	6.6	21.51	0.56	1.84	0.44	1.10	0.26	0.60
45-54	7.0	23.26	0.69	2.42	0.59	1.45	0.21	0.58
55-64	7.7	25.77	0.94	3.38	0.70	1.91	0.21	0.61
65-74	8.4	28.30	1.27	4.69	1.08	2.62	0.15	0.60
>75	9.0	30.17	1.34	5.04	1.10	2.75	0.13	0.57
Gender								
Male	8.06	25.57	0.67	2.26	0.44	1.08	0.67	1.17
Female	8.04	25.49	0.66	2.00	0.35	0.90	0.70	1.18
Type of Residence								
Urban	8.13	23.30	0.56	1.63	0.36	0.77	0.62	0.92
Rural	8.00	26.87	0.67	2.43	0.42	1.12	0.73	1.33
Education Level								
No schooling	7.79	27.60	1.14	4.26	0.88	2.42	0.34	0.96
Unfinished Primary	7.40	26.07	0.69	2.70	0.53	1.46	0.51	1.04
Finished Primary	6.46	22.92	0.55	2.01	0.39	1.02	0.40	0.82
Finished Junior High	6.20	20.49	0.46	1.42	0.31	0.73	0.35	0.62
Finished Senior High	6.21	18.81	0.43	1.22	0.29	0.62	0.24	0.48
Finished university	6.67	17.73	0.47	1.21	0.27	0.60	0.21	0.39
Employment								
Jobless	6.99	23.17	0.84	2.83	0.62	1.40	0.40	0.84
Student	6.77	22.96	0.40	1.34	0.18	0.49	0.80	1.26
House wife	6.42	21.75	0.50	1.80	0.39	0.98	0.27	0.61
Employee	6.58	18.07	0.42	1.17	0.27	0.56	0.18	0.37
Entrepreneur	6.37	20.47	0.56	1.69	0.42	0.89	0.26	0.53
Farmer/Fisherman/	6.85	24.57	0.72	2.73	0.55	1.60	0.27	0.73
Others	6.33	22.20	0.61	2.08	0.49	1.17	0.30	0.59
Level of expenditure per capita								
Quintile 1	8.09	27.01	0.66	2.40	0.40	1.07	0.86	1.45
Quintile 2	8.00	26.48	0.68	2.33	0.43	1.07	0.74	1.32
Quintile 3	8.11	25.68	0.64	2.13	0.42	1.01	0.70	1.17
Quintile 4	7.98	24.82	0.61	2.04	0.38	0.94	0.65	1.09
Quintile 5	7.99	23.43	0.55	1.69	0.34	0.82	0.50	0.84

3.3.3 The Prevalence of Typhoid, Hepatitis, and Diarrhea

Typhoid fever prevalence was determined by asking the respondents whether they have been diagnosed with typhoid by health personnel in the last 1 month. Those who said no were asked again about typhoid symptoms they have suffered.

Hepatitis prevalence was determined by asking respondents whether they had been diagnosed with hepatitis by any health personnel within the last 12 months. If the answer was no, another question was asked to determine whether they have suffered symptoms such as loss of appetite, vomiting, uneasy feeling in the gut, pain in the upper right stomach, light brown urine color, yellow skin and eyes.

Diarrhea prevalence was determined by asking whether respondents have ever been diagnosed to have diarrhea by health personnel in the last 1 month. Those who said never, were asked whether in that period of 1 month they have ever had more than 3 defecations in a day with liquid/mushy feces. Respondents who suffered from diarrhea were asked whether they have drunk oralit or sugar salt liquid.

Table 3.62a shows that clinical typhoid prevalence at the national level is 1.6% (range: 0.3% - 3%). Twelve provinces have a prevalence above the national rate. They are NAD, Bengkulu, West Java, Banten, West Nusa Tenggara, East Nusa Tenggara, South Kalimatan, East Kalimantan, South Sulawesi, Gorontalo, West Papua, and Papua. In 18 provinces, most of the typhoid case was detected based on health personnel's diagnosis while in other provinces it was mainly based on clinical symptoms.

Clinical hepatitis was detected all over Indonesia with a prevalence as much as 0.6% (range: 0.2% - 1.9%). 13 provinces have prevalence above national average and the highest prevalence is in Central Sulawesi and East Nusa Tenggara. Hepatitis case is commonly detected based on clinical symptoms unless in East Java, South Sumatera, Central Kalimantan and North Sulawesi where mostly detected based on health personnel's diagnosis.

The prevalence of clinical diarrhea was 9.0% (range: 4.2% - 18.9%). NAD had the highest diarrhea prevalence, and Yogyakarta had the lowest diarrhea prevalence. Diarrhea cases in most provinces (75%) was detected based on diagnosis by health personnel. There are only 7 provinces (Banten, South Kalimantan, Central Kalimantan, North Sulawesi, Central Sulawesi, West Sulawesi, and South Sulawesi) where diarrhea cases are more often detected based on reported clinical symptoms. In addition, some provinces have clinical diarrhea prevalence > 9% (NAD, West Sumatera, Riau, West Java, Central Java, Benten, West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Papua, and Papua).

Dehydration is one of the complications of diarrhea that can lead to death. Nationally, the proportion of clinical diarrhea respondent who took oralit is 42.2%. 12 provinces have proportion of oralit use lower than the national average and the lowest rate of usage was found in Banten (29.4%).

Table 3.62a
Prevalence Typhoid, Hepatitis, Diarrhea according to Province, Riskesdas 2007

Province	Typhoid		Hepatitis		Diarrhea		
	D	DG	D	DG	D	DG	O
NAD	1.88	2.96	0.7	1.4	11.3	18.9	42.0
North Sumatera	0.44	0.87	0.1	0.3	5.2	8.8	43.4
West Sumatera	0.56	1.46	0.3	0.8	6.0	9.2	41.7
Riau	0.44	1.03	0.2	0.8	5.7	10.3	44.6
Jambi	0.43	1.16	0.2	0.6	4.9	8.5	50.7
South Sumatera	0.99	1.27	0.2	0.3	5.6	7.0	56.1
Bengkulu	1.60	2.58	0.1	0.4	5.5	8.3	49.1
Lampung	0.40	0.67	0.1	0.2	3.1	4.9	43.5
Bangka Belitung	0.60	1.06	0.2	0.5	2.9	5.1	43.1
Kepulauan Riau	0.35	0.77	0.1	0.3	3.5	6.0	48.3
DKI Jakarta	0.90	1.44	0.3	0.6	5.8	8.0	36.4
West Java	1.28	2.14	0.3	0.6	5.8	10.2	35.7
Central Java	1.01	1.61	0.1	0.5	4.8	9.2	29.2
DI Yogyakarta	0.54	0.75	0.1	0.2	2.6	4.2	40.0
East Java	0.86	1.13	0.2	0.3	4.9	7.8	37.0
Banten	1.16	2.24	0.2	0.5	5.0	10.6	29.4
Bali	0.53	0.90	0.1	0.3	5.2	7.3	54.7
West Nusa Tenggara	0.87	1.93	0.2	0.8	8.1	13.2	51.0
East Nusa Tenggara	0.66	2.33	0.3	1.9	5.8	11.4	53.9
West Kalimantan	0.96	1.48	0.2	0.4	2.8	5.4	47.7
Central Kalimantan	0.98	1.51	0.2	0.3	3.2	7.5	30.8
South Kalimantan	0.91	1.95	0.2	0.5	3.8	9.5	30.0
East Kalimantan	1.31	1.80	0.1	0.2	4.5	7.1	49.6
North Sulawesi	0.12	0.35	0.4	0.7	2.7	5.4	39.2
Central Sulawesi	0.36	1.65	0.3	1.9	4.2	9.9	47.1
South Sulawesi	0.70	1.80	0.1	0.7	3.7	7.9	44.9
Southeast Sulawesi	0.68	1.32	0.1	0.7	5.1	9.4	52.2
Gorontalo	0.69	2.25	0.3	1.1	8.4	16.5	47.7
West Sulawesi	0.53	1.03	0.1	0.4	3.2	7.7	41.4
Maluku	0.42	1.19	0.1	0.4	2.6	4.5	47.4
North Maluku	0.30	1.20	0.2	0.7	2.6	4.4	43.8
West Papua	0.94	2.39	0.3	1.1	6.9	12.3	45.4
Papua	0.85	2.11	0.3	0.8	7.8	10.9	53.5
Indonesia	**0.79**	**1.60**	**0.2**	**0.6**	**5.1**	**9.0**	**42.2**

Table 3.62b shows typhoid, hepatitis, and diarrhea case by respondent characteristic. Clinical typhoid was distributed in all age groups and evenly spread in adult ages. The clinical typhoid prevalence peaked among school aged children (5 – 14 years old) that is 1.9%, the lowest among babies (0.8%) and was relatively higher in rural areas as compared to urban areas. Among those with low education and in lower household expenditure quintiles the prevalence tended to be higher.

Table 3.62b

Prevalence Typhoid, Hepatitis, Diarrhea according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Typhoid		Hepatitis		Diarrhea		
	D	DG	D	DG	D	DG	O
Age group (year)							
<1	0.3	0.8	0.0	0.2	11.7	16.5	52.8
1-4	0.8	1.6	0.1	0.3	11.3	16.7	55.5
5-14	1.1	1.9	0.1	0.4	5.1	9.0	43.4
15-24	0.9	1.5	0.2	0.6	3.8	7.2	36.0
25-34	0.7	1.4	0.2	0.7	3.9	7.3	40.0
35-44	0.7	1.4	0.2	0.7	4.2	7.8	38.1
45-54	0.7	1.4	0.3	0.8	4.6	8.4	37.0
55-64	0.7	1.5	0.3	0.9	4.9	8.9	37.4
65-74	0.6	1.5	0.3	0.9	5.3	9.5	39.0
>75	0.7	1.6	0.2	0.9	5.9	10.4	36.8
Gender							
Male	0.9	1.6	0.2	0.7	5.0	8.9	41.7
Female	0.8	1.5	0.2	0.6	5.2	9.1	42.6
Type of Residence							
Urban	0.7	1.2	0.2	0.4	4.4	7.4	41.8
Rural	0.9	1.8	0.2	0.7	5.6	10.0	42.3
Education Level							
No schooling	0.7	1.8	0.3	1.0	5.8	10.4	37.5
Unfinished Primary	0.9	1.8	0.2	0.8	4.9	9.3	38.5
Finished Primary	0.9	1.6	0.2	0.7	4.3	8.2	37.3
Finished Junior High	0.8	1.4	0.2	0.6	3.9	7.4	37.5
Finished Senior High	0.7	1.1	0.2	0.5	3.4	6.2	39.5
Finished university	0.7	1.0	0.3	0.6	3.4	5.7	41.7
Employment							
Jobless	0.9	1.6	0.3	0.7	4.8	8.7	36.1
Student	1.0	1.8	0.2	0.5	4.0	7.6	39.1
House wife	0.6	1.3	0.2	0.7	4.5	8.1	40.8
Employee	0.7	1.1	0.2	0.5	3.2	5.6	38.3
Entrepreneur	0.7	1.2	0.2	0.6	4.1	7.4	36.1
Farmer/Fisherman/Labor	0.8	1.7	0.3	0.9	4.5	8.7	37.6
Others	0.5	1.2	0.3	0.8	4.2	7.9	37.8
Level of expenditure per capita							
Quintile 1	0.8	1.7	0.2	0.6	5.7	10.0	41.8
Quintile 2	0.9	1.7	0.2	0.7	5.3	9.5	43.0
Quintile 3	0.8	1.5	0.2	0.6	5.1	9.0	41.5
Quintile 4	0.8	1.5	0.2	0.6	4.9	8.6	42.2
Quintile 5	0.8	1.4	0.2	0.6	4.6	7.9	41.9

The highest hepatitis prevalence was among those aged $\geq$ 55 years, and it was almost 2 times higher in rural areas as opposed to urban areas and risk tended to be higher in low

education groups. Clinical hepatitis prevalence is evenly distributed across all level of per capita household expenditure quintiles.

Diarrhea occurred in all age groups with the highest prevalence detected in children under five (16.7%). Diarrhea prevalence is 13% higher in rural areas as compared to urban areas. It also tends to be higher in those with low education attainment and in the lower household expenditure quintiles as well. Infant and under fives are not always given oralite have a higher prevalence while the proportion of oralite distribution in both groups is 52.8% and 55.5%.

3.4 Non-communicable Disease

3.4.1 The Prominent Non-communicable Disease, Joint illness, and Genetic Disease

The data concerning non-communicable disease which is presented covers joint pain, asthma, stroke, cardiac disease, diabetes, hypertension, tumor/cancer, severe mental disorder, color blindness, glaucoma, harelip, arthritis, rhinitis, thalassemia, and hemophilia that have been analyzed based on respondents' answer in which they mentioned that they have "never been diagnosed by health personnel" (D notation in the table) or "having clinical symptom related to non-communicable disease". The prevalence of non-communicable disease is a mixture of non-communicable disease case which was diagnosed by health personnel and cases histories of non-communicable disease symptoms (notated by DG on table). The service coverage for health professionals on non-communicable disease case management in the community was counted by the percentage of non-communicable disease diagnosed by health professionals and divided with percentage of each case either based on diagnosis or symptoms (D divided by DG).

Questions related to joint illness, cardiac disease, and stroke was addressed to respondents aged more than 15 years while for another non-communicable disease all ages were respondents. Medical history of joint illness, hypertension, stroke, and asthma were asked for the last 12 months but other non-communicable disease was asked if it occurred during the whole life time.

In the case of cardiac disease, the history was assessed from 5 questions and concluded into 4 symptoms which indicate to cardiac disease. Respondents were confirmed to have cardiac disease if they have suffered from one of those symptoms.

The data related to hypertension was obtained using measurement and interview. Hypertension based on blood pressure was determined using digital blood pressure device. Digital blood pressure device was validated using blood pressure standard of measurement (manual mercury sphygmomanometer). Blood pressure measurement was applied to respondents above 15 years of age. Every respondent was measured 2 times minimally. A third measurement was taken if the second result was more than 10 mmHg compared the first result. Two data resulted from measurement with smallest difference being use as the blood pressuret. Hypertension criteria that used to confirm a case refer to diagnosis criteria JNC VII 2003 which is the result of systolic blood pressure measurement in which ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg.

JNC VII 2003 criteria is only valid for people older than 18 years, so that hypertension prevalence based on blood pressure measurement is only used for a population older than 18 years. Considering blood pressure implemented to population more than 15 years old, then hypertension case finding to 15-17 years old is appropriate with JNC VII 2003 criteria will reported generally as additional information.

Table 3.63
Prevalence of Joint illness, Hypertension, and Stroke by Province, Riskesdas 2007

Province	Joint illness (%)		Hypertension (%)			Stroke (‰)	
	D	D/G	D	D/O	U	D	D/G
NAD	23.1	34.2	9.2	10.0	30.2	10.4	16.6
North Sumatera	11.9	20.2	5.2	5.4	26.3	5.0	6.8
West Sumatera	19.0	33.0	7.6	8.4	31.2	6.9	10.6
Riau	12.6	26.8	7.8	8.2	34.0	3.8	5.0
Jambi	15.6	27.6	5.1	5.5	29.9	4.5	6.1
South Sumatera	19.3	23.9	6.0	6.3	31.5	6.3	7.3
Bengkulu	19.2	30.9	8.1	8.3	25.1	5.5	6.5
Lampung	12.1	26.0	6.6	6.8	24.1	5.4	6.4
Bangka Belitung	13.6	27.4	8.4	8.9	37.2	6.4	8.1
Kepulauan Riau	9.5	17.6	7.3	7.7	30.3	10.1	14.9
DKI Jakarta	15.3	29.3	9.5	9.8	28.8	9.4	12.5
West Java	17.7	41.7	8.8	9.1	29.4	7.5	9.3
Central Java	12.0	36.8	7.6	7.9	37.0	5.7	7.6
DI Yogyakarta	9.3	27.1	8.3	8.6	35.8	7.1	8.4
East Java	13.2	30.9	7.3	7.5	37.4	5.9	7.7
Banten	11.7	28.9	8.0	8.6	27.6	5.9	7.2
Bali	20.4	32.6	5.5	5.7	29.1	4.4	6.8
West Nusa Tenggara	15.1	33.6	6.4	6.7	32.4	7.2	12.5
East Nusa Tenggara	14.0	38.0	5.0	5.1	28.1	4.5	7.1
West Kalimantan	14.2	30.0	8.1	8.4	29.8	4.6	5.5
Central Kalimantan	10.3	28.1	9.2	9.7	33.6	5.3	6.8
South Kalimantan	9.0	35.8	9.0	9.4	39.6	7.9	9.8
East Kalimantan	12.6	23.7	9.0	9.3	31.3	5.0	7.0
North Sulawesi	11.4	25.5	11.2	11.4	31.2	8.5	10.4
Central Sulawesi	8.3	29.7	7.7	8.2	36.6	4.8	10.0
South Sulawesi	8.8	26.6	5.7	5.9	29.0	5.0	7.4
Southeast Sulawesi	11.7	26.8	6.6	7.3	31.6	3.9	7.6
Gorontalo	11.6	29.1	9.1	10.0	31.5	8.2	14.9
West Sulawesi	7.5	24.8	4.1	4.7	33.9	2.9	5.3
Maluku	12.0	23.4	4.1	4.4	29.3	3.8	4.6
North Maluku	10.7	22.9	5.0	5.2	28.4	5.6	6.7
West Papua	28.8	38.2	6.9	7.1	20.1	5.7	9.5
Papua	19.7	29.1	4.3	4.4	22.0	2.4	3.8
Indonesia	**14.0**	**30.3**	**7.2**	**7.6**	**31.7**	**6.0**	**8.3**

Notes :
D = Diagnose by health personnel
D/G = Diagnosed by health personnel or by symptom
D/O = Medicine taking case or diagnosed by health personnel
U = Based on the result of blood pressure measurement
*) Hypertension is measured on people aged >=18 years

Besides measurement of blood pressure measurement, respondents were also interviewed about diagnosis history by health personnel or history in taking anti hypertension drugs. Hypertension case based on measurement result is initialed by U, hypertension case based on diagnosed by health staff labeled with initial D, and based on both of them labeled with initial DO.

National joint pain prevalence (Table 3.63) is 30.3% and the prevalence based on health personnel's diagnosis is 14%. The highest prevalence is in West Papua (28.8%) and the lowest is in West Sulawesi (7.5%). The coverage of diagnosis by health staff in every province is about 50% of all case. There are 11 Province with a prevalence higher than the national rate.

Referring to the result of blood pressure measurement, hypertension prevalence in the population above 18 years old is 31.7%. The highest hypertension prevalence is in South Kalimantan (39.6%) and the lowest is in West Papua (2.1%). East Java, Bangka Belitung, Center Java, Center Sulawesi, DI Yogyakarta, Riau, West Sulawesi, Center Kalimantan and West Nusa Tenggara are Provinces which have hypertension prevalence greater than the national average. Hypertension prevalence based on health staff's diagnosis is 7.2%, added by cases with hypertension drugs intake, the prevalence on this interview becomes 7.6% (case with hypertension drugs intake only 0.4%). Thus, the coverage of hypertension diagnosis by health staff is only 24.0%, or in another word as much as 76.0% hypertension case in the community is not dealt with by the health system.

If hypertension criteria according to JNC VII 2003 is implemented for population aged 15-17 years old, there are 4050 (8.4%) respondent aged 15-17 years suffering from hypertension.

Stroke prevalence in Indonesia is 8.3 per 1000 population, and the diagnosed case is 6 per 1000 population. This indicates that about 72.3% of the stroke cases in the community have been diagnosed by health staff. The prevalence is highest in NAD (16.6%) and the lowest is in Papua (3.8%). 13 provinces have stroke prevalence above the national prevalence.

According to respondent characteristics, the prevalence of joint illness, hypertension, and stroke increase along with the increase of the respondent's age. By gender, joint pain is higher in woman, as well as hypertension prevalence. There is no significant difference in stroke prevalence by gender.

As presented in table 3.64, the prevalence of joint pain, hypertension, and stroke are higher among those with low education attainment and lower among those with more advanced education, but rise again among those at the university graduate level. Based on occupation, the prevalence in farmer/labor/fishermen is higher than other employment groups. On the other hand, the prevalence of hypertension and stroke are higher among the jobless. Referring to the household expenditure quintile, there is no significant difference in prevalence of joint illness, hypertension and stroke, however there is a tendency of prevalence increase in accordance with the increase of household expenditure level.

Table 3.64
Prevalence of Joint illness, Hypertension, and Stroke according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Joint pain (%)		Hypertension (%)			Stroke (‰)	
	D	D/G	D	D/0	U	D	D/G
Age							
18-24 Years	2.3	6.9	0.9	0.9	12.2	1.1	1.7
25-34 Years	7.4	19.0	2.5	2.6	19.0	1.6	2.5
35-44 Years	14.1	32.8	6.3	6.7	29.9	2.9	4.7
45-54 Years	22.2	46.3	11.9	12.5	42.4	8.1	11.3
55-64 Years	28.8	56.4	17.2	17.9	53.7	15.5	20.2
65-74 Years	33.5	62.9	22.3	23.1	63.5	25.0	31.9
75+ Years	35.1	65.4	23.3	24.2	67.3	29.7	41.7
Gender							
Male	12.7	28.2	5.8	6.1	31.3	6.1	8.3
Female	15.1	32.2	8.6	9.0	31.9	5.8	8.3
Education Level							
No schooling	25.7	53.7	13.9	14.7	14.5	11.9	18.0
Unfinished Primary school	20.5	44.9	10.6	11.5	11.1	8.2	12.0
Finished Primary School	15.3	33.7	7.5	8.5	7.8	5.9	8.2
Finished Junior High school	8.9	19.6	4.4	5.8	4.6	3.7	4.9
Finished Senior High	8.2	18.0	4.5	4.8	4.7	3.9	4.9
Finished university	9.6	18.8	6.7	7.1	7.1	6.2	7.8
Employment							
Jobless	16.0	31.3	11.1	11.5	39.1	17.1	22.6
Student	2.0	4.8	0.7	0.8	13.4	1.3	1.7
House wife	15.6	33.4	9.1	9.4	30.9	5.2	7.3
Employee	9.7	20.1	6.3	6.6	27.8	5.1	6.6
Entrepreneur	13.4	29.1	7.2	7.6	31.2	5.1	7.0
Farmer/Fisherman/Labor	16.6	37.6	6.6	6.9	32.6	4.2	6.5
Others	13.4	28.4	8.5	8.9	32.8	7.5	9.8
Type of Residence							
Urban	11.9	25.8	7.6	0.3	30.8	6.9	9.1
Rural	15.2	33.2	7.0	0.4	32.2	5.4	7.8
Level of expenditure per capita							
Quintile 1	13.7	31.5	6.3	6.7	30.5	5.1	7.7
Quintile 2	13.7	31.3	6.7	7.0	30.9	5.5	8.0
Quintile 3	14.1	30.8	7.0	7.4	31.6	5.7	7.9
Quintile 4	14.0	29.9	7.6	8.0	31.9	6.3	8.7
Quintile 5	14.1	28.4	8.3	8.7	33.0	7.0	9.3

Analysis by district level is done for non-communicable disease by ranking them from the best until the worst. Using this approach, health indicators with the highest prevalence should be selected as a health priority in those district. For example, hypertension can be targets based on blood pressure measurement The best and the worst districts for individuals 18 years and above are below:

	The Best			**The Worst**	
1	Jayawijaya	6.76	1	Natuna	53.29
2	Teluk Wondama	9.38	2	Mamasa	50.56
3	Bengkulu Selatan	11.00	3	Katingan	49.55
4	Kepulauan Mentawai	11.11	4	Wonogiri	49.48
5	Tolikara	12.45	5	Hulu Sungai Selatan	48.23
6	Yahukimo	13.64	6	Rokan Hilir	47.74
7	Pegunungan Bintang	13.94	7	Kuantan Singingi	46.29
8	Seluma	14.56	8	Bener Meriah	46.09
9	Sarmi	14.58	9	Tapin	45.96
10	Tulang Bawang	15.86	10	Salatiga city	45.19

Table 3.65 shows asthma prevalence, cardiovascular disease, diabetes, and tumor by province. Asthma affects 3.5% of Indonesia and its prevalence based on health staff's diagnosis is 1.9%. This data suggest that 54.3% of all asthma cases are diagnosed by health personne(D divided by DG). Asthma prevalence varies by province, from 1.5% in Lampung to 7.2% in Gorontalo. There are 17 Provinces with asthma prevalence higher than the national average.

In Indonesia, the prevalence of cardiac disease based on interview is 7.2% and only 0.9% based on diagnosis history done by health professional. The case coverage which has been diagnosed by health professional is 12.5% of all respondents who have subjective indication similar with heart disease. According to the province heart disease prevalence ranges from 2.6% in Lampung to 12.6% in NAD. There are 16 provinces where heart disease prevalence is higher than national rate.

Diabetes prevalence in Indonesia based on diagnosed by health staff is 0.7% while Diabetes prevalence (D/G) is 1.1%. This data shows the coverage of Diabetes diagnosed by health staff which is 63.6% higher than the coverage of asthma and cardiac disease. Diabetes prevalence by province ranges around 0.4% in Lampung to 2.6% in DKI Jakarta. There are 17 Provinces which have Diabetes prevalence above the national rate.

Tumor disease prevalence based on health professional's diagnosis is 4.3%. The prevalence by province ranges around 1.5% in Maluku up to 9.6% in DI Yogyakarta. There are 11 Provinces which have tumor prevalence above national average.

Table 3.66 presents asthma, cardiac disease, DM and tumor prevalence based by the respondent's characteristic.

Table 3.65
Prevalence of Asthma *, Cardiac disease *, Diabetes* and Tumor** by Province, Riskesdas 2007

Province	Asthma (%)		Cardiac Disease (%)		DM (%)		Tumor (‰)
	D	D/G	D	D/G	D	D/G	D
NAD	3.1	4.9	2.0	12.6	1.0	1.7	2.7
North Sumatera	1.1	1.8	0.8	3.0	0.6	0.8	2.9
West Sumatera	2.0	3.6	1.3	11.3	0.7	1.2	5.6
Riau	1.6	3.3	0.8	7.7	0.8	1.2	3.3
Jambi	1.8	3.1	0.7	5.1	0.5	0.7	3.3
South Sumatera	1.5	2.0	0.7	4.9	0.4	0.5	1.9
Bengkulu	1.7	2.8	0.5	5.3	0.4	0.5	3.7
Lampung	0.8	1.5	0.5	2.6	0.3	0.4	3.6
Bangka Belitung	2.5	4.0	0.9	7.2	0.7	1.2	2.0
Kepulauan Riau	1.8	2.7	1.2	7.7	0.8	1.4	3.8
DKI Jakarta	2.2	2.9	1.3	8.1	1.8	2.6	7.4
West Java	2.5	4.1	1.0	8.2	0.8	1.3	5.5
Central Java	1.3	3.0	0.8	8.4	0.8	1.3	8.1
DI Yogyakarta	1.8	3.5	1.1	7.3	1.1	1.6	9.6
East Java	1.7	2.6	0.8	5.6	1.0	1.3	4.4
Banten	1.9	3.4	0.6	5.8	0.5	0.8	6.4
Bali	2.3	3.7	0.8	5.4	0.8	1.0	4.9
West Nusa Tenggara	2.4	4.4	0.6	6.8	0.6	1.4	2.8
East Nusa Tenggara	1.5	4.7	0.7	8.8	0.7	1.2	3.3
West Kalimantan	2.1	3.7	0.6	4.4	0.6	0.8	2.4
Central Kalimantan	2.3	4.0	0.5	6.4	0.6	0.9	3.8
South Kalimantan	2.3	5.4	0.8	8.1	0.6	1.0	3.9
East Kalimantan	2.1	3.1	0.8	4.4	1.0	1.3	3.6
North Sulawesi	1.2	2.7	1.3	8.2	1.0	1.6	5.8
Central Sulawesi	2.4	6.5	1.3	11.8	0.7	1.6	4.5
South Sulawesi	1.6	4.0	0.8	9.4	0.5	0.8	4.8
Southeast Sulawesi	2.3	4.3	0.7	8.6	0.4	1.0	2.6
Gorontalo	2.5	7.2	0.9	11.0	0.5	1.3	3.2
West Sulawesi	1.3	4.0	0.4	7.8	0.3	0.8	2.4
Maluku	1.6	3.1	0.6	5.7	0.3	0.5	1.5
North Maluku	1.5	2.7	0.8	5.9	0.6	0.9	1.9
West Papua	3.6	5.5	0.9	6.7	0.6	1.4	2.8
Papua	2.4	3.6	0.7	4.3	0.5	0.8	3.4
Indonesia	1.9	3.5	0.9	7.2	0.7	1.1	4.3

Notes:
D=Diagnose by health personnel; D/G = Diagnose by health personnel or by symptom
*) Asthma, Cardiac disease, Diabetes and Tumor is decided referring to the answer that the respondent has been diagnosed or got symptom.
**) Tumor is decided referring to the answer that the respondent has been diagnosed to suffer from tumor/cancer

Table 3.66
Prevalence of Asthma, Cardiac disease, Diabetes and Tumor According to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Asthma (%)		Cardiac disease (%)		Diabetes (%)		Tumor (‰)
	D	D/G	D	D/G	D	D/G	D
Age group (years)							
<1	0.6	1.1	0.3	1.4			0.3
1-4	1.4	2.4	0.2	1.6			0.6
5-14	1.2	2.0	0.2	2.1			1.0
15-24	1.2	2.2	0.3	4.8	0.1	0.4	2.4
25-34	1.4	2.7	0.5	6.8	0.2	0.7	4.2
35-44	1.8	3.5	1.0	9.3	0.7	1.3	7.1
45-54	2.6	4.8	1.9	12.5	2.0	2.7	8.7
55-64	3.8	7.3	2.5	16.1	2.8	3.7	8.8
65-74	5.4	10.4	3.1	19.2	2.4	3.4	8.9
75+	6.3	12.4	3.0	20.4	2.2	3.2	9.4
Gender							
Male	1.9	3.5	0.8	6.2	0.7	1.1	2.9
Female	1.9	3.5	1.0	8.1	0.7	1.1	5.7
Education Level							
No schooling	4.0	8.3	1.5	14.9	1.0	1.7	6.6
Unfinished Primary school	2.5	5.0	1.1	10.0	0.7	1.3	5.1
Finished Primary School	2.0	3.8	1.0	8.9	0.8	1.3	4.7
Finished Junior High	1.5	2.7	0.8	6.8	0.7	1.2	4.7
Finished Senior High	1.3	2.2	1.0	6.2	1.0	1.4	5.4
Finished University	1.5	2.3	1.5	7.1	2.0	2.5	8.4
Employment							
Jobless	2.9	5.4	1.5	10.5	1.2	1.7	5.8
Student	1.2	2.0	0.3	3.1	0.1	0.3	1.5
House wife	2.2	4.0	1.4	11.1	1.2	1.8	8.2
Employee	1.4	2.3	1.2	6.2	1.6	2.1	6.6
Entrepreneur	1.8	3.2	1.2	8.4	1.3	1.9	6.1
Farmer/Fisherman/Labor	2.4	5.1	1	10.5	0.6	1.2	4.7
Others	2.2	4.1	1.6	10.3	1.8	2.5	6.8
Type of Residence							
Urban	1.7	2.8	1.0	6.1	1.1	1.5	5.3
Rural	2.0	3.9	0.8	7.8	0.5	0.9	3.7
Level of expenditure per capita							
Quintile 1	2.0	3.9	0.6	6.8	0.4	0.8	3.2
Quintile 2	1.9	3.7	0.7	7.2	0.4	0.9	3.8
Quintile 3	1.9	3.5	0.8	7.2	0.6	1.1	4.0
Quintile 4	1.8	3.4	0.9	7.3	0.8	1.2	4.7
Quintile 5	1.8	3.1	1.2	7.3	1.2	1.7	5.9

There is a tendency for asthma, cardiac disease, diabetes, and tumor prevalence to increase with age but for diabetes, the prevalence declines after 64 years old. There is no difference of prevalence of asthma and diabetes by sex while the prevalence of cardiac disease and tumor is higher among women.

By level of education, those without school attendance have the highest risk of asthma and cardiac disease prevalence whereas university graduates have the highest prevalence of diabetes and tumor.

In terms of employement, asthma prevalence was highest among the unemployed group followed by farmer/fisherman/labor. The prevalence of cardiac disease was highest in housewives followed by farmer/fisherman/labor and the unemployed. Employees have the highest diabetes prevalence while housewives also had the highest tumor prevalence. Respondents who were still going to school had the lowest risk of asthma, cardiac disease, diabetes, and tumor.

The prevalence of asthma and cardiac disease was higher in rural areas while diabetes and tumor was highest in the cities. Asthma prevalence is increases as household expenditure level decreases. The was an increasing risk seen in cardiac disease, diabetes, and tumor prevalence as the household expenditure level increased.

Table 3.67 shows that severe mental disorder prevalence in Indonesia is 4,6‰ and the highest prevalence was found in DKI Jakarta (20.3‰) followed by Nanggroe Aceh Darussalam (18.5‰), West Sumatera (16.7‰), West Nusa Tenggara (9.9‰), South Sumatera (9.2‰). The lowest prevalence was found in Maluku (0.9‰).

Color blindness prevalence in Indonesia is 7.4‰, the highest risk was found in DKI Jakarta (24.3‰), followed by Riau (21.5‰), West Sumatera (19,0‰), Gorontalo (15.9‰), Nanggroe Aceh Darussalam (15.2‰). The lowest prevalence was found in North Sumatera (1.5‰).

Glaucoma prevalence in Indonesia is 4.6‰ and the highest risk was found in DKI Jakarta (18.5‰), followed by Nanggroe Aceh Darussalam (12.8‰), Kep. Riau (12.6‰), Central Sulawesi (12.1‰), West Sumatera (11.4‰). The lowest prevalence was found in Riau (0.4‰).

The highest harelip prevalence was found in DKI Jakarta, that was 13.9‰ far above the national rate. Other provinces like South Sumatera (1.6‰), Kep. Riau (9.9‰), West Nusa Tenggara (8.6‰), Nanggroe Aceh Darussalam (7.8‰) are lower. The lowest prevalence was found in Jambi, West Kalimantan, and West Sulawesi, each of them was 0.4‰.

Dermatitis prevalence in Indonesia was high (67.8‰), the highest risk was found in South Kalimantan (113.0‰), followed by Center Sulawesi (105.8‰), DKI Jakarta (99.9‰), East Nusa Tenggara (99.9‰), Nanggroe Aceh Darussalam (98.7‰). The lowest prevalence was found in West Sulawesi (25.7‰).

Rhinitis prevalence in Indonesia was 24.3‰, the highest risk was found in Nanggroe Aceh Darussalam (49.8‰), and followed by DI Yogyakarta (40.1‰), Central Sulawesi (38.6‰), DKI Jakarta (37.7‰) West Java (36.2‰). The lowest prevalence was found in North Sumatera.

There are 8 provinces with higher thalassemia prevalence than the national average. There are Nanggroe Aceh Darussalam (13.4‰), DKI Jakarta (12.3‰), South Sumatera (5.4‰), Gorontalo (3.1‰), Kep. Riau (3.0‰). The lowest prevalence was found in Lampung, West Kalimantan, and North Sulawesi, each of them with 0.1‰.

Table 3.67
Prevalence of Genetic Diseases*: Severe Mental Disorder, Color Blindness, Glaucoma, Harelip, Dermatitis, Rhinitis, Thalassemia, Hemophilia by Province, Riskesdas 2007

Province	Mental	Color Blindness	Glau-coma	Hare-lip	Derma-titis	Rhinitis	thalassemia	Hemo-philia
NAD	18.5	15.2	12.8	7.8	98.7	49.8	13.4	5.5
North Sumatera	1.4	1.5	0.6	0.7	26.3	5.9	0.2	0.1
West Sumatera	16.7	19.0	11.4	6.1	92.4	34.4	0.7	1.0
Riau	1.0	2.4	0.4	1.1	47.6	22.8	0.4	0.4
Jambi	1.9	4.6	1.4	0.4	39.1	21.2	0.3	0.8
South Sumatera	9.2	12.8	7.2	10.6	48.4	26.8	5.4	6.3
Bengkulu	1.6	2.4	1.5	0.8	90.0	35.3	0.4	0.5
Lampung	1.4	2.2	0.6	0.7	40.3	7.7	0.1	0.2
Bangka Belitung	8.7	6.0	3.8	6.4	84.3	26.3	0.4	0.4
Kepulauan Riau	7.4	21.5	12.6	9.9	67.1	34.5	3.0	8.5
DKI Jakarta	20.3	24.3	18.5	13.9	99.9	37.7	12.3	9.5
West Java	2.2	5.6	3.6	1.1	92.7	36.2	0.8	0.7
Central Java	3.3	6.9	2.8	0.9	79.5	27.8	0.5	0.5
DI Yogyakarta	3.8	6.5	3.6	1.5	73.0	40.1	0.8	0.6
East Java	3.1	4.0	5.5	0.8	64.6	23.9	0.3	0.4
Banten	2.0	3.9	1.5	0.8	53.3	20.0	0.6	0.5
Bali	3.0	4.8	1.6	0.9	58.8	13.9	0.4	0.8
West Nusa Tenggara	9.9	13.2	7.3	8.6	49.5	15.2	2.6	3.4
East Nusa Tenggara	2.5	11.2	2.3	1.1	99.9	22.8	0.3	0.6
West Kalimantan	1.5	3.2	0.8	0.4	32.8	8.0	0.1	0.1
Central Kalimantan	2.5	6.8	1.5	1.4	89.5	32.0	0.4	0.5
South Kalimantan	3.9	5.1	10.5	2.3	113.0	27.8	0.6	0.6
East Kalimantan	1.3	2.0	0.6	0.8	62.5	26.5	0.2	0.4
North Sulawesi	2.4	1.9	4.7	1.2	73.2	27.8	0.1	0.1
Central Sulawesi	5.3	9.9	12.1	2.1	105.8	38.6	0.8	1.4
South Sulawesi	3.2	8.5	5.1	0.9	53.2	11.0	0.3	0.6
Southeast Sulawesi	2.5	4.3	2.9	0.9	62.1	17.9	0.5	0.4
Gorontalo	2.4	15.9	6.7	1.4	94.2	30.8	3.1	1.0
West Sulawesi	1.5	6.1	1.1	0.4	25.7	6.9	0.2	0.3
Maluku	0.9	5.0	0.8	0.5	38.9	14.4	1.9	1.2
North Maluku	1.6	5.4	1.9	0.7	39.5	11.4	0.3	0.4
West Papua	1.8	10.4	3.1	0.7	43.2	21.2	2.2	0.9
Papua	2.6	13.9	2.3	2.2	29.5	18.0	1.2	1.4
Indonesia	**4.6**	**7.4**	**4.6**	**2.4**	**67.8**	**24.3**	**1.5**	**1.3**

Notes:
*) Genetic disease is decided referring to answers that the respondent has been suffer from one of the disease history; severe mental disorder (schizophrenia), color blindness, glaucoma, Harelip, dermatitis, Rhinitis, thalassemia, or hemophilia

Hemophilia prevalence is high, especially in DKI Jakarta (24.3‰), Kep. Riau (21.5‰), West Sumatra (19.0‰), Gorontalo (15.9‰), and Nanggroe Aceh Darussalam (15.2‰). The lowest prevalence was found in North Sumatera (1.5‰).

For 5 of the 8 genetic diseases which were recorded, Jakarta has the highest prevalence; severe mental disorder, color blindness, glaucoma, harelip, and hemophilia.

3.4.2 Mental Emotional Disorder

In the Riskesdas questionnaire, questions related to mental health were part of the individual questionnaires F01 – F20. Mental health was assessed by Self Reporting Questionnaire (SRQ) consisting of 20 questions in which household members aged $\geq$ 15 years responded. All of these questions are in a form of yes or no questions. Cut off points determined in this survey is 6 which mean if the respondent answered "yes" in minimally 6 questions or even more, he/she was indicated to have mental emotional disorder. This cut off point is appropriate with validity testing research (Hartono, NIHRD, 1995)

Mental emotional disorder is a condition where a person is indicated to experience an emotional change which can develop into pathologist condition if it continues. SQR has constraints as it only covers temporary individual emotional status ($\pm$ 2 weeks) and is not designed to specifically diagnose mental disorder. In Riskesdas 2007, the questions were read by interviewer to all respondents.

Table 3.68 bellow shows emotional mental disorder prevalence in population ≥ 15 years old. Each person was confirmed to have mental emotional disorder experience and if they answered "Yes" in minimally 6 questions of SRQ questioner.

From this table we can see that national mental emotional disorder prevalence in people aged ≥ 15 years was 11.6%. This prevalence varied among Provinces ranging between 5.1% up to 20.0%. The highest prevalence was in West Java (20.0%) and the lowest was in Riau Islands (5.1%). The result of SKRT (National Household Health Survey) by NIHRD in 1995, showed that 140 from 1000 family ≥ 15 years old were experiencing mental emotional disorder. SKRT 1995 also used the SRQ as a measurement device.

Table 3.69 shows mental emotional disorder that rises as age increase. Based on the age group, the highest percentage belong to group with age ≥ 75 years (33.7%). Groups which were susceptible to mental emotional disorder are women (14.0%), low education (the highest was non education which is 21.6%), jobless (19.6%), rural people (12.3%) as well as those in households with the lowest household expenditure level (at quintile 1: 12.1%).

Table 3.68

Prevalence of Mental Emotional Disorder on People aged 15 years above (based on *Self Reporting Questionnaire*-20)* by Province

District/city	Mental emotional disorder
NAD	14.1
North Sumatera	6.9
West Sumatera	13.9
Riau	11.4
Jambi	7.1
South Sumatera	6.3
Bengkulu	10.3
Lampung	6.8
Bangka Belitung	14.5
Kepulauan Riau	5.1
DKI Jakarta	14.1
West Java	20.0
Central Java	12.0
DI Yogyakarta	9.6
East Java	12.3
Banten	11.5
Bali	9.8
West Nusa Tenggara	12.8
East Nusa Tenggara	14.5
West Kalimantan	7.8
Central Kalimantan	10.7
South Kalimantan	11.3
East Kalimantan	6.9
North Sulawesi	9.0
Central Sulawesi	16.0
South Sulawesi	13.7
Southeast Sulawesi	10.2
Gorontalo	16.5
West Sulawesi	7.7
Maluku	7.5
North Maluku	8.9
West Papua	13.2
Papua	9.7
Indonesia	**11.6**

* *Cut off Point*s ≥ 6

Table 3.69
Prevalence of Mental Emotional Disorder on People aged above 15 years (based on *Self Reporting Questionnaire*-20)* according to Respondent's characteristic

Respondent's characteristic	Mental emotional disorder
Age group (years)	
15-24	8.7
25-34	9.0
35-44	9.9
45-54	12.0
55-64	15.9
65-74	23.2
75+	33.7
Gender	
Male	9.0
Female	14.0
Education Level	
No schooling	21.7
Unfinished Primary School	15.8
Finished Primary School	12.0
Finished Primary School	9.0
Finished Senior High	7.5
Finished University	6.7
Employment	
Jobless	19.6
Student	8.0
House wife	13.4
Employee	6.3
Entrepreneur	9.2
Farmer/Fisherman/Labor	11.2
Others	11.0
Type of Residence	
Urban	10.4
Rural	12.3
Level of expenditure per capita	
Quintile 1	12.9
Quintile 2	12.4
Quintile 3	11.8
Quintile 4	11.1
Quintile 5	10.1

* Cut off Points ≥ 6

3.4.3 Eye Disease

The data for eye health was collected to measure eye health indicator including visual acuity measurement using a Snellen Card (with or without pin-hole), glaucoma history, cataract history, cataract operation, and checking eye anterior segment using a pen-light.

Low vision prevalence and blindness was calculated based on result of visual measurement in respondent ≥ 6 years old. Cataract prevalence was based on the answer of respondent aged ≥ 30 years to 4 questions from the individual form. The D notation in table 3.72 and 3.73 is from the proportion of respondents who had been diagnosed for cataract by health personnel in the last 12 months while DG was D proportion added by respondent proportion who had cataract symptom (low vision and restricted sight), but had never been diagnosed by health personnel. The proportion of cataract operation history was obtained from respondent who have ever been diagnosed suffering from a cataract and having a received a cataract operation in the last 12 months.

The uncertainty in the vision data is due to the fact vision correction was not done while vision testing was done without pin-hole, and only if vision was less than 20/20 was the pin hole examinated performed. In case of cataract data collecting, the limitation was the enumerators capability in assessing eye lens using pen light so that the presence of intra-ocular lens by respondents who reported having a cataract operation could not be confirmed.

Table 3.70 demonstrates that 4.8% of Indonesians suffer from low vision with a range between 1.7% (in Papua) up to 10.1% (in Bengkulu). The low vision prevalence in Papua was low due to a low individual response rate so that the proportion examined may not represent the condition of the entire province.

The highest prevalence of low vision was found in Bengkulu, followed by South Sulawesi (9.8%) which was 2 times over the national rate. There were 8 of 33 Provinces showing higher prevalence of low vision than the national rate.

The national blindness prevalence was 0.9% ranging between 0.3% in East Kalimantan to 2.6% in South Sulawesi. The highest blindness proportion was found in South Sulawesi followed by NTT 1.4%, from almost 3 to 1.5 times the national national average. There were 11 Provinces with prevalence higher than the national average.

Table 3.71 demonstrates that low vision prevalence increases with age and after 45 years of age it increases dramatically. Following the low vision prevalence, blindness prevalence also increases, doubling in older ages over the 35-44 year prevalence. Low vision and blindness prevalence among woman is higher than among man. Low vision and blindness were inversely proportional with education level in that low education level, had a higher prevalence of low vision and blindness. Meanwhile, the highest prevalence of low vision and blindness was among the jobless population, followed by farmer/fishermen/worker. Low vision and blindness prevalence was higher in rural areas, but it was evenly distributed across all household expenditure levels.

Generally, table 3.72 shows that the cataract diagnosis in people aged more than 30 as diagnosed is 1.8% with range starting from 1.1% found in West Sulawesi until 3.7% in NAD. On the other hand, the national proportion of population with cataract symptoms is 17.3%, ranging from 10.2% in Yogyakarta to 28.1% in East Nusa Tenggara. This suggest low coverage in terms of cataract diagnosis by health professionals (1.8% from 17.3% or merely 1/10). This low level of cataract diagnosis is true for all provinces

Table 3.70

Proportion of People aged above 6 years according to *Low Vision,* Blindness (With or without correction of maximum glasses) and Province Riskesdas 2007

Province	*Low vision** (%)	Blindness** (%)
NAD	5.8	1.1
North Sumatera	4.5	0.7
West Sumatera	4.1	0.8
Riau	3.0	0.5
Jambi	1.9	0.4
South Sumatera	2.9	0.4
Bengkulu	10.1	1.3
Lampung	3.7	1.0
Bangka Belitung	3.2	0.4
Kepulauan Riau	4.8	1.1
DKI Jakarta	3.5	0.5
West Java	4.5	1.2
Central Java	5.9	1.0
DI Yogyakarta	6.3	0.9
East Java	5.6	0.9
Banten	2.0	0.4
Bali	4.7	1.0
West Nusa Tenggara	3.9	1.1
East Nusa Tenggara	5.4	1.4
West Kalimantan	3.9	0.5
Central Kalimantan	4.0	0.6
South Kalimantan	4.2	0.6
East Kalimantan	3.2	0.3
North Sulawesi	3.4	0.5
Central Sulawesi	3.7	0.6
South Sulawesi	9.8	2.6
Southeast Sulawesi	4.1	0.5
Gorontalo	2.4	1.0
West Sulawesi	5.2	0.6
Maluku	2.7	0.5
North Maluku	3.4	0.6
West Papua	2.3	0.7
Papua	1.7	0.4
Indonesia	**4.8**	**0.9**

*)Range of visus : 3/60 ≤ X < 6/18 (20/60) in the best eyes
**)Range of visus <3/60 in the best eyes

Table 3.71
Proportion of People aged above 6 years according to *Low Vision*, Blindness (With or without correction of maximum glasses) and Respondent's characteristic Riskesdas 2007

Respondent's characteristic	*Low vision** (%)	Blindness* (%)
Age group (years)		
6 – 14	1.1	0.2
15 – 24	1.6	0.2
25 – 34	1.8	0.2
35 – 44	2.7	0.3
45 – 54	6.1	0.8
55 – 64	14.7	2.3
65 – 74	27.7	6.0
75+	37.8	13.8
Gender		
Male	4.1	0.7
Female	5.4	1.1
Education Level		
No schooling	19.1	5.4
Unfinished Primary School	6.6	1.3
Finished Primary School	4.1	0.6
Finished Primary School	2.6	0.3
Finished Senior High	2.7	0.3
Finished University	3.2	0.3
Employment		
Jobless	11.5	3.7
Student	1.3	0.1
House wife	5.3	0.8
Employee	2.7	0.3
Entrepreneur	4.0	0.5
Farmer/Fisherman/Labor	6.4	0.9
Others	6.1	1.3
Type of Residence		
Urban	4.2	0.8
Rural	5.1	1.0
Level of expenditure per capita		
Quintile 1	4.6	1.0
Quintile 2	4.6	1.0
Quintile 3	5.0	1.0
Quintile 4	5.0	0.9
Quintile 5	4.7	0.8

*)Range of visus: $3/60 \leq X < 6/18$ (20/60) in the best eyes
**)Range of visus <3/60 in the best eyes

Table 3.72
Proportion of People aged above 30 years with Cataract by Province, Riskesdas 2007

Province	D* (%)	DG** (%)
NAD	3.7	27.0
North Sumatera	1.5	11.3
West Sumatera	3.3	24.5
Riau	2.3	18.0
Jambi	2.8	16.1
South Sumatera	2.4	15.0
Bengkulu	2.0	16.9
Lampung	1.3	14.5
Bangka Belitung	1.2	16.3
Kepulauan Riau	1.8	11.6
DKI Jakarta	2.9	10.5
West Java	1.7	17.6
Central Java	1.3	15.2
DI Yogyakarta	1.2	10.2
East Java	1.3	12.0
Banten	1.5	16.2
Bali	2.0	17.0
West Nusa Tenggara	2.0	20.6
East Nusa Tenggara	1.5	28.1
West Kalimantan	1.6	14.3
Central Kalimantan	1.6	17.2
South Kalimantan	2.0	18.5
East Kalimantan	1.7	13.7
North Sulawesi	2.1	20.1
Central Sulawesi	1.6	28.0
South Sulawesi	1.2	23.4
Southeast Sulawesi	1.4	18.6
Gorontalo	1.6	27.6
West Sulawesi	1.1	20.3
Maluku	1.4	21.0
North Maluku	1.4	20.0
West Papua	2.4	19.2
Papua	1.5	12.4
Indonesia	1.8	17.3

*)D = proportion of respondent who admit to have cataract diagnosis by health professional in the last 12 month.

**)DG= proportion of respondent who admit to have cataract diagnosis by health professional and have foggy and glare sight symptom in the last 12 month.

Table 3.73 shows that the prevalence of cataract diagnosis by health professionals increases as age increases. Cataract prevalence by age which is categorized with a 10 interval years is demonstrates a tendency to double for every increase to the next older 10 year age group.

Cataract prevalence by diagnosis history tends to be higher among in woman (1.9%) and a little bit higher in urban areas (2.1%). Similar to low vision and blindness, cataract diagnosis prevalence based on health professionals' confirmation is higher in people with educational of 6 years or less compared with those with 7 years or more education. In the aspect of occupation, the diagnosis prevalence is higher among the jobless.

The proportion of cataract diagnosis made by health professionals is distributed almost evenly in all household expenditure level per capita but it is seen that the highest proportion was found in group with highest expenditure level (2%). It can be seen that using the prevalence of cataract symptom risk declines as household expenditure level increases.

Table 3.74 presents the proportion of cataract operations and the utilization of post operation glasses in people more than 30 years old. Nationally, the proportion of cataract operation in the last 12 months is 18% of the total population with cataract diagnosis confirmed by health professionals. The lowest proportion was found in West Papua (5.2%) while the highest was found in North Sulawesi (31.5%). For the national level, this coverage is low since there are 82% of people requiring surgery whose needs remain unmet in the year 2007.

The use of post operation glasses at the national level is 58.1% with the lowest range is found in Southeast Sulawesi (21.4%) and the highest is in Papua (91.7%). The distribution of post operation glasses aims to optimize the sharpness of far and near sight as well so that not all sufferers after operation consider necessary to demand for glasses in their daily activities. Another possibility is the result of cataract operation was quite good so that post operation vision was almost normal and only small number of patients required post operation glasses.

Table 3.75 shows that the proportion of cataract operation increases along with age. The prevalence of cataract operation is higher among males than females.

The prevelance of cataract operation increases as the length of education increases. The highest prevalence of cataract operation was found in those who still studying and living in urban areas. In addition, the prevalence of cataract surgery increases as per capita household expenditure rises.

Table 3.73
Proportion of People aged above 30 years old with Cataract according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	D (%)	DG (%)
Age group (years)		
30 – 34	0.3	4.2
35 – 44	0.6	8.7
45 – 54	1.4	18.2
55 – 64	3.2	28.8
65 – 74	5.5	41.9
75+	7.6	51.6
Gender		
Male	1.7	15.5
Female	1.9	19.0
Duration of education		
≤ 6 Years	2.1	22.0
7-12 Years	1.3	9.6
>12 Years	1.4	8.8
Employment		
Jobless	5.5	38.3
Student	1.7	17.3
House wife	1.5	16.1
Employee	1.3	8.4
Entrepreneur	1.4	11.8
Farmer/Fisherman/Labor	1.3	17.8
Others	3.1	19.4
Type of Residence		
Urban	2.1	13.6
Rural	1.6	19.6
Level of expenditure per capita		
Quintile 1	1.6	18.1
Quintile 2	1.6	17.9
Quintile 3	1.8	17.7
Quintile 4	1.9	17.3
Quintile 5	2.0	16.1

Table 3.74
Proportion of People aged above 30 years old with Cataract who had Cataract Operation and wear glasses after Operation by Province, Riskesdas 2007

Province	Cataract Operation (%)	Wear glasses after operation (%)
NAD	13.2	55.0
North Sumatera	13.9	54.4
West Sumatera	21.2	71.5
Riau	18.1	72.1
Jambi	8.8	47.8
South Sumatera	8.9	66.7
Bengkulu	10.5	46.7
Lampung	8.8	66.7
Bangka Belitung	22.9	62.5
Kepulauan Riau	20.7	50.0
DKI Jakarta	27.0	62.7
West Java	18.3	63.4
Central Java	17.5	47.8
DI Yogyakarta	20.6	71.4
East Java	22.7	49.1
Banten	15.0	25.0
Bali	26.9	49.2
West Nusa Tenggara	27.3	34.0
East Nusa Tenggara	14.8	54.5
West Kalimantan	14.1	70.4
Central Kalimantan	21.1	65.8
South Kalimantan	16.0	43.2
East Kalimantan	23.7	46.5
North Sulawesi	31.5	90.7
Central Sulawesi	20.9	81.5
South Sulawesi	20.9	61.3
Southeast Sulawesi	10.9	21.4
Gorontalo	27.6	65.0
West Sulawesi	11.9	50.0
Maluku	13.1	50.0
North Maluku	20.6	76.9
West Papua	5.2	66.7
Papua	12.8	91.7
Indonesia	**18.0**	**58.1**

Table 3.75
Percentage of People aged above 30 years old with Cataract who had Cataract Operation and wear glasses after Operation according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Cataract Operation (%)	Wear glasses after operation (%)
Age group (years)		
30 – 34	13.2	35.5
35 – 44	11.2	46.2
45 – 54	13.9	55.9
55 – 64	18.6	58.1
65 – 74	21.4	59.8
75+	21.8	64.3
Gender		
Male	18.5	56.7
Female	17.5	59.4
Duration of education		
≥ 6 years	17.4	54
7-12 years	19.2	65.3
>12 years	20.3	78.9
Employment		
Jobless	19.8	57.4
Student	31.3	66.7
House wife	17	60.9
Employee	21.2	72.2
Entrepreneur	19.7	56.2
Farmer/Fisherman/Labor	14	48
Others	24.9	72
Type of Residence		
Urban	22.7	59.5
Rural	14.2	56.4
Level of expenditure per capita		
Quintile 1	15.2	50.9
Quintile 2	15.1	46.4
Quintile 3	16.3	52.7
Quintile 4	18.2	63.6
Quintile 5	22.5	65.3

3.4.4 Dental Health

To achieve the targets set for dental health care set for 2010, various activities have been undertaken; including promotion, prevention, protection, curative and even rehabilitative. Most of the indicators were establish by WHO including insuring that 90% of children under fives are carie free, children aged 12 years having a severity level of

dental damage (DMF-T index) of 1 tooth or less, people aged 18 years old who have all their teeth, and are free from the extracted teeth (component M = 0), 90% of the people aged 35-44 years should have a minimum of 20 functioned teeth, ≤ 2% of people aged 35-44 years should be without teeth (edentulous), and 75% people aged older than 65 should have have functional working teeth, and ≤ 5% the population should be without teeth (WHO, 1995).

There are 5 indicator program measures in relation with the assessment of program accomplishment and target achievement of healthy teeth 2010 which are:

Healthy/Promotive (Prevalence)	Sensitive (protective) (Incident)	Latent/Early detection and therapy *(% dentally Fit*)	Sick/Curative % complaints	Defect/ Rehabilitative (% 20 of teeth function)
% Free from caries at the age of 5 years DMF-T 12 years DMF-T 15 years DMF-T 18 years	*Expected incidence* Tendency of DMF-T by age	PTI RTI MI CPITN	% dentally fit PTI RTI MI	% edentulous % protease

- Source WHO, 2005
- Performed Treatment Index(PTI) is percentage number of the amount of permanent filling teeth to DMF-T number. PTI describes one's motivation to fill up his/her decay teeth as an effort to keep the existence of the permanent teeth.
- Required Treatment Index (RTI) is percentage number of decay permanent teeth to DMF-T number. RTI illustrates the amount of decay teeth which has not been maintained and need filling/extraction.

Various indicators of community dental-mouth health were collected in Riskesdas 2007 either by interview or with a dental-mouth examination. The exam was done for all age groups covering all data concerning people with dental-mouth problems, treatment received from dental medical officers, and behavior related to dental health maintenance. In terms of dental health/dental cleanness maintenance behavior, questions related to this matter were addressed to people aged more than 10 years.

The assessment and examination of dental-mouth health status was carried out by surveyors with various backgrounds. This examination was undertaken for those older than 12 years using observation method with hand held instrument (mouth mirror) and a flashlight. The assessment of Community periodontal index treatment need (CPITN) was not carried out since it required specific hand instrument. Analysis of dentally fit could not be applied because it would would have required more instruments that could be carried by the enumerators. The result of interview and dental-mouth check can been seen in the table bellow.

Table 3.76 describes the prevalence of population with dental-mouth problem and acquired dental treatment from dental medical specialist in the last 12 months. The prevalence of population who had a dental-mouth problem in the last 12 months was 23,4% and it was reported that 1,6% of population had lost all their genuine teeth. There was 29,6% calculated from all population with dental-mouth problem who obtained dental treatment or medication from dental health specialist.

Table 3.76
Prevalence of People with dental-mouth problem by Province, Riskesdas 2007

Province	Dental-mouth Problem	Acquired dental treatment from dental medical specialist	Missing all the genuine teeth
NAD	30.5	44.5	1.5
North Sumatera	16.7	23.9	0.7
West Sumatera	21.6	34.6	1.8
Riau	22.8	30.3	2.2
Jambi	25.1	31.5	1.6
South Sumatera	17.0	31.4	1.2
Bengkulu	24.7	31.3	0.7
Lampung	18.1	25.9	1.0
Bangka Belitung	19.4	30.8	3.2
Kepulauan Riau	19.0	36.0	2.8
DKI Jakarta	23.0	39.5	0.6
West Java	25.3	33.0	0.7
Central Java	25.8	28.4	1.5
DI Yogyakarta	23.6	37.1	2.4
East Java	20.3	30.2	2.1
Banten	22.6	28.2	0.4
Bali	22.5	42.4	1.7
West Nusa Tenggara	25.5	30.7	0.7
East Nusa Tenggara	25.1	23.1	1.0
West Kalimantan	20.1	26.5	2.1
Central Kalimantan	23.6	22.9	1.2
South Kalimantan	29.2	21.2	2.5
East Kalimantan	21.6	39.1	1.8
North Sulawesi	29.8	26.9	0.9
Central Sulawesi	31.2	20.1	2.3
South Sulawesi	25.3	26.4	4.0
Southeast Sulawesi	27.5	21.2	1.7
Gorontalo	33.1	25.9	0.7
West Sulawesi	24.5	20.5	2.9
Maluku	24.4	27.7	1.0
North Maluku	24.0	15.1	0.9
West Papua	23.7	34.7	0.7
Papua	19.7	35.0	0.4
Indonesia	**23.4**	**29.6**	**1.6**

There are 5 provinces with highest prevalence of dental-mouth problem namely Gorontalo (33.1%), Central Sulawesi (31.2%), Aceh (30.5%), North Sulawesi (29.8%), and South Kalimantan (29.2%). On the other hand, provinces with the lowest prevalence

were North Sumatera (16.7%), South Sumatera (17.0%), Lampung (18.1%), Riau (19.0%) and Bangka Belitung (19.4%).

From all provinces with dental-mouth problems, those with highest percentage in terms of dental treatment/medication acceptance given by dental health specialist were Nanggroe Aceh Darussalam (44.5%) while the lowest was in North Maluku (19.9%). Although it seems that the prevalence of people who have no genuine teeth was relatively samll (1.6%) the risk was high in South Sulawesi (4.0%) and Bangka Belitung (3.2%).

Table 3.77 is describing that the prevalence of dental-mouth problem is varied by characteristic of respondent. The prevalence of dental-mouth problem and genuine teeth loss shows tendency to decline by age. This means that as growing age, the prevalence of dental-mouth problem is increasing but it starts to decline in at the age 55. It was found as much as 1.8% In group of 45 – 54 years old losing all their genuine teeth while in group of 65 years old above, the loss of all genuine teeth was reaching 17,6% exceeding far from WHO target in 2010. Regarding the acceptance of dental treatment/medication, there was no pattern clearly indicated according to age.

The prevalence of dental-mouth problem as well as dental treatment/ medication acceptance was showing slight higher in woman than man. Based on region characteristic, rural area had a slight higher prevalence than urban area in terms of dental-mouth problem and the acceptance of dental treatment/medication. Based on region type, the prevalence of dental-mouth problem and the percentage of population with all genuine teeth loss were slightly higher in rural area than urban area. On the other hand, the acceptance level of dental treatment/medication appeared lower in rural area than urban area. There was a tendency of higher household expenditure level led to the higher percentage of people who obtained dental treatment/medication.

Table 3.78 is describing sorts of treatment received by people with dental-mouth problem in the last 12 months by provinces. It is can be seen that the most treatment received by people was ‘medication’ (87.6%) followed by ‘tooth filling/extraction/surgery’ (38.5%). Counseling on dental treatment/hygiene and imitation tooth plant either temporary or permanent was relatively small, each of them was 13.3% and 4.6%.

The highest medication by province was occurred in Nanggroe Aceh Darussalam (94.6%) while the lowest was in Jakarta (74.5%). The highest tooth filling/extraction/surgery was appeared in Riau Islands (55.9%) and the lowest was in East Nusa Tenggara (23.9%). The temporary/permanent tooth planting was high in provinces namely Riau Islands (12.3%), West Sulawesi (11.2%), and West Sumatera (10.9%). The awareness to conduct counseling was relatively small in all provinces (13.3%).

Table 3.79 is giving the information on treatment kinds received by people who carrying dental-mouth problem in the last 12 months by respondent’s characteristic. There was no extinct pattern shown in kinds of treatment by age group. However, the older age tends to result in higher percentage of tooth filling/extraction/surgery and temporary/permanent imitation tooth planting.

The data concerning of tooth filling/extraction/surgery percentage in babies (< 1 year) was 10.9% (6/54) calculated from 16.747 babies whose parents have been interviewed. It showed that 175 babies suffering from dental/mouth problem in which 54 among them obtained dental treatment and 6 of them obtained mouth surgery because of unknown reason. Start from 65 years old above, the percentage of tooth filling/extraction seemed to decline. Imitation tooth planting was found in school aged children group and was increasing as age growing.

In terms of sex, there was no difference in the percentage of dental treatment utilization in its kinds significantly between man and woman. Based on region type, rural area was showing higher percentage of tooth filling/extraction, temporary/permanent imitation tooth planting, and dental counseling but medication was higher in urban area.

There is a tendency where higher per capita household expenditure resulted in higher percentage of population who experienced tooth filling/extraction, temporary imitation tooth planting and dental counseling. In contrast, in terms of medication, the higher household expenditure level, the lower medication occurred.

Table 3.77
Prevalence of People with dental-mouth problem according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Dental-mouth Problem	Acquired dental treatment	Missing all the genuine teeth
Age group (years)			
< 1	1.1	28.1	0
1 - 4	6.9	27.4	0
5 - 9	21.6	30.9	0
10 – 14	20.6	26.6	0
15 – 24	21.5	26.5	0
25 – 34	26.6	30.7	0.1
35 – 44	29.6	32	0.4
45 – 54	31.1	31.3	1.8
55 – 64	29.1	29.5	5.9
65+	22.1	24.7	17.6
Gender			
Male	22.5	28.3	1.4
Female	24.3	30.7	1.8
Type of Residence			
Urban	21.9	37	1.3
Rural	24.4	25.5	1.8
Level of expenditure per capita			
Quintile 1	22.7	23.8	1.4
Quintile 2	23.4	26.2	1.6
Quintile 3	23.5	28.8	1.6
Quintile 4	23.7	31.3	1.7
Quintile 5	23.7	37.6	1.6

Table 3.78
Percentage of People Acquired Dental Treatment according to kind of treatment and Province, Riskesdas 2007

Province	Medication	Filling/ Extraction/ Surgery	Imitation tooth planting	Dental treatment/ hygiene counseling	Others
NAD	94.6	32.9	4.8	13.2	0.2
North Sumatera	86.7	32.5	6.0	15.7	2.9
West Sumatera	90.0	35.1	5.8	7.8	2.6
Riau	80.9	47.7	9.8	9.3	5.9
Jambi	92.8	34.0	4.7	10.4	1.5
South Sumatera	88.5	43.5	10.9	16.6	3.8
Bengkulu	93.5	25.7	2.5	12.6	0.3
Lampung	91.8	25.3	2.0	6.8	0.0
Bangka Belitung	81.1	44.8	4.6	9.6	2.3
Kepulauan Riau	83.5	55.9	12.3	21.5	6.3
DKI Jakarta	74.5	54.4	4.0	16.4	4.3
West Java	88.7	37.8	2.6	14.2	2.9
Central Java	91.2	28.2	2.9	13.5	1.9
DI Yogyakarta	85.3	36.5	5.9	21.6	4.0
East Java	85.0	42.1	4.4	11.6	2.0
Banten	86.6	39.5	2.3	12.9	2.0
Bali	82.7	53.0	3.7	12.7	2.2
West Nusa Tenggara	89.6	37.8	5.0	20.4	4.6
East Nusa Tenggara	92.0	23.9	1.9	14.3	1.6
West Kalimantan	86.6	43.2	4.3	11.2	2.0
Central Kalimantan	87.0	40.7	6.1	13.2	3.0
South Kalimantan	81.1	42.8	3.3	12.5	2.8
East Kalimantan	85.3	42.9	2.9	15.5	1.0
North Sulawesi	84.4	35.0	7.1	10.7	0.0
Central Sulawesi	83.9	39.4	4.5	11.5	1.1
South Sulawesi	83.6	46.8	4.8	10.7	2.0
Southeast Sulawesi	81.7	52.5	5.5	14.2	1.3
Gorontalo	90.2	45.3	2.9	13.6	0.1
West Sulawesi	89.8	48.6	11.2	21.4	1.0
Maluku	91.2	45.8	2.0	9.8	1.1
North Maluku	85.2	34.9	2.9	18.3	3.2
West Papua	87.9	32.3	3.4	22.1	2.2
Papua	89.1	36.2	4.0	20.6	5.2
Indonesia	**87.6**	**38.5**	**4.6**	**13.3**	**2.2**

Table 3.79
Percentage of People Acquired Dental Treatment/Medication according to Kind of treatment and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Medication	Filling/ Extraction/ Dental Surgery	Temporary Imitation tooth planting	Dental treatment/ hygiene counseling	Others
Age group (years)					
< 1	83.0	10.9	0.0	6.4	4.3
1 – 4	93.0	9.7	0.0	9.2	2.0
5 – 9	88.6	29.6	0.0	12.2	1.5
10 – 14	89.5	30.5	0.8	11.5	2.3
15 – 24	88.1	35.7	2.0	13.2	2.2
25 – 34	88.4	41.2	3.6	14.3	2.6
35 – 44	87.7	43.1	4.6	14.4	2.4
45 – 54	86.5	43.5	7.6	13.8	2.0
55 – 64	84.7	44.4	10.6	12.9	2.2
65 +	81.2	39.8	14.5	12.4	2.1
Gender					
Male	87.4	39.4	4.2	13.5	2.1
Female	87.7	37.8	4.8	13.2	2.3
Type of Residence					
Urban	84.5	45.6	5.0	15.7	2.7
Rural	90.0	32.9	4.2	11.4	1.8
Level of expenditure per capita					
Quintile 1	89.2	32.0	3.4	11.2	1.7
Quintile 2	89.4	33.9	3.6	11.1	1.8
Quintile 3	88.3	36.7	4.4	12.7	2.2
Quintile 4	87.4	39.4	4.5	13.8	2.5
Quintile 5	84.9	46.4	6.1	16.3	2.5

Table 3.80 bellow is describing behavior of people more than 10 years old in relation with teeth brushing habit as well as when they usually brush their teeth. Most of people aged more than 10 years (91.1%) have daily teeth brushing habit. In order to acquire the optimal result, a proper tooth brushing is done every day in the morning after breakfast and in the evening before go to sleep. It is reported that in general, people are brushing their teeth every day at morning shower time and evening (90.7%). Only 12.6% of population have daily teeth brushing after breakfast and 28.7% before going to bed in the evening. This might due to their limited knowledge and awareness as well in terms of dental-mouth hygiene and also geographic reason in some regions which caused difficulties in spreading the information. There are 3 provinces with highest teeth brushing percentage namely Jakarta (98.5%), West Java (95.8%), and East Kalimantan (95.5%). On the other hand, the lowest are in East Nusa Tenggara (74.4%) and Papua (58.4%).

Table 3.80
Percentage of People Above Ten Years Old Having Daily Teeth Brushing and Having A proper Behavior in Teeth Brushing by Province, Riskesdas 2007

Province	Daily Teeth Brushing	Teeth Brushing Time				
		Morning/ evening shower	After breakfast	After Wake up in the morning	Before sleeping At night	Others
NAD	87.6	88.6	10.0	27.4	20.8	2.1
North Sumatera	93.3	90.7	6.3	27.9	18.7	2.5
West Sumatera	92.7	85.9	5.0	37.7	20.3	1.4
Riau	94.5	91.0	9.7	31.0	27.3	13.1
Jambi	92.8	94.5	6.7	25.2	17.1	4.2
South Sumatera	94.0	96.9	12.2	20.4	18.8	1.9
Bengkulu	95.4	96.3	9.0	17.6	15.8	2.7
Lampung	94.8	97.9	5.1	9.0	14.5	2.2
Bangka Belitung	94.5	95.9	11.7	16.7	34.9	4.3
Kepulauan Riau	94.0	95.5	23.0	40.2	50.1	10.9
DKI Jakarta	98.5	95.8	11.9	24.7	42.6	3.4
West Java	95.8	94.6	14.6	32.3	34.7	4.0
Central Java	92.0	92.2	9.8	19.3	25.5	3.7
DI Yogyakarta	92.1	90.7	11.8	20.2	35.9	3.5
East Java	91.2	94.0	9.7	24.2	22.4	6.8
Banten	94.8	95.7	9.0	23.1	26.9	2.8
Bali	86.2	74.4	16.1	31.5	44.4	2.5
West Nusa Tenggara	86.5	90.2	15.3	22.7	28.9	2.6
East Nusa Tenggara	74.7	68.7	16.3	48.0	16.0	3.4
West Kalimantan	93.5	86.9	15.2	38.6	37.9	2.0
Central Kalimantan	94.6	92.3	17.5	31.9	31.8	3.5
South Kalimantan	94.4	80.8	15.3	34.3	44.4	3.9
East Kalimantan	95.5	92.4	12.9	25.9	35.3	1.8
North Sulawesi	94.8	89.3	12.7	27.6	26.7	1.9
Central Sulawesi	89.7	94.3	13.6	22.3	32.9	2.4
South Sulawesi	88.7	86.3	20.6	22.9	48.4	2.7
Southeast Sulawesi	89.7	93.2	26.6	26.9	41.2	1.5
Gorontalo	92.2	95.9	11.8	24.4	25.1	2.7
West Sulawesi	88.4	91.9	13.2	13.8	31.7	1.7
Maluku	92.0	84.0	26.7	42.1	32.4	1.7
North Maluku	84.0	87.9	19.3	40.9	28.6	3.2
West Papua	84.1	89.0	30.3	46.0	42.7	2.8
Papua	58.4	88.5	25.2	32.9	34.6	3.4
Indonesia	**91.1**	**90.7**	**12.6**	**27.2**	**28.7**	**3.7**

The province with highest percentage in teeth brushing after breakfast was West Papua (30.3%), Maluku (26.7%), and Southeast Sulawesi (26.6%). The lowest percentage were found in West Sumatera (5.0%), Lampung (5.1%), and North Sumatera (6.3%). In case of teeth brushing habit before night sleep, its highest prevalence was in Riau Islands (50.1%), South Sulawesi (48.4%), Bali, and South Kalimantan each were 44.4% while the lowest was in Lampung (14.5%), East Nusa Tenggara (16.0%), and Jambi (17.1%).

Table 3.81 is presenting community behavior in brushing teeth which was varied by characteristic of respondent. Based on age, the percentage of population with daily teeth brushing habit was reducing as age getting older particularly starts from 15 years old above. In terms of sex, there was no significant difference only teeth brushing habit before night sleep appeared higher in women.

Table 3.81
Percentage of People Above Ten Years Old Having Daily Teeth Brushing and Having A proper Behavior in Teeth Brushing according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Daily Teeth Brushing	Teeth brushing time				
		Morning/ evening shower	After breakfast	After Wake up In the morning	Before sleeping At night	Others
Age group (years)						
10 – 14	93.8	90.7	11.8	25.2	25.0	2.5
15 – 24	96.9	92.5	13.7	28.0	33.6	3.3
25 – 34	96.0	91.5	13.2	27.7	31.5	3.7
35 – 44	94.5	90.7	12.6	27.4	28.8	4.0
45 – 54	90.6	89.4	11.9	27.2	25.5	4.0
55 – 64	80.2	88.2	11.3	26.3	22.5	4.3
65+	58.0	85.5	10.8	25.5	18.9	4.9
Gender						
Male	90.8	90.3	11.8	26.2	25.5	3.4
Female	91.3	91.1	13.3	28.1	31.6	3.9
Type of Residence						
Urban	95.7	92.5	14.0	30.1	38.9	3.9
Rural	88.2	89.4	11.7	25.2	21.8	3.5
Level of expenditure per capita						
Quintile 1	88.7	89.9	10.4	25.0	21.4	3.4
Quintile 2	90.0	90.3	11.2	26.0	24.3	3.6
Quintile 3	91.1	90.8	11.8	26.4	26.9	3.8
Quintile 4	92.0	91.0	13.3	27.9	30.8	3.8
Quintile 5	93.8	91.4	15.6	29.9	38.0	3.6

Based on region types, people in towns have higher percentage in terms of teeth brushing habit daily or any circumstance compared with people in villages. On the other hand, there was a tendency in which higher household expenditure level, higher percentage of people with proper behavior in brushing teeth.

The percentage of population who maintain teeth brushing habit after breakfast and before night sleep was higher in woman than man especially in cities. Similar thing

happened for household expenditure level where the percentage was higher as increasing household expenditure.

Table 3.82 is presenting the percentage of population above aged 10 years old and above who maintained proper behavior in brushing teeth.

Table 3.82
Percentage of People aged Above Ten Years Old Having A proper Behavior in Teeth Brushing By Province, Riskesdas 2007

Province	Proper Behavior in Teeth Brushing	
	Yes	No
NAD	4.9	95.1
North Sumatera	3.8	96.2
West Sumatera	2.7	97.3
Riau	5.5	94.5
Jambi	3.7	96.3
South Sumatera	6.9	93.1
Bengkulu	4.8	95.2
Lampung	2.1	97.9
Bangka Belitung	7.2	92.8
Kepulauan Riau	17.3	82.7
DKI Jakarta	9.1	90.9
West Java	8.2	91.8
Central Java	5.5	94.5
DI Yogyakarta	7.7	92.3
East Java	5.1	94.9
Banten	4.8	95.2
Bali	10.9	89.1
West Nusa Tenggara	7.4	92.6
East Nusa Tenggara	5.0	95.0
West Kalimantan	10.6	89.4
Central Kalimantan	11.1	88.9
South Kalimantan	10.3	89.7
East Kalimantan	9.0	91.0
North Sulawesi	6.6	93.4
Central Sulawesi	8.3	91.7
South Sulawesi	12.5	87.5
Southeast Sulawesi	15.9	84.1
Gorontalo	7.2	92.8
West Sulawesi	8.2	91.8
Maluku	15.8	84.2
North Maluku	8.5	91.5
West Papua	17.4	82.6
Papua	9.7	90.3
Indonesia	**7.3**	**92.7**

Notes :
A proper behavior in teeth brushing is some one who brush his/her teeth everyday in a proper way (After breakfast and before going to sleep at night).

A proper behavior in brushing teeth is categorized if a particular person has daily teeth brushing habit in proper way which is after breakfast and before night sleep.

It seems that the percentage of people with a proper teeth brushing behavior was still low (7.3%). Provinces with highest percentage was West Papua (17.4%), Riau Islands (17.3%), and Southeast Sulawesi (15.9%) while the lowest was in Lampung (2.1%), West Sumatera (2.7%), and Jambi (3.7%).

Table 3.38 is describing a proper behavior in brushing teeth. The variation was occurred based on respondent's characteristic.

Table 3.83
Percentage of People aged Above Ten Years Old Having A proper Behavior in Teeth Brushing according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Proper Behavior in Teeth Brushing	
	Yes	No
Age group (years)		
10 – 14	6.2	93.8
15 – 24	8.8	91.2
25 – 34	8.5	91.5
35 – 44	7.7	92.3
45 – 54	6.6	93.4
55 – 64	5.4	94.6
65+	3.5	96.5
Gender		
Male	6.4	93.6
Female	8.0	92.0
Type of Residence		
Urban	9.6	90.4
Rural	5.8	94.2
Level of expenditure per capita		
Quintile 1	5.2	94.8
Quintile 2	5.8	94.2
Quintile 3	6.6	93.4
Quintile 4	7.9	92.1
Quintile 5	10.4	89.6

Notes:
A proper behavior in teeth brushing is some one who brush his/her teeth everyday in a proper way (After breakfast and before going to sleep at night).

According to age, there was a tendency to decline in the percentage of people who properly brushed their teeth along with the increasing age. According to sex, the percentage was higher in woman than man and also by types of region where the percentage in cities was higher than villages.

According to household expenditure level, there was a tendency in which the higher expenditure, higher percentage of proper behavior in brushing teeth.

Table 3.84 is presenting DMF-T component by provinces. DMF-T index as indicator of dental health status is accumulated from D-T index, M-T index, and F-T index which shows the large number of dental defect such as Decay/D (dental caries or cavity), Missing/M (dental extraction), and Filling/F (dental filling). The national index of DMF-T is

4,85 which means the average dental defect in Indonesian people is 5 teeth per person. The biggest component is dental extraction/M-T which is 3,86 so that averagely Indonesian people have 4 extracted teeth or extraction indication.

Table 3.84
D, M, F Components and DMF-T Index by Province, Riskesdas 2007

Province	D-T (Mean)	M-T (Mean)	F-T (Mean)	DMF-T Index (Mean)
NAD	1.02	3.21	0.04	4.28
North Sumatera	0.89	2.46	0.05	3.43
West Sumatera	1.00	4.25	0.04	5.25
Riau	1.35	3.39	0.06	4.83
Jambi	1.50	3.66	0.06	5.25
South Sumatera	1.04	3.60	0.04	4.69
Bengkulu	1.06	2.68	0.02	3.02
Lampung	1.38	3.60	0.05	3.92
Bangka Belitung	1.38	3.60	0.05	3.92
Kepulauan Riau	0.92	3.82	0.18	4.93
DKI Jakarta	0.95	2.53	0.16	3.66
West Java	1.36	3.71	0.06	4.03
Central Java	1.24	4.08	0.08	5.11
DI Yogyakarta	1.42	5.02	0.08	6.53
East Java	1.27	5.01	0.08	6.44
Banten	0.84	2.37	0.05	3.18
Bali	0.77	3.66	0.08	4.73
West Nusa Tenggara	0.68	2.55	0.06	3.27
East Nusa Tenggara	1.04	3.16	0.02	4.22
West Kalimantan	1.88	4.73	0.05	6.38
Central Kalimantan	1.34	3.85	0.09	5.01
South Kalimantan	1.31	5.52	0.12	6.83
East Kalimantan	1.41	3.61	0.11	5.08
North Sulawesi	1.77	4.34	0.06	5.01
Central Sulawesi	1.35	4.59	0.05	5.98
South Sulawesi	1.35	4.90	0.08	4.84
Southeast Sulawesi	1.00	3.47	0.09	4.52
Gorontalo	1.19	2.94	0.05	3.53
West Sulawesi	1.43	3.70	0.04	4.43
Maluku	1.80	3.84	0.08	5.73
North Maluku	1.50	3.01	0.05	4.60
West Papua	1.13	2.92	0.02	4.05
Papua	1.11	2.96	0.05	4.19
Indonesia	**1.22**	**3.86**	**0.08**	**4.85**

DMF-T in five provinces were extremely high, they are South Kalimantan (6.83%), Yogyakarta (6.83%), East Java (6.44%), West Kalimantan (6.38%), And Central Sulawesi (5.98%). The DMF-T found in this Riskesdas was lower than what it reported

in SKRT 1995 which was 6,4 and SKRT 2001 as much as 5,3. Probably, this was occurred in relation with examination method and tools that have been used (Kristanti et al, 1997 and Kristanti et al, 2002).

Table 3.85
D, M, F Components and DMF-T Index According to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	D-T (Mean)	M-T (Mean)	F-T (Mean)	DMF-T Index
Age group (years)				
12	0.57	0.24	0.07	0.91
15	0.74	0.33	0.02	1.14
18	0.90	0.47	0.04	1.41
35 – 44	1.44	2.89	0.08	4.46
65 +	1.16	16.99	0.14	18.33
Gender				
Male	1.22	3.57	0.06	4.55
Female	1.22	4.13	0.09	5.13
Type of Residence				
Urban	1.11	3.41	0.10	4.36
Rural	1.29	4.14	0.06	5.15
Level of expenditure per capita				
Quintile 1	1.26	3.91	0.05	4.79
Quintile 2	1.27	3.90	0.06	4.87
Quintile 3	1.24	3.90	0.07	4.89
Quintile 4	1.22	3.88	0.08	4.92
Quintile 5	1.13	3.72	0.12	4.77

Notes:

D-T : The average number of cavity per person,
M-T : The average number of tooth extraction/ indication of extraction,
F-T : The average number of tooth filling,
DMF-T : The average number of dental defect per person (could be tooth decay, extraction or filling),

Table 3.85 above shows the number of tooth defect was increasing along with the increase of age based on DMF-T index. In age group of 35-44 years old, DMF-T was considered high (4,46). Moreover, in group of above 65 years old, it was reaching 18.27 which means the defect was averagely 18.27 teeth per person. The biggest component was M-T (the average number of tooth extraction) for about 16.97 per person.

DMF-T was higher in woman and villages while based on household expenditure level it almost identical at all groups both in age and household expenditure level.

Table 3.86 is presenting the prevalence of active caries and caries experience in population aged 12 years and more by provinces. Active caries was categorized if the D-T index >0 or unhandled caries and if DMF-T index >0, it can be categorized as caries experience.

Table 3.86
Prevalence of Active Caries and Caries Experience of People Aged Above 12 Years by Province, Riskesdas 2007

Province	Active Caries	Caries Experience
NAD	41.0	62.9
North Sumatera	40.1	62.1
West Sumatera	41.6	70.6
Riau	53.3	75.4
Jambi	56.1	77.9
South Sumatera	43.9	71.2
Bengkulu	34.8	51.0
Lampung	43.1	59.5
Bangka Belitung	50.8	86.8
Kepulauan Riau	39.6	65.5
DKI Jakarta	40.6	68.1
West Java	39.0	58.4
Central Java	43.1	67.9
DI Yogyakarta	52.3	78.9
East Java	47.8	76.2
Banten	37.3	61.2
Bali	37.6	68.2
West Nusa Tenggara	30.8	55.4
East Nusa Tenggara	40.7	64.4
West Kalimantan	55.2	75.1
Central Kalimantan	49.4	72.5
South Kalimantan	50.7	83.4
East Kalimantan	49.6	75.1
North Sulawesi	47.4	67.9
Central Sulawesi	48.0	77.2
South Sulawesi	37.6	58.1
Southeast Sulawesi	44.0	71.0
Gorontalo	34.0	51.3
West Sulawesi	42.9	60.8
Maluku	54.4	77.5
North Maluku	39.8	55.5
West Papua	40.8	60.4
Papua	40.3	62.9
Indonesia	**43.4**	**67.2**

Notes:

People with active caries are those who have D >0 or unhandled caries.
People with caries experience are those who have DMFT >0.

From the table above, caries prevalence was shown as 46.5% and caries experience was 72.1%. According to province, the highest prevalence of active caries (more than 50%) was found in Jambi (56.1%), West Kalimantan and North Sulawesi (57.2%),

Maluku (54.4%), Riau (53.35), Lampung (54.9%), Yogyakarta (52.3%), Bangka Belitung (50.8%), South Kalimantan (50.7%), East Kalimantan (50.6%), West Java and South Sulawesi (50.4%).

On the other hand, 10 provinces with highest prevalence in terms of caries experience were Bangka Belitung (86.8%), South Kalimantan (84,7%), North Sulawesi (82.8%), Yogyakarta (78.9%), Jambi (77.9%), Maluku (77,5%), and East Java (76.25).

The prevalence of active caries as well as caries experience was showing variation by characteristic of respondent as presented in table 3.87.

Table 3.87
Prevalence of Active Caries and Caries Experience of People Aged Above 12 Years according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Active Caries	Caries Experience
Age group (years)		
12	29.8	36.1
15	36.1	43.6
18	41.2	50.8
35 – 44	53.8	80.5
65 +	32.5	94.4
Gender		
Male	43.2	65.7
Female	43.6	68.5
Type of Residence		
Urban	42.0	66.5
Rural	44.3	67.6
Level of expenditure per capita		
Quintile 1	42.5	64.6
Quintile 2	43.7	66.2
Quintile 3	43.8	67.5
Quintile 4	44.0	68.4
Quintile 5	42.8	68.9

Notes:
People with active caries are those who have D >0 or unhandled caries
People with caries experience are those who have DMFT >0.

In the context of age group, there was a tendency of increasing age led to the higher caries experience while its prevalence was rising until age 35 – 44 years old and started to decline at 65 years old above.

From the above table, the prevalence of caries experience (DMF-T >0) was slightly higher in woman and villages. On the other hand, caries prevalence was not showing any difference between man and woman but in villages it was a little bit higher. According to household expenditure level, there was a tendency in which higher household expenditure level, more people experiencing dental caries. However, caries prevalence was not showing a certain pattern at all household expenditure level.

Table 3.88 below is presenting the percentage of filled permanent teeth as well as caries permanent teeth by province.

Table 3.88
Required Treatment Index and Performed Treatment Index by Province, Riskesdas 2007

Province	RTI (D/DMF-T)x100%	PTI (F/DMF-T)x100%	MTI (M/DMF-T)x100%
NAD	23.9	1.1	75.0
North Sumatera	25.8	1.6	71.6
West Sumatera	19.0	0.7	81.0
Riau	27.9	1.2	70.2
Jambi	28.7	1.2	69.7
South Sumatera	22.2	0.9	76.6
Bengkulu	35.0	0.8	88.7
Lampung	35.1	1.4	91.8
Bangka Belitung	22.5	8.7	68.7
Kepulauan Riau	18.8	3.6	77.5
DKI Jakarta	25.8	4.4	69.1
West Java	33.8	1.6	92.2
Central Java	24.2	1.6	79.9
DI Yogyakarta	21.7	1.3	76.8
East Java	19.7	1.3	77.8
Banten	26.7	1.6	75.3
Bali	16.3	1.8	77.4
West Nusa Tenggara	20.8	1.9	77.6
East Nusa Tenggara	24.6	0.6	74.8
West Kalimantan	29.5	0.7	74.1
Central Kalimantan	26.8	1.9	76.9
South Kalimantan	19.2	1.7	80.9
East Kalimantan	27.8	2.2	71.0
North Sulawesi	35.3	1.1	86.6
Central Sulawesi	22.5	0.9	76.8
South Sulawesi	28.1	1.7	102.2
Southeast Sulawesi	22.2	2.0	76.9
Gorontalo	33.6	1.4	83.2
West Sulawesi	32.4	1.0	83.6
Maluku	31.5	1.4	67.1
North Maluku	32.7	1.2	65.4
West Papua	27.9	0.6	72.0
Papua	26.5	1.2	70.7
Indonesia	**25.2**	**1.6**	**79.6**

From the table above it is seen than PTI (personal motivation to have tooth filling in order to maintain the permanent teeth) was very low by only 1.6% while RTI (the severity of unhandled defect and required tooth filling/extraction) was 25.2%. There were 20 provinces with RTI rate above national average and 18 provinces with PTI under national average.

The percentage of PTI and RTI in table 3.89 was showing a variation by characteristic of respondent. According to age, starting from 15 years old, the RTI rate seemed to decline as age increasing while PTI was high at age 18 but started to decline at higher

ages. Meanwhile, based on sex, RTI in man was higher but its PTI was lower than woman.

The PTI in cities were 2 times higher than villages while for RTI was almost similar. Based on household expenditure level, there was a tendency where higher household expenditure level came to higher PTI but lower in RTI. It means that higher expenditure level resulted in better motivation of people to maintain their dental health.

Table 3.89
Required Treatment Index and Performed Treatment Index according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	RTI (D/DMF-T)x100%	PTI (F/DMF-T)x100%	MTI (M/DMF-T)x100%
Age group (years)			
12	62.3	0.7	26.2
15	65.3	1.9	28.6
18	63.4	2.6	33.0
35 – 44	32.3	1.9	64.9
65 +	6.3	0.8	92.6
Gender			
Male	26.8	1.4	78.6
Female	23.8	1.8	80.4
Type of Residence			
Urban	25.5	2.4	78.2
Rural	25.0	1.2	80.3
Level of expenditure per capita			
Quintile 1	26.3	1.1	81.7
Quintile 2	26.1	1.2	80.1
Quintile 3	25.3	1.5	79.7
Quintile 4	24.8	1.7	79.0
Quintile 5	23.6	2.6	78.0

Notes:

Performed Treatment Index(PTI) is a percentage of permanent teeth number which have been filled to DMF-T. PTI is describing motivation from someone to have tooth filling in order to maintain the permanent tooth.
Required Treatment Index (RTI) is a percentage of caries permanent teeth number to DMF-T rate. RTI is describing the severity of unhandled tooth defect and needs dental filling/extraction.

Table 3.90 below is presenting the proportion of normal teeth function, edentulous, and protease use on respondents aged 12 years above by provinces.

Table 3.90
Proportion of People Aged Above 12 Years According to Teeth Normal Function, Edentulous, Protease and Province, Riskesdas 2007

Province	Normal Function	Edentulous	Protease
NAD	92.2	2.0	4.8
North Sumatera	94.8	0.9	6.0
West Sumatera	88.9	2.5	5.8
Riau	92.5	3.0	9.8
Jambi	91.0	2.1	4.7
South Sumatera	91.3	1.5	10.9
Bengkulu	95.1	0.7	2.5
Lampung	93.2	1.0	2.0
Bangka Belitung	84.6	2.0	4.6
Kepulauan Riau	89.9	3.7	12.3
DKI Jakarta	94.9	0.7	4.0
West Java	93.2	0.7	2.6
Central Java	90.0	1.8	2.9
DI Yogyakarta	86.1	2.9	5.9
East Java	86.3	2.6	4.4
Banten	95.3	0.5	2.3
Bali	90.6	2.1	3.7
West Nusa Tenggara	94.0	0.9	5.0
East Nusa Tenggara	92.2	1.5	1.9
West Kalimantan	88.2	2.7	4.3
Central Kalimantan	91.3	1.6	6.1
South Kalimantan	85.1	3.2	3.3
East Kalimantan	91.5	2.3	2.9
North Sulawesi	91.5	0.9	7.1
Central Sulawesi	88.4	3.2	4.5
South Sulawesi	90.1	4.0	4.8
Southeast Sulawesi	92.0	2.4	5.5
Gorontalo	95.0	0.7	2.9
West Sulawesi	91.9	3.4	11.2
Maluku	91.5	1.4	2.0
North Maluku	94.2	1.3	1.6
West Papua	93.0	1.0	3.4
Papua	93.6	0.5	4.0
Indonesia	**91.0**	**2.0**	**4.5**

From the table above, it is seen that 91.0% of population aged more than 12 years was having dental normal function (owning at least 20 teeth functioning) which was higher than SKRT 2001 result (86.5%). The highest proportion of people who have normal function of teeth was in Banten (95.2%), and Gorontalo (95.0%). Edentulous proportion was 2.0% slightly lower than SKRT result in 2001 (2.6%). The highest proportion was found in South Sulawesi (4.0%) and Riau Islands (3.7%). Generally, 4.5% of people have been using prostatic or temporary/permanent imitation tooth where the highest was in Riau (12.3%) and West Sulawesi (11.2%).

The proportion of people with normal functioned teeth, edentulous and protease use was varied by characteristic of respondents.

From table 3.91, it is seen that the proportion of respondents aged 35 – 44 years old with normal functioning teeth was 95.9% which is higher than the WHO target in 2010 (90%) and SKRT 2001 (91.2%). Whereas in aged 65 years and above it was only 41.2%, still far above WHO target in 2010 (5%). The proportion of population experiencing edentulous and denture increased with age.

The proportion of normal teeth was a slightly higher in man than woman. Edentulous was higher in woman and village. Based on household expenditure level, normal function teeth and edentulous were spread evenly at all household expenditure level but protease utilization was rising along with the increase of per capita household expenditure.

Table 3.91
Proportion of People Aged Above 12 Years According to Teeth Normal Function, Edentulous, Prosthetic and Province, Riskesdas 2007

Characteristic	Normal Function	Edentulous	Prosthetic
Age group (years)			
12	99.9	0.0	0.5
15	99.9	0.0	1.7
18	99.9	0.1	1.9
35 – 44	95.9	0.4	4.6
65 +	41.2	17.6	14.5
Gender			
Male	91.3	1.9	5.0
Female	89.4	2.3	5.6
Type of Residence			
Urban	91.9	1.7	5.9
Rural	89.3	2.4	5.0
Level of expenditure per capita			
Quintile 1	90.0	2.1	4.2
Quintile 2	90.1	2.2	4.4
Quintile 3	90.2	2.1	5.1
Quintile 4	90.3	2.2	5.3
Quintile 5	91.0	2.0	6.9

3.5 Biomedical

3.5.1 Anemia

Biomedical data was collected from vena blood check of 80% respondents in cities. One of the results is anemia data. Anemia check to respondents' blood specimen was carried out in district/city's laboratory. The measurement covering Hemoglobin (Hb), MCV (mean corpuscular volume), MCH (mean corpuscular haematocrit), and MCHC (mean corpuscular haematocrit concentration). The last three mentioned above were measured to determine anemia types that can possibly predict the cause of anemia.

Table 3.92
Average Rate of Hemoglobin Concentration of Urban People by Province, Riskesdas 2007

Province	Adult Woman		Adult Man		Children (≤ 14 years)		Pregnant Mother	
	∑ specimen	Average rate Hb (g/dl)	∑ specimen	Average rate Hb (g/dl)	∑ specimen	Average rate Hb (g/dl)	∑ specimen	Average rate Hb (g/dl)
NAD	288	13.06	168	14.54	115	13.11	1	
North Sumatera	691	12.86	533	14.23	433	12.69	15	
West Sumatera	483	12.76	322	13.8	315	12.31	8	
Riau	73	12.74	39	14.85	41	12.43	1	
Jambi	178	13.33	157	15.25	77	12.75	10	
South Sumatera	246	13.15	219	14.48	103	12.83	5	
Bengkulu	229	13.12	221	14.74	175	12.87	2	
Lampung	313	12.82	305	14.22	199	12.79	4	
Bangka Belitung	232	12.91	226	14.21	147	12.36	0	
Kepulauan Riau	48	13.26	57	14.36	20	13.41	0	
DKI Jakarta	685	12.6	485	14.37	366	12.1	15	
West Java	1631	13.07	1471	14.76	1136	12.65	50	
Central Java	1841	12.82	1617	14.53	1075	12.66	37	
DI Yogyakarta	253	12.76	207	14.54	115	12.53	4	
East Java	2236	13.25	1953	15.01	1299	12.96	28	
Banten	327	13.13	307	15.16	169	12.9	5	
Bali	833	13.35	736	15.02	556	12.97	6	
West Nusa Tenggara	359	13.07	337	14.63	286	12.59	8	
East Nusa Tenggara	184	13.61	160	15.58	170	12.76	4	
West Kalimantan	239	12.8	182	14.51	173	12.53	2	
Central Kalimantan	268	13.11	218	14.8	123	13.06	11	
South Kalimantan	295	12.73	253	14.45	181	12.78	11	
East Kalimantan	405	12.75	331	14.44	323	12.48	6	
North Sulawesi	265	13.9	220	15.52	198	13.17	7	
Central Sulawesi	157	13.28	125	15.17	123	12.55	1	
South Sulawesi	594	12.97	483	14.56	396	12.54	20	
Southeast Sulawesi	205	12.22	157	14.03	144	11.67	10	
Gorontalo	86	12.48	75	14.18	57	12.79	0	
West Sulawesi	70	13.17	58	15.14	66	12.79	3	
Maluku	83	12.27	47	13.77	45	12.06	0	
North Maluku	95	11.62	70	13.32	57	10.49	3	
West Papua	41	13.5	28	14.21	44	12.78	0	
Papua	39	13.05	42	14.07	24	13.1	1	
Indonesia	**13.972**	**13**	**11.809**	**14.67**	**8.751**	**12.67**	**278**	**11.81**

As many as 34.810 blood specimens were collected and examined of which 13.972 were blood specimens of adult women (≥ 15 years) without pregnancy, 11.809 blood specimens of adult men (≥ 15 years) and 278 blood specimens of pregnant mothers.

Table 3.92 is presenting examination result such as the average number of Hb for adult women and men, children, and pregnant mothers in cities by provinces. Nationally, the average Hb of adult women was 13.00 g/dl, adult men was 14.67 g/dl, children was 12,67 g/dl, and pregnant mothers was 11.81 g/dl.

With those numbers and standard deviation for each average number, normal Hb range has been determined in Riskesdas version for those groups mentioned above (Table 3.93).

To determine whether a person is suffering from anemia or not, national normal standard as attached in SK Menkes RI No. 736a/Menkes/XI/1989 is used. The standards are:

Hb for adult man : ≥ 13 g/dl
Hb for adult woman : ≥ 12 g/dl
Hb for children : ≥ 11 g/dl
Hb for pregnant mothers : ≥ 11 g/dl

A person is confirmed to have anemia if Hb level is less than the above mentioned standard.

If we use average Hb obtained in Riskesdas, a person is confirmed to have anemia if the Hb is fewer than Hb national standard value for a particular group (adult women, adult men, and children) deducted 1 SD (X – 1SD).

Table 3.93
Normal Rate Range of Hemoglobin Concentration of Adult Woman and Man, Children and Pregnant Woman, Riskesdas 2007

Group	Average No. Hb (g/dl)	No SD (g/dl)	Average ± 1SD (g/dl)
Adult Woman	13.00	1.72	11.28 – 14.72
Adult Man	14.67	1.84	12.83 – 16.51
Children (≤ 14 years)	12.67	1.58	11.09 – 14.25
Pregnant Mother	11.81	1.55	10.26 – 13.36

Table 3.94 shows anemia prevalence in adult women (without pregnancy) and adult men as well as children by province, based on Riskesdas average and a confidence interval of 1 SD and standard value of SK Menkes No. 736 year 1989.

It is seen that there was a difference in anemia prevalence referring to both standards above. Respectively referred to normal standard in Riskesdas and SK Menkes were 11.3% and 19.7% for anemia in urban adult women, 12.2% and 13.1% for urban adult men, 12.8% and 9.8% for children. Additionally, from 33 provinces totally, pregnant mothers who became biomedical respondent (whose blood was collected) was reported as many as 278 persons (not presented in Table 3.94); 68 persons (24.5%) of them were suffering from anemia as referred to SK Menkes while it was 39 persons based on Riskesdas (14.0%).

The prevalence of anemia in general, after adjusted into women, men, and children can be seen in Table 3.95.

It seems that nationally, the national prevalence for anemia was 14.8% (referring to SK Menkes) and 11.9% (referring to Riskesdas). There were 20 provinces with higher anemia prevalence from national rate. An extremely high prevalence was found in Southeast Sulawesi and North Maluku based on the above standards.

Table 3.94
Prevalence of Anemia of Adult People in Urban area
By Province, Riskesdas 2007

Province	Woman		Man		Children	
	Anemia (%) SK Menkes <12g/dl	Anemia (%) Riskesdas <11,28g/dl	Anemia (%) SK Menkes <13g/dl	Anemia (%) Riskesdas <12,83g/dl	Anemia (%) SK Menkes <11g/dl	Anemia (%) Riskesdas <11,09g/dl
NAD	20.1	10.4	16.1	15.5	7.8	12.2
North Sumatera	25.0	15.6	26.8	25.3	14.5	17.1
West Sumatera	29.8	16.6	27.6	25.8	17.1	19.0
Riau	28.8	16.4	5.1	5.1	9.8	12.2
Jambi	9.0	9.0	5.1	5.1	5.2	19.5
South Sumatera	16.3	9.3	17.4	16.4	12.6	16.5
Bengkulu	16.2	7.9	11.3	11.3	8.0	10.3
Lampung	25.9	12.5	21.6	21.0	5.5	6.0
Bangka Belitung	21.1	12.9	17.7	16.8	16.3	19.7
Kepulauan Riau	12.5	8.3	19.3	15.8	5.0	5.0
DKI Jakarta	27.6	13.6	14.6	13.8	18.6	19.7
West Java	13.4	13.4	7.4	7.4	6.4	18.8
Central Java	22.8	12.4	14.4	12.8	9.1	10.4
DI Yogyakarta	20.9	9.1	11.6	10.6	8.7	10.4
East Java	15.6	7.7	8.9	8.1	5.4	6.2
Banten	19.3	11.3	8.8	7.8	8.9	10.7
Bali	10.8	4.6	8.0	7.7	4.7	5.4
West Nusa Tenggara	20.9	9.7	13.6	11.9	11.5	12.6
East Nusa Tenggara	28.8	19.0	8.1	8.1	18.2	19.4
West Kalimantan	23.4	10.5	13.7	12.6	12.1	13.3
Central Kalimantan	19.4	14.2	13.3	13.3	8.1	9.8
South Kalimantan	21.7	12.2	14.2	14.2	3.9	5.0
East Kalimantan	24.2	12.6	17.5	14.8	14.2	14.9
North Sulawesi	8.7	4.5	5.0	5.0	2.5	3.0
Central Sulawesi	13.4	7.6	8.8	8.8	8.9	17.1
South Sulawesi	19.7	10.3	16.1	15.3	11.9	13.1
Southeast Sulawesi	38.0	19.5	23.6	20.4	31.9	34.7
Gorontalo	31.4	17.4	18.7	18.7	8.8	10.5
West Sulawesi	12.9	2.9	5.2	5.2	10.6	10.6
Maluku	43.4	20.5	14.9	14.9	17.8	17.8
North Maluku	27.4	24.2	24.3	24.3	26.3	26.3
West Papua	14.6	7.3	17.9	17.9	4.5	9.1
Papua	17.9	12.8	23.8	23.8	12.5	16.7
Indonesia	**19.7**	**11.3**	**13.1**	**12.2**	**9.8**	**12.8**

Table 3.95
Anemia Prevalence of Adult People in Urban Area by Province, Riskesdas 2007

Province	Anemia Prevalence (%) (adjusted with group of adult woman, adult man and children)	
	Refers to SK Menkes	Refers to Riskesdas
NAD	16.4	12.2
North Sumatera	22.7	19.0
West Sumatera	25.4	19.8
Riau	17.5	12.3
Jambi	6.6	9.2
South Sumatera	15.9	13.3
Bengkulu	12.1	9.7
Lampung	19.2	14.0
Bangka Belitung	18.7	16.0
Kepulauan Riau	14.4	11.2
DKI Jakarta	21.1	15.0
West Java	9.4	12.6
Central Java	16.4	12.0
DI Yogyakarta	15.0	9.8
East Java	10.7	7.5
Banten	13.0	9.8
Bali	8.2	5.9
West Nusa Tenggara	15.6	11.2
East Nusa Tenggara	18.7	15.6
West Kalimantan	17.1	11.9
Central Kalimantan	14.7	12.7
South Kalimantan	14.5	10.9
East Kalimantan	19.0	13.9
North Sulawesi	5.7	4.2
Central Sulawesi	10.6	10.8
South Sulawesi	16.2	12.5
Southeast Sulawesi	31.2	23.6
Gorontalo	21.1	16.1
West Sulawesi	9.6	6.1
Maluku	29.1	18.3
North Maluku	25.8	24.4
West Papua	11.5	10.6
Papua	18.9	17.9
Indonesia	**14.8**	**11.9**

According to erythrocyte formation and color (morphology) , some types anemia are known as follow:

Woman:

Anemia Microcytic : MCV <96 fl (fitoliter)

Anemia Normocytic : MCV = 96 – 108 fl

Anemia Macrocytic : MCV >108 fl

Man :

Anemia Microcytic : MCV <96 fl (fitoliter)

Anemia Normocytic: MCV = 96 – 108 fl

Anemia Macrocytic: MCV >108 fl

Woman and Man :

Anemia Hypochromic : MCHC <33 %

Anemia Normochromic : MCHC = 33 – 36%

Anemia Hyperchromic : MCHC >36 %

And combination of all types above.

Micrcytic – hypochromic anemia commonly occurred because of iron deficiency, advanced chronic disease or lead. Normocytic-normochromic anemia is commonly caused by early phase chronic disease or acute bleeding while macrocytic anemia is normally caused by Vitamin B12 deficiency.

Table 3.96 shows most types of anemia that occurred in adults and children is microcytic hypochromic anemia (60.2%). If it is compared between children and adults, this anemia is higher among children. On the other hand, normocytic normochromic anemia was pirmarialy found in adult men. The most frequent anemia in pregnant mothers was microcytic hypochromic anemia (53% of pregnant mothers suffering from this type of anemia).

In addition to Hb level and anemia types, another examination like hemocyte check, erythrocyte check, leukocyte check, and thrombocyte check were also carried out (Table 3.97). The result of Hb check and erythrocyte check on pregnant mothers tends to show lower values than among other adult groups. In contrast, leukocyte level of pregnant mothers was higher.

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1 Microcytic = erythrocyte size < normal
Normochrocytic = erythrocyte size is normal
Macrocytic = erythrocyte size > normal
Hypochrome = erythrocyte color is lighter than normal
Normochrome = erythrocyte color is normal
Hyperchrome = erythrocyte color is darker than normal

Table 3.96
Proportion of various kinds of Anemia
On Adult And Children

Group	N Anemia*	Anemia (%) Microcytic Hypochromic	Anemia Normocytic Normochromic	Anemia Macrocytic	Anemia Others
Adult Woman	1581	59.9	0.8	11.3	27.9
Adult Man	1445	33.4	31.1	14.5	20.9
Children	1118	70.1	4.1	1.5	24.2
Pregnant mother	39	59	0	10.3	30.8
TOTAL	**4183**	**60.2**	**4.3**	**14.2**	**21.4**

*Anemia refers to standards proportion of Riskesdas

Table 3.97

Average Rate ± of 1SD Result of other Hematology Check
Riskesdas 2007

Group	Hematocryte (%)	Erythrocyte (mio/µl)	Leukocyte (thousand/µl)	Trombocyte (thousand /µl)
Children				
1 – 4 years	31.0 – 40.0	4.2 – 5.4	6.1 – 12.1	221.8 – 444.2
5 – 14 years	29.2 – 46.8	3.3 – 6.5	6.0 – 10.2	259.0 – 379.0
Adult				
Man	38.1 – 48.7	4.4 – 5.8	5.3 – 9.7	174.6 – 321.4
Woman	33.8 – 43.8	4.0 – 5.2	5.7 – 10.1	193.5 – 354.5
Pregnant mother	30.7 – 39.3	3.5 – 4.7	6.7 – 11.9	187.1 – 342.9

Table 3.98 describes the prevalence of anemia by age group, education, occupation, and household expenditure level per capita per month. In terms of age, the highest prevalence was found in under fives that was 27.7% followed by elderly group (above 75 years old) as much as 17.7%.

Based on educational level, with higher levels of education, anemia prevalence became lower. It was seen that housewives were experiencing the highest anemia prevalence. According to household expenditure level per capita, the quintile 1 group had highest prevalence (11%). Higher household expenditure level led to lower anemia prevalence.

Table 3.98
Prevalence of Anemia Refers to Respondent's characteristic
Riskesdas 2007

Respondent's characteristic	Anemia
Age group (year)	
1-4	27.7
5-14	9.4
15-24	6.9
25-34	5.5
35-44	6.2
45-54	6.6
55-64	7.7
65-74	10.4
75+	17.7
Education Level	
No Schooling	10.4
Unfinished Primary School	8.0
Finished Primary School	7.1
Finished Junior High	6.0
Finished Senior High	6.3
Finished University	5.5
Employment	
Jobless	8.9
Student	6.6
House wife	10.0
Employee	5.1
Entrepreneur	4.5
Farmer/Fisherman/Labor	5.6
Others	7.0
Level of expenditure per capita	
Quintile 1	11
Quintile 2	10
Quintile 3	9
Quintile 4	7.9
Quintile 5	7.4

3.5.2 Diabetes Mellitus

Vena blood extraction for examining blood glucose was done in respondents aged more than 15 years for 24,417 respondents from urban area only. The inclusion criteria of blood glucose checking was for sample survey respondents 15 years old and above and not pregnant (for medical and ethic reasons). Respondents were requested to fast for 14 hours before blood extraction then 75 grams of glucose was given (300 calories) unless the respondents indicated a history of Diabetes Mellitus (DM) history (confirmed by coordinator doctor of laboratory team). Venous blood extraction was done as much as 15 cc 2 hours after loading.

After being extracted, the blood was kept for about 30 minutes. Soon after that, the blood was centrifuged and its serum extracted. The serum (300 µl) was immediately examined (< 4 hours) to know the level of blood glucose using automatic clinical chemistry or photometry. The remainer of the blood was sent to NIHRD laboratory in Jakarta for further analysis.

To confirm DM diagnosis, the WHO reference (1999) and American Diabetic Association (2003) in which the glucose level 2 hours after loading are:

< 140 mg/dl	:	No DM
140 - < 200 mg/dl	:	Impaired Glucose Tolerance (IGT)
≥ 200 mg/dl	:	Diabetes Mellitus (DM)

Table 3.99 shows IGT and total DM in Indonesian urban population. The total number of DM is a combination of percentage of respondents who acknowledged that they have DM or in this report it called Diagnosed Diabetes Mellitus (DDM) and percentage of respondents who did realize that they have DM – just have been diagnosed in this Riskesdas – called as Undiagnosed Diabetes Mellitus (UDDM) in this report.

Generally, the IGT prevalence resulted in this research was almost double of DM prevalence. The total prevalence of DM was 5.7% but respondents with recognized DM diabetes (DDM) was only 1.5%, which is only 26% of the from total DM.

Table 3.99
Prevalence of TGT, DM, DDM and UDDM in Urban Population, Riskesdas 2007

	TGT	DDM*	UDDM**	Total DM***
Urban population in Indonesia	10.2%	1.5%	4.2%	5.7%

*DDM = *Diagnosed Diabetes Mellitus* (Respondent acknowledged that they have DM)
**UDDM = *Undiagnosed Diabetes Mellitus* (Respondent realized that they have DM – just have been diagnosed in this Riskesdas)
***Total DM = DDM + UDDM

Table 3.100 shows the prevalence of IGT and DM in urban population by province. The highest DM prevalence was found in West Kalimantan and North Maluku (each was 11.1%) followed by Riau (10.4%) and NAD (8.5%). The lowest DM prevalence was occurred in Papua (1.7%) and East Nusa Tenggara (1.8%). The highest IGT prevalence was in west Papua (21.8%) followed by West Sulawesi (17.6%), and North Sulawesi (17.3%) while the lowest was in Jambi (4%) and East Nusa Tenggara (4.9%).

Table 3.100
Prevalence of Impaired Glucose Tolerance and Diabetes Mellitus according to Province in Urban Area, Riskesdas 2007

Province	TGT (%)	Total DM (%)
NAD	12.0	8.5
North Sumatera	11.3	5.3
West Sumatera	8.9	4.1
Riau	6.6	10.4
Jambi	4.0	5.2
South Sumatera	7.3	3.4
Bengkulu	6.6	3.0
Lampung	6.3	6.2
Bangka Belitung	8.2	8.6
Kepulauan Riau	6.5	3.3
DKI Jakarta	12.3	6.6
West Java	7.8	4.2
Central Java	13.1	7.8
DI Yogyakarta	8.4	5.4
East Java	11.6	6.8
Banten	10.3	5.3
Bali	9.1	3.0
West Nusa Tenggara	5.4	4.1
East Nusa Tenggara	4.9	1.8
West Kalimantan	12.3	11.1
Central Kalimantan	8.2	3.2
South Kalimantan	14.7	5.0
East Kalimantan	10.2	6.0
North Sulawesi	17.3	8.1
Central Sulawesi	9.1	4.5
South Sulawesi	10.5	4.6
Southeast Sulawesi	8.0	3.8
Gorontalo	7.7	7.7
West Sulawesi	17.6	3.7
Maluku	10.3	4.8
North Maluku	9.9	11.1
West Papua	21.8	5.5
Papua	6,7	1,7
Indonesia	**10.2**	**5.7**

Table 3.101 is describing the prevalence of IGT and DM by characteristic of respondent. The table shows that DM and IGT were rising as age rose. DM was mostly found in women (6.4%) than men (4.9%) and also similar in IGT in women (was 11.5%) higher than men (8.7%). In education, DM and IGT prevalence was higher in group without school experience and Elementary School experience. Based on occupation, it was higher in housewives and jobless followed by employees and entrepreneur. In terms of household expenditure level, the prevalence of DM and IGT was rising along with the increase of household expenditure level per capita.

Table 3.101
Prevalence of TGT and DM according to Respondent's characteristic, Riskesdas 2007

Characteristic	TGT (%)	Total DM (%)
Age group (year)		
15 – 24	5.3	0.6
25 – 34	6.9	1.8
35 – 44	11.5	5.0
45 – 54	12.8	10.5
55 – 64	15.3	13.5
65 – 74	17.8	14.0
Above 75	21.7	12.5
Gender		
Male	8.7	4.9
Female	11.5	6.4
Education Level		
No schooling	13.9	8.9
Unfinished Primary School	12.3	8.0
Finished Primary School	10.4	5.5
Finished Primary School	9.6	4.4
Finished Senior High	8.9	4.9
Finished University	9.8	5.6
Employment		
Jobless	12.6	6.9
Student	6.5	1.0
House wife	11.7	7.0
Employee	10.6	5.9
Entrepreneur	9.9	5.9
Farmer/Fisherman/Labor	6.0	2.8
Others	10.3	9.0
Level of expenditure per capita		
Quintile 1	8.8	4.1
Quintile 2	8.9	4.0
Quintile 3	10.4	5.3
Quintile 4	10.1	5.3
Quintile 5	10.5	7.1

Table 3.102 shows the percentage of blood glucose of respondents who acknowledged DM or called as Diagnosed Diabetes Mellitus (DDM), 2 hours after 300 calories liquid food feeding, seemed that there were many of them whose blood glucose was not under control (glucose level $\geq$ 140 mg/dl).

Table 3.102
Percentage of blood glucose of DDM respondents, 2 hours after 300 calories liquid food feeding, Riskesdas 2007

Gender	Level of blood glucose		
	< 140 mg/dl	140 - < 200 mg/dl	>= 200 mg/dl
Male	33.1%	17.8%	49.1%
Female	17.3%	15.9%	66.8%
Total	24.1%	16.7%	59.2%

Table 3.103 shows higher DM and IGT prevalence in respondents who are overweight and obese as well as having central obesity. It was also higher in hypertension group prevalence compared with non hypertension group.

Table 3.14 indicates that DM and IGT prevalence is approximately same in group whose vegetable consumption < 5 and ≥ 5 portion/day. By physical activities, DM and IGT prevalence was higher in the less active groups.

Table 3.103
Prevalence of TGT and DM refers to BMI, Abdominal Obesity and Hypertension

Respondent's characteristic		TGT	DM
BMI	Thin	10.3	3.7
	Normal	9.1	4.4
	Overweight	12.3	7.3
	Obesity	16.3	9.1
Abdominal	Central obesity	15.9	9.7
	Non Central obesity	9.1	4.0
Hypertension		15.1	9.0
	Non Hypertension	8.4	3.4

Table 3.104
Prevalence of DM and TGT refers to vegetables and fruits consumption habit and Activity

Characteristic		TGT	DM
Vegetables & Fruits	≥ 5 portion/day	10.3	4.9
	< 5 portion/day	10.5	5.0
Physical activity	enough	10.1	4.7
	Not enough	11.2	5.7

3.6 Injuries and Disabilities

3.6.1 Injuries

Injury cases in Riskesdas 2007 were collected from interviews. Respondents were asked about Injuries that they had experienced in the last 12 months for all age groups. The injuries in Riskesdas 2007 were accident and incidents which impaired activity level. The number of respondents which had been asked about injuries were 973,525 people..

The classification of body parts which have been injured were based on ICD-10 (International Classification Diseases) consisting of 10 categories. They are head; neck; chest; stomach and around (stomach, back, hip); shoulders and around (shoulder and Upper arm); elbow and around (elbow and lower arm); hand and fingers; Knee and lower leg; heel and foot. Generally, respondents had injury experiences in multiple locations.

Table 3.105 shows that from 33 provinces in Indonesia, overall injury prevalence was between 3.8% - 12.9% with the average of 7.5%. The highest prevalence was found in East Nusa Tenggara (12.9%), while the lowest was found in South Sumatera (3.8%). There were 15 provinces which the injury prevalence was higher than the number of national prevalence, they are East Nusa Tenggara (12.9%), South Kalimantan (12.0%), Gorontalo (11.1%), Central Sulawesi (10.2%), DKI Jakarta (10.1%), and West Papua (10.1%), the rest were below of 10%.

The major causes of injury were accidental falls, followed by land transportation accidents, and injury by sharp/dull objects. While other types of injury causes were varied but the prevalence was low.

The average cause of injury by falling was 58.0%. The highest falling prevalence was found in DKI Jakarta (67.0%) which was followed by East Nusa Tenggara (64.6%) and the lowest prevalence was found in DI Yogyakarta (45.4%). There were 11 provinces in which the injury prevalence rates of fall related accidents was higher than the National prevalence fall rate, they were DKI Jakarta East Nusa Tenggara, Southeast Sulawesi, Banten, West Papua, Maluku, East Java, West Sulawesi, Central Java, and West Java.

The prevalence of land transportation accidents was 14.8%-44.2% with an average of 25.9%. The highest prevalence was found in Bengkulu (44.2%), then in DI Yogyakarta (43.3%), while the lowest was found in East Nusa Tenggara (14.8%). There were 18 provinces which injury prevalence causes by land transportation accident was higher than National prevalence number.

The highest prevalence of injury caused by sharp/dull objects was found in Central Sulawesi (33.7%) more than the National prevalence (20.6%) whereas the lowest risk was found in DKI Jakarta (8.9%). There were 14 provinces which the prevalence of injury caused by sharp objects was higher than National prevalence number.

The causes of injury were almost evenly spread in every provinces. The injury cause by of attack had a its highest prevalence in West Kalimantan (5.2%) and Papua (4.9%).

Table 3.106 shows that injury prevalence according to age was highest in 5-14 years old (about 9.1%) and followed by 15-24 years old (9.0%). Other age categories were almost flat except for babies (< 1 years old). Thus, fall injury prevalence ncreased in young ages but started to go down and slowly rose again in older age groups. The highest prevalence of fall injury was found among children less than 14 years old and adults above 75 years of age. The prevalence of injury caused by land transportation accident grouped between 15-54 years old and the highest prevalence (47.9%) was among 15-24 years olds.

Generally, the highest risk of injury was among males and injury caused by land transportation accident was also highest among males, while the highest injury caused by fall and/or sharp/dull objects is among females. Other injury causes have simiar risk among male and females.

If reference to educational level, injury risk was similar among all education level, only slightly higher in respondents who didn't accomplish Elementary School. Injury caused by land transportation accident rose with the rise of education level. The highest prevalence was in respondents who completed university (50.2%) and the lowest was in respondents without education experience (13.3%). While injury caused by fall accident was decrease as education level increased. The highest prevalence was found in respondents without education background (64.5%) and the lowest was in respondents who graduated from university (36.4%). Injury prevalence which caused by sharp/dull objects was highest among respondents who finished Elementary School (26.0%) and the lowest was in respondents who graduated from university. Another injury causes were almost same at all education level.

Referring to job category, there was 9.3% of injuries found in respondents who still going to school and the lowest were in housewives (4.8%). Injury caused by fall accident was found in respondents who still going to school (63.0%) and the lowest risk was among employees (37.3%). The highest injury prevalence which caused by land transportation accident was occurred in employees (53.2%) followed by entrepreneur (45.6%) and the lowest was happened in housewife (19.7%). The highest injury prevalence caused by sharp and dull objects was in housewives (32.2%) and the lowest was in employees (15.4%).

Referring to type of residence, there was no significant difference in injury prevalence between urban and rural areas. However, if it refers to cause of injuries, the prevalence of injuries caused by land transportation in urban areas was approximately 30.7% but injuries resulted from fall accident (58.5%) and sharp/dull objects (23.6%) was found in respondents living in rural areas.

Table 3.106 is also showing the prevalence of injury by expenditure level per capita per month. In that table, injury prevalence was almost same or equal with expenditure level between quintile 1 until quintile 5. It indicates that there was no difference in prevalence of injury by economic status. The highest injury prevalence caused by land transportation accident appears in quintile 5 (34.4%) whereas the biggest injury caused by fall accident appeared in quintile 1 (63.7%). The prevalence of injury caused by sharp/dull objects was available in quintile 2 (21.9%).

Table 3.107 shows the highest prevalence of injured body part by province as follow: neck was 3.5% in Papua, chest was 8.5% in NAD, abdominal/back/hip was 14.4% in west Papua, shoulders/upper arms was 14.6% in NAD, elbows/down arms was 29.6% in West Kalimantan, circle and hand was 38.3% in West Nusa Tenggara, hip/upper legs was 11.5% in South Kalimantan, knees/down leg was 47.5% in Jakarta, heel and leg was 30.8% in West Nusa Tenggara.

Some of provinces which injury prevalence to the head were higher than the National prevalence were Kepulauan Riau (18.9%), West Papua (8.0%), NAD (17.9), Papua (16.8%), South Sumatera (16.7%), Jambi (16.5%), DI Yogyakarta (16.4%), North Sulawesi (16.1%). The other provinces, the prevalence was lower than 15%.

Table 3.108 shows that injury to the head, neck, chest, abdominal/back/hip, shoulder/upper arm were dominated by < 1 year old age group. Each of them was 50.0%, 3.6%, 6.9%, 15.5%, 11.3%. While for injury to the shoulder was balanced between < 1 year old, 15-24 years old and above 75 years old. The highest injury prevalence to the elbow was among respondents agee 15-24 and 5-14 years old each was 50.0%; 3.6%; 6.9%; 15.5%; and 11.3%. Shoulder injury was similar among age

groups, 1 year, 15-24 years, and above 75 years. The prevalence of elbow injury was highest in 15-24 years old group and 5-14 years old group, each was 24.0% and 20.5%. On the other hand, injuries to the hip and upper leg were mostly suffered by age respondents age 75 years and above (15.2%) while for elbow injury risk was highest in age cohort 5-14 years (46.7%) and age cohort of 1-4 years (43.3%).

The prevalence of respondents who suffered from injuries in head, chest, shoulders, elbows, knees/down leg, heels and legs was mostly seen in men rather than among women. A significant difference was slightly seen in elbows/arms injury which was 20.6% compared with 14.8%.

In terms of educational background, it was found that the prevalence of respondents who have head injury (12.3%) also completed senior high school followed by respondents who completed junior high school (11.7%). For abdominal injury, most of its respondents didn't go to school (11.1%) and for other injuries was almost equal across all levels of education.

The highest head injury prevalence was suffered by working respondent (13.0%) followed by jobless respondents and entrepreneur (each was 12.9%). For chest injury (3.8%), the highest was suffered by farmers/fisherman/labors while abdominal injury was mostly suffered by housewives (9.3%) as well as farmers/labors (9.1%). Injuries in hip/upper legs was mostly in housewives (36.2%) whereas elbows and down legs injuries was in respondents who still going to school (43.7%).

Based on type of recidence, injuries in head and neck were equal between urban and rural population. Injuries in chest (3.6%), stomach (7.7%), circle hand (28.6%) and hip (6.3%) were mostly found in villages.

The prevalence of body parts which suffered the most injuries was the head, neck, and stomach. Analysis by expenditure level per capita by month was indicated that injury risk was almost equal from quintile 1 until quintile 5, only elavated highest for shoulders and neck injuries among quintile 5. On the other hand, the highest prevalence for hip injury was among quintile 3 while elbow injury was highest for quintile 4.

As given in table 3.109, the average prevalence of any injury resulted from collision accident was 42.47%. The highest injury prevalence caused by collision accident was 47.1% found in South Sulawesi which followed by Maluku (46.6%). There were 5 provinces which injury prevalence caused by collision was higher than national average namely South Sulawesi, Maluku, Gorontalo, North Sulawesi, and Papua.

The average prevalence of abrasion was 50.8%. West Kalimantan province reached 60.2% which is the highest provincial prevalence. There are 19 provinces with abrasion risk above the national average. The average prevalence of open injury is 25.4%. And the highest prevalence is approximately 33.3% which occurred in Central Sulawesi province. Some 13 provinces reach the total prevalence that higher than National prevalence. The average prevalence of burns is relatively low at 2.2%. The province of NAD and Riau Island reach 3.8% which is the highest level of burns.

The average prevalence of sprained ankle is 20.9%. The highest percentage was in the Province of South Kalimantan which reported 36.6%. Some 16 provinces have the higher total prevalence than the national average. The average prevalence of broken bone is 4.5%. The highest prevalence occured in the Province of North Maluku that had a prevalence of 9.0%. Some 14 provinces had a prevalence of broken bones that was higher than the national average. The average prevalence of other wounds is relatively low. The average prevalence of amputation is 1.0%, poisoned 1.0% and the others are 1.5%.

Table 3.110 describes types of wound based on the respondents' characteristic. Refer to age group, the prevalence of fire wound is the most common case and found in the age

group under 1 year /infant (3.3%). The cases of poisoned are quite often found in the age group of above 75 years old, and the males are quite often become the victims , and also this kind of wound more often happens in the village/rural area .

Table 3.105 Prevalence of Injury and Injury causes by Province, Riskesdas 2007

Respondent's characteristic	Injury	Injury causes															
		Land	Sea	Air	Fall	Sharp /dull	Attack	Gun	Poison contact	Nature disaster	suicide	Sink	radiation	Burnt	Aphasia	medical	Others
NAD	5.2	35.4	0.9	1.2	48.3	18.1	2.0	0.9	1.4	1.2	0.2	0.3	1.2	2.1	0.3	0.5	2.8
Sumut	3.8	31.3	0.1	1.0	53.7	16.9	0.7	0.0	0.5	0.0	0.0	0.2	0.4	0.8	0.1	0.2	5.3
Sumbar	7.2	25.2	0.2	1.2	56.1	24.1	2.4	0.2	1.0	0.8	0.6	0.3	0.9	1.9	0.0	0.2	6.4
Riau	5.0	30.3	0.7	0.7	50.7	19.5	1.2	0.4	1.0	0.1	0.0	0.3	0.3	0.5	0.0	0.2	7.3
Jambi	4.9	31.4	0.1	0.5	54.1	25.0	2.4	0.0	2.2	0.1	0.0	0.5	0.5	0.9	0.1	0.0	2.9
Sumsel	4.6	29.1	0.9	1.2	53.7	28.3	3.3	0.1	2.4	0.1	0.1	0.4	0.6	0.6	0.1	0.1	4.3
Bengkulu	9.0	44.2	0.1	0.4	50.1	15.0	1.5	0.1	0.7	0.6	0.0	0.1	0.3	0.9	0.1	0.1	3.1
Lampung	4.5	35.8	0.2	0.2	50.1	14.9	1.3	0.0	0.6	0.0	0.0	0.0	0.4	0.8	0.0	0.0	**2.2**
Ba-Bel	7.6	33.5	0.0	0.5	56.9	15.6	0.5	0.0	1.4	0.0	0.0	0.1	0.4	0.7	0.1	0.1	5.4
Kep. Riau	5.9	31.8	0.7	0.8	55.4	15.0	0.8	0.0	0.5	0.0	0.0	0.3	0.8	2.9	0.0	0.0	6.7
DKI	10.1	27.7	0.3	1.3	67.0	8.9	1.3	0.1	0.8	0.6	0.1	0.2	1.0	1.7	0.1	0.2	4.2
Jabar	9.5	27.2	0.1	0.4	58.2	15.8	0.7	0.0	0.6	0.0	0.0	0.1	0.6	1.2	0.1	0.1	3.7
Jaten	8.7	24.7	0.1	0.4	**60.4**	16.7	1.0	0.0	0.8	0.1	0.0	0.1	0.4	1.0	0.1	0.1	4.1
D.I Y	7.2	43.3	0.4	0.5	45.4	9.6	0.8	0.0	0.5	0.1	0.0	0.0	0.3	0.4	0.0	0.0	7.8
Jatim	8.4	24.1	0.2	0.4	62.3	17.6	1.3	0.1	1.0	0.0	0.0	0.3	0.8	1.0	0.1	0.1	3.1
Banten	9.2	30.2	0.2	0.5	64.1	12.2	1.9	0.1	1.7	0.1	0.0	0.2	0.9	0.6	0.0	0.2	9.2
Bali	6.8	30.1	0.4	0.4	55.4	15.7	1.4	0.1	1.1	0.1	0.1	0.1	0.3	0.8	0.1	0.1	2.8
N.T.B	9.0	25.7	0.1	0.4	57.5	32.8	1.4	0.0	0.7	1.6	0.0	0.2	0.5	1.2	0.0	0.0	1.7
N.T.T	12.9	14.8	0.2	0.1	64.6	29.0	1.3	0.1	0.8	0.0	0.1	0.1	0.3	0.8	0.0	0.0	1.9
Kalbar	4.7	24.5	0.1	0.7	57.7	31.8	5.2	0.1	1.2	0.1	0.2	0.2	0.9	0.3	0.1	0.1	1.9
Kalteng	5.4	22.8	0.4	0.5	57.8	16.8	1.5	0.1	0.7	0.2	0.1	0.1	0.7	1.7	0.1	0.2	4.2
Kalsel	12.0	17.8	0.1	0.5	61.1	23.6	0.6	0.0	1.3	0.1	0.0	0.2	0.5	3.1	0.1	0.0	3.9
Kaltim	6.7	30.7	0.3	0.3	53.1	22.7	1.2	0.1	0.7	0.0	0.1	0.3	0.2	1.4	0.0	0.1	4.3
Sulut	9.1	30.9	0.1	0.2	56.8	12.9	0.9	0.1	0.8	0.0	0.0	0.0	0.5	0.8	0.0	0.0	**3.9**
Sulteng	10.2	21.7	0.3	0.1	49.3	33.7	1.1	0.0	0.6	0.2	0.0	0.2	0.6	0.9	0.0	0.0	3.0
Sulsel	8.9	22.6	0.1	0.2	57.3	24.2	2.0	0.0	1.1	0.1	0.1	0.1	0.8	1.4	0.0	0.1	**2.6**
Sultra	7.5	23.9	0.3	0.2	64.1	21.6	0.6	0.0	0.3	0.0	0.0	0.1	0.3	1.2	0.0	0.1	2.0
Gorontalo	11.1	30.8	0.4	0.2	51.7	29.7	0.9	0.0	0.7	0.2	0.2	0.5	0.4	0.2	0.0	0.1	3.2
Sulbar	4.5	17.7	0.4	0.2	61.8	19.0	2.4	0.2	0.2	0.2	0.2	0.4	1.1	0.9	0.2	0.5	3.9
Maluku	4.3	18.0	1.6	0.9	62.3	16.5	1.3	0.0	0.2	0.2	0.0	0.2	0.0	0.2	0.0	0.2	1.1
Malut	4.4	27.9	0.4	0.2	58.0	19.4	1.2	0.0	0.0	0.0	0.0	0.4	0.0	1.2	0.0	0.2	**3.8**
Papua Barat	10.1	22.0	0.7	0.1	63.6	21.4	1.0	0.1	0.3	0.3	0.0	0.1	0.3	1.0	0.0	0.2	3.3
Papua	7.5	16.8	0.3	0.3	56.6	31.9	4.9	0.1	0.9	0.4	0.1	0.8	0.3	1.5	0.2	0.0	5.1
Indonesia	7.5	**25.9**	**0.2**	**0.5**	**58.0**	**20.6**	**1.4**	**0.1**	**0.9**	**0.2**	**0.1**	**0.2**	**0.6**	**1.2**	**0.1**	**0.1**	**3.7**

Table 3.106. Prevalence of Injury and Injury causes according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Injury	Injury cause															
		Land	Sea	Air	Fall	Sharp /dull	Attack	Gun	Poison contact	Nature disaster	suicide	Sink	radiation	Burnt	As-fik-sia	Complication ication	Others
Age group (year)																	
< 1	2.2	2.2	0.3	0.3	88.9	3.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	1.4	0.0	0.0	5.7
1 – 4	7.9	4.8	0.1	0.4	87.6	8.4	0.5	0.0	0.5	0.0	0.0	0.3	0.2	1.6	0.0	0.1	3.0
5 – 14	9.1	12.2	0.1	0.6	78.4	14.7	1.1	0.1	0.6	0.2	0.1	0.3	0.4	1.0	0.0	0.0	3.1
15 – 24	9.0	47.9	0.2	0.6	42.3	18.2	1.5	0.1	0.7	0.2	0.1	0.2	0.7	1.3	0.0	0.1	3.6
25 – 34	6.7	36.8	0.5	0.6	40.2	28.7	2.0	0.1	1.1	0.4	0.1	0.2	0.9	1.3	0.1	0.2	4.2
35 – 44	6.4	31.5	0.4	0.4	42.3	28.8	2.0	0.0	1.5	0.2	0.0	0.1	0.8	1.5	0.1	0.2	4.1
45 – 54	6.5	27.5	0.3	0.4	45.7	29.3	1.5	0.1	1.3	0.2	0.0	0.1	0.6	0.9	0.1	0.1	4.4
55 – 64	6.4	19.7	0.5	0.2	56.5	26.1	1.9	0.0	1.2	0.2	0.1	0.1	0.5	1.0	0.1	0.2	4.2
65 – 74	7.0	13.1	0.2	0.7	67.9	19.2	1.4	0.1	1.3	0.1	0.1	0.0	0.4	0.5	0.0	0.1	4.5
75+	7.7	9.2	0.0	0.8	76.7	11.9	0.7	0.2	0.8	0.1	0.0	0.2	0.2	0.5	0.0	0.2	4.8
Gender																	
Male	9.2	30.4	0.3	0.5	54.7	19.7	1.5	0.1	1.0	0.2	0.1	0.2	0.7	1.0	0.0	0.1	3.9
Female	6.0	19.3	0.2	0.5	62.9	21.9	1.3	0.1	0.8	0.2	0.1	0.2	0.5	1.4	0.1	0.1	3.5
Education																	
No schooling	7.7	13.3	0.2	0.4	64.5	24.0	1.9	0.1	1.3	0.2	0.0	0.1	0.5	1.1	0.0	0.1	3.9
Unfinished	8.2	18.2	0.3	0.6	62.0	24.6	1.8	0.1	1.2	0.2	0.1	0.2	0.5	1.0	0.1	0.1	3.9
Finished Primary	7.4	27.1	0.4	0.3	52.2	26.0	1.7	0.1	1.1	0.2	0.1	0.2	0.5	1.1	0.1	0.1	4.0
Finished Junior H.	7.6	42.6	0.3	0.6	41.9	21.8	1.5	0.1	0.9	0.3	0.1	0.2	0.9	1.2	0.1	0.1	3.9
Finished Senior H.	6.9	49.0	0.3	0.6	37.1	19.3	1.4	0.1	0.6	0.4	0.1	0.1	1.0	1.4	0.1	0.1	4.0
Finished University	5.5	50.2	0.3	0.8	36.4	17.4	1.1	0.1	0.8	0.1	0.2	0.1	0.6	1.3	0.2	0.4	4.5
Job																	
Jobless	8.2	31.2	0.2	0.5	58.1	16.7	1.6	0.2	0.7	0.2	0.2	0.3	0.7	1.0	0.0	0.1	3.5
Student	9.3	28.9	0.1	0.6	63.0	15.7	1.3	0.1	0.6	0.3	0.1	0.3	0.5	1.1	0.1	0.1	3.4
House wife	4.8	19.7	0.2	0.4	49.9	32.2	1.7	0.0	1.0	0.3	0.0	0.1	0.4	1.7	0.1	0.2	4.2
Employee	6.5	53.2	0.3	0.8	37.3	15.4	1.1	0.1	0.6	0.1	0.1	0.1	1.3	1.4	0.2	0.2	3.8
Entrepreneur	7.2	45.6	0.3	0.5	39.5	19.9	1.6	0.1	0.9	0.2	0.1	0.1	0.8	1.6	0.0	0.2	4.4
Farmer/Fisherma	7.9	25.8	0.5	0.5	46.4	31.6	2.1	0.1	1.7	0.2	0.1	0.2	0.7	0.9	0.1	0.1	4.3
Others	8.5	41.4	0.3	0.3	42.9	20.6	1.7	0.1	0.6	0.3	0.0	0.1	1.1	1.1	0.0	0.2	4.7
Living area																	
Urban	7.7	30.7	0.2	0.5	57.4	15.6	1.1	0.1	0.7	0.2	0.1	0.2	0.7	1.4	0.1	0.1	4.0
Rural	7.4	22.8	0.3	0.5	58.5	23.6	1.6	0.1	1.0	0.2	0.1	0.2	0.5	1.0	0.1	0.1	3.6
Level of expenditure per capita																	
Quintile 1	7.6	19.2	0.2	0.4	63.7	21.1	1.6	0.1	0.9	0.2	0.1	0.3	0.5	1.1	0.1	0.1	3.6
Quintile 2	7.7	23.0	0.3	0.5	59.8	21.9	1.5	0.1	0.9	0.3	0.1	0.3	0.5	1.3	0.0	0.1	3.8
Quintil 3	7.6	25.4	0.2	0.6	58.3	20.4	1.4	0.1	1.1	0.2	0.1	0.2	0.6	1.1	0.1	0.1	3.7
Quintile 4	7.5	28.1	0.2	0.6	56.3	20.3	1.3	0.1	0.8	0.2	0.1	0.1	0.6	1.1	0.1	0.1	4.0
Quintil 5	7.3	34.4	0.4	0.4	51.9	18.5	1.3	0.1	0.8	0.2	0.1	0.2	0.7	1.3	0.1	0.1	3.8

Table 3.107 Prevalence of Injury according to injured body part and Province, Riskesdas 2007,

Respondent's characteristic	Body Part Injured									
	Head	Neck	Chest	stomach, back, hip	Shoulder Upper arm	Elbow. Lower arm Sharp/dull object	Wrist and Hip	Upper leg	Knee and Lower leg	Heel and foot parts
NAD	17.9	3.2	8.5	11.2	14.6	21.5	24.3	8.5	33.2	28.7
North Sumatera	14.6	1.1	3.3	6.4	9.7	24.0	28.5	5.3	36.4	23.1
West Sumatera	13.3	1.9	4.0	9.6	9.7	17.1	32.4	9.3	35.2	22.5
Riau	13.9	2.0	2.0	5.8	10.4	22.0	28.2	4.5	35.5	23.5
Jambi	16.5	2.3	4.1	6.2	15.0	28.8	32.9	7.3	45.0	25.7
South Sumatera	16.7	1.6	5.6	7.6	12.4	26.7	35.5	8.5	36.0	26.4
Bengkulu	13.8	1.2	2.5	5.3	11.2	20.7	27.8	5.3	36.7	25.8
Lampung	11.8	1.6	2.1	6.5	11.7	21.6	23.7	6.5	30.6	26.3
Bangka Belitung	13.1	2.5	3.7	5.1	7.4	13.8	28.8	4.5	39.4	28.2
Kepulauan Riau	18.9	2.2	2.7	7.3	9.3	24.2	23.8	5.4	43.4	22.0
DKI Jakarta	13.7	1.1	1.8	6.1	7.1	17.4	14.4	5.7	47.5	27.3
West Java	13.9	1.0	2.1	5.6	6.6	14.6	21.7	5.0	35.0	30.4
Central Java	11.6	1.0	1.8	5.9	7.6	15.7	25.2	4.7	34.5	27.1
DI Yogyakarta	16.4	1.1	1.8	6.2	6.7	15.2	18.6	6.3	34.2	24.5
East Java	11.1	1.1	1.8	6.4	7.8	15.6	24.0	5.3	40.7	21.6
Banten	11.9	0.5	1.9	7.0	11.1	18.0	23.3	5.0	45.3	28.2
Bali	10.2	0.9	1.2	4.1	7.7	18.6	24.7	4.1	33.3	28.7
West Nusa Tenggara	11.7	0.6	3.0	6.6	8.8	25.7	38.3	6.5	37.7	30.8
East Nusa Tenggara	14.9	1.0	5.4	9.7	6.3	17.5	37.1	7.5	34.2	28.7
West Kalimantan	11.6	0.6	2.1	7.7	12.5	29.6	34.7	5.2	44.7	29.4
Central Kalimantan	10.8	1.1	3.2	5.7	9.7	17.0	20.7	4.8	35.6	23.9
South Kalimantan	9.4	2.2	2.6	10.6	11.6	13.5	31.9	11.5	31.5	25.4
East Kalimantan	13.1	1.4	3.3	6.1	8.6	21.3	27.8	10.6	43.3	26.5
North Sulawesi	16.1	1.2	4.3	7.5	8.9	15.1	20.9	7.8	36.7	24.0
Central Sulawesi	12.3	1.2	3.8	6.6	5.5	15.0	32.3	5.4	31.8	21.7
South Sulawesi	14.6	1.1	2.6	6.2	5.2	17.2	26.7	4.1	35.1	22.7
Southeast Sulawesi	14.3	1.4	4.6	5.9	7.9	25.7	27.9	4.6	37.7	21.3
Gorontalo	11.5	1.0	4.3	5.5	6.2	22.0	31.0	4.1	38.8	23.9
West Sulawesi	10.8	0.4	4.1	6.5	6.5	21.3	27.8	3.0	38.9	15.6
Maluku	12.3	0.9	4.0	7.8	7.4	21.0	22.8	3.1	30.4	19.0
North Maluku	12.1	0.8	5.9	6.9	5.1	15.5	21.0	6.3	21.8	23.4
West Papua	18.0	2.0	8.1	14.4	7.8	14.7	19.6	5.7	27.6	19.9
Papua	16.8	3.5	6.5	9.5	10.9	17.7	23.3	5.9	29.6	23.4
Indonesia	**13.2**	**1.3**	**3.2**	**7.0**	**8.4**	**18.3**	**27.1**	**6.0**	**36.5**	**25.4**

Table 3.108 Prevalence of Injury according to injured body part and Respondent's characteristic, Riskesdas 2007,

Respondent's characteristic	Body Part Injured										
	Head	Neck	Chest	stomach, back, hip	Shoulder Upper arm	Elbow. arm	Lower Sharp/dull object	Wrist and Hip	Upper leg	Knee and Lower leg	Heel and foot parts
Age group (years)											
< 1	50.0	3.6	6.9	15.5	11.3	6.6		9.9	8.3	13.5	5.4
1 – 4	26.1	1.4	3.9	6.7	5.6	14.2		16.3	3.9	43.3	19.6
5 – 14	12.7	0.8	2.3	4.0	5.1	20.5		20.8	3.5	46.7	24.8
15 – 24	11.8	1.4	3.2	6.3	11.0	24.0		30.1	6.0	37.9	27.1
25 – 34	11.1	1.5	3.2	7.5	9.8	18.6		34.1	6.3	30.5	27.3
35 – 44	10.8	1.7	3.5	8.1	9.3	15.6		32.9	6.5	28.6	26.2
45 – 54	11.4	1.4	3.5	9.7	9.7	14.4		31.5	7.7	27.8	26.4
55 – 64	11.2	1.5	4.6	9.8	10.8	13.1		29.3	9.3	27.4	27.1
65 – 74	12.8	2.0	3.8	13.3	9.7	11.9		25.8	13.2	29.4	22.0
75+	14.4	1.5	3.0	13.0	11.1	11.3		20.3	15.2	29.9	21.4
Gender											
Male	14.1	1.4	3.6	6.6	9.4	20.6		26.4	5.2	37.3	26.8
Female	11.9	1.3	2.6	7.6	7.1	14.8		28.1	7.2	35.3	23.2
Education Level											
No schooling	11.0	1.5	3.6	11.1	9.3	12.4		27.0	10.0	29.9	24.4
Unfisnished Primary	10.6	1.3	3.1	8.0	7.9	17.4		28.0	6.8	35.5	26.9
Finished Primary School	10.8	1.3	3.1	7.4	8.9	17.4		29.9	6.5	32.8	26.3
Finished Junior High Scool	11.7	1.3	3.1	6.4	10.2	21.9		31.6	6.0	35.4	26.8
Finished Senior High	12.3	1.5	3.6	6.9	11.3	21.1		31.8	6.1	33.4	26.9
Finished University	11.2	1.5	2.5	6.1	10.7	18.8		28.9	6.9	33.4	26.3
Employment											
Jobless	12.9	1.4	3.2	8.5	9.7	18.3		26.5	8.9	35.3	25.3
Student	10.2	0.9	2.2	4.4	7.6	22.4		25.3	4.4	43.7	26.8
House wife	9.6	1.4	2.6	9.3	7.3	11.6		36.2	8.6	24.5	23.2
Employee	12.4	1.6	3.7	6.9	12.3	20.9		29.0	6.0	35.0	27.0
Entrepreneur	12.9	1.9	3.5	7.2	11.4	20.1		31.7	6.0	32.8	26.5
Farmer/Fisherman/Labor	10.7	1.5	3.8	9.1	9.9	17.0		31.8	7.2	29.6	27.6
Others	13.6	1.0	3.5	6.6	10.7	17.4		26.7	7.7	32.6	27.9
Type of Residence											
Urban	13.7	1.2	2.4	6.0	8.3	18.4		24.7	5.6	38.8	25.9
Rural	13.0	1.4	3.6	7.7	8.5	18.2		28.6	6.3	35.5	25.0
Level of expenditure per capita											
Quintile 1	13.5	1.2	3.4	7.3	7.8	17.9		26.0	5.9	35.8	25.4
Quintile 2	12.7	1.5	3.5	6.9	8.2	17.6		27.8	5.9	36.6	25.7
Quintile 3	13.0	1.2	3.1	7.3	8.3	18.2		27.1	6.3	36.1	24.9
Quintile 4	13.5	1.4	3.1	6.8	8.6	18.6		27.2	5.9	37.7	25.5
Quintile 5	13.5	1.3	2.7	6.7	9.3	19.2		27.2	5.9	36.3	25.1

Table 3.109
Prevalence of Injury by Province, Riskesdas 2007

Province	collision	Abrasion	Open wound	Fire wound	sprained ankle / stretched	Broken bone	Amputation	Poisoned	Others
NAD	35.0	50.4	23.7	3.8	31.7	8.4	1.5	0.6	1.8
North Sumatera	37.1	47.7	29.4	2.5	28.1	4.2	0.6	0.6	2.0
West Sumatera	30.0	44.6	27.1	3.0	31.9	6.0	1.0	0.5	1.8
Riau	30.5	54.9	21.0	2.2	22.4	5.2	0.9	0.6	2.0
Jambi	39.2	58.4	28.4	3.0	24.1	5.1	1.6	1.0	3.9
South Sumatera	39.2	53.9	31.2	2.0	23.7	7.2	1.9	1.0	4.9
Bengkulu	35.7	55.6	19.8	2.0	23.6	3.0	0.6	1.6	1.8
Lampung	35.5	53.1	19.4	1.7	26.4	7.1	1.0	3.1	2.0
Bangka Belitung	35.4	52.5	24.4	1.8	16.5	7.8	0.3	1.4	3.9
Kepulauan Riau	39.2	56.5	20.1	3.8	18.1	3.7	1.2	0.7	4.9
DKI Jakarta	35.0	58.0	17.6	3.1	15.5	2.6	0.6	0.2	2.6
West Java	37.1	45.6	25.8	2.7	22.3	4.3	0.7	1.9	3.3
Central Java	30.0	53.0	22.7	2.1	21.5	4.7	0.7	0.6	1.0
DI Yogyakarta	30.5	49.7	19.8	1.1	20.5	7.1	0.5	0.4	2.7
East Java	39.2	49.5	23.9	1.8	20.0	4.6	0.6	0.6	2.4
Banten	39.2	59.2	22.1	2.2	24.4	4.5	0.3	0.4	9.9
Bali	35.7	53.0	19.7	1.5	21.0	5.7	1.1	0.2	2.1
West Nusa Tenggara	35.5	59.3	31.2	2.4	18.8	4.0	0.4	0.4	2.3
East Nusa Tenggara	35.4	55.4	29.4	1.6	13.2	3.3	0.4	0.5	2.4
West Kalimantan	39.2	60.2	28.5	2.1	23.1	3.7	0.5	0.5	4.9
Central Kalimantan	39.9	45.8	21.4	2.6	24.1	4.2	0.5	0.8	2.6
South Kalimantan	40.8	40.6	23.5	3.2	36.6	2.2	0.2	0.7	2.0
East Kalimantan	34.5	56.9	27.1	2.9	14.5	2.7	0.4	0.3	1.7
North Sulawesi	45.5	49.6	15.2	1.3	23.1	5.6	0.5	3.0	.3
Central Sulawesi	38.7	46.3	33.3	1.6	14.5	4.5	0.5	1.7	.9
South Sulawesi	47.1	49.3	29.6	2.3	13.3	3.7	0.7	1.8	1.4
Southeast Sulawesi	29.8	51.2	29.5	2.0	16.2	3.9	1.5	2.2	2.3
Gorontalo	45.7	57.3	30.1	0.8	12.9	2.9	0.6	2.3	1.3
West Sulawesi	39.8	55.8	19.7	1.3	11.6	2.6	1.0	1.3	2.8
Maluku	46.6	53.8	21.1	0.7	12.0	4.7	0.9	0.4	2.4
North Maluku	35.9	40.2	22.7	2.0	14.7	9.0	1.6	0.2	1.4
West Papua	28.5	42.1	23.1	1.5	13.7	3.5	1.9	0.6	2.6
Papua	44.6	42.1	29.8	2.6	12.7	4.7	0.6	0.8	1.4
Indonesia	42.4	50.8	25.4	2.2	20.9	4.5	1.0	1.0	1.5

Table 3.110

Prevalence of kind of Injury according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	collision	Abrasion	Open wound	Fire wound	Sprained ankle.	Broken bone	Amputation	Poisoned	Others
Age group (years)									
< 1	49.7	22.7	3.0	3.3	25.2	1.1	0.3	0.0	3.8
1—4	39.5	58.8	13.5	2.5	13.3	1.0	0.3	0.4	2.2
5 – 14	35.3	62.5	21.1	1.8	16.4	3.1	0.4	0.7	1.5
15 – 24	38.9	57.8	27.1	2.5	21.7	4.9	0.7	1.0	1.9
25 – 34	36.3	47.3	32.0	2.8	21.1	5.0	0.9	1.2	2.8
35 – 44	36.5	41.7	31.5	2.6	23.4	5.3	1.0	1.0	3.0
45 – 54	37.7	37.4	30.7	2.2	26.1	6.1	0.8	1.3	2.8
55 – 64	37.7	33.8	26.3	1.8	28.1	6.9	1.3	1.3	3.2
65 – 74	40.8	28.6	22.4	1.4	29.2	7.5	1.1	1.5	2.8
75+	44.1	28.2	13.6	1.4	31.6	6.5	1.3	1.6	3.4
Gender									
Male	37.9	53.0	27.3	2.1	20.7	5.1	0.8	1.2	2.2
Female	36.6	47.7	22.5	2.5	21.3	3.5	0.5	0.7	2.4
Education Level									
No schooling	39.4	34.0	25.4	2.1	26.5	5.4	0.9	1.2	2.5
Unfinished Primary	36.4	47.0	27.8	2.0	22.0	4.5	0.7	1.1	2.3
Finished Primary	36.0	46.4	29.1	2.3	23.1	4.8	0.7	1.0	2.6
Finished Junior High	36.8	52.8	28.1	2.4	22.8	5.4	0.9	1.1	2.2
Finished Senior High	39.5	52.1	27.1	2.8	22.5	5.8	1.1	1.1	2.6
Finished University	41.0	51.4	23.5	2.2	22.8	8.0	0.9	1.3	2.8
Employment									
Jobless	39.4	46.8	23.5	2.1	23.8	6.2	1.0	1.1	2.6
Student	36.1	61.3	22.5	2.1	20.0	4.1	0.5	0.8	1.7
House wife	33.6	35.7	28.4	2.6	22.8	4.3	0.6	0.8	3.2
Employee	42.5	52.5	23.7	2.7	23.1	7.0	1.2	1.4	2.7
Entrepreneur	39.9	51.7	27.0	2.9	24.0	5.8	1.0	0.8	2.4
Farmer/Fisherman/Labor	36.2	40.3	34.3	2.1	24.3	5.1	1.0	1.4	2.6
Others	40.2	47.6	28.6	2.7	22.3	5.6	0.7	1.3	2.6
Type of Residence									
Urban	38.3	54.2	22.4	2.5	20.3	4.4	0.7	0.8	2.5
Rural	36.8	48.7	27.3	2.0	21.0	4.5	0.7	1.1	2.2
Level of expenditure per capita									
Quintile 1	37.2	50.6	25.4	2.1	20.9	3.9	0.6	0.8	2.2
Quintile 2	37.1	50.3	25.9	2.1	21.2	4.2	0.7	1.0	2.2
Quintile 3	36.5	49.7	25.9	2.1	21.2	4.4	0.8	1.1	2.5
Quintile 4	37.4	52.0	25.1	2.3	20.9	4.6	0.7	0.9	2.4
Quintile 5	38.5	51.6	24.4	2.7	20.7	5.4	0.8	1.1	2.3

3.6.2 Disabilities Status

Disabilities status was collected from respondents above 15 years old based on the questions developed by WHO in ***International Classification of Functioning, Disability and Health (ICF).*** The target of this measurement is to obtain information about the problem/disability experienced by the local people in relation to body, individual and social functions.

Respondents were urged to evaluate themselves during the last one month by using 20 core questions and 3 additional questions in order to find out the extent of the disability problems encountered by the respondents by asking them how much they needed other people's aid. 11 questions to the first group related to the problem of body function, and the answer choices are: 1). None 2).Light 3). Relative 4). Hard 5). Extremely hard. Nine questions related to the individual and social functions with the answer choices are: 1). None 2). Light 3). Relative 4). Difficult 5). Extremely difficult/cannot be done. Three additional questions related to the respondents ability to take care of themselves , to carry out activity/movement or to communicate, the answer choices were :1). Yes and 2). No.

In the analysis, the evaluation to each type of disturbance is classified into 2 criteria, that is: "No problem" or "Has problem". The respondent is classified in the first group should he/she chooses number 1 or 2 of the 20 core questions. The latter should the respondent chooses number 3,4 or 5 of 20 core questions .

Table 3.111
Percentage of Population above 15 years old
Who Have problem of Body/Individual/Social Functions, Riskesdas 2007

Body/Individual/Social Functions	Problem* (%)
See long distant (20 m)	11.7
See short distant (30 cm)	11.5
Hear normal voice in a room	5.9
Hear someone's talking in a quiet room	5.3
Feel pain/uncomfortable	11.2
Short of breath after light exercise	10.5
Coughing/sneezing for 10 minutes each attack	5.3
Have a sleep problem	8.7
Health problem effecting emotion	6.9
Difficulty in standing 30 minutes	8.8
Difficulty in a long distant walk (1 km)	11.6
Difficulty to concentrate for 10 minutes	9.2
Clean the whole body	2.8
Wear clothes	2.5
Do daily work	5.2
Understand other person's talking	4.9
Interact with strangers	6.6
Keep friendship	5.4
Do some job/responsibility	6.8
Have a role in the community activity.	8.2

*) Have Problem, if the respondent answer 3,4 or 5

Based on the table 3.111, it is obvious that some of the population aged above 15 years old has problems which related to long distant visibility, short distant visibility, long distant walk, feel uncomfortable or pain and unable to take a deep breath after having light exercise which all are the prominent disabilities. Whereas those who have problems in cleaning the whole body, and wearing clothes are only approximately 3%.

In evaluating the status of disabilities, the criteria “has problem” is divided into “has problem” and “extremely problem”. The latter should the respondent answers yes on one of the three additional questions. Nationally, disability status related to the criteria “extremely problem” is 1.8% and the other criteria are 19.5% .

The highest disabilities prevalence in relation to “extreme disability problem” is found in the Province of West Papua (2.7%), West Nusa Tenggara (2.5%), Bengkulu (2.4%), Gorontalo (2.3%), and South Sulawesi (2.2%) . As for the lowest disabilities prevalence in relation to “extremely problem are in Maluku (1.2%), East Kalimantan , Central Kalimantan and North Sumatra which are only 1.3%.

The highest disabilities prevalence in relation to “has problem” is found in the Province of Bangka Belitung (27.9%), West Nusa Tenggara (27.7%), Central Sulawesi (26.6%), West Java (25.4%) The lowest disability prevalence in relation to “has problem” are in the Province of North Maluku and Kepulauan Riau which both are only 10%. (See table 3.112).

The further analysis represents that the disability prevalence shows the variability based on the respondent’s characteristic. The disability prevalence in relation to “extremely problem” is gets higher as age increases. The disability prevalence related to “extremely problem” for females is a little bit higher as compared to the males. The lower the population educational level, the higher the disability prevalence related to “extreme problem”. The highest disability prevalence related to “extreme problem” is experienced by the unemployed respondent , whereas the lowest one experienced by the respondent who was still in school .The disability prevalence of “extremely problem” does not differ based on the type of the region and the expenditure level per capita per month (Table 3.113).

Table 3.112
Prevalence of Disability of people aged above 15 Years
By Status and Province, Riskesdas 2007

Province	Disability Status	
	Extremely Problem (%)	Problem (%)
NAD	2.1	18.1
North Sumatera	1.3	14.1
West Sumatera	2.1	20.5
Riau	1.5	14.1
Jambi	1.9	18.6
South Sumatera	1.4	10.8
Bengkulu	2.4	16.0
Lampung	1.4	15.0
Bangka Belitung	1.6	27.9
Kepulauan Riau	1.7	10.3
DKI Jakarta	1.9	17.8
West Java	1.9	25.4
Central Java	2.0	22.9
DI Yogyakarta	2.0	15.1
East Java	1.7	21.7
Banten	1.4	14.6
Bali	1.9	21.1
West Nusa Tenggara	2.5	27.7
East Nusa Tenggara	2.1	19.2
West Kalimantan	1.4	17.9
Central Kalimantan	1.3	20.0
South Kalimantan	1.6	21.6
East Kalimantan	1.3	12.8
North Sulawesi	1.7	18.6
Central Sulawesi	1.7	26.6
South Sulawesi	2.2	23.7
Southeast Sulawesi	1.5	19.7
Gorontalo	2.3	21.9
West Sulawesi	1.9	23.6
Maluku	1.2	15.0
North Maluku	1.4	10.1
West Papua	2.7	14.3
Papua	1.7	12.8
Indonesia	**1.8**	**19.5**

Table 3.113

Prevalence of Disability of Population above 15 Years Old According to Status and Respondent's characteristic, Riskesdas 2007

Characteristic	Disability Status	
	Extremely Problem (%)	Problem (%)
Age group:		
15-24 years	1.0	14.8
25-34 years	1.0	18.9
35-44 years	1.2	25.3
45-54 years	2.0	37.3
55-64 years	4.4	50.8
65-74 years	10.5	62.1
>75 years	23.8	61.4
Gender:		
Male	1.5	17.4
Female	2.0	21.5
Education Level		
No schooling	8.7	47.7
Unfinished Primary	2.6	26.8
Finished Primary	1.7	23.7
Finished Junior High	1.2	20.1
Finished Senior High	1.2	19.0
Finished University	1.4	20.8
Employment		
Jobless	7.9	29.7
Student	.4	5.1
House wife	2.0	30.8
Employee	1.2	19.3
Entrepreneur	1.5	25.4
Farmer/Fisherman/Labor	1.9	31.7
Others	3.0	30.1
Type of Residence		
Urban	1.7	18.1
Rural	1.8	20.2
Level of expenditure per capita		
Quintile 1	1.8	17.8
Quintile 2	1.8	18.9
Quintile 3	1.8	19.6
Quintile 4	1.8	20.3
Quintile 5	1.7	20.7

3.7 Knowledge, Attitude and Behavior.

Knowledge, attitude and behavior questions were asked in Riskesdas 2007 to those respondents above 10 years old. Knowledge and attitude related to avian influenza, HIV/AIDS were asked in the individual interview. Hygienic behavior likewise included questions that related to the behavior in hand wash using soap, defecating, consuming tobacco or smoking behavior, consuming alcoholic drinks, physical activity, consuming fresh fruit and vegetables, as well as the pattern of consuming high risk food were also asked.

In order to obtain the same perception, visual aid card were used in carrying out interviews to standardize the response on amont of alcoholic drinks, physical activity classification, and portion of fruits and vegetables consumed.

3.7.1 Smoking Behavior.

Those above 10 years were questioned to find out whether they smoked every day, occasionally smoked, were former smokers or did not smoke at all. To those who smoke everyday, questions were asked related to the age at which they started smoking everyday and at what age they smoked for the first time, included to those who learned to smoke. To those who smoke everyday and to those who occasionally smoke were asked how many cigarettes they consumed daily and the kind of cigarettes . They were also asked whether they smoke at home when together with other members of family . To those who were former smokers, the question asked was to find out at what age they stopped smoking.

Table 3.114 shows that nationally, the percentage of the population above 10 years that smoke every day is 24%. The highest percentage found in Province Bengkulu (29.5%), Lampung (28.8%) and West Java (26.6%). The lowest smaoking rate was found in Maluku (19.2%).

Table 3.115 describes smoking behavior of population older than 10 years based on the respondent's characteristic. Nationally, the percentage of the population who smokes everyday looked considerably high in the productive age group (25-64 years old), and the average range is 29% to 32%. As for the population in the age group of 10-14 years that smoke everyday has reached 0.7% and age group of 15-24 years is 17%.

Nearly half (45,8%) of male population above 10 years are daily smokers .In the perspective of education, the highest proportion was found among those graduated from high school (26.8%) and compared to the urban area, the rural area had higher smoking rates.

To those who occasionally smoke, the high proportion starting at the age group of 15-24 years (7.3%), males (9.9%), was ten times higher than females (1.4%). As for former smokers ,the highest proportion found at the age group of above 75 years (12.0%). There was no difference in smoking rates between the household of high and low expenditures level.

Table 3.116 presents current smoking behavior and average cigarettes consumed provincially. The current smokers are daily and occasional smokers. Nationally, current smoker prevalence is 29.2% with the daily average consumption is 12 cigarettes. The current highest smoker prevalence is in The Province of Lampung (34.3%), Bengkulu (34.1%), and Gorontalo (32.6%). The other provinces that below national prevalence are South Kalimantan (24.2%), Bali (24.9%), West Sulawesi (25.3%), South Sulawesi (25.5%) and Maluku (25.8%).

The highest average of consumed cigarettes per day is NAD (19 cigarettes), Riau Island and Bangka Belitung (16 cigarettes), and the lowest are Bali, NTB, DKI Jakarta and West Java (9 cigarettes).

Table 3.114
Percentage of Population above 10 Years old According to Smoking Habit and Province in Indonesia, Riskesdas 2007

Province	Current Smokers		Do not smoke	
	Daily smokers	Occasional Smokers	Ex Smokers	Not smokers
NAD	23.0	6.7	2.1	68.2
North Sumatera	23.3	5.5	2.2	68.9
West Sumatera	25.7	4.5	2.3	67.5
Riau	24.4	6.0	3.1	66.6
Jambi	24.5	5.0	2.5	68.1
South Sumatera	25.4	6.3	2.7	65.6
Bengkulu	29.5	4.6	1.8	64.0
Lampung	28.8	5.6	2.5	63.2
Bangka Belitung	24.6	3.6	2.2	69.6
Kepulauan Riau	22.4	4.6	3.2	69.8
DKI Jakarta	20.8	7.0	5.0	67.2
West Java	26.6	5.8	3.5	64.1
Central Java	24.3	6.4	3.6	65.7
DI Yogyakarta	23.8	6.0	5.9	64.4
East Java	24.3	4.8	3.1	67.8
Banten	25.8	5.5	2.9	65.8
Bali	20.1	4.8	1.8	73.3
West Nusa Tenggara	25.2	4.9	1.9	68.0
East Nusa Tenggara	22.2	6.5	2.0	69.2
West Kalimantan	21.7	5.5	3.4	69.4
Central Kalimantan	23.1	5.8	4.0	67.1
South Kalimantan	20.1	4.1	3.3	72.5
East Kalimantan	21.4	4.4	3.6	70.7
North Sulawesi	24.6	5.7	5.0	64.7
Central Sulawesi	24.6	6.1	3.9	65.4
South Sulawesi	20.9	4.6	3.0	71.5
Southeast Sulawesi	19.8	6.5	2.3	71.3
Gorontalo	27.1	5.5	2.5	64.8
West Sulawesi	20.1	5.3	3.1	71.6
Maluku	19.2	6.6	2.5	71.8
North Maluku	23.9	6.3	2.3	67.5
West Papua	19.5	7.4	1.8	71.3
Papua	22.0	5.8	2.4	69.8
National	**23.7**	**5.5**	**3.0**	**67.8**

Table 3.115
Percentage of Population above 10 Years old According to Smoking Habit and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Current Smokers		Do not smoke	
	Daily smokers	Occasional Smokers	Ex Smokers	Not smokers
Age group (year)				
10-14	0.7	1.3	0.3	97.7
15-24	17.3	7.3	1.1	74.3
25-34	29.0	6.1	1.8	63.2
35-44	30.2	5.8	2.8	61.2
45-54	32.4	5.6	4.1	57.9
55-64	31.8	5.7	6.8	55.6
65-74	28.8	5.8	9.9	55.5
75+	27.8	5.3	12.0	54.8
Gender				
Male	45.8	9.9	5.4	38.9
Female	3.0	1.4	0.7	94.9
Education Level				
No schooling	26.3	4.7	3.8	65.3
Unfinished Primary	21.3	4.0	2.7	72.0
Finished Primary	23.4	4.9	2.6	69.1
Finished Junior High	24.0	6.6	2.4	67.0
Finished Senior High	26.8	7.2	3.4	62.6
Finished University	20.6	6.4	5.0	68.0
Type of Residence				
Urban	21.2	5.4	3.5	69.9
Rural	25.3	5.6	2.6	66.5
Level of expenditure per capita				
Quintile 1	23.4	5.6	2.5	68.5
Quintile 2	24.2	5.5	2.7	67.7
Quintile 3	23.9	5.6	2.9	67.6
Quintile 4	23.9	5.6	3.1	67.4
Quintile 5	23.3	5.4	3.4	67.9

Table 3.116
Prevalence of Current Smokers and Average of Cigarettes Consumed by Population above 10 Years old by Province, Riskesdas 2007

Province	Current smokers	Average of Cigarettes Consumed/day
NAD	29.7	18.5
North Sumatera	28.8	14.9
West Sumatera	30.2	14.1
Riau	30.4	16.0
Jambi	29.4	12.0
South Sumatera	31.7	12.7
Bengkulu	34.1	13.3
Lampung	34.3	10.7
Bangka Belitung	28.2	15.5
Kepulauan Riau	27.0	14.9
DKI Jakarta	27.8	9.1
West Java	32.4	9.5
Central Java	30.7	8.9
DI Yogyakarta	29.8	9.8
East Java	29.1	9.9
Banten	31.2	10.4
Bali	24.9	8.5
West Nusa Tenggara	30.1	9.4
East Nusa Tenggara	28.7	11.5
West Kalimantan	27.2	12.8
Central Kalimantan	28.9	12.4
South Kalimantan	24.2	13.4
East Kalimantan	25.7	13.1
North Sulawesi	30.3	11.9
Central Sulawesi	30.7	11.3
South Sulawesi	25.5	13.4
Southeast Sulawesi	26.4	13.0
Gorontalo	32.6	13.4
West Sulawesi	25.3	14.3
Maluku	25.8	10.1
North Maluku	30.2	10.4
West Papua	26.9	11.2
Papua	27.8	14.0
Indonesia	**29.2**	**12.0**

Table 3.117 describes the current prevalence of smoker and the average number of cigarettes consumed based on the respondent's characteristics. The current prevalence of smoking is getting higher starting from the age group of 15-24 years up to the age group

of 55-64 years. And gradually start decreasing in older age groups. Different from those in the age group of 10-14 years, despite the prevalence is only 2%, however the average consumption is 16 cigarettes/day .

Table 3.117
Prevalence of Smoker and Average of Cigarettes Consumed by Population above 10 Years old According to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Current smokers	Average of Cigarettes Consumed/day
Age Group (years)		
10-14	2.0	10
15-24	24.6	12
25-34	35.0	13
35-44	36.0	14
45-54	38.0	13
55-64	37.5	13
65-74	34.7	10
75+	33.1	13
Gender		
Male	55.7	11.7
Female	4.4	15.7
Education Level		
No schooling	30.9	12.1
Unfinished Primary	25.3	12.6
Finished Primary	28.3	12.0
Finished Junior High	30.6	11.6
Finished Senior High	34.0	11.7
Finished University	27.0	12.5
Type of Residence		
Urban	26.6	11.3
Rural	30.9	12.4
Level of expenditure per capita		
Quintile 1	29.0	11.6
Quintile 2	29.6	11.7
Quintile 3	29.5	11.9
Quintile 4	29.5	12.1
Quintile 5	28.7	12.7

Current smoker prevalence among males is 11 (eleven) times higher than among females.(55.7% and 4.4%), however the average consumption of cigarettes is higher among females than males (16 and 12 cigarettes). The current smoker prevalence is higher among those who graduated from high school have no schooling, as well as in the rural areas. There is no significant difference between those who have high and low household expenditures level per capita.

Table 3.118 performs percentage of population above 10 years that smoke according to their age level when started smoking every day. It is very important to obtain the data on their age level when started smoking every day in order to decide the length level of

smoke on population . Nationally, the percentage of commencing smoke every day at the age group of 15-19 years reach the highest position (36.3%).

Table 3.118
Percentage of Population above 10 Years Old that Smoke According to Their Age Level when Started Smoking Every day and Province, Riskesdas 2007

Province	Ages started smoking everyday (years)						
	5-9	10-14	15-19	20-24	25-29	≥30	Don't know
NAD	0.0	6.8	30.6	17.4	3.4	2.5	39.4
North Sumatera	0.0	7.3	33.5	20.0	3.3	2.5	33.4
West Sumatera	0.0	13.6	40.0	13.8	3.1	1.9	27.5
Riau	0.0	9.3	37.5	14.3	2.3	1.7	34.8
Jambi	0.0	12.8	43.6	14.9	2.8	1.8	24.0
South Sumatera	0.0	10.9	38.0	12.4	3.2	1.7	33.8
Bengkulu	0.0	10.6	36.8	11.4	2.4	1.8	37.1
Lampung	0.6	9.3	36.3	13.9	3.1	2.2	34.6
Bangka Belitung	0.0	12.2	46.5	15.1	3.5	3.2	19.5
Kepulauan Riau	0.0	9.3	44.7	14.3	2.9	1.9	26.9
DKI Jakarta	0.0	12.3	59.7	18.8	4.9	2.9	1.4
West Java	0.0	9.3	39.6	19.0	5.3	4.2	22.7
Central Java	0.0	10.8	34.9	18.4	6.4	5.0	24.4
DI Yogyakarta	0.0	12.6	39.3	16.5	4.8	5.1	21.6
East Java	0.0	10.1	36.3	17.0	6.0	3.9	26.7
Banten	0.0	10.6	35.4	12.9	2.9	2.0	36.2
Bali	0.0	4.6	36.0	17.4	5.6	7.3	29.1
West Nusa Tenggara	0.0	11.8	39.6	13.0	3.2	1.9	30.6
East Nusa Tenggara	0.4	5.4	28.3	18.1	6.7	4.8	36.2
West Kalimantan	0.0	8.0	33.0	14.8	3.6	2.5	38.1
Central Kalimantan	0.0	9.9	38.6	15.8	5.3	3.5	27.0
South Kalimantan	0.0	12.8	36.8	17.5	5.0	3.4	24.4
East Kalimantan	0.0	8.2	36.7	17.1	3.9	2.7	31.4
North Sulawesi	0.2	7.0	44.1	17.7	4.4	2.5	24.1
Central Sulawesi	0.0	10.4	34.7	18.7	5.2	3.8	27.1
South Sulawesi	0.8	10.0	32.2	15.4	4.4	2.7	34.5
Southeast Sulawesi	0.0	8.0	26.4	13.9	3.3	1.6	46.9
Gorontalo	0.0	12.9	35.5	11.2	3.3	1.7	35.5
West Sulawesi	0.0	6.7	29.2	8.0	2.6	1.0	52.5
Maluku	0.3	5.8	39.2	18.6	4.2	3.3	28.6
North Maluku	1.4	6.4	35.6	18.4	5.2	3.5	29.5
West Papua	1.2	6.8	33.4	18.0	6.7	4.6	29.3
Papua	3.2	11.0	26.7	13.7	3.1	2.1	40.2
Indonesia	**0.1**	**9.6**	**36.3**	**16.3**	**4.4**	**3.2**	**30.0**

As for the young age group (5-9 years), Papua has the highest (3.2%) smoking risk, which is much higher than the national average (0.1%).

Table 3.119 performs the percentage of population above 10 years who smoke according to the time when they started smoking every day and the respondent's characteristic. Based on the age group, 19% population aged 10-14 years has started smoking at the age 10-14 years, even 1.4% started smoking at 5-9 years old.

Table 3.119
Percentage of Population above 10 years who Smoke According to the Time when They Started smoking Every Day and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Ages started smoking everyday (years)						
	5-9	10-14	15-19	20-24	25-29	≥30	Don't know
Age Group (years)							
10-14	1.4	19.0	0.0	0.0	0.0	0.0	79.6
15-24	0.1	17.8	57.3	7.1	0.0	0.0	17.6
25-34	0.1	9.8	44.6	18.6	3.5	0.4	22.9
35-44	0.2	7.7	34.7	19.5	5.9	3.0	29.0
45-54	0.1	7.1	28.3	18.8	6.5	5.4	33.7
55-64	0.1	7.3	22.9	17.3	6.2	7.1	39.1
65-74	0.1	6.9	19.2	14.0	5.1	8.0	46.7
75+	0.1	6.7	15.9	10.3	3.8	7.9	55.2
Gender							
Male	0.1	10.1	38.2	16.8	4.4	2.5	27.9
Female	0.3	4.7	14.0	10.2	4.5	11.0	55.4
Education Level							
No schooling	0.2	7.7	21.3	12.0	4.2	6.2	48.3
Unfinished Primary	0.2	10.1	29.1	14.5	4.9	4.2	37.0
Finished Primary	0.1	11.2	35.0	16.0	4.5	3.1	30.1
Finished Junior High	0.1	11.1	43.0	15.6	3.7	1.8	24.7
Finished Senior High	0.1	7.6	45.1	19.3	4.3	2.1	21.5
Finished University	0.1	5.6	38.4	24.6	6.6	3.6	21.2
Type of Residence							
Urban	0.1	9.2	40.7	18.4	4.5	3.0	24.1
Rural	0.2	9.9	34.1	15.3	4.4	3.2	33.0
Level of expenditure per capita							
Quintile 1	0.1	10.6	34.9	14.6	4.0	2.9	32.9
Quintile 2	0.1	10.4	35.9	15.5	4.2	2.9	30.9
Quintile 3	0.1	9.6	36.8	16.1	4.4	3.1	29.9
Quintile 4	0.1	9.4	37.0	16.6	4.5	3.3	29.0
Quintile 5	0.2	8.4	36.9	18.6	4.9	3.5	27.5

In relation for each age group that commenced smoking, the male percentage in general is higher than females, except for the age group of 5-9 years and above 30 years are an

exception. There is no age difference of commencing smoking every day based on the type of region and the level of per capita household expenditure per month .

Table 3.120
Percentage of Population Above 10 Years who Smoke Based on Their Age Level of Commencing Smoking or Chewing Tobacco and Province in Indonesia, Riskesdas 2007

Province	Age of Smoking or Chewing Tobacco for the 1st time (years)						
	5-9	10-14	15-19	20-24	25-29	≥30	Don't know
NAD	0.7	7.0	26.5	11.5	2.3	2.2	49.8
North Sumatera	1.0	9.1	31.7	10.9	2.1	1.9	43.2
West Sumatera	1.5	16.3	34.3	8.7	2.2	1.8	35.1
Riau	1.3	8.4	29.8	9.7	1.4	1.3	48.2
Jambi	0.7	12.0	35.4	11.2	1.8	1.4	37.4
South Sumatera	1.7	10.6	34.1	8.6	1.8	1.5	41.8
Bengkulu	1.1	10.9	31.3	7.6	1.8	1.7	45.6
Lampung	0.9	9.6	33.1	9.2	2.4	1.7	43.0
Bangka Belitung	1.9	16.2	42.0	12.0	2.6	3.2	22.2
Kepulauan Riau	2.1	8.4	34.1	8.6	2.2	1.9	42.7
DKI Jakarta	1.4	13.6	39.9	11.6	3.1	2.3	28.1
West Java	1.3	10.1	35.9	13.7	3.8	4.0	31.2
Central Java	1.5	13.8	33.1	14.0	4.6	4.3	28.6
DI Yogyakarta	1.9	14.0	35.6	13.1	3.8	3.6	28.0
East Java	1.3	11.3	33.2	13.8	4.5	3.5	32.5
Banten	0.9	12.3	31.6	8.5	2.0	1.5	43.1
Bali	0.8	4.7	33.4	13.5	4.3	6.1	37.3
West Nusa Tenggara	1.0	11.5	33.6	10.4	2.7	1.8	38.9
East Nusa Tenggara	0.7	6.1	26.3	13.9	5.0	3.7	44.3
West Kalimantan	0.5	8.3	28.4	11.4	2.8	1.8	46.8
Central Kalimantan	1.2	11.3	34.3	11.5	4.0	3.2	34.5
South Kalimantan	1.1	12.9	34.5	13.4	3.4	2.7	32.0
East Kalimantan	0.6	9.2	33.8	11.8	2.6	1.6	40.5
North Sulawesi	0.6	7.5	39.5	10.9	2.5	2.6	36.2
Central Sulawesi	1.9	12.3	33.0	13.1	3.1	2.9	33.6
South Sulawesi	1.7	10.0	27.4	11.7	2.9	2.2	44.0
Southeast Sulawesi	1.5	7.5	27.6	10.0	1.9	1.4	50.2
Gorontalo	2.0	12.3	32.1	9.5	2.3	1.6	40.2
West Sulawesi	0.9	6.4	24.4	6.2	1.8	0.9	59.4
Maluku	0.9	4.3	32.3	16.8	3.3	2.6	39.8
North Maluku	1.3	6.2	32.7	13.1	3.6	2.9	40.2
West Papua	0.7	6.5	28.9	14.2	4.3	3.1	42.3
Papua	4.0	8.9	22.3	9.7	2.2	1.8	51.0
National	**1.3**	**10.5**	**32.4**	**11.7**	**3.2**	**2.7**	**38.2**

Table 3.120 shows the percentage of population above 10 years who smoke based on their age level of commencing smoking or chewing tobacco. This table also includes those who for the first time try to smoke or chew the tobacco.

Nationally, the highest percentage in this group is at the age of 15-19 years (32.4%),20-24 years (11.7%). Provincially, the highest smokers percentage belong to the 15-19 years age group found in Bangka Belitung, (42.0%), DKI Jakarta (39.9%), North Sulawesi (39.5%) and West Java (35.9%).The highest percentage of new beginners who started smoking for the first time were found in the province of West Sumatra (16.3%), Bangka Belitung (16.2%), Central Java (13.8%), DKI Jakarta (13.6%), and West Kalimantan (12.9%). The highest risk of smoking in the age group of 5-9 years who started smoking for the first time are the province of Papua (4.0%), Kepulauan Riau (2.1%), Gorontalo (2.0%), Bangka Belitung, DI Yogyakarta and Central Sulawesi that each has 1.9%.

Table 3.121 describes the percentage of population above 10 years that smoke based on their age level of commencing smoking or chewing tobacco and respondents characteristics. In general, the smokers at the age 10-14 years started smoking for the first time at the age 10-14 years (31.8%), however some 5.1% started smoking at 5-9 years. The highest percentage of starting to smoke was found at the age group of 15-19 years based on the sex, education, type of region, and expenditure level per capita .

Table 3.122 shows smoking prevalence at home with other members of family based on the provincial location. Nationally, 85.4% smokers smoke in the house when other members of family are there. There are 18 provinces have the prevalence above the national record, the highest was found in the Province of Central Sulawesi (93.3%).

In general, the most favorable cigarettes are filtered kretek cigarette (64.5%), non filtered cigarettes (35.4%) and hand-rolled cigarettes (17.1%) (see table 3.123).

In relation to each age group, the most favored cigarette is the kretek filter, with an exception at the age group of above 55 years in which kretek without filter is the favored product. Hand-rolled cigarettes and chewing tobaccos are favored by those above 55 years.

Based on the gender, males conume much more cigarettes than females, except in consuming chewing tobacco where females are 19 times higher than males. In the perspective of education, those who are uneducated consumed more hand-rolled cigarettes or chewing tobacco compared to other kinds of cigarettes, and on the other level of education dominated by consuming filtered kretek; as well as based on the type of residence and expenditure level per capita (Table 3.124).

Table 3.121
Percentage of Population above 10 Years who Smoke Based on Their Age Level of Commencing Smoking or Chewing Tobacco for the first time and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Age of Smoking or Chewing Tobacco for the 1st time (years)						
	5-9	10-14	15-19	20-24	25-29	≥30	Don't know
Age Group (years)							
10-14	5.1	31.8	0.0	0.0	0.0	0.0	63.2
15-24	1.4	19.3	49.0	4.7	0.0	0.0	25.6
25-34	1.1	10.8	40.3	13.2	2.7	0.4	31.6
35-44	1.1	8.4	32.0	14.2	4.1	2.6	37.5
45-54	1.1	7.5	26.0	14.1	4.5	4.5	42.3
55-64	1.4	7.0	20.8	13.3	4.6	5.7	47.2
65-74	1.4	6.2	17.0	11.1	3.9	6.9	53.5
75+	1.3	5.8	13.8	8.8	2.9	6.1	61.3
Gender							
Male	1.2	11.1	34.3	12.1	3.1	1.9	36.2
Female	1.7	4.4	13.0	7.8	3.6	10.4	59.1
Education Level							
No schooling	1.5	6.9	18.2	9.4	3.2	5.7	55.2
Unfinished Primary	1.6	10.1	25.4	10.9	3.4	3.7	44.9
Finished Primary	1.3	12.2	30.5	11.6	3.3	2.7	38.3
Finished Junior	1.2	12.6	38.4	10.7	2.5	1.5	33.0
Finished Senior	0.9	9.1	41.0	13.2	3.0	1.6	31.1
Finished University	1.2	7.1	34.6	17.8	4.5	2.7	32.1
Type of Residence							
Urban	1.3	10.7	36.3	12.9	3.1	2.5	33.3
Rural	1.3	10.4	30.2	11.1	3.2	2.8	41.0
Level of expenditure per capita							
Quintile 1	1.4	11.2	31.2	10.5	2.8	2.6	40.4
Quintile 2	1.3	11.1	32.2	10.9	3.0	2.5	38.9
Quintile 3	1.2	10.6	32.5	11.6	3.0	2.6	38.4
Quintile 4	1.2	10.4	32.8	12.3	3.2	2.8	37.3
Quintile 5	1.2	9.5	33.2	13.2	3.7	2.9	36.3

Table 3.122
Prevalence of Smokers who Smoke at Home when They Stay Together with Other Family Members Based on the Provincial Scale, Riskesdas 2007

Province	Smokers smokes at home when they stay together with other Family members
NAD	82.7
North Sumatera	86.2
West Sumatera	89.2
Riau	83.9
Jambi	86.0
South Sumatera	88.1
Bengkulu	88.7
Lampung	92.3
Bangka Belitung	90.7
Kepulauan Riau	82.1
DKI Jakarta	64.1
West Java	82.0
Central Java	83.8
DI Yogyakarta	80.7
East Java	83.7
Banten	77.4
Bali	79.0
West Nusa Tenggara	84.9
East Nusa Tenggara	84.5
West Kalimantan	91.3
Central Kalimantan	90.1
South Kalimantan	85.4
East Kalimantan	87.4
North Sulawesi	86.8
Central Sulawesi	93.3
South Sulawesi	90.7
Southeast Sulawesi	89.2
Gorontalo	89.9
West Sulawesi	91.4
Maluku	78.7
North Maluku	86.7
West Papua	87.4
Papua	84.4
Indonesia	**85.4**

Table 3.123
Percentage of Population Above 10 Years who Smoke According to Kind of Cigarettes They Consumed and Province, Riskesdas 2007

Province	Kind of Cigarettes Consumed							
	Filtered kretek cigarette	Non filtered kretek cigarette	White cigarette	hand-rolled cigarette	Smoking pipe	Cigar	chewing tobacco	Others
NAD	55.3	38.4	16.0	7.5	0.3	0.4	6.5	0.9
North Sumatera	64.9	29.2	15.9	4.6	0.5	0.6	5.0	0.2
West Sumatera	67.9	28.5	12.2	6.0	0.3	0.7	1.5	0.6
Riau	75.2	20.7	13.0	4.8	0.3	0.4	1.1	0.2
Jambi	70.9	24.1	13.1	8.5	0.5	1.2	1.7	0.2
South Sumatera	60.5	46.8	12.1	13.1	0.8	0.8	1.8	0.2
Bengkulu	51.7	56.6	5.7	11.1	0.4	0.4	2.3	0.3
Lampung	45.9	55.9	9.5	33.3	0.2	0.5	1.5	0.0
Bangka Belitung	77.3	27.4	10.8	2.9	0.2	0.2	1.3	0.2
Kepulauan Riau	72.4	22.2	18.0	2.0	0.0	0.2	0.9	0.1
DKI Jakarta	69.7	30.0	13.4	2.9	1.9	0.5	1.7	0.7
West Java	57.3	59.9	14.2	18.7	0.8	0.7	1.5	0.4
Central Java	55.8	43.8	9.4	32.8	0.4	0.5	5.7	0.2
DI Yogyakarta	55.7	37.7	12.9	28.9	0.6	0.9	9.6	0.3
East Java	59.0	46.2	10.9	30.4	0.7	1.0	3.9	0.3
Banten	63.1	51.9	6.2	5.3	1.4	0.4	2.2	0.4
Bali	65.1	12.3	11.3	7.4	0.5	0.4	14.6	0.1
West Nusa	60.4	16.9	19.4	46.7	1.4	1.2	8.6	0.5
East Nusa Tenggara	52.6	26.8	20.8	24.2	1.1	0.6	23.1	1.2
West Kalimantan	59.1	38.4	14.2	16.3	0.7	0.4	4.6	0.7
Central Kalimantan	70.8	31.5	7.3	10.3	0.4	0.2	4.9	0.0
South Kalimantan	85.3	20.9	3.9	2.1	0.2	0.4	1.4	0.1
East Kalimantan	76.9	21.8	14.6	3.6	0.5	0.6	1.6	0.3
North Sulawesi	80.8	17.1	21.4	6.2	0.1	0.4	1.2	0.1
Central Sulawesi	82.7	24.6	25.8	11.4	0.2	0.7	3.1	0.2
South Sulawesi	80.2	22.6	23.5	14.0	0.5	1.0	3.2	0.3
Southeast Sulawesi	84.3	25.2	20.9	9.5	0.6	1.2	3.4	0.2
Gorontalo	75.7	20.7	24.2	21.8	0.7	0.7	1.3	0.4
West Sulawesi	85.9	26.6	21.3	5.6	0.7	0.6	0.9	0.2
Maluku	60.8	18.2	14.9	18.1	0.9	0.3	6.3	0.3
North Maluku	74.3	16.6	14.7	14.8	0.4	0.9	3.7	0.5
West Papua	72.3	25.0	20.6	25.0	0.7	1.4	10.0	1.0
Papua	62.1	16.9	16.0	42.1	0.7	1.2	9.1	6.5
Indonesia	**64.5**	**35.4**	**13.9**	**17.1**	**0.6**	**0.7**	**4.5**	**0.4**

Table 3.124
Percentage of Population Above 10 Years who Smoke According to Kind of Cigarettes They Consumed and Respondent's characteristic in Indonesia, Riskesdas 2007

Respondent's characteristic	Kind of Cigarettes Consumed							
	Filtered kretek cigarette	Non filtered kretek cigarette	White cigarette	hand-rolled cigarette	Smoking pipe	Cigar	chewing tobacco	Others
Group age								
10-14	73.8	23.9	18.3	12.0	0.7	0.7	2.3	0.7
15-24	79.7	27.3	23.0	7.8	0.4	0.7	1.0	0.3
25-34	74.6	33.1	17.3	11.0	0.5	0.6	1.6	0.3
35-44	68.4	37.6	12.3	14.4	0.5	0.5	2.4	0.4
45-54	57.6	41.6	9.6	20.5	0.6	0.6	4.7	0.6
55-64	44.5	40.8	7.7	30.5	0.9	0.9	9.8	0.5
65-74	33.5	35.6	6.7	37.3	1.0	1.1	17.4	0.6
75+	24.6	30.0	4.9	41.5	0.9	1.0	24.5	0.6
Gender								
Male	66.8	36.7	14.4	17.3	0.6	0.7	1.8	0.4
Female	35.9	18.7	8.5	14.8	0.6	0.5	38.4	0.9
Education Level								
No schooling	34.5	33.4	7.4	35.8	0.9	0.8	20.2	1.0
Unfinished Primary	51.7	40.7	10.0	29.3	0.7	0.7	6.7	0.5
Finished Primary	62.6	41.1	12.3	20.4	0.6	0.6	3.5	0.4
Finished Junior High	74.7	33.7	16.5	9.5	0.5	0.7	1.5	0.3
Finished Senior High	77.8	28.0	18.5	4.6	0.4	0.6	1.1	0.3
Finished University	77.9	24.1	19.6	3.8	0.5	0.8	1.3	0.3
Type of Residence								
Urban	72.3	31.7	15.8	7.4	0.5	0.6	2.0	0.3
Rural	60.3	37.4	12.9	22.2	0.6	0.7	5.8	0.5
Level of expenditure per capita								
Quintile 1	59.3	38.0	12.7	22.6	0.6	0.7	5.2	0.4
Quintile 2	62.0	37.2	13.2	19.9	0.6	0.7	4.8	0.5
Quintile 3	63.7	36.3	13.4	17.8	0.6	0.7	4.6	0.4
Quintile 4	66.2	34.6	14.3	15.2	0.5	0.6	4.3	0.5
Quintile 5	70.4	31.6	15.8	10.8	0.5	0.7	3.6	0.4

3.7.2 Consuming Fruits and Vegetables Behavior.

Data of frequency and portion of consumed fruit and vegetables was collected in order to measure the total consumption day in a week and the daily average portion. The population is classified "sufficient" in consuming vegetables and fruits should they consume a minimum of 5 portions per day for 7 days in a week. A respondent was classified "insufficient" if they consuming less than the designated minimum portion.

Table 3.125 shows that among the population above 10 years 93.6%had insufficient consumption of fruits and vegetables. The lowest fruits and vegetables consumption was found in the Province of Riau and West Sumatra, where 97.9% and 97.8% had insufficient consumption. Whereas with the provinces that have lower levels of insufficient consumption are Gorontalo (83.5%), DI Yogyakarta (86.1%), and Lampung (87.7%).

Table 3.125
Prevalence of Insufficient consumption of fruits and vegetables of Population Above 10 Years by Province, Riskesdas 2007

Province	Insufficient consumption of fruits and vegetables *)
NAD	95.9
North Sumatera	94.4
West Sumatera	97.8
Riau	97.9
Jambi	93.4
South Sumatera	96.9
Bengkulu	92.1
Lampung	87.7
Bangka Belitung	96.6
Kepulauan Riau	96.4
DKI Jakarta	94.5
West Java	96.4
Central Java	92.0
DI Yogyakarta	86.1
East Java	90.6
Banten	96.7
Bali	96.2
West Nusa Tenggara	92.6
East Nusa Tenggara	94.2
West Kalimantan	94.9
Central Kalimantan	91.5
South Kalimantan	95.7
East Kalimantan	91.8
North Sulawesi	91.2
Central Sulawesi	91.5
South Sulawesi	93.7
Southeast Sulawesi	92.9
Gorontalo	83.5
West Sulawesi	96.4
Maluku	96.5
North Maluku	96.1
West Papua	91.3
Papua	89.7
Indonesia	**93.6**

*) Consumption of fruits and vegetables less than 5 portion/day for 7 days in a week.

Table 3.126 describes that the age group experiences with the lowest consumption of fruits and vegetables are those above 75 years old (95.3%). There is no difference in insufficient consumption of fruits and vegetables between men and women. In the perspective of education, the higher the level of education, the higher the consumption of minimal levels of fruits and vegetables. There is no a significant difference related to the fruits and vegetables consumption behavior in the urban and village area . Based on the expenditure level per capita, the higher the level of expenditure per capita per month, the higher the consumption of fruits and vegetables.

Table 3.126
Prevalence of Insufficient consumption of fruits and vegetables of Population Above 10 Years according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Insufficient consumption of fruits and vegetables*)
Age group (Years)	
10-14	93.6
15-24	93.8
25-34	93.4
35-44	93.3
45-54	93.5
55-64	93.7
65-74	94.7
75+	95.3
Gender	
Male	93.5
Female	93.7
Education Level	
No schooling	94.9
Unfinished Primary	94.3
Finished Primary	94.1
Finished Junior High	93.6
Finished Senior High	92.8
Finished University	90.3
Type of Residence	
Urban	93.0
Rural	94.0
Level of expenditure per capita	
Quintile 1	94.6
Quintile 2	94.2
Quintile 3	93.9
Quintile 4	93.3
Quintile 5	92.4

*) Consumption of fruits and vegetables less than 5 portion/day for 7 days in a week

3.7.3 Alcohol consumption behavior.

One of the health risk factors is the habit of drink alcohol. Information regarding alcoholic consumption was obtained by asking the respondent aged above 10 years. Since this behavior is periodic, the questions were related to drink alcoholic behavior during 12 month period and the last one month. The nterview was started by questioning whether the respondent drank alcoholic drinks in the last 12 month. For those who answered “yes” they were also asked the last one month consumption, included how often (frequency), kind of drink and the average unit of standard drinking.

Calibration was used toward the various of measurement perception of respondents to obtain standard measurement, which was one standard of drinks equal to 285 ml volume of beer.

Table 3.127 shows that on the national scale the prevalence of alcoholic drinking during the last 12 month period is 4.6%, whereas those who still drink in the last one month is 3.0%. Some provinces have high prevalence of drinking alcohol, such as in the province of East Nusa Tenggara (17.7%), North Sulawesi (17.4%), and Gorontalo (12.3%). In general, those province that had acohol consumption in the last 12 month as well as the prevalence of drink alcohol behavior both are above the national record .

Table 3.128 , it can be seen that the prevalence of alcohol consumption within the last 12 months and the last one month increases between 15-24 years of age, that reach 5.5% and 3.5% and then increase to 6.7% and 4.3% at the age 25-34 years, and starts to decrease as the age increases.

In the terms of gender, the prevalence of alcohol consumption is higher among males than females. Whereas from the perspective of education, consumption of alcohol was higher among those who graduated from junior and senior high school (SMP/SMA). The prevalence of alcohol consumption was higher in rural areas than urban areas. There is no difference of alcohol consumption based on expenditure level per capita per month.

Table 3.127
Prevalence of Alcoholics Drinker during the last 12 month and 1 month by Province, Riskesdas 2007

Province	Alcohol consumption during the last 12 month	Alcohol consumption during the last 1 month
NAD	1.5	0.4
North Sumatera	6.1	4.4
West Sumatera	1.5	0.7
Riau	3.4	1.3
Jambi	2.7	1.7
South Sumatera	2.9	2.1
Bengkulu	2.8	1.8
Lampung	2.2	1.4
Bangka Belitung	4.4	2.5
Kepulauan Riau	5.9	3.7
DKI Jakarta	4.0	2.7
West Java	2.6	1.3
Central Java	2.2	1.1
DI Yogyakarta	3.2	1.7
East Java	1.9	1.0
Banten	1.6	0.9
Bali	6.4	4.6
West Nusa Tenggara	2.0	1.2
East Nusa Tenggara	17.7	13.5
West Kalimantan	8.8	4.8
Central Kalimantan	6.5	3.5
South Kalimantan	1.2	0.5
East Kalimantan	3.4	1.7
North Sulawesi	17.4	14.9
Central Sulawesi	8.9	6.4
South Sulawesi	5.9	3.9
Southeast Sulawesi	7.7	5.8
Gorontalo	12.3	10.7
West Sulawesi	4.0	2.6
Maluku	8.2	5.0
North Maluku	7.4	4.4
West Papua	8.1	4.9
Papua	6.7	4.4
Indonesia	**4.6**	**3.0**

Table 3.128
Prevalence of Alcohol consumption during the last 12 months and 1 month according to Respondent's characteristic in Indonesia, Riskesdas 2007

Respondent's characteristic	Has ever drank Alcohol during the last 12 month	Still drank Alcohol during the last 1 month
Age group		
10-14	0.7	0.3
15-24	5.5	3.5
25-34	6.7	4.3
35-44	5.5	3.7
45-54	4.8	3.3
55-64	3.6	2.4
65-74	2.6	1.7
75+	1.5	0.9
Gender		
Male	8.8	5.8
Female	0.7	0.4
Education Level		
No schooling	3.1	2.1
Unfinished Primary	3.8	2.5
Finished Primary	4.5	3.0
Finished Junior High	5.5	3.5
Finished Senior High	6.0	3.8
Finished University	3.9	2.4
Type of Residence		
Urban	*3.9*	*2.5*
Rural	5.1	3.3
Level of expenditure per capita		
Quintile 1	4.4	2.9
Quintile 2	4.7	3.0
Quintile 3	4.6	3.0
Quintile 4	4.7	3.0
Quintile 5	4.7	3.0

3.7.4 Physical Activity Level Behavior

Regular physical activity is important for controlling body weight and strengthening the cardio-vascular system. Data concerning frequency of physical activity in the last week for those respondents above 10 years was collected. The physical activity level was classified as "sufficient" if activity was done continuously for at least 10 minutes in an unstopped activity and cumulatively reach 150 minutes for 5 days in a week .

Besides frequency, the collection also included physical activity intensity data, which was the total days of undertaking "heavy" ,"relative" and "walking" levels of physical activity. The calculations of total minutes of physical activity done in a week was also considered as well as the kind of activity that was done; each activity was given a weight, four was the weight "heavy" activities, two for "relative" activity as compared to a "light" or walking activity.

As can be seen in the table 3.129, it is clear that from the national perspective nearly half of the population (48.2%) lacks adequate levels of physical activity. The highest lack of physical activity is found in the province of East Kalimantan (61.7%), and Riau (60.2%). Low levels of limited physical activity were found in the provinces of East Nusa Tenggara, (27.3%), Central Sulawesi (39.4%), and Bengkulu (40.1%).

Table 3.129
Prevalence of the Lack of Physical Activity of Population Above 10 Years by Province, Riskesdas 2007

Province	Lack of physical activity
NAD	53.3
North Sumatera	52.1
West Sumatera	54.8
Riau	60.2
Jambi	57.8
South Sumatera	48.1
Bengkulu	40.1
Lampung	45.3
Bangka Belitung	46.4
Kepulauan Riau	53.1
DKI Jakarta	54.7
West Java	52.4
Central Java	44.2
DI Yogyakarta	45.3
East Java	44.7
Banten	55.0
Bali	44.6
West Nusa Tenggara	48.8
East Nusa Tenggara	27.3
West Kalimantan	46.9
Central Kalimantan	43.8
South Kalimantan	49.4
East Kalimantan	61.7
North Sulawesi	47.2
Central Sulawesi	39.4
South Sulawesi	49.1
Southeast Sulawesi	47.6
Gorontalo	47.3
West Sulawesi	42.7
Maluku	49.2
North Maluku	48.2
West Papua	50.4
Papua	43.0
Indonesia	**48.2**

*) lack of physical activity is a cumulative activity which less than 150 minutes in a week.

In the table 3.130 it can be seen that according to age group, the highest lack of physical activity is experienced by those above 75 years (76.0%), and the age group of 10-14 years (66.9%) and women (54.5%) as compred to men (41.4%). Based on the education level ,

the higher education the higher the prevalence of inadeaute physical activity. The lack of activity prevalence among urban population (57.6%) is higher than in rural areas (42.4%), and the higher the level of monthly expenditure the higher the prevalence of lack of adequate physical activity.

Table 3.130
Prevalence of the Lack of Physical Activity of Population Above 10 Years according to Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Lack of physical activity
Age group (Years)	
10-14	66.9
15-24	52.0
25-34	42.9
35-44	38.9
45-54	38.4
55-64	44.4
65-74	58.5
75+	76.0
Gender	
Male	41.4
Female	54.5
Education level	
No schooling	48.8
Unfinished Primary	48.1
Finished Primary	43.4
Finished Junior High	47.4
Finished Senior High	52.6
Finished University	60.3
Type of Residence	
Urban	57.6
Rural	42.4
Level of expenditure per capita	
Quintile 1	44.8
Quintile 2	45.5
Quintile 3	47.1
Quintile 4	49.1
Quintile 5	53.9

3.7.5 Knowledge and Attitude toward Avian Influenza and HIV/AIDS.

a. Avian Influenza.

Data about the population's knowledge and attitude related to the avian influenza was collected by asking the filter question: Have you heard about avian influenza. For those who have heard it, the further question was related to the knowledge of how the disease can spread and their attitude should concerning poultry that were sick or suddenly dead .

The population classified as having knowledge of the correct bird flu contamination should they able to explain the way of contamination through contact with the sick poultry or contact with poultry's feces/ stable fertilizer. They were classified as correct should they

give one of the following answer: report to the related official, or clean the poultry stable ,or burry down/fire the sick poultry, if there is a sick poultry and suddenly dead .

Table 3.131
Percentage of Population Above 10 Years in Relations to the Knowledge and Attitude about Avian Influenza by Province, Riskesdas 2007

Province	Have heard	Correct Knowledge*	Correct Attitude**
NAD	61.7	81.3	88.7
North Sumatera	74.6	84.8	94.2
West Sumatera	67.3	73.7	81.3
Riau	74.1	77.2	87.6
Jambi	67.8	81.7	87.6
South Sumatera	55.8	87.7	85.1
Bengkulu	66.8	80.7	87.2
Lampung	70.2	86.2	92.2
Bangka Belitung	73.1	75.2	92.1
Kepulauan Riau	81.4	81.0	91.9
DKI Jakarta	80.9	83.6	91.4
West Java	71.6	77.6	84.9
Central Java	68.2	79.9	86.9
DI Yogyakarta	74.7	74.6	93.6
East Java	63.7	75.9	89.4
Banten	63.2	83.3	87.3
Bali	70.8	85.7	96.1
West Nusa Tenggara	52.2	79.6	91.0
East Nusa Tenggara	35.9	69.8	85.9
West Kalimantan	57.8	81.3	88.6
Central Kalimantan	61.4	82.2	82.4
South Kalimantan	69.3	71.1	74.6
East Kalimantan	74.6	86.7	92.5
North Sulawesi	71.1	80.7	92.7
Central Sulawesi	66.7	70.0	83.9
South Sulawesi	63.1	70.6	85.8
Southeast Sulawesi	55.8	74.9	83.2
Gorontalo	51.9	79.9	85.2
West Sulawesi	56.9	66.2	84.5
Maluku	54.7	76.2	84.1
North Maluku	41.9	63.7	82.2
West Papua	52.1	69.0	84.2
Papua	44.4	74.8	86.8
Indonesia	**64.7**	**78.7**	**87.7**

*) Possess correct knowledge if they answer “yes” in relation to contact with the sick poultry or contact with poultry feces/stable fertilizer.

**) Correct attitude if they answer “yes” in relation to give the report to the related official, to clean the poultry stable, or bury down/burn the sick poultry and suddenly dead.

Table 3.131 presents the population percentage of above 10 years in relations to the knowledge and attitude about avian influenza and the province . Nationally, 64.7% of the population had heard about it. Among those, there were 78.7% possessing the correct knowledge and 87.7% possessing the correct attitude. Three provinces in which the

population lack of knowledge about avian influenza were the highest were East Nusa Tenggara (35.9%), North Maluku (41.9%), and Papua (44.4%). The province in which the population has the highest knowledge about avian influenza is Lampung (86.2%) and the best attitude found in Bali (96.1%).

Table 3.132
Percentage of Population Above 10 Years in Relations to the Knowledge and Attitude about Avian Influenza and Respondent's characteristic, Riskesdas 2007

Respondent's characteristic	Have heard	Correct Knowledge*	Correct Attitude**
Age			
10-14 years	52.4	73.0	82.2
15-24 years	79.0	83.1	89.7
25-34 years	75.3	81.6	89.3
35-44 years	70.0	79.2	88.5
45-54 years	60.8	75.6	86.9
55-64 years	47.6	71.4	85.6
65-74 years	33.5	64.8	82.3
75+ years	19.7	59.2	79.1
Gender			
Male	68.2	80.6	88.8
Female	61.5	76.7	86.6
Education Level			
No schooling	26.3	60.9	77.7
Unfinished Primary	44.5	66.7	78.8
Finished Primary	61.0	74.1	84.3
Finished Junior High	79.1	82.2	90.2
Finished Senior High	89.0	86.4	93.4
Finished University	93.7	90.3	95.7
Employment			
Jobless	53.9	77.1	86.3
Student	65.3	79.4	86.9
House wife	65.1	75.8	86.5
Employee	91.3	88.7	95.1
Entrepreneur	78.2	81.9	90.4
Farmer/Fisherman/Labor	54.6	73.9	84.4
Others	73.4	80.4	89.2
Type of Residence			
Urban	78.8	82.7	91.0
Rural	56.1	75.2	84.9
Level of expenditure per capita			
Quintile 1	56.0	75.5	86.3
Quintile 2	60.5	76.3	86.9
Quintile 3	64.0	77.7	86.5
Quintile 4	67.7	79.4	95.1
Quintile 5	74.5	82.6	90.4

*) Possess correct knowledge if they answer "yes" in relation to contact with the sick poultry or contact with poultry feces/stable fertilizer.
**) Correct attitude if they answer "yes" in relation to give the report to the related official, to clean the poultry stable, or bury down/fire the sick poultry and suddenly dead.

Table 3.132 shows the percentage of population that above 10 years in the perspective of knowledge and attitude towards avian influenza and the respondent's characteristic. The

age group of 15-24 years is the highest group for the category of ever heard, correct knowledge and attitude. The percentage of man who ever heard avian influenza is higher than woman . (68.2% compared to 61.5%), and also more man possess knowledge and correct attitude towards the avian influenza. In the perspective of region type, a lot of urban population has heard the avian influenza ,and more of them have correct knowledge and attitude towards the avian influenza than those in the rural areas. From the perspective of household expenditures per capita, the higher the level of expenditure ,the higher the percentage of population who has heard avian influenza, and has correct knowledge and attitude towards it.

b. HIV/AIDS

In relation to HIV/AIDS, the people were asked if they heard about HIV/AIDS. Then ,those who have heard were asked further question related to the knowledge of how HIV virus spread to human (7 questions), its prevention (6 questions), and 5 questions related to their attitude should there be a member of family contaminated. The population considered having the correct knowledge about the spread and the prevention of HIV/AIDS should they answer reach 60% for both contamination and prevention. In relation to the attitude, the respondent was asked: should there be a member of the family suffering from HIV/AIDS, will the respondent: a) keep it confidential , b) discuss it with the other member of family, C) join counseling and medical treatment, d) try to look for the alternative medical treatment or E) isolate the sufferer .

Table 3.133 shows the percentage of population above 10 years from the perspective of knowledge and attitude towards HIV/AIDS by province. Nationally, 44.4% of the population heard about it; 13.9% among them possess good knowledge about HIV/AIDS transmission and 49.3% have good knowledge about HIV/AIDS prevention. Three provinces that have the least population that have ever heard about HIV/AIDS are North Maluku (28.4%), West Sulawesi (29.3%) and East Nusa Tenggara (30.2%). From those who have heard, the lowest understanding level about HIV/AIDS transmission are West Java (6.2%), East Java (6.6%), and Banten (6.9%), whereas the lowest good understanding on how to prevent HIV/AIDS are West Sulawesi (29.0%), Lampung (37.8%), and South Sulawesi (38.9%).

Table 3.134 presents the percentage of population above 10 years from the perspective of knowledge about HIV/AIDS and the respondent's characteristics. In general, the productive age group population (15-45 years) are those who often heard and have good knowledge on the spread/contagion and the prevention of HIV/AIDS. From the perspective of gender, males are much more familiar and possess the correct knowledge about the contamination and prevention of HIV/AIDS as compared to females.

In general, there is improvement on knowledge about HIV as they get older. In the perspective of activity, those who have fixed income are more knowledgeable about HIV/AIDS.

Whereas in the perspective of type of residence, it is the urban population have heard more about HIV/AIDS and have good knowledge on the prevention of HIV/AIDS than rural populations. The higher the level of per capita household expenditure, the better the good knowledge about the spread and the prevention of HIV/AIDS.

Table 3.133
Percentage of Population Above 10 Years in Relations to the Knowledge and Attitude about Avian Influenza and HIV/AIDS and Province, Riskesdas 2007

Province	Have heard	Correct knowledge about the contagion *	Correct knowledge about the prevention**
NAD	44.3	17.9	41.0
North Sumatera	55.2	17.1	40.6
West Sumatera	42.0	16.5	46.6
Riau	55.3	14.3	45.1
Jambi	46.0	19.5	40.3
South Sumatera	34.5	21.8	40.4
Bengkulu	49.2	10.6	39.8
Lampung	43.2	7.2	37.8
Bangka Belitung	52.9	8.7	44.5
Kepulauan Riau	71.1	17.4	53.9
DKI Jakarta	67.8	9.2	61.8
West Java	45.1	6.2	61.2
Central Java	42.5	12.2	60.0
DI Yogyakarta	57.4	9.4	64.9
East Java	40.5	6.6	53.6
Banten	41.7	6.9	49.3
Bali	52.1	12.8	61.8
West Nusa Tenggara	33.9	21.4	52.7
East Nusa Tenggara	30.2	29.2	50.6
West Kalimantan	46.6	17.7	46.7
Central Kalimantan	40.5	10.9	46.1
South Kalimantan	44.3	7.8	46.3
East Kalimantan	59.2	13.3	47.8
North Sulawesi	58.6	12.5	51.9
Central Sulawesi	38.5	7.1	44.2
South Sulawesi	35.3	13.7	38.9
Southeast Sulawesi	35.6	14.8	41.0
Gorontalo	33.7	14.1	40.5
West Sulawesi	29.3	16.1	29.0
Maluku	45.7	26.6	54.9
North Maluku	28.4	15.9	46.8
West Papua	56.4	37.1	53.4
Papua	51.3	45.0	59.9
Indonesia	**44.4**	**13.9**	**49.3**

*) Possess correct knowledge of contagion if they answer correctly 4 of 7 questions.
**) Possess correct knowledge of prevention if they answer correctly 4 of 6 questions.

Table 3.134
Percentage of Population Above 10 Years in relation to the knowledge about HIV/AIDS and Respondent's characteristic, Riskesdas 2007

Characteristic	Have heard	Correct knowledge about the contagion *	Correct knowledge about the prevention**
Age			
10-14 years	21.8	11.3	34.9
15-24 years	63.2	14.2	50.5
25-34 years	58.8	14.0	51.4
35-44 years	49.7	14.2	51.1
45-54 years	37.3	14.4	48.9
55-64 years	25.4	12.9	47.4
65-74 years	14.7	11.6	42.8
75+ years	7.1	12.0	34.7
Gender			
Male	48.0	14.0	50.1
Female	40.9	13.8	48.5
Education Level			
No Schooling	8.7	14.4	32.9
Unfinished Primary School	17.1	10.1	33.4
Finished Primary School	33.4	9.5	38.2
Finished Junior High School	61.2	11.8	47.0
Finished Senior High	80.1	15.6	57.4
Finished University	89.7	26.3	68.8
Employment			
Jobless	37.2	13.2	48.2
Student	40.7	14.3	46.9
House wife	44.2	11.9	46.9
Employee	84.6	20.9	64.2
Entrepreneur	60.7	12.5	51.9
Farmer/Fisherman/Labor	30.3	11.0	39.1
Others	57.1	14.2	53.9
Type of Residence			
Urban	62.5	13.5	56.6
Rural	33.2	14.3	40.9
Level of expenditure per capita			
Quintile 1	33.0	11.0	43.1
Quintile 2	38.0	11.5	45.3
Quintile 3	42.9	12.6	47.6
Quintile 4	47.9	13.7	50.3
Quintile 5	58.2	17.6	55.2

*) Possess good knowledge of contagion if they answer correctly 4 of 7 questions.
**) Possess good knowledge of prevention if they answer correctly 4 of 6 questions.

Table 3.135
Percentage of Population Above 10 Years in the perspective of attitude should there is a member of family suffers from HIV/AIDS and province, Riskesdas 2007

Province	Keep it confidential	Talk with other household's member	Counseling and medical treatment	Look for alternative medical treatment	Isolate the suffer
NAD	33.8	58.7	84.7	60.4	5.8
North Sumatera	27.3	68.7	87.9	56.7	5.3
West Sumatera	29.9	70.8	85.7	63.3	5.3
Riau	34.9	67.7	85.2	57.3	5.1
Jambi	43.3	57.4	85.2	57.2	5.0
South Sumatera	40.0	67.3	87.0	66.0	5.5
Bengkulu	24.5	65.8	88.4	51.2	6.1
Lampung	24.8	67.2	85.9	62.0	4.2
Bangka Belitung	20.1	67.1	93.4	62.5	6.3
Kepulauan Riau	43.8	74.9	85.3	48.8	5.5
DKI Jakarta	30.5	76.7	91.5	61.3	6.8
West Java	28.9	76.7	92.7	67.8	8.3
Central Java	29.8	76.4	93.7	60.9	7.1
DI Yogyakarta	26.4	79.0	95.1	59.9	5.9
East Java	28.8	76.9	93.7	55.8	8.1
Banten	23.3	64.3	90.9	59.4	5.4
Bali	26.8	70.2	92.1	58.6	3.6
West Nusa Tenggara	34.8	73.1	89.0	58.7	6.0
East Nusa Tenggara	19.1	61.8	83.6	68.3	8.2
West Kalimantan	38.7	64.3	90.1	62.8	5.7
Central Kalimantan	21.3	72.6	90.3	60.7	8.6
South Kalimantan	30.7	63.0	89.9	60.5	6.2
East Kalimantan	24.3	76.1	89.2	51.0	5.0
North Sulawesi	15.3	71.2	87.7	51.5	5.9
Central Sulawesi	12.9	75.2	88.8	48.3	5.5
South Sulawesi	13.7	62.2	87.2	50.1	3.8
Southeast Sulawesi	23.1	64.2	86.0	55.7	5.7
Gorontalo	19.6	63.4	83.5	62.3	5.1
West Sulawesi	9.6	65.3	88.0	64.1	2.4
Maluku	34.7	64.5	87.4	60.6	6.4
North Maluku	23.7	57.8	82.5	52.9	7.7
West Papua	37.3	50.1	75.2	44.4	10.9
Papua	35.7	59.3	78.9	54.2	10.4
Indonesia	28.2	69.7	89.0	58.6	6.3

Table 3.135 shows the percentage of the population above 10 years from the perspective of attitude should there is a member of family suffering from HIV/AIDS by province. Nationally, those who keep it confidential and isolate the person that suffers from HIV/AIDS reached 34.5% (each is 28.2% and 6.3% consecutively). The highest percentage that reach 89.0% is still kept by those who do the counseling and medical treatment. The provinces in which its population have good attitude (less confidentiality and isolation) are West Sulawesi (12%), South Sulawesi (17.5%) and Central Sulawesi

(18.4%). Whereas the provinces in which its population have a good manner in the perspective that they will do the counseling and medical treatment are East Java and Central Java (93.7% each), and Bangka Belitung (93.4%).

Table 3.136
Percentage of the Population Above 10 Years in the Perspective of Attitude Should there is a Member of Family Suffers from HIV/AIDS and Respondent's Characteristics, Riskesdas 2007

Respondent's characteristic	Keep it confidential	Talk with other household's member	Counseling and medical treatment	Look for alternative medical treatment	Isolate the sufferer
Age group (year)					
10-14	29.4	58.4	79.7	49.8	6.2
15-24	30.4	69.4	89.5	59.4	5.9
25-34	28.1	71.6	90.3	60.2	6.0
35-44	26.4	71.6	90.4	59.7	6.6
45-54	27.0	70.2	89.3	57.7	6.9
55-64	25.8	69.1	87.7	55.6	7.6
65-74	25.8	66.1	85.0	53.6	6.8
75+	24.0	60.7	78.6	50.8	5.8
Gender					
Male	28.0	69.6	89.3	58.9	6.3
Female	28.5	69.8	88.8	58.3	6.3
Education Level					
No Schooling	30.1	58.7	78.7	52.0	6.8
Unfinished Primary	28.0	59.6	81.0	52.6	7.5
Finished Primary School	28.1	64.7	85.3	55.6	6.9
Finished Junior High	29.3	69.1	89.1	59.0	6.4
Finished Senior High	28.0	74.2	92.2	60.9	5.7
Finished University	26.7	77.8	94.9	62.7	5.6
Employment					
Jobless	29.3	68.2	87.5	58.3	6.3
Student	29.8	66.0	86.8	56.5	5.9
House wife	28.1	70.1	88.9	58.5	6.7
Employee	27.7	76.7	93.8	61.7	5.5
Entrepreneur	28.1	72.7	90.9	60.3	6.4
Farmer/Fisherman/Labor	27.5	64.9	86.1	56.7	6.7
Others	26.5	71.8	90.6	57.4	6.6
Type of Residence					
Urban	28.9	74.9	91.9	60.6	6.1
Rural	27.4	63.6	85.7	56.3	6.5
Level of expenditure per capita					
Quintile 1	29.5	67.0	86.9	56.9	6.3
Quintile 2	28.7	68.1	87.5	57.9	6.6
Quintile 3	28.2	69.0	88.6	58.2	6.3
Quintile 4	28.3	70.4	89.5	59.5	6.4
Quintile 5	27.2	72.0	91.1	59.5	6.0

Table 3.136 describes the percentage of the population above 10 years from the perspective of attitude should there be a member of family that suffers from HIV/AIDS and the respondent's characteristics. From the perspective of age group, the younger the respondent, the higher the tendency to not reveal and isolate. There is no attitude difference between man and woman. From the perspective of education, the higher the education level the lower the tendency toward confidentiality and isolation. By employment, those who do not have a job, are more likely to keep it confidential as well as isolate he/she who suffers from HIV/AIDS, this is true among urban population. From the perspective of expenditure level, the higher its level the lower the attitude to keep information confidential and patients isolated.

3.7.6 Hygienic Behavior

Hygienic behavior includes habit/behavior in defecating and hand washing. Defecating behavior is considered correct if the people do it in a toilet. Correct hand washing is when it is done with soap prior to having meal, preparing the meals, after defecating, after cleaning up infant/child, and after holding poultry/animals.

Table 3.137 shows the percentage of population above 10 years who have correct attitude related to defecating and hand washing based by province. Nationally, 71.1% has correct behavior in defecation ,however only 23.2% has correct behavior in hand washing. The Province of West Sulawesi (57.4%), Gorontalo (59.2%) and West Sumatra (59.3%) are the provinces possessing the lowest correct defecating behavior. Whereas the Province of West Sumatra (8.4%), North Sumatra (14.5%), and Riau (14.6%) are the provinces possessing the lowest levels of correct hand washing behavior. DKI Jakarta has the highest correct defecating and hand washing behavior.

Table 3.138 shows the percentage of population above 10 years which has correct attitude related to defecation and hand washing by various attributes. The older the person the better the behavior in defecating and hand washing, but eventually it decreases at the age of above 55 years. The percentage of woman possessing correct behavior in defecating and hand washing is higher than man (71.2% to 70.9% and 27.8% to 18.8% respectively).

The higher the education level, the higher good behavior in defecating and hand washing. From the perspective of work, farmer/labor/fisherman has the lowest percentage of good behavior in defecating and hand washing (56.1% and 18.6%). The urban population has better good behavior than the rural areas. The higher the level of per capita household expenditure the higher the percentage of good behavior in defecating and hand washing.

Table 3.137
Percentage of Population above 10 Years who Has Correct Behavior in Defecating and Hand Washing by Province, Riskesdas 2007

Province	Correct behavior in defecating *	Correct behavior in hand washing **
NAD	61.6	16.0
North Sumatera	76.2	14.5
West Sumatera	59.3	8.4
Riau	80.0	14.6
Jambi	68.1	18.5
South Sumatera	59.7	35.9
Bengkulu	71.8	15.4
Lampung	72.9	15.4
Bangka Belitung	73.3	20.6
Kepulauan Riau	84.0	29.3
DKI Jakarta	98.6	44.7
West Java	79.3	27.2
Central Java	68.2	25.1
DI Yogyakarta	89.3	32.8
East Java	68.7	26.3
Banten	67.4	24.0
Bali	82.6	30.6
West Nusa Tenggara	60.0	14.2
East Nusa Tenggara	81.1	20.0
West Kalimantan	72.7	23.3
Central Kalimantan	60.1	25.9
South Kalimantan	69.9	17.9
East Kalimantan	83.2	29.0
North Sulawesi	86.2	36.5
Central Sulawesi	59.5	19.9
South Sulawesi	73.0	20.8
Southeast Sulawesi	65.7	24.9
Gorontalo	59.2	22.9
West Sulawesi	57.4	18.4
Maluku	63.2	43.1
North Maluku	72.9	32.8
West Papua	68.3	38.5
Papua	59.9	30.6
Indonesia	**71.1**	**23.2**

*) Correct behavior in defecating if is done in the toilet .

**) Correct behavior in hand washing if using soap prior to having meals, preparing the food, after defecating and after cleaning up the infant/child, and after holding poultry/animal.

Table 3.138
Percentage of Population above 10 Years who Has Correct Behavior in Defecating and Hand Washing According to Respondent's characteristics, Riskesdas 2007

Respondent's characteristics	Correct behavior in defecating *	Correct behavior in hand washing **
Age		
10-14 years	68.2	17.2
15-24 years	72.4	23.6
25-34 years	71.8	26.1
35-44 years	72.1	25.9
45-54 years	71.6	24.5
55-64 years	69.6	22.1
65-74 years	68.5	18.1
75+ years	68.0	14.1
Gender		
Male	70.9	18.4
Female	71.2	27.8
Education level		
No Schooling	52.2	17.1
Unfinished Primary School	59.1	18.0
Finished Primary School	65.8	21.8
Finished Junior High School	76.7	24.8
Finished Senior High	88.9	29.0
Finished University	94.7	36.9
Employment		
Jobless	69.9	20.6
Student	73.6	19.9
House wife	73.7	30.7
Employee	93.3	31.8
Entrepreneur	83.7	24.8
Farmer/Fisherman/Labor	56.1	18.6
Others	77.8	23.7
Type of Residence		
Urban	89.4	28.7
Rural	59.7	19.8
Level of expenditure per capita		
Quintile 1	58.0	19.6
Quintile 2	64.3	21.4
Quintile 3	70.6	22.4
Quintile 4	75.8	24.4
Quintile 5	84.5	27.7

*) Correct behavior in defecating if it is done in the toilet .

**) Correct behavior in hand washing if using soap prior to having meals, preparing the food, after defecating and after cleaning up the infant/child, and after holding poultry/animal.

3.7.7 The pattern of risky food consumption

Those who “often” have sweet meals/drinks, salty food, fatty meals, innards, roasted food, preserved food, caffeine, flavoring spice are considered to possess risky food consumption behavior. The risky food consumption behavior is classified “often” in case they consume it once or more daily.

Table 3.139
Prevalence of Population Above 10 Years Having Risky Food Consumption by Province, Riskesdas 2007

Province	Sweet	Salty	Fatty	Innards	Roasted	Preserved	Caffeine	Flavoring
NAD	69.1	22.1	15.6	3.6	5.7	6.2	45.6	33.6
North Sumatera	71.1	21.4	6.5	2.3	4.2	5.0	23.3	47.3
West Sumatera	55.6	8.1	8.6	1.9	3.7	4.5	29.6	57.3
Riau	70.8	20.6	10.7	2.4	3.4	5.2	30.4	72.1
Jambi	71.0	24.3	5.9	2.6	3.0	4.3	35.1	72.2
South Sumatera	79.1	41.6	8.7	2.6	3.7	5.2	59.7	78.3
Bengkulu	56.6	24.7	18.5	1.8	2.1	5.1	47.5	87.5
Lampung	67.6	24.4	6.5	1.2	1.6	3.1	44.5	85.6
Bangka Belitung	61.5	8.5	5.2	1.7	4.2	10.2	45.6	86.9
Kepulauan Riau	82.6	25.2	11.4	4.9	8.6	10.3	43.2	79.4
DKI Jakarta	74.3	27.8	21.4	4.7	4.5	16.2	34.0	83.5
West Java	58.9	54.9	23.6	1.6	2.4	11.6	29.5	89.3
Central Java	65.3	27.6	23.8	1.6	2.4	5.4	19.2	85.6
DI Yogyakarta	71.2	13.2	14.2	2.0	2.4	5.8	11.2	77.7
East Java	59.4	30.7	15.7	1.4	2.4	4.1	43.4	85.2
Banten	60.4	40.7	17.3	1.6	3.8	9.8	35.2	87.1
Bali	44.7	14.8	15.4	2.5	2.9	4.1	62.0	90.8
West Nusa Tenggara	47.2	18.1	7.5	2.9	5.7	4.0	46.8	89.8
East Nusa Tenggara	50.1	13.6	4.3	1.9	3.4	2.8	52.9	73.4
West Kalimantan	74.0	24.5	10.2	1.2	1.3	12.1	59.6	86.5
Central Kalimantan	79.3	19.3	10.4	1.2	3.1	9.9	38.3	92.6
South Kalimantan	83.5	19.8	8.3	1.6	4.4	7.1	21.8	84.7
East Kalimantan	79.9	27.4	9.7	2.0	4.1	9.2	34.7	90.5
North Sulawesi	69.6	7.3	7.3	2.0	6.2	3.0	52.0	89.2
Central Sulawesi	55.9	5.8	7.0	0.7	9.2	3.6	39.9	86.9
South Sulawesi	60.1	17.4	6.8	1.5	7.2	7.0	30.9	83.2
Southeast Sulawesi	64.8	14.8	7.1	1.1	9.3	4.3	29.8	80.4
Gorontalo	63.6	11.7	25.8	1.1	11.9	2.6	39.6	84.9
West Sulawesi	68.2	28.3	5.0	0.8	7.0	9.5	45.1	69.0
Maluku	81.0	21.8	8.4	3.2	18.7	4.6	22.7	75.0
North Maluku	76.3	19.2	16.8	2.0	15.8	6.0	31.0	68.3
West Papua	76.5	19.3	19.9	5.1	23.9	8.7	31.5	84.2
Papua	58.2	15.8	13.2	4.7	38.0	8.9	28.0	68.8
Indonesia	**65.2**	**24.5**	**12.8**	**2.0**	**4.9**	**6.3**	**36.5**	**77.8**

Table 3.139 describes the prevalence of population above 10 years having risky food consumption by province scale. Consuming sweet food often is done by 65.2% of

Indonesian people aged at or above 10 years, the highest is in the province South Kalimantan (83.5%) and the lowest is in Bali (44.7%).

As for the prevalence of "often" consuming salty food, nationally, is 24.5%, the highest is in the province of South Sumatra (41.6%) and the lowest is in the province of Central Sulawesi (5.8%). Nationally, 12.8% of Indonesian people often consuming fatty food ,the highest consumption is in the province of Gorontalo (25.8%) and the lowest is in the province of Bangka Belitung (5.2%). Flavoring spice is often consumed by 77.8% of the Indonesian people, the highest consumption was in the province of Central Kalimantan (92.6%), and the lowest level was in the province of NAD (33.6%). As for caffeine it is often consumed by 36.5% of the population nationally, the highest in Bali (62.0%) and the lowest in the province of DI Yogyakarta (11.2%)

Table 3.140
Prevalence of Population Above 10 Years Having Risky Food Consumption, According to Respondent's characteristics, Riskesdas 2007

Characteristics	Sweet	Salty	Fatty	Innards	Roasted	Preserved	Caffeine	Flavoring
Age group (years)								
10-14	63.1	24.4	13.5	2.1	5.6	8.6	16.3	75.7
15-24	65.1	24.4	13.4	2.0	5.0	7.3	28.6	77.2
25-34	66.5	24.7	13.1	2.2	5.1	6.6	39.4	79.5
35-44	66.8	24.9	12.9	2.0	5.0	6.0	43.7	79.7
45-54	66.3	24.9	12.5	1.8	4.7	5.2	46.1	78.3
55-64	63.9	24.2	11.8	1.8	4.3	4.5	45.7	76.9
65-74	61.6	23.0	11.0	1.7	3.5	3.8	42.1	74.7
75+	60.5	21.9	10.2	1.7	3.4	3.7	38.5	72.7
Gender								
Male	67.2	24.5	12.8	2.1	5.0	5.0	46.6	77.5
Female	63.4	24.4	12.9	1.9	4.8	4.8	26.9	78.2
Education Level								
No Schooling	57.5	25.5	11.4	1.8	6.2	4.9	42.1	78.1
Unfinished Primary	62.2	25.4	12.3	1.9	5.0	6.5	36.0	78.5
Finished Primary School	64.6	26.0	12.6	1.7	4.7	6.3	37.4	79.5
Finished Junior High	66.8	24.1	13.1	2.0	4.5	6.7	35.1	77.5
Finished Senior High	69.9	21.8	13.7	2.4	4.7	6.6	35.7	76.0
Finished University	71.5	21.0	14.6	2.5	5.5	6.1	32.6	71.9
Type of Residence								
Urban	69.7	23.0	14.8	2.3	4.1	7.4	31.1	78.8
Rural	62.5	25.4	11.7	1.8	5.4	5.7	39.7	77.2
Level of expenditure per capita								
Quintile 1	62.4	62.4	62.4	1.8	4.6	6.4	36.8	78.7
Quintile 2	63.8	63.8	63.8	1.9	4.6	6.3	37.3	78.3
Quintile 3	65.1	65.1	65.1	1.9	4.8	6.3	37.0	78.2
Quintile 4	66.4	66.4	66.4	2.1	4.8	6.2	36.3	77.9
Quintile 5	68.1	68.1	68.1	2.3	5.3	6.5	35.1	76.5

Table 3.140 describes the prevalence of population above 10 years having risky food consumption on the respondent's characteristic basis. According to the age, the behavior to consume sweet meals often tends to decline at the age of 45 years, as well as the

behavior to consume salty, fatty, innards, roasted and preserved foods. Whereas the behavior to consume caffeine drinks seems to increase following the age increase, however the prevalence prone to decline after the age of 55 years. The same pattern is found for consuming the flavoring spicy foods by age.

By gender, men are prone to consume sweet foods and caffeine drinks more often as compared to women. As for the consumption of other risky foods, the prevalence pattern between men and women is almost similar. From the perspective of education level, the prevalence pattern of consuming sweet, fatty foods, innards, tend to increase with educational attainment. As for roasted, preserved and flavoring spicy foods, the prevalence based on the education level seems to be irregular.

By type of residence basis, the pattern of consuming sweet, fatty, and preserved foods is much higher in urban areas than in rural areas. As for the pattern of consuming salty foods, drinking caffeine and roasted foods, vrural areas is higher than urban areas. The consumption pattern of other foods does not seem to differ by the location of residence.

On the basis of household expenditures per capita, the consumption pattern of consuming sweet, salty, fatty, innards, and roasted foods tends to increase following the economic prosperity. Whereas the prevalence pattern of often consuming caffeine drinks and flavoring spicy foods inversely proportional with the increase of percapita household expenditure.

3.7.8 Healthy and Clean Life Behavior

Riskesdas 2007 collected 10 indicators of healthy and clean life behavior (PHBS) that consist of six individual and four household indicators. Individual indicators covers child-birth assistance by a trained medical officer, exclusive mother breast feeding for babies 0-6 month, the proprietary/availability of Guaranty of Health Service, a person that does not smoke, has sufficient physical activity, has sufficient consumption of fruits and vegetables. Household indicator includes having access to clean water, healthy toilet, the conformity of floor space with the occupant (28m sq/person), and household with house floor (not soil floor).

In PHBS evaluation, there are 2 types of household, one with children under five years (0-5 year infant), and households without under five children. Ten indicators are used for the household with “Under-five” children, and the highest score is 10; for household without children under five eight indicators are used and the highest score is 8. Healthy and clean life behavior (PHBS) is classified “less” if the score obtained is less than six (6) for the household with under fives and less than five (5) for household without under fives.

Table 3.141 presents the proportion of household that fulfill the criteria of healthy and clean life by province. Nationally, the population that has fulfilled the criteria of good healthy and clean life behavior is 38.7%. There are 5 provinces that has achieved over the national record, they are DI Yogyakarta (58.2%), Bali (51.7%), East Kalimantan (49.8%), Central Java (47%), and North Sulawesi (46.9%). Whereas the provinces with the lowest achievement are Papua (24.4%) East Nusa Tenggara (26.8%), Gorontalo (27.8%), Riau (28.1%) and West Sumatra (28.2%).

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3 PHBS (healthy and clean life behavior) program is the effort to give the learning experience or to create the condition for the individual, family, group and society, by means of opening communication line, providing information and carrying education, to improve the knowledge, attitude and behavior of clean and healthy life through the leader approach, to build the situation and empower the society .

Table 3.141
Percentage of household that fulfill the criteria of healthy and clean life by Province, Riskesdas 2007

Province	Household with healthy and clean life
NAD	34.7
North Sumatera	41.3
West Sumatera	28.2
Riau	28.1
Jambi	33.4
South Sumatera	35.9
Bengkulu	32.8
Lampung	30.7
Bangka Belitung	47.8
Kepulauan Riau	32.4
DKI Jakarta	42.4
West Java	37.6
Central Java	47.0
DI Yogyakarta	58.2
East Java	45.2
Banten	35.8
Bali	51.7
West Nusa Tenggara	34.1
East Nusa Tenggara	26.8
West Kalimantan	37.9
Central Kalimantan	33.0
South Kalimantan	40.6
East Kalimantan	49.8
North Sulawesi	46.9
Central Sulawesi	34.9
South Sulawesi	44.0
Southeast Sulawesi	33.3
Gorontalo	27.8
West Sulawesi	28.8
Maluku	33.8
North Maluku	29.3
West Papua	33.0
Papua	24.4
Indonesia	38.7

Table 3.142
Prevalence of Risky Factors of Main Noncommunicable Disease (Lack Consumption of Vegetables and Fruits, Lack Physical Activity and Smoking) on Population Above 10 Years by Province, Riskesdas 2007

Province	Lack Consumption of Vegetables and Fruits *	Lack Physical Activity **	Smoking ***
NAD	95.9	53.3	23.0
North Sumatera	94.4	52.1	23.3
West Sumatera	97.8	54.8	25.7
Riau	97.9	60.2	24.4
Jambi	93.4	57.8	24.5
South Sumatera	96.9	48.1	25.4
Bengkulu	92.1	40.1	29.5
Lampung	87.7	45.3	28.8
Bangka Belitung	96.6	46.4	24.6
Kepulauan Riau	96.4	53.1	22.4
DKI Jakarta	94.5	54.7	20.8
West Java	96.4	52.4	26.6
Central Java	92.0	44.2	24.3
DI Yogyakarta	86.1	45.3	23.8
East Java	90.6	44.7	24.3
Banten	96.7	55.0	25.8
Bali	96.2	44.6	20.1
West Nusa Tenggara	92.6	48.8	25.2
East Nusa Tenggara	94.2	27.3	22.2
West Kalimantan	94.9	46.9	21.7
Central Kalimantan	91.5	43.8	23.1
South Kalimantan	95.7	49.4	20.1
East Kalimantan	91.8	61.7	21.4
North Sulawesi	91.2	47.2	24.6
Central Sulawesi	91.5	39.4	24.6
South Sulawesi	93.7	49.1	20.9
Southeast Sulawesi	92.9	47.6	19.8
Gorontalo	83.5	47.3	27.1
West Sulawesi	96.4	42.7	20.1
Maluku	96.5	49.2	19.2
North Maluku	96.1	48.2	23.9
West Papua	91.3	50.4	19.5
Papua	89.7	43.0	22.0
Indonesia	**93.6**	**48.2**	**23.7**

* Population above 10 years who consume vegetables and/or fruits <5 portion daily
** Population above 10 years who do cumulative activity <150 minutes/week
*** Population above 10 years who smoke every day

Table 3.143
Prevalence of Risky Factors of Main Noncommunicable Disease (Lack Consumption of Vegetables and Fruits, Lack Physical Activity and Smoking) on Population Above 10 Years according to Respondent's Characteristics, Riskesdas 2007

Respondent's characteristic	Lack Consumption of Vegetables and Fruits *	Lack Physical Activity **	Smoking ***
Age group (years)			
10-14	93.6	66.9	2.0
15-24	93.8	52.0	24.6
25-34	93.4	42.9	35.0
35-44	93.3	38.9	36.0
45-54	93.5	38.4	38.0
55-64	93.7	44.4	37.5
65-74	94.7	58.5	34.7
75+	95.3	76.0	33.1
Gender			
Male	93.5	41.4	55.7
Female	93.7	54.5	4.4
Education Level			
No schooling	94.9	48.8	30.9
Unfinished Primary School	94.3	48.1	25.3
Finished Primary School	94.1	43.4	28.3
Finished Junior High School	93.6	47.4	30.6
Finished Senior High	92.8	52.6	34.0
Finished University	90.3	60.3	27.0
Type of Residence			
Urban	93.0	57.6	26.6
Rural	94.0	42.4	30.9
Level of expenditure per capita			
Quintile 1	94.6	44.8	29.0
Quintile 2	94.2	45.5	29.6
Quintile 3	93.9	47.1	29.5
Quintile 4	93.3	49.1	29.5
Quintile 5	92.4	53.9	28.7

* Population above 10 years who consume vegetables and/or fruits <5 portion daily
** Population above 10 years who do cumulative activity <150 minutes/week
*** Population above 10 years who smoke every day

Table 3.142 and 3.143 above are the combination of some behaviors that become the risky factors of the main noncommunicable disease (cardiovascular, Diabetes, Cancer, Stroke, and chronic obstructive lung), that is the behavior of lack of consumption of vegetables and or fruits (<5 portion daily), lack physical activity (<150 minutes/week) and smoking every day.

3.8 Access and Utilization of Health Service

3.8.1 Access and Utilization of Health Service

Access to health service facilities is related to some decisive factors, for example the residential distance and time to get to the health facility, and social economic status as well as cultural. In this analysis, health service facility is classified into 2 parts, :

1. Health service facilities consist of Hospital, Health Center (Puskesmas and Puskesmas Pembantu), practiced doctor and practiced nurse.
2. Community-Based Health effort (UKBM) that consists of integrated service facility (posyandu), Village health service (Poskesdes or Polindes), village medicine shop, and midwife service in the village.

For each health service group, the access of households to the health service facility is examined. Then, in regard of UKBM, the analysis includes the utilization and kind of services provided/accepted by household /society, including the reason the respondent does not utilize UKBM services.

Table 3.144 shows that some 94.1% Indonesian household located less than or five kilometers from the health service facility and only 6.0% of household located more than 5 kilometers. The provinces with the highest proportion of household that located more than 5 kilometers from the health service facility are as follows: West Kalimantan (16.3%), West Sulawesi (14.5%), NTT (14.2%), Papua (12.7%), NAD (10.8%), Southeast Sulawesi (10.4%) and Maluku (10.4%).

In the perspective of distant to the health service facility it appears that 67.2% of the population can reach the closest health facility in less than 15 minutes and another 23.6% population can reach the facility between 16-30 minutes. Therefore, nationally, there are still 9.2% of household that needs more than 30 minutes to reach the nearest health facility.

The provinces with the highest proportion of household which need more than 30 minutes to reach the facility are NTT (30.7%), Papua (30.6%), West Kalimantan (19.4%), West Sulawesi (17.7%), and Southeast Sulawesi (13.8%).

The provinces with the lowest proportion of household which need more than 30 minutes to reach the health service facility are the province of Bangka Belitung (3.9%), DKI Jakarta (4.0%), DI Yogyakarta (4.8%), South Sulawesi and East Kalimantan (4.9%).

Table 3.145 presents information about distance and the household's timing range to the facility of health service based on household characteristics. Based on the type of residence, household proportion in which the distance to the health service facility > 5 kilometers , in the urban area is lower than rural ares. The household proportion in which time range is >30 minutes , is lower in the urban area than in the rural areas.

In the perspective of per capita household expenditure, the higher the expenditure per capita levels the closer the distance, and the shorter timing range to the health service facility.

Table 3.144
Percentage of Household refers to Distance and Time to Get to the Health Service Facility*) by Province, Riskesdas 2007

PROVINCE	DISTANCE TO HEALTH SERVICE			TIME TO GET TO THE HEALTH SERVICE			
	< 1 KM	1 - 5 KM	> 5 KM	≤15'	16'-30'	31'-60'	>60'
NAD	27.4	61.8	10.8	55.7	31.5	9.6	3.2
North Sumatera	58.6	36.5	4.9	67.5	23.2	6.6	2.7
West Sumatera	42.9	50.5	6.6	73.3	19.5	4.6	2.6
Riau	48.2	45.5	6.3	72.0	20.4	4.7	3.0
Jambi	45.2	48.7	6.1	76.5	17.9	4.3	1.4
South Sumatera	50.4	44.5	5.0	69.6	24.3	4.6	1.5
Bengkulu	52.6	43.0	4.4	74.4	17.7	5.9	2.0
Lampung	40.8	54.8	4.4	69.5	22.1	6.9	1.6
Bangka Belitung	55.1	37.6	7.3	79.4	16.8	3.6	0.3
Kepulauan Riau	72.5	24.8	2.7	74.0	20.6	2.3	3.1
DKI Jakarta	58.0	42.0	0.0	69.0	27.0	3.6	0.4
West Java	48.1	48.2	3.7	72.2	22.6	3.8	1.4
Central Java	51.4	46.6	2.0	75.0	19.6	4.6	0.8
DI Yogyakarta	47.4	50.2	2.3	76.2	18.9	4.4	0.4
East Java	47.7	48.9	3.4	72.3	20.6	5.7	1.4
Banten	47.9	44.6	7.5	66.3	24.2	7.9	1.6
Bali	49.5	47.0	3.5	75.0	19.0	4.4	1.6
West Nusa Tenggara	44.9	51.4	3.8	65.1	27.2	5.9	1.8
East Nusa Tenggara	31.7	54.1	14.2	39.4	29.8	17.9	12.8
West Kalimantan	36.6	47.2	16.3	52.2	28.4	11.9	7.5
Central Kalimantan	55.4	39.4	5.2	64.5	27.8	6.7	1.1
South Kalimantan	50.5	44.3	5.2	70.4	23.4	5.5	0.8
East Kalimantan	52.6	41.9	5.6	73.7	21.4	3.2	1.7
North Sulawesi	57.7	35.7	6.7	76.2	19.0	3.7	1.2
Central Sulawesi	52.5	40.8	6.8	69.0	20.8	7.6	2.6
South Sulawesi	40.0	52.0	7.9	57.9	30.8	9.2	2.1
Southeast Sulawesi	37.7	52.0	10.4	50.1	36.2	10.3	3.5
Gorontalo	38.4	54.4	7.3	66.3	22.8	7.8	3.1
West Sulawesi	37.9	47.6	14.5	44.4	37.8	10.9	6.8
Maluku	58.6	31.0	10.4	61.3	25.3	7.3	6.2
North Maluku	64.5	27.5	8.1	65.1	24.6	7.4	3.0
West Papua	57.6	35.7	6.6	60.7	26.3	8.8	4.2
Papua	41.6	45.7	12.7	46.3	23.1	14.6	16.0
Indonesia	**47.6**	**46.4**	**6.0**	**67.2**	**23.6**	**6.6**	**2.7**

Notes:

*) Health service facilities: Hospital, Health Center (Puskesmas and Puskesmas Pembantu), Practiced Doctor and Nurse

Table 3.145
Percentage of Household refers to Distance and Time to Get to the Health Service Facility*) and Household's Characteristics, Riskesdas 2007

Household's Characteristics	DISTANCE TO THE HEALTH SERVICE			TIME TO GET TO THE HEALTH SERVICE			
	< 1 km	1 - 5 km	> 5 km	≤15'	16'-30'	31'-60'	>60'
Type of Residence							
Urban	58.8	39.9	1.4	78.1	18.8	2.6	0.5
Rural	40.6	50.5	8.9	60.3	26.6	9.1	4.0
Level of expenditure per capita							
Quintile 1	43.8	48.7	7.4	61.4	26.5	8.5	3.6
Quintile 2	45.4	48.0	6.6	64.0	25.3	7.5	3.1
Quintile 3	47.5	46.4	6.1	67.1	23.8	6.6	2.5
Quintile 4	48.8	45.7	5.6	69.4	22.5	5.8	2.3
Quintile 5	52.8	43.2	4.0	74.4	19.7	4.3	1.6

Notes:
*) Health service facilities: Hospital, Puskesmas, Puskesmas Pembantu, Practiced Doctor and Nurse

Table 3.146 explains household's access to UKBM that includes Integrated Service Facility (Posyandu), Village Health Service (Poskesdes) and Polindes.

In the perspective of distance, it seems that 78.9% of households have distances that are less than 1 kilometer, and 19.5% have distances from 1-5 kilometers to reach UKBM . Provinces of the highest household proportion that have distance more than 5 kilometers from the closest UKBM are West Kalimantan (6.3%) and Riau (5.4%).

Based on the timing range to reach the UKBM, 85.4% of Indonesia's households can reach UKBM in less than or in 15 minutes. Some 11.1% of the household need between 16-30 minutes, and the remaining 3.6% need more than 30 minutes to attend the community health program. Provinces that possess the household proportion that need more than 30 minutes to reach UKBM are Papua (15.3%) which is the highest, and NTT (11.6%).

Based on the type of residence, household proportion having distance > 5 kilometers to UKBM, is more common in rural areas than in urban areas, as well as time to reach the community health program. And the proportion of households requiring more than 30 minutes, the urban area is lower than the rural areas.

Based on the household's expenditure per capita, there is an inclination in which the higher the level of household's expenditure the closer the distance, and the shorter time required to reach the UKBM. (Table 3.147) .

Table 3.146
Percentage of Household refers to Distance and Time to Get to UKBM *) and Province, Riskesdas 2007

PROVINCE	DISTANCE TO THE HEALTH SERVICE			TIME TO GET TO THE HEALTH SERVICE			
	< 1 km	1 - 5 km	> 5 km	≤15'	16'-30'	31'-60'	>60'
NAD	69.2	27.3	3.5	80.8	14.0	3.1	2.2
North Sumatera	74.7	22.8	2.5	79.0	16.1	3.3	1.6
West Sumatera	75.6	22.8	1.7	88.1	7.9	1.5	2.5
Riau	64.9	29.8	5.4	84.8	11.9	1.7	1.5
Jambi	69.3	27.9	2.8	86.2	9.8	2.1	1.9
South Sumatera	73.3	24.3	2.4	83.9	12.7	2.3	1.1
Bengkulu	78.5	20.4	1.1	86.9	9.3	2.4	1.4
Lampung	76.9	21.3	1.8	83.9	13.3	1.6	1.2
Bangka Belitung	76.1	21.7	2.2	92.0	7.0	0.9	0.2
Kepulauan Riau	79.0	20.2	0.9	87.7	11.1	0.6	0.6
DKI Jakarta	86.8	13.2	0.0	88.6	9.9	1.4	0.1
West Java	90.9	8.7	0.4	93.1	5.7	0.7	0.6
Central Java	86.2	13.4	0.4	91.3	6.9	1.4	0.4
DI Yogyakarta	87.6	12.3	0.1	93.7	4.4	0.8	1.2
East Java	82.2	17.2	0.7	89.7	8.2	1.6	0.5
Banten	93.0	6.4	0.5	90.9	7.9	0.9	0.3
Bali	81.5	18.0	0.6	89.3	8.1	2.1	0.5
West Nusa Tenggara	85.6	14.2	0.3	88.6	9.7	1.6	0.1
East Nusa Tenggara	70.0	27.7	2.3	66.2	22.2	8.0	3.6
West Kalimantan	62.6	31.2	6.3	74.2	16.9	5.2	3.7
Central Kalimantan	74.1	23.5	2.4	79.4	15.5	4.0	1.1
South Kalimantan	75.7	23.1	1.2	87.5	9.9	2.2	0.4
East Kalimantan	83.6	15.3	1.1	90.4	7.5	1.3	0.8
North Sulawesi	83.9	15.5	0.7	92.3	6.3	0.8	0.7
Central Sulawesi	77.5	21.2	1.3	82.7	13.8	2.7	0.8
South Sulawesi	74.3	24.1	1.6	80.7	15.3	3.6	0.5
Southeast Sulawesi	80.6	18.5	0.9	81.0	16.7	1.6	0.7
Gorontalo	72.6	25.9	1.5	84.1	11.3	2.9	1.7
West Sulawesi	68.3	28.2	3.4	68.1	24.5	4.4	3.0
Maluku	88.3	8.4	3.4	84.5	9.6	2.4	3.5
North Maluku	91.7	7.0	1.4	91.1	6.5	2.0	0.5
West Papua	88.2	9.9	2.0	81.8	14.0	3.0	1.3
Papua	66.3	29.6	4.1	67.7	16.9	7.3	8.1
Indonesia	**78.9**	**19.5**	**1.6**	**85.4**	**11.1**	**2.4**	**1.2**

***) UKBM covers Posyandu, Poskesdes/Polindes**

Table 3.147
Percentage of Household refers to Distance and Time to Get to UKBM *) and Household's Characteristics, Riskesdas 2007

Household's Characteristics	DISTANCE TO THE *UKBM*			TIME TO GET TO THE *UKBM*			
	< 1 km	1 - 5 km	> 5 km	≤15'	16'-30'	31'-60'	>60'
Type of Residence							
Urban	88.2	11.4	0.4	92.2	6.7	0.7	0.5
Rural	73.1	24.5	2.4	81.1	13.8	3.4	1.7
Level of expenditure per capita							
Quintile 1	76.7	21.3	2.0	82.3	12.9	3.1	1.6
Quintile 2	77.8	20.5	1.8	84.0	11.9	2.8	1.4
Quintile 3	78.9	19.4	1.7	85.7	10.9	2.4	1.1
Quintile 4	79.8	18.6	1.6	86.6	10.4	2.1	1.0
Quintile 5	81.5	17.4	1.1	88.5	9.1	1.4	1.0

***) UKBM covers Posyandu, Poskesdes/Polindes**

Table 3.148 gives the description of household percentage that utilizes posyandu service or poskesdes in each province for the last three months. Overall, the service in posyandu and poskesdes/polindes has been utilized by 27.3% of the Indonesian households. Some 62.5% of the households state that they do not need such service due to various reasons, such as : they do not have the member of family that needs medical treatment, there is no pregnancy or there is no infant. Those who ,in fact, need the service but do not utilize the service of posyandu or poskesdes are 10.3% of the household.

The province that has the highest household percentage of utilizing the service of posyandu/poskesdes is the province of NTT (42.9%) and the lowest is the province of Bangka Belitung (19.8%). The provinces that have the highest household percentage of households that do not utilize the service of posyandu/poskesdes is Maluku (20.9%) and NAD (19.7%), the lowest rates of non-utilization are Central Java (5.8%) and West Java (5.9%).

Table 3.149 describes the utilization of posyandu/poskesdes based on household characteristics. Household utilization of the posyandu/poskesdes service in the rural areas is greater than in the urban areas. From the perspective of the household's expenditure level per capita, there is an inclination for the household's of higher expenditure level to have lower the utilization rates of the service from posyandy/poskesdes.

Table 3.148
Percentage of Household which utilize Posyandu/Poskesdes
By Province, Riskesdas 2007

Province	Utilize	Do not utilize	
		Do not need	Other reasons
NAD	30.4	50.0	19.7
North Sumatera	24.1	64.5	11.4
West Sumatera	28.5	64.3	7.2
Riau	28.8	58.9	12.3
Jambi	25.9	58.6	15.5
South Sumatera	27.8	58.7	13.5
Bengkulu	30.7	52.7	16.6
Lampung	23.4	64.3	12.3
Bangka Belitung	19.8	68.4	11.8
Kepulauan Riau	22.4	59.6	18.0
DKI Jakarta	25.4	66.7	7.9
West Java	28.4	65.7	5.9
Central Java	27.0	67.2	5.8
DI Yogyakarta	23.8	64.4	11.9
East Java	23.8	70.1	6.2
Banten	26.6	62.4	11.0
Bali	22.8	68.5	8.8
West Nusa Tenggara	31.3	61.3	7.4
East Nusa Tenggara	42.9	48.2	8.9
West Kalimantan	30.5	60.1	9.4
Central Kalimantan	22.4	66.6	11.1
South Kalimantan	25.2	67.5	7.2
East Kalimantan	26.6	60.4	13.0
North Sulawesi	20.9	68.1	11.0
Central Sulawesi	33.0	60.4	6.6
South Sulawesi	26.2	61.5	12.4
Southeast Sulawesi	31.3	57.9	10.8
Gorontalo	25.0	69.8	5.2
West Sulawesi	27.9	54.4	17.8
Maluku	27.7	51.4	20.9
North Maluku	36.8	56.0	7.2
West Papua	33.7	55.3	11.0
Papua	27.6	42.1	30.3
Indonesia	**27.3**	**62.5**	**10.3**

Table 3.149
Percentage of Household According to the utilization of Posyandu/Poskesdes and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Utilize	Do not utilize	
		Do not need	Other reasons
Type of Residence			
Urban	24.3	66.9	8.8
Rural	29.1	59.7	11.2
Level of expenditure per capita			
Quintile 1	35.4	54.1	10.4
Quintile 2	31.0	58.8	10.1
Quintile 3	27.3	62.4	10.3
Quintile 4	23.9	66.0	10.1
Quintile 5	18.5	71.1	10.3

Table 3.150 describes the kind of services provided by posyandu/poskesdes and utilized by the household in the last three months. The kind of services most utilized by the household are growth monitoring (85.0%) and immunization (55.8%) There are a few households that utilize posyandu/poskesdes service to consult for of disease (13.7%) and birth plan service (28.1%)

Table 3.151 describes the kind of posyandu/poskesdes services utilized by the household within the last 3 months by the household characteristics. Based on the region, the services of weighing, counseling, immunization, PMT, and nutrition supplement is more utilized by the urban households than the rural households. As for the Birth Control and medical treatment, the rural household utilization is greater than urban households.

Based on the household's expenditure, there is an inclination that for higher levels of household's expenditure, the lower the utilization of growth monitoring, immunization, PMT and nutrition supplement services. Reversely, higher incomes households tend to utilize these services for the medical service and the consultation for disease.

Table 3.152 describes the household's main reason for not utilizing the posyandu/poskesdes services in the last three months (excluding those who do not need it).

At the household that actually needs posyandu/poskesdes services in the last three months but do not utilize the service, they were asked to state the reason. Almost half of the households (49.6%) that did not utilize the services was quality of service (incomplete). Those who give the reason that the facility location was far from their home and there is no posyandu service had similar percentage response, 26.1% and 24.3% each.

The province that had the highest percentage of household responding "the incomplete service" is DI Yogyakarta (88,6%) and the lowest is West Papua (17.6%). The highest percentage of the household that gives the reason " the location of posyandu/poskesdes is far is West Papua (71.5%) and the lowest is DI Yogyakarta (6.2%).

Table 3.153 describes the main reason (excluding those who do not need it) not to utilize posyandu/poskesdes based on household characteristics. Based on the type of region,

the reason that “kinds of posyandu/poskesdes are incomplete” dominated the responses of urban household, whereas the reason “far location” is often stated by the household in rural area. The inexistence of posyandu/poskesdes is mentioned as the reason for not to utilize posyandu/poskesdes services, and this has the similar percentage between urban and rural areas.

Table 3.150
Percentage of Household which Utilize Posyandu/Poskesdes According to Kinds of Service and Province, Riskesdas 2007

Province	Weighing	Counseling	Immunization	KIA	Birth Control	Medical treatment	PMT	Nutrition supplement	Consultation of Disease risk
NAD	92.5	51.2	59.0	41.1	35.2	52.9	60.5	56.9	16.5
North Sumatera	81.9	34.8	56.8	18.4	23.2	52.9	33.9	35.7	13.6
West Sumatera	94.8	33.7	52.3	37.2	22.3	40.4	55.9	54.7	12.0
Riau	92.2	24.7	59.1	33.5	33.0	42.3	35.1	49.2	11.7
Jambi	84.6	33.1	48.1	25.7	30.7	36.3	34.2	42.3	9.9
South Sumatera	80.1	30.5	46.4	28.8	42.4	61.3	32.2	33.9	19.6
Bengkulu	67.5	34.4	46.2	28.0	31.9	51.0	27.4	24.6	12.2
Lampung	89.7	37.6	55.8	34.7	28.2	24.7	53.3	50.5	11.5
Bangka Belitung	88.1	25.6	55.0	28.9	22.5	37.3	29.1	41.9	14.1
Kepulauan Riau	93.6	27.6	40.2	15.3	16.3	25.4	40.1	60.9	10.2
DKI Jakarta	85.1	42.8	60.5	27.2	29.2	33.5	54.9	61.5	15.4
West Java	89.0	34.6	56.0	24.9	27.2	30.0	52.2	51.3	14.2
Central Java	82.5	30.6	44.1	25.3	20.2	34.4	54.7	50.9	11.5
DI Yogyakarta	91.8	62.1	36.8	38.3	17.5	49.7	79.0	68.2	32.5
East Java	96.1	39.3	56.8	37.7	27.2	37.0	64.7	48.1	12.2
Banten	90.2	28.2	51.8	20.3	25.7	23.8	39.6	50.6	8.4
Bali	98.3	46.7	64.8	28.9	16.7	30.9	77.4	62.1	16.2
West Nusa Tenggara	94.1	39.0	58.2	46.4	25.1	34.9	59.4	46.5	10.5
East Nusa Tenggara	83.6	47.7	50.8	32.6	27.5	58.5	35.2	42.0	17.0
West Kalimantan	68.8	24.9	59.3	31.2	40.7	49.5	20.2	40.9	10.2
Central Kalimantan	74.5	22.0	56.2	26.1	30.9	37.2	32.9	38.4	9.1
South Kalimantan	71.4	24.8	60.9	27.5	33.6	36.7	34.9	50.1	9.3
East Kalimantan	88.1	37.2	64.1	28.0	25.9	22.3	48.4	55.4	10.3
North Sulawesi	88.0	50.4	58.5	39.6	32.0	45.3	53.0	55.3	25.8
Central Sulawesi	78.9	26.3	67.3	30.6	32.0	40.7	25.5	46.8	9.7
South Sulawesi	78.2	40.8	69.1	27.7	24.2	37.4	32.6	46.2	14.3
Southeast Sulawesi	80.5	38.7	62.5	32.9	35.0	47.0	38.5	35.0	12.0
Gorontalo	85.5	46.9	70.9	48.4	36.6	43.9	46.7	53.7	20.3
West Sulawesi	78.2	28.7	56.2	27.5	24.0	46.4	31.6	37.1	23.0
Maluku	80.7	37.4	47.3	31.2	22.2	46.3	42.9	43.9	14.0
North Maluku	92.2	51.2	65.9	46.9	48.8	60.7	43.4	54.0	24.6
West Papua	95.7	54.5	72.9	36.7	29.6	47.8	67.3	62.1	17.1
Papua	76.3	46.2	58.6	39.9	28.7	55.6	49.9	52.5	18.7
Indonesia	85.0	36.6	55.8	30.6	28.1	41.2	45.7	47.6	13.7

The province that has the highest percentage of household in utilizing polindes/village nurse service in the village is the province of West Sumatra (34.0%), whereas the lowest is DKI Jakarta (6.4%). The provinces that has the highest percentage of household not utilizing services due to other reason are (excluding those that do not need) are the province of Papua (55.0%) and West Papua (54.3%), the lowest is the province of NTB

(13.2%). As for not utilizing the polindes/village nurse services, the province of Gorontalo has the highest percentage (76.4%) and the lowest is Papua (30.7%).

Table 3.155 describes the utilization of polindes/nurse in the village for the last three month on bases of household characteristic. More than half of the households, either in rural or urban area do not need polindes/nurse service in the village. Whereas the percentage of household that utilize the service of polindes/nurse in the village (25.8%) is higher compared to the urban (15.6%).

Table 3.151
Percentage of Household which utilize Posyandu/Poskesdes According to Kinds of Service and Household's Characteristics, Riskesdas 2007

Area type	Weighing	Counseling	Immunization	KIA	Birth Control	Medical treatment	PMT	Nutrition supplement	Consultation of Disease risk
Type of Residence									
Urban	89.9	39.2	39.2	30.4	25.2	33.0	52.6	54.1	13.7
Rural	82.2	35.3	35.3	30.8	29.6	45.5	42.0	44.2	13.7
Level of expenditure per capita									
Quintile 1	87.0	37.2	58.7	30.6	27.6	39.5	47.8	49.5	12.4
Quintile 2	85.7	37.2	56.8	30.5	29.1	40.9	46.5	48.6	13.3
Quintile 3	84.7	35.6	55.6	30.6	28.0	40.8	45.4	47.1	13.5
Quintile 4	83.2	36.1	53.8	30.7	28.7	42.7	43.7	46.4	14.9
Quintile 5	81.9	36.2	51.6	30.6	26.8	43.7	43.1	44.3	15.7

In the perspective of per capita household expenditure, among the higher expenditure level, there is lower utilization of polindes/nurse services in the village.

From the household that utilizes the service of polindes/midwife in the village for the last three month, the kind of service that acceptable can be classified into 2 parts, MCH service and medical treatment. MCH service includes pregnancy examination, childbirth, mother's parturition examination, neonatal examination, and infant control.

Table 3.156 describes the percentage of household that utilize polindes/nurse in the village by the type of service and province. The kind of service that is most utilized is medical treatment (82.9%). As for the MCH service that are the most highly utilized is infant examination, followed by pregnancy examination (22.5%). The percentage of household that utilize the services of childbirth, mother's parturition examination and neonatal examination are below 10% each.

In the perspective of provincial basis, the utilization of polindes/midwife in the village as a medical treatment facility has the highest percentage in the province of Central Sulawesi (90.1%) and the lowest is in DKI Jakarta (56.6%). As for the MCH, infant examination is most utilized in the province of North Maluku (97.0%) and the lowest is in Bengkulu (11.3%). Childbirth service is most utilized in the province of Jambi (42.1%) and the lowest is in Riau (4.7%).

Table 3.152

Percentage of Household according to main reasons not to utilize the posyandu/poskesdes services (exclude those who do not need it) and Province, Riskesdas 2007

Province	Main reasons not to utilize the posyandu/poskesdes services		
	The location is far	No posyandu	The service is incomplete
NAD	16.7	20.1	63.3
North Sumatera	32.1	24.2	43.7
West Sumatera	25.2	20.2	54.6
Riau	52.4	8.9	38.7
Jambi	23.9	14.0	62.2
South Sumatera	38.1	20.1	41.8
Bengkulu	23.9	17.6	58.5
Lampung	27.4	12.0	60.6
Bangka Belitung	11.4	37.8	50.8
Kepulauan Riau	6.9	67.2	25.9
DKI Jakarta	16.3	22.7	61.0
West Java	20.5	26.8	52.7
Central Java	13.8	17.0	69.2
DI Yogyakarta	5.2	6.2	88.6
East Java	24.5	19.9	55.6
Banten	21.5	39.1	39.5
Bali	30.5	22.3	47.2
West Nusa Tenggara	25.2	8.4	66.4
East Nusa Tenggara	46.8	16.6	36.6
West Kalimantan	51.6	16.1	32.3
Central Kalimantan	19.8	42.8	37.4
South Kalimantan	29.0	27.9	43.1
East Kalimantan	17.0	38.6	44.4
North Sulawesi	10.6	18.5	70.9
Central Sulawesi	33.7	22.3	44.0
South Sulawesi	37.4	12.4	50.1
Southeast Sulawesi	35.1	8.8	56.1
Gorontalo	39.4	9.7	51.0
West Sulawesi	38.7	26.7	34.6
Maluku	18.3	50.2	31.6
North Maluku	10.3	29.7	60.0
West Papua	10.9	71.5	17.6
Papua	19.4	50.1	30.5
Indonesia	**26.1**	**24.3**	**49.6**

Table 3.153
Percentage of Household according to main reasons not to utilize the posyandu/poskesdes services (exclude those who do not need it) and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Main reasons not to utilize the posyandu/poskesdes services		
	The location is far	No posyandu	The service is incomplete
Type of Recidence			
Urban	15.3	24.1	60.7
Rural	31.3	24.4	44.2
Level of expenditure per capita			
Quintile 1	33.0	25.7	41.4
Quintile 2	29.5	25.6	44.9
Quintile 3	26.8	22.9	50.3
Quintile 4	22.8	24.3	52.9
Quintile 5	18.2	22.8	59.0

Table 3.157 describes the percentage of households that utilize polindes/nurse in the village by the type of service and household characteristics. By type of residence, the households in urban area utilize polindes/nurse more than rural areas for MCH services, whereas rural areas are more likely to utilize the medical treatment. By the per capita household expenditure quintile, it seems there is an inclination in which the households with higher expenditure utilize the services of polindes/nurse service less to have infant examination and the higher for utilization of pregnancy examination.

Table 3.158 describes the main reason for the households not utilizing polindes/nurse in rural area by province (excluding those that do not need the service).

The households that does not utilize the polindes/nurse service for the last three month is required to convey the reason. The prominent main reason includes "no polindes/nurse service in the village"(39.3%), "distant location"(8.9%),"incomplete service"(7.9%).

The greatest number of households that does not utilize polindes/nurse in the village due to the reason "there is no polindes/nurse in the village" is found in the province of East Kalimantan (77.7%), and the lowest is in the province of Central Java (15.3%). The province of West Sulawesi has the highest household percentage (23.8%) for not utilizing the polindes/nurse services due to the reason "distant location", while the lowest is the province of DKI Jakarta (1.1%). As for the reason "incomplete service", the highest percentage is NAD (26.5%) and the lowest is Bangka Belitung (2.1%).

Table 3.154
Percentage of Household which utilize Polindes/Village Nurse by Province, Riskesdas 2007

Province	Utilize	Do not utilize	
		Do not need	Other reasons
NAD	23.4	48.8	27.8
North Sumatera	24.0	54.3	21.6
West Sumatera	34.0	42.4	23.6
Riau	19.9	57.5	22.5
Jambi	23.9	45.5	30.7
South Sumatera	26.0	51.2	22.8
Bengkulu	33.1	46.2	20.7
Lampung	26.8	50.8	22.4
Bangka Belitung	21.4	46.4	32.2
Kepulauan Riau	11.3	43.4	45.3
DKI Jakarta	6.4	49.4	44.2
West Java	21.9	56.9	21.2
Central Java	25.3	58.2	16.5
DI Yogyakarta	8.7	50.4	40.9
East Java	25.6	52.5	21.8
Banten	20.5	45.3	34.3
Bali	23.5	50.1	26.3
West Nusa Tenggara	15.8	71.0	13.2
East Nusa Tenggara	29.2	39.0	31.8
West Kalimantan	17.2	52.9	29.9
Central Kalimantan	13.3	64.5	22.1
South Kalimantan	19.3	63.3	17.3
East Kalimantan	9.8	51.7	38.5
North Sulawesi	8.2	67.4	24.4
Central Sulawesi	29.1	45.6	25.3
South Sulawesi	19.2	56.1	24.7
Southeast Sulawesi	19.9	54.3	25.8
Gorontalo	9.9	76.4	13.7
West Sulawesi	19.0	62.2	18.8
Maluku	14.1	45.0	41.0
North Maluku	27.7	45.4	27.0
West Papua	10.8	34.9	54.3
Papua	14.3	30.7	55.0
Indonesia	**21.9**	**52.9**	**25.2**

Table 3.155
Percentage of Households which utilize Polindes/Village Nurse According to Household's Characteristics, Riskesdas 2007

Household's Characteristics	Utilize	Do not utilize	
		Do not need	Other reasons
Type of Residence			
Urban	15.6	57.0	27.4
Rural	25.8	50.3	23.8
Level of expenditure per capita			
Quintile 1	24.8	49.6	25.6
Quintile 2	24.5	50.7	24.8
Quintile 3	22.6	52.5	24.9
Quintile 4	20.8	54.0	25.2
Quintile 5	16.7	58.2	25.1

Table 3.159 describes the percentage of households that does not utilize polindes/nursein the village with the main reason (excludes those that do not need it)on the household characteristic basis .

On the type of regional basis, the percentage of households that does not utilize the polindes/nurse due to the reason "distant location" and "incomplete service" is higher in the rural than in the urban area. While the reason "there is no polindes/nurse in the village" is more often found in the urban area. On the per capita household expenditure, it seems that there is an inclination in which the higher the household expenditure the lower those that do not utilize the polindes/nurse in the village due to the reason "distant location", and the higher convey the reason "incomplete service"

Table 3.160 presents information on the utilization of Pos Obat Desa (POD) or Warung Obat Desa (WOD) for the last three month. Overall, most households (79.5%) do not utilize POD/WOD.

The highest percentage of households that utilizes POD/WOD is the province of NAD (24.4%) and the lowest one is Bangka Belitung Island (0.5%). While the highest percentage of households that does not utilize POD/WOD because of unnecessary is in the province of Riau (16.8%) and the lowest is in Lampung (0.4%).

The study on the utilization of POD/WOD on household characteristic basis presented by the table 3.161. The percentage of households that utilizes POD/WOD is higher in the village area (11.3%) than in the urban area (8.7%), reversely for the households that do not need it is higher in the urban area (11.6%).

On the per capita household expenditure basis ,it shows there is an inclination that the higher the household expenditure, the higher the percentage of households that does not need POD/WOD.

Table 3.156
Percentage of Households which utilize Polindes/Village Nurse According to Kind of Services and Province, Riskesdas 2007

Province	Pregnancy examination	Delivery	Mother's parturition examination	Neonatal examination	Baby/Under 5 examination	Medical treatment
NAD	29.6	20.0	17.8	16.0	42.8	76.9
North Sumatera	17.5	11.6	10.0	10.3	23.1	86.8
West Sumatera	15.0	4.7	4.6	5.8	28.4	89.7
Riau	29.8	19.1	16.9	19.3	30.7	80.1
Jambi	75.2	42.1	26.3	27.8	39.4	77.8
South Sumatera	15.3	6.3	5.5	5.6	25.4	86.7
Bengkulu	11.3	5.3	4.1	5.3	17.7	88.6
Lampung	18.4	7.4	7.6	6.7	24.8	84.3
Bangka Belitung	20.0	5.9	4.2	5.6	23.9	77.3
Kepulauan Riau	16.2	6.8	4.5	6.9	33.1	86.8
DKI Jakarta	38.2	14.2	14.0	12.6	34.7	56.6
West Java	23.2	10.2	10.3	9.7	29.4	78.8
Central Java	15.6	6.4	6.0	5.6	20.5	84.7
DI Yogyakarta	33.5	21.3	20.9	17.5	36.2	78.6
East Java	38.2	24.2	24.8	6.2	34.4	85.8
Banten	24.6	10.7	11.0	11.7	30.8	82.5
Bali	72.0	26.3	16.7	15.8	47.2	85.2
West Nusa Tenggara	92.2	40.9	15.9	18.2	49.8	71.9
East Nusa Tenggara	20.5	8.7	8.6	7.2	30.9	88.6
West Kalimantan	20.3	8.1	7.4	7.3	30.2	79.4
Central Kalimantan	20.8	6.3	5.6	5.1	20.7	77.1
South Kalimantan	21.2	8.1	6.6	5.6	20.6	80.5
East Kalimantan	21.4	7.3	8.7	4.8	22.7	73.2
North Sulawesi	23.8	9.7	14.1	10.7	44.1	72.7
Central Sulawesi	35.5	12.4	10.7	9.1	32.8	90.1
South Sulawesi	24.8	6.2	6.1	4.1	23.8	80.3
Southeast Sulawesi	24.1	8.5	9.8	7.8	39.0	81.4
Gorontalo	40.8	25.8	27.4	19.9	48.3	68.7
West Sulawesi	19.9	6.6	4.6	3.5	30.4	78.5
Maluku	26.9	11.1	9.1	8.6	24.1	78.4
North Maluku	97.0	11.6	16.4	20.6	69.1	77.9
West Papua	49.5	25.7	23.3	22.8	45.1	59.7
Papua	30.2	13.6	13.6	11.6	34.3	72.1
Indonesia	**22.5**	**9.8**	**9.2**	**8.2**	**29.2**	**82.9**

Table 3.157
Percentage of Households which utilize Polindes/Village Nurse According to Kind of Services and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Pregnancy examination	Delivery	Mother's parturition examination	Neonatal examination	Baby/Under 5 examination	Medical treatment
Type of Residence						
Urban	27.7	10.9	10.5	9.3	33.2	77.9
Rural	20.6	9.4	8.8	7.8	27.7	84.8
Level of expenditure per capita						
Quintile 1	20.1	10.3	9.3	8.0	32.9	83.3
Quintile 2	21.7	9.7	9.2	8.2	30.2	83.0
Quintile 3	22.2	9.5	9.2	8.2	28.9	83.1
Quintile 4	23.5	10.3	9.9	8.7	26.5	83.4
Quintile 5	26.1	8.8	8.2	8.0	25.2	81.5

On the per capita household expenditure basis, it shows there is an inclination that the higher the household expenditure, the higher the percentage of households that does not need POD/WOD.

The households that does not utilize POD/WOD is required to convey the reason. Most of them (94.8%) do not utilize POD/WOD due to "POD/WOD is unavailable".

Table 3.162 shows the highest percentage of households that does not utilize POD/WOD due to "distant location" is the province of Riau (3.5%) and the lowest is in Lampung, Bangka Belitung Island, DI Yogyakarta and North Sulawesi (0.1% each).

Those that have the reason "POD/WOD is unavailable", the highest percentage are the province of Lampung (98.2%), and the lowest is the province of West Papua (90.1%). While those that have the reason "incomplete medicine", the highest percentage is the province of North Maluku (7.1%), and the lowest is Lampung, Bangka Belitung Island and DI Yogyakarta (0.0%).

Table 3.163 presents the information about the main reason for not utilizing POD/WOD on the basis of household characteristic. The most prominent reason is the unavailability of POD/WOD. There is no difference between the rural and the urban areas in terms of the main reason for not utilizing POD/WOD, including on the basis of per capita household expenditure.

Table 3.158
Percentage of Households that do not utilize Polindes/Village Nurse Poskesdes According to Other reasons and Province, Riskesdas 2007

PROVINCE	Other reasons for not utilize Poslindes/midwife			
	The location is far	No polindes/ Village Nurse	The service is incomplete	Others
NAD	7.8	39.5	26.5	26.2
North Sumatera	13.1	46.2	7.2	33.5
West Sumatera	9.5	30.3	4.6	55.6
Riau	17.8	27.1	12.4	42.7
Jambi	8.5	19.2	15.0	57.3
South Sumatera	14.6	19.9	10.2	55.3
Bengkulu	9.0	31.5	10.6	48.9
Lampung	12.2	22.8	4.9	60.1
Bangka Belitung	4.1	27.0	2.1	66.8
Kepulauan Riau	5.6	71.1	6.2	17.2
DKI Jakarta	1.1	81.9	6.2	10.9
West Java	10.9	28.3	4.7	56.1
Central Java	6.2	15.3	7.9	70.6
DI Yogyakarta	2.0	70.1	7.5	20.5
East Java	7.7	19.3	6.4	66.6
Banten	5.6	53.9	3.3	37.2
Bali	5.9	39.6	6.3	48.1
West Nusa Tenggara	18.8	26.3	16.1	38.7
East Nusa Tenggara	13.4	53.7	4.9	28.0
West Kalimantan	20.7	35.6	7.3	36.5
Central Kalimantan	7.1	53.9	5.9	33.1
South Kalimantan	7.6	25.4	9.3	57.7
East Kalimantan	3.4	77.7	4.7	14.2
North Sulawesi	1.4	58.3	7.5	32.9
Central Sulawesi	8.5	24.6	12.4	54.5
South Sulawesi	11.3	38.2	4.9	45.6
Southeast Sulawesi	12.3	26.3	7.5	53.9
Gorontalo	12.3	20.0	9.1	58.5
West Sulawesi	23.8	31.5	15.0	29.7
Maluku	6.3	56.9	8.7	28.0
North Maluku	1.6	29.7	2.5	66.3
West Papua	1.2	64.7	2.3	31.8
Papua	5.7	64.4	10.4	19.6
NAD	**8.9**	**39.3**	**7.9**	**43.9**

Table 3.159
Percentage of Households according to Main Reasons not to utilize the Polindes/Village Nurse and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Main Reasons not to utilize the Polindes/Village Nurse			
	The Location is far	No polindes/ Village Nurse	The service is incomplete	Others
Type of Residence				
Urban	3.4	49.7	7.0	39.9
Rural	12.8	31.8	8.6	46.8
Level of expenditure per capita				
Quintile 1	11.8	39.2	6.9	42.1
Quintile 2	10.1	39.7	7.3	42.9
Quintile 3	9.4	40.0	7.6	43.0
Quintile 4	7.8	38.7	8.5	45.0
Quintile 5	5.5	37.9	9.3	47.3

Table 3.160
Percentage of Household According to the Utilization of Village Medicine Post (POD) / Village Medicine Stall (WOD) and Province, Riskesdas 2007

Province	Utilize	Do not utilize	
		Do not need	Other reasons
NAD	24.4	11.4	64.1
North Sumatera	21.1	12.8	66.1
West Sumatera	9.6	11.2	79.2
Riau	8.0	16.8	75.2
Jambi	18.0	10.9	71.1
South Sumatera	15.4	15.1	69.5
Bengkulu	12.3	11.5	76.2
Lampung	3.4	0.4	96.2
Bangka Belitung	0.5	11.3	88.3
Kepulauan Riau	14.1	9.6	76.3
DKI Jakarta	5.9	13.0	81.1
West Java	4.4	5.5	90.1
Central Java	9.4	10.7	80.0
DI Yogyakarta	0.7	6.6	92.7
East Java	15.4	10.6	74.0
Banten	3.9	6.2	89.9
Bali	4.2	10.1	85.6
West Nusa Tenggara	3.7	9.5	86.8
East Nusa Tenggara	4.7	10.2	85.1
West Kalimantan	10.9	11.5	77.6
Central Kalimantan	7.5	12.4	80.1
South Kalimantan	11.9	7.6	80.5
East Kalimantan	3.4	12.2	84.4
North Sulawesi	17.7	13.2	69.1
Central Sulawesi	8.4	3.6	88.0
South Sulawesi	7.6	7.1	85.3
Southeast Sulawesi	4.0	13.4	82.6
Gorontalo	21.0	9.9	69.1
West Sulawesi	3.0	7.4	89.6
Maluku	5.1	14.0	80.9
North Maluku	5.6	15.6	78.8
West Papua	6.2	5.6	88.2
Papua	7.5	7.6	85.0
Indonesia	**10.3**	**10.2**	**79.6**

Table 3.161
Percentage of Households According to the Utilization of Village Medicine Post (POD) / Village Medicine Stall (WOD) and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Utilize	Do not utilize	
		Do not need	Other reasons
Type of Residence			
Urban	8.7	11.6	79.7
Rural	11.3	9.2	79.5
Level of expenditure per capita			
Quintile 1	10.4	9.1	80.5
Quintile 2	10.9	9.3	79.8
Quintile 3	10.4	10.2	79.4
Quintile 4	10.2	10.3	79.6
Quintile 5	9.6	12.0	78.4

Table 3.162
Percentage of Household according to Main Reasons not to utilize the Village Medicine Post (POD) / Village Medicine Stall (WOD) and Province, Riskesdas 2007

PROVINCE	Main Reasons not to utilize the POD/WOD			
	The location is far	No POD/WOD	The medicine is incomplete	Others
NAD	1.0	93.1	4.0	1.9
North Sumatera	2.8	92.2	1.3	3.8
West Sumatera	1.8	93.8	0.5	3.9
Riau	3.5	89.3	2.8	4.4
Jambi	1.1	96.1	1.2	1.6
South Sumatera	3.2	91.5	2.3	3.1
Bengkulu	1.1	91.9	4.0	3.0
Lampung	0.1	98.2	0.0	1.7
Bangka Belitung	0.1	95.9	0.0	4.0
Kepulauan Riau	0.3	96.7	1.0	2.0
DKI Jakarta	0.6	91.1	0.8	7.5
West Java	0.4	97.1	0.2	2.3
Central Java	0.4	96.3	0.7	2.7
DI Yogyakarta	0.1	96.6	0.0	3.3
East Java	0.7	93.8	0.5	5.0
Banten	0.3	96.5	0.2	3.1
Bali	0.6	98.0	0.5	0.9
West Nusa Tenggara	0.5	96.8	0.7	2.0
East Nusa Tenggara	0.7	96.6	0.5	2.2
West Kalimantan	1.5	93.2	1.5	3.8
Central Kalimantan	0.3	98.0	0.5	1.2
South Kalimantan	0.5	97.2	0.7	1.6
East Kalimantan	0.3	97.0	0.5	2.2
North Sulawesi	0.1	97.0	0.6	2.4
Central Sulawesi	0.4	96.6	0.2	2.8
South Sulawesi	2.4	93.9	1.3	2.4
Southeast Sulawesi	0.5	94.5	2.2	2.7
Gorontalo	0.5	96.8	0.2	2.6
West Sulawesi	1.1	98.0	0.2	0.7
Maluku	1.2	90.3	0.5	8.0
North Maluku	0.2	89.7	7.1	3.0
West Papua	0.8	90.1	1.0	8.1
Papua	2.5	90.6	1.4	5.5
Indonesia	**1.0**	**94.8**	**1.0**	**3.1**

Table 3.163
Percentage of Household According to the Main Reasons not Utilize Village Medicine Post (POD) / Village Medicine Stall (WOD) and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Main Reasons not utilize POD/WOD			
	The location is far	No POD/WOD	The medicine is incomplete	Others
Type of Residence				
Urban	0.9	94.5	0.9	3.7
Rural	1.1	95.0	1.1	2.7
Level of expenditure per capita				
Quintile 1	1.2	94.9	1.0	2.9
Quintile 2	1.0	95.1	0.9	2.9
Quintile 3	1.1	95.0	1.0	3.0
Quintile 4	1.0	94.7	1.1	3.1
Quintile 5	0.8	94.4	1.2	3.6

3.8.2 The Facility and the Financial Source of Health Service

One of the health system goals is responsiveness, and besides health status improvement fairness of financing is also important. To measure this, information on the kinds of facility and the source of financing most utilized by the respondent was collected.

Health financing includes medical treatment for inpatient and outpatients. Source of financing is divided into self/family source of financing, Insurance (Askes PNS or Civil Servant Insurance, Jamsostek or Labor Social Insurance, Asabri or Armed Forces Insurance, Private Health Insurance or Askes Swasta, and JPK Pemda or Askeskin/identification paper for poor family, community risk pooling or Dana Sehat, etc). The data describes what households report on how they finances their health care, which also includes the misuse of identification paper for poor family or Askeskin.

All people were asked to give information about inpatient service utilization for the last five years and/or outpatient service utilization for the last one year. Those who have been utilizing inpatient service and/or outpatient service are ask to identify the last location of their medical treatment, as well as the source of financing for that medical treatment. The parties that responsible for the medical treatment are often more than one.

For inpatient service (table 3.164) the population still most ofeten uses Government Hospital (3.1%), followed by The Private Hospital (2.0%). There are 16 provinces of 33 provinces that utilize Government Hospital as a facility of hospitalization below the national average. The highest percentage of utilizing the Government Hospital for hospitalization is in the province of East Kalimantan (5.1%) and followed by the province of West Papua (5.0%). While the lowest is in the province of West Sulawesi (1.5%). As for the utilization of private hospital for hospitalization, there are 11 provinces with higher utilization than the national average. The highest utilization of private hospital is in the province of DI Yogyakarta (5.9%) and North Sulawesi (5.2%).

Table 3.164
Percentage of Population Utilize Inpatient service According to Place and Province, Riskesdas 2007

Province	Place of Inpatient Services								
	Govt. hospital	Private hospital	RSLN	Maternity hospital	Health Center	Health workforce/ paramedics	Batra	Others	Non inpatient
NAD	2.8	1.1	0.1	0.8	0.6	0.3	0.1	0.1	94.1
North Sumatera	1.8	1.8	0.1	0.8	0.1	0.6	0.1	0.1	94.5
West Sumatera	3.7	1.4	0.4	0.6	0.3	1.3	0.1	0.1	92.1
Riau	1.9	2.5	0.2	0.9	0.5	0.5	0.2	0.2	93.1
Jambi	1.9	0.9	0.0	0.3	0.5	0.2	0.0	0.0	96.2
South Sumatera	2.1	1.5	0.1	0.4	0.2	0.6	0.0	0.0	95.0
Bengkulu	3.0	0.8	0.0	0.1	0.6	0.2	0.0	0.1	95.2
Lampung	1.8	1.4	0.0	0.5	0.3	0.6	0.0	0.1	95.3
Bangka Belitung	3.0	3.2	0.0	0.7	0.8	0.4	0.0	0.1	91.8
Kepulauan Riau	2.7	2.8	0.8	1.2	0.8	0.5	0.1	0.1	91.1
DKI Jakarta	3.2	4.8	0.0	0.6	0.2	0.2	0.1	0.1	90.9
West Java	3.3	2.9	0.0	0.3	0.5	0.5	0.1	0.1	92.3
Central Java	3.7	3.8	0.0	0.6	1.2	0.5	0.0	0.1	90.2
DI Yogyakarta	4.1	5.9	0.0	0.8	1.2	0.6	0.0	0.1	87.3
East Java	3.2	2.7	0.0	0.3	1.5	0.4	0.0	0.1	91.9
Banten	2.1	2.4	0.0	0.5	0.4	0.5	0.1	0.1	93.9
Bali	4.8	1.7	0.0	0.8	0.2	0.8	0.1	0.1	91.7
West Nusa Tenggara	3.2	0.5	0.0	0.3	2.5	0.4	0.0	0.1	93.0
East Nusa Tenggara	3.8	1.5	0.0	0.2	1.3	0.1	0.0	0.1	93.1
West Kalimantan	2.3	0.9	0.0	0.2	0.4	0.4	0.1	0.1	95.5
Central Kalimantan	2.8	0.3	0.0	0.1	0.3	0.2	0.0	0.1	96.2
South Kalimantan	3.0	0.9	0.0	0.1	0.3	0.2	0.0	0.1	95.4
East Kalimantan	5.1	2.7	0.0	0.5	0.6	0.4	0.0	0.1	90.6
North Sulawesi	3.7	5.2	0.0	0.3	1.4	0.4	0.0	0.0	89.0
Central Sulawesi	4.3	0.9		0.1	1.2	0.2	0.0	0.1	93.1
South Sulawesi	3.5	0.9	0.0	0.2	0.8	0.2	0.0	0.1	94.3
Southeast Sulawesi	2.2	0.7	0.0	0.1	0.9	0.2	0.1	0.0	95.8
Gorontalo	4.5	0.4	0.0	0.1	0.7	0.2	0.0	0.0	94.0
West Sulawesi	1.5	0.4		0.0	0.9	0.1	0.1	0.2	96.8
Maluku	2.1	1.2		0.0	0.6	0.1	0.0	0.0	95.9
North Maluku	3.1	0.7		0.1	0.9	0.1	0.0	0.1	95.0
West Papua	5.0	1.5	0.0	0.2	2.0	0.1	0.0	0.3	90.7
Papua	4.1	1.7	0.0	0.2	2.7	0.3	0.0	0.4	90.7
INDONESIA	**3.1**	**2.0**	**0.1**	**0.4**	**0.8**	**0.4**	**0.1**	**0.1**	**93.1**

By type of residence basis (table 3.165), it is seen that the Government, Private, other, Maternity Hospital, and paramedics location are most utilized by the urban society, while puskesmas/health center is more utilized by the rural areas.

In terms of per capita household expenditure, the higher the level of household expenditure the higher the utilization of inpatient services at both the Government Hospital and Private Hospitals. The utilization of other facilities is spread evenly on all level of household expenditures.

Table 3.165
Percentage of Population Utilize Inpatient service
According to Place and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Place of inpatient service								
	Government hospital	Private hospital	RS LN	Maternity hospital	Puskes-mas	Health workforce/ paramedics	Batra	Others	Non Inpatient
Type of Residence									
Urban	4.3	3.3	0.1	0.6	0.6	0.5	0.0	0.1	90.5
Rural	2.4	1.2	0.0	0.3	0.9	0.4	0.1	0.1	94.6
Level of expenditure per capita									
Quintile 1	2.3	1.1	0.0	0.4	0.8	0.4	0.1	0.1	94.9
Quintile 2	2.6	1.4	0.0	0.4	0.8	0.4	0.1	0.1	94.1
Quintile 3	2.9	1.8	0.1	0.4	0.8	0.5	0.1	0.1	93.4
Quintile 4	3.4	2.3	0.1	0.4	0.8	0.5	0.1	0.1	92.5
Quintile 5	4.3	3.3	0.1	0.4	0.7	0.4	0.0	0.1	90.6

Table 3.166 shows that the entire financing source of hospitalization for Indonesia is still dominated by self-financing (71.0%) or family (out of pocket), then followed by Askes/Jamsostek (15.6%), Askeskin/SKTM (14.3%), and Dana Sehat (2.9%). Should the financing carried out by Askeskin/Jamsostek, Askeskin/SKTM, and Dana Sehat is considered as "a kind of health insurance", then around 30% respondent that have been hospitalized in the last 5 years have " a kind of health insurance".

Table 3.167 shows utilization by type of residence, hospitalization financing by Askes/Jamsostek is more utilized in the urban area. While for the hospitalization financing that utilize Askeskin/SKTM is more utilized in the rural area.

By per capita household expenditure, there is the inclination that the higher the level of expenditure the more hospitalization financed by Askes/Jamsostek. Reversely, the lower the level of expenditure the higher the utilization of Askeskin/SKTM and Dana Sehat. However, should we observe that there is still 10% of the population that can afford to pay but still utilize Askeskin/SKTM.

Table 3.166
Percentage of Population Utilize Inpatient service
According to the Financing Source and Province, Riskesdas 2007

Province	Financing Source for Inpatient Services				
	Self/ family	Askes/ Jamsostek	Askeskin/ SKTM	Dana Sehat	Others
NAD	62.8	13.3	28.8	4.5	6.9
North Sumatera	76.0	13.9	8.7	2.0	5.3
West Sumatera	75.2	13.8	10.9	3.4	5.2
Riau	65.1	19.7	4.9	5.0	5.6
Jambi	76.5	14.7	7.8	2.3	10.0
South Sumatera	74.0	14.5	12.8	0.7	4.7
Bengkulu	68.8	19.8	13.5	3.0	7.9
Lampung	70.5	11.5	17.6	1.4	3.0
Bangka Belitung	75.2	17.1	4.2	0.5	9.1
Kepulauan Riau	71.1	17.0	7.3	0.7	11.4
DKI Jakarta	67.0	23.9	5.9	1.0	10.4
West Java	73.3	15.2	10.9	1.6	9.8
Central Java	76.6	12.4	12.4	3.0	5.2
DI Yogyakarta	79.1	12.2	15.4	2.3	10.7
East Java	76.6	13.1	10.5	1.6	6.5
Banten	67.5	18.4	7.7	1.7	15.9
Bali	81.9	11.9	11.4	0.2	3.1
West Nusa Tenggara	66.7	17.2	25.9	7.1	2.2
East Nusa Tenggara	49.9	12.7	33.7	13.8	3.5
West Kalimantan	74.5	14.4	19.0	0.5	4.3
Central Kalimantan	72.5	17.9	15.0	1.4	8.9
South Kalimantan	68.6	16.8	10.6	3.2	8.4
East Kalimantan	58.2	29.4	11.9	2.0	8.9
North Sulawesi	76.5	15.7	18.3	1.6	4.3
Central Sulawesi	68.7	16.4	22.3	3.3	7.1
South Sulawesi	63.8	19.1	18.6	2.6	7.3
Southeast Sulawesi	65.1	19.2	26.4	1.9	3.2
Gorontalo	60.5	19.5	27.1	1.1	3.1
West Sulawesi	63.4	19.1	18.8	3.7	8.2
Maluku	67.5	19.9	17.9	1.2	4.1
North Maluku	72.0	23.0	8.5	5.2	3.3
West Papua	59.9	20.9	25.8	3.8	5.0
Papua	65.7	11.6	18.1	4.9	11.3
INDONESIA	**71.0**	**15.6**	**14.3**	**2.9**	**6.6**

Table 3.167
Percentage of Population Utilize Inpatient service According to the Financing Source and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Financing Source for inpatient services				
	Self/ family	Askes/ Jamsostek	Askeskin/ SKTM	Dana Sehat	Others
Type of residence					
Urban	69.7	21.0	10.9	2.2	7.5
Rural	72.4	10.1	17.9	3.5	5.8
Level of expenditure per capita					
Quintile 1	66.9	6.8	25.0	4.4	5.9
Quintile 2	71.5	9.7	18.9	3.7	6.3
Quintile 3	72.4	12.2	15.6	3.2	6.5
Quintile 4	72.5	16.8	11.7	2.5	6.8
Quintile 5	71.0	25.4	6.8	1.5	7.3

Remarks :
Self = financing by the patient or family.
Askes/Jamsostek = includes civil servant health insurance, Jamsostek, Asabri, Private health insurance, JPK regional government.
Askeskin = the payment by Askeskin financing or use SKTM.
Dana Sehat = Dana sehat/JPKM and Kartu Sehat.
Others = reimbursed by company and the payment by other party that exclude the above.

Table 3.168 shows that nationally Maternity Hospitals (14.8%) and Health workforce/Paramedics (13.9%) are the health facilities that most utilized for outpatient medical treatment. The utilization of Puskesmas/health center (1.3%) on the fourth position after The Government Hospital on the third (1.6%).

The highest percentage of utilization of Maternity Hospitals as a facility of non hospitalization medical treatment is in the province of West Papua (38.5%) and the lowest is in North Sumatra (7.6%). While the highest percentage in utilizing the paramedics service for outpatient medical treatment is found in the province of Bali (25.6%) and the lowest is in Papua (3.9%).

Table 3.168
Percentage of Respondents utilize Outpatient Service for the Last One Year According to Place and Province, Riskesdas 2007

Province	Place of Outpatient Service									
	Government hospital	Private hospital	RSLN	Maternity hospital	Pus-kesmas	Health Workforce	Batra	Others	At home	Non Outpatient
NAD	3.2	0.8	0.3	26.1	1.3	19.1	0.9	0.7	1.2	46.4
North Sumatera	1.2	1.0	0.8	7.6	2.0	17.0	0.7	0.3	1.0	68.3
West Sumatera	2.3	0.6	0.3	13.1	0.5	14.8	1.1	0.4	0.5	66.4
Riau	1.1	1.5	0.7	12.6	2.3	11.6	0.6	0.7	1.0	67.8
Jambi	1.0	0.5	0.1	14.6	0.9	14.0	0.4	0.2	0.7	67.6
South Sumatera	1.2	0.8	0.3	9.6	0.9	11.3	0.3	0.5	0.6	74.5
Bengkulu	1.4	0.3	0.1	12.0	1.2	22.1	0.7	0.5	0.7	61.0
Lampung	0.6	0.4	0.3	7.8	1.6	17.3	0.4	0.2	0.9	70.5
Bangka Belitung	1.1	2.1	0.4	16.7	1.1	17.2	0.6	0.1	0.3	60.5
Kepulauan Riau	1.4	1.9	0.4	20.7	4.1	12.7	1.2	0.2	0.8	56.6
DKI Jakarta	2.1	2.9	0.3	10.8	4.9	5.3	0.2	0.3	0.1	73.1
West Java	1.4	1.4	0.1	11.6	3.1	13.8	0.3	0.5	0.2	67.6
Central Java	1.6	1.2	0.3	13.5	1.4	19.7	0.2	0.3	0.3	61.5
DI Yogyakarta	2.4	3.9	0.3	16.2	1.9	16.3	0.2	0.2	0.2	58.4
East Java	1.4	1.0	0.2	10.1	0.9	19.2	0.3	0.3	0.5	66.2
Banten	1.2	1.8	0.4	13.8	5.4	14.0	0.4	0.4	0.5	62.2
Bali	2.0	1.0	0.1	14.4	1.1	25.8	0.8	0.1	0.9	53.6
West Nusa Tenggara	1.4	0.2	0.1	19.5	0.3	10.4	0.8	0.0	0.7	66.6
East Nusa Tenggara	1.9	0.7	0.5	35.1	1.2	4.2	0.2	1.0	0.7	54.4
West Kalimantan	1.0	0.4	0.1	14.3	0.5	13.4	0.3	0.4	0.7	68.8
Central Kalimantan	1.4	0.1	0.1	15.3	0.5	11.1	0.3	0.2	1.8	69.2
South Kalimantan	1.1	0.4	0.0	10.9	0.6	12.8	1.0	0.5	0.9	71.7
East Kalimantan	2.2	2.4	0.1	19.0	1.7	11.9	0.1	0.2	0.6	61.7
North Sulawesi	1.6	1.6	0.0	12.6	0.3	15.2	0.1	0.5	0.4	67.7
Central Sulawesi	1.7	0.4	0.0	14.5	0.1	11.5	0.2	0.6	0.8	70.2
South Sulawesi	1.7	0.4	0.1	15.9	0.4	7.1	0.2	0.3	0.8	73.1
Southeast Sulawesi	1.1	0.4	0.0	11.7	0.2	4.0	0.4	0.2	1.0	81.0
Gorontalo	1.3	0.1	0.0	18.0	0.1	15.0	0.2	0.1	0.7	64.5
West Sulawesi	1.3	0.3	0.0	12.6	0.1	4.2	0.2	0.3	0.7	80.3
Maluku	1.0	0.3	0.1	17.7	0.1	4.7	0.2	3.8	1.9	70.1
North Maluku	1.8	0.4	0.0	17.6	0.1	5.5	0.2	1.0	1.8	71.6
West Papua	2.3	0.9	0.1	38.5	1.4	4.3	0.0	1.2	1.2	50.1
Papua	2.7	1.0	0.0	33.9	1.2	3.9	0.1	1.7	0.7	54.9
INDONESIA	**1.6**	**1.0**	**0.3**	**14.8**	**1.3**	**13.9**	**0.4**	**0.4**	**0.7**	**65.6**

By type of residence (Table 3.169), the urban area that more utilizes the Government Hospital, Private Hospital, and Puskesmas; while the rural areas more often utilize Maternity Hospital, paramedics and traditional treatment for outpatient medical treatment.

By level of per capita household expenditure, the higher the level of household expenditure the higher the utilization rates of Government Hospitals, Private Hospitals,

Puskesmas, and Paramedics, but on the contrary the lower the utilization of Maternity Hospital for inpatient service.

Table 3.169
Percentage of Population utilize Outpatient Service
According to Place and Household's Characteristics, Riskesdas 2007

Province	Place of Outpatient									
	Government hospital	Private hospital	RSLN	RSB	Pus-kesmas	Health workforce	Batra	Others	At home	Non outpatient
Type of Residence										
Urban	2.4	1.8	0.3	12.1	2.0	13.6	0.3	0.3	0.5	66.6
Rural	1.1	0.5	0.2	16.3	0.9	14.0	0.5	0.5	0.9	65.0
Level of expenditure per capita										
Quintile 1	1.0	0.5	0.2	16.8	0.9	11.3	0.5	0.4	0.7	67.6
Quintile 2	1.2	0.7	0.2	15.8	1.2	12.9	0.5	0.4	0.7	66.4
Quintile 3	1.4	0.9	0.3	15.2	1.3	13.8	0.4	0.5	0.7	65.6
Quintile 4	1.7	1.1	0.3	14	1.5	15.0	0.4	0.4	0.8	64.9
Quintile 5	2.5	1.7	0.3	11.8	1.8	16.5	0.4	0.5	0.7	63.8

The description of financing source for Outpatient and Inpatient does not much differ. (Table 3.170). The financing source of outpatient services is also dominated by self/family financing (74.5%). The highest percentage of self/family financing source is in the province of Lampung (88.8%) and the lowest is West Papua (40.4%).

Financing source from Askeskin/SKTM nationally reaches 10.8% for Outpatient for the last one year and, provincially the highest percentage is the province of West Papua (37.6%) and the lowest is DKI Jakarta (2.0%). Nationally, the highest percentage of Inpatient financing in Lampung is self/family financing while the lowest is financed by Askes/Jamsostek, while highest percentage of Outpatient financing is Askeskin/SKTM and the lowest is self/family financing.

Table 3.170
Percentage of Population utilize Outpatient Service According to Financing Source and Province, Riskesdas 2007

PROVINCE	Financing Source for Outpatient service				
	Self/ Family	Askes/ Jamsostek	Askeskin/ SKTM	Dana Sehat	Others
NAD	58.1	6.6	32.9	2.0	5.1
North Sumatera	88.3	4.3	3.7	1.6	2.6
West Sumatera	77.1	11.2	5.6	2.3	4.5
Riau	60.2	21.0	4.5	5.9	9.9
Jambi	83.9	9.3	4.1	3.2	4.9
South Sumatera	83.6	5.1	8.2	1.6	1.9
Bengkulu	87.3	5.5	5.8	0.8	1.6
Lampung	88.8	3.4	5.9	0.6	1.9
Bangka Belitung	73.5	12.6	2.1	0.6	11.3
Kepulauan Riau	75.2	12.3	6.1	0.6	7.4
DKI Jakarta	86.1	8.3	2.0	1.1	4.3
West Java	80.4	10.1	5.4	1.1	4.2
Central Java	78.8	10.4	6.7	2.2	3.8
DI Yogyakarta	77.8	11.9	8.9	1.7	3.3
East Java	84.1	6.5	4.5	1.3	3.9
Banten	85.0	6.3	5.3	1.2	4.7
Bali	80.0	13.3	2.7	0.8	3.5
West Nusa Tenggara	78.5	9.5	11.1	4.3	1.2
East Nusa Tenggara	47.7	6.5	33.8	11.3	3.9
West Kalimantan	85.1	6.9	8.3	0.5	2.4
Central Kalimantan	81.4	9.3	6.2	1.7	3.4
South Kalimantan	70.9	15.3	4.5	2.9	6.9
East Kalimantan	60.8	20.9	11.9	1.9	6.3
North Sulawesi	79.7	9.7	9.4	0.8	3.2
Central Sulawesi	78.7	7.3	12.1	2.2	3.4
South Sulawesi	66.9	15.4	13.0	1.6	5.6
Southeast Sulawesi	61.0	15.9	23.6	3.2	1.9
Gorontalo	72.5	10.1	15.2	0.5	2.9
West Sulawesi	49.0	22.5	16.7	7.1	7.4
Maluku	71.5	8.6	18.9	1.4	3.8
North Maluku	64.5	17.4	11.1	5.2	2.6
West Papua	40.4	17.0	37.6	4.6	3.9
Papua	46.2	10.1	28.1	6.9	13.2
INDONESIA	**74.5**	**9.8**	**10.8**	**2.5**	**4.4**

Remarks :

Self = financing by the patient or family.
Askes/Jamsostek = includes civil servant health insurance, Jamsostek, Asabri, Private health insurance, JPK regional government.
Askeskin = the payment by Askeskin financing or use SKTM.
Dana Sehat = Dana sehat/JPKM and Kartu Sehat.
Others = reimbursed by company and the payment by other party that exclude the above.

The source of non hospitalization on the type of residence basis (Table 3.171), there is no difference between urban and rural area, the highest is self/family financing. Askes/Jamsostek financing in more utilized in the urban (13.6%), on the contrary Askeskin/SKTM financing is more utilized in the rural area (12.8%).

Table 3.171
Percentage of Outpatient Respondents According to Financing Source and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Financing Source for outpatient services				
	Self/ Family	Askes/ Jamsostek	Askeskin/ SKTM	Dana Sehat	Others
Type of Residence					
Urban	73.7	13.6	7.3	1.9	5.1
Rural	74.9	7.7	12.8	2.8	3.9
Level of expenditure per capita					
Quintile 1	72.0	6.8	6.8	3.3	4.0
Quintile 2	74.6	7.5	7.5	2.8	4.1
Quintile 3	75.4	8.5	8.5	2.6	4.3
Quintile 4	76.1	10.5	10.5	2.1	4.3
Quintile 5	75.0	14.8	14.8	1.6	5.0

Remarks :

Self = financing by the patient or family.
Askes/Jamsostek = includes civil servant health insurance, Jamsostek, Asabri, Private health insurance, JPK regional government.
Askeskin = the payment by Askeskin financing or use SKTM.
Dana Sehat = Dana sehat/JPKM and Kartu Sehat.
Others = reimbursed by company and the payment by other party that exclude the above.

Outpatient financing by level of per capita household expenditure that the higher the level of household expenditure the higher the utilization of Askes/Jamsostek and Askeskin/SKTM for financing Outpatient service. It seems that Askeskin/SKTM is not fully utilized for the poorest parts of society. Financing by Dana Sehat is less utilized by the higher level expenditure respondents.

3.8.3 Health Service Responsiveness

The perception of population as the user of health service related to non-medical can be used as a responsiveness indicator towards the health service. There are eight domains of responsiveness for the hospitalization service and seven domains of responsiveness for non hospitalization service. The evaluation for each domain is asked to the respondent based on their experience when they utilized health service facility both for hospitalization or outpatient services.

Eight domain of responsiveness for hospitalization consists of :

- Waiting time to get the health service
- The medical staffs hospitality in greeting and talking
- The medical staff clarity in explaining something related to patient's complaint.
- The opportunity given by the medical staffs to the client to participate in making decision related to the type of treatment which is requested by the client.
- Client can talk personally to the medical staffs and the client's health condition is kept in confidential manner.

- Client is free to choose the place and the medical staffs to serve.
- The cleanliness of hospital room/service including bathroom
- An easy access to be visited by the family and relatives.

The Seven domains of responsiveness for Outpatient service is same with Inpatient, except domain number 8.

The population is requested to evaluate the aspect of responsiveness towards non medical health service while being hospitalized for the last 5 years and for outpatient services for the last 1 year. Each domain of responsiveness evaluated in 5 scales: extremely good, good, fair, bad, extremely bad. In order to ease the evaluation of responsiveness of Outpatient and Inpatient in the health service system, WHO has combined the five categories into 2, those being “good”(extremely good and good) and the other is” not good enough” (fair, bad and extremely bad). The next presentation of the analysis/table only present the “good” percentage.

Table 3.172 describes the percentage of population who precieve their health care “good” for the aspect of responsiveness by province.

Nationally, those who give “good” and has the high percentage is related to “an easy access to visit” (87.5%), and “staffs hospitality” (87.0%). The lowest percentage is related to the aspect of “the room cleanliness”(82.%).

On the provincial basis, there is no variation that too sharp from every aspect of responsiveness. The province of Jambi has the lowest percentage for all aspect of responsiveness except waiting time aspect. Whereas the province of North Sulawesi has the highest percentage for the aspects of: information clarity, participate in making decision to choose the kind of requested service, the confidentially of information, and the freedom to choose service facility.

Table 3.172
Percentage of Inpatient Population
According to Responsiveness Aspect and Province, Riskesdas 2007

PROVINCE	Waiting time	Hospitality	Information clarity	Participate in making decision	Secrecy	Freedom to choose facility	Room cleanliness	Easy to be visited
NAD	84.2	86.0	81.8	81.4	82.7	81.1	78.6	83.9
Sumatera Utara	88.6	88.7	87.7	87.5	87.2	87.0	84.6	86.4
Sumatera Barat	83.9	84.1	82.4	83.0	83.4	82.9	80.6	84.2
Riau	85.1	84.8	84.9	85.6	86.1	85.0	84.4	86.8
Jambi	72.6	74.0	68.4	69.4	69.3	68.1	67.6	70.2
Sumatera Selatan	82.8	83.2	81.6	81.6	83.4	81.6	78.6	82.6
Bengkulu	80.0	79.2	78.0	79.9	79.8	78.3	74.7	78.5
Lampung	81.9	84.4	84.8	84.8	86.2	84.9	80.9	85.1
Bangka Belitung	79.2	80.7	78.8	77.1	79.5	77.7	74.2	81.0
Kepulauan Riau	84.1	84.1	80.4	79.8	80.5	78.3	78.9	84.7
DKI Jakarta	81.7	85.1	82.2	83.7	84.8	82.5	84.4	87.0
West Java	80.0	83.4	82.0	81.3	82.8	81.6	81.5	85.4
Central Java	83.9	87.5	85.6	84.4	85.4	85.0	84.1	88.0
DI Yogyakarta	90.1	91.0	89.6	90.5	91.8	90.9	90.6	93.8
East Java	88.2	90.0	88.6	87.2	89.0	88.0	88.2	91.2
Banten	71.4	76.7	72.6	72.8	72.7	72.3	72.7	76.7
Bali	92.9	92.5	92.5	92.3	91.6	91.4	92.0	92.7
Nusa Tenggara Barat	84.5	86.6	85.4	82.8	85.2	82.1	79.8	87.2
Nusa Tenggara Timur	86.4	88.8	88.8	88.0	90.5	87.8	85.6	89.0
Kalimantan Barat	77.2	78.4	79.0	78.9	80.5	77.5	73.2	81.7
Kalimantan Tengah	79.0	83.1	81.0	80.4	83.2	80.8	76.0	85.8
Kalimantan Selatan	83.2	88.4	83.2	82.7	85.0	83.1	80.1	85.6
Kalimantan Timur	84.5	86.2	85.9	85.4	86.2	84.4	81.7	86.5
Sulawesi Utara	88.8	94.1	92.8	93.8	95.5	92.4	89.4	93.9
Sulawesi Tengah	85.5	89.7	87.7	84.6	86.5	82.9	77.2	91.7
Sulawesi Selatan	92.6	94.4	92.8	91.7	93.3	91.0	89.8	94.1
Sulawesi Tenggara	87.1	90.2	86.9	88.4	89.5	86.4	82.3	89.5
Gorontalo	92.8	95.1	92.6	92.2	93.1	91.0	88.0	94.2
Sulawesi Barat	84.2	86.5	84.9	82.6	87.1	81.7	80.7	86.2
Maluku	91.1	91.8	90.8	88.7	90.4	88.7	87.0	94.0
Maluku Utara	84.5	88.1	86.7	84.6	86.9	84.6	82.9	93.0
Papua Barat	81.0	86.2	87.7	85.0	89.1	81.2	72.0	89.6
Papua	79.4	87.6	83.7	82.9	86.4	81.9	75.3	87.2
INDONESIA	**84.8**	**87.0**	**85.4**	**84.8**	**86.1**	**84.5**	**82.9**	**87.5**

Table 3.173 presents the percentage of population that gives “good” to the aspect of responsiveness on the basis of household characteristics.

By region, there is no extreme percentage difference of population that gives “good” to all aspects of responsiveness between those in the urban and in the rural areas. On the level of per capita household expenditure basis, the higher the level of household expenditure the more statement that consider the health service is “good” to the following aspects: the cleanliness of service room, the freedom to choose the service facility, and easy access for the family/relatives to visit.

Table 3.173
Percentage of Inpatient Population According to Responsiveness Aspect and Household’s Characteristics, Riskesdas 2007

Respondent’s Characteristics	Waiting time	Hospitality	Information clarity	Participate in making decision	Secrecy	Freedom to choose facility	Room cleanliness	Easy to be visited
Type of Residence								
Urban	84.0	86.5	85.1	84.7	86.0	84.5	83.1	87.8
Rural	85.5	87.6	85.7	84.8	86.2	84.6	82.6	87.2
Level of expenditure per capita								
Quintile 1	84.4	86.4	84.7	83.7	85.0	83.2	82.3	86.6
Quintile 2	83.7	86.3	84.6	83.5	85.2	83.2	81.9	86.6
Quintile 3	84.5	86.5	84.7	84.2	85.5	83.6	82.5	86.9
Quintile 4	84.7	87.0	85.6	85.4	86.4	84.9	82.8	87.7
Quintile 5	85.8	88.2	86.6	86.1	87.4	86.4	84.0	88.7

Table 3.174 shows the aspect of responsiveness nationally towards Outpatient service in which the high percentage of “good” is staffs hospitality (90.4%), while the lowest percentage is the aspect of room cleanliness (85.1%). On the provincial basis, it does not show too much variation.

The province of Banten has the lowest percentage for all aspects of responsiveness of Outpatient treatment. Whereas the province of North Sulawesi has the highest percentage for the aspects of: participate in making decision related to the type of treatment which requested by the client, the confidentiality of information, and the freedom to choose service facility. And the province of Gorontalo has the highest percentage for the aspects of : waiting time, staffs hospitality, the clarity of information, and room cleanliness.

By type of residence (table 3.175) the percentage difference between those who rate services “good” in some aspects of responsiveness on Outpatient service varies between the urban and the rural areas. In the urban areas the aspect of responsiveness “good” that has the high percentage is related to the clarity of information, participate in making decision related to the type of treatment requested by the client, the room cleanliness. In the rural areas, the highest reponse of “good” is related to the waiting time and staffs hospitality.

By per capita household expenditure the higher the level of household expenditure , the more likely that they rate “good” to all aspects of responsiveness of outpatient service .

Table 3.174
Percentage of Outpatient Population According to Responsiveness Aspect and Province, Riskesdas 2007

PROVINCE	Waiting time	Hospitality	Information clarity	Participate in making decision	Secrecy	Freedom to choose facility	Room cleanliness
NAD	87.7	89.1	84.3	84.4	85.3	83.4	79.4
North Sumatera	90.7	91.0	88.4	87.2	87.5	86.4	84.5
West Sumatera	87.1	88.2	83.7	84.1	85.0	84.5	82.2
Riau	82.9	84.2	84.9	84.3	85.0	83.3	79.9
Jambi	77.0	78.0	71.8	70.7	70.3	68.3	65.5
South Sumatera	85.1	87.8	85.7	84.3	85.2	85.2	83.6
Bengkulu	86.8	87.5	85.0	84.4	85.0	84.0	81.5
Lampung	87.2	90.3	88.9	88.1	88.9	87.8	86.7
Bangka Belitung	82.2	84.5	80.5	78.5	80.3	77.8	77.7
Kepulauan Riau	82.8	85.9	81.1	78.3	79.9	78.4	78.0
DKI Jakarta	76.7	86.0	83.8	80.6	83.2	81.5	85.0
West Java	80.9	88.6	83.5	82.1	84.0	83.0	85.5
Central Java	82.4	89.8	86.4	84.8	86.8	86.1	86.1
DI Yogyakarta	87.7	94.8	90.8	91.1	93.0	92.1	93.2
East Java	92.7	95.1	93.0	91.8	92.7	91.9	92.1
Banten	67.6	73.2	67.3	65.5	68.2	65.6	65.9
Bali	93.7	95.1	94.0	93.2	93.7	93.9	93.9
West Nusa Tenggara	86.8	89.9	86.4	84.1	87.2	83.5	82.6
East Nusa Tenggara	92.3	94.6	94.6	93.5	94.8	93.2	93.4
West Kalimantan	84.4	86.5	84.5	83.6	84.2	83.2	80.8
Central Kalimantan	83.6	88.5	83.8	82.9	85.6	83.5	81.2
South Kalimantan	84.3	90.6	85.2	83.0	86.0	84.3	83.2
East Kalimantan	86.6	91.1	88.2	87.6	88.5	86.0	81.2
North Sulawesi	91.8	97.7	95.9	95.6	97.4	95.9	93.8
Central Sulawesi	92.3	95.1	90.6	88.8	88.7	87.7	89.2
South Sulawesi	93.9	96.2	93.1	92.3	93.7	92.2	92.6
Southeast Sulawesi	90.4	91.8	87.0	86.3	88.3	86.0	83.8
Gorontalo	95.4	98.4	96.0	94.6	95.3	95.8	96.1
West Sulawesi	92.0	93.4	91.6	91.0	91.1	88.9	88.1
Maluku	95.4	96.0	94.8	93.8	94.7	93.3	92.8
North Maluku	89.3	94.6	91.9	89.4	92.6	90.1	90.5
West Papua	83.9	93.1	91.4	89.9	92.6	86.3	84.3
Papua	79.8	88.2	83.3	82.5	86.3	81.4	77.7
INDONESIA	**86.8**	**90.4**	**87.2**	**86.1**	**87.5**	**86.0**	**85.1**

Table 3.175
Percentage of Outpatient Population
According to Responsiveness Aspect and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Waiting time	Hospitality	Information clarity	Participate in making decision	Secrecy	Freedom to choose facility	Room cleanliness
Type of Residence							
Urban	85.2	90.0	87.7	86.6	88.1	86.7	86.6
Rural	87.6	90.5	86.9	85.8	87.1	85.7	84.3
Level of expenditure per capita							
Quintile 1	86.1	89.5	86.1	84.9	86.4	84.9	84.0
Quintile 2	86.0	89.6	86.3	85.2	86.5	85.1	84.4
Quintile 3	86.8	90.3	86.9	85.9	87.1	85.8	84.9
Quintile 4	87.1	90.9	87.8	86.6	87.9	86.5	85.6
Quintile 5	87.7	91.4	88.7	87.7	89.1	87.8	86.7

3.9 Environment Health

Data about environment health is taken from 2 data sources, Riskesdas 2007 and Kor Susenas 2007. Therefore, the presentation of several environment health tables are the combination of Riskesdas and Kor Susenas data .

Data that have been collected in this survey cover the household water, human waste facility, the facility of waste disposal (SPAL), garbage disposal, and housing characteristics. The data have the physical character in the household, therefore the data collection is carried out by interviewing the head of household and by observation.

3.9.1 Water necessity for the household

According to WHO, the total utilization of household clean water per capita has a strong relationship to the population's health and disease risk associated with hygiene. The average of individual's clean water usage is the average of total household's clean water usage per day divided by the total family members. Then, the average of individual's usage is grouped into four categoreis "<5 liters/person/day", "5-19.9 liters/person/day", "20-49.9 liters/person/day", and ">100 liters/person/day". On the level of service basis, the above categories can be classified "no access", "lack of access", "basic access", "middle access", and "optimal access". The population health risk in the group of low access to the clean water ("no access" and "lack of access") is categorized high risk.

The head of household was asked about the average of total water usage for all household necessities in one single day .

Table 3.176
Percentage of Household According to the Average of Clean Water Usage per Person per Day and Province, Riskesdas 2007

Province	Average of Clean Water Usage per Person Per Day (in Liters)				
	<5	5-19,9	20-49,9	50-99,9	≥100
NAD	13.5	7.2	20.6	25.9	32.7
North Sumatera	6.4	7.1	21.9	21.9	42.7
West Sumatera	32.6	12.6	15.8	14.2	24.7
Riau	32.0	11.6	10.5	14.0	31.9
Jambi	5.3	11.2	41.2	22.9	19.5
South Sumatera	1.6	6.0	24.1	31.6	36.6
Bengkulu	1.1	8.5	41.1	13.8	35.6
Lampung	10.6	3.1	17.5	34.3	34.5
Bangka Belitung	0.6	4.7	22.0	30.6	42.0
Kepulauan Riau	23.0	8.1	9.6	36.5	22.9
DKI Jakarta	0.7	8.0	10.9	17.3	63.1
West Java	2.1	24.2	23.0	21.0	29.7
Central Java	0.4	6.0	23.2	30.3	40.1
DI Yogyakarta	0.3	3.0	13.0	28.2	55.5
East Java	0.3	7.0	40.0	21.0	31.6
Banten	0.4	4.6	21.1	23.5	50.3
Bali	0.8	6.7	47.8	33.6	11.2
West Nusa Tenggara	0.5	10.4	26.9	21.2	41.0
East Nusa Tenggara	4.7	32.9	31.9	19.1	11.4
West Kalimantan	1.9	8.2	31.7	28.2	29.9
Central Kalimantan	0.3	4.3	37.6	30.5	27.4
South Kalimantan	0.3	2.4	27.6	36.1	33.7
East Kalimantan	0.6	2.8	16.2	41.2	39.2
North Sulawesi	1.2	9.1	17.6	27.7	44.4
Central Sulawesi	2.3	12.7	42.6	22.7	19.7
South Sulawesi	0.1	13.7	29.1	32.7	24.5
Southeast Sulawesi	15.3	8.4	26.4	32.4	17.5
Gorontalo	16.9	37.2	13.7	4.5	27.7
West Sulawesi	13.6	31.9	19.3	17.5	17.7
Maluku	1.6	15.2	31.1	23.5	28.6
North Maluku	0.2	9.1	43.8	29.4	17.5
West Papua	1.2	9.8	43.7	30.6	14.7
Papua	13.0	26.9	28.0	20.8	11.2
Indonesia	**5.4**	**10.8**	**26.9**	**25.3**	**31.6**

Table 3.176 shows nationally, that there is 16.2% of all household where the clean water usage is still low (5.4% is no access and 10.8% lack access), which means that they have high risk for health problems/disease. Some 26.9% of the household have basic access (minimal), 25.3% middle access and 31.6% have optimal access.

The provinces that still have the low access to the clean water (above 16.2%) consecutively are Gorontalo, West Sulawesi, West Sumatra, Riau, Papua, NTT, Riau Island, West Java, Southeast Sulawesi, NAD, Maluku and Jambi. While the provinces that

have optimal access to the clean water are DKI Jakarta, DI Yogyakarta, Banten, North Sulawesi, and NTB.

Who has made a standard where the minimal access limit to the clean water consumption should be 20 liters/person/day (*Joint Monitoring Program WHO-Unice)f*, then nationally the access to the clean water based on the total of water usage per person per day is 83.8% which is a reduction from 2004, when it was reported as 88.7%.

By household characteristic, (Table 3.177), the average usage of clean water /person/day indicates differences, both by the type of region but also by the per capita household expenditure basis.

Table 3.177
Percentage of Household According to the Average of Clean Water Usage per Person Per Day and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Average of Clean Water Usage per Person Per Day (in Liters)				
	<5	5-19,9	20-49,9	50-99,9	≥100
Type of Residence					
Urban	3.8	7.2	23.0	26.5	39.4
Rural	6.5	13.0	29.3	24.6	26.7
Level of expenditure per capita					
Quintile 1	6.2	12.6	29.6	25.0	26.6
Quintile 2	5.8	11.6	28.3	25.4	29.0
Quintile 3	5.3	10.9	26.9	25.9	31.0
Quintile 4	4.9	10.1	26.0	25.5	33.6
Quintile 5	4.6	8.3	23.8	25.1	38.2

The proportion of households which have low access to clean water is much higher in the rural areas (19.5%) than in the urban area (11%). By per capita household expenditure, the higher the level of household expenditure the higher the access to the optimal amount of clean water.

Besides the total amount of clean water consumed by the household, some questions were asked about the distance and total time required to reach the water source, as well as the perception on water source availability. Questions were asked to the head of family about how much time is needed to reach the water source and return, how far the distance between the house and the water source, and how easy it is in obtaining the clean water. The results are presented in the table 3.178

Table 3.178
Percentage of Household According to the Total Time and Distance to Reach Water source, Clean Water Availability and Province, Riskesdas 2007

Province	Total Time and Distance to Reach Water source				Availability		
	Time (mnt)		Distance(km)		Easy all the year	Difficult in the dry season	Difficult all the year
	>30	≤30	>1	≤1			
NAD	2.2	97.8	7.4	92.6	77.5	21.0	1.5
North Sumatera	4.7	95.3	7.4	92.6	85.6	13.5	0.8
West Sumatera	2.2	97.8	5.8	94.2	83.4	15.3	1.3
Riau	10.4	89.6	18.5	81.5	53.8	44.6	1.6
Jambi	0.4	99.6	1.3	98.7	68.4	30.9	0.7
South Sumatera	1.5	98.5	6.2	93.8	59.8	39.6	0.6
Bengkulu	5.2	94.8	10.2	89.8	70.8	28.8	0.4
Lampung	1.9	98.1	3.0	97.0	59.3	38.9	1.7
Bangka Belitung	4.1	95.9	10.1	89.9	40.5	57.9	1.6
Kepulauan Riau	14.9	85.1	16.3	83.7	69.6	24.0	6.3
DKI Jakarta	0.3	99.7	2.2	97.8	79.5	19.6	0.9
West Java	1.3	98.7	3.4	96.6	70.5	29.0	0.5
Central Java	2.4	97.6	3.6	96.4	74.6	25.0	0.4
DI Yogyakarta	2.2	97.9	2.3	97.7	85.1	14.6	0.3
East Java	0.6	99.4	2.4	97.6	82.3	16.9	0.8
Banten	2.2	97.8	5.2	94.8	66.7	32.4	0.9
Bali	1.4	98.6	2.5	97.5	84.7	14.0	1.3
West Nusa Tenggara	0.6	99.4	3.3	96.7	68.5	30.4	1.1
East Nusa Tenggara	10.7	89.3	6.8	93.2	52.4	42.7	4.9
West Kalimantan	3.8	96.2	5.5	94.5	48.4	50.8	0.8
Central Kalimantan	1.2	98.8	2.8	97.2	64.8	35.0	0.2
South Kalimantan	1.3	98.7	2.4	97.6	67.0	32.8	0.3
East Kalimantan	4.5	95.5	4.4	95.6	71.5	26.4	2.1
North Sulawesi	4.1	95.9	5.1	94.9	87.6	10.0	2.4
Central Sulawesi	3.3	96.7	4.4	95.6	87.4	10.9	1.7
South Sulawesi	0.7	99.3	2.8	97.2	73.1	25.8	1.1
Southeast Sulawesi	5.0	95.0	14.5	85.5	72.7	25.3	2.0
Gorontalo	5.4	94.6	6.7	93.3	85.7	12.5	1.7
West Sulawesi	6.2	93.8	11.6	88.4	72.9	26.3	0.8
Maluku	5.1	94.9	9.7	90.3	78.0	20.4	1.6
North Maluku	1.8	98.2	11.0	89.0	89.2	8.6	2.2
West Papua	6.6	93.4	9.2	90.8	68.3	29.4	2.3
Papua	7.8	92.2	12.6	87.4	66.3	31.6	2.1
Indonesia	**3.1**	**96.9**	**5.5**	**94.5**	**72.8**	**26.0**	**1.2**

The above table shows, nationally, that some 3.1% of the household require more than the average time of more than 30 munutes to reach the nearest clean water source. There are 16 provinces that are above 3.1%, the highest is Kepulauan Riau(14.9%), followed by NTT (10.7%), and Riau (10.4%). In terms of radius, nationally, there are 5.5% of household which have the radius to the water source more than 1 kilometer, they are : The Province of Riau (18.5%),followed Kepulauan Riau (16.3%) and Southeast Sulawesi (14.5%).

In terms of the clean water availability for the entire year, nationally, there is 72.8% of the households which have the available clean water at all times. There are 18 provinces possess the clean water access for the whole year less than 72.8%. The Kepulauan Riau (6.3%) and NTT (4.9%) are those that have the highest household proportion in terms of difficult clean water for the entire year.

The clean water access based on the time, distance and clean water availability is varied depending on the region and the level of per capita household expenditure. (Table 3.179).

Table 3.179
Percentage of Household According to the Total Time and Distance to Reach Water source, Clean Water Availability and Household's Characteristics in Indonesia, Riskesdas 2007

Household's Characteristics	Total Time and Distance to Reach Water source				Availability		
	Time (mnt)		Distance (km)		Easy in the whole year	Difficult in the dry season	Difficult in the whole year
	>30	≤30	>1	≤1			
Type of Residence							
Urban	2.4	97.6	4.0	96.0	82.4	16.8	0.9
Rural	3.4	96.6	6.5	93.5	66.8	31.7	1.4
Level of expenditure per capita							
Quintile 1	3.5	96.5	6.2	93.8	68.0	30.4	1.7
Quintile 2	3.1	96.9	5.9	94.1	70.4	28.2	1.4
Quintile 3	3.0	97.0	5.4	94.6	72.3	26.5	1.2
Quintile 4	2.9	97.1	5.2	94.8	75.0	24.0	1.1
Quintile 5	2.6	97.4	4.6	95.4	78.7	20.4	0.8

The proportion of household that require more than 30 minutes to reach their water source is higher in the rural area (3.4%) than in the urban (2.4%). From the perspective of per capita household expenditure, the distance to water source is reduced as per capita household expenditure increases.

The proportion of households which has access to a water source more than 1 kilometer is higher in the rural area (6.5%) as compared to the urban area (4.0%). By per capita household expenditure, the distance to water source decreases and per capita household expenditure increases. Likewise the proportion of households that report water availability is easy the whole year is higher in the urban area (82.4%) compared to the rural areas (66.8%). By per capita household expenditure, higher household expidture levels have better accessabilty to water the whole year than lower level of per capita household expenditure.

Table 3.180
Percentage of Household According to Individual who Usually Takes Water in the Household and Province in Indonesia, Riskesdas 2007

Province	Female		Male	
	Adult	Children (<12 years)	Adult	Children (<12 years)
NAD	65.3	5.4	23.7	5.5
North Sumatera	52.3	7.4	34.9	5.4
West Sumatera	72.6	5.4	19.4	2.6
Riau	38.7	2.4	51.9	7.1
Jambi	49.8	1.3	46.3	2.6
South Sumatera	52.8	2.4	42.5	2.3
Bengkulu	48.3	1.5	48.3	2.0
Lampung	38.7	2.2	54.2	4.9
Bangka Belitung	41.9	1.1	54.5	2.4
Kepulauan Riau	28.9	1.3	59.2	10.6
DKI Jakarta	27.3	1.2	67.1	4.4
West Java	48.0	0.8	48.3	2.9
Central Java	54.6	1.7	40.8	2.9
DI Yogyakarta	41.4	0.9	55.9	1.8
East Java	47.2	1.4	48.3	3.0
Banten	49.4	0.6	47.5	2.5
Bali	50.6	1.4	46.9	1.1
West Nusa Tenggara	77.0	4.8	16.4	1.7
East Nusa Tenggara	64.9	7.1	23.4	4.6
West Kalimantan	33.9	2.0	60.7	3.4
Central Kalimantan	41.7	2.0	53.1	3.2
South Kalimantan	44.0	1.7	51.6	2.7
East Kalimantan	23.9	0.5	72.0	3.6
North Sulawesi	32.5	1.0	63.5	3.0
Central Sulawesi	47.9	2.8	44.7	4.7
South Sulawesi	61.4	4.5	29.7	4.4
Southeast Sulawesi	25.7	2.3	65.2	6.8
Gorontalo	34.7	2.3	57.9	5.1
West Sulawesi	46.8	3.3	43.8	6.1
Maluku	29.2	3.9	60.7	6.2
North Maluku	36.7	4.7	55.6	3.0
West Papua	44.1	2.0	51.4	2.5
Papua	49.0	5.5	38.1	7.4
Indonesia	**49.7**	**3.2**	**43.2**	**4.0**

In order to get the water to the household necessities that someone needs to carry the water from the source located outside of the yard, households were questioneds as to whom carried the water, to evaluate this aspect of gender and children protection. The gender aspect in taking the water is presented in the table 3.180.

The above table nationally indicates that there is some 7.2% of the household in which their children responsible for taking the water for the household (3.2% woman and 4.0% boy). The percentage of woman that responsible in taking the water is higher than man.

The provinces in which the children takes part in taking the water are Papua, Maluku, NTT, Riau Island and North Sumatra. While the provinces where this task is done by more woman are NTB, West Sumatra, NTT, South Sulawesi, and NAD.

Individual carriers of the clean water for the household use shows variation by region and the level of per capita household expenditure. (Table 3.181).

Table 3.181
Percentage of Household According to Household member who Usually Carries Water and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Female		Male	
	Adult	Children (<12 years)	Adult	Children (<12 years)
Type of Residence				
Urban	44.1	2.2	49.8	3.9
Rural	51.2	3.4	41.3	4.0
Level of expenditure per capita				
Quintile 1	50.5	3.6	41.6	4.3
Quintile 2	50.5	3.3	42.2	4.1
Quintile 3	49.6	3.2	43.4	3.8
Quintile 4	49.4	2.9	44.0	3.8
Quintile 5	46.7	2.4	47.1	3.8

Woman and children who take the water for the household is higher in the rural area (51.2% and 7.4%) as compared to the urban areas (44.1% and 6.1%). While by level of per capita household expenditure, the higher the level of per capita household expenditure the lower woman and children proportion who responsible for taking the water for the household.

Through interview and observation , the data of physical water quality for the household have been collected, including its muddiness, smell, taste, color, and the presence of foam. The physical water quality is categorized good in case the water does not have the muddiness, does not smell, distaste, discolor, and has no foam.

Table 3.182 shows nationally the household proportion that possess good physical drinking water quality is 86.0%. There are 15 provinces in terms of this has the below national average, and the lowest is the province of Central Kalimantan (58.6%).

Table 3.182
Percentage of Household According to Physical Quality of Drinking Water and Province in Indonesia, Riskesdas 2007

Province	Physical Quality of Drinking Water					
	Muddy	Smelled	Colored	Tasted	Foamed	Good*
NAD	17.2	4.8	12.5	7.0	1.8	75.2
North Sumatera	9.3	3.9	9.9	6.8	0.9	84.3
West Sumatera	7.6	3.3	6.0	2.6	1.5	90.3
Riau	9.1	3.5	9.6	5.0	1.3	84.9
Jambi	8.2	1.3	6.3	3.2	0.8	88.5
South Sumatera	10.1	2.9	10.5	5.7	2.0	84.8
Bengkulu	4.7	1.4	2.0	1.8	0.5	93.0
Lampung	5.8	1.9	3.6	3.6	0.6	91.5
Bangka Belitung	1.7	1.9	2.6	2.6	0.7	95.3
Kepulauan Riau	6.4	3.2	6.8	4.2	1.9	88.5
DKI Jakarta	7.3	11.1	4.8	9.7	1.4	80.3
West Java	6.6	3.8	4.4	4.0	1.1	88.6
Central Java	7.4	1.9	3.5	3.1	0.6	89.2
DI Yogyakarta	3.4	1.7	2.8	1.4	0.4	95.0
East Java	3.7	1.9	2.5	2.8	0.7	92.9
Banten	9.9	4.0	6.0	7.4	1.4	82.7
Bali	3.0	1.1	4.1	3.7	0.3	92.5
West Nusa Tenggara	5.3	2.6	2.5	4.1	0.7	90.1
East Nusa Tenggara	11.7	2.3	4.5	6.2	1.5	84.8
West Kalimantan	12.5	2.2	10.5	3.8	0.8	82.5
Central Kalimantan	34.4	9.8	26.2	15.2	1.6	58.6
South Kalimantan	22.4	6.6	17.0	10.9	1.6	71.6
East Kalimantan	15.9	5.8	11.2	6.8	1.7	79.2
North Sulawesi	6.7	1.0	5.1	3.4	0.7	90.4
Central Sulawesi	7.2	3.4	5.9	3.9	0.7	87.4
South Sulawesi	6.4	2.6	4.0	3.1	0.8	90.2
Southeast Sulawesi	10.5	1.6	6.1	7.7	0.4	81.9
Gorontalo	7.3	2.0	4.7	3.9	1.3	89.7
West Sulawesi	9.6	1.7	6.8	3.0	1.7	86.8
Maluku	8.5	0.9	3.9	3.9	0.5	87.0
North Maluku	8.4	1.2	6.9	11.0	0.8	80.4
West Papua	15.5	5.6	13.5	7.5	4.3	79.5
Papua	18.1	6.4	15.3	9.2	2.6	75.8
Indonesia	**9.3**	**3.2**	**6.8**	**5.0**	**1.1**	**86.0**

* Good = Not muddy, no color, no taste, no foam and no smell

The proportion of physical quality of good drinking water in the household is varied according to the level of per capita household expenditure (Table 3.183). In general, the proportion of household possessing good physical drinking water in the urban is slightly higher (88.6%) than in the rural area (84.3%), especially in terms of muddiness and color.

The higher the level of per capita household expenditure the higher the proportion of good physical drinking water.

Table 3.183
Percentage of Household According to Physical Quality of Drinking Water and Household's Characteristics in Indonesia, Riskesdas 2007

Household's Characteristics	Physical Quality of Drinking Water					
	Muddy	Smelled	Colored	Tasted	Foamed	Good*
Type of Residence						
Urban	6.6	3.6	5.2	4.2	1.0	88.6
Rural	11.0	3.0	7.9	5.5	1.1	84.3
Level of expenditure per capita						
Quintile 1	10.9	3.7	8.1	6.1	1.3	83.8
Quintile 2	10.1	3.5	7.3	5.4	1.2	85.0
Quintile 3	9.3	3.1	6.8	4.9	1.0	85.9
Quintile 4	8.6	3.0	6.4	4.7	1.0	86.7
Quintile 5	7.3	2.7	5.5	4.1	0.9	88.5

* Good = Not muddy, no color, no taste, no foam and no smell

Data of the main type of drinking water for the household is taken from Kor Susenas 2007 data.

In the table 3.184, there are still a lot of households, nationally, consume drinking water from unprotected source (unprotected wells 12.4%; unprotected spring 5.0%; river water 3.8% and others 0.5%).Compared to data of Susenas 2004, the use of packaged water in the household has increased more than doubled, from 2.6% to 6.0%. While those that use running water/piping has not increased/constant (17.8% each)

The provinces that its coverage of pipe water above the national average are South Kalimantan, DKI Jakarta, and West Papua. The provinces that have high proportion in consuming the packaged water are Riau Island, DKI Jakarta, Bali, Banten, and DI Yogyakarta, The provinces that most use rain water as the source of its drinking water are West Kalimantan, Riau, Papua, Jambi and West Papua.

Table 3.184

Percentage of Household According to Kinds of Drinking Water Source and Province in Indonesia, Susenas 2007

Province	Kinds of Drinking Water Source										
	Packaged water	Retail tap water	Tap water	Drilled well / Pumped	Protected well	Non Protected well	Protected spring	Non Protected spring	River water	Rain water	Others
NAD	7.0	8.9	3.6	5.1	41.7	20.5	3.8	3.3	4.3	1.2	0.6
North Sumatera	3.2	19.2	2.4	17.7	25.8	11.4	6.3	6.6	4.5	2.2	0.7
West Sumatera	3.9	20.3	2.4	7.8	28.9	13.9	5.4	11.5	3.1	2.2	0.5
Riau	10.7	1.9	0.7	10.2	28.9	18.9	0.3	0.8	2.2	24.5	0.6
Jambi	3.6	15.9	0.6	4.2	29.9	22.7	1.3	1.4	7.3	12.8	0.3
South Sumatera	7.1	18.4	5.4	2.2	34.2	14.6	1.0	1.2	8.3	7.0	0.7
Bengkulu	2.8	9.7	1.6	2.9	26.1	46.4	3.2	5.0	1.9	0.0	0.5
Lampung	3.9	1.9	2.0	4.8	43.1	34.9	2.3	3.1	2.2	1.5	0.2
Bangka Belitung	11.4	1.7	0.3	9.6	49.8	23.7	0.7	1.2	1.4	0.1	0.0
Kepulauan Riau	29.7	21.1	3.7	3.6	21.2	10.9	2.9	2.8	.5	2.0	1.5
DKI Jakarta	27.5	24.4	11.3	34.5	1.1	0.2	0.0	0.1	0.0	0.2	0.7
West Java	7.0	8.2	3.3	29.2	28.1	8.6	7.8	7.0	0.4	0.1	0.2
Central Java	2.4	10.8	3.9	14.9	42.4	7.6	11.9	4.3	0.9	0.6	0.2
DI Yogyakarta	10.4	9.9	0.4	8.9	57.3	6.2	2.0	1.7	0.0	3.1	0.0
East Java	6.7	11.5	4.9	22.2	33.6	6.4	9.9	3.5	0.5	0.4	0.5
Banten	14.8	5.8	3.3	36.3	20.7	7.3	3.2	3.8	4.2	0.1	0.7
Bali	19.0	33.9	1.1	5.0	12.6	1.8	15.5	4.3	2.3	4.1	0.4
West Nusa Tenggara	5.5	12.6	2.1	8.6	47.1	9.6	10.1	2.6	1.7	0.0	0.0
East Nusa Tenggara	0.9	11.8	2.6	1.2	18.8	11.2	25.7	19.4	5.3	1.3	1.9
West Kalimantan	3.2	6.4	1.2	2.0	6.5	9.1	4.3	2.9	23.2	41.2	0.1
Central Kalimantan	2.3	13.9	1.7	13.4	13.0	8.2	1.4	1.6	35.7	8.7	0.2
South Kalimantan	1.8	22.6	13.4	13.4	11.3	14.6	0.7	0.7	19.4	1.7	0.3
East Kalimantan	8.9	40.6	7.5	5.1	7.7	7.6	1.6	1.7	11.3	7.1	0.9
North Sulawesi	7.4	15.8	5.0	10.6	29.1	11.8	14.2	4.7	0.6	0.2	0.5
Central Sulawesi	4.4	11.6	3.6	16.1	21.6	11.7	15.2	7.5	6.9	0.8	0.7
South Sulawesi	4.7	18.4	5.0	15.7	25.1	14.8	8.5	5.4	1.8	0.6	0.1
Southeast Sulawesi	0.6	17.8	2.9	5.3	30.5	17.3	15.4	5.9	2.2	1.9	0.2
Gorontalo	0.9	15.5	3.0	5.1	55.7	9.3	3.9	1.5	5.0	0.0	0.1
West Sulawesi	0.7	7.1	3.2	7.9	34.2	13.9	12.0	11.3	9.0	0.3	0.3
Maluku	0.7	11.8	5.2	5.9	34.0	10.5	21.9	6.1	1.4	1.9	0.6
North Maluku	1.7	13.9	1.4	1.3	43.9	21.1	5.1	1.0	3.4	7.3	0.0
West Papua	9.5	16.5	10.8	3.0	14.4	7.6	8.4	8.5	10.1	10.8	0.5
Papua	5.1	10.8	2.1	3.1	11.2	10.8	6.4	21.6	13.0	14.8	1.1
Indonesia	**6.0**	**14.0**	**3.8**	**13.0**	**28.9**	**12.4**	**7.6**	**5.0**	**5.0**	**3.8**	**0.5**

The spread of usage proportion of drinking water source type on the type by residence and by level of per capita household expenditure is shown in Table 3.185.

Table 3.185
Percentage of Household According to Kinds of Drinking Water Source and Household's Characteristics in Indonesia, Susenas 2007

Household's Characteristics	Kinds of Drinking Water Source										
	Packaged water	Retail tap water	Tap water	Drilled well / Pumped	Protected well	Non Protected well	Protected spring	Non Protected spring	River water	Rain water	Others
Type of Residence											
Urban	13.3	27.0	6.2	17.7	24.0	5.1	2.3	0.7	0.9	2.3	0.6
Rural	1.4	5.9	2.2	10.1	31.9	16.9	10.9	7.7	7.6	4.8	0.4
Level of expenditure per capita											
Quintile 1	2.1	8.3	4.4	11.1	29.7	16.2	9.1	7.1	6.8	4.6	0.5
Quintile 2	3.3	10.9	4.1	12.3	30.2	14.3	8.7	5.8	5.8	4.2	0.4
Quintile 3	4.9	13.1	3.9	13.1	30.0	12.8	7.7	5.1	5.2	3.7	0.4
Quintile 4	6.8	16.2	3.5	14.1	28.9	11.0	7.0	4.2	4.3	3.5	0.5
Quintile 5	12.9	21.8	2.8	14.5	25.4	7.6	5.5	3.0	2.9	3.0	0.4

The use of packaged water, retail tap water, tap water, and drilled wells is higher in the urban compared to the rural areas. The prominent rural drinking water source compared to the urban area is the type of wells (protected and unprotected), spring, river water, and rain water. While by household expenditure level, the higher the per capita household expenditure the higher the proportion of those who consume packaged water, retail tap water, and pumped wells. The higher the household expenditure level per capita the lower the proportion of consuming unprotected water sources.

Table 3.186 describes the type of water reservoir location for drinking water that consumed by the household and type of drinking water processing carried out by the household prior to consuming.

Most household's water reservoirs are closed containers (69.0%), and those who do not use the reservoir (18.2%), while those who use open reservoir is 12.8%. In terms of its spread, the provinces that have high proportion of opened reservoir are Papua, West Papua, West Sumatra, NAD, and North Sumatra.

Table 3.186
Percentage of Household According to types of Water Reservoir and Drinking Water Processing Prior to Consuming and Province, Riskesdas 2007

Province	Water Reservoir			Drinking Water Processing Prior to Consuming				
	Opened container	Closed container	No container	Directly consumed	Cooked	Filtered	Chemical material	Others
NAD	21.2	41.9	37.0	12.2	89.4	12.7	0.9	4.1
North Sumatera	23.6	45.6	30.9	2.0	96.2	12.8	1.5	3.4
West Sumatera	21.2	48.4	30.4	2.1	96.3	7.4	0.7	2.3
Riau	16.6	56.6	26.8	9.3	86.4	8.3	1.4	7.7
Jambi	17.2	70.7	12.1	5.5	93.7	9.7	1.9	5.6
South Sumatera	8.4	81.7	9.9	9.1	95.3	7.1	4.1	2.0
Bengkulu	10.8	54.6	34.6	0.9	97.8	3.7	0.3	1.4
Lampung	11.0	64.6	24.4	2.0	96.9	4.5	0.6	1.7
Bangka Belitung	8.0	88.3	3.7	5.1	94.0	4.4	0.9	6.1
Kepulauan Riau	4.9	69.1	26.0	14.3	78.7	13.3	2.3	26.3
DKI Jakarta	7.3	70.1	22.5	12.7	84.7	5.8	2.2	8.2
West Java	9.3	76.1	14.6	4.4	93.1	7.7	1.2	5.1
Central Java	11.2	72.1	16.6	1.3	97.3	14.7	1.1	2.4
DI Yogyakarta	10.3	56.4	33.3	1.1	94.8	4.8	0.7	4.3
East Java	7.9	70.3	21.8	12.7	86.4	23.6	0.8	5.1
Banten	7.9	72.5	19.6	5.4	93.0	6.1	0.5	5.9
Bali	10.1	62.8	27.1	17.6	77.6	2.8	0.5	11.4
West Nusa Tenggara	14.3	60.6	25.0	55.5	54.8	1.9	1.1	2.2
East Nusa Tenggara	15.0	79.0	6.0	9.4	93.1	40.3	2.2	0.8
West Kalimantan	16.1	78.8	5.0	5.6	96.3	7.1	0.9	0.9
Central Kalimantan	10.4	84.4	5.2	7.6	92.7	17.0	14.5	5.2
South Kalimantan	5.8	90.8	3.3	7.0	94.1	5.3	10.1	3.1
East Kalimantan	12.6	81.3	6.1	7.1	92.8	8.9	8.4	3.2
North Sulawesi	9.8	72.8	17.4	7.5	95.0	2.4	0.4	4.2
Central Sulawesi	10.3	81.7	8.0	4.6	92.5	14.8	0.6	5.8
South Sulawesi	11.2	76.6	12.3	6.3	89.7	7.5	0.8	6.5
Southeast Sulawesi	11.3	84.6	4.1	5.5	94.1	18.3	0.9	0.7
Gorontalo	12.6	62.8	24.7	1.3	97.5	7.6	0.5	0.8
West Sulawesi	15.5	79.0	5.5	5.6	95.7	4.2	1.1	0.8
Maluku	13.2	80.0	6.8	5.7	96.6	28.1	0.5	0.7
North Maluku	11.5	75.7	12.7	1.5	98.0	9.0	2.7	0.2
West Papua	20.6	67.4	12.0	5.0	94.1	10.6	0.7	3.4
Papua	31.4	37.5	31.0	41.3	69.0	14.9	0.7	5.7
Indonesia	**12.8**	**69.0**	**18.2**	**8.1**	**91.3**	**12.3**	**2.0**	**4.2**

On national basis, the process of drinking water carried out by the household prior to consuming it is mostly boiling (cooked) (91.3%). Some 12.3% that process their water by means of filtering and 2.0% by adding a chemical. The provinces that have high proportion in filtering are NTT, Maluku, and East Java, while the provinces that have high proportion in adding chemical are Central Kalimantan, South Kalimantan, and East Kalimantan.

The proportion of using water reservoir and the processing of water prior to consumption are varied based on the type of region and the level of per capita household expenditure. (Table 3.187).

Table 3.187
Percentage of Household According to types of Water Reservoir and Drinking Water Processing Prior to Consuming and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Water Reservoir				Drinking Water Processing Prior to Consuming			
	Opened container	Closed container	No container	Directly consumed	Cooked	Filtered	Chemical material	Others
Type of Residence								
Urban	9.2	68.1	22.7	9.2	88.9	10.9	1.7	7.9
Rural	15.1	69.5	15.4	7.5	92.8	13.1	2.2	2.0
Level of expenditure per capita								
Quintile 1	14.3	69.0	16.7	7.9	92.3	12.1	2.1	2.8
Quintile 2	13.6	69.0	17.4	7.8	92.2	12.4	2.3	3.3
Quintile 3	12.8	69.6	17.6	7.8	92.0	12.1	2.1	3.9
Quintile 4	12.2	68.9	18.9	7.9	91.4	12.4	1.9	4.6
Quintile 5	10.9	68.8	20.3	8.5	89.3	12.4	1.9	6.7

The proportion of household using an open reservoir is higher in the rural areas as compared to the urban area, while those who do not use a reservoir is higher in the urban area compared to the ruraL area. In terms of water processing prior to consuming, it is obviously clear that water cooking and filtering is more common in the village area, while direct consume without processing is higher in the urban area.

By per capita household expenditure basis, the higher the level of per capita household expenditure the lower the proportion of using opened reservoir, but the total of those who do not use the water reservoir is higher.

According to *Joint Monitoring Program WHO/Unicef ,* the access to the clean water is "good' should the minimal water consumption is 20 liters/person/day, water source facility is improved, and the facility of water source is within a radius of 1 kilometer from the house. The data on water consumption and the distance to the water source is taken from Riskesdas 2007, while the data of type of drinking water facility is taken from Kor Susenas 2007. According to WHO/Unicef, an improved water source is the type of pipe/plumbing, drilled wells/pump, protected wells, protected spring, and rain water; other than these are categorized not improved.

Table 3.188
Percentage of Household According to Access to the Clean Water and Province, Susenas and Riskesdas 2007

Province	Clean water access	
	Not good enough	Good*)
NAD	51.8	48.2
North Sumatera	37.4	62.6
West Sumatera	62.6	37.4
Riau	68.7	31.3
Jambi	46.7	53.3
South Sumatera	38.9	61.1
Bengkulu	63.8	36.2
Lampung	55.5	44.5
Bangka Belitung	46.2	53.8
Kepulauan Riau	68.6	31.4
DKI Jakarta	37.2	62.8
West Java	44.1	55.9
Central Java	23.5	76.5
DI Yogyakarta	22.9	77.1
East Java	25.1	74.9
Banten	35.8	64.2
Bali	35.0	65.0
West Nusa Tenggara	31.1	68.9
East Nusa Tenggara	60.5	39.5
West Kalimantan	46.6	53.4
Central Kalimantan	50.7	49.3
South Kalimantan	39.8	60.2
East Kalimantan	34.8	65.2
North Sulawesi	37.1	62.9
Central Sulawesi	43.7	56.3
South Sulawesi	38.7	61.3
Southeast Sulawesi	51.5	48.5
Gorontalo	63.2	36.8
West Sulawesi	67.0	33.0
Maluku	38.4	61.6
North Maluku	40.7	59.3
West Papua	48.9	51.1
Papua	73.3	26.7
Indonesia	**42.3**	**57.7**

*) 20 ltr/person/day (Riskesdas, 2007), from the protected source (Susenas, 2007), and its facility in the radius of 1 km (Riskesdas, 2007)

Based on the criteria, table 3.188 shows, nationally, there are 57.7% have good access to clean water. There are 18 provinces that have good access proportion to the clean water below the national average, the lowest is Papua (26.7%), followed by Riau (31.3%), and Islands of Riau (31.4%).

The proportion of households that has good access to clean water varies based on the type of residence and the level of per capita household expenditure.

Table 3.189
Percentage Household According to Access to the Clean Water and Household's Characteristics, Susenas and Riskesdas 2007

Household's Characteristics	Clean water access	
	Not good enough	Good*
Type of Residence		
Urban	32.1	67.9
Rural	48.7	51.3
Level of expenditure per capita		
Quintile 1	47.0	53.0
Quintile 2	43.4	56.6
Quintile 3	41.6	58.4
Quintile 4	39.7	60.3
Quintile 5	38.5	61.5

Notes : *) 20 ltr/person/day (Riskesdas, 2007), from the protected source (Susenas, 2007), and its facility in the radius of 1 km (Riskesdas, 2007)

The above table shows that good water access in the urban areas is higher (67.9%), compared to the rural areas (51.3%). By level of household expenditure, the higher the level of expenditure the larger the proportion of households that have good access to clean water.

3.9.2 Defecating Facility

Data on defecating facility includes the use or the ownership of such facility and type of toilet. The data is taken from Kor Susenas 2007 household data.

Table 3.190 shows the household that use their own toilet (58.9%), when compared to the result of Susenas 2004, this has been decreased 1.5% (compared to 60.4% in 2004). Some provinces that have low proportion in using the own toilet are Gorontalo (31.0%), NTB (35.6%), and North Maluku (36.8%).

The coverage of using their own toilet shows that the variation according to the type of residence and the level of per capita household expenditure.

Table 3.190
Percentage of Household According to the Usage of Defecating Facility and Province in Indonesia, Susenas 2007

Province	Kinds of Usage			
	Own	Sharing	Public	None
NAD	51.2	8.2	8.4	32.2
North Sumatera	71.8	6.8	4.0	17.4
West Sumatera	49.1	12.5	7.1	31.2
Riau	79.8	8.5	1.7	9.9
Jambi	63.3	9.6	4.0	23.1
South Sumatera	65.8	11.1	4.0	19.1
Bengkulu	59.5	9.9	2.4	28.2
Lampung	64.1	11.1	1.8	23.0
Bangka Belitung	60.7	5.0	2.0	32.3
Kepulauan Riau	77.8	14.4	1.8	6.0
DKI Jakarta	72.6	20.1	6.7	0.7
West Java	61.8	12.7	8.7	16.9
Central Java	58.7	12.4	3.5	25.4
DI Yogyakarta	65.4	25.8	0.7	8.2
East Java	57.1	15.3	1.8	25.8
Banten	53.3	12.0	2.0	32.8
Bali	59.5	20.0	.3	20.2
West Nusa Tenggara	35.6	13.0	2.3	49.1
East Nusa Tenggara	60.8	12.1	1.6	25.5
West Kalimantan	57.9	6.6	3.3	32.2
Central Kalimantan	51.1	14.5	8.4	26.1
South Kalimantan	59.3	13.3	9.0	18.4
East Kalimantan	76.4	9.5	5.2	8.9
North Sulawesi	64.1	16.2	3.4	16.4
Central Sulawesi	45.4	8.1	3.7	42.8
South Sulawesi	58.4	12.6	1.6	27.4
Southeast Sulawesi	57.7	8.2	2.8	31.2
Gorontalo	31.0	19.2	7.5	42.2
West Sulawesi	42.0	7.0	3.1	47.9
Maluku	46.5	7.1	7.6	38.9
North Maluku	36.8	18.5	7.7	36.9
West Papua	43.3	16.1	13.1	27.5
Papua	47.9	11.6	4.2	36.3
Indonesia	**58.9**	**12.1**	**4.2**	**24.8**

Table 3.191
Percentage of Household According to the Usage of Defecating Facility and Household's Characteristics, Susenas 2007

Household's Characteristics	Kinds of Usage			
	Own self	Sharing	Public	None
Type of Residence				
Urban	73.2	14.3	3.3	9.2
Rural	49.9	10.7	4.8	34.5
Level of expenditure per capita				
Quintile 1	43.6	13.0	6.2	37.1
Quintile 2	52.3	12.6	4.9	30.1
Quintile 3	58.5	12.2	4.2	25.2
Quintile 4	65.0	11.8	3.5	19.8
Quintile 5	75.0	11.0	2.4	11.6

The percentage of household that uses their own toilet is higher in the urban areas (73.2%) as compared to the rural area (49.9%). By level of per capita household expenditure, there the higher the level of expenditure the higher the proportion of households using their own toilet.(Table 3.191)

Table 3.192 describes various type of human waste facility. The facility is classified "sanitary" in case the facility uses the type of goose neck shape in the plumbing of the "pan".

Nationally, the household that uses the type of goose neck shape is 68.9%. Compared to 2004 data (49.3%), the use of this type of plumbing has had a significant improvement.

The provinces that have high coverage in using sanitary toilet are Bali (95.7%), Gorontalo (87.8%), Banten (87.7%), DKI Jakarta (86.2%), North Sulawesi (85.1%), North Maluku (84.2%), and DI Yogyakarta (83.3%). The provinces that have high proportion of household that do not use the toilet are Central Kalimantan (14.3%), South Kalimantan (13.4%), and Papua (11.2%).

Table 3.192

Percentage of Household According to the Place of Defecating and Province, Susenas 2007

Province	Kinds of Place of Defecating			
	Goose neck shape	Flowing water	Pit latrine (Open hole)	None
NAD	59.9	8.5	24.1	7.5
North Sumatera	66.0	9.2	19.9	4.8
West Sumatera	68.4	7.3	17.5	6.8
Riau	60.7	16.6	18.4	4.2
Jambi	59.5	9.7	25.0	5.8
South Sumatera	62.9	8.3	24.1	4.7
Bengkulu	72.8	7.1	15.0	5.1
Lampung	60.0	8.3	30.0	1.7
Bangka Belitung	78.6	12.0	8.6	0.8
Kepulauan Riau	67.2	16.8	14.3	1.7
DKI Jakarta	86.2	11.2	1.8	0.8
West Java	75.2	9.6	8.8	6.4
Central Java	75.2	6.6	15.8	2.4
DI Yogyakarta	83.3	2.4	14.3	0.0
East Java	67.1	7.3	24.0	1.6
Banten	87.7	5.6	4.7	1.9
Bali	95.7	2.8	0.9	0.6
West Nusa Tenggara	79.4	15.8	2.2	2.5
East Nusa Tenggara	39.5	22.6	31.9	6.0
West Kalimantan	66.1	13.0	14.5	6.4
Central Kalimantan	49.3	7.4	29.0	14.3
South Kalimantan	58.5	10.8	17.3	13.4
East Kalimantan	70.5	12.5	13.5	3.4
North Sulawesi	85.1	7.8	5.7	1.4
Central Sulawesi	75.9	11.1	9.3	3.7
South Sulawesi	76.5	9.8	11.2	2.6
Southeast Sulawesi	63.7	6.4	25.7	4.2
Gorontalo	87.8	4.3	5.0	2.9
West Sulawesi	68.8	7.9	18.8	4.5
Maluku	69.6	18.0	5.6	6.7
North Maluku	84.2	7.7	4.2	3.9
West Papua	53.0	26.6	13.8	6.6
Papua	43.0	21.2	24.6	11.2
Indonesia	**68.9**	**9.7**	**16.9**	**4.5**

The proportion of households using toilets varies based on type of residence and the level of household expenditure. (Table 3.193).

Table 3.193
Percentage of Household According to the Place of Defecating and Province in Indonesia, Susenas 2007

Household's Characteristics	Kinds of Place of Defecating			
	Goose neck shape	Flowing water	Pit latrine (Open hole)	None
Type of residence				
Urban	83.9	8.8	5.8	1.5
Rural	56.0	10.5	26.5	7.0
Level of expenditure per capita				
Quintile 1	53.5	11.4	27.4	7.7
Quintile 2	61.8	10.5	22.1	5.6
Quintile 3	68.3	9.9	17.5	4.3
Quintile 4	73.6	9.2	13.6	3.6
Quintile 5	82.0	8.2	7.8	2.1

The proportion of household that use the type of goose neck shape toilet is higher in the urban area (83.9%) compared to the rural area (56.0%). In terms of the level of per capita household expenditure, there is the inclination in which the higher the per capita household expenditure the higher the use the type of goose neck shape toilet.

According to *Joint Monitoring Program WHO/Unicef* , the access of sanitation is classified "good" if the household uses its own facility and has the type of goose neck shape toilet.

Based on the criteria, in table 3.194, nationally, the household that has good access to the sanitation is 43.0%. There are 18 provinces have access that is below the national average for sanitation, and the lowest one is Papua (17.9%), followed by West Papua (25.5%) and North Maluku (31.1%).

Table 3.194
Percentage of Households according to Access to the Sanitation and Province, Susenas 2007

Province	Sanitation access	
	Not good enough	Good*)
NAD	66.9	33.1
North Sumatera	49.9	50.1
West Sumatera	60.0	40.0
Riau	50.4	49.6
Jambi	58.1	41.9
South Sumatera	55.5	44.5
Bengkulu	55.2	44.8
Lampung	60.6	39.4
Bangka Belitung	51.7	48.3
Kepulauan Riau	44.7	55.3
DKI Jakarta	35.9	64.1
West Java	46.8	53.2
Central Java	53.1	46.9
DI Yogyakarta	46.0	54.0
East Java	58.7	41.3
Banten	50.7	49.3
Bali	42.6	57.4
West Nusa Tenggara	70.5	29.5
East Nusa Tenggara	77.1	22.9
West Kalimantan	58.2	41.8
Central Kalimantan	68.5	31.5
South Kalimantan	58.9	41.1
East Kalimantan	42.6	57.4
North Sulawesi	45.0	55.0
Central Sulawesi	65.7	34.3
South Sulawesi	55.2	44.8
Southeast Sulawesi	63.5	36.5
Gorontalo	73.0	27.0
West Sulawesi	70.0	30.0
Maluku	66.6	33.4
North Maluku	69.0	31.0
West Papua	74.5	25.5
Papua	82.1	17.9
Indonesia	**57.0**	**43.0**

*) use own toilet, latrine type (Susenas, 2007).

The proportion of household that has good access to the sanitation varies based on the region and by level of the per capita household expenditure. Table 3.195 shows the proportion of households that have good access to sanitation which in urban is doubled (63.3%), compared to rural areas (30.3%). By level of per capita household expenditure,

the higher the level of household expenditure the higher the proportion of household that have good access to sanitation.

Table 3.195
Percentage of Household according to Access to the Sanitation and Household's Characteristics, Susenas and Riskesdas 2007

Household's Characteristics	Sanitation access	
	Not good enough	Good*)
Type of residence		
Urban	36.7	63.3
Rural	69.7	30.3
Level of expenditure per capita		
Quintile 1	74.9	25.1
Quintile 2	65.4	34.6
Quintile 3	57.7	42.3
Quintile 4	49.5	50.5
Quintile 5	36.5	63.5

*) use own toilet, latrine type (Susenas, 2007).

For the final human waste, the data is taken from 2007 Kor Susenas. The final human waste is classified sanitary in case the facility uses the type of tank/waste water spillway facility(SPAL).

Nationally, the proportion of household that has final human waste using tank/sanitary, is 46.3%, while the rest is thrown to river/sea, holes, pool/paddy fields, and beach/soil (Table 3.196).

The highest proportion in using the sanitary human waste disposal is province of DKI Jakarta (86.0%), and Bali (76.3%). The provinces that have the lower average than national average in using the final sanitary human waster are: NTT, Central Kalimantan, South Kalimantan, Papua, West Sulawesi, Bengkulu, West Kalimantan, Lampung, Jambi, NAD, West Sumatra, West Papua, Central Sulawesi, NTB, Maluku, Southeast Sulawesi, and Gorontalo.

The proportion of household that uses final sanitary human waste disposal varies based on region and by the level of per capita household expenditure.

The proportion of household that uses tank/waste water spillway facility as fecal disposal is higher in the urban area (71.6%) than in rural area (30.5%). While by level of per capita household expenditure, the higher the level of household expenditure the higher the proportion of using tank/waste water spillway facility (SPAL) (Table 3.197).

Table 3.196
Percentage of Household according to Final Sanitary of Human Waste and Province, Susenas 2007

Province	Final Sanitary of Human Waste					
	Tank/ SPAL	Pool/paddy field	River/sea	Hole	beach/ soil	Others
NAD	36.7	63.3	22.2	22.2	12.2	3.1
North Sumatera	69.7	30.3	14.1	20.5	5.5	4.8
West Sumatera	38.8	14.9	30.1	11.5	2.0	2.7
Riau	47.5	2.0	11.7	34.0	4.0	0.9
Jambi	38.1	1.1	31.0	26.9	1.6	1.2
South Sumatera	50.3	2.2	21.4	22.4	2.1	1.6
Bengkulu	34.4	1.5	21.7	33.1	7.3	2.0
Lampung	36.3	3.3	11.4	46.9	1.1	1.1
Bangka Belitung	55.7	0.4	3.9	12.0	25.1	3.0
Kepulauan Riau	53.9	0.6	15.6	25.4	4.0	0.4
DKI Jakarta	86.0	0.7	6.2	5.8	0.0	1.3
West Java	49.5	15.1	22.8	9.6	1.4	1.6
Central Java	49.7	5.4	21.9	20.0	1.9	1.1
DI Yogyakarta	69.9	1.6	7.7	20.0	0.2	0.6
East Java	46.4	1.2	22.0	25.6	4.1	0.7
Banten	54.4	6.6	14.7	7.9	15.1	1.4
Bali	76.3	0.4	6.5	3.7	12.3	0.8
West Nusa Tenggara	41.6	2.3	31.0	7.2	16.9	1.1
East Nusa Tenggara	21.4	0.3	0.8	48.6	22.2	6.7
West Kalimantan	35.3	2.0	24.9	24.1	11.3	2.4
Central Kalimantan	23.8	0.4	45.3	28.2	1.7	0.6
South Kalimantan	32.1	0.6	33.3	31.7	1.2	1.1
East Kalimantan	57.8	0.9	15.5	22.6	2.3	0.9
North Sulawesi	61.6	0.5	11.0	21.0	2.7	3.2
Central Sulawesi	40.0	1.5	24.8	14.6	14.6	4.5
South Sulawesi	53.1	1.6	8.4	18.4	16.8	1.8
Southeast Sulawesi	42.3	0.8	11.7	26.2	16.7	2.1
Gorontalo	43.3	1.1	14.1	13.1	26.1	2.1
West Sulawesi	33.4	0.9	22.7	21.3	20.2	1.6
Maluku	42.2	2.0	12.7	8.8	29.6	4.6
North Maluku	55.7	0.6	3.1	4.3	35.2	1.0
West Papua	39.3	2.1	21.1	17.9	18.4	1.2
Papua	32.7	1.2	7.5	22.7	30.7	5.2
Indonesia	**46.3**	**3.4**	**18.9**	**21.4**	**8.0**	**2.0**

Table 3.197
Percentage of Household according to Final Sanitary of Human Waste and Household's Characteristics in Indonesia, Susenas 2007

Household's Characteristics	Final Sanitary of Human Waste					
	Tank/ SPAL	Pool/paddy field	River/sea	Hole	beach/ soil	Others
Type of Residence						
Urban	71.6	1.9	11.6	11.6	2.0	1.2
Rural	30.5	4.3	23.5	27.4	11.8	2.5
Level of expenditure per capita						
Quintile 1	30.0	4.3	26.1	24.3	12.5	2.8
Quintile 2	38.3	3.8	22.5	23.5	9.7	2.2
Quintile 3	45.6	3.4	19.2	21.8	7.9	2.1
Quintile 4	52.6	3.0	16.1	20.3	6.3	1.7
Quintile 5	65.2	2.2	10.7	16.9	3.8	1.2

3.9.3 Waste Water Spillway Facility.

Data of using the waste water spillway of the household is generated through the interview and observation.

Nationally, 67.7% of the household report using sewage systems at home, both the opened and the closed system. Compared to the data of 2005 Susenas. there has been a significant increase in the households that do not have sewage system. from 25.8% to 32.5% (Table 3.198).

There are 16 provinces having the proportion of households without sewage system higher than national average, the highest is NTT (77.7%),and then South Kalimantan (75.7%), and Central Kalimantan (65.9%).

The proportion of household that does not use sewage system varies based on region and by level of per capita household expenditure.

In the village area, the proportion of household without using the sewage system is nearly tripled (42.9%), compared to the urban area (15.9%). By per capita household expenditure, the higher the level of household expenditure the lower the proportion of households that does not have a sewage system.(Table 3.199)

Table 3.198
Percentage of Household according to kinds of Waste Water Spillway Facility and Province, Riskesdas 2007

Province	Waste water spillway facility		
	Opened	Closed	None
NAD	56.3	17.6	26.1
North Sumatera	52.9	26.6	20.5
West Sumatera	47.6	30.2	22.1
Riau	53.0	21.3	25.7
Jambi	50.3	18.7	31.0
South Sumatera	60.5	11.8	27.7
Bengkulu	69.2	10.7	20.1
Lampung	71.1	12.0	17.0
Bangka Belitung	37.4	16.0	46.6
Kepulauan Riau	47.3	27.4	25.3
DKI Jakarta	25.6	69.6	4.9
West Java	37.9	51.5	10.5
Central Java	43.1	33.1	23.8
DI Yogyakarta	27.4	57.9	14.7
East Java	42.9	34.0	23.2
Banten	44.3	38.0	17.7
Bali	24.3	48.1	27.6
West Nusa Tenggara	38.0	24.7	37.3
East Nusa Tenggara	17.7	4.7	77.7
West Kalimantan	33.5	13.9	52.6
Central Kalimantan	25.4	8.8	65.9
South Kalimantan	17.5	6.8	75.7
East Kalimantan	34.4	21.3	44.3
North Sulawesi	48.5	11.0	40.5
Central Sulawesi	41.8	11.3	46.9
South Sulawesi	42.1	16.4	41.5
Southeast Sulawesi	43.6	9.4	47.1
Gorontalo	39.4	8.1	52.5
West Sulawesi	30.6	14.2	55.2
Maluku	46.7	5.2	48.1
North Maluku	46.2	10.7	43.0
West Papua	34.1	16.7	49.2
Indonesia	**42.3**	**25.2**	**32.5**

Table 3.199
Percentage of Household according to kinds of Waste Water Spillway Facility and Household's Characteristics in Indonesia, Riskesdas 2007

Household's Characteristics	Waste water spillway facility		
	Opened	Closed	None
Type of residence			
Urban	41.9	42.2	15.9
Rural	42.6	14.5	42.9
Level of expenditure per capita			
Quintile 1	42.5	17.4	40.1
Quintile 2	42.8	20.8	36.4
Quintile 3	43.0	23.8	33.2
Quintile 4	42.0	28.3	29.7
Quintile 5	41.6	35.9	22.5

3.9.4 Garbage Disposal

Data of garbage disposal includes the availability of a garbage can inside or outside of home.

Table 3.200 shows that, nationally, there is 26.6% of household that have garbage cans inside of their homes and 45.5% of household keep the garbage can outside of home. The provinces that have the highest percentage not having garbage cans is Gorontalo (inside) and West Kalimantan (outside).

The proportion of household that has the garbage cans varies by type of residence and the level of per capita household expenditure

Table 3.201 shows the proportion of household in the urban area that has the garbage can is higher (36.3% inside and 56.2% outside of home) home compared to those in the rural area (20.5% inside and 38.9% outside of home). By per capita household expenditure, the higher the level of per capita household expenditure the larger those who have garbage can both inside and outside of home.

Table 3.200

Percentage of Household according to the kinds of garbage Place inside or outside of home and Province, Riskesdas 2008

Province	Garbage Place inside of home			Garbage Place outside of home		
	Closed	Opened	None	Closed	Opened	None
NAD	5.9	17.0	77.1	9.7	25.3	65.0
North Sumatera	5.0	11.2	83.9	8.2	49.5	42.3
West Sumatera	16.0	15.0	69.0	17.2	17.1	65.7
Riau	11.4	8.0	80.6	10.8	34.5	54.6
Jambi	5.5	17.4	77.1	6.1	37.9	56.0
South Sumatera	10.4	14.4	75.1	8.8	35.3	55.9
Bengkulu	5.0	23.9	71.0	4.4	44.5	51.1
Lampung	3.2	11.7	85.1	3.7	55.1	41.2
Bangka Belitung	21.0	14.5	64.6	13.1	26.0	60.9
Kepulauan Riau	29.5	14.2	56.2	34.1	23.4	42.5
DKI Jakarta	16.5	16.6	66.8	28.1	34.0	37.9
West Java	8.3	18.7	73.1	8.5	29.1	62.4
Central Java	7.0	26.1	66.9	6.0	58.2	35.8
DI Yogyakarta	11.0	32.4	56.6	9.0	54.9	36.1
East Java	7.8	18.9	73.2	10.5	53.0	36.5
Banten	6.4	15.8	77.8	7.8	33.2	59.0
Bali	6.7	18.3	74.9	5.9	54.9	39.3
West Nusa Tenggara	5.2	13.3	81.4	5.6	31.1	63.3
East Nusa Tenggara	5.0	14.4	80.6	3.1	23.3	73.6
West Kalimantan	7.8	11.5	80.7	4.6	30.3	65.1
Central Kalimantan	7.7	15.6	76.6	3.3	24.7	72.0
South Kalimantan	7.8	23.9	68.3	4.5	19.4	76.1
East Kalimantan	22.2	17.8	60.0	12.8	28.4	58.8
North Sulawesi	12.2	24.0	63.8	5.0	36.7	58.3
Central Sulawesi	5.5	33.0	61.5	2.1	34.5	63.4
South Sulawesi	7.2	27.0	65.9	6.9	27.2	66.0
Southeast Sulawesi	6.5	21.1	72.4	3.2	31.3	65.4
Gorontalo	3.4	10.4	86.3	3.6	48.9	47.5
West Sulawesi	3.9	15.5	80.6	2.5	23.0	74.5
Maluku	10.8	3.7	85.5	9.4	29.3	61.3
North Maluku	5.5	13.3	81.2	3.8	30.2	65.9
West Papua	8.9	13.3	77.8	6.8	28.9	64.3
Papua	8.8	7.7	83.5	4.1	24.0	72.0
Indonesia	**8.5**	**18.1**	**73.4**	**8.2**	**37.3**	**54.5**

Table 3.201
Percentage of Household according to the kinds of garbage Place inside or outside of home and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Garbage Place inside of home			Garbage Place outside of home		
	Closed	Opened	None	Closed	Opened	None
Type of residence						
Urban	15.3	21.0	63.7	15.3	40.9	43.9
Rural	4.3	16.2	79.4	3.8	35.1	61.1
Level of expenditure per capita						
Quintile 1	4.8	15.5	79.7	5.2	34.8	60.1
Quintile 2	6.3	17.0	76.7	6.4	36.0	57.6
Quintile 3	7.8	18.2	74.0	7.3	37.5	55.2
Quintile 4	10.0	19.0	71.1	8.9	38.4	52.7
Quintile 5	14.0	20.9	65.1	13.5	40.5	46.0

3.9.5 Housing

Housing data that is collected and becomes the part of health house requirement is type of house floor, population density, and existing pets in the house. Data on floor type, house floor space and the number of family members are taken from 2007 Kor Susenas, while as for the data on livestock cultivation it is taken from 2007 Riskesdas. The occupancy density is obtained by calculating house floor space in meter square divided the total number of household members.

The result of calculation is classified to conform to the Health Minister Regulations on the healthy house, households fulfill the requirement if >8m²/capita (not dense) and do not fulfill the requirement if <8m²/capita (dense).

Table 3.202 shows, nationally, there is still 12.6% of household with soil floors and 17.5% have dense occupancy. By provincial basis, there are 8 provinces having the proportion of soil house floor higher than the national average in which the highest is NTT(44.4%), Central Java (28.4%), and Papua (27.9%). While the provinces that have the higher proportion of households with denser occupancy than the national average are Papua (51.0%), West Papua (40.8%), and DKI Jakarta (37.7%).

The proportion of household that have house soil floor and dense occupancy varies based on the type of residence and by level of per capita household expenditure.

Table 3.203 shows the proportion of households that have soil floors in the rural area is higher (17.0%) as compared to the urban area (5.5%), while the proportion of house with the high density of occupancy is not different between the rural and in the urban areas.

By the level of per capita household expenditure, the higher the level of per capita household expenditure the lower the proportion of household that has soil floor and dense occupancy level.

Table 3.202
Percentage of Household according to kinds of House Floor, Occupancy Density and Province, Susenas 2007

Province	Kinds of Floor		Occupancy density	
	Not soil	Soil	>= 8 m^2/ capita	< 8 m^2/ capita
NAD	86,7	13,3	79,5	20,5
North Sumatera	94,5	5,5	80,7	19,3
West Sumatera	96,7	3,3	82,2	17,8
Riau	96,0	4,0	83,3	16,7
Jambi	94,9	5,1	86,1	13,9
South Sumatera	89,7	10,3	76,1	23,9
Bengkulu	90,2	9,8	79,6	20,4
Lampung	80,3	19,7	89,1	10,9
Bangka Belitung	97,7	2,3	89,1	10,9
Kepulauan Riau	94,8	5,2	78,8	21,2
DKI Jakarta	97,5	2,5	62,3	37,7
West Java	93,2	6,8	84,6	15,4
Central Java	71,6	28,4	95,8	4,2
DI Yogyakarta	88,3	11,7	93,2	6,8
East Java	78,9	21,1	92,6	7,4
Banten	89,3	10,7	80,1	19,9
Bali	93,7	6,3	82,5	17,5
West Nusa Tenggara	88,4	11,6	73,6	26,4
East Nusa Tenggara	55,6	44,4	63,5	36,5
West Kalimantan	96,4	3,6	79,3	20,7
Central Kalimantan	96,1	3,9	82,2	17,8
South Kalimantan	97,7	2,3	84,7	15,3
East Kalimantan	95,8	4,2	83,8	16,2
North Sulawesi	91,2	8,8	74,1	25,9
Central Sulawesi	90,3	9,7	78,9	21,1
South Sulawesi	96,0	4,0	84,4	15,6
Southeast Sulawesi	88,9	11,1	78,0	22,0
Gorontalo	92,1	7,9	69,8	30,2
West Sulawesi	91,7	8,3	72,1	27,9
Maluku	81,4	18,6	66,7	33,3
North Maluku	79,4	20,6	87,4	12,6
West Papua	88,6	11,4	59,2	40,8
Papua	72,1	27,9	49,0	51,0
Indonesia	**87,4**	**12,6**	**82,5**	**17,5**

Table 3.203
Percentage of Household according to kinds of House Floor, Occupancy Density and Household's Characteristics, Susenas 2007

Household's Characteristics	Kinds of Floor		Occupancy density	
	Not soil	Soil	>= 8 m^2/ capita	< 8 m^2/ capita
Type of residence				
Urban	94,5	5,5	82,2	17,8
Rural	83,0	17,0	82,6	17,4
Level of expenditure per capita				
Quintile 1	80,9	19,1	65,4	34,6
Quintile 2	85,3	14,7	78,1	21,9
Quintile 3	87,6	12,4	84,6	15,4
Quintile 4	90,1	9,9	89,8	10,2
Quintile 5	93,4	6,6	94,5	5,5

In terms of raising livestock, data were collected by asking all head of household whether they kept poultry, medium livestock (goat, lamb, pig etc) and the bigger livestock (cow, horse, buffalo etc) or pets like dog, cat, and rabbit. If they do, then the observation is done to find out whether the livestock are kept inside the house.

In the table 3.204, nationally, it is clear that 41.7% of the household cultivates poultry, 12.3% cultivates medium livestock, 8.8% cultivates big livestock and 16.9% cultivates animals like dog, cat or rabbit. In terms of the household that kept livestock approximately 10-20% kept them inside the house. The provinces that have high proportion of household involved in raising livestock are NTT, Bali and Papua.

The proportion of household that raises livestock varies based on the type of residence and the level of per capita household expenditure (Table 3.205). The proportion of households that kept their livestock in urban areas is lower as compared to the rural areas. By level of per capita household expenditure, the higher the level of per capita household expenditure the lower the rate of raising livestock, both poultry, medium or big livestock or pets like cat, dog or rabbit.

Table 3.204 Percentage of Household according to Place of Livestock Raising and Province, Riskesdas 2007

Province	Poultry			Medium livestock (goat, lamb, pig etc.)			Big livestock (cow,/buffalo/horse etc.)			Dog/Cat/Rabbit		
	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise
NAD	3,9	51,3	44,7	1,3	12,6	86,1	0,5	11,6	87,9	9,8	3,7	86,6
North Sumatera	2,8	29,8	67,4	0,6	10,8	88,5	0,4	3,3	96,2	8,3	6,6	85,1
West Sumatera	2,6	33,3	64,1	0,3	4,4	95,4	0,4	10,9	88,7	17,0	11,2	71,7
Riau	2,5	26,9	70,6	0,1	2,9	97,0	0,1	2,3	97,6	18,7	4,2	77,2
Jambi	3,1	32,8	64,1	0,2	5,7	94,1	0,2	5,8	94,0	15,1	4,6	80,3
South Sumatera	3,8	29,5	66,8	0,7	4,2	95,1	0,4	2,8	96,8	7,4	2,6	90,0
Bengkulu	5,4	42,3	52,3	0,3	6,0	93,6	0,2	5,7	94,1	9,1	8,8	82,1
Lampung	7,5	44,5	48,0	0,9	14,4	84,7	1,1	11,5	87,4	12,7	3,8	83,4
Bangka Belitung	1,7	27,8	70,5	0,0	0,6	99,3	0,0	0,2	99,8	14,9	6,2	78,9
Kepulauan Riau	1,9	19,5	78,6	0,0	0,9	99,1	0,0	0,7	99,2	13,2	4,3	82,5
DKI Jakarta	1,1	5,2	93,7	0,0	0,3	99,7	0,0	0,1	99,9	2,0	1,5	96,6
West Java	4,4	25,8	69,8	0,7	6,9	92,4	0,2	1,3	98,6	2,9	2,5	94,6
Central Java	15,4	29,8	54,9	3,4	11,6	85,0	3,9	7,0	89,2	4,6	2,4	92,9
DI Yogyakarta	4,3	36,1	59,6	0,5	16,9	82,6	0,2	18,7	81,1	7,1	4,9	88,1
East Java	10,7	36,8	52,6	1,5	12,8	85,7	2,8	17,6	79,6	5,9	3,8	90,3
Banten	4,7	25,5	69,8	0,7	6,8	92,6	0,1	1,3	98,6	3,8	2,1	94,1
Bali	26,9	27,5	45,6	5,8	26,3	67,9	2,2	26,5	71,3	23,4	21,9	54,8
West Nusa Tenggara	8,6	33,7	57,7	0,9	4,7	94,4	0,4	9,0	90,6	2,0	2,1	95,9
East Nusa Tenggara	4,8	63,8	31,4	3,3	56,3	40,4	0,6	15,7	83,7	12,9	31,0	56,1
West Kalimantan	1,9	48,7	49,4	0,3	13,9	85,8	0,1	4,2	95,7	17,7	13,0	69,4
Central Kalimantan	2,2	40,8	57,0	0,3	8,1	91,6	0,1	3,2	96,7	16,2	6,5	77,3
South Kalimantan	2,8	31,3	65,9	0,0	1,3	98,7	0,1	4,0	95,9	13,1	3,8	83,1
East Kalimantan	1,8	29,4	68,8	0,1	6,1	93,8	0,0	2,9	97,1	10,2	6,3	83,4
North Sulawesi	3,5	34,6	62,0	0,3	8,1	91,6	0,1	2,1	97,8	25,0	12,3	62,7
Central Sulawesi	1,9	46,3	51,8	0,4	16,3	83,3	0,1	7,9	91,9	14,9	9,0	76,1
South Sulawesi	14,0	40,7	45,3	1,8	8,8	89,4	2,0	9,0	89,0	13,2	11,8	75,0
Southeast Sulawesi	3,1	39,8	57,1	0,2	3,5	96,3	0,3	5,2	94,5	7,3	2,4	90,3
Gorontalo	2,2	50,0	47,8	0,1	5,9	94,0	0,3	16,5	83,2	23,8	10,8	65,4
West Sulawesi	2,7	50,1	47,2	0,8	18,9	80,3	0,2	6,7	93,1	5,0	10,7	84,3
Maluku	3,7	27,0	69,3	0,4	8,6	91,0	0,4	4,5	95,1	6,4	9,0	84,6
North Maluku	2,9	33,2	63,9	0,3	8,0	91,7	0,2	6,8	93,0	5,4	3,9	90,7
West Papua	3,7	30,1	66,1	1,5	6,3	92,2	0,6	3,7	95,7	11,4	22,4	66,1
Papua	3,3	35,2	61,5	6,6	26,8	66,5	0,3	5,1	94,6	8,9	17,6	73,5
Indonesia	**6,5**	**35,2**	**58,4**	**1,3**	**11,0**	**87,7**	**1,0**	**7,8**	**91,1**	**9,9**	**7,0**	**83,0**

Table 3.205
Percentage of Household according to Place of Livestock Raising and Household's Characteristics, Riskesdas 2007

Household's Characteristics	Poultry livestock			Medium livestock (goat, lamb, pig etc.)			Big livestock (cow,/buffalo/horse etc.)			Dog/Cat/Rabbit		
	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise	Inside the house	Outside the house	Does not raise
Area type												
Urban	4,3	19,4	76,3	0,4	3,6	96	0,3	2,1	97,6	6,6	4,2	89,2
Rural	7,8	45	47,2	1,8	15,7	82,5	1,5	11,4	87,1	12	8,8	79,2
Level of expenditure per capita												
Quintile 1	7,8	39	53,2	1,7	13,8	84,5	1,4	9,6	89,0	10,5	7,8	81,6
Quintile 2	7,2	38,4	54,4	1,5	12,5	86	1,3	9,2	89,5	10,5	7,4	82,1
Quintile 3	6,8	36,3	56,9	1,3	11,3	87,4	1,2	8,3	90,6	10,3	7,0	82,7
Quintile 4	6,0	34,1	59,9	1,0	9,6	89,4	0,8	7,2	92,0	9,8	6,7	83,6
Quintile 5	4,7	27,8	67,6	0,6	7,0	92,3	0,5	4,8	94,7	8,7	6,0	85,3

3.10 Mortality

The interviewers tried to find out the causes of mortality in the households during the previous 3 years prior to collecting data . The mortality that took place in 12 months prior to the survey (time range 1 July 2006-31 January 2008) is followed up by interviewing the member of deceased family members using verbal autopsy questionnaire.

One year mortality history data collected from 33 provinces during the above period totaled 4,552 deaths. Therefore, the crude death rate is 4 per 1000 which is 4,552 deaths from 1,163,196 people (258.488 households were interviewed x 4.5 average household members).

3.10.1 The mortality case distribution

From the above 4,552 mortality cases, only 4,014 cases (88.2%) where the household members can be interviewed completely, including 75 cases of mortality at birth.

Table 3.206
Distribution of Mortality cases according to Age group and sex, Riskesdas 2007

Age group	Male		Female		Total	
	n	%	n	%	n	%
Below 1 year	210	9.4	144	8.4	354	9.0
1-4 years	55	2.5	48	2.8	103	2.6
5-14 years	49	2.2	27	1.6	76	1.9
15-24 years	89	4.0	48	2.8	137	3.5
25-34 years	89	4.0	89	5.2	178	4.5
35-44 years	120	5.7	124	7.2	250	6.3
45-54 years	298	13.4	213	12.4	511	13.0
55-64 years	381	17.1	251	14.6	632	16.0
65-74 years	460	20.7	316	18.4	776	19.7
75 years and above	468	21.0	454	26.5	922	23.4

Mortality distribution from the perspective of age and sex is given in table 3.206 and shows that the proportion of mortality under 1 year old reaches 9.0%, the proportion of mortality at 5-14 years is the lowest, and from that age cohort mortality starts increasing for all subsequent age cohorts. The proportion of mortality at 45-74 years to man is higher than woman, whereas the proportion of mortality at above 75 years old to woman is higher than man.

Table 3.207 compares the proportion of mortality by region. At the group of young age (under 15 yrs old), the proportion of mortality in the rural area is higher than in the urban area, while in terms of age group of 45-74 yrs old in the urban is higher than in the rural.

Table 3.207
Distribution of Mortality cases according to Age group and Area type, Riskesdas 2007

Age group	Urban area		Rural area		Total	
	n	%	n	%	n	%
Below 1 year	104	6.3	250	11.0	354	9.0
1-4 years	31	1.9	72	3.1	103	2.6
5-14 years	23	1.4	53	2.3	76	1.9
15-24 years	59	3.6	78	3.4	137	3.5
25-34 years	84	5.1	94	4.1	178	4.5
35-44 years	97	5.9	153	6.7	250	6.3
45-54 years	252	15.3	259	11.3	511	13.0
55-64 years	295	17.9	336	14.7	631	16.0
65-74 years	327	19.8	449	19.6	776	19.7
75 years and above	378	22.9	544	23.8	922	23.4

3.10.2 The mortality of all ages

Table 3.208 shows that the major cause of mortality for all ages is stroke (15.4%), and Tuberculosis (7.5%), Hypertension (6.8%), and Injury (6.5%),

If compared to the result of 1995 SKRT and 2001 SKRT, in terms of 4 groups of caouse of mortality, it seems that during 12 years (1995-2007) and epidemiological transition has occurred that followed the demography transition. This process will continue. The mortality proportion caused by non-communicable disease will get higher. On the other side, the proportion of communicable disease has decreased, although the reduction for the last 6 years is small. Maternal/prenatal condition in the last 7 (seven) years does not show the reduction, and the mortality caused by injury has no change.

Graph 3.1 indicates that the proportion of communicable disease in Indonesia within 12 years has declined one third, from 44% to 28%, while on the other hand, the proportion of non communicable disease has increased significantly from 42% to 60%. The proportion of maternal/pre-natal problems within the last 6 years has not declined, therefore it needs special attention to improve this area.

Table 3.209 shows the sequence of communicable and non-communicable disease at all ages. Communicable disease is dominated by tuberculosis, chronic hepatitis, pneumonia and diarrhea, while non-communicable disease is dominated by stroke, hypertension, diabetes mellitus, and tumor.

Table 3.208.
Pattern of Mortality Reason of all Ages, Riskesdas 2007

Mortality causes	Proportion of mortality (%)
Stroke	15.4
TB	7.5
Hypertension	6.8
Injury	6.5
Perinatal	6.0
Diabetes Mellitus	5.7
Severe Tumor	5.7
Liver Disease	5.1
Ischemic heart disease	5.1
Respiratory channel Disease	5.1
Heart disease	4.6
Pneumonia	3.8
Diarrhea	3.5
Ulcus ventriculli and ulcus duodeni	1.7
Typhoid	1.6
Malaria	1.3
Meningitis Encephalitis	0.8
Congenital malformations	0.6
Dengue	0.5
Tetanus	0.5
Septicemia	0.3
Malnutrition	0.2

Graph 3.1
Mortality Distribution on all ages according to Disease group, SKRT (HHS) 1995-2001 and Riskesdas 2007

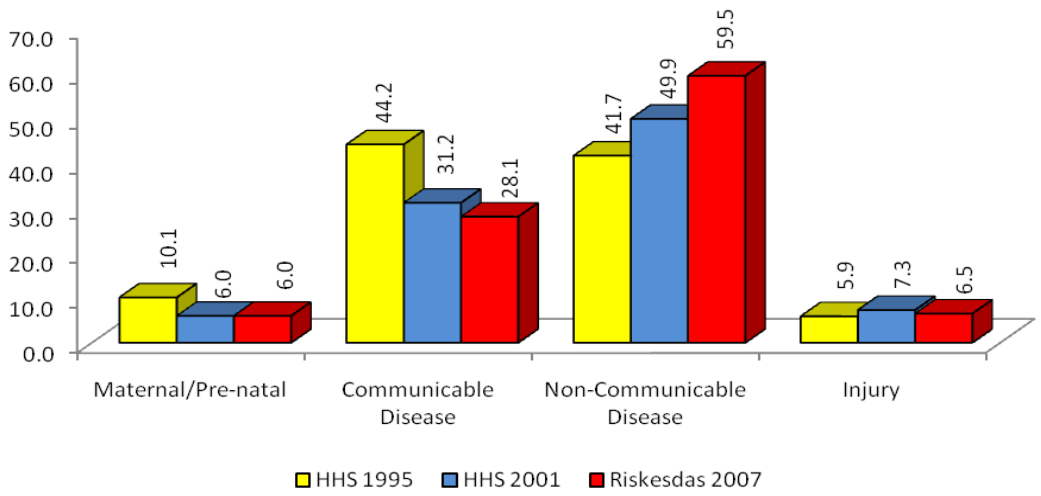

Table 3.209.
The Proportion of Communicable and Noncommunicable Diseases on all Ages, Riskesdas 2007

No	Communicable Disease (n=1.080)	%	Noncommunicable Disease (n=2.285)	%
1	TB	27.8	Stroke	26.9
2	Liver Disease	19.1	Hypertension	12.3
3	Pneumonia	14.4	Diabetes mellitus	10.2
4	Diarrhea	13.2	Severe Tumor	10.2
5	Typhoid	6.0	Ischemic heart disease	9.3
6	Malaria	4.6	Chronic Obstructionary Pulmanary Disease	9.2
7	Meningitis/encephalitis	3.2	Other hearth diseases	7.5
8	Dengue	2.1	Ulcus ventriculli and ulcus duodeni	3.4
9	Tetanus	1.9	Congenital malformations	1.0
10	Septicemia	1.2	Malnutrition	0.4

3.10.3 Mortality by age group

a. Mortality at 0-28 days (Neonatal)

The total number of prenatal mortality in 33 provinces at the age 0-6 days is 217 cases, mainly still birth plus infant mortality. The proportion of still birth is quite high (34.6%) or 75 mortality cases of all prenatal mortality. And the rest, the infant mortality at the age 0-6 days (called the early mortality of neonatal infant), totals 142 cases.

The total of neonatal mortality at the age 0-28 days, totaled 181 cases. Compared to all neonatal mortalities, then the early mortality of infant (0-6 days) totaled 78.5%. The largest proportion is caused by the disturbance/respiratory disorders, the 2nd and the 3rd cause of mortality is because of premature and sepsis (Table 5.2). The handling of new infant births should be focused on improvement of village midwife skills to handle asphyxia for the new born infant. The proportion of premature infant mortality is quite high (32.4%) which suggest that the handling of a premature baby is not satisfactory, or due to other reason such as the late arrival or reluctance to utilize medical care.

Neonatal infant mortality from 7-28 days is 39 cases. Most are caused by sepsis (20%) (Table 3.210).

In terms of perinatal mortality, the mother's health status during pregnancy and delivery most often contributes to the health condition of the infant. By finding out the disease/health problems during the pregnancy, the preventive action or the medical/nutritional intervention should be given to the mother during her pregnancy. Related to the infant that is stillbirth or experienced early neonatal mortality (at the age of 0-6 days), the interviewer then asked the question whether the infant's mother experienced health problem during her pregnancy.

From the 217 cases of prenatal mortality, 96.8% of perinatal infant's cases mother had health problems during their pregnancy. The most diseases experienced by pregnant mother with a still birth infant were maternal hypertension (24%), complication during the childbirth process (17.5%). While the disease of pregnant mothers for infants dying 0-6

days, is premature rupture of fetal membrane (23%), and maternal hypertension (22%) (Table 3.211)

Table 3.210
Proportion of mortality by Age group of 0-6 days and 7-28 days

No	0-6 days (n=142)	%	7-28 days (n=39)	%
1	Respiratory disorders	35.9	Sepsis	20.5
2	Premature	32.4	Congenital malformations	18.1
3	Sepsis	12.0	Pneumonia	15.4
4	Hypothermia	6.3	Respiratory distress syndrome (RDS)	12.8
5	Bleeding disorder and yellow coloration of the skin	5.6	Prematurity	12.8
6	Post mature	2.8	Yellow coloration of the skin	2.6
7	Congenital malformations	1.4	Injury born	2.6
8			Tetanus	2.6
9			Nutrition Deficiency	2.6
10			Sudden infant death syndrome	2.5

Table 3.211
Proportion of mother's main factors to Stillbirth and infant mortality on 0-6 days, Riskesdas 2007

No	Stillbirth (n=75)	%	0-6 days (n=142)	%
1	Maternal Hypertension	23.6	Premature rupture of fetal membrane	23.0
2	Pregnancy and Delivery complications	17.5	Maternal Hypertension	21.8
3	Premature rupture of fetal membrane	12.7	Pregnancy and Delivery complications	16.0
4	Ante partum bleeding	12.7	Maternal nutrition disorder	10.3
5	Maternal injury	10.9	Multiple pregnancy	6.9
6	Breech delivery	5.5	Ante partum bleeding	6.9
7	Multiple pregnancy	3.6	Breech delivery	5.7
8	Intrapartum infection	3.6	Intrapartum infection	3.4
9	Other position disorders during pregnancy and delivery	3.6	Umbilical cord twist	2.3
10	Umbilical cord twist	1.8	Other position disorders during pregnancy and delivery	1.1

b. Mortality of infant at the age of 29 days

The mortality of post neonatal and below 5 year infant was dominated by communicable diseases, with over 50% of the diseases in this age group being caused by diarrhea and pneumonia. In the case of post neonatal infant, the focus should be on congenital heart disorder and hydrocephalus (6%), while the mortality cause of below 5 years infant is measles (6%), sink (5%), tuberculosis (4%) (Table 3.212).

Table 3.212
Proportion of Infant Mortality Cause on the Age of 29 days-4 years, Riskesdas 2007

No	29 days-11 months (n=173)	%	1-4 years (n=103)	%
1	Diarrhea	31.4	Diarrhea	25.2
2	Pneumonia	23.8	Pneumonia	15.5
3	Meningitis/encephalitis	9.3	Necroticans Entero Collitis (NEC)	10.7
4	Digestion disorder	6.4	Meningitis/encephalitis	8.8
5	Congenital cardiac disorder and hydrocephalus	5.8	Dengue	6.8
6	Sepsis	4.1	Measles	5.8
7	Tetanus	2.9	Sink	4.9
8	Malnutrition	2.3	TB	3.9
9	TB	1.2	Malaria	2.9
10	Measles	1.2	Leukemia	2.9

c. The mortality of above Five years old child

The proportion of the big three mortality cause at the group age of above 5 years in the urban area is the noncommunicable disease such as: stroke, diabetes mellitus, and hypertensive disease. The mortality proportion due to tuberculosis is on the 4th rank in the urban area. As for in the rural area, stroke and tuberculosis are the 1st and 2nd rank, totaling 16% and 9% (Table 3.213).

The mortality pattern for the group age of 5-14 years in the urban area differs from the rural area. The biggest component of mortality in the urban area is Dengue (30%), while in the rural area it is diarrhea and pneumonia (11% each). Mortality risk due to traffic accident is twice as high in the rural areas than in the urban area. And there are a lot of mortalities in the village area that caused by fall and drowning totaling 8% each (Table 3.214).

Table 3.213
Proportion of Mortality Cause on the age of above 5 year according to Area type, Riskesdas 2007

No	Urban (n=1,515)	%	Rural (n=1,966)	%
1	Stroke	19.4	Stroke	16.1
2	Diabetes mellitus	9.7	TB	9.1
3	Hypertension	7.5	Hypertension	8.3
4	TB	7.3	Chronic Respiratory channel disease	7.1
5	Ischemic heart disease	6.5	Severe Tumor	6.6
6	Severe Tumor	5.8	Liver disease	6.0
7	Liver disease	5.5	Ischemic heart disease	5.6
8	NEC	5.3	NEC	5.4
9	Other heart diseases	5.1	Other heart diseases	4.7
10	Chronic Respiratory channel disease	4.7	Diabetes mellitus	4.4

Table 3. 214
Proportion of Mortality Cause on the Age Group of 5-14 years According to Area Type, Riskesdas 2007

No	Urban (n=23)	%	Rural (n=53)	%
1	Dengue	30.4	Diarrhea	11.3
2	Typhoid	13.0	Pneumonia	11.3
3	Meningitis	13.0	Malaria	9.4
4	Pneumonia	13.0	Traffic accident	9.4
5	Fall	8.7	Liver disease	7.5
6	Severe Tumor	8.6	Fall	7.5
7	Traffic accident	4.3	Drown	7.5
8	Measles	4.3	NEC	7.5
9	Other Infectious and parasite diseases	4.3	Typhoid	3.8
10			Renal Failure	3.8

The proportion of disease that cause the mortality at the age group of 15-44 years on the type of region basis shows that the urban and the rural area have the same pattern namely: the top ranking are traffic accident, liver and tuberculosis. For this age group, the proportion of noncommunicable disease such as stroke, ischemic cardiac/heart disease is the mortality causes in the urban and the rural areas.

Table 3.215
Proportion of Mortality Cause on the Age Group of 15-44 Years According Area type, Riskesdas 2007

No	Urban (n=240)	%	Rural (n=325)	%
1	Traffic accident	13.4	Liver disease	9.9
2	TB	10.5	Traffic accident	9.9
3	Liver disease	8.8	TB	9.0
4	Mortality due to obstetrical cause	5.4	Malaria	6.2
5	Severe Tumor (breast, lever, Cervix, lungs, Uterus)	5.4	Severe Tumor (Cervix. breast. Uterus. Liver)	4.3
6	Diabetes mellitus	4.2	Ischemic heart disease	4.3
7	Stroke	4.2	Ulcus ventriculli and ulcus duodeni	4.0
8	Ulcus ventriculli and ulcus duodeni	4.2	Stroke	3.7
9	Hypertension	3.3	Typhoid	3.4
10	Other heart diseases	2.9	Chronic Respiratory channel disease	3.1

In the urban area, the proportion of mortality due to obstetrical cause is higher than in the rural area. In the village area, the proportion of infectious disease as the mortality cause is same as urban area (19%). The proportion of Tuberculosis as the mortality cause is similar both in the urban and in the village area. (Table 3.215).

The proportion of mortality cause at the age group of 15-44 years both to man and woman due to tuberculosis is still high (11% to man, 8% to woman).The highest proportion to man is traffic accident. To woman, the proportion due other direct obstetric deaths is on the 3rd rank totaling 8% (Table 3.216)

Table 3.216
Proportion of Mortality cause on the Age Group of 15-44 years According to Gender, Riskesdas 2007

No	Male (n=298)	%	Female (n=261)	%
1	Traffic accident	16.7	Liver Disease	9.6
2	TB	11.1	TB	7.7
3	Liver Disease	9.5	Other Obstetrical causes	7.7
4	Malaria	4.9	Severe tumor on cervix and breast	7.7
5	Stroke	4.6	Ulcus ventriculli and ulcus duodeni	5.0
6	Ischemic heart disease	4.3	Traffic accident	5.0
7	Typhoid	4.3	Malaria	5.0
8	Other heart diseases	3.0	Diabetes mellitus	4.2
9	Diabetes mellitus	2.6	Hypertension	4.2
10	Fall	2.6	Typhoid	3.5

By type of residence, the proportion of mortality cause due to infectious disease in the age group of 45-54 years is higher in the rural areas (25%) as compared to the urban areas

(14%), while the proportion of noncommunicable disease is higher in the urban area (62%) than in the village area (48%). In terms of communicable disease, the proportion of tuberculosis deaths is higher in the rural areas. Traffic accidents in urban areas is one of the top 10 causes of mortality (Table 3.217).

For the age group of 45-54 years for men and women, the proportion of noncommunicable disease is significantly higher than noncommunicable disease. As for woman, the most common cause of mortality for a noncommunicable disease is diabetes mellitus (16%), whereas the most common cause of mortality for noncommunicable disease for man is stroke (16%). The proportion of tuberculosis deaths for the age group of 45-54 years among men is higher (11%) than woman (9%) (Table 3.218)

At the age group of 55-64 yrs, the pattern of disease causing the mortality in the urban and in the rural areas do not differ, both are dominated by noncommunicable disease. (Table 3.219).

The proportion of mortality cause the age group of 55-64 years by generder shows caused that noncommunicable disease both for man and woman (stroke, diabetes mellitus, hypertension, ischemic cardiac disease) dominates the cause of mortality. The communicable disease that cause mortality are tuberculosis, with men and women having the same proportion of deaths by this cause. The proportion of tumor deaths among woman is higher than man (Table 3.220)

Table 3.217
Proportion of Mortality Cause on the Age Group of 45-54 years According to Area type, Riskesdas 2007

No	Urban (n=252)	%	Rural (n=259)	%
1	Stroke	15.9	TB	12.3
2	Diabetes mellitus	14.7	Stroke	11.5
3	Ischemic heart disease	8.7	Hypertension	9.2
4	TB	7.9	Ischemic heart disease	8.8
5	Hypertension	7.1	Liver Disease	8.5
6	Other heart diseases	7.1	Diabetes mellitus	5.8
7	Liver Disease	6.3	Severe Tumor (lungs. liver. breast. Uterus. prostate)	4.4
8	Traffic accident	5.2	Ulcus ventriculli	4.2
9	Severe Tumor (breast, Cervix, Uterus)	4.8	Chronic Respiratory channel disease	4.2
10	Chronic Respiratory channel disease	3.2	Typhoid	3.8

Table 3.218
Proportion of Mortality Cause on the Age Group of 45-54 years
By Gender, Riskesdas 2007

No	Male (n=298)	%	Female (n=213)	%
1	Stroke	15.7	Diabetes mellitus	16.3
2	TB	11.0	Stroke	11.0
3	Liver Disease	9.0	Ischemic heart disease	9.1
4	Ischemic heart disease	8.7	Hypertension	8.6
5	Hypertension	8.0	TB	8.6
6	Diabetes mellitus	6.0	Severe Tumor (lungs. liver. breast. cervix. uterus)	7.1
7	Traffic accident	4.3	Other heart diseases	6.2
8	Chronic Obstructionary Pulmanary Disease	3.7	Liver disease	5.3
9	Typhoid	3.0	Pneumonia	3.8
10	Ulcus ventriculli	2.7	Chronic Obstructionary Pulmanary Disease	3.8

Table 3.219
Proportion of Mortality Cause on the Age Group of 55-64 years
According to Area type, Riskesdas 2007

No	Urban (n=295)	%	Rural (n=337)	%
1	Stroke	26.8	Stroke	17.4
2	Hypertension	8.1	Hypertension	11.4
3	TB	7.1	TB	10.5
4	Liver disease	6.1	Liver disease	8.4
5	Ischemic heart disease	5.8	Other disease	6.0
6	Ulcus ventriculli	5.1	Ischemic heart disease	5.7
7	Other heart diseases	4.7	Other heart diseases	5.1
8	NEC	3.4	Chronic Obstructionary Pulmanary Disease	4.8
9	Severe Tumor (liver, lungs, cervix, breast, uterus, prostate)	3.2	Severe Tumor (liver. lungs. cervix. breast. uterus. prostate)	3.9
10	Other diseases	2.7	NEC	3.3

Table 3.220
Proportion of Mortality Cause on the Age Group of 55-64 years According to Gender, Riskesdas 2007

No	Male (n=381)	%	Female (n=251)	%
1	Stroke	22.5	Stroke	20.7
2	Diabetes mellitus	10.5	Diabetes mellitus	12.0
3	TB	9.2	Hypertension	11.6
4	Hypertension	8.6	TB	9.2
5	Liver disease	8.1	Liver disease	6.4
6	Ischemic heart disease	7.6	Severe Tumor (liver. lungs. breast. cervix. uterus)	6.0
7	Other heart diseases	5.8	Chronic Obstructionary Pulmanary Disease	5.6
8	Chronic Obstructionary Pulmanary Disease	4.7	Other heart diseases	3.6
9	NEC	3.4	NEC	3.6
10	Severe Tumor (liver, lungs, prostate, brain)	2.3	Ischemic heart disease	2.8

The proportion of mortality for the age group of 65 years and above caused by noncommunicable disease is lower in the urban areas (59.5%) than in the rural areas (57%). The infectious disease mortality in the urban areas is due to respiratory system disorder such as tuberculosis, hepatitis, and pneumonia. The proportion of infectious disease mortality pattern for this age cohort is not too different between urban and rural areas.(Table 3.221)

Table 3.221
Proportion of Mortality Cause in the Age cohort of 65 Years and above According to Area Type, Riskesdas 2007

No	Urban (n=705)	%	Rural (n=993)	%
1	Stroke	23.5	Stroke	21.8
2	NEC	9.2	Chronic Obstructionary Pulmanary Disease	10.2
3	Hypertension	9.0	Hypertension	9.5
4	Ischemic heart disease	7.8	TB	8.1
5	Diabetes mellitus	7.3	NEC	7.6
6	Chronic Obstructionary Pulmanary Disease	6.5	Other heart disease	6.3
7	TB	6.3	Ischemic heart disease	5.5
8	Other heart diseases	5.4	Diabetes mellitus	4.0
9	Liver disease	4.0	Pneumonia	3.5
10	Pneumonia	3.3	Liver disease	3.0

The cause of mortality for the age of 65 years or above for both for men and women, is primarily noncommunicable disease. The pattern of disease mortality for this age group is similar to younger age group. The proportion of mortality cause by the noncommunicable disease is higher for woman than man (Table 3.222).

Table 3.222
Proportion of Mortality Cause on the Age Group of above 65 Years According to Gender, Riskesdas 2007

No	Male (n=928)	%	Female (n=770)	%
1	Stroke	20.9	Stroke	24.4
2	Chronic Obstructionary Pulmanary Disease	10.5	Hypertension	11.2
3	TB	8.9	NEC	9.6
4	Hypertension	7.7	Chronic Obstructionary Pulmanary Disease	6.6
5	NEC	7.0	Diabetes mellitus	6.0
6	Ischemic heart disease	6.9	Ischemic heart disease	6.0
7	Other heart diseases	5.9	Other heart diseases	5.9
8	Diabetes mellitus	4.9	TB	5.6
9	Liver disease	4.4	Pneumonia	3.0
10	Pneumonia	3.8	Liver disease	2.2

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ATTACHMENT

HOUSEHOLD AND INDIVIDUAL QUESTIONNAIRES