By the Numbers: Major Health Problems in the Deep South

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Amid the impact of stunted development as well as the violence in the Deep South, local health professionals have been working hard to combat disease and improve communities’ well-being. Despite their hard work, however, disparities in health indicators remain between the South and other non-conflict areas of Thailand, as the following analysis on the successes and challenges in health care in the Deep South illustrate. Although the geographical areas that are off-limits to government staff because they are insurgent-controlled have reduced over the past decade, as pointed out in chapter 6 on the challenges and dilemmas in delivering health care, certainly the lack of access to health professionals has had an impact on health outcomes. But the socio-economic conditions of the Deep South likely heavily influence the health situation as well, if not more so.

While the so-called Deep South and its high level of conflict and violence refers to Pattani, Yala and Narathiwat provinces and the four districts of Songkhla province (Chana, Thepha, Na Thawi and Saba Yoi), many of the statistics cited in this chapter refer to all five provinces covered by the Southern Border Provinces Administrative Office, which includes the whole of Songkhla and Satun. In certain surveys, however, data collection was done exclusively in the conflict area and the non-conflict areas of Songkhla and all of Satun province were not included.

Population demographics for the Deep South

The majority of the population in the Deep South is Muslim, with approximate proportions at 82 per cent in Pattani, Narathiwas and Yala provinces and 46 per cent in Satun and Songkhla provinces. The percentage of households living under the national poverty line in 2009 was 15 per cent, 12 per cent and 4 per cent in Yala, Narathiwat and Pattani, respectively. Among all 76 provinces of Thailand, the three southern provinces rank 32nd, 49th and 52nd in terms of per capita income.2

The total population in the southern provinces of Songkhla, Satun, Pattani, Narathiwat and Yala in 2013 was slightly more than 3.6 million. The population pyramid (figure 1) reflects slightly declining fertility and longer life expectancy, indicated by a high dependency ratio.3 In 2012, the life expectancy at birth of the population in Pattani Province was 60.6 years.

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2 Ibid.

among males and 67.3 years among females,\textsuperscript{4} lower than the life expectancy at birth for the overall Thai population, at 71.9 years for males and 78.8 years for females in the same year.\textsuperscript{5}

The population growth was constant from 2008 to 2012, at 1.2 per cent per year.\textsuperscript{6} The crude birth rate has been stable since 2008, ranging between 17.5 and 19 per 1,000 population. The crude mortality rate was 5.5 per 1,000 population, slightly below the national average, in 2012.\textsuperscript{7}

\textbf{Figure 1: Population pyramid of the Southern Provinces, Thailand, 2012}

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{population_pyramid.png}
\caption{Population pyramid of the Southern Provinces, Thailand, 2012}
\end{figure}

\textit{Source: National Statistical Office, 2012.}

\section*{Maternal and child health}

\textbf{Maternal and infant mortality}

As illustrated in figure 2, the maternal mortality rate (MMR) fluctuated between 2003 and 2011, remaining higher than the national indicator (at fewer than 18 per 100,000 live births). In 2012, the recorded MMR in the southern provinces was 30.5 per 100,000 live births.\textsuperscript{8} The MMR was higher in Pattani, Yala and Narathiwat (also known as the Deep South, the conflict-affected areas) than in Songkhla and Satun (non-conflict areas). Intra-partum and post-partum haemorrhaging were the major causes of maternal deaths.\textsuperscript{9}

\begin{itemize}
\item \textsuperscript{5} Bureau of Policy and Strategy, Health statistics, Nonthaburi: Ministry of Public Health, 2011.
\item \textsuperscript{6} Thailand National Statistical Office, Number of population from registration record, percent change and density by district: 2007–2011, Bangkok: Government of Thailand.
\item \textsuperscript{7} Thailand National Statistical Office, Number of birth and death, crude birth rate, crude mortality rates 2007–2011, Bangkok: Government of Thailand.
\item \textsuperscript{8} Center of Health Promotion Region 12, \textit{The Statistical Report 2006–2012: Maternal mortality rates}. Yala: Center of Health Promotion Region 12.
\item \textsuperscript{9} Department of Health Promotion, \textit{Causes of Maternal Deaths: Reported from Saiyarak Project}. Available at www.saiyairakhospital.com/newdemo/admin/user_department_report.html [accessed on 30 May 2013].
\end{itemize}
In 2010, the United Nations Statistics Division estimated that the infant mortality rate (IMR) in Thailand was 11.4 per 1,000 live births. The IMR in the Deep South ranged between 8.5 and 10.9 per 1,000 live births in 2011, which were better than the national indicator. [From the Editors: underreporting may be more common in these conflict provinces.] Within the subregion, the IMR in the conflict-affected areas has been higher than in the non-conflict areas. The rise in IMR has been observed in Pattani Province since 2005, following the resurgence of violence. The major causes of early infant death (occurring within the first 28 days of life) in 2011 were congenital abnormalities and obstetric complications, including velamentous umbilical cord, antepartum haemorrhaging and intrauterine asphyxia, while infectious diseases are the most common causes of late infancy death.  

**Mortality and morbidity among children younger than 5 years**
The mortality rate for children younger than 5 years (U5MR) in Thailand has declined as a result of better health care and improvement in socio-economic status. In contrast, the U5MR in the Deep South was overall 13.7 per 1,000 live births in 2009, higher than the national and regional averages. The online registration during 2007–2009 showed the U5MR in Pattani, Narathiwat, Yala, Songkhla and Satun provinces at 15, 19.4, 13.4, 12.2 and 8.2 per 1,000 live births, respectively. Again, the U5MR has been higher in the conflict areas.

The pneumonia incidence rate was estimated at 1,541 per 100,000 population. The morbidity rates of measles ranged between 20 and 40 per 100,000 population from 2009 to 2012; two cases of pertussis have been reported; one in Yala in 2010 and one in Songkhla in 2011, while 97 cases of diphtheria, with 27 per cent fatality rate, were recorded from 2007
to 2012. Of all provinces in Thailand, the Deep South has the worst situation of vaccine-preventable diseases.

**Nutritional status**

The nutritional problems among children younger than 5 years require special attention. The prevalence of undernutrition in 2011 was 1.5–2 times higher than that on the national level and above the World Health Organization's threshold for public health concern (underweight > 10 per cent, stunting > 20 per cent, wasting > 5 per cent). The rates of underweight, stunting and wasting among children younger than 5 years in the three southernmost provinces in 2010 were 19.3 per cent, 27.6 per cent and 7.4 per cent, respectively. The prevalence of obesity was 3.6 per cent, slightly lower than the national level. Satun (at 11 per cent) and Songkhla (at 10 per cent) provinces have higher rates of obesity than Pattani (at 5 per cent), Yala (at 5 per cent) and Narathiwat (at 5 per cent) provinces.

Inadequate intake of energy (at 27 per cent) and protein (at 7 per cent) among children younger than 5 years was documented in 2011. Intake of sodium and sugar in 2011 was two times higher than the Thai recommended daily intake, which implies the high risk of future chronic disease, such as cardiovascular disease, diabetes mellitus and renal dysfunction.

The prevalence of iron deficiency anaemia among women in the Deep South, based on a screening of haematocrit of less than 33 per cent in the first antenatal care visit, was constantly high, ranging between 15 and 20 per cent in 2012, which was 1.5–2 times higher than the national indicator (at 10 per cent). Among those pregnant women, 18 per cent had a soil-transmitted helminth infection. Pregnant women living in areas with a high intensity of violence had a higher risk of macro- and micronutrient deficiencies.

**HIV and AIDS**

The annual incidence of AIDS in Thailand has declined, from 55.4 per 100,000 population in 2004 to 0.4 per 100,000 population in 2012. The incidence of AIDS in the Deep South has been below the national estimate and steadily declining, from 31.2 per 100,000 population in 2004 to 0.4 per 100,000 population in 2012.

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in 2004 to 0.06 per 100,000 population in 2012 (figure 3). The cumulative number of AIDS cases in Songkhla, Satun, Pattani, Yala and Narathiwat was reported as 12,484 in 2012, with 2,822 deaths.

Among the AIDS cases, the ratio of males to females was 2.6 to 1 in 2012; with labourers (at 42 per cent), farmers (at 18 per cent) and fishermen (at 7 per cent) the most common occupations. Around 47 per cent of the AIDS patients were aged 25–35 years in 2012. The infection rate among housewives tended to increase during 2007–2011. The prevalence of HIV among children younger than 20 years in the Deep South was 4.8 per cent in 2012.

The incidence of HIV infection among pregnant women in the provinces of the deep South in 2012 was 0.5 per cent and increased to 3.5 per cent among pregnant women who did not attend antenatal care clinics. The incidence of mother-to-child transmission was 3.6 per cent in 2012.

Figure 3. Incidence of AIDS, 2004–2010

Drug addiction
The Ministry of Social Development and Human Security reported that 5.5 per cent of children in Thailand sought treatment for drug addiction in 2012. Estimates from a survey in southern Thailand in 2004 placed the prevalence of illicit substance use among high

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school students in 2002–2004 at 5–7 per cent.\textsuperscript{23} The prevalence of illicit substance use among youth in the five southernmost provinces ranged from 80 to 380 per 100,000 population, two times higher than the national estimate.\textsuperscript{22} Krathom cocktail, typically made by boiling the leaves of a local addictive herb (\textit{Mitragyna speciosa Korth.}) and adding cough syrup, Coca-Cola and a sedative drug, is considered the most common illicit substance used among youth in the area. A significant upward trend for Krathom use was reported among the population in southern Thailand, from 2.3 per cent in 2002 to 6 per cent in 2011.\textsuperscript{24} On the other hand, the rates of methamphetamine use declined, from 2.8 per cent in 2002 to 2.3 per cent in 2004\textsuperscript{22} but increased to 3.4 per cent in 2011.\textsuperscript{23}

\textbf{Chronic diseases}

Non-communicable chronic diseases are the major causes of morbidity and death in Thailand. Among them, hypertension and diabetes mellitus were the most common health problems in 2013 (table 1).\textsuperscript{25} The Bureau of Epidemiology estimated in 2013 the number of patients with non-communicable chronic diseases at 626,073. The country conducts a National Health Examination Survey every five years. However, due to the security reasons, the Deep South provinces have not been covered by the survey for the past ten years. The figures reported by the Ministry of Public Health in table 1 are based on the number of cases attending public health services.

\textit{Table 1. Morbidity of non-communicable chronic diseases per 100,000 population, by province, 2013}

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Songkhla</th>
<th>Pattani</th>
<th>Yala</th>
<th>Narathiwat</th>
<th>Satun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>442.5</td>
<td>345.2</td>
<td>326.5</td>
<td>442.3</td>
<td>456.9</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>202.8</td>
<td>138.1</td>
<td>121.0</td>
<td>143.1</td>
<td>215.9</td>
</tr>
<tr>
<td>COPD</td>
<td>103.3</td>
<td>91.8</td>
<td>99.5</td>
<td>116.4</td>
<td>91.8</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>61.6</td>
<td>57.9</td>
<td>56.6</td>
<td>86.1</td>
<td>71.1</td>
</tr>
<tr>
<td>Stroke</td>
<td>93.5</td>
<td>48.5</td>
<td>56.9</td>
<td>54.5</td>
<td>73.8</td>
</tr>
</tbody>
</table>

\textsuperscript{c}COPD: Chronic obstructive pulmonary disease.

Source: Bureau of Non-Communicable Disease, 2014.

Figure 4 shows the mortality rates from coronary heart disease, stroke, diabetes mellitus and chronic obstructive pulmonary disease. There is a rising trend of deaths from coronary heart disease and stroke.

\textit{Figure 4. Fatality rates, by non-communicable chronic disease and year, 2007–2014}


\textsuperscript{24} Assanangkornchai, S. et al., \textit{Situation of Substance Use in Southern Thailand 2011}, Songkhla: Prince of Songkla University, 2012.

Access to care and use of health services

The expansion of the Universal Health Care Scheme has improved accessibility to health services among Thais, including residents of the Deep South. The accessibility of antenatal and postnatal care of pregnant women in Thailand was 99 per cent since 2009. In the provinces of the Deep South, the rate of early antenatal and postnatal care has improved but remains worse than the national average and has not met the Millennium Development Goal. The rates of pregnant women in the Deep South who had their first antenatal visit during the gestational stage (within the first 12 weeks) and had completed antenatal care visits during their pregnancy were less than 75 per cent and 90 per cent, respectively. Skilled birth attendance during delivery in the Deep South provinces has increased, from 95 per cent in 2007 to 98 per cent in 2012. The rate of skilled birth assistance was lower in Pattani, Yala and Narathiwat than in Satun and Songkhla provinces.

Accessibility and quality of HIV and other chronic disease treatment has improved over time. The coverage of antiretroviral therapy among HIV-infected cases increased, from 66.8 per cent in 2010 to 82.9 per cent in 2013. The quality of care has also improved but remains below the national average. The Nationwide Prevention of Mother-to-Child Transmission programme was launched in 2000 and has reduced the incidence rate of HIV transmission among infants in Thailand from 6.4 per cent in 2001 to 0.7 per cent in 2009. However, early diagnosis of HIV among infants born to HIV-infected mothers in the Deep South has not been achieved. The coverage rate of HIV testing by the DNA Polymerase Chain Reaction test within two months was less than 70 per cent in 2012.


The coverage of the recommended vaccine immunizations among all children in Thailand was more than 80 per cent in 2006 and 2010. However, the accessibility of vaccine immunization among children in the Deep South has been worsening. The health surveys in 2006 and 2010 reported that the coverage was lower than 60 per cent in Pattani, Yala and Narathiwat provinces. This led to the outbreak of several vaccine-preventable diseases during 2007–2012. The low coverage of immunization was associated with the intensity of armed violence. Residents of areas with a high intensity of violent conflict had 2.4 times higher risk to have incomplete immunization in comparison with residents in the non-conflict areas of the South.

Conclusion

Thanks to the dedication of the local health work force, there are certain successes in most of the indicators, although several coverage indicators are still below par. The poor health indicators can be partially explained by the fluctuating physical access that public health officers have had to certain zones controlled by the insurgents. But as well and likely more so, the long-running neglect of economic development in the region, coupled with socio-cultural barriers and inadequate education, have had adverse impact on personal unhealthy behaviours. Poor health, poor coverage of health care, the violence and the socio-economic traps have formed a vicious cycle. It is hoped that the cycle can be broken finally through peace and equitable development, both of which involve health professionals.


32 Jeharsae, R., Effects of Armed Violence on Growth and Development of 1- to 5-year-old Children in Southern Thailand, Songkhla: Prince of Songkla University, 2011.