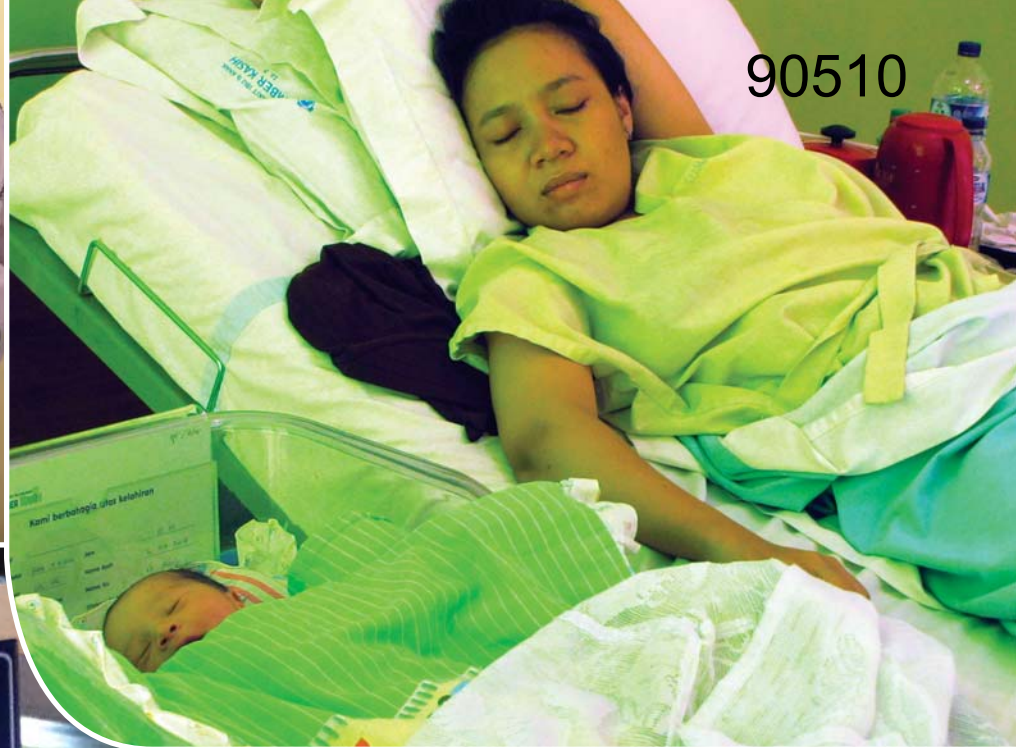


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# UNIVERSAL MATERNAL HEALTH COVERAGE?

Assessing the Readiness of Public Health Facilities to Provide Maternal Health Care in Indonesia

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# Universal Maternal Health Coverage?

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## List of Abbreviations and Acronyms

Askes	: <i>Asuransi Kesehatan</i>
AusAID	: Australian Agency for International Development
BPJS	: <i>Badan Penyelenggara Jaminan Sosial</i>
CAD	: coronary artery diseases
COPD	: chronic obstructive pulmonary disease
CRDs	: chronic respiratory diseases
DALYs	: Disability-adjusted life years
DM	: diabetes mellitus
DRGs	: diagnosis-related groups
GIZ	: German Society for International Cooperation
HFCS	: Health Facility Costing Study
HRH	: human resources for health
INA-CBGs	: Indonesia Case-based Groups
Jamsostek	: <i>Jaminan Sosial Tenaga Kerja</i>
JKN	: <i>Jaminan Kesehatan Nasional</i>
MOH	: Ministry of Health
NCD	: non-communicable diseases
OOP	: out-of-pocket
PETS	: Public Expenditure Tracking Survey
Puskesmas	: <i>Pusat Kesehatan Masyarakat</i> (public primary care facilities)
Rifaskes	: <i>Riset Fasilitas Kesehatan</i>
Riskesdas	: <i>Riset Kesehatan Dasar</i>
SARA	: service availability and readiness assessment
SJSN	: <i>Sistem Jaminan Sosial Nasional</i>
UHC	: universal health coverage
WHO	: World Health Organization





## Executive Summary

# Executive Summary

**Over the period 2011–2013, Indonesia had universal maternal health coverage for its population and utilization of key maternal health services was relatively high, except for in the case of facility-based deliveries** — only about 63 percent of all deliveries occurred at a health facility, even though 83 percent of births were attended by a skilled attendant. This policy paper presents findings from an analysis of the supply-side service readiness of Indonesia’s public health facilities to provide key maternal health (MH) services, such as antenatal care, obstetric care, and neonatal care, and assesses the extent to which Indonesia’s universal maternal health coverage was “real”, in order to inform policy reforms aimed at attaining universal health coverage (UHC) in Indonesia by 2019, which includes the merger of existing schemes into a single-payer umbrella — *Jaminan Kesehatan Nasional* (JKN).

**Key findings include the heterogeneity of maternal health service utilization and service readiness in the country**, with ‘eastern’ provinces<sup>1</sup> associated with lower utilization and public sector dominance, while ‘western’ provinces<sup>2</sup> were associated with higher utilization and private sector dominance. Hence, as the first of eight key policy recommendations, a *Special Focus on Eastern Provinces* is recommended in order to improve MH outcomes in these areas, especially since the service readiness of public facilities is weak and will likely directly impact the ability to meaningfully provide quality MH services. In ‘western’ provinces, there is a need to *Improve Stewardship and Accountability* of private facilities through an independent accreditation process, as well as to clarify the accountability structures of different levels of government, given the decentralized context of government health services.

**Although service readiness differs per region, the overall national picture indicates that there is much room for improvement in levels of maternal health service readiness in Indonesia.** For example, PONE (Pelayanan Obstetri dan Neonatal Esensial Dasar) puskesmas, which are health centers with special responsibility for providing basic emergency obstetric and neonatal care across the country, generally do not have the inputs required to manage and treat obstetric emergencies such as postpartum hemorrhage and neonatal care. Hence, further *Investments in Service Readiness for Maternal Health* are needed across the board. Additional granularity emerges with the finding that deficiencies in diagnostic capacity, medicines and commodities, and specialized equipment, are more pronounced than deficiencies in basic equipment. Important urine tests, injectable antibiotics, and specialized equipment are lacking. Efforts are needed to *Understand Why Supply-Side Deficiencies and Misallocations Exist* as these could be related to how health facilities are financed and/or to a lack of accountability.

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<sup>1</sup> For example, the provinces in Sulawesi, Maluku, Papua, and Nusa Tenggara.

<sup>2</sup> For example, the provinces in Sumatera, Kalimantan, and Jawa.

**Furthermore, there are specific and worrying gaps in the availability of the key commodities required to manage the two obstetric conditions that together account for 55 percent of maternal deaths - hypertensive disorders during pregnancy and hemorrhage.** For example, there are significant deficiencies in the availability of urine tests required to diagnose these conditions. There is also a peculiar deficiency in the availability of the recommended treatment of choice — magnesium sulphate — for managing these conditions, while an alternative, inferior drug is more available (although also with limitations). Similarly, key drugs required to manage hemorrhage are also limited in their availability, especially in ‘eastern’ provinces. These deficiencies, which may reflect more than just a logistics or financing issue and could instead reflect limitations in provider knowledge and demand for these treatments, need to be explored further to *Address Specific Bottlenecks Preventing the Deployment of Specific Life-Saving Maternal Health Interventions*. Similarly, **PONED puskesmas are only a little better than non-PONED puskesmas, and substantially more underequipped than public hospitals, at providing primary care interventions like basic obstetric care (which are intended to be provided at puskesmas-level facilities).** This limits the effectiveness of the referral network system built around PONED puskesmas. Hence it is recommended that efforts to Strengthen the PONED and Referral Systems, which are already part of national policy, be accelerated in an efficient and optimal manner.

**As Indonesia moves forward with the implementation of JKN,** priority should be placed on *Ensuring Non-Interruption of Universal Maternal Health Coverage Benefits* by delaying and effectively coordinating the termination of the Jampersal program, and on *Clarifying the Supply-Side Implications of the Benefit Package*, with particular focus on ensuring clarity in the supply-side specification of the JKN benefit package. These efforts are key to ensure that the focus is not just on increasing the breadth and height of universal maternal health coverage, but also on ensuring that ‘effective depth’ of coverage exists in order to realize improved maternal health outcomes.





# Introduction

# 1. Introduction

**Over the period 2011-2013, Indonesia had universal maternal health coverage for its population.**

Although there were some differences in the specific benefit entitlements, many in the country had maternal health coverage through Askes (the formal public sector social insurance program), Jamsostek (the formal private sector social insurance program), Jamkesmas (the non-contributory social insurance program for the poor and near-poor), or through Jamkesda (the local government-financed social insurance programs that complement Jamkesmas in several districts and provinces). In addition, anyone not covered by existing insurance programs had coverage via Jampersal, a special program financed by the central government that provided a comprehensive maternal health benefit package. Since 2014, most social insurance schemes (including Askes, Jamsostek, and Jamkesmas) have been merged under a single-payer umbrella – *Jaminan Kesehatan Nasional* (JKN) – and Jampersal has been dismantled.

**Utilization of most key maternal health services is relatively high in Indonesia.** Latest data from the 2012 *Indonesia Demographic and Health Survey* (IDHS) indicate that 96 percent of mothers received antenatal care (ANC) from skilled providers, with 88 percent of all pregnant women receiving the WHO-recommended four or more ANC visits during their last pregnancy.<sup>3</sup> In addition, 83 percent of all births occurred with the assistance of a skilled attendant, and 80 percent of mothers received postnatal care (PNC) within two days following delivery. Facility-based deliveries, however, remain relatively low: only about 63 percent of all deliveries occurred at a health facility in Indonesia.

**Recent progress notwithstanding, and despite the relatively high utilization rates for most key maternal health services, the level of maternal mortality remains high in Indonesia,** especially in provinces such as West Papua, North Maluku, Papua, Gorontalo, West Sulawesi, Maluku, and South Kalimantan. In general, for a variety of reasons, high utilization of maternal health services need not translate into improvements in maternal health outcomes.<sup>4</sup> High fertility rates, poor health and nutrition at the time of conception, and high levels of adolescent pregnancies can increase the risk of complications during pregnancy and childbirth. In addition, poor levels of service delivery—in terms of inputs, ability, and effort of health care providers—can lead to high maternal mortality outcomes despite high levels of utilization of maternal health services.<sup>5</sup> In Indonesia, previous assessments indicate that continued use of traditional birth attendants, poor access to emergency obstetric services, and poor quality of health care have contributed to high levels of maternal mortality.<sup>6</sup>

**This policy paper assesses the supply-side readiness of Indonesia’s public health facilities in providing key maternal health services such as ANC as well as basic and comprehensive emergency obstetric care.** Given universal maternal health coverage over the period 2011-2013, and using analyses of facility-

<sup>3</sup> Indonesia Demographic and Health Survey 2012. Jakarta: BPS, BKKBN, Kemenkes, and ICF International.

<sup>4</sup> Souza, JP et al. 2013. “Moving beyond essential interventions for reduction of maternal mortality (the WHO multicountry survey on maternal and newborn health): a cross-sectional study.” *Lancet* 381: 1747-55.

<sup>5</sup> This conceptualization of service delivery follows that of the WB’s Service Delivery Indicators program being implemented in Africa.

<sup>6</sup> World Bank. 2010. “...and then she died’: Indonesia maternal health assessment.” Jakarta: World Bank



level data, the focus in the paper is on assessing to what extent Indonesia's universal maternal health coverage is "real". What were the benefits provided for maternal health under the different social health insurance programs? Were there clear facility-level guidelines for provision of maternal health services and how did these compare with the World Health Organization's (WHO) Service Availability and Readiness Assessment (SARA) guidelines?<sup>7</sup> Did facilities have the minimum inputs to be able to adequately provide ANC and basic and emergency obstetric services as stipulated in the benefit packages of the various social insurance programs? If not, where are the biggest deficiencies and what might be potential ways of overcoming them? Assessing supply-side readiness for key maternal health services is a key input to help inform policy reforms aimed at attaining universal health coverage (UHC) in Indonesia by 2019. Ensuring the supply-side readiness of Indonesia's health system, incorporating lessons from the past experiences of implementing universal maternal health coverage under the different social health insurance programs, will be one key factor in ensuring that implementation of UHC results in improvements in health outcomes, including for maternal health.<sup>8</sup>

**The remainder of the policy paper is structured as follows:** The section *Maternal Health in Indonesia* provides some background on maternal health in Indonesia and on intended reforms to attain UHC by 2019. *Assessing Universal Maternal Health Coverage in Indonesia* provides information on maternal health benefits under existing social health insurance programs. *Public Facility Supply-Side Service Readiness for Maternal Health* outlines the supply-side implications of maternal health coverage using national guidelines as well as the WHO's SARA framework, focusing specifically on ANC as well as basic and emergency obstetric care services and presents an assessment of service readiness using facility-level data. The report then concludes with policy implications in the final section, *Policy Implications and Conclusions*.

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<sup>7</sup> WHO's SARA is a health facility assessment toolkit that is designed to help collect and analyze information on key aspects of service delivery in a health system such as the availability of key human resources and infrastructure resources as well as basic equipment, basic amenities, essential medicines, diagnostic tools, and the readiness of facilities to provide health-care interventions for tracer conditions; for more details see: WHO. 2012. *Measuring Service Availability and Readiness: A Health Facility Assessment Methodology for Monitoring Health System Strengthening*. Geneva: World Health Organization.

<sup>8</sup> This is one in a series of policy papers on service readiness; another companion paper focuses on non-communicable diseases (NCDs).





# Maternal Health in Indonesia

## 2. Maternal Health in Indonesia

The Republic of Indonesia is an archipelago of almost 18,000 islands encompassing 33 provinces and special administrative regions with over 238 million people. There are hundreds of distinct ethnolinguistic groups which reside in areas as diverse as densely populated Java to sparsely populated regions in Kalimantan and Papua.

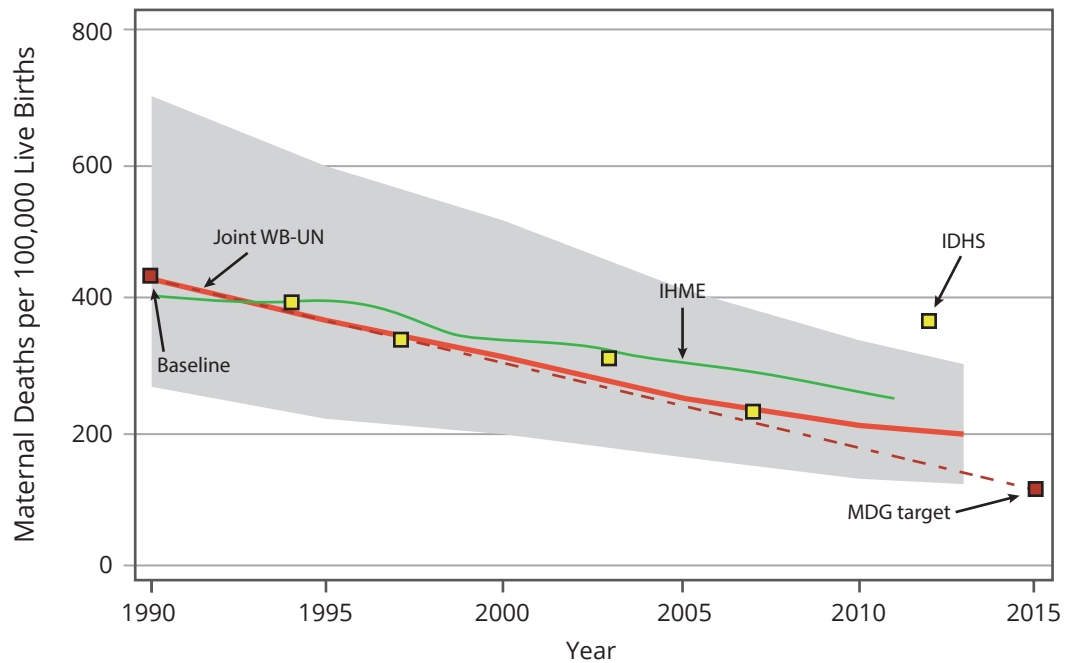
### 2.1 Maternal Mortality

**By most estimates, Indonesia has made steady and significant progress in attaining reductions in maternal mortality in the past few decades.** Recently released joint United Nations-World Bank (UN-WB) data indicates that Indonesia's maternal mortality rate (MMR) declined by an average of 3.5 percent per year over the period 1990–2013 (Figure 1). Estimates from an Institute of Health Metrics and Evaluation (IHME) model indicate an annual decline of 1.9 percent per year 1990 to 2011. Data from the 2012 *Indonesia Demographic and Health Survey* (IDHS) indicates a decline of 3.0 percent per year over 1990–2007 (albeit followed by an increase over the period 2007–2012) (Figure 1). By comparison, in order for Indonesia to meet the United Nations Millennium Development Goal 5 (MDG5) target of reducing maternal mortality by 75 percent over 25 years, a 5.4 percent reduction in the maternal mortality rate per year is implied and needed. The decline in maternal mortality in the past few decades is likely a result of improvements in general socioeconomic conditions, as well as government initiatives specifically targeting maternal health. In addition to improving financial access via the expansion of social health insurance coverage, Indonesia has implemented several programs that include improving access to family planning services, overhauling the national midwifery program, the introduction of special “waiting rooms” for supervised deliveries in remote villages, and additional financing for puskesmas in regions with the poorest maternal health indicators.<sup>9</sup>

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<sup>9</sup> Webster, P. 2012. “Indonesia makes maternal health a national priority.” *Lancet* 380: 1981-1982.

FIGURE 1: MATERNAL MORTALITY RATIO IN INDONESIA, 1990–2015

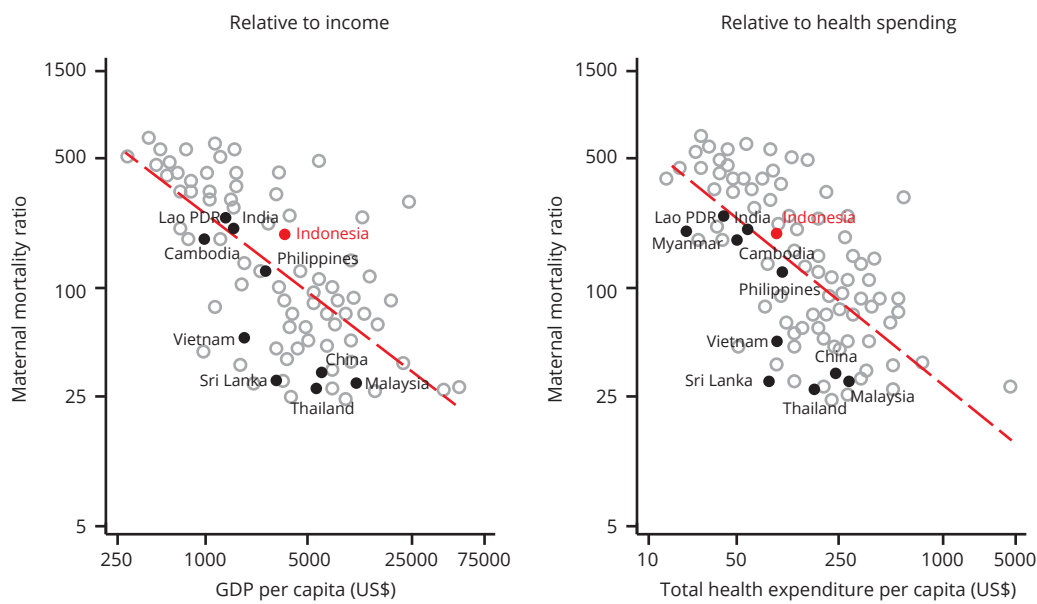


Source: Joint WB-UN estimates  
 Indonesia Demographic Health Survey (IDHS); Institute of Health Metrics and Evaluation (IHME)  
 Note: Shaded area represents joint WB-UN estimation uncertainty

**Recent progress notwithstanding, the level of maternal mortality in Indonesia remains high,** considering Indonesia's economic status and regional comparators, especially in some of the poorer and more remote regions of the country. There is some uncertainty about the exact level of Indonesia's MMR. Joint UN-WB model-based estimates report an MMR of 190 per 100,000 live births in 2013. The IHME model estimated an MMR of 189 in 2011. 2012 IDHS estimates based on sibling-survival data indicate an MMR of 359, although it is important to note that this latter estimate is derived from a sample occurrence of only 92 maternal deaths over a five-year period (Figure 1).

Despite the uncertainty in the estimates of the exact level of MMR in Indonesia, it remains clear that it is high and especially so for a country in which the population ostensibly has had access to universal maternal health coverage. Indonesia is also a relative underperformer, considering the economic status of the country and its health expenditure per capita. For example, Sri Lanka has a similar GDP per capita and health expenditure per capita as Indonesia, but has a substantially lower MMR. Indonesia has a higher GDP per capita and health expenditure per capita than India, but has a similar MMR (Figure 2). This suggests that the high MMR in Indonesia cannot solely be attributed to the economic status of the country nor its health expenditure.

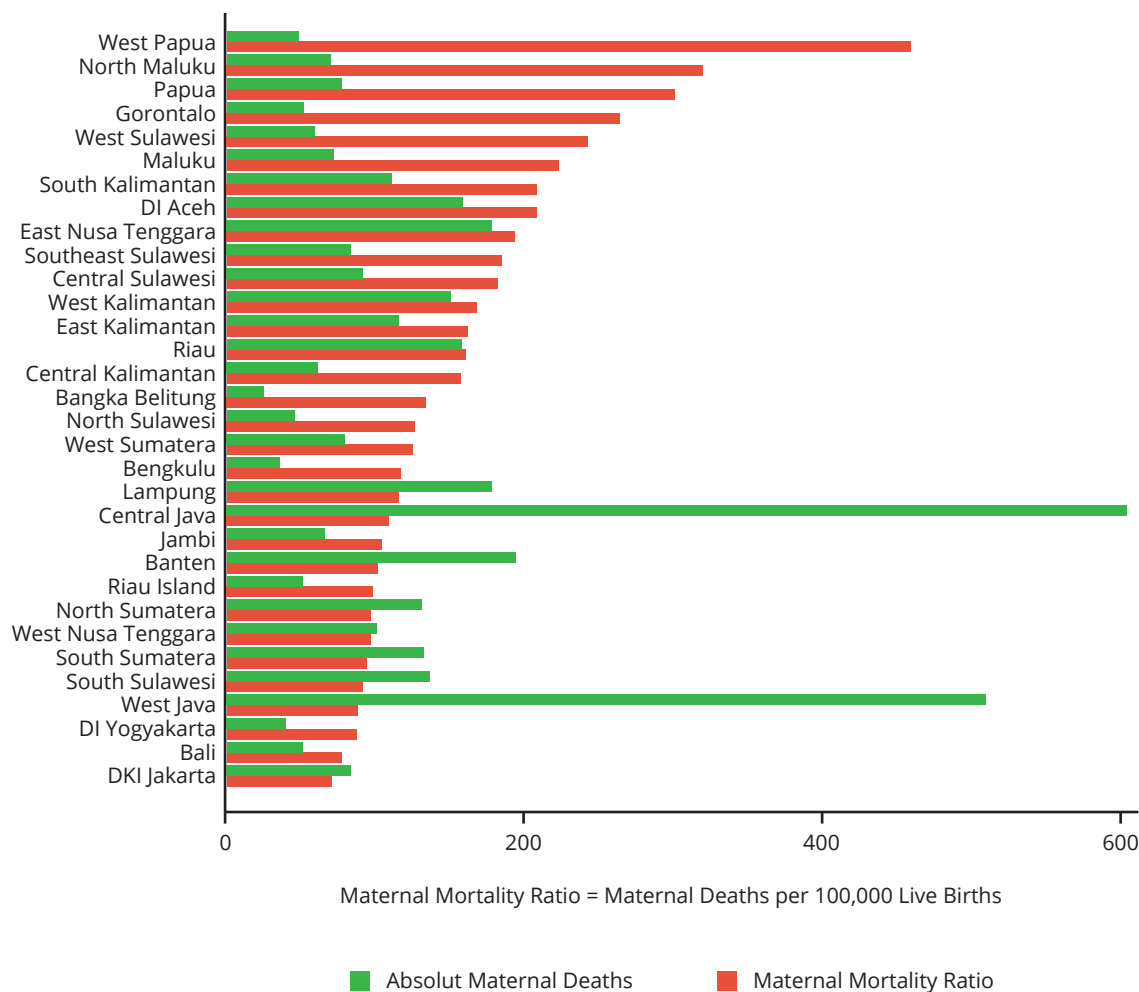
FIGURE 2: MATERNAL MORTALITY RATIO, CONTROLLING FOR INCOME AND HEALTH EXPENDITURE, 2012



Source: WDI  
Note: x-scale and y-scale logged

There are significant differences in the number of maternal deaths and in the MMR across provinces in Indonesia. Whereas the absolute number of maternal deaths is highest in populous provinces such as Central and West Java, the MMR is highest in West Papua, North Maluku, Papua, Gorontalo, and West Sulawesi. DKI Jakarta, Bali, and DI Yogyakarta have the lowest MMRs in the country (Figure 3).

FIGURE 3: NUMBER OF MATERNAL DEATHS AND MATERNAL MORTALITY RATIO BY PROVINCE IN INDONESIA, 2012



Source: MOH 2012 (Download from <http://gizikia.depkes.go.id/data/#1>, East Java province exclude due to data quality issues)  
Maternal Mortality Ratio = Maternal Death per 100.000 Live Births

**Many factors contribute to the relatively high levels of maternal mortality in Indonesia.** Hypertensive disorders during pregnancy, including eclampsia and preeclampsia, and postpartum and antepartum hemorrhage, were the two biggest causes of maternal death in the country. Although rates of skilled attendance at births have risen significantly in recent years, there are concerns about the training of midwives and their adherence to protocols. Access to emergency obstetric care in the case of complications remains a challenge in some parts of the country. In general, the number of obstetricians is low and availability is skewed, with most practicing on the island of Java. Referral systems do not always function smoothly across different levels of care. Continued use of traditional birth attendants in some areas is another contributory factor.<sup>10</sup>

<sup>10</sup> World Bank. 2010. "...and then she died": Indonesia maternal health assessment." Jakarta: World Bank

TABLE 1: CAUSES OF MATERNAL DEATHS IN INDONESIA<sup>11</sup>

Cause of maternal death	Percent
Hypertensive disorders during pregnancy, including eclampsia and preeclampsia	32%
Postpartum and antepartum hemorrhage	22%
Diseases of circulatory system	6%
Abortion outcome	4%
Tuberculosis	4%
Puerperal sepsis	3%
Diseases of respiratory system	3%

**Adolescent pregnancies are a further concern as mothers under the age of 18 are more likely to experience complications during pregnancy.** According to the 2012 IDHS, 10 percent of adolescent women (ages 15–19 years) had begun childbearing; 7 percent had a live birth and 3 percent were pregnant with their first child.<sup>12</sup> Unsurprisingly, adolescent women from rural areas with only primary education (or less) and those from lower wealth quintiles were associated with early childbearing. Worryingly, this proportion is an increasing trend compared with the 2007 IDHS.

## 2.2 Utilization of Maternal Health Services

**Indonesia has mixed public-private provision of health care services.** The public sector generally takes a dominant role in rural areas and for secondary levels of care but, as discussed below, this is not necessarily the case for maternal health services. Private provision has been increasing rapidly in recent years, including for primary care. Of the 163,000 hospital beds in the country, about 52,000 are managed by the private sector. According to the Indonesia Midwives Association, there are 37,289 midwives in private practice. For primary care, Indonesia has more than 9,500 public puskesmas (PONED and non-PONED puskesmas), each serving catchment areas of 25,000–30,000 individuals (approximately a third of puskesmas also provide inpatient services).<sup>13</sup> The public system also includes village-level public health facilities: village delivery posts (polindes, often the home of a village midwife) and village health posts (poskesdes). Under the Jampersal program, poskesdes count as health facilities and are supposed to be

<sup>11</sup> Disparitas Akses & Kualitas : Kajian Determinan Kematian Maternal di 5 Region di Indonesia, Depkes-UNFPA 2012

<sup>12</sup> Indonesia Demographic and Health Survey (IDHS), 2012

<sup>13</sup> Approximately 500 new puskesmas have been constructed since the Rifaskes census in 2011.



equipped to handle normal deliveries. Maternal health providers and facilities are summarized in Table 2 below, including details on the role of PONE D puskesmas: a subset type of puskesmas that form a backbone of the obstetric referral system in the country. There are specific guidelines for the availability (density) of PONE D puskesmas and service standards (including staffing, training, and equipment). In addition, the implementation plans for PONE D include making detailed plans for how referrals are to be arranged and for the socialization of the availability of these facilities to the general population. Although these guidelines and plans exist, the socialization of the PONE D system is unclear and women may not know the difference between PONE D puskesmas and ordinary puskesmas.

**Within Indonesia, there is a wide variation in the density and type of health facilities<sup>14</sup> across provinces** (Figure 4). Generally, densely populated provinces have fewer health facilities per population and this could be related to the dominance of private health providers and efficiency gains in having fewer but larger health facilities in densely populated areas. Only West Papua, a sparsely populated province, has close to the WHO recommended target<sup>15</sup> of two health facilities per 10,000 people. PONE D guidelines require at least one PONE D puskesmas per 100,000 people. On a provincially aggregate basis, this requirement is met in most provinces except densely populated provinces and Papua. Papua is also notable in that the density of puskesmas is high, but few of these are PONE D puskesmas.

**With regard to human resources for health, the density of health workers in Indonesia is just below the WHO's critical threshold** of 23 health workers (doctors, nurses, and midwives) per 10,000 people, which is the minimum required to achieve an 80 percent coverage rate for deliveries by skilled birth attendants.<sup>16</sup> The density of health workers is typical for the region (Figure 5), but the performance of countries with a similar density of health workers varies widely—from Thailand with a much lower MMR to Lao PDR with a much higher MMR— suggesting that other factors are also crucial in influencing maternal health.

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<sup>14</sup> Data is only available for public facilities (hospitals and puskesmas) and some private facilities (hospitals only).

<sup>15</sup> [http://www.who.int/healthinfo/systems/SARA\\_OverviewPresentation.pdf](http://www.who.int/healthinfo/systems/SARA_OverviewPresentation.pdf)

<sup>16</sup> [http://www.who.int/hrh/resources/strengthening\\_hw/en/](http://www.who.int/hrh/resources/strengthening_hw/en/)

TABLE 2: MATERNAL HEALTH FACILITIES IN INDONESIA

Facility	Empanelled by social insurance schemes?	Type	Features
Maternity hut (polindes) <sup>a</sup> or village health post (poskesdes)	Included as a primary care provider	Feeder network for public health centers	<ul style="list-style-type: none"> <li>Staffed by the village midwife</li> <li>Often the home of a village midwife</li> </ul>
PONED Puskesmas (Health Center with BEONC) <sup>b</sup>  2,037 facilities throughout Indonesia (but only 1,429 active) <sup>c</sup>	Included as a primary care provider	Public health center	<ul style="list-style-type: none"> <li>There should be at least 4 puskesmas PONED per regency (<i>kabupaten</i>) or city (<i>kota</i>), within one hour of catchment districts</li> <li>Functions as a referral sub-center, catering for a population of 50,000 to 100,000</li> <li>Inpatient services available</li> <li>Able to provide 24-hour <i>Basic Emergency Obstetric and Neonatal Care</i> (BEONC/ PONED<sup>d</sup>), including management of preeclampsia/eclampsia, shoulder dystocia, vacuum extraction, post-partum hemorrhage, puerperal infections, low birth weight, and other early neonatal conditions.</li> <li>Able to refer to <i>Comprehensive Emergency Obstetric and Neonatal Care</i> (CEONC/ PONEK<sup>e</sup>) hospitals</li> <li>At least one PONED-trained doctor</li> <li>At least one PONED-trained midwife</li> <li>At least one PONED-trained nurse</li> <li>Adequate infrastructure (water and sanitation facilities) and equipment</li> </ul>
Non-PONED Puskesmas (Health center without BEONC)	Included as a primary care provider	Public health center	
General and Specialist Public Hospitals (A, B, C, and D)	Included as a secondary care (referral) provider (class III accommodation for Jampersal/ Jamkesmas)	Public hospital	<p>Criteria for a 24-hour PONEK Hospital<sup>f</sup></p> <ul style="list-style-type: none"> <li>Emergency Room (ER) doctor on-call</li> <li>Doctors, midwives, and nurses trained in PONEK</li> <li>SOP for admitting and managing patients with obstetric and neonatal emergencies</li> <li>No user fees for emergency obstetric and neonatal patients</li> <li>24-hour Operating Room (OR) and surgical team standby</li> <li>24-hour blood bank service</li> <li>Defined response times: 10 minutes for ER, 30 minutes for delivery room, and 1 hour blood bank response time</li> </ul>
Private Facilities (midwives, doctors, clinics, maternity homes, general and specialist hospitals)	Included as a primary or secondary care provider, if agreed ( <i>Perjanjian Kerja Sama</i> , PKS) with the regency/city administrator.	Wide range from informal "homes" to hospitals	

a. *Poliklinik Desa* (Rural Polyclinic) usually abbreviated as either *Poskesdes* (Pos Kesehatan Desa) or *Polindes* (Pos Bersalin Desa)

b. MOH Regulation No. 828/2008

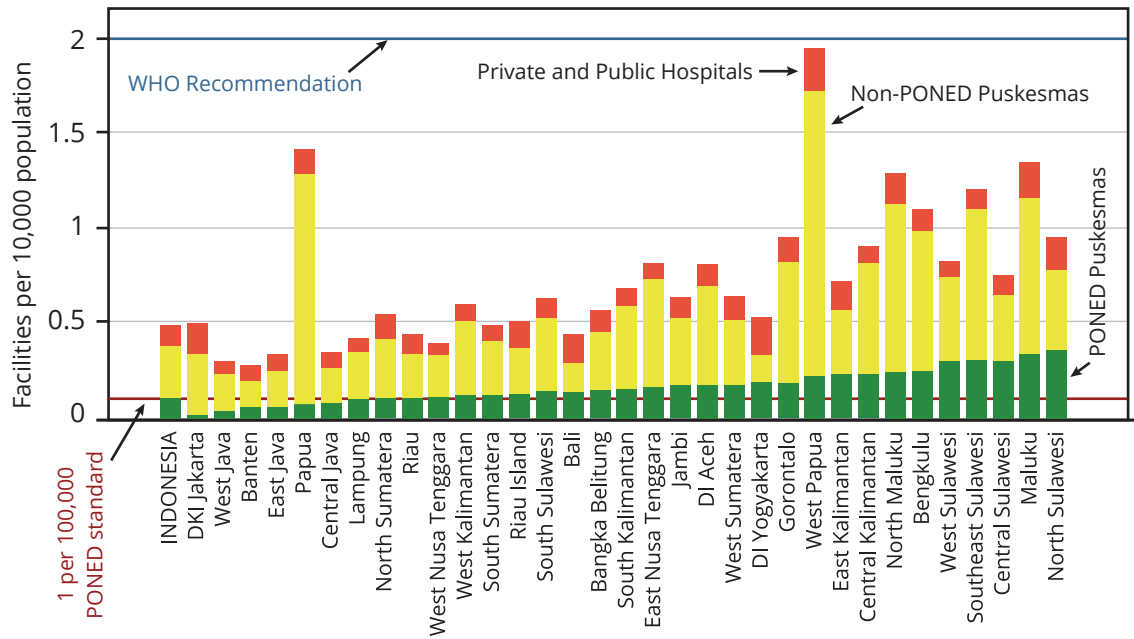
c. *Pelayanan Obstetrik dan Neonatal Emergensi Dasar* Factsheet. Direktorat Bina Kesehatan Ibu. MOH.

d. PONED (*Pelayanan Obstetrik dan Neonatal Emergensi Dasar*) is the Indonesian acronym for BEONC (*Basic Emergency Obstetric and Neonatal Care*).

e. PONEK (*Pelayanan Obstetrik dan Neonatal Emergensi Komprehensif*) is the Indonesian acronym for CEONC (*Comprehensive Emergency Obstetric and Neonatal Care*).

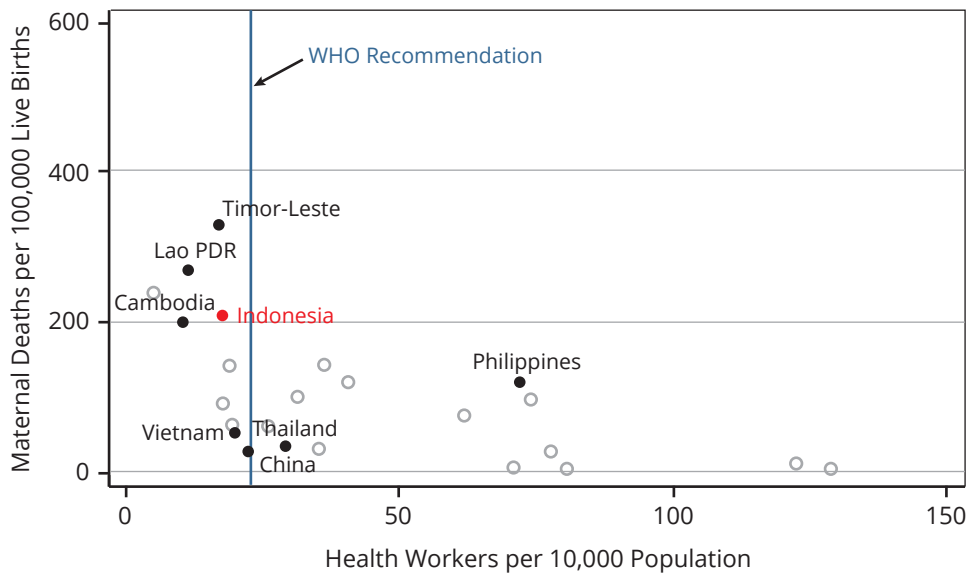
f. *Pedoman Penyelenggaraan Pelayanan Obstetri Neonatal Emergensi Komprehensif (PONEK) 24 jam di Rumah Sakit*. Direktorat Jenderal Bina Pelayanan Medik. MOH. 2008.

FIGURE 4: DENSITY OF HEALTH FACILITIES BY PROVINCE, 2013 (ADDITIONAL DETAILS IN ANNEX B)



Sources  
 Population: Badan Pusat Statistik, 2013  
 Health Facilities: Ministry of Health, 2013~Privateprimary care facilities not available

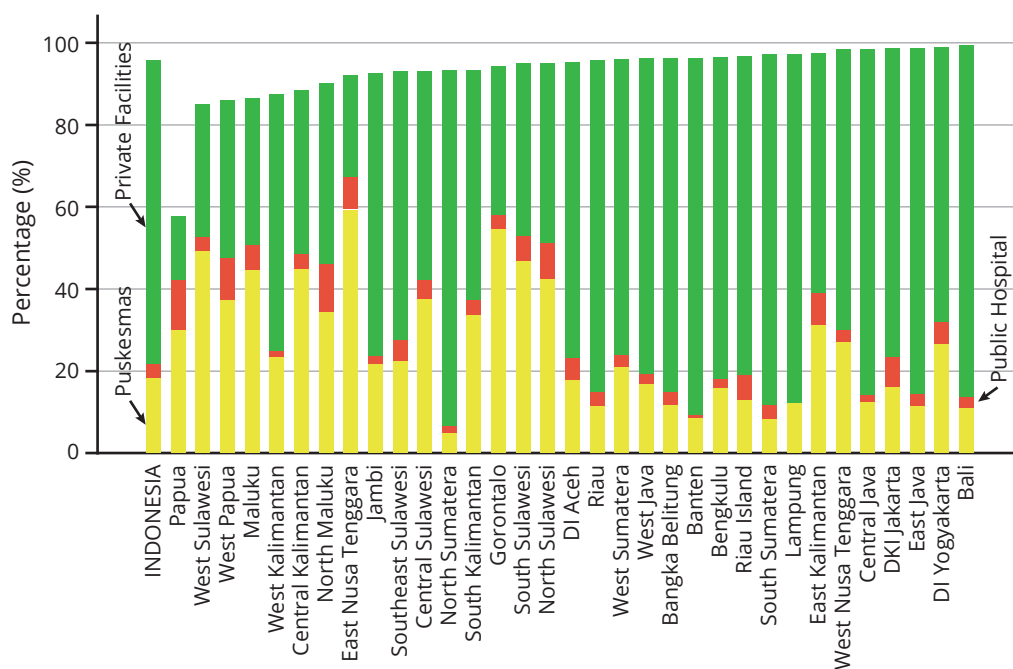
FIGURE 5: MATERNAL MORTALITY AND HUMAN RESOURCES FOR HEALTH IN EAST ASIA & PACIFIC COUNTRIES, 2010



Source: WDI 14 (MMR Joint Estimates WHO/UNICEF/UNFPA/World Bank)  
 Health Workers = Doctors, Midwives and Nurses

**Utilization of most key maternal health services is high in Indonesia.** Latest data from the 2012 IDHS indicates that 96 percent of mothers received antenatal care (ANC) from skilled providers, with 88 percent of all pregnant women receiving the WHO-recommended four or more ANC visits during their last pregnancy.<sup>17</sup> ANC utilization was relatively high even among the poor: 87 percent of those in the poorest economic quintile reported receiving ANC care (versus 99 percent in the highest economic quintile). ANC utilization (of all providers, both public and private) was in excess of 90 percent both among those living in urban areas and rural areas. One outlier was the province of Papua, with an ANC utilization rate of only 58 percent; all other provinces in Indonesia had ANC utilization rates greater than 85 percent (Figure 6).

FIGURE 6: ANC UTILIZATION RATES BY PROVINCE, 2012



Source: IDHS, 2012

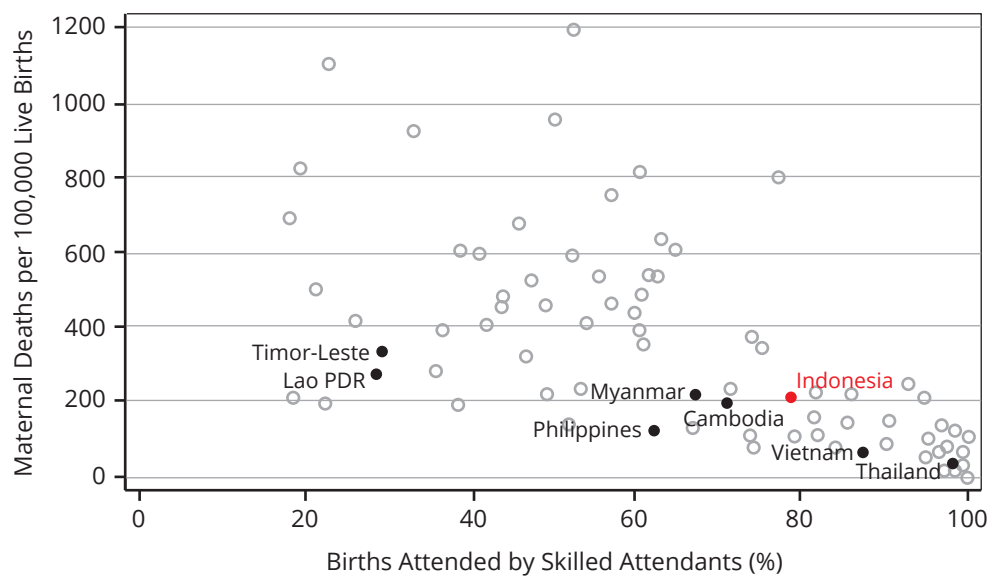
**Almost half of all ANC visits occurred at private clinics in Indonesia: 29 percent occurred at village-level public health facilities; 18 percent occurred at puskesmas; and only 3 percent at public hospitals.** There were wide variations in the extent to which ANC utilization occurred at puskesmas or at public hospitals across provinces. More than half of all ANC visits occurred at either puskesmas or public hospitals in the provinces of Papua, East Nusa Tenggara, West Sulawesi, Gorontalo, Maluku, South Sulawesi, West Papua, Central Kalimantan, North Sulawesi, and North Maluku (as compared to 21 percent nationally) (Figure 6). One third of all ANC visits among the poorest economic quintile occurred in puskesmas (compared to 8 percent among the richest). Only 2 percent of the poor utilized ANC care at public hospitals compared with 8 percent of the rich. Greater utilization of public hospitals than puskesmas may be a general indication of perceived deficiencies in the provision of care at puskesmas. This

<sup>17</sup> IDHS, 2012. Jakarta: BPS, BKKBN, Kemenkes, and ICF International.

is particularly notable in Papua, West Papua, North Maluku, East Nusa Tenggara, North Sulawesi, and East Kalimantan, where this prominence of ANC utilization at public hospitals in could be an indication of perceived or real deficiencies in the the provision of care at puskesmas.

**The rate of skilled attendance at births in Indonesia was 83 percent**, with 62 percent of births attended by a nurse, midwife, or village midwife, 20 percent attended by an obstetrician, and 1 percent by a medical doctor. Nationally, about 14 percent of births were attended by traditional birth attendants, but this proportion rose to almost a third among the poorest economic quintile. Variations in rates of skilled birth attendance were notable between urban and rural dwellers (92 percent versus 75 percent, respectively), between the rich and the poor (98 percent versus 57 percent, respectively), and across provinces. Less than 50 percent of births were attended by a skilled health worker in Papua, Maluku, and West Sulawesi, compared to almost 100 percent in Bali and DKI Jakarta.

**FIGURE 7: MATERNAL MORTALITY RATIO AND SKILLED BIRTH ATTENDANCE RATE IN SELECTED EAP COUNTRIES (BLACK DOTS), 2010**



Source: WDI 2014 (MMR: Model WHO/UNICEF/UNFPA/World Bank)

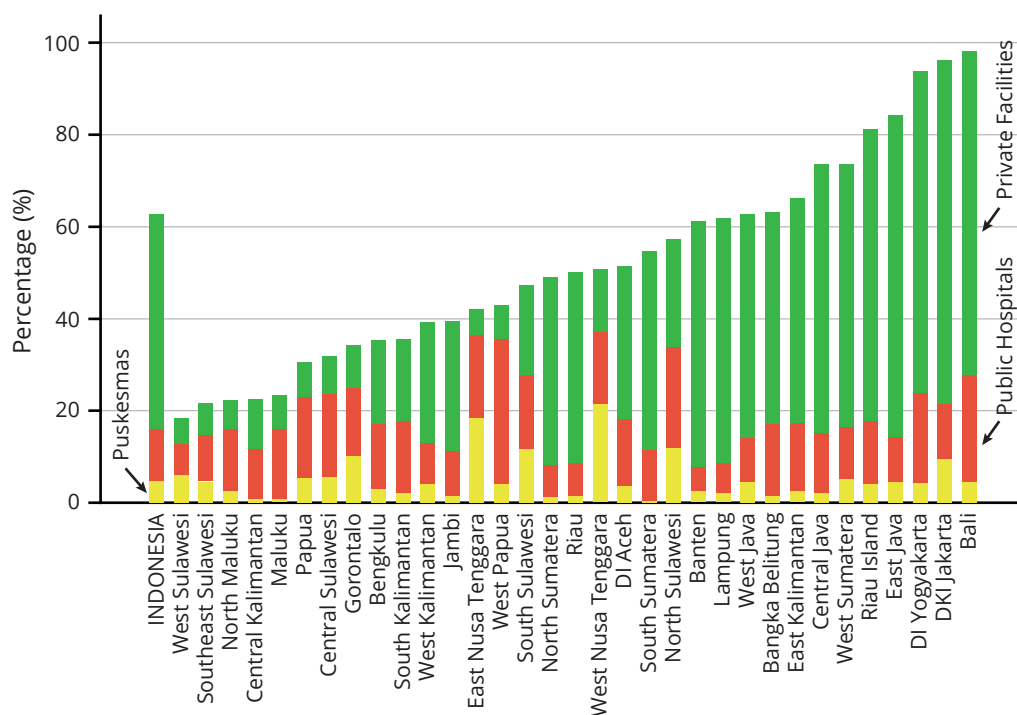
**The institutional delivery rate is one of the few key maternal health utilization indicators that was relatively low in Indonesia.** Only about 63 percent of all deliveries occurred in a health facility in 2012.<sup>18</sup> The institutional delivery rate at health facilities was almost double in urban areas versus rural areas (80 percent versus 47 percent, respectively). Home delivery rates among mothers in the lowest economic quintile were almost six times higher than among mothers in the highest economic quintile (69 percent versus 12 percent, respectively). About 17 percent of all deliveries occurred at puskesmas (5 percent) or

<sup>18</sup> IDHS defines health facilities as public/private hospitals, health centers, clinics, village health posts, delivery posts, and private doctor/midwives.

public hospitals (11 percent).<sup>19</sup> By contrast, almost 47 percent of deliveries nationally were at private hospitals.<sup>20</sup> This paper focuses on institutional deliveries rather than skilled birth attendance, not because the importance and contribution of skilled birth attendance is not recognized, but due to the nature of the facility-based supply-side assessment and framework described in the next section.

**In general, higher institutional delivery rates were strongly associated with higher use of private facilities.** Use of private facilities for deliveries was highest in Java-Bali provinces. West Nusa Tenggara, East Nusa Tenggara, North Sulawesi, South Sulawesi, and Gorontalo had some of the highest proportions of all deliveries occurring at puskesmas and public hospitals (Figure 8). East Nusa Tenggara and West Nusa Tenggara were also the two provinces with the highest proportion of all births occurring at puskesmas (21 percent and 18 percent, respectively). Institutional delivery rates were inversely related with maternal mortality ratios across provinces (Figure 9).

FIGURE 8: INSTITUTIONAL DELIVERIES BY PROVINCE, 2012

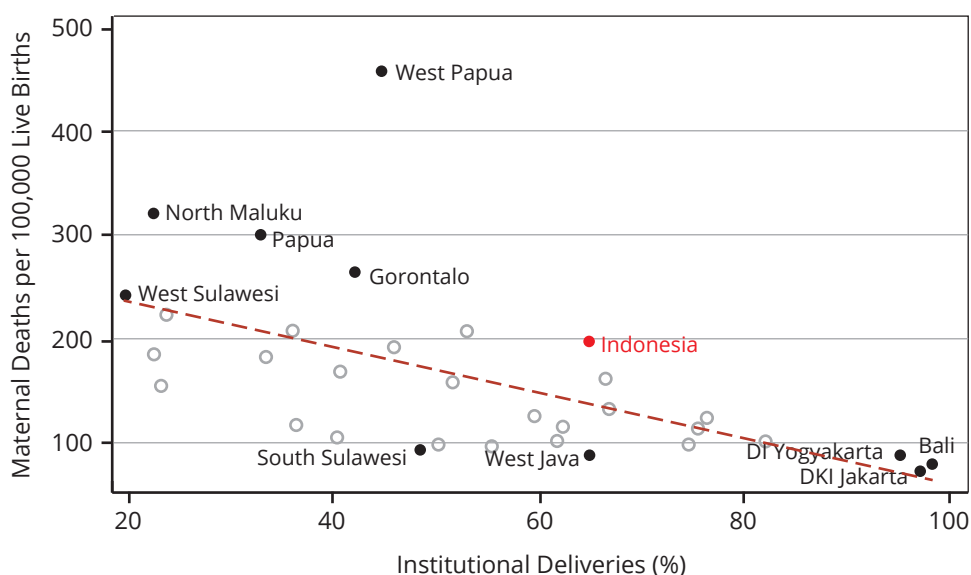


Source: IDHS, 2012

<sup>19</sup> Percentages do not sum up due to rounding.

<sup>20</sup> Ibid.

FIGURE 9: MATERNAL MORTALITY RATIO VERSUS INSTITUTIONAL DELIVERY RATES BY PROVINCE, 2012



Source: IDHS 2012 & MOH

**Utilization of postnatal care (PNC) services was also relatively high: 80 percent of mothers received postnatal care within two days following delivery.** PNC was provided mainly by nurses, midwives, or village midwives (60 percent) and obstetricians (17 percent), while doctors (1 percent) and traditional birth attendants (2 percent) played a smaller role in PNC. Almost all women who delivered at a health facility (96 percent) had a PNC checkup. The lack of any PNC checkups was associated with greater parity<sup>21</sup>, rural residence, lower educational status, and lower wealth quintiles.

### 2.3 Universal Health Coverage Reforms in Indonesia

**Since 2011, Indonesia has had universal maternal health coverage for its population**, in the sense that everyone who potentially needs maternal health care has coverage under at least one of the various health coverage schemes. Although there are some differences in the specific benefit entitlements, many in the country have maternal health coverage through Askes (covering 9 percent of the population), Jamsostek (covering 8 percent of the population), Jamkesmas (the non-contributory social insurance program for the poor and near-poor), or via Jamkesda (the local government-financed social insurance programs that complement Jamkesmas in several districts and provinces). Jamkesmas and Jamkesda together cover about 21 percent of the population.<sup>22</sup> In addition, since 2011, anyone not covered by existing insurance programs has coverage via Jampersal, a special program financed by the central government that provides a comprehensive maternal health benefit package (described in more detail below), hence the breadth of coverage for maternal health in Indonesia is universal, theoretically.

<sup>21</sup> The number of liveborn children a woman has delivered.

<sup>22</sup> These are estimates from SUSENAS 2011; the magnitude of the extent of insurance coverage is similar to that found in IDHS 2012.

### Box 1: Jampersal<sup>1</sup>

Jampersal is a program for maternity care supported by the central government and specifically targeted at pregnant women who are not covered by any other health insurance schemes, and was implemented from 2011 to 2013 in line with the Ministry of Health Strategic Plan 2010–2014 and the government's Roadmap to Accelerate the Achievement of MDGs in Indonesia. The Jampersal benefits package includes antenatal care, delivery care, and post-partum care for the mother and newborn, and family planning, at both public health facilities and enlisted private facilities. Funds are channeled from the central Ministry of Health to hospitals (directly) and to primary care facilities (via the District Health Office). Reimbursement tariffs to providers were increased and benefits for users expanded between 2011 and 2012. With the introduction of the National Health Insurance Program (JKN) on January 1, 2014, the implementation of Jampersal has been terminated and merged into JKN.

A small study on Jampersal in two areas in West Java—Garut District and Depok Municipality—found that utilization of institutional deliveries increased by 14 percent between 2011, just before Jampersal was implemented, and 2013, and that the increase in utilization was highest among women who were least educated, poor, and who resided in rural areas.

<sup>1</sup> World Bank. 2013. A Study on the Implementation of Jampersal Policy in Indonesia. Jakarta: World Bank.

**Indonesia is in the midst of implementing a series of health system reforms aimed at attaining UHC for all health services by 2019.** The universal right to health care was included as an amendment to Indonesia's constitution in 1999. However, the impetus for UHC came a few years later, in a 2004 landmark legislation—the *Sistem Jaminan Sosial Nasional* or the SJSN Law—which formed the legal basis for attaining several social protection objectives in the country. In 2011, the government passed a ground-breaking follow-up law that defined the administrative and implementation arrangements—the *Badan Penyelenggara Jaminan Sosial* or BPJS Law—which stipulated that several existing contributory and non-contributory social health insurance schemes would be merged to provide streamlined uniform benefits under a single-payer umbrella beginning in 2014. Following institutionalization of the single-payer insurance administrator (BPJS Kesehatan) in 2014, the government plans to incrementally extend coverage to the entire population by 2019. BPJS Kesehatan is expected to contract with both public and private providers for delivery of the benefit package beginning in 2014. Jampersal will be phased out beginning in 2014.



**Assessing supply-side readiness for key maternal health services is a key input to help inform policy reforms aimed at attaining UHC in Indonesia by 2019.** Ensuring the supply-side readiness of Indonesia's health system, incorporating lessons from the experiences of implementing universal maternal health coverage under existing social health insurance programs, will be one key factor in ensuring that implementation of UHC results in improvements in health outcomes, including for maternal health.



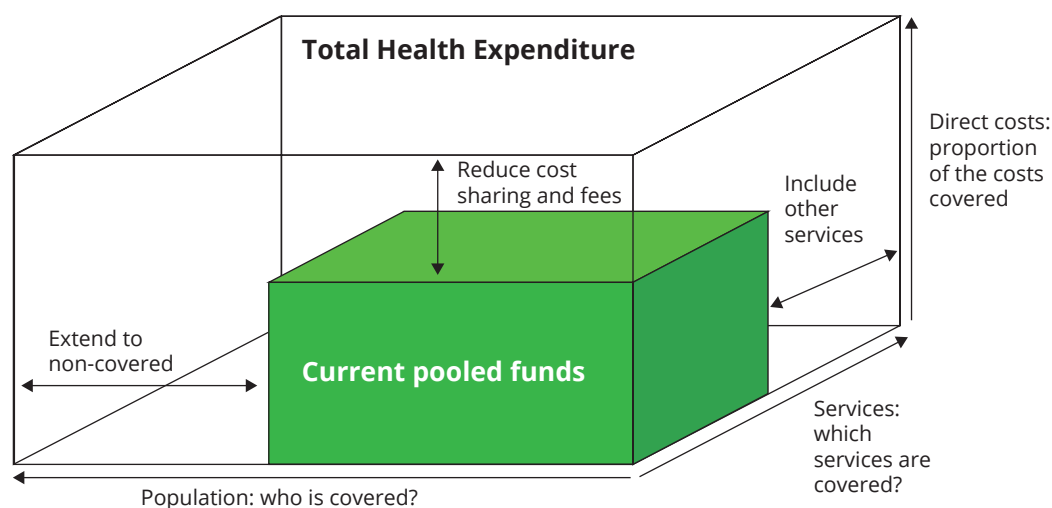


# Assessing Universal Maternal Health Coverage in Indonesia

### 3. Assessing Universal Maternal Health Coverage in Indonesia

**UHC—ensuring that everyone has access to quality health services when needed, without experiencing financial hardship as a result—can be conceptualized as having three key dimensions: “breadth”, “height”, and “depth” (Figure 10).<sup>23</sup> Breadth refers to the proportion of the population that is covered; height refers to the proportion of health costs that are paid by pooled funds as opposed to via direct OOP payments; and depth refers to the benefit package of services that are covered by pooled financing (and the definition of services can be broadened to include provision of public health interventions).<sup>24</sup>**

FIGURE 10: THREE DIMENSIONS OF UHC



**One of the key challenges to implementing UHC from a service delivery perspective is to ensure depth (benefit package) of coverage—not just on paper, but also in effect (available at an accessible, empanelled provider)—especially in rural, remote regions of the country and in light of the continuing challenges related to improving maternal health outcomes in Indonesia.** Table 3 summarizes benefit package entitlements and provider payment methods for maternal health services under some of the existing social insurance programs such as Jamkesmas, Jampersal, and Askes. The proposed JKN benefit package for maternal health services is comprehensive and will be similar to that of Jamkesmas and Jampersal.

<sup>23</sup> WHO. 2010. *World Health Report: Health Systems Financing—The Path to Universal Coverage*. Geneva: World Health Organization.

<sup>24</sup> Ibid.

TABLE 3: BENEFIT PACKAGE ENTITLEMENTS AND PROVIDER PAYMENT MECHANISMS FOR MATERNAL HEALTH

Type	Jamkesmas/Jampersal <sup>a</sup> (and JKN from 2014 onwards)	Askes <sup>b</sup>
Target	<p><b>Jamkesmas:</b> The poor and non-poor, occupants of social institutions, prisoners and victims of disasters. (approximately 76.4 million individuals)</p> <p><b>Jampersal:</b> All pregnant women who have not been covered by any type of health insurance.</p>	Civil servants, pensioners, veterans, and Independence Pioneers, and their immediate family members.
Benefit Package	<p><b>At the primary care level:</b> (i) Four antenatal care visits, (ii) Early detection of risk factors for obstetric and newborn complications, (iii) Normal delivery, (iv) Vaginal delivery with complications within PONED competencies, (v) Four postnatal visits for the mother and newborn, (vi) Family planning services.</p> <p><b>At the secondary care level:</b> (i) Antenatal care visits for high-risk pregnancies only, (ii) Complicated deliveries which cannot be managed at primary care level, (iii) Postnatal care visits following high-risk pregnancies, (iv) Long term family planning, (v) Untreated complications referred from the primary care level.</p> <p><b>JKN:</b> Different categories of insurance membership are eligible for different ward classes. For example, informal sector workers and subsidized members are only eligible for a Class III ward. An insured member can request a higher level class, above what they are eligible for, by paying the difference or through supplementary insurance.</p> <p><i>It is understood that co-payments are generally not permitted, although this is not specifically mentioned in the JKN Presidential Decree 2013.</i></p>	<p><b>At the primary care level (including Puskesmas with bed and empanelled private clinics):</b> (i) normal and complicated vaginal deliveries, (ii) medical complications during pregnancy, (iii) medicines on the essential drugs list, (iv) inpatient care (maximum 3 days).</p> <p><b>At the secondary care level:</b> (i) normal and complicated deliveries including caesarean sections, (ii) medical complications during pregnancy, and (iii) medicines on the essential drugs list.</p> <p>Antenatal and postnatal care is included as part of the 'package payment' for deliveries.</p>
Provider payment	<p><b>At the primary care level:</b> Antenatal care visit: Rp 20,000 / visit Postnatal care visit: Rp 20,000 /visit</p> <p>Normal delivery: Rp 500,000 / case Vaginal delivery complicated with PPH at PONED: Rp 650,000 / case Vaginal delivery complicated with retained placenta at PONED: Rp 150,000 / case</p> <p>Family planning IUD or implants: Rp 60,000 Injection: Rp 10,000 Contraceptive complications: Rp 100,000</p> <p><b>Referral transportation:</b> Reimbursed on a general cost standard (<i>Standard Biaya Umum</i>).</p> <p><b>At the secondary care (referral) level:</b> Diagnosis-related groups called Indonesia Case-based Groups (INA-CBGs).</p> <p><i>Considering the provider payment mechanism used, it is understood that balance billing is not permitted, although this is not specifically mentioned in the JKN Presidential Decree 2013.</i></p>	<p><b>At the primary care level:</b> Normal delivery: Rp 300,000 / case Complicated vaginal delivery: Rp 350,000/ case Basic inpatient services: Rp 80,000 per day</p> <p><b>At the secondary care (referral) level:</b> Tariff of charges for inpatient care depending on four classes of hospitals—A, B, C, and D—and class of accommodation (I or II).</p> <p>Detailed tariff of charges for specific diagnostic tests and medical interventions (varying by hospital class).</p>

a. Ministry of Health Decree 2562/MENKES/PER/XII/2011

b. Ministry of Health Decree 416 (2011) on Health Service Tariffs for Members of Askes

**Demand-side payments from social health insurance schemes are not the primary source of revenue for public health facilities.** For example, health facilities receive supply-side investments and operational financing in the form of equipment and drugs from and determined by the local government. The central government also contributes towards specific vertical programs such as immunizations, contraception, and communicable diseases such as AIDS, tuberculosis, and malaria—in some instances through a special central fund.<sup>25</sup> Operational budgets (including salaries) are also provided by local governments (except in the case of central hospitals). Hence, accountability for supply-side readiness (especially for non-commodities; for example, equipment and staffing) falls, to a large extent, under the responsibility of local governments.

**Both Jampersal and Askes make important distinctions between primary care and secondary care for the purposes of reimbursement.** At the primary care level, outpatient maternal health care—such as ANC and PNC visits—are reimbursed on a case-by-case basis at a rate of Rp 20,000 per visit. Secondary maternal health care is reimbursed by Jampersal and Jamkesmas using a form of diagnosis-related groups (DRGs) called Indonesia Case-based Groups (INA-CBGs). Askes, the insurance scheme for civil servants, provides lower benefit payments than Jampersal and Jamkesmas: Rp 300,000 instead of Rp 500,000 for a normal delivery.

**Private facilities in the network are reimbursed the same amount as public facilities under Jamkesmas and Jampersal, but do not receive the same central and local government supply-side financing.** Askes reimbursements to private facilities are based on negotiated rates, but presumably, this will be phased out with the introduction of JKN. Considering that both public and empanelled private providers will receive the same demand-side payments from JKN, private providers are possibly at a disadvantage as they do not receive supply-side financing (equipment, salaries, etc.) from the government but would presumably cover these costs from the demand-side payments. Considering that utilization of maternal health (MH) services is low, the capacity and dynamism of both public and private sector providers would be helpful during this initial period—perhaps with private providers filling in geographic or service gaps with the focus of expanding coverage, although careful attention has to be paid through the accreditation process to ensure adequate service readiness in both sectors. As it is beyond the scope of this paper to explore this in further detail, additional research is anticipated through a forthcoming Public Expenditure Tracking Survey to explore the dynamics arising from interactions between public and private providers, in the context of the newly merged JKN health insurance scheme.

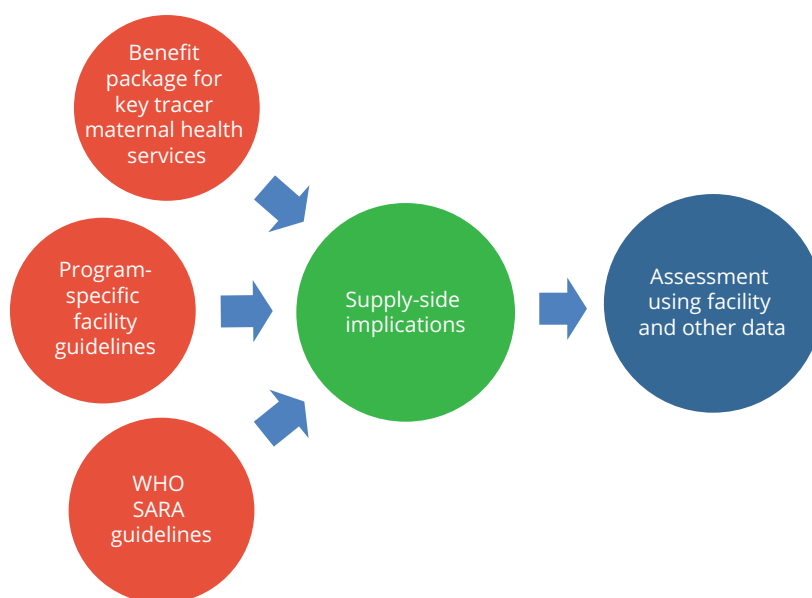
### 3.1 Framework for Analysis

**The framework used in this paper to assess supply-side readiness for UHC is summarized in Figure 11 below.** As depicted in the figure, the supply-side assessment begins with an examination of the current maternal benefit package for key social health insurance programs in the country. Detailed supply-side implications for the provision of the benefit package were derived from program-specific facility guidelines that detail equipment, diagnostic tests, and medicines that are stipulated to be available at facilities. The

<sup>25</sup> This Special Allocation Fund, or *Dana Alokasi Khusus* (DAK), is a central funded allocation to the local government (province/district) to finance special local government needs, especially needs related to national priorities (*Law No. 33 year 2004 : Equalization fund between central and local government; and Government Regulation (PP) No. 55 year 2005 : Equalization fund*).

paper also compares the supply-side implications from program-specific facility guidelines with those recommended by the World Health Organization’s SARA framework. SARA is a comprehensive framework for monitoring and assessing key aspects of service delivery in a health system.<sup>26</sup> The framework has two dimensions: (i) service availability: this is with regard to number and distribution of health facilities and staff; and (ii) service readiness: this includes two elements—*general service readiness* (which relates to general infrastructure required to provide any type of health service, for example water supply and electricity) and *specific service readiness* (which relates to the specific inputs required for specific diseases, conditions, and services such as diabetes mellitus and antenatal care). This paper and analysis focuses on the service readiness dimension of SARA, providing a framework to collect and analyze facility-level data, and enabling an assessment of whether or not facilities have the minimum staffing, equipment, diagnostic capacity, medicines, and commodities for a given disease or condition. This SARA framework can also provide an inference of the extent to which a health system is able to minimally provide the benefits that are included under the service benefit package dimension of UHC schemes, and hence by extension, this framework can help assess the “effective depth” of MH coverage.

FIGURE 11: SUPPLY-SIDE ASSESSMENT FRAMEWORK FOR MATERNAL HEALTH SERVICES



**In assessing the depth of UHC, it is also important to link the provision of covered benefits to broader issues related to service delivery.** Service delivery can be conceptualized as consisting of three key dimensions: (i) inputs; (ii) provider ability; and (iii) provider effort.<sup>27</sup> The abovementioned framework (including SARA), and complementary work on availability and distribution of human resources for health

<sup>26</sup> O’Neill, K, M Takane, A Sheffel, C Abou-Zhar, and T Boerma. 2013. “Monitoring service delivery for universal health coverage: the Service Availability and Readiness Assessment.” *Bulletin of World Health Organization*. 91:923-931.

<sup>27</sup> World Bank. 2012. *Service Delivery Indicators Concept Note*. Washington: World Bank.

in Indonesia focus on the issue of service delivery inputs.<sup>28</sup> Needless to say, even if service delivery inputs are available, the ability and efforts of providers—as well as the actions and behaviors of households and key interventions in other sectors—remain areas of consideration in ensuring that any intended reforms lead to improvements in MH and other health outcomes.

### 3.2 Data Sources

**The assessment of the depth of coverage reported in this policy note using the framework outlined above is based primarily on analysis of the 2011 Rifaskes facility census data,** validated, where possible, with information from the 2011 Health Facility Costing Study (HFCS) and evidence reported in recent literature where applicable.<sup>29</sup> The Rifaskes facility data was collected by the Ministry of Health's National Institute Health Research and Development Ministry in 2011. The data covers all public facilities owned by central, provincial, and district governments—a total of 707 hospitals and 9,005 puskesmas. From these, 685 hospitals and 8,981 puskesmas, that is, those that were operational prior to January 2010, were included in the final analysis. The data includes information on human resources, medical equipment, organization and management, health services, and outputs of most essential health services. Data was collected through interviews, observations, and also from secondary sources. Independent validation of the Rifaskes data was conducted by three public health faculties in Indonesia: University of Indonesia, Airlangga University, and Hasanuddin University.

**Although the design of the Rifaskes census of puskesmas and hospitals throughout Indonesia was not based on the WHO SARA framework,** it includes many questions in common with the WHO SARA questionnaire and these have been used to estimate, albeit incomplete, of the corresponding SARA service readiness indicators presented in this report. There are certain occasions where the SARA indicator is more precise and specific (e.g., urine dipstick test for protein) than the Rifaskes (e.g., urine test), and this is noted as footnotes in the analysis.

**Private providers were not included in Rifaskes, except for a small unrepresentative sample, and this unfortunately limits the analysis to public providers.** This is an important caveat to bear in mind, as the utilization of private facilities for MH services is significant and indeed larger than that of public providers. This is especially so in densely populated provinces, which due to their sheer population size contribute more towards absolute counts of maternal deaths than remote and sparsely populated provinces (which tend to have higher mortality *rates*). Considering that private providers are even more dominant in these densely populated provinces, the lack of data on private providers would constrain the value of an analysis focused on those provinces. Although it could be argued that by focusing this analysis on exploring the

<sup>28</sup> World Bank. 2010. *New Insights in to the Provision of Health Services in Indonesia: A Health Workforce Study*. Jakarta: World Bank

<sup>29</sup> A further possible data source—the PODES Village Infrastructure Census (2011)—was considered for inclusion in this analysis, but unfortunately the census was not found to contain relevant information for contextualizing or validating the analysis from the other data sources.



effective depth of coverage of MH, providers *within* the health insurance schemes (all public providers are automatically ‘empanelled’) are key. However, private providers too can be empanelled, albeit after an accreditation process, and this accreditation process would presumably imply that a set of minimum criteria for service readiness had already been met by empanelled private providers. It is understood, however, that the government is currently in the process of conducting a follow-up assessment of facilities, building on Rifaskes, but with inclusion of private providers.

**The Rifaskes data, and to some extent the WHO SARA framework, do not specifically explore provider ability or provider effort directly.** Formal training received and job role are the primary means of defining minimum human resources for health (HRH) service readiness. Actual provider knowledge and skills, and actual provider presence at the health facility are not part of this framework.

**Analysis of Rifaskes data was complemented with results from HFCS** data, the latter collected as part of a nationwide costing study commissioned by the Ministry of Health in 2011, financed by the German organization for international cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*) and the Australian Agency for International Development (AusAID) with technical support from Oxford Policy Management, GIZ, and Universitas Gadjah Mada. The facility survey sampled 234 puskesmas, 120 government general hospitals, and 80 private general hospitals across 15 provinces in 30 districts/cities. The sample was selected using a stratified random sampling method so as to ensure national representativeness of the facility data, but the sampling method and sampling frame are different from those of Rifaskes, and hence direct comparisons would not be valid. The primary objective of the GIZ health facility study was to calculate the cost of service provision. For this purpose, the study collected highly detailed information about assets, drugs, equipment, and supplies from the fourth quarter of 2010 until the third quarter of 2011. Some modules were collected monthly; others were collected quarterly or annually. To ensure data quality, an independent verification team was established consisting of staff from four universities: University of Indonesia, Universitas Gadjah Mada, University of Airlangga, and University of Hasannudin. The richness of the database and the time period of data collection make it useful for triangulation with Rifaskes data.

**Annex A** summarizes key information regarding both the Rifaskes and GIZ facility datasets used in the analysis reported in this policy note.





**Public Facility  
Supply-Side Service  
Readiness for Maternal  
Health**

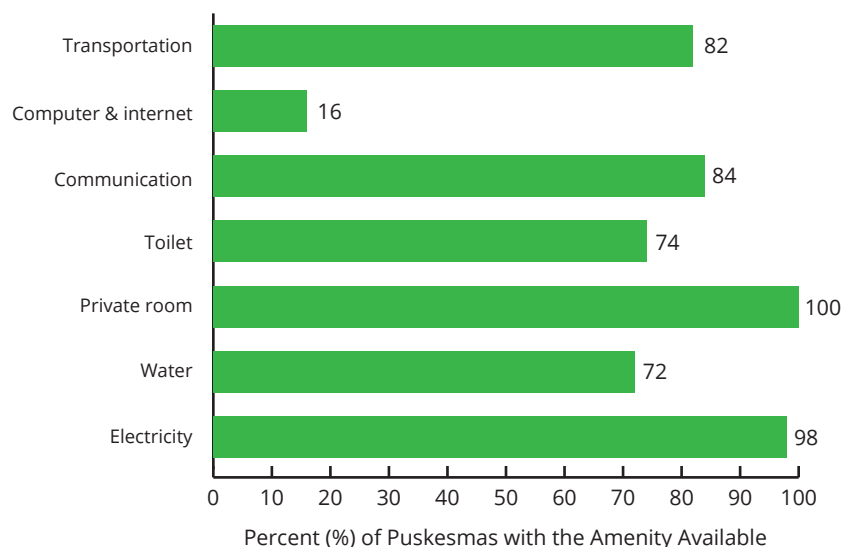
## 4. Public Facility Supply-Side Service Readiness for Maternal Health

As mentioned above, the SARA framework includes two domains of focus for service readiness: general service readiness and specific service readiness. General service readiness refers to the basics required to provide any medical service, such as availability of water and sanitation facilities, electricity, and a private room for consultations. Specific service readiness, in the context of maternal health, refers to specific components and stages of maternal health such as antenatal care (ANC) and basic obstetric care.

### 4.1 General Service Readiness

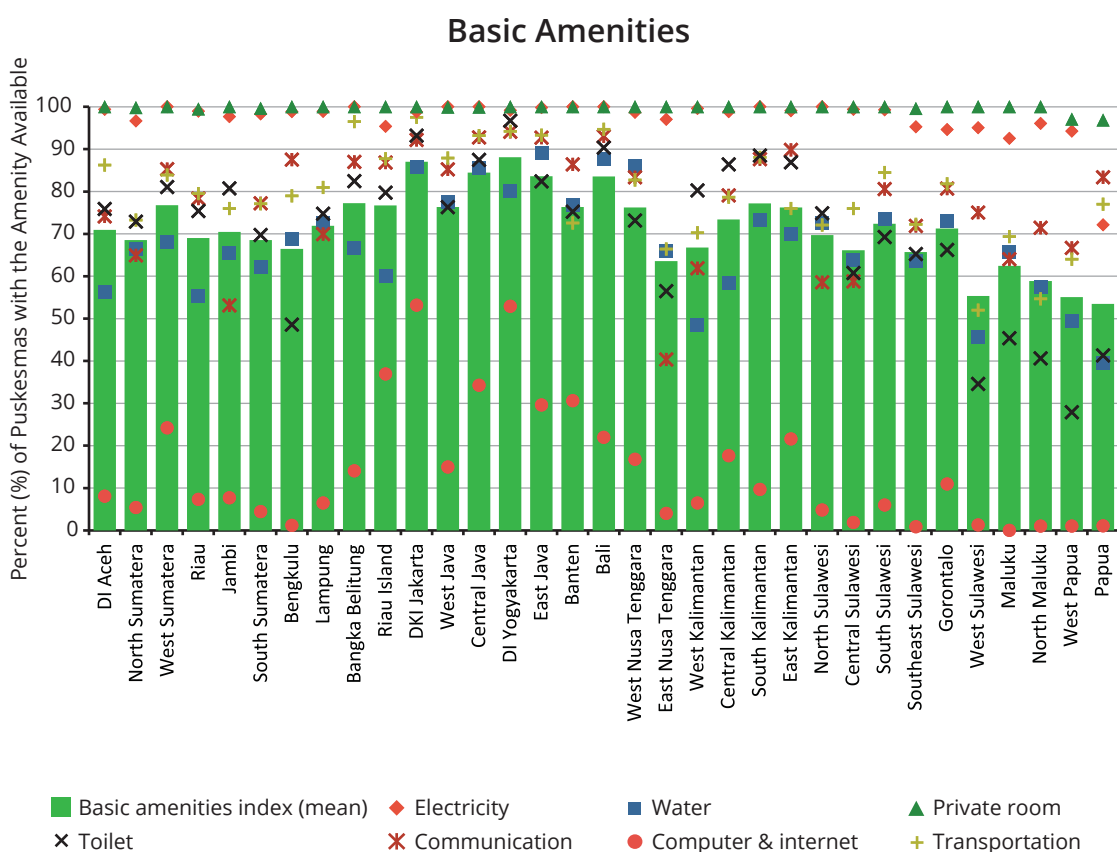
Analysis of puskesmas data from Rifaskes indicates that many puskesmas lacked basic water and sanitation facilities, but access to referral communications and transportation systems was generally reasonable. Although almost all puskesmas had electricity and a private room for consultations, adequate water and sanitation facilities, important for ensuring clean and hygienic conditions for childbirth, were only available in 72 percent of all puskesmas. If obstetric complications were to occur, which necessitate an emergency referral to hospital, 82 percent of puskesmas had access to referral transportation and 84 percent had access to basic communications such as telephones (Figure 12).

FIGURE 12: GENERAL SERVICE READINESS (BASIC AMENITIES)



**There was a nearly twofold difference between provinces with the lowest and highest general service readiness.** In Papua, the mean basic amenities index was 46 percent compared with 89 percent for DI Yogyakarta (Figure 13).<sup>30</sup> As almost all puskesmas had electricity and a private room, the provincial differences appear to be driven by the availability of water, sanitation facilities, basic communications, and referral transportation, which are all vital for the provision of obstetric services. For example, only 40 percent of puskesmas in Papua had water and sanitation facilities compared with 80 percent or more in the provinces in Java. Almost half of puskesmas in West Sulawesi lacked the means to transport a pregnant woman needing emergency referral to hospital; and although the 66 percent of puskesmas in East Nusa Tenggara had this means, only 40 percent would have been able to communicate the referral or seek advice by telephone. This contrasted with the readiness of puskesmas in the provinces in Java to provide transport and basic communications, which was above 90 percent.

FIGURE 13: GENERAL SERVICE READINESS (BASIC AMENITIES) BY PROVINCE



<sup>30</sup> The index is the mean availability of relevant service readiness indicators for basic amenities. For example, if the basic amenities index in a given province was 50%, this meant that on average, health centers in that province only met half of the relevant service readiness indicators for basic amenities.

**In general, urban puskesmas had better service readiness indicators when compared with rural puskesmas.** This was also true to a lesser extent when PONED puskesmas were compared with non-PONED puskesmas (Table 4). For public hospitals, by way of contrast, the availability of general services indicators was almost 100 percent (Table 4). Compared with international comparators for which data was available, puskesmas in Indonesia are better supplied with electricity but somewhat less so for water and toilets (Table 4).

TABLE 4: GENERAL SERVICE READINESS INDICATORS IN INDONESIA AND COMPARATOR COUNTRIES

Type/Region	Electricity	Water	Toilet	Communication	Transportation
Rural puskesmas	97%	69%	71%	81%	81%
Urban puskesmas	99%	81%	84%	89%	87%
PONED puskesmas	99%	79%	77%	84%	84%
Non-PONED puskesmas	98%	70%	74%	84%	82%
All puskesmas	99%	72%	74%	84%	82%
All public hospitals	98%	94%	100%	100%	97%
Sierra Leone health centers (2011) <sup>a</sup>	18%	66%	86%	67%	78%
Kenya health centers (2010) <sup>b</sup>	34%	45%		91%	
Zambia health centers (2010) <sup>c</sup>	57%	88%	95%	81%	52%
Namibia health centers (2009) <sup>d</sup>	55%	68%		100%	

a. *Sierra Leone Service Availability and Readiness Assessment 2011 Report*, Ministry of Health and Sanitation, Sierra Leone.

b. *Kenya Service Provisions Assessment Survey 2010*, Government of Kenya

c. *Zambia Service Availability and Readiness Assessment 2010 Summary Report*, Ministry of Health, Zambia.

d. *Namibia Health Facility Census 2009*, Ministry of Health and Social Services, Namibia.

## 4.2 Antenatal Care

**The benefit package for existing social health insurance programs such as Jamkesmas and Jampersal includes coverage for up to four ANC visits:** one during the first trimester, one during the second trimester, and two during the third trimester. The content of ANC services, according to Antenatal Care Guidelines, should include: height measurement, weight measurement, blood pressure measurement, fundal height measurement, blood tests, urine tests, iron tablets, tetanus toxoid vaccinations, and advice on complications during pregnancy and delivery.<sup>31</sup> The associated service readiness indicators for ANC are summarized in Table 5. Apart from the Doppler ultrasound and the weighing scale, which are stipulated under national guidelines, the national supply-side requirements for ANC are the same as those in WHO SARA (Table 5). In the rightmost column, Table 5 shows which of the indicators were available for analysis in the Indonesia facility data sets.

<sup>31</sup> *Pedoman Pelayanan Antenatal* (Antenatal Care Guidelines), 2007.

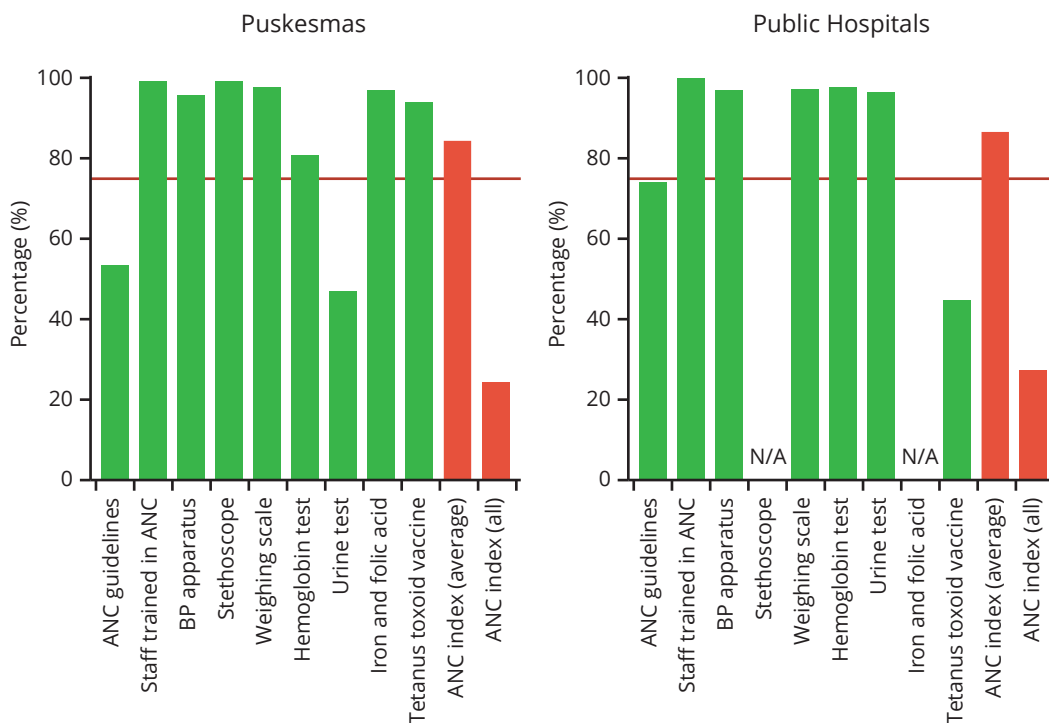
TABLE 5: ANC SERVICE READINESS INDICATORS

Component	WHO SARA guidelines	National ANC guidelines (2007)	Indicators available
Staff and training	<ul style="list-style-type: none"> <li>ANC guidelines</li> <li>Staff trained in ANC</li> </ul>	<ul style="list-style-type: none"> <li>ANC guidelines</li> <li>Staff trained in ANC</li> </ul>	<ul style="list-style-type: none"> <li>ANC guidelines</li> <li>Doctor, nurse, or midwife at health facility</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>Blood pressure apparatus</li> <li>Stethoscope</li> </ul>	<ul style="list-style-type: none"> <li>Blood pressure apparatus</li> <li>Stethoscope</li> <li>Doppler ultrasound</li> <li>Weighing scale</li> </ul>	<ul style="list-style-type: none"> <li>Blood pressure apparatus</li> <li>Stethoscope</li> <li>Weighing scale</li> </ul>
Diagnostics	<ul style="list-style-type: none"> <li>Hemoglobin</li> <li>Urine dipstick-protein</li> </ul>	<ul style="list-style-type: none"> <li>Hemoglobin</li> <li>Urine dipstick-protein</li> </ul>	<ul style="list-style-type: none"> <li>Hemoglobin</li> <li>Urine test</li> </ul>
Medicine and commodities	<ul style="list-style-type: none"> <li>Iron tablets</li> <li>Folic acid tablets</li> <li>Tetanus toxoid vaccination</li> </ul>	<ul style="list-style-type: none"> <li>Iron and folic acid combination tablets</li> <li>Tetanus toxoid vaccination</li> </ul>	<ul style="list-style-type: none"> <li>Iron and folic acid combination tablets</li> <li>Tetanus toxoid vaccination</li> </ul>

**Equipment required to conduct basic ANC services, such as blood pressure apparatus, was widely available across all puskesmas in Indonesia.** Furthermore, more than 75 percent of all puskesmas reported having staff trained in ANC. Stethoscopes, iron and folic acid tablets, and tetanus toxoid vaccines were also generally reported as being available. Hemoglobin blood tests, used for diagnosing anemia, were available in 81 percent of puskesmas nationally.

**The two indicators for which ANC service readiness was weak at puskesmas were with regard to availability of ANC guidelines at the facility and the ability to conduct urine tests.** Although the average availability of ANC indicators was over 80 percent, only 20 percent of puskesmas had all the measured ANC service readiness indicators available, suggesting that there is still substantial scope to improve the service readiness of puskesmas. ANC service readiness at public hospitals was generally higher than at puskesmas for all available ANC indicators, although Rifaskes did not collect data on ANC-specific commodities at hospitals (Figure 14).

FIGURE 14: ANC SERVICE READINESS INDICATORS AT PUSKESMAS AND PUBLIC HOSPITALS



Note: ANC index (all) = All indicators measured were available  
N/A: Data not available

**Three provinces—namely, Maluku, Papua, and West Papua—had generally poor ANC supply-side readiness indicators.** These were also the same provinces in which more than half of all ANC utilization visits occurred at puskesmas (Figure 6) and that had the highest maternal mortality rates (MMRs) in the country (Figure 3). Whereas in the provinces in Java, hemoglobin testing was available at more than 90 percent of all puskesmas, in some provinces such as North Sulawesi, Maluku, and Papua less than 60 percent of puskesmas had this blood test available. The availability of urine tests was even more limited: only 43 percent of non-PONED puskesmas and 66 percent of PONED puskesmas had this capacity.<sup>32</sup> Although finding protein in the urine is vital in diagnosing pre-eclampsia and finding glucose in urine is vital in screening for gestational diabetes, urine tests were almost completely unavailable in certain provinces such as Gorontalo (3 percent), North Sulawesi (5 percent), and Maluku (8 percent), which contrasts with the universal availability of urine tests in puskesmas in DI Yogyakarta (100 percent).

<sup>32</sup> The Rifaskes questionnaire does not differentiate between the different types of urine tests (e.g., for protein, ketones, or glucose).



**Deficiencies in the availability of basic ANC-related medicines at puskesmas were also prominent in some provinces.** In particular, availability of iron and folic acid tablets was limited in Papua (77 percent), West Papua (83 percent), and Maluku (86 percent) (Table 6). Tetanus toxoid vaccines—which unlike iron and folic acid tablets require a cold chain—were stocked by 95 percent of puskesmas nationally; however, deficiencies were notable in some provinces such as Papua (58 percent), West Sulawesi (88 percent), and North Maluku (89 percent) with implications for neonatal tetanus, especially if there is an associated lack of infection control and sterilization of equipment at the same facilities.

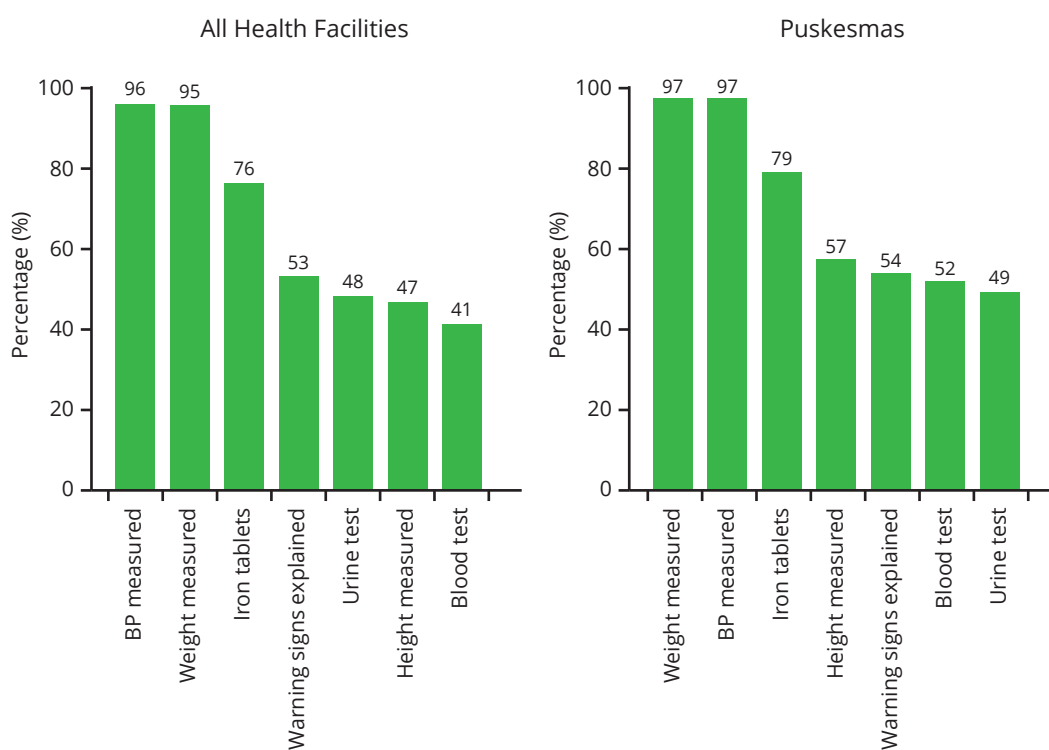
**TABLE 6: ANC SERVICE READINESS INDICATORS IN INDONESIA AND COMPARATOR COUNTRIES**

Level	ANC guidelines	Weighing scale	Stethoscope	BP apparatus	Hemoglobin test	Urine test	Iron & folic acid	TT vaccine	ANC index (mean) <sup>a</sup>
Province									
Papua	40%	87%	90%	83%	52%	11%	77%	58%	65%
Maluku	24%	90%	96%	78%	54%	7%	86%	70%	67%
West Papua	43%	93%	90%	85%	62%	16%	84%	62%	70%
North Sulawesi	25%	95%	99%	90%	54%	5%	100%	98%	74%
North Maluku	28%	95%	96%	93%	72%	13%	98%	89%	76%
Bangka Belitung	70%	96%	100%	100%	95%	56%	100%	100%	91%
Central Java	62%	100%	100%	99%	94%	72%	99%	99%	92%
West Nusa Tenggara	64%	99%	100%	100%	90%	79%	99%	99%	92%
East Java	72%	100%	100%	99%	94%	77%	99%	98%	93%
DI Yogyakarta	66%	100%	100%	100%	97%	100%	98%	99%	96%
Rural puskesmas									
Rural puskesmas	54%	98%	99%	95%	82%	43%	97%	94%	85%
Urban puskesmas									
Urban puskesmas	51%	98%	100%	97%	79%	57%	97%	97%	86%
PONED puskesmas									
PONED puskesmas	61%	99%	100%	98%	89%	66%	98%	96%	90%
Non-PONED puskesmas									
Non-PONED puskesmas	52%	98%	99%	95%	79%	42%	97%	94%	84%
All puskesmas									
All puskesmas	53%	98%	99%	96%	81%	47%	97%	95%	85%
All public hospitals									
All public hospitals	74%	97%	N/A	98%	98%	96%	N/A	44%	86%
Sierra Leone health centers (2011)									
Sierra Leone health centers (2011)	57%		93%	78%	9%	16%	86%	86%	
Kenya health centers (2010)									
Kenya health centers (2010)					59%	61%			
Zambia health centers (2010)									
Zambia health centers (2010)		92%	95%	89%	44%	33%	99%	96%	
Namibia health centers (2009)									
Namibia health centers (2009)					95%	100%			

a. The ANC index is the unweighted mean availability of selected ANC indicators. There is mild skewing of this data which does not affect the provincial rank order. Use of mean is consistent with usage in similar SARA analysis and reports, e.g., <http://apps.who.int/healthinfo/systems/datacatalog/index.php/catalog/25>

**The general trend of high availability of basic equipment required for ANC and modest availability of diagnostic tests noted in the analysis of service readiness indicators is mirrored in reports from pregnant women captured by the recent IDHS survey.**<sup>33</sup> Components of ANC services that require basic and reusable equipment such as the measurement of blood pressure and body weight are unsurprisingly reported by 97 percent of pregnant women as having been received (see Figure 15). With regard to diagnostic tests, far fewer pregnant women reported having received these basic diagnostic tests—for example, only 52 percent of pregnant women reported having had a blood test and only 49 percent reported having been provided with a urine test during antenatal care at puskesmas. The former is particularly intriguing as the service availability of blood tests is decent.

FIGURE 15: CONTENT OF ANC AS REPORTED BY PREGNANT WOMEN, 2012

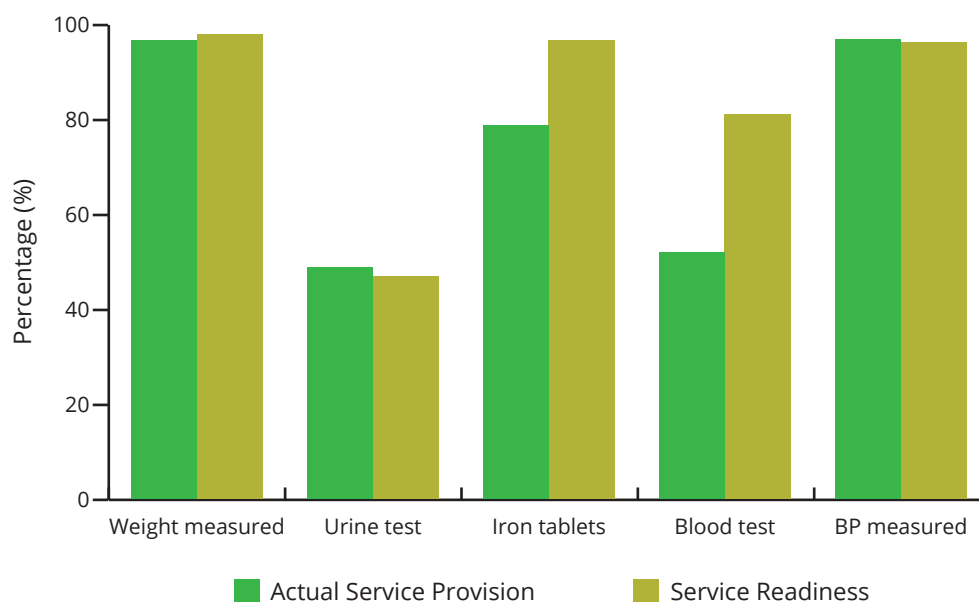


Source: IDHS, 2012

<sup>33</sup> Indonesian Demographic and Health Survey (IDHS), 2012

However, there are exceptions to this comparability—especially for iron and folic acid tablets, and blood tests—providing further insight into additional limitations and constraints (i.e., those not due to service readiness alone) that prevent women from receiving the full ANC package. For example, it is surprising that only 79 percent of pregnant women received iron and folic acid tablets even though 97 percent of puskesmas stocked this (Figure 16 and Table 7). This may be related to training and low provider compliance to guidelines. Similarly, even though blood tests were available in 81 percent of puskesmas, only 52 percent of pregnant women reported a blood test during ANC.

FIGURE 16: ACTUAL ANTENATAL CARE SERVICE PROVISION COMPARED WITH SERVICE READINESS



Actual Service Provision: IDHS, 2012  
 Service Readiness: Relevant Equipment/Medicines Available, Source: Rifaskes, 2011

TABLE 7: ANC COMPONENTS VERSUS SERVICE READINESS INDICATORS

Province	Components received during ANC (IDHS 2012)						Rifaskes 2011
	Weighed	Height measured	Blood pressure taken	Urine sample taken	Blood sample taken	Days iron taken	ANC index (mean)
Bottom 5 ANC Index							
Papua	56%	33%	52%	20%	28%	61	65%
Maluku	75%	42%	79%	14%	28%	79	67%
West Papua	81%	36%	80%	25%	48%	39	70%
North Sulawesi	91%	48%	92%	30%	39%	42	74%
North Maluku	82%	40%	84%	23%	41%	108	76%
Top 5 ANC Index							
Bangka Belitung	95%	38%	93%	49%	42%	82	91%
Central Java	98%	48%	96%	55%	47%	142	92%
West Nusa Tenggara	92%	47%	93%	65%	53%	80	92%
East Java	97%	65%	98%	52%	43%	124	93%
DI Yogyakarta	99%	62%	99%	70%	66%	172	96%

Despite some cases of disconnect between supply readiness and service provision, provinces with better ANC supply readiness also are generally better at providing the different ANC components at puskesmas level. Almost every component for ANC was better provided in the high ANC index provinces of Bangka Belitung, Central Java, West Nusa Tenggara, East Java, and DI Yogyakarta compared to provinces with some of the lowest ANC supply-side readiness such as Papua, Maluku, West Papua, North Sulawesi, and North Maluku.

### 4.3 Basic Obstetric Care

There is substantial overlap between the WHO SARA guidelines for basic obstetric care and Indonesia's National Basic Emergency Obstetric and Neonatal Care (PONED) guidelines, allowing for greater detail in the analysis. Supply-side readiness indicators for basic obstetric care according to SARA and PONED guidelines are summarized in Table 8. The analysis of supply-side readiness for basic obstetric care focuses on: (i) supply-side readiness in PONED puskesmas; (ii) provinces where the proportion of deliveries occurring at puskesmas were the highest; and (iii) provinces with the highest rates of maternal mortality. Most (not all) supply-side readiness indicators for basic obstetric care were available from the Rifaskes puskesmas dataset.

TABLE 8: BASIC OBSTETRIC CARE SERVICE READINESS INDICATORS

Component	WHO SARA guidelines	National PONED guidelines <sup>a</sup>	Indicators available
Staff and training	<ul style="list-style-type: none"> <li>Guidelines for integrated management of pregnancy and childbirth (IMPAC)</li> <li>Staff trained in IMPAC</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines for basic emergency obstetric and neonatal care (PONED)</li> <li>Staff trained in PONED</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines for basic emergency obstetric and neonatal care (PONED)</li> <li>Staff trained in PONED</li> </ul>
Equipment	<ul style="list-style-type: none"> <li>Emergency transport</li> <li>Examination light</li> <li>Delivery pack</li> <li>Suction apparatus (mucus extractor)</li> <li>Manual vacuum extractor<sup>b</sup></li> <li>Vacuum aspirator or dilatation and curettage (D&amp;C) kit</li> <li>Neonatal bag and mask</li> <li>Delivery bed</li> <li>Partograph</li> <li>Gloves</li> </ul>	<ul style="list-style-type: none"> <li>Examination light</li> <li>Pinard stethoscope or Doppler ultrasound</li> <li>Stethoscope</li> <li>BP Apparatus</li> <li>Delivery pack</li> <li>Manual vacuum extractor</li> <li>Neonatal bag and mask</li> <li>Cunam tampon</li> <li>Sims speculum</li> <li>Gloves</li> </ul>	<ul style="list-style-type: none"> <li>Emergency transport</li> <li>Examination light</li> <li>Doppler ultrasound</li> <li>Stethoscope</li> <li>BP Apparatus</li> <li>Delivery pack</li> <li>Suction apparatus (mucus extractor)</li> <li>Manual vacuum extractor</li> <li>Neonatal bag and mask</li> <li>Cunam tampon</li> <li>Sims speculum</li> <li>Gloves</li> </ul>
Medicines and commodities	<ul style="list-style-type: none"> <li>Antibiotic eye ointment for newborn</li> <li>Injectable uterotonic (oxytocin)</li> <li>Injectable antibiotic (broad spectrum, usually gentamycin or penicillin and ampicillin)</li> <li>Magnesium sulphate (injectable) or injectable valium</li> <li>Diazepam (injectable)</li> <li>Skin disinfectant</li> <li>Intravenous solution with infusion set (normal saline or ringers lactate, and dextrose 5%)</li> </ul>	<ul style="list-style-type: none"> <li>Oxytocin injection<sup>c</sup></li> <li>Methylethergometrine maleat injection</li> <li>Procaine or Lidocaine injection</li> <li>Adrenaline injection</li> <li>Antibiotics : (Ampicillin, Gentamycin, Metronidazole)</li> <li>Intravenous solution with infusion set (NaCl 0.9% or Ringer Lactate)</li> <li>Dexamethasone</li> <li>Magnesium sulphate</li> <li>Skin disinfectant (Povidone iodine 10%)</li> <li>Oxygen and regulator</li> </ul>	<ul style="list-style-type: none"> <li>Antibiotic eye ointment for newborn</li> <li>Oxytocin</li> <li>Ergometrine</li> <li>Lidocaine injection</li> <li>Antibiotics (ampicillin or gentamycin)</li> <li>Injectable magnesium sulphate</li> <li>Injectable diazepam</li> </ul>

a. *Buku Acuan Pelayananana Obstetri Neonatal Emergensi Dasar (PONED) 2005* (Basic Emergency Obstetric and Neonatal Care Manual). Ministry of Health, Indonesia.

b. A suction cup device used to assist with the delivery (also known as a Ventouse); not to be confused with suction aspiration device used to clean the womb after a miscarriage.

c. Oral and rectal misoprostol are included in the national PONED guidelines, but are not recommended in the national essential medicines list due to the possibility of misuse for abortions.

**Nationally, only 62 percent of PONED puskesmas had at least one staff member trained in PONED in the previous two years<sup>34</sup>, only slightly more than in non-PONED puskesmas (50 percent).** About three-fourths (77 percent) of PONED puskesmas and 68 percent of non-PONED puskesmas reported having guidelines for basic obstetric care available at the facilities. Geographical disparities appear modest, even for human resources for health (HRH)—with rural puskesmas appearing to be better staffed than urban puskesmas (Table 9). The availability of PONED guidelines and HRH training in PONEDs was generally the same or higher in public hospitals in the country (Table 9).

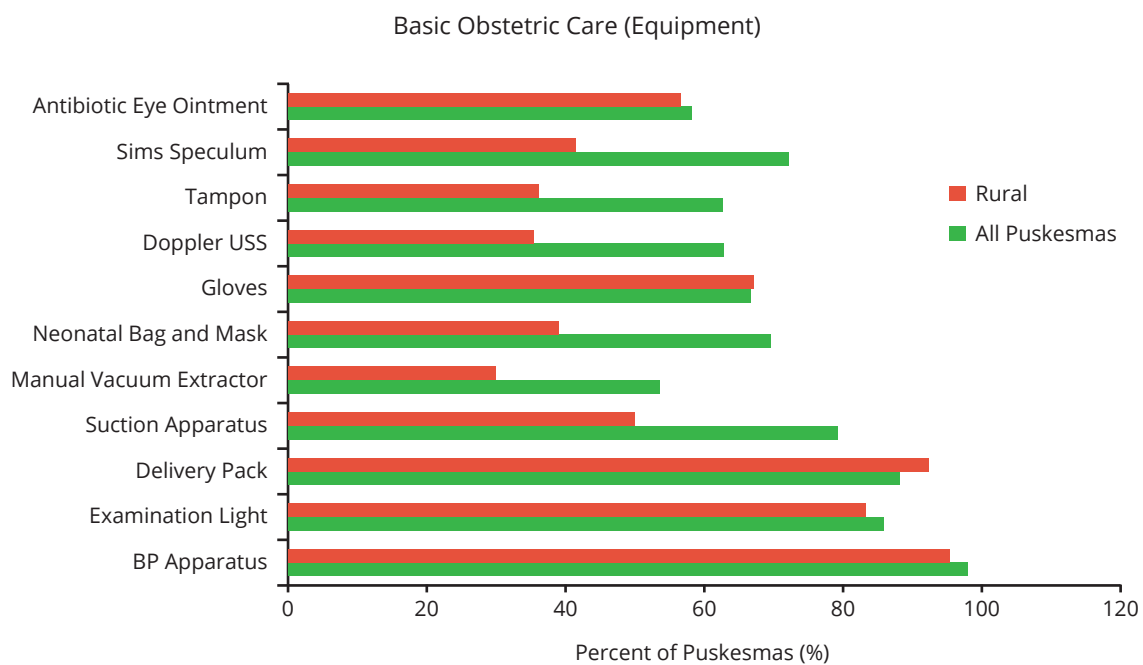
<sup>34</sup> The arbitrary cut-off of training within the last two years, is in concordance with SARA guidelines. However, this is not intended to be an adequate marker for provider ability—training within the last two years does not necessarily mean that the provider has the ability to perform.

TABLE 9: STAFF AND TRAINING FOR BASIC OBSTETRIC CARE IN INDONESIA AND COMPARATOR COUNTRIES, VARIOUS YEARS (2009–2011)

Type of facility	Availability of PONED guidelines at facility	Staff trained in PONED (in previous two years)
Rural puskesmas	71%	53%
Urban puskesmas	66%	50%
Non-PONED puskesmas	68%	50%
PONED puskesmas	77%	62%
All puskesmas	70%	52%
All public hospitals	74%	73%
Sierra Leone health centers (2011)	54%	68%
Kenya health centers (2010)		44%
Zambia health centers (2010)	35%	17%
Namibia health centers (2009)		32%

Source: Rifaskes (2011)

FIGURE 17: AVAILABILITY OF EQUIPMENT FOR BASIC OBSTETRIC CARE AT PUSKESMAS



**There was substantial variation in the availability of equipment required to provide basic obstetric care.** On the positive side, basic equipment such as delivery packs and blood pressure apparatus are almost universally available (in 92 percent and 96 percent of all puskesmas throughout the country, respectively) (Table 10). Even in rural areas, the availability of either exceeded 91 percent. However, among the five provinces with some of the highest rates of maternal mortality, for instance, Papua and West Papua, the availability of delivery packs was only 78 percent and 83 percent, respectively; and for blood pressure apparatus, 83 percent and 85 percent, respectively. However, the availability of emergency transport was generally deficient except for in some of the larger urban centers such as DKI Jakarta (98 percent) and Yogyakarta (94 percent). Among the five provinces with the highest rates of maternal mortality, the availability of emergency transport was extremely poor: only 52 percent in West Sulawesi and 55 percent on North Maluku (Table 10).

TABLE 10: EQUIPMENT FOR BASIC OBSTETRIC CARE

Region / Type	BP Apparatus	Emergency Transport	Delivery Pack	Manual Vacuum Extractor	Doppler
Rural puskesmas	95%	81%	92%	30%	36%
Urban puskesmas	97%	87%	91%	23%	33%
Non-PONED puskesmas	95%	82%	93%	5%	9%
PONED puskesmas	98%	84%	88%	54%	63%
PONED puskesmas (HFCS data)	-	-	-	16%	50%
All puskesmas	96%	82%	92%	29%	35%
All public hospitals <sup>a</sup>	98%	99%	-	95%	95%
Provinces with highest rates of delivery in puskesmas <sup>b</sup>					
West Nusa Tenggara	100%	83%	98%	55%	54%
East Nusa Tenggara	96%	66%	95%	28%	40%
North Sulawesi	90%	72%	93%	10%	18%
South Sulawesi	98%	84%	93%	29%	41%
Provinces with highest MMR (Puskesmas)					
West Sulawesi	98%	52%	98%	47%	67%
Gorontalo	97%	82%	95%	67%	62%
Papua	83%	77%	78%	4%	9%
North Maluku	93%	55%	84%	23%	27%
West Papua	85%	64%	87%	5%	11%

a. Rifaskes public hospital indicators

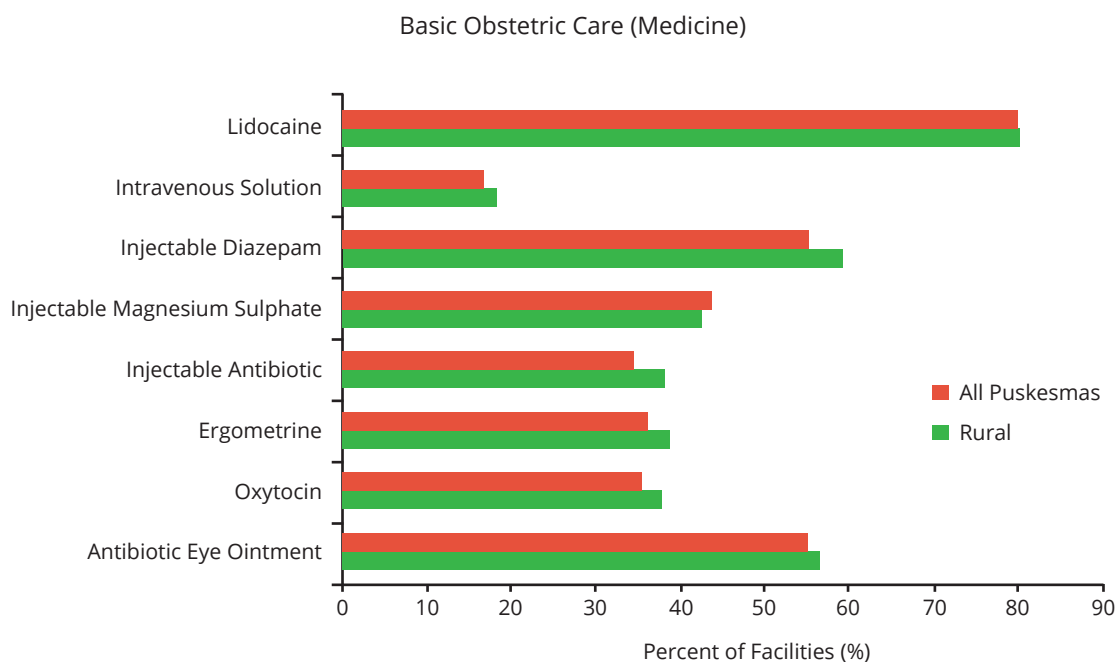
b. Percent of deliveries at puskesmas, by province: West Nusa Tenggara (21%), East Nusa Tenggara (18%), North Sulawesi (12%), South Sulawesi (12%), and Gorontalo (10%); Gorontalo is also one of the five provinces with the highest maternal mortality rates.

Note: Availability below 80% indicated in red

**Public hospitals are clearly better equipped**, with 95 percent possessing a manual vacuum extractor (for assisting with complicated deliveries) and 95 percent possessing a Doppler ultrasound (for the easy detection and measurement of the fetal heart rate) (Table 10).

**Medicines and commodities required for basic obstetric care are generally poorly available, with the exception of lidocaine.** The availability of drugs and commodities such as intravenous solution and oxytocin was notably deficient, especially when compared with the availability of basic equipment (Figure 18).

FIGURE 18: MEDICINES FOR BASIC OBSTETRIC CARE (PUSKESMAS)



**The most common causes of maternal mortality can be classified into two categories: postpartum hemorrhage (PPH), and preeclampsia and eclampsia.**<sup>35, 36</sup> Being cognizant that the determinants of maternal mortality are far more complex than the service readiness of puskesmas, especially considering that most deliveries (and most maternal deaths<sup>37</sup>) do *not* occur at puskesmas, in the following paragraphs these

<sup>35</sup> PPH refers to abnormally large amounts of bleeding following childbirth. The main risk factors for PPH are a prolonged third stage of labor, parity (e.g., multiple previous pregnancies, multiple pregnancies (e.g., twins), and unskilled birth delivery assistance (e.g., episiotomy) resulting in trauma of the birth canal. With this in mind, the person attending the birth would need the training to manage the birth process skillfully (including in the use of uterotonic drugs such as oxytocin to actively manage the third stage of labor, as per basic obstetric training) in order to reduce the risk of PPH, to be able to detect (through training and experience) that the woman is bleeding an unusually large amount, identify the source of where the bleeding is coming from, and to treat that cause by stopping/slowing the bleeding.

<sup>36</sup> Abnormally high blood pressure related to pregnancy (preeclampsia), leading to seizures (eclampsia).

<sup>37</sup> Locations of maternal deaths: Urban maternal deaths: 49% at public hospitals, 25% at private hospitals, 18% at home, 5% at other locations; Rural maternal deaths: 38% at public hospitals, 36% at home, 10% at private hospitals, 0.5% at puskesmas, 10% at other locations.



two causes of maternal death are contextualized against the availability of specific equipment, medicines, and commodities used to identify or treat these conditions. This is not intended to be a comprehensive analysis of the determinants of maternal mortality in Indonesia, but merely a logical way of categorizing the mix of service readiness indicators for basic obstetric care.

In the case of PPH, to identify the source of the bleeding, the attendant needs an examination light and a speculum (to help visualize the birth canal). These were present in only 86 percent and 72 percent of PONEP puskesmas, respectively. In some urban centers, it is understandable that only some puskesmas have a Sims speculum, as they are unlikely to have to manage obstetric emergencies since deliveries would mainly occur at hospitals. However, in certain provinces with high rates of maternal mortality such as Papua and West Papua, it is of grave concern that only 11 percent and 13 percent of puskesmas had this speculum, respectively, as these facilities would be inadequately equipped to manage PPH even if the delivery occurred there.

**Uterotonic drugs (oxytocin and ergometrine injection) for prevention and treatment of PPH were only available in 36 percent of puskesmas (Table 11).**<sup>38</sup> Even among PONEP puskesmas, which have special responsibility for managing obstetric cases, the availability of these drugs was limited: 67 percent for oxytocin and 69 percent for ergometrine.<sup>39</sup> The geographical inequalities are an even greater concern. In all five provinces with the highest rates of maternal mortality, the availability of these lifesaving drugs was below 50 percent and as low as 17 percent in the case of oxytocin in Papua. Even in provinces where the utilization of puskesmas for deliveries were the highest in the country—for example, West and East Nusa Tenggara, and North and South Sulawesi—the availability of oxytocin and ergometrine was modest (ranging from 45 to 61 percent) except for in North Sulawesi, where the availability was low: only 20 percent for oxytocin and 24 percent for ergometrine. Intravenous solution, essential for PPH management, was only available in 12 to 21 percent of puskesmas in the five provinces with the highest rates of maternal mortality, and was only 51 percent of PONEP puskesmas.

<sup>38</sup> Uterine atony (loss of tone of uterine muscles) is the main cause of PPH. This can be managed and treated by uterine massage and administration of uterotonic drugs which cause the uterus to contract down tightly so that bleeding from the inner lining of the uterus stops or slows.

<sup>39</sup> HFCS data indicate higher availability of oxytocin and ergometrine among PONEP puskesmas: 86% and 86%, respectively.

TABLE 11: BASIC OBSTETRIC SERVICE READINESS INDICATORS IN INDONESIA AND COMPARATOR COUNTRIES, FOCUSED ON POST-PARTUM HEMORRHAGE (PPH)

Region / Type	Examination Light	Tampon	Sims Speculum	Oxytocin	Ergometrine	Intravenous solution	Health Facilities 'ready' for PPH (average)	Health Facilities 'ready' for PPH <sup>a</sup>
Rural Puskesmas	83%	36%	42%	38%	39%	18%	44%	5%
Urban Puskesmas	90%	30%	35%	29%	29%	13%	43%	3%
Non-PONED Puskesmas	85%	8%	9%	22%	22%	9%	38%	1%
PONED Puskesmas	86%	63%	72%	67%	69%	51%	67%	21%
<i>PONED Puskesmas (HFCS data)</i>	45%	-	-	86%	86%	100%	-	-
All Puskesmas	85%	35%	40%	36%	36%	17%	44%	4%
All Public Hospitals	96%	-	-	-	-	99%	97%	95%
Provinces with the highest rates of delivery at Puskesmas								
West Nusa Tenggara	90%	50%	63%	61%	60%	36%	58%	13%
East Nusa Tenggara	83%	38%	45%	50%	49%	20%	47%	5%
North Sulawesi	76%	15%	38%	20%	24%	8%	34%	1%
South Sulawesi	81%	44%	51%	50%	45%	13%	44%	2%
Provinces with highest MMR (Puskesmas)								
West Sulawesi	74%	67%	60%	57%	50%	15%	47%	5%
Gorontalo	88%	62%	59%	48%	48%	12%	47%	4%
Papua	51%	8%	11%	17%	19%	12%	21%	1%
North Maluku	73%	23%	32%	30%	34%	16%	38%	2%
West Papua	58%	8%	13%	27%	24%	21%	28%	2%
Sierra Leone Health Centers (2011)	39%			78%		34%		
Zambia Health Centers (2010)	21%			77%				

a. This is the percentage of facilities which have an examination light, tampon, Sims speculum, oxytocin, ergometrine, oxytocin, AND intravenous solution.  
Note: Availability below 80% indicated in red

**Blood pressure equipment for detecting abnormally high blood pressure that can lead to preeclampsia and eclampsia was widely available (at 98 percent of PONEC puskesmas).** On the other hand, urine tests were only available in 42 percent of PONEC puskesmas and in only 3 percent of puskesmas in Gorontalo (Table 12).<sup>40</sup>

For the prevention and treatment of seizures related to abnormal high blood pressure, only 7 percent of PONEC puskesmas have injectable magnesium sulphate in stock. This is ironically less than the availability in puskesmas nationally (44 percent). Injectable diazepam, an alternative drug that is also used to treat seizures, is more widely available, in 69 percent of PONEC puskesmas compared with 55 percent of all puskesmas nationally.<sup>41</sup> Both injectable magnesium sulphate and injectable diazepam are specified in the essential medicines list for puskesmas.<sup>42</sup> However, national PONEC and Comprehensive Emergency obstetric and neonatal care (*Pelayanan obstetric dan neonatal emergensi komprehensif* (PONEK/CEONC) guidelines, as well as international guidelines, recommend the use of injectable magnesium sulphate instead of injectable diazepam due to its superior clinical results compared with diazepam.<sup>43</sup> Considering that PONEC puskesmas typically stock injectable diazepam instead of injectable magnesium sulphate, these findings provide tantalizing evidence that although clinical guidelines (from 2005 and 2007) and essential medicines lists (from 2011, that is, before the Rifaskes census) have been updated, the likely actual practice inferred by this data is that preeclampsia and eclampsia are generally managed with injectable diazepam instead of injectable magnesium sulphate. Regional variation is a further concern with only 42 percent and 50 percent of puskesmas in Papua and West Papua, where maternal mortality rates are among the highest in the country, stocking diazepam (and far fewer stocking injectable magnesium sulphate). Even just including the top four provinces where the utilization of puskesmas for deliveries is highest, there is considerable variation in the availability of injectable magnesium sulphate (ranging from 23 percent to 64 percent) and injectable diazepam (ranging from 30 percent to 77 percent) suggesting that utilization alone may not drive the service readiness of these basic obstetric medicines.

<sup>40</sup> Rifaskes does not provide additional details on the nature of the urine test—for example, whether it is a test for glucose or protein.

<sup>41</sup> HFCS data indicates that the availability of injectable magnesium sulphate and injectable diazepam at PONEC puskesmas is higher—36% and 75% respectively—however the noted trend that diazepam is more widely available than magnesium sulphate is similar.

<sup>42</sup> *Daftar Obat Esensial Nasional* 2011. Ministry of Health, Indonesia

<sup>43</sup> *Buku Acuan Pelayanan Obstetri Neonatal Emergensi Dasar* 2005 (Basic Emergency Obstetric and Neonatal Care Manual). Ministry of Health, Indonesia; *Pedoman Penyelenggaraan Pelayanan Obstetri Neonatal Emergensi Komprehensif (PONEK) 24 Jam di Rumah Sakit* 2007 (Comprehensive Emergency Obstetric and Neonatal 24-hour Care at Hospitals). Ministry of Health, Indonesia.

TABLE 12: BASIC OBSTETRIC SERVICE READINESS INDICATORS IN INDONESIA, FOCUSED ON PRE-ECLAMPSIA/ECLAMPSIA

Region / Type	Stethoscope	BP Apparatus	Urine test <sup>a</sup>	Injectable Magnesium Sulphate	Injectable Diazepam	Health facilities 'ready' for Pre-eclampsia/Eclampsia (average)	Health facilities 'ready' for Pre-eclampsia/Eclampsia (%) <sup>b</sup>
Rural Puskesmas	99%	95%	43%	43%	60%	68%	11%
Urban Puskesmas	100%	97%	57%	48%	44%	69%	12%
Non-PONED Puskesmas	99%	95%	66%	52%	52%	68%	13%
PONED Puskesmas	100%	98%	42%	7%	69%	68%	3%
PONED Puskesmas (HFCS data)	80%	82%	9% <sup>c</sup>	36%	75%	-	-
All Puskesmas	99%	96%	47%	44%	55%	68%	11%
All Public Hospitals	-	98%	96%	-	-	97%	88%
Provinces with the highest rates of delivery at puskesmas							
West Nusa Tenggara	100%	100%		23%	77%	76%	17%
East Nusa Tenggara	100%	96%		51%	62%	66%	7%
North Sulawesi	99%	90%		46%	30%	54%	0%
South Sulawesi	100%	98%		64%	60%	77%	21%
Provinces with the Highest MMR (puskesmas data shown)							
West Sulawesi	99%	98%	37%	48%	55%	67%	11%
Gorontalo	100%	97%	3%	43%	58%	60%	0%
Papua	90%	83%	11%	11%	42%	47%	2%
North Maluku	96%	93%	13%	42%	62%	61%	5%
West Papua	90%	85%	16%	9%	50%	50%	1%

a. Rifaskes does not distinguish between the types of urine test strips—e.g., for protein, glucose, ketones, etc. Urine test strips for protein are used to aid the diagnosis of preeclampsia/eclampsia.

b. This is the percentage of facilities that have a stethoscope, BP apparatus, urine test, AND, either injectable magnesium sulphate OR injectable diazepam.

c. Specifically, urine protein test strips

Note: Availability below 80% indicated in red

**Basic obstetric care includes management of newborns, especially if the newborn is premature, is asphyxiated during birth, or is at risk of infection.** Essential equipment for management of newborns includes suction apparatus. This equipment was available in 80 percent of PONE D Puskesmas (but only in 31 percent of non-PONE D Puskesmas), with pronounced regional disparities. Although Puskesmas in Papua and West Papua rarely had this equipment (19 percent and 17 percent, respectively), 80 percent of Puskesmas in Gorontalo had it. PONE D Puskesmas in general have a neonatal bag and mask<sup>44</sup> (70 percent), but non-PONE D Puskesmas rarely do (7 percent). Among the five provinces with the highest rates of maternal mortality, the availability of this equipment ranged from 6 percent (Papua) to 80 percent (West Sulawesi). The reasons behind the variation in availability of this equipment, even amongst disadvantaged provinces, should be explored further. Regarding medicines and commodities for newborns, one trace drug is antibiotic eye ointment, used routinely to prevent eye infections among newborns. Although only 58 percent of PONE D Puskesmas stocked this drug, there is less variation in its availability. For example, 57 percent of rural Puskesmas stocked this drug compared with 52 percent of urban Puskesmas.

**Infection following childbirth (and abortions) is another main cause of maternal mortality.** Basic infection control measures such as gloves were, however, only available in 67 percent of PONE D Puskesmas and only 38 percent of Puskesmas in Gorontalo. Injectable antibiotics for infection treatment were available only in 45 percent of PONE D Puskesmas. Geographic disparities were even more stark: only 15 percent of Puskesmas in Gorontalo stocked this drug, although it is notable that there were deficiencies even in provinces such as Bali (18 percent) and West Java (26 percent) where the maternal mortality rate was lower than the national rates.

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<sup>44</sup> Commonly also known as an ambubag.

TABLE 13: BASIC OBSTETRIC SERVICE READINESS INDICATORS IN INDONESIA, FOCUSED ON INFECTIONS AND NEONATAL CARE

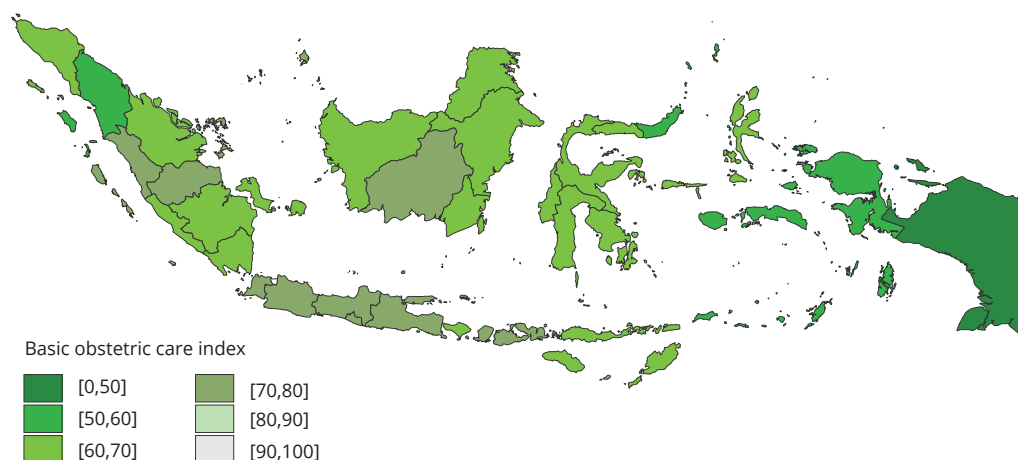
Region / Type	Suction Apparatus	Neonatal Bag and Mask	Gloves	Antibiotic Eye Ointment	Injectable Antibiotic	Health Facilities 'ready' for Neonatal Care (Average)	Health Facilities 'ready' for Neonatal Care <sup>a</sup>
Rural Puskesmas	50%	39%	67%	57%	38%	51%	3%
Urban Puskesmas	43%	31%	77%	52%	23%	47%	1%
Non-PONED Puskesmas	31%	7%	71%	55%	32%	47%	0%
PONED Puskesmas	80%	70%	67%	58%	45%	63%	11%
PONED Puskesmas (HFCS data)	48%	16%	80%	-	18% <sup>b</sup>	-	-
All Puskesmas	49%	37%	70%	55%	34%	50%	2%
All Public Hospitals	96%		94%			95%	84%
Provinces with the highest rates of delivery at Puskesmas							
West Nusa Tenggara	70%	60%	54%	49%	60%	58%	7%
East Nusa Tenggara	51%	38%	54%	54%	46%	50%	3%
North Sulawesi	45%	28%	54%	34%	12%	33%	0%
South Sulawesi	50%	49%	63%	60%	23%	48%	1%
Provinces with the Highest MMR (Puskesmas only)							
West Sulawesi	44%	80%	38%	34%	33%	37%	0%
Gorontalo	79%	48%	55%	59%	15%	44%	3%
Papua	19%	6%	64%	57%	49%	39%	0%
North Maluku	50%	32%	61%	46%	40%	47%	1%
West Papua	17%	12%	76%	63%	57%	47%	3%

a. This is the percentage of facilities which have suction apparatus, neonatal bag and mask, AND antibiotic eye ointment.

b. Injectable ampicillin, a commonly used antibiotic. Oral antibiotics are more widely available.

Note: Availability below 80% indicated in red

FIGURE 19: PUSKESMAS BASIC OBSTETRIC CARE SERVICE READINESS INDEX BY PROVINCE



#### 4.4 Comprehensive Obstetric Care

**Comprehensive obstetric care, which within the WHO SARA framework refers to hospitals and facilities offering caesarean section,** describes key interventions and obstetric complications that comprehensive obstetric care would need to cover.<sup>45</sup> These are all complex procedures that require the availability of perhaps hundreds of different types of medicines, commodities, and equipment, not to mention a variety of staffing skills and expertise. Furthermore, compared with basic obstetric care, there is greater variation in practice, with different providers and facilities choosing a different combination of inputs (like medicines and equipment) in order to provide equivalent services. Hence, for the purposes of this analysis and due to data limitations, four aspects are specifically explored: (i) the physical accessibility of (public) PONEK (CEONC) facilities; (ii) HRH; (iii) the availability of a small subset of key advanced (generally high-cost) obstetric and neonatal commodities and equipment; and in particular, (iv) blood transfusion services, which are important services required to support the provision for caesarean sections. Public hospitals, the location for 11 percent of births nationally (more than double that of puskesmas), are the focus of data analysis for this section.<sup>46</sup>

**Globally, the lack of timely access to PONEK facilities in the event of pregnancy-related complications is a key determinant of high levels of maternal mortality.** Three types of delays are commonly described: (i) a delay in the decision to seek care, (ii) a delay in reaching care, and (iii) a delay in receiving adequate health care.<sup>47</sup> The first type of delay, in the decision to seek care, in the context of this supply-side analysis,

<sup>45</sup> These are: *Parenteral administration of antibiotics; Parenteral administration of oxytocic drug; Parenteral administration of anticonvulsants; Assisted vaginal delivery; Manual removal of placenta; Manual removal of retained products; Neonatal resuscitation; Caesarean section; Blood transfusion; and Comprehensive emergency obstetric care.*

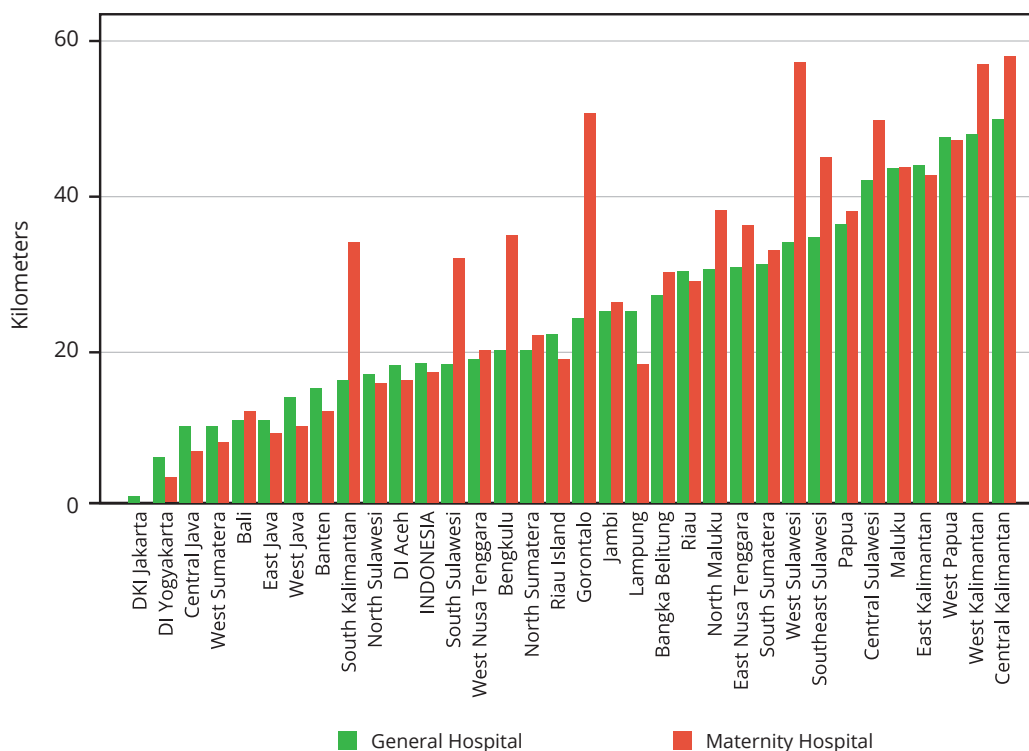
<sup>46</sup> PONEK (*Pelayanan Obstetri Neonatal Emergensi Komprehensif*), which is CEONC = Comprehensive Emergency Obstetric and Neonatal Care.

<sup>47</sup> Thaddeus, Sreen, and Deborah Maine. 1994. "Too Far to Walk: Maternal Mortality in Context." *Social Science & Medicine* 38 (8): 1091–1110." Also see: Gabrysch, Sabine, and Oona MR Campbell. 2009. "Still Too Far to Walk: Literature Review of the Determinants of Delivery Service Use." *BMC Pregnancy and Childbirth* 9 (1): 34.

pertains mainly to the quality of ANC and in particular, the training of health workers in explaining the warning signs to pregnant women, signs which indicate that medical care should be sought immediately. Other determinants of the delay in the decision to seek care (e.g., cultural factors and educational status) are also important, but beyond the scope of this paper.

**Regarding the second type of delay, that of reaching care,** government policy indicates that the standard for the regionalized system of obstetric and neonatal care is that these facilities should be accessible by the catchment population within one hour, using the usual transportation method for that area, although there is a lack of clarity regarding whether the health facilities referred to are PONED puskesmas or public hospitals.<sup>48, 49</sup> Analysis of the PODES dataset indicates that the median distance from a village to a maternity or general hospital is about 20km in Indonesia. Unsurprisingly, distances to hospitals in the relatively densely-populated provinces in Java and Bali are much lower than in other provinces: in Central and West Kalimantan the median distance to a maternity or general hospital is almost three times higher than the national average (Figure 20). As discussed in the early section on Basic Obstetric Care Service Readiness, the readiness of puskesmas to provide emergency transportation (Table 10) add a further dimension to delays in reaching care, particularly for these disadvantaged provinces.

FIGURE 20: MEDIAN DISTANCES FROM VILLAGES TO THE NEAREST MATERNITY OR GENERAL HOSPITAL, 2011



Source: PODES

<sup>48</sup> Pelayanan Obstetrik dan Neonatal Emergensi Dasar Factsheet. Direktorat Bina Kesehatan Ibu, MOH

<sup>49</sup> Pedoman Penyelenggaraan Pelayanan Obstetri Neonatal Emergensi Komprehensif (PONEK) 24 Jam di Rumah Sakit 2007 (Comprehensive Emergency Obstetric and Neonatal 24-hour Care at Hospitals). Ministry of Health, Indonesia.



The third type of delay, that of receiving adequate health care in time, is a function of both service readiness and provider ability and effort. Key advanced obstetric and neonatal service readiness indicators are summarized in Table 14 below. Provider ability and effort is not specifically measured in the Rifaskes census but availability of key staff, training, and the availability of guidelines is measured and included in Table 14.

TABLE 14: COMPREHENSIVE OBSTETRIC CARE SERVICE READINESS INDICATORS

Component	WHO SARA guidelines	National PONEK guidelines <sup>a</sup>	Indicators available
Staff and training	Guidelines for CEmOC Staff trained in CEmOC Staff trained in surgery Staff trained in anesthesia	Guidelines for PONEK Staff trained in PONEK Essential HRH: one obstetrician; one pediatrician; one emergency room physician; three midwives; two nurses; one anesthetist	Guidelines for PONEK Staff trained in PONEK Essential HRH: one obstetrician; one pediatrician; one emergency room physician; three midwives; two nurses; one anesthetist
Equipment	Anesthetic equipment Incubator	<i>Selected key advanced obstetric equipment:</i> Manual vacuum extractor Cardiotocograph (CTG) Ultrasound equipment (USG) Anesthetic machine  <i>Selected key advanced neonatal equipment:</i> Infant radiant warmer Incubator Phototherapy lamp Bedside monitor Pulse oxymeter Infusion pump Infant ventilator	<i>Selected key advanced obstetric equipment:</i> Manual vacuum extractor Cardiotocograph (CTG) Ultrasound equipment (USG) Anesthetic machine  <i>Selected key advanced neonatal equipment:</i> Infant radiant warmer Incubator Phototherapy lamp Bedside monitor Pulse oxymeter Infusion pump Infant ventilator
Diagnostics	Blood typing-Crossmatch testing	Laboratory open 24 hours	Laboratory open 24 hours
Medicines and commodities	Blood supply sufficiency  Blood supply safety	<i>Selected key advanced obstetric and neonatal medicines and commodities:</i>  Pharmaceutical facility and support equipment available 24 hours per day Dexamethasone or Cortisone Injectable magnesium sulphate  <i>Selected blood transfusion-related indicators:</i> Facility able to provide cross-matched blood for transfusion in less than one hour Blood transfusion services open 24 hours	<i>Selected key advanced obstetric and neonatal medicines and commodities:-</i> Pharmaceutical facility and support equipment available 24 hours per day Injectable dexamethasone Injectable magnesium sulphate  <i>Selected blood transfusion-related indicators:</i> Facility able to provide cross-matched blood for transfusion in less than one hour transfusion Blood transfusion services open 24 hours

a. Pedoman Penyelenggaraan Pelayanan Obstetri Neonatal Emergensi Komprehensif (PONEK) 24 Jam di Rumah Sakit 2007 (Comprehensive Emergency Obstetric and Neonatal 24-hour Care at Hospitals). Ministry of Health, Indonesia.

**Nationally, half of public hospitals reported having PONEK guidelines available, but only one of ten public hospitals in West Papua reported the same.** Availability of PONEK guidelines, although generally low across all provinces in the country, was especially low in the provinces of North Maluku, Riau Island, West Papua, Maluku, and Southeast Sulawesi. There ought to be a relatively easy fix for this: a key policy recommendation would be for the Ministry of Health (MOH), Provincial Health Offices (PHOs), and District Health Offices (DHOs) to ensure that, at the very least, hospitals have PONEK guidelines that can be easily accessed and socialized among hospital staff.

**About 78 percent of all public hospitals in Indonesia had essential HRH for CEONC.** In most cases, the deficiencies were related to hospitals not having the minimum number of midwives (3) and nurses (2) required by the national CEONC guidelines.

TABLE 15: STAFF AND TRAINING FOR COMPREHENSIVE OBSTETRIC CARE AT PUBLIC HOSPITALS IN INDONESIA

Staff and training	PONEK public hospitals	All public hospitals
PONEK Guidelines	62%	50%
PONEK Training	72%	78%
At least one obstetrician	100%	100%
At least one pediatrician	100%	100%
At least one emergency room physician	99%	99%
At least three midwives	81%	84%
At least two nurses	84%	86%
At least one anesthetist	98%	98%
Essential HRH indicators met	72%	78%

**The availability of CEONC-related equipment was good across all public hospitals in the country.** Over 95 percent of public hospitals reported having infant incubators, manual vacuum extractors, and ultrasound equipment (USG). About 64 percent of public hospitals reported having 24-hour laboratory facilities, as required by national CEONC guidelines.

TABLE 16: COMPREHENSIVE OBSTETRIC CARE SERVICE INDICATORS (EQUIPMENT, DIAGNOSTICS, AND MEDICINES AND COMMODITIES) AT PUBLIC HOSPITALS IN INDONESIA

Equipment, Diagnostics, And Medicines And Commodities	PONEK Public Hospitals	All Public Hospitals
<b>Obstetric Equipment</b>		
Manual vacuum extractor <sup>a</sup>	95%	96%
Cardiotocograph (CTG)	95%	95%
Ultrasound equipment (USG)	97%	97%
Anesthetic machine	100%	100%
<b>Neonatal Equipment</b>		
Infant radiant warmer	100%	100%
Incubator <sup>b</sup>	97%	97%
Phototherapy lamp	99%	99%
Bedside Monitor	99%	99%
Pulse oxymeter	100%	100%
Infusion pump	98%	98%
Infant ventilator	97%	97%
<b>Diagnostics</b>		
Laboratory open 24 hours	75%	64%
<b>Medicines and Commodities</b>		
Pharmaceutical facility and support equipment available 24 hours per day	76%	66%
Injectable dexamethasone <sup>c</sup>	98%	98%
Injectable magnesium sulphate	-	37% <sup>d</sup>

a. HFCS data indicate availability in 46% of hospitals

b. HFCS data indicate availability in 65% of hospitals

c. HFCS data indicate availability in 33% of hospitals

d. HFCS data. Not included in Rifaskes data for hospitals.

**About half of all public hospitals in Indonesia reported having access to 24-hour blood transfusion services, but there are large geographical variations.** In almost half of all provinces in Indonesia, less than two thirds of public hospitals reported having 24-hour blood transfusion services. These were also the provinces with the lowest proportion of public hospitals reporting a blood transfusion response time of less than one hour (to deliver crossmatched blood after receiving a sample of the patient's blood). Overall, less than a quarter of all public hospitals in Indonesia reported a blood transfusion response time of less than one hour. (Table 17).

TABLE 17: BLOOD TRANSFUSION SERVICE AND RESPONSE TIMES AT PUBLIC HOSPITALS IN INDONESIA

Province	Percent of public hospitals reporting 24-hour blood transfusion services (%)	Percent of public hospitals reporting a blood transfusion response time of less than one hour (%)	Total number of public hospitals
Southeast Sulawesi	20.0	20.0	15
Papua	22.2	5.6	18
Maluku	28.6	7.1	14
Bengkulu	30.8	23.1	13
Riau Island	36.4	9.1	11
North Sulawesi	37.5	12.5	16
Riau	39.1	13.0	23
South Kalimantan	40.0	15.0	20
West Papua	40.0	10.0	10
North Maluku	41.7	-	12
North Sumatera	44.4	38.9	54
East Kalimantan	45.0	35.0	20
South Sumatera	50.0	19.2	26
West Sumatera	50.0	31.8	22
Central Sulawesi	53.3	26.7	15
All public hospitals	54.2	26.0	685

**Almost all public hospitals reported having all the tracer CEONC medications for which data was available from the Rifaskes study.** These medicines included saline, ringer lactate, ampicillin, dexamethasone, and salbutamol.



## POLICY IMPLICATIONS AND CONCLUSIONS

## 5. Policy Implications and Conclusions

**Despite progress in recent years, Indonesia's maternal mortality ratio remains high relative to its income level and for a country that has universal maternal health coverage.** From a health systems perspective, some of the challenges in improving maternal health remain with regard to the availability and training of HRH, quality of services, and access to emergency care when needed. Universal maternal health coverage has, in principle, reduced financial access barriers. Nevertheless, supply-side readiness remains a challenge in terms of actualizing benefits of universal maternal health coverage especially in provinces with some of the poorest maternal health care utilization indicators and some of the highest maternal mortality ratios. Although, on paper, Indonesia has universal maternal health coverage, this is far from the reality if one assesses the ability of public health facilities to provide some of the basic services related to ANC, basic obstetric care, and comprehensive obstetric care. Using analysis of facility-level data—combined with information from the maternal health benefit package of key social insurance programs, from national maternal health service guidelines, and the WHO's SARA framework—this paper presents a snapshot of supply-side service readiness for maternal health services in Indonesia.

One notable result from this analysis is the degree of heterogeneity of MH service utilization and readiness inherent within Indonesia. **The 'eastern' (loosely speaking) part of Indonesia (as typified by provinces such as Papua, West Papua, Gorontalo, Maluku, North Maluku, East Nusa Tenggara, and North Sulawesi) utilization of MH services is generally much lower and where utilization does occur, the public sector is dominant but weak in service readiness.** Although these regions, by virtue of low population densities, do not contribute the most towards the total counts of maternal deaths in Indonesia, the rates of maternal mortality are generally higher than the Indonesian average. In some of these provinces, the readiness to provide services is so poor that basic infrastructure like a water supply was only present in 40 percent of puskesmas in Papua, referral transportation was only available in half of puskesmas in West Sulawesi, and referral communications only available in 40 percent of puskesmas in East Nusa Tenggara. These deficiencies are likely to result in less effective service provision of MH services and contribute towards low utilization levels as patients may not have confidence in using these puskesmas. The higher utilization of public hospitals rather than public puskesmas even for primary care services like ANC lends further weight to this possibility. The policy implications of this are:

*Special Focus on Eastern Provinces.* In order to improve maternal health outcomes, Indonesia will need to focus attention on some of the eastern provinces (such as West Papua, North Maluku, Papua, Gorontalo, and West Sulawesi) where utilization of maternal health services in *public* facilities is the highest (though is not necessarily highest in total utilization, inclusive of private providers). The MH supply-side readiness of public health facilities, which may be the only providers that some communities in these provinces have access to, is weaker than in the rest of the country. As public health facilities are automatically into JKN, the existing service readiness of these facilities will have a direct impact on the ability to meaningfully provide quality MH services. Although the sparseness of the population means that developing health services may be more costly than in other provinces, greater improvements in maternal health outcomes are expected since current outcomes are poor. The focus on the eastern provinces should also emphasize aspects that would encourage utilization—including enhanced cultural and ethno-linguistic sensitivity in attempting to change the utilization behaviors of pregnant women, and improvement of facility readiness.

**In ‘western’ provinces of Indonesia (as typified by provinces in Java and Bali), utilization of MH services is already high and the private sector is strongly dominant.** Although maternal mortality rates are generally lower than the Indonesian average, these provinces contribute the majority of maternal deaths in Indonesia, by virtue of the sheer population numbers living in these areas. Due to limitations in the data sources used in this analysis, the service readiness of private facilities could not be explored in detail.<sup>50</sup> However, the accreditation process of JKN in theory should encourage private providers to upgrade their service readiness in order to meet the criteria and prevent private providers that do not have adequate service readiness from providing services under JKN. Hence,

*Improve Stewardship and Accountability.* The MOH should play a stewardship role in facilitating the independent accreditation of facilities, rather than focusing purely on service provision, although it is accepted that the role of the public sector in providing MH services in areas that may not be attractive to private sector providers and in ensuring an adequate network of referral centers remains critical. The measuring and monitoring of service availability and readiness should be further integrated as a core function of the MOH.

In addition to accreditation, there are further challenges in accountability considering Indonesia’s decentralized context. There remains some confusion about the roles and responsibilities for different levels of government, especially given the different financing modalities in the health system. If district and provincial governments are to be held accountable for provision of health services, a better system of independent monitoring and evaluation needs to be put in place, as well as appropriate and effective incentive and provider payment mechanisms to ensure that coverage is realized.

<sup>50</sup> It is understood by the authors that the Ministry of Health is currently in the midst of conducting a follow-up assessment to the Rifaskes, which will include a greater sample of private providers.

**Notwithstanding the variations among regions and provinces, there is a need for improvement of overall maternal health service readiness in Indonesia.** For example, only 21 percent of PONE D puskesmas nationally had all the inputs (included in Rifaskes) required to manage and treat postpartum hemorrhage, and only 11 percent of PONE D puskesmas had all the inputs required to provide neonatal care. The ‘effective depth’ of coverage of these services through public puskesmas is hence in doubt. Hence,

*Invest in Service Readiness for Maternal Health.* In order for investments in expanding the breadth and height of maternal health care to be fully realized, the depth of coverage needs to be addressed: to maximize efficiency gains from the prevention and prudent management of relevant conditions, and to minimize costly and harmful complications. This is vital, not only to ensure the long-term sustainability of JKN, but also to improve the health and productivity of Indonesia’s women and children.

**As outlined in this paper, deficiencies in diagnostic capacity, medicines and commodities, and specialized equipment are more pronounced than for basic equipment.** While the availability of basic equipment like stethoscopes and blood pressure apparatus, which are used even for non-MH services, is nearly ubiquitous even in rural areas, even basic diagnostics like urine tests are only available in 42 percent of PONE D puskesmas and injectable antibiotics are only available in 45 percent of PONE D puskesmas. It is not only consumables that are limited. Specialized equipment (in the sense that they have a specific purpose for maternal and newborn health, but not in the sense that they are complex or particularly expensive) that is reusable is also in short supply. For example, neonatal bag and masks used to support the first few breaths of a newborn child are only available in 70 percent of PONE D puskesmas, and a Doppler ultrasound, a small hand-held device to accurately listen to the fetal heart rate, is only available in 63 percent of PONE D puskesmas. Hence,

*Understand Why Supply-Side Deficiencies and Misallocations Exist.* The analysis of Rifaskes and other facility data demonstrate where deficiencies in supply-side readiness exist. One key next step is to gain a better and more systematic understanding of why these deficiencies exist and what can be done to overcome them.

Several explanations are possible including weaknesses in data collection and reporting of service readiness; lack of provider ability and provider demand for equipment/commodities; lack of financing, or inefficient financing that is unresponsive to the needs of the facility; lack of provider autonomy, or lack of signals as to what inputs are required for providing services; weak procurement/logistics systems; or lack of accountability.

In order to assist with further understanding why supply-side deficiencies exist, a proposed Public Expenditure Tracking Survey (PETS) is planned for health facilities in Indonesia, including provincial consultations and analytical work related to assessment of public financial flows at different levels of government (central, provincial, district). It is hoped that this analysis will provide further evidence for the development of policies related to the efficient allocation of resources—HRH, equipment, medicines, etc.—across levels and across provinces.



**There are also specific and worrying gaps in key commodities required to manage the two obstetric conditions that together account for 55 percent of maternal deaths**—hypertensive disorders during pregnancy, including eclampsia and preeclampsia, and postpartum and antepartum hemorrhage. While the determinants of these maternal deaths are far more complex than facility service readiness, several supply-side concerns are highlighted.

**Firstly, with regard to hypertensive disorders during pregnancy, although blood pressure apparatus is readily available, urine tests required to detect protein are lacking, even in PONE D puskesmas**, which have a special responsibility to identify and manage or refer patients on for these conditions. Only 42 percent of PONE D puskesmas have urine tests available (or 9 percent, according to HFCS data, which specifically asks for urine protein tests), which are used to diagnose this condition. Even if this life-threatening hypertensive condition is identified accurately and in time, the treatment of choice according to national (and international) guidelines—magnesium sulphate (MgSO<sub>4</sub>)—is only available in 7 percent of PONE D puskesmas (36 percent according to HFCS data, which is still low). This particular deficiency highlights an additional and interesting concern, which may provide clues to some of the possible underlying causes. There is an alternative treatment, injectable diazepam, which used to be the standard treatment for eclampsia (seizures due to a hypertensive condition) until later clinical evidence demonstrated the superiority of MgSO<sub>4</sub>. Injectable diazepam, in contrast to MgSO<sub>4</sub>, is more widely available, at 69 percent of PONE D puskesmas (75 percent according to HFCS data). The relatively high availability of the comparatively less effective injectable diazepam suggests that there may be a disconnect in the transmission of information on the latest clinical guidelines to both staff (are they trained to use the newer drug?) and to procurement systems. With regard to staff knowledge, considering that only 62 percent of PONE D puskesmas are staffed by PONE D-trained staff trained within the last two years, it is unsurprising if the content of the latest clinical guidelines (available in only 77 percent of PONE D puskesmas) has not been internalized. In addition, the fact that there is no large gap in PONE D training between PONE D puskesmas (62 percent have staff trained in the last two years) and non-PONE D puskesmas (50 percent have staff trained in the last two years) could reflect the magnitude of staff rotation, in that PONE D-trained staff are allowed to rotate out to non-PONE D puskesmas, instead of concentrating Human Resources for Health (HRH) resources in alignment with the PONE D referral network system.

**Secondly, with regard to postpartum hemorrhage (PPH), the lack of key uterotonic drugs used to prevent and treat PPH, such as oxytocin and ergometrine, is a worrying concern.** These drugs work by causing the uterus to clamp down tightly so as to reduce bleeding from the lining of the uterus, but are only available in 67 percent (oxytocin) and 69 percent (ergometrine) of PONE D puskesmas and there are large geographical variations.<sup>51</sup> In provinces where utilization of puskesmas for deliveries is high—for example, West and East Nusa Tenggara, and North and South Sulawesi—the availability of oxytocin and ergometrine is modest (ranging from 45 to 61 percent) except for in North Sulawesi, where the availability is low: only 20 percent for oxytocin and 24 percent for ergometrine. The routine administration of oxytocin in the active management of the third stage of labor (immediately after the birth of the neonate, before the

<sup>51</sup> HFCS survey data indicate higher availability of oxytocin and ergometrine among PONE D puskesmas in aggregate - 86% and 86% respectively – but sample size is too small for greater geographic granularity. A follow-up assessment is currently in progress.

placenta is delivered) is recommended<sup>52</sup> in order to stimulate contractions and prevent PPH. The lack of this drug indicates that national guidelines cannot even be adhered to on a routine basis. Hence,

*Address Specific Bottlenecks Preventing the Deployment of Specific Life-Saving Maternal Health Interventions.* In order for a shift in facility deliveries to impact maternal mortality rates, the facilities need to be able to diagnose, manage, and treat the key causes of maternal deaths. Although service readiness indicators provide some inference of where certain problems are, focusing on the minimum basic inputs to provide maternal health services is clearly not enough. The mere availability of inputs required to manage these conditions does not necessarily mean that providers are able and willing to use them in such a way as to improve outcomes. Other dimensions of service delivery, including provider ability (knowledge and skills) and effort (working presence at the facility)—which capture higher dimensions of provision of care, but are not included in Rifaskes—should also be assessed and improved systematically and regularly, especially in light of the major health system reforms being implemented in the country. Additional context and recommendations for HRH, which is not the specific focus of this paper, can be found in *New Insights into the Provision of Health Services in Indonesia: A Health Workforce Study* (World Bank, 2010), and this would be an area ripe for further exploration and research.

**As mentioned, public hospitals are clearly better equipped than PONED puskesmas, which are little better than non-PONED puskesmas.** Although it is unsurprising that public hospitals are better equipped than public puskesmas, the gap even in *Basic Obstetric Care* service readiness between public hospitals and PONED puskesmas is far greater than the gap in Basic Obstetric Care service readiness between PONED puskesmas and non-PONED puskesmas. (Basic Obstetric Care is actually a *primary care* intervention intended for PONED puskesmas, rather than for hospitals, which would provide *Comprehensive Obstetric Care*). For example, with regard to having all the inputs (included in Rifaskes) required to manage and treat postpartum hemorrhage, only 1 percent of non-PONED puskesmas fulfilled the criteria, compared with 21 percent of PONED puskesmas, but 95 percent of public hospitals. Ironically, with regard to having all the inputs required to manage and treat preeclampsia and eclampsia, more non-PONED puskesmas (13 percent) than PONED puskesmas (3 percent) fulfilled the criteria, while 88 percent of public hospitals fulfilled the criteria. This suggests that many PONED puskesmas are still not ready to play the role of a referral center by receiving referrals from the community and providing basic emergency obstetric and neonatal care.

<sup>52</sup> Indonesia, Ministry of Health. 2005. *Pelatihan Pelayanan Obstetri Neonatal Emergensi Dasar* (Basic Emergency Obstetric and Neonatal Care Guidelines).

Hence,

*Strengthen the PONED and Referral Systems.* The rationale for establishing a network of public primary care facilities close to the community (within an hour of travel) that can provide basic emergency obstetric and neonatal care and refer onwards more complex cases, remains strong. However, further investments in the supply-side and HRH will be required in order for this vision to materialize. As resources are limited, careful allocation and distribution of these resources are required in order to serve the communities in an efficient and optimal manner. There may be efficiency gains made by offloading the primary care workload of public hospitals back to primary care facilities, especially in the context of a national insurance scheme like JKN, where gatekeeping may be an appropriate cost-containment and sustainability strategy. There needs to be more clarity with regard to the role of different levels of facilities in providing maternal health care services so that resources can be allocated accordingly and community expectations managed. Greater socialization of the PONE health facility network and referral system will also be helpful.

**Finally, in moving forward with the implementation of JKN, two major priorities should be emphasized:**

*Ensure Non-Interruption of Universal Maternal Health Coverage Benefits.* Indonesia has had universal maternal health coverage since 2011, when the Jampersal program was introduced to provide coverage for maternal health care to all those that did not have coverage via other programs. In light of the 2014 single-payer reforms, Indonesia will dismantle Jampersal. This will leave a period between 2014 and 2019 during which those who are not covered under JKN will no longer have access to universal maternal health coverage as they did over the period 2011–2013. As JKN will be one of the largest health coverage schemes in the world, implemented within an ambitious timescale, it would be surprising if there are no implementation problems during the transition period. The central government should consider keeping Jampersal active at least until 2019, by which time everyone is expected to have coverage under JKN. Other stakeholders, both national and local — such as Program Nasional Pemberdayaan Masyarakat (PNPM) Generasi and Program Keluarga Harapan — should also be informed of the implementation plans, not least so that they may be able to provide grassroots support to guide communities and individuals in the allocation of PNPM Generasi resources.

And finally,

*Clarify Supply-Side Implications of the Benefit Package.* As the analysis reported in this policy note indicates: it is not enough to specify a benefit package on paper. In moving forward to implementing UHC, Indonesia needs to ensure that there are clear supply-side standards that are derived from the specification of the unified JKN benefit package, in terms of what equipment, training, diagnostic capabilities, and medicines are to be provided at different levels of care and to clearly specify the accountability structure for this provision. In this regard, BPJS may want to reconsider its plans for automatic accreditation of public facilities and to consider an independent accreditation process for public facilities in the future as the program develops. In addition, JKN should specify whether or not lower-level public facilities (such as *polindes* and *poskesdes*<sup>1</sup>) are eligible for reimbursement under the program, and to clearly specify the supply-side implications for them. In addition, MOH policy with regard to PONE and non-PONE puskesmas needs to be clarified.

<sup>1</sup> Please see Table 2.

**In conclusion, the analysis reported in this policy paper underscores that in order to realize universal maternal health coverage and improve maternal health outcomes, there needs to be a focus not just on increasing the breadth and height but also on ensuring that effective depth of coverage exists, especially in the eastern parts of the country and at the primary care level (PONE puskesmas). It is not enough to specify a comprehensive maternal health benefit package on paper if facilities do not have the basic supply-side readiness conditions to be able to provide key maternal health services such as ANC, basic obstetric care, and comprehensive obstetric care. In addition to identifying *where* and along what dimensions the key maternal health supply-side deficiencies exist, it is also important to better understand *why* this is the case.**



# ANNEXES

## ANNEX A: Data Sources

	Rifaskes	HFCS
<b>Year of data collection</b>	2011	2010-11
Sampling	National census of all puskesmas and government general hospitals	Nationally representative survey (stratified random sampling) in 15 provinces, 30 districts
<b>Government hospitals</b>	685	120
<b>Private hospitals</b>	-	80
		(194 used for analysis)
<b>Number of puskesmas, of which:</b>	9,005 (8,981 used for analysis)	234 (217 used for analysis)
<b>Urban puskesmas</b>	2,364	82
<b>Rural puskesmas</b>	6,617	135
<b>PONED Puskesmas</b>	1674	56
<b>Non PONED</b>	7307	161
<b>Provincial<sup>a</sup></b>		
<b>DI Aceh</b>	311	
<b>North Sumatera</b>	506	
<b>West Sumatera</b>	248	
<b>Riau</b>	195	
<b>Jambi</b>	171	
<b>South Sumatera</b>	298	
<b>Bengkulu</b>	173	
<b>Lampung</b>	265	
<b>Bangka Belitung</b>	57	
<b>Riau Island</b>	65	
<b>DKI Jakarta</b>	336	
<b>West Java</b>	1031	
<b>Central Java</b>	861	
<b>DI Yogyakarta</b>	121	
<b>East Java</b>	949	
<b>Banten</b>	206	
<b>Bali</b>	114	
<b>West Nusa Tenggara</b>	149	
<b>East Nusa Tenggara</b>	302	
<b>West Kalimantan</b>	233	
<b>Central Kalimantan</b>	176	
<b>South Kalimantan</b>	217	
<b>East Kalimantan</b>	213	
<b>North Sulawesi</b>	167	
<b>Central Sulawesi</b>	163	
<b>South Sulawesi</b>	406	
<b>Southeast Sulawesi</b>	233	
<b>Gorontalo</b>	74	
<b>West Sulawesi</b>	81	
<b>Maluku</b>	161	
<b>North Maluku</b>	101	
<b>West Papua</b>	104	
<b>Papua</b>	294	

a. HFCS data is representative at national and strata level and not representative at province level.

## ANNEX B: Health Facility Density

Province	Population 2013	Number of Facilities				Ratio per 10,000 Population			
		PONED	All Puskesmas*	Hospital	Puskesmas & Hospital	PONED	All Puskesmas*	Hospital	Puskesmas & Hospital
DI Aceh	4,811,100	86	334	55	389	0.18	0.69	0.11	0.81
North Sumatera	13,590,300	140	570	158	728	0.10	0.42	0.12	0.54
West Sumatera	5,066,500	92	262	61	323	0.18	0.52	0.12	0.64
Riau	6,033,300	65	207	55	262	0.11	0.34	0.09	0.43
Jambi	3,286,100	58	176	29	205	0.18	0.54	0.09	0.62
South Sumatera	7,827,700	97	319	52	371	0.12	0.41	0.07	0.47
Bengkulu	1,814,400	46	180	19	199	0.25	0.99	0.10	1.10
Lampung	7,932,100	73	280	48	328	0.09	0.35	0.06	0.41
Bangka Belitung	1,315,100	20	60	14	74	0.15	0.46	0.11	0.56
Riau Island	1,861,400	25	70	25	95	0.13	0.38	0.13	0.51
DKI Jakarta	9,969,900	17	340	153	493	0.02	0.34	0.15	0.49
West Java	45,340,800	204	1,050	273	1323	0.04	0.23	0.06	0.29
Central Java	33,264,300	259	873	275	1148	0.08	0.26	0.08	0.35
DI Yogyakarta	3,594,900	67	121	70	191	0.19	0.34	0.19	0.53
East Java	38,363,200	264	960	322	1282	0.07	0.25	0.08	0.33
Banten	11,452,500	66	230	77	307	0.06	0.20	0.07	0.27
Bali	4,056,300	57	120	57	177	0.14	0.30	0.14	0.44
West Nusa Tenggara	4,710,800	53	158	23	181	0.11	0.34	0.05	0.38
East Nusa Tenggara	4,954,000	80	362	42	404	0.16	0.73	0.08	0.82
West Kalimantan	4,641,400	55	237	41	278	0.12	0.51	0.09	0.60
Central Kalimantan	2,384,700	56	194	19	213	0.23	0.81	0.08	0.89
South Kalimantan	3,854,500	59	228	34	262	0.15	0.59	0.09	0.68
East Kalimantan	3,870,800	90	222	55	277	0.23	0.57	0.14	0.72
North Sulawesi	2,360,400	86	183	41	224	0.36	0.78	0.17	0.95
Central Sulawesi	2,785,500	86	183	26	209	0.31	0.66	0.09	0.75
South Sulawesi	8,342,000	116	440	83	523	0.14	0.53	0.10	0.63
Southeast Sulawesi	2,396,700	72	264	25	289	0.30	1.10	0.10	1.21
Gorontalo	1,098,000	21	91	12	103	0.19	0.83	0.11	0.94
West Sulawesi	1,234,300	37	92	9	101	0.30	0.75	0.07	0.82
Maluku	1,628,400	55	190	27	217	0.34	1.17	0.17	1.33
North Maluku	1,114,900	28	125	18	143	0.25	1.12	0.16	1.28
West Papua	828,300	19	143	17	160	0.23	1.73	0.21	1.93
Papua	3,032,500	21	391	35	426	0.07	1.29	0.12	1.40
Indonesia	248,818,100	2570	9,655	2,250	11905	0.10	0.39	0.09	0.48

Note: \* Puskesmas include PONED Puskesmas  
 Data sources are  
 Population: BPS, 2013  
 Health Facilities: MOH-Puskesmas/Hospital data, 2013  
 Density: World Bank staff calculations

# ANNEX C: Basic Obstetric Care

Province	Equipment															Diagnostics										Medicine & commodities										Index		# Facility
	At least one GP/ Midwife/Nurse	ANC Guidelines	APN Guidelines	Training	Emergency Transport	Adult Weighing Scale	Stethoscope	BP Apparatus	Examination Light	Doppler USS	Delivery Pack	Suction Apparatus	Manual Vacuum Extractor	Neonatal Bag and Mask	Tampon	Sims Speculum	Gloves	Hemoglobin Test	Urine Test	Iron & Folic Acid	Tetanus Toxoid Vaccine	Antibiotic Eye Ointment	Oxytocin	Ergometrine	Lidocaine	Injectable Antibiotic	Intravenous Solution	Injectable Magnesium Sulphate	Injectable Diazepam	Maternal Health Index (mean)	Number of Facilities							
DI Aceh	100.0	34.1	53.7	47.6	86.2	98.4	100.0	94.9	76.2	37.2	84.6	51.5	32.6	34.9	32.6	38.4	56.0	81.4	49.2	95.5	95.8	45.5	18.5	24.3	65.0	19.0	14.5	44.7	56.6	62.8	311							
North Sumatra	99.4	41.7	56.1	41.7	73.3	94.5	98.4	89.7	74.3	11.2	89.3	35.3	11.2	14.2	16.6	20.7	65.5	58.5	16.0	96.6	94.7	52.6	11.4	15.1	70.4	24.5	9.1	39.7	33.0	57.1	506							
West Sumatra	100.0	48.4	70.2	58.1	83.9	96.0	100.0	98.8	78.2	67.2	79.0	62.9	54.1	60.7	60.7	70.5	77.1	94.0	68.5	100.0	98.0	53.2	39.0	40.7	85.1	23.4	16.1	50.4	56.5	71.0	248							
Riau	100.0	43.1	63.4	46.7	79.5	96.4	100.0	95.4	77.4	32.1	93.3	56.6	20.8	34.0	40.4	47.2	66.0	86.2	56.4	97.9	91.8	52.1	43.1	46.2	80.4	40.2	25.8	33.3	70.6	68.0	195							
Jambi	100.0	58.5	57.3	49.1	75.9	98.2	98.8	96.5	82.5	52.4	95.3	58.8	46.0	42.9	50.8	54.0	60.2	90.6	60.8	98.8	93.0	58.2	51.7	57.5	81.8	45.3	21.8	49.1	65.9	70.8	171							
South Sumatra	100.0	49.3	65.1	60.4	77.1	97.7	100.0	94.3	81.9	29.0	95.6	50.4	20.3	33.3	44.9	42.0	75.4	83.6	46.6	99.0	91.6	56.2	28.4	31.3	78.9	34.9	17.8	41.3	38.9	66.9	298							
Bengkulu	100.0	37.6	42.4	27.2	78.9	99.4	100.0	98.3	81.5	54.8	94.2	68.9	48.4	64.5	51.6	80.6	67.2	75.7	16.2	97.7	92.5	45.1	31.1	30.0	69.9	26.6	15.0	48.0	49.7	63.2	173							
Lampung	100.0	44.2	78.1	41.1	81.0	98.9	99.2	91.3	82.6	25.6	94.3	39.3	29.9	28.7	23.0	29.1	69.9	87.2	43.0	97.4	94.7	66.8	34.7	29.9	83.4	44.2	17.7	37.0	59.2	66.8	265							
Bangka Belitung	100.0	70.2	77.2	43.9	96.5	96.5	100.0	100.0	91.2	5.3	95.0	33.3	18.4	18.4	15.8	18.4	86.0	94.7	56.1	100.0	100.0	26.3	20.0	24.4	95.0	33.3	21.1	19.3	52.6	62.8	57							
Riau Islands	100.0	53.8	81.5	92.3	87.7	98.5	100.0	93.8	96.9	44.1	93.8	43.6	29.4	32.4	29.4	35.3	73.8	84.6	60.0	96.9	95.4	44.6	60.5	51.2	89.2	61.5	35.4	33.8	72.3	72.0	65							
DKI Jakarta	100.0	45.5	49.4	34.2	97.5	98.2	99.1	98.5	94.0	16.2	87.2	17.5	5.4	14.7	12.3	15.2	91.5	36.7	17.3	94.6	96.7	57.8	12.7	10.9	72.5	21.6	7.8	34.5	23.7	54.0	336							
West Java	99.8	65.6	84.1	59.7	87.9	99.1	99.9	97.5	94.9	39.0	95.1	48.6	30.7	40.9	39.0	42.2	69.7	90.0	52.3	99.2	98.9	61.6	35.8	34.4	87.9	26.2	13.0	51.5	49.0	71.6	1,031							
Central Java	100.0	62.5	82.7	65.2	93.2	99.9	100.0	99.4	95.4	45.8	92.9	59.5	28.1	49.8	40.3	43.7	81.1	94.4	72.1	98.6	99.2	58.5	45.4	44.9	87.6	43.7	20.0	46.0	61.3	75.0	861							
DI Yogyakarta	100.0	66.1	81.8	60.3	94.2	100.0	100.0	100.0	98.3	55.3	90.9	56.9	28.9	60.5	39.5	57.9	92.5	96.7	100.0	97.5	99.2	41.3	42.7	49.3	90.9	12.4	28.1	38.0	62.0	74.9	121							
East Java	100.0	72.3	84.6	57.4	93.3	99.8	100.0	99.3	97.3	55.1	94.8	65.5	56.1	65.2	59.7	65.1	81.9	93.9	77.1	99.2	98.0	66.0	54.0	54.4	85.5	46.8	21.2	50.6	69.2	77.8	949							
Banten	100.0	55.8	81.6	65.5	72.5	99.5	100.0	99.0	93.7	61.8	95.6	62.7	52.9	63.2	52.9	55.9	72.0	80.6	35.4	99.0	97.1	58.3	44.4	43.4	81.9	17.1	18.6	51.9	61.0	70.9	206							
Bali	100.0	47.4	46.5	20.2	94.7	98.2	100.0	99.1	99.1	53.5	90.4	48.9	39.5	58.1	44.2	46.5	56.9	91.2	44.7	98.2	100.0	36.0	49.3	47.8	79.8	17.5	24.6	39.5	45.6	65.5	114							
West Nusa Tenggara	100.0	63.8	83.9	60.4	82.7	99.3	100.0	100.0	89.9	54.2	98.0	69.8	54.9	60.2	50.0	62.7	54.0	89.9	79.2	99.3	99.3	49.3	60.9	60.0	81.8	60.1	36.5	23.5	77.2	74.3	149							
East Nusa Tenggara	100.0	63.8	78.4	71.5	66.4	98.3	99.7	95.7	83.4	40.4	95.3	50.6	28.4	37.6	37.6	45.0	54.1	89.7	21.5	97.4	95.0	54.5	49.7	49.0	76.1	45.7	19.9	50.7	62.0	69.0	302							
West Kalimantan	100.0	59.2	82.0	54.1	70.2	98.3	100.0	94.8	82.8	45.6	94.0	56.7	28.1	45.6	40.4	47.4	46.1	86.3	49.4	97.4	98.7	51.5	39.6	42.3	59.7	39.9	16.3	52.4	56.2	68.4	233							
Central Kalimantan	100.0	41.5	69.9	51.7	78.6	98.3	100.0	97.2	81.8	54.3	94.3	62.7	45.7	51.4	45.7	45.7	68.1	81.8	31.8	98.3	98.9	63.6	45.5	54.5	85.2	40.3	28.4	43.8	67.0	70.4	176							
South Kalimantan	100.0	39.6	54.8	44.7	88.0	99.5	100.0	99.1	87.1	31.4	98.6	42.0	21.6	29.4	23.5	27.5	69.2	89.9	72.8	98.6	97.7	43.8	42.0	37.5	85.3	41.5	13.4	59.4	53.9	69.9	217							



Province	Equipment														Diagnostics										Medicine & commodities										Index	# Facility
	At least one GP/ Midwife/Nurse	ANC Guidelines	APN Guidelines	Training	Emergency Transport	Adult Weighing Scale	Stethoscope	BP Apparatus	Examination Light	Doppler USS	Delivery Pack	Suction Apparatus	Manual Vacuum Extractor	Neonatal Bag and Mask	Tampon	Sims Speculum	Gloves	Hemoglobin Test	Urine Test	Iron & Folic Acid	Tetanus Toxoid Vaccine	Antibiotic Eye Ointment	Oxytocin	Ergometrine	Lidocaine	Injectable Antibiotic	Intravenous Solution	Injectable Magnesium Sulphate	Injectable Diazepam	Maternal Health Index (mean)	Number of Facilities					
East Kalimantan	100.0	59.6	79.8	57.7	76.0	99.1	99.5	97.2	86.3	30.8	92.9	55.3	26.2	38.5	47.7	47.7	67.3	88.2	47.4	96.7	96.7	45.1	37.0	31.1	76.5	39.4	20.2	36.6	62.0	68.6	213					
North Sulawesi	100.0	24.6	33.5	26.9	72.1	94.6	99.4	89.8	76.0	17.5	92.8	44.6	10.0	27.5	15.0	37.5	54.1	54.5	5.4	100.0	98.2	34.1	20.0	24.4	61.1	12.0	7.8	46.1	29.9	54.5	167					
Central Sulawesi	100.0	60.7	62.6	51.5	76.0	97.5	98.8	96.3	79.8	42.9	90.8	63.0	40.0	48.6	51.4	60.0	54.2	76.7	26.4	97.5	95.1	46.0	36.8	44.3	69.1	37.0	17.9	34.4	62.3	65.1	163					
South Sulawesi	100.0	47.8	56.2	45.1	84.5	98.5	99.8	97.8	81.2	41.0	92.9	50.4	28.9	49.4	43.9	50.6	63.1	81.4	61.6	96.3	97.3	59.9	50.0	44.5	88.2	22.9	12.6	64.0	60.3	69.5	406					
Southeast Sulawesi	100.0	49.8	70.4	44.2	72.3	93.1	97.4	94.4	76.3	24.8	96.1	41.0	26.7	27.7	24.8	35.6	65.6	62.5	6.4	96.6	97.0	59.3	30.6	33.3	83.1	18.7	15.2	36.9	68.3	62.0	233					
Gorontalo	100.0	50.0	70.3	81.1	81.8	98.6	100.0	97.3	87.8	61.9	94.6	79.2	66.7	47.6	61.9	59.1	54.8	63.5	2.7	98.6	98.6	59.5	47.6	47.6	89.2	14.9	12.2	43.2	58.1	67.7	74					
West Sulawesi	98.8	49.4	82.5	75.3	52.0	98.8	98.8	97.5	73.8	66.7	97.5	44.1	46.7	80.0	66.7	60.0	37.5	78.8	37.0	96.3	87.7	33.8	57.1	50.0	48.8	32.5	15.0	48.1	55.0	65.5	81					
Maluku	100.0	24.2	43.6	32.3	69.4	90.4	95.5	78.5	56.7	11.3	82.8	23.8	16.1	8.1	17.7	21.0	48.1	54.2	7.5	85.7	70.4	45.6	4.9	8.8	72.2	47.8	5.7	36.6	58.6	51.2	161					
North Maluku	100.0	27.7	50.0	50.5	54.6	95.0	96.0	93.1	73.3	27.3	84.2	50.0	22.7	31.8	22.7	31.8	60.6	71.7	12.9	98.0	89.1	46.0	30.0	33.9	76.0	40.0	16.0	41.6	62.0	60.2	101					
West Papua	96.2	43.3	58.7	40.4	64.0	93.3	90.4	84.6	57.7	10.5	86.5	17.2	5.3	11.8	7.9	13.2	76.3	61.5	16.3	83.7	61.5	62.5	27.4	24.2	82.5	56.7	21.2	8.7	50.0	50.6	104					
Papua	89.8	40.1	53.1	39.8	77.0	87.4	90.1	82.9	51.0	9.1	77.7	18.8	3.7	5.8	8.2	10.7	63.6	51.5	10.5	77.2	57.7	57.0	17.4	18.9	66.3	48.8	12.4	10.5	41.9	45.0	294					
Rural	99.4	54.1	71.1	53.3	81.0	97.6	99.0	95.4	83.4	35.8	92.5	50.2	30.3	39.2	36.4	41.7	67.3	81.7	43.0	96.8	93.8	56.8	38.1	39.0	80.3	38.5	18.3	42.8	59.5	67.6	6,617					
Urban	100.0	51.4	65.8	50.0	86.9	97.9	99.5	97.0	89.9	33.4	91.2	43.1	23.2	31.4	29.7	34.5	77.0	79.4	57.3	97.3	97.1	51.6	29.1	28.5	78.6	23.2	13.1	47.5	43.5	66.8	2,364					
BEONC	99.9	60.6	76.7	61.8	84.2	98.5	99.8	98.1	86.2	62.7	88.3	79.5	53.8	69.6	62.7	72.3	67.1	89.0	66.2	98.1	95.9	58.2	67.1	68.8	78.3	45.4	51.3	7.5	68.9	73.1	1,674					
Non-BEONC	99.5	51.8	68.1	50.3	81.9	97.5	99.0	95.3	84.9	8.9	93.0	31.1	4.6	6.6	8.2	9.2	70.6	79.3	42.3	96.7	94.4	54.8	21.9	22.0	80.2	32.0	9.1	52.4	52.2	66.1	7,307					
All Puskesmas	99.6	53.4	69.7	52.4	82.4	97.7	99.1	95.8	85.1	35.2	92.1	48.7	28.6	37.4	34.8	40.1	69.9	81.1	46.8	96.9	94.7	55.4	35.9	36.4	79.9	34.5	16.9	44.1	55.3	67.4	8,981					
All Hospitals	100.0	74.0	72.7	99.3				97.5	96.2	94.7	95.9	95.5					93.7	97.7	96.2		44.0				94.4	98.7			90.1	685						
HFCs data - Puskesmas	-	-	-	-	-	82.9	83.9	88.0	41.5	33.6	50.2	40.6	6.0	-	-	-	-	-	6.5	81.6	8.3	-	72.8	-	-	-	-	-	26.3	54.4	217					

# ANNEX D: Comprehensive Obstetric Care

Province	Standard facility																# Facility								
DI Aceh	44.0	48.0	52.0	32.0	36.0	24.0	48.0	44.0	24.0	84.0	72.0	80.0	64.0	84.0	72.0	80.0	80.0	84.0	36.0	44.0	36.0	84.0	100.0	100.0	25
North Sumatra	24.1	29.6	24.1	14.8	42.6	35.2	46.3	51.9	38.9	72.2	48.1	51.9	44.4	55.6	53.7	42.6	53.7	88.9	40.7	29.6	40.7	88.9	92.6	100.0	54
West Sumatra	68.2	68.2	72.7	59.1	40.9	36.4	40.9	45.5	31.8	72.7	72.7	72.7	50.0	68.2	63.6	59.1	63.6	59.1	36.4	36.4	36.4	59.1	90.9	95.5	22
Riau	52.2	47.8	47.8	26.1	30.4	26.1	26.1	21.7	13.0	56.5	56.5	56.5	39.1	60.9	60.9	47.8	52.2	78.3	39.1	30.4	30.4	78.3	95.7	100.0	23
Jambi	76.9	84.6	84.6	76.9	69.2	30.8	38.5	61.5	46.2	84.6	76.9	84.6	69.2	76.9	76.9	69.2	69.2	61.5	53.8	46.2	46.2	61.5	100.0	100.0	13
South Sumatra	46.2	46.2	42.3	38.5	42.3	42.3	30.8	26.9	19.2	53.8	50.0	65.4	50.0	57.7	50.0	50.0	65.4	76.9	34.6	34.6	34.6	76.9	100.0	100.0	26
Bengkulu	23.1	30.8	23.1	0.0	30.8	15.4	30.8	7.7	23.1	53.8	23.1	46.2	30.8	23.1	30.8	23.1	23.1	92.3	0.0	7.7	0.0	92.3	92.3	100.0	13
Lampung	71.4	78.6	71.4	57.1	50.0	64.3	57.1	64.3	50.0	92.9	78.6	92.9	71.4	85.7	57.1	57.1	92.9	64.3	71.4	28.6	28.6	64.3	85.7	100.0	14
Bangka Belitung	42.9	28.6	42.9	28.6	28.6	0.0	42.9	42.9	57.1	57.1	57.1	28.6	71.4	14.3	14.3	28.6	42.9	85.7	42.9	14.3	14.3	85.7	100.0	100.0	7
Riau Island	27.3	45.5	45.5	36.4	9.1	9.1	18.2	18.2	9.1	63.6	54.5	63.6	36.4	54.5	54.5	54.5	54.5	90.9	18.2	18.2	18.2	90.9	90.9	100.0	11
DKI Jakarta	68.4	63.2	57.9	52.6	73.7	57.9	68.4	68.4	52.6	78.9	73.7	73.7	63.2	73.7	73.7	68.4	68.4	84.2	63.2	52.6	52.6	84.2	100.0	100.0	19
West Java	60.9	71.7	69.6	58.7	67.4	43.5	45.7	32.6	19.6	78.3	60.9	82.6	63.0	69.6	63.0	54.3	63.0	73.9	56.5	54.3	54.3	73.9	95.7	95.7	46
Central Java	52.5	57.4	60.7	39.3	59.0	44.3	44.3	42.6	29.5	73.8	75.4	82.0	65.6	73.8	70.5	67.2	78.7	67.2	50.8	41.0	41.0	67.2	98.4	98.4	61
DI Yogyakarta	60.0	60.0	60.0	60.0	80.0	30.0	70.0	50.0	30.0	70.0	60.0	70.0	60.0	80.0	50.0	70.0	90.0	80.0	70.0	60.0	60.0	80.0	100.0	100.0	10
East Java	61.3	61.3	64.0	54.7	73.3	44.0	65.3	54.7	28.0	89.3	80.0	90.7	57.3	77.3	72.0	76.0	84.0	72.0	52.0	45.3	45.3	72.0	97.3	100.0	75
Banten	66.7	66.7	66.7	55.6	66.7	55.6	33.3	44.4	44.4	66.7	77.8	77.8	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	100.0	100.0	9
Bali	69.2	84.6	69.2	76.9	100.0	76.9	61.5	76.9	38.5	100.0	100.0	92.3	92.3	100.0	100.0	92.3	100.0	61.5	61.5	53.8	53.8	61.5	92.3	100.0	13
West Nusa Tenggara	55.6	55.6	55.6	44.4	77.8	55.6	33.3	44.4	55.6	77.8	77.8	88.9	77.8	77.8	77.8	66.7	88.9	77.8	55.6	66.7	66.7	77.8	88.9	100.0	9
East Nusa Tenggara	64.7	70.6	82.4	70.6	58.8	52.9	35.3	35.3	17.6	82.4	58.8	88.2	64.7	76.5	76.5	52.9	88.2	58.8	58.8	35.3	35.3	58.8	100.0	94.1	17
West Kalimantan	50.0	44.4	55.6	33.3	38.9	27.8	27.8	33.3	11.1	83.3	66.7	83.3	66.7	61.1	55.6	38.9	50.0	83.3	22.2	16.7	16.7	83.3	88.9	100.0	18
Central Kalimantan	62.5	68.8	75.0	25.0	37.5	12.5	18.8	18.8	12.5	62.5	31.3	43.8	81.3	81.3	75.0	56.3	87.5	81.3	18.8	31.3	31.3	81.3	93.8	100.0	16
South Kalimantan	40.0	45.0	50.0	50.0	35.0	25.0	45.0	45.0	15.0	65.0	35.0	65.0	40.0	55.0	40.0	35.0	70.0	80.0	20.0	20.0	20.0	80.0	90.0	100.0	20
East Kalimantan	25.0	35.0	30.0	15.0	50.0	25.0	60.0	55.0	35.0	60.0	60.0	60.0	45.0	60.0	55.0	50.0	65.0	90.0	30.0	25.0	25.0	90.0	90.0	100.0	20
North Sulawesi	31.3	25.0	37.5	6.3	43.8	18.8	18.8	31.3	12.5	43.8	31.3	50.0	37.5	37.5	31.3	31.3	56.3	81.3	18.8	12.5	12.5	81.3	100.0	100.0	16

Province	Standard facility															# Facility										
	Province/Hospital type	Has trained GP in emergency room	Has GP trained in CEONC	Has midwife trained in CEONC	Has nurse trained in CEONC	Has obstetric guidelines	Has delegation authority procedure	Emergency response < 10 mins	Maternity room response < 30 mins. minute	Blood services available in < 1 hour	Surgery room ready 24 hours	Maternity surgery room available < 30 mi mins then 30 minute	Surgery team ready (incl. on call)	Blood service ready 24 hours	Laboratory service ready 24 hours		Radiology ready 24 hours	Recovery room ready 24 hours	Pharmacy unit ready 24 hours	Guidelines on practice and job description	Internal coordination	Has essential CEONC personnel	Manual Vacuum Extractor	Bedside monitor		
Central Sulawesi	46.7	60.0	66.7	60.0	60.0	33.3	46.7	46.7	26.7	73.3	66.7	80.0	53.3	73.3	46.7	46.7	53.3	80.0	20.0	33.3	66.7	100.0	100.0	100.0	15	
South Sulawesi	57.1	57.1	60.0	45.7	48.6	34.3	25.7	28.6	25.7	68.6	48.6	62.9	54.3	57.1	45.7	45.7	40.0	60.0	34.3	37.1	85.7	94.3	97.1	97.1	35	
Southeast Sulawesi	40.0	33.3	26.7	13.3	20.0	20.0	26.7	33.3	20.0	53.3	26.7	53.3	20.0	33.3	26.7	26.7	33.3	53.3	6.7	33.3	86.7	100.0	100.0	100.0	15	
Gorontalo	33.3	33.3	33.3	33.3	50.0	66.7	33.3	33.3	33.3	66.7	50.0	66.7	66.7	66.7	50.0	50.0	66.7	50.0	16.7	16.7	66.7	100.0	100.0	100.0	6	
West Sulawesi	0.0	66.7	33.3	33.3	66.7	0.0	0.0	0.0	0.0	66.7	66.7	66.7	66.7	66.7	66.7	66.7	0.0	33.3	0.0	0.0	100.0	100.0	100.0	100.0	3	
Maluku	14.3	21.4	28.6	21.4	14.3	14.3	21.4	28.6	7.1	64.3	42.9	64.3	28.6	42.9	28.6	28.6	21.4	35.7	7.1	21.4	92.9	100.0	100.0	100.0	14	
North Maluku	16.7	33.3	33.3	25.0	8.3	0.0	0.0	0.0	0.0	25.0	16.7	33.3	41.7	25.0	25.0	25.0	16.7	25.0	8.3	8.3	91.7	83.3	100.0	100.0	12	
West Papua	10.0	10.0	20.0	10.0	10.0	0.0	20.0	20.0	10.0	40.0	30.0	20.0	40.0	30.0	10.0	10.0	20.0	10.0	0.0	10.0	90.0	100.0	100.0	100.0	10	
Papua	44.4	61.1	50.0	22.2	44.4	38.9	22.2	22.2	5.6	72.2	33.3	66.7	22.2	55.6	55.6	55.6	33.3	66.7	33.3	55.6	88.9	88.9	100.0	100.0	18	
Hospital - Type A	87.5	87.5	87.5	81.3	93.8	87.5	81.3	81.3	68.8	93.8	93.8	93.8	93.8	93.8	93.8	93.8	93.8	93.8	62.5	75.0	75.0	100.0	100.0	100.0	16	
Hospital - Type B	75.9	83.4	80.0	64.8	85.5	54.5	68.3	64.1	45.5	91.0	84.8	93.8	78.6	88.3	81.4	81.4	78.6	87.6	67.6	71.0	62.8	95.2	97.9	97.9	145	
Hospital - Type C	50.5	56.3	56.3	42.4	49.8	35.6	38.7	38.4	24.1	79.6	63.2	80.8	58.2	68.4	63.8	63.8	52.9	69.3	31.6	39.3	77.1	95.0	99.4	99.4	323	
Hospital - Type D	22.9	21.9	26.4	14.4	22.4	16.9	22.4	22.9	11.4	42.8	31.3	41.3	26.9	36.8	28.4	28.4	29.4	43.3	11.4	19.4	89.6	96.0	99.5	99.5	201	
Hospital - CEONC	59.3	65.5	64.5	50.4	62.0	43.0	49.0	47.5	32.0	83.5	70.7	85.1	65.5	75.2	70.0	70.0	62.0	75.6	43.4	50.0	72.7	95.2	99.0	99.0	484	
Hospital - Non CEONC	22.9	21.9	26.4	14.4	22.4	16.9	22.4	22.9	11.4	42.8	31.3	41.3	26.9	36.8	28.4	28.4	29.4	43.3	11.4	19.4	89.6	96.0	99.5	99.5	201	
All Hospitals	48.6	52.7	53.3	39.9	50.4	35.3	41.2	40.3	26.0	71.5	59.1	72.3	54.2	63.9	57.8	57.8	52.4	66.1	34.0	41.0	77.7	95.5	99.1	99.1	685	
HFCs - data Hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	194



Province /Hospital type	# Facility	Equipment																								
		Has essential CEONC personnel	Manual Vacuum Extractor	Bedside Monitor	Suction Apparatus	Infusion Pump	Syringe Pump	Weighing machine	BP Apparatus	Infant Incubator	Examination Light	Oxygen Giving Set	Sterilizer	Refrigerator	USG	Doppler USS	Diathermy	Bedside Monitoring	Endoscope with video monitor	Centrally-supplied Oxygen	Anesthetic machine	Infant radiant warmer	Pulse oxymeter	Infant ventilator	Phototherapy lamp (blue light)	
East Kalimantan	20	90.0	90.0	100.0	100.0	100.0	100.0	100.0	90.0	90.0	100.0	100.0	100.0	100.0	100.0	95.0	100.0	100.0	100.0	100.0	95.0	100.0	100.0	100.0	100.0	100.0
North Sulawesi	16	81.3	100.0	100.0	100.0	100.0	100.0	100.0	75.0	87.5	100.0	100.0	100.0	100.0	100.0	93.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Central Sulawesi	15	66.7	100.0	100.0	86.7	100.0	100.0	100.0	80.0	86.7	100.0	86.7	100.0	100.0	100.0	93.3	93.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
South Sulawesi	35	85.7	94.3	97.1	97.1	91.4	97.1	100.0	97.1	94.3	100.0	97.1	100.0	100.0	91.4	97.1	100.0	97.1	100.0	94.3	100.0	100.0	100.0	100.0	97.1	97.1
Southeast Sulawesi	15	86.7	100.0	100.0	93.3	93.3	100.0	100.0	100.0	93.3	100.0	80.0	100.0	100.0	100.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gorontalo	6	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
West Sulawesi	3	100.0	100.0	100.0	100.0	100.0	66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maluku	14	92.9	100.0	100.0	100.0	100.0	78.6	100.0	78.6	100.0	100.0	100.0	100.0	100.0	92.9	85.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North Maluku	12	91.7	83.3	100.0	83.3	100.0	100.0	100.0	91.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	91.7	100.0	100.0
West Papua	10	90.0	100.0	100.0	100.0	90.0	90.0	100.0	90.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Papua	18	88.9	88.9	100.0	83.3	94.4	88.9	88.9	100.0	88.9	94.4	94.4	88.9	88.9	100.0	88.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hospital - Type A	16	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	93.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hospital - Type B	145	62.8	95.2	97.9	95.9	97.9	98.6	98.6	97.9	97.9	100.0	98.6	99.3	95.2	95.9	97.2	97.9	100.0	100.0	99.3	100.0	100.0	100.0	99.3	99.3	99.3
Hospital-Type C	323	77.1	95.0	99.4	95.7	97.8	96.6	96.3	96.3	95.7	99.7	95.0	99.4	97.5	93.5	99.7	99.4	100.0	98.8	98.8	99.7	100.0	100.0	98.8	99.1	99.1
Hospital-Type D	201	89.6	96.0	99.5	96.0	98.5	97.5	98.5	95.5	95.5	100.0	97.0	99.5	97.5	95.5	99.0	99.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Hospital - CEONC	484	72.7	95.2	99.0	95.9	97.9	97.3	97.1	96.9	96.5	99.8	96.3	99.2	96.9	94.4	99.0	99.0	100.0	99.0	99.0	99.8	100.0	100.0	99.0	99.2	99.2
Hospital - Non CEONC	201	89.6	96.0	99.5	96.0	98.5	97.5	98.5	95.5	95.5	100.0	97.0	99.5	97.5	95.5	99.0	99.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All Hospitals	685	77.7	95.5	99.1	95.9	98.1	97.4	97.5	96.5	96.2	99.9	96.5	99.3	97.1	94.7	99.0	99.1	100.0	99.3	99.3	99.9	100.0	100.0	99.3	99.4	99.4
HFCS - data Hospitals	194	-	45.9	-	86.1	-	-	-	65.5	-	-	-	-	-	68.0	-	-	43.3	-	-	-	-	-	-	-	-

Province /Hospital type	Medicine & Commodities					CEONC index		# Facility
	NaCl 0.9%	Ringers Lactate	Ampicillin	Dexamethasone	Salbutamol	Comprehensive Obstetric Care Index (mean)	Comprehensive Obstetric Care (all indicators met)	
DI Aceh	100.0	100.0	100.0	100.0	88.0	80.0	0%	25
North Sumatera	94.3	96.2	98.1	92.5	94.3	76.0	0%	54
West Sumatera	95.5	95.5	100.0	100.0	90.9	79.9	0%	22
Riau	100.0	100.0	95.7	95.7	91.3	75.0	0%	23
Jambi	100.0	100.0	100.0	91.7	100.0	85.1	0%	13
South Sumatera	100.0	100.0	100.0	100.0	96.2	77.2	3.8	26
Bengkulu	100.0	100.0	100.0	100.0	100.0	67.8	0%	13
Lampung	100.0	85.7	100.0	100.0	92.9	84.4	0%	14
Bangka Belitung	71.4	57.1	85.7	85.7	57.1	69.9	0%	7
Riau Island	100.0	100.0	100.0	100.0	100.0	74.4	0%	11
DKI Jakarta	100.0	100.0	100.0	100.0	100.0	85.9	5.3	19
West Java	100.0	97.8	97.8	95.7	93.5	82.0	2.2	46
Central Java	100.0	96.7	100.0	96.7	93.4	81.8	1.6	61
DI Yogyakarta	90.0	100.0	100.0	100.0	100.0	84.0	0%	10
East Java	100.0	98.7	100.0	98.7	96.0	84.8	6.7	75
Banten	88.9	88.9	100.0	88.9	88.9	81.7	0%	9
Bali	100.0	100.0	100.0	100.0	100.0	91.0	15.4	13
West Nusa Tenggara	100.0	100.0	100.0	100.0	100.0	83.8	22.2	9
East Nusa Tenggara	100.0	100.0	100.0	100.0	70.6	82.6	5.9	17
West Kalimantan	100.0	94.4	100.0	100.0	100.0	77.1	0%	18
Central Kalimantan	87.5	93.8	93.8	93.8	93.8	76.7	0%	16
South Kalimantan	100.0	100.0	100.0	100.0	95.0	75.1	5.0	20
East Kalimantan	100.0	100.0	100.0	100.0	75.0	76.1	0%	20
North Sulawesi	93.8	100.0	100.0	100.0	100.0	70.8	0%	16
Central Sulawesi	100.0	100.0	100.0	100.0	100.0	79.3	0%	15
South Sulawesi	97.1	97.1	100.0	100.0	97.1	77.2	2.9	35
Southeast Sulawesi	92.9	100.0	100.0	100.0	100.0	70.0	0%	15
Gorontalo	100.0	83.3	100.0	100.0	100.0	77.1	0%	6
West Sulawesi	100.0	100.0	100.0	66.7	100.0	72.2	0%	3
Maluku	92.9	100.0	100.0	92.9	92.9	69.3	0%	14
North Maluku	75.0	83.3	100.0	91.7	91.7	65.1	0%	12
West Papua	90.0	70.0	100.0	100.0	80.0	64.8	0%	10
Papua	100.0	100.0	100.0	100.0	94.4	74.5	0%	18
Hospital - Type A	100.0	100.0	100.0	100.0	100.0	93.9	18.8	16
Hospital - Type B	99.3	98.6	100.0	98.6	99.3	88.8	5.5	145
Hospital-Type C	98.1	96.9	99.7	98.1	92.9	79.4	1.2	323
Hospital-Type D	94.5	95.0	98.0	95.5	89.9	69.0	0.5	201
Hospital - CEONC	98.6	97.5	99.8	98.3	95.0	82.6	3.1	484
Hospital - Non CEONC	94.5	95.0	98.0	95.5	89.9	69.0	0.5	201
All Hospitals	97.4	96.8	99.3	97.5	93.5	78.7	2.3	685
HFCS – data Hospitals	60.3	-	-	76.3	68.6	-	-	194



