Case Study: Clinical Governance as an Approach to Improve Maternal and Newborn Health in 22 Hospitals in Indonesia

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Abstract

Clinical governance is a concept used to improve management, accountability and the provision of quality healthcare. An approach to strengthen clinical governance as a means to improve the quality of maternal and newborn care in Indonesia was developed by the Expanding Maternal and Neonatal Survival (EMAS) Program. This case study presents findings and lessons learned from EMAS program experience in 22 hospitals where peer-to-peer mentoring supported staff in strengthening clinical governance from 2012–2015. Efforts resulted in improved hospital preparedness and significantly increased the odds of facility-level coverage for three evidence-based maternal and newborn healthcare interventions.

Introduction

Indonesia is a middle-income nation of 252 million people that has experienced substantial economic growth over the past 15 years. The poverty rate was halved over this same period; however, there have not been comparable improvements in maternal and newborn health indicators. For example, the 2012 Indonesia Demographic and Health Survey (IDHS) reported that 83% of births were attended by a skilled provider (Statistics Indonesia et al. 2013), but significant decreases in maternal and neonatal mortality have not followed. The 2012 IDHS indicated the maternal mortality ratio to be 359 per 100,000 live births—one of the highest in Southeast Asia. The IDHS also reported that the neonatal mortality rate has remained around 20 deaths per 1,000 live births for the past 10 years.

Indonesia's limited progress is not due to weak political commitment. The Ministry of Health has implemented numerous policies to increase skilled attendance at birth, improve emergency obstetric and newborn care (EmONC) and increase national health insurance coverage (National Academy of Sciences 2013; World Bank 2014; Van Lerberghe et al. 2014).

The United States Agency for International Development (USAID)-funded Expanding Maternal and Neonatal Survival (EMAS) Program (2011–2016) was developed to accelerate reductions in maternal and neonatal mortality in the six provinces of North Sumatra, Banten, West Java, Central Java, East Java and South Sulawesi, where 48% of the maternal deaths in Indonesia occur. EMAS is implemented by Jhpiego, Budi Kemuliaan Health Institution (*Lembaga Kesehatan Budi Kemuliaan* [LKBK]), the national faith-based organization Muhammadiyah, and nongovernmental implementing organizations Save the Children and RTI International. EMAS identified clinical governance as a strategy to improve and sustain the quality of EmONC in health facilities.

Clinical governance as a concept originated in the 1990s in the United Kingdom's National Health Service (Halligan and Donaldson 2001), and now there are numerous clinical governance models from high-income countries (Phillips et al. 2010). Clinical governance is summarized as "a robust framework that acknowledges the importance of adopting a culture of shared accountability for sustaining and improving the quality of services and outcomes for both patients and staff" (McSherry and Pearce 2011: 29). Specific responsibilities are further defined by hospital management, ward/unit management and individual providers (Brennan and Flynn 2013).

Clinical governance in EMAS originated from LKBK's Maternity and Children's Hospital, the largest and oldest maternity hospital in Indonesia. The facility averages 7,000 deliveries a year. Hospital management has emphasized the principle of good clinical governance since 2006. The hospital created a learning-based organizational culture that emphasizes accountability for delivering high-quality care. It actively uses data to assess and improve performance in a quality improvement process. Quality of maternal and neonatal care has improved, as evidenced by a direct obstetric case fatality rate of 0.9% in 2014, less than the maximum acceptable value of 1% (WHO et al. 2009). EMAS sought to systematically strengthen clinical governance in more than 150 hospitals and 300 *puskesmas* (community health centres) in 10 districts over a five-year period, beginning in 2012. Selected districts had the largest volume of maternal and newborn deaths, and 22 intervention hospitals were chosen based upon their high delivery volume. In 2014, 35,848 women delivered in the 22 intervention hospitals.

This case study describes the process and initial results of activities to strengthen clinical governance in 22 EMAS-supported hospitals to improve the quality of EmONC. It details the acceptability and feasibility of clinical governance focused on EmONC at the health facility level in a middle-income country in Asia. It demonstrates an association between increases in clinical governance practices and increased coverage of facility-level evidence-based interventions.

Intervention

Based on the experience at LKBK, EMAS introduced a set of five mutually-reinforcing practices to strengthen clinical governance for EmONC (Table 1). Clinical governance was not explicitly defined by EMAS, but the concept emphasized accountability of management and staff to deliver quality EmONC services. Clinical interventions were

Table 1. Hospital-based tools and approaches by level, supported by EMAS

Practices and Tools	Description	Frequency
Hospital management: Creates the systems, standards and culture of clinical accountability and responsibility		
1. Performance standards	A set of tools that define facility readiness to prevent and manage selected complications and good hospital management practices (e.g., infection prevention, clinical governance, client feedback).	Quarterly assessments, with an action plan to address gaps
2. Maternal and neonatal death reviews and near-miss reviews (facility)	Reviews use a simplified case review process for every maternal death, fresh stillbirth and neonatal death (>2,000 grams), as mandated (MOH 2010).	Within 24 hours
Ward/unit management: Sets the processes and procedures to deliver high-quality clinical care safely and efficiently		
3. Emergency drills	Maternal and neonatal emergencies are simulated to practice emergency responsiveness, improve teamwork, maintain skills and resolve possible delays (e.g., client flow, emergency trolleys).	As needed
4. Clinical dashboards	Colour-coded charts display the most important clinical and operational indicators, chosen by each unit/ward. They are used by staff to assess their performance and to take action when sub-optimal performance is indicated.	Weekly
Clinicians: Provide high-quality clinical care safely and efficiently in compliance with clinical policies and standards		
5. Service statistics on the provision of evidence-based interventions for maternal and newborn health	Data on the provision of selected evidence-based interventions* are aggregated monthly from the standardized registers by EMAS staff and analyzed to track coverage. Monthly performance is posted in the facilities.	Daily recording, monthly reporting (including on wall charts)

*Interventions include: active management of the third stage of labour (AMTSL), which includes the provision of a uterotonic for postpartum hemorrhage prevention (WHO 2012; MOH 2013); management of severe pre-eclampsia/eclampsia with magnesium sulfate (WHO 2011; MOH 2013); provision of one or more doses of antenatal corticosteroids to women delivering between 24 to 34 weeks to prevent respiratory distress syndrome in newborns (WHO 2015; MOH 2013); and initiation of breastfeeding for all live births within one hour of birth (WHO 2014; MOH 2013).

prioritized based on the main direct causes of maternal and newborn death: postpartum hemorrhage (PPH), eclampsia and sepsis for mothers (UNICEF and WHO 2014); and low birth weight/preterm birth, asphyxia and sepsis for newborns (UNICEF 2012). Evidence-based interventions that are cited in both World Health Organization recommendations and national clinical guidelines were selected to be recorded and tracked within each hospital to measure change over time. (Ministry of Health [MOH] 2013, WHO 2011, WHO 2012, WHO 2014, WHO 2015).

Peer-to-peer or *pendampingan* (meaning "side-by-side") mentoring was used to establish good clinical governance practices. The LKBK team mentored staff from the 22 hospitals through a series of six structured mentoring visits that occurred over a 12–16 month period. First, EmONC providers (specialists, doctors and midwives), hospital management and district officials visited LKBK to learn about clinical governance and observe the practices, team work and organizational culture. Communication, workplace organization, privacy, infection prevention and documentation were emphasized. A team of five to seven doctors, midwives and nurses from LKBK then visited each of the 22 hospitals for on-site mentoring. The LKBK team along with hospital staff assessed facility readiness to provide EmONC using standards that were developed by EMAS. This group discussed the findings openly and in-depth so they could develop an action plan to address gaps. Subsequent visits by the LKBK team reviewed progress on the action plan, reinforced key practices and helped staff with problem-solving. Frequent communication also occurred between visits via SMS and phone calls.

Monitoring and evaluation of the intervention included tracking changes in the use of key clinical governance practices, primarily the frequency of death reviews. Increased frequency and rigor of these practices are expected to increase accountability and improve learning, based on review of prior performance. The increased use of key practices is expected to improve facility readiness to provide EmONC according to performance standards, increase coverage of high-impact evidence-based interventions and ultimately improve the quality of care. The aim was that hospitals and providers achieve at least 80% on performance standards and that key interventions be implemented for 100% of eligible clients in each hospital.

EMAS worked to improve data collection and strengthen data systems and practices within the hospitals to ensure that relevant information was available to staff who implemented clinical governance activities.

Methods

Three types of information were collected from the 22 intervention hospitals between July 2012 and March 2015. EMAS programmatic records were used to monitor the frequency of selected practices (e.g., hospital staff documented the number of death and near-miss reviews conducted; this information was collected quarterly by EMAS staff). Performance standards were used jointly by EMAS and hospital staff to assess facility readiness to provide EmONC and monitor implementation. Assessment results for all 22 hospitals (i.e., number of performance standards achieved) were tracked and reported each quarter. Service statistics were collected on a monthly basis and used to calculate the coverage of four maternal and newborn health evidence-based interventions. Data elements were recorded by facility staff in standardized registers and collected by EMAS program staff.

The percentage of standards achieved, as well as the percentage of clients who received evidence-based interventions was computed quarterly for each of the 22 hospitals. Logistic regression analysis was conducted to test for significant differences in the odds of clients receiving evidence-based interventions between 2013 and 2015, adjusting for clustering within health facilities.

Results

Frequency of Clinical Governance Practices

The frequency of key practices implemented to strengthen clinical governance increased over time. Almost three-quarters (73%) of the 22 facilities practiced emergency drills and 67% were using the dashboards as of March 2015. The proportion of maternal deaths reviewed increased from 48% in 2012 to 85% by March 2015, while the proportion of neonatal deaths among newborns more than 2,000 grams reviewed increased from 39% to 56% in the same period.

Facility Readiness to Provide EmONC

All 22 hospitals completed quarterly assessments using EmONC standards. No facilities achieved 80% of the maternal standards at the 2012 baseline, but 18 hospitals achieved at least 80% by March 2015.Thirteen hospitals achieved at least 80% of the newborn standards in the same period.

Facility-Based Coverage of Key Interventions

A total of 104,016 women delivered in the 22 hospitals between July 2012 and March 2015. Figures 1 and 2 present average hospital performance scores on EmONC standards and the percentage of eligible clients who received related interventions. Intervention coverage data are presented from July 2013 when the data collection system introduced by EMAS had matured sufficiently to produce reliable information. Figure 1 displays the achievement of standards related to immediate breastfeeding and the management of women delivering preterm with antenatal corticosteroid (ACS) along with actual provision of the interventions. The average achievement of standards quickly increased to 80%, and performance was sustained over time. There was a greater change in ACS intervention coverage between July 2013 and March 2015 compared to the change in breastfeeding.

Figure 2 displays the achievement of standards related to the management of severe pre-eclampsia/eclampsia with magnesium sulfate ($MgSO_4$) and the provision of a uterotonic in the third stage of labour along with provision of the related interventions. The achievement of standards generally increased over time and small increases were observed in the coverage of both interventions.

Figure 1. Newborn care: Average achievement of EmONC standards for ACS and immediate breastfeeding relative to coverage of related interventions (*N*=22 hospitals)

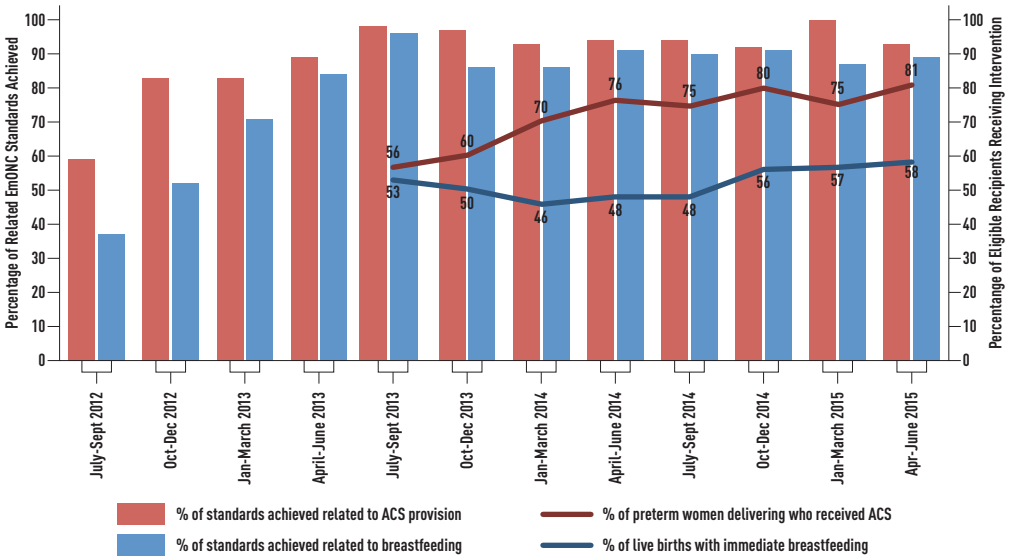
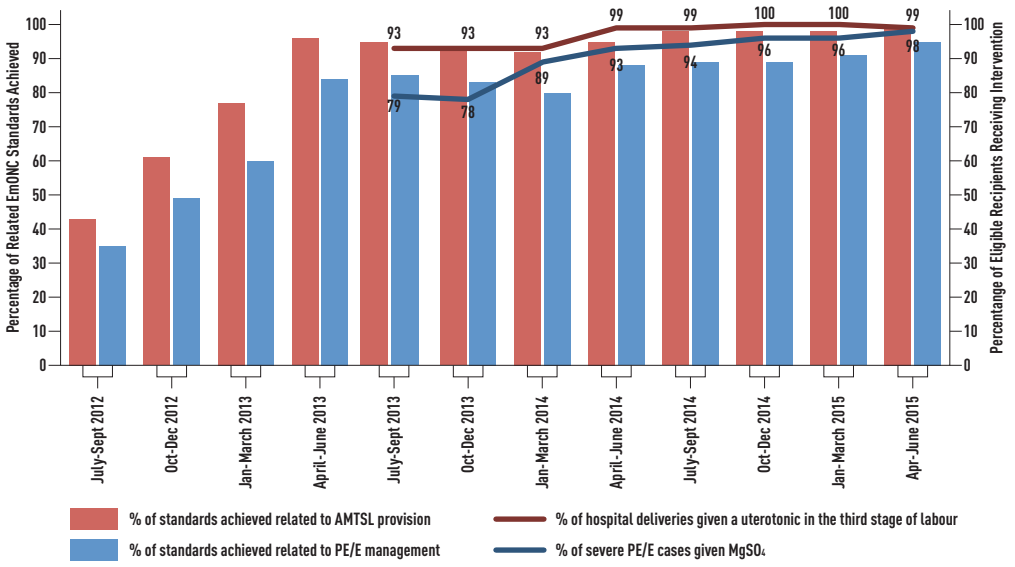


Figure 2. Obstetric care: Average achievement of EmONC standards for the active management of the third stage of labour and management of pre-eclampsia/eclampsia with $MgSO_4$ relative to coverage of related interventions (*N*=22 hospitals)



AMTSL = active management of the third stage of labour
PE/E = pre-eclampsia/eclampsia

A logistic regression model for grouped data, adjusted for within-facility correlation, assessed the difference in odds of receiving care between 2013 and 2015. The results in Table 2 indicate that the odds of uterotonic provision (Odds Ratio [OR]: 38.2, Confidence Internal [CI]: 3.79–386.4), ACS provision (OR: 2.35, CI: 1.80–3.09) and $MgSO_4$ provision (OR: 7.21, CI: 2.22–23.4) were significantly higher in 2015 when compared with 2013.

Discussion

Efforts to systematically strengthen clinical governance using peer-to-peer mentoring in 22 hospitals in Indonesia have resulted in increased frequency of selected practices (e.g., use of clinical dashboards and death and near-miss reviews). Facility readiness to provide EmONC improved, as evidenced by the majority of hospitals that scored over 80% on maternal and/or newborn care

Table 2. Odds of clients receiving maternal and newborn health interventions: 2013 compared to 2015 in 22 hospitals

Intervention	Number of eligible clients (2013)	Number of eligible clients (2015)	Odds Ratio	95% CI	*p* value
Routine care					
Breastfeeding within one hour*	10,023	8,430	1.18	0.75–1.85	0.483
Uterotonic provision*	10,297	8,532	38.2	3.79–386.4	**0.002**
Care for complications					
ACS provision**	494	491	2.35	1.80–3.09	**0.032**
$MgSO_4$ provision**	1,036	799	7.21	2.22–23.4	**0.001**

*22 facilities included; **21 facilities included; two-level logistic regression model for grouped data with standard errors adjusted for within-facility correlation; $p < 0.05$ level of significance.

standards. Facility-level coverage of three evidence-based interventions also increased. This case study in Indonesia is an important contribution to the literature, given the limited evidence of the influence of clinical governance on quality of care in low- and middle-income countries (Okwundu 2011).

The concept of good clinical governance resonated in these hospitals as a way to improve EmONC. LKBK as a hospital, as well as its staff and leadership, provided inspiration and exemplified why and how clinical governance works. While practices have been successfully introduced in supported hospitals, there is still room for improvement in their execution. The proportion of neonatal deaths that were reviewed in 2015 improved from the 2012 baseline figure, but remains low at 56%. Death reviews require on-going effort to improve quality (i.e., timeliness, rigor and completion). Similar challenges were noted in conducting perinatal mortality audits (Pattinson et al. 2009). Improved practices and facility readiness were not associated with a significant increase in breastfeeding. Factors associated with failure to initiate immediate breastfeeding include cesarean delivery (Patel et al. 2015). The average cesarean section rate at these hospitals was 42% (2015 data).

Ramsey et al. (2010) reported that accountability was central to clinical governance models. EMAS helped increase accountability by creating systems, clarifying roles, encouraging discussion across units and measuring performance related to EmONC. Accountability for performance was possible due to changes in data collection systems that produced relevant quality data. Data use and visualization to measure and improve performance were not routine in these hospitals prior to EMAS, but were modeled at LKBK and heavily emphasized during mentoring. Death reviews increased accountability and engaged staff in frank discussions of poor outcomes to promote learning as part of quality improvement.

The EMAS experience shows that strengthening clinical governance improves accountability at different levels within a facility, transforms hospital organizational culture to value learning and openness and promotes the use of relevant service delivery data to drive quality improvement.

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References

Brennan, N.M. and M.A. Flynn. 2013. "Differentiating Clinical Governance, Clinical Management and Clinical Practice" *Clinical Governance: An International Journal* 18 (2): 114–31. doi: 10.1108/14777271311317909.

Halligan, A. and L. Donaldson. 2001. "Implementing Clinical Governance: Turning Vision into Reality." *British Medical Journal* 322: 1413-17. doi: http://dx.doi.org/10.1136/bmj.322.7299.1413

McSherry, R. and P. Pearce. 2011. *Clinical Governance: A Guide to Implementation for Healthcare Professionals.* 3rd edition. Hoboken: Wiley.

Ministry of Health. 2010. *Maternal and Perinatal Audit Guidelines (Pedoman Audit Material Perinatal)*. Jakarta, Indonesia: Ministry of Health, Republic of Indonesia.

Ministry of Health. 2013. *Maternal Health Services in Basic and Referral Health Facilities (Pelayanan Kesehatan Ibu di Fasilitas Kesehatan Dasar dan Rujukan)*. Jakarta, Indonesia: Ministry of Health, Republic of Indonesia.

National Academy of Sciences. 2013. *Reducing Maternal and Neonatal Mortality in Indonesia: Saving Lives, Saving the Future*. Washington, D.C.: National Academies Press. Retrieved August 27, 2015. <http://www.ncbi.nlm.nih.gov/books/NBK201702/>.

Okwundu, C.I. 2011. "Can Clinical Governance Improve the Quality of General Practice and Primary Care? A SUPPORT Summary of a Systematic Review." Retrieved August 28, 2015. <http://global.evipnet.org/SURE-Guides/source/support%20summaries/phillips2010.pdf>.

Patel, A., S. Bucher, Y. Pusdekar, F. Esamai, N.F. Krebs, S.S. Goudar et al. 2015. "Rates and Determinants of Early Initiation of Breastfeeding and Exclusive Breast Feeding at 42 Days Postnatal in Six Low and Middle-Income Countries: A Prospective Cohort Study." *Reproductive Health*. 12(Suppl 2): S10. doi: 10.1186/1742-4755-12-S2-S10.

Pattinson, R., K. Kerber, P. Waiswa, L.T. Day, F. Mussell, S. Asiruddin et al. 2009. "Perinatal Mortality Audit: Counting, Accountability, and Overcoming Challenges in Scaling Up in Low- and Middle-Income Countries." *International Journal of Gynaecology and Obstetrics* 107 (2009): S113-S122. doi: 10.1016/j.ijgo.2009.07.011.

Phillips, C.B., C.M. Pearce, S. Hall, J. Travaglia, S. de Lusignan, T. Love and M. Kljakovic.2010. "Can Clinical Governance Deliver Quality Improvement in Australian General Practice and Primary Care? A Systematic Review of the Evidence." *The Medical Journal of Australia*. 193(10): 602-7.

Ramsey, A., N. Fulop, A. Fresko and S. Rubenstein. 2010. *The Healthy NHS Board: A review of guidance and research evidence, January 2010*. London: National Health Service.

Statistics Indonesia (Badan Pusat Statistik—BPS), National Population and Family Planning Board (BKKBN), and Kementerian Kesehatan (Kemenkes—MOH), and ICF International. 2013. *Indonesia Demographic and Health Survey 2012*. Jakarta, Indonesia: BPS, BKKBN, Kemenkes, and ICF International. Retrieved August 27, 2015. <http://dhsprogram.com/pubs/pdf/FR275/FR275.pdf>.

UNICEF. 2012. *Maternal, Newborn & Child Survival: Indonesia Country Profile*. Retrieved August 28, 2015. <http://www.childinfo.org/files/maternal/DI%20Profile%20-%20Indonesia.pdf>.

UNICEF and World Health Organization (WHO). 2014. *Fulfilling the Health Agenda for Women and Children: The 2014 Report. Countdown to 2015 Maternal, Newborn and Child Survival*. Geneva, Switzerland: World Health Organization.

Van Lerberghe W., Z. Matthews, E. Achadi, C. Ancona, J. Campbell, A. Channon et al. 2014. "Country Experience with Strengthening of Health Systems and Deployment of Midwives in Countries with High Maternal Mortality." *The Lancet*, 384 (9949):1215-25. doi: 10.1016/S0140-6736(14)60919-3

World Bank. 2014. *Universal Maternal Health Coverage? Assessing the Readiness of Public Health Facilities to Provide Maternal Health Care in Indonesia*. Jakarta: The World Bank.

World Health Organization (WHO). 2011. *WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia*. Geneva, Switzerland: World Health Organization. Retrieved August 27, 2015. <http://apps.who.int/iris/bitstream/10665/44703/1/9789241548335_eng.pdf>.

World Health Organization (WHO). 2012. *WHO recommendations for the prevention and treatment of postpartum haemorrhage*. Geneva, Switzerland: World Health Organization. Retrieved August 27, 2015. <http://apps.who.int/iris/bitstream/10665/75411/1/9789241548502_eng.pdf?ua=1>.

World Health Organization (WHO). 2014. *Integrated Management of Pregnancy and Childbirth Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice*. Geneva, Switzerland: World Health Organization.

World Health Organization (WHO). 2015. *WHO recommendations on interventions to improve preterm birth outcomes*. Geneva, Switzerland: World Health Organization. Retrieved August 27, 2015. <http://apps.who.int/iris/bitstream/10665/183037/1/9789241508988_eng.pdf?ua=1>.

WHO, UNFPA, UNICEF and Averting Maternal Death and Disability. 2009. *Monitoring emergency obstetric care: a handbook*. Geneva, Switzerland: World Health Organization.