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The Quality-of-Care Challenge in Pujehun, Sierra Leone: from the Referral System to Emergency Obstetric Care

Maternal health: from worldwide improvement to Sierra Leone

WHO's global statistics show that between 1990 and 2015 the worldwide maternal mortality rate (MMR) fell by 44%, with 216 maternal deaths per 100,000 live births down from 385 – a 2.3% annual rate of reduction. In sub-Saharan Africa levels are still unacceptably high, with a regional MMR in 2015 of 510 maternal deaths per 100,000 live births. In Sierra Leone, which already has some of the highest levels of infant and maternal mortality in the world (in 2014 infant mortality was 182 deaths per 1,000 live births and maternal mortality was 1,360 deaths per 100,000 live births), the Ebola outbreak has exacerbated the situation; the epidemic's direct and indirect consequences have led to a 19% increase in the MMR there (WHO 2015).

Doctors with Africa CUAMM has been active in Sierra Leone since 2012, in Pujehun District, located in the country's southernmost province. The NGO is active in the district hospital, which includes a main hospital and a maternity complex. The latter is the only health centre in the Pujehun District capable of providing CEmOC services such as caesarean sections and blood transfusions.

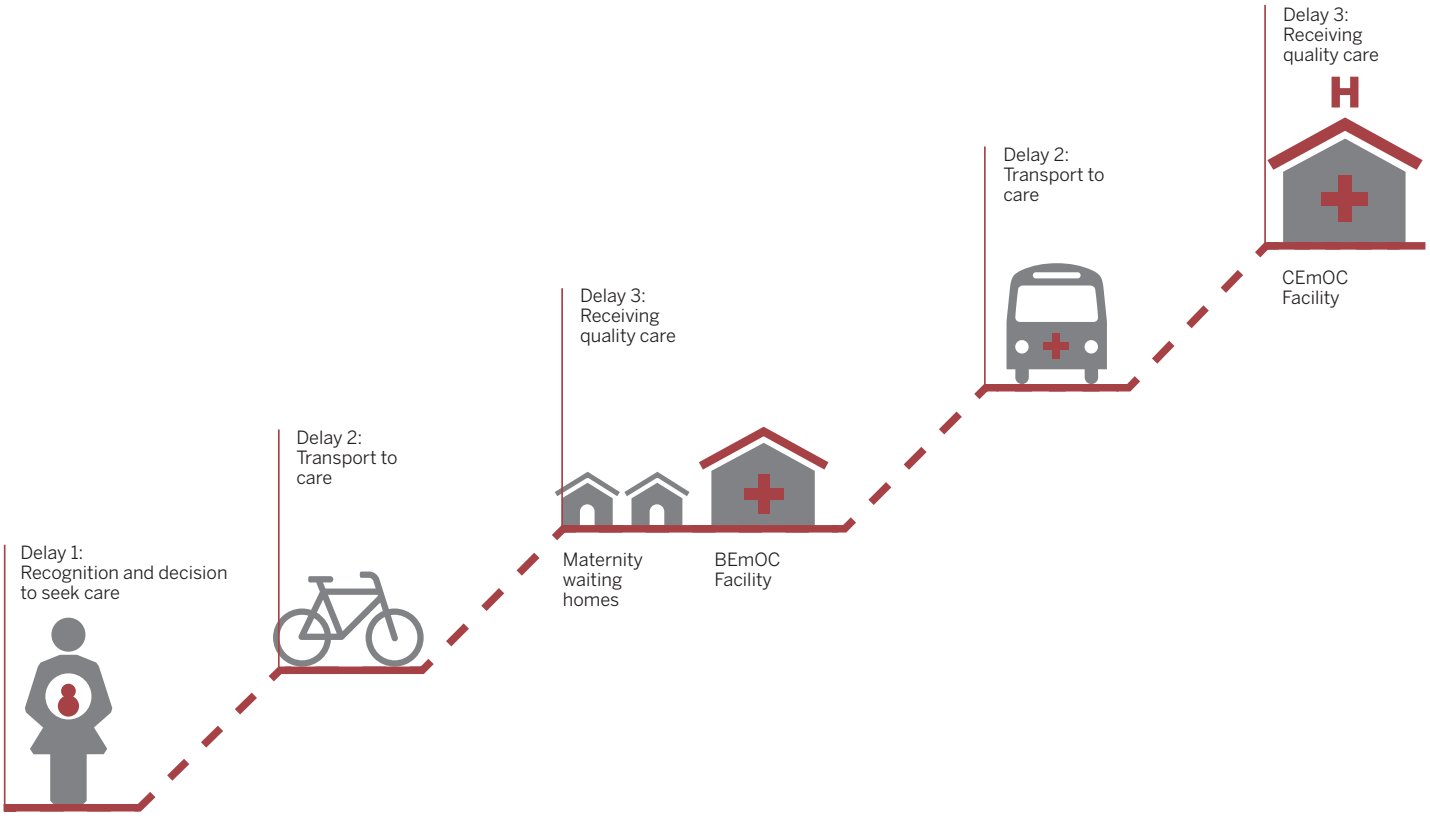
Meeting the quality-of-care challenge

High coverage of essential interventions was not associated with reduced maternal mortality (MM) in the health care facilities we studied. If substantial MM reductions are to be achieved, universal coverage of life-saving interventions needs to be matched with comprehensive emergency care and overall improvements in the quality of maternal health care. For this reason, Doctors with Africa CUAMM believes that is critical to work both on improving primary health care (through the peripheral health centres in the area of Pujehun) and the hospital, to enable it to meet the demand for higher-quality care and respond to the obstetric emergencies that are referred by the above-mentioned centres.

The challenge is to build an effective health care system with access to quality of care: community awareness, transport, skilled human resources, an effective supply chain, safe blood transfusion and around-the-clock emergency care.

The importance of referral

One of the main gaps to be dealt with is the issue of transport to care (Delay 2 in Figure 1). In January 2015 Doctors with Africa CUAMM improved the referral system in Pujehun District by providing 3 ambulances in the field for transportation from the primary health care units to the second level of care. Data show that obstetric referrals in 2015 rose +251% compared to 2014. The referral of obstetric complications from peripheral health units (PHUs) to Pujehun Maternity rose sharply between 2011 and 2015, with 63 such cases in 2011, 181 in 2013 and 720 in 2015; this is a consequence of the availability of transportation and the activities that have been carried out to make the population aware of it.



Emergency Obstetric Care (EmOC) and its assessment

Emergency Obstetric care (EmOC) must be made available and accessible to all women, in line with the strategic objectives of the Sierra Leonean government and the goal of reducing maternal mortality (MDG 5). It is well known, in fact, that EmOC plays a fundamental role in reducing maternal and neonatal mortality, saving the lives of women with obstetric complications during pregnancy and childbirth and saving the lives of newborns intrapartum. Major direct obstetric complications (MDOC, antepartum haemorrhage, post-partum haemorrhage, prolonged or obstructed labour, post-partum sepsis, abortion complications, severe pre-eclampsia and eclampsia, ectopic pregnancy, uterine rupture) are the main causes of maternal deaths.

The WHO has developed a set of indicators to monitor fundamental aspects of reproductive health programmes[1]. They are designed to reduce maternal and child mortality and ensure universal access to reproductive health care. The EmOC indicators can be used to measure progress in a programmatic continuum: from the availability and accessibility of EmOC services to their use and quality.

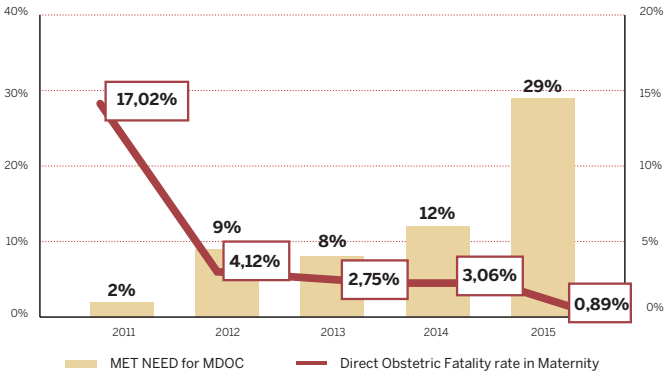
Doctors with Africa CUAMM has applied WHO's tool in Pujehun in order to assess its own health care services.

Indicators[2]	Results	Comment
2. Geographical distribution of EmOC facilities a) No. of EmOC facilities per 500,000 population b) No. of comprehensive EmOC facilities per 500,000 population	8.0 1.3	Expected number of EmOC facilities should be 5/500,000 and 1 comprehensive per 500,000 inhabitants. Pujehun has surpassed this target.
3. Proportion of all births in EmOC facilities a) % of births in EmOC facilities b) % of births in all surveyed facilities	16.2% 81.3%	The first indicator considers all the deliveries that took place in the Pujehun hospital and the 5 BemOC; the second considers all institutional deliveries.
4. Met need for EMoC a. % of all women estimated to have major direct obstetric complications who are treated in a health facility providing EmOC	29.3%	Since the goal is that all the women who have obstetric complications should receive EmOC, the WHO suggests that the minimum acceptable level should be 100%. Although this indicator is below the expected value, it shows a strong increase from 2014 (12% vs 29.3%).
5. Caesarean sections as a proportion of all births a. Caesarean sections in EmOC as a proportion of all births	2.3%	Although the proportion of Caesarean section is below the expected percentage (5-15%), it shows a strong increase from 2014 (0.9 % vs. 2.3%).
6. Direct obstetric case fatality rate a. Direct obstetric case fatality rate in EmOC facilities	0.8%	WHO states that the maximum acceptable value is <1%; the indicator is in line with the expected value.
7. Intrapartum and very early neonatal death rate a.1 Intrapartum and very early neonatal death rate in EmOC facilities a.2 Intrapartum and very early neonatal death rate in EmOC facilities only children > 2.5kg	3% 1%	This indicator was calculated twice, first for all children, and second only for children weighing >2,5Kg at birth. Its objective is to measure the quality of intrapartum and newborn care; it is recommended that newborns under 2.5 kg be excluded from the numerator and the denominator whenever the data permit, since low birth weight infants normally have a high fatality rate.
8. Proportion of deaths due to indirect causes in EmOC facilities a. Proportion of deaths due to indirect causes in EmOC facilities	33.33%	This data represents the CemOC indirect mortality rate. The indicator does not lend itself easily to a recommended or ideal level; instead, it highlights the larger social and medical context of a country or region and has implications for intervention strategies, especially in addition to EmOC, where indirect causes kill many women of reproductive age. In 2015, 3 out of 9 deaths in Pujehun District were due to indirect causes.

Table 1: Application of WHO EmOC indicators: data and results in Pujehun district

In particular, we focused our attention on MDOC assisted in Pujehun CemOC, which increased between 2011 and 2015 (from 2% to 29%), and led to a drop in the fatality rate (from 17.02% to 0.89%).

Graph 1: MET Need for EmOC Direct obstetric fatality rate in Maternity Complex



Lessons learned

- Secondary care is complementary, not alternative to primary health care: coverage and quality together can make the difference.
- Investments in the referral system must be district-specific, and it is critical to fill the gap between primary and secondary care.
- Involving the local community to raise their awareness is fundamental for building a culture of care and increasing both the demand for and the supply of health services.

[1] *Monitoring emergency obstetric care, WHO 2009.*
[2] Indicator 1 was not included because it deals with the national context.