

ACHIEVING EXCELLENCE IN MATERNAL, NEONATAL AND PERINATAL SURVIVAL: EXECUTIVE SYNOPSIS OF PEARL STUDY ANNUAL REPORT 2011

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ABSTRACT

PEARL Study (Perinatal Neonatal Outcomes Research Study in the Arabian Gulf) is Qatar's prospective National Perinatal Epidemiologic Study funded by QNRF (Qatar National Research Fund - grant # QNRF-NPRP-09-390-3-097). The study is a joint collaborative research project between Hamad Medical Corporation (HMC), Doha, Qatar and the University of Gloucestershire, Gloucester, United Kingdom. The project aims at building a National Neonatal Perinatal Registry for Qatar called Q-Peri-Reg which will be used to quantify Maternal, Neonatal and Perinatal mortality and morbidities and their correlates. The study is approved by the Research Ethics Committee (IRB) of Hamad Medical Corporation (protocol #9211/09), which is responsible for providing ethical approval to all health care research projects in the State of Qatar.

An executive synopsis of PEARL study for the State of Qatar on achieving excellence in maternal, neonatal and perinatal survival is reported here for guiding the practitioners and researchers in their relevant specialties. This describes these outcomes during 2011 and their trends since 1975 and shows that these outcomes in Qatar are comparable to many high income countries.

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Estimating and reporting reproductive outcomes, their correlates and risk factors at a national level is a daunting task. For the State of Qatar, Pearl Study (Perinatal Neonatal Outcomes Research Study in the Arabian Gulf) has now achieved this for maternal, neonatal and perinatal mortality outcomes during 2011 and their trends since 1975. According to the PEARL Study, Qatar's 2011 maternal, neonatal and perinatal outcomes are comparable to many high income countries; both from the West and East. The full report provides an up to date, authentic national and institutional data on maternal, neonatal and perinatal outcomes, their correlates and risk factors based on Qatar's National Perinatal Registry (Q-Peri-Reg); a unique scientific research tool for Qatar which gives it a distinct position among Gulf Cooperation Council (GCC) countries.

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Qatar had only two maternal deaths during 2011 giving a Maternal Mortality Rate (MMR) of 9.85/100,000. Qatar's MMR had been zero for several years between 1995 and 2000; for the rest of the years it had been between 7 and 11 (Figure 1). This is a great achievement against a global MMR of 260/100,000 and regional MMR of 320/100,000 in the Eastern Mediterranean Region (EMR). Qatar' MMR is comparable to many high income countries both from the West and East (Figure 2).

Qatar presently enjoys an outstanding antenatal coverage of 94%. Qatar's reproductive health system, based on 99.45 % hospital based deliveries, provides a unique model to study the correlates and associations of maternal survival which can form the basis of global maternal health systems improvement strategies. During 2011 the State of Qatar had a 25%

Figure: 1 Trends in Maternal Mortality Rates (per 100,000) in Qatar (2004 – 2011)

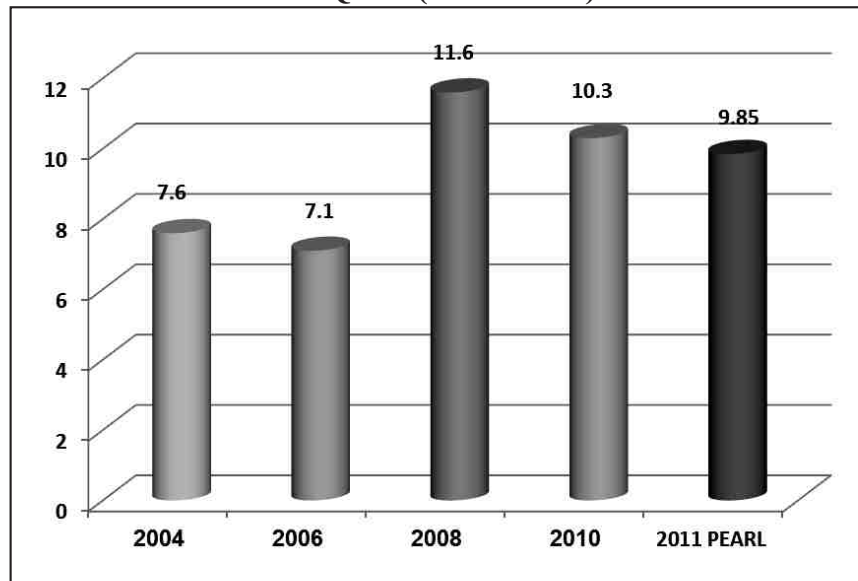
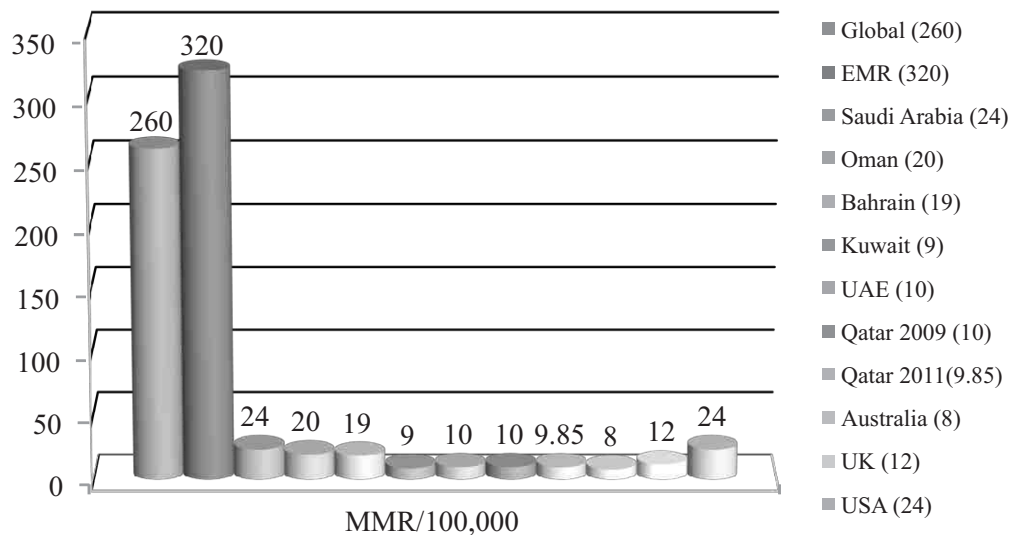


Figure 2: Qatar’s MMR (per 100,000) as estimated by PEARL Study during 2011 compared with Global, EMR, GCC countries and selected high income countries



Source: World Health Statistics 2011¹

national C - section (Caeserean Section) rate. According to PEARL Study analysis, the Relative Risk of Neonatal Mortality was significantly higher among C - section deliveries (p=0.003), particularly Emergency C - Section deliveries (p<0.001). Hence, it is time to review and further upgrade Qatar's national reproductive health system and practices.

Between 1975 and 2011, the Relative Risk (RR) of neonatal mortality in Qatar decreased by 87% (p<0.001) though the population increased by 10 fold and number of deliveries by 7.2 folds. This is a remarkable achievement; which encompasses both early and late neonatal mortality (Figure 3). Qatar's neonatal mortality rate corrected for lethal congenital anomalies and futility (cNMR) during 2011 was 3.3/1000.

Qatar's 2011 NMR (4.9/1000) and cNMR (3.3/1000) are comparable to selected high income countries; both from the West and East (Figure 4).

During 2011, not only 90% of mothers who delivered in Qatar had a literacy level of secondary school and above; there was a significant association (p=0.009) between maternal education and neonatal

Figure 3: Trends in Neonatal, Early Neonatal, Late Neonatal and Perinatal Mortality Rates (per 1000) in Qatar 1975-2011

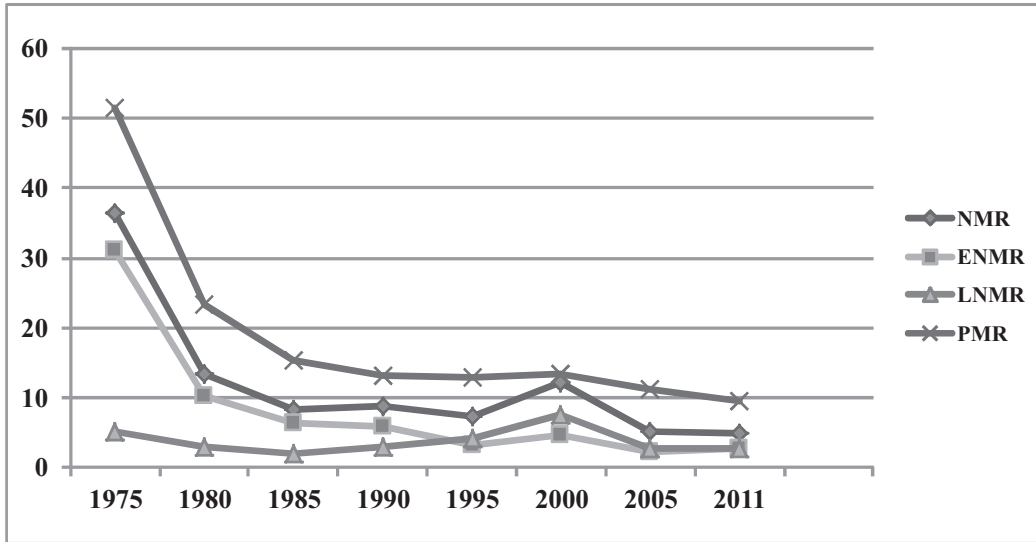
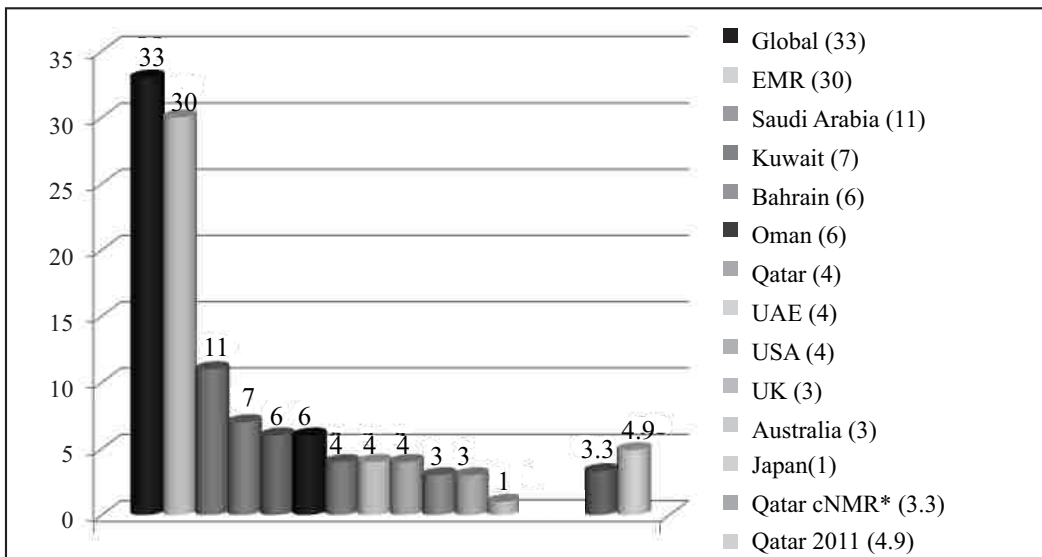


Figure 4: Qatar's NMR (per 1000) during 2011 compared with Global, EMR, GCC and few developed high income countries' NMRs

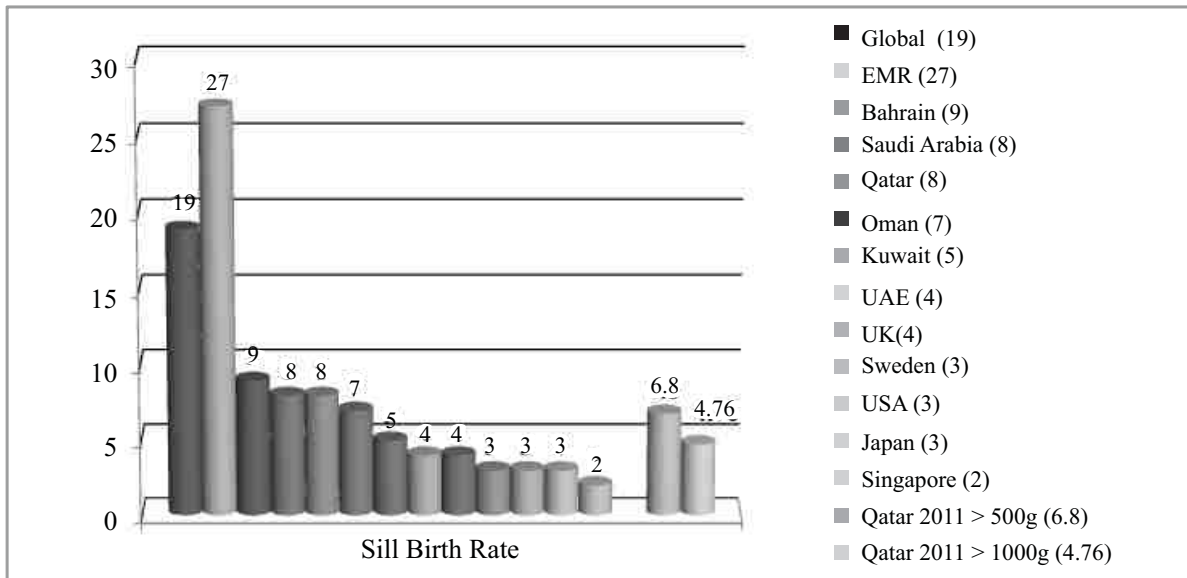


Source: World Health Statistics 2011'

survival. Hence, State of Qatar is a model for other countries to replicate. Qatar's neonatal survival is independent of nationality, gender, socio-economic and living status which supports the notion of an equitable health system in the State. Further improvement in Qatar's neonatal mortality is possible by addressing the high incidence of low birth weight (8.8%), preterm deliveries (8.5%), congenital and genetic disorders. PEARL Study has identified better maternal nutrition, improved antenatal care, birth spacing and best obstetric and neonatal practices at delivery as the prime areas for further improvement.

During 2011, Qatar's perinatal mortality rate was 9.55/1000, stillbirth rate (>500g birth weight) 6.85/1000 and 4.76/1000 (>1000g birth weight) which are much lower than the global stillbirth rate of 19/1000 and the EMR stillbirth rate of 27/1000 and comparable to many high income countries (Figure 5). Between 1990 and 2011, the Relative Risk of perinatal mortality in Qatar decreased by 28% (p=0.002) with a significantly downward trend of Risk Ratio (p=0.0016). However, the impact proportion of stillbirths on Qatar's perinatal mortality has increased from 55% in 1990 to 71.72% in 2011. In addition

Figure 5: Qatar's Stillbirths Rates (per 1000) during 2011 compared with Global, EMR, the America's, Europe's and selected high income countries



Source: World Health Statistics 2011¹

Panel 1: Strategic Guidelines for Improvement in Reproductive Health in Qatar

| Service Strategies |
|--|
| <ul style="list-style-type: none"> ● Adopt ICD-10 definitions as a universal classification system for maternal, neonatal and perinatal mortalities and morbidities in all maternity facilities in Qatar. ● Regular reporting of accurate maternal, neonatal and perinatal mortality rates and cause-of-death data from each facility and audit for preventability. ● Integrate National birth and death registration data base, Primary Health Care data base, feto-maternal unit data base, maternal, neonatal and pediatric follow up data bases with Qatar Perinatal Registry (Q-Peri-Reg). ● Include stillbirth reduction in all relevant international health reports and maternal and neonatal national health initiatives. ● Implement an effective business model to reduce miscarriages, stillbirths and congenital anomalies in Qatar. ● Provide birth plans and transportation. ● Assess any disparities in reproductive outcomes by ethnic origin and location. ● Reduce stigma associated with stillbirth. ● Ensure empowerment for women and families. ● Religious, social and cultural education of families on fertility and elective withdrawal of care. ● Provide bereavement support. |
| Research Strategies |
| <ul style="list-style-type: none"> ● Increase reproductive health research capacity and support. ● Research into the genetics of congenital anomalies among all ethnicities. ● Research in preventable causes of reproductive wastage in Qatar. ● Translation of research outcomes into strategic plans to prevent reproductive mortalities and morbidities. |

69% of stillbirths in Qatar are third trimester stillbirths, which is not the case in other high income countries where majority of stillbirths occur during early gestation. Over the next few years reduction in stillbirth rate will be a major reproductive health challenge for the State of Qatar.

Based on the analysis of Qatar's 2011 data, PEARL Study has developed strategic guidelines for further improvement of reproductive outcomes in the State of Qatar (Panel 1). The guidelines are potentially useful for other regional countries as well as the world at large.

REFERENCE

1. World Health Organization. World Health Statistics 2011. [Online] 2012 [cited on September 20, 2012]. Available from URL: http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf.