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BRIEF COMMUNICATION

Three years of data on the impact of obstetrician/gynecologist coverage in rural Uganda

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Previous research has suggested that training specialist obstetrician/gynecologists in Sub-Saharan Africa is a valuable strategy for improving public health [1]. Yet outcomes data demonstrating changes in such objective metrics as maternal mortality, stillbirth, and neonatal mortality following the addition of a board-certified obstetrician/gynecologist to a facility where there previously was none are extremely limited. The aim of the present study was to examine the changes in key maternal and neonatal indicators at one rural hospital in Uganda following the recruitment in January 2009 and retention of a board-certified obstetrician/gynecologist who lives at the facility and provides specialist coverage 24 hours a day.

Data were collected from registration books at a 205-bed hospital in rural southwestern Uganda from January 2009 to December 2011. Data were recorded on number of admissions, number and type of deliveries, stillbirths, early neonatal mortality, and other clinical factors. Frequencies and descriptive statistics were calculated for key variables. Note that the raw number of both maternal and neonatal deaths is small enough to render statistical analysis suspect. However, these data provide a glimpse of the trends seen in this one small hospital.

The protocol and data collection tools were reviewed and approved by the Institutional Review Board at the University of Michigan, as well as by the leadership at the Ugandan hospital. Given the nature of this study—retrospective analysis of secondary data that was entered into the research record without any identifying variables—informed consent was not required.

Table 1 illustrates that in the three years following the arrival of a board-certified obstetrician/gynecologist, the number of deliveries increased, as did the percentage of babies who survived after delivery. The cesarean delivery rate slightly declined over time, as did the percentage of stillbirths. The change in stillbirths appeared to result from a reduction in the number of macerated stillbirths, suggesting that women began coming to the hospital more promptly when they suspected a problem. The number and percentage of low birth weight neonates also decreased. While the number of deliveries to HIV-positive mothers remained the same, the percentage of HIV-positive mothers taking antiretroviral prophylaxis dropped and the percentage of HIV-positive mothers on highly active antiretroviral therapy (HAART) increased.

Table 1
Three years of maternal and neonatal outcomes data from one rural Ugandan hospital after the arrival of a board-certified obstetrician/gynecologist.[a]

	2009	2010	2011
Total deliveries	1882	2140	2077
Vaginal	1096 (58.2)	1385 (64.7)	1401 (67.5)
Cesarean	568 (30.2)	625 (29.2)	589 (28.4)
Undocumented delivery type	218 (11.6)	30 (1.4)	87 (4.2)
Number of referrals	406 (21.6)	364 (17.0)	457 (22.0)
Number of live births	1707 (90.7)	1986 (92.8)	1930 (93.0)
Number of stillbirths	175 (9.3)	154 (7.2)	147 (7.0)
Classified as "fresh"	82 (46.9)	101 (65.6)	91 (61.9)
Classified as "macerated"	86 (49.1)	53 (34.4)	56 (38.1)
Unclassified	7 (0.4)	0	0
Early neonatal deaths	4 (2.1 per 1000)	3 (1.4 per 1000)	27 (13.0 per 1000)
Maternal deaths	15 (80 per 10 000)	4 (19 per 10 000)	8 (39 per 10 000)
Neonates born <2.5 kg	216 (11.5)	119 (5.6)	91 (4.4)
Neonates born with asphyxia	132 (7.0)	231 (10.8)	142 (6.8)
Number of HIV-positive deliveries	169 (9.0)	206 (9.6)	199 (9.6)
HIV-positive mothers who took ARV prophylaxis	107 (63.3)	142 (68.9)	107 (53.8)
HIV-positive mothers on HAART	27 (16.0)	51 (24.8)	60 (30.2)

Abbreviations: ARV, antiretroviral; HAART, highly active antiretroviral therapy.
[a] Values are given as number (percentage) unless otherwise indicated.

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This was due to changes in protocols whereby all women with HIV were started on HAART, regardless of CD4 count.

The ratio of maternal deaths to live births and the ratio of early neonatal deaths to live births both fluctuated markedly, likely due to the small numbers and increased attention to reporting neonatal deaths in 2011 in the lead up to a new programmatic intervention.

Overall, data indicate that in this one small hospital in rural Uganda, the presence of a board-certified obstetrician/gynecologist has significantly improved maternal and neonatal health indicators. This is most likely because of several factors associated with having better-trained providers, such as more thorough prenatal care that encourages women to come in at the first sign of danger, women's increased trust in obtaining high-quality care at the facility, and the availability of emergency obstetric services not traditionally offered by midwives. Although there may have been other factors at play aside from the presence of a well-trained provider, these data suggest that placing obstetrician/gynecologists in rural, underserved areas may indeed have a positive public health impact.

Conflict of interest

The authors have no conflicts of interest.

Reference

[1] Anderson FW, Obed SA, Boothman EL, Opare-Ado H. The public health impact of training physicians to become obstetricians and gynecologists in Ghana. Am J Public Health 2014;104(Suppl. 1):S159–65.

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