

Ending preventable stillbirth: A gift for all women



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Dr Stringer received her BS from Davidson College and her MD from the University of Alabama at Birmingham. On completion of her residency in Obstetrics and Gynecology at the University of Alabama Hospitals, she moved to Lusaka, Zambia, where she spent more than a decade engaged in clinical and operational research focused on improving the lives of pregnant women infected with HIV. In 2012, she and her family returned to the USA, where she completed a sub-specialty clinical fellowship in Maternal Fetal Medicine at UNC. In 2015, she joined the UNC OBGYN faculty as Associate Professor. Throughout her career, Dr Stringer has conducted research at the intersection of obstetrics and public health. While in Zambia, she worked with local public health officials to implement a program to prevent mother-to-child HIV transmission, which had served over 1.6 million women at the time of her return to the USA. She also conducted clinical trials in contraception, AIDS therapeutics in women, and neonatal circumcision. Although Dr Stringer now lives in North Carolina, she maintains strong ties to her colleagues at the University of Zambia and its affiliated University Teaching Hospital. She practices clinical Maternal Fetal Medicine at UNC and also conducts domestic obstetrics research. Dr Stringer serves on the Society for Maternal Fetal Medicine's Global Health Committee and is a member of the editorial board of the International Journal of Gynecology & Obstetrics. She also serves on the combined board of American International Schools of Tangier and Marrakesh, Morocco.

I spent more than a decade working as an obstetrician in the African nation of Zambia, where I witnessed first-hand the real human toll of maternal mortality and stillbirth. On rounds each morning, the junior doctors recounted the statistics from the night before, and

the sheer number of maternal deaths and stillbirths was overwhelming. The maternal mortality rate at our hospital declined appreciably over the years, but the stillbirth rate remained stubbornly high.¹⁻³ The anguish in the faces of families as they left the hospital with no infant in their arms was unforgettable. One patient explained after her stillbirth that it was the loss of the future experiences she would have with her daughter that was the most painful. I am not the first to write of the silent epidemic of preventable stillbirth, but I would like to be the last. Why is this problem so recalcitrant? And what can we do to break free?

Some 2.6 million stillbirths occur worldwide each year, with the vast majority (98%) in low-resource countries.⁴ Half of these deaths (1.3 million per year) occur during labor, after a woman has carried her pregnancy for months. Even more so than prepartum stillbirth, intrapartum fetal death is concentrated in low-income countries⁵ and is among the best available surrogate markers for quality of labor and delivery care. Unfortunately, stillbirth has not traditionally been included in most countries' vital statistics, leaving these deaths unappreciated and marginalized in many of the very places where they are most frequent.

The situation has begun to change. The Every Newborn action plan—adopted in 2014 after contributions from 23 global organizations and 43 governments—has set the ambitious target of 10 stillbirths per 1000 total births by 2035.⁶ Meeting this goal will require many places—e.g. the urban district of Lusaka in Zambia, where the crude stillbirth rate has been reported as 21 per 1000 live births³—to reduce rates by approximately half.

Intrapartum stillbirths are exceedingly rare at the hospital where I now practice in the USA, owing to the availability of universal fetal monitoring and nearly instant cesarean or operative vaginal delivery when required. In countries where low stillbirth rates have been achieved, women are continually assessed throughout pregnancy and labor, and those that exhibit any high-risk features are followed up more closely and often referred to specialists. The system in Lusaka is also intended to function this way⁷: low-risk women should deliver at outlying clinics under the care of midwives, with more complicated pregnancies referred to the University Teaching Hospital. Although population growth and chronic underfunding has stressed the current system, referrals are correctly made in many cases, but often too late.⁷

Once appropriate referrals are made, providers must also be able to promptly diagnose fetal acidemia in labor. Accurate diagnosis of fetal distress remains elusive even in well-resourced countries, but is especially difficult in settings where laboring patients outnumber obstetric providers and where too often the only tool for fetal heart auscultation



is a fetoscope. Limited access to timely cesarean delivery or lack of training in operative vaginal delivery is a major barrier to decreasing stillbirths. Anesthesia training programs have lagged behind their obstetric peers so that the rate-limiting step in operative deliveries is often the availability of appropriate anesthesia. However, the answer to the problem of intrapartum stillbirth is not simply more cesarean deliveries. WHO suggests that most countries should aim for cesarean delivery rates of 10%–15%.⁸ In countries where cesarean deliveries are performed infrequently, maternal and neonatal outcomes improve with an increase in this rate, but there is little added benefit beyond the WHO target.⁸ Therefore, cesarean delivery should be expanded judiciously, taking into account the wider context of improved prenatal and intrapartum care.

From my own experience, it is clear that to solve this multifaceted problem, we must deconstruct the independent contributors to intrapartum stillbirth and systematically address each root. Continuous fetal heart rate monitoring in labor—a ubiquitous practice in many high-income countries—has never been shown to prevent more stillbirths among low-risk women than does simple intermittent auscultation.⁹ However, it is possible that the technology might prove beneficial in some low-income settings where healthcare staff can be so overwhelmed by obstetric volume that simple tasks such as intermittent fetal heart auscultation of higher-risk patients are not being done reliably. Whatever the technology, improved fetal monitoring in labor must be accompanied by better access to operative delivery. In places where cesarean deliveries are limited by theater space and available personnel, a cesarean delivery must be viewed as a precious scarce resource warranting scrutiny for the indication and timing by senior physicians. The goal of preventing the first cesarean delivery¹⁰ should be just as vigorously applied to low-income countries as it is in North America and Europe. This includes eliminating the practice of cesarean delivery for intrauterine fetal death, increasing operative vaginal births with appropriate anesthesia,¹¹ using external cephalic version for breech presentation, and removing the common but misguided cesarean indication of meconium staining during labor.

A global commitment has been made to drastically reduce stillbirth in the Every Newborn action plan, and this is a heartening, long-awaited

first step. Nevertheless, a simple numerical goal will not be enough by itself to effect change. We must insist that stillbirth be universally measured and reported. We must adopt intrapartum stillbirth as a key quality measure of obstetric care. And we must empower local authorities to develop their own iterative quality strategies for eliminating this unacceptable obstetric outcome. So what are we waiting for?

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REFERENCES

1. Vwalika B, Stoner MC, Mwanahamuntu M, et al. Maternal and newborn outcomes at a tertiary care hospital in Lusaka, Zambia, 2008–2012. *Int J Gynecol Obstet.* 2017;136:180–187.
2. Stringer EM, Chibwasha C, Stoner M, et al. A population-based cohort study of stillbirth among twins in Lusaka, Zambia. *Int J Gynecol Obstet.* 2015;130:74–78.
3. Stringer EM, Vwalika B, Killam WP, et al. Determinants of stillbirth in Zambia. *Obstet Gynecol.* 2011;117:1151–1159.
4. Lawn JE, Blencowe H, Waiswa P, et al. Stillbirths: Rates, risk factors, and acceleration towards 2030. *Lancet.* 2016;387:587–603.
5. Lawn JE, Blencowe H, Pattinson R, et al. Stillbirths: Where? When? Why? How to make the data count? *Lancet.* 2011;377:1448–1463.
6. World Health Organization. *Every Newborn: An Action Plan to End Preventable Deaths.* Geneva: World Health Organization; 2014.
7. Chi BH, Vwalika B, Killam WP, et al. Implementation of the Zambia electronic perinatal record system for comprehensive prenatal and delivery care. *Int J Gynecol Obstet.* 2011;113:131–136.
8. World Health Organization. *WHO Statement on Caesarean Section Rates.* Geneva: World Health Organization; 2015.
9. Devane D, Lalor JG, Daly S, McGuire W, Cuthbert A, Smith V. Cardiotocography versus intermittent auscultation of fetal heart on admission to labour ward for assessment of fetal wellbeing. *Cochrane Database Syst Rev* 2017;1:CD005122.
10. Spong CY, Berghella V, Wenstrom KD, Mercer BM, Saade GR. Preventing the first cesarean delivery: Summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists workshop. In reply. *Obstet Gynecol.* 2013;121:687.
11. Chakhtoura NA, Reddy UM. Management of stillbirth delivery. *Semin Perinatol.* 2015;39:501–504.