

Stillbirths: The Vision for 2020

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Abstract

Stillbirth is a common adverse pregnancy outcome, with nearly 3 million third trimester stillbirths occurring world-wide each year. Ninety-eight percent occur in low and middle income countries (LMIC), resulting in a ten-fold disparity in stillbirth rates between high and LMIC. Nevertheless, stillbirth is practically unrecognized as a health problem, either in global health metrics or within most LMIC data reports. Confusion regarding stillbirths is compounded by inconsistent definitions and over 35 different classification systems. One million or more stillbirths occur in the intrapartum period and are preventable with obstetric care that would also save the lives of mothers and newborns. The large disparities in stillbirth rates between HIC and LMIC, and those often seen in minority, disadvantaged and rural populations, are major themes among the papers in this series. Important interventions to reduce stillbirth include some components of antenatal and intrapartum obstetric care including timely cesarean section when required, although the effective implementation of these interventions remains a challenge in many LMIC. In this final paper, we call for inclusion of stillbirth as a recognized outcome in all relevant international health reports and initiatives. We ask every country to develop and implement a plan to improve maternal and newborn health that includes a reduction in stillbirths, and to count stillbirths in their vital statistics and other health outcome surveillance systems. We also ask for increased investment in stillbirth-related research, and especially research aimed at maternal and neonatal health system improvements in LMIC. Finally, we ask all those interested in reducing stillbirths to join with advocates for improvement of other pregnancy-related outcomes for mothers and their offspring so that a united front for improved pregnancy and newborn care for all will become a reality.

The issues

Nearly 3 million third trimester stillbirths occur world-wide each year, with 98% in low and middle income countries (LMIC). (1) Yet stillbirths are invisible in global health monitoring. Unlike other adverse pregnancy outcomes, such as maternal and neonatal mortality, stillbirth is not formally included in any of the major global disease campaigns. (1,2) None of the Millennium Development Goals (MDGs) mention stillbirth, nor is stillbirth included as an indicator in the Countdown monitoring process. Disability-adjusted life years (DALYs) for stillbirth are not presented in the Global Burden of Disease estimates. Interventions to reduce stillbirth are rarely evaluated, and those studied to improve maternal and newborn health have rarely included an evaluation of their impact on stillbirth. Most LMIC health departments do not count stillbirths. If a pregnancy outcome is not counted, it will almost certainly be ignored by the funding agencies, policy makers, and local communities. In this paper we summarize some of the key findings regarding stillbirth presented in the 5 previous papers in this Lancet Stillbirth series and present recommendations to reduce stillbirths in both HIC and LMIC. (1-5)

The first paper by Frøen et al, using data from a survey of health providers and families, provides a fascinating and sobering journey through the global variation in perceptions regarding stillbirth. (2) While stillbirths have not achieved the attention given to some other pregnancy outcomes such as maternal or neonatal mortality, the paper emphasizes that for the many women and their families who experience a stillbirth, the loss can be devastating. Troubling are the perceptions that having a stillbirth indicates the woman has failed as a mother or that evil spirits were involved in the death. There is also a widespread fatalism that those babies who die *in utero* were never meant to live. The too common stigmatization of women who have given birth to a dead baby is unfair, cruel and not based on fact. Inappropriate fatalism regarding stillbirths among care givers and policy makers will virtually guarantee that no progress occurs,

It is ironic that while stillbirths are often ignored from a policy and public health perspective, much of modern obstetric care evolved to reduce stillbirths. (6) During antenatal care, women are screened for syphilis, anemia, diabetes, growth restriction, preeclampsia and decreased fetal movement, and they have their baby's heart rate monitored in labour, all at least in part, in an attempt to prevent stillbirth. The ever-rising

cesarean section rates in high and many middle income countries can also be explained in part by increasing concern over potential stillbirths. (7) Thus, health professionals, and many women for whom they provide care, think about stillbirth much more than is generally perceived, yet the topic is rarely discussed in the media, or by policymakers.

Stillbirth history and geography

Despite the lack of attention to stillbirths in policy and programmes, stillbirth reduction is one of the most important success stories of HIC obstetrics. (8) One hundred years ago, stillbirth rates as high as 50 per 1000 births were common. Now, rates of less than 5 per 1000 are often seen – more than a ten-fold reduction. Many of the interventions that prevent stillbirth, including antenatal care, hospitalization for delivery and cesarean section for fetal distress were introduced in HIC after 1935 - 1940. By 1980, the most significant decreases in HIC stillbirth rates had been accomplished, e.g. stillbirth rates fell from 30 to 50/1000 births to about 6 to 8 per 1000 births in many HIC. (Figure 1) Reductions in stillbirth rates have not been uniform across all types of stillbirth. In HIC, it is now uncommon for stillbirths to occur at term, or intrapartum. (5,9,10) Thus, most HIC stillbirths now occur in the antepartum period and are preterm. Despite the historical successes, in recent years in HIC, the downward trajectory of stillbirth rates has substantially slowed, in part because intrapartum stillbirths rarely occur, making further reductions difficult, and because there has been little or no recent improvement in antepartum stillbirth rates.(1,11)

Stillbirth rates in some LMIC, and especially those with low health system coverage and quality, approximate those seen in HIC –a century ago (e.g., 30 to 50 per 1000 births). (1,11) The 1995 – 2008 stillbirth rate comparisons presented in the paper by Lawn et al suggest that in most LMIC, decreases in stillbirth rates continue to occur, although the rates of decline vary substantially among countries. (1,11) The two-thirds reduction seen in China since 1995 is especially impressive and demonstrates what can be accomplished when income rises and attention and resources are directed at lowering fertility rates and improving pregnancy outcomes. Other countries with limited resources but more fully developed health systems such as Cuba, Sri Lanka, Malaysia and Mexico have also achieved very low stillbirth rates. (1,11) Overall, however, the disparity between countries with the highest and the lowest stillbirth rates remains huge and demands action to achieve equity in this as well as other pregnancy outcomes.

For this series, the authors refer to the International Classification of Disease (ICD) gestational age and birth weight cutoffs for stillbirth of 22 weeks or 500 g, but for national and international data comparisons use the WHO commended cutoff of 28 weeks or 1000 g. (1) This decision accepts the reality that in many LMIC there is limited neonatal survival at gestational ages below 28 weeks and birthweights <1000 g, but also means that the data presented relate only to the later gestational age or larger stillbirths. In the US, 20 weeks is the usual lower gestational age cutoff for defining a stillbirth, with half of all stillbirths occurring between 20 and 28 weeks; similar results are found in other HIC using 22 weeks as the lower gestational age cutoff. (5,13) If these numbers represent the contribution of 20 to 28 week fetal deaths to stillbirth rates worldwide, it suggests that several million 20 to 28 week stillbirths may occur each year. In LMIC, these early stillbirths are even less likely to be counted or studied. Whichever gestational age cutoff is used, it is clear that stillbirth is one of the most common adverse pregnancy outcomes.

Stillbirth timing and aetiology

Most of the world's stillbirths occur in the late preterm, term and intrapartum periods. Over 1 million occur during labour, i.e., among babies with an excellent chance of survival if only born alive (1). In some LMIC studies, up to 70% of stillbirths occur in the intrapartum period and are often associated with obstetric emergencies. (1,12) In HIC, half of all stillbirths occur in non-anomalous babies at > 28 weeks gestation and because of the availability of newborn intensive care, nearly all would survive if born alive.

Among the major causes of stillbirth worldwide are obstructed labour with associated asphyxia, and infections, other infections such as chorioamnionitis, syphilis and malaria, as well as asphyxia associated with placental abruption, preeclampsia/eclampsia, and umbilical cord complications. (1,14) In HIC, congenital anomalies, infections associated with preterm birth, diabetes, and post-term pregnancy also play a relatively important role, since many of the other major preventable causes of stillbirth have been reduced or eliminated. Contributing to the risk in HIC are high or increasing levels of maternal smoking, obesity, and advanced maternal age. (5,15-17) An important unsolved issue, emphasized in the papers by Lawn et al and Flenady et al, are the large disparities in stillbirth rates often seen in minority, disadvantaged and rural populations. (1,5,18,19) It is important for each geographic area to understand the local causes of and risk factors

for stillbirths, and the context in which they occur, perhaps using a verbal and social autopsy, so that appropriate prevention strategies can be developed and implemented. Continuous monitoring of local stillbirth rates and causes will allow each area to evaluate the effectiveness of its stillbirth reduction programmes.

Currently, with more than 35 stillbirth classification systems in existence, there is no one system that is used consistently across HICs. Most LICs have no stillbirth causation data. (20) Having a single universal classification system for cause of death would enable countries to both count and classify stillbirths by cause of death, and allow international comparisons and evaluation of stillbirth rates over time. In the meantime, to provide minimal information, especially for LMIC, each stillbirth should be classified by birthweight, gestational age and by time of death (antepartum or intrapartum), aided by verbal autopsy information on the presence of maceration, fetal heart sounds after onset of labour, and maternal perception of fetal movements. In addition, if they exist, data should be collected regarding maternal conditions such as hypertension, maternal seizure/coma, hemorrhage, maternal testing for syphilis, and obstetric complications such as obstructed or prolonged labour. With these minimal data, many LMIC stillbirths can be classified as to timing and probable cause. This information should allow LMIC care givers and responsible authorities to choose among the interventions that will reduce stillbirths and develop appropriate policies and guidelines for their use.

Solutions that work to reduce stillbirth

Within populations, high rates of stillbirths rarely occur in isolation from high rates of other adverse maternal and perinatal outcomes. High rates of maternal mortality and fistulas as well as neonatal deaths and long-term childhood morbidity all tend to co-occur with stillbirths in the same populations, and at times, in the same woman. (4,21,22) For example, in a study from Cameroon, 83% of women with an obstetric fistula also had a stillborn. (22) In general, the conditions that cause stillbirths also kill mothers and newborns (Table 1) and the interventions that reduce stillbirths reduce maternal and neonatal mortality as well. Interventions such as system strengthening to improve quality of and access to care, improving transportation to medical facilities, training of health care personnel including obstetric drills and audits, and the use of maternity waiting homes are likely to prevent or treat multiple obstetric conditions and improve outcomes. (3,23,24) Based on the review by Bhutta et al in this series, we now know that there

also are a number of evidence – based interventions that reduce stillbirths. (3) Among the most important for LMIC are the packages of interventions known as “basic and comprehensive emergency obstetric care.” Screening and treatment of syphilis and the use of bednets for malaria in endemic area are also among the most important interventions.(3,25-27) Lawn et al and Pattinson et al emphasize that reducing the number of stillbirths can be accomplished not only by reducing medical risk for pregnant women at-risk, but also by increasing the availability of family planning services to reduce the overall number of pregnancies, an intervention likely responsible for part of the reduction in stillbirths in China. (1,4)

The papers in this series together make the point that to reduce stillbirths, the context in which they are occurring must be well understood. The interventions necessary to reduce stillbirth rates in geographic areas with a starting rate of 40 /1000 births are substantially different from those likely to reduce stillbirth rates in areas with a starting rate of 5/1000 births. (3,4) In the former case, the provision of prenatal care, screening for conditions such as syphilis and preeclampsia, and hospital care with induction of labour and cesarean section for obstructed labour, and management of antepartum/intrapartum hemorrhage, asphyxia and severe preeclampsia/eclampsia are likely to achieve large reductions in the number of stillbirths.(3,4) In low prevalence HIC areas, reducing disparities seen in high risk groups, risk reduction especially in vulnerable populations, searching for and appropriately managing fetal growth restriction, the use of induction to prevent post-dates pregnancies and improving quality of care for conditions such as hypertension and diabetes through high quality audit will likely contribute to a reduction in the residual stillbirths, once the major causes of stillbirth have been eliminated.(5,17,28,29)

Countries without a functional health care system will almost always need development of a basic health care infrastructure to establish a setting where proven interventions can be introduced. Pattinson et al, in paper 4 of this series, provide a thoughtful discussion of the various layers of policy, management and provider skills that must be in place before a package of interventions appropriate for reducing stillbirth can be successfully introduced. (4)They also emphasize that a program to reduce stillbirths alone will rarely gather enough political support to be implemented. Since with a few exceptions, the conditions that cause stillbirths overlap extensively with those that kill mothers and

newborns, and the interventions that reduce stillbirth also reduce maternal and neonatal deaths, they convincingly argue that a programme that attempts to reduce maternal, fetal and neonatal mortality will be more likely to garner political and financial support than programmes focused on any one of these outcomes in isolation.

Systems of care for mothers and babies

Nearly 60,000,000 of the world's 130,000,000 births occur at home, and many more occur in facilities without sufficient resources to prevent stillbirth. (30) Thus, much of this series has focused on improving perinatal health care systems, since increasing the coverage of key, life-saving interventions at scale will require that certain barriers within the system of care must be addressed. The components of such systems, in addition to the facilities, equipment and supplies, include a variety of health care providers.

Understanding who they are and their capabilities and where training can improve their practice is crucial to building a system that can adequately care for mothers and reduce fetal deaths. The value of training traditional birth attendants to recognize problems, stabilize at-risk women, and transfer at-risk women to higher levels of care has appropriately been questioned. (31) However, recent studies suggest the benefit of linking community birth attendants to referral systems and facility-based clinical care. (32-34) There is also encouraging evidence that mobilizing communities to address improvements in pregnancy-related care can facilitate reductions in the large stillbirth burden in LMIC. (4,35,36) This strategy includes improving demand by the community for access to facility-based services where more comprehensive care may be obtained.

One reason for the high stillbirth rates in LMIC has been a series of delays many women experience in receiving appropriate care including delay in recognizing risky maternal conditions, delay in arranging transportation to a medical facility, and delay in providing appropriate care at the facility. (4) The ability to stabilize and transfer women who are in jeopardy, arrange appropriate transfer, and enhance the ability of the medical facilities to provide timely emergency obstetric care, are important steps in reducing stillbirth rates in many LMIC. (37) Pattinson et al have shown that creating a perinatal care system may not be enough. The system must be strengthened in strategic ways to relieve the barriers that exist to the provision and uptake of specific, cost-effective interventions. They make a very strong case that a continuous search for correctable causes of

adverse pregnancy outcomes through the use of perinatal audits should be a component of any maternal and newborn health care system. (5,38)

Priority research agenda for stillbirth reduction

A formal and detailed evaluation of the potential interventions that might reduce stillbirth in both HIC and LMIC, as done in this series, is an important first step in choosing the interventions to implement in order to address this important and understudied problem. (3,5) These papers have identified a number of interventions that, if delivered at high quality, high coverage and at scale, would substantially reduce the number of stillbirths worldwide, especially in LMIC, at reasonable and sustainable costs. (3,4) However, they have also made it clear that there are many areas that would benefit from additional research, with the major research priority themes in HIC and LMIC summarized in Table 2.

In HIC, because most of the stillbirths occur in the antepartum period, a portion of the research should focus on stillbirths that occur during the antenatal period and especially those that are preterm. In the surveys on research priority setting in HIC, the high priority given to screening and monitoring for fetal growth restriction and conditions that cause it such as smoking and illicit drug use are a reflection of this concern. (5) So too are the recommendations relating to the management of various high-risk conditions occurring prior to labour such as preeclampsia and diabetes, and maternal reporting of decreased fetal movements. While term intrapartum stillbirths are quite rare in the countries with the strongest medical systems, there are still some HIC with significant numbers of term intrapartum stillbirths. Research on methods to improve the overall quality of care through audit and facility quality improvement programs was emphasized. Research priorities in discovery science emphasized understanding the influences of placental development in early pregnancy on late gestational complications and improved infrastructure for pregnancy research in this area.

To ascertain causes of stillbirth in HIC, fetal autopsies and placental histological examination, in addition to the medical history, collectively have been evaluated as a collective methodology to designate a cause of death. Up to 90% of stillbirths will be determined to have a possible or probable cause with such an approach. (15,20) In many LMIC, autopsies are almost never available and placental examinations are rarely

performed – thus, when done at all, the cause of death is generally approximated through use of post-mortem verbal autopsy, and is therefore rarely known with any degree of certainty. Studies are currently underway to evaluate the effectiveness of verbal autopsy using structured interviews of the mother, family and birth attendants. (39,40) Whether this technique will have sufficient accuracy to establish a cause of stillbirth compared to autopsy and placental examination is unknown. Regardless, vigorous attention should be given to developing methodologies that can determine the cause of stillbirth, especially in low-resource environments.

In LMIC, the stillbirth rates remain high and the resources to provide high quality maternity care are largely unavailable. Research questions therefore tend to focus on how to improve outcomes with less than adequate resources and especially through improved intrapartum care, since overwhelming evidence indicates that intrapartum stillbirths are among the easiest to avert. (1,4) The high rating given to questions related to induction of labour emphasizes that in many LMIC, induction of labour can prove life-saving both to the mother and baby. Finally, the paper by Frøen et al emphasized that, especially in LMIC, much more needs to be known about how women, their families and communities feel about and deal with the consequences of stillbirth, and what can be done to reduce the stigma associated with stillbirth. (2)

However, more important than any of the specific questions raised above, is the question addressed from several perspectives by the papers in this series. That is, how in low resource settings does one build a functioning maternal and neonatal care system that screens all women for conditions that cause stillbirth and provides timely access to hospital care including induction of labor, cesarean sections and newborn resuscitation? (1-5) Programmatic research is needed to learn how to implement stillbirth reduction programs in areas where the burden of stillbirth is high and resources are limited is a must. Research on how to integrate programs to reduce maternal mortality, stillbirth and neonatal mortality is also crucial if we are to build comprehensive, cost-effective and sustainable stillbirth reduction programs. We emphasize that most clinically important research efforts will require high quality data and standardization in data collection based on uniform definitions and a common stillbirth cause-of-death classification system.

CALL TO ACTION

The goal for all countries is to reduce their third trimester stillbirth rate to < 5 per 1000 births, a rate already achieved in over 40 countries, and for high-income countries to eliminate all preventable stillbirths and close equity gaps. By 2020, LMIC should aim to reduce their current stillbirth rates by at least 50%, noting that some LMIC have already achieved greater reductions than this in the last decade. Achieving a substantial reduction in stillbirths, as well as maternal and neonatal deaths, will require concerted action by many participants including country, regional and local governments and their official health departments, the WHO and other international health organizations, foundations, research institutes, professional and non-governmental organisations. These actions - framed as goals to accomplish prior to the year 2020 include:

International community

- By 2020, if not before, the global partnerships currently advancing maternal and newborn health such as UN Secretary's Global Strategy for Women's and Children's Health, The Muskoka Initiative, The Partnership for Maternal, Newborn and Child Health, Women Deliver and Countdown to 2015, among others, should include or promote plans for stillbirth reduction.
- By 2020, if not before, stillbirths will be included in the Global Burden of Disease estimates, with DALYs, in Countdown indicators and other international tracking processes.
- By 2020, if not before, funding for stillbirth prevention will be integrated into donor programs for maternal newborn and child health.
- By 2020, if not before, relevant global health agencies such as WHO and UNFPA will have identified staff responsible for stillbirth data collection and stillbirth prevention programs.
- By 2020, stillbirth rates will be more accurately ascertained in household surveys such as Demographic and Health Surveys and UNICEF's Multiple Indicator Cluster Survey.
- By 2020, if not before, there will be global agreement on a methodology for classifying stillbirth by cause of death, ICD will include specific codes to classify stillbirth, and there will be comparable national estimates to guide programmatic priorities and track progress.

- By 2020, if not before, develop effective business models that engage private sector investment in the development and delivery of innovative solutions to stillbirth.

Individual country

- By 2020, if not before, every country will have a plan for implementing packages of interventions for preventing stillbirths.
- By 2020, if not before, every country will have a methodology for estimating national, regional and local stillbirth rates, including intrapartum stillbirth, and the rates will be captured and reported in the large scale surveys and vital statistics systems based on a common definition.
- By 2020, if not before, each country will evaluate disparities in stillbirth rates based on ethnicity, socioeconomic indicators, and location, and develop plans and programs to understand and reduce those disparities.
- By 2020, every country will have an audit system in place so that a representative sample of stillbirths is audited for etiology and preventability.
- By 2020, every country will initiate efforts to reduce stigma associated with having a stillborn baby, and define and implement culturally appropriate support for mothers and families who have had a stillborn baby.

Communities and families

- By 2020, if not before, every community will be empowered to undertake measures to support healthy household and community practices and preventive measures for stillbirths.
- By 2020, if not before, with a focus on low income countries, each community will have a committee charged with improving pregnancy outcomes.
- By 2020, if not before, with a focus on low income countries, each community and its families should focus on removing social, cultural and financial barriers for pregnant women and their newborns in need of facility care.
- By 2020, if not before, each rural community and its families should have a plan for transporting pregnant women in need of both routine and emergency care, and sick newborns, to an appropriate medical facility.
- By 2020, if not before, every community, in order reduce stigma associated with having a stillborn baby, will initiate efforts to increase awareness that stillbirth is a

common occurrence, that they happen for medical reasons, and that many can be prevented

- By 2020, if not before, every community will initiate efforts to acknowledge the impact of stillbirth and meet the needs of bereaved families including culturally appropriate support for mothers and families who have had a stillborn baby..

RESEARCH PRINCIPLES

- By 2020, if not before, international health organizations, governments and foundations will substantially increase resources for research to determine etiologies and to develop effective interventions and programs to reduce stillbirths as well as maternal and neonatal deaths in low and middle income countries.
- By 2020, if not before, in LMIC, research capacity with an emphasis on implementation science aimed at reducing maternal, fetal and neonatal death will be substantially enhanced (for example, by developing regional centers of excellence) .
- By 2020, if not before, for all research projects aimed at reducing maternal or neonatal deaths, whenever relevant, stillbirths will be included as a major outcome.

Finally, and as soon as possible, we encourage all those with an interest in stillbirths, including the research community, to engage with those interested in improving other pregnancy outcomes so that an evidenced-based united front for improving all pregnancy outcomes is created.

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RLG and EMM compiled the manuscript with contributions from all authors and members of the Steering Committee. All authors and members of the Steering Committee read and approved the final manuscript. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of their employers.

Conflicts of interest

Authors declare no conflicts of interest.

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Table 1. Major killers of mothers, fetuses and newborns in low income countries

	Mother	Stillbirth	Newborn
1. Childbirth complications			
Haemorrhage	X	X	X
Obstructed labour	X	X	X
Preterm labour/birth	-	X	X
2. Infection			
Intrauterine infection	X	X	X
Syphilis	-	X	X
Malaria	X	X	-
3. Maternal conditions			
Preeclampsia/eclampsia	X	X	X
Diabetes	X	X	-
4. Fetal growth restriction	-	X	X
5. Congenital abnormalities	-	X	X

Adapted from data in ref (1)

Table 2. Research Themes

Implementation in Low and Middle Income Countries

1. How to adapt and scale up the most effective components of intrapartum care to reduce stillbirths, particularly the appropriate use of Cesarean section.
2. How to adapt and scale up the most effective components of antenatal care to reduce stillbirths, including how to screen for, prevent or treat various maternal infections so that stillbirths will be reduced.
3. How to institute quality improvement programs including mortality audits so that they will be effective in reducing stillbirths.
4. How to determine the skills needed by various health care workers to reduce stillbirths, to understand the value of task shifting among these workers, and then determine how to train these workers to adopt and provide the most effective methods for reducing stillbirths.
5. How to effectively mobilize communities so their efforts will contribute to a reduction in stillbirths.
6. How to better support women and families with a stillbirth and remove stigma associated with stillbirth.

Implementation in High Income Countries

1. How to reduce disparities in stillbirth rates seen among ethnic minorities, rural and socioeconomically disadvantaged groups.
2. How to reduce risk factors that are associated with antepartum stillbirths.
3. How, in the antenatal period, to better screen for risk of stillbirth including screening for intrauterine growth restriction.
4. How to effectively prevent early gestational age stillbirths.
5. How to implement perinatal audit to improve the quality of maternity care to prevent stillbirths.

Data for programmatic action and tracking

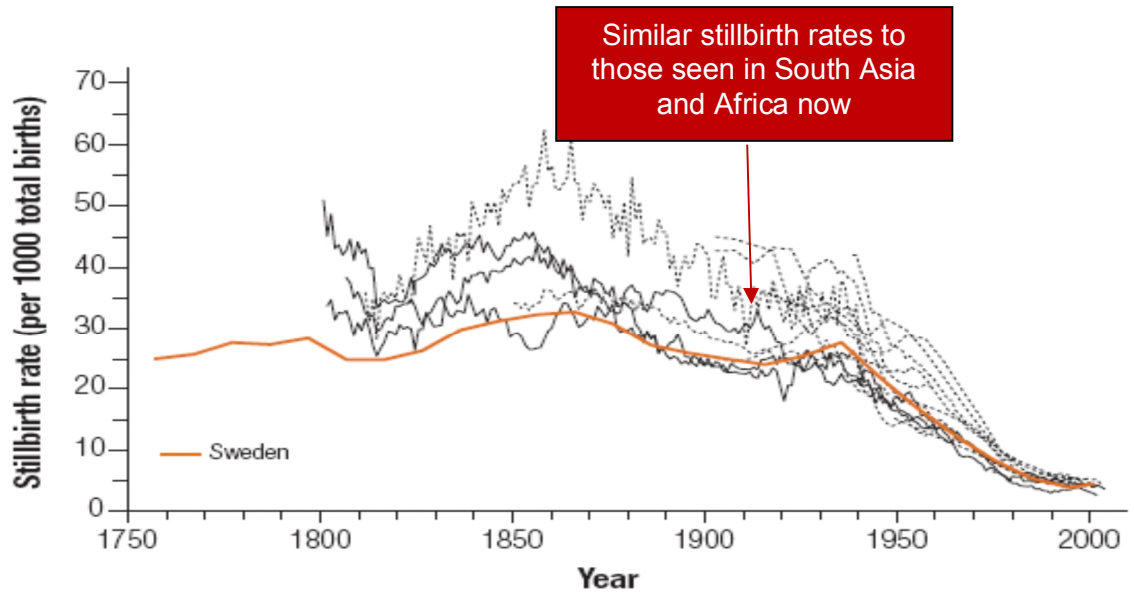
1. How to better count stillbirths in lower income countries including through household surveys, sentinel surveillance systems, and routine vital registration.
2. How to use data collected on cause of death in various locations to more accurately assign and classify cause of death so that it is useful for program

implementation, and so that comparisons can be made across locations and time periods, including the use of verbal autopsy and social autopsy in low and middle income countries.

3. How to overcome barriers to weighing and gestational age assessment for stillbirths by using simplified surrogates for gestational age such as foot size.
4. Innovation to better detect infections in pregnancy in settings with limited laboratory capacity.
5. How to effectively use simplified audit tools to maximize improvement in stillbirth rates.

Adapted from refs (1, 4, 5, 37)

Figure 1 Long term trends for stillbirth rates in 11 selected high income countries (1750 to 2000)



Source Woods R. Long-term trends in fetal mortality: implications for developing countries. Bull WHO 2008; 86: 460-6.

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