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## Stillbirths: the vision for 2020

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This is the sixth in a Series of six papers about stillbirths

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Stillbirth is a common adverse pregnancy outcome, with nearly 3 million third-trimester stillbirths occurring worldwide each year. 98% occur in low-income and middle-income countries, and more than 1 million stillbirths occur in the intrapartum period, despite many being preventable. Nevertheless, stillbirth is practically unrecognised as a public health issue and few data are reported. In this final paper in the Stillbirths Series, we call for inclusion of stillbirth as a recognised outcome in all relevant international health reports and initiatives. We ask every country to develop and implement a plan to improve maternal and neonatal 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 identifying and addressing barriers to the aversion of stillbirths within the maternal and neonatal health systems of low-income and middle-income countries. Finally, we ask all those interested in reducing stillbirths to join with advocates for the improvement of other pregnancy-related outcomes, for mothers and their offspring, so that a united front for improved pregnancy and neonatal care for all will become a reality.

### Introduction

Nearly 3 million third-trimester stillbirths occur worldwide each year, with 98% arising in low-income and middle-income countries.<sup>1</sup> Yet this pregnancy outcome is largely invisible in health monitoring reports worldwide. Unlike other adverse outcomes, such as maternal and neonatal mortality, stillbirth is not formally included in any of the major global disease campaigns.<sup>1,2</sup> None of the Millennium Development Goals mentions stillbirth, nor is it included as an indicator in the Countdown to 2015 monitoring process.<sup>3</sup> Disability-adjusted life-years for stillbirth are not presented in the Global Burden of Disease estimates.<sup>4</sup> Interventions to reduce stillbirth are not widely assessed, and trials of methods to improve maternal and neonatal health have rarely included an assessment of their effect on stillbirth. Most governmental health departments of low-income and middle-income countries do not count stillbirths. If a pregnancy outcome is not counted, it will almost certainly be ignored by funding agencies, policy makers, and local communities. In the first paper in *The Lancet's* Stillbirths Series, Frøen and colleagues,<sup>2</sup> present data from a survey of health-care providers and families, and provide a fascinating and sobering journey through the global variation in perceptions of stillbirth. Despite the fact that the attention given to stillbirth is less than that paid to some other pregnancy outcomes, such as maternal or neonatal mortality, Frøen and colleagues<sup>2</sup> note that, for women and their families who experience stillbirths, the loss can be devastating. In addition, some troubling perceptions about stillbirth exist, such as that the woman has failed as a mother or that evil spirits were involved in the death. A widespread misconception is that any baby who dies in utero was never meant to live. The too-common stigmatisation of women who have given birth to a dead baby is unfair, cruel, and not

based on fact. Inappropriate fatalism regarding stillbirths among caregivers and policy makers will virtually guarantee that no progress occurs.

Although stillbirth is frequently ignored from a policy and public health perspective, many advances in modern obstetric care have been made to reduce the rate of this outcome.<sup>5</sup> During antenatal care, women are screened for syphilis, anaemia, diabetes mellitus, growth restriction, pre-eclampsia, and decreased fetal movement, and the baby's heart rate is monitored during labour, all, at least in part, with the aim to prevent stillbirth. The frequency of caesarean section has risen in high-income countries and many middle-income countries, partly owing to increasing concern over the risk of stillbirth.<sup>6</sup> Thus, health-care 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, by policy makers, or in public health forums.

In this final article of the Series we summarise some of the key findings regarding stillbirth presented in the five previous reports,<sup>1,2,7–9</sup> and present recommendations to reduce stillbirth rates in countries of high, middle, or low income.

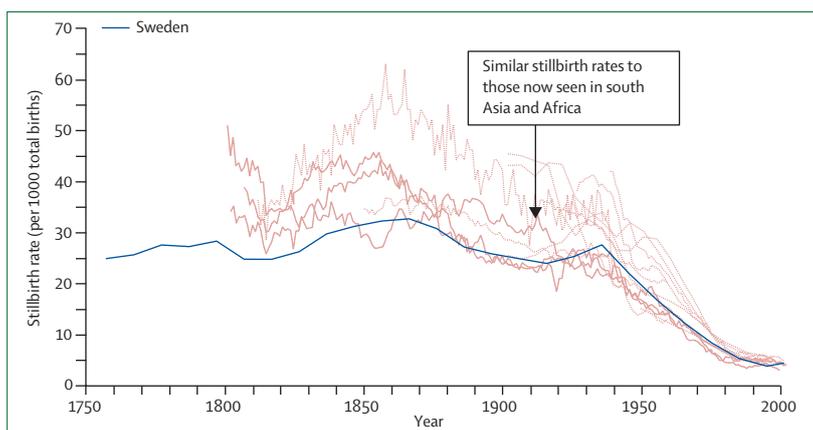
### Stillbirth history and geography

Despite the lack of attention to stillbirth in policies and programmes, lowering rates of this pregnancy outcome in high-income countries is one of the most important success stories of obstetrics.<sup>10</sup> 100 years ago stillbirth rates as high as 50 per 1000 births were frequently recorded, but rates have fallen to fewer than five per 1000—a reduction of more than ten times. Many of the interventions that prevent stillbirth, including antenatal care, admission to hospital for delivery, and use of caesarean section in cases of fetal distress were

introduced in high-income countries after 1935–40. By 1980, the greatest proportion of decreases in stillbirth rates in high-income countries had been accomplished—eg, stillbirth rates had fallen from 30–50 per 1000 births to about six to eight per 1000 births in many high-income countries (figure). Reductions in rates, however, have not been uniform across all types of stillbirth. In high-income countries, term or intrapartum stillbirths are infrequent,<sup>9,11,12</sup> and most now occur preterm in the antepartum period. Thus, the downward trajectory of stillbirth rates in high-income countries has substantially slowed since 1980 (figure), in part because little or no improvement has been made in antepartum stillbirth rates.<sup>1,13</sup>

Stillbirth rates in some low-income and middle-income countries, especially those in which coverage for specific interventions and quality of care are poor, are similar to those seen in high-income countries a century ago (ie, 30–50 per 1000 births). The comparisons of stillbirth rates in 1995 and 2008 presented by Lawn and colleagues<sup>1</sup> suggest that in most low-income and middle-income countries decreases can be seen, although the speed of decline varies substantially across countries.<sup>1,13</sup> The two-thirds reduction seen in China since 1995 is especially impressive, and demonstrates what can be accomplished when personal income rises and attention and resources are directed towards the lowering of fertility rates and the improvement of pregnancy outcomes. Other countries with limited resources but reasonably developed health systems, such as Cuba, Sri Lanka, Malaysia, and Mexico, have also achieved very low stillbirth rates.<sup>1,13</sup> Overall, however, the disparity between countries with the highest and the lowest stillbirth rates remains unacceptably large and demands action to achieve equity in this as well as other pregnancy outcomes.

For gestational age and birthweight cutoffs for stillbirth in this Series, we refer to the International Classification of Diseases and Related Health Problems, 10th revision, cutoff of 22 weeks or 500 g, but for national and international data comparisons, we use the WHO recommended cutoff of 28 weeks or 1000 g.<sup>1,14,15</sup> Use of the WHO cutoff values takes into account the reality that in many low-income and middle-income countries, neonatal survival is limited for babies born before 28 weeks' gestation and with birthweights lower than 1000 g and, therefore, any available data on stillbirths are most likely to relate only to babies born at later gestational ages, with greater weight, or both. In the USA, 20 weeks is generally used as the lower gestational age cutoff to define a stillbirth, and half of all stillbirths occur between 20 and 28 weeks' gestation; similar results are found in other high-income countries where 22 weeks is used as the lower gestational age cutoff.<sup>9,16</sup> If these numbers are taken to represent the contribution of very early fetal deaths to stillbirth rates worldwide, each year several million stillbirths occur earlier than at 28 weeks' gestation. In low-income and middle-income countries, these early



**Figure:** Long-term trends for stillbirth rates in 11 selected high-income countries, in the years 1750–2000  
Reproduced from Woods,<sup>10</sup> by permission of WHO.

stillbirths are even less likely to be counted or studied than are the later ones. Whichever gestational age cutoff is used, however, stillbirth clearly remains one of the most common adverse pregnancy outcomes.

### Timing and causes of stillbirth

Worldwide most stillbirths occur in late preterm and term fetuses. More than 1 million stillbirths occur during labour—ie, in babies who would have had an excellent chance of survival if born alive and safely.<sup>1</sup> In some studies in low-income and middle-income countries, up to 70% of stillbirths have been reported to occur in the intrapartum period and are frequently associated with obstetric emergencies.<sup>1,17</sup> In high-income countries, half of all stillbirths occur in babies without anomalies who were born at more than 28 weeks' gestation, nearly all of whom would be expected to survive if born alive because of the availability of neonatal intensive care.

Among the major causes of stillbirth worldwide are asphyxia owing to obstructed labour, placental abruption, pre-eclampsia or eclampsia, infections, especially chorioamnionitis, syphilis, and malaria, and umbilical cord complications.<sup>1,18</sup> In high-income countries, congenital anomalies, infections associated with preterm birth, diabetes, and post-term pregnancy are additional important causes, as many of the other major preventable causes of stillbirth have reduced rates or have been eliminated. Contributing to the risk in high-income countries are high or increasing levels of maternal smoking, obesity, and advanced maternal age.<sup>9,19–21</sup> Important, unsolved issues in high-income countries, which are emphasised by Lawn and colleagues<sup>1</sup> and Flenady and colleagues,<sup>9</sup> are the much higher stillbirth rates in ethnic minority, disadvantaged, and rural populations than in ethnic majority, affluent, and urban populations.<sup>1,9,22,23</sup> Each geographical area must understand the local causes of and risk factors for stillbirth, and the contexts in which they occur, perhaps by use of verbal and social autopsy methods,<sup>24</sup> so that appropriate

	Mother	Stillbirth	Neonate
<b>Childbirth complications</b>			
Haemorrhage	X	X	X
Obstructed labour	X	X	X
Preterm labour or birth	–	X	X
<b>Infection</b>			
Intrauterine infection	X	X	X
Syphilis	–	X	X
Malaria	X	X	–
<b>Maternal disorders</b>			
Pre-eclampsia or eclampsia	X	X	X
Diabetes	X	X	–
Fetal growth restriction	–	X	X
Congenital abnormalities	–	X	X

Adapted from data in Lawn and colleagues.<sup>1</sup>

**Table: Major causes of death in mothers, stillborn babies, and neonates in low-income countries**

prevention strategies can be developed and implemented. Continuous monitoring of local stillbirth rates and causes will allow each area to assess the effectiveness of its stillbirth rate reduction programmes.

With more than 35 stillbirth causation classification systems currently in existence in high-income countries, no one system is used consistently.<sup>25</sup> Most low-income countries report no stillbirth causation data. One universal classification system would enable countries to count and classify stillbirths by cause of death, and would allow international comparisons and assessment of worldwide stillbirth rates over time. In the meantime, at least the minimum of information—birthweight, gestational age, and time of death (antepartum or intrapartum)—should be reported, especially in low-income and middle-income countries, and be complemented 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 on any maternal disorders, such as hypertension, maternal seizure or coma, haemorrhage, syphilis, and obstetric complications, such as obstructed or long labour, should be collected. This information should enable care-givers and responsible authorities in low-income and middle-income countries to choose the interventions that will best reduce stillbirths and develop appropriate policies and guidelines for their use.

### Effective stillbirth rate reduction strategies

Within populations, high rates of stillbirth rarely occur in isolation from high rates of other adverse maternal and neonatal outcomes, especially in low-income countries (table). For instance, high rates of maternal mortality and fistulas, as well as neonatal deaths and long-term childhood morbidity, are generally seen in the same populations, and at the same times in the same women.<sup>8,26,27</sup> For example, in a study from Cameroon,

83% of women with obstetric fistula also had a stillbirth.<sup>27</sup> The interventions that reduce stillbirths frequently reduce maternal and neonatal mortality. Improvements in quality of and access to key life-saving interventions, through the facilitating of access to transportation to medical facilities, training of health-care personnel, including obstetric drills and audits, and the use of maternity waiting homes where high-risk women can await birth near medical facilities, are likely to prevent multiple obstetric disorders, augment treatment, and lower rates of adverse outcomes.<sup>7,28,29</sup> On the basis of the article by Bhutta and co-workers in this Series,<sup>7</sup> several evidence-based interventions can reduce stillbirths. Among the most important for low-income and middle-income countries are those known as basic and comprehensive emergency obstetric care.<sup>30,31</sup> The screening for and treatment of syphilis and the use of bednets to prevent malaria in endemic areas are also among the most important interventions.<sup>7,32</sup> Lawn and colleagues<sup>1</sup> and Pattinson and colleagues<sup>8</sup> emphasise that reductions in the numbers of stillbirths can be accomplished not only by lessening the medical risks for pregnant women, but also by increasing the availability of family planning services to lower the overall numbers of pregnancies. This intervention was probably partly responsible for the reduction of stillbirths in China.<sup>1,8</sup>

The articles in this Series together make the point that to reduce rates of stillbirth, the context in which they occur must be well understood. The issues and interventions required in geographical areas where stillbirth rates remain around 40 per 1000 births differ substantially from those where the rate is five stillbirths per 1000 births.<sup>7,8</sup> In the former case, the provision of prenatal care, screening for disorders (eg, syphilis and pre-eclampsia), and hospital care, including induction of labour, caesarean section for obstructed labour, and management of antepartum or intrapartum haemorrhage, asphyxia, or severe pre-eclampsia or eclampsia, are likely to achieve large reductions in the numbers of stillbirths.<sup>7,8</sup> In low-prevalence HIC, the disparities between high-risk and low-risk groups should be reduced, fetal growth restriction should be identified and appropriately managed, induction of labour should be used to prevent post-term pregnancies, and quality of care for various disorders, such as hypertension and diabetes, should be improved through audits.<sup>9,19–21,33</sup>

Countries without a functional health-care system will almost always need development of a basic infrastructure to establish a setting where proven interventions can be introduced. Pattinson and colleagues<sup>8</sup> 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 reduction of stillbirth can be successfully introduced. They also underscore that programmes to reduce stillbirth alone will rarely gather enough political support to be implemented. The

disorders that cause stillbirth and the interventions to reduce rates overlap extensively with those that kill and can save mothers and neonates. Pattinson and colleagues argue, therefore, that integrated programmes that attempt to reduce maternal, fetal, and neonatal mortality will be more likely to garner political and financial support than will programmes focused on any one of these outcomes in isolation.<sup>8</sup>

### Systems of care for mothers and babies

Nearly 60 million of the world's 130 million births occur at home, and many more occur in facilities without sufficient resources to prevent stillbirth.<sup>34</sup> Thus, much of this Series has focused on ways to improve health-care systems to increase coverage of key, life-saving perinatal interventions. The components of such systems, in addition to the facilities, equipment, and supplies, involve various health-care providers. Understanding of who is needed and their capabilities, and of where training can improve practice is crucial to building systems that can provide adequate care for mothers and lower rates of fetal death. The usefulness of training traditional birth attendants to recognise disorders and complications, to stabilise at-risk women, and to transfer them to higher levels of care has, appropriately, been questioned.<sup>35</sup> Studies suggest, however, that the linking of community birth attendants to referral systems and facility-based clinical care is beneficial.<sup>36–38</sup> Evidence also indicates that the mobilisation and empowerment of communities to increase demand for and implement improvements in pregnancy-related care can facilitate reductions in the large stillbirth burden in low-income and middle-income countries.<sup>8,39,40</sup> This strategy includes improvement of community demand for access to facility-based services where more comprehensive care might be obtained.

One reason for the high stillbirth rates in low-income and middle-income countries is the delay many women experience in receiving appropriate care, including delays in the recognition of high-risk maternal disorders, in arranging transportation to medical facilities, and in the provision of appropriate care at facilities.<sup>8</sup> The ability to meet these requirements is important to reduce stillbirth rates in many low-income and middle-income countries.<sup>41</sup> Pattinson and co-workers<sup>8</sup> have shown that creation of a perinatal care system might not be enough. The system must be underpinned by strategies to relieve the barriers that exist to the provision and uptake of specific, cost-effective interventions. Pattinson and colleagues make the 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 neonatal health-care system.<sup>8,42</sup>

### Research priorities

A formal and detailed assessment of the potential interventions that might reduce stillbirth in countries of high, middle, or low income, as done in this Series, is an

#### Panel 1: High-priority research themes to investigate ways to lower stillbirth rates in low-income, middle-income, and high-income countries<sup>1,8,9,42</sup>

##### Implementation in low-income and middle-income countries

- How to adapt and scale up the most effective components of intrapartum care, particularly the appropriate use of caesarean section
- How to adapt and scale up the most effective components of antenatal care, including how to screen for, prevent, and treat various maternal infections
- How to select and institute the most effective quality-improvement programmes, including mortality audits
- How to identify the skills needed by various health-care workers, to understand the value of task shifting, and to determine how to train these workers
- How to mobilise communities effectively to make their efforts count
- How to improve support of women and families with a stillbirth and remove the associated stigma

##### Implementation in high-income countries

- How to reduce disparities in stillbirth rates between groups of different ethnic origins and between people in rural and socioeconomically disadvantaged groups and those in urban and affluent groups
- How to reduce risk factors associated with antepartum stillbirth
- How to improve antenatal screening for risk factors for stillbirth, including fetal growth restriction
- How to prevent early gestational age stillbirths
- How to implement perinatal audit to improve the quality of maternity care

##### Data for programmatic action and tracking

- How to better count and report stillbirths, including through the use of household surveys, sentinel surveillance systems, and routine vital registration
- How to use data collected on cause of death in various locations to assign and classify accurately cause of death so that it is useful for programme implementation, and so that comparisons can be made across locations and time periods, including the use of verbal and social autopsy methods in low-income and middle-income countries
- How to overcome barriers to weighing and making gestational age assessments for stillborn babies by use of simplified surrogates, such as foot size for gestational age
- How to improve detection of infections in pregnancy in settings with limited laboratory facilities
- How to use effectively simplified audit tools

important first step in choosing the interventions to implement to address this important and understudied issue.<sup>7,9</sup> These papers have identified several key interventions that, if delivered with high quality and coverage and on a large scale, would substantially lower the number of stillbirths worldwide, especially in low-income and middle-income countries, with reasonable and sustainable costs.<sup>7,8</sup> However, the Series has also shown that many areas would benefit from additional research. The major themes for research priority in countries of high, middle, or low income are summarised in panel 1.

In high-income countries, one focus of research should be the antepartum period, especially before 37 weeks' gestation, when most stillbirths arise. In the surveys in the preceding Series papers on research priority setting in these countries, screening for and monitoring of fetal growth restriction and disorders that cause it, such as

**Panel 2: Steps be taken at the international, country, and community levels to reduce stillbirth rates by 2020 or earlier**

The goals for all high-income countries are to reduce by 2020 third-trimester stillbirth rates to less than five per 1000 births, to close equity gaps, and to eliminate all preventable stillbirths. In low-income and middle-income countries, the goal is to reduce stillbirth by at least 50%. These goals have already been achieved in some countries. Many participants at the country, regional, national government, and local government levels, and in international professional and non-governmental health organisations, foundations, and research institutes will have to work together to achieve these goals.

**International community***Key actions*

- **Include stillbirth reduction in all relevant maternal and neonatal health initiatives**
- **Include stillbirth in all relevant international health reports**
- **Report accurate stillbirth rates and cause-of-death data**
- **Create a universal classification system**
- **Implement an effective business model to reduce stillbirths**

*Details of actions*

- Organisations that are advancing maternal and neonatal health, such as the UN Secretary General's Global Strategy for Women's and Children's Health, the Muskoka Initiative, the Partnership for Maternal, Newborn and Child Health, Women Deliver, Countdown to 2015, the US Global Health Initiative, and the Alliance for Reproductive, Maternal and Newborn Health, should include and promote plans for stillbirth reduction
- Include stillbirths in the Global Burden of Disease estimates, disability-adjusted life-year estimates, Countdown to 2015 indicators, and other international tracking processes
- Integrate funding for stillbirth prevention into donor programmes for maternal, neonatal, and child health
- Identify staff responsible for stillbirth data collection and prevention programmes in relevant global health agencies, such as WHO and UNFPA
- Develop the ability to ascertain accurately stillbirth rates, for instance in household surveys, such as those in the Demographic and Health Surveys programme and the UNICEF Multiple Indicator Cluster Survey
- Agree on a universal method for classification of stillbirths by cause of death, include specific relevant codes in the International Classification of Diseases, and calculate national estimates to guide programmatic priorities and track progress
- Create and implement effective business models that engage private sector investment in the development and delivery of innovative solutions to stillbirth

**Individual country***Key actions*

- **Create a plan for stillbirth reduction**
- **Collect accurate data on stillbirth rates and causes of death**

- **Assess disparities in stillbirth rates by ethnic origin and location**
- **Audit stillbirths for causes and preventability**
- **Reduce stigma associated with stillbirth**

*Details of actions*

- Create a plan to implement packages of interventions to prevent stillbirths
- Design a method to estimate national, regional, and local stillbirth rates, including intrapartum stillbirth, and capture and report the data according to a common definition
- Assess disparities in stillbirth rates on the basis of ethnic origin, socioeconomic indicators, and location, and develop plans and programmes to understand and decrease those disparities
- Put in place an audit system for causes and their preventability
- Initiate efforts to reduce stigma associated with stillbirth, and define and implement culturally appropriate support for affected mothers and families

**Communities and families***Key actions*

- **Ensure empowerment for women and families**
- **Set up pregnancy improvement committees**
- **Provide birth plans and transportation**
- **Reduce stigma**
- **Provide bereavement support**

*Details of actions*

- Empower communities to undertake measures to support healthy household and community practices and preventive measures for stillbirths
- Set up community committees charged with improving pregnancy outcomes, especially in low-income countries
- Remove social, cultural, and financial barriers to pregnant women in need of facility care, especially in low-income countries
- Provide transport to appropriate medical facilities for pregnant women, and newborn babies, in rural communities who are in need of routine and emergency care
- Provide education to lessen the stigma associated with stillbirth and increase awareness of its frequency and preventability
- Initiate efforts to acknowledge the impact of stillbirth and meet the needs of bereaved families, including provision of culturally appropriate support for mothers and families

**Research principles***Key actions*

- **Increase support**
- **Increase research capacity**
- **Include stillbirth as an outcome in all relevant research**

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#### Details of actions

- Increase resources provided by international health organisations, governments, and foundations to investigate causes of stillbirth and to develop effective interventions and surveillance programmes to reduce maternal, fetal, and neonatal mortality in low-income and middle-income countries

- Increase research capacity in low-income and middle-income countries with an emphasis on implementation science, based on understanding relevant mechanisms and causes to reduce maternal, fetal, and neonatal mortality (eg, development of regional centres of excellence)
- Include stillbirth as a major outcome in all relevant research projects aimed at reduction of maternal, fetal, or neonatal deaths

UNFPA=UN Population Fund.

smoking and illicit drug use, were important.<sup>9</sup> Other relevant features are management of pre-labour disorders, such as pre-eclampsia and diabetes, and maternal reporting of decreased fetal movements. Although the rates of term intrapartum stillbirths are generally low across the countries with the strongest medical systems, there are still some high-income countries with higher rates of term intrapartum stillbirths. Research into methods to improve the overall quality of care emphasised the need for audit and improvement in the quality of facilities.<sup>8</sup> Research priorities in discovery science highlight the need to improve understanding of the influences of placental development in early pregnancy on late gestational complications. The need for improved basic science research infrastructure was also emphasised.<sup>9</sup>

To ascertain causes of stillbirth in high-income countries, clinical fetal autopsies and placental histological examinations together with the clinical records have been assessed. This combined approach will lead to a possible or probable cause being established in up to 90% of stillbirths.<sup>19,25</sup> In many low-income and middle-income countries, autopsies are almost never available and placental examinations are rarely done. Thus, when investigated at all, the cause of death is generally approximated through use of verbal autopsy post mortem and is, therefore, rarely known with any degree of certainty. Studies are currently underway that are using structured interviews with the mother, family, and birth attendants to assess the effectiveness of the verbal autopsy method.<sup>24,43</sup> Whether this technique will have sufficient accuracy to establish a cause of stillbirth compared with clinical autopsy and placental examination is unknown. Whatever the outcome, vigorous attention should be given to developing methods that can identify the cause of stillbirth, especially in low-resource environments.

In low-income and middle-income countries, 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, especially through improved intrapartum care, when resources are poor.<sup>18</sup> The high rating given to questions related to induction of labour emphasises that in many low-income and middle-income countries,

induction of labour can save the lives of mothers and babies. Finally, Frøen and colleagues<sup>2</sup> have highlighted that understanding of 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 this outcome needs to be broadened, particularly in low-income and middle-income countries.

More important than any of the specific questions raised above, however, is the question addressed from several perspectives by the papers in this Series. That is, how in low-resource settings can a functioning maternal and neonatal care system be built to screen all women for disorders that cause stillbirth and provide timely access to hospital care, including induction of labour, caesarean section, and neonatal resuscitation?<sup>1,2,5,9</sup> Programmatic research to learn how to implement stillbirth reduction programmes in areas where the burden remains high and resources are limited is crucial. Research on how to integrate programmes to reduce maternal mortality, stillbirth, and neonatal mortality is also important if they are to be comprehensive, cost effective, and sustainable. We note that most clinically important research efforts will require high-quality data and standardisation of data collection methods, definitions, and cause-of-death classifications.

### Conclusions and call to action

The goal for all high-income countries should be to reduce their third-trimester stillbirth rate to fewer than five per 1000 births, a rate that has already been achieved in more than 40 countries. High-income countries need to eliminate all preventable stillbirths and close equity gaps. By 2020, low-income and middle-income countries should aim to have reduced their current stillbirth rates by at least 50%; some low-income and middle-income countries have already achieved greater reductions than this in the past decade. To achieve a substantial reduction in stillbirth rate, as well as in maternal and neonatal mortality, concerted action will be needed by many participants, including country, regional, and local governments and their official health departments, WHO, and other international health organisations, foundations, research institutes, and professional and

non-governmental organisations. The actions, framed as goals to accomplish before the year 2020, are shown in panel 2.

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

#### Contributors

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

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#### Conflicts of interest

We declare that we have no conflicts of interest.

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