Medical Xpress

Best-available science will allow 5 percent relative reduction in high-income countries' preterm birth rates

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New research, published in *The Lancet* today ahead of World Prematurity Day on Saturday Nov. 17, has found that if the world's 39 highest-income countries were to fully implement five interventions to prevent preterm births, including smoking cessation and reducing the number of elective caesareans, around 58,000 premature births could be averted annually, amounting to roughly US $3.0 billion in economic cost savings.

The limits of current science to achieve large-scale prevention of preterm births contrast with the huge potential to halve the number of deaths of 1.1 million preterm babies a year. Most of these babies are born only a few weeks preterm in low income countries, where they die from lack of simple care, and this is the focus of World Prematurity Day events in over 50 countries.

Each year 15 million babies are born preterm (before 37 weeks of pregnancy), and rates have been rising in almost all countries with reliable data, yet there is limited understanding as to why, or what the best solutions are. The new *Lancet* paper is the first multi-country study to examine the causes of preterm births and potential reductions that might be possible. The research was conducted by an international team of researchers, coordinated by Dr Joy Lawn of Save the Children, and including experts from the London School of Hygiene and Tropical Medicine, Boston Consulting Group, March of Dimes, National Institute

of Child Health & Human Development, Bill & Melinda Gates Foundation, Global Alliance to Prevent Prematurity and Stillbirth, and the World Health Organization.

The researchers identified five evidence-based interventions that reduce the rate of preterm births: decreasing non-medically indicated caesarean deliveries and induced labour; limiting multiple embryo transfers in assisted reproductive technology; smoking cessation; progesterone supplementation; and cervical cerclage (a surgical operation which can prevent a preterm birth in some women). Of these interventions, limiting rates of non-medically indicated (elective) caesareans and induced labour had the most substantial predicted effect on preterm birth. The researchers suggest that if rates of preterm births are to be reduced in high-income countries, an 80% relative reduction in the rate of elective caesareans and other non-medically indicated early deliveries will be necessary, adding that similar reductions in the use of non-medically indicated early delivery have been achieved in the USA within two years.

If all 39 high income countries fully implemented these interventions, an average 5% relative reduction in preterm birth could be achieved by 2015, varying from 8% reduction in the USA to much smaller reductions in most European countries, and only 2% in the UK. The researchers calculate that, if all 39 high-income countries can achieve this average 5% relative reduction in preterm birth rates, this could result in around 58000 preterm births averted annually, amounting to roughly US$3.0 billion in total economic cost savings (including medical costs, economic costs to parents, employers, and other factors). Almost half of this cost saving would be in the USA, which has over half a million preterm babies delivered each year.

According to Dr Lawn, "Our analysis shows that the current potential for preterm birth prevention is shockingly small - yet 15 million babies are born too soon and this is the leading cause of newborn deaths, and the

second leading cause of child deaths globally. In addition, the five identified interventions, such as changing smoking habits and caesarean section practices, are not simple to implement. Our hope is that the proposed target of a 5% relative reduction in preterm births in high income countries will motivate immediate programme action, and the 95% knowledge gap will motivate immediate, strategic research. Research should also focus on preterm birth causes and solutions in low income countries where preterm birth rates are highest and the underlying causes may be much simpler to address."

The study arose as a consequence of the May 2012 Born Too Soon report which set out simple, effective solutions to reduce deaths for preterm babies in low income countries, as well as recommending that an expert team undertake analysis to consider a realistic goal for preterm birth rate reduction. The new *Lancet* Article is the first published research to propose evidence-based targets along these lines, albeit only for the highest income countries.

Writing in a linked Comment, Jane Norman and Andrew Shennan, of Tommy's Centre for Maternal and Fetal Health, at the University of Edinburgh, UK, state that, "Although any reduction in the rate of preterm births is to be welcomed, the conclusion that 95% of preterm births are intractable to current therapies suggests that substantial further research is needed in this area. Moreover, strategies and therapies developed to prevent preterm birth must also improve outcomes for the baby. Until considerable strides have been made in our understanding of how, why and when preterm births occur, and the effects that this has on both mother and baby, preterm births will remain a major public health problem, from which no country in the world is immune."

More information: www.thelancet.com/journals/lan … (12)61856-X/abstract

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