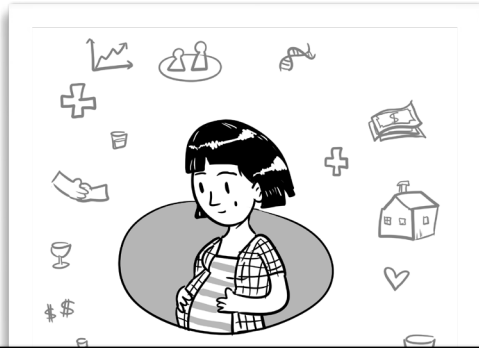


Healthy Mothers and Children make for a Healthy World

1



Pregnancy, birth, and infant development are essential moments in health. But how society functions also contributes to the well-being of mothers and their babies during this time, and research into confronting these issues and the factors which impact them is generally lacking.

2

Mothers give birth to babies every day, but not all of them receive adequate medical care. Newborn survival rates are at their lowest in underdeveloped and marginalized nations where preventable conditions, such as malnutrition, are a common risk.

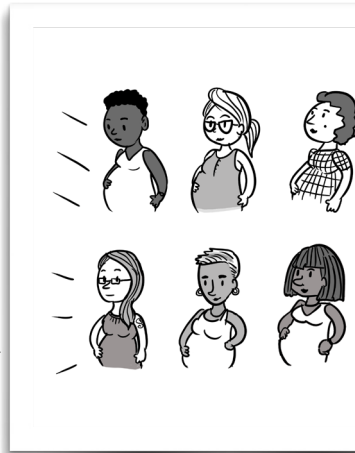


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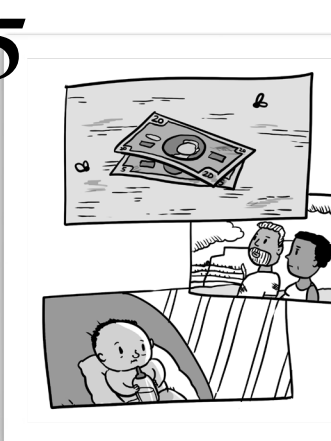
As a physician and scientist, Dr. Zulfikar Bhutta studies methods to improve maternal-child health globally. The goal is to decrease childhood mortality as quickly as possible by treating preventable illnesses. Since Dr. Bhutta started working on the issue in the early 2000's, there has been nearly 45% less newborn deaths worldwide.

4



Dr. Bhutta has initiated collaboration with other scientists to collect data and document child and maternal health in different countries. Evidence-based interventions were then used to address specific concerns within specific populations. For example, vitamin A deficiency.

5



A large portion of Dr. Bhutta's success in newborn care and research is due to his understanding of the various injustices preventing access to healthcare such as poverty, inequity, and conflict. Much of his efforts as a doctor is spent on advocating for just global policies by promoting community intervention and independence.

6



Dr. Bhutta is currently continuing his medical research on neonatal health in the global South while acknowledging the social struggles that impact mother-child care in these communities like climate change, food shortages, and heat shocks.



Healthy Mothers and Children Make for a Healthy World



Saving the lives of pregnant women and their babies relies on more than just adequate health-care.

Written by Rhonda Thygesen

Art by Armin Mortazavi

October 2022

Many of us were lucky to grow up with very few health issues. And our mothers experienced a relatively comfortable pregnancy, assured with the knowledge that medical intervention was nearby if it was needed. As babies, it was rare for our food supply to be low and if we were sick, our communities had the necessary treatments we needed. However, this is not the case in all parts of the world.

Each year, 99% of the world's maternal deaths occur in developing countries – countries where infrastructure is lacking and where poverty can be severe. For example, in Sub-Saharan Africa, 1 in 13 children die before their fifth birthday. More troubling, the majority of these deaths are entirely preventable. For example, the relatively simple act of fixing vitamin deficiencies during pregnancies would have huge beneficial outcomes. But without access to these types of specific care and resources, mothers and their neonates suffer.

Dr. Zulfiqar Bhutta is a physician and scientist studying ways to improve maternal-child health in the global context. Bhutta's medical career started in 1978 as a neonatologist in Pakistan, a country he grew up in and where he witnessed the structural conflict and poverty that was commonplace.

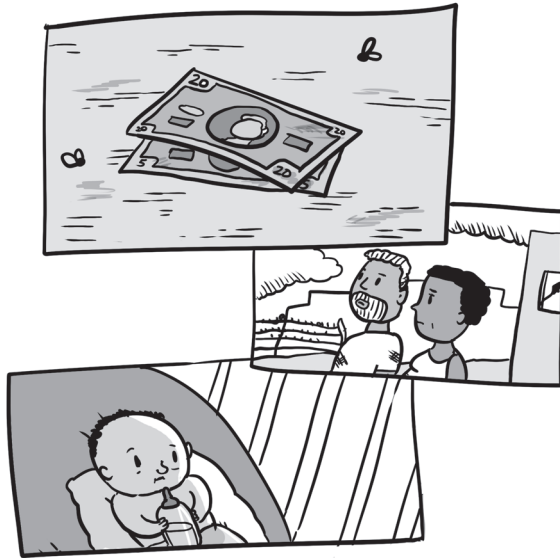
Neonatologists specialize in the care of newborns, but it wasn't long before Bhutta also began work-

ing with the mothers as well. Bhutta realized that he couldn't solve the health issues of the babies without considering the health of the mothers. And once he started working with the mothers, it was difficult to ignore how the **social determinants of health** impacted their well-being, and therefore their child's well-being.



Broadly speaking, the social determinants of health are the **non-medical factors** that affect health outcomes. There are many examples but a few include: racism, sexism, income, housing, food security (access to food), education, and access to health services. Depending on the situation, these determinants can have significant negative or positive effects

Understanding this, and seeing it with his own eyes in Pakistan, Bhutta's saw his responsibility as a doctor and researcher to do more than just treat the newborns in the hospital. He realized that the health of mothers and their babies was only going to improve if the inequities causing the issue were also considered.



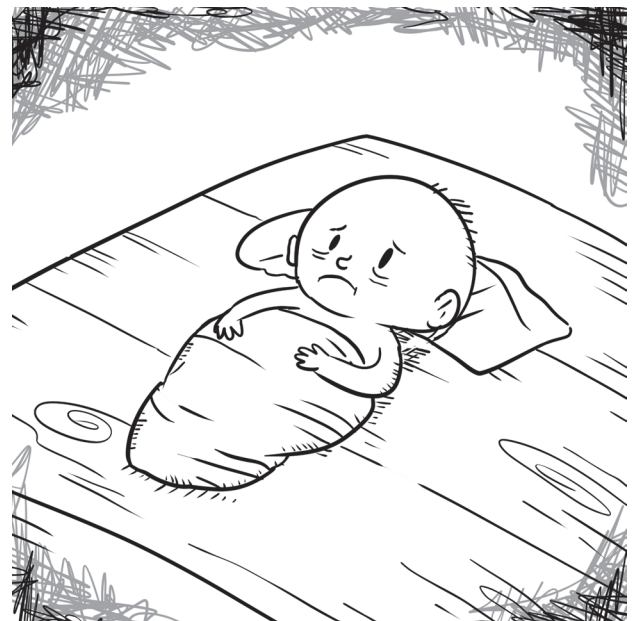
Continuing as a physician in Pakistan, Bhutta worked with colleagues in the mid-1990s to measure the impact of the Pakistani **Lady Health Workers** program. This is a program of training women (usually from the community) to be health practitioners, so that they could be on the ground to provide some health support, as well as be a more efficient connection to hospital services. Through Lady Health Workers, all mothers and children within a community would receive increased care by trained community members.

One large outcome of this work by Bhutta and his team, was the development of good practices for clean and successful home births. Furthermore, having access to Lady Health Workers, influenced women to more frequently go to the hospital for birthing, greatly increasing the overall number of hospital births - a number that has not lowered since. This research clearly showed the immediate benefits of giving women's health care more attention. However, it was also clear that there were still limits to what the community-based workers were able to do for a patient. Lady Health Workers were not fully trained physicians, and so did not have the same capabilities or resources. For

example, if a woman was bleeding to death during childbirth, a health care practitioner could not help without blood stores, transfusion equipment, and the training to utilize such tools.

Bhutta explained that many of the failures in the worker model were impacted by the social determinants of health. He remembers a time where pregnant women often arrived dead at his wife's hospital even though their homes may have been only two or three kilometers away. While recounting this memory, he explained that the reasons for postponing arrival at the birthing facility were often due to inequalities in the home – for example, who held control between the sexes in the household. Furthermore, mothers and families could not always financially afford to make the trip to the hospital.

Overall, these examples emphasize how the social nuances outside the medical details of the prenatal and birthing state were both important and in need of more study. In these types of situations, Bhutta has bluntly said, "There is no medical solution."



Later, in the early 2000s, Bhutta began working on improving the health of 'the first thousand days,' a child development term that describes the time that spans a mother's pregnancy and the life of the child until the age of two. This is the most important time for newborn development, which is also why it tends to be the time of the highest mortality.

Hypothetically, intervention at this stage could provide the greatest benefit.

Consequently, Bhutta's goal was to research real-life situations in a comprehensive manner and collect data that would hopefully reveal insight on the situation. This way, evidence-based strategies and interventions could be implemented to improve the health in underdeveloped or marginalized communities. In this context, Bhutta partnered around the globe with countries like Pakistan, Canada, and the United Kingdom to gather this data through what is called **cluster randomized effectiveness trials**. This type of research strategy analyses how groups, rather than individuals, are influenced by certain medical and social interventions, and it can be a powerful technique because it can be simpler to conduct the trails at the group level, as well as more easily allow the use of pre-existing patient data. This ultimately means that researchers may be able to receive a lot of useful information relatively quickly and with relatively little cost. Through such work, Bhutta's team discovered that the items that needed significant attention in global communities were notions like maternal-child care, diet, and age-related development.

Armed with this insight, the team then shifted their attention to using this important information to change global policies. As a strong believer in the power of advocacy, Bhutta felt that the role of a physician and researcher is incomplete, or "a job less than half done," unless you also push for the structural changes that will lead to tangible im-

Bhutta continues to work today in lower and middle income countries to improve maternal and child health. In particular, Bhutta remains attentive to current threats, such as climate change, that are impacting the lives of mothers and children in the Global South and other systemically minoritized groups.

By staying involved with global policy reforms, Bhutta hopes to discover ways to disarm the threat of climate change on impoverished citizen. In alignment with his past work, Bhutta would like to prepare those communities hit the hardest by the effects of climate change, to be more independent without the need for foreign support.

provements.

Many examples of Bhutta's work include using evidence to strengthen the independence of community-based workers in South Asian and North Africa, and research focusing on nutrition for babies and its relation to preventable conditions such as diarrhea. In fact, the continued efforts to use data-driven science to document and change the experiences of mothers and children around the globe has influenced and set numerous international guidelines including those of the United Nation's World Health Organization.

Overall, the impact of Bhutta and his many collaborators' efforts has been immense. This strategy of using available and affordable sustainable interventions, the type that are still accessible to disadvantaged populations, has been estimated to have lowered the annual child death rate by up to 45%. The world, and mothers in particular, owe a huge thanks to Dr. Zulfiqar Bhutta's work, and for this reason, he was awarded the 2022 John Dirks Canada Gairdner Global Health Award.

