

The Potential of Technology to Transform Maternal and Newborn Health

Reflections from a Gathering of Unlike Minds



A newborn child is weighed at an Internally Displaced Persons (IDP) camp in Place de la Paix, Port-au-Prince, Haiti.

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INTRODUCTION

How can technology potentially transform the field of maternal and newborn health (MNH)? A 2010 Pacific Health Summit plenary session, “Technologies for MNH: Innovation, Creation, and Delivery,” proved an exceptionally rich discussion about the creativity of, and potential for, modern technologies to transform maternal and newborn healthcare in developing countries. The session explored ideas and challenges from the wide variety of perspectives found among a diverse group of high-level stakeholders. Participants hailed from science, industry, policy, academia, and medicine, sectors that do not often coalesce around the theme of maternal and newborn health.

Key questions addressed in this session included: What do we mean by “creative technologies” for MNH? What innovations already exist, and what innovations do we still need? What business models can deliver these technologies, and what lessons can be learned from other consumer-driven sectors? What special design issues should be considered in developing new products so that they reach those at the edges of health systems?

The discussion catalyzed fresh thinking about the scalability of existing technologies, health worker capacity and training, and the role of telecommunications and user-oriented systems in affecting behavioral change in a variety of settings. It also emphasized the need for the healthcare industry to demonstrate how they will make their skills and technology relevant to everyone in the world—not only for emerging markets, but also for those at the peripheries of the poorest countries.

The Question & Answer format on the following pages presents excerpts from this unique gathering.

¹ Dr. Ishrak’s comments were made when he was President & CEO of GE Healthcare Systems.



INNOVATION IN TECHNOLOGY: NEW MARKETS, CREATIVE PROTOTYPES

Q In what areas of the MNH field are new tools and technologies most needed? What is the framework for thinking about technology for these markets?

Christopher Elias – *Shifting how we think about technology*

As we innovate and create new solutions, we have to think not just about new tools for prevention, diagnosis, and treatment, but of new tools for reducing distance, whether that refers to the physical distance from a health facility and a trained health worker, or the social distance. We need new technologies, as well as new ways to reduce distances and create better informed individuals, families, and communities.

Gary Darmstadt – *Creative application of highly technical interventions*

If you're born very preterm in London, lifesaving interventions can be provided; however, they're highly technical and very costly. Typically, we have regarded this kind of intervention as completely outside the reach of low- and middle-income countries, and as a result, hundreds of thousands of babies [in those countries] die of respiratory distress syndrome every year.

But what if we were to radically modify those interventions and equipment and make them more available peripherally? For example, could we put these technologies in the hands of

physicians in a frontline clinic or a community health center? Several interventions could come into play. One would be the surfactant that these newborns get; currently the surfactant is endotracheal-administered for severe respiratory distress syndrome. Could we instead administer it via the oropharynx and have it inhaled in the process of ventilating a baby? Could we simplify ventilation equipment and incubator technology?

Abhay Bang – *Liberating technologies, liberating communities*

We need to ask ourselves: Are these technologies liberating or dependence-producing? We know that technology shapes our lives...but technologies can also produce disempowerment—they can produce dependence, which is a political disease. What we really need are technologies that will empower individuals, families, women, and communities for self-care, self-diagnosis, home management, and community-based management. Then technologies, apart from their intended health effects, will also be politically liberating.

Omar Ishrak – *Technologies that span the entire birth continuum*

[GE]'s focus in maternal and newborn care is in three areas. First is the area of early detection in pregnancy and antenatal care. Through early detection, we can triage pregnant women or mothers who are at highest risk and manage them differently. At the same time, we want to create an efficient system of care so healthy mothers will not clog up an already stretched healthcare system. Second, we focus on the area of labor and delivery, creating clinics where we have advanced equipment for efficient and safe delivery of infants. Finally, there is often a need to provide various technical interventions after the infant is delivered, such as warmers, phototherapy treatment, and oxygen capability.

“Don't forget the maintenance part. Equipment will not function for months and years if a small piece is broken and nobody is there to fix it.”

Vinod Paul, Professor & Head, Department of Pediatrics, All India Institute of Medical Sciences