What is mPossible ? Leveraging Mobile Technology for Community Health and Global Health Systems

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Dr Alain Labrique is the founding director of the Johns Hopkins University Global mHealth Initiative, a multi-disciplinary Center of Excellence of over 140 projects engaged in mHealth innovation and research across the Johns Hopkins system. An infectious disease epidemiologist with training in molecular biology and nearly two decades of field experience running large population-based research studies in low and middle-income countries, Dr Labrique holds joint appointments in the Department of Epidemiology, Bloomberg School of Public Health, the Department of Community-Public Health in the School of Nursing and the Division of Health Informatics at the School of Medicine of the Johns Hopkins University in Baltimore, Maryland. In addition to teaching and training students and faculty at Hopkins and as a Visiting Professor at institutions in Bangladesh and China, he is lead investigator for several research projects measuring the impact of information and communications technologies on improving maternal, neonatal and infant health in resource-limited settings. Dr Labrique was recognized as one of the Top 11 mHealth Innovators in 2011 by the Rockefeller Foundation and the UN Foundation and was a lead author on a Bellagio Declaration on mHealth Evidence. His work on mHealth strategies for health system strengthening remains among the most cited mHealth resources in the peer-reviewed literature. He has authored over 120 publications in high-impact journals, as well as several book chapters and technical reports on Digital Health, Monitoring and Evaluation (M&E) methodologies and emerging infectious diseases.

Dr Labrique serves as a Digital Health and Technical Advisor to several international and global health agencies and Ministries of Health including the World Health Organization, Groupe Speciale Mobile Association (GSMA), United States Agency for International Development (USAID), the mHealth Alliance and HealthEnabled. He serves as the current Chair of the WHO mHealth Technical Evidence Review Group (mTERG) and the WHO Digital Health Guidelines Development Group, technical bodies convened by WHO to advise governments on digital health investments. Dr Labrique received a Presidential Excellence in Advising Award for teaching and mentoring students at the Bloomberg School, where he and his team strive to develop morbidity and mortality reduction strategies for resource-limited settings. Dr Labrique is also actively engaged in designing and validating diagnostic and public health technologies, and is the inventor of a number of patented diagnostic and anthropometric devices. Dr Labrique speaks fluent English, French, and Bengali.

Poor maternal, infant, and child health as well as inadequate coverage of family planning remain significant global health problems facing low- and middle-income countries (LMICs) today. Despite a 47% reduction since 1990, nearly 300,000 women still die annually from causes directly related to pregnancy. The majority of these deaths are attributed to preventable obstetric complications prior to, during, and following delivery, with developing countries carrying the vast majority (99%) of the burden. Additionally, although mortality for children under five years of age has decreased from 12 million annually at the beginning of the last century (in 1900), to 6.9 million annually in 2011, the burden of these deaths now falls primarily in LMICs. Most of these deaths are also due to preventable causes. In these same countries mobile phone coverage and access has become nearly ubiquitous, with the International Telecommunications Union (ITU) estimating in 2016 that the number of mobile phone subscriptions (>7 billion) is equal to the entire human population. The opportunity this represents has not been lost on the global health community.

This leapfrogging of traditional infrastructure has spurred innovative thinking and spawned countless efforts across the globe to harness mobile telephony and wireless computing for public health use. When the most disenfranchised populations can be reached by a mobile phone call, can we begin to make inroads to help improve the efficiency, coverage, quality and reach of essential maternal, newborn and child health services? Can mobile telephony be used as a conduit to improve how public health interventions are delivered? Can mHealth, the broad term used to capture innovations at the intersection of mobile communications and health, be used to amplify the impact of interventions that are already known to save lives? These are the questions that have been the focus of our research, as we develop and test strategies in real-world population settings, where the maternal and newborn health crisis remains the greatest.

Across much of Sub-Saharan Africa and South Asia, low rates of skilled birth attendance, postpartum care, and contraceptive use underlie the high rates of unintended pregnancies, short birth intervals, and elevated maternal and newborn mortality. Struggling health systems are often unable to meet the needs of growing populations, working with limited financial and human resources. Getting to women where and when they need support is a fundamental challenge; supporting them before they are in crisis is where public health innovation is lacking. Frequently, these health systems rely heavily on minimally-trained frontline community-based workers to support the health of thousands of families in hard-to-reach, rural populations. These workers have been disconnected actors, with tenuous links to the health system and a client load that is impossible to manage, incurring frequent service lapses and resulting in poor client outcomes.

Over the past decade hundreds of innovative projects have been tested to identify mHealth strategies which can help to resolve persistent health system challenges – from strengthening supply chains, to improving worker accountability to stimulating demand for essential services. The evidence base is slowly increasing around which strategies work best and, to some degree, which are cost-effective. Governments and donor agencies are investing in "global goods" and open-source technologies which enhance the ecosystem in which digital health innovations can flourish. In recent years, an increasing number of countries can boast digital health interventions at national-scale, and even more can claim to have crafted eHealth strategies and policies. As the coverage of mobile telephony and information systems continues to skyrocket, and costs plummet, we can expect these tools to be leveraged to strengthen public and clinical health. In the not-too-distant future, one imagines the most effective mHealth solutions being so seamlessly integrated into global maternal and child health programs that they cease to be thought of as "mHealth", but simply as a way programs are implemented – from registering births, to routinely tracking immunization coverage, to sending patients reminders to take their medication on time. This keynote will review key programs and global initiatives in digital health, and provide some examples of successes, key principles for developing new initiatives and challenges on the road ahead.