Supporting LIFE: Harnessing Innovation to Save the Lives of Children

Innovation and advancing technology have paved the way for a myriad of wondrous achievements, some of which are now often taken for granted, such as mobile phones and cellular networks. People everywhere seem to be connected to and by some type of mobile device at all times. Although many developing countries have tremendously benefitted from such technological innovations, not all sectors in these countries have duly progressed. Some nations in Africa, for example, have seen a rapid leap from nearly nonexistent telecommunications infrastructures to a sort of mobile-phone frenzy, in sharp contrast to the child healthcare sector, which, still in its infancy, lags far behind. Remote and rural regions are the hardest hit due to the absence of adequate healthcare infrastructures and scarce access to appropriate care. In Malawi, one of the poorest countries in southern Africa, the child mortality rate is as high as 133 deaths per 1,000 live births and, on average, only 1 child out of 3 presenting with fever is taken to a healthcare facility. Fortunately, with innovation comes inspiration, and a new era is dawning in which projects harness mobile technology and apply it to these real-world healthcare settings with the purpose of saving children’s lives.

Such is the story behind a special project in Malawi. The Supporting LIFE project (Supporting Low-cost Intervention For disEase control), which received over €2.8 million in funding from the European Commission Seventh Framework Programme (FP7), applies a novel combination of smart-phone technology, wireless body-area network sensors, and expert decision-support systems to equip the Ministry of Health’s front-line health-care workers with mobile devices and applications to assist in their assessment, diagnosis and treatment of children suffering from a range of diseases, including malaria, infantile diarrhoea, and pneumonia. Led by Dr John O’Donoghue and Dr Joe Gallagher, Co-Directors of the Health Information Systems Research Centre (HISRC), Department of Business Information Systems, University College Cork, the project includes a multinational group of experts, institutions and non-governmental organisations (NGOs) in Ireland, Sweden, the United Kingdom, Malawi, and Switzerland.

The Supporting LIFE project is fully in line with the Integrated Management of Childhood Illness (IMCI) protocols, which were created by the WHO and UNICEF in the 1990s to establish standards for classifying and treating common causes of death in children in developing countries, with the aim of improving survival and disease control. Accordingly, the partners in the Supporting LIFE project will develop an easy-to-use computer-based decision-support toolkit with an electronic IMCI (e-IMCI) application that will be provided to community healthcare providers - nurses and doctors known as Healthcare Surveillance Assistants (HSAs) - in order to effectively care for seriously ill children. Dr Simon Woodworth, Senior Researcher at the Health Information Systems Research Centre (HISRC), will oversee the design, testing, and implementation of the mobile e-IMCI application in conjunction with a local NGO in Malawi, Luke International Norway. Furthermore, outreach training and education programmes targeting HSAs and the local community will be delivered by Ungweru, a grass roots NGO in Malawi that specialises in empowering disadvantaged communities with appropriate skills and knowledge for a range of societal needs.

Running from May 2013 to April 2017, Supporting LIFE will be coordinated by Siobhán O’Connor, Research Coordinator at the Health Information Systems Research Centre (HISRC), and managed by Dr Jeanette Müller, CEO of accelopment in Switzerland. The impact of this four-year translational research project will be immediate and far reaching. The Supporting LIFE toolkits will have a
significant influence on the vital point-of-care diagnosis and treatment of children, which will help reduce the barriers to care in remote areas. The devices directly connect healthcare professionals fostering beneficial knowledge exchange, communication, support, and training. Additionally, the mobile platforms and e-IMCI application can be used to create electronic health records by generating an accurate digital database of child health and disease statistics, enabling remote monitoring of patients and in-depth epidemiological research, which, in collaboration with the Malawi Ministry of Health, can be used for the effective identification, analysis, tracking and control of disease outbreaks. Therefore, the Supporting LIFE project would not only reduce morbidity and mortality from common childhood illnesses, but would also provide an inter-connected health solution and strengthen the overall healthcare infrastructure of Malawi.

With such extensive applications, Supporting LIFE is the perfect example of harnessing innovative technology for the purpose of saving, improving and supporting the lives of children in Africa.


Members of the Supporting LIFE research team attending the kick-off meeting at University College Cork, Ireland

(L-R Backrow): Prof. Ciaran Murphy, Dr Matthew Thompson, Dr Bo Andersson. (L-R 2nd row): Dr Simon Woodworth, Dr Carl Heneghan. (L-R Front row): Nicklas Holmberg, Prof. Irene Lynch-Fannon, Dr Jeanette Müller, Siobhán O’Connor
Dr John O’Donoghue & Dr Simon Woodworth with the staff of the Department of Nursing & Midwifery, Mzuzu University, Malawi

Dr Simon Woodworth (HISRC-UCC) & Ms Lucia Ngwira (Ungweru) visiting Ekwaiweni Health Clinic, Mzimba district, Mzuzu, Northern Malawi