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Digital Health - Fluch oder Segen für die globale Gesundheit?

The eHealth hype in resource-limited countries

Digitalisation for Health: The magic bullet tends to miss its target

Von Martin Raab

The well intentioned widespread assumption is that digitilisation is indispensible for the global improvement of health care services and the health of populations. Governments and donors are eager to see 'digital innovations' rapidly providing results in terms of more efficient and better quality healthcare. However, the 'digital game changers' still need to find their rightful place in low income settings and a stronger public health perspective can contribute to aim the magic bullet.

Clinical Decision Support System at primary care level. Photo: © ICRC / Swiss TPH

The number of conventions, conferences and workshops during which the topic of 'digital health' is being debated is growing. And so too are the number of projects that pilot eHealth interventions and roll out Information and Communication Technology (ICT) health applications on a wide scale. Legendary is the 'eHealth moratorium' that the Uganda Government announced in 2012 when it realised that the proliferating health IT initiatives from donors fell short of delivering the expected benefits and were showing negative impacts in terms of resources use and governance. Both, the number of events and actions such as the Uganda moratorium are all good indicators that the decision makers and actors are moving to a more matured view and require better understanding and supportive policies for utilising modern technology in health care.

Reasons to engage health informatics

Obviously there are many areas where information and communication technologies have the power of achieving better results; such as in the fields of human and physical resource management, clinical decision support, patient information systems or epidemiological survey systems. Further, vertical interventions such as immunisations and screening for specific conditions are typical interventions where information technology support has proven its value and continues to be part of service delivery provision. The central pivot of of health services are the patients who are sick and need to have their health restored. Diagnosing and treating common diseases is the foundation of performing patient centred health care. Health informatics has been able to provide meaningful applications which are currently in use to substantially enhance health care provision. Examples such as making available medical expertise (computerised algorithm based clinical decision support systems) and patient health information (electronic medical records) help to overcome the frequent misdiagnosis of patients due to a lack of patient history, which can undermine the quality of care. Effective and efficient decision making is of the utmost importance in low income countries where there is roughly 1 or 2 doctors per 10'000 people compared to 30 for every 10'000 in OECD countries. Plenty of other examples exist where we have good evidence that ICT applications have proven its value also in low resources settings, such as health promotion messaging or Civil Registration and Vital Statistics Systems.

Accepting the lessons learned, being honest and avoiding harm

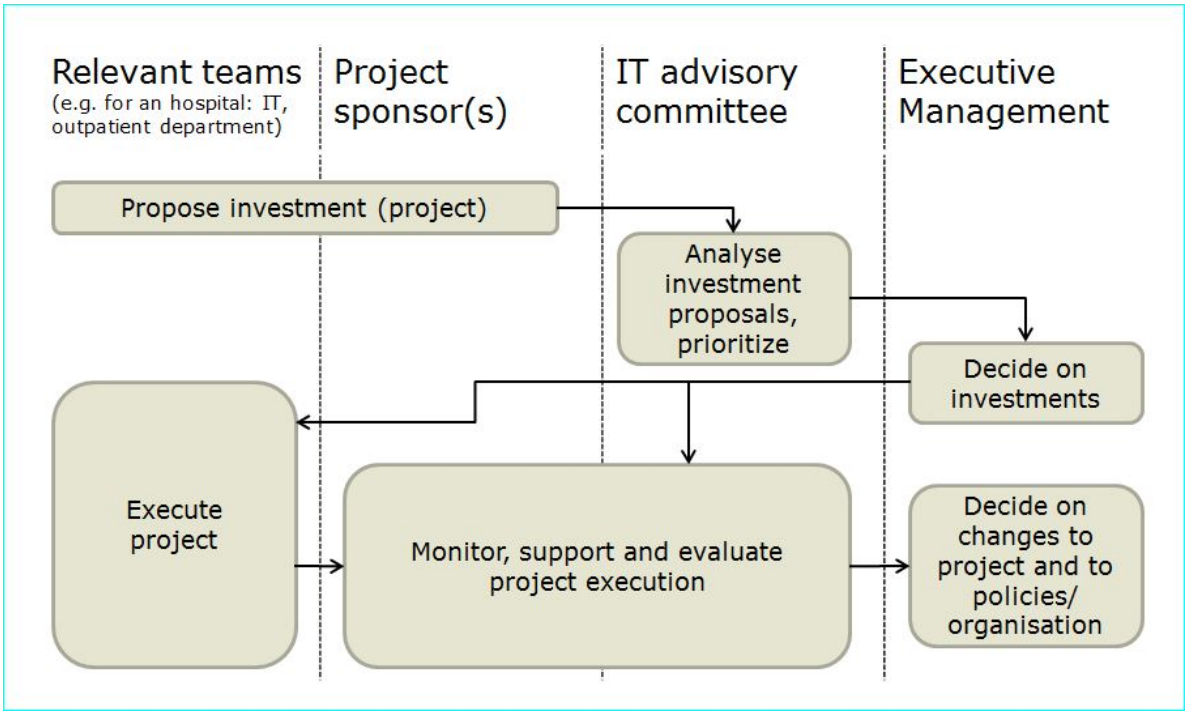
Whilst we have experienced meaningful, carefully deployed and well anchored informatics applications in low income countries, there are also likely to be as many Information Technology pilots and short living endeavours that do not contribute to improved health provision, but draw on scarce resources and even leave behind costly legacies.

It has to be questioned as to why do we continue to see poorly planned, poorly executed and largely irrelevant ICT interventions? The answers are probably not straight forward and simple. A common factor could be that the stakeholder communities involved in such projects are challenged by understanding the complexity of the technologies and that technologies themselves hold a lexicon that is difficult to grasp (IT 'products', network systems are non-material, 'non-visible') and related concepts are complex and highly theoretical.

Increase capacity for planning and maintenance

We experience that in the more developed countries IT projects frequently fail or turn out to be many times more expensive to set up and maintain as originally planned. The causes are known: the inability to specify appropriately the requirements, the lack of IT expertise of planners and low capacities to manage IT projects. Obviously, if we already have in high-income, industrialised countries these challenges, we cannot expect much better outcomes for digitalisation interventions in low resources countries. A decisive conclusion from the above

learning is that education and training for decision makers and technical personnel on IT related matters is imperative and can provide a solid basis for relevant and sustainable informatics interventions.



Example planning scheme for improved governance in eHealth projects

eHealth applications need a systems approach

In international health, we see plenty of failed eHealth projects where the applications do not correspond to the end-users requirements, where poorly conceived applications do not run stable, where security breaches compromise a productive use, where servers and updates cannot be maintained because of lack of qualified staff and funds, etc.

Many of those failures could have been prevented if the existing body of knowledge had been applied. Digitalisation projects require a very systematic approach in terms of context assessment, planning, execution and follow up. The main important dimensions to be considered are

1. good management and leadership
2. proper implementation strategies and secured funds for maintenance
3. appropriate infrastructure
4. consideration of standards and interoperability and
5. a well trained workforce for proper utilisation and maintenance (National e-Health Strategy Toolkit WHO/ITU, Geneva; 2012)

A concrete case example from a digital health intervention project currently implemented by Swiss Tropical and Public Health Institute (Swiss TPH) on behalf of ICRC can illustrate the above: To address the problem of poor adherence to clinical guidelines and good clinical practice by healthcare providers in child care, a project involving a Clinical Decision Support System (CDSS) was devised and tested in Afghanistan and Nigeria. The first prototype of a CDSS working with an adapted version of IMCI (Integrated Management of Childhood Ilnesses. WHO) emerged from basic research on the understanding of the better origins and the management of febrile disease in children. A translational implementation approach was then applied to adapt the prototype and to rigorously field test the application. Health care providers have been using a tablet computer with a user friendly interface to a) obtain clinical guidance during each consultation and b) to register case based data for the purpose of epidemiological surveillance. To anchor the digital support system for routine health care a variety of health systems challenges had to be considered, ranging from the introduction of new policies (governance level) to capacity building (especially for IT and clinical staff), to maintenance (sustainability) and the introduction of Data Protection and Information Security schemes.

Remember: digital systems have a technical and a social nature

Another important factor of eHealth project failures is to disregard the socio-technical aspect of informatics applications in health systems. The success of an informatics system will critically depend on its integration into the work processes and to sufficiently take into account the organisational and behavioural dimensions. For this reason it needs to be recognised that the introduction of new digital applications or systems constitute a change for involved actors: resistance to this change is common and hence needs to be identified, managed and sufficient training and support needs to be made available prior to the start of the project and during its implementation.

Ressources

- National e-Health Strategy Toolkit WHO/ITU, Geneva; 2012. https://www.isfteh.org/files/media/WHO-ITU_National_eHealth_Strategy_Toolkit.pdf
- Integrated Management of Childhood Ilnesses: A syndromic and case based approach and guideline to diagnose and treat common disease in Children (WHO). https://www.who.int/maternal_child_adolescent/documents/imci/en/

Martin Raab, MSc, MPH Health Technology and eHealth Planner, Scientific Collaborator, Project Manager and eHealth coordinator. Martin Raab is the acting head of the Health

Technology and Telemedicine Unit (HTTU) of the Swiss Centre for International Health (SCIH). He has 25 years of extensive international working experience in health systems development and capacity building in the Middle East and in various Eastern European countries. He had recently been the managing director of a large scale health project in the Ukraine and in Egypt. In both projects, health informatics applications and eHealth strategy settings were main fields of work. He is further involved in postgraduate teaching assignments on eHealth at the University of Basel and the Ticino University. The Health Technology and Telemedicine Unit is involved in various mandates to design and implement digital health applications in Switzerland as well as in low and middle income countries. The HTTU is a WHO Collaborating Centre on eHealth and Health Technology Management. Email

Kontakt

Deutschschweiz
Medicus Mundi Schweiz
Murbacherstrasse 34
CH-4056 Basel
Tel. +41 61 383 18 10
info@medicusmundi.ch

Suisse romande
Medicus Mundi Suisse
Rue de Varembé 1
CH-1202 Genève
Tél. +41 22 920 08 08
contact@medicusmundi.ch

Bankverbindung
Basler Kantonalbank, Aeschen, 4002 Basel
Medicus Mundi Schweiz, 4056 Basel
IBAN: CH40 0077 0016 0516 9903 5
BIC: BKBBCHBBXXX