Health
at your
fingertips

A collection of mHealth initiatives from the research-based pharmaceutical industry

July 2013

IFPMA

Health
at your
fingertips

A collection of mHealth initiatives from the research-based pharmaceutical industry

July 2013

IFPMA

Foreword

Information, communications technological innovations are changing the landscape of disease prevention, diagnosis and control. The widespread availability of mobile technology, including in many of the least developed countries, is an exceptional opportunity to expand the use of mobile phones for health (mHealth).

Mobiles are the most rapidly adopted technology in the world. Access to mobile networks has now reached 90% of the world's population and it is foreseen to have 6.8 billion mobile subscriptions for a world population estimated at 7.1 billion by the end of this year. Mobile applications and services can help raise awareness and induce behavioral changes, empower patients and provide them with solutions to help them better manage their conditions, train and support healthcare professionals, strenghten health systems and facilities, and provide access to services for people who are unable to engage officially with the health system.

Successes from pilot projects have shown that mobile applications can support the achievement of the Millennium Development Goals (MDGs) and could play an even more significant goal in the final push to meet the targets agreed in 2000 and the new ones that will be agreed on in 2015.

As this report shows, there are several initiatives that use mobile to help improve early infant diagnosis of HIV or, in other cases, adherence to antiretroviral treatment. Other initiatives focus to improve tuberculosis and malaria treatments by reducing stock-outs of essential medicines. mHealth is being leveraged to deliver vital information to new and expectant mothers, and also to boost immunization rates by encouraging them to take up vaccination services for their children. Programs like these bring us closer to achieving MDG 4 (reduce child mortality), MDG 5 (improve maternal health) and MDG 6 (combat HIV/AIDS, malaria and other diseases).

In the field of non-communicable diseases (NCDs), mobile phones are already used to help people quit smoking, to better support diabetic patient through their treatment, to help health workers conduct household surveys to measure NCD prevention levels, to inform young people about sporting and fitness opportunities, and to help people maintain healthy diet.

mHealth provides strong opportunities for public-private partnerships. One example is the recently launched International Telecommunication Union (ITU)-World Health Organization (WHO) initiative Be He@lthy, Be Mobile of which IFPMA is an active partner. The program will provide evidence-based operational guidance to encourage partners worldwide, especially governments, to implement mHealth interventions to address prevention and treatment of NCDs and their common risk factors – tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol.

This report *Health at your fingertips*, documenting a wide array of mHealth programs carried out by IFPMA member companies and associations, shows how private sector contributions and expertise and products are particularly important to addressing current and future health challenges. Working together, we can help reduce global, national and individual burdens of diseases.

Mr. Eduardo Pisani

Director General,
International Federation
of Pharmaceutical Manufacturers
& Associations

Partnering with the Be He@lthy, Be Mobile Initiative

IFPMA is proud to join as a partner the International Telecommunication Union (ITU) mHealth Non-Communicable Diseases (NCDs) Initiative, Be He@lthy, Be Mobile.

Be He@lthy, Be Mobile is a new partnership between the International Telecommunication Union (ITU) and the World Health Organization (WHO) that will focus on the use of mobile technology to improve NCDs prevention and treatment. This partnership aims to contribute to global and national efforts to save lives, minimize illness and disability, and reduce the social and economic burden due to NCDs.

A number of countries are already using mobile technology to deliver health promotion messages on the NCD risk factors, to persuade users to change unhealthy behaviors and to help countries implement national laws on NCDs.

This initiative will scale up these successful pilots and scale them up in other countries. The WHO will provide the technical assistance and the ITU will help implement country projects through government partnerships with the support from the private sector.

The initiative, in its initial 4-year period, will scale up mobile technology in eight priority countries, at least one in each region, for NCDs prevention, treatment and policy enforcement. Activities will be two-fold: mHealth operational projects will be implemented within countries, and standard operating procedures will be developed for running mHealth NCDs intervention package to support more traditional NCDs prevention and control work.

Mobile solutions will be primarily SMS or apps based and will include a range of services such as mAwareness, mTraining, mBehavioural change, mSurveillance, mTreatment, mDisease management and mScreening building on existing successful pilots and scaling them to a population level. Countries will choose the interventions that best suit their needs.

This report was produced by IFPMA as a contribution to Be Hea@lthy, Be Mobile Initiative. Showcasing 37 initiatives by IFPMA members, this report highlights use cases, challenges and lessons learned in the field of mHealth.

Contents

Health at your fingertips

The research-based pharmaceutical industry and mHealth

54% *focus on adherence to treatment*

54% *aim to increase health literacy*

62% *use apps*

37 initiatives *since 2009*

43% *focus on NCDs and mental disorders*

24% *focus on disease management*

24% *use SMS*

6 billion people have access to a mobile

Connecting with the general public, patients, and healthcare professionals at home or on the move, at the local dispensary, pharmacy, or hospital through SMS and applications

Partnering with governments, NGOs, academia, patient groups, information and communication technology (ICT) companies to
Promote general health
Manage infectious diseases
Prevent and control non-communicable diseases (NCDs)
Address mental disorders
Improve women's and children's health
Support emergency aid

mHealth and the final push to meet the

Millennium Development Goals (MDGs)

| 3 PROMOTE GENDER EQUALITY AND EMPOWER WOMEN | 4 REDUCE CHILD MORTALITY | 5 IMPROVE MATERNAL HEALTH | 6 COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES |

- mHealth gives women better access to health information and services and empowers them to make better choices for their families (MDG 3)
- mHealth delivers vital health information to new and expectant mothers and help boost immunization rates (MDG 4 & 5)
- mHealth improves early diagnosis, adherence to treatments, and reduces stock-outs of essential HIV/AIDS, tuberculosis and malaria medicines (MDG 6)

mHealth and the NCDs challenge

- mHealth helps measure long-term risks of developing chronic diseases and helps make better lifestyle choices, by avoiding common risk factors – tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol.

- mHealth offers assistance to patients to manage lifelong conditions such as diabetes, hypertension, and other chronic diseases.

- mHealth supports task-shifting (from physicians to nurses and other health workers) as a promising approach to expanding access to NCD services.

- mHealth supports diagnosis and documentation of cancer cases.

mAwareness mBehavior change

Raise awareness, **increase public knowledge** of health risks and induce behavioral changes
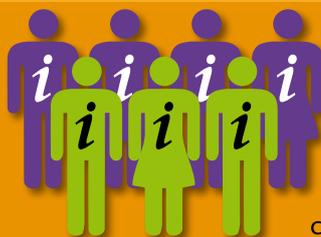
Imagine... smokers having a companion available every day at every hour to help them quit smoking... Yes, we are sending supportive messages and tailored images to smokers...15,392,340 cigarettes were not smoked!
Imagine... if you could measure your health in just a few simple steps and learn how small changes can lead to a healthier life?... Yes, it's possible: answer seven questions about health indicators and habits and you will know how healthy you are and what you can do to lessen the long term risk of developing chronic diseases such as diabetes, cancer and heart disease.

mDisease management

Empower patients *and provide them with health solutions to help them manage their conditions*

Imagine... if you could track symptoms you're experiencing and share and discuss them with your doctor?... Yes, you can now register your symptoms and send a report to your doctor so that you can discuss appropriate solutions.
Imagine... if you could keep track of your medications... taken or missed?... Yes, you can setup medication and healthcare appointment reminders to improve adherence to your treatment.

mHealth solutions
that are happening
right now

mTraining

Training healthcare professionals *and support task-shifting*
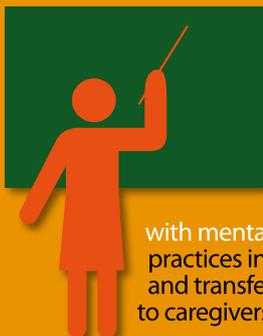
Imagine... healthcare workers trained to manage hypertension and diabetes... Yes, we are supporting healthcare workers with trainings and real-time advice in dispensaries in Kenya.
Imagine... if caregivers would be better prepared to treat patients with mental disorders... Yes, we support best practices in the treatment of schizophrenia and transfer of knowledge from psychiatrists to caregivers in clinics in Mexico.

mMonitoring mScreening

Improve health coverage and **strenghtening health systems** *and facilities*
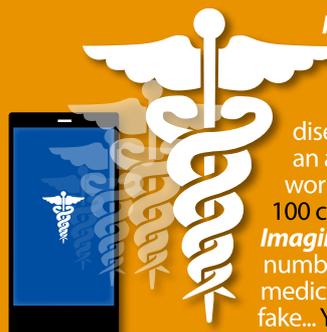
Imagine... if all mothers could receive SMS telling them about vaccines against common childhood diseases and when to schedule an appointment with health workers... Yes, we are testing it in 100 clinics in Mozambique.
Imagine... it there was a free text number that tells you whether the medicine you bought is genuine or fake... Yes, it exists and more than 100,000 users have used this service in Nigeria.

Dispensary mHealth System for Chronic Disease Management

www.ampathkenya.org/our-programs/research-informatics/medical-informatics/

Partners
- AMPATH, Kenya
- AbbVie and AbbVie Foundation
- Abbott and Abbott Fund
- Regenstrief Institute, Inc., Indianapolis, USA
- Indiana University School of Medicine, Indianapolis, USA
- Mindflow Consulting, Nairobi, Kenya
- Mount Sinai School of Medicine, New York, NY
- Ministry of Health, Kenya

Type of partners
- Private sector
- Academia
- Government

Therapeutic focus
Non-communicable diseases – Diabetes, Hypertension

Initiative type
- mDisease management
- mTreatment
- Improve access to health services
- Support decision-making

Technology
- App

Targeted populations
- General population
- Health professionals

Country
- Kenya

Timeframe
Start Date: 2009
Anticipated Termination Date: N/A

Since 2009, Abbott Fund has supported the award-winning mHealth and computerized Clinical Decision-Support (CDS) program for AMPATH. AMPATH is one of the largest HIV care and treatment programs in sub-Saharan Africa, with over 150,000 HIV-infected adults and children currently under the program's care in over 500 clinical facilities in western Kenya. The program has extended its services to include chronic diseases, maternal-child health and primary care, and serves a catchment area of over 2 million individuals.

Now supported by the AbbVie Foundation, the overall aim of AMPATH's mHealth and CDS program is to develop, implement and evaluate innovative, cost-effective and scalable technological solutions to improve access, quality of care, and patient outcomes for individuals in resource-limited settings.

To meet its overall aim, the program has the following specific objectives:
- Develop and broadly implement a scalable Clinical Decision-Support (CDS) platform within the home-grown and internationally-adopted open-source electronic health record system called OpenMRS. This CDS system is used to provide patient-specific, just-in-time reminders to clinicians and other providers when there are deficiencies in a patient's care.
- Develop and implement a robust open-source smartphone-based application to serve data collection and decision-support needs in the community and in the clinical setting. Current use-cases for the mHealth solution include a comprehensive home-based HIV and TB counseling and testing program, a maternal-child health program, and chronic disease program for diabetes and hypertension care.
- Develop and implement innovative clinical data quality, compliance-monitoring, and workflow management systems to strengthen the health system infrastructure to serve the resource-limited setting within which AMPATH works.
- Rigorously evaluate the developed mHealth solutions to determine impact on care, cost-effectiveness and usability. The findings from these evaluations are broadly disseminated to help inform the body of evidence for these technologies in resource-limited settings.

Objectives: Provide decision-support to dispensary nurses in management of hypertension and diabetes. This is part of a technologically-assisted task-shifting effort.

Problem: Given limited resources in care settings, it is practically impossible for most individuals who need confirmatory testing for diabetes and hypertension to be referred to higher level clinics. AMPATH has task-shifted the responsibility for basic management for hypertension and diabetes to dispensaries. There is a need to ensure that the quality of care offered at the dispensaries is consistent and of a high standard. Dispensaries typically do not have medical records, and patients can be referred to them both from the community, and also from a clinic. The clinical personnel in the dispensaries also have less training than providers found in regular clinics, and thus need all the support they can get to ensure quality care is maintained.

Solutions: AMPATH, with support from AbbVie and other partners, has

developed a mHealth-based chronic disease management system on the Android-platform to support dispensary personnel. This system allows for retrieval of relevant data about the patient onto smartphone devices (irrespective of where the data was collected). The system also enables documentation of any new clinical information during a dispensary encounter, with the information delivered back to the central server with the patient's electronic health record. The chronic disease application has decision-support functionality for real-time advice to the dispensary nurses based on a patient's clinical data. This advice includes recommendations for referral, follow-up appointments, weight loss and dietary intake advice, and medication administration and compliance, among others.

Sustainability: The system is well-integrated into the care system and avoids the use of paper records for patients.

Challenges: Lower educational level of the dispensary nurses makes it a bit challenging to use the system at times. Occasionally, connectivity is slow. AMPATH and partners are working with mobile operators on a more reliable solution.

Lessons learnt: Technology can be used to assist in task-shifting efforts.

Impact: System is currently being piloted in two dispensaries in western Kenya.

mHealth System for Home-based Counseling and Testing (HCT)

www.ampathkenya.org/our-programs/research-informatics/medical-informatics/

Partners
- AMPATH, Kenya
- AbbVie and AbbVie Foundation
- Abbott and Abbott Fund
- Regenstrief Institute, Inc., Indianapolis, USA
- Indiana University School of Medicine, Indianapolis, USA
- Ministry of Health, Kenya

Type of partners
- Private sector
- Academia
- Government

Therapeutic focus
- Infectious diseases – HIV/AIDS, Tuberculosis
- Women's health
- Newborns health

Initiative type
- mScreening
- mTreatment
- mMonitoring
- Improve access to health services

Technology
- App

Targeted populations
- General population
- Mothers
- Newborns
- Children
- Health professionals

Country
- Kenya

Timeframe
Start Date: 2009
Anticipated Termination Date: N/A

Objectives: Facilitate data collection during a population-wide home-based counseling and testing program.

Problem: Many people with HIV in developing countries do not know their HIV status, and many have not been screened for the problem. Home-based counseling and testing offers an approach for improving access to testing and care.

Solutions: AMPATH, with the support from AbbVie and other partners, used a robust open-source smartphone-based data collection system to facilitate data collection during HCT – Open Data Kit. AMPATH use low-end Android smartphones for this purpose. The developed system has several modules, namely: (a) registration; (b) HIV; (c) pediatric; (d) antenatal; and (e) tuberculosis screening. The mobile application supports barcode scanning of IDs, capturing of GPS locations of visited homes, and comprehensive data validation. The HCT application meets the objective of facilitating cost-effective collection of high-quality data within the community to facilitate care. This system has been rigorously evaluated with work published in peer-reviewed journals.

Sustainability: The system is effectively cheaper than using a paper system with retrospective data entry. The system is well integrated to the care processes at AMPATH.

Challenges: Challenges include monitoring providers, maintaining the devices, and ensuring reliability of data collection mechanisms. AMPATH and its partners have a comprehensive support and training infrastructure.

Lessons learnt: It is possible to successfully conduct large-scale deployment of mobile technology for use at a population level by frontline health workers in developing countries. There is general diligence in managing devices, but standard operating procedures are also needed. Considerations of power usage and ruggedness of devices is quite relevant. This technology can play a role strengthening the health system.

Impact: By end of 2012, the system had been used during home testing for over 877,500 people. Approximately 50% of those found to be pregnant during HCT had not attended an antenatal clinic (ANC). Those not attending antenatal care had more than four time higher prevalence of HIV compared to those attending an antenatal clinic. This led to the surprising but critical realization that an ANC-based Preventing Mother-to-Child Transmission (PMTCT) program could at best have a marginal impact on community-wide mother to child transmission of HIV. Over 300 providers have been trained and use the mobile devices.

Mobile Computerized Clinical Decision-Support for Clinic-based HIV Care

www.ampathkenya.org/our-programs/research-informatics/medical-informatics/

Partners
- AMPATH, Kenya
- AbbVie and AbbVie Foundation
- Abbott and Abbott Fund
- Regenstrief Institute, Inc., Indianapolis, USA
- Indiana University School of Medicine, Indianapolis, USA
- Mindflow Consulting, Nairobi, Kenya
- Ministry of Health, Kenya

Type of partners
- Private sector
- Academia
- Government

Therapeutic focus
- Infectious diseases – HIV/AIDS

Initiative type
- mTreatment
- Improve access to health services

Technology
- App

Targeted populations
- General population
- Health professionals

Country
- Kenya

Timeframe
Start Date: 2009
Anticipated Termination Date: N/A

Objectives: Provide just-in-time alerts and reminders to clinicians taking care of HIV positive adult patients when there were identified deficiencies in care.

Problem: Often, sub-standard care is offered to patients with HIV, and there are few mechanisms to address these in a scalable fashion.

Solutions: AMPATH, with support of AbbVie and other partners, has developed a system that generates patient-specific clinical abstracts, with alerts and reminders that are made available to clinical providers at the time of a patient's visit. The system currently has over 80 different HIV-based reminders, ranging from reminders for overdue tests and medications to recommendations for referrals. Summaries with reminders are available at clinical sites through Android-based smartphone devices through a system developed on top of the Open Data Kit framework. Providers can respond to these reminders at the time of a patient's visit. By ensuring reliable and high-quality HIV care, the mobile HIV decision-support system helps strengthen the care system. For undertaking this work, AMPATH and partners have received recognition from the mHealth Alliance, Rockefeller Foundation and UN Foundations as one of the top 11 innovators in mHealth for 2011 during the mHealth summit.

Sustainability: This system replaces a paper-based summary printing system. It is well integrated with the care system as an essential challenge.

Challenges: There are challenges in ensuring reliability of transmission of reminders, also in ensuring that providers respond comprehensively to the reminders. AMPATH has implemented modules for provider performance and monitoring to help address challenges and also train their providers.

Lessons learnt: A mobile-based clinical summary and reminder system is highly liked by providers and can be sustained within clinics in a resource-limited setting.

Impact: Over 80 reminders currently implemented. System in use at two clinics within the AMPATH setting, with over 20 clinical officers trained and currently using the system.

Appropriate Use Criteria App

https://itunes.apple.com/us/app/
appropriate-use-criteria-auc/
id391068250?mt=8

Partners
• American Society of Nuclear
  Cardiology
• Elsevier

Type of partners
• Medical publisher
• Non-profit professional advocacy and
  educational organization

Therapeutic focus
• Non-communicable diseases –
  Cardiovascular diseases

Initiative type
• mAwareness
• mBehavioral changes
• mScreening
• Improve utilization management
• Support decision-making

Technologies
• Mobile app available for iOS and
  Android platforms
• Online version of app available on
  multiple websites

Targeted population
• US Healthcare professionals

Country
• USA

Timeframe
Start Date: Fall 2012
Anticipated Termination Date: N/A

Objectives: Diagnostic imaging technology is playing an increasingly important role in helping detect and effectively treat cardiovascular disease. There is also a shared commitment among healthcare providers to ensure that the appropriate technology is used for each patient, and to avoid unnecessary tests and the accompanying patient burden and healthcare costs. This mobile app is designed as a reference guide to assist physicians and the nuclear lab (point-of-service) determine whether cardiac radionuclide imaging (RNI) is appropriate for their patients using evidenced-based data and expert opinions developed by a multi-society taskforce led by the American College of Cardiology Foundation.

Problems: The 2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging (AUC) is a resource that supports physicians in selecting the appropriate patients for cardiac radionuclide procedures and serves as a standard for all nuclear cardiology laboratories. Physicians need to access the AUC information quickly and easily when treating each patient.

Solutions: Develop a decision support app using the 2009 Appropriate Use Criteria for Cardiac Radionuclide Imaging (AUC) that is easily accessible to physicians.

Sustainability: This application demonstrates Astellas' commitment to advancing patient care in the diagnosis of cardiovascular disease using nuclear imaging.

Challenges: Timing, visibility with a multi-channel approach to content development, frequency, metrics and evaluation. Creating awareness of the offering within a diverse physician population is a challenge.

Measurement of progress
• Success in reaching healthcare professionals, agencies and other
  partners.
• Over 15,000 downloads as of June 1st, 2013.

Get BladderFit

https://itunes.apple.com/gb/app/
get-bladderfit/id387682478?mt=8

Therapeutic focus
• Over active bladder (OAB)

Initiative type
• mAwareness
• mBehavioral changes
• mScreening
• mDisease management
• mTreatment

Technology
• App

Targeted population
• Individuals having trouble controlling their bladder movements

Country
• Worldwide

Timeframe
Start Date: August 2010
Anticipated Termination Date: N/A
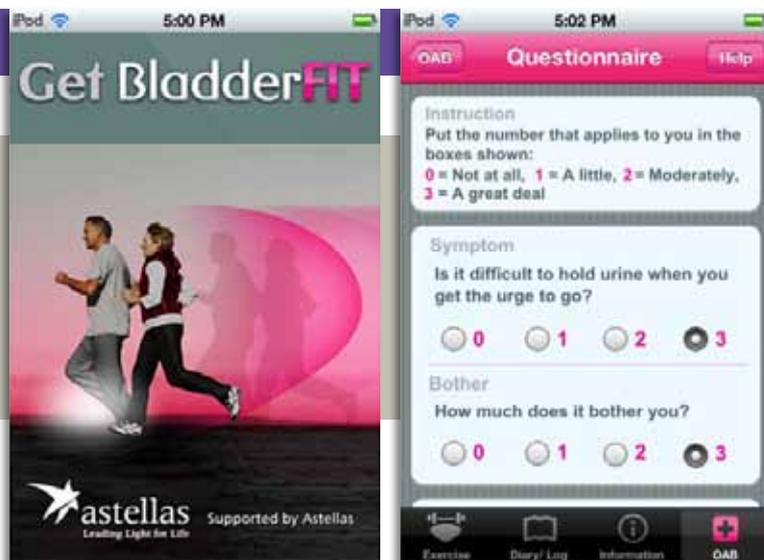
Objectives: The application Get BladderFit has been developed for patients having trouble controlling their bladder movements. This non-promotional tool can help patients to better understand their conditions. It shows how to do pelvic floor exercises to improve urinary function, and gives information about special diets. Patients can use the bladder training diary to monitor progress and then to show graphs to their doctor.

Problems: Over active bladder (OAB) is a poorly understood condition. The idea was to help patients to improve their understanding of OAB.

Solutions: Simple, accessible information to educate patients regarding their condition, bladder training, pelvic (Kegel) exercises; and monitor progress. The application has a timer to assist with the pelvic floor exercises and also a beeper that reminds patients to take their medication. Patients sign in and the information is tailored to male or female users. The application features:
• Bladder tracker diary
• Self-rating scheme
• Personal progress charts
• Exercise schedule and guide
• Log book
• Gender-specific information and tips

Sustainability: The app can be updated if new key data for patients becomes available.

Challenges: Creating awareness of the availability and usefulness of the app with patients and ensuring health care professionals understood the value and its potential to be a resource to support their patients.

Impact: The application Get BladderFit has a 4.5 star rating on the App store (out of 5). It has been incorporated into a patient facing website. It was featured on a giant iPhone at congresses to demonstrate Astellas commitment to patient education which was well received.

Measurement of progress
• Number of downloads: 6,500.

13

Show Me OAB

www.ShowMeOAB.com

*https://itunes.apple.com/us/app/
show-me-oab/id634977833?mt=8*

Therapeutic focus
• Over active bladder (OAB)

Initiative type
• mAwareness

Technology
• App

Targeted populations
• Elderly
• Women
• Men
• Healthcare professionals

### Country
• USA

Timeframe
Start Date: May 2013
Anticipated Termination Date: N/A
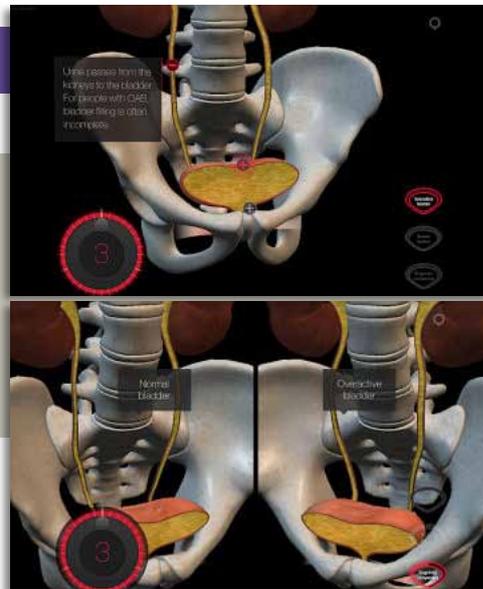
Objectives: The ShowMeOAB mobile application provides healthcare professionals with a tool to facilitate the discussion on the disease state of the overactive bladder (OAB) condition with patients.

Problems: Awareness of the prevalence of OAB and mechanism of the disease is relatively low. Healthcare professionals are often challenged to explain the disease state without a visual aid resource, which can be confusing and concerning for patients. Healthcare professionals lack mobile resources that provide anatomical insight about OAB, resulting in a lack of understanding about the condition from patients. Additionally, patients may believe that OAB is not a common problem and that they are alone in the struggle to manage symptoms.

Solutions: The majority of healthcare professionals have moved to mobile platform use in practice and during patient consultation. They use such mobile vehicles to facilitate discussion on the overall OAB disease state that is consistent and valuable for patients. This application provides a series of facts related to the prevalence and incidence of OAB to facilitate consultation and move the patient dialogue into a discussion more focused on disease and treatment approach.

Sustainability: Likely to be an ongoing part of Astellas' commitment to urology and offers an additional layer of support to the healthcare professional treatment and care for OAB patients.

Challenges: Creating awareness of the availability and value of the app in practice and refreshing the content to ensure its value to healthcare professionals and patients over time.

Measurement of progress
• Number of downloads from mobile stores.

MyAsthma

https://myasthma.com/en/about-myasthma

Partners
- University of London
- Aberdeen University
- Education for Health

Types of partners
- Academia
- NGOs

Therapeutic focus
- Non-communicable diseases - Asthma/respiratory disease

Initiative type
- mAwareness,
- mBehavioral changes
- mDisease management
- mTreatment

Technology
- Apps (iOS, Android, PC)

Targeted population
- Asthma sufferers, including children with asthma

Countries
Currently live in 16 countries with plans to launch in other countries globally throughout 2013/14. Live currently in:
- Australia
- Costa Rica
- Denmark
- El Salvador
- Guatemala
- Honduras
- Hungary
- Jamaica
- Netherlands
- Nicaragua
- Norway
- Poland
- Tobago
- Trinidad
- UK

Timeframe of the initiative
Start Date: 2011
Anticipated Termination Date: N/A
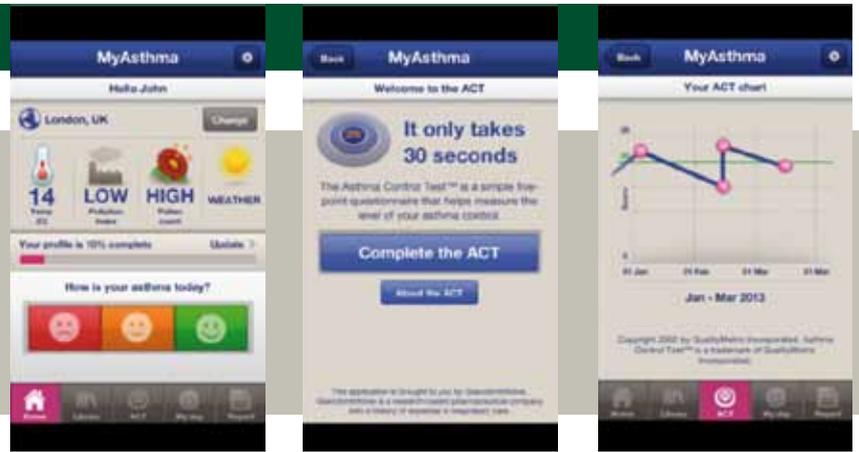
Objectives: The overall aim of the MyAsthma program is to improve asthma control by reaching patients suffering from asthma with a tailored tool that can provide them with support and the ability to monitor their asthma, with the ultimate aim of improving control and management.

Problem: Asthma has a significant impact on patient quality of life and healthcare resources and, despite medication and asthma treatment guidelines being available; there is still a large unmet need, with 54% of patients poorly controlled in the EU. There is a variety of factors that contribute to poor control including not taking medication as prescribed to poor inhalation technique.

Solutions: MyAsthma was developed in the UK in collaboration with pioneers in the fields of Behavioural Psychology and Asthma. MyAsthma is a free app providing useful tips, practical advice and special monitoring tools to support patients control and manage their asthma. This includes the Asthma Control Test, a simple five-step questionnaire that helps measure the patient's level of asthma control, Peak Flow Measurement (PFM) recording, Personalised Asthma Action Plans (PAAP). The application requires no direct input from the patient's healthcare professional and is suitable for all patients with asthma.

Sustainability: The service is designed to be developed further. GSK has recently launched version.2 which now includes additional information and tools to provide support to children with asthma

Challenges: Ensuring that the app is relevant to all countries and situations. We have developed in such a way that the master file can be easily localized and re-purposed.

Lessons learnt: As with any mobile/digital solution in order to generate interest and drive ongoing uptake an effective and continuous communication strategy is critical.

Niquitin

https://www.24plan.ru/en-ru/

Partners
- University College London
- University of California at Los Angeles

Types of partners
- Academia

Therapeutic focus
- Non-communicable diseases - Tobacco cessation

Initiative type
- mAwareness,
- mBehavioral changes

Technology
- Apps

Targeted population
- General population

Countries
- Russia
- USA

Timeframe
Start Date: 2009
Anticipated Termination Date: N/A

Objectives: To enable consumers to track their temptations on a mobile device.

Problem: A number of studies have shown that tracking behavior is a core technique of behavioral change. Niquitin have developed a web based solution that tries to encourage this and many other techniques that will increase the chances of quitting. However temptation can happen anytime and anywhere so consumers need something at their fingertips to track their temptations as they happen and to offer solutions to their temptation.

Solution: Distribute the functionality that currently resides on the web based platform, enabling it on mobile. Hence whenever a consumer feels the urge to smoke, they can pull out their mobile and immediately track their temptation. The end point of this process is the synchronizing of their temptation with the web-based system whilst supportive messages and imagery are sourced from their web-based profile, tailored to the consumer's particular needs.

Sustainability: Removes the need for paper-based diaries and subsequent reports back to the consumer which would be too expensive to maintain.

Challenges: Beyond the investment in the app, there is a cost in raising awareness of the app to consumers. Once consumers have downloaded the app, there is a competition for their attention amongst the plethora of other apps available, both in the same and in competing space.

Lessons learnt: Driving traffic to the app are as important as the initial build. Ultimately the app is about helping with the temptation in real time. This requires huge amounts of content to ensure the message speaks to the exact situation the consumers finds themselves in, is not repetitive and takes account of their history as well as the present temptation.

Impact: The aim moving forward is to replace the hard coded locations with a check-in style functionality and develop the content that is served to the consumer. The app is now being extended to include additional opportunities for user generated content to help motivate the person to beat temptation in the form of videos. Registration will also form part of the next release removing the need to first set up an account on the website.

Measurement of progress
- 45 new plans created.
- 15,392,340 cigarettes not smoked.
- P.19,842,446 money saved.
- 2360 quit plans completed.

The mobile app is a subset of the full behavioural support programme which is live in Australia, United Kingdom, USA, Malaysia and Russia. In total over 50,000 people have registered on the system across all countries.

GlaxoSmithKline

SMS Anti-Counterfeiting

http://developingcountriesunit.gsk.com/Home#summary-6

Partners
- Sproxil
- NAFDAC

Type of partners
- Private sector
- Government

Therapeutic focus
- A range of GSK medicines will be protected in this manner; currently some antibiotics are covered in Nigeria and Kenya, but the number of stockkeeping units covered is expanding as is the number of countries, e.g. Tanzania in Q1 2013.

Initiative type
- Fight against counterfeit medicines

Technology
- SMS

Targeted population
- General population

Countries
- Nigeria 2010
- Kenya Q4 2012
- Tanzania Q1 2013

Timeframe
Start Date: 2010
Anticipated Termination Date: N/A
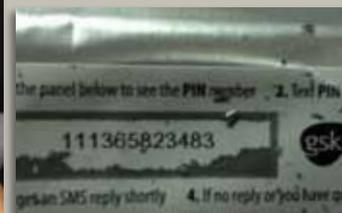
Objectives: GSK piloted an innovative approach to protecting patients in Africa from counterfeit medicines using mobile phones, taking advantage of the high mobile phone penetration rate in Africa, on average above 50%.

Problem: Counterfeit medicines are not only illegal, but they can be very harmful and also can damage the reputation of the legitimate manufacturer. What actually goes into these fake pills can cause serious health problems. Aside from having little or no active ingredients (i.e. the actual medicine), other ingredients that have been found in the fake medicines include metals such as mercury, uranium and arsenic, and poisons such as boric acid and antifreeze. The problem is global but most acute in the developing world, where regulation and law enforcement capacity is relatively weak. In Africa, counterfeit medicines account for around 10 to 30% of products sold, but this figure is only an estimate. Getting the true figure is nearly impossible since the counterfeiters are constantly changing their methods to avoid detection. Combating these potentially dangerous counterfeit medicines on a continent with little healthcare infrastructure require innovative thinking.

Solutions: In the case of *Ampiclox™*, a GSK antibiotic in Nigeria which was heavily counterfeited, labels are applied to the blister packs with a rub off panel which exposes a unique ID number. This number can be sent via SMS to a "free text" number which replies whether the medicine is genuine or possibly fake. In the case of the latter, a call centre provides additional support.

Sustainability: GSK pay for the running costs of the service. At present the labels are applied in market, but automation and/or application during manufacturing is being investigated as volumes grow.

Challenges: Need a secure source of labels to prevent fraud; reliable in country SMS anti-counterfeiting service; free national "text" number in place; application of labels is labor intensive and this solution may not be cost-effective for all products, i.e. target those with worst problems; quality help desk service to deal with customer queries with direct contact to GSK as backup.

Lessons learnt: Mobile phones and SMS usage are highly prevalent in Africa; approximately 10% of people who purchase *Ampiclox™* use the service. Support of the Government regulator is very important, and the service is free at point of use.

Impact: Counterfeiting of the product has been significantly reduced and sales have risen. GSK's reputation has improved both with the public and the regulator in terms of product quality reputation and corporate responsibility for taking action. The regulator in Nigeria has recently announced that all pharmaceutical products within particular therapeutic areas should be protected this way, hence GSK are increasing the number of products covered in 2013. The response from consumers was enthusiastic: in all, GSK received 145,000 texts from 115,000 unique users, representing approximately 10% of use. Ninety per cent of texts returned a genuine confirmation, 2.5% received a counterfeit alert and others received a message indicating a duplicate PIN. More than 2,360 calls were made to the helpdesk, some of which helps us identify counterfeit *Ampiclox™* blisters in the Nigerian market.

Measurement of progress
- Number of people reached: approximately 1m *Ampiclox™* packs dispatched with scratch panels in Nigeria; roughly 10% of customers have used the SMS anti-counterfeiting service.

http://developingcountriesunit.gsk. com/Home#summary-6

Vaccination coverage improvements

Partners

- Vodafone
- Mozambique MoH
- Save the Children

Type of partners
- Private sector
- Government
- NGOs

Therapeutic focus
- Childhood vaccine preventable diseases

Initiative type
- mAwareness
- mBehavioral changes
- mTreatment
- Improve access to health services
- Stock management

Technology
- SMS

Targeted populations
- Newborns
- Children

Country
- Mozambique

Timeframe
Start Date: Planning Q1 2013, implementation Q2 2013, 12 month assessment period
Anticipated Termination Date: Q2 2014

Objectives: This project aims to establish if mobile technology solutions could increase the proportion of children covered by vaccination in Mozambique by an additional 5-10% through helping to encourage mothers to take up vaccination services, support health workers, improve record keeping, and enable better management of vaccine stock. If successful, the project will create a model that can be replicated throughout Mozambique and then scaled across Africa to reach thousands more children with lifesaving vaccination.

Problem: Despite major advances in the funding and availability of vaccines worldwide, it is estimated that up to a fifth of children worldwide still do not receive basic vaccines. The proliferation of mobile phones in Africa offers an opportunity to create innovative and cost-effective ways to address barriers to universal vaccination.

Solutions: With access to mobile phones rapidly rising in the developing world, a significant opportunity exists for mobile technology to help healthcare providers save hundreds of thousands of children's lives by increasing the take-up of vaccinations. The pilot uses mobile technology to address barriers to increased take-up of vaccines in Mozambique in three key ways:
- Mothers and caregivers are registered on a Mozambique Ministry of Health database and alerted by SMS to the availability and importance of lifesaving vaccinations against common childhood diseases. Mothers are able to schedule vaccination appointments by SMS and receive notifications of past and future vaccinations to ensure children complete the full schedule and become fully immunized.
- Health workers are provided with smartphones with software allowing them to contact mothers, view and record vaccination histories, schedule vaccinations and report on follow-up visits.
- Healthcare facilities are prompted to regularly report on crucial vaccination stock levels by SMS. This enables critical supply chain management and the availability of vaccines when and where they are needed, particularly in rural areas.

Sustainability: GSK and Vodafone are paying all costs for the period of the Mozambique pilot (approx. 12 months). In the event the pilot is successful, the local Ministry of Health will make an application to the GAVI Systems Strengthening Fund for monies to support a nationwide rollout.

Challenges: Still to be identified, but GlaxoSmithKline envisage such factors as user adoption of the service -> who benefits; worker training; partner collaboration; on-going Ministry of Health support; mobile phone coverage.

Lessons learnt: Too early to report, but lessons learnt from "SMS for Life in Tanzania" will be incorporated.

Impact: Nothing available to add at this time, although a reputable research organization will be engaged to monitor and evaluate the pilot, along with identifying measures of success up front.

Measurement of progress
- Still under development, but 100 clinics will be covered and initial thinking is to drive DTP3 coverage up from current 76 to 81+%.

AIM-HI: Access to Improved Mental Health Initiative

Type of partners
- Government
- NGOs

Therapeutic focus
- Brain disorders – Schizophrenia

Initiative type
- mAwareness
- mBehavioral changes
- mDisease management
- mTreatment
- mTraining
- Improve access to health services

Technologies
- SMS
- Blogs

Targeted populations
- Health professionals
- Patients with schizophrenia and caregivers

Country
- Mexico

Timeframe
Start Date: 2012
Anticipated Termination Date: N/A

Objectives: Leverage technology in Mexico to increase access to better mental healthcare, easing pressure on public facilities and payers through improved outcomes and lower costs.

Problem: Prevalence is nearly 1% of the general population: approximately 1.2 million; less than 30% have access to health services. Neuropsychiatric diseases represent the fifth place in terms of national disease burden: disability and premature death rates. Private insurance does not cover mental illnesses. Largest government payers face insufficient capacity and increasing costs related to mental health management. Gap in care is largely driven by lack of infrastructure including low number of psychiatrists, outdated and insufficient number of mental health clinics nationwide as well as poor medication adherence.

Solutions: Interactive IT platforms to educate healthcare professionals, patients and caregivers to improve outcomes, enhance network between community and specialty care and allow institutions to track relapse and cost savings. Text messaging service to monitor adherence.

Sustainability: Development of new skills, capabilities and knowledge transfer. Support implementation of best practices in the treatment of schizophrenia across participating clinics.

Measurement of progress
- Number of patients and healthcare professionals reached.

Care4Today™ Mobile Health Manager

www.care4today.com

Therapeutic focus
- General health

Initiative type
- mTreatment

Technologies
- SMS
- Website

Targeted population
- General population

Countries
- USA
- United Kingdom
- Germany
- France

Timeframe
Start Date: 2012
Anticipated Termination Date: N/A

Objectives: The Care4Today Mobile Health Manager application and website helps patients setup medication and healthcare appointment reminders to improve adherence.

Problem: It is estimated that 50% of patients do not take their medications as directed.

Solutions: The Care4Today Mobile Health Manager and website allows patients to self-enter medication reminders which include a customized message and medication images and are triggered at the time that the patient sets up. The reminders require a response of "Taken" or "Skipped" and track the patient's adherence which can be shared with healthcare providers.

Sustainability: The number one reason that patients give for not taking their medications as directed is that they simply forget. Care4Today Mobile Health Manager provides sustainable, long-term reminders for medications that treat acute and chronic diseases.

Challenges: In addition to providing a service to help patients remember when to take their medications, Care4Today Mobile Health Manager also provides incentive programs for adherence, including family monitoring, gaming, and charitable giving.

Lessons learnt: The population of smartphone users is increasing; however, there is still a large number of patients using feature phones. A platform had to be developed that included a downloadable and a text messaging option.

Impact: Clinical trials are planned for 2013 to assess the impact on adherence.

CNS Drug Drug interactions (DDI)

Partner
• Elsevier

Type of partner
• Private sector

Therapeutic focus
• Brain disorders

Initiative type
• mAwareness
• mBehavioral changes
• mTreatment
• Increase worker efficacy

Technology
• App

Targeted population
• Health professionals

Country
• Italy

Timeframe
Start Date: 2011
Anticipated Termination Date: 2013

The CNS DDI is an application for smartphones aimed at identifying drug-drug interactions (DDI) and providing the key characteristics of CNS drugs. The project generated from an idea contest within the field force in collaboration with marketing and was implemented by the digital multi-channel unit with the continuous interaction and feedback from the field. The app achieved more than 10,000 download during the first 9 months on the Apple store and app was ranked among the top 5 downloaded for 3 weeks after the launch.

Objectives: Guiding the physician through the clinical efficacy, tolerability profile and drug-drug interactions (DDI) of modern drugs by offering a useful easy to use tool to compare products and facilitate the choice of the best therapeutic algorithm. The customer need that led the ideation of CNS DDI was the lack of a quick and reliable source of information concerning drug-drug interactions (insight obtained by face-to-face interaction with the customer).

How it Works: The CNS DDI is very easy to use; a physician can search drugs by typing commercial name, active principle or simply the name of the company and a list of commercial formulation appears on screen. By selecting a formulation the results show some visual icons concerning the collateral effects (e.g. caution in case of pregnancy or caution in case of driving if there are teratogenic or narcoleptic effects, respectively). Additionally the physician finds the package insert documentation and last a section dedicated to drug-drug interaction.

Measurement of progress
• Number of downloads.
• Number of updates/unlock code used.
• Figures.
• Qualitative feedback (over 30 store comments).

How's today been?

Therapeutic focus
- Brain disorders – ADHD

Initiative type
- mAwareness
- mBehavioral changes
- Improve access to health services

Technology
- App

Targeted populations
- Women
- Children
- Men
- Youth
- Parents and carers

Countries
- United Kingdom
- Netherlands

Timeframe
Start Date: November 2011
Anticipated Termination Date: N/A

Objectives:
- Help parents and carers better understand their child's Attention Deficit Hyperactivity Disorder (ADHD)
- Facilitate consultations, making them less emotional, more factual
- Achieve 1,000+ downloads (83 monthly) between November 2011-November 2012

Problem:
- Children with ADHD display different behaviors throughout the day, impacting school and home
- Parents commonly experience guilt, believing long-acting medications mean they cannot cope
- In consultations, treatment decisions are made between pediatrician, parent and child based on an average day
- Fifty percent of children with ADHD have a parent with the condition, so in consultations, remembering challenging times of the day can be difficult

Solutions:
- Create a simple, engaging and quick-to-use that allows parents and carers to track their child's day and build an ongoing picture of their child's day that can be discussed during consultations
- Developed with ADHD clinical experts, an app was selected as the most widely-used technology among target audiences
- The name "How's today been?" clearly communicates its purpose and reflects a common question parents ask their child. Its simplicity reflects the needs of parents who also have ADHD
- Parents and children can build ongoing pictures of their child's day at six time points, identifying challenging times. Parents choose reminder times and enter daily ratings using simple sliding scales
- Easy-to-read charts show average scores and behavior patterns over time
- "How's today been?" is innovative because it addresses the unmet needs of children and parents with ADHD, helping focus consultations and support decisions
- The app is purposefully simple, engaging and quick-to-use
- Parents can use the sitting with their child, offering an opportunity for calm discussion of the day's highs and lows

Sustainability: The app can be updated and evolve with new elements based on user feedback.

Challenges: How to create an app that would be simple enough for parents to fill out daily, while providing sufficient information to support consultations.

Lessons learnt: Downloads figures are significantly higher among people with an iPhone.

Impact: Positive feedback shared by users: "Keep up the good work and thanks for helping people with ADHD"; "I'm 12 and have ADHD. This is a fantastic and has helped my anger just by using this"; "I'm 14 and have ADHD. The app helps me look back on my day"; "Great for parents. Daily alarm reminders very useful".

iHP

Therapeutic focus
- General health

Initiative type
- mAwareness
- mBehavioral changes
- Support decision-making
- Increase worker efficacy

Technology
- App

Targeted population
- Health professionals (hospital pharmacists)

Country
- Italy

Timeframe
Start Date: 2011
Anticipated Termination Date: N/A

iHP is a collection of mobile apps aimed at supporting hospital pharmacists in their daily work.

The target of hospital pharmacists has, in recent years, become increasingly important in decision-making processes affecting drugs (commissions for drugs insertion in local and regional formularies, technical specifications for tenders/supply chain for health goods, guidelines and treatment protocols).

Objectives: Provide hospital pharmacists (and other healthcare practitioners) useful and innovative apps for their work and have a good impact on customer satisfaction, providing them with trustworthy medical information for the daily work.

Customer Insights: The customer need that led to the ideation of iHP was the lack of a quick, mobile and reliable source of information addressing the problem of fragmentation of information (insight obtained by face-to-face interaction with the customer).

Measurement of progress
- Number of pharmacists reached.
- Number of downloads.
- Number of updates/unlock code used.
- Qualitative feedback.

JanssenMD™

www.janssenmd.com

Therapeutic focus
- General health

Initiative type
- Information resource site

Technologies
- App
- Site available on mobile devices and desktop

Targeted population
- Health professionals

Country
- USA

Timeframe
Start Date: September 2012
Anticipated Termination Date: N/A

Objectives: To provide accurate, compliant and reliable product-based medical information that is easily reviewed by healthcare providers on their mobile devices.

Problem: The standard medical information self-service model across the industry is to provide PDF-based response letters. These letters are not easily viewable on today's mobile devices and are not easily navigated to enable healthcare providers to quickly find the answers to their questions.

Solutions: Janssen developed a desktop and mobile solution with concise responses which can be easily navigated and reviewed by healthcare providers to align with their busy schedules. The web application has been designed with the primary focus on the content and search capability that gets healthcare providers answers to their medical information requests quickly.

Sustainability: A content team is responsible for maintaining the existing product information and recreate product information for new products coming into JanssenMD™.

Challenges: JanssenMD™ is mobile friendly tool and as such required development work to ensure that the content is easily accessible and viewable on a mobile device.

Impact: Janssen's early indicators are very positive. Since September 2012, more than 140 different universities, hospitals, and pharmacies visited JanssenMD™, with users hailing from 47 states. Over 30% of usage is from mobile devices, which is 40% more mobile use than our previous site. Over 30% of our users are return visitors and these visitors view 29% more pages and spend 124% more time on the site than do our new user indicating that they are finding value in JanssenMD™. Users that have taken our site survey also indicated that they were able to find the answer to their question 82% of the time.

Measurement of progress
- Over 2,000 visitors performing over 500 searches since September 2012.
- More than 140 different universities, hospitals, and pharmacies visit JanssenMD™, with users hailing from 47 states.
- Over 30% mobile traffic.
- Users that have taken our site survey indicated that they were able to find the answer to their question 82% of the time.

MAMA (Mobile Alliance for Maternal Action)

www.mobilemamaalliance.org

Partners
- United States Agency for International Development (USAID)
- United Nations Foundation
- mHealth Alliance
- BabyCenter

Type of partners
- Private sector
- Government
- NGOs

Therapeutic focus
- Women's health
- Newborns health
- Children's health

Initiative type
- mAwareness
- mBehavioral changes

Technologies
- SMS
- Mobiweb, USSD, voice

Targeted populations
- Mothers
- Newborns

Countries
- Global reach 40+ countries through adaptable messages
- Direct programs in Bangladesh, South Africa, and India

Timeframe
Start Date: May 2011
Anticipated Termination Date: May 2014

Objective: MAMA is a public-private partnership launched in May 2011 by the United States Agency for International Development (USAID), Johnson & Johnson, the United Nations Foundation, mHealth Alliance, and BabyCenter. MAMA is engaging an innovative global community to deliver vital health information to new and expectant mothers through mobile phones.

Problem: Every day, there are 1,000 women that do not survive childbirth or pregnancy. Most of these deaths are preventable. Increasing access to vital health information and basic healthcare could help millions of moms and their babies.

Solutions: The Mobile Alliance for Maternal Action (MAMA) is using mobile technology to improve the lives of pregnant women, new mothers and their families in developing countries throughout the world. MAMA has made a multi-million dollar investment to create and strengthen mobile health education programs in three countries – Bangladesh, India and South Africa – and to enhance global capability of new and existing programs for underserved moms in those countries and beyond. In 2012, MAMA launched Aponjon, a mobile health service delivering critical stage-based information tailored to mothers, like Asha Rani, and their supportive family members throughout Bangladesh. There are already more than 12,000 subscribers. MAMA's South Africa service will launch in 2013.

Sustainability: Adaptable messages are offered as a free, mobile-friendly tool that can be downloaded via MAMA's website at www.mobilemamaalliance.org.

Impact: MAMA was named a 2012 Fast Company Innovation By Design Awards winner in the Service Design Category in recognition of its in-country programs and its adaptable messages that have already reached more than 100 organizations in 40 countries from Afghanistan to Zambia.

Measurement of progress
- Number of women reached.
- Number of organizations reached.

MMApp

Type of partners
- Private sector
- Academia

Therapeutic focus
- Hematology – Multiple myeloma

Initiative type
- mScreening
- mDisease management
- mTreatment
- mTraining

Technology
- App

Targeted population
- Health professionals

Countries
- Austria
- Switzerland

Timeframe
Start Date: 2011
Anticipated Termination Date: N/A

Objectives:
- Multiple myeloma is a rare disease and physicians do usually not see patients on a daily basis. There is a substantial amount of new information, data and studies. In 2011, around 1,900 papers were published in PubMed.
- The idea of this project is to address the need for an easily available overview, as a smartphone application (exclusively for iPhone), about Multiple myeloma and reflecting the local treatment practice in Switzerland.
- Janssen developed the content in collaboration with Swiss physicians from different clinical centers. It was developed in 2011 and went live in December 2011.

Measurement of progress
- 162 downloads in first year (estimated 500 physicians treating Multiple myeloma patients in Switzerland).

Sorted: The Daily Organiser

Therapeutic focus
Brain disorders – ADHD

Initiative type
- mAwareness
- mBehavioral changes
- mDisease management

Technology
- App

Targeted populations
- Women
- Children
- Men
- Youth
- Parents and carers

Country
- United Kingdom

Timeframe
Start Date: April 2011
Anticipated Termination Date: N/A

Objectives:
- Help people with ADHD improve organization and demonstrate progress over time
- Achieve 1,000+ downloads (~111 per month) and positive feedback between April-December 2012

Problem:
- People with Attention Deficit Hyperactivity Disorder (ADHD) find organization, prioritization, time management of daily tasks and long-term goals extremely challenging, resulting in frustration and low self-esteem
- There was no single tool to help people with ADHD manage these challenges

Solutions:
- Create a simple-to-use, engaging for people aged 12-30 years to organize and prioritize tasks, set goals and reward progress
- This was developed with experts in ADHD and motivational design. iPhone and iPad formats were selected as the most widely-used technology among the target audience
- It combines key organizational elements into a package tailored for people with ADHD, recognizing their daily challenges and limited attention span. Gamification and motivational design principles deliver an intrinsically rewarding experience that helps users overcome specific organizational challenges associated with their ADHD
- It is designed as a prompting to-do list in a creative, simple, motivational design format, helping people improve daily planning. The ability to categorize, color code tasks and personalize by adding pictures and sound clips is critical for people with ADHD who find organization challenging
- Users can create tasks/deadlines, set personal goals and track progress
- Alarms prompt users to check task-lists, accumulating points towards personal goals with rewards, e.g. stars, badges, vibrations and pop-up messages

Sustainability: The app can be updated and evolve with new elements based on user feedback.

Challenges: How to create an app with the right amount of motivational design that it is sufficiently motivating without being distracting.

Lessons learnt: Pilot in ADHD community prior to launch.

Impact: Positive feedback shared by users with ADHD: "I am an adult with ADHD. It is very well planned for ADHD brains – visual, color coded, allows photographs and voice recording. And best of all…there are rewards! Clearly developed with people who understand the ADHD brain and how difficult it is to organize our lives, needing instant reward/success. I'm looking forward to becoming a complete convert to this".

text4baby

www.text4baby.org

Partners
- United States founding partners: National Healthy Mothers Healthy Babies (HMHB) coalition, CTIA The Wireless Foundation, Voxiva, Inc., The White House Office of Science and Technology and Health and Human Services (HHS). Johnson & Johnson is the founding sponsor.
- Russia founding partners: Health Development Foundation, Russian Federation Ministry of Health, the Kulakov Center, HMHB and Voxiva, Inc. Operates as SMS name.

Type of partners
- Private sector
- Academia
- Government
- NGOs

Therapeutic focus
- Childhood vaccine preventable diseases
- Non-communicable diseases – Tobacco cessation, Healthy diet, Alcohol consumption
- Family planning
- Malnutrition
- Women's health
- Newborns health

Initiative type
- mAwareness
- mBehavioral changes
- mTreatment
- Improve access to health services

Technology
- SMS

Targeted populations
- Mothers
- Newborns

Countries
- USA
- Russia

Timeframe
Start Date: United States text4baby launched in Feb. 2010, Russia launched in Feb. 2012
Anticipated Termination Date: N/A

Objectives: Direct texting to deliver health-critical messages to mothers in underserved communities with timely, stage-based content.
- Demonstrate the potential of mobile phones to reach underserved.
- Develop a base of evidence on the efficacy of mobile health interventions.
- Catalyze new models for public-private partnerships in the area of mobile health.

Problem: According to the WHO, 360,000 women die each year due to pregnancy complications. Three million newborns die every year during childbirth or within a few weeks and 2.6 million are stillborn.
- The majority of women worldwide only have one prenatal visit with a healthcare professional before they give birth.
- Each year in the United States, 500,000 (1 in 8) babies are born prematurely and 28,000 die before their first birthday.

Solutions: More than one billion women in low- and middle-income countries own a mobile phone.
- Utilize mobile messaging to deliver timely, stage-based messages to expectant and new mothers to inform, educate and drive healthy behaviors.
- 3 messages per week in an algorithm timed to babies due or birth date.
- Urgent alert messages as needed, often at request of the CDC and state health departments.
- Messages are free to the end-user.

Sustainability: Corporate sponsorship, fundraising, integration into healthcare delivery systems. Both United States and Russia programs housed within an NGO.

Challenges: Multi-disciplinary, multi-agency approach to content development, frequency and metrics and evaluation.
- Creating awareness for the service among its targeted populations is a challenge; direct marketing works well and is very costly.
- Creative approaches have worked well – targeted to specific at-risk populations, e.g. African Americans.
- 900+ outreach partners (state, local health departments, clinics, HCPs, etc.) distribute enrollment information to patients.

Impact: Over 500,000 subscribers, over 67,000,000 messages have been delivered to moms
- Recently, the first randomized evaluation of the service, led by The George Washington University, found that text4baby mothers were nearly three times more likely to believe that they were prepared to be new mothers, compared to women in a control group.
- A University of California and California State University study demonstrates that text4baby is "increasing users' health knowledge, facilitating interaction with health providers, improving adherence to ointments and immunizations, and strengthening access to health services".
- Many other outcomes studies underway.

Measurement of progress
- Number of people enrolled.
- Percentage of penetration of underserved target populations.
- Healthcare professionals, agencies and other partners.
- Multiple outcomes studies completed or underway.
- Multiple journal publications.

The Digital Health Scorecard

www.digitalhealthscorecard.com

www.calculadoradesaude.com.br

Type of partner
- Private sector

Therapeutic focus
- General health
- Non-communicable diseases – Cardiovascular diseases, Cancer, Diabetes, Hypertension, Tobacco cessation, Healthy diet, Physical activity, Salt reduction, Obesity control, Alcohol consumption

Initiative type
- mAwareness
- mBehavioral changes

Technology
- App

Targeted populations
- General population
- Health professionals

Countries
- USA
- Brazil

Timeframe
Start Date: 2009
Anticipated Termination Date: 2014 - project will move into next phase for roll out
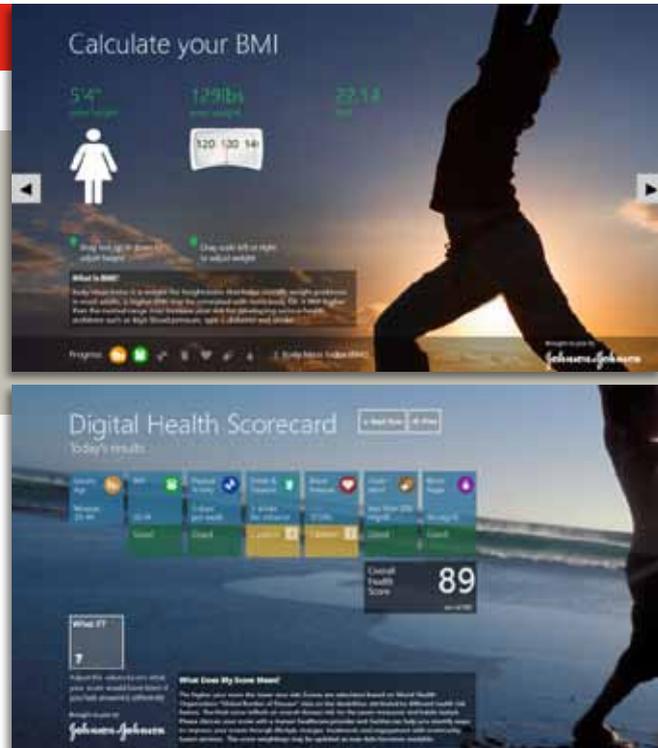
- The Digital Health Scorecard introduces your "health score," a new single metric that helps an individual better appreciate his long-term risk for developing common chronic diseases.
- The health score is computed using a new algorithm developed by Johnson & Johnson and employing weightings based on WHO Global Burden of Disease data.
- Users of the Digital Health Scorecard provide answers to seven basic questions about current health measures and habits.
- The Digital Health Scorecard can provide a meaningful result even when users do not know all of their biometric values.
- Results from the Digital Health Scorecard are identified and evaluated in the aggregate.
- Johnson & Johnson has collaborated with world-class institutions in the development of the science and the application; Johnson & Johnson will continue to work leaders in public health to improve the algorithms and publish meaningful results on the population.
- The Digital Health Scorecard is now available in the United States and will soon be available in additional global regions on iOS, Android, Windows 8, and web platforms (varies by region). The Digital Health Scorecard has also been launched in Brazil in June 2013.

UNITE
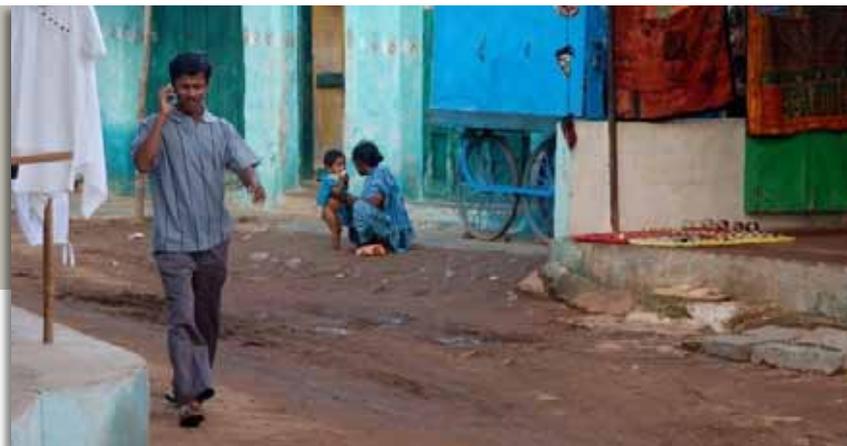
Partners
- Grameen Foundation
- Indian Institute of Technology, Mumbai
- Several Indian HIV clinical experts (Dr. Saple, Dr. Pujari, Dr. Kumarasamy, Dr. Shet)

Type of partners
- Private sector
- Academia

Therapeutic focus
- Infectious diseases – HIV/AIDS

Initiative type
- mDisease management
- mTreatment
- Improve access to health services
- Support decision-making

Technology
- IVR technology platform

Targeted populations
- Health professionals
- HIV positive individuals

Country
- India

Timeframe
Start Date: 2009
Anticipated Termination Date: 2014 – ready for roll-out

Objectives: Project UNITE is a collaboration between, among others, Johnson & Johnson, Grameen Foundation, Indian Institute of Technology (Mumbai) and 5 HIV clinics in India to create a mobile-based technology platform, that integrates patient information and supports physicians in clinical care, decision-making and holistic management of HIV patients.

Solutions: The mobile application called TAMA (Treatment Advice by Mobile Alerts) is based on the Grameen Foundation Motech platform (open-source software). TAMA currently offers the following services for patients and physicians:
- Daily and/or weekly pill reminders.
- Daily and/or weekly adherence feedback to patients.
- Automated algorithms for managing clinical events for patients being initiated on anti-retroviral therapy.
- Health tips customized by patient condition.
- Appointment reminders.
- Real time reporting to the clinics of patient interaction with TAMA – to enable decision-making and prioritization of clinic intervention.

The above services are available to patients through an interactive voice response system, configured for 6 languages. As such, the platform is designed to improve therapy adherence, increase patient's understanding of the disease and the treatment specifics, provide remote access to treatment advice, and supports physicians in providing HIV healthcare in the most effective and efficient way.

Impact: TAMA has been evaluated in pilot studies at 5 clinics across India. A multicenter randomized clinical trial is planned to start Q2 2013 in India to demonstrate impact of the TAMA platform on HIV health outcomes. Johnson & Johnson is also exploring options of deployment of the TAMA platform towards improving treatment outcomes in other parts of the world, including Uganda and other African countries.

Measurement of progress
Currently, the project is still in R&D phase. The clinical study that will start later this year will collect evidence that the platform has impact on clinical outcome, and as such has a meaningful impact on patient lives. Once this evidence has been collected, the idea is to make the platform widely available across India.

Mobile Anticounterfeiting Service (MAS)

Partners
- Biofem Pharmaceuticals Ltd.
- Sproxil
- NAFDAC (National Agency for Food and Drugs Administration and Control in Nigeria)

Type of partners
- Private sector
- Government

Therapeutic focus
- General health
- Non-communicable diseases – Diabetes

Initiative type
- Fight against counterfeit medicines

Technology
- SMS

Targeted population
- People with diabetes

Country
- Nigeria

Timeframe
Start Date: 2010
Anticipated Termination Date: N/A

Objectives: Allow consumers to verify that products they buy are genuine by using a mobile phone and simple, free text message.

Problem: Counterfeit medicines are a serious threat to public health. They represent a major social and economic problem in developing countries and a key challenge for the global pharmaceutical industry. Particularly, Nigeria faces a huge counterfeit medicine issue. Patients are buying counterfeit medicines without knowing it and without being aware of the great harm counterfeit products can cause. Merck noticed that Glucophage (medicine used to improve glycemic control in patients with Type 2 diabetes) sales had fallen by 75% since 2008, the main reason being counterfeit medicines. Merck had to find a workable and effective solution to make patients aware of this issue and give them a tool to verify if they were buying the genuine products or not.

Solutions: In February 2010 the Mobile Anticounterfeiting Service (MAS) was launched. This was the worldwide pilot of this service. A scratch code was attached to all Glucophage blisters. The patient scratches off the protective layer, which reveals a code. He/she then sends a text message with the code to a free number. Instantly, the patient receives a free text message back, which will tell him/her whether the Glucophage medicine is genuine or potentially fake. Additionally, consumers also get general advice on diabetes.

Sustainability: Patients do not pay anything extra for this verification process. All costs are paid by Merck/Biofem. The benefits of this free system are clear: patients can now verify the genuineness of their products prior to purchasing them. For Merck this action has contributed to the decrease in counterfeit medicine trafficking in Nigeria as well as reducing the parallel trade. Patients are now requesting a blister with a scratch code. This shows that it has become a standard. The good news is that Nigeria has adopted the technology for other products as well.

Challenges: It has been reported that counterfeiters have attempted to copy MAS, but only the labels and not the technology. So patients notice immediately that it is not the real blister, since they are not able to verify its authenticity. The reason why the technology has not been counterfeited is because the cost barriers are high. Apart from the extra costs that this entails, this will also mean that the counterfeiters will not remain faceless (something they try to do by any means).

Impact: Seeing the impressive results of MAS and believing this could be a powerful tool to fight against counterfeit medicine, NAFDAC (National Agency for Food and Drugs Administration and Control in Nigeria) has commissioned all manufacturers, importers and marketers of anti-malarial drugs to use MAS for their products as of 2 January 2013, and for all antibiotics as of 1 March 2013.

Measurement of progress
Number of authentications done per product:
- Glucophage 500 mg: 270,126
- Glucophage 1,000 mg: 20,039
- Glucovance 2.5 mg: 5,925
- Glucovance 5 mg: 18,791
- Neurobion: 28,978

iManage Migraine

Therapeutic focus
- Migraine

Initiative type
- mAwareness
- mBehavioral changes
- mDisease management
- mTreatment

Technology
- App

Targeted population
- Individuals with migraine

Country
- USA

Timeframe
Start Date: 2010
Anticipated Termination Date: 2013/14

Objectives: Provide an app to help support patients better manage their migraines and share information with their healthcare professionals.

Problem: Many patients with migraine have difficulties in managing their disease.

Solutions: Each person's experience with migraine may be different, but understanding each personal experience with it (including potential triggers and symptoms) may help to better manage it. iManage Migraine provides a comprehensive suite of educational tools, real-time tracking, and analytic capabilities to enable to better understand and manage migraine experience. iManage Migraine includes:
Migraine Management Square – an interactive learning experience that will help to:
– Understand what migraine is
– Identify potential migraine triggers and symptoms
– Understand types of migraine treatment options
– Work with healthcare providers to create an action plan to help manage experience with migraine
Migraine Journal – a tool that enables patients to track:
– Symptoms and potential triggers
– Information about pain intensity and location
– Potential triggers
– Treatment used
– Notes about patients' day that they can review with their healthcare provider
Analysis – graphs to help patients and their healthcare provider better understand and use the information entered in the Migraine Journal over a 30-, 60- and 90-day time period.

Impact: Support patients with migraine to help them successfully manage their disease.

My Health Matters

www.healthywithhiv.com

Partner
- Developed with input from community leaders in the EU and Canada regions

Type of partner
- NGOs

Therapeutic focus
- Infectious diseases – HIV/AIDS

Initiative type
- mDisease management
- mTreatment
- Patient empowerment

Technology
- App

## Targeted population
- HIV positive individuals

Countries
- USA
- United Kingdom
- Ireland
- Austria
- Switzerland
- France

Timeframe
Start Date: 2011
Anticipated Termination Date: N/A
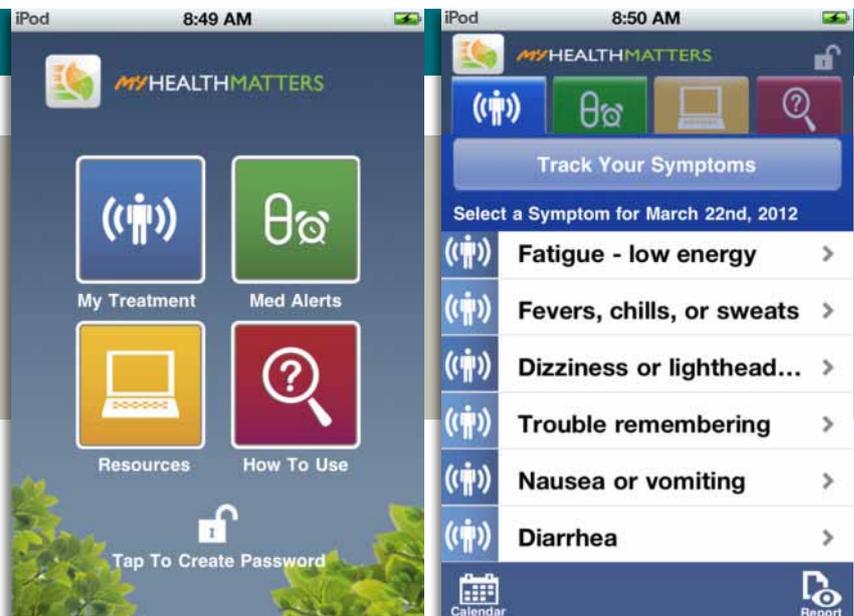
Objectives: A tool to help empower patients to take a more active role in the management of HIV disease and their treatment.

Problem: Many HIV+ patients are suffering in silence by not proactively sharing symptoms they may be experiencing with their providers. Patients also are skipping doses of their HIV medications at time potentially risking the continued efficacy of the medications and their providers may be unaware.

Solutions: My Health Matters is an easy-to-use tool that helps track the symptoms patients may be experiencing, including those related to patients' HIV treatment so they can share and discuss them with their healthcare team. They can also create reports that display those symptoms. This allows patients to e-mail the reports or share information with healthcare providers, so they know exactly what their patients are feeling and when. Having all the information will help healthcare providers help their patients. My Health Matters also lets patients set up automatic and confidential reminders to take medication on time and keep a record of when they took their medication. It's possible to add the names of the actual medications or allows patients to make up their own names for what they call the medications so they can customize their reminders and records to help them take their medications optimally. From this information patients can generate reports for their reference or to share with members of their healthcare team. With My Health Matters patients are able to keep a record of any symptoms they are experiencing.

Sustainability: Health Outcomes study for United States patients currently enrolling to determine the effectiveness of the mobile app. Data will be finalized in 2013 and evolution opportunity decisions will be based on the outcome of this study.

Challenges: App tracks symptoms, has a diary function, helps patients record and track medications and reminds them to take medications at selected times, and creates reports for the patient that can be shared with healthcare professionals to help enhance patient care.

Lessons learnt: As the market has evolved, Merck has received feedback to incorporate principles of adult gaming into the app to encourage engagement and participation in a fun way.

Measurement of progress
Through November 2012:
- 31,000+ unique visitors to tools web pages in United States, Austria, and United Kingdom.
- Over 10,000 unique users of desktop and mobile apps tools in the United States, United Kingdom and Austria.
- App now available in 9 markets with up to another 10 markets in 2013.

VICTRELIS Patient Dose Reminder
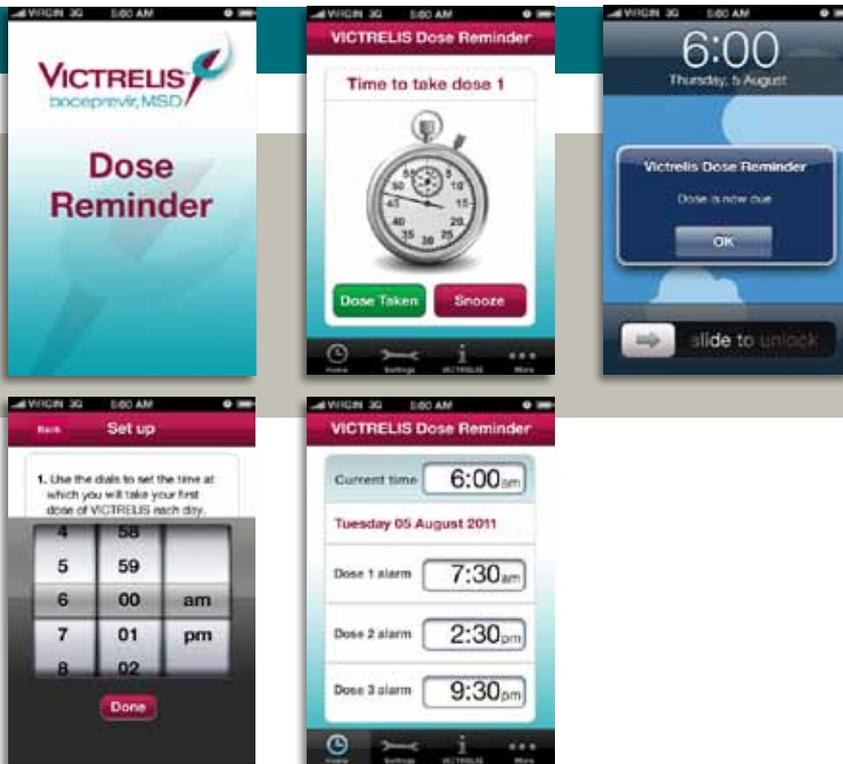
Therapeutic focus
- Hepatitis C

Initiative type
- mDisease management
- mTreatment

Technology
- App

Targeted population
- VICTRELIS patients

Country
- Australia

Timeframe
Start Date: February 2012
Anticipated Termination Date: N/A

Objectives: Maximize positive clinical outcomes during the launch of VICTRELIS® (boceprevir) Patient Familiarization Program (PFP) in Australia by promoting treatment compliance. Empower patients to engage in conversation with their healthcare providers about adherence.

Problem: Adherence of patients to a three tablet a day regimen and at 7- to 9-hour intervals.

Solutions: The VICTRELIS® (boceprevir) Dose Reminder is an application specifically designed for patients being treated with VICTRELIS. An important requirement for patients on VICTRELIS is for them to adhere and comply to a three tablet a day regimen and to take their medication at 7- to 9-hour intervals. The VICTRELIS Dose Reminder helps patients to keep to this recommended schedule. Patients can set a daily dosing schedule on the app, which then alerts them throughout the day when it is time to take their VICTRELIS capsules. Patients can also hit "snooze" when they receive the alert and they will be given up to three reminders for a given dose. This also hosts Frequently Asked Questions about taking VICTRELIS and the full Consumer Medicine Information.

Challenges: The promotion of Prescription Products to the general public is prohibited in Australia, and would breach the Commonwealth therapeutic goods legislation and Section 12.3 of the Medicines Australia Code of Conduct. Hence this was password protected on Apple App store. Adverse events monitoring was also in place for comments on the Apple store.

Lessons learnt:
- No reports were recorded on the iTunes App Store.
- Patients and HCPs are asking for a combined dose reminder for Victrelis and Pegatron providing total convenience and compliance.
- Another feedback was to provide locally relevant information like support group and local liver clinics by leveraging on the GPS capability of the device.
- Increasing adherence was key to ensure positive clinical outcomes during the PFP which ended in September 2012.
- Distribution via Apple is a challenge to ensure a specific go to market date.

Impact: Adherence on the Patient Familiarization Program (PFP) was better than expected.

Measurement of progress
- 160 patients reached, approx. 25% of total PFP population.
- 4,135 reminders pushed to patients during the 6 months of PFP.

e-TIQH (electronic Tool to Improve the Quality of Healthcare)

www.novartisfoundation.org

Partners
- Ifakara Health Institute (IHI)
- Swiss Tropical and Public Health Institute (Swiss TPH)
- National, regional and district health authorities, Tanzania
- Vodafone

Type of partners
- Private sector
- Academia
- Government

Therapeutic focus
- General health
- Infectious diseases – HIV/AIDS, Malaria, Tuberculosis
- Women's health
- Newborns health
- Children's health

Initiative type
- Improve access to health services
- Assess and improve quality of healthcare services through regular supportive supervision

Technology
- Electronic questionnaire on tablet computers

Targeted populations
- General population
- Women
- Mothers
- Newborns
- Children

Country
- Tanzania

Timeframe
Start Date: 2011
Anticipated Termination Date: N/A
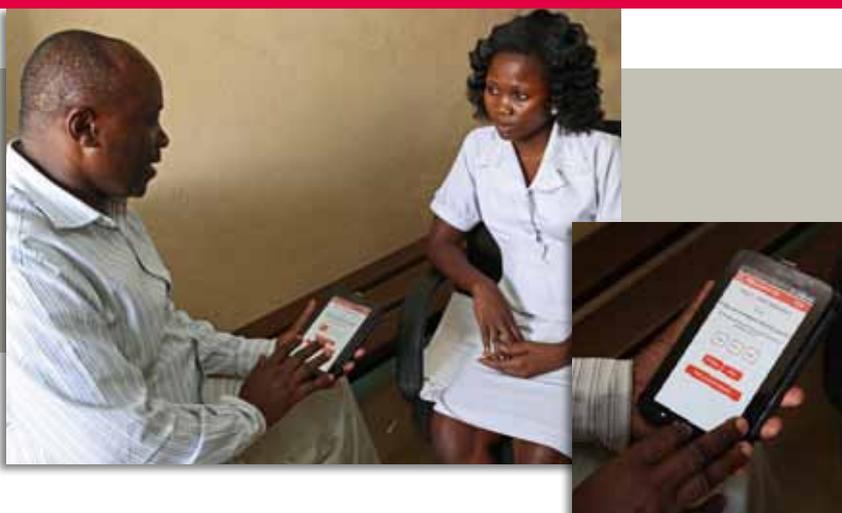
Objectives: Through the Initiative to Strengthen Affordability and Quality of Healthcare (ISAQH), the successor initiative of the ACCESS project, the Novartis Foundation for Sustainable Development (in collaboration with the Ifakara Health Institute and the Swiss Tropical and Public Health Institute) aims at improving access to health services and the health status of rural populations in Tanzania.

Solutions: Apart from strengthening district-based insurance mechanisms, ISAQH targets the quality of healthcare services. The project team developed a questionnaire-based tool, which district health authorities use to regularly assess facilities' services according to six indicators: 1) infrastructure and equipment, 2) job expectations, 3) staff motivation, 4) professional skills of healthcare staff, 5) facility management and 6) patient satisfaction. Based on the assessment results, quality gaps are addressed through evidence-based planning and budget allocation.

In 2011, the Novartis Foundation – with technical support from Vodafone – developed and piloted an electronic version of the formerly paper-based assessment tool. E-TIQH (electronic Tool to Improve the Quality of Healthcare) facilitates data collection, minimizes data entry errors and automatically analyzes the data and generates reports.

Sustainability: Currently ISAQH covers seven districts in Tanzania; another two will be added in 2013.

Impact: The standardized data collection and analysis allow for comparison across regions and districts and enable quick reaction to quality gaps and efficient resource allocation. Therefore, there is great potential for scaling up e-TIQH across Tanzania.

Measurement of progress
- Seven districts covered by end of 2012; 2 more in 2013.
- The total number of health facilities assessed with e-TIQH in 2011-2012 for the 7 districts: 293. Based on the quality score, about 100 facilities underwent further training of the health providers to better comply with the guidelines.
- The quality score for each district allowed for a better allocation of resources which resulted to an improvement in score over time, e.g. from an average score of 58% to 80% within a district.

Rheumatic Heart Disease Registry

Partners
- University Teaching Hospital (UTH), Lusaka
- Ministry of Health, Zambia
- Pan-African Cardiology Society (Cape Town University, South Africa)
- Mass General Hospital (MGH), Boston, MA, USA

Type of partners
- Private sector
- Academia
- Government

Therapeutic focus
- Non-communicable diseases – Cardiovascular diseases (Rheumatic heart disease (RHD) in children)

Initiative type
- mAwareness
- mScreening
- mTreatment
- mMonitoring

Technology
- Tablets, PCs and cloud based mobile electronic registry

Targeted population
- Children

Countries
- The initial focus is Zambia.
- The Pan-African Cardiology Society has endorsed Lusaka as one of the RHD demonstration sites, similar to sites in South Africa, Ethiopia and Ghana. The plan is to use these sites in the future for the development of a group A streptococcal vaccine.

Timeframe
Start Date: October 2012
Anticipated Termination Date: 2014

Objectives: Working with Dr. John Musuku at UTH, as the Principal Investigator and the Ministry of Health, Novartis plans to establish a community-based registry for children with RHD in Zambia. The goal of the study is to 1) document prevalence of the disease in school-age children, 2) raise awareness about strep throat infections, rheumatic fever and RHD, 3) provide primary and secondary penicillin prophylaxis, and 4) improve adherence to RHD treatment and prevention regimens.

Problem: Rheumatic heart disease (RHD) has been practically eradicated in wealthy nations, but in the developing world the disease remains a major cause of morbidity and mortality, particularly in children and young adults. RHD is caused by untreated streptococcal infections. It is one of the few truly preventable chronic diseases if diagnosed at an early, clinically silent stage.

Solutions: With the UTH and the Ministry of Health in Zambia, Novartis will screen children for silent RHD at public schools in the Lusaka area using mobile echocardiography. Study protocols have been developed in collaboration with the Pan-African Cardiology Society. The Zambian team will be trained in the use of mobile echocardiographic devices through one-week trainings in Lusaka by clinical fellows from MGH, along with training for recognition and treatment of severe allergic reactions to penicillin. Categorization of echo images will be validated remotely at MGH. The data will be entered into a mobile, cloud-based electronic registry system to document disease prevalence and monitor penicillin treatment of RHD patients.

Sustainability: In December 2012, the Pan-African Cardiology Society has endorsed Lusaka as one of the RHD demonstration sites, similar to sites in South Africa, Ethiopia and Ghana. The plan is to use these sites in the future for the development of a group A streptococcal vaccine.

Impact: The initial plan is to screen 10,000 children, ages 9-10, in 50 Lusaka-area public schools. The anticipated 1-2% RHD-positive children will be put on secondary prophylaxis of monthly intramuscular penicillin injections and monitored for severe drug allergies.

Measurement of progress
- Number of children screened for RHD: initial plan 10,000.
- Number of children initiated on prophylactic treatment for RHD: anticipated at 1-2% of number of children screened.
- Number of people trained: 5 Zambian teams of 5 people each will be trained in the use of mobile echocardiography.

SMART Dr. for Chronic Diseases

Partner(s)
- Physicians' clinics

https://itunes.le.com/kr//smart-dr/id391324836?mt=8

Type of partner
- Physicians' clinics

Therapeutic focus
- Non-communicable diseases – Diabetes, Hypertension

Initiative type
- mAwareness
- mBehavioral changes
- mTreatment
- Improve access to health services

Technologies
- App
- For the Q&A section, patients can ask questions to physicians, then physicians can answer with the help of computer programs (C7S Program: Client Server).

Targeted populations
- Elderly
- Women
- Men
- Health professionals

Country
- South Korea

Timeframe
Start Date: 2011
Anticipated Termination Date: N/A
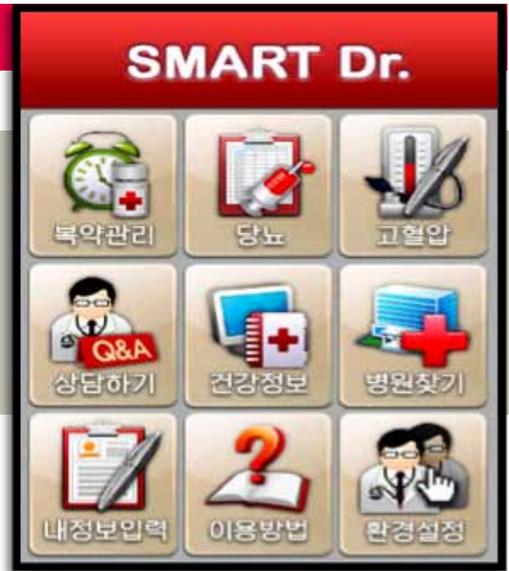
Objectives: Increase the accessibility of patients to physicians and improve compliance by supporting patients and physicians with a smartphone application for chronic disease management. This includes hypertension and diabetes self-monitoring tools, health information, hospital searching function as well as Q&A.

Problem: Local regulations may not allow "remote medical examination and treatment" to be captured in the application.

Solutions: Apply features such as Medical Examination and Treatment only within clinics (e.g. Posco in Korea).

Challenges: Novartis cannot extract information from this program due to privacy issues, especially the Q&A section.

Impact: Convenience for patient to access physicians remotely, daily disease management tool, management of compliance.

Measurement of progress
- By the end of 2011, close to 7,000 patients used this application.
- 17 clinics involved in the program.

SMS for Life

www.smsforlife.com

Partners

Tanzania Pilot
- Novartis
- Tanzania Ministry of Health
- Google
- IBM
- Vodafone
- Vodacom Tanzania

Tanzania Country Scale-up
- Novartis
- Tanzania Ministry of Health
- Vodacom Tanzania
- Medicine for Malaria Venture (MMV)
- Swiss Agency for Development and Cooperation (SCD)
- Population Services International (PSI)

Ghana Pilot
- Novartis
- Ghana Health Service
- Swiss Tropical and Public Health Institute (SwissTPH)
- INDEPTH Network Ghana
- Ghana National Blood Transfusion Service

Kenya Pilot
- Novartis
- Kenya Ministry of Health
- Management Sciences for Health (MSH)
- Safaricom
- Kenya Medical Research Institute (KEMRI)

Cameroon
- Novartis
- Ministry of Health Cameroon
- Norwegian Agency for Development cooperation (Norad)
- Malaria No More

Type of partners
- Private sector
- Academia
- Government
- NGOs
- IGOs

Objective: To reduce mortality by improving access to lifesaving medicines and other essential commodities at the point of care, the health facility. Novartis aims to achieve this by reducing or eliminating stock-outs, by providing a service-based mHealth infrastructure designed to bring the necessary weekly visibility of commodities at the health facility level.

Problem: Maintaining adequate supplies of medicines and other essential commodities at the health facility level in rural sub-Saharan Africa is a major barrier to effective management of health and disease.

Solutions: Novartis has designed an ICT service-based solution and worked with multiple vendors to have the solution developed on their technology platforms. The system automatically sends an SMS text to all registered health facilities on a weekly basis asking for their current stock levels. The responses are collected and stored centrally on a website and generate reports which are delivered by Internet, mobile phone and e-mail to key health staff at all levels. With this visibility, management have the necessary information to take appropriate actions to resolve any problems.

Sustainability: The system has been designed to be scalable, affordable and sustainable. System and data ownership is by the Ministry of Health who commit, via a Memorandum of Understanding, to fund systems operations for a minimum of three years after country scale-up and to integrate the system into their mainstream health systems. The system is designed to be delivered as a total service, at a per-facility cost of less than USD 100 per facility per year, which is profitable for the technology vendors. This fee includes all consulting, development, hardware purchase and replacement, software, Internet, SMS costs, aggregator costs, software and hardware upgrades, systems operation, systems support and helpdesk, etc.

Challenges: Frequent leadership changes at the Ministry of Health and at national program levels in addition to lacking program funds for training and system operations cost.

Lessons learnt: Managing partnerships is time consuming. Early discussion on funding and funding sources is essential. Sections within ministries of health are extremely busy, have multiple on-going initiatives and priorities and it is difficult for them to devote the right people for significant amounts of time.

Impact: Novartis has demonstrated in multiple pilots that stock-outs can be vastly improved and even eliminated. Novartis has scaled nationally, over 9 months, to 5,080 health facilities in Tanzania where the Ministry confirm stock levels are better managed and lives have been saved. Following evaluation of pilot results, Kenya and Ghana have decided to scale nationally. Maternal mortality in childbirth has been reduced in the Greater Accra Region in Ghana, where the system has supported full availability and visibility of all blood stocks at all locations.

Therapeutic focus

- Infectious diseases – Malaria, Tuberculosis, Leprosy
- Women's health
- Emergency aid

Initiative type
- mTreatment
- mMonitoring
- Improve access to health services
- Stock management

Technologies
- SMS
- App
- Internet, Cloud Computing, Google Mapping

Targeted populations
- General population
- Elderly
- Women
- Mothers
- Children
- Men
- Youth
- Health professionals

Countries
Currently 4 countries with a further 3 under discussion:

- Tanzania
- Kenya
- Ghana
- Cameroon

Timeframe
Start Date: 2009
Anticipated Termination Date: As a general infrastructure service-based solution, it can be applied to multiple countries, multiple products, multiple data collection, multiple health programs and as such does not have an end date.

Measurement of progress

- Number of people reached: 25+ million of population impacted by the solution.
- Number of health professionals trained: 5,250 with another 3,300 to 11,000 scheduled for 2013/2014.
- Number of contacts, including partners, ministries, health workers, NGOs, and vendors: approx. 350.
- 2 publications:

Barrington et al (2010). "SMS for Life: a pilot project to improve anti-malarial drug supply management in rural Tanzania using standard technology". Malaria Journal 9:298. http://www.malariajournal.com/content/9/1/298

Githinji, S. et al. "Reducing stock-outs of life saving malaria commodities using mobile (m) phone (p) text-messaging: SMS for Life study in Kenya". PlosOne 2013.
http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0054066

Telemedicine in Ghana

www.novartisfoundation.org

Partners
- Millennium Villages Project
- Earth Institute at Columbia University
- Ministry of Health, Ghana
- Ministriy of Communication, Ghana
- District Hospital in Agroyesum, Ghana
- Airtel, Ghana
- Ericsson, Ghana
- Medgate Swiss center for telemedicine

Type of partners
- NGOs
- Private sector
- Academia
- Government

Therapeutic focus
- General health
- Women's health
- Newborns health
- Children's health
- Emergency aid

Initiative type
- Improve access to health services

Technology
- Telemedicine/teleconsultation using mobile phones

Targeted populations
- General population
- Women
- Mothers
- Newborns
- Children
- Health professionals

Country
- Ghana

Timeframe
Start Date: 2010
Anticipated Termination Date: N/A

Objectives: In an effort to strengthen human resources in rural areas, the Novartis Foundation for Sustainable Development (NFSD) started a telemedicine project in cooperation with the Millennium Villages Project (MVP) and the Ministries of Health and Communication in Ghana. The project is being implemented through the local MVP infrastructure in Bonsaaso.

Problem: The goal is to provide quality primary healthcare services that are affordable, sustainable and meet the needs of patients, specifically by overcoming geographical barriers through information and communication technologies.

Solutions: The project will build upon current health sector initiatives in Bonsaaso and adapt to existing mobile health platforms such as ChildCount+, a system that uses text messages to deliver vital health information of patients from a mobile phone to a database. As part of this process, a teleconsultation center has been established to provide decision-making support through structured interviews to health workers in rural areas. The goal is to reduce the number of unnecessary referrals.

Sustainability: In 2012, the project submitted a reimbursement policy request to the Ministry of Health to establish a temporary reimbursement policy responding to district hospital needs. Best practices from the MVP will determine the development of the project and demonstrate results to the Ministry of Health in Ghana as it looks to scale-up telemedicine services across the country.

Measurement of progress
- In 2012, 462 patient consultations were performed through telemedicine.
- Reduction of unnecessary referrals.

LUTH/Pfizer Electronic Pharmacy Project

Partner
- Lagos University Teaching Hospital (LUTH)

Type of partners
- Academia
- Government

Therapeutic focus
- General health
- Non-communicable diseases
- Brain disorders
- Women's and Children's Health
- Emergency aid
- All categories of patients presenting at the out-patient and emergency departments

Initiative type
- mTreatment
- mMonitoring
- Stock management
- Patient data collection, inventory management, patient refill reminder and general wellness tips to improve quality of medical care

Technologies
- SMS
- The project utilizes a computer-based electronic health information management system that collects and stores medication and biodata of patients who visit the LUTH pharmacy. This system captures information such as patient medication history, medicine inventory, patient/pharmacist transactions, drug interactions, patient history and prescription costs.

Objective: The LUTH/Pfizer Electronic Pharmacy Project is aimed at implementing a pharmacy health information system for both in- and out-patients within a hospital pharmacy practice environment. The overarching goal is to create a large database of real world pharmacy-based data to enable pharmacists, physicians and medical suppliers to better identify the needs and vulnerabilities of patients, as well as streamline operations and provide access to in-demand resources and products.

Problem: It was discovered that there was a dearth of credible and reliable health information fit for scientific research. There was also a need to make patient medication records more easily accessible hence the need for an easy electronic retrieval system.

Solutions: The project utilizes a computer-based electronic health information management system that collects and stores medication and biodata of patients who visit the LUTH pharmacy. The e-Pharmacy model was developed as a fusion of these three systems and includes modules to collect inventory data for improved management of stock and ordering, and systems to better manage patient/pharmacist transactions, including facilities for patient history checks, stock availability checks, drug interactions and prescription costing. The program provides systematized administrative and metrics reports, as well as health outcomes utilization studies and ability to provide standardized patient counseling. Reports generated from the database will help foster a greater understanding of patients' needs, enabling physicians and pharmacists to provide better care and make more informed, standardized decisions for their patients – ultimately improving the overall quality of medical care.

Sustainability: Pfizer signed a memorandum of understanding with LUTH to guarantee the continued existence of the project. LUTH is therefore committed to continually provide funding for the maintenance of the ICT and power infrastructure.

Challenges: the major challenges experienced were with the provision of alternative power supply due to the epileptic nature of public power supply. Human capacity challenges with respect to change agility and proficiency in software use was also encountered.

Lessons learnt: It is important to harmonize felt and perceived needs to get the real need of the community; this helped in identifying a project that will meet the actual need of the community. Secondly, it is crucial that the benefiting community is actively involved in the project by shouldering part of the responsibilities like providing electricity and IT support in this instance. And finally, top management buy-in is important. The chief medical director, the director of pharmacy, the director of administration, the chairman medical advisory committee and other members of the board of the hospital were carried along de novo.

Impact: The system currently provides online real-time patient information to

Targeted populations

- General population
- Elderly
- Women
- Mothers
- Newborns
- Children
- Men
- Youth
- General population of patients who visit the hospital pharmacy

Country
- Nigeria

Timeframe

Start Date: January 2012
Anticipated Termination Date: Pfizer expects to close its active participation by December 31st, 2013 upon activation of the SMS portal of the project, and allow LUTH to run the project. That is, the project will continue, hopefully, ad infinitum under the direct management of LUTH, allowing access to all stakeholders including Pfizer for data mining. Possible scaling up of the project by Pfizer in the future, depending on the availability of funds.

all units of the Pharmacy strategically located around the expansive hospital complex. Patient medication history is now easily retrievable irrespective of where the patient is accessing pharmaceutical care and the issue of drug interactions has dropped significantly as the system would not process any of such interactions hence requiring a prescription review. The short messaging service (SMS) of the project is currently being activated thereby allowing patients to receive prompts on their phones when their medication is running out. It also prompts patients on basic health tips that help them live healthier lives.

Measurement of progress
- Number of patient profiles created, number of medication errors interventions, speed of service delivery.

Smidge – "More than Medication"

http://www.morethanmedication.ca/en/smidge/

Therapeutic focus
- General health
- Non-communicable diseases – Healthy living, wellness

Initiative type
- mAwareness
- mBehavioral changes
- Improve access to health services

Technologies
- App
- Website and "find support" health services directory

Targeted population
- General population

Country
- Canada

Timeframe
Start Date: Launched in October 2010
Anticipated Termination Date: N/A

Objectives:
- Create engaging digital platforms to motivate and help Canadians to make better lifestyle choices and improve their general health.

Problem:
- Population continues to engage in unhealthy behaviors and habits that contribute to health issues (obesity, stress, low rate of exercise, etc.)
- Self-care is increasingly important as healthcare professionals don't always have time to counsel on prevention.
- Self-help content/tools are abundant but consumers question credibility.
- Younger generation needs relevant communication platforms.

Solutions:
- Website (iPad friendly) content/interactive tools and videos built around physical, mental and emotional health.
- Online "Find Support" directory of over 10,000 non-profit organizations, support groups and websites across Canada providing information and help in a wide area of health and conditions.
- Smidge™: free health application that acts as a health motivator to build healthy habits over 21 days. Activities are fun, easy and take just a few seconds. As you build momentum over 21 days, Smidge™ shows you how to do just a little bit more by choosing across six health activities that include: Be Positive, Eat More Fruits and Veggies, Train Your Brain, Take the Stairs, Deep Breathing and Drink More Water. Developed with Canadian health experts.

Sustainability:
- Smidge resides/promoted on high traffic MTM website.
- "Share" functionality built into the app (via Facebook, Twitter, e-mail).
- Smidge branding/positioning relevant for potential expansion to other consumer health related apps.
- Value added tool for healthcare professionals to recommend to patients.
- Leverages health gamification trend.

Challenges/Lessons learnt:
- Promotion necessary to drive downloads.

Impact:
- After 5 years in market, and with minimal promotional support, the More than Medication website continues to attract 30K+ visitors per month. When there is a promotional push, these numbers double.
- In 2011 4% of this visits were from mobile.
- Smidge has helped Pfizer Canada to stake out a leadership position in the mHealth market as first consumer facing from a pharmaceutical company.
- As of March 2013 Smidge has generated almost 700,000 healthy actions by Canadians.
- In F12 More than Medication initiatives (including Smidge) generated positive PR for Pfizer with over 414 stories last year and over 126 million impressions.

Measurement of progress
- 33,008 downloads.

painPREMIER

Partner
- Terveystalo

Type of partners
- Private sector
- Academia
- Patients
- Physicians

Therapeutic focus
- Chronic lower back pain

Initiative type
- mAwareness
- mBehavioral changes
- mScreening
- mTreatment
- mTraining
- Support decision-making
- Patients support their physicians in classifying their pain and treating them with therapies that go beyond the pill.

Technologies
- App
- Training for nurses and pain specialists, decision-support tool on tablet computer, behavior modification program accessible to patients with an e-mail address and Internet access

Targeted population
- Patients suffering from chronic lower back pain

Countries
- Pilot launched in Finland in 2013
- Upcoming pilots in United States and other markets

Timeframe
Start Date: February 2013
Anticipated Termination Date: N/A

painPREMIER is a service (not yet commercially available) that begins with a consultation with a specialist in lower back pain at Terveystalo Kamppi branch in the centre of Helsinki. Lower back pain patients enter data into a tablet computer, which is then combined with data from the specialist during the exam. With this information, the specialist receives decision-support and makes a treatment recommendation.

Once the patient leaves the center, he is expected to read painPREMIER educational material at his convenience using any web browser, usually for a three-month period. It is up to the patient how actively he uses the application features, but there is a tracker and patients are rewarded for engagement. The program makes contributions to a charity chosen by the patient once he has completed the compulsory sections and follow-up measures in painPREMIER.

painPREMIER is an easy-to-use tool for web and mobile browsers and all the patient needs is a valid e-mail address and Internet access. PainPREMIER supports the current versions of Internet Explorer, Mozilla Firefox and Google Chrome.

Challenges: Lower back pain is a chronic disease of its own rather than a symptom of an illness and the underlying causes can be many. They may include causes arising from the musculoskeletal system, such as problems with muscles, supporting structures around joints, and joints and bones. The underlying causes may also have to do with the nervous system, internal organs and psychological factors. Metabolic disorders, such as osteoporosis, and congenital structural issues may also cause lower back pain. In some cases, the underlying cause cannot be identified. Lack of exercise, obesity and smoking may exacerbate back pain. Stress and poor job satisfaction are also often linked with back problems. The underlying causes are partly identical to those for cardiovascular diseases.

Given the complex and numerous causes of lower back pain, and the lack of physician training in diagnosing and treating the disease, it's no wonder that inefficiencies exist. painPREMIER seeks to fill the gaps in understanding to provide the physician with decision-support and the patient with an effective treatment to potentially improve quality of life.

Lessons learnt: The response from Terveystalo physicians to painPREMIER has been very exciting. They feel it is easy to integrate into their normal patient interactions and report it to be a good addition to the medication and education they've been giving previously. A key added value is that painPREMIER keeps the patients engaged after they leave the office – reminding them of their treatment and keeping them motivated.

About Integrated Health: Integrated Health is a new Pfizer business focused on improving patient health outcomes and reducing wasted costs for payers, employers and providers. Integrated Health builds upon Pfizer's unique knowledge, skills, and experience to develop tailored programs and technology solutions across disease prevention and management, patient engagement, behavior modification, and outcomes measurement/analytics platforms.

Integrated Health is building a new patient-centered healthcare ecosystem where many stakeholders will collaborate to improve engagement, diagnosis, treatment, and measurement with the goal of improving health outcomes and reducing wasted costs. Pfizer is developing a variety of web-based, mobile and on-site interventions aimed at engagement, diagnosis, treatment and outcomes measurement. Learn more at www.PfizerIntegratedHealth.com.

No smoking be hAPPy

www.fondazioneveronesi.it/ricerca-e-prevenzione/no-smoking-be-happy/

Partner
• Veronesi Foundation

Type of partner
• NGOs

Therapeutic focus
• Non-communicable diseases – Cancer, Tobacco cessation

Initiative type
• mAwareness
• mBehavioral changes
• mScreening
• Monitoring progress of tobacco cessation

Technology
• App

Targeted populations
• General population
• Women
• Particular focus on ages 20-45 years

Country
• Italy

Timeframe
Start Date: February 2012
Anticipated Termination Date: N/A
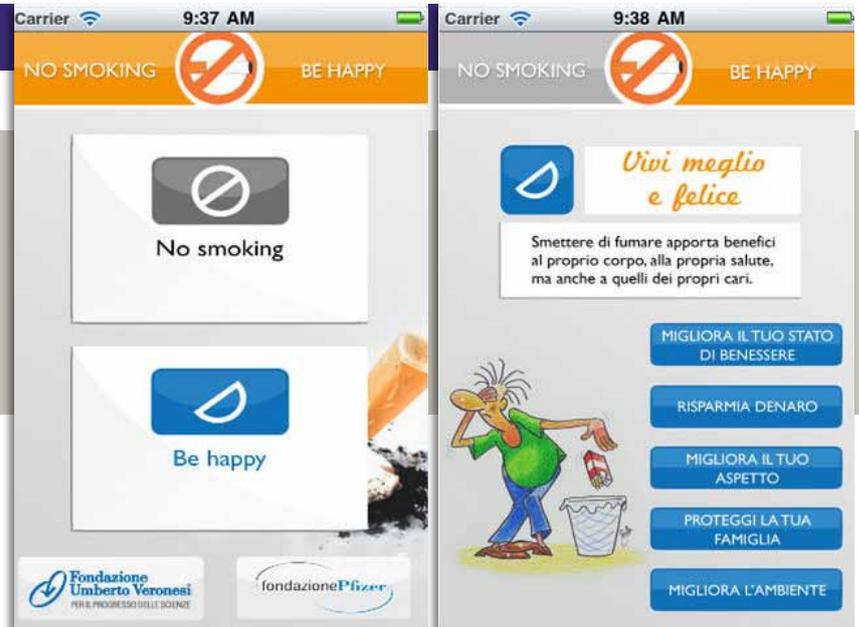
Solutions: Taking its name from an established campaign against tobacco smoking that has been supported for more than three years by Fondazione Pfizer, the application is divided into two sections: "No Smoking" and "Be Happy".

The "No Smoking" section offers users information and advice on why and how to quit smoking, and helps them to find the nearest smoking cessation center where they can find medical support. Users are also kept informed on the initiatives of the larger campaign.

The "Be Happy" section offers a place where users can log their progress on quitting, aiming to help them realize the physical benefits that can be obtained through the release of toxic substances assimilated with smoking, the money saved from not buying packages of cigarettes, as well as the benefits to family and friends who no longer are exposed to second-hand smoke.

It is designed to target people in the age group 20-45 years, which has the highest concentration of smokers.

Measurement of progress
• Number of downloads, traffic created (on-going).

Reducing loss to follow-up of HIV exposed infants using SMS

Partners
- German Development Bank (DEG-KFW)
- Namibia Institute of Pathology
- Namibia Ministry of Health

Type of partners
- Private sector
- Government

Therapeutic focus
- Infectious diseases – HIV/AIDS

Initiative type
- mTraining
- Improve access to health services

Technology
- SMS

Targeted populations
- Women
- Newborns

Country
- Namibia

Timeframe
Start Date: 2012
Anticipated Termination Date: 2014

Objectives: The public-private partnership (PPP) with the German Development Bank (DEG-KFW), the Ministry of Health in Namibia and Roche addresses the challenge of loss to follow-up of mothers and infants who were tested for HIV post-partum, and their ability to receive results of the infant's HIV status.

Problem: A substantial number of women in Namibia return to their home villages to give birth. However, in most cases the pressure to return to work results in newborns being left behind to be reared in home villages from birth while the mother returns to the city. In addition, transport costs often result in women not being able to visit clinics at regular intervals. These scenarios exacerbate the issue of loss to follow-up to the clinic of the infant and the infected mother.

Challenges: Loss to follow-up (LTFU) is a complex issue; the result of logistical bottlenecks, socio-economic constraints and technological limitations, it is well documented in public health literature. One of the major contributors to LTFU in Namibia is a delay in the turn around time (TAT) of HIV results to a clinic site. This TAT can vary from 6-12 weeks, during which time many of the exposed infants may have died or the mother is unable to return to the clinic for a variety of reasons to receive the test result.

Solutions: Roche is a long-term partner of the Namibian laboratory services. The laboratory aspect of the early infant diagnosis (EID) program, which has been enabled through the AmpliCare program (www.roche.com/amplicare) has been successful and is centrally managed. However, due to rapid scale-up of the EID program, the clinics have been struggling to manage the laboratory results in a timely fashion. Hence, Roche engaged with the Ministry of Health to explore innovative ways to address this specific issue. Through the PPP, Roche Diagnostics extends its support beyond laboratory services to address the issue of LTFU of infants in Namibia through the introduction of mobile technology as a way to reduce TAT and improve LTFU rates in Namibia. This involved the development of a special SMS printer and capabilities to deliver the results to local villages through this technology, and is being piloted in on site.

Impact: The project's main aim is to address the high rates of LTFU and deliver results to patients in a timely manner that overcomes the issues related to availability of time and transport. In addition, the project will improve the local healthcare facilities by ensuring that the clinics services are robust. The use of an SMS printer, and seamless automation from the testing laboratory, brings in new levels of advancement which HIV medicine in sub-Saharan Africa requires. The project also allows for scalability to the rest of Namibia and eventually to other resource-limited settings. This project further addresses the Millennium Development Goals (MDGs) namely, reducing infant mortality (Goal 4) and combating HIV/AIDS, malaria and other diseases (Goal 6).

Sustainability: Roche has invested considerable R&D in designing the test for EID. However, our contribution is not only financial. Where possible, Roche has stepped outside core competencies to work with partners to address gaps and shortcomings in the program. Roche anticipates this PPP will provide a significant social benefit, whilst assisting Namibia to raise the necessary finance to adopt mobile technology to meet the needs of the program. Preliminary discussions with international donors such as PEPFAR have generated interest in supporting such initiatives as it is in line with PEPFAR's long-term strategy of health systems strengthening.

MyMedRec and MediCarnet Personal Health/ Medication App

www.knowledgeisthebestmedicine. org

Partners
- Institute for Safe Medication Practices Canada
- Canadian Pharmacists Association
- Canadian Medical Association
- Victorian Order of Nurses
- Canadian Nurses Association
- Best Medicines Coalition

Type of partner
- NGOs

Therapeutic focus
- General health
- Childhood vaccine preventable diseases
- Non-communicable diseases - Cardiovascular diseases, Cancer, Diabetes, Hypertension, Healthy diet
- Brain disorders - Depression
- Women's health
- Children's health
- Adolescent's health
- Emergency aid

Initiative type
- mAwareness
- mBehavioral changes
- mTreatment
- The focus is on adherence and having a full medication list available for medication reconciliation and interacting with healthcare professionals.

Technologies
- App
- Website

Targeted populations
- General population
- Health professionals
- Caregivers

Objectives:
- Promote the safe and effective use of medication as patients move through the healthcare system at the various points of care.
- Enable patients to better manage their own healthcare.
- Encourage patients to keep a full and accurate list of their medications including prescription, over the counter, vitamins and other.

Problem: Fifty percent of patients do not take their medication correctly according to the World Health Organization (WHO)[1]. Lack of adherence to medication leads to poorer health outcomes and increases costs for hospitalization, physician visits and other health services.

Solution: MyMedRec is a new and easy-to-use tool for patients and caregivers who wish to keep track of their medications, immunizations and other health information. Users can enter their information about prescription and non-prescription medications, vitamins, herbal supplements, allergies and vaccinations. They can set dose and refill reminders while recording clinical outcomes such as blood pressure and cholesterol levels. Patients can share the information via e-mail with their family, doctor, nurse, pharmacist or anyone else involved in their healthcare as they choose.

Sustainability: According to the Institute for Safe Medication Practice (ISMP)s in the USA, in 2005, two-thirds of the population received at least one prescription per year, and close to 40% received prescriptions for four or more medications. Unfortunately, half of the prescriptions taken each year are used improperly, and 96% of patients nationwide failed to ask questions about how to use their medications.

Studies have shown that lack of adherence to medication have led to poorer health outcomes and increased costs for hospitalization and other health services. Keeping a full and up-to-date list of medications can be an important tool for pharmacists performing medication reviews or medication reconciliation. If a medication review is performed by a pharmacist in the first two weeks after discharge from hospital, it can significantly reduce readmission by 40%, according to a study[2] published in the American Pharmacists Association Journal.

Challenges: Privacy – Concerns were raised by partners about maintaining patient/user privacy. A privacy expert was retained who did a thorough review and recommended safeguards which were implemented.

User experience – Focus groups were utilized to recommend features. Supporting organizations and healthcare providers were involved in testing and made recommendations for improvements.

---

1   http://www.who.int/mediacentre/factsheets/fs338/en/.
2   Postdischarge pharmacist medication reconciliation: Impact on readmission rates and financial savings, Journal of the American Pharmacists Association-JAPhA. http://japha.org/article.aspx?articleid=1656864.

Countries
- Canada
- App is also available globally through website and at iTunes store. Android and Blackberry versions are being developed.

Timeframe
Start Date: App was launched June 2012 in Canada and made available internationally on May 2013
Anticipated Termination Date: N/A

Translation – The app was to be made available in English and French.

Demographics – Apps are generally aimed at a younger demographic. Rx&D wanted to design a simple tool that would be consistent with the "Knowledge is the best medicine" record book that Rx&D has offered since 1994. This is a tool that is used mainly by seniors who utilize more medication than younger populations. Rx&D made sure that MyMedRec built upon the success of the ongoing program "Knowledge is the best medicine."

Lessons learnt: Mistakes will be made and unforeseen glitches will crop up. It is important to correct them as soon as feasible. Costs can climb higher than expected. Collaboration is key in problem solving.

Impact: Rx&D have had endorsements from healthcare professionals and positive feedback from patients and caregivers who say they have had good results in keeping track of their medication.

Measurement of progress
- Positive media coverage of app raises awareness about adherence and safe and appropriate medication use. Total audience reach of media coverage was over 7,000,000.
- 8,500 downloads of MyMedRec app in English and French by Canadians. Since the app was made available use on 14 May, it has been downloaded by users in China, Argentina, Chile, the United Kingdom, Thailand, China, Viet Nam, France and the USA.
- 14,500 visits to www.knowledgeisthebestmedicine.org.
- 2,800 people have downloaded the pdf version of the medication record.
- Health professionals have integrated MyMedRec into their medication reconciliation process.

About IFPMA

IFPMA represents the research-based pharmaceutical companies and associations across the globe. The research-based pharmaceutical industry's 1.3 million employees research, develop and provide medicines and vaccines that improve the life of patients worldwide. Based in Geneva, IFPMA has official relations with the United Nations and contributes industry expertise to help the global health community find solutions that improve global health.

IFPMA manages global initiatives including: IFPMA Developing World Health Partnerships initiative studies and identifies trends for the research-based pharmaceutical industry's long-term partnership programs to improve health in developing countries, IFPMA Code of Practice sets standards for ethical promotion of medicines, IFPMA Clinical Trials Portal helps patients and health professionals find out about on-going clinical trials and trial results.

IFPMA

Health at your fingertips

IFPMA