Workshop on Improving Access and Use of Life-Saving Commodities for Child Health through Digital Tools

HELD FROM 26 – 27 MAY 2016
AT SPEKE RESORT MUNYONYO IN KAMPALA, UGANDA

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Background

The United Nations Commission for Life-Saving Commodities (UNCoLSC) is a multi-year effort, started in 2012, that sought to expand access to 13 life-saving commodities that could save the lives of women and children if made more widely available and used. Ten recommendations were developed; resources mobilized through the Reproductive, Maternal, Neonatal and Child Health (RMNCH) Trust Fund and global and local experts were convened to implement the recommendations. Working groups (referred to as technical resource teams, TRTs) were established and included Child Health and, separately, Digital Health. The Child Health TRT has focused on three life-saving commodities: amoxicillin, oral rehydration salts (ORS) and zinc. The Child Health TRT also identified digital health as an enabler of child health implementations and accordingly, developed a joint work plan with the Digital Health TRT.

Focusing on extending the reach and scale of Child Health commodities, the joint work plan has led to the critical review of integrated community case management (iCCM) content and delivery and digital health-supported iCCM (m-iCCM) implementations. The work has culminated in the development of a harmonization framework for m-iCCM implementations that, if applied, could lead to the increased access and use of commodities through the expanded scale of m-iCCM. This workshop was the next step in the ongoing process of refining and validating the framework.

OVERVIEW OF THE WORKSHOP

The primary goal of the workshop was for country teams to have a clear and actionable plan for harmonizing iCCM content and delivery channels upon return to their country.

The specific objectives for country teams were to:

1. Learn from each other, with special attention on iCCM and m-iCCM approaches,

2. Identify approaches, opportunities and innovations around improving the access and use of Child Health commodities through the interaction with global and local implementers,

3. Develop country-specific strategies that will help guide decisions on harmonizing m-iCCM initiatives and promote coordination and alignment with broader health system goals and

4. Validate the m-iCCM harmonization framework.

This was achieved through bringing together government leaders involved in reproductive; maternal; neonatal, child and adolescent health (RMNCAH); human resources for health (HRH) and information communication technology (ICT), with non-governmental organisations, to assess the current landscape of digital technology content and programs for integrated community case management (m-iCCM) and begin to develop a strategy and plan for the harmonization of such efforts. The agenda and full list of participants can be found in Appendix A.

This report, which serves as a summary of the workshop, outlines the expectations of the participants, anticipated contributions, presentations and discussions and final learnings and reflections.
Welcome and Introduction

Dr Jesca Sabiiti, a representative from the Uganda Ministry of Health, welcomed the participants to Uganda and apologized on behalf of the ministry that most of its top officials were in Geneva and were unable to be part of the workshop. Dr Sabiiti mentioned that Uganda was one of the first countries to adopt iCCM and implement it as a national policy. She said there was need to harmonize digital health interventions because of the disconnect between different key players.

As a follow-up to Dr Sabiiti’s welcome, all of the participants were asked to identify their experience with iCCM, their expectations for the workshop and what they hoped to contribute. [See Appendix B for the detailed responses.]

The participants represented both programmatic experience with iCCM and also designing and implementing m-iCCM initiatives. The breadth of experience among the participants could be summarized into the following broad activities:

- Experience focusing on community health systems
  - Supporting frontline health workers for improved performance management, strengthening supervision and decision-making, reducing stock-outs and/or developing incentives for retention
  - Improving quality and access to commodities and health services
- Experience focusing on technology
  - Using technology to reach hard to reach areas for enhanced response
  - Designing, managing, implementing and/or evaluating m-iCCM and IMCI projects (among other digital health initiatives)
  - Working on scaling up m-iCCM implementations through integration and alignment with national ecosystems

“\textit{We know where we are but we want to confirm where we are}”
– Dr Anthony Nuwa, Malaria Consortium

The participants’ expectations for the workshop were to:

- Bring different people together and network
- Have open, honest conversations and share experiences
- Learn from each other, especially around: challenges, enhancing commodity access (for health impact) and successful innovations
- Improve knowledge
- Begin the harmonization process
- Help find solutions to challenges and spark new ideas
- To do better in m-iCCM

All participants were willing to share their experiences, including how they overcame challenges. The participants promised to contribute the following during the workshop:

- Achievements and successes
- Advocacy efforts on integrated systems
- Trouble-shooting and overcoming challenges
- Best practices and lessons learnt
- Perspectives based on professional roles and project implementations, including stock management procedures
Country Updates on Use of Digital Health Technologies

Country teams provided updates on the progress of iCCM in their country and how digital technologies were being used to support iCCM implementations. They took special note to highlight achievements and challenges that other countries and implementing partners could learn from. The countries represented at the workshop included Tanzania, Uganda, Malawi and Kenya.

**TANZANIA**

Due to logistical challenges, government representatives from Tanzania were unable to physically attend the conference. A remote presentation was provided and a question and answer period followed the presentation.

*Tanzania Presentation by Ms Lucy Fulgence-Silas on behalf of members of the Tanzania MOH*

Tanzania has introduced a new sustainable cadre of Community Health Workers (CHWs) to be employed by the government and positioned at the community level to provide health services at household level that comprises of: health promotion, disease preventative, emergency basic curative services, rehabilitative services, disease surveillance and vital statistics. Training will start soon for CHWs under the Big Results Now initiative (BRN). The trainings will be for Maternal and Child Health (MCH) CHWs in the BRN regions and will be a temporary solution as the CHWs are not employable by the Ministry of Health (MOH) until they undergo one year of training. There is a plan to allocate a minimum of two CHWs in every village linked to the dispensary that is well equipped with supplies and staffing.

With support from UNCoLSC RMNCH Trust Fund, the following have been achieved so far:

**Under Maternal Health:**

- Clinical mentorship done in Lake zone,
- Eight health facilities in the Lake Zone upgraded for comprehensive obstetric and neonatal care with all needed equipment,
- 52 ambulances have been secured through World Health Organisation.

**Under child health:**

- Capacity building for essential newborn Care,
- Kangaroo Mother Care trainings,
- Procurement for essential newborn care resuscitation equipment through UNICEF and
- Procurement of Gentamicin.

The MOH has managed to conduct IMCI distance learning for over 5000 Health workers, and the training is still ongoing.

Challenges foreseen with iCCM include: limited stock, lack of storage facilities, and disposal of used supplies.

**UGANDA**

*Presentation by Ms Allen Nabanoba of the Uganda MOH*

In Uganda, there is advocacy to include RMNCAH commodities at lower levels and in the community. The essential medicines list has been revised to include the life-saving commodities. National Medical Stores are to include resuscitation devices on the procurement list. Alternative distribution strategy has been adopted for contraceptives and other reproductive products and the anticipated scale of the iCCM strategy. Zinc/ORS were made more available and affordable with a 60% price reduction. There is ongoing policy revision on treatment of pneumonia using amoxicillin as first line.

There has been a reduction in child mortality, which has been documented to decrease from 156 to 90 deaths per 1000 children in between 1995 and 2011. The more recent health sector development plan (HSDP) (2015/2016 to 2019/2020) targets note that the decrease in child mortality is at 51/1000 under the current interventions.

In Uganda, iCCM is one of the strategies being used to reduce child mortality, since 2010. The iCCM national policy has the goal of reducing under five mortality due to malaria, pneumonia and diarrhea and focuses on newborn home visits. CHW (Village health teams -VHTs) selected by the communities; two people per village, each VHT 25-30 households, are highlighted as key.
delivery mode of iCCM. VHTs use job-aids as reference manuals and use registers for documentation.

Some of the challenges include: lack of remuneration and transport for the VHTs, stock out of key commodities/drugs, lack of transport for referred cases to the hospitals, and lack of adequate human resources for VHT supervision.

Lessons learnt include the need for:

- Constant availability of commodities to ensure success of program,
- Refresher trainings and mentoring for VHTs,
- Remunerating VHTs and
- Ensuring reporting of VHT activities on iCCM into the national reporting system.

In 2012, the MOH recommended that maternal and perinatal deaths be included as a notifiable condition for surveillance purposes. To this end, weekly updates are received by the MOH on the numbers of maternal and perinatal deaths are received. Through the mobile phone (mTrac System) where the health management information system (HMIS) weekly surveillance report has been customized, these data are fed into DHIS2.

As a means of ensuring timely reporting for maternal deaths, the MOH has provided two e-mail addresses to which scanned copies of both the notification and audit can be sent, after which they are captured into the DHIS2 on a case by case basis. Increased availability of internet services at the health facility and district improves timeliness and notification and data entry into DHIS2.

MALAWI

Presentation by Mr Clifford Dedza of the Malawi MOH

The National iCCM Program started in Malawi in 2008. As of 2014, over 3500 health surveillance assistants (HSAs) have been trained in iCCM. HSAs provide curative services for diarrhea, malaria, and pneumonia for children aged two to 59 months in communities. HSAs are allocated in hard to reach areas more than eight kilometers from the nearest health center. Recently this has changed to five kilometers from a health center and the policy is slowly being scaled up to all the districts.

HSA conduct home visits and collect data for the village health registers. They inspect homes, refuse disposal sites around homes, water supplies, market places, prayer places, schools, and conduct feedback meetings. They provide support in outreach clinics and run village clinics where they do assessment, treatment, counselling and referrals of children under the age of five.

cStock was introduced in Malawi because there was low data visibility of products used at village clinics, delayed and lost reports from the village clinics, high stock out rates for medicines, lack of rapid feedback on activities at village clinics, long waiting time for HSAs to get resupplies from health facilities, and low coordination among HSAs, health centers, districts and central level.

JSI system administrators worked together with MOH during the pilot study and scaling up of cStock. A JSI system administrator oriented two MOH officers on cStock administration and later introduced MOH members to telecommunications companies as a part of the transition of full ownership and implementation by the Malawi MOH. The Malawi MOH has since taken over leadership of cStock.

The impact of cStock includes:

- It is easy to forecast iCCM medicines to be used by all HSAs in Malawi,
- Data are readily available on iCCM medicine and other supplies usage,
- Motivated and well-coordinated structure at all levels in the MOH,
- Instant feedback on health center, district and national level performance and
- Promoted rational medicinal use at HSAs’ level.

Challenges include: limited network availability in some areas, double or triple registration of HSAs on cStock, and the negative attitude of some drugstore clerks in resupplying HSAs with iCCM medicines.

Planned next steps for Malawi include:

- National product availability team will follow up on the districts issues on monthly basis,
- Telecommunications companies to upgrade their bandwidth to accommodate SMS traffic on cStock,
- cStock administrators to deregister double registered HSAs,
- District product availability team to follow up on their health centers and
- Health center product availability team to follow up on their HSAs’ performance.
In Kenya, iCCM presents a platform for acceleration of the control and management of childhood diarrhea, malaria, pneumonia and malnutrition at the community level, thus contributing by reducing significantly mortality and morbidity attributed to these conditions. It is anchored on the national community health strategy and the child survival and development strategy.

The policy guidelines were developed through a wide consultative process in 2012. The following documents were developed to guide implementation both at the national and county levels: National Implementation Guide and Action Plan, Monitoring & Evaluation Plan, training guidelines (facilitators’ manuals & participants’ (CHVs’) manual), and job aids; the sick child recording form for child aged two months up to five years & the newborn danger signs checking list for newborn age 0 up to two months.

Kenya can increase efficiency and cost effectives by using iCCM blended with technology to integrate their programmes and have better health systems. However, there is need for counties to embrace iCCM to reduce childhood mortality and morbidity. The adoption of m-iCCM will be effective, cost effective and enable faster roll out.
Presentations from m-iCCM Innovators

Introductory Presentation by Mr Steve Ollis

There were several m-iCCM innovators participating in the workshop. They represented technology development and/or program implementing organizations, including Dimagi, D-tree, Living Goods, the Malaria Consortium and UNICEF. An introductory, general presentation on innovations in digital health was provided by Steve Ollis. He highlighted that current innovations cover:

- Electronic stock monitoring and reporting
- Citizen reporting
- Behavior change messaging
- Digital learning platforms
- Point of care diagnostics
- Point of care decision support
- Integrated tools

There was special mention that program considerations can and should be made now in anticipation of future technologies and the rapid evolution of current technologies.

DIMAGI: MOBILE SOLUTIONS FOR FRONTLINE WORKERS

Presentation by Ms Nele Groosman

Dimagi is a socially-conscious technology company with more than 100 staff with different expertise: scientists, public health experts, physicians, software developers, engineers, field consultants. Its mission is to deliver open and innovative technology to underserved communities everywhere. It has supported more than 500 organizations that have deployed CommCare in more than 50 countries. Developed in 2007, CommCare is an easily customizable, open source mobile platform that supports frontline workers in low-resource settings.

iCCM Projects since 2003 include: WorldVision (Niger), REC with Terre des hommes (Burkina Faso), University Research Center (Benin), Adventist Development Relief Agency (Madagascar) and MIKOLO with MSH (Madagascar).

Focusing on the Burkina Faso implementation, there was a midterm review of the project. The achievements identified in the midterm review included: deployed REC in 200 health facilities, over 1,000 users trained, over 400,000 children screened in two years and MOH decided to extend the program to another region (Sahel) to over 100 health facilities. This has resulted into greater adherence to the IMCI protocol: 47.2% of children correctly evaluated following the IMCI protocol (baseline: 8%). It has also changed behaviors: users and caretakers do not want consultations without the REC.

Issues that Dimagi tries to address in the projects they support are low quality of care, inadequate supervision, inadequate staff learning/training and, poor data management. Notable IMCI limitations include: Cost - more expensive: requires more staff and equipment, complexity - hard to implement, requires lengthy trainings for health workers, very exhaustive (diagnostic; treatment; vaccination; advice to caretakers), longer consultation time - sensitive point for a system with staffing issue and can be perceived as a burden by health workers.

However, the impact of Dimagi and partner’s work through digitally-enhanced IMCI implementations includes: data culture emergence - analyze and use data in the decision-making process, increased supervision and accountability - monitor health worker consultations and prescriptions, and incentive mechanisms implementation - reward health workers based on their good adherence to protocol.

Challenges and Solutions (based on the REC project)

1. MOH iCCM protocol too rigid and too many changes - Built REC to guide as much as possible, but allow for alternatives and research consortium to design a more tech-friendly protocol for a better integration into the REC and regular updates to the app.

2. Data synchronization delays - set up a system to move tablets to areas with reception, setting up local servers at HF level.

3. Improving data analysis system - create simplified dashboards and implement a global web dashboard for all stakeholders.

4. Moving away from project-based approach / working in silos - extend the REC to all patients with new protocols (Pre-natal care, CMAM protocol), integrate the REC deeper
in the healthcare ecosystem: work with Social Security to monitor healthcare cost with REC data; Associate the REC with existing performance-oriented policies.

5. Data integration in the national health information system (DHIS2) - REC to become an interface to enter data into DHIS2, MOTECH Suite for automatic transfer of data and CommCare plugs into the way MOH has set up its reporting.

**D-TREE INTERNATIONAL: MHEALTH ICCM APPLICATION**

*Presentation by Ms Monica Meleke*

D-tree uses technology to improve healthcare. They are a global organization and have supported the implementation of small and large-scale iCCM programs. In Malawi, they have an iCCM application that follows the Ministry of Health community IMCI protocol for assessing and treating under five children at the village clinic. The application has three components aimed at an HSA's ability to deliver effective and efficient care.

Application features include: App forces adherence to protocol, improved access to patient information compared to village clinic register, automatically generated monthly reports, easier follow up of patients, ability to deploy for HSAs using mRDTs and counseling videos.

There is also a supervisory application that is based on the routine supervision checklist which focuses on indicators of HSA performance. The application uses key performance indicators and facilitates both collection and interpretation of data; a dashboard provides summary of work done by HSAs.

- Over 1000 HSAs across Malawi are using the app ~25% of CCM HSAs
- 87 HSA supervisors are using the supervisor application to monitor and enhance performance of the HSAs
- Over 340,000 children have been seen by HSAs using the app in six districts and
- MOH trainers and program officers offer local support in addition to D-tree's remote support

The next steps for D-tree include: nation-wide scale up in collaboration with partners, continue with capacity building with MOH such that the program has support at the local level, integration of community-based maternal and newborn health (CBMNH) material into the application and its implementation in two districts, continue integrating the CCM application with other applications, integration of family planning in one district, continue supporting existing HSAs, explore further support mechanisms to ensure maximum usage of the application, and integrating the application reporting into national reporting system (DHIS).

Problems that D-tree solves include: shortages of doctors and nurses in poor countries, critical decisions are made by health workers with limited training which can lead to - inconsistency in adhering to clinical protocols, problems in diagnosis and treatment and limited adequate information for care provision.

While using the phone the following have been observed: reduced workload of re-registering children, improved caregivers’ confidence in HSAs’ ability and competence in using the application comes with practice.

Challenges experienced include: frequent stock outs of drugs, hardware issues (broken phones and solar chargers), poor network affecting synchronization data, use of both paper and mobile phone, and irregular supervision and mentorship of the HSAs.

Results of using applications: phone users correctly identified danger signs 100% correctly while only 83% by paper users, adherence to treatment higher among phone users (73%) than paper (62%) and counseling and treatment advice higher among phone users at 92% compared to 83% for paper users.

**LIVING GOODS: DRIVING HEALTH IMPACT WITH MOBILE TOOLS**

*Presentation by Mr Alfred Wise*

Living Goods runs a network of Community Health Promoters (CHPs) who sell health and household goods door-to-door in their communities in Uganda and Kenya and provide basic health counseling. Living Goods provides quality and performance management, health worker incentives and motivation and in-stock supply chain.

Living Goods focuses on iCCM, Maternal Health and Nutrition as well as environmental solutions such as solar lights and clean cook stoves. Living Goods drives sustainability through CHPs, as they earn a modest margin on what they sell, addressing the challenge of how to fund community health workers. Living Goods is able to recover 100% of product cost and earns a modest wholesale margin that covers most field costs.
Living Goods Smart Mobile Tools’ key objectives are to improve performance in the field, performance management, patient compliance, and healthy behaviors.

A randomized controlled trial revealed Living Goods is achieving a 27% reduction in mortality in children under the age of five.

MALARIA CONSORTIUM: INSCALE PROJECT

*Presentation by Dr Anthony Nuwa*

The inSCALE project aims to identify and seek solutions to the main barriers to iCCM implementation at scale, including CHW motivation, performance, retention and appropriate treatment of sick children. The project is running in Mozambique and Uganda from 2009-2016.

According to findings from an evaluation study: sick children were 9% more likely to receive appropriate treatment for diarrhea, pneumonia, and fever compared with those in the control arm, VHTs appreciated SMS feedback on performance, motivation and performance did not change appreciably but CHW motivation was already high, and a small, but significant, reduction in the attrition rate was observed in areas that received an intervention.

Lesson learnt included:

- Drug stock-outs negatively affected the progress and improvements gained by the intervention,
- Technical challenges are very likely to happen and it is highly recommended to establish a good troubleshooting system at sub-county level,
- Tailor-made network provider packages for data and airtime, as opposed to standard package deals, are highly recommended, and
- MOH should capitalize on corporate social responsibility policies to leverage better phone operator deals

UNICEF: INNOVATIONS IN REAL TIME MONITORING AND DATA USE

*Presentation by Mr Sean Blaschke*

The focus of this presentation was to provide information on how data could effectively be used to provide the right information at the right time and in the right form. There is a considerable amount of data generated from both paper and (especially from) electronic systems, but we do not yet have the information that we need when and how we need it.

Some considerations for improved data use included:

- Traditional information systems provide a post facto audit of what went wrong
- Real-time data allows course corrections as problems emerge
- Building a culture of data use is the primary systems challenge we face

The Theory of Change presented was to turn management information systems into information for management. Examples of what has been done includes mHero, which networks health workers with one another; DHIS2 and mTrac; Hotline Programme; FamilyConnect; eVouchers.
DHIS2 and mTrac have national coverage in Uganda with over 42,000 registered health workers in 4,434 Health Facilities in 112 districts. This has led to faster response times to emergencies and better management of essential commodities at Sub-National level.

The Health Monitoring Unit’s Hotline Programme has led to the reporting of misappropriation of funds and/or unprofessional behavior with appropriate action being taken to address the issues reported.

FamilyConnect, a program seeking to further link the community with health services, is being led by the Uganda MOH in partnership with UNICEF and others. The FamilyConnect mobile technology provides stage-based SMS messages to those enrolled in the program. There is also a service for patients to rate the services provided, as well as the ability to reach out to a help desk. As a part of the initiative, VHTs will be required to report on the services they provided and the outcomes; supervisors will be able to monitor and review performance based on some of this information.

eVouchers – “Boda Boda Transport” – are being used to help get mothers to the hospital to increase facility-based births. Mobile Money is used to reimburse boda and other special hire drivers for transporting the women.

Other initiatives in place in Uganda include the Community Health Management System; mobile vital events and registration – which has seen gains in birth registration coverage through links of the health system with civil registration, UReport – which has enhanced civil engagement of youth, and the National RMNCAH Score Card for evidence-based programming.

**PRINCIPLES OF DIGITAL DEVELOPMENT**

*Presentation by Dr Patty Mechael*

An interactive presentation was given on the Principles for Digital Development. The Principles’ roots are based on the collective efforts and experiences of individuals, development organizations, and donors. The Principles have institutionalized lessons learnt in the use of information and communication technologies (ICTs) in development projects and serve as a guide for key considerations when approaching new or existing digital health implementations.1

1. **Design with the User**
   - Develop context appropriate solutions informed by user needs.
   - Include all user groups in planning, development, implementation and assessment.
   - Develop projects in an incremental and iterative manner.
   - Design solutions that learn from and enhance existing workflows and plan for organizational adaptation.
   - Ensure solutions are sensitive to, and useful for, the most marginalized populations: women, children, those with disabilities, and those affected by conflict and disaster.

2. **Understand the Existing Ecosystem**
   - Participate in networks and communities of like-minded practitioners.
   - Align to existing technological, legal, and regulatory policies.

3. **Design for Scale**
   - Design for scale from the start, and assess and mitigate dependencies that might limit ability to scale.
   - Employ a “systems” approach to design, considering implications of design beyond an immediate project.
   - Be replicable and customizable in other countries and contexts.
   - Demonstrate impact before scaling a solution.
   - Analyze all technology choices through the lens of national and regional scale.
   - Factor in partnerships from the beginning and start early negotiations.

4. **Build for Sustainability**
   - Plan for sustainability from the start, including planning for long-term financial health e.g., assessing total cost of ownership.
   - Utilize and invest in local communities and developers by default and help catalyze their growth.
   - Engage with local governments to ensure integration into national strategy and identify high-level government advocates.
5. Be Data Driven

› Design projects so that impact can be measured at discrete milestones with a focus on outcomes rather than outputs.

› Evaluate innovative solutions and areas where there are gaps in data and evidence.

› Use real-time information to monitor and inform management decisions at all levels.

› When possible, leverage data as a by-product of user actions and transactions for assessments.

6. Use Open Standards, Open Data, Open Source, and Open Innovation

› Adopt and expand existing open standards.

› Open data and functionalities and expose them in documented APIs (Application Programming Interfaces) where use by a larger community is possible.

› Invest in software as a public good.

› Develop software to be open source by default with the code made available in public repositories and supported through developer communities.

7. Reuse and improve

› Use, modify and extend existing tools, platforms, and frameworks when possible.

› Develop in modular ways favoring approaches that are interoperable over those that are monolithic by design.

8. Address Privacy & Security

› Assess and mitigate risks to the security of users and their data.

› Consider the context and needs for privacy of personally identifiable information when designing solutions and mitigate accordingly.

› Ensure equity and fairness in co-creation, and protect the best interests of the end-end-users.

9. Be Collaborative

› Engage diverse expertise across disciplines and industries at all stages.

› Work across sector silos to create coordinated and more holistic approaches.

› Document work, results, processes and best practices and share them widely.

› Publish materials under a Creative Commons license by default, with strong rationale if another licensing approach is taken.

GLOBAL NETWORKS AND RESOURCES

There were two in-depth presentations that covered global resources for iCCM and m-iCCM. One was a remote presentation from the iCCM Task Force, and the other presentation was on mPowering Frontline Health Workers and their global repository of tools. Ms Lorraine Kabunga discussed CHAI’s supply chain work, supporting the Uganda MOH.

Additional information on global networks and resources was provided to the participants, by Ms Nadi Nina Kaonga, on the Child Health TRT/Diarrhea and Pneumonia Working Group, the Health Data Collaborative, the UNColSC Knowledge Network and the HealthAfrica Peer Assistance Network. The participants were not only welcome to access and use the resources developed by the networks, but to also join the networks, to lend their expertise to a broader community of practitioners.

ICCM TASK FORCE

Presentation by Mr Nick Oliphant

The iCCM Task Force is an association of over 70 organizations globally working together to promote iCCM. The Steering Committee is represented by USAID, MCSP, UNICEF, WHO, and Save the Children -USAID MCSP serves as the secretariat.

The Task Force advocates for the adoption of iCCM in appropriate contexts, coordinates and harmonizes technical support for planning and implementation / scale-up, and improvement of iCCM in target countries, promotes state-of-the-art best practices and evidence-based approaches and tools for iCCM at global, regional and country levels and promotes and engages in operations and implementation research on iCCM to contribute to learning and improvement of iCCM and health systems. In addition, the iCCM Task Force through its sub-groups of iCCM experts, provide a mechanism for coordinating and harmonizing technical support for iCCM (including on mHealth) to countries, and advocate for coordination and harmonization of mHealth standards, approaches, guidance, and tools for iCCM.

The Steering Committee sets the overall agenda; sub-groups of experts in thematic areas coordinate technical support, respond to requests, and carry out time bound work plans. The sub-groups...
include Costing and Financing; Demand Generation & Social Mobilization; Monitoring & Evaluation; Nutrition; Operations Research; Supply Chain Management; Workforce Issues and Coordination with other networks (e.g., Health Data Collaborative).

Participants were encouraged to be part of the iCCM Task Force.

**MPOWERING: OPEN DELIVER**

*Presentation by Mr Mike Bailey*

mPowering Frontline Health Workers is a partnership of public and private organizations who aim to support the elimination of preventable deaths through accelerating the appropriate use of mobile technology by frontline health workers for improved skills and performance.

Currently, data collection is often done without an educational component. In addition, there is fragmented and uncoordinated delivery of frontline health worker training; development of programs and technology without government ownership or leadership; duplication of content and a failure to plan for changes in smartphone (or other technology) ownership.

Accordingly, mPowering seeks to:

- Create collaborative approaches to reduce duplication
- Foster government ownership and promote alignment of initiatives (and content) with national strategies
- Develop open source, easily accessible technology and materials
- Integrate ORB (an educational resource platform) into a digital delivery system for streamlined reviews and approvals
- Align implementations with market trends (and moving beyond technology to design content for multimedia platforms)
- Use a process based approach towards technology adoption so the technology meets the workflow requirements
- Abide by the principles of digital development

One of mPowering’s solutions is Open Deliver. Open Deliver is a digital content delivery system for health worker training and community information. The steps, which are iterative, include:

1. Address demand
2. Review content
3. Store, curate and share
4. Deploy and
5. Distribute

For each step, the appropriate stakeholders are involved, and there are opportunities for adaptation, validation, curation, evaluation and learning across the chain of activities.

Open Deliver is being used in frontline health worker programs in Ethiopia, Nigeria, Zambia, India and Pakistan.
The First Steps Towards Harmonization

Introductory Presentations by Steve Ollis and Nadi Nina Kaonga

The harmonization of digital health technologies is important to eliminating preventable child and maternal deaths, as well as:

- Leveraging existing work
- Achieving scale more quickly, efficiently
- Avoiding re-inventing the wheel
- Coordinating across other health programs

Harmonization is not only limited to technology or platforms, it is also relevant to content, delivery channels, data, clients and users, among other areas. The harmonization process is iterative and requires a solid understanding of the current situation and existing systems in place.

The draft harmonization framework reviewed and used by participants at the workshop was developed out of a landscape of iCCM and m-iCCM implementations in Kenya, Malawi, Tanzania and Uganda. The landscape identified the achievement of scale of m-iCCM programs as a challenge and harmonization as a means to integrate and coordinate systems and resources in order to achieve greater reach and impact.

The participants were engaged in a series of interactive sessions that not only led to initial thinking and action on country-specific harmonization opportunities, but also provided an opportunity to learn from each other and engage in further discussions on m-iCCM.

IDENTIFYING A PROBLEM

As a first step, the participants divided into small, country-specific groups and shared information on digital health implementations in their countries. Participants identified major challenges specific to their country, then selecting one of the challenges, developed a road map for addressing the problem.

A common theme emerged, further reinforcing the importance of harmonization: Digital health projects are disconnected and overlapping in Kenya, with the same situation in Malawi and Uganda. The participants, equipped with a template to guide their theory of change (see Appendix C) and the draft harmonization guide (see Appendix D), worked on identifying ways to address their selected problems, particularly through flagging integration opportunities.

USING A THEORY OF CHANGE

Using the theory of change – which covered the problem, key stakeholders, activities, outputs, outcomes and impact – the participants mapped out the current state (with the identified problem) and worked toward the changed, improved state that would ultimately lead to the desired impact. Where possible, indicators were developed that could, theoretically, be used in a monitoring and evaluation plan to assess progress towards identified goals.

Some of the commonalities across the countries during the Theory of Change exercise included:

- Change would have to start with service providers, identifying change agents;
- Advocacy was necessary and needed to include strategies to engage the users and ultimate beneficiaries
- It was absolutely necessary to look to governments to lead
- Collaborations and partnerships were necessary and could be cultivated under the stewardship of the governments

HARMONIZATION OPPORTUNITIES

Additional group work and discussions ensued, with participants identifying areas for harmonization.

Key areas for harmonization included:

- Standard (but dynamic) training manuals and curricula for health workers
- Integrating service delivery, logistics and stock management information [systems]

“Kenya can increase efficiency and cost effective by using iCCM blended with technology to integrate their programmes and have better health systems.”
– Dr Salim Hussein, Kenya
• Creating (if not yet existing) a national digital health registry

• Improving coordination with different government departments on digital health (as a part of refining governance structures)

• Data mapping across all levels of the health system

In Kenya, in particular, it was identified that digital health projects are disconnected and overlapping. Areas of harmonization include coordinating with different government departments, research institutions and ethical review boards to help regulate the space, as well as develop an approval mechanism for content; conduct a landscape mapping (which is already underway for a sub-set of digital health projects) and enforce registration of implementations – for which a national registry would be important. These activities could help improve visibility into digital health programs per country and eliminate the use of multiple devices by a single health care worker; help advocate reduced prices from telecommunications providers as the government would be the steward; and promote the sharing of best practices, tools and materials across projects.

For Uganda, the following were flagged as important areas of consideration:

• Data use and access

• Routinely evaluate digital health programs against government criteria

  › Assess applicability to other health domains

• Conduct a readiness assessment of programs, as well as a program mapping exercise

In Malawi, the problem was that the service delivery and supply chain information systems are not linked. Ideally, through linking the information systems and accessing the data through one system (DHIS2), there would be greater data visibility, easier data access for decision-making, improved data quality, reduced health care costs, among other benefits. Based on the discussions, the representatives from the Malawi MOH pledged that they would make a case to their colleagues to prioritize the system linkages through an existing initiative.

The participants noted that, ultimately, the desired outputs of more harmonized m-iCCM implementations and systems is to have trained, motivated and high-performing frontline health workers; available supplies; knowledge of different projects to ensure their alignment with national strategies, systems and goals. For outcomes, all participants identified reduced morbidity and mortality as most important. In addition, healthy, satisfied customers and access to health care, information and supplies could be achieved through working towards harmonization. Such efforts could lead to happy and healthy children in Uganda, more effective and efficient digital health projects in Kenya and an efficient supply chain in Malawi.
At the end of the workshop, participants promised to do the following as soon as they get back to work in their respective countries:

- Present to the Kenyan mHealth taskforce working group on how the MOH should take control of m-health projects in Kenya
- Prioritize logistic and supply systems to integrate
- Get teams work together to harmonize
- To harmonize the system to be centralized
- Support all efforts that will lead to improved service delivery at all levels of care through digital system
- Advocate for review process of Uganda e-health start up innovations
- Brief colleagues what was discussed at the workshop
- Ensure all apps are designed to report data to DHIS2
- Work with MOH in close partnership and other partners
- Advocate for a situational analysis of digital health
- Advocate for harmonization in digital health
- Become more informed and active in Kenya digital health
- Follow up with new MOH friends and explore possibilities of working together
- Present to iCCM Task Force working group on digital health innovations
- Present to the DPCC Task Force working group on digital health innovations
- Need more emphasis on systems and making data digestible
- Find a way to keep in touch with the participants of the workshop
Learnings During the Workshop

The participants listed the following as what they had learned during the workshop:

- Co-ordination and integration is vital
- Integrations of various information system is vital
- Digital health system is the way to go in terms of reporting and service in order to improve my country’s health system
- mHealth is a good tech knowledge that can directly improve health services for the marginalized community
- Very few people have complete picture of what happening in their country
- Better results need harmonization, integration
- Overview of digital health
- Experiences of digital health from Malawi, Tanzania, and Kenya
- The importance of systematic approach when implementing digital health
- The importance of quality data for better performance
- The need to coordinate with MOH and other partners
- The different iCCM digital health applications
- There is need for harmonization of digital health
- Better results need harmonization and integration
APPENDIX A. AGENDA AND LIST OF PARTICIPANTS

About the Workshop
The United Nations Commission for Life-Saving Commodities (UNCoLSC) is a multi-year effort, started in 2012, that sought to expand access to 13 life-saving commodities that could save the lives of women and children if made more widely available and used. Ten recommendations were developed; resources mobilized through the Reproductive, Maternal, Neonatal and Child Health (RMNCH) Trust Fund and global and local experts were convened to implement the recommendations. Working groups (referred to as technical resource teams, TRTs) were established and included Child Health and, separately, Digital Health. The Child Health TRT has focused on three life-saving commodities: amoxicillin, oral rehydration salts (ORS) and zinc. The TRT also identified digital health as an enabler of Child Health implementations, and accordingly, developed a joint work plan with the Digital Health TRT. Focusing on extending the reach and scale of Child Health commodities, the joint work plan has led to the critical review of integrated community case management (iCCM) content and delivery and digital health-supported iCCM (m-iCCM) implementations. The work has culminated in the development of a harmonization framework for m-iCCM implementations that, if applied, could lead to the increased access and use of commodities through the expanded scale of m-iCCM. This workshop is the next step in the on-going process of refining and validating the framework.

Goal and Objectives
The primary goal of the workshop is for country teams to have a clear and actionable plan for harmonizing iCCM content and delivery channels upon return to their country. The specific objectives are for country teams to:

1. Learn from each other, with special attention on iCCM and m-iCCM approaches,

2. Identify approaches, opportunities and innovations around improving the access and use of Child Health commodities through the interaction with global and local implementers,

3. Develop country-specific strategies that will help guide decisions on harmonizing m-iCCM initiatives and promote coordination and alignment with broader health system goals and

4. Validate the m-iCCM harmonization framework.

This will be achieved through bringing together government leaders involved in reproductive; maternal; neonatal, child and adolescent health (RMNCAH); human resources for health (HRH) and information communication technology (ICT), with non-governmental organisations, to assess the current landscape of digital technology content and programs for integrated community case management (m-iCCM) and begin to develop a strategy and plan for the harmonization of such efforts.

Location
The workshop will be held at the Speke Resort in Kampala, Uganda, from 26-27 May 2016.

Workshop Organizing Committee
Nadi Nina Kaonga, HealthEnabled
Patricia Mechael, HealthEnabled
Steve Ollis, D-tree International

List of Participants
Rita Atugonza, Uganda MOH
Mike Bailey, mPowering Frontline Health Workers
Sean Blaschke, UNICEF Uganda
Lastone Chikoti, Malawi MOH
Clifford Dedza, Malawi MOH
Lucy Fulgence-Silas,* D-tree International
Badru Gidudu, Malaria Consortium
Eisha Grant, Uganda MOH
Nele Groosman, Dimagi
Salim Hussein, Kenya MOH
Opigo Jimmy, Uganda MOH
Lorraine Kabunga, CHAI Uganda
Peter Kaddu, Living Goods
Lydia Karimurio, Kenya MOH
Carol Kyoziwa, Uganda MOH
Beatrice Lamwaka, Arts Therapy
Patrick Lumumba, Malaria Consortium
Livingstone Makanga, Uganda MOH
Rhino Mchenga, Malawi MOH
Monica Meleke, D-tree International
Jeffrey Misomal, ELMA Philanthropies
Denis Mubiru, Malaria Consortium
Alex Muhereza, UNICEF Uganda
Allen Nabannoba, Uganda MOH
Anthony Nuwa, Malaria Uganda
Nick Oliphant,* UNICEF
Jesca Sabiiti, Uganda MOH
William Wasula, ELMA Philanthropies
Alfred Wise, Living Goods

*Remote participation
<table>
<thead>
<tr>
<th>Time</th>
<th>Thursday, 26 May 2016 - Day 1</th>
<th>Friday, 27 May 2016 - Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 9:00 AM</td>
<td>Breakfast and networking</td>
<td>8:00 AM – 9:00 AM</td>
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<tr>
<td>9:00 AM – 9:30 AM</td>
<td>Welcome and orientation to the two-day event, focus on Day 1</td>
<td>9:00 AM – 9:30 AM</td>
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<tr>
<td>9:30 AM – 10:00 AM</td>
<td>Opening remarks</td>
<td>9:30 AM – 10:30 AM</td>
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<tr>
<td>10:00 AM – 11:00 AM</td>
<td>Country presentations and discussions: Kenya, Malawi, Tanzania and Uganda</td>
<td>Review of Day 1 and overview of Day 2</td>
</tr>
<tr>
<td>11:00 AM – 11:30 AM</td>
<td>Tea break</td>
<td>Contextualizing country activities within global initiatives, featuring presentations from:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNCoLSC, iCCM Task Force, Health Data Collaborative, CHAI and mPowering Frontline Health Workers</td>
</tr>
<tr>
<td>11:30 AM – 12:00 PM</td>
<td>Innovations in iCCM</td>
<td>10:30 AM – 11:00 AM</td>
</tr>
<tr>
<td>12:00 PM – 12:30 PM</td>
<td>State of the evidence and measuring impact</td>
<td>11:00 AM – 12:30 PM</td>
</tr>
<tr>
<td>12:30 PM – 1:00 PM</td>
<td>Principles of digital development</td>
<td>12:30 PM – 1:30 PM</td>
</tr>
<tr>
<td>1:00 PM – 2:00 PM</td>
<td>Lunch and networking</td>
<td>1:30 PM – 3:00 PM</td>
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<tr>
<td>2:00 PM – 2:30 PM</td>
<td>Presentations from m-iCCM Innovators: Dimagi, D-tree, Living Goods, Malaria Consortium, UNICEF</td>
<td>3:00 PM – 3:30 PM</td>
</tr>
<tr>
<td>2:30 PM – 3:00 PM</td>
<td>Introduction to the harmonization framework</td>
<td>3:30 PM – 4:00 PM</td>
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<tr>
<td>3:00 PM – 4:30 PM</td>
<td>Harmonization exercise</td>
<td>4:00 PM – 4:30 PM</td>
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<tr>
<td>4:00 PM – 4:30 PM</td>
<td>Working tea break</td>
<td>Recap and closing</td>
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<tr>
<td>4:30 PM – 5:30 PM</td>
<td>Report back on the harmonization exercise</td>
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</tr>
<tr>
<td>5:30 PM – 6:00 PM</td>
<td>Reconvening and recap of Day 1</td>
<td></td>
</tr>
<tr>
<td>6:00 PM onwards</td>
<td>Dinner and networking</td>
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</tbody>
</table>
APPENDIX B. FROM THE WELCOME EXERCISES: EXPERIENCE, EXPECTATIONS AND CONTRIBUTIONS

**Experience**

- Dimagi has worked on four major iCCM and IMCI projects since 2013. They have equipped frontline HWs with mobile apps
- Reaching out to hard to reach areas effectively for fast response, through the use of mobile technology, and it was easily done
- Collect real time data information on areas of implementation through mobile phone technology
- Implementing both iCCM and m-health programs – designing and supervising the implementation of m-health enhances iCCM programming and supervision.
- Worked with technology on InScale project study to understand the iCCM village health team’s motivation and retention
- Have used mobile technology on daily basis because in this era it’s hard to do away with technology
- Experience with use of mobile phone technology by village health teams to communicate with health facility in charge, VHTs supervisor and fellow VHTs on care given to children in community: communication on stock status and referral of patients
- Use of technology for data collection, performance management, stock monitory and treatment protocols. Use of technology for community health education client follow up and referral.
- Works with technology on InScale project; study the IMCI visits, motivation and retention
- How to integrate m-health in iCCM implementation for maximum benefit and efficiency
- CO-founder of UNICEF Uganda innovation lab. Developed tools that are used in at least 30 countries and leading UNICEF work around 1000 days toolkit in Uganda.
- Think in this era we cannot do away with technology because it makes life easier it makes people access it faster
- Five years in the m-health space

**Expectations**

- Scale up mTrac and DIHS2 to national scale and currently working on community initiatives
- Created online survey tools and involved in community health
- Supply chain management tools and geo mapping
- Implementation, evaluation, and strategic planning/ technical advisory role on iCCM
- Working in Malawi with decision support for HSAs iCCM
- 15 years m-health and digital health mostly in Africa
- Developing of applications, conducting training of uses for applications and creating a relationship with MOH involving m-health
- Technologies improves quality and access of commodities
- Designing, managing, implementation, reviewing of ICCM
- Bringing different people together
- Learning about other country’s challenges in implementing iCCM
- Open honest and front conversations about iCCM
- Sharing experiences, challenges and finding solutions together on how donors, IT companies and MOH can work together
- Sharing country’s experiences
- To learn how to enhance commodity access
- Learn from other partners’ innovations and experiences in implementing iCCM
- To be better in ICT-iCCM experience after this meeting
- To learn different innovation in m-health being country used for community health program
- To learn what other countries are doing in ICCM.
- Will improve knowledge and try to identity gaps in m-health health service at national level
- Sustainable ways of rolling out m-health in resource limited countries some for ICCM
• Learn other projects’ experiences on the use of technology in enhancing community health

• Network – make connections

• Identity new opportunity for program I work for involving child health.

• Strengthening of data utilization and accountability of collected data at the national level.

• Understand the contributions of the ICCM initiatives

• Any areas in improvement of the documentation process

• Begin harmonization’s process

• Learn from other countries on m-health supply chain management integration

• Better understanding how all HDPs can contribute to using ICCM to strengthen broader community health

• To get more on better use of technology to improve quantity and motivation of the community level interference

Contributions

• IT provider prospective, lessons learned, sharing ICCM project experiences

• Share the Living Goods experiences and learnings, and explore partnerships

• Share the Kenyan experience in ICT-ICCM in Home Bay

• To push for integrated information systems for better decisions making

• To share Uganda experience on programing, implementing and ways of improving ICCM

• Share programs achievements and overcoming challenges

• To share ICCM experiences in Malawi

• Share challenges and experience on the use of technology enhancing community health

• Troubleshooting / navigating difficult sceneries through innovations for m- health based or non-health solutions

• Stock management

• Learn from others, share on best practices and challenges in information system – ICCM

• Multi- country experiences with designing implementation and research

• Share experience on implementation of ICCM and lessons learned in Kenya
IMPACT
What is the long-term change?

OUTCOME
What are the wider benefits of your work and how will you measure them?

OUTPUTS
What are the measurable effects of your work and how will you measure them?

INTERVENTION AND STEPS
What is the intervention and what steps are needed to bring about change?

ENTRY POINT
How will you reach your audience?

AUDIENCE
Who is your key audience?

PROBLEM
What is the problem you are addressing?
### APPENDIX D. HARMONIZATION FRAMEWORK

<table>
<thead>
<tr>
<th>Understand Program Status</th>
<th>Review Data/Systems Functions</th>
<th>Review Technology</th>
<th>Compare Data Usage</th>
<th>Evaluate Content and Identify Overlap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review or update landscape analysis of tools and frontline health worker programs and for each existing implementation, identify the following:</td>
<td>For each existing implementation, identify overlapping systems, components, including:</td>
<td>For each existing implementation, identify the overlapping technology feature or function in use, including:</td>
<td>For each existing implementation, identify the overlapping data analysis needs and possibilities:</td>
<td>For each existing implementation, evaluate eLearning resources to identify content that can be reused:</td>
</tr>
</tbody>
</table>

- Health problem being addressed
- Target audience/end-users and beneficiaries
- Current/planned geographic coverage for each existing implementation
- Current/planned geographic coverage for each existing implementation
- Devices being used
- Operating systems on devices in use (or compatible with the software)
- Motivation and incentives for appropriate use of tool (if any)
- Status of program: planned, active, closed
- Unique identifiers
- Health worker registration and contact details
- Beneficiary contact details (if direct-to-client service)
- Child registration
- Expectant woman registration
- Household registration
- Linked registration (e.g., mother-child; mother-father; household-individual)
- Immunization tracking
- Commodities tracking and management
- Link to transportation
- Link to health facility
- Link to pharmacy
- Client feedback mechanisms (may overlap with beneficiary contact details)
- Integration with DHIS2
- Integration with other Health Management Information System (HMIS)
- Integration with other systems (e.g., commodities or SMS messaging platforms)
- Supervisory capability
- Data sharing with supervisors
- Data review capabilities for supervisors and other users
- Mobile money (including use and API*)
- Closed user group
- Call center support
- Telemedicine
- Data reports (“canned” and custom)
- Overlay of commodities data with disease surveillance data
- Comparison of commodities data with signs and symptoms reported
- [Health] Assessment tools
- Training guides
- Static digital learning resources (e.g., national guidelines, job aids, charts, counseling cards)
- Interactive media (e.g., videos, audio, images)

*API = Application Programming Interface; SMART = Specific, Measurable, Achievable, Relevant, Time-bound; M&E = Monitoring and Evaluation
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<tr>
<td>For each existing implementation, review training procedures and identify areas of overlap for topic areas including:</td>
<td>Evaluate the state of research from existing and other community case management programs and consider an integrated research and evaluation approach:</td>
<td>For each existing implementation, assess the following:</td>
<td>Evaluate the landscape based on the findings from the columns on the left:</td>
<td>Make considerations for the often overlooked, including:</td>
<td>Will require review and updates of programs, systems, technology, data use, content, training, policy alignment, research and evaluation and previous action plans</td>
</tr>
<tr>
<td>• Using a smartphone</td>
<td>• Different service delivery mechanism (e.g., use of frontline health workers for distribution/provision of medications)</td>
<td>• Alignment with National Health Plans/Strategies</td>
<td>• Identify areas for harmonization in existing and planned systems</td>
<td>• Server hosting</td>
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<tr>
<td>• Sending an SMS</td>
<td>• Narrow versus expanded scope of integrate community case management</td>
<td>• Alignment with Child Health/ Maternal Health Guidelines</td>
<td>• Establish clear and focused vision and SMART* objectives</td>
<td>• Systems support</td>
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<tr>
<td>• Using keyboard (or keyboard on a screen)</td>
<td>• Alignment with National eHealth/ mHealth Policy/ Strategy</td>
<td>• Alignment with national enterprise architecture efforts</td>
<td>• Have clear roles and responsibilities</td>
<td>• Short codes</td>
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<tr>
<td>• Accessing files</td>
<td>• Variance from guidelines (e.g., providing treatment versus referring)</td>
<td>• Alignment with national enterprise architecture efforts</td>
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<td>• Closed user groups</td>
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<tr>
<td>• Uploading files</td>
<td>• Digital health approval process</td>
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<td>• Data bundles</td>
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<td>• Accessing applications</td>
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<td>• Bulk pricing</td>
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<td>• Securing phones</td>
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<td>• Power (e.g., solar)</td>
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<td>• Local hardware repair</td>
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<td></td>
<td>• M&amp;E*</td>
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Endnotes

1 More information on the principles can be found at http://digitalprinciples.org/.


3 http://www.healthdatacollaborative.org/

4 http://www.lifesavingcommodities.org/about/our-experts/

5 http://www.healthenabled.org/index.php/healthe-africa

6 http://www.lifesavingcommodities.org/about/lifesaving-commodities/


8 http://www.spekeresort.com/ - Contact Jessica (info@spekeresort.org) for information on the discounted rates for lodging and mention this workshop or the name, Nadi Kaonga.
PHOTO CREDITS

Cover: Frank (Speke Photographer)

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