SUPPORTING THE SITUATION OF CHILDREN IN COVID-19

Rapid scan of UNICEF global/regional Digital Health support

Presentation to Digital Health & Innovations Subgroup Child Health Taskforce
28 October, 2020
Alex Muhereza, UNICEF
UNICEF’s COVID-19 Response Health Profile

• Immediate preparedness and response measures specific to the CoVid-19 pandemic that reduce the potential for impact on regular health services
• Improving the capacity of the health system and of communities to prepare for and respond to CoVid-19, related conditions like pneumonia, and future disease outbreaks and emergencies.
• Ensuring that accurate health information is available to all communities, and that all available channels of communication are used to disseminate this information.
Preparedness & Response

1. Based on HSS Approach, developed & disseminated guidance on rapid identification and deployment Digital Health initiatives.

2. Donor & Digital Health initiatives mapping for community engagement and risk communication on COVID-19 awareness, infection, prevention and control.


4. Digitally informed country level Emergency response plans.
Health System Capacity

At the onset of COVID-19, assess the Health System level preparedness for Response

- Capacity to interrupt virus transmission.
- Build Frontline Health workers Interpersonal skills
- Conduct remote CHW Training and supervision
**Burkina Faso**

Enhancing digital health to support COVID-19 surveillance and response

- Characterized by deteriorated security and in humanitarian crisis
- By August 2020, the country had registered 1,153 cases with 54 deaths
- Adopted digital solutions to support health care service provision and continuity
- Support COVID-19 contact tracing, detection of suspected cases in the population and searches for undeclared contact cases
- Supplements the call center function
- COVID-19 knowledge management - notifications on symptoms, suspected cases & response actions
- Used by at least one health worker in 409 facilities in 6 regions across Burkina Faso

**511** alerts with **18,983** people followed up to date

- UNICEF supporting RapidPro setup, resources mobilization and partner collaborations
Experience so far

Lessons

- Rapid deployment and support through existing community practices
  - Flexibility in use, features & capabilities.
- Immediate value in supporting Public Health emergencies response including increased interest from governments.

Challenges

- Streamlined content development, management and dissemination
- Lack of demonstrated digital public goods for analytics & visualization
- Clear investment case vs value over period time & response to context needs
Thank you.
Resource Guide to Assess Digital Health Platforms for COVID-19 Case Management and Contact Tracing

Dr. Smisha Agarwal
Research Director, Johns Hopkins University Global mHealth Initiative
Assistant Professor, Department of International Health
Johns Hopkins Bloomberg School of Public Health
Context

• Anticipation of overwhelmed health systems and governments globally by COVID-19
  • Capacity to manage critically ill patients in hospitals and remote monitoring of patients at home
  • Planning of large-scale contact tracing programs

• Digital platforms can support case management and contact tracing
  • While also meeting needs of healthcare providers and public health officials on the frontlines

• This report fills that gap, by identifying platforms that could serve those health systems and governments
Digital Solutions for COVID-19 Response

• A rapid assessment of nine digital platforms to address COVID-19 related case management and contact tracing

• Supported by the Bill & Melinda Gates Foundation

• Platforms: CommCare, Community Health Toolkit (CHT), DHIS2 Tracker, Go.Data, ODK, OpenSRP, RapidPro, SORMAS, and WelTel
Use Cases for the Platforms

• COVID-19 Case Management
• Contact Registration & Follow-Up
• Port of Entry Screening & Follow-Up
• Event-based Surveillance System
• Lab Test Tracking
• Healthcare Worker Training
• Facility Readiness and Stock Tracking
COVID-19 Use Case: Workflow for Patient Triage, Referral for Testing, Contact Listing and Notification, and Follow-Up

1 Process will vary if patient is seen at home.
### Use Case

Key: 1 = Yes
0 = No

As a community healthcare worker, I may need to perform the following tasks:

<table>
<thead>
<tr>
<th></th>
<th>CommCare*</th>
<th>ChT*</th>
<th>PHL2 Tracker*</th>
<th>Go.Data*</th>
<th>ODK*</th>
<th>OpenSRF*</th>
<th>SORMAS*</th>
<th>RapidPro/Text*</th>
<th>WeRuli</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Risk assessment for suspecting and existing COVID-19 patients</td>
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<tr>
<td>Register patients in the system with a unique ID</td>
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<tr>
<td>Query patient’s past health from the system</td>
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<td>1</td>
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<tr>
<td>Record patient contact information (e.g. address, phone number, emergency contacts)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tr>
<tr>
<td>Input patient demographics, vital signs, risk factors, and symptoms related to COVID-19*</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>1</td>
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<tr>
<td>Provide educational materials for patients through audio, video, and images (regarding preventative measures like quarantine, handwashing, etc.)</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>1</td>
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<tr>
<td>Schedule a follow-up with patients</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Communicate with patient/contact via phone call</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Communicate with patient via one-way messaging (e.g. SMS, social media, in-app, WhatsApp)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>
### Use Case

Key: 1 = Yes  
0 = No

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Communicare</th>
<th>CTR</th>
<th>DNA2Tracker</th>
<th>Go.Dice</th>
<th>ODK</th>
<th>OpenApp</th>
<th>SOMAS®</th>
<th>RapidPoi Textit</th>
<th>WeTel</th>
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</thead>
<tbody>
<tr>
<td>As a community healthcare worker, I may need to perform the following tasks:</td>
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<td><strong>2. Referral for testing</strong></td>
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<tr>
<td>Order laboratory investigations</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0^</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Receive updates when the results are available</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0^</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td><strong>3. Contact listing of suspected and existing COVID-19 cases</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Document detailed contact history about the time, place, and person for each close encounter</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Create a listing of close contacts linked to the suspected and existing COVID-19 cases</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Create record to input demographics and risk factors of the close contact</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0^</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Select/modify contact record in case of errors*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0^</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Query the record of the close contacts from the system</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>N/A</td>
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</tr>
<tr>
<td><strong>4. Exposure Notification for ‘close contacts’ of suspecting/existing COVID-19 cases</strong></td>
<td></td>
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<tr>
<td>Communicate (two-way) via a messaging service with the close contact. (SMS, Whatsapp, others)</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
<td>1^</td>
<td>0</td>
<td>1</td>
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</tr>
</tbody>
</table>
Selecting an Appropriate Platform based on the Context

• The “quality attributes” of the platforms

• Refers to criteria that can be used to judge the general operation
  • E.g. system architecture, usability, security, and scalability

• Assessed via a maturity scale of 0-2, with ‘0’ indicating that the functionality does not exist, and ‘2’ indicating a well-developed functionality
## Non-functional requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usability:</strong></td>
<td>This describes features that make it intuitive for a user to interact with the system.</td>
</tr>
<tr>
<td><strong>Documentation, Training, and Support:</strong></td>
<td>The availability of support services and training.</td>
</tr>
<tr>
<td><strong>Open Access and Developer Community:</strong></td>
<td>The number of people who can customize the software, and provide training and operational support.</td>
</tr>
<tr>
<td><strong>Standards, Interoperability, and Data Accessibility:</strong></td>
<td>Adherence to global norms and standards to facilitate operations with other healthcare systems.</td>
</tr>
<tr>
<td><strong>Reliability:</strong></td>
<td>The system's potential to run consistently without failure.</td>
</tr>
<tr>
<td><strong>Scalability:</strong></td>
<td>The application's ability to maintain performance over time as the number of users increases.</td>
</tr>
<tr>
<td><strong>Devices and Operating Systems:</strong></td>
<td>Types of devices and operating systems supported by the system.</td>
</tr>
<tr>
<td><strong>Messaging:</strong></td>
<td>Support for messaging services such as SMS, WhatsApp, and Facebook Messenger.</td>
</tr>
<tr>
<td><strong>Security:</strong></td>
<td>Ways in which to safeguard the security and privacy of the data.</td>
</tr>
<tr>
<td><strong>Analytics:</strong></td>
<td>Capacity of platform to support extensive reporting and analytic capabilities.</td>
</tr>
<tr>
<td><strong>Time to Deployment:</strong></td>
<td>Factors that impact the amount of time taken to get the application ready for deployment in a country.</td>
</tr>
<tr>
<td><strong>Cost Considerations:</strong></td>
<td>Factors that impact cost such as licensing fees, customization, operational support, and technical support.</td>
</tr>
</tbody>
</table>
Open Access and Developer Community

- The community that can customize the software, and provide training and operational support
- **Benefits**: system can be adapted with plausibly lower upfront costs, leverage existing resources, knowledge and standards
- **Drawbacks**: Difficult to adapt without adequate documentation, support community, local expertise. May promote reliance on external technical experts and limit sustainability.
- DHIS2 Tracker, ODK, and RapidPro have the most active global implementer communities
  - Local expertise to customize & support, without active involvement of steward organization
Reliability

• The system’s potential to run consistently without failure
• All nine platforms can be deployed on the cloud
• All nine platforms allow data to be stored locally, and uploaded when connection is available

• Low connectivity environments:
  • Duplication of IDs
  • Data transfer
Cost Considerations

• All applications, besides WelTel and Go.Data, have free open-source licensing, but they have varying support provisions

• CommCare, CHT, ODK, Go.Data, OpenSRP, and SORMAS can provide support for a fee

• RapidPro and DHIS2 Tracker provide advanced troubleshooting support

• WelTel follows tiered subscription-based pricing model

• **Specific to COVID-19, these services may be available free of cost or at a highly discounted price.**
Access report:
https://drive.google.com/file/d/1yCP7t1di_ofQ0YhuPAD1Oqcj1aTo74k5/view

Contact:
Smisha Agarwal: sagarw23@jhu.edu
Resources

Engage with co-chairs:

- Darlene Irby - Darlene.Irby@jhpiego.org
- Jeanne Koepsell - jkoepsell@savechildren.org

Subgroup information, recordings and presentations from previous meetings are available on the subgroup page of the Child Health Task Force website: https://www.childhealthtaskforce.org/subgroups/digital-health

*The recording and presentations from this webinar will be available on this page later today

Become a member of the Child Health Task Force: www.childhealthtaskforce.org/subscribe

Check out the Task Force Child Health & COVID-19 web page for additional resources!

Suggestions for improvement or additional resources are welcome. Please email childhealthtaskforce@jsi.com.