Global mHealth at BD Technologies

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Africa Regional Meeting on Digital Health for Overcoming Barriers to Ending Preventable Child and Maternal Deaths and Achieving Universal Health Coverage

Lilongwe, Malawi
May 12-15, 2015

Overview

- Introduction to BD

- BD Global Health Partnerships

- BD Technologies Global mHealth

    - Transform supply chain

    - Enable more robust data collection

    - Drive faster transfer of samples to labs

- Iterative Learning Process

- Opportunities for Collaboration

BD - Becton Dickinson, and Co.

- 1897: Founded

- 1924: First insulin syringe

- 1954: First completely disposable syringe for large-scale field test of Polio vaccine

- 1973: BD Research Center established

- 2014: FACS Presto Point-of-Care CD4 Counter
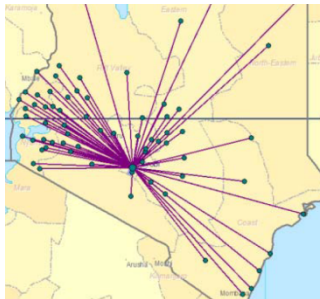
BD Global Health Partnerships

- **U.S. Fund for UNICEF**: Partnering to protect newborn children and their mothers from tetanus using Uniject (2002)

- **American Red Cross**: Measles Initiative, a program aimed at eliminating measles deaths in Africa (2005)

- **World Health Organization**: Collaboration with **SL@B** partners to develop the Odon Device for assisted newborn delivery (2013)

BD Technologies Global mHealth Focus

"Real time" 2-way transfer of information and supplies

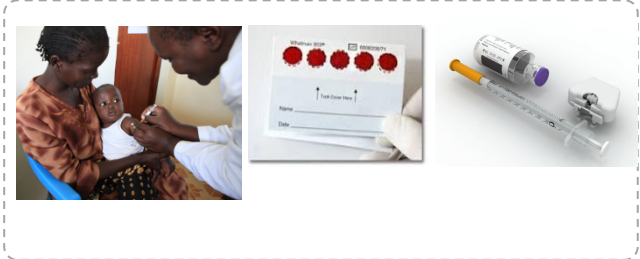## Points of Coordination

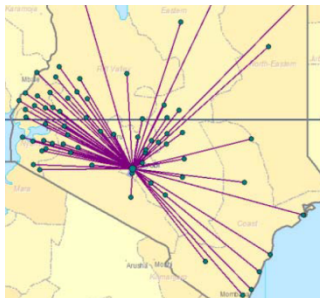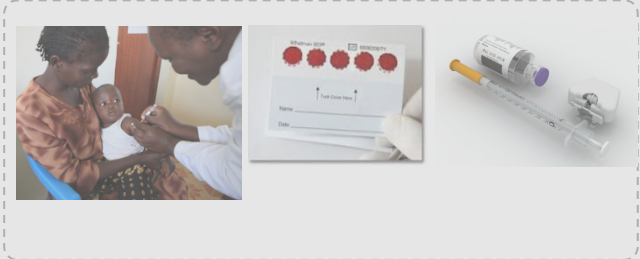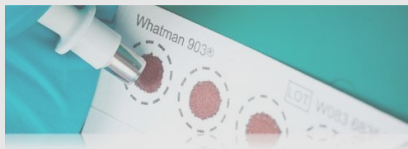## Points of Care

Supplies Received, Condition Verified

Administration, Sample Collection, Data Collection

BD Technologies Global mHealth Focus

"Real time" 2-way transfer of information and supplies

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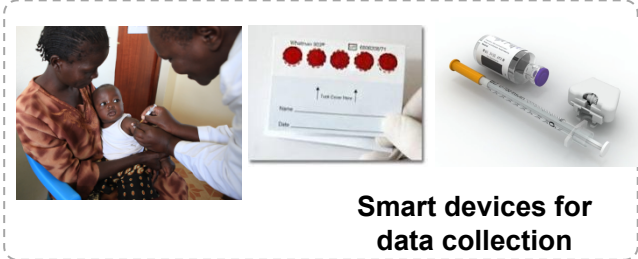
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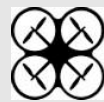
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Smart devices for data collection
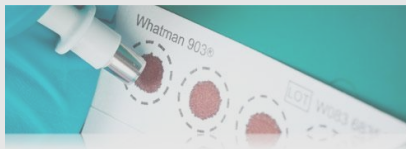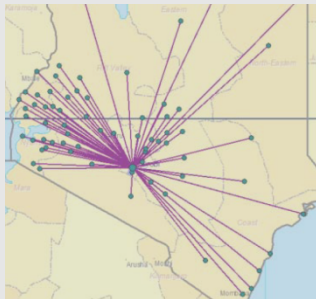
BD Technologies Global mHealth Focus

"Real time" 2-way transfer of information and supplies

Sample transfer
Supply requests
Patient data

Points of Coordination

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Smart devices for data collection

"On-demand" supply
Temperature monitoring

BD Technologies Global mHealth Focus

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Sample transfer
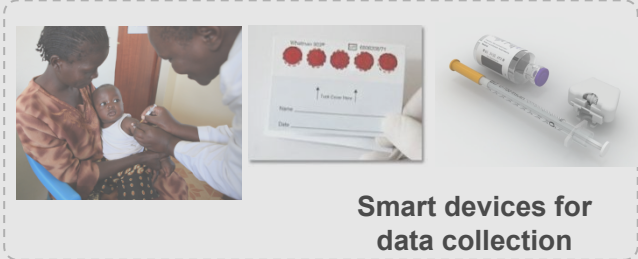Supply requests
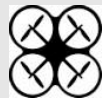Patient data

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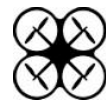
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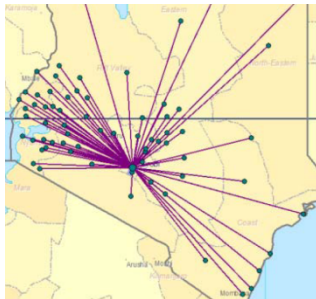# BD Technologies Global mHealth Focus

(1) Transformed supply chain

(2) More robust data collection

(3) Faster sample transfer to labs

Points of Coordination

Sample transfer
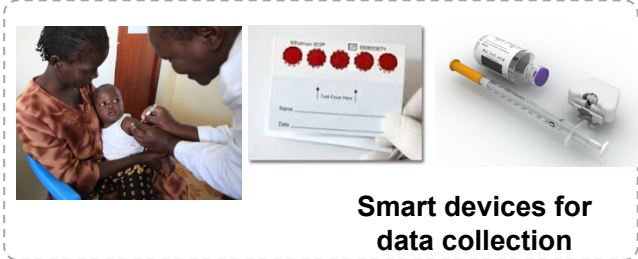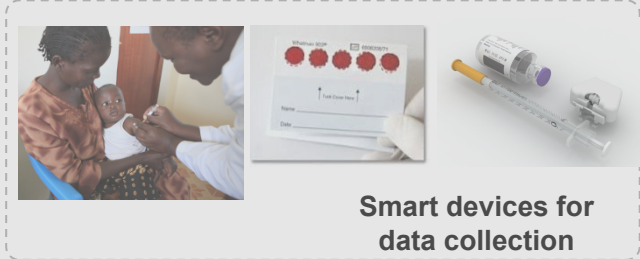Supply requests
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Enabling Technologies

Technologies

1. Unmanned aerial vehicles

Enabling:

Transformation of the supply chain

- UAV-based transport to hard-to-access locations

Robust data collection

- Inventory management system tied in to point of care in real time

Faster transfer of patient samples

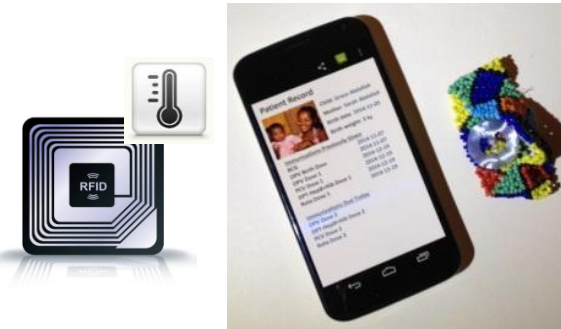- UAV-based transport to higher-level testing facilities

Enabling Technologies

Technologies

1. Unmanned aerial vehicles

2. Smart RFID

Enabling:

Transformation of the supply chain

- UAV-based transport to hard-to-access locations
- Wireless ID and temperature history

Robust data collection

- Inventory management system tied in to point of care in real time
- Identify patients

Faster transfer of patient samples
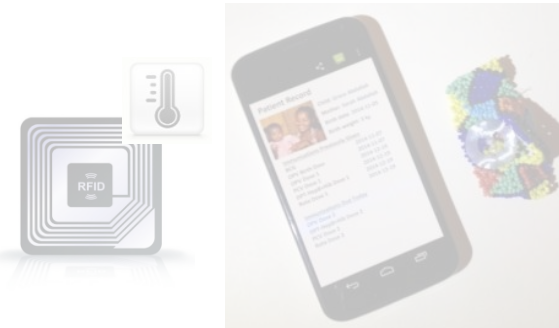
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- Record treatment type and capture administration

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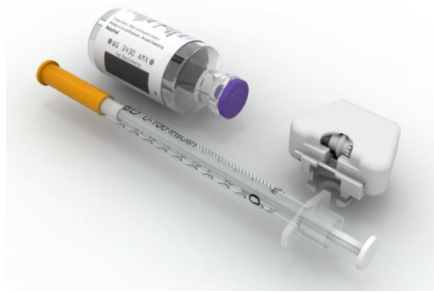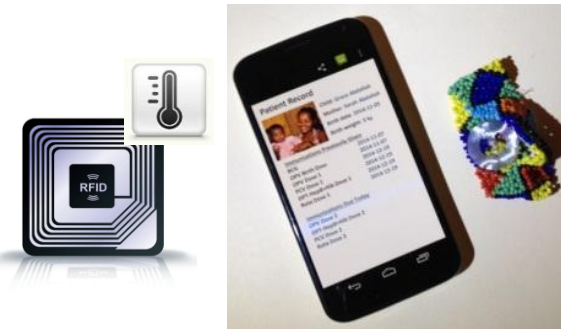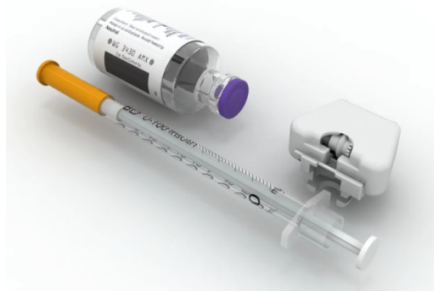
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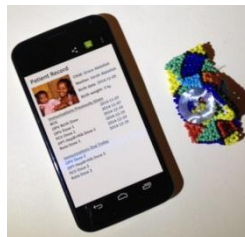# Iterative Learning Process

Partner Engagement

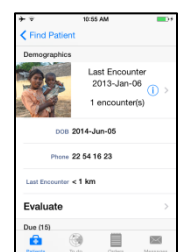**Multilateral**   **Government**   **Non-profit**   **Commercial**
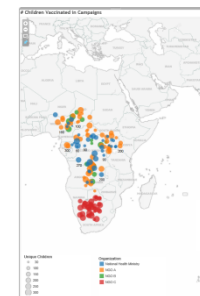

Value Hypothesis Development

Rapid Prototyping and Pilot Studies

Smart Devices   **Supporting Software**

Example: UAVs for "On-demand Healthcare"

1. **Understand** the unmet needs

2. **Develop** network of partners

3. **Identify** public-private partnership opportunities

4. **Solution development and iteration**, 1st Objective of pilot study

Opportunities for Collaboration

1. **Collaborate** on work currently in progress

   A) Pilot studies of ready-to-test technologies

   - Vaccine and medication delivery by UAV

   B) Co-development of early stage / front-end technologies

   - Improving immunization yield through RFID and smart drug delivery devices

2. **Dialogue** on new areas for development

   - Improving compliance to therapy regimens (e.g. diabetes)