Presentation
AHEAD@NU

Bringing the Lab to the Village
*Medical Testing for Resource Limited Settings*

July 1, 2010
The Problem of Health Disparity

People Living with HIV AIDS by Country Income Classification

N = 32.6M
The Problem of Health Disparity

- Refrigeration Required
- Blood sample transport system
- Lab Technician Required
- Electricity Required
- Maintenance and Service Technician Required
Product Examples

- Portable
- Easy to use
- Rugged
- Accurate
What is NU doing about this?

NU partners with private industry, nonprofit donors and academia to achieve its mission to **develop products** that address health issues facing **underserved communities** around the world.

**Key Contributions:**
- Project Coordination, New Technology, Market Research and Product Development, Field Experience

**Current Partners:**
- McCormick School of Engineering – Center for Innovation in Global Health Technology (CIGHT)
- Kellogg School of Management – Global Health Initiative (GHI)
- Feinberg School of Medicine

**Key Contributions:**
- Technology, Manufacturing, Regulatory, Distribution, Manufacturing

**Current Partners:**
- Abbott
- Inverness Medical Innovations

**Key Contributions:**
- Funding, Mission, Field Experience

**Current Partners:**
- Bill & Melinda Gates Foundation
NU Participants - Faculty

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Julie Hennessy Kellogg
Kearsley Stewart Weinberg
Prioritizing and Defining User Requirements

The Patient Perspective

Patients

Healthcare Workers

International Agencies

Governments

Distributors

National Measles Immunization Campaign

Ndola, Zambia
Where is the “Point of Care”?  
Uganda Example

1.2 M Births

Delivering in health facility: 15%

Est. # of HIV Exposed Infants Per Year: 8-10%

Est. # of HIV Infected Infants Per Year: 2%

Est. # of HIV Tested Infants Per Year: 0.007%

Accessing Immunization Services: 89%

Accessing PMTCT Services: 25%
Prioritizing and Defining User Requirements

The Healthcare Worker Perspective

- Patients
- Healthcare Workers
- International Agencies
- Governments
- Distributors
Prioritizing and Defining User Requirements

The International Agency Perspective

- Patients
- Healthcare Workers
- **International Agencies**
- Governments
- Distributors
Prioritizing and Defining User Requirements
The International Agency Perspective

- Patients
- Healthcare Workers
- International Agencies
- Governments
- Distributors
Prioritizing and Defining User Requirements

*The Distributor Perspective*

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<tr>
<th>Patients</th>
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<tr>
<td>Healthcare Workers</td>
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<td>International Agencies</td>
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<tr>
<td>Governments</td>
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</tbody>
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**Distributors**
Our current area of focus is a handheld test used for early infant diagnosis of HIV (EID)
What Our First Product Replaces

1. Collecting Samples
2. Drying Samples
3. Packing Samples
4. Transporting Samples
5. Processing Samples
6. Delivering Results
7. Patient receives results
What Our First Product Replaces

<table>
<thead>
<tr>
<th>Countries</th>
<th>~ Observed Time to Result</th>
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<tbody>
<tr>
<td>Botswana</td>
<td>2-16 weeks</td>
</tr>
<tr>
<td>Cambodia</td>
<td>3 weeks</td>
</tr>
<tr>
<td>Mozambique</td>
<td>3 months or greater</td>
</tr>
<tr>
<td>Namibia</td>
<td>1-4 weeks</td>
</tr>
<tr>
<td>South Africa</td>
<td>1-3 weeks</td>
</tr>
<tr>
<td>Tanzania</td>
<td>N/A</td>
</tr>
<tr>
<td>Uganda</td>
<td>4-6 weeks</td>
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“Uncollected Test Results”