“The idea that some lives matter less is the root of all that’s wrong with the world.”

- Dr. Paul Farmer

Together, we can save lives.

Partners In Health
Health is a human right.

Providing high-quality health care to poor and marginalized people—and inspiring others to do the same.

Our Mission
Our Model

Service

Training

Advocacy

Research
Building a movement
Where PIH works
Information systems are a key component in PIH’s model of care. To replicate the model of care, it is fundamental that open, scalable, maintainable, and high-quality information systems are available that meet the unique challenges found in resource poor settings.
Clinical Decision Support

View trends that would be difficult or impossible to see otherwise

Alert clinicians to potentially dangerous situations (allergies, contraindications)

Why technology?
Why technology?

Disease Surveillance

Patients

Conditions

Improving access
Monitoring, Evaluation, and Quality Improvement

Analyze cohorts of patients. Find patient groups in need of follow-up or further analysis.

Identify areas of improvement (in what percentage of patient visits was a weight recorded)

Perform routine reporting to health ministries, funders, and program managers

Why technology?
Support Advanced Treatment

Why technology?
Challenges: Infrastructure

Unreliable Internet and power

Remote facilities
Challenges: Human resources

Few trained staff
High patient volume.
Challenges: Funding

No cost recovery from facilities
Low eHealth budgets
PIH and Harvard Medical School win $44.7 million Gates Foundation grant to fight drug-resistant TB in Peru.

In Haiti, Zanmi Lasante’s HIV Equity Initiative is one of the first in the world to provide antiretroviral therapy in resource-poor settings.

2000
PIH creates drug-resistant TB EMR for Peru and HIV EMR for Haiti.

2001
PIH expands to sub-Saharan Africa, bringing community-based HIV treatment and primary care to two districts in rural Rwanda.
2005: Why OpenMRS?

PIH begins collaboration with Regenstrief Institute to create OpenMRS.

- global health community
- free & open
- collaboration
- replication
- cost benefits
Why OpenMRS? Free and open
<table>
<thead>
<tr>
<th>Core Apps</th>
<th>Registration App</th>
<th>Dispensing</th>
<th>Radiology App</th>
<th>Paper Record App</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>App Framework</td>
<td>Emrapi</td>
<td>Metadata Sharing</td>
<td>Metadata Deploy</td>
</tr>
<tr>
<td></td>
<td>Reporting Framework</td>
<td>Provider Mgmt</td>
<td>Html Form Entry</td>
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<td>Allergy Api</td>
<td>Address Hierarchy</td>
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<td>Style Guide</td>
<td>Ui Library</td>
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<td></td>
<td></td>
<td>Ui Framework</td>
<td>Ui Commons</td>
<td>Ui Framework</td>
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</tbody>
</table>

**Why OpenMRS? Modular**
### Flat Model

New data points require new columns

<table>
<thead>
<tr>
<th>Name</th>
<th>Weight</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>150</td>
<td>65</td>
</tr>
</tbody>
</table>

### EAV Model

New data points require new rows.

Metadata dictionary enables associating more information describing each data point (e.g., units, value ranges)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Units</th>
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<td>Weight</td>
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<tr>
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<table>
<thead>
<tr>
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<tbody>
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<tr>
<td>John Doe</td>
<td>Temp</td>
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</tr>
</tbody>
</table>
Why OpenMRS? Configurable and shareable metadata, including forms

Configurable components via editable settings

Customizable functionality, including overriding core pages, styles, logos via modules

Why OpenMRS? Configurable
Active forums

#OpenMRS on irc.freenode.net
Developers list: dev@openmrs.org

https://talk.openmrs.org/
https://wiki.openmrs.org

Many contributors with broad expertise

Thanks to the complete list of code contributors to OpenMRS 2.1:
@alexis_duque, Andrew Szell, @angshuonline, @aniketha, Anton Kravchenko, Arathy-mac, @bwoife, @burke, @cintiadr, @cian, Damian Szafrańek, Damitha Kithmal, @dkaywa, @darius, @endeepak, Filip Biedrzycki, Geoffrey W Wasilwa, Gilahi Ng'ang'a, Glauber Ramos, @harsha89, Hemanth, Jakub Kondrat, @k_joseph, Krzysztof Kaczmarczyk, Lech Rozanski, Lee Breisacher, @ibat, Madawa Scyca, Marek Szukalski, @mgoodrich, Mihir, @mseaton, Miss Beena, Mujir Shaikh, @marioareias, Nehasri P L, Neisii Torres Lima, @ninquisi, @nyoman, Pamela Canchanya, Pawel Muchowski, Przemyslaw Gierszewski, Radek Puzdrowski, Radoslaw Puzdrowski, @raff, Rohan Poddar, Rowan Seymour, @sunbiz, Shruthi Dipali, @suraj5, Sushmitha Rao, Vinay Venu, Vinkesh Banka, Wesley Spencer See, @willa, @wyclif, hemanth, indraneel, Lukasz Gasió

Regular (un)conferences

Building the movement

- Not reliant on any one organization
- Evolving regional communities
- Supports scaling and replicating

Why OpenMRS? Community
AMPATH starts using OpenMRS in Kenya.

PIH Rwanda begins using OpenMRS in Rwanda.

2006
PIH begins work in Lesotho and Malawi, launching testing and treatment programs for HIV and TB.

PIH Lesotho and Malawi uses OpenMRS.
PIH develops OpenMRS MDRTB module for many countries and organization including Haiti, Pakistan, Nepal, and South Africa.

2009
PIH trains computer science graduates in Java and OpenMRS in Rwanda. 34 graduates in 3 years.

2009
PIH responds to a 7.0 earthquake in Haiti with lifesaving emergency care and a plan to strengthen Haiti's public health system.

PIH provides treatment and vaccination in response to cholera outbreak.

2010
"The new teaching hospital at Mirebalais will be a model for our national health system, offering high-quality medical services, a place for our clinicians to study and train, and hope and dignity to all who will seek—and offer—care there. We look forward to building upon our long-standing partnership with Partners In Health/Zanmi Lasante with this desperately-needed facility."

— Dr. Alex Larsen,
Haitian Minister of Health
Clinical care
Point of care
Registration
Appointments
Vitals
Medications
Surgery

2013
PIH develops OpenMRS for University Hospital which becomes the basis of the OpenMRS 2.0 Reference Application.
Since March 2013:

150K unique patients
480K visits
1.3M encounters
6.7M observations
400+ users

2015: HUM by the numbers
PIH continues ebola response work in Sierra Leone and Liberia, but transitioning to health care strengthening.

2015
Where next?
OpenMRS 1.x

OpenMRS 2.x

Mirebalais

KenyaEMR

Bahmni

MDR-TB

Distributions
● Partners In Health (pih.org)
  ○ Medical Informatics positions
    ■ Boston
    ■ Lesotho
    ■ Malawi
  ○ http://www.pih.org/pages/employment
  ○ PIH Engage
  ○ Donate
● OpenMRS community
  ○ Sprints / Bug fixes / Documentation
  ○ Google Summer of Code

Opportunities