Breaking Down Barriers to Care: PIVOT’s Integrated Approach to Health System Strengthening in Madagascar

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Outline

I. The ‘Know-Do’ Gap
II. PIVOT’s Approach to a Model Health District
III. PIVOT’s Data Platform
IV. Our Scientific Future
I. The “Know-Do” Gap
The Delivery (‘Know-Do”) Gap

“There is a gap between today’s scientific advances and their application: between what we know and what is actually being done.”

10 million deaths can be averted annually

“Closing this [Delivery] gap... has been a particularly stubborn global health challenge.
Kruk et al. PLOS Bio (2016)
The Know-Do Gap

The Delivery (“Know-Do”) Gap
“There is a gap between today’s scientific advances and their application: between what we know and what is actually being done.”
Lee Jong Wook, WHO
The Know-Do Gap

**The Delivery (‘Know-Do”) Gap**

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Lee Jong Wook, WHO
The Delivery (‘Know-Do”) Gap

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Lee Jong Wook, WHO
Partners in Health - Rwanda
Partners in Health-Rwanda

Health System Strengthening: Staff, Stuff, Systems, and Space
Partners in Health-Rwanda

Health System Strengthening: Staff, Stuff, Systems, and Space

- Image of Rwanda map
- Graph showing under 5 mortality rate with trend lines
- Images of health facilities and people in medical settings

Thomson, et al. in review (2017)
Knowledge Gap
- Rwanda is an outlier?
  - Broader socio-economic change
  - Unique national leadership
- Data Systems were retrofitted
  - Small household sample size at baseline
  - Weak health systems data at baseline
- Convergence ≠ Divergence
II. PIVOT’s Approach to a Model Health District
PIVOT - Madagascar
Why Madagascar?

The Need
**Why Madagascar?**

**The Need**

- **1 in 6** Under-5 Mortality
- **1 in 14** Lifetime Maternal Mortality

Per Capita Spending on Healthcare: **$14**
Why Madagascar?

The Opportunity

1. 30 years of relationships
2. Research capacity
3. Biodiversity: UNESCO World Heritage Site
PIVOT’s Aims

1. Advance agenda for health as a human right

2. Create a model health district for Madagascar

3. Provide platform for science and innovation
Health System Strengthening

Health System Intervention
“Staff, Stuff, Systems, Space”

Partnership with Ministry of Health
Health System Strengthening

System ‘Readiness’

- Infrastructure
- Equipment
- Staffing
- Supply Chain

“Staff, Stuff, Systems, Space”

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Health System Strengthening

**System ‘Readiness’**
- Infrastructure
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**Health System Intervention**

“Staff, Stuff, Systems, Space”

- Hospital
- Health Center
- Community Health Workers
Clinical Programs

Health System Intervention

“Staff, Stuff, Systems, Space”

System ‘Readiness’
- Infrastructure
- Equipment
- Staffing
- Supply Chain

Clinical Programs
- Malnutrition
- Tuberculosis
- Maternal and Child Health

 Hospital

 Health Center

 Community Health Workers

Community Health Workers
III. PIVOT’s Data Platform
PIVOT – Information Loop

**Health System Intervention**

- Hospital
- Health Center
- Community Health Workers

**Data Platform**

- Health Management Information Systems
- Longitudinal Cohort Study
  - Demographic and Health Survey

[Map of Vatoavy Fitovinany District Ifanadiana]
Example: Malnutrition Program

**Health System Intervention**
- Testing
- Treatment
- Follow-up

**Data Platform**

**Health Management Information Systems**

**Longitudinal Cohort Study**
Demographic and Health Survey
Results: Utilization Rates

Utilization Changes

- **Outside PIVOT Intervention**
- **PIVOT Intervention**

$0.68
82,712 patients

$26
6,167 patients

Health Center

Hospital

15,251
Children under 5 provided comprehensive examinations

4,849
Ambulance referrals made

PIVOT – Results

Infrastructure & Equipment

Diagnostics & Training

Ambulance Referrals

ACCESS TO DELIVERY CARE

Health Care Access

Healthcare Access

Legend

- Commune Limit
- Villages Sampled
- Paved road
- Non-paved road

Health System

- Hospital
- Health Center (PIVOT supported)
- Health Center
- Basic Health Center

Access to delivery at HC facility

- 0
- 0 - 0.05
- 0.05 - 0.1
- 0.1 - 0.15
- 0.15 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 1

2014
PIVOT – Results

Infrastructure & Equipment

Diagnostics & Training

Ambulance Referrals

ACCESS TO DELIVERY CARE

Health Care Access

2014  2016

Legend
- Commune Limit
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- 0.4 - 1
PIVOT – Results

Diagnosis

Treatment

Follow-Up

CHILD ACCESS FOR FEVER (HCF ONLY)

Legend
- Commune Limit
- Villages Sampled
- Paved road
- Non-paved road

Health System
- Hospital
- Health Center (PIVOT supported)
- Basic Health Center

HC access for fever (Children under five)

2014

2014

0.5

0.4

0.3

0.2

0.1

0.0

Health Care Access

2014

2016

intervention
- Inside Catchment
- Outside Catchment
PIVOT – Results

**Diagnosis**

**Treatment**

**Follow-Up**

![Graph showing child access for fever (HCF only)](image)

**Legend**
- Commune Limit
- Villages Sampled
- Paved road
- Non-paved road

**Health System**
- Hospital
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- Basic Health Center

**HC access for fever (Children under five)**
- 0 - 0.05
- 0.05 - 0.15
- 0.15 - 0.25
- 0.25 - 0.35
- 0.35 - 0.5
- 0.5 - 0.65
- 0.65 - 0.8
- 0.8 - 1

*Note: The graph illustrates the increase in health care access for fever in children under five from 2014 to 2016 within the catchment area. The intervention and access levels inside and outside the catchment are compared.*
PIVOT – Results

Under-five Mortality

Under 5 mortality rate - Combined

Other rural areas trend: < 0.01

2014

16%

2016

PIVOT – Results

Under-five Mortality

Under 5 mortality rate - Combined

16% 14% 9.9%

2014 2016

IV. Our Scientific Future
Our Scientific Future

Environmental Determinants of Disease

Pioneering TB Diagnostics (DBS)

Frugal Science
Summary

- There is a need for evidence-based bottom-up health system strengthening.

- PIVOT is partnering with the Madagascar Ministry of Health to create a model district.

- A key to this model is simultaneously strengthening all levels of the health system in the district, while establishing rigorous data systems.

- Early results indicate population-level change in health access and mortality rates.
## Acknowledgments

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