



# Annual Report 2015

Annual Report to the Ministry of Health and Partners  
Improving Care for the Severely Ill in Uganda



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Health workers in Uganda practice safely donning protective equipment during a training.



# Annual Letter

## Walimu Operations in Uganda

### The importance of the frontline health worker in caring for Uganda’s severely ill has never been higher.

Uganda faces a series of forces converging to increase the burdens on these providers: a growing epidemic of chronic disease, increasing injuries and accidents, persistent infectious disease, and ever-present risk of outbreaks.

If a health system aims to achieve its ultimate goal – improved health for patients – our health workers must have the knowledge, skills, and resources to deliver high quality care to the patient in front of them, particularly those who are severely ill and at greatest risk of death.

Although a simple point, the focus on the patient and their provider has often been neglected in efforts to “fix” the health system. Ultimately though, it is most often at that patient-provider level, be it in a facility or in the community, that health outcomes can be tangibly influenced. We are proud of the efforts of the Ministry of Health to improve emergency care and management of the severely ill patients and we pledge to support their efforts to equip providers to deliver high quality care.

2015 has been a time of tremendous growth for Walimu. We have started to demonstrate the effectiveness of our core program in changing health worker behavior, trained thousands of health workers across the country, and built relationships with our key partners.

But we are just beginning on this journey: in 2016 and beyond we will continue to work to put the patient and their provider back at the center of healthcare in Uganda; we firmly believe this is the best approach to tangibly improving the health of Uganda’s citizens, and we look forward to working with our partners as we advance a vision of a healthy Uganda.

**Dr. Nathan Kenya-Mugisha**

Executive Director

Severe illness is the great **global health blindspot**.

Decades of vertical programs and special donor initiatives have left the core of Uganda’s health system - the health facility itself - understaffed, poorly resourced, and, most importantly, **ill-prepared to save lives**.

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**Severely ill patients are much more likely to die.**

**5x** likelihood of hospital death<sup>1</sup>

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**Patient mortality can be reduced through simple interventions.**

**46% → 33%**  
*early monitored care for severe sepsis<sup>2</sup>*

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**The severely ill are still missed in hospital care.**

**10%** of patients have vital signs taken<sup>1</sup>

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**Simple programs can drive improvements in care.**

**34%** increase in vital signs taken<sup>1</sup>

<sup>1</sup> Walimu Pilot Study, 2015. Pg. 11.

<sup>2</sup> Crit Care Med. 2012 Jul;40(7):2050-8

## Our Work in Uganda

We strengthen the capacity of health workers to care for severely ill patients in hospitals and health centers across the country.

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### Clinical Quality Improvement Program, including WHO IMAI Quick Check+ Training

Angal St. Luke	Arua Hospital	Bwera Hospital	Kagando Hospital
Kilembe Mines	Mulago Hospital	Nebbi Hospital	St. Paul HC IV
Yumbe Hospital			



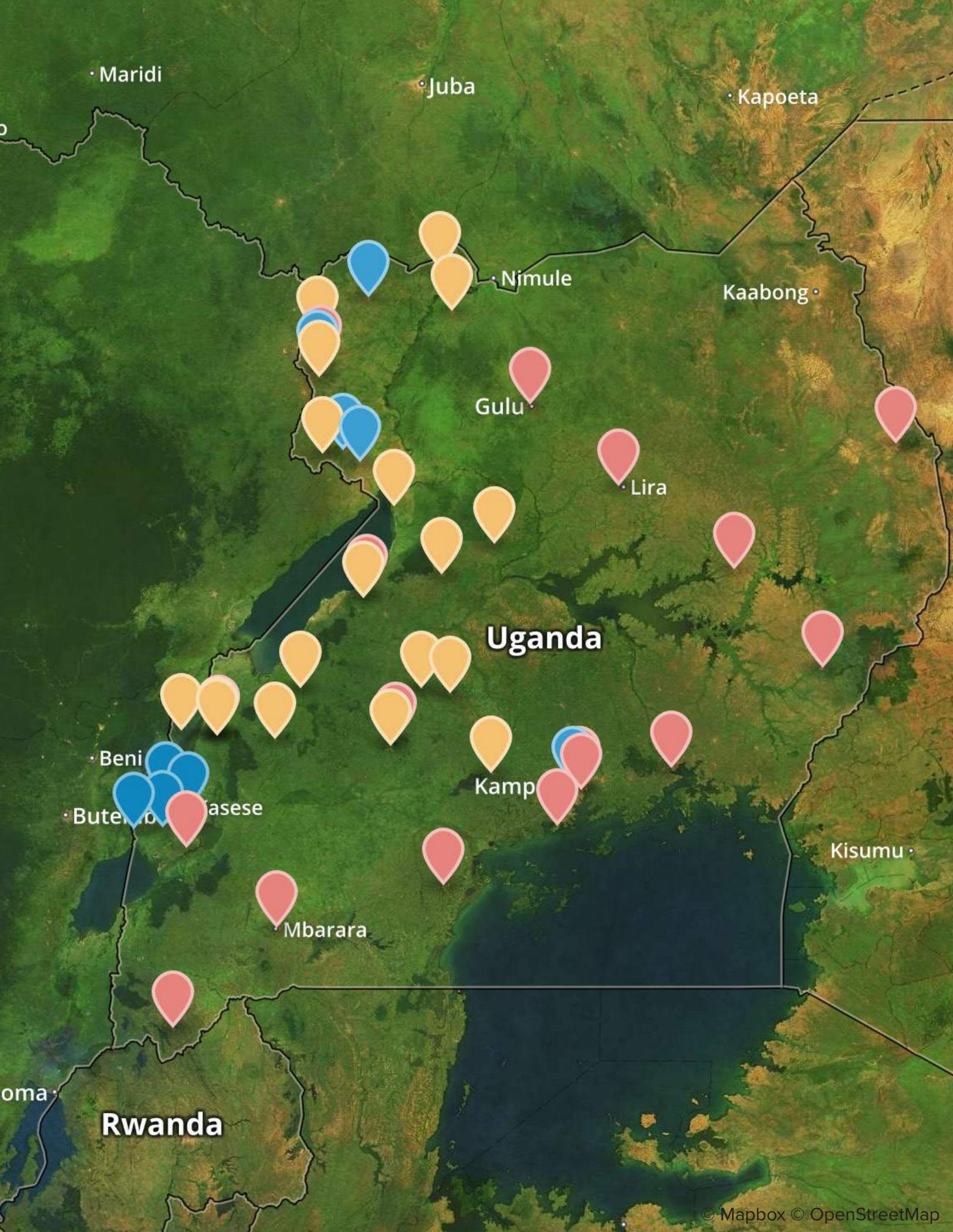
### Additional WHO IMAI Quick Check+ Trained facilities

Adjumani Hospital	Buliisa Hospital	Bundibugyo Hospital	Fort Portal
Hoima Hospital	Kabarole Hospital	Kagadi Hospital	Kiboga Hospital
Kiryandongo Hospital	Kuluva Hospital	Kyenjojo Hospital	Maracha Hospital
Masindi Hospital	Mityana Hospital	Moyo Hospital	Mubende Hospital
Ntwetwe HC IV	Nyapea Hospital	Virika Hospital	



### Regional Ebola and Marburg Clinical Management Training

Arua Region	Entebbe Hospital	Fort Portal Region	Gulu Region
Hoima Region	Jinja Region	Kabale Region	Lira Region
Masaka Region	Mbale Region	Mbarara Region	Moroto Region
Naguru Hospital	Soroti Region		



· Maridi

· Juba

· Kapoeta

· Nimule

· Kaabong

· Gulu

· Lira

**Uganda**

· Beni

· Butere · Masese

· Kamp

· Mbarara

· Kisumu

**Rwanda**

# Model for Impact

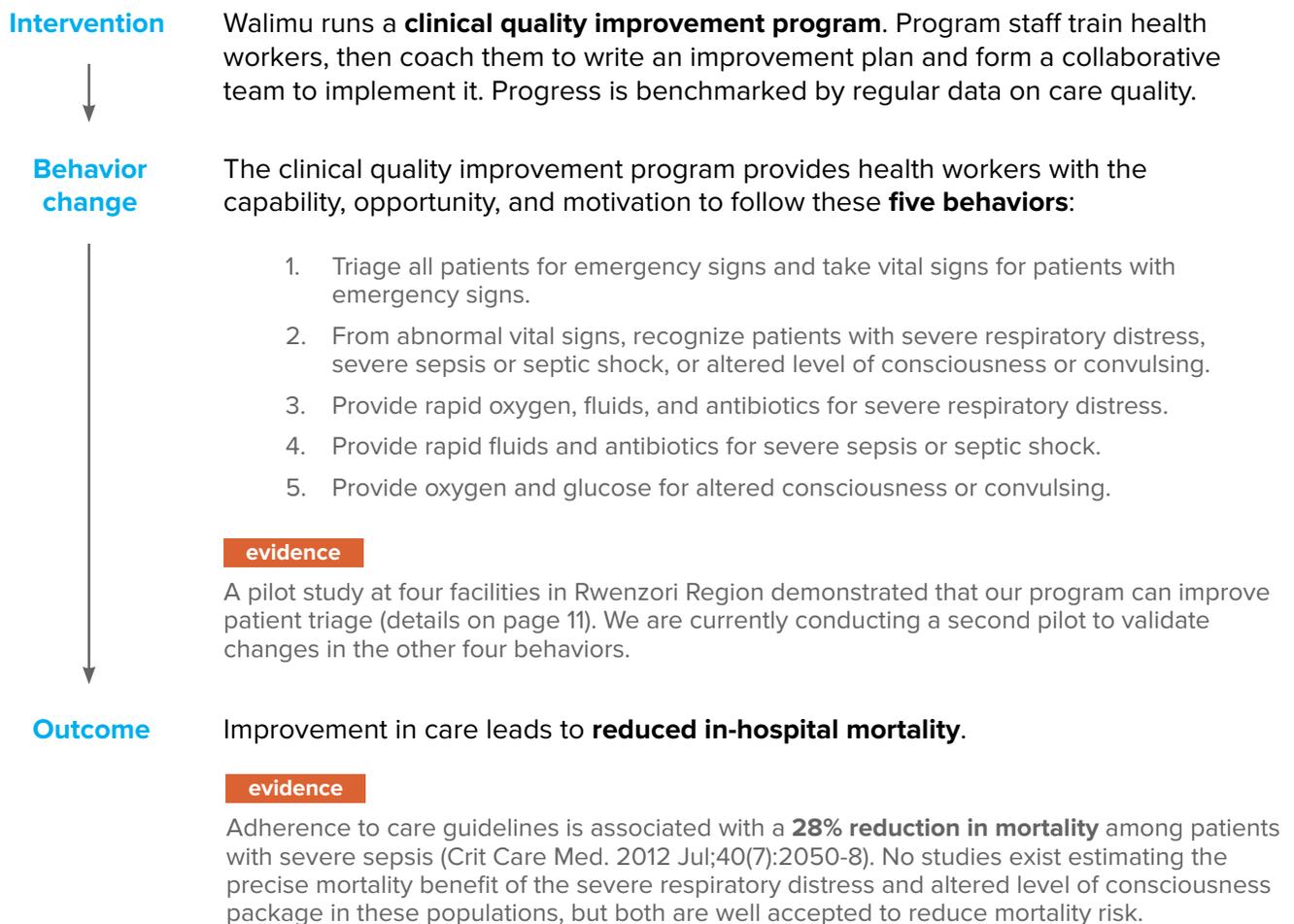
We achieve impact through increasing the number of severely ill patients in Ugandan hospitals who are identified and appropriately treated.

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<b>Mission</b>	To reduce mortality among hospitalized patients in Uganda.
<b>Problem</b>	Patients die unnecessarily from severe illnesses that can be managed with existing resources.
<b>Outcome</b>	Reduced patient mortality
<b>Stage</b>	Model validation

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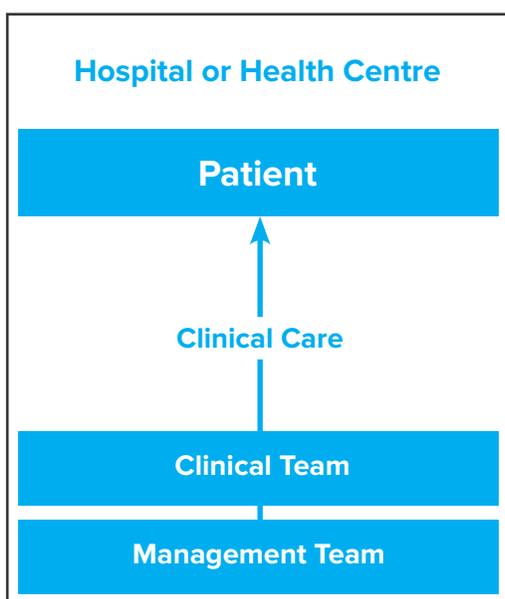
## Theory and Evidence of Change



# Intervention

We are designing and testing a model for continuous clinical quality improvement that equips health workers to provide excellent clinical care to severely ill patients.

The quality of clinical care is a key barrier to achieving national health objectives. Under Ministry of Health direction, Walimu is building an integrated quality improvement program to improve outcomes for severely ill patients in hospitals and health centres.



Walimu's clinical quality improvement program delivers the following package of services to targeted facilities:

Facility health workers receive **WHO IMAI Quick Check+ Training** on integrated patient triage, severe illness identification, and emergency care.

During the training, each facility team creates an **improvement plan** for triage, identification, and care.

The **collaborative team** runs a continuous quality improvement cycle following the PDCA model.

The **data layer** tracks clinical care of patients and benchmarks quality for the collaborative team.

National and regional teams provide **mentoring, technical assistance, and other support.**

To support this work, Walimu also advises on national policy and builds regional capacity.

## NATIONAL POLICY

Development and adaptation of clinical care and training **guidelines**

**Expert technical advice** on national planning and national quality frameworks

**Implementation science research** on quality improvement methods

## REGIONAL CAPACITY

Creation of and support for regional teams of **expert trainers and mentors**

# Accomplishments in 2015

We made significant progress in developing and validating our model for improved patient care. We also st

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## PATIENT CARE

In order to improve quality of care for the severely ill, Walimu implements its clinical quality improvement program at facilities. In addition, at some facilities Walimu implements a more minimal package of interventions, the WHO IMAI Quick Check+ Training and Mentoring Program.

### **Clinical Quality Improvement Program**

Walimu's clinical quality improvement program targets five care behaviors to reduce in-hospital mortality. The program delivers a package of five components - team-based training, an improvement plan, a collaborative team to implement the plan, a data layer to track progress, and mentoring and other external support. The program is designed to rapidly drive improvements in clinical quality of care for patients with severe illness.

In 2015, Walimu completed implementation of its clinical quality improvement program at **four hospitals and health centres** and initiated the program at an additional **four hospitals**.

In order to validate our program, Walimu completed its first pilot study of the approach, which found improvements in patient triage. More details on page 11.

### **WHO IMAI Quick Check+ Training and Mentoring Program**

The WHO IMAI Quick Check+ Training and Mentoring Program provides team-based training on triage, severe illness identification, and emergency care. During the training, health workers develop an improvement plan for their facility. Following the training, program staff conduct on-site mentoring to track progress on implementation and motivate further improvement.

In 2015, Walimu delivered training and mentoring to **17 hospitals and one health centre**.

### **Ebola Clinical Management Training**

Walimu supported the Ministry of Health to conduct 12 regional VHF trainings on clinical case management. In total 408 health workers from 14 regions were trained. Walimu and the WHO Uganda Country Office provided technical support for material development and course content. In addition, Walimu demonstrated proper care in a mock Ebola Treatment Units in all the training locations.

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## NATIONAL POLICY

### Identification of Gaps in Emergency and Severe Illness Care

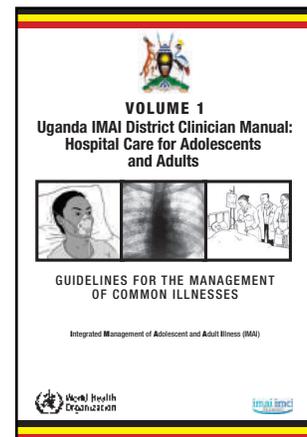
Walimu completed facility assessments in 36 health facilities in Arua, Mubende, Hoima, Kabale, and Mbarara regions. The assessments identified significant gaps in emergency care, patient flow and other processes of care, availability of essential medicines and equipment, and staff capacity to manage severely ill patients.

These gaps significantly reduce the quality of patient care. For example, one facility had 47 full oxygen cylinders in storage, but no oxygen was available on any of the wards. In particular, these findings highlight the need for targeted systems to improve care processes at the ward level; otherwise gains in other systems, such as supply chain delivery, will fail to improve care.

### Uganda Adaptation of Volume 1 of the Integrated Management of Adolescent and Adult Illness (IMAI), District Clinical Manual

The IMAI-IMCI Alliance and Walimu completed the adaptation of Volume 1 of the WHO IMAI District Clinician Manual. The adapted version incorporates local knowledge into the international version.

The adaptation was requested and approved by the Ministry of Health, and the adapted guidelines are now authorized for use in the country. Walimu completed a first printing of the guidelines. The generic and adapted District Clinician Manuals have been distributed to over 200 trained health workers.



### Uganda Adaptation of WHO IMAI Quick Check+ Training Materials

Walimu is working to review and adapt the WHO IMAI Quick check+ training materials on triage, management of severely ill patients, infection prevention and control and disease surveillance.

### Advice to National Taskforce of Viral Haemorrhagic Fever

Walimu joined the National Taskforce on Viral Haemorrhagic Fever, and provided expert advice on the national VHF strategy.

### Training of Trainers on Ebola clinical case management

Walimu supported the Ministry of Health to conduct a training of trainers to prepare health workers to identify and safely manage Ebola and other viral haemorrhagic fevers. The training included 26 Ugandan health workers from around the country, as well as two international participants.

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## NATIONAL POLICY (continued)

### Field-test of WHO PEN (Non-Communicable Disease) training materials

In collaboration with IMAI-IMCI Alliance, Walimu provided assistance for a field test of trainings materials for WHO's Package of Essential Noncommunicable (PEN) Disease Interventions. The field-test provided health worker feedback in order to revise the training materials.

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## REGIONAL CAPACITY

### Regional training teams

Walimu continued building regional training and mentoring teams. Walimu has 77 trainers and mentors across all 14 regions in Uganda.

## Training Programs and Guidelines

Severe illness can be arise through a number of causes. Walimu works with a series of training programs and guidelines to improve patient care.

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### Emergency Care, Severe Illness

#### TRAINING PROGRAM

IMAI Quick Check+ Clinical Training Program

#### GUIDELINES

WHO IMAI District Clinician Manual

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### Viral Haemorrhagic Fever

#### TRAINING PROGRAM

WHO Viral Haemorrhagic Fever Clinical Training

#### GUIDELINES

WHO Pocket Guide on Clinical Management of Patients with Viral Haemorrhagic Fever

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### Non-Communicable Diseases

#### TRAINING PROGRAM

WHO IMAI updated Primary Care Guideline

#### GUIDELINES

WHO IMAI PEN Chronic Care Guideline Module

## Pilot study findings

Our clinical quality improvement program grew from a simple observation: in low-income countries, most patients die of curable conditions because they are not identified and treated early enough.

### Study design

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Often the essential resources to care for patients exist, but the necessary systems and provider behaviors for appropriately treating patients are missing. Drawing on a strong peer-reviewed evidence base which demonstrates that training alone is insufficient to change behaviors and systems, our program is a multi-pronged post-training quality improvement intervention designed to follow the WHO IMAI Quick Check+ (QC+) training course in triage, emergency care, and management of the severely ill.

The program, which is described on page 7, aims to increase the following health worker behaviors: triage of patients, identification of those who are severely ill, and appropriate care for patients with severe respiratory distress, severe sepsis or septic shock, and altered level of consciousness or convulsing.

In our pilot study of the program, we evaluated the ability of the program to increase health worker triage. We phased in the program at three hospitals (Bwera Hospital, Kagando Hospital, and Kilembe Mines Hospital) and one health centre IV (St. Paul Health Centre IV) in Kasese District, Uganda. The program was stepped in at each facility between September and November 2014, and ran through June 2015.

Walimu research nurses collected data on patient care through chart audits. Due to data limitations, we only report changes in patient monitoring, not patient management. See more at [walimu.org/2015pilot](http://walimu.org/2015pilot).

### Key Findings

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#### ABNORMAL VITAL SIGNS PREDICT MORTALITY

Patients with abnormal signs are much likely to die in the hospital.

Normal vital signs

**2%**

Abnormal vital signs

**10%**

#### LOW RATES OF VITAL SIGNS MONITORING

Very few patients are having vital signs monitored regularly.

**10%**

of patients have three or more vital signs checked on a daily basis.

#### SIMS CAN DRIVE SUBSTANTIAL IMPROVEMENT

Very few patients are having vital signs monitored regularly.

**34%**

increase in daily vital signs monitoring across four sites ( $p < 0.1$ ).

# People

## Board of Directors

### **Luke Davis, MD**

Associate Professor of Epidemiology (Microbial Diseases), Yale School of Public Health

### **Elijah Goldberg, *President***

Former Executive Director of Walimu; Co-Founder and Operations Director of ImpactMatters

### **Shevin Jacob, MD**

Acting Assistant Professor of Medicine (Infectious Diseases), University of Washington

### **Achilles Katamba, MBChB *Chair***

Senior Lecturer, College of Health Sciences, Makerere University

## Advisors

### **Sandy Gove, MD, MPH**

Executive Director, IMAI-IMCI Alliance; former technical lead, WHO IMCI; former lead, WHO IMAI

### **Phil Hopewell, MD**

Professor (Pulmonary and Critical Care Medicine), UCSF

### **Steven Asimwe, MBChB**

Post-Doctoral Fellow, Department of Epidemiology and Biostatistics, UCSF

### **Elijah Goldberg**

President, Walimu; Co-Founder and Operations Director, ImpactMatters

### **Adithya Cattamanchi, MD**

Associate Professor (Pulmonary and Critical Care Medicine), San Francisco General Hospital, UCSF

### **Shevin Jacob, MD**

Acting Assistant Professor of Medicine (Infectious Diseases), University of Washington

### **Luke Davis, MD *Chair***

Associate Professor of Epidemiology (Microbial Diseases), Yale School of Public Health

### **Achilles Katamba, MBChB**

Post-Doctoral Fellow, Department of Epidemiology and Biostatistics, UCSF

### **Nathan Kenya-Mugisha**

Executive Director, Walimu; Former Acting Director General, Ministry of Health, Government of Uganda

### **William Worodria, MBChB**

Senior Consultant Physician, Mulago National Referral Hospital

## Team

### **Nathan Kenya-Mugisha, MBChB, MPH**

Executive Director

Dr. Kenya leads Walimu, providing the vision, direction and drive to advance our mission of high quality care for the severely ill in Uganda. Dr. Kenya has cared for Uganda's patients over a long, distinguished career, most recently as Acting Director General of the Ministry of Health, Government of Uganda. Dr. Kenya has been deeply involved in the development and scale up of the World Health Organization IMCI guidelines for children in the 1990s and IMAI guidelines for adolescents and adults in the 2010s.

### **Shevin Jacob, MD**

Medical Director

Shevin manages technical aspects of Walimu's program, designing, developing and implementing training and quality improvement initiatives. Shevin is an expert in severe illness, particularly severe sepsis, and viral haemorrhagic fever, and has led a number of related studies and international initiatives. Most recently, he was deeply involved in the training scale up in West Africa in response to the Ebola epidemic. Shevin is faculty at the Department of Medicine, University of Washington.

### **Luke Davis, MD**

Research Director

Luke manages Walimu's research portfolio, designing, overseeing, and analyzing program implementation and evaluation to better understand the burden of severe illness and the best strategies for reducing mortality among severely ill patients. Luke is an Associate Professor at the Yale School of Public Health and the Yale School of Medicine, where he conducts implementation science research, with a particular focus on tuberculosis. Luke has been researching in Uganda since 2005.

### **Savio Mwaka**

Program Manager

### **Olive Kabajaasi**

Program Manager

### **Nynette Lwantanga**

Logistics Officer

### **Onzoma Pereti Amos**

Research Nurse

### **John Bosco**

Research Nurse

### **Drani Enos**

Research Nurse

### **Abiko Gertrude**

Research Nurse

### **Bako Ruth**

Research Nurse

## Partners

Ministry of Health, Republic of Uganda

Clinical Services Department

Quality Assurance Department

*Walimu conducts quality improvement in hospitals and health centres in Uganda under a mandate from Ministry of Health.*

IMAI-IMCI Alliance

World Health Organization, Uganda Country Office

AgileMD

## Funders

Department of Defense, Defense Threat Reduction Agency

World Health Organization, Pandemic and Epidemic Disease

Anonymous foundation

Dr. Kenya discusses patient triage with a nurse in Kabale Hospital's outpatient department.





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