HARVARD MEDICAL SCHOOL

BRIGHAM HEALTH
BRIGHAM AND WOMEN'S HOSPITAL

# Detailing Expertise and Distributing Evidence to Address Inequities in Global Health

Dr. Rebecca Weintraub

NAFSA Global Learning Colloquium:
Health Professions
May 2018

HARVARD MEDICAL SCHOOL

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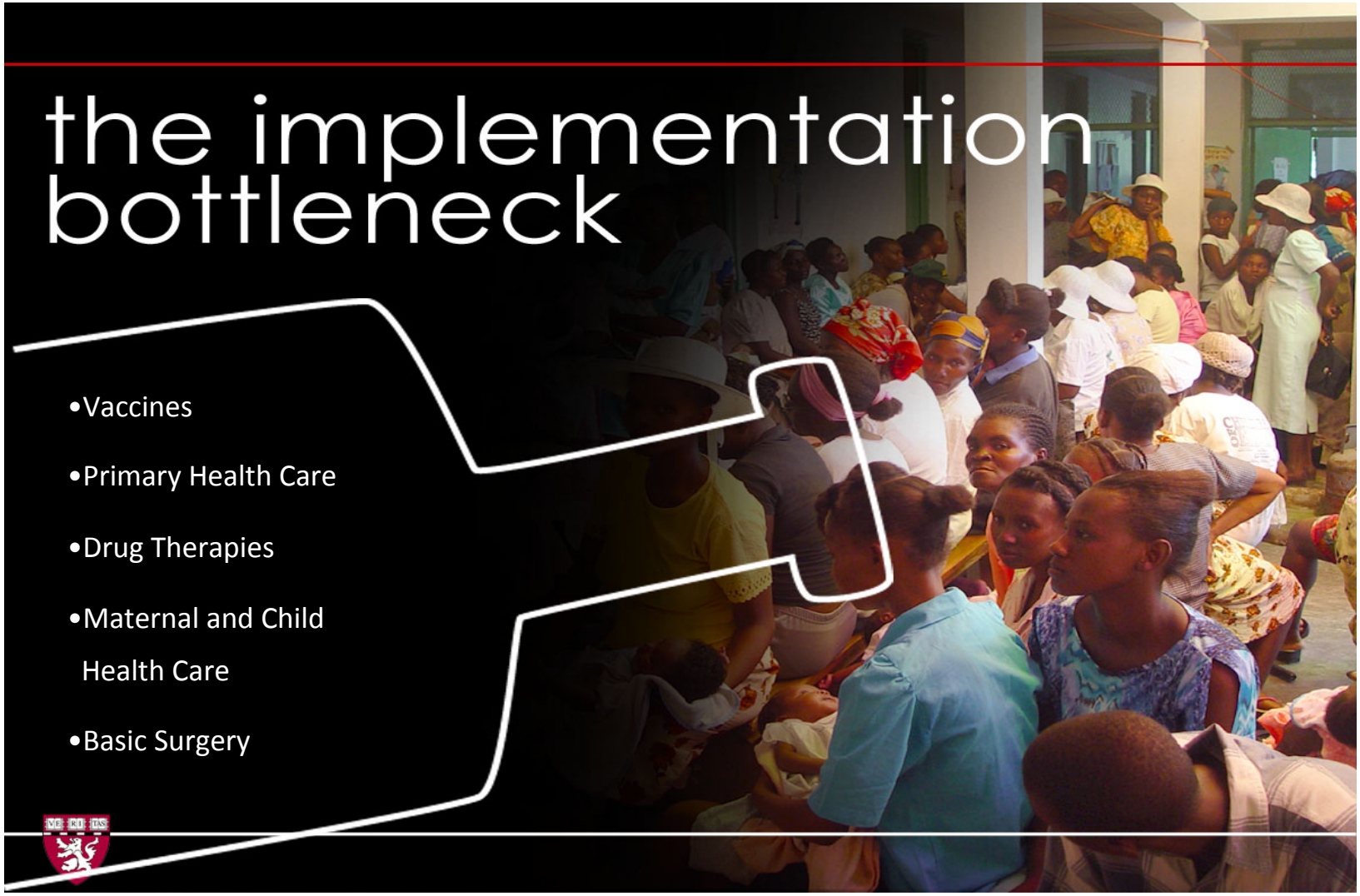
The future has arrived, it's just not evenly distributed yet.

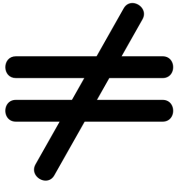
-- *William Gibson*

# Implementation Bottleneck.



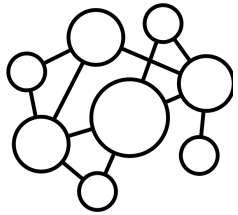
# Implementation bottlenecks are due to various, interrelated factors.

1. Mismatch between the **demand** and **supply** of health care delivery.



2. **Constraints** of the health care workforce.

3. **Context** of care delivery **and social determinants of health**.



# Our strategy: To connect health care providers with the best *evidence* and *expertise*.

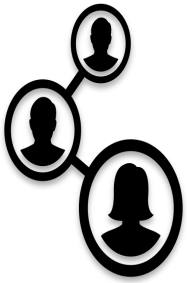
## Case Collection

- More than **40 award-winning cases** in Global Health Delivery available at no cost

## GHD Intensive

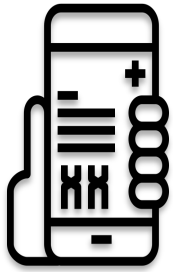
- Global Health Delivery Intensive with more than **400 alumni** from 60 countries

## GHDonline



- A professional virtual community with **24,000+ members** across 185 countries

## Better Evidence



- In partnership with UpToDate, provide free evidence-based clinical resources (EBCR) to reach **20,000 clinicians** in 120+ countries

# Case Studies

# Why Case Studies?

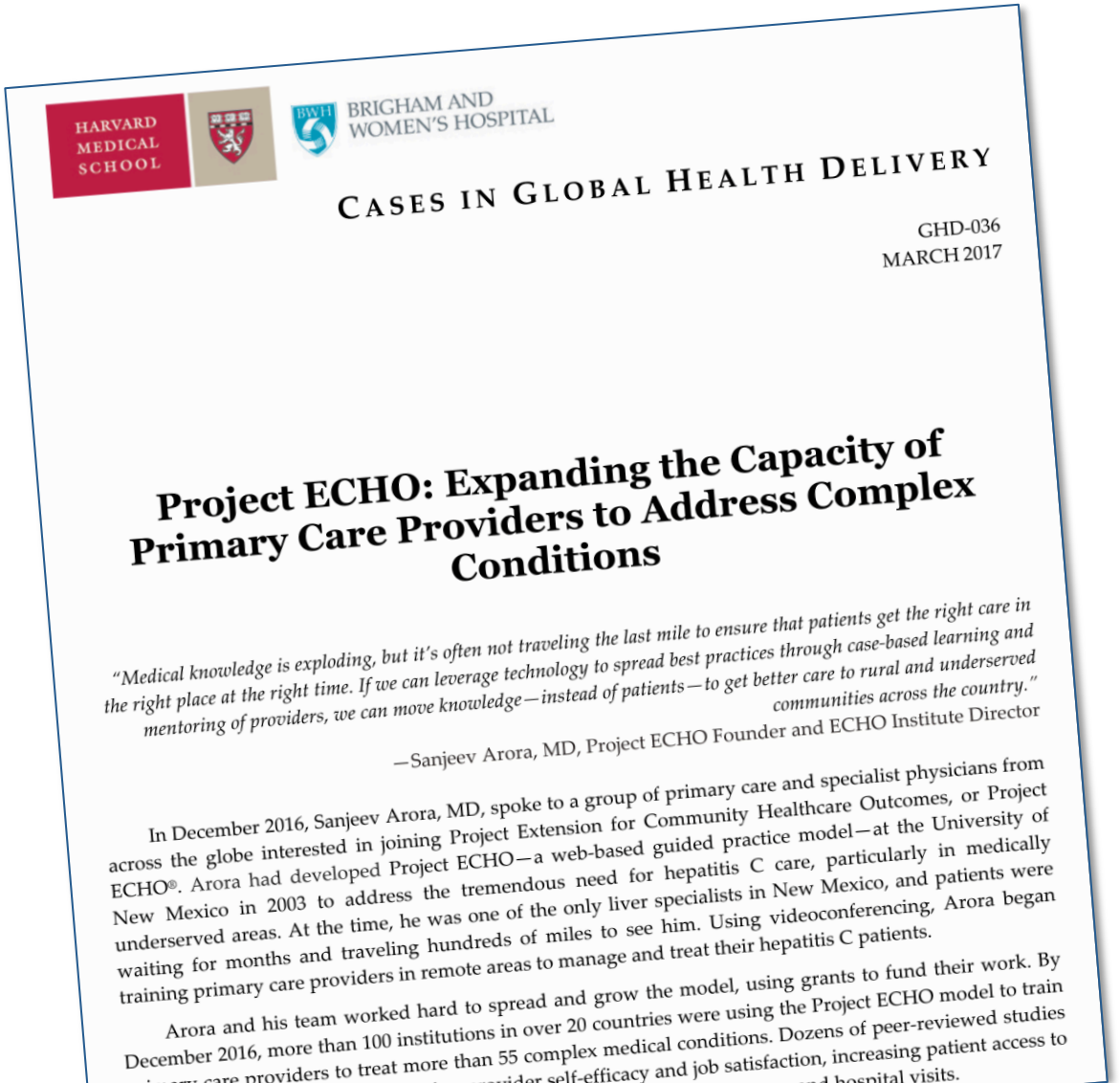
- “Virtual experiential learning” trains leaders to address the complex factors they will face as decision makers
- Cases allow readers to understand the multi-disciplinary complexities of global health care delivery and provide
- Cases illustrate value-based care and inspire critical thinking and application of the framework

We disseminate our cases and teaching notes free of charge

HARVARD BUSINESS PUBLISHING

case centre

# Role of Teaching Cases



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CASES IN GLOBAL HEALTH DELIVERY

GHD-036
MARCH 2017

**Project ECHO: Expanding the Capacity of Primary Care Providers to Address Complex Conditions**

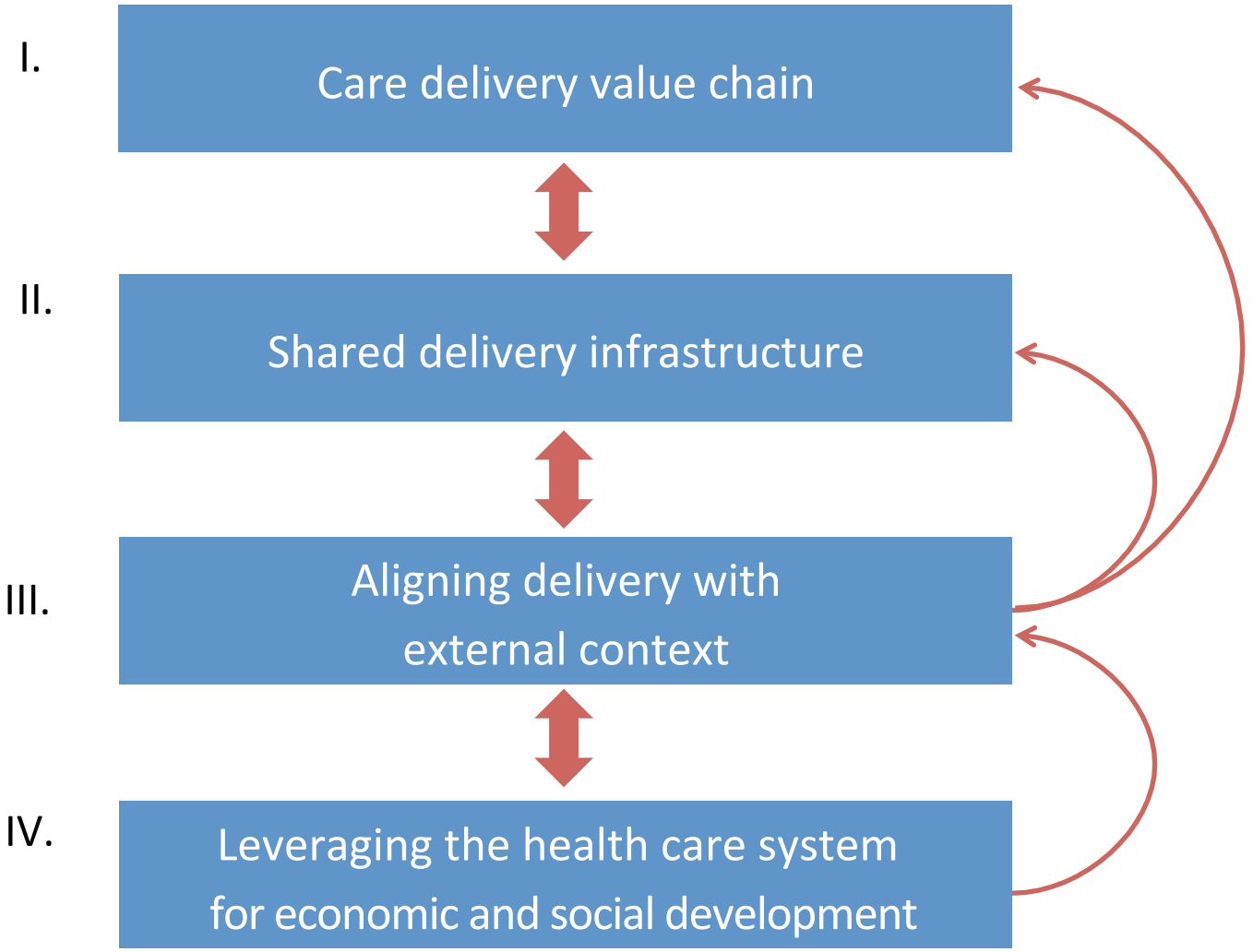
*"Medical knowledge is exploding, but it's often not traveling the last mile to ensure that patients get the right care in the right place at the right time. If we can leverage technology to spread best practices through case-based learning and mentoring of providers, we can move knowledge—instead of patients—to get better care to rural and underserved communities across the country."*

—Sanjeev Arora, MD, Project ECHO Founder and ECHO Institute Director

In December 2016, Sanjeev Arora, MD, spoke to a group of primary care and specialist physicians from across the globe interested in joining Project Extension for Community Healthcare Outcomes, or Project ECHO®. Arora had developed Project ECHO—a web-based guided practice model—at the University of New Mexico in 2003 to address the tremendous need for hepatitis C care, particularly in medically underserved areas. At the time, he was one of the only liver specialists in New Mexico, and patients were waiting for months and traveling hundreds of miles to see him. Using videoconferencing, Arora began training primary care providers in remote areas to manage and treat their hepatitis C patients.

Arora and his team worked hard to spread and grow the model, using grants to fund their work. By December 2016, more than 100 institutions in over 20 countries were using the Project ECHO model to train [illegible] care providers to treat more than 55 complex medical conditions. Dozens of peer-reviewed studies [illegible] provider self-efficacy and job satisfaction, increasing patient access to [illegible] and hospital visits.

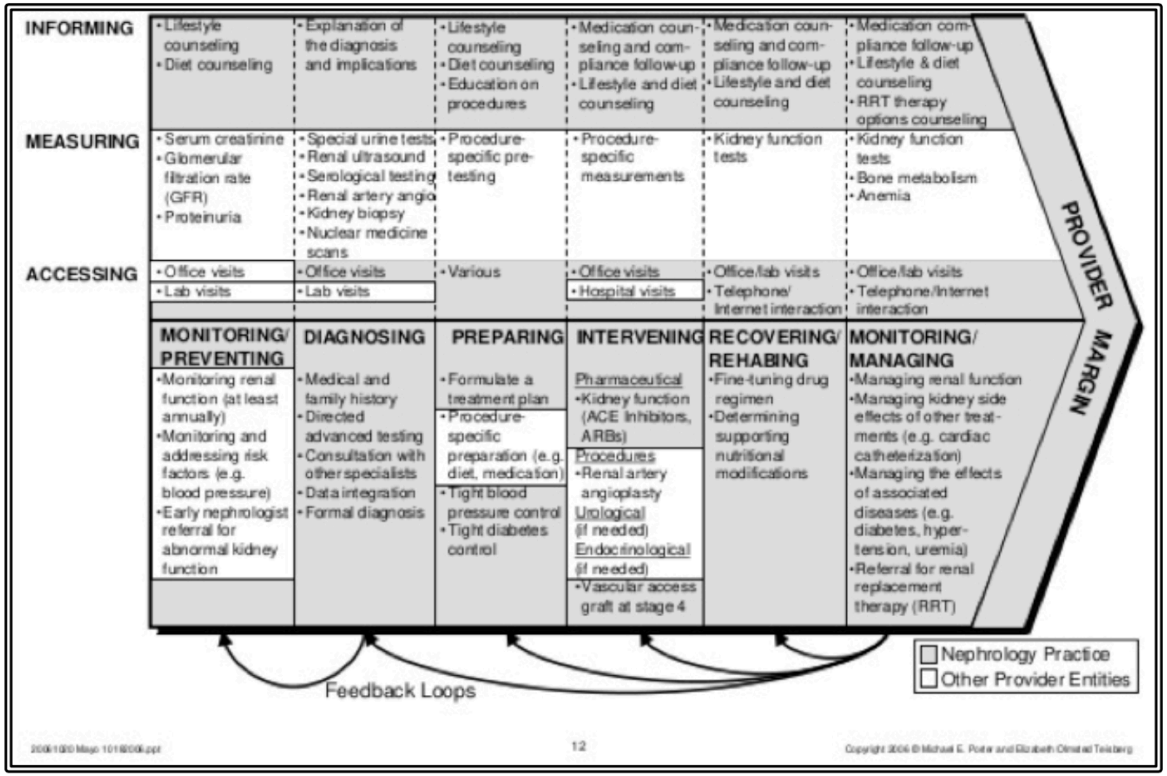
# Framework highlights value generation in global health care delivery*




*See Kim JY, Farmer PE, Porter ME. Redefining global health-care delivery. *Lancet,* May 20, 2013.

# I. Care Delivery Value Chain—how are services configured to generate value?

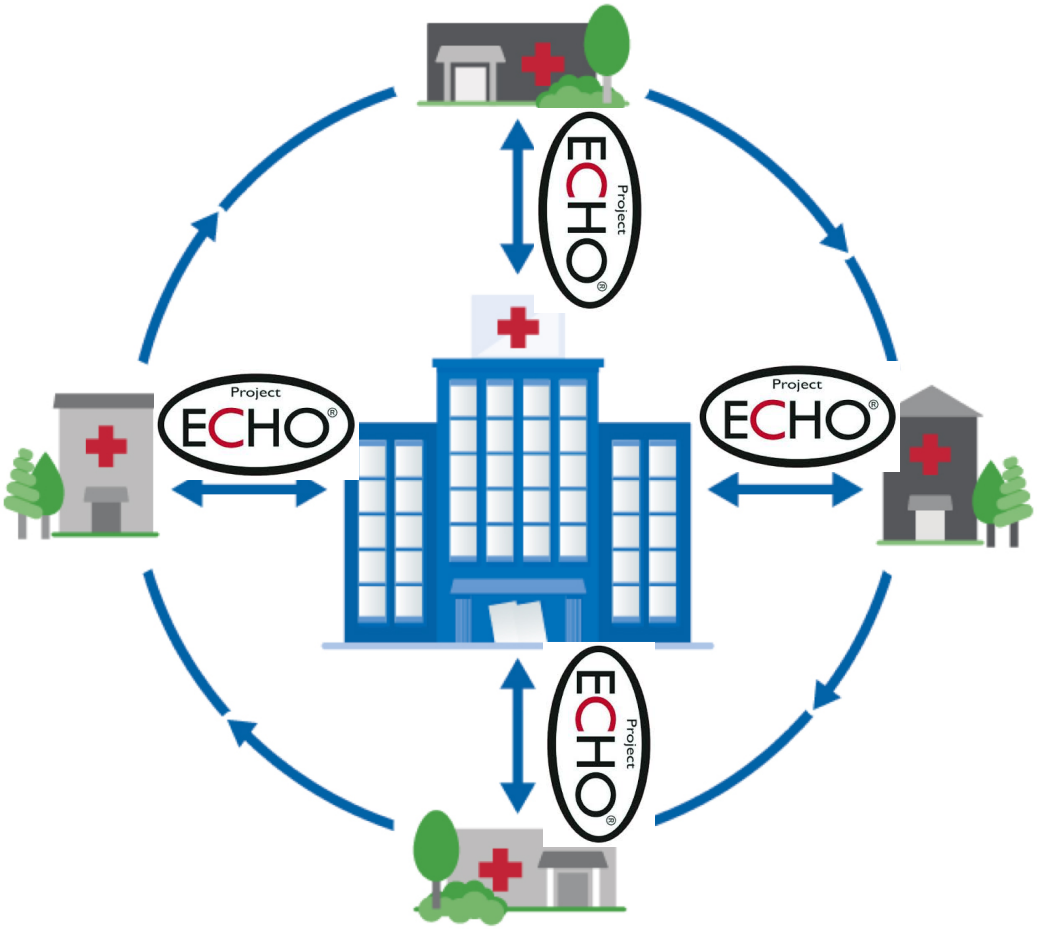
Looking at what is needed over the entire cycle of care to ensure needs are met at each stage creates value.




Source: Porter, Michael E., and Elizabeth Olmsted Teisberg. *Redefining health care: creating value-based competition on results*. Harvard Business Press, 2006.

# II. Shared delivery infrastructure—how do programs integrate care across value chains?

Making specialized care available at the same facilities patients attend for primary care creates value. It decreases the need for additional facilities and retains patients.



# III. Aligning delivery with external context

Removing contextual barriers and providing care that is culturally acceptable improves usage and drives demand.

# IV. Leveraging the health care system for economic and social development

Investing in local clinicians and improving local access to services promotes sustainable economic development.

*Results of Project ECHO Provider Surveys, 2006 and 2007*

| Annual Survey of Clinicians Participating in ECHO HCV Clinic, 2006 | |
|---|---|
| N=17<br>Rating Scale from 1 to 5<br>with 1=Not at all to 5=To a Large Degree | Mean score<br>(Range 1–5) |
| ECHO has diminished my professional isolation. | 4.3 |
| My participation in ECHO has enhanced my professional satisfaction. | 4.8 |
| Collaboration among agencies in ECHO is a benefit to my clinic. | 4.9 |
| ECHO has expanded access to HCV treatment for patients in our community. | 4.9 |
| In general, access to specialist expertise and consultation is a major area of need for me and my clinic. | 4.9 |
| Access to HCV specialist expertise and consultation is a major area of need for me and my clinic. | 4.9 |

| Community Clinician Assessment of Self-Efficacy*<br>in HCV Patient Care (ECHO Annual Survey, 2006 and 2007) | | |
|---|---|---|
| N=25 | Before Participation, Mean | After 1 Year of Participation, Mean |
| Ability to identify patients who should be screened for HCV | 4.2 | 6.4 |
| Ability to identify suitable candidates for treatment for HCV | 2.8 | 5.6 |
| Ability to assess severity of liver disease in patients with HCV | 3.2 | 5.5 |
| Ability to treat patients with HCV and manage side effects | 2.0 | 5.2 |
| Ability to educate clinic staff about patients with HCV | 2.8 | 5.8 |
| Ability to educate and motivate patients with HCV | 3.0 | 5.7 |
| Ability to assess and manage psychiatric comorbidities in patients with HCV | 2.6 | 5.1 |
| Ability to assess and manage substance abuse comorbidities in patients with HCV | 2.6 | 4.7 |
| Ability to serve as a consultant within my clinic and in locality for HCV questions/issues | 2.4 | 5.6 |
| Overall competence (average of nine items above) | 2.8± | 5.5± |

# Training Programs:
# Global Health Delivery Intensive

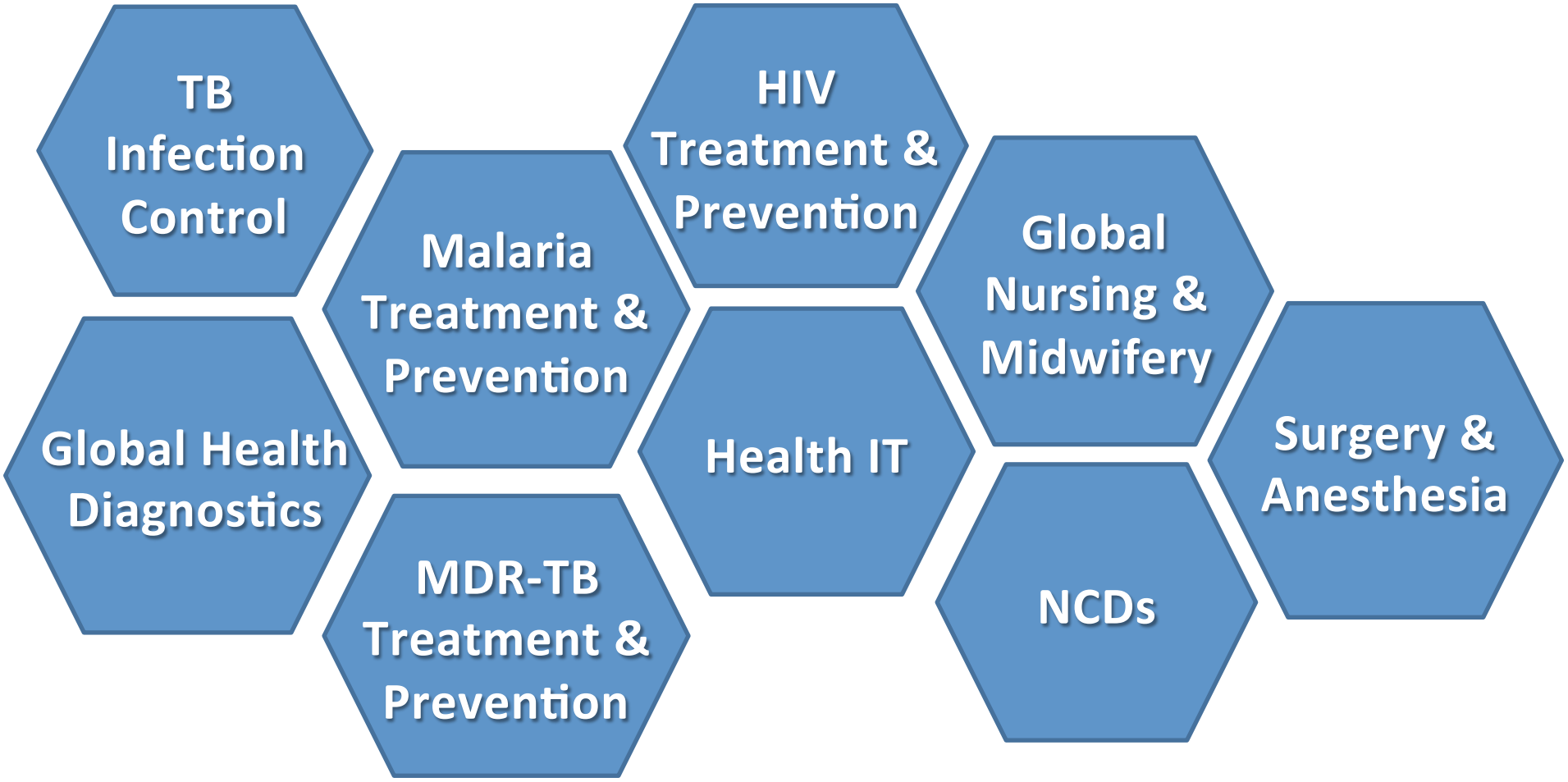
# Global Health Delivery Intensive



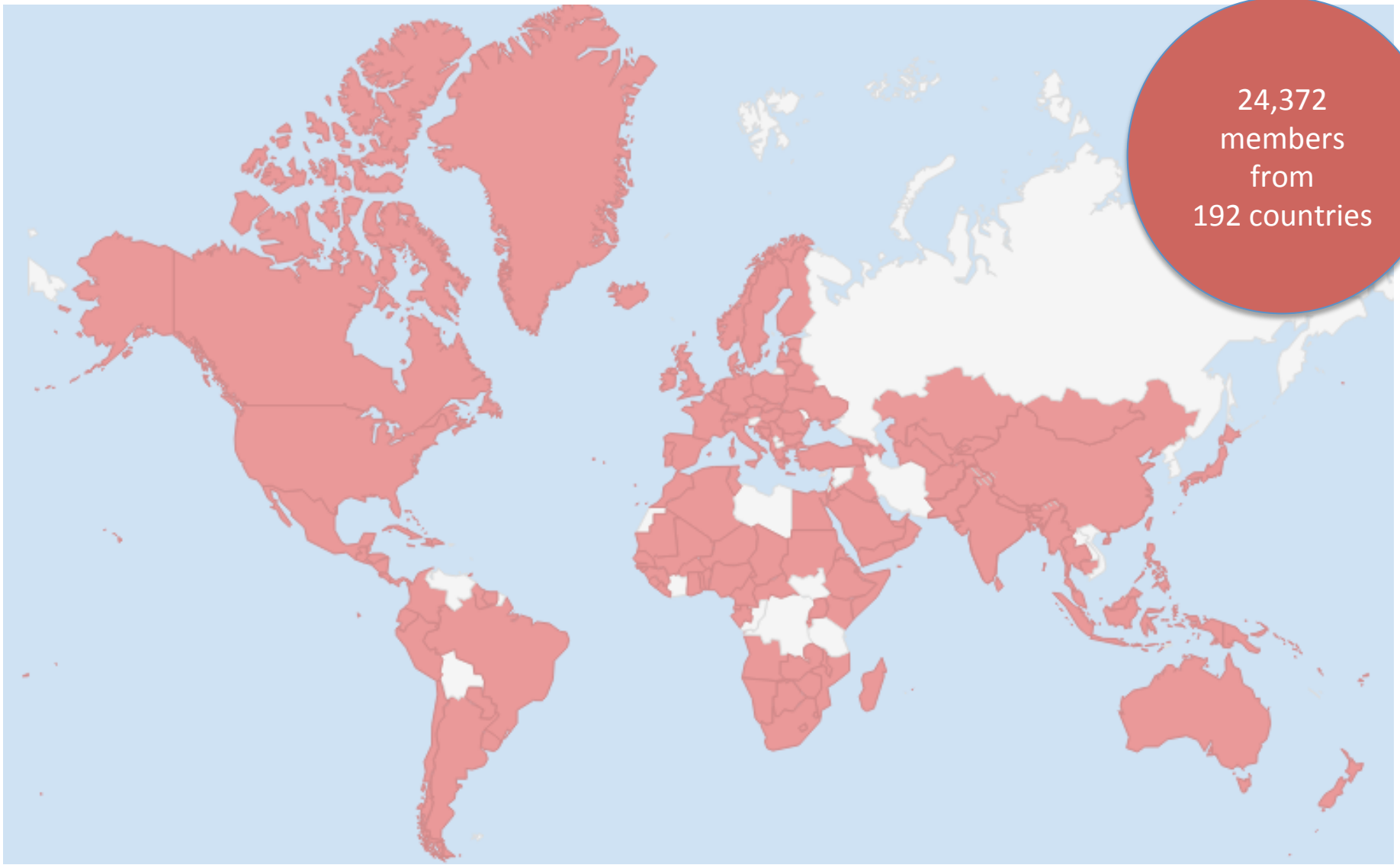
# Online Communities of Practice

# GHDonline: Virtual Colleagues

# Public Communities



# GHDonline members



# Better Evidence

# Clinicians practicing in low-income countries face an almost impossible task.

## Universal challenges

Over 30,000 human diseases

Improving, and increasingly complex, treatment options

Staggering growth of evidence
- 16,000 new clinical trials in 2014-2016 [1]
- 900,000 new medical publications in 2016

## Additional challenges for low-income countries

Sick patients: Low-income countries account for 9% of world's population and 59% of global DALYs [2]

Low or no access to specialists

Rapidly shifting burden of disease
- Complex communicable diseases
- Growing NCD burden

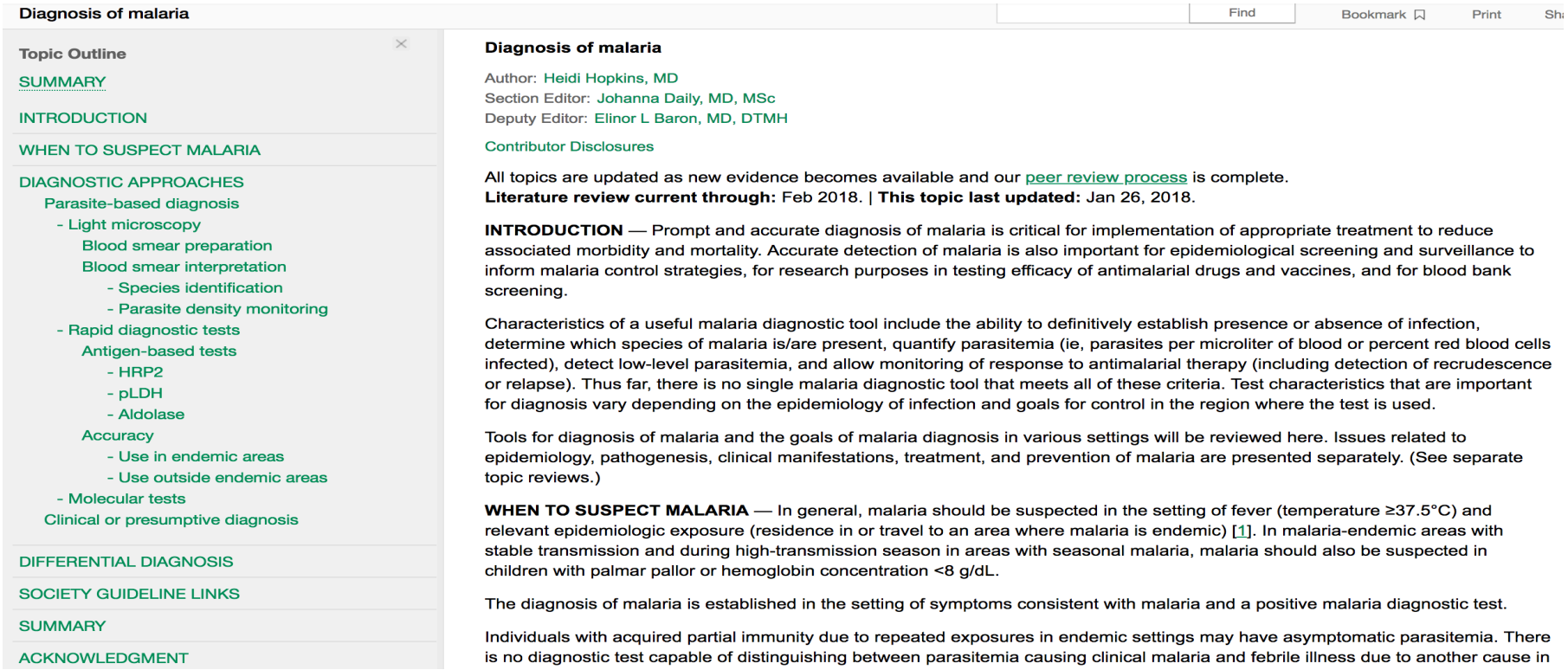
Medical education challenges [3]
- Limited tuition revenue
- Constrained library budgets
- Significant knowledge gaps leading to high medical error rate [4]

**Equipping these clinicians with the best available tools is crucial for their patients**

1. ClinicalTrials.gov [Internet]. U.S. National Institutes of Health. Trends, Charts, and Maps; 2017. 2. WHO Website [Internet]. The World Health Organization. Health Statistics and Information Systems; 2017. 3. Mullan F, Frehywot S, Omaswa F, et al. Medical schools in sub-Saharan Africa. Lancet. 2011 Mar 26;377(9771):1113-21. 4. Nolan T, Angos P, Cunha AJ, Muhe L, Qazi S, Simoes EA, Tamburlini G, Weber M, Pierce NF. Quality of hospital care for seriously ill children in less-developed countries. Lancet. 2001 Jan 13;

# Better Evidence awards free subscriptions to qualified practitioners.

To maximize clinician capacity, t**imely**, **accurate evidence** and **expertise** needs to be widely available to front-line providers throughout training and clinical practice.



Diagnosis of malaria

Find Bookmark Print Sh

Topic Outline

SUMMARY
INTRODUCTION
WHEN TO SUSPECT MALARIA
DIAGNOSTIC APPROACHES
Parasite-based diagnosis
- Light microscopy
Blood smear preparation
Blood smear interpretation
- Species identification
- Parasite density monitoring
- Rapid diagnostic tests
Antigen-based tests
- HRP2
- pLDH
- Aldolase
Accuracy
- Use in endemic areas
- Use outside endemic areas
- Molecular tests
Clinical or presumptive diagnosis
DIFFERENTIAL DIAGNOSIS
SOCIETY GUIDELINE LINKS
SUMMARY
ACKNOWLEDGMENT

**Diagnosis of malaria**

Author: Heidi Hopkins, MD
Section Editor: Johanna Daily, MD, MSc
Deputy Editor: Elinor L Baron, MD, DTMH

Contributor Disclosures

All topics are updated as new evidence becomes available and our peer review process is complete.
**Literature review current through:** Feb 2018. | **This topic last updated:** Jan 26, 2018.

**INTRODUCTION** — Prompt and accurate diagnosis of malaria is critical for implementation of appropriate treatment to reduce associated morbidity and mortality. Accurate detection of malaria is also important for epidemiological screening and surveillance to inform malaria control strategies, for research purposes in testing efficacy of antimalarial drugs and vaccines, and for blood bank screening.

Characteristics of a useful malaria diagnostic tool include the ability to definitively establish presence or absence of infection, determine which species of malaria is/are present, quantify parasitemia (ie, parasites per microliter of blood or percent red blood cells infected), detect low-level parasitemia, and allow monitoring of response to antimalarial therapy (including detection of recrudescence or relapse). Thus far, there is no single malaria diagnostic tool that meets all of these criteria. Test characteristics that are important for diagnosis vary depending on the epidemiology of infection and goals for control in the region where the test is used.

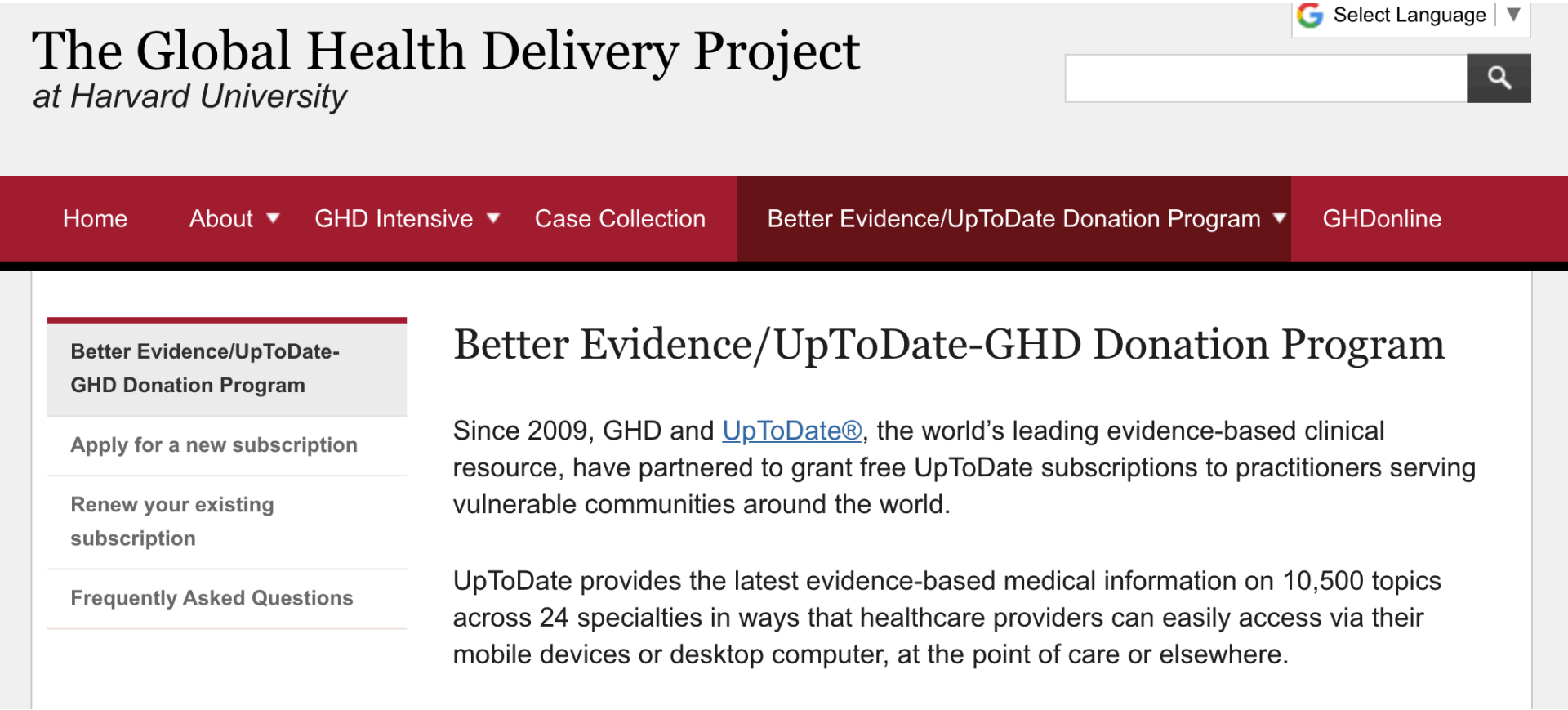
Tools for diagnosis of malaria and the goals of malaria diagnosis in various settings will be reviewed here. Issues related to epidemiology, pathogenesis, clinical manifestations, treatment, and prevention of malaria are presented separately. (See separate topic reviews.)

**WHEN TO SUSPECT MALARIA** — In general, malaria should be suspected in the setting of fever (temperature ≥37.5°C) and relevant epidemiologic exposure (residence in or travel to an area where malaria is endemic) [1]. In malaria-endemic areas with stable transmission and during high-transmission season in areas with seasonal malaria, malaria should also be suspected in children with palmar pallor or hemoglobin concentration <8 g/dL.

The diagnosis of malaria is established in the setting of symptoms consistent with malaria and a positive malaria diagnostic test.

Individuals with acquired partial immunity due to repeated exposures in endemic settings may have asymptomatic parasitemia. There is no diagnostic test capable of distinguishing between parasitemia causing clinical malaria and febrile illness due to another cause in

# The Better Evidence application is available on our website.




https://www.globalhealthdelivery.org/uptodate

# Comments from our users in low-income countries show its ability to transform care.

This past October, we had a patient arrive with high fever and general body aches, soon followed by skin bruising and epistaxis. We used UpToDate to look at the possible differential diagnosis and suspected hemorrhagic fever. We had no experience with this disease before, and would not have recognized it without the help of UpToDate. The Ugandan authorities were alerted - and arrived quickly. This case was finally diagnosed as the first case of Crimean-Congo Hemorrhagic Fever (CCHF) in Uganda in the past 4 years. Following the quick diagnosis, the source of the infection was traced, and an epidemic was prevented.

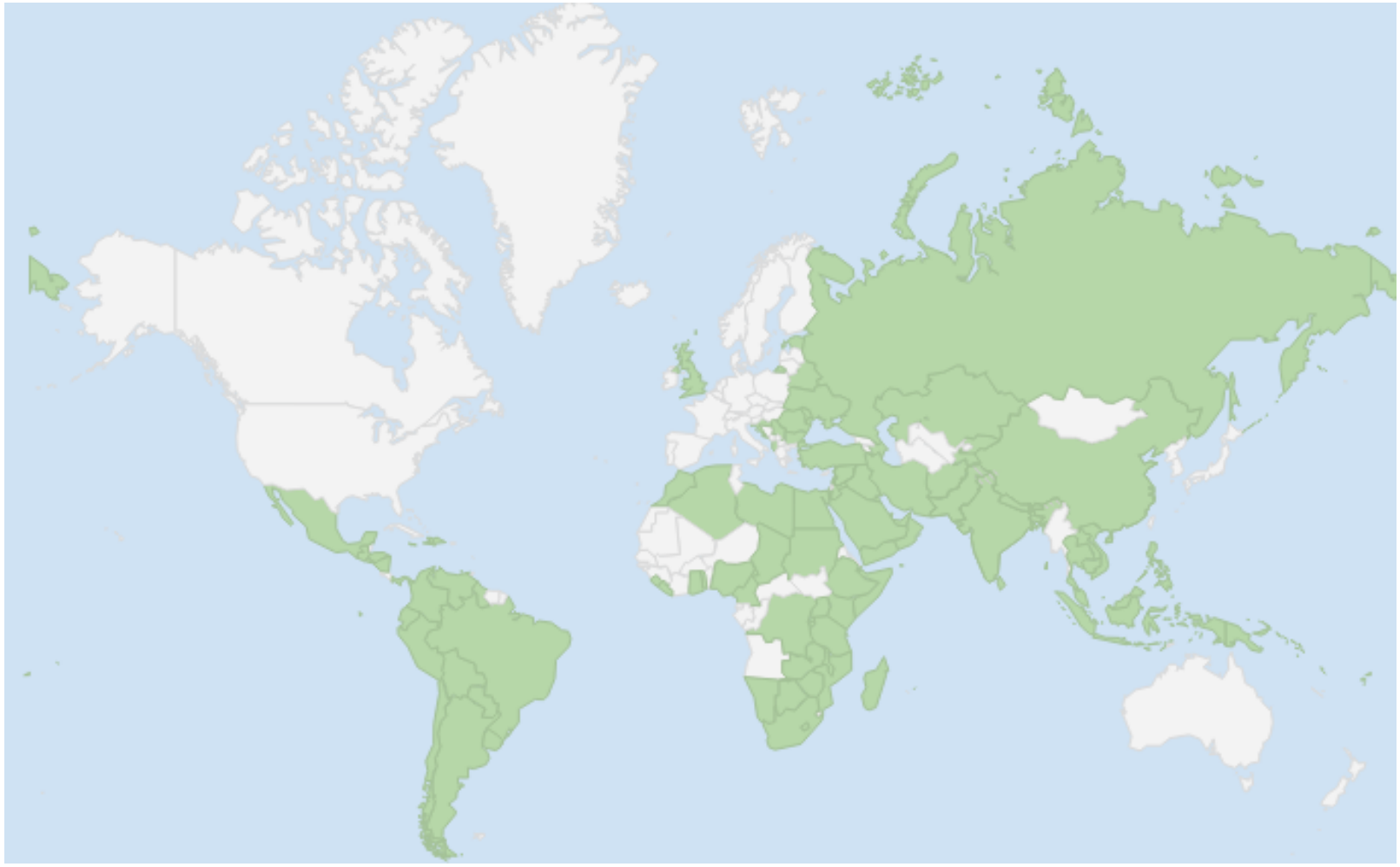
*Clinician in Uganda*

The evidence-based clinical resource has allowed me to expand my differential and remember/ learn about diseases that are rarely seen here. As there are very few subspecialists, it has allowed me to take care of patients who require subspecialty care and to be more confident in the care I am providing. It has impacted my care of patients because I use it all the time also for teaching, to show differential diagnosis tables, algorithms, summarize evidence from previous studies, etc.
*Clinician from Malawi*

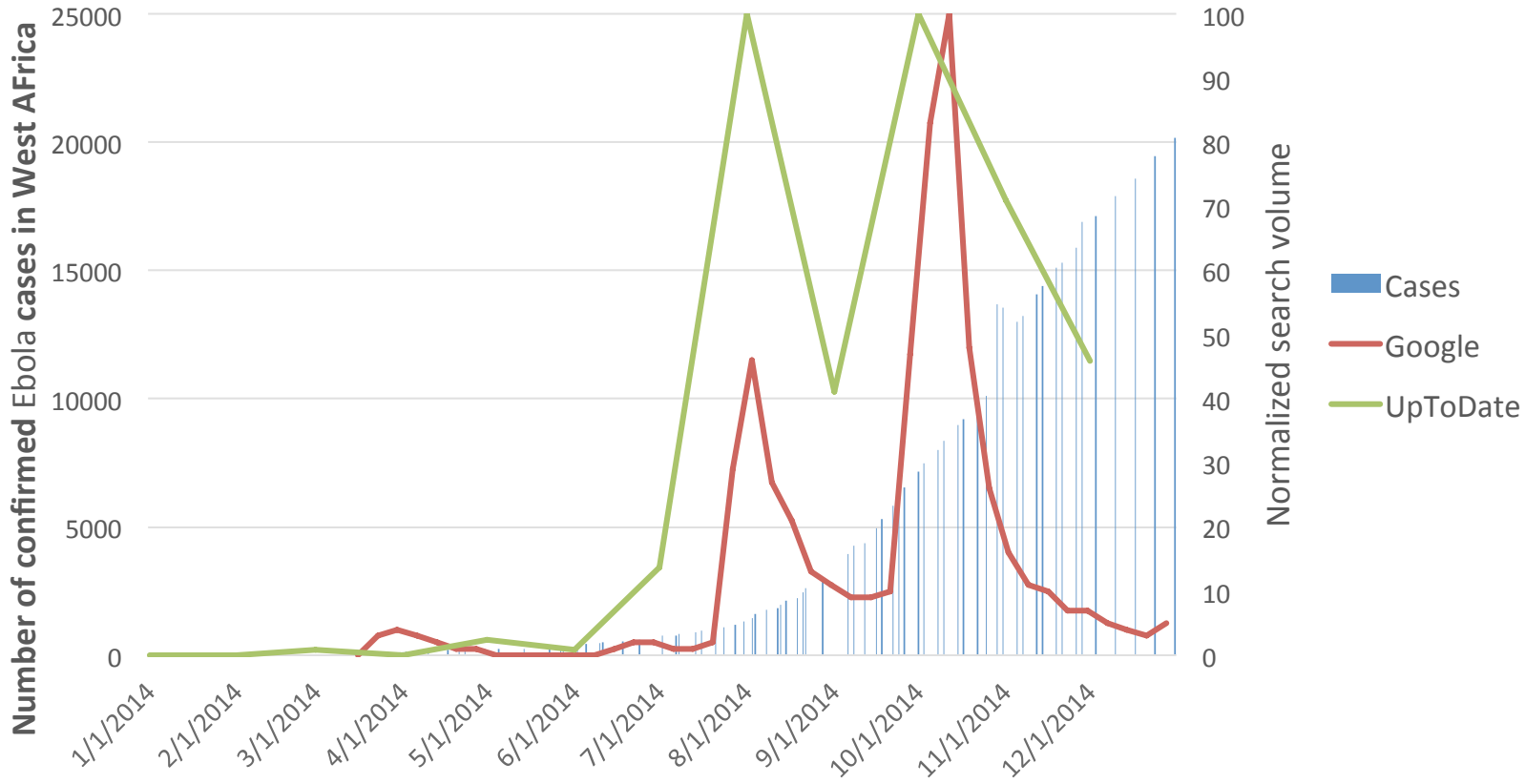
The most important scenario where I have adapted the use of UpToDate is the management of Enteric Fever. While textbook management of typhoid and related fevers is mostly focused on management in the western hemisphere, UpToDate provides data from clinical studies specifically done in Nepal, allowing us to deviate from the textbook knowledge and treat patients with the antibiotics which are sensitive to bugs in this part of the world. It has helped with the practice of evidence based medicine while catering to an endemic disease of this region.

*Clinician from Nepal*

# Distributing Better Evidence to over 120 countries



# Potential impact of usage patterns




***Cases:*** *Number of confirmed cases in Guinea, Sierra Leone, and Liberia. Source: US CDC*
***Google:*** *Normalized worldwide search volume of the term "ebola" on Google. Source: Google Trends*
***UpToDate:*** *Normalized worldwide searches containing the word "ebola" among GHD UTD subscription recipients.*

Note: Topic titles were counted once if they appeared more than once in the same log-on session.

# How it all Ties Together,

# Professional Trajectories of Students and Faculty

## Case Collection

***Ashti Doobay-Persaud, MD***
*Northwestern University Feinberg School of Medicine*

"Most recently, I had the opportunity to dedicate an entire class to selected cases from the collection for our MPH program. I am now the Associate Director of Global Health Graduate Education. Teaching the cases… has helped build a career for me."

## GHD Intensive

***Maimunat Alex-Adeomi, MBBS, MBA***
*Nigerian physician and former M&E Implementation Assistant at PACT*

Maimunat's professional development through GHDI:

1. Global Health Corps Fellow (*2012*)
2. Completed GHDI (*2012*)
3. GHDonline community moderator (*2015*)

## GHDonline

***Junior Bazile, MD, MPH***
*Formerly Partners in Health (PIH)/Zanmi Lasante (ZL)*

Bazile's Professional Development on GHDonline:

1. Reader *(2010-11)*
2. Participant *(2011-13)*
3. Expert Panelist *(2013)*
4. HIV Treatment & Prevention community moderator *(2015-17)*

## Better Evidence

***Chiquita Palha De Sousa, MD, MPH***
*Pediatric Global Health fellow at Boston Children's Hospital*

Chiquita's Professional Development with GHD:

1. Better Evidence UpToDate subscription recipient (*since 2017*)
2. Completed GHDI (*2016*)

# Creating new distribution channels

## Case Collection

- More than **40 award-winning cases** in Global Health Delivery available at no cost

## GHD Intensive

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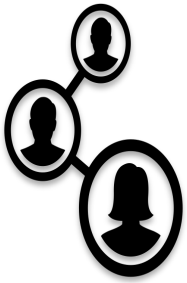

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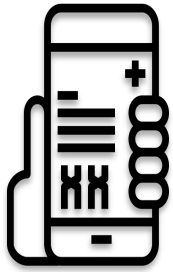

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