



Humanitarian Disasters and Public Health Emergencies: A place for pathology and laboratory medicine

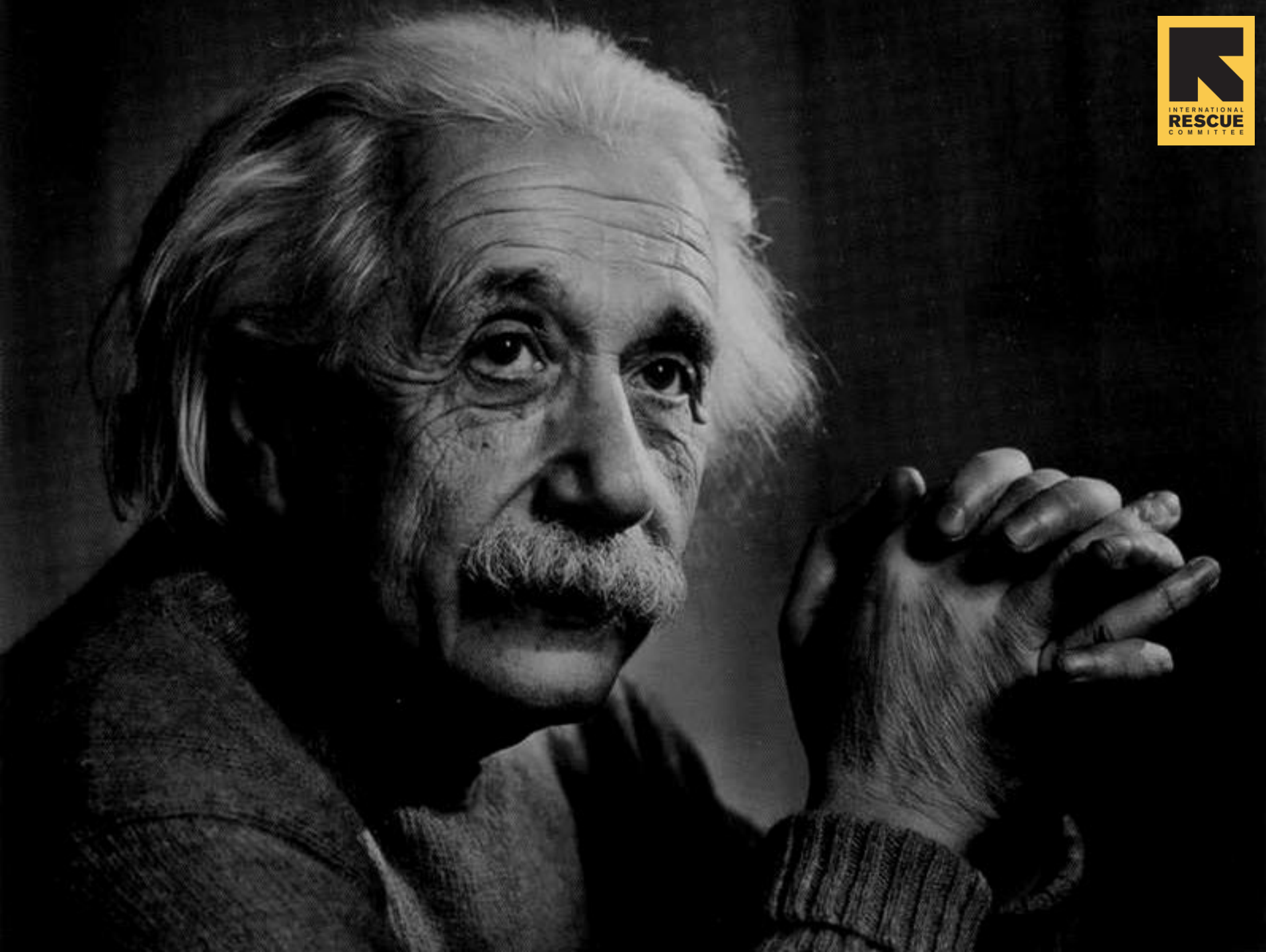
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International Rescue Committee

Pathology is Global Symposium

Royal Society of Medicine, London, 1 November 2016





LONDON
BRUSSELS
GENEVA

United States of America
NEW YORK
WASHINGTON, D.C.

Haiti

Senegal
Sierra Leone
Liberia
Ivory Coast

Mali Niger Chad

Central African Republic
Cameroon

Uganda
Democratic Republic of Congo

Zimbabwe

South Africa

Turkey
Northern Caucasus
Syria
Iraq
Jordan
Lebanon
Palestinian Territories

South Sudan
Yemen

Ethiopia

Somalia
Kenya
Rwanda
Burundi
Tanzania

Afghanistan
Pakistan

Myanmar
Thailand
BANGKOK

Philippines

Malaysia

Indonesia

Offices
IRC Programs
Surge Programs

Our Work

The International Rescue Committee responds to the world's worst humanitarian crises, helping people to survive, recover and reclaim control of their future.

Our Impact

In 2015, more than **23 million people** benefited from IRC programs and those of its partner organizations.

In 2015, the IRC and its partner organizations:

Helped more than **21 million people** gain access to primary and reproductive health care.

Vaccinated more than **440,000 children** under the age of one against measles.

Supported **2,384 clinics and health facilities** that helped more than **315,000 women** deliver healthy babies.

Supported more than **13,000 community health workers** to treat communicable diseases in children under age 5 and treated **186,000 children** under age 5 for acute malnutrition.

Gave **2.6 million people** access to clean drinking water or sanitation.

What is a Disaster / Crisis?

A serious disruption of the functioning of a society, involving widespread human, material, economic or environmental losses and impacts which exceeds the ability of the affected society to cope using its own resources.
(*UNISDR*)

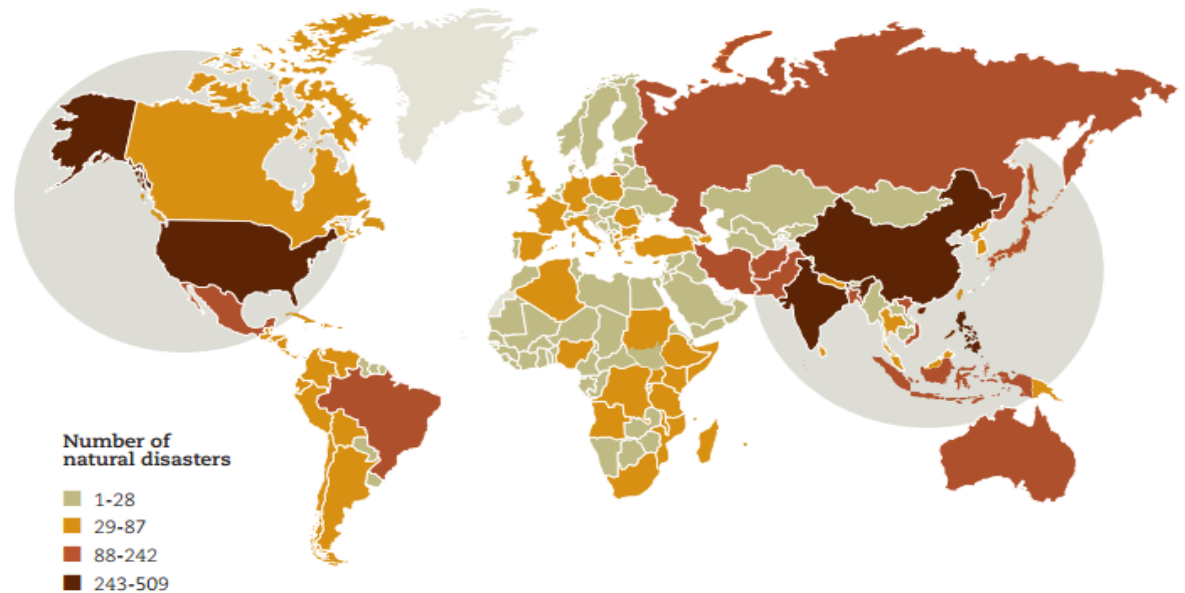
Over a 20 year period, 6,873 **natural disasters** claimed almost 68,000 lives a year

Earthquakes, tsunamis, volcanic eruptions and mass movements remained broadly constant with a sustained rise in climate-related events (mainly **floods and storms**)

Centre for Research on the Epidemiology of Disasters, UN International Strategy for Disaster Reduction

Figure 2

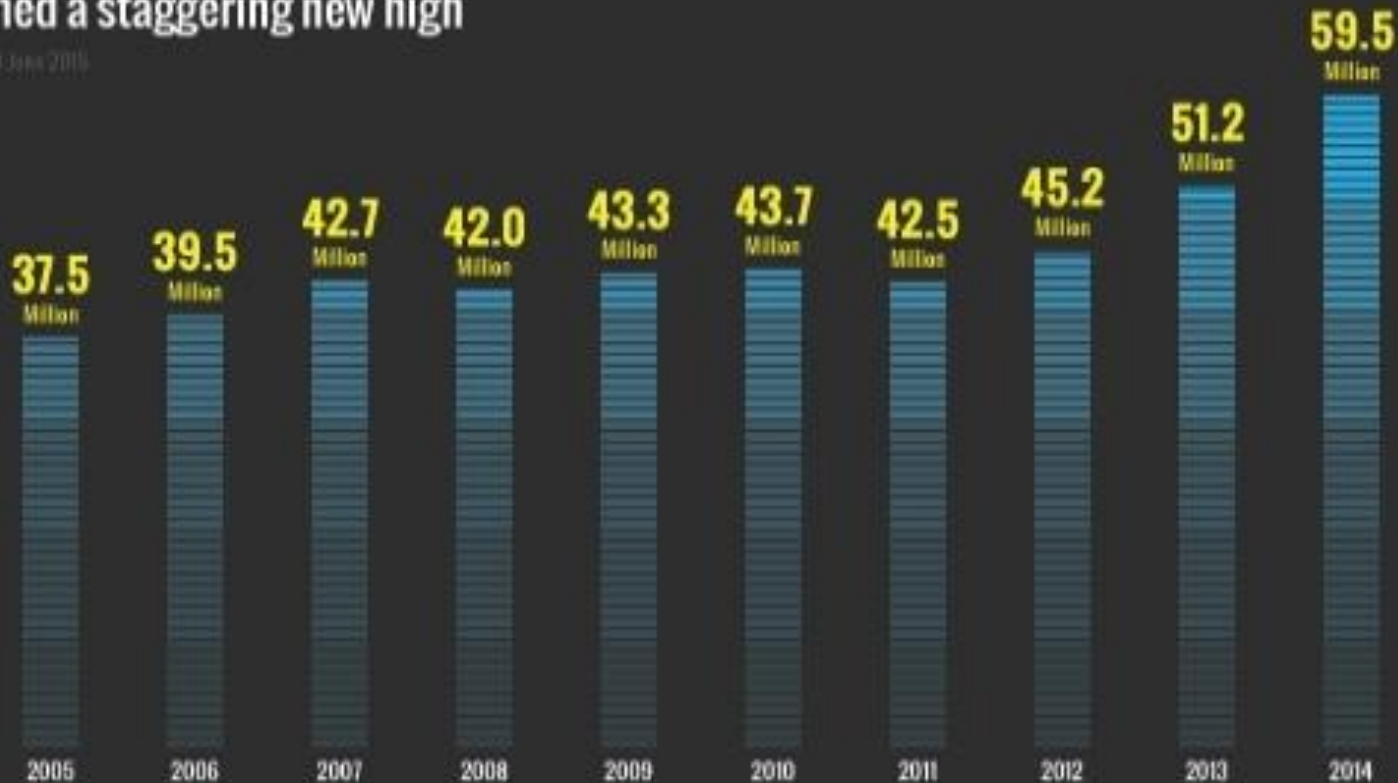
Number of disasters reported per country (1994-2013)



War and insecurity: trends in global population displacement: 2005-2014

The number of people displaced by war has reached a staggering new high

Sources: UNHCR / 18 June 2015

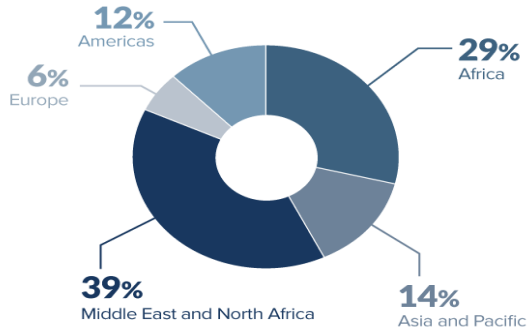




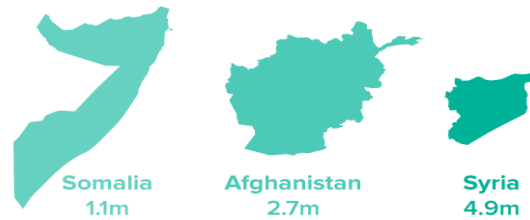
65.3 million
forcibly displaced people worldwide



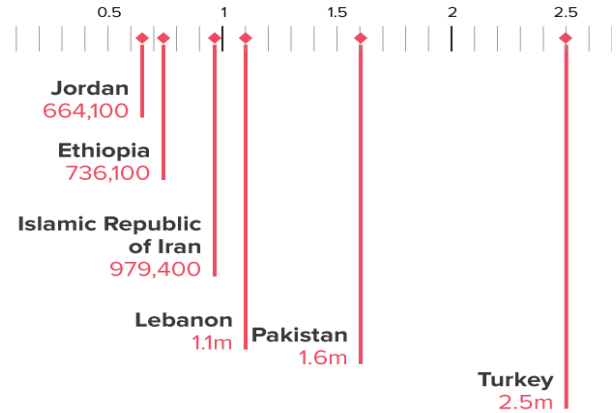
Where the world's displaced people are being hosted



54% of refugees worldwide came from three countries



Top hosting countries



33,972 people
a day forced to flee their homes
because of conflict and persecution

9,700 staff
UNHCR employs 9,700 staff
(figures from December 2015)

126 countries
We work in 126 countries

We are funded almost entirely by
voluntary contributions, with 86 per
cent from governments and the
European Union.

Source: UNHCR / 20 June 2016

Responding to acute emergencies- Burundi Crisis 2015: Cholera



When Ebola came the health systems were weak.....



Figures up to 13
January 2016

11,315

Deaths - probable,
confirmed and
suspected

(Includes one in the
US and six in Mali)

- **4,809** Liberia
- **3,955** Sierra Leone
- **2,536** Guinea
- **8** Nigeria

Source: WHO

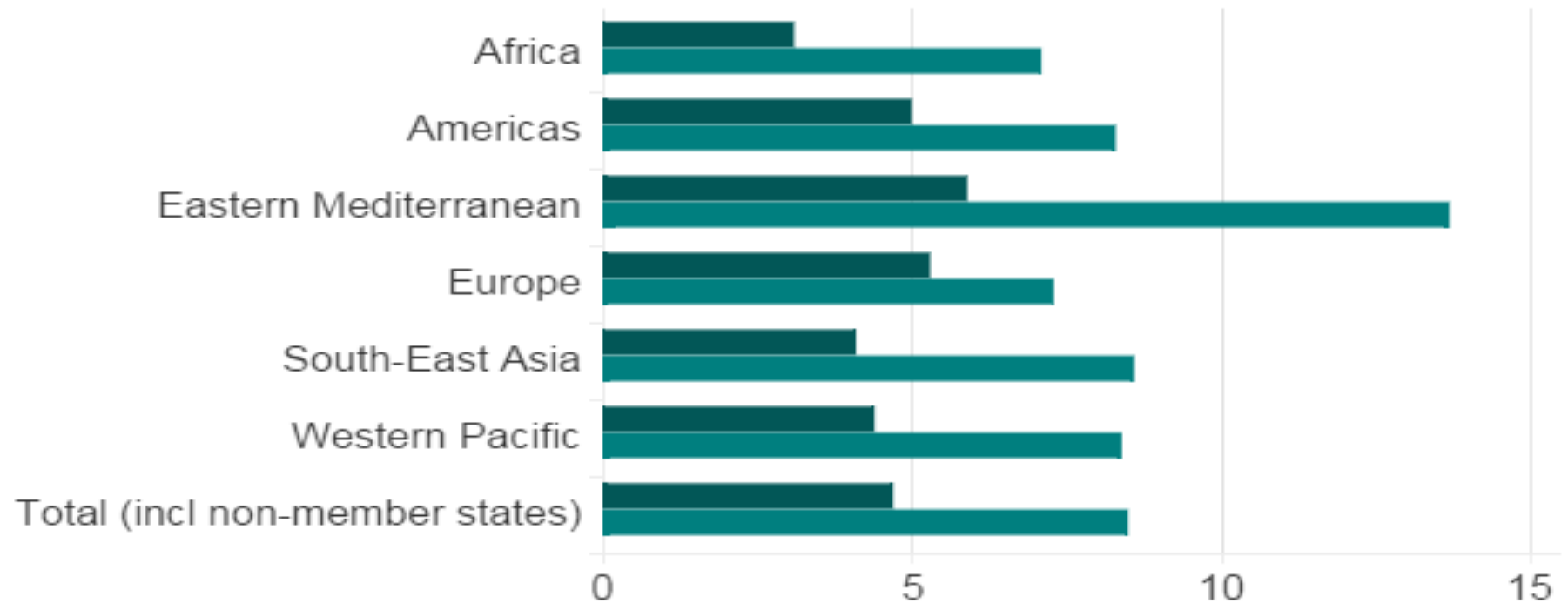
Quality of laboratory services: in 2015, most lab workers (7/8) died of Ebola in Kenema, SL; 2/10 in Lofa Liberia developed TB



Non-Communicable Diseases (NCDs) in humanitarian emergencies

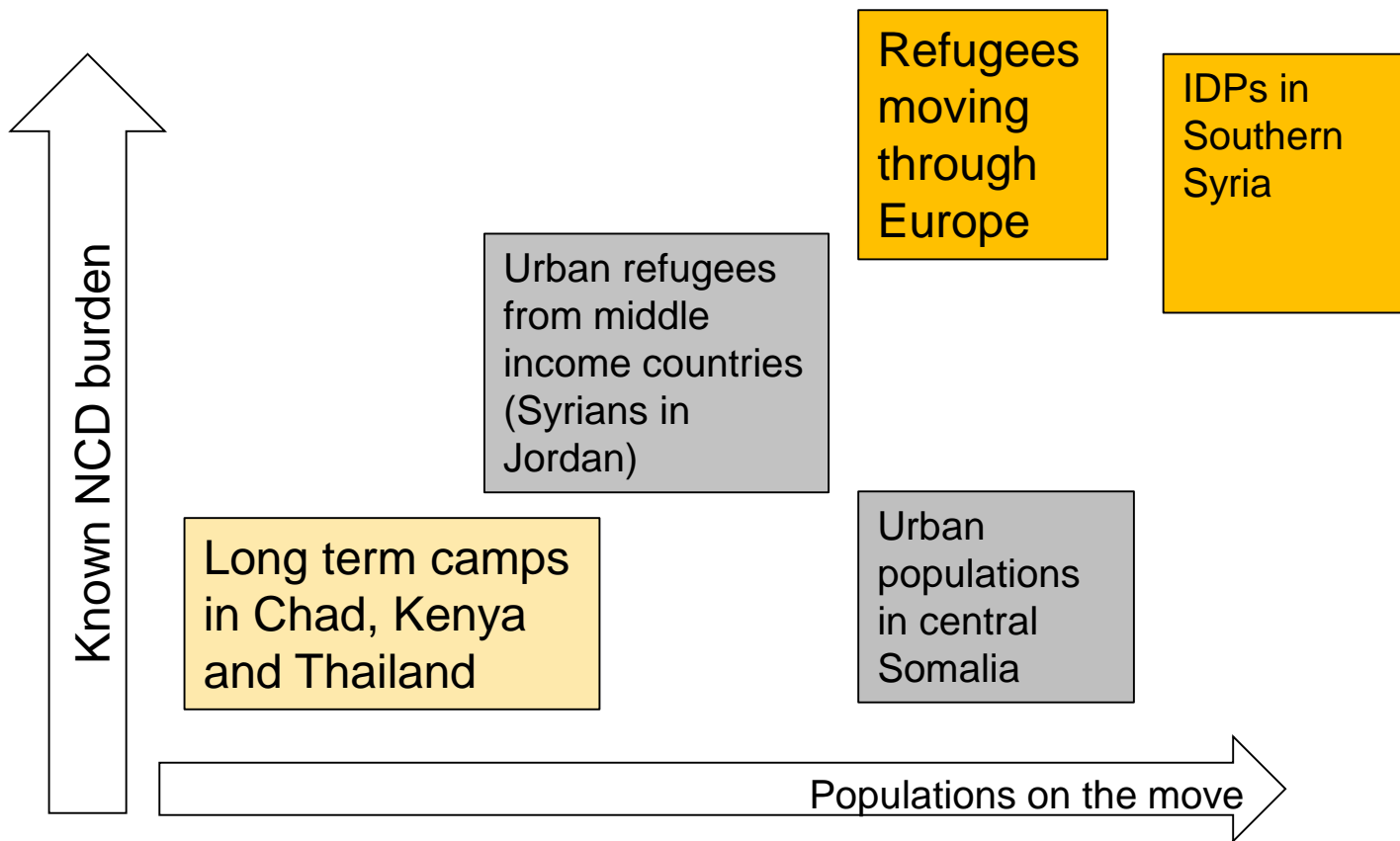
Estimated prevalence of adults with diabetes in WHO regions

■ % in 1980 ■ % in 2014



Source: WHO

B B C



The Global Health Security Agenda: Prevent, Detect, Respond

- **Launched in February 2014**
- A **partnership** of over 50 nations, international organizations, and non-governmental stakeholders to help build countries' capacity to help create a world safe and secure from infectious disease threats and elevate global health security as a national and global priority.
- A **Multilateral** and **multi-sectoral** approach

The Global Health Security Agenda: Action Packages (11)

Prevent 1: Antimicrobial Resistance

Prevent 2: Zoonotic Disease

Prevent 3: Biosafety and Biosecurity

Prevent 4: Immunization

Detect 1: National Laboratory System

Detect 2 & 3: Real-Time Surveillance

Detect 4: Reporting

Detect 5: Workforce Development

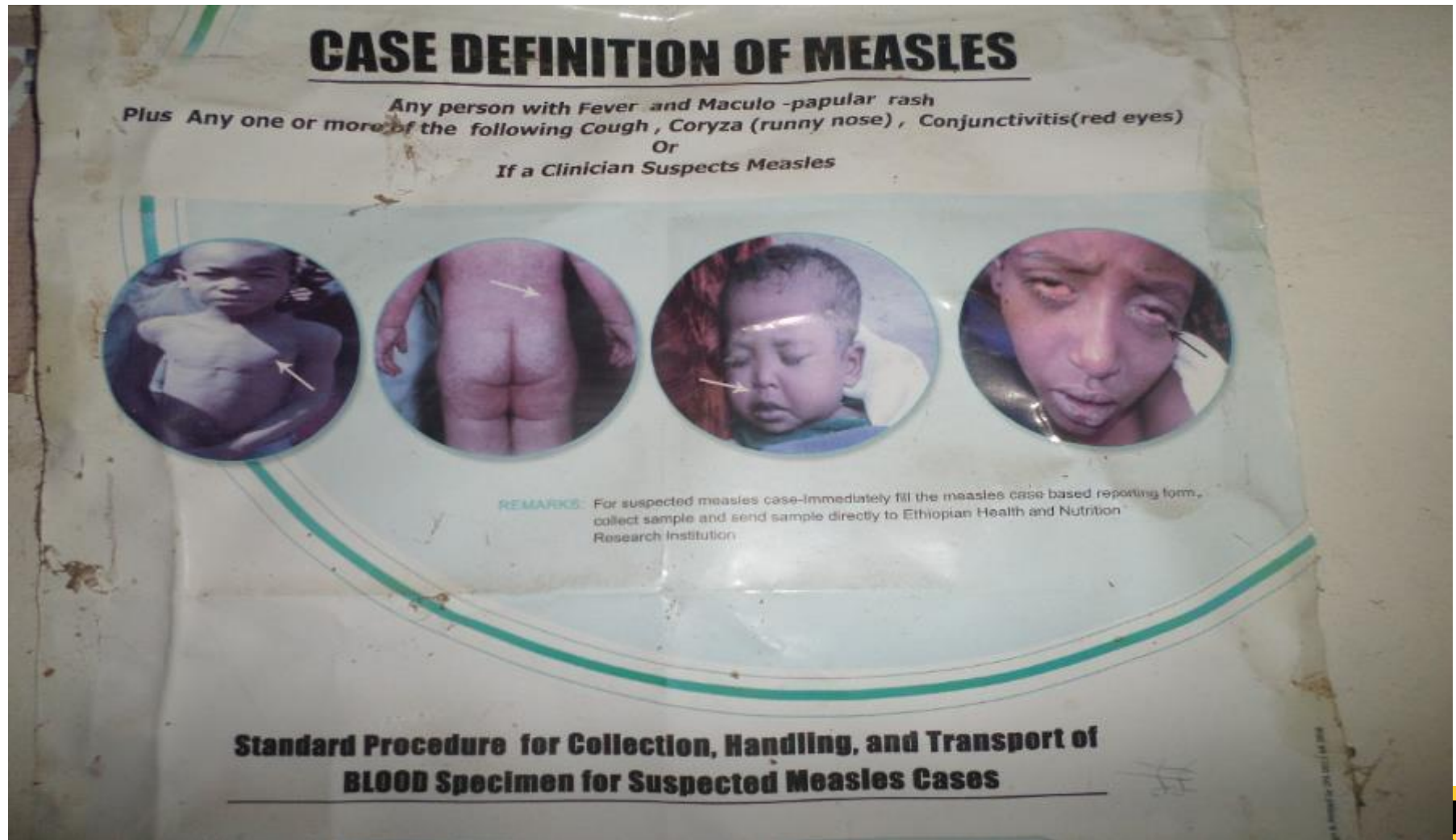
Respond 1: Emergency Operations Centers

Respond 2: Linking Public Health with Law and Multisectoral
Rapid Response

Respond 3: Medical Countermeasures and Personnel

¹⁶ Deployment Action Package

Community based surveillance and case confirmation



Framework and current best practice for implementation of an Early Warning and Response Network (EWARN)

Outbreak surveillance and response
in humanitarian emergencies

WHO guidelines for EWARN implementation
Geneva, 2012

DISEASE CONTROL IN HUMANITARIAN EMERGENCIES



EWARN systems work to pre-empt the late confirmation of outbreaks in emergencies where surveillance infrastructure is destroyed or non-existent (newly displaced populations/camps):

Research-Emerging infectious diseases : Volume 22, Number 8—August 2016;Assessment of Community Event–Based Surveillance for Ebola Virus Disease, Sierra Leone, *Ruwan Ratnayake, Samuel J Crowe, Joseph Jasperse et al*

- The IRC, along with the Ministry of Health Sierra Leone and 4 other partners implemented community events based surveillance (CEBS) to supplement the surveillance system in 9 districts working with 7,416 community monitors and 137 surveillance supervisors
- Community members were recruited and trained to report suspected Ebola cases using job specific content
- An evaluation of the process between February and September 2015

Possibilities where resources are adequate: Hagadera Hospital, Dadaab



Ability to do the minimum tests: laboratory at Karaan Health Centre, Mogadishu serving internally displaced persons



Community level rapid diagnostic testing for malaria



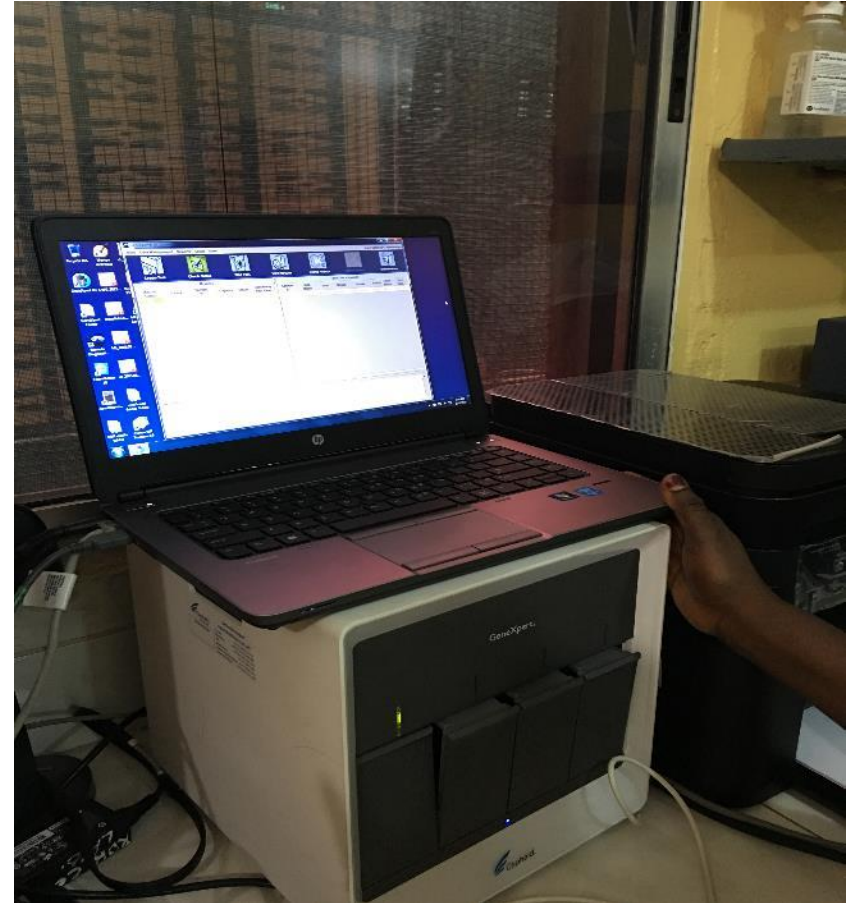
Recent developments

We know that stool culture remains the gold standard for cholera diagnosis. There have been big gains recently in validating new rapid diagnostic tests for cholera, which would have huge implications for PH emergencies

(<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0037360>)

There's been a lot of great work in terms of setting up mobile laboratories to do the more difficult tests for Ebola, Marburg etc. and there is a whole humanitarian laboratory sector dedicated to it (CDC, South African labs, Public Health England)

GenExpert: piloting a new Ebola test



Humanitarian emergencies, laboratory medicine and the global health security agenda

- Is Rapid diagnostic testing the way to go during humanitarian emergencies?
- Is there a place for innovation around easier ways of testing for NCDs?
- Is there a place for task shifting laboratory tests to lower level facilities and community level?

Questions?

Thank you!