Global consultation to optimize Routine Health Information Systems (RHIS) to effectively deliver Universal Health Coverage (UHC) and improve Primary Health Care (PHC) in countries

**Session 5 - Integrated Disease Surveillance (IDSR): Opportunities to scale**

*Facilitator: Carl Kinkade, US Centre for Disease Control and Prevention*
Session objective and contents

**Objectives:**
- Highlight the potential of integrated data systems in disease surveillance and emergencies
- Sharing experiences of systems integration and interoperability

**Contents**

1. Developing the Global Surveillance, Early Warning Strategy
   Karl Schenkel, WHO
2. Integrated VPD and Epidemic prone disease surveillance information system
   Alain Poy, WHO
3. Emergency programme:
   - Go.data and
   Sara Hollis,
   - EWARS
   Niluka Wijekoon Kannangarage
4. Rapid mortality surveillance during the COVID-19 pandemic
   Martin Bratschi, Vital Strategies
Session 5  Integrated Disease Surveillance (IDSR) Opportunities to Scale

Facilitator

Carl Kinkade  Centers for Disease Control

Dr. Carl Kinkade is a Health Scientist on the Surveillance and Information Systems team in the Global Epidemiology, Laboratory, and Surveillance Branch in the Center for Global Health at the US CDC. Dr. Kinkade has worked in surveillance and informatics for over 20 years and is member of the CDC Global Rapid Response Team. He has worked with countries across the globe to improve the use of informatics and information systems to improve surveillance and public health action. Recently, he was posted in Liberia for three years to support the Ministry of Health to recover from the Ebola outbreak in West Africa. In addition to Dr. Kinkade’s work in surveillance and information systems, he coordinates across divisions in the Center for Global Health to maximize coordination between PEPFAR, PMI, VPD surveillance, and Global Health Security Agenda. He is also the Project Officer for the CDC five-year cooperative agreement with the University of Oslo to support global surveillance.

Speakers

Karl Schenkel  World Health Organization

Dr. Karl Schenkel MSC, DTMPH is a medical epidemiologist working for the Surveillance and Epidemiology Strengthening (SES) team, Field Epidemiology Support (FES) unit of the WHO Emergencies Programme Geneva. His work relates to health information management in emergencies, including development of a surveillance strategy, developing user guidance for Early Warning and Response, and supporting development of tools for outbreak investigations and for Early Warning and Response.

Trained as a medical doctor, he followed clinical specialization as a GP with a Master in International Health, focusing on communicable diseases epidemiology and disease control. He then worked as a research fellow in communicable diseases epidemiology at the Robert Koch Institute (RKI), Berlin, Germany, including a 2-year applied field epidemiology training programme and joined WHO in 2016. He coordinates a donor funded project with the objective of developing a framework and operational guidance around field epidemiological competencies at the human-animal-environmental interface, following a One Health approach, and on improving the health workforce for epidemiologists. The WHO emergencies programme operates mainly in emergency prone countries, with a focus on the African Region. Karl recruits and supervises FETP fellows from the regional FETP program AFENET who support WHO surveillance activities on completion of their advanced programme. Karl is passionate about working with colleagues in African countries and about mapping and identifying global and regional initiatives providing opportunities for collaboration on surveillance capacity strengthening and harmonization at country level.
**Alain Poy** World Health Organization

Alain Poy is married and father to 1 boy and 1 girl. He is a US citizen originally from DR Congo, he has over 20 years of experience in public health information management, database management, Monitoring & Evaluation and data quality improvement support in the African Region from district, provincial, national, sub-regional and Regional level. He also has experience in emergencies from being Information management lead in during Ebola in West Africa, during the crisis in Central Africa Republic and during yellow fever outbreak in Angola to being recently Covid-19 incident Manager in Equatorial Guinea.

Alain started his public health experience at country level, at the National immunization programme of Democratic Republic of Congo in Informatics, data management and M&E in 1999 where he worked for 9 years. Alain participated to 4 different STOP DM mission to WHO sub-regional offices/IST (Stop 20, 21, 22 and 34). He joined WHO first as consultant from Atlanta Georgia/USA after his last STOP mission as consultant to WHO AFRO before becoming WHO Staff in 2010 fist at IST and then at the regional office since 2012 in the area of of immunization data management and data quality. He coordinates the development of immunization and VPD surveillance DHIS2 package from WHO side. Alain has also academic experience, while in DR Congo, Alain was also Assistant Professor for DB and BDMS at “Institut Supérieur d’Informatique Programmation et Analyse (ISIPA) in Kinshasa, DRC. Alain established the early warning IMS during the last humanitarian crisis in Central African Republic; he coordinated information management during yellow fever outbreak in Angola, he coordinated the Ebola information management team in Sierra Leone and developed and supported the response monitoring in the 3 Ebola affected countries in West Africa within UNMER. Alain currently coordinates Information System and Monitoring and Evaluation team overseeing system development, data management, monitoring and Evaluation as well as and data quality activities related activities for immunization and VPD surveillance in the WHO African region. This includes routine immunization, supplementary Immunization activities (independent monitoring, LQAs, admin data), polio risk assessment, JRF, VPD surveillance, data quality activities and DMS development. Alain also chairs the MenAfriNet DM team for meningitis case based surveillance in AFRO with WHO and CDC Atlanta and coordinates partner’s efforts.

**Sara Hollis** World Health Organization

Sara is an Epidemiologist based in Geneva in WHO’s Health Emergencies Pro-gramme within the GOARN Operational Support Team, currently supporting the Go.Data project - a WHO tool for case investigation and contact tracing - and formerly a programme focal point for the DHIS2-based WHO Integrated Data Platform (WIDP).

Her past and present research interests center around how to best harness timely and localized data to field operations, and how to leverage open-source tools and initiatives to build capacity in this area. Sara holds an MSc in Global Health Sciences at the University of California, San Francisco.
Niluka Wijekoon Kannangarage  World Health Organization

Dr Niluka Wijekoon Kannangarage is a medical epidemiologist. She works in the Emergencies Programme at WHO headquarters in Geneva, in the Department of Health Information Management and Risk Assessment. Dr Niluka is a technical expert in surveillance, early warning, alert and response in emergency settings. She has started her public health career with the United Nation’s International Organization for Migration (IOM) as the Emergency Health Coordinator in Sri Lanka, during the ethnic crisis. She has first joined WHO in 2011 as the Officer in Charge (OIC) of WHO’s emergency hub in Vavuniya, Sri Lanka. She has been with WHO headquarters since 2014 and has worked in emergencies and outbreaks around the world, including in Ethiopia, Kenya, Liberia, Sierra Leon, Guinea, Nigeria, South Sudan, Mozambique, Rohingya crisis is Bangladesh, NE Syria, Yemen, DRC, and Indonesia. Dr Niluka also manages WHO’s electronic tool for early warning, alert and response named EWARS-in-a-Box, an innovative solution for outbreak detection in emergency settings. Before embarking on a public health career, Dr Niluka worked as an emergency physician in both public and private healthcare sectors. She obtained her Master of Public Health from The University of Sheffield, UK and Master of Biostatistics and Epidemiology from French School of Public Health, Paris, France (École des hautes études en santé publique).

Dr Niluka has been a human rights and gender champion from the outset of her career. She is the Gender, Equity and Human Rights (GER) focal person for her department at WHO.

Martin Bratschi  Vital Strategies

Dr Martin Bratschi (PhD) is a CRVS systems and public health expert working as the Technical Director CRVS, at Vital Strategies. Martin is supporting the technical implementation of CRVS system strengthening and mortality measurement activities in over 15 countries around the world. His work includes strategic discussions with national stakeholders and global partners aimed at institutionalizing and scaling CRVS system improvements.
Developing the Global Surveillance, Early Warning Strategy
Background/problem statement

• Surveillance and early warning activities fragmented across disease-specific and cross-cutting programs, across WHO and beyond

• Data architecture and data use lacking scalability

• A holistic approach to both routine surveillance and early warning is needed
Vision, aim, scope of the strategy

- Reduced impact of public health emergencies due to epidemics, pandemics and other health hazards

- A 5-year global strategic plan, articulating high-level strategic objectives and related activities that constitute a framework for WHO, other stakeholders and Member States

- Strategy covers:
  - surveillance (routine surveillance of epidemic-prone diseases for baseline, trend and impact analysis, early detection of public health events, risk assessment)
  - Broader health information needs: eg response monitoring, assessment of health system readiness and utilization during emergencies, and other programmatic needs.
Guiding principles

- Engaging communities
- Building upon existing systems, processes and capacities
- Focusing on most vulnerable countries and those with greatest risk
- Adopting an all-hazard approach
- Engaging firmly in a One-Health approach
- Investing in new technologies
- Promoting broad partnerships
- Focusing on results, including monitoring and accountability
- Ensuring country ownership and leadership
Areas of work

• Advocacy and governance
• National capacities strengthening
• Early warning and risk assessment
• Better use of data
• Operational research
DHIS2 platform for VPD and epidemic prone disease surveillance information management system

Experience form WHO African Region

Alain Poy

Lead Information System and ME, VPD WHO AFRO
Outline

1. Background and context
2. Current VPD Information system in AFR countries and justification for a new system
3. New system development process and progress update
4. Challenges and key drivers or success
1. Background and context

2. Current VPD Information system in AFR countries and justification for a new system

3. New system development process and progress update

4. Challenges and key drivers or success
In January 2017 the Addis Declaration on Immunization (ADI) was endorsed by Heads of State from across Africa at the 28th African Union Summit. **One of the 10 ADI commitments aims at “Attaining and maintaining high quality surveillance for targeted vaccine-preventable diseases”.**

There is a need to mobilize sufficient funding to support the implementation of polio transition plans and mitigate the consequences of the post-polio eradication era since **current VPD surveillance efforts are heavily supported by GPEI funding.**

In response to the Ebola Virus Disease (EVD) outbreak in West Africa the Global Health Security Agenda (GHSA) recommended the strengthening of health security and having **flexible surveillance systems in Africa by implementing the International Health Regulations (IHR, 2005).**

**RITAG recommendation, June 2018**

“Recommended development of investment case for VPD surveillance in the African Region and document return on investment for the national governments”

**Immunization Business case**

Disease surveillance & outbreak management identified as key components to strengthen immunization systems

**Need to effectively implement IHR in all countries**

There is a need for a sensitive and flexible surveillance system with an early warning function to accelerate the implementation of the International Health Regulations 2005 to improve the overall health of the population
Vaccine Preventable Diseases Surveillance Investment Case for Africa: Six major components

Ambition for 2030

"By 2030... countries will own, sustainably fund and maintain high-quality surveillance systems and laboratory infrastructure... context of improved performance of their national immunization programmes to achieve their disease control objectives, leveraging reliable VPD surveillance data."
By 2030, the complexity and the demand for VPD surveillance is expected to increase in the African Region

The number of VPDs under surveillance will increase...

<table>
<thead>
<tr>
<th>2000</th>
<th>2018</th>
<th>2030 vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>18</td>
<td>22 +</td>
</tr>
</tbody>
</table>

- Congenital rubella syndrome
- Influenza
- Rabies
- Typhoid fever
- Cholera
- Ebola
- Haemophilus influenzae type b
- Malaria
- Measles
- Meningococcal diseases
- Neonatal tetanus
- Non-neonatal tetanus
- Pneumococcal diseases
- Poliomyelitis
- Rotavirus gastroenteritis
- Rubella
- Tuberculosis
- Yellow fever

- Measles
- Meningococcal diseases
- Neonatal tetanus
- Non-neonatal tetanus
- Yellow fever

- Poliomyelitis

... and the type of surveillance recommended will also change

Source: WHO, 2018
## List of priority diseases, conditions and events for IDSR

<table>
<thead>
<tr>
<th>Epidemic-prone diseases, conditions or events which require immediate reporting</th>
<th>Diseases targeted for eradication or elimination</th>
<th>Other major diseases, events or conditions of public health importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acute haemorrhagic fever syndrome*</td>
<td>1. Buruli ulcer</td>
<td>1. Acute and chronic viral hepatitis</td>
</tr>
<tr>
<td>2. Anthrax</td>
<td>2. Bacterial Meningitis</td>
<td>2. Adverse events following immunization (AEFI)</td>
</tr>
<tr>
<td>3. Bacterial Meningitis</td>
<td>3. Dracunculiasis (Guinea Worm Disease)</td>
<td>3. Diabetes mellitus (new cases)</td>
</tr>
<tr>
<td>4. Chikungunya</td>
<td>4. Leprosy</td>
<td>4. Diarrhoea with dehydration less than 5 years of age</td>
</tr>
<tr>
<td>5. Cholera</td>
<td>5. Lymphatic filariasis</td>
<td>5. Epilepsy</td>
</tr>
<tr>
<td>7. Diarrhoea with blood (Shigella)</td>
<td>7. Measles</td>
<td>7. HIV/AIDS (new cases)</td>
</tr>
<tr>
<td>10. Middle East respiratory syndrome (MERS)</td>
<td>10. Poliomyelitis***</td>
<td>10. Malaria</td>
</tr>
<tr>
<td>15. Yellow fever</td>
<td>15. Yaws and endemic syphilis or bejel</td>
<td>15. Severe pneumonia less than 5 years of age</td>
</tr>
<tr>
<td>16. Zika virus disease</td>
<td>*** Disease specified by IHR (2005) for immediate notification</td>
<td>16. STIs</td>
</tr>
</tbody>
</table>

Also:
- A cluster of deaths in the community (animal or human deaths)
- A cluster of unwell people or animals with similar symptoms

* ** National programmes may wish to add influenza-like illnesses to their priority disease list

### Diseases or events of international concern

- Human influenza due to a new subtype***
- SARS***
- Smallpox***
- Zika virus disease
- Yellow fever
- Any public health event of international or national concern (infectious, zoonotic, food borne, chemical, radio nuclear, or due to unknown condition).

*** Disease specified by IHR (2005) for immediate notification

Note: It is important to remember that countries may select from this list according to national priorities and the epidemiologic situation. Disease-specific summary pages are available in Section 12 of this guide.
1. Background and context

2. Current VPD information system in AFR countries and justification for a new system

3. New system development process and progress update

4. Challenges and key drivers or success
Immunization and VPD information system in the AFR

Reference data (Population) → EPI data

1. Surveillance → IDSR
   - Case based
     - AFP (polio)
     - Measles
     - Yellow fever
     - Rotavirus
     - PBM
     - Meningitis
     - Tetanus
   - Laboratory
     - Weekly (Tuesday)
     - Monthly (7th)

2. Immunization
   - Routine Imm
     - RIM*
     - DVDMT*
     - SMT*
     - National HMIS
     - JRF
     - WUENIC
   - Supply
     - Monthly (7th)
     - Monthly (7th)
     - Monthly (7th)
     - Annual (15th April)
     - Annual (By July)
   - SIAs
     - Admin data
     - Independent Monitoring
     - LQAs
     - Corrective actions
     - 10 days after the SIAs ends
     - 7 days after the SIAs ends
     - 10 days after the SIAs ends

* RIM: Routine Immunization module, DVDMT: District vaccine data management tool, SMT: Stock monitoring tool, WUENIC: WHO-UNICEF estimates of national immunization coverage

By Alain Poy, July 2013
**Information System characteristics**

**Key strength**
- Robust systems and solid DM network with established timelines
- Data reported by most of the Member states
- High data completeness (>90%)
- Existence of standard variables
- Programmed automated output for key indicators and data quality check
- Standardized and reliable historical data

**Some limitations**
- Vertical system
- Limited use of data at operational level
- Double data entry in some instance
- Laboratory data some times separated from clinical and patient data
- Surveillance data not in the same instance with immunization data
Justification for a new system using DHIS2

- Epi info 3.5 no longer supported by CDC with incompatibility with windows
- +40 countries in the Region already using DHIS2
- +20 countries already installed in recently WHO immunization package in DHIS2
- DHIS2 started to be used for surveillance in a number of countries -
- Growing countries appetite for health data integration using one platform and web based system with real time access to information for action
# Status of Routine Immunization transitioned within countries in WHO AFR

## 25 Countries with RI data transitioned to DHIS2

<table>
<thead>
<tr>
<th>Country</th>
<th>HISP group</th>
<th>Transitioned to DHIS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>HISP UG + HISP RW</td>
<td>Yes</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Burundi</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Cameroon</td>
<td>HISP WCA, UiO</td>
<td>Yes</td>
</tr>
<tr>
<td>DRC</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Eritrea</td>
<td>HISP Tanzania</td>
<td>Yes</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>HISP Ethiopia</td>
<td>Yes</td>
</tr>
<tr>
<td>Ghana</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Guinea</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Kenya</td>
<td>HISP Tanzania + UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Lesotho</td>
<td>HISP ZA</td>
<td>Yes</td>
</tr>
<tr>
<td>Liberia</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Mali</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Mauritius</td>
<td>HISP Uganda</td>
<td>Yes</td>
</tr>
<tr>
<td>Mozambique</td>
<td>HISP Moz [Saudigitus]</td>
<td>Yes</td>
</tr>
<tr>
<td>Namibia</td>
<td>HISP Moz [Saudigitus]</td>
<td>Yes</td>
</tr>
<tr>
<td>Niger</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Tanzania</td>
<td>HISP Tanzania</td>
<td>Yes</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>HISP ZA, Eric Adu-Gyamfi, HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>South Africa</td>
<td>HISP ZA</td>
<td>Yes</td>
</tr>
<tr>
<td>South Sudan</td>
<td>HISP Tanzania + HISP Uganda</td>
<td>Yes</td>
</tr>
<tr>
<td>Togo</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Uganda</td>
<td>HISP UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Zambia</td>
<td>HISP UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>HISP Zim [ITNordic] + UiO + Saudigitus</td>
<td>Yes</td>
</tr>
</tbody>
</table>

## 6 Countries with RI data transitioned to DHIS2 but not used as main data source

<table>
<thead>
<tr>
<th>Country</th>
<th>HISP group</th>
<th>Transitioned to DHIS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar</td>
<td>HISP Rwanda + Uganda</td>
<td>Yes</td>
</tr>
<tr>
<td>Malawi</td>
<td>HISP Malawi + Uganda</td>
<td>Yes</td>
</tr>
<tr>
<td>Mauritania</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Namibia</td>
<td>HISP Moz [Saudigitus]</td>
<td>Yes</td>
</tr>
<tr>
<td>Niger</td>
<td>HISP WCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Tanzania</td>
<td>HISP Tanzania</td>
<td>Yes</td>
</tr>
</tbody>
</table>
1. Background and context
2. Current VPD Information system in AFR countries and justification for a new system
3. New system development process and progress update
4. Challenges and key drivers or success
Vaccine Preventable Diseases (VPD) Surveillance Investment Case for Africa; 2020-2030 and Information system developed through wide consultations

Regional Stakeholders’ Consultation on VPD Surveillance, Kigali Rwanda; 21 to 23 Nov. 2018
High level support and wide consensus: Stakeholders’ consultation on the development of an integrated VPD and epidemic prone diseases surveillance information management system (DHIS2) in the African Region, 18-22 February 2019

WHO (Immunization, polio, WHE, CDS, HSS) from IST, AFRO, HQ and partners from GAVI, CDC, HISP...
Key orientation

- Development of a new integrated information system for VPD and epidemic prone diseases surveillance in DHIS2
  - For replacement of existing Excel and Epi info systems in countries
  - Should include case based and aggregated data
  - System to be country focused
  - Inclusion of all disease within countries IDSR package
  - Linked to Regional data warehouse- DHIS2 instance
  - Should be in the same instance as Routine immunization
  - Should be interoperable with other existing systems in countries
  - Should promote data use
Regional view for immunization and Surveillance information systems
## Disease currently being included

### Aggregated surveillance diseases

<table>
<thead>
<tr>
<th>(default list)</th>
<th>Case Based Surveillance diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningitis</td>
<td>Meningitis</td>
</tr>
<tr>
<td>Measles</td>
<td>Yellow Fever</td>
</tr>
<tr>
<td>Rubella</td>
<td>Measles/rubella</td>
</tr>
<tr>
<td>Yellow Fever</td>
<td>Neonatal tetanus</td>
</tr>
<tr>
<td>Cholera</td>
<td>Polio (AFP)</td>
</tr>
<tr>
<td>Acute watery diarrhea</td>
<td>Rotavirus Diarrhoea</td>
</tr>
<tr>
<td>Acute Flacid Paralysis</td>
<td>Rotavirus impact</td>
</tr>
<tr>
<td>Neonatal Tetanus</td>
<td>IBVPD</td>
</tr>
<tr>
<td>Non Neonatal tetanus</td>
<td>Congenital Rubella Syndrome</td>
</tr>
<tr>
<td>Pertussis</td>
<td>polio (environmental and PID)</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>Viral hemorrhagic fever (Lhassa, Ebola)</td>
</tr>
<tr>
<td>Diarrhea with blood</td>
<td>Cholera</td>
</tr>
<tr>
<td>Rabies</td>
<td></td>
</tr>
<tr>
<td>Viral Haemorragic Fever</td>
<td></td>
</tr>
<tr>
<td>Dengue Fever</td>
<td></td>
</tr>
</tbody>
</table>

**AGG: other diseases to be added**
**country specific**
Components of the system

1. Aggregate

- Key components:
  - Standard packages for country installation
    - Dashboard packages
    - Full installation package
  - Regional instance
  - Country Implementations

2. Case Based Surveillance (CBS)

Key components:

- Replacement for existing countries VPD Surveillance Epi Info systems
- Standard “packages” for country installation
  - Dashboard packages
  - Full installation package
- Components to support live use and additional workflows
  - Thresholds and Notifications, Lab testing, Case Investigation Forms, Outbreak line listing, Action/Working lists
- Regional instance
Progress so far

1. Aggregate

- Country package completed
- Regional package under last stage
- Pilot ongoing

2. Case Based Surveillance (CBS)

- Country package completed
- Regional package under last stage
- Pilot ongoing

Pilot

- **Mali**: training at national level conducted last week – week starting from 23rd Aug, provincial training planned to start from 6th Sept
- **Togo**: training at national level conducted 9-13 August, Regional level training planned 16-20 Sept
- **DRC**: discussion ongoing
- **Côte d’Ivoire**: Adaptation to start in September
- **Cameroon**: Adaptation to start end September
Illlustration-Aggregate AFRO instance

- Regional AFRO DHIS2 instance to accept aggregate surveillance data from all AFRO countries
1. Background and context

2. Current VPD Information system in AFR countries and justification for a new system

3. New system development process and progress update

4. Challenges and key drivers or success
Challenges

• Human resource: limited availability of country staff due to the pandemic

• Communication with countries: Multiple actors handling surveillance in countries

• Coordination between laboratory and surveillance teams in countries

• Financial support to run operation at the ground

Drivers of success

• Effective collaboration and coordination between AFRO, HQ, other clusters and programmes

• Learning from Immunization package development and deployment

• Strong collaboration/coordination with partners: Gavi, UiO, HISPs

• Endorsement and support from programme/cluster leadership
THANK YOU

MERCI

Obrigado
Enhancing Case Investigation and Contact Tracing with Go.Data
Go.Data Project goal

Design, develop and deploy comprehensive and free tool for use by Member states, Partners and WHO to:

*Support and facilitate outbreak investigation* including field data collection on cases/contacts, contact tracing and visualization of chains of transmission.
<table>
<thead>
<tr>
<th></th>
<th>OUTBREAK RESPONSE</th>
<th>PROXIMITY TRACKING/TRACING</th>
<th>SYMPTOM TRACKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Used by public health response personnel involved in contact tracing activities and outbreak investigation.</td>
<td>Using either GPS location or Bluetooth signals, proximity tracing tools can help identify contacts by identifying when individuals have been in close physical proximity and have had prolonged contact with a case.</td>
<td>Used for self-checking and self-reporting of signs and symptoms by people through mobile phone apps or SMS technology.</td>
</tr>
</tbody>
</table>

See: WHO Guidance on Digital Tools for Contact Tracing
<table>
<thead>
<tr>
<th>Countries/territories</th>
<th>Community</th>
<th>Dedicated team</th>
<th>Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ 60</td>
<td>Diverse, <strong>global Go.Data user base</strong>, supported with community of practice as one-stop-instance for all Go.Data documents and materials.</td>
<td>Dedicated team in WHO HQ, US CDC, UNICEF. Focal points in all 6 WHO regional offices.</td>
<td><strong>Global Go.Data implementation, rollout and presence.</strong></td>
</tr>
</tbody>
</table>
3 Key Principles

1. Case investigation and contact tracing (CI/CT) can only reduce COVID-19 transmission when timeliness and completeness criteria are met.

2. Decentralization of data capture, analysis and action is necessary to decrease key time intervals.

3. Integrating with existing platforms will increase efficiency and sustainability of entire system.
CI/CT can only reduce COVID-19 transmission when timeliness and completeness criteria are met.

See: Measures to Improve COVID-19 Response
Decentralization of data capture, analysis and action is necessary to decrease key time intervals.

NOTE: mobile phone optional; FU can also be performed by decentralized web-app users (call-center, users with login)
Integrating with existing platforms will increase efficiency and sustainability of entire system.

**Go.Data – DHIS2 Interoperability App**

- **Routine surveillance / Early warning system**
  - Usually without native support for:
    - Contact tracing and chains of transmission

- **Go.Data-DHIS2 Interoperability App**
  - Need to integrate summary of disease outbreak data:
    - Incidence over time

- **National Health Information System**

```
Thank you

- godata@who.int
- https://community-godata.who.int/
EWARS-in-a-box

Early Warning, Alert and Response System

Early Detection of Disease Outbreaks for Rapid Response
During emergencies, existing national public health surveillance systems may be underperforming, disrupted or non-existent; they may quickly become overwhelmed to adequately meet surveillance information needs of a large-scale outbreak or humanitarian emergency.

One of the most immediate responses is to establish an early warning system to detect and react rapidly to suspected disease outbreaks. Collection of essential, minimal data on selected diseases and the timely, rapid analysis of trends is key to this activity.
Since 2015..

A custom-built electronic tool EWAR-in-a-box was introduced to strengthen early warning, alert and response in emergencies. This is an online, desktop and mobile application, that can be rapidly configured and deployed within 48 hours of an emergency being declared.

WHO HQ directly supports emergency implementations across regions, countries every year.

WHO supports Ministries of Health and partners through the provision of technical support, training and capacity building.

The aim is to reduce the numbers of cases and deaths that occur during emergencies, through early detection of disease outbreaks and the initiation of timely response efforts.
We’re built to support you during emergencies.

Suppose one day you need to...

- Strengthen surveillance during an emergency
- Be alerted to suspected outbreaks
- Rapidly respond to a disease outbreak

EWARS provides support across a continuum of early warning, alert and response.
The Early Warning, Alert and Response System (EWARS)

is designed with the needs of frontline users in mind. We use technology and innovation to make disease control in emergencies easier and more effective.

Guiding Principles

Simple  Rapid deployable  Flexible
EWARS-in-a-box supports over 100 million population across five regions of the world. It detect outbreaks in the most difficult environments; rural, over-crowded camps or camp-like settings, hard-to-reach areas and besieged areas, where populations are frequently affected by infrastructure, security and socio-economic challenges.

**On-going Support**

South Sudan, NE Nigeria, NW & SW Cameroon, Democratic Republique of Congo (DRC), Cox’s Bazaar, Bangladesh, NW Syria, Fiji, Pacific Islands; American Samoa, Cook Islands, FSM, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, N Mariana Is, Nauru, New Caledonia, New Zealand, Niue, PNG, Palau, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis & Futuna

**Concluded Support**

Yemen Cholera outbreak, Chad Hepatitis E outbreak, Ethiopia El Nino Response support; Afar and Oromia Regions
EWAR-in-a-box is a custom-built electronic tool introduced to strengthen early warning, alert and response in emergencies. It is designed with the needs of the front-line emergency responders in mind.

This is an online, desktop and mobile application that can be rapidly configured and deployed within 48 hours of an emergency being declared.
Inclusion of COVID-19 in the priority list of diseases; for reporting from IDPs, refugee camps, shelters and from the community.

<table>
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<th>AWD</th>
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<th>Bloody Diarrhoea</th>
<th>Malaria (Confirmed)</th>
<th>Measles</th>
<th>Covid-19</th>
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Alerts under priority diseases

Poor testing capacity
Limited Human resources
Poor Infrastructure
Inclusion of Point-of-Entries to the reporting locations; airports, ground crossings

With limited healthcare capacity, PoE alert management is important for emergency settings.
## Line listing and sharing information for rapid response

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<th>Report Date</th>
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<th>Rental</th>
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Integration with existing tools and platforms for better response in emergencies

Tools for Routine and Community-based Surveillance

National/Sub-national Health Information Systems

DHIS2

Outbreak tools
Go.Data

EWARS-in-a-Box
Write to us
ewars@who.int

https://www.who.int/emergencies/surveillance/early-warning-alert-and-response-system-ewars
Rapid mortality surveillance during the COVID-19 pandemic

Global consultation to Optimize Routine Health Information Systems
2 September 2021

Martin W. Bratschi, PhD
Agenda

• Value of all-cause mortality data
• Opportunity and challenges for excess mortality analysis and rapid mortality surveillance
• Integrated mortality surveillance: civil registration and vital statistics systems
Total mortality data

• Counting COVID-19 deaths is complicated:
  • Limited testing; community deaths
• Need to capture secondary mortality impact of the COVID-19 pandemic
• Need all-cause mortality surveillance to inform pandemic response:
  • Capturing total mortality impact
  • Detecting inequalities in mortality burden
  • Setting alert levels
Excess mortality analysis in countries with digitized death registration and high completeness

- “Rapid” mortality surveillance: accelerated compilation, analysis, and use

Excess mortality analysis in Brazil for 2020 and 2021.

The President of Peru cited excess mortality data in a televised national briefing on the trajectory of the COVID-19 pandemic.

https://www.conass.org.br/indicadores-de-obitos-por-causas-naturais/

https://www.minsa.gob.pe/reunis/data/exceso_mortalidad.asp
Challenges with rapid mortality surveillance in countries strengthening death registration systems

• Many existing civil registration and vital statistics (CRVS) systems cannot provide information on all deaths

• Facility sources easiest but still challenging:
  • Limited / selected coverage
  • Limited historical data in facilities
  • Incomplete and paper-based data collection
  • Data not captured in health information systems

• Community mortality surveillance most difficult to establish:
  • Few routine sources; can consider sentinel site systems
Integrated mortality surveillance: CRVS systems

• Digitized CRVS systems with high completeness are best source of total mortality data

• To build towards CRVS systems:
  • Strengthen facility mortality reporting, include all mortality in HIS, and coordinate with the civil registration organisation
  • Leverage and integrate with community-level surveillance systems (e.g., Integrated Disease Surveillance and Response)

• CRVS systems (including complete birth and death registration, high-quality cause-of-death information) will also support planning and implementation of universal health coverage and improve primary health care
Thank you.

Martin W. Bratschi
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