

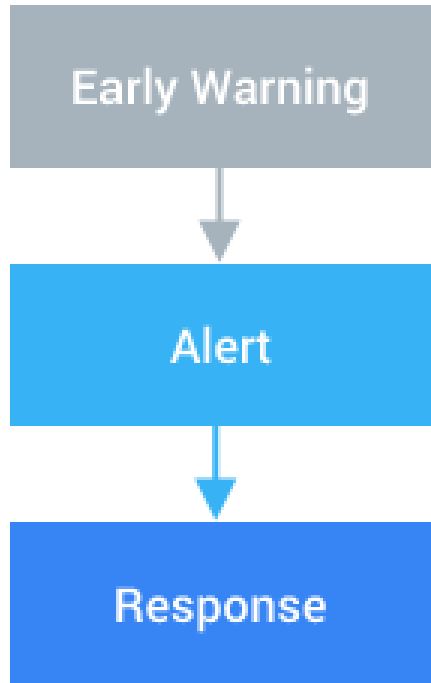
EWAR Concept and Implementation of EWARS-in-a-Box During Complex Emergencies

PAHO Health Emergencies (PHE)



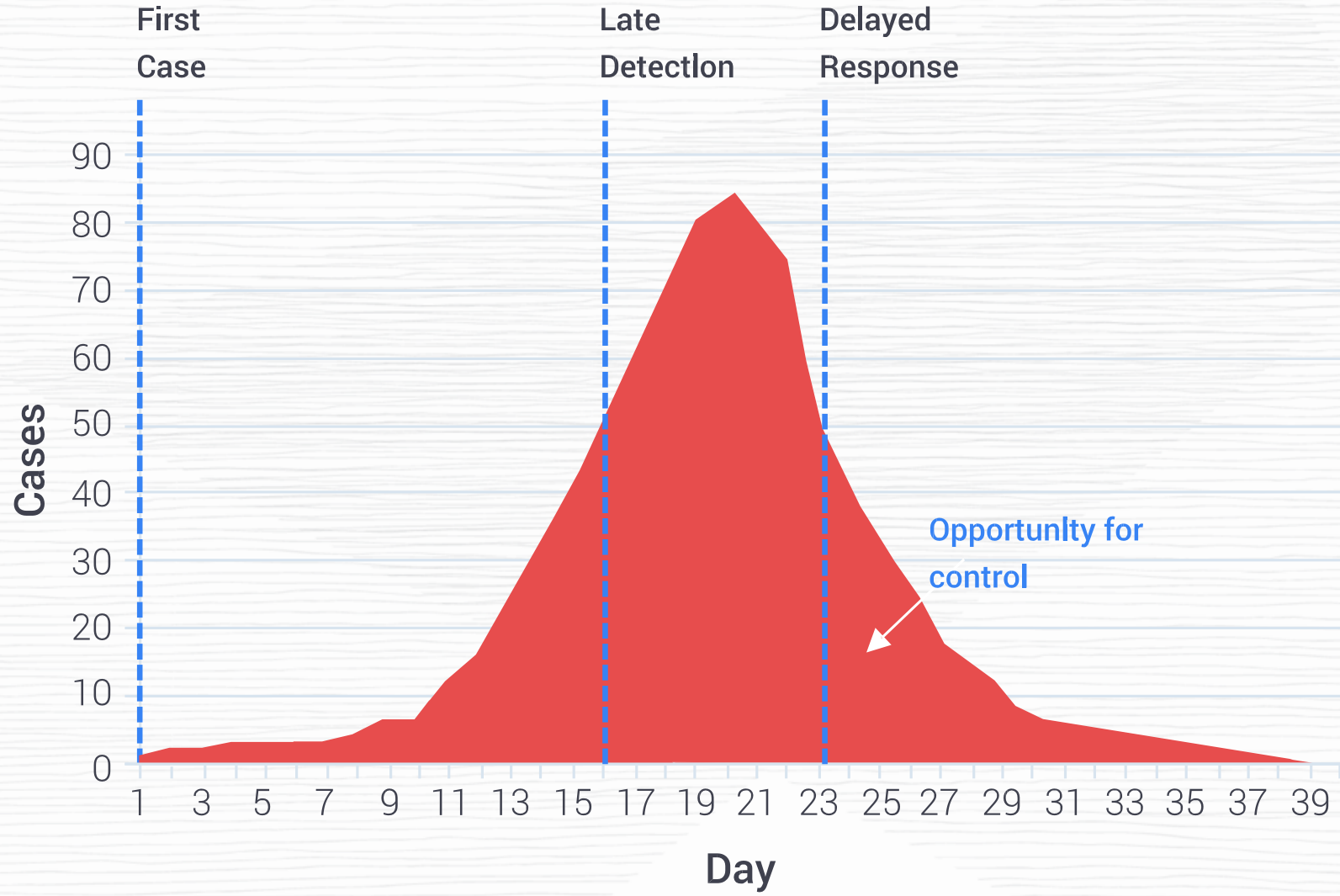
PAHO

What is EWAR?

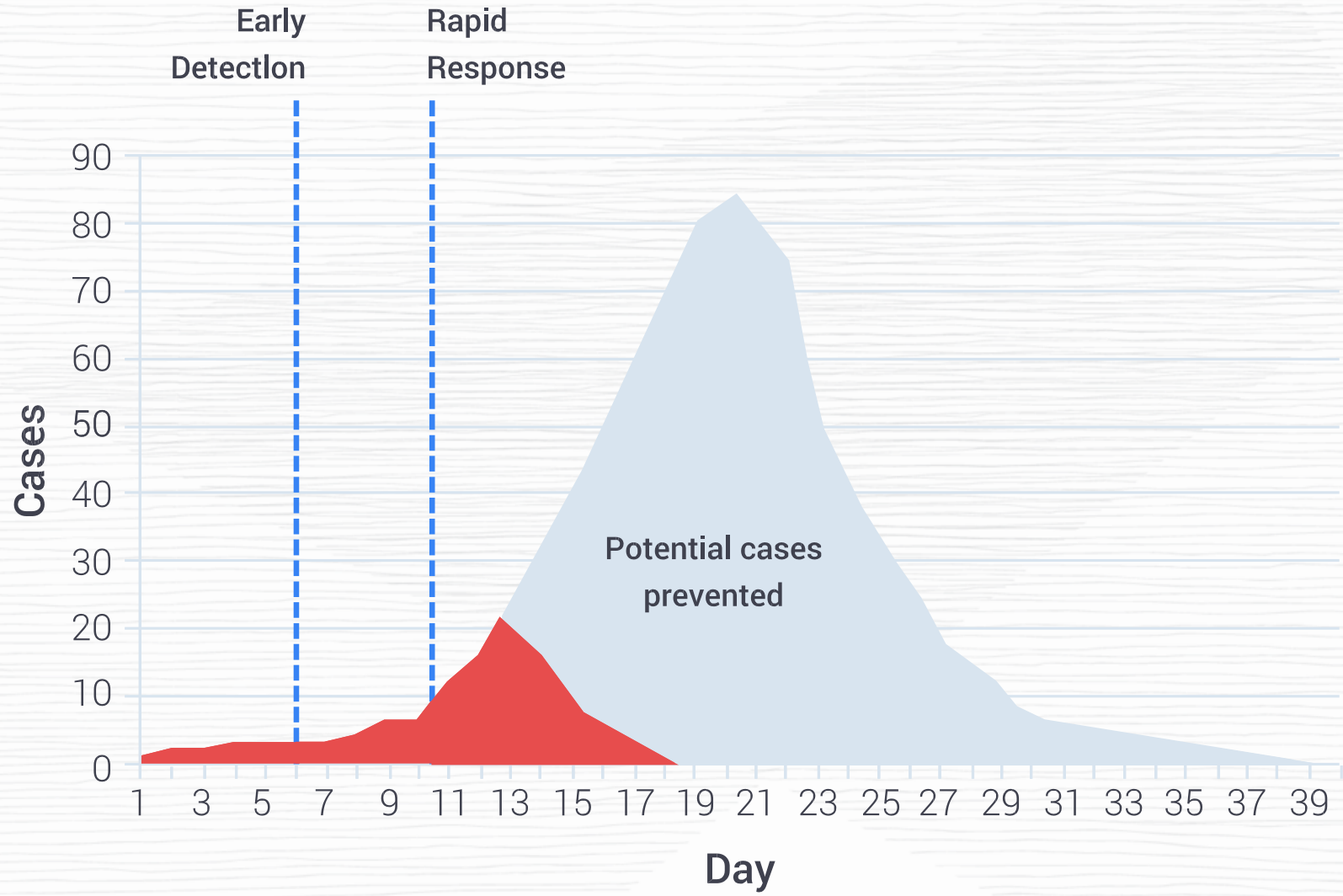


The objective of early warning, alert and response (EWAR) is to support the early detection and rapid response to acute public health events of any origin.

Outbreak response without early warning



Outbreak response with early warning





Role of EWAR during emergencies



The Operational Importance

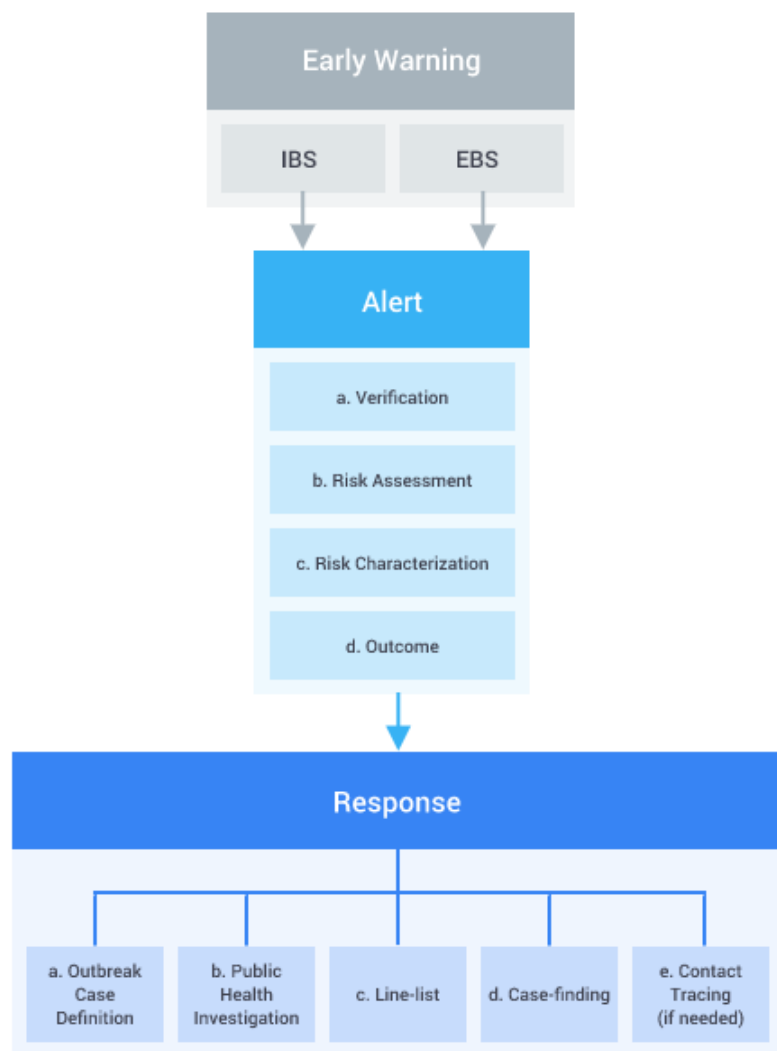
Underperforming or disrupted surveillance systems

One of the most urgent priorities in an emergency is to establish a functioning EWAR system to rapidly detect and respond to outbreaks.

Risk factors for the transmission of communicable diseases



EWAR in emergencies



What is IBS?

Definition

Indicator-based surveillance (IBS) is the routine collection, monitoring, analysis, and interpretation of data from health facilities that is based on standardized case definitions.

What is EBS?

Definition

Event-based surveillance (EBS) describes the detection and immediate generation of health events or risks based on unstructured reports from a predefined network of trained community members and healthcare workers. EBS is monitored and responded to immediately, producing real-time alerts.

Steps

1. Agree on strategy
2. Select priority diseases and other hazards
3. Define case definitions
4. Define alert thresholds
5. Strengthen data collection and reporting

Gaps in past emergencies



Information
delays



Paper-based
forms



Unreliable
communication
channel



Data stored in un-
analyzable formats



Limited analysis or
reporting



No integrated
surveillance strategy

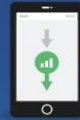
Proposed solution

EWARS is made up of 3 components



DataHub

Fully offline. Ready to collect, submit and analyse data. All in a single, easy-to-use box.



Mobile

Collect and submit data anywhere. Even in remote and insecure environments.



Exchange

Choose what data you wish to share with others and when. Manage interoperability with other databases. Receive regular upgrades for free!

How does it work?



1. Data collected offline in EWARS Mobile.



2. Data received in real-time in DataHubs at subnational level.



3. DataHubs synchronise data to county level.



4. Immediate alerts and feedback shared with field users when needed.



5. Data analysed and shared for rapid action. System updates and data sharing moderated via Exchange.

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EWARS IN A BOX

Everything you need in the field.

EWARS in a box is a kit containing the essential equipment needed to establish surveillance and response in emergencies.



Requires
- Mobile network coverage



Does not require
- 24 hour electricity supply
- Internet connection



What Does a Kit Contain?

Transport & Security

- x1 Ruggedized pelican case
- x2 Secure Locks

Data Collection

- x50 Mobile Phones
- x1 Laptop

Data Hosting & Storage

- x1 DataHub

Power Supply

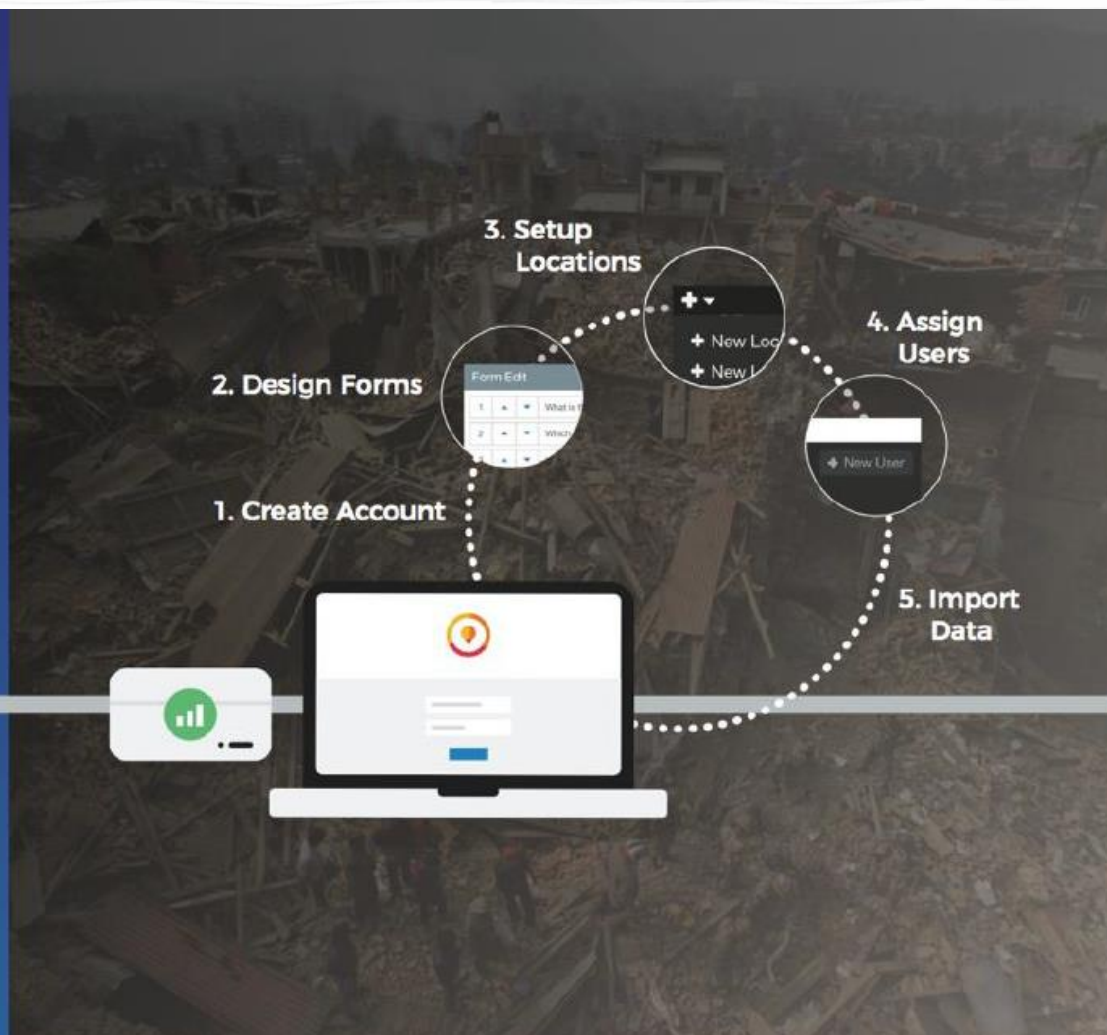
- x50 Solar Chargers

Configuration


Rapidly adapt to needs in the field

Users need to feel in full control of their own tasks and reporting deadlines. They also need to be constantly aware of how they are performing and where improvements need to be made.

Account administrators need higher level views of the application, in order to be able to coordinate and manage the system at country-level.



EWARS – Guyana – Facility Reporting Forms


Ministry of Public Health
Guyana

S 2

WEEKLY SYNDROMIC SURVEILLANCE TALLY SHEET

Region #: _____ Site: _____ Epidemiological Week: _____

Filled by: (Dr/Mx/Nurse/CHW/Stats Clerk/Other) _____ Day filled: _____ Date filled: dd / mm / yyyy

SYNDROMES		Under 1		1 - 4		5 - 14		15 and over		TOTAL
		Male	Female	Male	Female	Male	Female	Male	Female	
* Gastroenteritis:	Diarrhoea (a)									
	Vomiting (b)									
	Diarrhoea & Vomiting (c)									
	Bloody Diarrhoea (d)									
*Fever & Neurological Symptoms (e)										
Actue Flaccid Paralysis (f)										
Fever & Haemorrhagic Symptoms										
Fever & Respiratory Symptoms (ARI)										
Fever & Jaundice										
*Fever & Rash (g)										
Chicken Pox (h)										
Undifferentiated Fever/Febrile systemic Disease										
STI:	Genital Discharge									
	Genital Ulcer									

OTHER DISEASES	Under 1		1 - 4		5 - 14		15 and over		TOTAL
	Male	Female	Male	Female	Male	Female	Male	Female	
Conjunctivitis									
Skin Infections									

* The total for Gastroenteritis = a+b+c. * The total for Fever & Neurological Syndrome = e+f. * The total for Fever & Rash Syndrome = g+h.
Immediate Notification of disease to the National Epidemiologist
 Diseases of international concern (suspected cases): Smallpox, Poliomyelitis, Severe Acute Respiratory Syndrome (SARS), Influenza (new subtype)
 Diseases of special concern: Cholera, Plague, Yellow Fever, Vira, Haemorrhagic Fever, West Nile Fever, Outbreaks/Unusual events
 Please return copy to: The National Epidemiologist, Ministry of Health, 1 Brickdam, Georgetown; Through the Senior Health Visitor and RHO



Save Draft
Submit

Heightened weekly Syndromic Surveillance Form

Fields with an * are required.

Location *

No Selection
▼

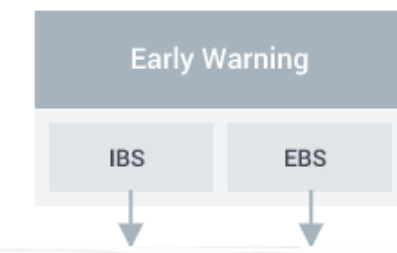
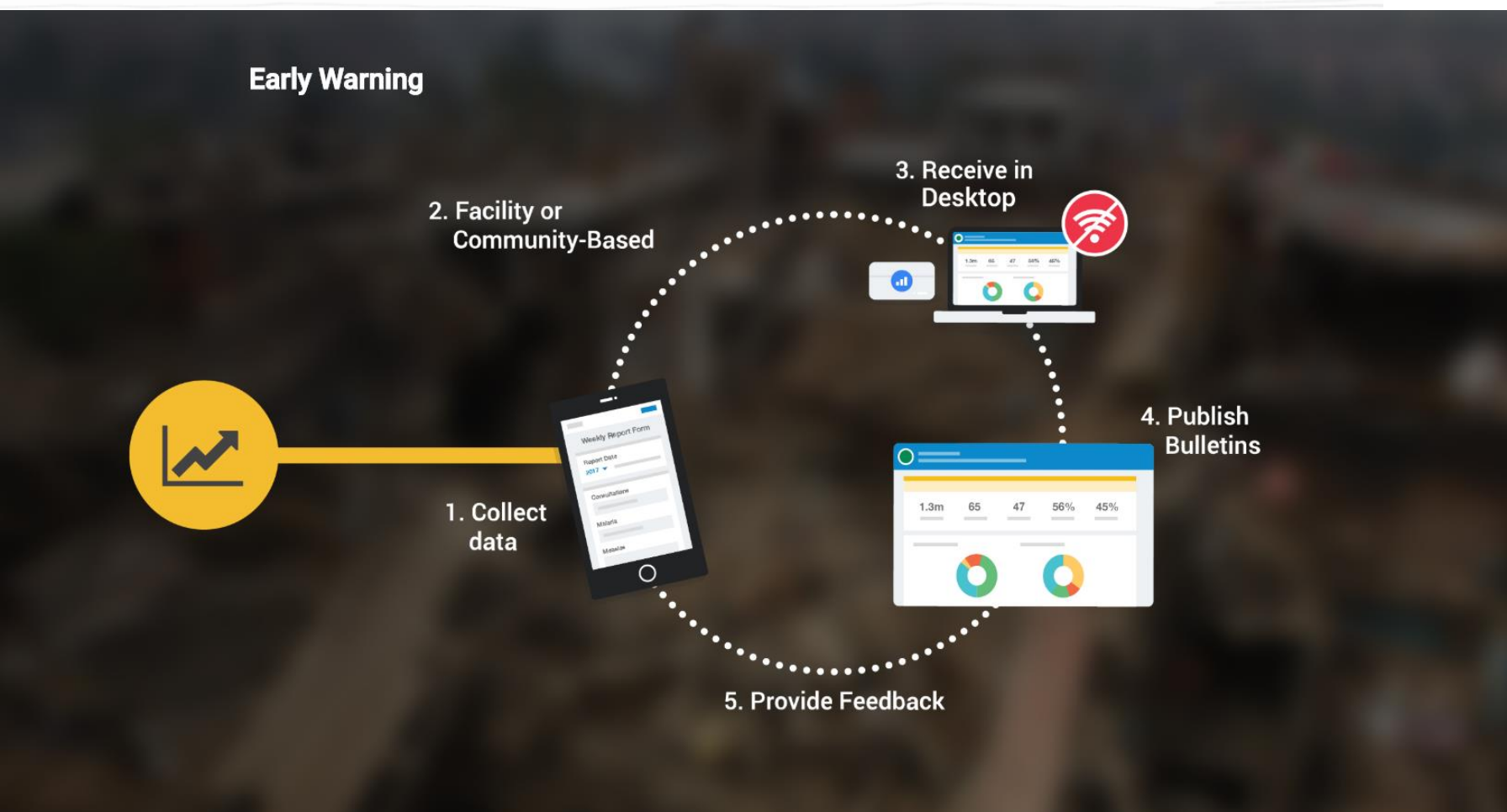
REPORT_DATE *

No date selected
📅

Syndromes

	Under 1 Male *	Under 1 Female *	1-4 Male *	1-4 Female *	5-14 Male *	5-14 Female *	15 > Male *	15 > Female *
Fever & Respiratory Symptoms	Enter nu	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr
Fever & Rash	Enter nu	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr
Undifferentiated Fever/ Febrile systemic Disease	Enter nu	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr	Enter n	Enter nurr

Early Warning



EWARS – Guyana – Automatically generated reports

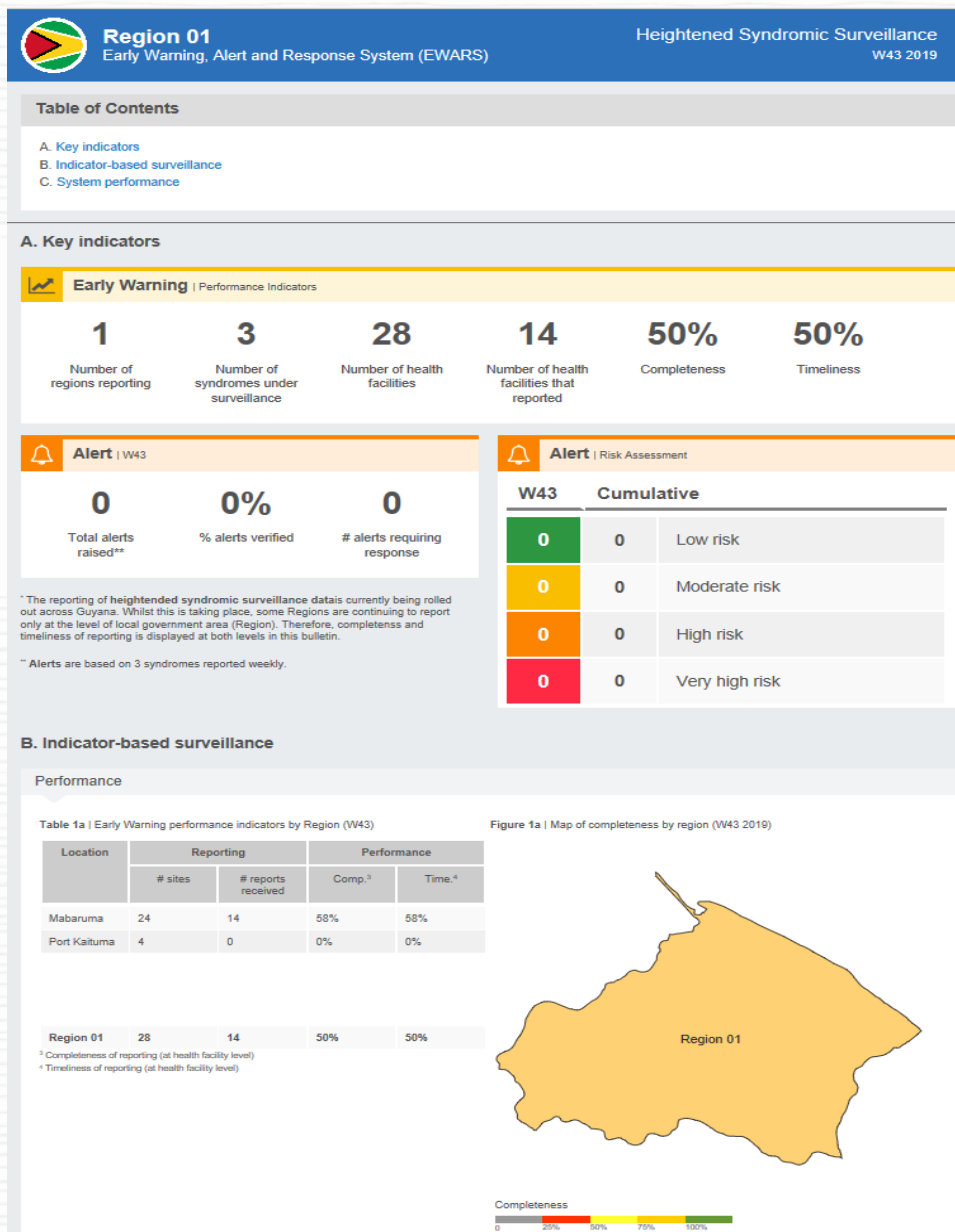

B. Indicator-based surveillance
Performance

Table 1a | Early Warning performance indicators by Region (W43)

Location	Reporting		Performance	
	# sites	# reports received	Comp. ³	Time. ⁴
Mabaruma	24	14	58%	58%
Port Kaituma	4	0	0%	0%
Region 01	28	14	50%	50%

³ Completeness of reporting (at health facility level)
⁴ Timeliness of reporting (at health facility level)

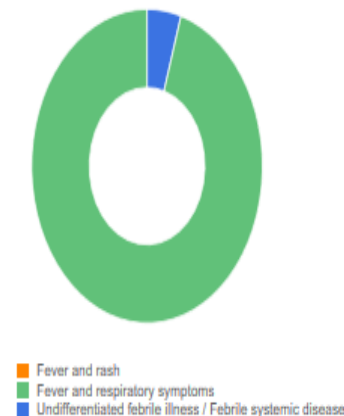
Figure 1a | Map of completeness by region (W43 2019)

Syndromic surveillance [Show](#)

Table 1a | Weekly and cumulative number of reported cases

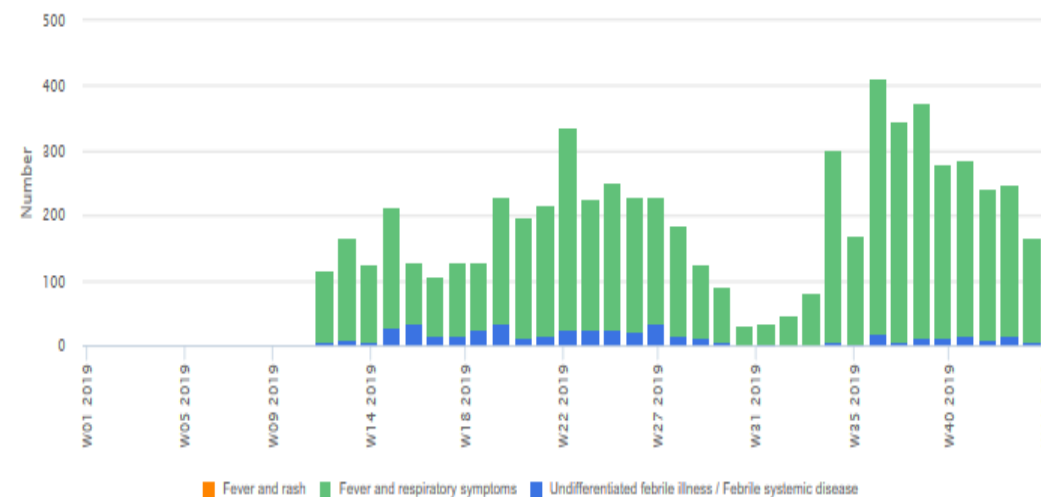
Syndrome	W43		Cumulative 2019	
	# cases	% morb. ¹	# cases	% morb. ¹
Fever and rash	0	0.0%	2	0.0%
Fever and respiratory symptoms	160	95.2%	5,977	92.7%
Undifferentiated febrile illness / Febrile systemic disease	8	4.8%	488	7.2%

Figure 1a | Proportional morbidity (W43)



¹ Proportional morbidity

Figure 1 | Trend in syndromes (Region 01)



The Early Warning, Alert and Response System (EWARS)



Guiding Principles



Simple



Rapid Deployment



Flexible

EWARS deployments | 2015-2019

#	Country	Date	Event
1	South Sudan	Sep 2015 - present	Conflict
2	Ethiopia	Jan 2016- Dec 2016	Famine
3	Fiji*	Mar 2016 – present	Tropical Cyclone
4	NE Nigeria*	Aug 2016 – present	Conflict
5	Vanuatu	Dec 2016 - present	Mini games/Mass gathering
6	South Pacific	Jan 2017 – present	Regional Early Warning
7	Chad*	Jan 2017 – Jun 2017	Hepatitis E
8	Yemen	Aug 2017 – present	Cholera
9	Solomon Islands	Sep 2017 – present	Early Warning
10	Bangladesh	January 2018 – present	Rohingya emergency
11	Papua New Guinea	February 2018 – present	Earthquake
12	Tonga	February 2018 – present	Tropical Cyclone
13	DR Congo	May 2018 - present	Ebola (Equateur and Nord Kivu)
14	Syria	November 2018 - present	Conflict

A graphic design featuring a light gray background. On the right side, there is a large, solid blue abstract shape that resembles a stylized speech bubble or a hand. Inside this blue shape is a white circle. The words "THANK YOU!" are written in white, uppercase, sans-serif font, centered within the white circle.

THANK
YOU!