

The Health Early Warning System (HEWS)

Global Center for Mass Gatherings Medicine (WHO CC on Mass Gatherings Medicine) Deputyship for Public Health, Ministry of Health



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Global Health Security Goals

The goal of the international health regulations (**IHR 2005**) is to **prevent**, **protect against, control and provide a public health response** to the international spread of disease Key concepts in achieving this goal based on <u>All-hazard</u> include:

Risk assessment	• What might happen, and how likely is it to happen?	
Surveillance	• How will we know when it happens?	
Response	• What will we do when it happens?	

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HEWS 5 years Milestone





The Health Early Warning System (HEWS) Characteristics

- The health early warning system (HEWS) is based on syndromic and event-based surveillance (EBS) sy
- HEWS is a **IHR 2005 core capacity requirement** for national disease surveillance systems and a **WHO** key consideration for **MGs**
- Rapidly **detect health threats** and ongoing monitoring of health events (**situational awareness**).
- In April 2018, KSA-MoH and WHO EMRO organized an international technical consultation (TC) on HEWS, in Cairo Egypt

Syndromes

- Influenza-like illness (COVID-19)
- •Acute febrile syndrome with rash
- Acute febrile syndrome with neurological manifestation
- •Acute jaundice syndrome
- Acute flaccid paralysis (AFP)
- Acute haemorrhagic fever
- Severe acute respiratory infections (COVID-19)
- Acute respiratory distress syndrome
- •Acute watery diarrhea
- Acute bloody diarrhea

Events

- •Food poisoning
- Heat-related illness
- Chemical, biological, radiological and nuclear emergencies
- •Trauma/injuries
- •Cluster of cases or unusual health events
- Detection of unusual pathogens

HEWS Data Management

- Facility-based data: demographic data (age, nationality) and provisional diagnosis (ICD 10)
- Non-facility based data sources--Social media and internet -Hotline and emergency call etc







HEWS Alert Dashboard : multiple dashboards for alerts notification and data analysis

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Proposed Task allocation

HEWS_GCMGM	NEU_ EWAS	
Design alerts : Definition, thresholds, source, frequency	Design the Event Management System, and event grading system	
Testing and reporting alerts and field investigation teams	Monitor the capacity related indicators	
Declare the alert to as an event to NEU	NEU to investigate the alert as an emergency event in terms of Scale, complexity, scope, scenarios for unfolding	
Immediate report and follow up with Public health at regional level for development of the alert	Grading of the event and monitor the response operation	
Produce a regular Epidemiological bulletin and alert characterization	Produce a regular capacity development and management bulletin	

Both unites to review the threshold regular and update the HEWS accordingly

Both unites to work on projected scenarios for each expected risk and response strategy

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Mass Gathering Electronic Health Records (MGEHR) System

- An HIS designed for temporary health posts at MGs, such as Hajj, G20 Summit, Saudi Seasons
- MGEHR is integrated with the HEWS dashboard to improve surveillance for health threats at MGs
- Captures morbidity, surveillance and case management data



HEWS findings 1440 Hajj Implementation: Consultation rates



- HEWS was deployed from 4 July-31 August 2019
- A total of 409,098 consultations from emergency and out-patient departments
- ~3 fold rise in consultation rate during Hajj rites (80.2% among pilgrims)
- Males represented 62.8% of consultations among pilgrims
- Double-fold reduction in consultation rate among nonpilgrims





HEWS Findings 2 1440 Hajj: Automated alarms and alerts for response

- 121 automated alarms were generated
- Of these, 49 field investigations
- 1 alarm generated through hotline
- Daily mean response time: 1.47-3.44 hours
- 2 health events were confirmed after investigation



Number of auto-generated alarm signal

HEWS Findings 3 1440 Hajj: Confirmed health events



Epi-curve of confirmed HEWS priority health events during the 2019 (1440) Hajj 120 and 100 of non-80 Heat syncope Heat Fatigue, transient 60 monitored Effect of heat and light Heat Stroke Heat Exhaution 40 20

- 2 non-infectious priority health conditions (HRIs and Injuries) detected
- Prompt detection of noninfectious threats
- Events monitored epidemiologically (who, where and when) in near real-time
- **79%** of suspected HRI cases were reported in **Mina and Arafat**

1440 Hajj: Strengthening Risk Communication





Regular media interviews and briefings

Tweets & replies Media Likes Tweets 0.1 11.ST ÷.

WHO EMRO @ @WHOE... 10/08/2019 Global Center for Mass Gatherings Medicine of @SaudiMOH released today 1st #HajjPHEB bulletin. It updates stakeholders on public health status of pilgrims in the last 24h, with focus on signals & alerts received via the Early Warning System & analysis/ interventions made. Read



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HEWS daily bulletin



Reassuring stakeholders





Thank you