Current major event

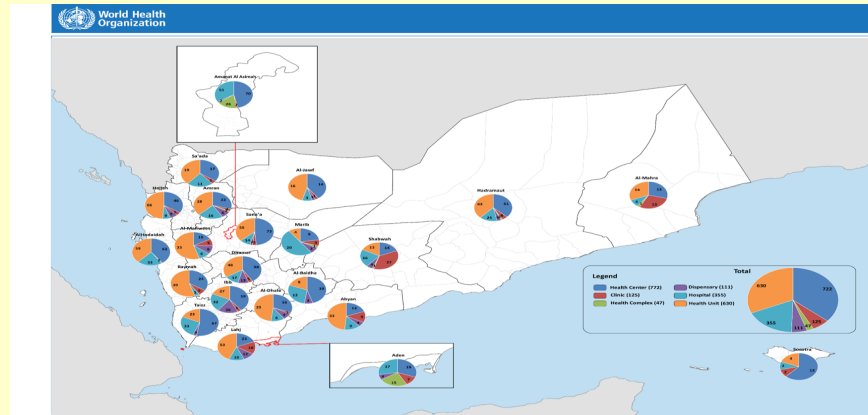### Workshop on evaluation of Yemen's surveillance system

In October, Yemen's World Health Organization (WHO) country office in collaboration with Eastern Mediterranean office (EMRO) conducted the preparatory workshop to prepare and develop action plan for the evaluation of surveillance system on Yemen using Early Warning Alert and Response Network (EWARN) in emergencies evaluation protocol.

Editorial note

Humanitarian emergencies often increase the risk of transmission of communicable diseases particularly from outbreak-prone diseases. To enhance the surveillance capacity to rapidly identify and respond to outbreaks, Yemen's Ministry of Public Health (MoPH) in collaboration with WHO established the Electronic Disease Early Warning System (eDEWS) in 2013. In later years, the national surveillance system was integrated into the eDEWS after the system collapsed due to acute complex emergencies. It is a health facility based surveillance system with 1990 health facilities (or sentinel sites) covering all 23 governorates in the country (*see the map*). The current system monitors 28 diseases (6 immediately and 22 weekly reportable diseases). Data are collected from sentinel sites using mobile software and sent to higher levels. The country is planning to upgrade and expand the system to include more sentinel sites, however the MoPH wants to evaluate the existing system first. One shortcoming to the current early warning system in Yemen is the integration with other non-epidemic-prone diseases which may derail the primary objective of the eDEWS. A systematic evaluation of the eDEWS is required to ensure that the earrly warning surveillance system effectively meets its objectives.

The evaluation aims to: describe EWARN system and how it operates, assess its effectiveness and usefulness to detect, confirm, and respond to priority diseases, and to provide recommendations and practical measures to improve system performance. It evaluation process and methodology will be based on the EWARN in emergencies evaluation protocol, developed jointly by WHO EMRO and US CDC. The EWARN evaluation protocol focuses on reviewing the following system attributes: simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness, stability and usefulness, as well as assessing the implementation process and exit strategy. Qualitative and quantitative methods will be used for system review at different levels (facility, districts

and central levels). The protocol provides detailed steps for evaluation planning, logistics, implementation, data collection and analysis, and for developing recommendations and conclusion. It contains data collection tools such as questionnaire templates that could be easily adopted according to country context.

In the preparatory workshop, participants from MoHP namely eIDEWS coordinators and focal points at all levels worked intensely to develop the evaluation action plan with timeline and guiding principles. At the end of the workshop, the participants developed a detailed evaluation methodology, sample size and sampling mechanism, reviewed and adapted the data collection tools , and developed a field implementation strategy and road map for the evaluation.

Despite many challenges, Yemen is a few steps away from evaluating its early warning surveillance system which will identify technical and operational gaps, and recommendations that would contribute the overall strengthening and enhancing of the surveillance system in the country.

Health Facility type under *eIDEWS*

Reported diseases in eIDEWS, Yemen

Major endemic diseases/conditions of public health importance	Diseases targeted for eradication and elimination	Epidemic-prone diseases/ conditions
Vaccine preventable diseases	Poliomyelitis, Onchocerciasis, schistosomiasis	Acute Bloody Diarrhea
Suspected Cholera		Suspected Cholera
Dengue		Meningitis
Malnutrition/ food insecurity		Acute Viral Hepatitis
Tuberculosis		Measles
Malaria		Diphtheria
Perinatal and maternal health		Typhoid Fever
		Hemorrhagic Fever
		Dengue

Update on outbreaks
in the Eastern Mediterranean Region

MERS in Saudi Arabia; **cholera** in Sudan; **cholera** in Somalia; **cholera** in Yemen; **Multidrug-resistant typhoid fever** in Pakistan.

Current public health events of concern
[cumulative N° of cases (deaths), **CFR** %]

Avian influenza: 2006-2017

Egypt (A/H5N1)	[359 (122), 33.98%]
Egypt (A/H9N2)	[4 (0)]

Ebola virus disease (EVD): 2018-2019

Democratic Republic of Congo (DRC)	[3 292 (2 195), 66.68%]

Cholera: 2017-2019

Somalia	[9 177 (48) , 0.52%]
Yemen	[2 188 503 (3 750), 0.17%]
Sudan	[336 (11), 3.27%]

Diphtheria: 2018-2019

Yemen	[4 788 (281), 5.87%]
Bangladesh	[8 887 (45), 0.51%]

MERS: 2012-2019

Saudi Arabia	[2 100 (780), 37.14%]

Multidrug-resistant typhoid fever: 2016-2019

Pakistan	[14 082 (0)]