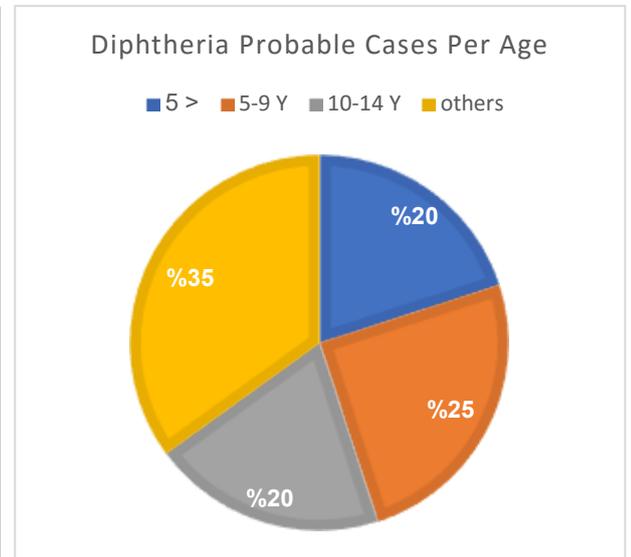
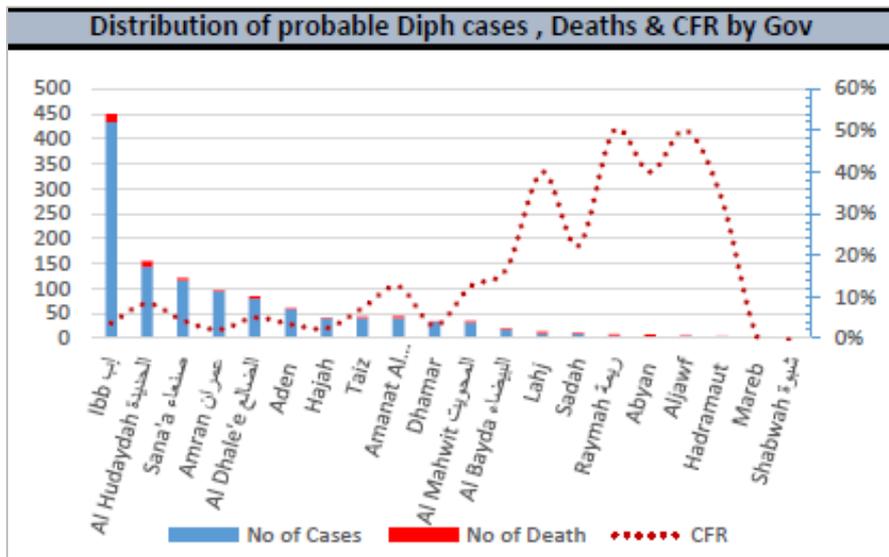




## 1.1 Diphtheria Highlights

- According to MoPHP (24 February 2018), there are **1,172** probable diphtheria cases, including **72** associated deaths, in **168** districts among **20** governorates.
- The most affected governorates are Ibb (**433** cases) and Al Hudaydah (**145**) Case Fatality Ratio (CFR) is **6.1** %. Children under the 5 years of age represent 20 % of probable cases and 36% of deaths.
- Contacts traced by district RRTs in 10 governorates: 517 (up to week 52), and 2,882 (weeks 1-7).
- Weekly admissions to DIUs: A total of 1,176 admissions were reported since week 52 up to week 6, 125 (week 4), 84 (week 5), (week 6) 81, (week 7) 80.
- Diphtheria Anti-Toxin (DAT) distributed per governorate: 1000 doses received in country up to (December 2017), with an additional 300 doses (January 2018) and around 592 doses arrived in WHO, Sana'a warehouse.



## 1.2 Diphtheria Outbreak Response:

### 1.2.1 Vaccination

- 8,500 children (between 6 weeks of age and < 5 years of age) in the 3 most affected villages of Saddah and Yarim districts of Ibb Governorate.
- Children (between 6 weeks of age and < 1 year of age) vaccinated during Integrated Outreach Round (IOR) 4 & 5.
- Children 1 - < 7 years of age vaccinated with Penta in all 20 districts of Ibb Governorate in and 3 most affected districts of Hodeida during Integrated Outreach Round (IOR) 5.

### Proposed Penta/Td vaccination strategy

- WHO, UNICEF and MoPHP developed a strategic multiple fixed site vaccination campaign taking into account availability of vaccines and access.
- PENTA vaccine will be administered to children 6 weeks to 7 years of age; and Td to >7 years up to 15 years of age.

- Districts have been Prioritized according to available epidemiological data due to limited availability of Penta and Td vaccine in the country as follows:
  - Priority 1: Districts reported more than 1 case in the last 4 weeks (38 districts)
  - Priority 2: Districts reported 1 case in the last 4 weeks (37 districts).
  - Priority 3: Districts that are neighbouring infected districts and or at risk due to other factors (119 districts)
- Phases/rounds; 3 rounds for Penta and Td vaccine
  - Round 1: 5-10 March 2018
  - Round 2: 4 weeks after round 1
  - Round 3: 6 months after round 2

### 1.2.2 Surveillance

- Daily Reporting is received as line lists including essential data required to monitor the epidemic situation and outbreak response.
- Standard case definition is approved and shared with all facilities.
- A total of 317 rapid response teams (RRTs) were supported financially by WHO since November 2017.
- The importance of data collection, using the newly revised and validated line lists of the patients and contacts, that would allow more detailed analysis of the outbreak, and development of appropriate control measures was emphasized.
- Contact tracing was prioritized, all contacts related to probable cases are being identified, and given prophylaxis by districts rapid response teams RRTs. This resulted to a significant increase in the percentage of vaccination of contacts and an uptake of prophylaxis administered as shown below: (See the table).

**The Contact Identified by Governorate**

Governorate	Number of contacts up to 31 Dec.	Number of contacts during Jan. 2018	up to 25 <sup>th</sup> February
Ibb	576	596	191
Amant Al-Asema	99	30	140
Al Hudaydah	90	138	164
Al-Mahweet	35	96	148
Taiz	33	44	84
Hajjah	65	89	67
Dhamar	31	26	58
Raymah	7	8	7
Sana'a	55	522	194
Amran	102	185	22
Grand	1093	1734	1,175

### 1.2.3 Strengthening laboratory functions for sample collection and testing

- Some key lab reagents and transport media were brought into the country to upgrade the Central Public Health Laboratories (CPHL) in Sana'a and Aden, to enable the diagnosis and confirmation of probable diphtheria cases. The media has been used and the central lab is running of reagents.

- Based on the availability of required lab reagents and culture, eight probable cases were confirmed following a culture that yielded Crony bacterium diphtheria at CPHL Sana'a.
- The eight cases are from Sana'a; two cases from Alsabeen districts, one from Bani matar, and one from Bani Al Hareth, one from Bani Hashish, one from Juhana, one from Hamdan and from Al Hraarah.

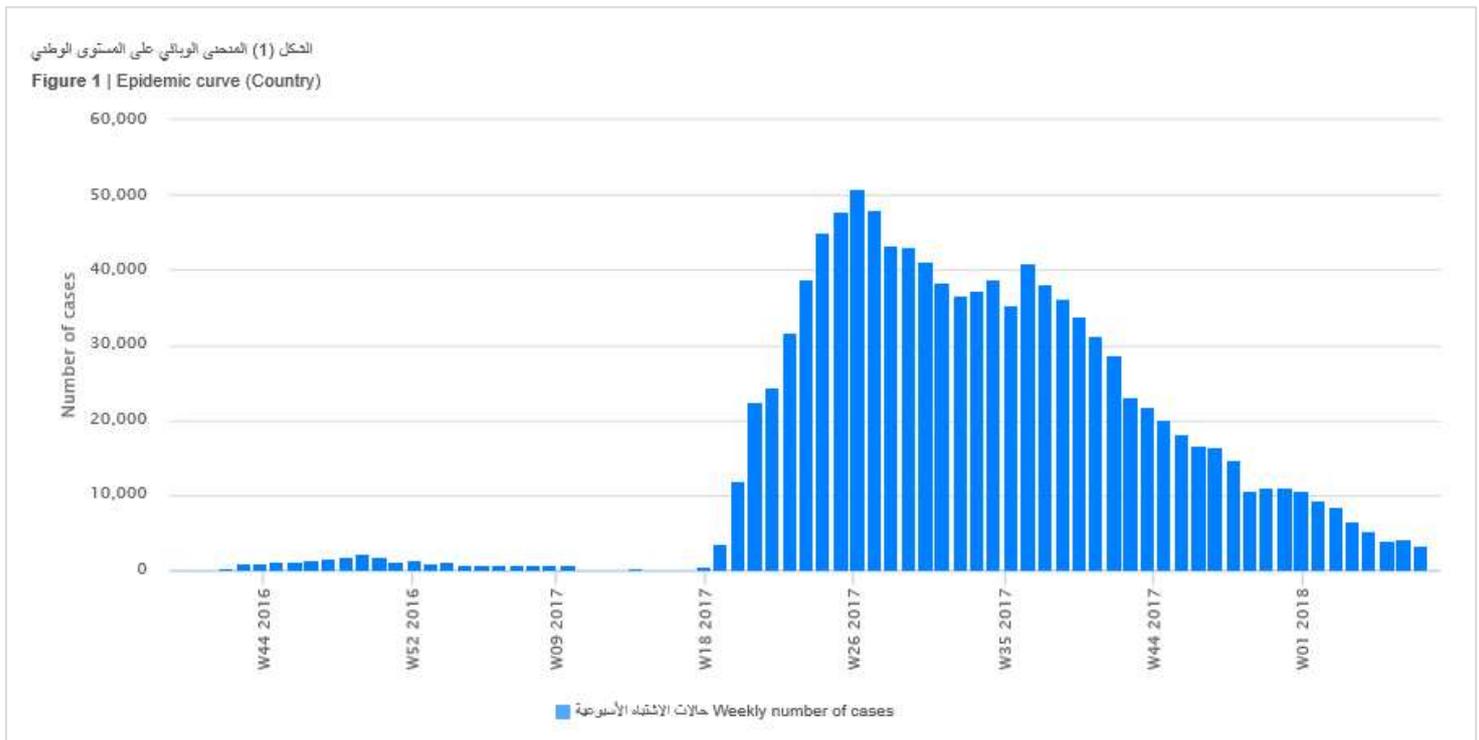
### 1.3 Challenges and Concerns

- There are over 16 million people who require assistance to ensure adequate access to healthcare
- There are over 1 million suspected cases of cholera and over 600 probable cases of diphtheria
- Restricted access is a major challenge to reaching those most in need
- DAT urgently needed by NGOs running Diphtheria ICUs
- Vaccination of HCWs is needed in DIUs and Diphtheria ICUs.
- RRT training must be conducted immediately.

### 2.1 Cholera Highlights

- The cumulative total of suspected cholera cases reported since 27<sup>th</sup> April 2017 to 24<sup>th</sup> February 2018 is 1,067,524 and 2,259 associated deaths across the country.
- The overall case fatality ratio is 0.21%, and the national attack rate is 384.87 per 10,000 people. Children under 5 years of age represent 28.8 % of total suspected cases.
- The weekly proportion of severe cases has significantly decreased representing now 11 % of the admitted cases.
- So far, the outbreak has hit 22 out of 23 governorates (96%) and 305 out of 333 districts (92%). At governorate level, the trend W5 –W7 decrease or was stable in all governorates.

Weekly number of cases



### 2.2.1 Health Cluster Response

- **Operating Diarrhoeal Treatment Centres (DTCs) and Oral Rehydration Corners (ORCs):** Health Cluster partners are currently operating 2,942 DTC beds in 207 DTCs in addition to 788 ORCs in 195 affected districts in 19 Governorates.
- **Health cluster partners engage in Health systems strengthening:** Initial integration of cholera treatment facilities into the health system is being considered. Sixteen recommendations have been developed covering DTCs and ORCs with an aim at efficient utilization of cholera resource, including finances. The recommendations will also support the preparedness in case of a new wave of cholera epidemic.
- **Health cluster partners continue:** to strengthen the Community-Based Surveillance. Health surveillance officers / Rapid Response Teams (RRT) to keep conducting field investigations and active case finding and rapidly report death from severe dehydration.
- Health Cluster to conduct a joint workshop with WASH cluster to discuss and ensure allocation and utilization of cholera response resources to strengthen the health system.

### 2.2.2 Alert and response systems strengthening:

- District and governorate level RRTs to tackle the epidemic are considered to play a key role, RRTs are expected to early detect, alert and respond to any potential outbreak
- Emergency operations centres (EOCs): EOCs are partially functional in Sana'a and Aden, while in other 6 governorates they are in the process of becoming functional.

### 2.2.3 Lab systems strengthening:

- Support is ongoing to strengthen laboratory sampling and diagnostics in-country (i.e. collection of stool samples for lab testing, transporting samples to lab and provision of operational costs), and availability of supplies and reagents.
- Testing of samples: Cumulatively, A total of 30,305 rapid diagnostic tests (RDT) have been performed which represents 28 % coverage. A total of 2,763 cultures have been performed which represents 22.3% coverage. The last positive culture was on 4 Feb 2018 in Al Harith district in Amant Al Asimah. In week (7), A total of 731 RDTs were performed, 151 were positive.

## 2.3 Challenges and Concerns

### 2.3.1 Quality of data:

- Case definition (CD) should be strictly observed, taking into account sensitivity and specificity.
- Weakness monitoring that resulted in lack of adherence to case definition
- Lack of lab capacity and problems in sample transportation for early case confirmation
- Incentives playing a role in case management. Concerns of health workers to lose incentives in case of reduction in cholera cases.
- Immediate deployment of RRTs and assuring the quality of their work.
- Data management: Lack of an electronic system to manage line lists at health facility level. Data entry errors at different levels as well as completeness and timeliness of data management.

### **2.3.2 Access issues:**

- Some WASH partners are facing challenges in accessing the most-affected communities due to security risks or because of bureaucratic impediments.
- Visa constraints continue to hinder some experts from coming into the country.
- Escalation of violence in Yemen affects many areas, limiting further access of health partners to provide health services to Yemeni people.
- Blockage of borders and the halt of delivery of humanitarian aid into Yemen has devastating effects on the response to cholera in country with probable lack of medical supplies needed to respond to the epidemic in the coming weeks.
- Currently the health cluster has enough medical supplies to response to the epidemic for 6-8 weeks, lack of medical supplies could result in a higher CFR--which is currently around .21% as of February 2018, with more potentially associated deaths from cholera (note: that all recorded cases are currently suspected cholera cases as reflected in EWARS).

### **2.3.3 Health systems deterioration and misreporting:**

- The health system has been weakened by the ongoing conflict. More than 55% of all facilities either closed or partially functioning. WATSAN systems are disrupted and continued funding is required for the operation and maintenance of these system, critical to outbreak control.
- Misreporting of suspected cholera cases in many health facilities accounts for a misleading increased case load observed in some governorates and districts. There is a lack of capacity and resources of some partners to conduct regular supervisory visits to DTCs and ORPs.
- Collecting stool samples for laboratory testing, transporting the samples to laboratory and provision of operational cost, and availability of supplies and reagents.

### **2.3.4 Lessons learned:**

- Strengthening Early Warning, Alert and Response for preparedness
- Enhancing the capacity of district Rapid Response Teams (RRTs)
- Improving data management and assuring quality
- Upgrade health facilities to enable electronic data entry focusing surveillance on selected epidemic-prone diseases
- Increase the capacity of laboratories for testing
- Stockpiling of supplies such as cholera kits, rapid diagnostic tests (RDTs)
- Strengthening WASH activities.
- Limited WASH supplies, overstretched resources: WASH supplies such as household water treatment tablets and soap are of limited availability in the local market. The cholera response of WASH partners is competing with other WASH emergency response priorities, such as the provision of clean water and sanitation for displaced populations and the response to malnutrition.

**FOR FURTHER INFORMATION, please contact with:**

**Dr. Mohammed Al Hajjer**

EOC Manager, MoPHP

[Mazen376@gmail.com](mailto:Mazen376@gmail.com)

**Dr. Jennie Musto**

EOC Manager a.i., WHO

[mustoj@who.int](mailto:mustoj@who.int)

**Ms. Christine "Tiff" Cool**

Emergency Communication Lead,  
WHO

[coolc@who.int](mailto:coolc@who.int)

**Ms. Muneerah Al Mahdli**

Communication Consultant-EOC

[Muneerah.mahdli@gmail.com](mailto:Muneerah.mahdli@gmail.com)