

# WHO ANNUAL REPORT 2020

World Health Organization  
Yemen



World Health  
Organization  
Yemen



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# OVERVIEW

## SNAPSHOT: 2020 WHO RESPONSE IN YEMEN

In 2020, the conflict in Yemen intensified. Now in its sixth year, the world's largest humanitarian crisis displaced 172 000 more people, bringing the total number of displaced persons (IDPs) inside Yemen to 4 million.

As humanitarian needs increased, the country's health system became increasingly impaired. According to the 2020 Health Resources Availability and Mapping System (HeRAMS), only 50% of health facilities across the country were fully functional at the end of 2020, and 20.7 million people, or two out of every three Yemenis, needed some form of humanitarian and protection assistance. Almost 40% of operational hospitals lacked specialists, equipment and medicines. Immunization coverage had decreased by as much as 30% since the conflict started, and most health personnel were still not receiving salaries after at least two years.

Data from HeRAMS also showed that there were no doctors in 18% of districts across Yemen, while 70% of health care facilities lacked basic water, sanitation and hygiene services, making the provision of safe water, adequate sanitation and hygiene services in health care facilities an urgent need. Of all open health facilities in Yemen, 83% did not have access to a safe water source, 61% were without basic sanitation services, only 24% had medical waste disposal unit incinerators, and just 14% were connected to the public network.

Noncommunicable diseases (NCDs) were responsible for 57% of all deaths in Yemen. People with NCDs constituted the most vulnerable population group, as they lacked regular access to essential drugs and treatments due to ongoing conflict.

In 2020, the humanitarian response was significantly underfunded, forcing key programmes to close or reduce. The escalating conflict and deterioration of the economy worsened with the COVID-19 pandemic, causing most Yemenis to lose their livelihoods, depleting most or all of their savings, and leaving them completely reliant on humanitarian assistance for survival.

Yemen was also vulnerable to natural hazards. Between April and August 2020, heavy rains and flooding devastated communities, causing deaths and injuries, destroying infrastructure and livelihoods, and increasing the spread of deadly diseases.

The civil war also fragilized the health system and led to increase in diseases outbreaks such as cholera, diphtheria, mosquito-borne diseases and vaccine preventable diseases. The vulnerability of the Yemeni people to disease and death was further increased by growing food insecurity, limited hygiene and sanitation services (particularly for women and children), and the long-term effects of malnutrition.

As the Yemeni people faced unabated poverty, displacement, malnutrition, and chronic illnesses, WHO led the UN health response in North and South Yemen. This response focused largely on preventing the collapse of existing health systems through coordination and work of the UN Health Cluster and local health authorities to deliver life-saving assistance. In coordination with other UN agencies, donors, partner organizations and national to local authorities, WHO supported primary and secondary health care service delivery, establishing epidemiological and nutrition surveillance systems and responding to infectious disease outbreaks.



## HEALTH

PEOPLE IN NEED (PIN)

**20.1m**

ACUTE PIN

**11.6m**

MODERATE PIN

**8.5m**

WOMEN

**24%**

CHILDREN

**51%**

WITH DISABILITY

**15%**

PEOPLE IN NEED

**20.1m**

TREND (2015-2020)



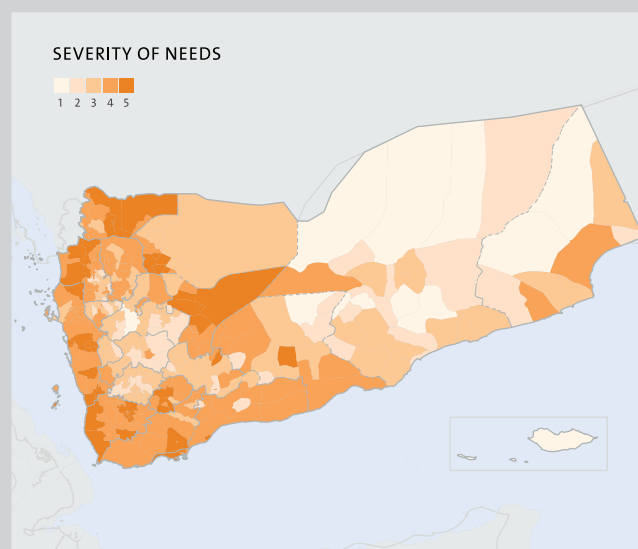
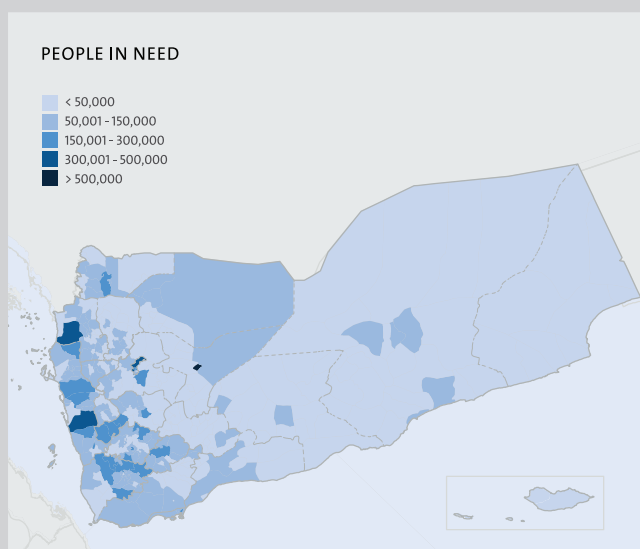
SEVERITY OF NEEDS

4%  
Stress

30%  
Severe

41%  
Extreme

25%  
Catastrophic



Eighty percent of the population required humanitarian or protection assistance, as estimated by the 2020 Yemen Humanitarian Response Plan Extension. Approximately 17.9 million people required health services, of whom 14.3 million were in acute need. Two-thirds of the population required services to prevent or treat malnutrition, making Yemen the largest food security crisis in the world.

Health worker density in Yemen was only 10 per 10 000 population, compared to the WHO benchmark of more than 22 per 10 000, while density of specialists was 0.88 per 10 000 population. There were no doctors in 67 of Yemen's 333 districts.

Health needs escalated in 2020, as Yemen recorded its first COVID-19 case on 10 April. As the disease spread – possibly infecting more than 11 million people by August 2020 (London School of Hygiene and Tropical Medicine; 27 July 2020) – 15% of still-functioning health facilities were repurposed to respond to COVID-19.

As of October 2020, over 2000 cases of COVID-19 had been officially reported. However, the actual numbers of COVID-19 cases and deaths were much higher in reality. The ongoing conflict meant that many cases were probably untraceable, combined with a severe lack of testing facilities and under-reporting of cases. Additionally, many people faced difficulties accessing treatment centres, often arriving in very critical condition.

Compounding this already catastrophic situation, many health workers quit their jobs because of fear of infection, while misinformation and fear of stigmatization kept many patients from seeking medical treatment.

Yemen recorded more than 4 million forcibly displaced people at the end of 2020 – the fourth highest number of IDPs in the world. For about 80% of Yemeni people, substandard living conditions, including limited access to quality water, sanitation and health services, increased the spread of infectious diseases including cholera, dengue, diphtheria and polio.

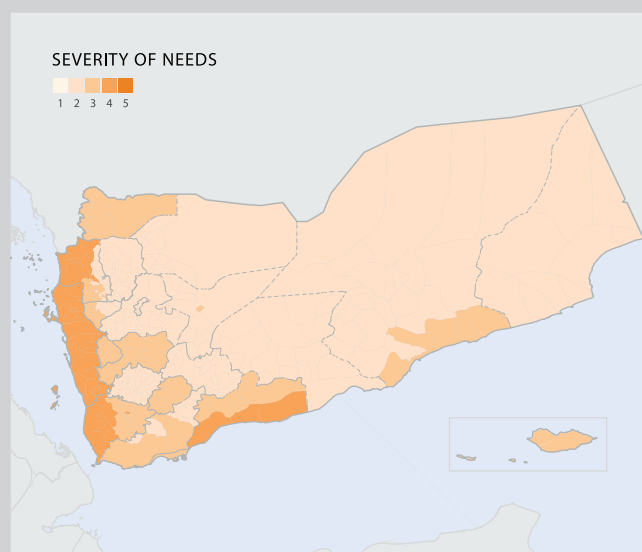
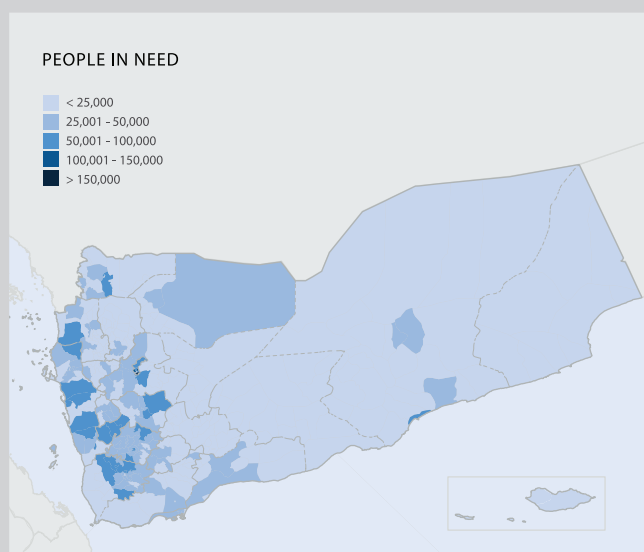
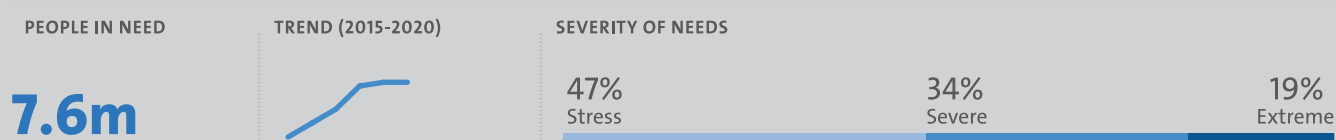
Over 65 000 cases of dengue fever were reported in 2020, affecting 69% of districts in Yemen. In addition, new cases of vaccine-derived polio virus type 1 (cVD-PV1) were reported in the first weeks of August 2020, appearing for the first time since polio was eradicated from the country in 2000.

Acute malnutrition continues to severely impact lives and livelihoods. Throughout much of Yemen, armed conflict, infectious diseases, chronic illnesses and an

overall poor health environment were key drivers of food insecurity. According to data from the Integrated Food Security Phase classification (IPC), over 2.25 million children up to the age of five, and more than 1 million pregnant and lactating women, were projected to suffer from acute malnutrition. Based on the IPC Acute Malnutrition (AMN) analysis conducted in 333 districts, the nutrition situation deteriorated in 18 zones of North and South Yemen between August and December 2020.

## NUTRITION

PEOPLE IN NEED (PIN)	ACUTE PIN	MODERATE PIN	WOMEN	CHILDREN	WITH DISABILITY
<b>7.6m</b>	<b>4.7m</b>	<b>2.8m</b>	<b>66%</b>	<b>84%</b>	<b>15%</b>



## SNAPSHOT: LEADING THE HEALTH RESPONSE IN YEMEN

During the course of 2020, WHO led the UN health response in Yemen, in coordination with other UN agencies, donors, partner organizations and national to local authorities. This response focused largely on preventing the collapse of existing health systems in North and South Yemen through coordination and work of the UN Health Cluster, and local health authorities, to deliver life-saving assistance. WHO and Health Cluster partners supported primary and secondary health care service delivery, establishing epidemiological and nutrition surveillance systems and responding to infectious disease outbreaks.

<sup>(1)</sup> 2021 HNO analysis

<sup>(2)</sup> 2021 HNO analysis

<sup>(3)</sup> YEMEN | IPC ACUTE MALNUTRITION ANALYSIS



# 1. LEADING THE HEALTH CLUSTER

## HEALTH CLUSTER YEAR 2020:

TOTAL FUNDS REQUIRED  
FOR 2020:

**US\$ 221.3 M**

FUNDS RECEIVED  
IN 2020:

**US\$ 83.3 M**



**27%**  
RECEIVED

As the Health Cluster lead agency in Yemen, WHO played a critical role in identifying the gaps and needs of available health services, as well as ensuring targeted, integrated, effective, and efficient health joint response to health risks. A key element of the health response strategy is to work with partners to build on national capacities with the Ministry of Public Health and Population, local health authorities and Yemeni civil society organizations involved in the health sector.

WHO with Health Cluster partners coordinated support to 2263 health facilities across the country, including 16 governorate hospitals, 126 district hospitals, 60 general hospitals, 22 specialized hospitals, 568 health centres and 1471 health units. To sustain the continuity of essential health services, WHO and Health Cluster partners supported 3054 health facilities to keep their doors open while ensuring uninterrupted provision of health services and life-saving medicines and medical supplies. This support extended to health workforce capacity-building, including training for 1562 doctors, nurses and midwives, and 1000 community health-care workers.

Despite funding shortages and the impact of COVID-19 in 2020, the Health Cluster expanded its presence through three new sub-hubs in the Western Coast, Al-Mukalla and Mareb to effectively coordinate health activities through partners that reached to the most vulnerable and in need populations.

As part of its coordination mechanism, the Health Cluster convened 46 National Cluster Coordination meetings in Sana'a and Aden, and 80 subnational cluster coordination meetings at the hub level. Moreover, the Health Cluster led the coordination pillar of the COVID-19 response. Subsequently, 20 COVID-19 meetings and six COVID-19 task-force meetings took place during 2020 in Sana'a and Aden, ensuring alignment of all elements of the response programme.

The Health Cluster and partners were able to reach more than 7.6 million people by providing 15.2 million medical consultations in more than 3112 supported health facilities across the country during the year.

## 2. RESPONDING TO OUTBREAKS

The humanitarian crisis in Yemen has fostered conditions to increase the risk of communicable disease outbreaks.



Sana'a, Yemen | PCR test at Central laboratories. ©WHO/Omar Nasr

### 2.1 COVID-19

Yemen recorded its first laboratory-confirmed case of COVID-19 on 10 April 2020.

Despite the limited capacities of the country to respond to COVID-19, WHO and health partners invested substantial efforts in ensuring that priority steps and actions were taken for each pillar of

the Yemen national COVID-19 Preparedness and Response Plan. Considering this situation and its alignment with the World Bank Group (WBG) strategic priorities, the WBG committed to support Yemen through the Yemen COVID-19 Response Project (YCRP). This provided the funding for the COVID-19 Strategic Preparedness and Response Masterplan and focused on supporting case management, central public health laboratories (CPHLs)/national laboratories, infection



prevention and control (IPC), surveillance, rapid response teams (RRTs), points of entry (PoE), providing supplies and equipment needed for the response, as well as facilitating capacity-building. The YCRP aimed to help Yemen respond and mitigate the risks associated with the COVID-19 outbreak through a project allocated with US\$ 26.9 million, managed by WHO.

In addition, a COVID-19 Incident Management Structure was put in place with the local health authorities in Sana'a and Aden by preparing and developing the Yemen National COVID-19 Preparedness and Response Plan, which was presented to the authorities in April 2020 with clear objectives and targets for each of the nine initial pillars. Also, a COVID Task Force was established under the leadership of the HRCO co-led by WHO and OCHA. The Task Force was an important platform to share and agree on clear guidelines related to patients' triage, referral and case management. Roughly 15% of the functioning health system was repurposed for COVID-19, reducing overall health coverage by 20 to 30%. Fewer patients have sought health care, partly due to fear of COVID-19 related stigma and constrained access.

WHO Yemen's operational support in 2020 focused mainly on establishing COVID-19 centres for the case management of severe/critical cases (with an assumption that mild-to-moderate cases were to be supported through the Health Cluster). Priority was also given to establishing a network of central public health laboratories (CPHLs) with PCR capacity. With initial resources mobilized from the World Bank, all the pillars were activated to strengthen preparedness and response activities, but with limited funding for Pillar 4 (PoE) and Pillar 9 (maintaining essential health services).

The first wave of COVID-19 hit Yemen between May and July 2020. Although available data was limited, cases were confirmed throughout all remaining weeks of the year. The World Bank and WHO worked together through the Yemen COV-

ID-19 Response Project (YCRP) to support and strengthen the country's preparedness and response to the pandemic. The YCRP supported early virus detection and screening, provided essential medicines and medical equipment to treatment centres, and built the capacity of human resources to respond to the pandemic in Yemen.

Additional funding for COVID-19 response was also mobilized from different donors, including the King Salman Humanitarian Aid and Relief Centre (KSrelief), the Islamic Development Bank and Germany. A total of 37 isolation units were established across the country and supplied with medicines and medical equipment to provide treatment and handle severe cases of COVID-19. Specialized RRTs were trained and deployed to 84 high-priority districts to detect and respond to COVID-19. Additionally, the YCRP supported the country's diagnostic capacity with six national laboratories to conduct PCR testing for suspected cases since the beginning of the response. The project is also supporting the local health system in IPC to prevent further spread of the virus.

## HIGHLIGHTS

### **Surveillance, RRTs and case investigation:**

Working within the surveillance system to detect and respond to notifiable diseases in Yemen, the existing 333 RRTs were capacitated and strengthened to incorporate the COVID-19 response into their day-to-day disease surveillance activities. Additional teams were specifically designed and activated to respond to COVID-19 in 84 priority districts.

**PoE:**

To improve rapid detection and screening, thermal scanners and thermometers were provided for the 26 formal entry points to enhance screening capacity and reduce the chances of cases of COVID-19 being imported into Yemen.

**National laboratories:**

The YCRP supported the existing health system to respond to COVID-19 by improving central public health laboratories' capacity. The support included the procurement of additional laboratory equipment and supplies such as PCR thermocyclers and staff training. Six of eight CPHLs provided testing for COVID-19 in Sana'a, Taiz, Hadramout, Sayoun and Al-Hudaydah. The laboratory supplies delivered by the project included PCR diagnostic kits, RNA extraction kits, PCR

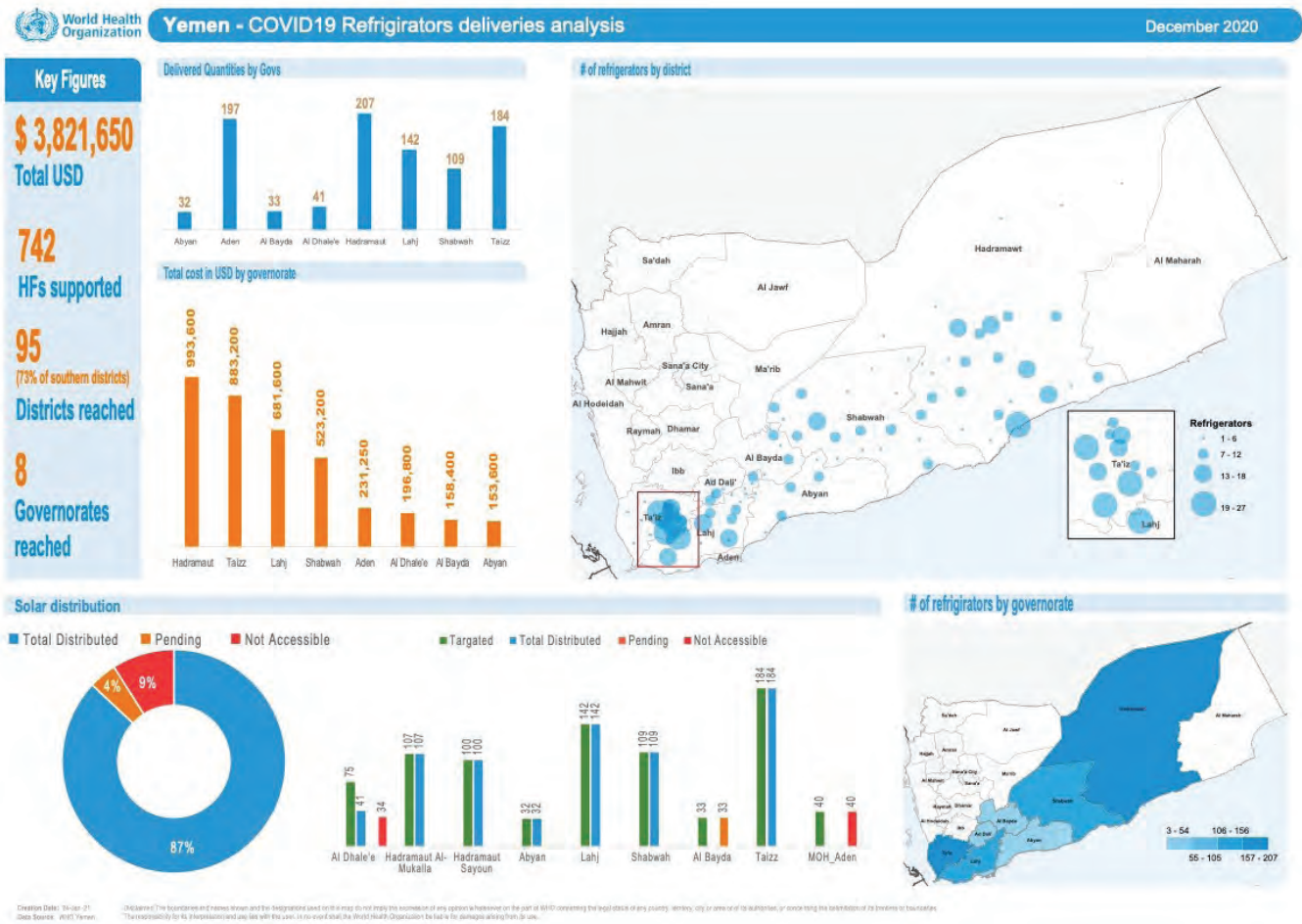
tubes and pipette tips, and nasopharyngeal swabs.

**IPC:**

WHO rehabilitated 19 isolation units to improve WASH infrastructure and ensure compliance with IPC protocols. Environmental ventilation systems with high-efficiency particulate absorbing (HEPA) filters were installed in these isolation units. The project also trained 770 health care workers in IPC protocols according to WHO guidelines.

**Case management:**

In 2020, a total of 1002 individuals were trained in case management in 37 isolation units supported by the project.







Aden, Yemen | Infant girl receiving polio vaccine during national polio immunization campaign. ©WHO/YPN

## 2.2 POLIO

In August 2020, vaccine-derived polio was detected in Yemen for the first time since 2005. The cases were clustered in Sa'adah governorate, an area that has very low routine immunization levels and which has been inaccessible to the polio programme for more than two years. The last house-to-house campaigns in this area were conducted nearly two years before, in November 2018. The outbreak of vaccine-derived poliovirus type 1 (cVDPV1), a strain of paralytic poliovirus that can emerge in under-vaccinated communities, struck 31 children in 2020.

From November to early December, WHO and UNICEF in support of health authorities responded with a national polio immunization campaign. A package of integrated health outreach activities, including childhood vaccination, nutritional and WASH support, was deployed in Sa'adah. Health workers noted a particularly high demand in Sa'adah for polio, measles and diphtheria vaccines, protection from cholera, and nutritional and hygiene interventions.

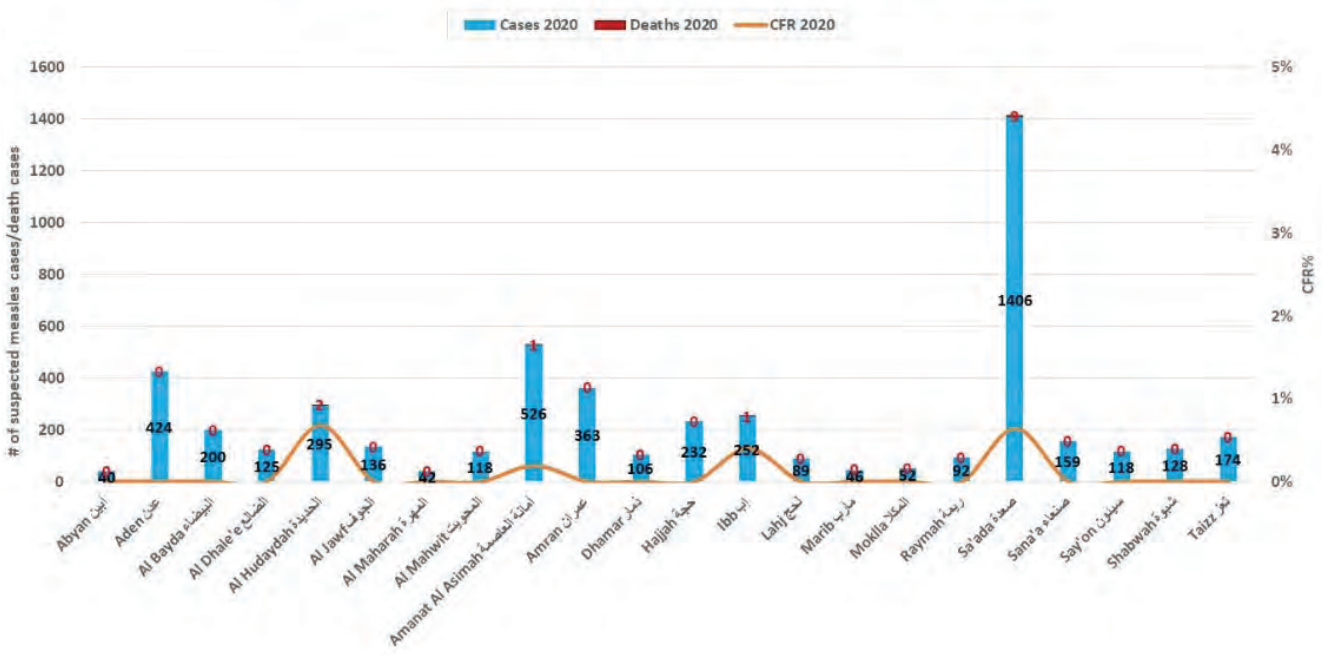
## 2.3 MEASLES

In 2020, the number of measles cases increased due to a decrease in children’s immunity levels, leading to a total of 5554 suspected measles cases and 13 associated deaths reported from all 23

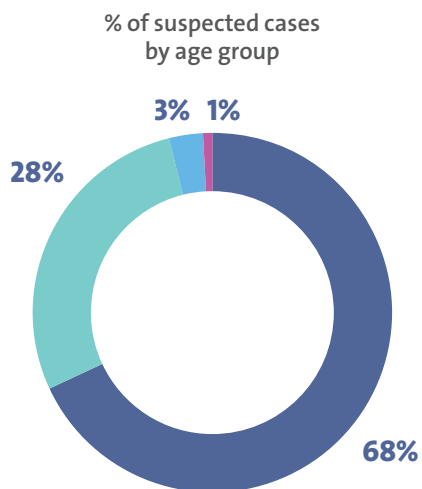
governorates in Yemen. Sa’adah governorate was the most affected governorate – contributing to 25% of suspected national cases, and 68% of associated deaths.

### INCIDENCE BY GOVERNORATE AND AGE DISTRIBUTION OF CASES AND ASSOCIATED DEATHS

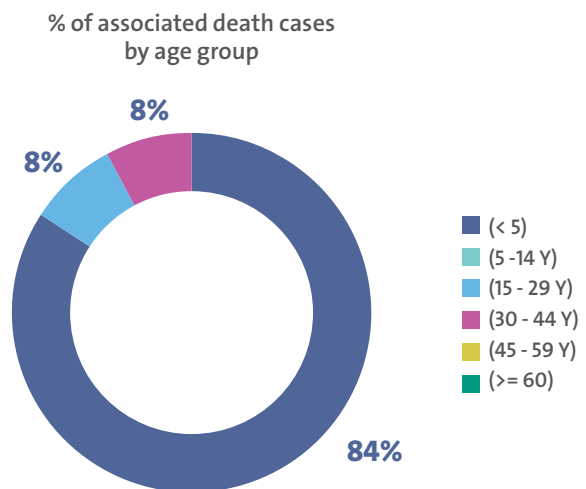
Distribution of suspected measles cases, deaths & CFR by Gov., WK1 to Wk 52 2020



### AGE GROUP DISTRIBUTION OF SUSPECTED MEASLES CASES AND DEATHS, 2020



96% of suspected measles cases are less than 15 years of age



92% of deaths in suspected measles cases are less than 15 years of age



Yemen's Expanded Programme on Immunization (EPI) uses routine and specialized vaccination campaigns to protect children under one year of age from life-threatening diseases, including diphtheria, cholera and polio. During 2020, four rounds of integrated outreach immunizations were carried out in the eight highest priority governorates of the country with 1–2 rounds in the remaining governorates. During these campaigns, the measles and rubella (MR) virus vaccine was administered to children under the age of five along with other routine EPI antigens, integrated management of childhood illness (IMCI) and nutrition services. The reported coverage of the first MR dose was 76% and the

second dose was 54%, which still falls far below the required level.

In December 2020, an integrated outreach round was conducted in all districts of Sa'adah in response to a cVDPV1 outbreak which included MR vaccine for children from 6 months to 15 years of age with reported coverage of 71%.

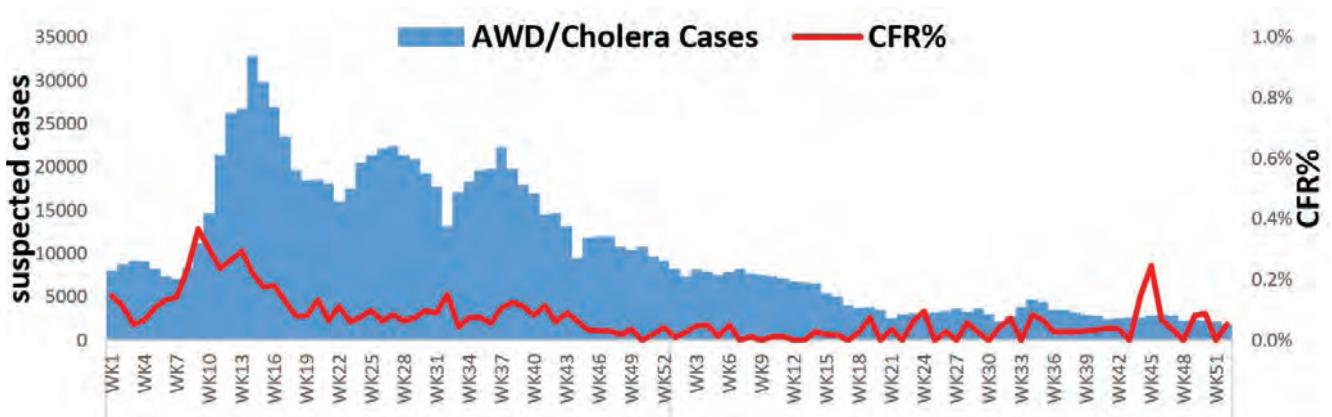
WHO, in coordination with UNICEF, also made significant strides to mobilize funds for vaccine procurement and operational costs to conduct outbreak response campaigns against measles.

## 2.4 CHOLERA

Cholera remained a leading public health concern in Yemen in 2020. A total of 230 540 suspected cholera cases and 84 associated deaths were reported nationwide. The outbreak affected 22 of 23 governorates and 300 of 333 districts in the country;

worst hit were the areas that lacked access to clean water and proper sanitation. Children under five represented 26.54% of all suspected cases while the elderly above 60 years of age accounted for 5.72% of total suspected cases. WHO and health partners

THE TREND OF SUSPECTED CHOLERA CASES BETWEEN EPIDEMIOLOGICAL WEEK 1, 2019 TO WEEK 52, 2020



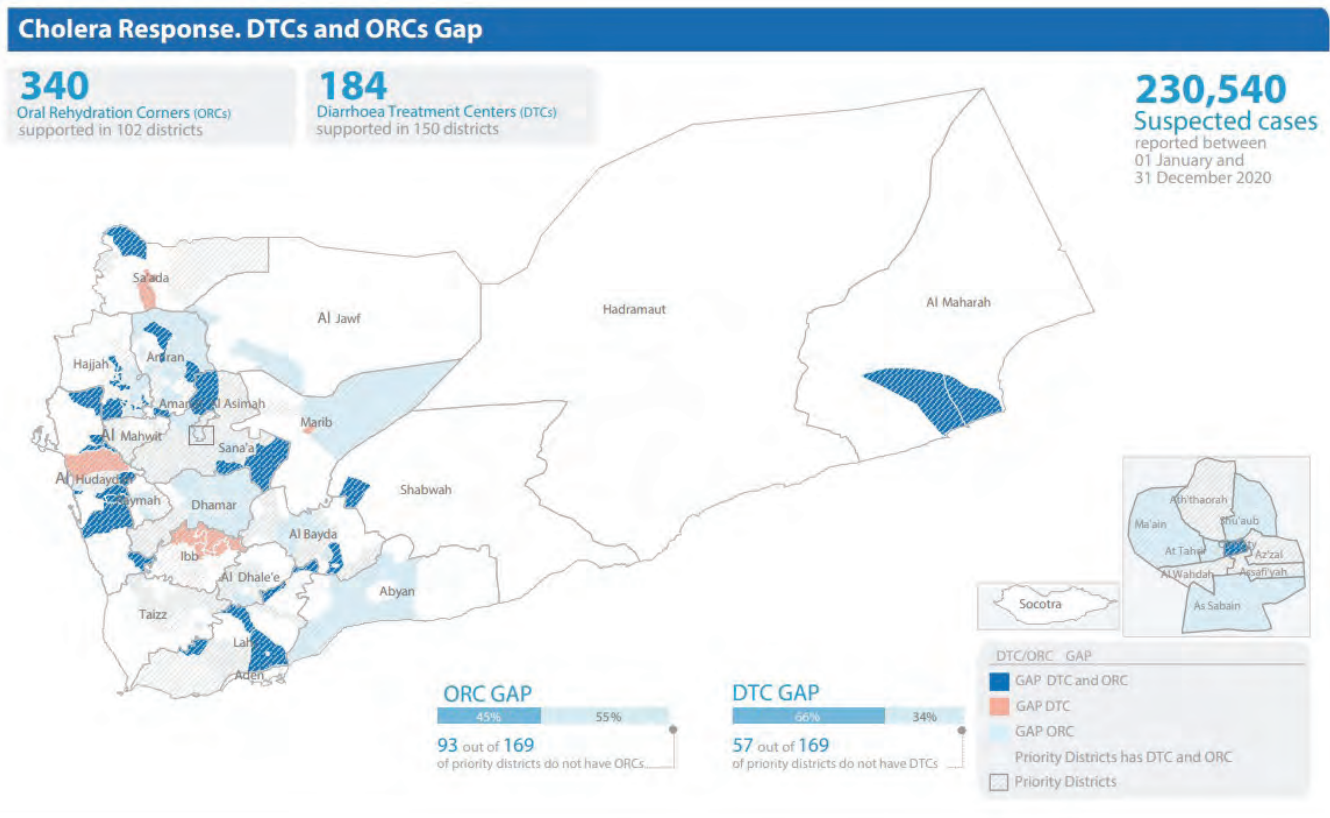
continued support to local health authorities in responding to the prolonged cholera outbreak. The response included: case management, surveillance and laboratory diagnostic capacity; hotspot mapping; oral cholera vaccine (OCV) campaign planning and implementation; water, sanitation, and hygiene (WASH) support; and risk communication. The Health Cluster partners supported a total number of 150 diarrhoea treatment centres (DTCs) and 130 oral rehydration corners (ORCs) in 169 priority districts.

Adding to this effort, WHO and UNICEF, through the Emergency Health and Nutrition Project (EHNP) funded by the World Bank, continued their support by providing medications, consumables and laboratory supplies to ensure laboratory diagnostic capacity in targeted health facilities.

To slow the spread of cholera, in December 2020 the EHNP supported the Ministry of Public Health

and Population in conducting an oral cholera vaccination campaign in the Hajr district of Hadramout governorate, and in the Al Dhalea and Al Azareq districts of Al Dhalea governorate. In these hard-to-access rural areas, people face difficulties in reaching health care centres. To ease access for these communities, the campaign assigned fixed and mobile teams to cover over 32 000 households and over 188 000 people in these two governorates.

Yemen is extremely water scarce, making nearly the entire population vulnerable to the economic and physical impacts of water scarcity and health impacts of water-washed and water-borne diseases. In response to this situation, since September 2020 WHO and KSrelief have worked together to improve water, sanitation, and hygiene (WASH) services in Yemen, thanks to US\$7 million to support targeted health facilities and water quality monitoring and surveillance in high-risk cholera district, benefiting some 653 000 people across the country.





## 2.5 VECTOR-BORNE DISEASES

### 2.5.1 MALARIA AND DENGUE

About 20.5 million Yemenis – 65% of the country’s total population – were living in areas at risk of malaria transmission in 2020. Low to very low transmission occurred in the eastern governorates of Hadramout, Shabwah and Al-Maharah (accounting for about 0.7% of total reported national cases). Moderate to low transmission occurred in southern governorates that accounted for about 14% of total reported malaria cases during 2018–2020, with 41% of these cases occurring in Aden city.

Tehama region was the most endemic area in Yemen, accounting for 82% of confirmed malaria cases, with Al-Hudaydah having 80% of cases reported in Tehama and 66% of total cases reported in the country.

Approximately 80% of reported malaria cases were confirmed through a parasitological test, with no difference in 2020 compared to the preceding two years. Nevertheless, parasitological confirmation of reported malaria cases increased from 54% in 2010, reflecting better coverage. The slide positivity rate (SPR) was 12.3% in 2020, compared to 14.1% in 2018.

Dengue fever has been the most emerging disease in Yemen in the last two decades, becoming endemic in many urban settings along the coastal area from Al-Hudaydah bordering the Red Sea to Al-Mukalla bordering the Arab Sea. The ongoing humanitarian crisis, abject poverty, lack of safe water and sanitation, and climatic and environmental changes fueled the emergence of vector-borne diseases (VBDs), particularly in the aftermath of floods and tropical storms. The country also witnessed outbreaks of acute febrile illnesses, including dengue and chikungunya, and West Nile virus (WNV).

WHO supported Yemen with access to reliable malaria and dengue diagnosis and treatment; implemented vector control interventions for communities at risk of malaria and dengue transmission; strengthened the national surveillance system to collect malaria and dengue data; detected epidemics; and delivered an effective and timely response while building national capacity on all levels.

### HIGHLIGHTS

1. WHO distributed antimalarial medicines and diagnostic tests to all governorates in Yemen: Distributed quantities were enough to diagnose and treat 100 000 malaria cases and 1800 severe malaria cases, and to detect 148 800 suspected dengue cases, 15 360 suspected cases of chikungunya and 9600 suspected cases of WNV. These commodities were procured with support from KSrelief Malaria Project and the EHNP.

#### MALARIA AND DENGUE CASE MANAGEMENT COMMODITIES DISTRIBUTED BY WHO IN 2020

94 545 DOSES OF ARTEMETHER/LUMEFANTRINE

20 000 ARTESUNATE INJECTION 60 VIALS

100 000 MALARIA RAPID DIAGNOSTIC TESTS (RDTs)

140 000 DENGUE RAPID DIAGNOSTIC TESTS (RDTs)

260 DENGUE ELISA KITS (IGM & IGG)

220 CHIKUNGUNYA ELISA KITS (IGM & IGG)

140 WNV ELISA KITS (IGM & IGG)

10 000 ARTESUNATE SUPPOSITORIES

2. WHO delivered 21 000 kilograms of Clothianidin insecticides for indoor residual spraying (18 000 kilograms for Tehama governorates and 3000 kilograms for Aden and Hadramout regions). This support reached more than 2 million people.

3. WHO implemented an indoor residual spraying campaign targeting 28 districts in the southern areas of Tehama (December 2020). A total of 153 226 households were sprayed, providing direct protection against malaria for 762

755 people in Al-Hudaydah, Al-Mahweet, Rayimah, Ibb Dhamar and Taiz. The campaign was manned by 1140 spraying workers, 283 foremen and 68 field supervisors.

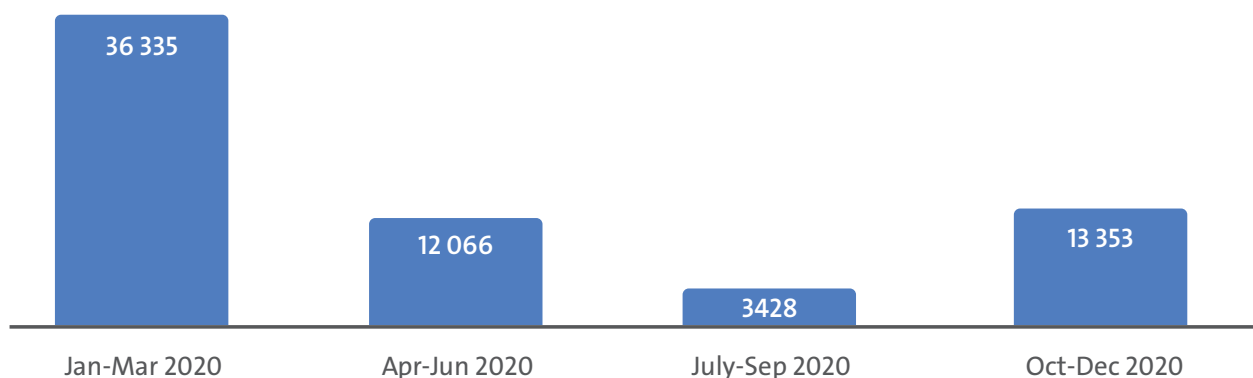
4. WHO carried out the dengue control campaign in eight districts in Aden governorate in September 2020. The campaign constitutes three main areas of intervention: entomological surveillance, space fogging and community awareness. This response reached 430 000 residents in 717 areas/zones in Aden.

Gov.	Targeted Houses	Households Sprayed	Houses Sprayed	% of coverage	Population Protected
Ibb	9993	10 473	9097	91.0%	55 320
Al-Mahweet	11 425	12 445	10 940	95.8%	64 672
Hodeida	101 794	106 081	94 755	93.1%	517 315
Taiz	12 987	12 668	10 964	84.4%	65 815
Rayimah	5228	5462	4831	92.4%	29 390
Dhamar	5843	6097	5173	88.5%	30 243
Total	147 270	153 226	135 760	92.2%	762 755

5. WHO targeted 44 400 households in Al-Hawak, Al-Hali and Al-Mina districts in Al-Hudaydah governorate with the dengue control campaign (January 2020). The campaign carried out indoor and outdoor fogging to exterminate adult *Aedes aegypti* (yellow fever mosquito) to reduce the transmission of dengue and chikungunya in Al-Hudaydah

governorate, and also implemented entomological surveillance and a source reduction campaign by educating the local community on the proper means of destroying mosquito breeding grounds. All the residents of the governorate – over 500 000 people – benefited from this support.

Suspected dengue fever cases reported by eDWES 2020





6. As part of integrated community case management supported by the KSrelief Malaria Project, 150 community health volunteers were trained in malaria diagnosis and treatment in six districts in the Southern and Eastern governorates (Hajr, Tor Al-Baha, Al-Mukkah, Al-Khokah, Al-Azareq and Mareb Al-Wadi).

7. WHO implemented active case surveillance to investigate 271 suspected malaria cases in Hadramout governorate. This intervention is essential to prevent the reintroduction of malaria transmission in many districts across the governorate. Active surveillance investigation visits were conducted across 28 villages in 10 districts of Hadramout and Shabwa governorates.

8. As part of large-scale capacity-building efforts, WHO with support from the Japan Fund trained 63 health workers and 60 community leaders in dengue case management procedures in Shabwa, Taiz and Abyan (districts of Ataq, Al-Mukkah, Zingiber).

9. WHO also supported a field epidemiology training programme, which is a six-month training course assigned for 54 physicians on basic field epidemiology and outbreak investigation. This intensive capacity-building programme strengthened the field epidemiology skills of district surveillance coordinators working in the most outbreak-affected governorates, enabling them to better respond to epidemic-prone diseases.

10. To evaluate the efficacy of Artemether/lumefantrine as a first-line defence for antimalaria treatment, WHO conducted an antimalaria therapeutic efficacy study in Bajil district. The results showed the study drug to be 100% effective.

11. Ten medical doctors in the WHO Eastern Mediterranean Region were trained in malaria case management for resource persons and focal points.

## 2.5.2 DIPHTHERIA

In 2020, and in response to the emergence of over 1710 diphtheria patients, WHO provided 3675 vials of diphtheria antitoxin and more than US\$ 200 000 worth of antibiotics and medical supplies as part of large-scale life-saving interventions, including to both internally displaced communities and host communities. This support helped 1576 patients to recover from diphtheria and protected more than 22 400 of their contacts from infection. In a country that continues to have insufficient vaccination coverage, provision of life-saving medicines for deadly infections including diphtheria remains a crucial intervention.

In 2020, a total of 24 309 diphtheria patients and their contacts across Yemen were reached with the diphtheria medication. A total of 20 health facilities were supported with diphtheria medication to ensure essential medication for vulnerable people.

To support capacity-building, a six-month training course supported 54 physicians in basic field epidemiology and outbreak investigation and response, as part of the Field Epidemiology Training Programme curriculum.

In March 2020, as part of efforts to protect the most vulnerable from diphtheria and other high-threat infectious diseases in Yemen, WHO partnered with the Government of Japan to implement a comprehensive disease prevention and control programme.

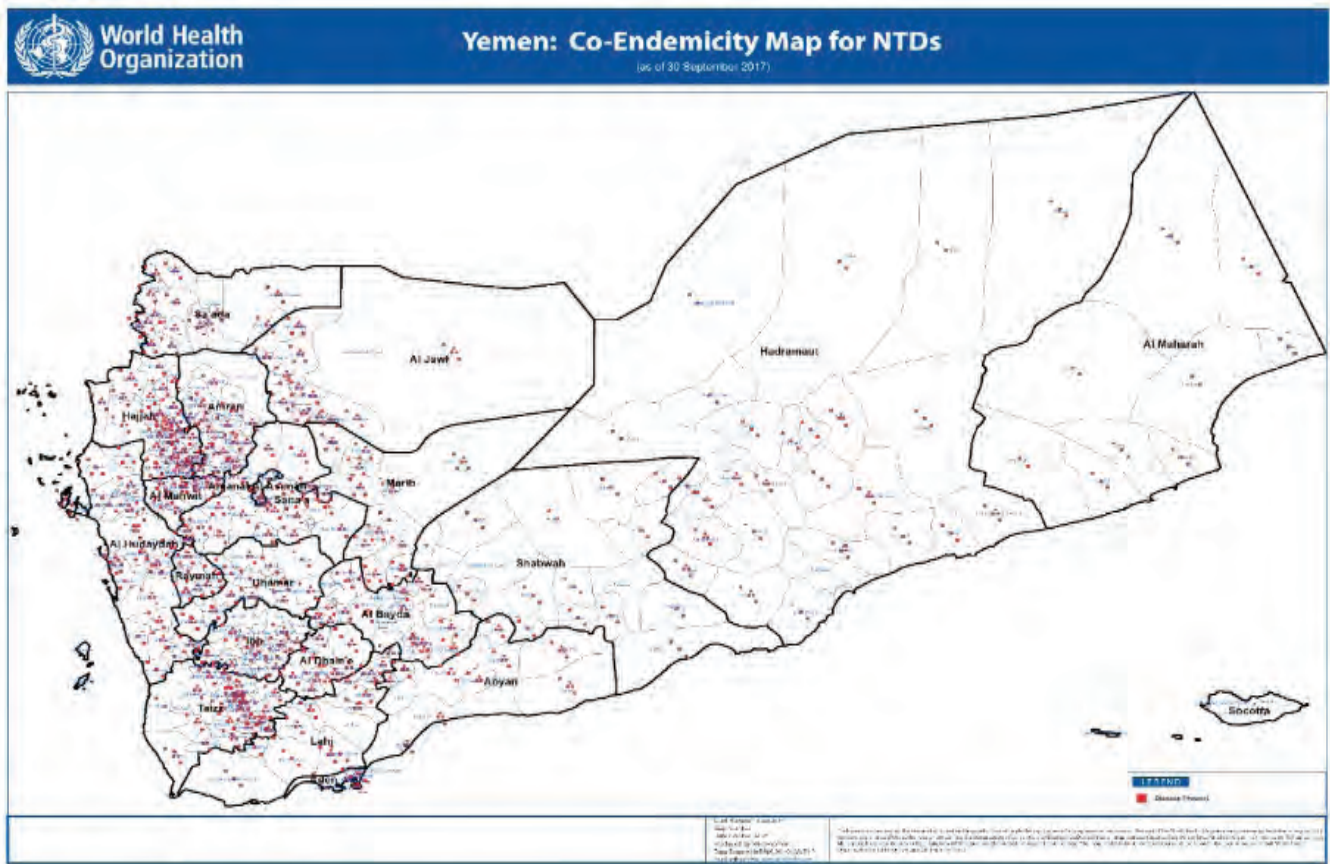
## 2.6 NEGLECTED TROPICAL DISEASES

Thousands of Yemenis continue to suffer from neglected tropical diseases (NTDs) such as onchocerciasis (river blindness), schistosomiasis, soil-transmitted helminths (STHs), trachoma, rabies, leishmaniasis, leprosy, dengue fever, mycetoma, scabies and snakebite/scorpion sting envenoming. National programmes to combat these NTDs were put in place prior to the Yemen humanitarian crisis, but were interrupted by conflict, leading to hundreds of thousands of people being exposed to seriously debilitating infections. NTDs impair childhood growth and intellectual development, and debilitate, blind and maim millions of Yemeni people every year.

An estimated 350–400 000 people were exposed to onchocerciasis in endemic valleys of the country. Additionally, about 3 million people were known to be infected with schistosomiasis in Yemen. However, this figure is believed to be an underestimate of the actual disease burden.

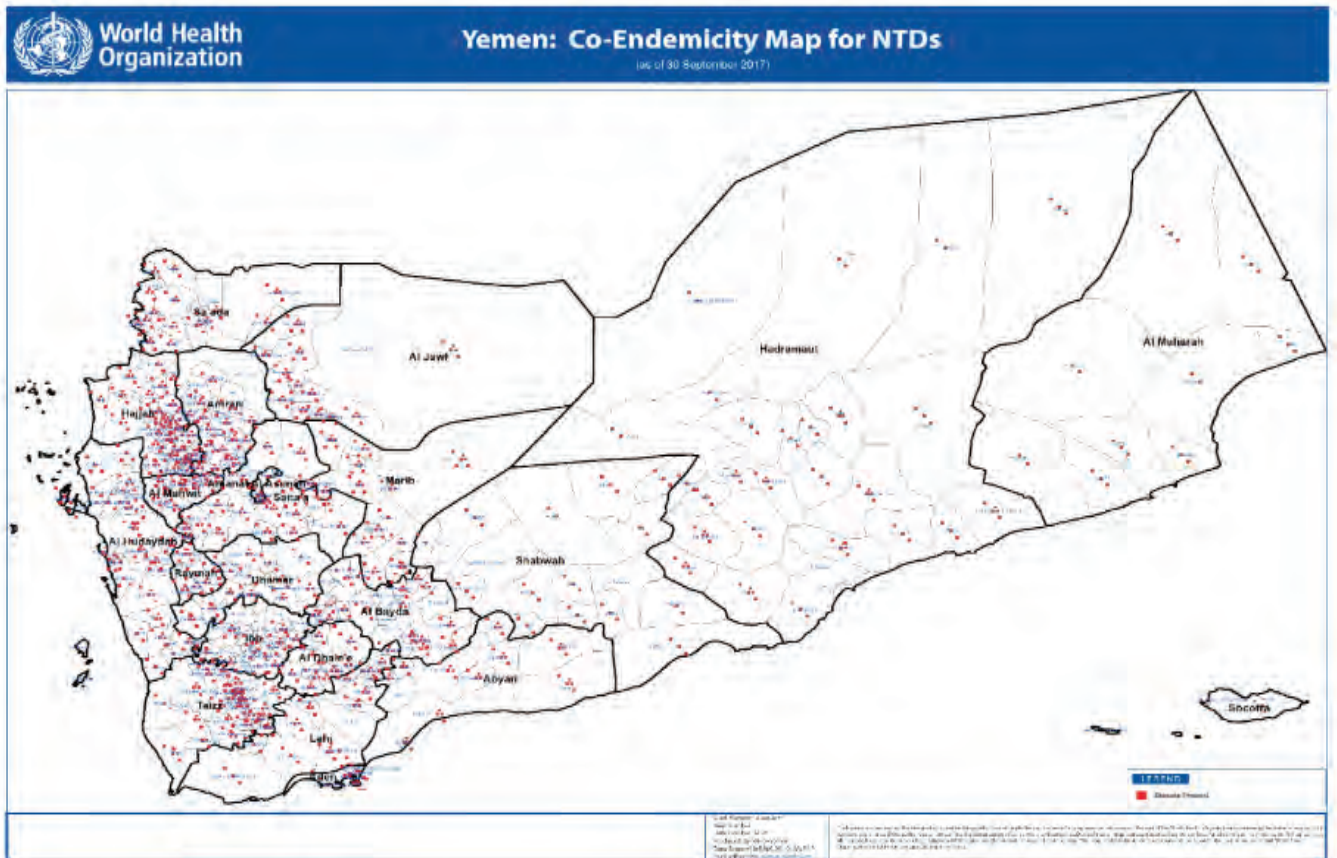
In 2020, WHO through the Emergency Health and Nutrition Project (EHNP) conducted public health campaigns to combat NTDs. Mass drug administration (MDA) campaigns reached over 2 077 939 people with schistosomiasis and STH medicines, as well as supporting 1 312 074 people with trachoma treatment, and 478 000 people with onchocerciasis treatment.

Leishmaniosis (cutaneous and vesicular) remains one of the most neglected diseases in Yemen. Between 5000–6000 people were estimated to have been exposed to cutaneous leishmaniasis, and another 300–500 affected by visceral leishmaniasis in endemic areas such as Taiz, Al-Dhalea, Abyan, Hadramout, Hajjah, Dhamar, Al-Hudaydah and Sana'a governorates. However, reporting of cases was unreliable with under-reporting likely. Rabies was also a significant public health problem in a number of governorates across Yemen, where 52 deaths and more than 13 541 cases of dog bites were reported in 2018, most from Ibb, Sana'a, Amran, Dhamar, Hajjah, Al-Hudaydah, Lahj, Abyan Al-Dhalea, Raima and Taiz governorates.





In 2020, WHO with support from KSrelief, the World Bank (through EHNP), and the Ministry of Public Health and Population, facilitated the provision of 25 000 vials of stilboglucanate (Pentostam) and more than 5000 human rabies vaccines. Sustained efforts were critical to control and eliminate NTDs through MDA campaigns and case management.



SCH & STH- MDA CAMPAIGNS, AL-MAHWEET GOV, 2020 -JAN 2021

## 3. SUPPORTING HEALTH FACILITIES AND THE HEALTH WORKFORCE

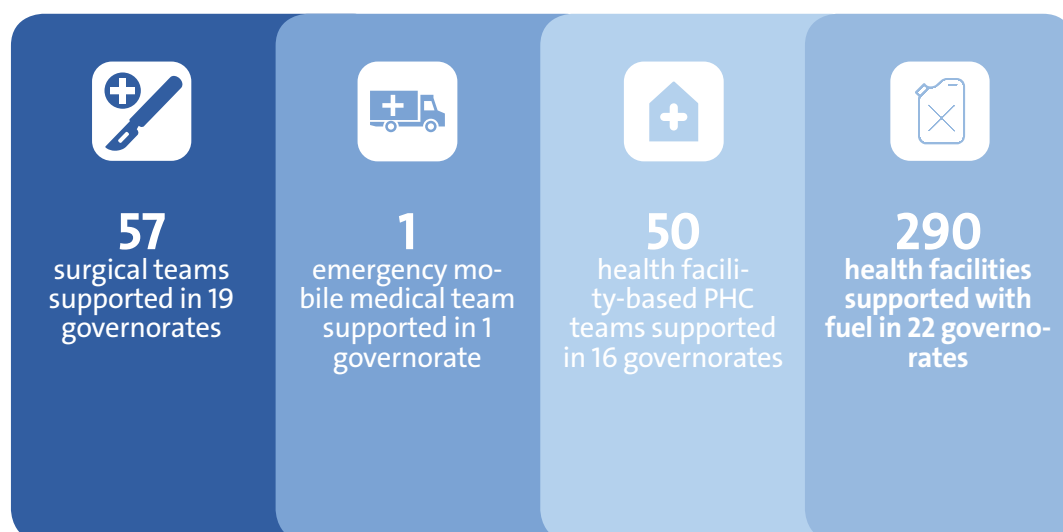
### 3.1 SUPPORTING HEALTH FACILITIES

In 2020, WHO and health partners supported the continuity of health services at more than 535 medical facilities across the country, including 223 hospitals, 228 health centres and 82 health units, to help provide primary, secondary and tertiary levels of care to the people of Yemen. Overall, WHO supported 533 health facilities with medicines and equipment.

**Incentives payment for emergency mobile medical teams, surgical teams and health facility based PHC teams for provision of fully integrated life-saving health services.**

Health care workers on the frontlines of Yemen’s disease outbreaks worked in adverse conditions under immense pressure due to severely strained health systems. Hospitals in affected governorates were overwhelmed with increased numbers of injuries and casualties while lacking competent mass-casualty care and surgical staff.

WHO made essential basic and PHC services accessible to targeted areas. Mobile and fixed medical teams (based in health facilities) were supported with over US\$ 3.5 million in incentive payments between January and March 2020. Quality health services were also supported with technical oversight from WHO, under the supervision of the Ministry of Public Health and Population (MoPHP).

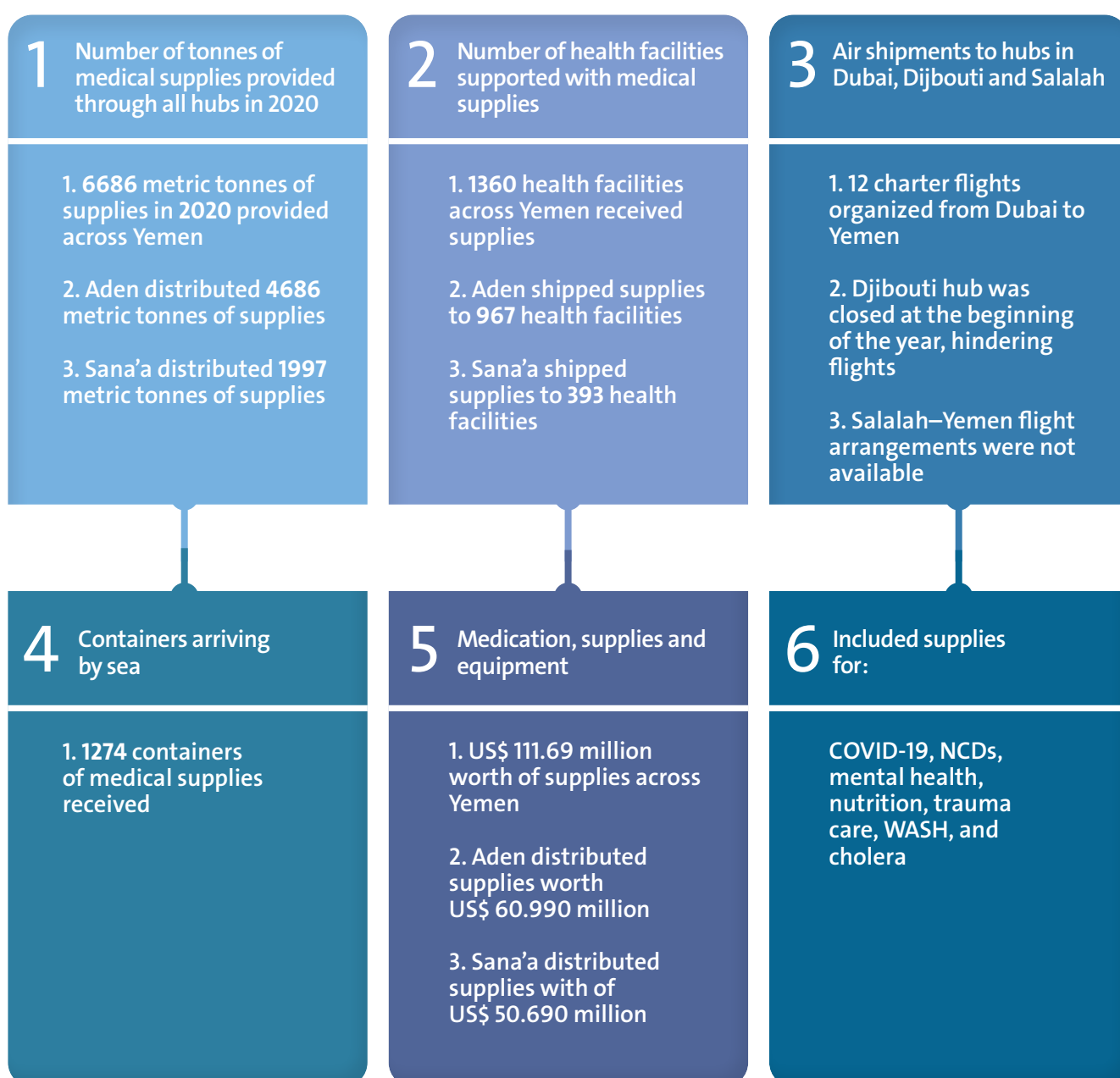


## 3.2 FUEL PROVISION TO HEALTH FACILITIES

Health facilities were unable to provide vital health services due to intermittent electricity and shortages of fuel that affected the functionality of operation theatres and intensive care units. Hospitals were unable to run standby emergency generators due to fuel shortages in the country and a pronounced fuel crisis in the north.

During 2020, and despite many hurdles, WHO was able to provide 16 175 362 litres of fuel to 290 health facilities across the country (with an average of 1.3 million litres per month), including to main referral hospitals, oncology centers, national laboratories, dialysis centres, and diagnostic and treatment centres. These fuel provisions helped ensure the availability of life-saving health services in targeted areas.

## 3.3 MEDICAL AND OPERATIONAL SUPPLIES

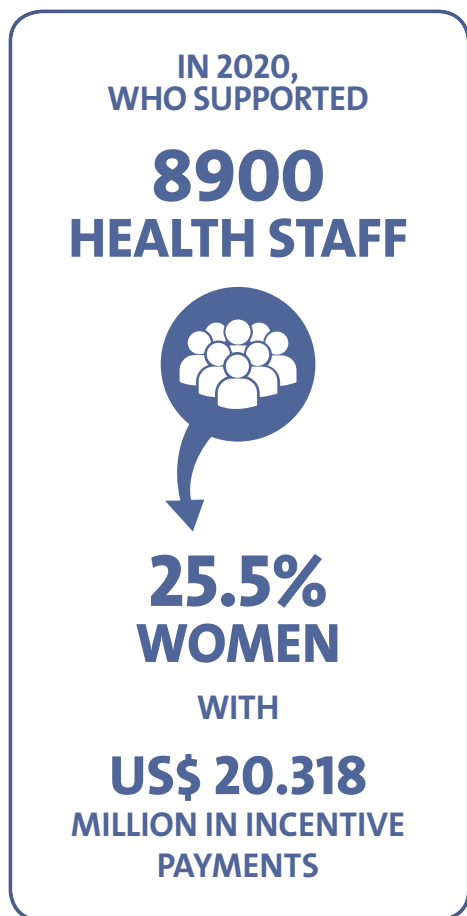




### 3.4 FINANCIAL SUPPORT TO THE HEALTH WORKFORCE

To protect essential health services in Yemen, the Health Cluster provided incentive support to almost 25 000 health workers across the country in 2020. WHO provided incentives worth US\$ 20.318 million to some 14 886 health staff including nurses, midwives, physicians and specialists such as data and support workers. Around a quarter of these health workers were women.

To prevent further loss of specialized staff and maintain critical services for vulnerable patients, WHO also provided incentive support and per diems to more than 780 technical staff in 14 cancer centres, 1 transplantation centre, 2 mental health centres, 1 thalassemia centre and 25 dialysis centres. A robust monitoring and evaluation mechanism were also established to ensure direct payments to health workers.



### 3.5 WASH AND ENVIRONMENTAL HEALTH IN HEALTH FACILITIES

The WASH sector in Yemen is confronted with significant obstacles including water scarcity, high population growth, urbanization, insufficient funds and lack of technical capacity. The provision of safe water, proper medical waste management, and environmental cleaning infrastructure are essential components of IPC.

Over 15.4 million people needed support to access their basic water and sanitation needs, of whom 8.7 million were in acute need. Yemenis were increasingly forced to resort to negative coping mechanisms in relation to WASH access and behaviours, significantly heightening the risk of malnutrition and increasing WASH-related disease and outbreaks, including cholera and dengue. Protection of civilians remained a high priority, as some of the highest levels of vulnerability were concentrated in IDP sites facing a severe scarcity of available services.

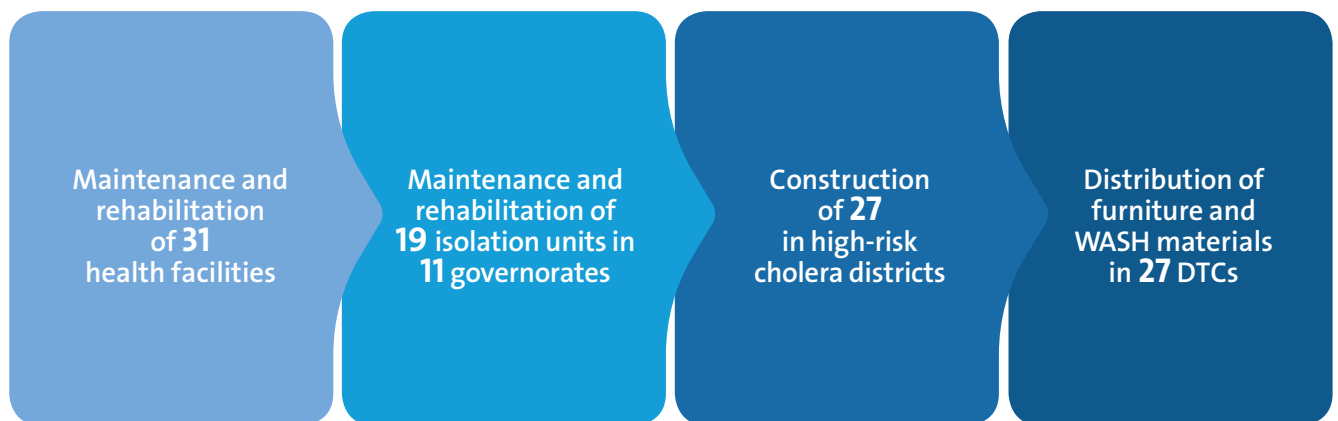
WHO continued supporting the provision of safe water to targeted health facilities and DTCs in 2020. Some 560 million litres of water were distributed to 155 health facilities. These facilities are spread across 20 governorates, included main referral hospitals, oncology centers, national laboratories, DTCs and dialysis centers. In response to the cholera outbreak, WHO and health partners supported the distribution of more than 479 million litres of safe water to 46 health facilities, and 112 million litres to DTCs.

In response to rising cholera infections, the WASH in Health Facilities Technical Working Group was reinstated under the leadership of WHO. It included all WASH and Health Cluster partners who implement WASH-related activities in health facilities. Health and WASH partners met regularly to ensure a coordinated cholera response at both national and subnational levels.

WHO conducted regular water quality monitoring for delivered water supplies to 46 health facilities and 84 DTCs. More than 1500 pH samples and 2500 free residual chlorine (FRC) samples were taken, and water quality monitoring undertaken in 18 high-risk districts of six governorates. During the first phase, water samples were collected from 40 water purification plants, 108 water selling points, 326 wells, 20 springs and 148 charity tanks, for microbiological analysis.

WHO also assessed establishing 20 isolation units in different governorates, and conducted assessments of WASH maintenance in 45 health facilities of 22 governorates.

## HIGHLIGHTS



## TRAINING

**A workshop on COVID-19 IPC** was held at the UN Common Accommodation Facility (UNCAF) in Sana'a for **113 environmental, food service, maintenance and security workers and farmers**

**11 620 trainees** from isolation units in different governorates **received IPC training for COVID-19**

## 4. SUSTAINING THE DELIVERY OF ESSENTIAL HEALTH AND NUTRITION SERVICES



Hudaydah, Yemen | Therapeutic Feeding Centres (TFC) at Al-Thawra Hospital . ©WHO/Omar Nasr

### 4.1 NUTRITION

One in every four Yemenis, including 2.1 million children and 1.2 million pregnant and lactating women, suffered from either moderate or severe malnutrition in 2020. In July, a new Integrated Phase Classification (IPC) analysis released by the World Food Programme (WFP), the UN Children's Fund (UNICEF) and the Food and Agriculture Organization (FAO), warned that economic shocks, conflict, floods, locusts and COVID-19 could reverse food security gains in Yemen. Nearly 1.5 million families depended on food assistance to survive, and another 10 million people had only subsistence-level in-

comes to purchase sporadic and minimal food and fuel supplies in economically volatile local markets.

Within the 2020 Yemen Humanitarian Response Plan Nutrition Cluster strategy, WHO mounted a first-line, life-saving response to severe acute malnutrition (SAM) and attendant medical complications that threatened the survival of infants and children throughout the country. WHO continued direct support to therapeutic feeding centres (TFCs), their workers (medical and paramedical) and surveillance sentinel sites. To detect early cases of malnutrition



in children under five, WHO set up an extended nutrition surveillance system. Through a network of nutrition surveillance health facility sites located in areas with the highest incidence of malnutrition, health workers are able to detect children suffering from acute malnutrition and refer them for timely treatment, as well as addressing stunting, anaemia and suboptimal infant feeding practices.

During the year, WHO supported 147 ongoing nutrition surveillance sites (NSSs) across 21 governorates. A plan to scale up plan NSSs was only partially implemented in 2020 because of the COVID-19 pandemic. The MoPHP adopted measures to prevent and control the spread of infection with WHO support to maintain essential health and nutrition services, including nutrition surveillance screening for children in targeted areas and TFCs.

Throughout the year, some 307 000 children up to age five (27% under six months old) were screened for malnutrition across 147 NSSs. Of this number, 23% were found to be suffering from wasting and were referred to nutrition treatment programmes; 47% of all screened infants and children were found to be underweight; and just under 18% of screened infants under six months were being exclusively breastfed – well short of the WHO global target of at least 50% by 2025. To increase access to treatment for severely malnourished children with medical

complications, WHO supported 100 TFCs across 22 governorates, with plans to scale up a further 113 centres if funds permit. By the end of 2020, WHO had supported TFCs in more than half of Yemen’s priority districts, providing 14 322 children with free-of-charge treatment including therapeutic milk, laboratory investigations and essential medicines, as well as health education for families and meals for caregivers. In 2020, 92% of children were cured of acute malnutrition with complications, compared with 90% in 2018 and 91% in 2019.

To improve feeding practices and prevent malnutrition among other children in same families, WHO provided counselling sessions for caregivers in TFCs on appropriate feeding practices, especially on the importance of breastfeeding. In 2020, 14 322 caregivers were counselled in TFCs with an average of five sessions per hospital stay.

WHO provided SAM kits to support treatment of children under five suffering from SAM and COVID-19 in 17 isolation units in the districts hardest hit by COVID-19.

Standard operating procedures (SOPs) for primary health care, triage, nutrition surveillance and isolation units were developed in collaboration with Nutrition Cluster partners, and endorsed by the MoPHP.



**147**

ONGOING NSS



**147**

ONGOING TFCs



**306 695**

TOTAL SCREENED CHILDREN 2020



**306 695**

TOTAL ADMITTED CHILDREN 2020

**23%**

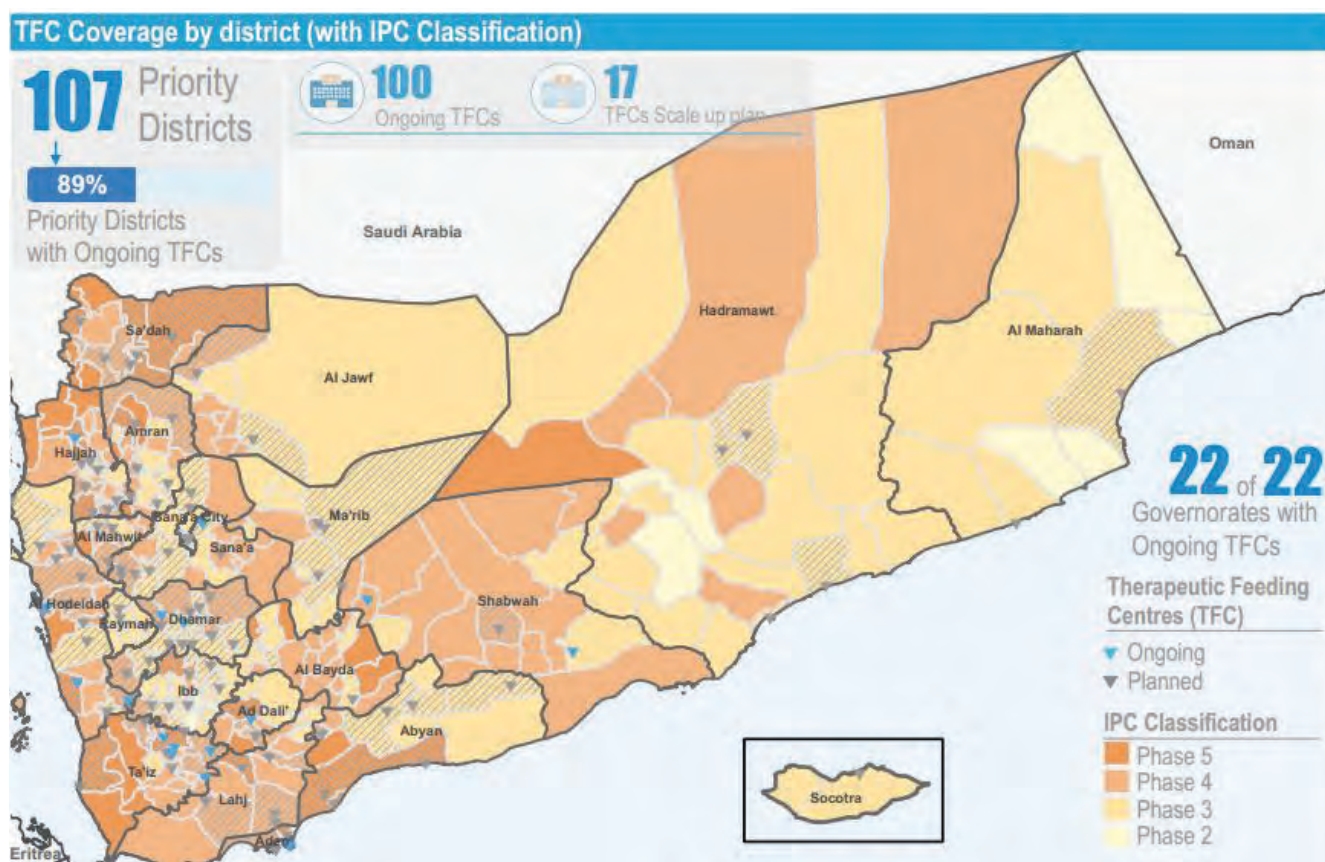
PROPORTION OF WASTING

**92%**

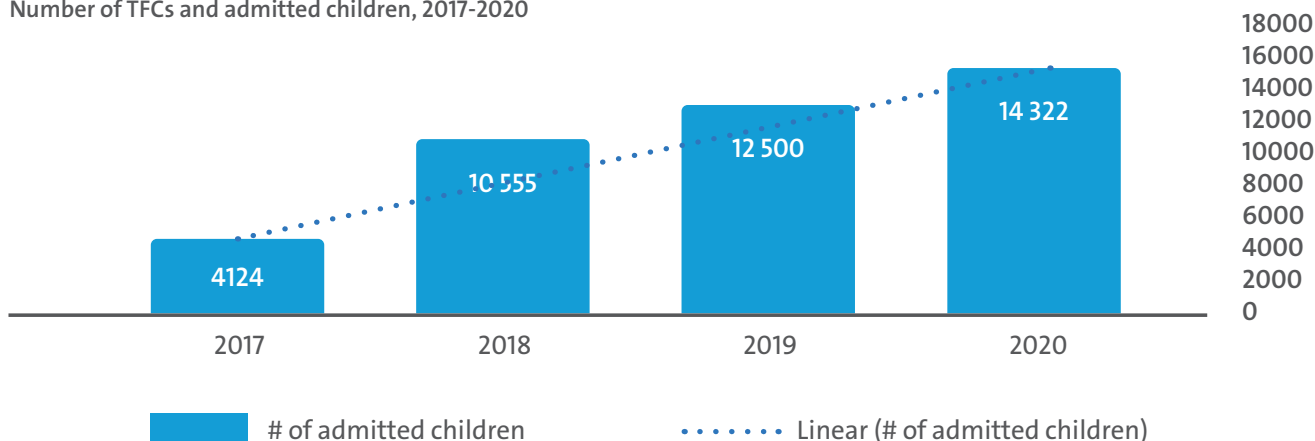
CURE RATE 2020

A series of training courses supported the capacity-building of health and nutrition workers in nutrition service procedures. Medical staff in isolation units and RRTs were also trained to assess children for acute malnutrition and refer them to the appropriate programme or isolation unit. Moreover, 260 nutrition focal points were trained in IPC measures for essential nutrition services, promotion of breastfeeding, healthy nutrition and mental health during COVID-19. These focal points further trained 852 health workers in TFCs and NSSs, who in turn counselled caregivers.

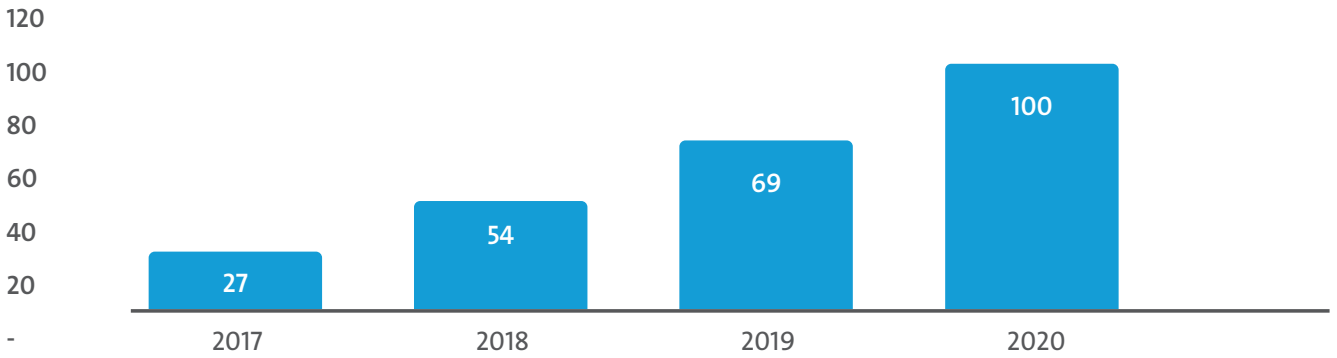
WHO also upskilled 487 medical doctors and health care staff from isolation units on in-patient management of SAM with COVID-19 to treat malnourished children under five in COVID-19 isolation units. Additionally, WHO supported training of 1310 RRT trainers and members on mid-upper arm circumference (MUAC) assessment of acute malnutrition among infants and children to age five.



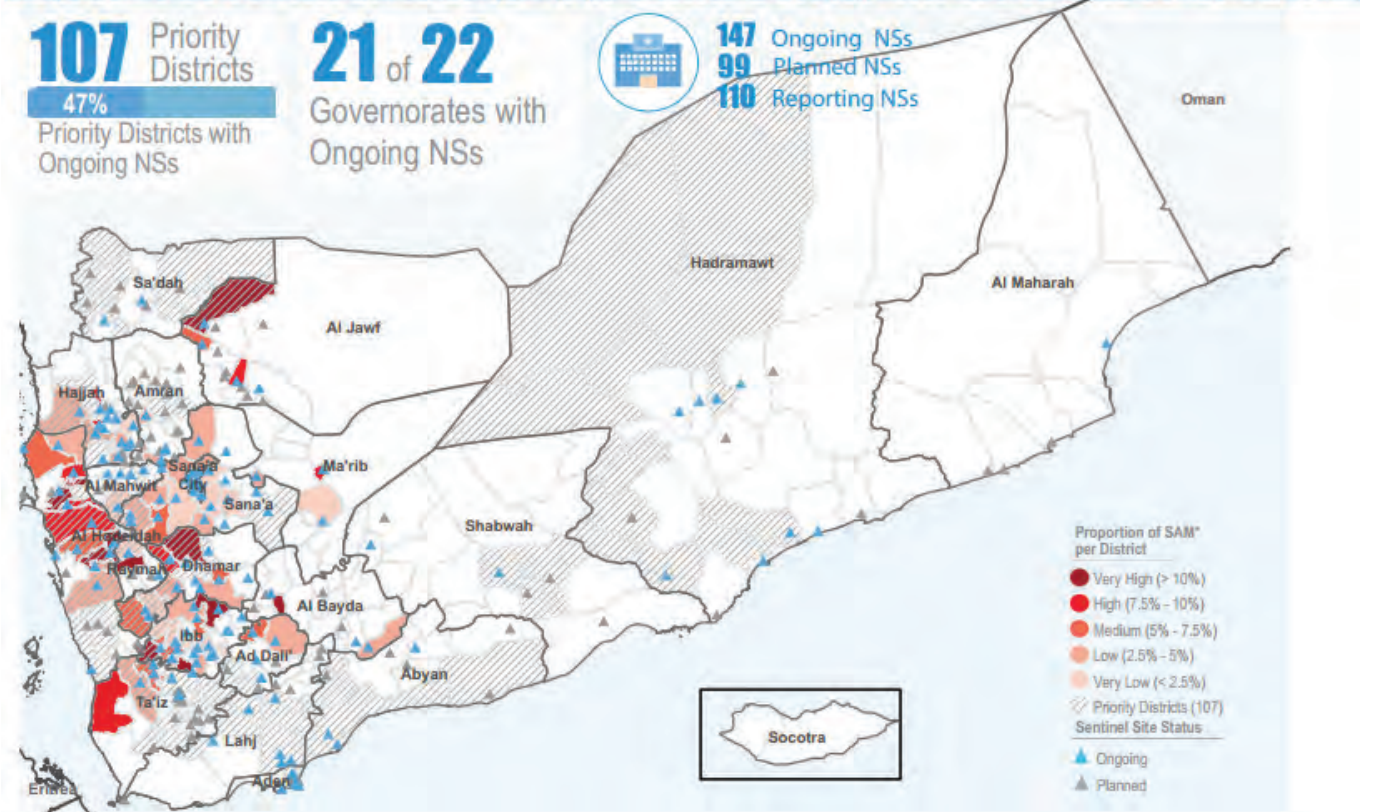
Number of TFCs and admitted children, 2017-2020



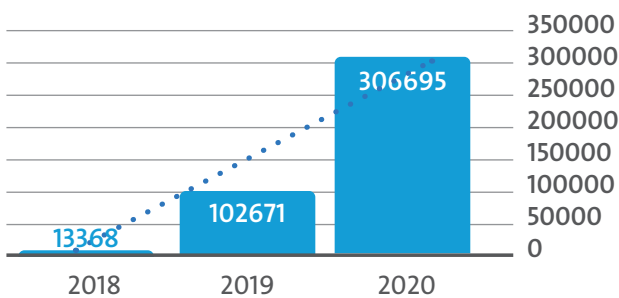
# of TFCs achievements from 2017 to 2020



Proportion† of Severe Acute Malnutrition (SAM)\* per District and Geographical Presence of Nutrition Sentinel Sites

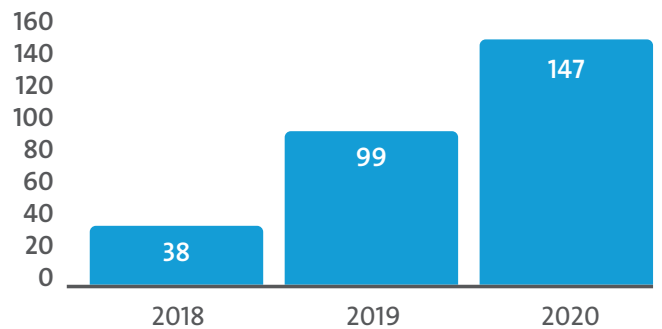


Number of TFCs and admitted children, 2017- 2020



■ # of screened children  
..... Linear (# of screened children)

# of NSS achievements from Nov 2018 to 2020





## 4.2 MINIMUM SERVICE PACKAGE: A LIFELINE TO REMOTE AREAS

The Minimum Service Package (MSP) is a health delivery mechanism aimed at strengthening access to and the availability of quality health care services. It consists of eight health care components: general health and trauma care; nutrition; reproductive, maternal and newborn health; communicable diseases in childcare; noncommunicable diseases; mental health; and WASH and environmental health in health facilities.

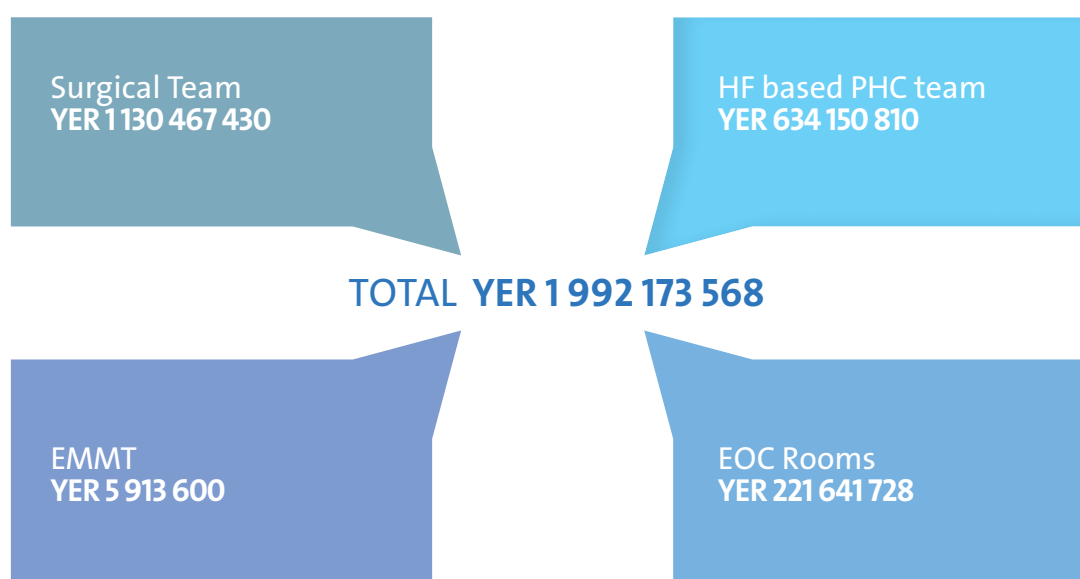
The work of MSP to strengthen the Yemen health system continued in 2020 in close coordination with health authorities and partners. Throughout the year, WHO and Health Cluster partners supported health facilities with supplies, equipment, medicines and capacity-building initiatives at the national level. Additionally, WHO launched a new project in October to support 19 district and inter-district health facilities for improved access by their target populations to essential health services. Project activities included the provision of essential medicines and equipment, fuel and water supply, and the rehabilitation of targeted WASH facilities. The project also aimed to initiate quality-based programmes, building staff capacities and supporting other improvements in health services at targeted hospitals.

## 4.3 GENERAL HEALTH AND TRAUMA CARE

WHO secured 188 ambulances for health facilities, with an equivalent value of US\$ 6.7 million, and 448 metric tonnes of trauma kits, essential supplies and equipment were distributed to hospitals all over the country.

WHO supported surgical teams in 57 hospitals in 19 governorates, as well as strengthening integrated primary health care services in 50 hospitals in 16 governorates, and one mobile team in Al-Hudaydah governorate. The mobile and health facility teams provided reproductive health, nutrition and expanded programme of immunization (EPI) services, and contributed to increasing access to basic and comprehensive emergency obstetric and neonatal care (BEmONC and CEmoNC) and other reproductive health services.

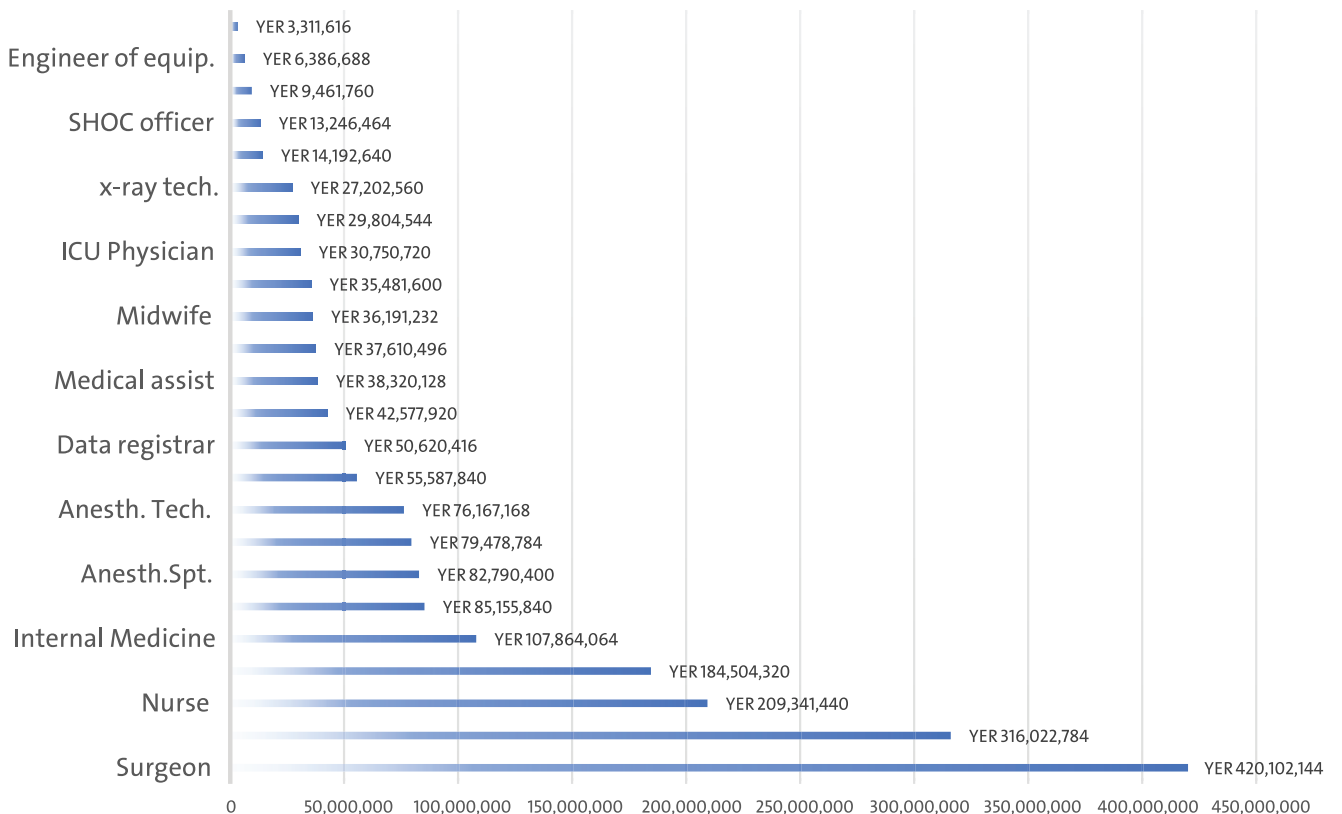
Over 200 health professionals were trained in mass casualty management and trauma stabilization techniques between 2018 and 2020. This support enabled WHO to expand the provision of essential primary health services and emergency assistance to internally displaced persons and host communities in need. Trauma services were enhanced through the trauma surveillance system.





Sana'a, Yemen | Healthcare worker at Al-Jomhori hospital. ©WHO/Omar Nasr

## SUPPORTED MEDICAL AND SURGICAL TEAMS WITH INCENTIVES JAN TO MARCH AND DEC 2020



## 2020 REPORTED INDICATORS



**16 175 362 L**

FUEL PROVIDED TO HFS



**60 880**

SURGERIES



**8878**

FAMILY PLANNING



**10 412**

ANTENATAL CARE



**8236**

POSTNATAL CARE



**8043**

NORMAL DELIVERY



**7018**

C-SECTION



**352 115**

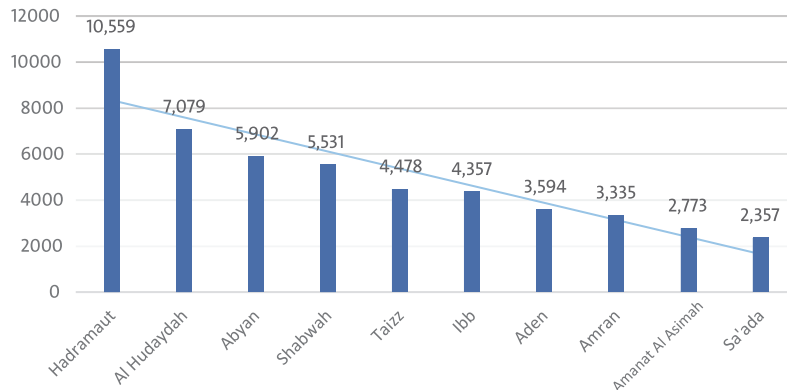
OPD



**5822**

MENTAL HEALTH CONSULTATIONS

## TOTAL # OF SURGERIES FOR TOP 10 GOV. FROM JAN TO MARCH AND DEC 2020

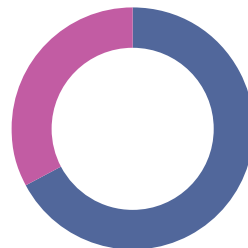


### Type of surgery

Type of surgery	Male	Female	Total
General surgery	11 592	8895	20 487
Neurosurgery	951	367	1318
Orthopedic surgery	4913	2335	7248
Vascular surgery	766	346	1112
Burns	723	412	1135
Others	10 618	7599	18 217
Caesarian section	7018		7018
Gynecological surgery	4345		4345
<b>Total</b>	<b>40 926</b>	<b>19 954</b>	<b>60 880</b>

### SURGERIES BY GENDER

Female, 33%



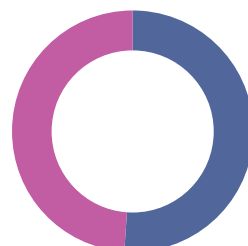
Male, 67%

### IMCI integrated care services

IMCI integrated care services	Male	Female	Total
Treatment of bloody diarrhoea	187	191	378
Treatment of malaria	339	297	636
Treatment of diarrhoea	280	273	553
Treatment of pneumonia	69	67	136
Treatment of worms	415	367	782
Other	219	248	467
<b>Total</b>	<b>1509</b>	<b>1443</b>	<b>2952</b>

### IMCI BY GENDER

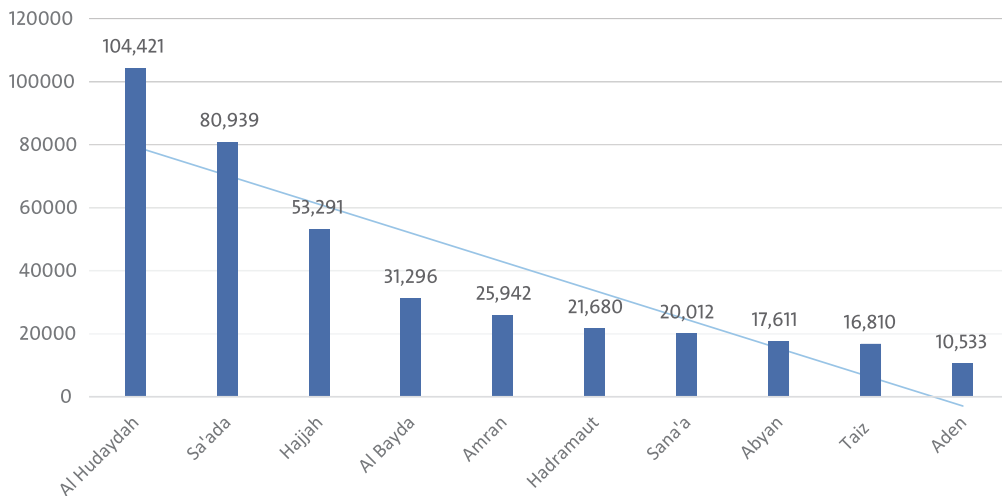
Female, 49%



Male, 51%



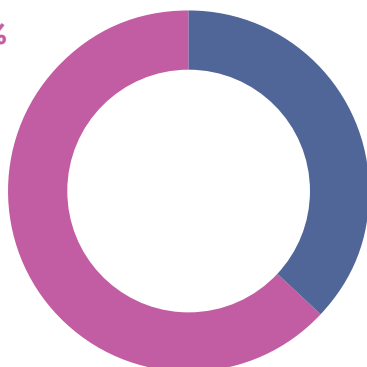
## TOTAL # OF CONS FOR HF BASED PHC TEAMS BY FOR TOP 10 GOV. FROM JAN TO MARCH AND DEC 2020



Outpatient department (OPD)	Male	Female	Total
Chronic disease	9807	27 146	36 953
General infection treatment	17 314	30 737	48 051
Lower respiratory tract infection (LRTI)	7205	14 418	21 623
Musculoskeletal	9946	12 978	22 924
Upper respiratory tract Infection (URTI)	20 013	25 077	45 090
Skin disease	6602	11 758	18 360
Urinary tract infection (UTI)	16 711	19 978	36 689
Other infection	42 532	79 893	122 425
<b>Total</b>	<b>130 130</b>	<b>221 985</b>	<b>352 115</b>

## OPD BY GENDER

Female, 63%



Male, 37%

## 4.4 MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH

Thanks to the support of health partners through the MSP, WHO was able to reach 8 733 606 individuals in 238 health facilities in 80 districts and 17 governorates with maternal, newborn, child and adolescent health care services.



**99 961**  
WOMEN RECEIVED  
ANTENATAL CARE



**18 228**  
SAFE DELIVERIES  
CONDUCTED



**16 044**  
DELIVERIES ATTENDED BY  
SKILLED BIRTH ATTENDANTS

Aiming to build national capacity, and through implementing partners, a number of trainings were supported including training midwives in implants and IUD insertion, community care and obstetric emergency, infection control and nutritious diets.

To help increase women's access to emergency obstetric care and other reproductive health services, WHO provided incentive payments during the first quarter of 2020 to 239 nurses, 83 anaesthesia technicians, 65 gynaecologists, 49 operating theatre technicians, 48 midwives, 47 anaesthesia technicians and 27 paediatricians.

### WHO PROVIDED

Access to essential  
medicines



Reproductive health kits  
to supported MSP facilities  
and other facilities under  
different projects



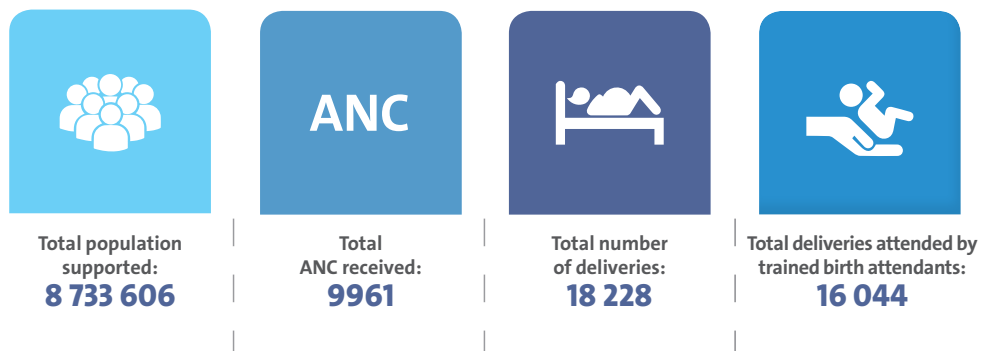
Maternal medicines,  
delivery beds, portable  
baby doppler and medical  
supplies to targeted health  
facilities



Portable X-rays, ventilators,  
and infant monitors to  
Al-Sabeen hospital

## HEALTH SERVICE DELIVERY

MSP service delivery in 238 health facilities in 80 districts in 17 governorates, including 14 Inter District Hospitals, 34 District Hospitals, HC+ 22, HC 53, HU 115. Implemented through 15 nongovernmental organizations and international nongovernmental organizations.



WHO in coordination with the MoPHP developed a national guideline on COVID-19 for reproductive health workers, covering infection, prevention and control. WHO also supported the MoPHP in piloting the Maternal, Perinatal Death Surveillance and Response System (MPDSR) initially in two of the major maternal and child health hospitals, while aiming to pilot it in additional hospitals in future. The primary goal of MPDSR is to eliminate preventable maternal mortality by obtaining and using information on each maternal death to guide public health actions and monitor their impact. Consequently, WHO supported capacity-building of 26 policy-makers and health workers in MPDSR during a six-day workshop in Amman, Jordan.



Ibb, Yemen | Al-Thawra hospital. ©WHO/Omar



## 4.5 NONCOMMUNICABLE DISEASES

WHO provided essential chemotherapy medicines at 11 cancer care health facilities in Yemen which were estimated to have saved the lives of 35 000 cancer patients in 2020.

More than 680 000 dialysis session consumables and dialysis medicine and supplies were provided to 25 dialysis centers in 15 governorates. This resulted in a significant increase in access to regular and life-saving dialysis care for more than 5000 dialysis-dependent patients receiving free dialysis services across the country.

WHO also supported kidney transplant patients and other immune disease patients through the provision of life-saving drugs, giving about 4000 patients access to immunosuppressive medications. In addition, essential medicines for thalassemia and hereditary blood diseases were provided, saving the lives of more than 15 000 thalassemia patients across the country.

WHO supported 124 targeted health facilities in 22 governorates with 754 NCD kits including equipment modules and NCD loose items (73 district-hospitals, 6 interdistrict hospitals, 24 government hospitals and 4 major public central pharmacies, 5 drug supply programmes and 15 NGOs). This support served to im

prove regular access to essential drugs for more than 700 000 patients suffering from diabetes, cardiovascular disease and hypertension.

WHO facilitated the provision of 1 050 000 insulin vials (750 000 mixtard insulin, 100 000 insulin NPH and 100 000 actrapid insulin) to the National Drug Supply Programme, through which they were distributed to health facilities across the country. A total of 196 NCD kits and 2016 Basic Module (1b-insulin) were distributed to 24 health facilities in 15 governorates (two district-hospitals, five DSP, 13 government hospitals, and four (PCPH). This support served more than 80 000 diabetic patients and ensured their regular access to diabetic medicines to avoid complications.

WHO also provided support to 289 core health workers in 14 cancer care centres in nine governorates, as well as 369 technical staff in 25 dialysis centers in 15 governorates from January to March 2020. This support included 12 technical staff in a major thalassemia care centre and 31 technical staff of the kidney transplant team at Al-Thawra Hospital in Sana'a, with the aim of ensuring the sustainability of medical care provided to cancer patients, dialysis-dependent chronic renal failure patients, thalassemia patients and patients requiring kidney transplantation.



Sana'a, Yemen | Dialysis session at Al-Jomhori hospital. ©WHO/Omar Nasr

## 5 MENTAL HEALTH AND PSYCHOSOCIAL SUPPORT (MHPSS)

Against the backdrop of an ongoing humanitarian crisis and COVID-19 pandemic, the mental health care system in Yemen continued to suffer from shrinking funds, low interest among decision-makers, and scarcity of mental health professionals in 2020. Most Yemenis could not afford to pay for required care including psychotropic drugs. Mental health services were available only in the largest cities of the country. Even by conservative estimates, of the 28.5 million people living in Yemen, some 7 643 490 people required immediate mental health treatment, of whom 5 326 100 were directly affected by ongoing conflict.

In 2020, 16 partners worked to provide mental health and psychosocial support services in 55 health facilities with an average of 3000 mental health consultations and 22 000 psychosocial support sessions conducted per month. WHO continued to chair the national MHPSS Technical Working Group (TWG) based in Sana'a, and established a subnational MHPSS technical working group (TAG) in Aden in January 2020.

Through the TWG, WHO and partners sought to address the psychological impact of the pandemic by working to:

**1** provide capacity-building to over 1000 frontline health workers

**2** produce and disseminate messages relevant to the COVID-19 context by means of flyers, posters, radio and TV spots

**3** conduct self-care sessions for more than 300 people working to deliver services within the COVID-19 context

WHO organized a joint mission to Yemen by senior technical staff from the WHO Regional Office and the Inter-Agency Standing Committee (IASC) Reference Group. From February to March, the mission provided support to health authorities, partners and the WHO Yemen Country Office, including two workshops held in Aden and Sana'a with TWG members. Upon completion of the mission, a set of recommendations were issued for the purposes of:

**1** strengthening the mental health system

**2** promoting community resilience and prevention of mental disorders with a focus on vulnerable groups

**3** conducting a desk review of documentation relevant to mental health and psychosocial support in Yemen prior to the current humanitarian emergency

### Examples

Mental health care by mental health specialists (psychiatric nurse, psychologist, psychiatrist, etc.)

Basic mental health care by Primary Health Care doctor. Basic emotional and practical support by community workers

Activating social networks  
Supportive child-friendly spaces  
Communal traditional supports

Advocacy for basic services that are safe, socially appropriate and protect dignity

### Intervention pyramid

Specialized services

Focused (person-to-person) non-specialized supports

Strengthening community and family supports

Social considerations in basic services and security

<sup>(1)</sup> Due to the lack of available data on mental health in Yemen, these estimates are based on the percentage of the population affected by conflict (22.1%) according to a WHO/Lancet publication from June 2019 and the 10% burden of disease morbidity.



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