Communicable diseases

Poliomyelitis eradication

There has been excellent global progress towards stopping wild poliovirus transmission in 2017; just 22 cases of the only remaining serotype of wild poliovirus type 1 (WPV1) were reported from two endemic countries, namely Afghanistan and Pakistan (14 cases and 8 cases, respectively), the lowest number of polio cases ever reported since the start of the Global Polio Eradication Initiative in 1988. However, although case numbers are down, WPV1 is still being isolated in 2017 in wide geographical areas in both Afghanistan and Pakistan.

The onset of the last polio case in the world due to wild poliovirus type 2 was in 1999, and the date of onset of the most recent case due to wild poliovirus type 3 was in November 2012. The eradication of wild poliovirus type 2 was certified in September 2015 by the Global Certification Commission.

Seventy-four cases of circulating vaccine-derived poliovirus type 2 (cVDPV2) were confirmed in 2017 in north-east Syrian Arab Republic (Deir Ez-Zor, Raqqa and Homs). The first case detected had onset on 3 March, and the date of onset of the most recent case was 21 September 2017.

During the fifteenth meeting of the IHR Emergency Committee regarding the international spread of polio on 14 November 2017, the committee considered the risk of international spread of poliovirus to remain a Public Health Emergency of International Concern (PHEIC) and extended the revised temporary recommendations for a further three months. Afghanistan and Pakistan fall under states infected with WPV1, with potential risk of international spread, while Syrian Arab Republic falls under states infected with cVDPV2 with potential risk of international spread.

Photo: ©WHO Afghanistan/Sini Ramo

↑ Polio vaccination teams at border crossing points with Pakistan and Islamic Republic of Iran vaccinate children in Afghanistan

Despite the tremendous progress globally and in the Region, as long as wild poliovirus (WPV) is circulating anywhere, risks remain. The risk of importation of WPV1 or the emergence of circulating vaccine-derived polioviruses (cVDPV) remains high due to ongoing transmission of poliovirus in endemic foci in Afghanistan and Pakistan, as well as complex emergency situations in several countries of the Region that have resulted in extensive population movements, inaccessibility, and deteriorating routine immunization coverage in several areas. In addition, there was a global supply shortage of inactivated polio vaccine (IPV) in 2016 and 2017.

Afghanistan and Pakistan have developed robust national emergency action plans to stop polio transmission in 2018. Pakistan progressed very well in 2017, reducing the number of polio cases

by 60% from 20 cases in 2016 to 8 cases in 2017, while the number of cases slightly increased in Afghanistan from 13 cases in 2016 to 14 cases in 2017, with 10 cases (71%) reported from the conflict and access-affected southern region of the country.

Response activities to contain the outbreak of cVDPV2 in the north-east of the Syrian Arab Republic have been implemented in a situation that is extremely difficult operationally. The response is paying dividends, as reflected by the decline in transmission, with no new cases detected since 21 September 2017. Response activities are continuing to ensure that the outbreak has been contained.

Surveillance performance indicators in all countries of the Region except one have been maintained at and above certification standards in 2017. Moreover, environmental surveillance has been expanded to include Islamic Republic of Iran, Jordan, Lebanon, Pakistan, Somalia and Syrian Arab Republic, in addition to Afghanistan and Egypt, where the system has been established for some years. Environmental surveillance will be further expanded in 2018 to Iraq, Sudan and Yemen.

Photo: ©WHO Afghanistan/Sini Ramo

↑ **Children in Afghanistan are immunized against polio during a national immunization day**

National preparedness and response plans in all polio-free countries in the Region except Palestine and Yemen were tested and updated in simulation exercises conducted in 2016 and 2017 to mitigate the risk of importation of WPV and/or the emergence of VDPVs, and to ensure an effective response should it occur. However, the only way to completely eliminate the risk of importation of wild poliovirus is by stopping polio transmission in Afghanistan and Pakistan. The risk of VDPVs emerging, particularly in conflict-affected countries with a significant number of children inaccessible to immunization services, remains.

The countries of the Region successfully implemented the switch from trivalent to bivalent oral polio vaccine in April 2016. It is imperative that all the countries of the Region complete Phase I containment requirements and start Phase II poliovirus type 2 containment as an integral part of implementation of the Global Action Plan III (GAP III) for poliovirus containment and a prerequisite for certification of polio eradication.

Somalia and Sudan have conducted polio asset mapping in 2017 as part of the post-eradication transition process to determine what polio functions will be integrated into other existing initiatives, and what functions may be prioritized or phased out. Both countries are planning to complete their transition plans by May 2018. The other two transition priority countries in the Region, Afghanistan and Pakistan, are still endemic and will develop their transition plans within a year of stopping transmission.

In the low transmission season of 2018, the Region and the world have the best ever opportunity

to stop poliovirus transmission. To achieve this historic goal, the Region must continue to address ongoing wild poliovirus transmission in the remaining endemic foci in Afghanistan and Pakistan, reach inaccessible children in Afghanistan, Iraq, Pakistan, Somalia and Syrian Arab Republic, and maintain population immunity, even in emergency countries and among displaced populations, while maintaining vigilance and the capacity to detect and respond to any new introduction or outbreak due to WPV or cVDPV.

A key priority for 2018 is to stop WPV transmission in Afghanistan and Pakistan by supporting implementation of national emergency action plans through technical, financial and logistical support. Another priority will be to continue support to the Syrian Arab Republic to ensure that the outbreak of cVDPV2 is completely contained and transmission has been interrupted. Enhancing preparedness and response capacity in all countries will continue, with a strong focus on improving surveillance systems to ensure early detection and effective response to any introduction of poliovirus, and supporting countries in containment and preparation for certification of polio eradication.

Photo: ©WHO Afghanistan/Sini Ramo

↑ A child in Afghanistan receives oral polio vaccine

Photo: ©WHO

↑ Dr Rik Peeperkorn, WHO Representative in Afghanistan, addresses a meeting of the Technical Advisory Group on polio eradication

Effectively utilizing polio assets, infrastructures and lessons learned to improve routine immunization and other key public health interventions by developing robust transition plans in priority countries (Afghanistan, Iraq, Pakistan, Somalia, Sudan, Syrian Arab Republic and Yemen) is another key area of focus. To this end, support will be provided to polio transition priority countries to develop country-specific transition plans to sustain polio-free status after certification of polio eradication, benefit other public health interventions and learn lessons from polio eradication.

Technical support to countries will include regular review of programmes in Pakistan, Afghanistan and the Horn of Africa through Technical Advisory Group meetings to analyse progress and advise governments on the most effective technical interventions. It will also involve conducting regular risk analysis (quarterly for at-risk countries and twice a year for other countries) to identify risks and develop specific mitigation strategies. Additionally, building the capacity of polio-free countries to respond to polio emergencies will be done through training on polio outbreak standard operating procedures and

conducting simulation exercises to field test and update national preparedness and response plans. Annual review of the certification requirements of the polio-free countries will continue to be done by the Regional Certification Committee.

HIV, viral hepatitis, tuberculosis, malaria and tropical diseases

Despite the low prevalence of HIV in the Region, the increase in the number of new cases remains a concern. The number of people living with HIV (PLHIV) in the Region increased from 340 000 in 2016 to 350 000 by the end of 2017. Ninety-five per cent of this increase occurred in key populations at risk of HIV. Furthermore, only 30% of PLHIV have been diagnosed, indicating that limited access to HIV testing is the main impediment to access to care and treatment.

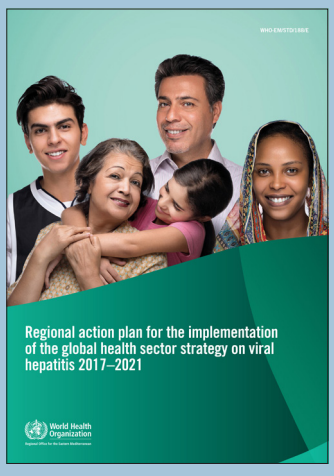
In response, WHO organized a consultation in July 2017 in Beirut, Lebanon, on accelerating access to the continuum of HIV diagnosis, care and treatment, with a focus on HIV testing. Moreover, World AIDS Day 2017 advocacy activities focused on promoting HIV testing. WHO also provided support to the Islamic Republic of Iran and Pakistan to improve testing efficiency and linkage to care for those diagnosed HIV positive.

As a result of adopting the "Treat all" approach, the treatment coverage rate improved by 12.5% compared to 2016 and the number of PLHIV receiving antiretroviral therapy (ART) reached 64 900 by the end of 2017. Still, the overall coverage of ART in the Region did not exceed 18%. Developing model programmes that can be replicated to increase HIV diagnosis and treatment coverage will be the focus of future WHO support in the Region.

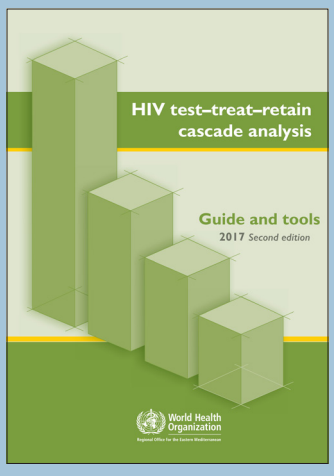
Viral hepatitis remains a significant cause of mortality in the Region, with 80% of those infected with viral hepatitis C residing in Egypt and Pakistan. The majority of new infections are caused by weak injection safety and infection prevention and control measures in health services, followed by injecting drug use. Regional coverage of hepatitis B vaccine birth dose immunization increased from 22% in 2016 to 34% in 2017. Egypt continues to be a global success story in hepatitis C treatment. Over five million tests were conducted between October 2016 and December 2017, and 1.5 million cases were treated for the infection. Strong political commitment has also been demonstrated for the implementation of the first hepatitis strategic framework developed in Pakistan. Moreover, both Egypt and Pakistan have succeeded in reducing the price of direct acting antivirals to less than 0.1% of its global price, enabling rapid scale-up of treatment. Also in 2017, Morocco developed its national hepatitis strategy and initiated the first epidemiological survey of hepatitis B and C prevalence in the country.

Photo: ©WHO

↑ Former Minister for National Health Services Regulation and Coordination Mrs Saira Afzal Tarar signs Pakistan Declaration to eliminate hepatitis by 2030



↑ *Regional action plan for the implementation of the global health sector strategy on viral hepatitis 2017–2021*



↑ *Second edition of the HIV test-treat-retain cascade analysis*

Future support will focus on the development of national strategic plans, testing and treatment guidelines, and developing and rolling-out surveillance, monitoring and evaluation systems.

During 2016, a total of 527 693 tuberculosis cases (all forms) were notified in the Region. Despite a slight improvement in the tuberculosis case detection rate (currently referred to as the treatment coverage rate), it is still far below the global target of 90%. Eight countries in the Region (Afghanistan, Egypt, Iraq, Morocco, Pakistan, Somalia, Sudan and Yemen) are responsible for around 97% of missed tuberculosis cases. The treatment success rate reached 91% for the new and relapsed patient cohort of 2015, and slow but steady improvement has been seen in the detection and management of multidrug-resistant tuberculosis (MDR-TB) cases. Of 21 000 estimated MDR-TB cases, 4713 cases were detected and 4073 started treatment in 2016. The destruction of health systems, huge population movements and worsening of the security situation have all severely impacted the implementation of tuberculosis control strategies in countries experiencing complex emergencies.

The regional End TB action plan 2016–2020 was endorsed by the Regional Committee in October 2017. Also in 2017, support was provided to update tuberculosis strategic plans, guidelines and standard operating procedures in Afghanistan, Iraq and Pakistan, in line with the regional action plan and WHO's End TB Strategy. New updates in both diagnosis and treatment for MDR-TB and tuberculosis in children were widely distributed through the support of the regional Green Light Committee, and capacity-building in tuberculosis diagnosis was conducted for staff from 10 countries, and in rifampicin resistance/MDR-TB management for staff from 20 countries (over the period 2016–2017). In addition, a tuberculosis and MDR-TB laboratory task force was established to strengthen the tuberculosis laboratory network in the Region. In November, 14 countries of the Region participated in the first WHO Global Ministerial Conference on Ending TB in Moscow. WHO will continue work with countries to promote the establishment of a comprehensive package to increase tuberculosis case detection, including tuberculosis diagnosis and treatment services for countries with refugee or internally displaced populations.

The reported number of confirmed malaria cases in the Region was 1.36 million in 2017, 65% of which were reported from Pakistan and Sudan, with 1626 deaths reported due to malaria. However, 14 countries in the Region are free from indigenous malaria transmission, the Islamic Republic of Iran and Saudi Arabia are at the stage of malaria elimination, and Egypt has reported zero local cases for the three years required to be eligible for certification of malaria-free status. During 2017, the proportion of suspected cases tested for malaria in six high-burden countries was 81%. Coverage of the main interventions in endemic countries is increasing, but is yet to achieve the target of universal coverage. The reported operational coverage of nets for at-risk populations in Afghanistan, Pakistan, Sudan and Yemen was 70%, 21%, 78% and 51%, respectively. The quality and coverage of the malaria surveillance system increased in Pakistan, Somalia and Sudan, following adoption of DHIS2.

In 2017, technical support was provided for the development of national strategies for malaria control and elimination and for capacity-building in Afghanistan, Somalia and Yemen. Support was also given to the Malaria Indicators Survey in Somalia, for monitoring drug and insecticide resistance in Afghanistan and Pakistan, for an external competency assessment for malaria microscopy, and for resource mobilization in high-burden countries. Protracted emergencies in many malaria-endemic countries in the Region is the main challenge for implementation of malaria control interventions. Outbreaks of other vector-borne diseases (chikungunya and dengue) in malaria-endemic countries puts further strain on the limited human and financial resources. In the upcoming period, WHO will focus on developing an integrated strategy for continuation of malaria and other vector-borne disease interventions, particularly in countries experiencing complex emergencies. The involvement of other sectors beyond health will be key in future planning.

Significant progress in the fight against neglected tropical diseases was achieved in the Region in 2017. The control and elimination of neglected tropical diseases is now considered to be a major

Photo: ©WHO

↑ High-level Ministerial Conference on ending TB in Moscow

Table 1
Parasitologically-confirmed cases in countries with no or sporadic transmission and countries with low malaria endemicity

Country	2015		2016		2017	
	Total reported cases	Autochthonous	Total reported cases	Autochthonous	Total reported cases	Autochthonous
Bahrain	87	0	106	0	133	0
Egypt	291	0	233	0	305	0
Iran (Islamic Republic of)	799	187	705	94	939	74
Iraq	2	0	5	0	9	0
Jordan	59	0	51	0	44	0
Kuwait	309	0	390	0	419	0
Lebanon	125	0	134	0	152	0
Libya	324	2	370	2	397	NA
Morocco	510	0	409	0	586	0
Palestine	2	0	1	0	1	0
Oman	822	4	807	3	1078	18
Qatar	445	0	493	0	444	0
Saudi Arabia	2620	83	5382	272	3151	177
Syrian Arab Republic	12	0	12	0	25	0
Tunisia	88	0	99	0	120	0
United Arab Emirates	3685	0	3849	0	4013	0

NA: not available

Table 2
Reported malaria cases in countries with high malaria burden

Country	2015		2016		2017	
	Total reported cases	Total confirmed	Total reported cases	Total confirmed	Total reported cases	Total confirmed
Afghanistan	350 044	103 377	392 551	190 161	320 045	161 778
Djibouti	9557	9557	13 804	13 804	14 671	14 671
Pakistan	3 776 244	202 013	2 115 941	318 449	2 190 418	350 467
Somalia	39 169	20 953	58 021	35 628	37 156	35 138
Sudan	1 102 186	586 827	974 571	566 015	1 368 589	720 879
Yemen	104 831	76 259	144 628	98 701	114 004	84 677

Photo: ©WHO

↑ Officials of Egypt's Ministry of Health and Population talk to local people during surveillance phase of lymphatic filariasis elimination programme

contributor to achieving universal health coverage, and four of them have been included among the priority areas in the roadmap of WHO's work in the Eastern Mediterranean Region (2017–2021). Links were established or strengthened with significant partners to reinforce support to neglected tropical disease activities in the Region. Moreover, the Expanded Special Project for Elimination of Neglected Tropical Diseases has now been extended to the Region and the Reaching the Last Mile Fund, sponsored by the Crown Prince of Abu Dhabi, was launched in November to mobilize partnerships to eliminate and eradicate preventable deadly diseases that hinder the health and economic prospects of the world's poorest people.

The elimination of lymphatic filariasis as a public health problem was validated in Egypt, Yemen progressed in the finalization of its validation dossier and Sudan scaled up mass drug administration. Interruption of transmission of onchocerciasis was definitely confirmed in the second focus in Sudan, while planning and resource mobilization towards elimination was done in Yemen. With regard to schistosomiasis, surveys to demonstrate interruption of transmission were carried out in Iraq, the Islamic Republic of Iran and Oman, while Egypt started implementation of its elimination plan; and mass treatment with praziquantel was carried out in Somalia, Sudan and Yemen. Treatment of school-age children for soil-transmitted helminthiasis was implemented in Afghanistan, Egypt, Iraq, Somalia, Sudan, Syrian Arab Republic and Yemen, as well as in the five fields of operation of UNRWA, namely Jordan, Lebanon, Syrian Arab Republic, and the West Bank and Gaza Strip. WHO provided technical, and in some cases financial, support and donated the medicine. In Pakistan, soil-transmitted helminthiasis mapping was completed in preparation for the commencement of mass treatment. Implementation of the SAFE strategy for trachoma progressed regionally, notably in Sudan, while mapping was completed in Somalia. A regional trachoma action plan was developed in collaboration with the Eastern Mediterranean Region Alliance for Trachoma Control.

Photo: ©WHO

↑ A young girl undergoes ophthalmologic examination for trachoma in Islamic Republic of Iran

Progress was made in Sudan to strengthen surveillance and awareness of dracunculiasis (commonly known as Guinea worm disease), and the country submitted its eradication dossier in preparation for the planned visit of the international certification team in 2018. Implementation of leprosy elimination activities and the reporting of yearly statistics progressed, especially in the remaining high-burden countries: Afghanistan, Egypt, Pakistan, Somalia, Sudan and Yemen. Notably, intensification of case-finding in Somalia resulted in detection of over 1000 new cases in 2017. With regard to cases of cutaneous leishmaniasis, the Region shoulders 74% of the global burden, with 119 608 cases detected in 2016. Significant improvements were made in case-detection, access to diagnosis and treatment, and reporting of both cutaneous and visceral leishmaniasis in Afghanistan, Pakistan, Syrian Arab Republic, Somalia and Sudan. Priority actions for controlling mycetoma were taken in line with resolution WHA69.21 of the Sixty-ninth World Health Assembly in 2016 on addressing the burden of mycetoma.

Immunization and vaccines

Despite the challenging situation, the Region is managing to maintain immunization coverage at 80%. The regional average of diphtheria-tetanus-pertussis (DTP3) vaccine coverage increased from 80% in 2016 to 81 in 2017, while 14 countries maintained the target of ≥90% DTP3 vaccination coverage. However, although DTP3 coverage in the Syrian Arab Republic increased slightly from 42% in 2016 to 48% in 2017, an estimated 3.7 million children missed DPT3 immunization in 2016, 94% of whom were in countries experiencing emergencies, namely Afghanistan, Iraq, Pakistan, Somalia, Sudan, Syrian Arab Republic and Yemen. Ten countries achieved

Photo: ©WHO

↑ Children from communities of internally displaced persons in Somalia were targeted by a preventative measles vaccination campaign

≥95% coverage with the first dose of measles-containing vaccine (MCV1) and two countries achieved 94% in 2017, compared to 12 countries in 2016, and 21 countries provided the routine second dose of measles-containing vaccine. Measles case-based laboratory surveillance is implemented in all countries, and seven countries are close to achieving the measles elimination target. A regional verification commission for measles and rubella elimination was established, and verification of elimination in two countries is planned for 2018. Moreover, except for Egypt, the introduction of inactivated polio vaccine is almost completed.

During 2017, WHO held intercountry immunization meetings in Oman, which provided countries with updates and an opportunity to meet with partners and the Regional Technical Advisory Group on Immunization. WHO also supported countries such as Iraq, Syrian Arab Republic and Yemen to develop and implement outreach immunization activities, including for the control of a diphtheria outbreak in Yemen

and nationwide measles/rubella supplementary immunization activities (SIAs) in Libya. It supported periodic immunization reviews in Iraq and mobilized the Gavi Alliance to fund supplementary measles immunization in Afghanistan, Pakistan, Somalia and Yemen. Support was also provided to assess data quality in Pakistan, including the development of a data quality improvement plan. The regional network for measles/rubella case-based surveillance and regional surveillance network for bacterial meningitis, bacterial pneumonia and rotavirus were further strengthened to include the provision of laboratory supplies, capacity-building activities, coordinating the external laboratory quality control system, and monitoring and evaluation.

The security situation in many countries in the Region in 2017 caused the delay or cancellation of planned immunization activities and the delivery of vaccines. This was exacerbated by limited awareness of elimination and control goals, insufficient commitment to routine immunization programmes, and a lack of adequate and sustainable funding, with a total reliance on donor funding in some countries.

Priority WHO support to countries for 2018 will include support for the preparation and implementation of district microplans, comprehensive immunization reviews, and the updating of comprehensive multi-year strategic plans for immunization and plans of action. Ensuring adequate preparation for, and implementation of, measles SIAs in five countries, developing national capacity for documentation of measles/rubella elimination, and verification of elimination in the countries that are ready will also be priorities. WHO will likewise seek to establish a regional verification commission for hepatitis B and support verification that the control target has been achieved in ready countries. During 2018, WHO will continue to work on raising the visibility of immunization targets and mobilizing national and partner commitment to achieving them.

Photo: ©WHO

↑ A nationwide measles immunization campaign was conducted in Somalia targeting 4.4 million children aged from six months to 10 years

In 2017, assessments of the regulatory capacity of Afghanistan, Egypt, Islamic Republic of Iran, Jordan, Lebanon, Pakistan, Somalia and Sudan were carried out using the WHO national regulatory authorities global benchmarking tool. These resulted in the development of institutional development plans for the national regulatory authorities. Follow-up on the implementation of these plans will be conducted over the next two years. An informal national regulatory authority assessment was also conducted in Saudi Arabia.

Also during 2017, technical support in the area of vaccine safety was provided to Pakistan, Syrian Arab Republic and Yemen to address gaps in adverse events following immunization (AEFI) investigation and causality assessments. The capacity-building of regulators in vaccine-producing countries (Egypt, Islamic Republic of Iran and Saudi Arabia) and countries supported by the Pandemic Influenza Preparedness (PIP) framework (Pakistan and Sudan) was also undertaken through WHO's Global Learning Opportunities for Vaccine Quality initiative.

With the closure in 2016 of the Global Action Plan for Influenza Vaccines (GAP) which sought to address the challenges to sustainable influenza vaccine production and uptake in developing countries, WHO has developed an assessment tool to evaluate the sustainability of influenza vaccination in influenza pandemic preparedness plans. The assessment tool was adapted and piloted in Morocco in 2017.

Antimicrobial resistance

In view of the global importance of antimicrobial resistance, the 64th session of the Regional Committee adopted resolution EM/RC64/R.5 on antimicrobial resistance in October 2017. The resolution urges countries in the Region to develop and endorse national action plans for antimicrobial resistance, establish a multisectoral high-level coordinating structure to oversee their implementation, enforce policies to prevent the purchase of antimicrobials without prescription, and establish national antimicrobial resistance surveillance systems and infection prevention and control programmes. As of December 2017, 10 countries had developed antimicrobial resistance national action plans, of which two had been officially submitted to WHO. The plans involve the engagement of multiple sectors, including the animal, agricultural and food production sectors.

A series of training workshops were held in 2017 to improve the capacities of national focal points on the implementation of the global antimicrobial resistance surveillance system (GLASS) and on the use of the WHONET software programme for antimicrobial resistance data entry, analysis, aggregation and reporting to the GLASS platform. As a result, 11 countries have enrolled in the GLASS platform, of which nine submitted antimicrobial resistance data that were published in the GLASS report published in January 2018. Moreover, national teams from eight countries were trained in WHO methodology to collect national antibiotic consumption data. As a result, antibiotic consumption data from Islamic Republic of Iran, Jordan and Sudan have been submitted and will be included in a global antibiotic consumption report. In addition, the status of infection prevention and control programmes was assessed in eight countries, and strategic plans developed to enhance or create national and facility-level programmes.

Also in 2017, the WHO tailoring antimicrobial resistance programmes (TAP) guide, a protocol for behaviour change on antimicrobial resistance,

was developed in collaboration with experts from different countries of the Region. It is to be piloted in Egypt, Qatar and Sudan during 2018. Technical support was also provided to set up internal laboratory quality control systems for three countries (Iraq, Jordan and Sudan) by arranging shipment of quality control strains for antimicrobial resistance pathogens. WHO celebrated World Antibiotic Awareness Week 2017 (13–19 November) with a Cairo-based event involving the Food and Agriculture Organization of the United Nations (FAO), the media and experts in infection prevention and control, surveillance and research. Regional communication materials were developed and a regional media competition launched to encourage the media to write about antimicrobial resistance and antibiotic usage in the Region. Furthermore, a variety of advocacy and awareness-raising activities took place in 11 countries to celebrate the Week.

Looking forward, the main challenges facing the proper implementation of antimicrobial resistance strategies in the Region are a lack of national financial and human resources to support antimicrobial resistance and infection prevention and control programmes, limitations in the capacities of microbiology laboratories, and the fragmentation of antimicrobial resistance/infection prevention and control programmes at country level. WHO will continue providing the necessary technical support to Member States to raise their capacities in developing national action plans for addressing antimicrobial resistance, establishing effective national and facility-level infection prevention and control programmes and developing and implementing national antimicrobial resistance surveillance programmes. WHO will also support countries in implementing relevant advocacy, awareness and educational programmes to promote behaviour change.

Public health laboratories

In 2017, in line with the strategic framework for strengthening health laboratory services (2016–2020), five countries (Afghanistan, Iraq, Morocco, Pakistan and Saudi Arabia) received focused guidance and support for the establishment of a national laboratory working group and development of national laboratory policies and strategic plans. Additionally, the management and governance of laboratory systems and individual laboratories were strengthened through training and mentorship of 84 senior staff in three countries (Afghanistan, Jordan and Sudan). In Sudan, the curriculum for medical laboratory science was reviewed and updated to support laboratory workforce development.

During 2017, WHO also supported the monitoring and evaluation of laboratory performance and quality in 20 countries. This included coordinating external quality assessment programmes and training activities, which resulted in certification of 53 staff as assessors of health laboratories. Biosafety and biosecurity were identified by the International Health Regulations (IHR 2005) JEE as requiring major improvements in the Region. Nine countries were supported in establishing a core of qualified national biosafety officers and trainers. They now provide national and provincial biosafety and biosecurity training and the maintenance and servicing of biosafety cabinets. Furthermore, to improve specimen referral by air, 118 staff were certified as shippers of infectious substances.

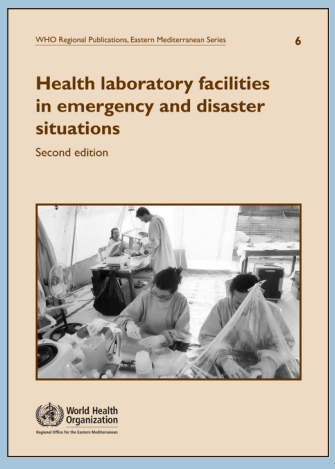
Laboratories continue to play a cross-cutting role and have contributed to various technical areas such as the establishment of antimicrobial resistance surveillance, provision of reagents and kits for diagnosis of priority infections, and provision of technical support during emergencies.

A second edition of WHO's *Health laboratory facilities in emergency and disaster situations* was published in 2017.

Blood safety

In 2017, WHO provided guidance to countries for the implementation of the regional strategic framework for blood safety and availability (2016–2025), with a focus on strengthening blood regulatory systems, improving blood donor management, strengthening haemovigilance systems and meeting the increased demand for blood transfusion during humanitarian emergencies. To strengthen national blood regulatory systems, the blood legislation of nine countries was reviewed and technical support provided to update legislation for the effective management of blood and blood products as essential medicines. In addition, recognizing the differences in blood legislation among countries, and to facilitate the harmonization of legislation across the Region and the implementation of WHO recommendations, WHO is providing technical support in updating their blood legislation.

The demand for blood and blood products continues to increase in countries affected by humanitarian emergencies. Five countries (Afghanistan, Iraq, Libya, Syrian Arab Republic and Yemen) were supported to integrate blood transfusion services within their overall national emergency preparedness and response efforts, and to address the safety and availability of blood transfusion during humanitarian emergencies. WHO will continue to provide comprehensive guidance and support for implementation of the regional strategic framework, with a focus on the key priority interventions outlined in the framework.



↑ ***Technical guidance on provision of basic laboratory services in various types of emergencies***