



***Resource materials for in-country  
development and implementation of  
national action plans to address  
antimicrobial resistance***



***2024 UPDATE***



**World Health  
Organization**



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## What's new in the AMR Resource Pack 2024 update

Section	New resources
<b>General</b>	<ul style="list-style-type: none"> <li>• A pocket guide for ministers across sectors: How to respond to antimicrobial resistance <a href="#">A pocket guide for ministers across sectors (amrleaders.org)</a></li> <li>• <a href="#">Health and economic impacts of antimicrobial resistance in the Western Pacific Region, 2020-2030 (who.int)</a></li> <li>• <a href="#">Antimicrobial resistance (who.int)</a> Fact Sheet (updated 2023)</li> </ul>
<b>Awareness</b>	<ul style="list-style-type: none"> <li>• AMR Quiz - WHO/Europe - RC73 (EN, GER, RU) <a href="#">No time to wait (who.int)</a></li> </ul>
<b>Surveillance</b>	<ul style="list-style-type: none"> <li>• <a href="#">GLASS manual for antimicrobial resistance surveillance in common bacteria causing human infection (who.int)</a></li> <li>• Global Antimicrobial Resistance and Use Surveillance System (GLASS) Dashboard: <a href="https://worldhealthorg.shinyapps.io/glass-dashboard">https://worldhealthorg.shinyapps.io/glass-dashboard</a></li> <li>• Antimicrobial resistance surveillance in Europe 2023 – 2021 data <a href="https://www.who.int/europe/publications/i/item/9789289058537">https://www.who.int/europe/publications/i/item/9789289058537</a></li> </ul>
<b>Laboratory strengthening</b>	<ul style="list-style-type: none"> <li>• See Section 7 for all new resources added</li> </ul>
<b>AMR national action plan implementation resources</b>	<ul style="list-style-type: none"> <li>• People-centred approach to addressing antimicrobial resistance in human health: WHO core package of interventions to support national action plans <a href="#">People-centred approach to addressing antimicrobial resistance in human health (who.int)</a></li> <li>• WHO AMR NAP costing &amp; budgeting tool now available in <a href="#">SP</a> and <a href="#">FR</a></li> <li>• <a href="#">Mali national action plan on antimicrobial resistance: review of progress in the human health sector (EN, FR)</a></li> <li>• <a href="#">Kenya national action plan on antimicrobial resistance: review of progress in the human health sector (who.int)</a></li> <li>• WHO/World Bank. <a href="#">Sustaining Action Against Antimicrobial Resistance: A Case Series of Country Experiences</a></li> </ul>
<b>Infection prevention and control</b>	<ul style="list-style-type: none"> <li>• WHO <a href="#">Global Strategy for Infection Prevention and Control</a></li> <li>• WHO Global report on infection prevention and control: executive summary (<a href="#">EN</a>, <a href="#">FR</a>)</li> <li>• E-learning course <a href="#">Infection Prevention and Control in Maternal and Neonatal Care   (openwho.org)</a></li> <li>• <a href="#">My 5 Moments for Hand Hygiene game: https://5mgame.lxp.academy.who.int/</a></li> <li>• New IPC in primary care section</li> </ul>
<b>Water, sanitation &amp; hygiene</b>	<ul style="list-style-type: none"> <li>• <a href="#">A field guide to improving small drinking-water supplies: water safety planning for rural communities (who.int)</a></li> <li>• Water, sanitation and hygiene in health-care facilities: a practical tool for situation assessment and improvement planning <a href="#">Water, sanitation and hygiene in health-care facilities: a practical tool for situation assessment and improvement planning (who.int)</a></li> <li>• Water, sanitation, hygiene, waste and electricity services in health care facilities: progress on the fundamentals. 2023 Global Report. <a href="#">WHO-UNICEF-Global-progress-report-2023.pdf (washinhcf.org)</a></li> <li>• Countries Posters from the Global Summit on WASH and Waste in Healthcare Facilities June 2023 <a href="#">All-countries-posters-in-Global-Summit-.pdf (washinhcf.org)</a></li> </ul>
<b>Immunization</b>	<ul style="list-style-type: none"> <li>• <a href="#">Global and regional burden of attributable and associated bacterial antimicrobial resistance avertable by vaccination: modelling study (bmj.com)</a></li> <li>• WHO repository of recommendations for use of vaccines: <a href="https://www.who.int/teams/immunization-vaccines-and-biologicals/policies/position-papers">https://www.who.int/teams/immunization-vaccines-and-biologicals/policies/position-papers</a></li> </ul>

	<ul style="list-style-type: none"> <li>WHO/UNICEF estimates of national immunization coverage: <a href="https://worldhealthorg.shinyapps.io/wuenic-trends-2023/">https://worldhealthorg.shinyapps.io/wuenic-trends-2023/</a></li> </ul>
<b>AMR &amp; essential medicines and products</b>	<ul style="list-style-type: none"> <li>WHO Model List of Essential Medicines - 23rd list, 2023 <a href="#">WHO Model List of Essential Medicines - 23rd list, 2023</a></li> <li>WHO Model List of Essential Medicines for children – 9th list, 2023 <a href="#">WHO EMLc 9th List (2023)</a></li> <li><a href="#">The selection and use of essential in vitro diagnostics: report of the fourth meeting of the WHO Strategic Advisory Group of Experts on In Vitro Diagnostics, 2022 (including the fourth WHO model list of essential in vitro diagnostics)</a></li> <li>The WHO Member State mechanism on substandard and falsified medical products <a href="https://www.who.int/publications/i/item/WHO-MHP-RPQ-REG-2022.01">https://www.who.int/publications/i/item/WHO-MHP-RPQ-REG-2022.01</a></li> <li>WHO global surveillance and monitoring system: Substandard and Falsified medical products <a href="https://www.who.int/publications/i/item/9789241513425">https://www.who.int/publications/i/item/9789241513425</a></li> </ul> <p><b>iLearn</b></p> <ul style="list-style-type: none"> <li><a href="#">Training on substandard/falsified (SF) medical products, Module 1: Introduction &amp; overview</a></li> <li><a href="#">Training on substandard/falsified (SF) medical products, Module 2: Responding to incidents</a></li> </ul>
<b>Antimicrobial stewardship</b>	<ul style="list-style-type: none"> <li>The WHO AWaRe (access, watch, reserve) antibiotic book: <a href="https://apps.who.int/iris/handle/10665/365237">https://apps.who.int/iris/handle/10665/365237</a></li> <li>Infographics: <a href="https://apps.who.int/iris/handle/10665/365135">https://apps.who.int/iris/handle/10665/365135</a></li> <li>Mobile App : <a href="#">WHO AWaRe Antibiotic Book (firstline.org)</a></li> <li><a href="#">AWaRe classification of antibiotics for evaluation and monitoring of use, 2023 (who.int)</a></li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>TrACSS <a href="#">2023 results</a></li> <li>TrACSS <a href="#">2022 country reports</a></li> <li><a href="#">Guidance to facilitate monitoring and evaluation for antimicrobial resistance national action plans (who.int)</a></li> </ul>
<b>One Health</b>	<ul style="list-style-type: none"> <li><a href="#">Animal Health and Welfare and Antimicrobial Resistance and Use (amrleaders.org)</a></li> <li><a href="#">Implementation of WOA standards: the Observatory Annual Report, First edition 2022</a></li> <li><a href="#">The Lancet Series on One Health and Global Health Security</a></li> <li>1st Global Joint Summit of Human and Veterinary Medicines Regulatory Authorities to Preserve Antimicrobials <a href="#">Summit Report</a></li> <li>WHO global strategy for food safety 2022-2030: towards stronger food safety systems and global cooperation. <a href="https://iris.who.int/bitstream/handle/10665/363475/9789240057685-eng.pdf?sequence=1">https://iris.who.int/bitstream/handle/10665/363475/9789240057685-eng.pdf?sequence=1</a></li> </ul>
<b>Research (new section)</b>	<ul style="list-style-type: none"> <li>WHO fungal priority pathogens list to guide research, development and public health action <a href="https://www.who.int/publications/i/item/9789240060241">https://www.who.int/publications/i/item/9789240060241</a></li> <li>Global research agenda for antimicrobial resistance in human health <a href="#">Global research agenda for antimicrobial resistance in human health (who.int)</a></li> <li>A one health priority research agenda for antimicrobial resistance. 2023 <a href="https://apps.who.int/iris/handle/10665/370279">https://apps.who.int/iris/handle/10665/370279</a></li> </ul>
<b>IHR/Pandemic preparedness</b>	<ul style="list-style-type: none"> <li><a href="#">Responding to outbreaks of antimicrobial-resistant pathogens in health-care facilities: guidance for the Western Pacific region (who.int)</a></li> </ul>

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## 1. General AMR resources

- [Antimicrobial resistance \(who.int\)](#) Fact Sheet (updated 2023)
- Global action plan on antimicrobial resistance <https://www.who.int/publications/i/item/9789241509763>
- Lancet publication: Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. Antimicrobial Resistance Collaborators, January 19, 2022.
  - ❖ Full report here [Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis - PubMed \(nih.gov\)](#)
  - ❖ Animation: [https://www.youtube.com/watch?v=xyv\\_QrroYZM](https://www.youtube.com/watch?v=xyv_QrroYZM)
  - ❖ Social media graphics: <https://cloud.ihme.washington.edu/s/6M2fNj3raArEFMX>
  - ❖ GRAM report launch video. <https://vimeo.com/675487510>
- A pocket guide for ministers across sectors: How to respond to antimicrobial resistance [A pocket guide for ministers across sectors \(amrleaders.org\)](#)
- Follow-up to the political declaration of the high-level meeting of the General Assembly on antimicrobial resistance. Report of the Secretary-General. May 2019 (Also in Arabic, Chinese, Russian, Spanish). <https://undocs.org/en/A/73/869>
- No time to wait: Securing the future from drug-resistant infections. IACG report to the Secretary-General of the United Nations. April 2019 (Arabic, Chinese, Russian, Spanish). <https://www.who.int/publications/i/item/no-time-to-wait-securing-the-future-from-drug-resistant-infections>
- WHO antimicrobial resistance webpage (also in Arabic, Chinese, French, Russian & Spanish) <https://www.who.int/health-topics/antimicrobial-resistance>
- World Bank 2019. Pulling Together to Beat Superbugs: Knowledge and Implementation Gaps in Addressing Antimicrobial Resistance. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/32552>
- Financing to Address Antimicrobial Resistance - Information note of the Global Leaders Group on Antimicrobial Resistance <https://www.amrleaders.org/resources/m/item/financing-to-address-antimicrobial-resistance>
- Antimicrobial Resistance, Fueled by the COVID-19 Pandemic. Policy Brief November 2021 (EN, SP, POR) <https://iris.paho.org/handle/10665.2/55864>
- [Health and economic impacts of antimicrobial resistance in the Western Pacific Region, 2020-2030 \(who.int\)](#)

## 2. AMR National action plan implementation resources

- WHO AMR community exchange platform: <https://amrcommunityexchange.org/>
- Antimicrobial resistance: [A manual for developing national action plans](#)
- People-centred approach to addressing antimicrobial resistance in human health: WHO core package of interventions to support national action plans [People-centred approach to addressing antimicrobial resistance in human health \(who.int\)](#)

- WHO implementation handbook for national action plans on antimicrobial resistance: guidance for the human health sector. (AR, CH, EN, FR, RU, SP). <https://www.who.int/publications/i/item/9789240041981>
  - eLearning course: <https://openwho.org/courses/AMR-NAP-6steps-for-implementation>
  - Infographic : 6 steps for sustainable implementation of national action plans on antimicrobial resistance. <https://www.who.int/multi-media/details/6-steps-for-sustainable-implementation-of-national-action-plans-on-antimicrobial-resistance>
- WHO costing and budgeting tool for national action plans on antimicrobial resistance
  - [WHO AMR Costing and Budgeting Tool](#) (EN, FR, SP)
  - [WHO costing and budgeting tool for national action plans on antimicrobial resistance: user guide](#) (EN, FR, SP)
  - eLearning course <https://openwho.org/courses/AMR-NAP-costing-tool>
- [Kenya national action plan on antimicrobial resistance: review of progress in the human health sector \(who.int\)](#)
- Mali national action plan on antimicrobial resistance: review of progress in the human health sector (EN, FR) <https://www.who.int/publications/i/item/9789240065468>
- Burkina Faso national action plan on antimicrobial resistance: review of progress in the human health sector. (EN, FR) <https://www.who.int/publications/i/item/9789240040410>
- Malawi national action plan on antimicrobial resistance: review of progress in the human health sector. <https://www.who.int/publications/i/item/9789240056848>
- WHO/World Bank. Sustaining Action Against Antimicrobial Resistance: A Case Series of Country Experiences <https://openknowledge.worldbank.org/handle/10986/38162?sequence=1&isAllowed=y>
- AMR National Action Plan Support Tools (webpage) <https://www.who.int/activities/supporting-countries-with-national-action-plan-implementation>
- Library of national action plans: <https://www.who.int/teams/surveillance-prevention-control-AMR/national-action-plan-monitoring-evaluation/library-of-national-action-plans>
- Tackling Antimicrobial Resistance Together. Working paper 1.0: Multisectoral coordination <https://www.who.int/publications/i/item/tackling-antimicrobial-resistance-together-working-paper-1.0-multisectoral-coordination>
- Turning plans into action for antimicrobial resistance (AMR). Working Paper 2.0: Implementation and coordination <https://apps.who.int/iris/handle/10665/311386>
- Thematic brief: Multisectoral action to tackle AMR <https://apps.who.int/iris/handle/10665/346539>
- Tackling antimicrobial resistance (AMR) together. Working Paper 5.0: Enhancing the focus on gender and equity <https://apps.who.int/iris/handle/10665/336977>

### 3. Health workforce AMR education resources

- OpenWHO: New Antimicrobial Resistance channel [Antimicrobial Resistance \(openwho.org\)](https://openwho.org)
- Online course: Reducing AMR of curable Sexually Transmitted Infections (STIs) in Antenatal Care (ANC) settings <https://openwho.org/courses/amr-sti-anc>
- Online course: Surgical site infections. <https://openwho.org/courses/IPC-SSI-EN>
- Online course: WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities. <https://openwho.org/courses/policy-guidance-on-AMS>
- Online course: WHO practical toolkit for antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries. <https://openwho.org/courses/practical-toolkit-for-AMS>
- Health workers' education and training on antimicrobial resistance: curricula guide. WHO & Public Health England 2019. <https://apps.who.int/iris/bitstream/handle/10665/329380/9789241516358-eng.pdf>
- WHO competency framework for health workers' education and training on antimicrobial resistance. Geneva: World Health Organization; 2018. <http://apps.who.int/iris/bitstream/handle/10665/272766/WHO-HIS-HWF-AMR-2018.1-eng.pdf?ua=1>
- WHO EURO Antimicrobial Stewardship: A competency-based approach Open Online Course(EN, FR, IT, Macedonian, RU, SP). <https://openwho.org/courses/AMR-competency>
- Antimicrobial stewardship interventions: a practical guide. WHO Regional Office for Europe 2021, (EN,RU, POL, GEO, TUR, SP, CRO, FR) <https://apps.who.int/iris/bitstream/handle/10665/340709/9789289054980-eng.pdf>
- Responding to Outbreaks of Antimicrobial-resistant Pathogens in Health-care Facilities: Guidance for the Western Pacific Region (EN, CHN) <https://apps.who.int/iris/handle/10665/363498>

### 4. Awareness, communications and behaviour change

- World AMR Awareness Week [World AMR Awareness Week \(who.int\)](https://who.int)
- AMR Quiz - WHO/Europe - RC73 (EN, GER, RU) [No time to wait \(who.int\)](https://who.int)
- Trello board for Quadripartite WAAW resources <https://trello.com/b/tBoXeVae/world-amr-awareness-week-toolkit-fao-unep-who-woah>
- WAAW materials (for GPs and leaflet) (EN, RU) <https://who.canto.global/v/LI33QQ5N04/album/SO8B9?viewIndex=0>



- The TAP manual: an in-depth guide for planning and implementing tailoring antimicrobial resistance programmes <https://apps.who.int/iris/handle/10665/363136>
- Tailoring Antimicrobial Resistance programmes (TAP) Quick Guide <https://apps.who.int/iris/handle/10665/341631> , EN, SP, GRE, FR, RUS, GER
  - Spanish: <https://iris.paho.org/handle/10665.2/55628>
- Tailoring Antimicrobial Resistance programmes (TAP) Toolbox <https://apps.who.int/iris/handle/10665/341632> (EN, RU, GRE, GER, FR , SP)
  - SP: <https://iris.paho.org/handle/10665.2/55629>
- Tailoring Antimicrobial Resistance programmes (TAP) Process Poster <https://who.canto.global/v/l6NL4P77JP/album/IB2K9?viewIndex=0> (EN, RU, GRE, GER, FR)
- El proceso de adaptacion de intervenciones a medida contra la resistencia a los antimicrobianos
  - <https://iris.paho.org/handle/10665.2/55627>
- Handbook for Communication on the Rational Use of Antimicrobials for the Containment of Resistance (ENG, SP) <https://iris.paho.org/handle/10665.2/54995>
- [Africa Regional Strategy on Antimicrobial Resistance Communications and Advocacy \(fao.org\)](#) (EN, FR)
- Wellcome Trust. Toolkit on communicating Antimicrobial Resistance <https://wellcome.ac.uk/reports/reframing-antimicrobial-resistance-antibiotic-resistance>
- Huttner B, Saam M, Moja L, et al How to improve antibiotic awareness campaigns: findings of a WHO global survey BMJ Global Health 2019;4:e001239. <https://gh.bmj.com/content/4/3/e001239.long>
- The fight against Antimicrobial Resistance is significant for cancer prevention and treatment , EN,RU <https://apps.who.int/iris/handle/10665/337511>
- Stop the COVID-19 pandemic from becoming an AMR catastrophe (EN, RU ) <https://apps.who.int/iris/handle/10665/337513>
- The fight against Antimicrobial Resistance with Evidence-informed policy-making (EN, RU ) <https://apps.who.int/iris/handle/10665/337527>
- Food Safety and the fight against Antimicrobial Resistance (EN, RU) <https://apps.who.int/iris/handle/10665/337525>
- Immunization strengthens the fight against Antimicrobial Resistance (EN, RU) <https://apps.who.int/iris/handle/10665/337523>
- The fight against Antimicrobial Resistance supports efforts towards Better Labs for Better Health (EN, RU ) <https://apps.who.int/iris/handle/10665/337515>
- The fight against Antimicrobial Resistance supports migrant health (EN, RU) <https://apps.who.int/iris/handle/10665/337521>

- The fight against Antimicrobial Resistance is closely linked to the Sustainable Development Goals (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/337519>
- Bacteria can make us ill. Antibiotics then (usually) help (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/337517>
- Tuberculosis and the fight against Antimicrobial Resistance (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/352460>
- Behavioural and Cultural Insights and the fight against Antimicrobial Resistance (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/352458>
- The fight against Antimicrobial Resistance requires a focus on gender (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/352456>
- The fight against Antimicrobial Resistance requires a focus on the health workforce (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/359109>
- The fight against Antimicrobial Resistance supports efforts towards Child and Adolescent Health (EN, [RU](#))  
<https://apps.who.int/iris/handle/10665/359106>

## 5. Surveillance resources

### a) Antimicrobial resistance surveillance

- Global Antimicrobial Resistance and Use Surveillance System (GLASS) Dashboard:  
<https://worldhealthorg.shinyapps.io/glass-dashboard>
- Global antimicrobial resistance surveillance system (GLASS) reports – all reports. [GLASS Resource Centre \(who.int\)](#)
- [GLASS manual for antimicrobial resistance surveillance in common bacteria causing human infection \(who.int\)](#)
- Methodological principles of nationally representative surveys as a platform for global surveillance of antimicrobial resistance in human bloodstream infections  
<https://www.who.int/publications/i/item/9789240067004>
- Antimicrobial Resistance in the WHO African Region: a systematic literature review  
<https://apps.who.int/iris/handle/10665/349223>
- Antimicrobial resistance surveillance in Europe 2023 – 2021 data  
<https://www.who.int/europe/publications/i/item/9789289058537>

- GLASS whole-genome sequencing for surveillance of antimicrobial resistance. Sept 2020  
<https://www.who.int/publications/i/item/9789240011007>
- GLASS guidance for national reference laboratories. Sept 2020  
<https://www.who.int/publications/i/item/9789240010581>
- GLASS method for estimating attributable mortality of antimicrobial resistant bloodstream infections.  
<https://www.who.int/publications/i/item/9789240000650>
- WHO integrated global surveillance on ESBL-producing E. coli using a “One Health” approach. Implementation and opportunities: 2021  
<https://www.who.int/publications/i/item/9789240021402>
- National antimicrobial resistance surveillance systems and participation in the Global Antimicrobial Resistance Surveillance System (GLASS): A guide to planning, implementation, and monitoring and evaluation <http://apps.who.int/iris/bitstream/10665/251554/1/WHO-DGO-AMR-2016.4-eng.pdf?ua=1>
- Diagnostic stewardship: A guide to implementation in antimicrobial resistance surveillance sites  
<http://apps.who.int/iris/bitstream/10665/251553/1/WHO-DGO-AMR-2016.3-eng.pdf?ua=1>
- Emerging antimicrobial resistance reporting framework (GLASS-EAR).  
<https://www.who.int/publications/i/item/9789241514590>
- The detection and reporting of colistin resistance. 2<sup>nd</sup> edition: 2021  
<https://apps.who.int/iris/bitstream/handle/10665/343654/9789240019041-eng.pdf>
- Proof-of-principle antimicrobial resistance routine diagnostics surveillance project (PoP project): protocol: version 2.0: <https://apps.who.int/iris/handle/10665/346076>
- Molecular methods for antimicrobial resistance (AMR) diagnostics to enhance the Global Antimicrobial Resistance Surveillance System. <https://www.who.int/publications/i/item/WHO-WSI-AMR-2019.1>
- Global Antimicrobial Resistance Surveillance System (GLASS) early implementation protocol for the inclusion of *Candida* spp. (EN, [SP](#)). <https://www.who.int/publications/i/item/WHO-WSI-AMR-2019.4>
- GLASS Resource Centre <https://www.who.int/initiatives/glass/resource-centre>
- Central Asian and European Surveillance of Antimicrobial Resistance CAESAR Manual Version 3, 2019 (EN, [RU](#)) <https://apps.who.int/iris/handle/10665/346572>
- Surveillance of Antimicrobial Resistance and Use - Information note of the Global Leaders Group on Antimicrobial Resistance
  - <https://www.amrleaders.org/resources/m/item/surveillance-of-antimicrobial-resistance-and-use>
- Surveillance of Bacterial Pneumonia and Meningitis in Children Aged Under 5 Years: Field Guide, 2nd ed., PAHO: <https://iris.paho.org/handle/10665.2/54637>

- Procedimientos para el diagnóstico de Neumonías y Meningitis Bacterianas y la caracterización de cepas de *Streptococcus pneumoniae* y *Haemophilus influenzae*, 2nd ed., PAHO: <https://www.paho.org/es/node/51879>
- Enhanced Gonococcal Antimicrobial Surveillance Programme (EGASP): general protocol, WHO: <https://www.who.int/publications/i/item/9789240021341>

## b) Antimicrobial consumption surveillance

- Global Antimicrobial Resistance and Use Surveillance System (GLASS) Dashboard: Global AMC data [WHO GLASS Dashboard \(shinyapps.io\)](https://www.shinyapps.io/GLASS-Dashboard/)
- Training on GLASS methodology for national surveillance of antimicrobial consumption. World Health Organization 2022. <https://apps.who.int/iris/handle/10665/354258>
- GLASS methodology for surveillance of national antimicrobial consumption, World Health Organization; 2020 (EN, FR) <https://www.who.int/publications/i/item/9789240012639>
- GLASS manual on the management of antimicrobial consumption data, World Health Organization; 2020 (EN, FR) <https://www.who.int/publications/i/item/9789240010192>

GLASS guide for national surveillance systems for monitoring antimicrobial consumption in hospitals, World Health Organization; 2020 <https://apps.who.int/iris/handle/10665/336182> (EN, FR, POR, RU, SP)

- World Health Organization (2019). GLASS Methodology for Point Prevalence Survey for Antibiotic Use in Hospitals, <https://apps.who.int/iris/bitstream/handle/10665/280063/WHO-EMP-IAU-2018.01-eng.pdf?ua=1>
- Antimicrobial consumption in the WHO Western Pacific Region: early implementation of the Western Pacific Regional Antimicrobial Consumption Surveillance System (WPRACSS) (2022): <https://www.who.int/publications/i/item/9789290619543>
- Antimicrobial consumption in the EU/EEA (ESAC-Net) Annual Epidemiological Report for 2020 <https://www.ecdc.europa.eu/sites/default/files/documents/ESAC-Net%20AER-2020-Antimicrobial-consumption-in-the-EU-EEA.pdf>
- WHO Collaborating Centre for Drug Statistics Methodology: ATC/DDD Index 2023 [https://www.whocc.no/atc\\_ddd\\_index/](https://www.whocc.no/atc_ddd_index/)
- Introduction to drug utilization research (EN, RU) <https://apps.who.int/iris/handle/10665/42627>
- WHO Regional Office for Europe Antimicrobial Medicines Consumption (AMC) Network: AMC data, 2014-2018 (2021) <https://www.who.int/europe/publications/i/item/9789289055567>

- Assessing non-prescription and inappropriate use of antibiotics (2019)  
<https://apps.who.int/iris/handle/10665/312306>

## 6. Research

- WHO fungal priority pathogens list to guide research, development and public health action. 2022  
<https://www.who.int/publications/i/item/9789240060241>
  - Global research agenda for antimicrobial resistance in human health. 2023  
<https://www.who.int/publications/m/item/global-research-agenda-for-antimicrobial-resistance-in-human-health>
  - A one health priority research agenda for antimicrobial resistance. 2023  
<https://apps.who.int/iris/handle/10665/370279>
- 

## 7. WHO laboratory strengthening tools

### a) National policy and strategy

- Development of National Laboratory Policies: Best practices document and facilitators' guide (EN, [RU](#)):  
<https://apps.who.int/iris/handle/10665/355631>
- Developing a national laboratory strategic plan: Best practices document and facilitators' guide (EN, [RU](#)):  
<https://apps.who.int/iris/handle/10665/353746>

### b) Quality management and assurance

- Laboratory quality management system: handbook ([FR](#), [RU](#), [SP](#)).  
<https://www.who.int/publications/i/item/9789241548274>
- Quality Manual template (EN, [FR](#), [RU](#), [SP](#)) <https://www.who.int/publications/m/item/laboratory-quality-manual>
- Quality assurance in bacteriology and immunology, 3rd ed., SEARO:  
<https://apps.who.int/iris/handle/10665/205730>
- LQMS training toolkit (EN, [FR](#), [RU](#)) <https://extranet.who.int/hslp/content/LQMS-training-toolkit>
- Laboratory Quality Stepwise Implementation tool ([FR](#), [RU](#), [SP](#), [Turkish](#)). <https://extranet.who.int/lqsi/>

### c) Biosafety

- Laboratory Biosafety Manual, 4<sup>th</sup> edition  
<https://www.who.int/publications/i/item/9789240011311>
- Tuberculosis laboratory biosafety manual, WHO:  
<https://www.who.int/publications/i/item/9789241504638>

### d) Tools and guidance

- Laboratory Assessment Tool  
2 tools: 1 to assess the system, 1 to assess the facility. (FR, RU, SP)  
<https://www.who.int/publications/i/item/WHO-HSE-GCR-LYO-2012.2>
- Manual of basic techniques for a health laboratory, 2nd ed, WHO:  
<https://apps.who.int/iris/handle/10665/42295>
- Maintenance manual for laboratory equipment, 2nd ed.,  
WHO: <https://www.who.int/publications/i/item/9789241596350>
- Manual for the Laboratory Identification and Antimicrobial Susceptibility Testing of Bacterial Pathogens of Public Health Importance in the Developing World, WHO, CDC, USAID:  
<https://apps.who.int/iris/handle/10665/68554>
- Laboratory methods for the diagnosis of meningitis caused by Neisseria meningitidis, Streptococcus pneumoniae, and Haemophilus influenzae: WHO manual, 2nd ed:  
<https://apps.who.int/iris/handle/10665/70765>
- Microbiología: lo esencial y lo práctico, PAHO: <https://iris.paho.org/handle/10665.2/51601>
- Basic laboratory procedures in clinical bacteriology, 2nd ed. WHO:  
<https://apps.who.int/iris/handle/10665/42696>
- Guidelines on standard operating procedures for microbiology, SEARO:  
<https://apps.who.int/iris/handle/10665/205200>
- Laboratory diagnosis of sexually transmitted infections, including human immunodeficiency virus, WHO:  
<https://apps.who.int/iris/rest/bitstreams/304701/retrieve>
- Specimen collection and transport for microbiological investigation, EMRO:  
<https://apps.who.int/iris/handle/10665/119529>
- WHO laboratory manual for the diagnosis of diphtheria and other related infections:  
<https://apps.who.int/iris/handle/10665/352275>
- Laboratory manual for diagnosis of fungal opportunistic infections in HIV/AIDS patients, SEARO:  
<https://apps.who.int/iris/handle/10665/205404>
- Diagnostic stewardship: a guide to implementation in antimicrobial resistance surveillance sites:  
<https://www.who.int/publications/i/item/WHO-DGO-AMR-2016.3>

- Guidance on regulations for the Transport of Infectious Substances  
<https://www.who.int/publications/i/item/9789240019720>
- GLASS whole-genome sequencing for surveillance of antimicrobial resistance  
<https://www.who.int/publications/i/item/9789240011007>
- GLASS guidance for national reference laboratories  
<https://www.who.int/publications/i/item/9789240010581>
- Molecular methods for antimicrobial resistance diagnostics to enhance the GLASS  
<https://www.who.int/publications/i/item/WHO-WSI-AMR-2019.1>
- GLASS: the detection and reporting of colistin resistance, 2<sup>ND</sup> ed.  
<https://www.who.int/publications/i/item/glass-the-detection-and-reporting-of-colistin-resistance-2nd-ed>

## 8. Prevention of Infection

### a) Infection prevention and control (IPC) resources

**WHO IPC home page** <https://www.who.int/teams/integrated-health-services/infection-prevention-control>

This page provides resources on

- Hand hygiene
- Core components
- AMR
- Surgical site infection
- Injection safety
- Sepsis
- Basic IPC and primary care

Newest publications are highlighted on this page

- [WHO Global Strategy for Infection Prevention and Control](#)
- E-learning courses are found on the IPC channel on OpenWHO: <https://openwho.org/channels/ipc>
- Global report on infection prevention and control <https://www.who.int/publications/i/item/9564>
- WHO Global report on infection prevention and control: executive summary ([EN](#), [FR](#))

- Understanding accelerators and overcoming barriers - the journey for developing or adapting an infection prevention and control guideline, <https://www.who.int/europe/publications/m/item/understanding-accelerators-and-overcoming-barriers---the-journey-for-developing-or-adapting-an-infection-prevention-and-control-guideline--an-easy-to-follow-country-approach>
- Understanding accelerators and overcoming barriers to IPC guideline development or adaptation – when, how, why, <https://www.who.int/europe/publications/m/item/understanding-accelerators-and-overcoming-barriers-to-ipc-guideline-development-or-adaptation--explaining-the-when--how-and-why-of-using-the-country-roadmap-approach>

**IPC and antimicrobial resistance (AMR) page** [Infection prevention and control \(who.int\)](#)

Key documents on this page include:

- Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, *Acinetobacter baumannii* and *Pseudomonas aeruginosa* in health-care facilities. <https://www.who.int/teams/integrated-health-services/infection-prevention-control/ipc-and-antimicrobial-resistance>
- Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level. <https://apps.who.int/iris/bitstream/handle/10665/312226/WHO-UHC-SDS-2019.6-eng.pdf?ua=1>

Of interest related to this topic are the following courses on OpenWHO:

- Catheter-associated urinary tract infections <https://openwho.org/courses/IPC-CAUTI-EN> and
- Bloodstream infections <https://openwho.org/courses/BSI-EN>

## Hand Hygiene

On this [page](#) for [Guidelines and evidence](#), [Implementation tools](#), [Training tools](#) and [Monitoring tools](#). You will also find an alcohol-based handrub planning and costing tool, leaflets on glove use, multimodal improvement and tools for creating an institutional safety climate.

OpenWHO online course, Standard precautions: Hand hygiene: <https://openwho.org/courses/IPC-HH-en>

My 5 Moments for Hand Hygiene game: <https://5mgame.lxp.academy.who.int/>

### Guidelines and evidence

- [WHO guidelines on hand hygiene in health care](#)
- Hand hygiene in outpatient and home-based and long-term care facilities: a guide to the application of the WHO multimodal hand hygiene improvement strategy and the “My Five Moments for Hand Hygiene” approach <https://www.who.int/publications/i/item/9789241503372>



## **Implementation Tools**

- Hand hygiene acceleration framework tool (HHAFT) – excel tool, <https://www.who.int/publications/i/item/WHO-HEP-ECH-WSH-2023.1>
- A guide to the implementation of the WHO multimodal hand hygiene improvement strategy <https://www.who.int/publications/i/item/a-guide-to-the-implementation-of-the-who-multimodal-hand-hygiene-improvement-strategy>
- Guide to local production: WHO-recommended handrub formulations <https://www.who.int/publications/i/item/WHO-IER-PSP-2010.5>
- Hand hygiene for all initiative: improving access and behavior in health care facilities <https://www.who.int/publications/i/item/9789240011618>

[Training tools](#) At this tab, you will find training and education resources on the importance of hand hygiene, the "My 5 Moments for Hand Hygiene" approach and the correct procedures for handrubbing and handwashing.

[Monitoring tools](#) - resources to support evaluation of hand hygiene practices among health-care workers.

## **IPC Core Components**

- WHO Minimum requirements for infection prevention and control programmes <https://www.who.int/publications/i/item/9789241516945>
- WHO Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level (also available for download in [Spanish](#)). <https://www.who.int/publications/i/item/9789241549929>
- Interactive core components, <http://www.developers-maraltro.com/who/4/>

There are several courses on the IPC channel of OpenWHO accessible here: <https://openwho.org/channels/ipc>. Of specific interest on the topic of core components is IPC core components and multimodal strategies: <https://openwho.org/courses/IPC-CC-MMIS-EN>

## **Surgical Site Infection**

Here you will find guidelines as well as implementation resources, training tools, and monitoring tools for the prevention of SSIs, including the following key publications:

- [Global guidelines for the prevention of surgical site infection](#)
- Implementation manual to support the prevention of surgical site infections at the facility level: turning recommendations into practice <https://www.who.int/publications/i/item/WHO-HIS-SDS-2018-18>
- Decontamination and reprocessing of medical devices for health-care facilities <https://www.who.int/publications/i/item/9789241549851>

- The Surgical site infections online course is also available on OpenWHO [Surgical site infections | OpenWHO](#)

### **Injection safety**

Several injection safety resources are available [here](#), including guidelines, a toolkit, videos and leaflets.

OpenWHO online course, Standard precautions: Injection safety and needle-stick injury management ([EN](#), [RU](#)) <https://openwho.org/courses/IPC-IS-EN>

### **Sepsis**

There are several links to relevant sepsis resources available [here](#), including the Global report on the epidemiology and burden of sepsis <https://www.who.int/publications/i/item/9789240010789>

### **Primary Care**

- New website for Basic IPC and primary care: <https://www.who.int/teams/integrated-health-services/infection-prevention-control/basic-ipc-and-primary-care>
- Strengthening infection prevention and control in primary care: A collection of existing standards, measurement and implementation resources <https://www.who.int/publications/i/item/9789240035249>
- Standard precautions for the prevention and control of infections: aide-memoire <https://www.who.int/publications/i/item/WHO-UHL-HIS-IPC-2022.1>
- Transmission-based precautions for the prevention and control of infections: aide-memoire <https://www.who.int/publications/i/item/WHO-UHL-HIS-IPC-2022.2>
- Decontamination and reprocessing of medical devices for health care facilities: aide-memoire <https://www.who.int/publications/i/item/WHO-UHL-HIS-IPC-2022.4>
- Surgical site infection prevention in the primary health care setting <https://www.who.int/multi-media/details/surgical-site-infection-prevention-in-the-primary-health-care-setting>

### **Monitoring/Assessment tools**

- National infection Prevention and Control Assessment tool 2 (IPCAT2), <https://iris.who.int/handle/10665/330078>
- Infection Prevention and Control Assessment Framework (IPCAF), <https://apps.who.int/iris/handle/10665/330072>
- Assessment tool of the minimum requirements for infection prevention and control programmes at the national level, <https://www.who.int/publications/m/item/assessment-tool-of-the-minimum-requirements-for-infection-prevention-and-control-programmes-at-the-national-level>
- Assessment tool on IPC minimum requirements for primary health care facilities, <https://www.who.int/publications/i/item/WHO-UHL-IHS-IPC-2023.2>

- International Health Regulations (2005): state party self-assessment annual reporting tool, 2nd ed. [9789240040120-eng.pdf \(who.int\)](https://www.who.int/publications/i/item/9789240040120-eng.pdf)
- Joint external evaluation tool: International Health Regulations (2005), 3rd ed. World Health Organization, <https://apps.who.int/iris/handle/10665/357087>

#### **Additional IPC and AMR resources:**

- Environmental cleaning and infection prevention and control in health care facilities in low- and middle-income countries, 2023
  - Trainers guide <https://www.who.int/publications/i/item/9789240051041>
  - Modules and resources <https://www.who.int/publications/i/item/9789240051065>
- Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the national level, <https://apps.who.int/iris/handle/10665/345251>
- Responding to Outbreaks of Antimicrobial-resistant Pathogens in Health-care Facilities: Guidance for the Western Pacific Region <https://apps.who.int/iris/handle/10665/363498>
- Responding to Outbreaks of Antimicrobial-resistant Pathogens in Health-care Facilities: Guidance for the Western Pacific Region (EN, CHN) <https://apps.who.int/iris/handle/10665/363498>
- Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the health care facility level, <https://apps.who.int/iris/handle/10665/361522>
- IPC for AMR advocacy document: The essential role of IPC to curb AMR, aimed at health policy decision-makers [https://cdn.who.int/media/docs/default-source/integrated-health-services-\(ihs\)/amr/ipc\\_amr\\_a4.pdf?sfvrsn=ede4a5cd\\_7](https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/amr/ipc_amr_a4.pdf?sfvrsn=ede4a5cd_7)
- Infection prevention and control: guidance to action tools. World Health Organization. Regional Office for Europe. <https://apps.who.int/iris/handle/10665/341107>.
- Aide-memoire: respiratory and hand hygiene. In: Infection prevention and control: guidance to action tools. World Health Organization. Regional Office for Europe. <https://apps.who.int/iris/handle/10665/341418>.
- Aide-memoire: personal protective equipment. In: Infection prevention and control: guidance to action tools. World Health Organization. Regional Office for Europe. <https://apps.who.int/iris/handle/10665/341417>.
- Aide-memoire: environmental cleaning, waste and linen management. In: Infection prevention and control: guidance to action tools. World Health Organization. Regional Office for Europe. <https://apps.who.int/iris/handle/10665/341416>
- OpenWHO IPC channel <https://openwho.org/channels/ipc>

## b) Water, sanitation & hygiene (WASH) resources

### Webpages

- WHO Water sanitation hygiene webpage: <https://www.who.int/health-topics/water-sanitation-and-hygiene-wash>
- WHO UNICEF Knowledge portal on WASH in HCF: [www.washinhcf.org](http://www.washinhcf.org).
- WASHFIT portal. <https://washinhcf.org/wash-fit/>
- The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) website (<https://washdata.org>)

### Standards and guidelines

- WHO/UNICEF, 2020. Water, sanitation, hygiene and waste management for SARS-CoV-2, the virus that causes COVID-19. <https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC-WASH-2020.4>
- WHO/FAO/WOAH (formerly OIE), 2020. Technical brief on water, sanitation, hygiene and wastewater management to prevent infections and reduce the spread of antimicrobial resistance. <https://www.who.int/publications/i/item/9789240006416>
- WHO, 2020. Achieving quality health services for all, through better water, sanitation and hygiene: Lessons from three African countries <https://www.who.int/publications/i/item/9789240009493>
- World Health Organization. (2021). Understanding barriers to quality of care: an approach for conducting a situational analysis of water, sanitation and hygiene (WASH) and quality in health care facilities. World Health Organization. <https://apps.who.int/iris/handle/10665/340297>
- WHO 2019. Burden of disease attributable to unsafe drinking-water, sanitation and hygiene: 2019 update [Burden of disease attributable to unsafe drinking-water, sanitation and hygiene: 2019 update \(who.int\)](https://www.who.int/publications/i/item/9789241516228)
- WHO 2018. Guidelines on sanitation and health (AR, EN, FR, RU, SP) <https://www.who.int/publications/i/item/9789241514705>
- Overview of technologies for the treatment of infectious and sharp waste from health care facilities (AR, EN, FR, SP) <https://www.who.int/publications/i/item/9789241516228>

- WHO 2017. Safe management of waste from health-care activities: a summary. World Health Organization, Geneva. <https://www.who.int/publications/i/item/WHO-FWC-WSH-17.05> (EN, FR, RU).

## Monitoring

- WHO/UNICEF country tracker: progress on WASH in healthcare facilities <https://washinhcf.org/country-progress-tracker/#country-progress-tracker>
- WHO Regional Office for Europe, 2022. Drinking-water, sanitation and hygiene in the WHO European Region: highlights and progress towards achieving Sustainable Development Goal 6 (2022) (document for download) <https://washdata.org/report/who-2022-regional-highlights-euro>
- WHO and UNICEF, 2023. Progress on WASH in health care facilities 2000–2021: special focus on WASH and infection prevention and control (IPC) <https://www.who.int/publications/i/item/9789240058699>
- WHO/UNICEF 2023 Water, sanitation, hygiene, waste and electricity services in health care facilities: progress on the fundamentals <https://www.who.int/publications/i/item/9789240075085>
- WHO/UNICEF, 2020. Global progress report on WASH in healthcare facilities: Fundamentals first. (AR, EN, FR, SP) <https://www.who.int/publications/i/item/9789240017542>
- WHO/UNICEF, 2019. WASH in health care facilities. Global baseline report 2019. <https://www.who.int/publications/i/item/9789241515504>. (AR, EN, FR, RU, SP)
- WHO/UNICEF, 2019. Progress on household drinking water, sanitation and hygiene 2000–2017: special focus on inequalities. <https://www.who.int/publications/i/item/9789241516235>. (AR, EN, FR, RU, SP)
- WHO/UNICEF (2018) Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. <https://www.who.int/publications/i/item/9789241514545>

## Tools

- WASH FIT: A practical guide for improving quality of care through water, sanitation and hygiene in health care facilities. Second edition. <https://www.who.int/publications/i/item/9789240043237>
- WHO/UNICEF WASH FIT Manual for Trainers <https://www.who.int/publications/i/item/9789240047730>
- WASH FIT all technical modules. <https://www.washinhcf.org/wp-content/uploads/WASH-FIT-Modules.zip>
- [WASH FIT Fact Sheets | WASH in Health Care Facilities \(washinhcf.org\)](https://www.washinhcf.org/wash-fit-fact-sheets/)
- [A field guide to improving small drinking-water supplies: water safety planning for rural communities \(who.int\)](https://www.who.int/publications/i/item/9789240043237) (EN, RU)
- [Water, sanitation and hygiene in health-care facilities: a practical tool for situation assessment and improvement planning \(who.int\)](https://www.who.int/publications/i/item/9789240043237) (EN, RU)

- Countries Posters from the Global Summit on WASH and Waste in Healthcare Facilities June 2023 [All-countries-posters-in-Global-Summit-.pdf \(washinhcf.org\)](#)
- WHO/UNICEF/WaterAid 2020. COMBATTING ANTIMICROBIAL RESISTANCE through WATER, SANITATION AND HYGIENE and INFECTION PREVENTION AND CONTROL in HEALTH CARE. Infographic highlighting the benefits of combined efforts [https://www.who.int/docs/default-source/wash-documents/wash-in-hcf/combating-antimicrobial-resistance.pdf?sfvrsn=cba673f\\_4](https://www.who.int/docs/default-source/wash-documents/wash-in-hcf/combating-antimicrobial-resistance.pdf?sfvrsn=cba673f_4)
- WHO. Water, sanitation, hygiene and Health: a primer for health professionals, 2019. <https://apps.who.int/iris/bitstream/handle/10665/330100/WHO-CED-PHE-WSH-19.149-eng.pdf>
- WHO/UNICEF Water, sanitation, and hygiene in health care facilities: Practical steps to achieve universal access for quality care, 2019 (EN, [FR](#), [RU](#), [SP](#)). <https://www.who.int/publications-detail-redirect/9789241515511>

### c) Immunization resources

- Global and regional burden of attributable and associated bacterial antimicrobial resistance avertable by vaccination: modelling study [Global and regional burden of attributable and associated bacterial antimicrobial resistance avertable by vaccination: modelling study \(bmj.com\)](#)
- WHO/UNICEF estimates of national immunization coverage: <https://worldhealthorg.shinyapps.io/wuenic-trends-2023/>
- Bacterial vaccines in clinical and preclinical development 2021. <https://www.who.int/publications/i/item/9789240052451>
- World Health Organization. (2020). Annex to Immunization Agenda 2030: Leveraging Vaccines to Reduce Antibiotic Use and Prevent Antimicrobial Resistance: An Action Framework. [https://cdn.who.int/media/docs/default-source/immunization/product-and-delivery-research/action-framework-draft.pdf?sfvrsn=2a63f53e\\_5&download=true](https://cdn.who.int/media/docs/default-source/immunization/product-and-delivery-research/action-framework-draft.pdf?sfvrsn=2a63f53e_5&download=true)
- Immunization Agenda 2030. <https://www.immunizationagenda2030.org/>
- WHO Immunization dashboard. <https://immunizationdata.who.int/>
- WHO. (2019). Intervention guidebook for implementing and monitoring activities to reduce missed opportunities for vaccination. <https://www.who.int/publications/i/item/9789241516310>
- WHO repository of recommendations for use of vaccines: <https://www.who.int/teams/immunization-vaccines-and-biologicals/policies/position-papers>

## 9. Optimize the use of antimicrobial medicines

### a) Antimicrobial selection

- WHO Model List of Essential Medicines - 23rd list, 2023 [WHO Model List of Essential Medicines - 23rd list, 2023](#)

- WHO Model List of Essential Medicines for children – 9th list, 2023 [WHO EMLc 9th List \(2023\)](#)
- Selection of essential medicines at country level: using the WHO Model List of Essential Medicines to update a national essential medicines list. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO <https://apps.who.int/iris/bitstream/handle/10665/330898/9789241515443-eng.pdf>
- Exposure to World Health Organization's AWaRe antibiotics and isolation of multidrug resistant bacteria: a systematic review and meta-analysis. <https://www.sciencedirect.com/science/article/pii/S1198743X22001537>

## b) Antimicrobial stewardship

- The WHO AWaRe (access, watch, reserve) antibiotic book: <https://apps.who.int/iris/handle/10665/365237>
- Infographics: <https://apps.who.int/iris/handle/10665/365135>
- Mobile App : [WHO AWaRe Antibiotic Book \(firstline.org\)](#)
- [AWaRe classification of antibiotics for evaluation and monitoring of use, 2023 \(who.int\)](#)
- [WHO's AWaRe Framework WHO Antibiotics Portal \(essentialmeds.org\)](#)
- WHO policy guidance on integrated antimicrobial stewardship activities (2021) <https://www.who.int/publications/i/item/9789240025530>
- Online course: WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities. <https://openwho.org/courses/policy-guidance-on-AMS>
- Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit. WHO 2019. (AR, EN, FR, RU, SP) <https://www.who.int/publications/i/item/9789241515481>
- Online course: WHO practical toolkit for antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries. <https://openwho.org/courses/practical-toolkit-for-AMS>
- Virtual Antimicrobial Stewardship Escape Room Game <https://www.biomerieux.com>
- Antimicrobial stewardship interventions: a practical guide. WHO Regional Office for Europe 2021 <https://apps.who.int/iris/bitstream/handle/10665/340709/9789289054980-eng.pdf>

- WHO EURO online course “Antimicrobial Stewardship: A competency-based approach” (EN, FR, IT, RU, SP) <https://openwho.org/courses/AMR-competency>.
- COVID-19 Clinical management: living guidance 23 November 2021  
<https://www.who.int/publications/i/item/WHO-2019-nCoV-clinical-2021-2>
- Recommendations for Implementing Antimicrobial Stewardship Programs in Latin America and the Caribbean: Manual for Public Health Decision-Makers 2018 (EN,SP)  
<https://www.paho.org/en/documents/recommendations-implementing-antimicrobial-stewardship-programs-latin-america-and>
- WHO Regional Office for Europe. Assessing non-prescription and inappropriate use of antibiotics (2019) <https://apps.who.int/iris/handle/10665/312306>
- EVIPNet evidence brief for policy: tackling antimicrobial resistance in primary health care through promoting the appropriate use of antibiotics  
Estonia <https://apps.who.int/iris/handle/10665/351528>
- WHO 2018. Methods to analyse medicine utilization and expenditure to support pharmaceutical policy implementation (EN, RU) <https://apps.who.int/iris/handle/10665/274282>
- Drug and Therapeutics Committees - A Practical Guide, WHO, 2003 (EN, FR, SP).  
<https://apps.who.int/iris/handle/10665/68553>
- [The selection and use of essential in vitro diagnostics: report of the fourth meeting of the WHO Strategic Advisory Group of Experts on In Vitro Diagnostics, 2022 \(including the fourth WHO model list of essential in vitro diagnostics\)](#)
- WHO 2021. The selection and use of essential in vitro diagnostics - TRS 1031  
<https://www.who.int/publications/i/item/9789240019102>

### c) Substandard and falsified medical products

- The WHO Member State mechanism on substandard and falsified medical products  
<https://www.who.int/publications/i/item/WHO-MHP-RPQ-REG-2022.01>
- WHO global surveillance and monitoring system  
<https://www.who.int/publications/i/item/9789241513425>
- iLearn resources
  - [Training on substandard/falsified \(SF\) medical products, Module 1: Introduction & overview](#)
  - [Training on substandard/falsified \(SF\) medical products, Module 2: Responding to incidents](#)



#### d) Quality of antimicrobials

- Operational principles for good pharmaceutical procurement (EN, [FR](#), [SP](#))  
<https://apps.who.int/iris/handle/10665/66251>
- Model quality assurance system for procurement agencies  
<https://apps.who.int/iris/handle/10665/69721>
- TRS 1025 - Annex 7: Good storage and distribution practices for medical products (EN, [FR](#))
  - <https://www.who.int/publications/m/item/trs-1025-annex-7>
- TRS 961 - Annex 10: Procedure for prequalification of pharmaceutical products
  - a. <https://www.who.int/publications/m/item/annex-10-trs-961>

#### e) Resources specific to Latin America

- El acceso a los medicamentos de alto costo en las Americas(2009)
  - <http://www1.paho.org/hq/dmdocuments/2009/Alto%20Costo%20Americas.pdf>
- El acceso y uso racional de los medicamentos y otras TS estrategicos de alto costo (2016)  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&gid=36189&Itemid=270&lang=es](http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&gid=36189&Itemid=270&lang=es)
- Lista de productos del Fondo Estratégico (EN, [SP](#)) <https://www.paho.org/en/node/58472>

## 10. Monitoring

- Tracking AMR Country Self-Assessment Survey (TrACSS) [2023 results](#)
- TrACSS [2022 country reports](#)
- [Guidance to facilitate monitoring and evaluation for antimicrobial resistance national action plans \(who.int\)](#)
- Tripartite Monitoring and Evaluation (M&E) framework for the Global Action Plan on Antimicrobial Resistance, with Methodology sheets for recommended indicator  
<https://www.who.int/publications/i/item/monitoring-and-evaluation-of-the-global-action-plan-on-antimicrobial-resistance>

## 11. One Health

- Antimicrobial resistance and the United Nations sustainable development cooperation framework: guidance for United Nations country teams <https://www.who.int/publications/i/item/9789240036024>
- Strategic framework for collaboration on antimicrobial resistance. Together for One Health <https://www.who.int/publications/i/item/9789240045408>
- Global Leaders Group on Antimicrobial Resistance <https://www.amrleaders.org>
  - A pocket guide for ministers across sectors. <https://www.amrleaders.org/resources/m/item/pocket-guide>
  - Statement on Codex Guidelines on integrated monitoring and surveillance of food borne antimicrobial resistance and Code of Practice to minimize and contain food borne antimicrobial resistance <https://www.amrleaders.org/resources/m/item/codex-guidelines-on-integrated-monitoring-and-surveillance-of-food-borne-antimicrobial-resistance-and-code-of-practice-to-minimize-and-contain-food-borne-antimicrobial-resistance>
- One Health Joint Plan of Action 2022-2026, <https://www.woah.org/app/uploads/2022/04/oh-jpa-14-march-22.pdf>
- [Animal Health and Welfare and Antimicrobial Resistance and Use \(amrleaders.org\)](https://www.amrleaders.org)
- [Implementation of WOAHS standards: the Observatory Annual Report, First edition 2022](#)
- [The Lancet Series on One Health and Global Health Security](#)
- 1st Global Joint Summit of Human and Veterinary Medicines Regulatory Authorities to Preserve Antimicrobials [Summit Report](#)

### Food safety & zoonotic diseases

- WHO global strategy for food safety 2022-2030: towards stronger food safety systems and global cooperation. <https://iris.who.int/bitstream/handle/10665/363475/9789240057685-eng.pdf?sequence=1>
- FAO and WHO. 2022. Foodborne antimicrobial resistance: Compendium of Codex standards. Revised February 2023 <https://www.fao.org/3/cb8554en/cb8554en.pdf>
- Codex guidelines for Risk Analysis of Foodborne antimicrobial resistance. Adopted in 2011. Revised in 2021. [Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance \(fao.org\)](#)

- Guidelines on Integrated Monitoring and Surveillance of Foodborne antimicrobial resistance (2021) [https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252Fstandards%252FCXG%2B94-2021%252FCXG\\_94e.pdf](https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252Fstandards%252FCXG%2B94-2021%252FCXG_94e.pdf)
- [Code of practice to minimise and contain foodborne antimicrobial resistance](#) Adopted in 2005. Amended in 2021.
- WHO guidelines on use of medically important antimicrobials in food-producing animals, Nov 2017 Executive summary in AR, CH, EN, FR, RU, SP. Policy brief in AR, CH, EN, FR, RU, SP. <https://www.who.int/publications/i/item/9789241550130>
- AGISAR guidance for integrated surveillance of AMR in foodborne bacteria: Application of a One Health approach, 2017. <http://apps.who.int/iris/bitstream/10665/255747/1/9789241512411-eng.pdf?ua=1>

## 12.Environment

- Antimicrobial Resistance in the Environment Webinar Series <https://www.unep.org/events/webinar/antimicrobial-resistance-environment-webinar-series>
- [Technical brief on water, sanitation, hygiene \(WASH\) and wastewater management to prevent infections and reduce the spread of antimicrobial resistance \(AMR\) \(who.int\)](#)
- Call to action by the Global Leaders Group on Antimicrobial Resistance on reducing antimicrobial discharges from food systems, manufacturing facilities and human health systems into the environment ( Available in AR, CH, EN, FR, RU, SP) <https://www.amrleaders.org/resources/m/item/reducing-antimicrobial-discharges-from-food-systems-manufacturing-facilities-and-human-health-systems-into-the-environment>
- Bracing for Superbugs: Strengthening environmental action in the One Health response to antimicrobial resistance. 2023 <https://www.unep.org/resources/superbugs/environmental-action>
- Summary for Policymakers - Environmental dimensions of antimicrobial resistance <https://www.unep.org/resources/report/summary-policymakers-environmental-dimensions-antimicrobial-resistance>

## 13.AMR and broader initiatives

- Antimicrobial Resistance and the Climate Crisis - Information note of the Global Leaders Group on Antimicrobial Resistance (AR, CH, EN, FR, RU, SP) <https://www.amrleaders.org/resources/m/item/antimicrobial-resistance-and-the-climate-crisis>

- CDC 2022 Special Report Covid-19 U.S. Impact on Antimicrobial Resistance <https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf>
- TB, HIV, malaria and neglected tropical diseases: Strengthening collaboration to prevent and manage antimicrobial resistance. <https://apps.who.int/iris/bitstream/handle/10665/311689/9789241515450-eng.pdf>
- Antimicrobial resistance and primary health care. Technical series on primary health care brief on the occasion of the Global Conference on Primary Health Care. [https://apps.who.int/iris/handle/10665/326454?search-result=true&query=primary+health+care&scope=&rpp=10&sort\\_by=score&order=desc](https://apps.who.int/iris/handle/10665/326454?search-result=true&query=primary+health+care&scope=&rpp=10&sort_by=score&order=desc)
  - Short version: [http://www.who.int/docs/default-source/primary-health-care-conference/amr.pdf?sfvrsn=8817d5ba\\_2](http://www.who.int/docs/default-source/primary-health-care-conference/amr.pdf?sfvrsn=8817d5ba_2)

## 14. Other

- WHO AMR Division online AMR Community Exchange platform. Register at [amrcommunityexchange.org](http://amrcommunityexchange.org)
- Global Antibiotic Research & Development Partnership (GARDP) Antimicrobial Encyclopaedia <https://revive.gardp.org/resources/encyclopaedia/>
- ReAct ToolBox <https://www.reactgroup.org/toolbox/>
- CIDRAP Antimicrobial Stewardship Project Newsletter. Subscribe here <http://www.cidrap.umn.edu/newsletter>
- JAC – Antimicrobial Resistance (JAC-AMR) - an open-access journal that publishes academic content and peer-reviewed commentary on stewardship resources. <https://academic.oup.com/jacamr>
- Gulf–Middle East–North Africa Educational Collaborative on Antimicrobial Stewardship: a network that hosts a discussion forum and a collection of resources. <http://mena-ams.com/>
- Open University/Fleming Fund Online learning: Tackling Antimicrobial Resistance Courses. <https://www.open.edu/openlearncreate/course/index.php?categoryid=415>
- British Society for Antimicrobial Chemotherapy (BSAC), including GASPH. <https://bsac.org.uk/>

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