

# Global Antibiotic Stewardship Evaluation Tool (G-ASET) for Inpatient Healthcare Facilities



# Acknowledgements

## Overall Coordination and Development of G-ASET:

Twisha S. Patel (U.S. CDC, USA) led the development of the final G-ASET materials under leadership of Fernanda C. Lessa (U.S. CDC, USA). Marilyn Ponder (U.S. CDC, USA) provided professional editing (plain language and usability) assistance.

## Technical Collaborators:

The following multidisciplinary experts including physicians, pharmacists, microbiologists, and researchers participated in technical consultations to guide the development, review, and piloting of G-ASET: Payal K. Patel (Intermountain Health, USA), Valeria Fabre (Johns Hopkins University, USA), Sara Cosgrove (Johns Hopkins University, USA), Rodolfo Quiros (PROAnet Project Lead, Argentina), Vu Thi Lan Huong (Oxford University Clinical Research Unit, Vietnam), Rogier van Doorn (Oxford University Clinical Research Unit, Vietnam), Raph Hamers (Oxford University Clinical Research Unit, Indonesia), Direk Limmathurotsakul (Mahidol Oxford Tropical Medicine Research Unit, Thailand), Abhilasha Karkey (Oxford University Clinical Research Unit, Nepal), Elizabeth Dodds-Ashley (Duke University, USA), Deverick Anderson (Duke University, USA), Julia Szymczak (University of Utah, USA), Ebbing Lautenbach (University of Pennsylvania, USA), Keith Hamilton (University of Pennsylvania, USA), Naledi Mannathoko (University of Botswana, Botswana), Mosepele Mosepele (University of Botswana, Botswana), Marc Mendelson (University of Cape Town, South Africa), Katharina Kranzer (London School of Hygiene and Tropical Medicine, Zimbabwe), and Deborah Tong (World Health Organization, Switzerland).

The tool was also assessed for relevancy and feasibility using a “Delphi-like” approach coordinated by Ronda Sinkowitz-Cochran (U.S. CDC, USA), and Laura E.A. Barnes (U.S. CDC, USA). The following experts participated in the process: Huynh Phuong Thao (Vietnam), Pinyo Rattanaumpawan (Thailand), Juan Carlos Tapia Torrez (Bolivia), Maria Marcela Bovera (Ecuador), Marcelo Carneiro (Brazil), Adrian Brink (South Africa), Mpho Ramato (Botswana), Engy Hamed (North Africa), and Anis Karuniawati (Indonesia).



# User Guide

## Overview

The U.S. Centers for Disease Control and Prevention (CDC) in collaboration with Johns Hopkins University, University of Oxford with Duke University consultants, and the University of Pennsylvania has developed a global tool to assess antibiotic stewardship practices in inpatient healthcare facilities. The tool was tested in more than 80 healthcare facilities across 12 countries (Guatemala, Panama, Ecuador, Colombia, Argentina, Vietnam, Nepal, Thailand, Indonesia, Botswana, South Africa, and Zimbabwe). The comprehensive diagnostic tool is designed to inform implementation of antibiotic stewardship activities, identify opportunities to improve antibiotic stewardship programs, and monitor progress of antibiotic stewardship actions over time.

The **Global Antibiotic Stewardship Evaluation Tool (G-ASET) for Inpatient Healthcare Facilities** assesses core elements, structure, education and training, facility processes, and the presence or absence of activities related to antibiotic stewardship practices as discussed in the [CDC's Core Elements of Human Antibiotic Stewardship Programs in Resource-Limited Settings](#), [WHO's Antimicrobial Stewardship Programmes in Health-care Facilities in Low-and Middle-Income Countries: A WHO Practical Toolkit](#), [WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities](#), and the published literature.

## Intended Users

Only one assessment should be completed by the antibiotic stewardship team. To accurately complete this assessment, members of the antibiotic stewardship team may need to consult with other relevant departments (e.g., microbiology, pharmacy). Although consultation with multiple departments is likely necessary to complete this assessment, responses should be compiled and only one response per assessment item should be recorded.

The G-ASET is primarily intended to be self-administered, but it can also be used as an external assessment through discussions between healthcare facilities and external assessors. Identification of strengths and gaps will help to advocate for resources and improve the antibiotic stewardship program at the healthcare facilities. Thus, ensuring the accuracy of responses is vital to proper use of this tool. Healthcare facilities should conduct the G-ASET annually at minimum to monitor progress over time. However, more frequent assessments may be conducted if major gaps are identified and improvement actions are taking place. Note, if a formal antibiotic stewardship team has not been established, the healthcare workers that are responsible for improving antibiotic use at your healthcare facility should complete this assessment.

## Instructions

- The 5 domains included in the G-ASET are:
  - Leadership Commitment & Accountability
  - Resources
  - Education & Training
  - Antibiotic Stewardship Actions
  - Antibiotic Use Tracking, Monitoring, & Reporting
- Please complete each assessment item by selecting one response per question based on the following options:
  - **Yes** = the activity/core element is in place and is fully implemented
  - **Partially implemented** = the activity/core element is in place but is only partially implemented requiring further action or strengthening
  - **No** = the activity/core element is not in place or has not been implemented

### **EXAMPLE:**

Item 46 asks, “Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) utilize rapid diagnostic testing to facilitate early antibiotic adjustments?”

You should answer “Yes” if the clinical microbiology laboratory used by your healthcare facility utilizes rapid diagnostic testing.

You should answer “Partially implemented” if the clinical microbiology laboratory used by your healthcare facility does not yet fully utilize rapid diagnostic testing but has purchased the technology and developed workflows.

You should answer “No” if the clinical microbiology laboratory used by your healthcare facility does not utilize rapid diagnostic testing and there are no plans to implement.

- Some items also include the option to “**Select all that apply.**”
- Following completion of the tool, please calculate the score for each domain and the overall score. See “Scoring” for more information.
- Note, although each question included in this assessment tool has undergone a rigorous development process that emphasized clinical relevancy and feasibility, additional questions with local context may be necessary to fully evaluate the status of antibiotic stewardship practice at your healthcare facility. However, if questions are added, domain and overall scores may need to be revised or interpreted with caution.
- Comments about the items can be entered in the “Notes/Comments” column in the survey instrument.

## Scoring

- Following completion of the tool, use the “**Scoring Rubric: Global Antibiotic Stewardship Evaluation Tool (G-ASET) for Inpatient Healthcare Facilities**” to complete this activity.
- Scores are based on points earned for individual answers to each question. Add together the points earned for each question. A score by domain and an overall score combining each domain score will be generated. Total earned points are converted to a percentage.

Domain	Maximum Points Possible
Leadership commitment and accountability	60
Resources	65
Education and training	25
Antibiotic stewardship actions	105
Antibiotic use tracking, monitoring, and reporting	75
Overall	330

- Importantly, the scores are for internal use only. They can be used to identify major areas for improvement amongst the five domains and importantly, allow antibiotic stewardship programs and healthcare facilities to track progress over time. Generally, a higher score indicates more advanced progress within the domain and overall with regards to antibiotic stewardship implementation. Scores are not intended to be used to compare performance against other healthcare facilities.

## Definitions

- **Antibiotic Stewardship** (as defined by WHO) - A coherent set of integrated actions which promote the responsible and appropriate use of antibiotics to help improve patient outcomes across the continuum of care. Responsible and appropriate use of antibiotics includes prescribing only when needed and selection of the optimal drug regimen, dosing, route of administration and duration of treatment following proper and optimized diagnosis.
- **Antibiotic Stewardship Committee** - A committee that either stands alone or is integrated into an existing committee with multi-disciplinary members that provides support and oversight of the activities performed by the antibiotic stewardship team in a healthcare facility.
- **Antibiotic Stewardship Team** - An individual or team of healthcare workers who routinely implement antibiotic stewardship activities. Note, an antibiotic stewardship team may not be formally established at your healthcare facility. If this is the case, assessment items using this term should refer to the healthcare workers responsible for improving antibiotic use at your healthcare facility.
- **AWaRe** - WHO classification of antibiotics into three stewardship groups: Access, Watch and Reserve, to emphasize the importance of their optimal uses and potential for antimicrobial resistance.

## Abbreviations

**HCF:** Healthcare facility

**IPC:** Infection prevention and control

# Global Antibiotic Stewardship Evaluation Tool (G-ASET) for Inpatient Healthcare Facilities

To complete the assessment tool, members of the antibiotic stewardship team at the healthcare facility should provide one response per question based on the following options:

**Yes** = the activity/core element is in place and is fully implemented

**Partially implemented** = the activity/core element is in place but is only partially implemented requiring further action or strengthening

**No** = the activity/core element is not in place or has not been implemented

**OR**

Members of the antibiotic stewardship team at the HCF should “**select all that apply**” based on the provided answer choices for relevant questions.

## Facility Characteristics

Facility Name: \_\_\_\_\_

Number of Licensed Beds: \_\_\_\_\_

Respondent Name	Hospital Department/Unit	Preferred Contact (Email/Phone)	Domain Completed	Date of Completion

## Domain 1: Leadership Commitment and Accountability

Item	Assessment	Notes/Comments
<p>1. Is antibiotic stewardship identified as a priority by the healthcare facility management/leadership?</p>	<p>Yes Partially implemented No</p>	
<p>2. Are antibiotic stewardship activities included in healthcare facility annual plans with key performance indicators?</p>	<p>Yes Partially implemented No</p>	
<p>3. Does your healthcare facility have an antibiotic stewardship committee that reviews policies, procedures, treatment guidelines, and operational considerations related to antibiotic stewardship?</p>	<p>Yes Partially implemented No</p>	<p>The antibiotic stewardship committee is either a stand-alone committee or is integrated into an existing committee with multi-disciplinary members that provides support and oversight of the activities performed by the antibiotic stewardship team in a healthcare facility.</p>
<p>4. Who are the members of the antibiotic stewardship committee at your healthcare facility (<i>select all that apply</i>)?</p>	<p><b>Select all that apply:</b></p> <p>Infection prevention and control (IPC) physician(s) IPC nurse(s) Non-IPC nurse(s) Infectious diseases trained physician(s) or clinician(s) with experience practicing infectious diseases Intensive care unit physician(s) Surgeon(s) General medicine physician(s) Other physician(s) Infectious diseases trained pharmacist(s) or pharmacist(s) with experience practicing infectious diseases Other clinical pharmacist(s) Other staff pharmacist(s) Senior healthcare facility leader(s) Clinical microbiologist(s) Information technology specialist(s) Not applicable Other, please specify:  _____</p> <p>If other physician(s) or clinical pharmacist(s) were selected, indicate specialty:  _____</p>	
<p>5. Does the antibiotic stewardship committee meet on a regular basis (minimum quarterly)?</p>	<p>Yes Partially implemented No</p>	

Item	Assessment	Notes/Comments
6. Antibiotic Stewardship Team	<b>Answer questions 6A-6E below</b>	The antibiotic stewardship team is an individual or team of health-care workers who work to routinely implement antibiotic stewardship activities.

6A. Who are the members of the antibiotic stewardship team at your healthcare facility (select all that apply)?	6B. For each role listed below, how many people are part of the team?	6C. Are any within this role an antibiotic stewardship team leader?	6D. What percent time for antibiotic stewardship activities is specified in this role's job description or contract (if more than one person within this role, average the percent time)?	6E. Are the persons within this role financially compensated for the time spent specifically on antibiotic stewardship activities?
Not applicable (My healthcare facility does not have an antibiotic stewardship team)	Not applicable	Not applicable	Not applicable	Not applicable
Infectious diseases trained physician(s) or clinician(s) with experience practicing infectious diseases		Yes No	1-25% 26-50% 51-75% 76-100% No dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Other physician(s) If yes, specify specialty(ies): <input type="text"/>		Yes No	1-25% 26-50% 51-75% 76-100% No dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Infectious diseases trained pharmacist(s) or pharmacist(s) with experience practicing infectious diseases		Yes No	1-25% 26-50% 51-75% 76-100% No dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Other clinical pharmacist(s) If yes, specify specialty(ies): <input type="text"/>		Yes No	1-25% 26-50% 51-75% 76-100% No dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role

6A. Who are the members of the antibiotic stewardship team at your healthcare facility (select all that apply)?	6B. For each role listed below, how many people are part of the team?	6C. Are any within this role an antibiotic stewardship team leader?	6D. What percent time for antibiotic stewardship activities is specified in this role's job description or contract (if more than one person within this role, average the percent time)?	6E. Are the persons within this role financially compensated for the time spent specifically on antibiotic stewardship activities?
Other staff pharmacist(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Infection prevention and control (IPC) physician(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
IPC Nurse(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Non-IPC Nurse(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Clinical microbiologist(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Information technology specialist(s)		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role



6A. Who are the members of the antibiotic stewardship team at your healthcare facility (select all that apply)?	6B. For each role listed below, how many people are part of the team?	6C. Are any within this role an antibiotic stewardship team leader?	6D. What percent time for antibiotic stewardship activities is specified in this role's job description or contract (if more than one person within this role, average the percent time)?	6E. Are the persons within this role financially compensated for the time spent specifically on antibiotic stewardship activities?
Administrative support		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role
Other(s) If yes, please specify: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		Yes No	1-25% 26-50% 51-75% 76-100% no dedicated time for antibiotic stewardship activities	Yes, all staff within this role Yes, some staff within this role No, none within this role

Item	Assessment	Notes/Comments
7. Does the antibiotic stewardship team meet on a regular basis?	Yes Partially implemented No	
8. Does the antibiotic stewardship committee or team have authority to make decisions about policies or procedures related to antibiotic use at your healthcare facility?	Yes Partially implemented No	Examples include formulary decisions, diagnostic test and drug ordering menus, restrictions
9. Which hospital department(s) or healthcare teams does your antibiotic stewardship committee or team collaborate with (select all that apply)?	<b>Select all that apply:</b> Infection prevention and control Infectious diseases Patient safety Quality Pharmacy Microbiology Drug and therapeutics committee HIV/tuberculosis (TB) team Surgery or operating theater Not applicable Other, please specify: _____	

Item	Assessment	Notes/Comments
10. Does the healthcare facility participate in any external networks (e.g., multicenter studies, research or quality improvement collaboratives, data sharing consortiums) related to antibiotic stewardship?	Yes Partially implemented No	
11. Who is involved in antibiotic formulary/procurement decisions at your healthcare facility (select all that apply)?	<b>Select all that apply:</b> Infectious diseases trained physician(s) or clinician(s) with experience practicing infectious diseases Infectious diseases trained pharmacist(s) or pharmacist(s) with experience practicing infectious diseases Other clinical pharmacist(s) Other staff pharmacist(s) Member(s) of antibiotic stewardship team Clinical microbiologist(s) Not applicable Other, please specify: _____	
12. Is the evidence related to the safety, efficacy, and cost of new antibiotics evaluated before adding to the formulary at your healthcare facility?	Yes Partially implemented No	

Domain 2: Resources		
Item	Assessment	Notes/Comments
13. Has the healthcare facility allocated human and financial resources to conduct antibiotic stewardship activities?	Yes Partially implemented No	
14. Which of the following are physically present at your healthcare facility (select all that apply)?	<b>Select all that apply:</b> Infectious diseases trained physician(s) or clinician(s) with experience practicing infectious diseases Infectious diseases trained pharmacist(s) or pharmacist(s) with experience practicing infectious diseases Other clinical pharmacist(s) Other staff pharmacist(s) Clinical microbiologist(s) Not applicable Other, please specify: _____	

Item	Assessment	Notes/Comments
15. Does the antibiotic stewardship team have an office or physical space to perform antibiotic stewardship activities?	Yes Partially implemented No	
16. Does the antibiotic stewardship team have the basic equipment (e.g., telephone, computer) to perform antibiotic stewardship activities?	Yes Partially implemented No	
17. Does your healthcare facility have information and decision support systems (tools embedded in the electronic health record to guide clinical decision making) in place to support antibiotic stewardship activities (e.g., review and optimization of antibiotic prescriptions, pre-authorization)?	Yes Partially implemented No	
18. Which of the following can the antibiotic stewardship team access ( <i>select all that apply</i> )?	<p><b>Select all that apply:</b></p> <ul style="list-style-type: none"> <li>Electronic medical record</li> <li>List of antibiotics purchased</li> <li>List of antibiotics dispensed</li> <li>Antibiotic administration records</li> <li>Syndromic antibiogram (e.g., antibiogram with urine cultures)</li> <li>Cumulative antibiogram (defined as report that shows the susceptibility of commonly isolated organisms to antibiotics in a defined period of time)</li> <li>Not applicable</li> </ul>	
19. Which data are available electronically at your healthcare facility ( <i>select all that apply</i> )?	<p><b>Select all that apply:</b></p> <ul style="list-style-type: none"> <li>Antibiotic consumption</li> <li>Antibiotic use</li> <li>Antibiotic resistance (e.g., aggregate susceptibility reports for specific pathogens)</li> <li>Antibiotic cost</li> <li>Administrative data (e.g., patient days, discharges)</li> <li>Not applicable</li> <li>Other, please specify: _____</li> </ul>	
20. Does the antibiotic stewardship team have access to updated evidence in the form of peer-reviewed scientific literature (e.g., published research)?	Yes Partially implemented No	

Item	Assessment	Notes/Comments
21. Does the healthcare facility have access to laboratory and imaging services (on-site or off-site) that can be used to support antibiotic stewardship interventions?	Yes Partially implemented No	
22. Is the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) open 24 hours per day to receive, process, and report microbiologic specimens?	Yes Partially implemented No	
23. Is the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) accredited?	Yes Partially implemented No	
24. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) have a quality control system?	Yes Partially implemented No	
25. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) have an electronic laboratory information system?	Yes Partially implemented No	Laboratory information system can be defined as software which receives, processes, and stores information generated by the laboratory workflow.

### Domain 3: Education and Training

Item	Assessment	Notes/Comments
26. Does the healthcare facility provide training on antibiotic stewardship (e.g., optimizing antibiotic use) in the staff induction training (e.g., new-hire training)?	Yes Partially implemented No	
27. Does the healthcare facility offer continuous in-service training or continuous professional development on antibiotic stewardship and IPC to staff?	Yes Partially implemented No	If the healthcare facility offers continuous in-service training or professional development on both antibiotic stewardship and IPC, then select "yes." If only on one topic (either antibiotic stewardship or IPC), select "partially implemented."



Item	Assessment	Notes/Comments
28. Does your healthcare facility provide training on antibiotic stewardship to students or trainees rotating at your healthcare facility?	Yes Partially implemented No	
29. Does the healthcare facility provide training for the antibiotic stewardship team on antibiotic stewardship/IPC?	Yes Partially implemented No	If the healthcare facility provides training for the antibiotic stewardship team on both antibiotic stewardship and IPC, then select "yes." If only on one topic (either antibiotic stewardship or IPC), select "partially implemented."
30. Does your healthcare facility provide patients and/or families with education about antibiotics?	Yes Partially implemented No	

#### Domain 4: Antibiotic Stewardship Actions

Item	Assessment	Notes/Comments
31. Which of the following treatment guidelines exist at your healthcare facility (select all that apply)?	<p><b>Select all that apply:</b></p> <ul style="list-style-type: none"> <li>Urinary tract infection</li> <li>Community-acquired pneumonia</li> <li>Hospital-acquired pneumonia</li> <li>Ventilator-associated pneumonia</li> <li>Sepsis</li> <li>Skin and soft tissue infection</li> <li>Surgical site infection</li> <li>Central line-associated bloodstream infection</li> <li>Surgical prophylaxis</li> <li>Intra-abdominal infection</li> <li>Febrile neutropenia</li> <li>Management of multidrug-resistant organisms</li> <li>Bacterial meningitis</li> <li>Infective endocarditis</li> <li>Not applicable (no treatment guidelines exist at my healthcare facility)</li> <li>Other, please specify: _____</li> </ul>	

Item	Assessment	Notes/Comments
32. Which of the following is/are included in treatment guidelines at your healthcare facility (select all that apply)?	<p><b>Select all that apply:</b></p> <p>First-line antibiotic agent</p> <p>Dose</p> <p>Duration</p> <p>Alternative antibiotic agents (e.g., penicillin allergy, pregnant women, oral antibiotics)</p> <p>Antibiotic agents categorized by WHO AWaRe classification</p> <p>Not applicable</p> <p>Other, please specify:</p> <p>_____</p>	
33. Are the guidelines reviewed and updated periodically based on availability of new evidence, with changes communicated to prescribers?	<p>Yes</p> <p>Partially implemented</p> <p>No</p>	
34. Does the antibiotic stewardship team use the healthcare facility antibiogram to modify treatment guidelines?	<p>Yes</p> <p>Partially implemented</p> <p>No</p>	
35. Antibiotic Stewardship Activities	<b>Answer questions 35A-35B below</b>	

Antibiotic Stewardship Activity	35A. Is this activity routinely conducted at your healthcare facility?	35B. If yes, is the activity performed facility-wide?
A. Antibiotic automatic stops (e.g., 24 hours for surgical prophylaxis): antibiotics are stopped automatically after a predefined time period according to indication regardless of physician order	<p>Yes</p> <p>No</p>	<p>Yes</p> <p>No</p>
B. Antibiotic “time outs” (e.g., at 48 hours a clinician is prompted to review any empiric IV antibiotic therapy): defined, regular prompts to the clinician to re-evaluate antibiotic choices	<p>Yes</p> <p>No</p>	<p>Yes</p> <p>No</p>
C. Antibiotic reminders: alerts at the time of prescribing that are tied to a particular antibiotic	<p>Yes</p> <p>No</p>	<p>Yes</p> <p>No</p>
D. Intravenous to oral antibiotic formulation conversion	<p>Yes</p> <p>No</p>	<p>Yes</p> <p>No</p>
E. Prospective audit and feedback of specified antibiotics: review of courses of therapy for these antibiotics to be evaluated for appropriateness (e.g., concordance with treatment guidelines), followed by regular feedback on use of the agent to the prescribing clinician	<p>Yes</p> <p>No</p>	<p>Yes</p> <p>No</p>

Antibiotic Stewardship Activity	35A. Is this activity routinely conducted at your healthcare facility?	35B. If yes, is the activity performed facility-wide?
F. Prior authorization of specified antibiotics: requires clinicians to obtain timely approval from experts (e.g., trained physicians or pharmacists) before these antibiotics get dispensed	Yes No	Yes No
G. Restricted use of antibiotics based on formulary approval for prespecified conditions or populations: clinicians are unable to prescribe certain antibiotics to certain types of patients	Yes No	Yes No
H. Peer comparisons on antibiotic prescribing: reports including individual-level antibiotic prescribing for all clinicians within a predefined group are developed and shared	Yes No	Yes No
I. In-person antibiotic stewardship clinical rounds: rounds held on a regular basis to review and discuss antibiotic choices and ensure accordance with best practice guidelines	Yes No	Yes No
J. Assessment and clarification of documented antibiotic allergies	Yes No	Yes No
K. Review of outpatient parenteral antibiotic therapy prior to discharge	Yes No	Yes No
L. Alerts to prescribers about potentially duplicative antibiotic coverage (e.g., double anti-anaerobic coverage)	Yes No	Yes No
M. Alerts to prescribers about drug-drug interactions	Yes No	Yes No
N. Dose optimization based on pharmacokinetic and pharmacodynamic parameters for treatment of organisms with reduced antibiotic susceptibility	Yes No	Yes No
O. Management of antibiotic shortages/stockouts	Yes No	Yes No
P. Pharmacist-assisted or clinical pharmacologist-assisted dosing of antibiotics in patients with renal or liver dysfunction	Yes No	Yes No
Q. Therapeutic drug monitoring of antibiotics with narrow therapeutic index (e.g., vancomycin, aminoglycosides)	Yes No	Yes No
R. Awareness campaigns on responsible use of antibiotics	Yes No	Yes No

Item	Assessment	Notes/Comments
<p><b>36.</b> Are there standardized operating procedures for specific antibiotic stewardship activities (e.g., audit and feedback, guideline development, testing protocols) at your healthcare facility?</p>	<p>Yes Partially implemented No</p>	
<p><b>37.</b> Does the activity report produced by the antibiotic stewardship committee or team include the following (<i>select all that apply</i>)?</p>	<p><b>Select all that apply:</b></p> <p>Current antibiotic stewardship resources and activity Performance against process and outcome indicators for antibiotic use Antibiotic appropriateness Antibiotic resistance (e.g., aggregate susceptibility reports for specific pathogens) Key areas of improvement Areas for further improvement or priority Areas in which guidance or support from executive and governance units is needed Not applicable (my healthcare facility does not produce an antibiotic stewardship activity report) Other, please specify: _____</p>	
<p><b>38.</b> Who is the antibiotic stewardship activity report disseminated to (<i>select all that apply</i>)?</p>	<p><b>Select all that apply:</b></p> <p>Healthcare facility management Other healthcare facility team members National authorities (e.g., ministry of health) Not applicable (my healthcare facility does not produce an antibiotic stewardship activity report) Other, please specify: _____</p>	
<p><b>39.</b> Does the healthcare facility have a formulary/ list of approved antibiotics for use based on the national formulary?</p>	<p>Yes Partially implemented No</p>	
<p><b>40.</b> Does the healthcare facility formulary specify lists of restricted antibiotics that require approval by a designated team or person (pre-authorization)?</p>	<p>Yes Partially implemented No</p>	
<p><b>41.</b> Does the approval of restricted antibiotics take place throughout the workday?</p>	<p>Yes Partially implemented No</p>	



Item	Assessment	Notes/Comments
42. Does the healthcare facility communicate modifications to the antibiotic formulary to prescribers?	Yes Partially implemented No	
43. Do nurses at your healthcare facility do any of the following antibiotic stewardship activities ( <i>select all that apply</i> )?	<b>Select all that apply:</b> Collect urine and/or respiratory cultures based on appropriate criteria Initiate discussions about converting from intravenous to oral formulation Initiate antibiotic “time outs” Antibiotic allergy assessment Not applicable Other, please specify: _____	
44. Does your healthcare facility have a policy that requires prescribers to document antibiotic dose, duration, and indication in the medical record?	Yes Partially implemented No	
45. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) utilize rapid diagnostic testing to facilitate early antibiotic adjustments?	Yes Partially implemented No	
46. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) have technology to identify the most relevant resistance mechanisms (e.g., extended spectrum beta-lactamases, carbapenemases)?	Yes Partially implemented No	
47. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) provide culture and susceptibility results to prescribers in a timely manner (e.g., within 72 hours)?	Yes Partially implemented No	
48. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) utilize selective or cascading antibiotic susceptibility testing reporting (e.g., not reporting an antibiotic that would not be appropriate for the source, not reporting a broad-spectrum antibiotic when a narrower spectrum is available)?	Yes Partially implemented No	

Item	Assessment	Notes/Comments
49. Does the clinical microbiology laboratory used by your healthcare facility (on-site or off-site) put comments in culture results to improve antibiotic prescribing?	Yes Partially implemented No	
50. Does the antibiotic stewardship team communicate the emergence of new antibiotic resistance (mechanisms or patterns based on antibiotic susceptibility testing) to prescribers?	Yes Partially implemented No	
51. Has the antibiotic stewardship team conducted an analysis of the barriers, challenges, and opportunities for antibiotic stewardship implementation at your healthcare facility?	Yes Partially implemented No	

### Domain 5: Antibiotic Use Tracking, Monitoring, and Reporting

Item	Assessment	Notes/Comments
52. Are regular prescription audits, point prevalence surveys to assess the appropriateness of antibiotic prescribing, undertaken at the facility by the antibiotic stewardship committee or relevant team?	Yes Partially implemented No	
53. Does the healthcare facility regularly monitor and report the quantity and types of antibiotic use (purchased, prescribed, or dispensed)?	Yes Partially implemented No	
54. What metric does the antibiotic stewardship team use to measure antibiotic use or consumption at your healthcare facility ( <i>select all that apply</i> )?	<b>Select all that apply:</b> Days of therapy Defined daily doses Not applicable Other, please specify: _____	
55. Does the antibiotic stewardship team develop action plans to address the problems identified related to optimization of antibiotic use (e.g., increase in the consumption of broad-spectrum antibiotics)?	Yes Partially implemented No	

Item	Assessment	Notes/Comments
<p>56. Does the antibiotic stewardship team monitor compliance with at least one specific antibiotic stewardship activity (e.g., compliance with treatment guidelines) at the healthcare facility?</p>	<p>Yes Partially implemented No</p>	
<p>57. Does the antibiotic stewardship committee or team implement strategies (e.g., presentation to healthcare workers on implementation of new infectious disease treatment guidelines) to increase compliance with prioritized antibiotic stewardship activities?</p>	<p>Yes Partially implemented No</p>	
<p>58. Which of the following metrics are monitored by the antibiotic stewardship team to assess the impact of antibiotic stewardship activities (<i>select all that apply</i>)?</p>	<p><b>Select all that apply:</b></p> <ul style="list-style-type: none"> <li>Antibiotic use or consumption</li> <li>Antibiotic appropriateness (agent, dose, duration)</li> <li>Time to appropriate antibiotic therapy</li> <li>Cost-savings</li> <li>In-hospital mortality</li> <li>Length of stay</li> <li><i>Clostridioides difficile</i> infection rates</li> <li>Rehospitalization</li> <li>Antibiotic-related adverse events</li> <li>Antibiotic-related near misses (e.g., an error that could have led to an adverse event but did not result in clinical harm)</li> <li>Antibiotic costs (e.g., purchase price and expenditure)</li> <li>Not applicable</li> <li>Other, please specify: _____</li> </ul>	
<p>59. Which data can be stratified by hospital unit/ward at your healthcare facility (<i>select all that apply</i>)?</p>	<p><b>Select all that apply:</b></p> <ul style="list-style-type: none"> <li>Antibiotic consumption</li> <li>Antibiotic use</li> <li>Antibiotic resistance (e.g., aggregate susceptibility reports for specific pathogens)</li> <li>Antibiotic cost</li> <li>Administrative data (e.g., patient days, discharges)</li> <li>Not applicable</li> <li>Other, please specify: _____</li> </ul>	

Item	Assessment	Notes/Comments
60. Does the healthcare facility regularly monitor shortages/stockouts of essential antibiotics?	Yes Partially implemented No	
61. Does your healthcare facility monitor shortages/stockouts of laboratory supplies (e.g., reagents, plates)?	Yes Partially implemented No	
62. Is there a mechanism to report concerns about substandard quality of antibiotics (e.g., falsified antibiotics) and diagnostics?	Yes Partially implemented No	
63. Does the antibiotic stewardship committee or team regularly monitor and report antibiotic susceptibility and resistance rates for a range of key indicator bacteria?	Yes Partially implemented No	
64. Does the antibiotic stewardship team communicate findings from audits/reviews of the quality/appropriateness of antibiotic use to prescribers along with specific action points?	Yes Partially implemented No	
65. Does the antibiotic stewardship team report metrics used to assess the impact of antibiotic stewardship activities to healthcare facility management/leadership?	Yes Partially implemented No	
66. Does the healthcare facility develop and aggregate an antibiogram and regularly update it?	Yes Partially implemented No	

Please go to [www.cdc.gov/international-infection-control/media/pdfs/Global-Stewardship-Tool-Scoring-Guide-508.pdf](http://www.cdc.gov/international-infection-control/media/pdfs/Global-Stewardship-Tool-Scoring-Guide-508.pdf) to access the **Scoring Rubric: Global Antibiotic Stewardship Evaluation Tool (G-ASET) for Inpatient Healthcare Facilities** to score your Assessment.