**AHRQ Safety Program for Improving Antibiotic Use**

**Gap Analysis for Antibiotic Stewardship Programs**

Instructions: Complete this document to assess your antibiotic stewardship program (ASP) on an annual basis. The ASP areas addressed in this document are those that are discussed throughout the AHRQ Safety Program Toolkit.

Unmarked questions ask about basic structure and commonly utilized interventions. The questions labeled as Enhancing Components (➕) address components that may enhance ASPs. Once your ASP is established, discuss whether implementation of the Enhancing Components might be of benefit to your program and what resources would be need to operationalize them.

For answers that are not non-yes/no or non-yes/no/not applicable, select all answers that apply.

Key: ➕ = Enhancing Components

| ASP Area | Answers | Comments |
| --- | --- | --- |
| Program Leadership | | |
| Physician Leadership | | |
| Has a physician leader been identified? | Yes  No |  |
| Is the physician leader trained in infectious disease? | Yes  No  Not applicable (N/A) |  |
| What salary support [full-time equivalent (FTE) or amount/hour consulting] is received by the ASP physician leader? |  |  |
| How much time does the ASP physician leader dedicate to ASP (% effort or hours/week) |  |  |
| Is the ASP physician leader available to the ASP on a daily basis? | Yes  No  N/A |  |
| Pharmacist Leadership | | |
| Has a pharmacist leader been identified? | Yes  No |  |
| Is the pharmacist leader trained in infectious diseases? | Yes  No  N/A |  |
| Senior Executive Leadership | | |
| To whom does the ASP report? |  |  |
| How often does ASP leadership meet with senior leadership? | Monthly  Quarterly  Annually  Never  Other: |  |
| Does senior leadership actively promote/support antibiotic stewardship (AS) prevention activities? | No  Yes: ASP Committee member  Yes: Provides adequate funding for ASP  Yes: Provides funding for AS member training  Yes: Promotes AS messages via newsletters, screen savers, etc.  Yes: Provides back up to ASP if prescribers do not follow AS approaches  Yes: Other: |  |
| Program Structure | | |
| How many pharmacists staff the ASP? | Number:  FTE for pharmacist leader:  FTE for other AS pharmacists: |  |
| Does ASP have access to a data analyst? | Number:  Total FTE for AS effort:  No access to a data analyst |  |
| ➕Does the ASP have a regular meeting with infection prevention to discuss issues relevant to both groups? | Yes  No |  |
| Is a representative of the ASP involved in antibiotic formulary decisions? | Yes  No |  |
| Is there a hospital wide ASP Committee that meets at least quarterly? | Yes  No |  |
| Who chairs the ASP Committee? |  |  |
| Who is on the ASP Committee?  Note: representatives from areas listed are suggestions for robust committee membership; not all committees will have all areas represented. | Senior executive  Pharmacy department  Front-line nurses  Infectious diseases physicians  Information technology  Microbiology lab  Infection control/hospital epidemiology  Department of nursing  Regulatory affairs  Department of quality improvement  Department of patient safety  Patient representative  Other:  N/A |  |
| What are the activities of the ASP Committee?  Note: activities listed are suggestions for committee activities; not all committees will perform all activities. | Review antibiotic use data and recommend improvement approaches  Review the antibiogram and recommend improvement approaches  Review *Clostridioides difficile* infection rates and recommend improvement approaches  Perform proactive risk assessments to determine areas in which harm related to antibiotic prescribing could be avoided with intervention  Review guidelines developed by the ASP  Review materials for patient and healthcare worker education regarding optimal antibiotic prescribing  Review ASP responses to antibiotic shortages  Review approaches employed by the microbiology lab for reporting culture and susceptibility data  Assure ASP and its procedures and policies meet relevant regulations  N/A |  |
| Are minutes taken and distributed? | Yes  No  N/A |  |
| To what committee does the ASP Committee report? |  |  |
| Does your ASP develop an annual plan outlining goals for the following year? | Yes  No |  |
| Does your ASP perform an annual risk assessment to identify priorities? | Yes  No |  |
| Does your ASP have a binder or other document detailing how it is compliant with The Joint Commission Antimicrobial Stewardship Standard and/or Centers for Disease Control and Prevention’s (CDC) *Core Elements of Hospital Antibiotic Stewardship Programs*? | Yes  No |  |
| Guidelines | | |
| Does your facility have facility-specific antibiotic treatment guidelines? | Yes  No |  |
| Do your facility-specific guidelines cover the following syndromes? | Urinary tract infection  Asymptomatic bacteriuria  Community-acquired pneumonia  Healthcare-acquired pneumonia  Ventilator-associated pneumonia  Intra-abdominal infections  Skin and soft tissue infection  Bacteremia  Sepsis  Surgical prophylaxis  *Clostridioides difficile* infection  Other:  Other:  Other:  N/A |  |
| Who is involved in guideline development? | ASP members  Non-AS infectious disease physicians  Non-ASP pharmacists  Front-line prescriber content experts  Trainees (e.g., housestaff, fellows)  Other:  N/A |  |
| Do your guidelines provide recommendations on empiric therapy? | Yes  No  N/A |  |
| Do your guidelines provide recommendations on oral step-down therapy? | Yes  No  N/A |  |
| Do your guidelines provide recommendations on duration of therapy? | Yes  No  N/A |  |
| Are guidelines disseminated to prescribers at the point of care? | Yes  No  N/A |  |
| ➕Do your facility guidelines provide recommendations about specific antibiotics? | Yes  No  N/A |  |
| ➕Do your guidelines provide recommendations for diagnostic testing? | Yes  No  N/A |  |
| ➕Do your facility guidelines provide recommendations about the interpretation of microbiology results (including rapid diagnostic tests)? | Yes  No  N/A |  |
| ➕Are guidelines available in operating rooms detailing specific recommendations for surgical prophylaxis? | Yes  No  N/A |  |

| Interventions | | | | | |
| --- | --- | --- | --- | --- | --- |
| Preauthorization and Post-prescription Review and Feedback | | | | | |
| Instructions for this section: For each agent or class, indicate whether the ASP performs pre-authorization (PA) and/or post-prescription review and feedback (PPRF), and the frequency of these interventions.  PA and PPRF are common and effective ASP interventions. Use the results from this section to assess your PA and PPRF practice and to determine if the type of intervention or antibiotics intervened upon are appropriate or should be modified based on institutional data and other ASP concerns. | **Antibiotic** | **Pre-authorization** | **Frequency** | **Post-prescription review and feedback** | **Frequency** |
| Cefazolin | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Ceftriaxone | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Cefepime | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Ceftaroline | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Piperacillin/  Tazobactam | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Aztreonam | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Carbapenems | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Fluoroquinolones | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Aminoglycosides | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Vancomycin IV | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Daptomycin | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Linezolid/  Tedizolid | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Ceftazidime/  Avibactam | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Ceftolozane/  Tazobactam | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Polymixins | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Vancomycin PO | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |
| Fidaxomicin | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A | Yes  No  N/A | Daily weekdays  Daily 7 days  2–3 times/week  Other:  N/A |

| ASP Area | Answers | Comments |
| --- | --- | --- |
| Do you have software or another mechanism that identifies patients for daily review by the ASP? | Yes  No |  |
| How do you make AS interventions? | Phone call to clinicians  Text to clinicians  Rounds with teams  Note in medical record  Other:  N/A |  |
| Where do you document AS intervention? | No documentation  Medical record: visible to clinicians  Medical record: not visible to clinicians  Database internal to ASP  N/A |  |
| Does your program monitor adherence to AS interventions? | Yes  No  N/A |  |
| Other Interventions To Consider | | |
| ➕Is there is a formal procedure for all clinicians to review the appropriateness of all antibiotics 48–72 hours after the initial orders (e.g., antibiotic time out) | No  Yes  Select units |  |
| ➕Is there a process for intravenous to oral conversion of antibiotics in the pharmacy? | Yes  No |  |
| ➕Does your facility have order sets for any of the following indications? | Urinary tract infection  Community-acquired pneumonia  Healthcare-acquired pneumonia  Ventilator-associated pneumonia  Intra-abdominal infections  Skin and soft tissue infection  Bacteremia  Sepsis  Surgical prophylaxis  *Clostridioides difficile* infection  Neutropenic fever  Other:  Other:  Other:  N/A |  |
| ➕Are there time-sensitive automatic stop orders for specified antibiotic prescriptions? | Yes  No |  |
| ➕Are activities conducted by the ASP to target antibiotics commonly associated with *C. difficile* infection  (e.g., fluoroquinolones, clindamycin, cephalosporins) | Yes  No |  |
| ➕Are activities being conducted by the ASP to reduce inappropriate treatment of asymptomatic bacteriuria? | Yes  No |  |
| ➕Are activities being conducted by the ASP to guide interpretation of procalcitonin results? | No procalcitonin testing  Procalcitonin results not acted upon by ASP  Yes: all patients  Yes: select patients |  |
| ➕List interventions being conducted by the ASP to improve antibiotic use outside of core interventions. |  |  |
| Microbiology | | |
| Do you have an onsite microbiology lab? | Yes  No |  |
| Does the ASP have a regular meeting with the microbiology lab to discuss issues relevant to both groups (e.g., interpretation of susceptibility tests, implementation of new diagnostic tests, etc.?) | Yes  No |  |
| Does your microbiology laboratory develop an annual antibiogram? | Yes: Whole hospital  Yes: Stratified by unit  Yes: Urine isolates  Yes: Blood isolates  No |  |
| Does your microbiology lab follow Clinical and Laboratory Standards Institute (CLSI) guidelines for making the antibiogram? | Yes  No  N/A |  |
| Is the antibiogram disseminated to prescribers? | Yes  No  N/A |  |
| ➕Does your microbiology lab blind any culture or susceptibility results as a strategy to assist prescribers in selecting appropriate antibiotics? | Yes  No |  |
| ➕Does your facility perform rapid diagnostics on blood? | Yes: Fungal organisms  Yes: Gram-negative organisms  Yes: Gram-positive organisms  No |  |
| ➕Does your facility perform rapid diagnostics on other specimens? | Yes: Respiratory virus  Yes: Respiratory bacterial  Yes: Cerebrospinal fluid  Legionella urinary antigen  *Streptococcus pneumoniae* urinary antigen  Other:  Other:  No |  |
| ➕Does your ASP have any specific interventions to adjust antibiotic regimens based on rapid diagnostic results? | Yes  No |  |
| Data | | |
| Antibiotic Use Metrics | | |
| Do you have access to antibiotic use data? | Yes  No |  |
| If you have access to antibiotic use data, what type of data is it? | Purchasing data  Days of therapy/1,000 patient days  Days of therapy/1,000 days present (National Healthcare Safety Network denominator)  Defined daily doses  Other:  N/A |  |
| Do you monitor antibiotic use trends over time? | Yes  No  N/A |  |
| ➕Do you stratify data by unit? | Yes  No  N/A |  |
| ➕Do you stratify data by antibiotic/antibiotic class? | Yes  No  N/A |  |
| ➕Do you stratify data by provider? | Yes  No  N/A |  |
| How are the data available to the ASP? | Report provided at a predetermined interval by IT, pharmacy, etc.  What interval?  Monthly  Quarterly  Annually  Other:  Data available in real-time on a dashboard  Other: |  |
| Does your ASP present antibiotic use data to the ASP Committee? | Yes  No  N/A |  |
| ➕Does your ASP present antibiotic use data to facility leadership? | Yes  No  N/A |  |
| ➕Does your ASP present antibiotic use data to frontline staff or unit directors? | Yes  No  N/A |  |
| ➕Do you report antibiotic use data to the National Healthcare Safety Network Antimicrobial Use and Resistance Module? | Yes  No  N/A |  |
| Other Metrics | | |
| ➕Does the ASP measure the number and type of interventions performed? | Yes  No |  |
| ➕Does the ASP identify units with high *Clostridioides difficile* rates and assess antimicrobial use on the units? | Yes  No |  |
| Education | | |
| Does your ASP provide updates to healthcare providers about judicious antibiotic prescribing and the role of AS? | No  Yes: Nurses  Yes: Pharmacists  Yes: Prescribers  Yes: Other(s) |  |
| How frequently does your ASP provide updates to health care providers about judicious antibiotic prescribing and the role of AS? | Annually  Annually, and as needed  Unscheduled  Other:  N/A |  |

AHRQ Pub. No. 17(20)-0028-EF

November 2019