# JumpStart Stewardship

## Implementing Antibiotic Stewardship in Ambulatory Settings

420-208 Nov 2017

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# Getting Started

Congratulations on taking the first step towards establishing an antibiotic stewardship program (ASP) in your clinic. Antibiotic stewardship is a commitment to optimize antibiotic use to improve your patients' health outcomes, and is a key component of patient safety and quality of care.

Antibiotic use is the key driver of antibiotic resistance. (1-3) About 80% of antibiotics prescribed, and 60% of antibiotic costs, are for outpatients (4-6) and 30-50% of antibiotics prescribed are either unnecessary or inappropriate (7-10). Therefore, focusing stewardship efforts in ambulatory settings can have a big impact on minimizing inappropriate antibiotic use and reducing antibiotic-associated adverse events such as antibiotic resistance, *Clostridium difficile* infections, and allergic reactions.(11)

US Centers for Disease Control and Prevention (CDC), the American Medical Association, American Academy of Family Physicians, American Academy of Pediatrics and American Association of Nurse Practitioners, among others, call for expansion of antibiotic stewardship efforts to improve use of these critical therapies.(12) Appropriate antibiotic prescribing is one of the measures in the Health Plan Employer Data and Information Set (HEDIS) used by insurers to assess quality of care.(13) Centers for Medicare and Medicaid Services now require both hospitals and long term care facilities to have a stewardship program as a condition of participation, and is encouraging outpatient stewardship by including it as an improvement activity for participation in the Merit-based Incentive Payment System. (14)

In November 2016, CDC published *Core Elements of Outpatient Antibiotic Stewardship* that identifies necessary components of an ASP. (11) The purpose of this JumpStart workbook is to provide ambulatory clinics with guidance and tools to plan, implement and maintain a feasible, sustainable ASP tailored to their own unique resources and characteristics. As you will see, each chapter title identifies the CDC core element that the chapter supports. Let's get started!

# Assessing Current State: COMMITMENT

To understand which of the stewardship strategies will work best for your antibiotic stewardship program (ASP), perform an assessment of your clinic's current state of readiness. A current state assessment identifies your starting point to use in planning how to develop or enhance an ASP. This assessment should be performed in the development stage of an ASP, prior to its implementation, and then periodically thereafter to determine if you have made progress. The main goals of this review are to identify any activities already underway within your facility, assess available resources, and to understand how antibiotics are used and how key metrics are changing over time. An additional goal is to identify variations in practices where standardization, such as in prescribing habits, may be beneficial as a potential intervention for your ASP.

The following current state assessment is adapted for clinics from CDC's *Core Elements of Outpatient Antibiotic Stewardship* (11). For best results, work with the appropriate content experts in your facility to determine the answers to the questions. If you are unable to obtain information for the current state assessment in the exact form requested, do your best to obtain an approximate estimate. For example, if you do not have access to an electronic health record to review antibiotic prescriptions by diagnosis type, consider performing a chart review of 10-20 cases of a particular type of respiratory infection for each prescriber to estimate the most common antibiotics prescribed and characterize variability in prescribing. The goal is to identify areas that may be suitable for a stewardship intervention.

# Current State Assessment

To help you identify potential areas of focus for your antibiotic stewardship program, please assess your facility's current state using this questionnaire.

| Facility Profile | |
|---|---|
| **Last Calendar Year or Last 12 months** | **Write in** |
| Number of office visits | |
| Number of unique prescribers | |
| Average number daily office visits per prescriber | |
| What are the three most common infectious syndromes treated in your clinic? | |
| | |
| | |
| Name 3 clinical practice guidelines for infectious syndromes that are *regularly* followed in your facility? | |
| | |
| | |
| Of the guidelines listed above, for which is clinician adherence to the guideline monitored in your facility? | |
| | |
| | |
| What proportion of office visits result in an antibiotic prescription? | |
| What proportion of **acute bronchitis** cases in persons without COPD are treated with an antibiotic? | |
| What are the three most common antibiotics prescribed **for acute bronchitis** in persons without COPD? | |
| | |
| | |
| What proportion of **acute sinusitis** cases are treated with an antibiotic? | |
| What are the three most common antibiotics prescribed for **acute sinusitis**? | |
| | |
| | |
| What proportion of **acute URI** cases are treated with an antibiotic? | |
| What are the three most common antibiotics prescribed for **acute URI**? | |
| | |
| | |
| Does your clinic require chart documentation of indication for each antibiotic prescription? | |

| Core Elements of Outpatient Antibiotic Stewardship<br>FACILITIES | | |
|---|---|---|
| **COMMITMENT** | | |
| 1. Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics? | ❑ YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Identify a single leader to direct antibiotic stewardship activities within the facility<br>❑ Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria<br>❑ Communicate with all clinic staff members to assist in educating patients regarding antibiotics |
| **ACTION** | | |
| 2. Has your facility implemented at least one policy or practice to improve antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which interventions are in place. (Select all that apply.)<br>❑ Require explicit written justification in the medical record for antibiotic prescribing that deviates from guideline.<br>❑ Provide support for clinical decisions (e.g., electronic clinical decision support in order entry, written clinical practice guidelines)<br>❑ Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits<br>❑ Routinely assess symptoms associated with antibiotic allergy to determine if allergy claim is credible |
| **TRACKING AND REPORTING** | | |
| 3. Does your facility monitor at least one aspect of antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which are being tracked. (Select all that apply.)<br>❑ Track and report antibiotic prescribing for one or more high-priority condition or antibiotic<br>❑ Track and report the percentage of all visits leading to antibiotic prescriptions<br>❑ Track and report complications of antibiotic use and antibiotic resistance trends among common outpatient bacterial pathogens<br>❑ Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers |
| **EDUCATION AND EXPERTISE** | | |
| 4. Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate how your facility provides antibiotic stewardship education. (Select all that apply.)<br>❑ Provide face-to-face educational training for prescribers (educational detailing)<br>❑ Provide continuing education activities for clinicians<br>❑ Ensure timely access to persons with prescribing expertise<br>❑ Encourage use of (and provide access to) treatment guidelines for common conditions<br>❑ Provide communications skills training for clinicians. |

This questionnaire was adapted from the CDC's *Core Elements of Outpatient Antibiotic Stewardship (2016).*

| Core Elements of Outpatient Antibiotic Stewardship<br>CLINICIANS | | |
|---|---|---|
| **COMMITMENT** | | |
| 1. Can you demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics? | ❑ YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Write and display public commitment in support of antibiotic stewardship<br>❑ Completed stewardship continuing education in prior 12 months |
| **ACTION** | | |
| 2. Have you implemented at least one practice to improve antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Use evidence-based diagnostic criteria and treatment recommendations<br>❑ Use delayed prescribing practices or watchful waiting, when appropriate |
| **TRACKING AND REPORTING** | | |
| 3. Do you monitor at least one aspect of antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which are being tracked. (Select all that apply.)<br>❑ Self-evaluate antibiotic prescribing practices<br>❑ Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing<br>❑ Compare your antibiotic prescribing to your peers' |
| **EDUCATION AND EXPERTISE** | | |
| 4. Do you provide education to patients on appropriate antibiotic use? | ❑ YES<br>❑ NO | If yes, indicate which activities are in place. (Select all that apply.)<br>❑ Use effective communications strategies to educate patients about when antibiotics are and are not needed<br>❑ Educate about the potential harms of antibiotic treatment<br>❑ Provide patient education materials<br>❑ Received stewardship education in the past 12 months. |

This questionnaire was adapted from the CDC's *Core Elements of Outpatient Antibiotic Stewardship (2016).*

# Building the Stewardship Team: COMMITMENT

For your ASP team to be successful and efficient, plan thoughtfully and specifically for your facility's individual personnel, resources, and other strengths. Depending on the size of the clinic, the team may be small (two to three members) or large (five or six members).

Ideally, the ASP team should be led by a knowledgeable and respected facility leader who has an understanding of antibiotics and stewardship and enjoys providing education and guidance. The team should include, at a minimum, individuals with different responsibilities in the clinic such as medical director, nurse, and a clinician prescriber. In a larger organization, the team may include an information technology staff member (if your facility uses electronic health records or data mining software). Because stewardship is considered a patient safety and quality of care issue, the medical director may be the most appropriate person to set goals, monitor the effectiveness of interventions, and serve as liaison to the clinic's medical staff and prescribers. A nurse may perform day-to-day data collection and review of prescribing data. A prescriber or pharmacist may develop facility-specific treatment recommendations based on nationally-recognized guidelines. With commitment and resources from leadership, the team can identify appropriate education for prescribers, staff and patients, set expectations for behavior and actions consistent with the ASP's goals, identify metrics to measure success of the program, and help patients and families understand the ASP and its potential impact on the care provided in the facility.

It is almost impossible to sustain an ASP without a commitment from facility leadership indicating their support for the program and for monitoring antibiotic use. To be successful, stewardship duties should be included in the ASP team members' job descriptions and annual performance reviews in order to establish accountability for success of the program. The facility should also support and provide annual stewardship education to the healthcare staff, including prescribers.

# Selecting Interventions and Targets: ACTION & EDUCATION

There are many effective strategies and tactics an ambulatory care facility may employ to improve antibiotic prescribing and use. Based on your current state assessment, select targets and interventions that are most appropriate to your individual facility and patient population. Start small and consider adding interventions over time.

Though "Education and Expertise" is named as a separate CDC core element from "Action," education should be considered a foundational *action* when starting an ASP. Education alone is unlikely to produce the desired level of behavior change, but education for providers, staff, and patients is necessary before implementing actions intended to change behavior surrounding antibiotic use.

Use the following **Stewardship Actions Resource Table** as a resource for actions that will help your practice address each of the CDC's core elements for stewardship. Consider which of the interventions might be right for your facility, or ways you might modify or adapt one or more of the activities to better fit your facility's

| Stewardship Actions Resource Table | | |
|---|---|---|
| **CDC Core Element** | **Strategy** | **Activity** |
| **Commitment** | **Publicize leadership commitment to stewardship** | • Create formal statement/policy of leadership commitment to stewardship<br>• Designate an stewardship leader and include stewardship duties in responsibilities<br>• Post “leadership commitment to stewardship” poster in clinics<br>• Ensure adequate time and resources for stewardship education for prescribers, staff and patients |
| **Action** | **Establish and audit adherence to best practices for laboratory testing** | • Promote appropriate testing (e.g., urine culture prior to treating urinary tract infection, rapid strep test and culture prior to treating pharyngitis)<br>• Avoid inappropriate use of microbiology tests that may drive unnecessary antibiotic treatment (e.g., strep testing in persons with pharyngitis and viral symptoms, urinalysis and culture in persons without signs localizing to the urinary tract, or “test of cure” for UTI) |
| | **Establish and audit adherence to best practices in antibiotic prescribing** | • Implement call center or nurse triage hotline to prevent unnecessary clinic visits<br>• Develop facility-specific treatment recommendations, based on national guidelines and local susceptibilities, for common infectious syndromes to optimize and standardize antibiotic selection and duration<br>• Require documentation of dose, duration, and indication for every course of antibiotics to ensure that antibiotics can be modified as needed based on additional lab and clinical data and/or discontinued in a timely manner<br>• Develop standardized order sets or clinical decision support tools based on facility-specific treatment recommendations<br>• Develop a system for rapid notification and assessment of culture results that impact antibiotic therapy (e.g. urine culture, throat culture).<br>• Evaluate patient claims of antibiotic allergy and consider skin testing for penicillin allergy to improve antibiotic options. See CDC allergy evaluation guide. |

| CDC Core Element | Strategy | Activity |
|---|---|---|
| **Tracking and Reporting** | **Track key data to assess progress towards goals** | • Monitor prescribers' adherence to documentation of dose, duration and indication on all antibiotic orders<br>• Monitor prescribers' adherence to facility-specific treatment guidelines<br>• By prescriber, monitor proportion of visits that result in an antibiotic order<br>• By prescriber, monitor proportion of visits for a common infectious condition (e.g., URI, bronchitis, sinusitis) that result in an antibiotic order<br>• Monitor follow up on microbiology testing results for certain conditions that impact the selection or need for antibiotics (e.g., strep test, urine culture)<br>• Monitor evaluation of allergy claims<br>• Provide feedback to prescribers and leadership on findings of data monitoring<br>• Encourage healthy competition between peers to improve antibiotic prescribing |
| **Education and Expertise** | **Educate prescribers, staff, and patients about importance of stewardship for improving health outcomes** | • Ensure access to expertise on antibiotic prescribing<br>• Provide stewardship education to all healthcare staff at hire and at least annually<br>• Provide stewardship educational resources to patients at check in, in the waiting room, and in exam rooms<br>• Encourage patients to be active participants in their healthcare, including questioning the benefits and harms of testing and medications<br>• Provide communication skills training to providers |

These ASP interventions are curated from 1) Centers for Disease Control and Prevention (CDC) *Core Elements of Outpatient Antibiotic Stewardship* and *National Quality Forum National Quality Partners Playbook: Antibiotic Stewardship in Acute Care* (15).

# Measuring Effectiveness: TRACKING AND REPORTING

Assessing quality improvement depends on accessing and tracking key metrics. To know the impact of a stewardship program, it's necessary to identify in advance what your baseline is and what changes you expect to see.

How widely a stewardship intervention is implemented in a facility will help determine how widely the metric data should be tracked. The goal is to monitor a population that is likely to be affected by the intervention. If you implement a change in antibiotic therapy for otitis media in pediatric patients but monitor antibiotic use clinic-wide, any observable change from the intervention may be diluted or obscured.

In addition, assess how completely your intervention is implemented. If dose, duration and indication are required for each antibiotic prescription in order to evaluate appropriateness of antibiotic therapy, assess the proportion of prescriptions for which complete documentation is included. If your intervention is not adequately implemented, you may need to devote increased resources to implementation before evaluating outcomes such as antibiotic use.

Remember that seasonal fluctuations may account for some changes over time so comparing the same months or quarters from year to year, may be appropriate.

Report interventions and metrics at least quarterly to the ASP team and appropriate nursing and medical staff, and at least annually to leadership. Providing individual prescribers their metrics as compared to their peers can be a powerful motivator to standardize practice and avoid being an outlier. In addition, comparing prescribing practices can provide an opportunity for learning and sharing within the clinical team how to improve adherence to best practices. Adjustments to the ASP plan should be based on what you learn from your metrics.

# Project Charter and Strategic Plan: COMMITMENT

Now that you've selected one or more interventions and considered how you will measure your success, the next step is to create a basic ASP charter and strategic plan

The **ASP Charter and Strategic Plan** is a document used to facilitate communication about your new ASP to facility leaders, staff, and prescribers. The charter states in writing your facility's commitment to work toward achieving the ASP's aim of promoting optimal, judicious use of antibiotics. Additionally, the charter provides readers with background information and purpose of the ASP, the activities and interventions the ASP will undertake, the composition and reporting structure of the ASP team, and the ASP's goals, metrics, and milestones.

The example that follows is a simple fill-in-the-blank template you may use to create an ASP charter and strategic plan. Some sample language has been included for you, but you are welcome to tailor or customize the information to reflect your facility's unique ASP structure, activities, and goals. Review the example provided in the last chapter (page 16) and then use the Project Charter and Strategic Plan template available on the EQuIP for Ambulatory Care website to create your own charter and plan.

After completing the ASP charter, present your ASP plan to your clinic's executive and medical leadership for input and feedback. A critical step in developing an ASP is getting your leaders—especially those with the power to provide financial resources to support your ASP—to agree to your plan and sign the charter as a symbol of their commitment to achieving the ASP aim.

| Antibiotic Stewardship Program (ASP) Charter and Strategic Plan | |
|---|---|
| **FACILITY NAME** | |

| **PROGRAM START DATE** | | **PROPOSED DATE FOR PROGRAM EVALUATION AND CHARTER UPDATE** | |
|---|---|---|---|

| | |
|---|---|
| **BACKGROUND AND PURPOSE** | Unnecessary and inappropriate antibiotic use is harmful to patients and populations by contributing to antibiotic resistance, allergic reactions, *Clostridium difficile* infections and avoidable medical care. Increasing antibiotic resistance combined with the lack of new antibiotic agents in the drug development pipeline threaten our ability to practice modern medicine. Antibiotic stewardship—a set of commitments and activities to optimize antibiotic use—is necessary in order to achieve best outcomes for patients, and prolong the usefulness of these lifesaving medications.<br><br>Therefore**, our facility commits to implementing a stewardship program** to improve appropriate and judicious use of antibiotics. This charter provides an initial framework for our strategic approach to this aim and establishes accountability for the ASP's activities and outcomes. |

| | |
|---|---|
| **ASP AIM** | Our ASP aims to achieve safe, effective, and efficient patient care, while reducing adverse effects of inappropriate antibiotic use—including resistant infections, *Clostridium difficile* infections, allergic reactions, and higher healthcare costs—and improving satisfaction of our key stakeholders. The program expects the following results:<br>1.<br>2.<br>3.<br>4. |

| | |
|---|---|
| **GUIDING PRINCIPLES AND STRATEGIES** | The ASP's strategic, guiding principles for achieving our aim include:<br>1. Promoting a culture of optimal antibiotic use through dedicated leadership and positive culture change<br>2. Ensuring timely and appropriate *initiation*, *administration,* and *de-escalation* of antibiotics<br>3. Monitoring data for ASP effectiveness in a culture of transparency, reporting, and open communication |

| | | |
|---|---|---|
| **ASP ACTIVITIES** | To achieve the ASP aim, the following specific actions, activities, or interventions will be implemented. Additional interventions may be implemented in time, as quantitative and qualitative data support such changes. | **IMPLEMENTATION TARGET DATE** |
| | 1. | |
| | 2. | |
| | 3. | |

| ASP TEAM MEMBERS | NAME | KEY RESPONSIBILITIES | DEDICATED ASP HOURS PER WEEK |
|---|---|---|---|
| **ASP Lead** | | | |
| **Nurse Leader** | | | |
| **Prescriber** | | | |
| | | | |
| | | | |
| | | | |

| OVERSIGHT COMMITTEE | REPORTING FREQUENCY | ASP EXECUTIVE SPONSOR |
|---|---|---|
| | | |

| ASP Interventions | DESCRIPTION | TARGET DATE |
|---|---|---|
| | | |
| | | |
| | | |

| COMMUNICATION PLAN | FREQUENCY | RESPONSIBLE LEAD/TEAM MEMBER | TOPIC |
|---|---|---|---|
| ASP Team Meetings | | | Operations and daily management issues |
| Oversight Committee | | | Approvals, progress on goals |
| | | | |
| | | | |

| METRICS/MEASURES | FREQUENCY | GOALS |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| APPROVAL | NAME | TITLE/ROLE/FUNCTION | DATE | SIGNATURE |
|---|---|---|---|---|
| **Author** | | | | |
| **Approved** | | Facility Executive | | |

# Creating a Timeline: COMMITMENT

After having determined what you seek to do and accomplish, the next step is to set realistic goals and commit to a timeline for specific events or milestones in order to establish expectations for actions and evaluate progress. The following sample "Implementation Timeline" can be used to communicate the expectations and status of a project. The Implementation Timeline demonstrates how to plan implementation for one selected intervention for your ASP by outlining the steps, actions, events, or activities required to implement the intervention, and graph the timeline required for each step. Don't get too far into the weeds; try to keep the number of steps to 10 or fewer. The worksheet also allows you to assign human resources to each step of implementation and to record the goals and tangible deliverables associated with the selected intervention.

Remember this is a planning tool. Consider the sequence of each step for the timeline. Does one step depend on completion of another step? Can more than one step occur simultaneously? Are the human resource needs well-balanced across the team, or if steps depend on just a few people, is the timeline and sequence of events appropriate with regard to workload and available resources?

Take a look at the **Implementation Timeline template** on the following page. After reviewing the example in the last chapter (page 16), you can use a new, blank Implementation Timeline available on the EQuIP for Ambulatory Care website to develop a plan for implementing your first stewardship intervention.

## Implementation Timeline Template

| Stewardship Implemetation Timeline | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intervention: | | | | | | | | CDC Core Element(s) Addressed | | | | | | | | | | | | | | | | | | Report to: | | | | | |
| | | | | | | | | 1) | | | | | | | | | | | | | | | | | | Target Implementation Date: | | | | | |
| | | | | | | | | 2) | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 3) | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 4) | | | | | | | | | | | | | | | | | | | | | | | |
| | Weeks | | | | | | | | | | | | | | | | | | | | | | | | | Accountable Personnel (A, B, C, etc.) | | | | |
| **Major Tasks** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** | | | | | |
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| MM/DD/YY | | | | | | | | | | | | | | | | | | | | | | | | | | | Names of Accountable Personnel | | | | |
| Track (metrics to measure effectiveness) | | | | | Baseline | | | Year 1 Goal | | | Deliver tangible products of implementation | | | | | | | | | | | | | | | A= | | | | |
| 1) | | | | | | | | | | | 1) | | | | | | | | | | | | | | | B= | | | | |
| 2) | | | | | | | | | | | 2) | | | | | | | | | | | | | | | C= | | | | |
| 3) | | | | | | | | | | | 3) | | | | | | | | | | | | | | | D= | | | | |
| Notes: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# Antimicrobial Stewardship Program Example

The following is a concrete example of how a clinic with fairly low resources might approach beginning an ASP. The example clinic is an independent Family Practice with 8 providers who care for families and patients of all ages. They currently use an electronic health record (EHR) but the clinic has limited informatics capacity. Due to inability to query the EHR, the clinic assigned to a medical assistant responsibility to review medical charts from the prior month in order to obtain select information for the current state assessment.

| Facility Profile | |
|---|---|
| **Last Calendar Year or Last 12 months** | **Write in** |
| Number of office visits | ~34,000 |
| Average number daily office visits/provider | ~25 |
| Number of unique prescribers | 8 |
| What are the three most common infectious syndromes treated in your clinic? | Bronchitis |
| | Sinusitis |
| | URI |
| Name 3 clinical practice guidelines for infectious syndromes that are *regularly* followed in your facility? | IDSA Sinusitis |
| | IDSA Community Acquired Pneumonia |
| | N/A |
| Of the guidelines listed above, for which is clinician adherence to the guideline monitored in your facility? | None |
| What proportion of office visits result in an antibiotic prescription? | ~40% |
| What proportion of acute bronchitis cases in persons (without COPD) are treated with an antibiotic? | 70% |
| What are the three most common antibiotics prescribed for acute bronchitis (in persons without COPD)? | Azithromycin |
| | Azithromycin + cefuroxime |
| | Levofloxacin |
| What proportion of acute sinusitis cases are treated with antibiotics? | 70% |
| What are the three most common antibiotics prescribed for acute sinusitis? | Amoxicillin-clav |
| | Azithromycin |
| | Doxycycline |
| What proportion of acute URI cases are treated with an antibiotic? | 25% |
| What are the three most common antibiotics prescribed for acute URI? | Azithromycin |
| | Amoxicillin-clav |
| | Cephalexin |
| Does your clinic require indication and duration for each antibiotic prescription? | No |

| Core Elements of Outpatient Antibiotic Stewardship<br>FACILITIES | | |
|---|---|---|
| **COMMITMENT** | | |
| 1. Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics? | ❑ YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Identify a single leader to direct antibiotic stewardship activities within the facility<br>❑ Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria<br>❑ Communicate with all clinic staff members to assist in educating patients regarding antibiotics |
| **ACTION** | | |
| 2. Has your facility implemented at least one policy or practice to improve antibiotic prescribing? | ❑ YES<br>❑NO | If yes, indicate which interventions are in place. (Select all that apply.)<br>❑ Require explicit written justification in the medical record for antibiotic prescribing that deviates from guideline.<br>❑ Provide support for clinical decisions (e.g., electronic clinical decision support in order entry, written clinical practice guidelines)<br>❑ Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits<br>❑ Routinely assess symptoms associated with antibiotic allergy to determine if allergy claim is credible |
| **TRACKING AND REPORTING** | | |
| 3. Does your facility monitor at least one aspect of antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which are being tracked. (Select all that apply.)<br>❑ Track and report antibiotic prescribing for one or more high-priority condition or antibiotic<br>❑ Track and report the percentage of all visits leading to antibiotic prescriptions<br>❑ Track and report complications of antibiotic use and antibiotic resistance trends among common outpatient bacterial pathogens<br>❑ Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers |
| **EDUCATION AND EXPERTISE** | | |
| 4. Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing? | X YES<br>❑ NO | If yes, indicate how your facility provides antibiotic stewardship education. (Select all that apply.)<br>❑ Provide face-to-face educational training for prescribers (educational detailing)<br>X Provide continuing education activities for clinicians<br>❑ Ensure timely access to persons with prescribing expertise<br>❑ Encourage use of (and provide access to) treatment guidelines for common conditions<br>❑ Provide communications skills training for clinicians. |

| Core Elements of Outpatient Antibiotic Stewardship<br>CLINICIANS | | |
|---|---|---|
| **COMMITMENT** | | |
| 1. Can you demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics? | ❑ YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Write and display public commitment in support of antibiotic stewardship<br>❑ Completed stewardship continuing education in prior 12 months |
| **ACTION** | | |
| 2. Have you implemented at least one practice to improve antibiotic prescribing? | X YES<br>❑ NO | If yes, indicate which are in place. (Select all that apply.)<br>❑ Use evidence-based diagnostic criteria and treatment recommendations<br>X Use delayed prescribing practices or watchful waiting, when appropriate |
| **TRACKING AND REPORTING** | | |
| 3. Do you monitor at least one aspect of antibiotic prescribing? | ❑ YES<br>❑ NO | If yes, indicate which are being tracked. (Select all that apply.)<br>❑ Self-evaluate antibiotic prescribing practices<br>❑ Participate in continuing medical education and quality improvement activities to track and improve antibiotic prescribing<br>❑ Compare your antibiotic prescribing to your peers' |
| **EDUCATION AND EXPERTISE** | | |
| 4. Do you provide education to patients on appropriate antibiotic use? | ❑ YES<br>❑ NO | If yes, indicate which activities are in place. (Select all that apply.)<br>❑ Use effective communications strategies to educate patients about when antibiotics are and are not needed<br>❑ Educate about the potential harms of antibiotic treatment<br>❑ Provide patient education materials<br>❑ Received stewardship education in the past 12 months. |

The assessment is used to identify potential targets for stewardship. The responses in red on the current state assessment above indicate some opportunities to improve antibiotic use by establishing an ASP. Key findings are:

- The proportion of bronchitis, sinusitis, and URI cases treated with antibiotics is much higher than is optimal.(16-17) Current guidance suggests that only about 5% of acute sinusitis is due to bacterial causes (17), and acute uncomplicated bronchitis should not be treated with antibiotics except in persons with chronic obstructive pulmonary disease, pertussis, or pneumonia.(16) URIs are due to viral infections and should not be treated with antibiotics.(16)
- The facility checklist shows that the clinic
    - Currently lacks leadership and accountability for stewardship
    - Has no actions in place to improve prescribing
    - Does not monitor any antibiotic prescribing
    - Has no requirement for specific education on stewardship.
- The clinician checklist shows that the clinician:
    - Has not demonstrated dedication and accountability for optimizing antibiotic prescribing
    - Does not monitor antibiotic prescribing
    - Does not provide education to patients about antibiotics.

These findings suggest that the clinic may achieve improved antibiotic prescribing by implementing some or all of the following activities

- Work through the steps in the workbook to build a stewardship team and select stewardship activities.
- Develop a stewardship charter and strategic plan and educate all prescribers and staff about the clinic's new focus on stewardship.
- Post a Leadership Commitment to Stewardship (Powerpoint Template) poster in the waiting room. This poster is available on the EQuIP for Long Term Care website and can be edited to display the clinic photo and logo.
- Implement one clinic-specific clinical practice guideline based on the patient population and local antibiogram—see Washington State Department of Health's clinical practice guidelines, or adapt them for the clinic's specific characteristics. For this clinic example, bronchitis may be an ideal condition to focus on because it is the most commonly

encountered infectious syndrome, and the proportion of bronchitis cases treated with antibiotics is higher than guidelines suggests is appropriate

- Track and report use of antibiotics for that particular condition.
    - Performing a systematic review of all charts of patients diagnosed with bronchitis; consider using this audit worksheet for acute bronchitis.
    - Documenting the proportion of bronchitis diagnoses for each provider that resulted in a prescription for an antibiotic.
    - If resources permit, considering performance of a more in-depth chart review. For a condition such as sinusitis for which antibiotics are sometimes indicated, evaluate whether key findings for a diagnosis of bacterial sinusitis are documented and if the antibiotic prescribed is the appropriate first-line therapy.(17)
    - Tracking the findings over time and reporting back to the team of clinicians. Some clinics provide these metrics naming the prescribers or using a code so that each provider knows how their prescribing practices compared to their peers'.
- Post a clinician commitment to stewardship poster in exam rooms. This version can be edited to include a provider's photograph and clinic logo.
- Require education for clinicians on stewardship. The Washington State Department of Health has developed an online e-learning module on Antimicrobial Stewardship in Ambulatory Settings. Free stewardship continuing medical education resources are also available from CDC.
- Require education for nurses and other staff on stewardship. CDC has an Antibiotics Quiz and other resources on What Everyone Should Know about antibiotics.
- Practicing prescriber-patient communication skills regarding antibiotics with this interactive activity.
- Offer educational materials for patients on appropriate use of antibiotics, for example from Choosing Wisely or from CDC, at check-in, in the waiting room, and in the exam rooms.
- Play videos and podcasts on antibiotic resistance and appropriate use of antibiotics in the waiting room.

The Antimicrobial Stewardship Program (ASP) Charter and Strategic Plan example that follows demonstrates how this example clinic might describe their strategic plan.

| Antibiotic Stewardship Program (ASP) Charter and Strategic Plan | |
|---|---|
| **FACILITY NAME** | **Independent Family Practice Clinic** |

| | | | |
|---|---|---|---|
| **PROGRAM START DATE** | **1/1/2018** | **PROPOSED DATE FOR PROGRAM EVALUATION AND CHARTER UPDATE** | **1/1/2019** |
| **BACKGROUND AND PURPOSE** | Unnecessary and inappropriate antibiotic use is harmful to patients and populations by contributing to antibiotic resistance, allergic reactions, *Clostridium difficile* infections and avoidable medical care. Increasing antibiotic resistance combined with the lack of new antibiotic agents in the drug development pipeline threaten our ability to practice modern medicine. Antibiotic stewardship—a set of commitments and activities to optimize antibiotic use—is necessary in order to achieve best outcomes for patients, and prolong the usefulness of these lifesaving medications.<br><br>Therefore**, our facility commits to implementing a stewardship program** to improve appropriate and judicious use of antibiotics. This charter provides an initial framework for our strategic approach to this aim and establishes accountability for the ASP's activities and outcomes. | | |

| | |
|---|---|
| **ASP AIM** | Our ASP aims to achieve safe, effective, and efficient patient care, while reducing adverse effects of inappropriate antibiotic use—including resistant infections, *Clostridium difficile* infections, allergic reactions, and higher healthcare costs—and improving satisfaction of our key stakeholders. The program expects the following results:<br>1. Reduce antibiotic prescribing for acute bronchitis by 50% (from 70% to 35%).<br>2. Educate clinicians and staff about antibiotic stewardship.<br>3. Raise patient awareness of antibiotic-associated harms and importance of avoiding antibiotics for viral infections.<br>4. Improve communication skills of providers when discussing antibiotics with patients. |

| | |
|---|---|
| **GUIDING PRINCIPLES AND STRATEGIES** | The ASP's strategic, guiding principles for achieving our aim include:<br>1. Promoting a culture of optimal antibiotic use through dedicated leadership and positive culture change<br>2. Ensuring timely and appropriate *initiation*, *administration,* and *de-escalation* of antibiotics<br>3. Monitoring data for ASP effectiveness in a culture of transparency, reporting, and open communication |

| | | |
|---|---|---|
| **ASP ACTIVITIES** | To achieve the ASP aim, the following specific actions, activities, or interventions will be implemented. Additional interventions may be implemented, in time, as quantitative and qualitative data support such changes. | **IMPLEMENTATION TARGET DATE** |
| | 1. Require clinician and staff stewardship education and communication skills practice. | 2/1/2018 |
| | 2. Develop clinic-specific clinical practice guideline for acute bronchitis and request clinic-wide adherence to the guideline. | 3/1/2018 |
| | 3. Provide consistent reinforcing messaging and education to patients about stewardship, appropriate use of antibiotics, and antibiotic associated harms by using the leadership and clinician commitment posters, and educational brochures, poster, and videos. | 4/1/2018 |

| ASP TEAM MEMBERS | NAME | KEY RESPONSIBILITIES | DEDICATED ASP HOURS PER WEEK |
|---|---|---|---|
| **ASP Lead** | Medical Director | Set expectations for the ASP.<br>Encourage participation by all support staff and clinicians. | 2 |
| **Nurse Leader** | Nurse Manager | Educate support staff.<br>Solicit input from support staff.<br>Direct chart review and tracking and reporting findings. | 2 |
| **Prescriber** | Staff Clinician | Solicit input from clinicians.<br>Identify barriers & strategize solutions. | 1 |

| OVERSIGHT COMMITTEE | REPORTING FREQUENCY | ASP EXECUTIVE SPONSOR |
|---|---|---|
| **Same as above** | **Monthly** | **Medical Director** |

| ASP Interventions | DESCRIPTION | TARGET DATE |
|---|---|---|
| Clinician Stewardship Education | All clinicians complete 1 hour of stewardship CME at the establishment of the ASP and annually. | 2/1/18 |
| Clinician Communication Skills Training | All clinicians complete the CDC training modules on communication skills. | 2/1/18 |
| Bronchitis Clinical Practice Guideline | Review Washington clinical practice guideline for bronchitis and adapt, if necessary, for clinic. Formally adopt guideline for use in the clinic. | 3/1/18 |
| Chart Review of Bronchitis Diagnoses and Treatment | Review bronchitis diagnoses on 1 day per month during the planning phase of the ASP to establish baseline, and then monthly.<br>Track findings and report back to team, comparing clinicians. | 2/1/18 and monthly |
| Patient Education Materials | Select and disseminate patient education materials in the clinic. | 2/1/18 |
| Commitment Posters | Post leadership commitment poster in the waiting room and provider commitment posters in each exam room. | 2/1/18 |

| COMMUNICATION PLAN | FREQUENCY | RESPONSIBLE LEAD/TEAM MEMBER | TOPIC |
|---|---|---|---|
| ASP Team Meetings | Monthly | Medical Director | Operations and daily management issues |
| Oversight Committee | Quarterly | Medical Director | Approvals, progress on goals |

| METRICS/MEASURES | FREQUENCY | GOALS |
|---|---|---|
| Proportion of bronchitis diagnoses treated with antibiotics | Monthly | Reduction by 50% from baseline |
| | | |

| APPROVAL | NAME | TITLE/ROLE/FUNCTION | DATE | SIGNATURE |
|---|---|---|---|---|
| **Author** | Jude Ishus, RN | Nurse Manager | 12/1/2017 | |
| **Approved** | Ann T. Biotics, MD | Medical Director | 12/1/2017 | |

The following Stewardship Implementation Timeline shows how this clinic maps out their activities and assigns responsibility.

**Stewardship Implemetation Timeline**

| | | |
|---|---|---|
| Intervention: Deploy clinic-specific bronchitis clinical practice guideline and monitor change in provider antibiotic prescribing for bronchitis. | CDC Core Element(s) Addressed<br>1) Commitment<br>2)Action<br>3)Tracking and Reporting<br>4) Education | Report to: Medical Director, Dr. Ann T. Biotics<br>Target Implementation Date: March 26, 2018 |

| Major Tasks | Weeks 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | Accountable Personnel (A, B, C, etc.) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stewardship education for all staff and prescribers | | | | | | | | | | | | | | | | | | | | | | | | | | | A | B | C | | |
| Stewardship education for patients | | | | | | | | | | | | | | | | | | | | | | | | | | | A | B | C | | |
| Develop bronchitis guideline | | | | | | | | | | | | | | | | | | | | | | | | | | | A | B | C | | |
| Educate prescribers on guideline | | | | | | | | | | | | | | | | | | | | | | | | | | | A | C | | | |
| Official launch of guideline | | | | | | | | | | | | | | | | | | | | | | | | | | | A | C | | | |
| Monthly chart review for bronchitis antibiotic prescribing | | | | | | | | | | | | | | | | | | | | | | | | | | | D | | | | |
| Monthly feedback to prescriber | | | | | | | | | | | | | | | | | | | | | | | | | | | A | | | | |
| ID high and low outliers | | | | | | | | | | | | | | | | | | | | | | | | | | | A | | | | |
| Assess and adjust intervention | | | | | | | | | | | | | | | | | | | | | | | | | | | A | B | C | | |
| MM/DD/YY | 1/1/2018 | 1/8/2018 | 1/15/2018 | 1/22/2018 | 1/29/2018 | 2/5/2018 | 2/12/2018 | 2/19/2018 | 2/26/2018 | 3/5/2018 | 3/12/2018 | 3/19/2018 | 3/26/2018 | 4/2/2018 | 4/9/2018 | 4/16/2018 | 4/23/2018 | 4/30/2018 | 5/7/2018 | 5/14/2018 | 5/21/2018 | 5/28/2018 | 6/4/2018 | 6/11/2018 | 6/18/2018 | 6/25/2018 | Names of Accountable Personnel | | | | |

| Track (metrics to measure effectiveness) | Baseline | Year 1 Goal | Deliver tangible products of implementation | A=Ann T. Biotics, Medical Director |
|---|---|---|---|---|
| 1)Adherence to bronchitis guieline | ? | 100% | 1)Number of staff and prescribers who complete education. | B=Jude Ishus, Nurse Manager |
| 2)Proportion of bronchitis cases prescribed antib | 70% | 35% | 2)Months that chart review is completed. | C=Noah Meds, Clinician |
| 3) | | | 3)Number of antibioitc prescribing reports to clnicians. | D=Otis Media, Medical Assistant |

Notes: Clinic will access free CME on CDC website for education, deploy patient education materials from Choosing Wisely and CDC, and adapt Washington State Department of Health clinical practice guideline for bronchitis. Monthly chart review will be manual and include all bronchitis diagnoses on one day per prescriber per each 4 week period. Prescribing report will be deidentified metrics for each prescriber. High and low outliers will be approached privately to discuss management practices for learning opportunities.

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