ANTIBIOTIC STEWARDSHIP IN OUTPATIENT SETTINGS TOOLKIT

MEDICARE BENEFICIARY QUALITY IMPROVEMENT PROJECT

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MEMO

TO:	Montana Critical Access Hospital CEOs and Quality Leaders
FROM:	Jamie Schultz, Rural Hospital Improvement Coordinator
	Jennifer Wagner, Flex Project Specialist
	Jack King, Director, Montana Rural Hospital Flex Program
RE:	New MBQIP Toolkits

The Medicare Beneficiary Quality Improvement Project (MBQIP) is a quality improvement activity under the Medicare Rural Hospital Flexibility (Flex) grant program. The goal of MBQIP is to improve the quality of care provided in small, rural Critical Access Hospitals (CAHs). A core service of the Flex Grant and Performance Improvement Network is to provide education and tools on a variety of topics associated with MBQIP measures. The MT Flex Grant has partnered with our national quality improvement leader, Cynosure Health, to develop these resources to further your improvement on measures collected under the Medicare Beneficiary Quality Improvement Program (MBQIP).

Each toolkit provides background about the set of measures, resources, and ideas on how to drive improvement, ideas on how to address barriers and challenges to improvement and reference materials. We encourage you to review the materials with your quality leaders and determine how they can support your quality improvement work.

Please contact the MT Flex Team with any questions or needs for assistance:

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Disclaimer:

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ANTIBIOTIC STEWARDSHIP IN OUTPATIENT SETTINGS TOOLKIT

BACKGROUND

Outpatient antibiotic stewardship (ABS) strategies consist of efforts to promote appropriate prescribing of antibiotics for non-hospitalized patients being seen and evaluated in office and clinic-based practices as well as urgent care and emergency department settings. Dental practices and dialysis centers are additional settings where antibiotic stewardship is indicated. The goal of ABS is to improve appropriate antibiotic prescribing practices to be consistent with evidence-based guidelines, improve clinical outcomes and minimize the emergence and transmission of antibiotic-resistant bacteria in the community.

The time for outpatient antibiotic stewardship is past due. It is estimated that more than 50% of people in the United States are prescribed an antibiotic every year, yet the antibiotics are considered appropriate in only one third of recipients. Approximately 60% of antibiotic expenditures in the United States are related to care received in outpatient settings. In 2013, approximately 269 million antibiotic prescriptions were dispensed from outpatient pharmacies in the US. Nearly 47 million unnecessary antibiotic prescriptions are written every year in US outpatient settings. Approximately 20% of pediatric visits and 10% of adult visits in outpatient settings result in an antibiotic prescription. These antibiotics can cause complications ranging from minor rashes or diarrhea to severe allergic reactions. These adverse drug events lead to approximately 143,000 annual emergency department visits and impact significantly to excess use of health care resources. Antibiotics are the most impactful risk factor for *Clostridioides difficile* infection. It is estimated that approximately 35% of adult and 70% of pediatric *C. difficile* infections are community associated. A study reported that a 10% reduction in overall outpatient antibiotic prescribing could reduce community-associated *C difficile* infections by 17%. Clearly, the reduction of unnecessary antibiotic prescribing in outpatient settings will prevent avoidable adverse events due to antibiotics.

Acute respiratory infections are the primary reason for which antibiotics are prescribed inappropriately in outpatient settings. Studies have shown that more than 50% of prescriptions for antibiotics for acute respiratory infections in both children and adults in primary care, urgent care, and emergency departments are unnecessary. In general, providers agree that antibiotics are not indicated for acute bronchitis, nonspecific upper respiratory infections, or viral pharyngitis as the etiology of these syndromes is most commonly a virus that will not respond to antibiotics. There are some other clinical conditions such as acute otitis media and sinusitis that *may* respond to antibiotics however it is not uncommon for these conditions to subside with only supportive care.

Antibiotic stewardship in the acute inpatient setting has proven to be effective in decreasing inappropriate antibiotic utilization over the past two decades and has been associated with decreasing antimicrobial resistance. Antibiotic stewardship in the outpatient setting is perceived as being more difficult to manage as there are more moving parts, less ‘structure’ (e.g. a front-end restriction or post-prescription review and feedback), and a patient population that differs in acuity, etiology, and clinical characteristics. Despite the fact that outpatients tend to be ‘less sick’ than inpatients, the volume of antibiotics used in the outpatient setting is much greater.

DRIVER DIAGRAM

A driver diagram visually depicts the causal relationship between your overall aim and the primary drivers, secondary drivers, and change ideas that "drive" the improvement. This driver diagram is provided to help you and your team identify potential change ideas to implement at your hospital as you work to improve care transition documentation.

AIM	Primary Driver	Secondary Driver	Change Idea
		Secondary Driver	Change Idea
	Primary Driver	Secondary Driver	Change Idea
		Secondary Driver	Change Idea

AIM: A CLEARLY ARTICULATED GOAL DESCRIBING THE DESIRED OUTCOME. IT SHOULD BE SPECIFIC (WHAT), MEASURABLE (HOW MUCH), AND TIME LIMITED (BY WHEN).

PRIMARY DRIVER: SYSTEM COMPONENT FOR FACTOR THAT DIRECTLY CONTRIBUTES TO ACHIEVING THE AIM.

SECONDARY DRIVER: PROCESSES, ACTIONS THAT ARE NECESSARY TO ACHIEVE THE PRIMARY DRIVER.

CHANGE IDEAS: SPECIFIC INTERVENTIONS, CHANGES THAT SUPPORT THE SECONDARY DRIVER.

DRIVERS IN ANTIBIOTIC STEWARDSHIP IN OUTPATIENT SETTINGS

AIM	PRIMARY DRIVER	SECONDARY DRIVER	CHANGE IDEA (DON'T FILL IN THIS SECTION)
Implement an antibiotic stewardship program in our outpatient setting by September 1, 2019.	Commitment	Demonstrate community-wide commitment to optimizing antibiotic prescribing and patient safety	CHANGE IDEAS See below
	Action for Policy and Practice	Implement policies and interventions to promote appropriate antibiotic prescribing practices in the community	CHANGE IDEAS See below
	Tracking and Reporting	Assess progress in improvement and	CHANGE IDEAS

		enhancement of antibiotic prescribing practices through audit and feedback.	See below
	Education and Expertise	Involve community providers, partners, patients, and families in antibiotic stewardship efforts	CHANGE IDEAS See below

DRIVERS IN ANTIBIOTIC STEWARDSHIP IN OUTPATIENT SETTINGS

Antibiotic Stewardship is defined as coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration (IDSA, 2018). Antibiotic overuse is associated with antibiotic resistance and diseases such as *Clostridioides difficile*, which is associated with many preventative deaths across the country each year (CDC, 2018). The four drivers for improvement in outpatient antibiotic stewardship are commitment, action for policy and practice, tracking and reporting, and education and expertise.

AIM: Set aims based upon obtainable metric (i.e. 'what can be improved', 'by how much' and 'by when'?).

PRIMARY DRIVER:	SECONDARY DRIVER:
Commitment	Demonstrate community-wide commitment to optimizing antibiotic prescribing and patient safety CHANGE IDEAS: • Create and transparently display commitment to community-based antibiotic stewardship in waiting and/or exam rooms • Create a 'physician/provider to patient' letter that explains the provider's commitment to prescribing antibiotics only when absolutely indicated • Post a sample letter in the waiting room or give to patient at the time of registration • Designate a leader to influence, engage and direct antibiotic stewardship in the community • Identify a community provider who is passionate about this work and will support the effort and drive improvement • Incorporate antibiotic stewardship-related duties in position descriptions and performance evaluations

	• Consider adding responsibility for this effort to nurses, medical assistants, allied health professionals, medical directors, and administrative/registration staff • Communicate with all clinic/ambulatory setting staff to establish patient/family expectations • Design a consistent 'message' to assure that all members of the team can improve antibiotic prescribing by using the same words while communicating with patients about the indications for antibiotics
PRIMARY DRIVER: Action for Policy and Practice	SECONDARY DRIVER: Implement policies and interventions to promote appropriate antibiotic prescribing practices in the community CHANGE IDEAS: • Use evidence-based diagnostic criteria and treatment recommendations from national (e.g. American Academy of Pediatrics; Infectious Disease Society of America) or local clinical practice guidelines informed by local pathogen susceptibilities • Use delayed prescribing practices or watchful waiting, when appropriate • Identify patients who have a condition that usually resolves without treatment or can benefit from antibiotics if the condition does not improve (e.g. acute uncomplicated sinusitis or mild acute otitis media) to test delayed prescribing practices • Give a patient or parent a postdated prescription and provide instructions to fill the prescription after a predetermined period of time; or instruct the patient to call or return to obtain a prescription if symptoms worsen or do not improve • Provide symptomatic relief with a clear plan for follow-up if infections worsen or do not improve • Practice messaging with providers so they can address patient/family concerns regarding prognosis, benefits, and potential harms of antibiotic treatment • Craft messaging to address management of self-limiting conditions and clinician concerns regarding managing patient/family expectations for antibiotics during a clinic/outpatient visit • Consider establishing criteria that must be documented in the medical record

	• In order to provide support for clinical decisions, design a hard-copy form/checklist or electronic medical record that makes the right thing the easy thing; facilitate accurate diagnoses and effective management where antibiotics for a healthy adult with acute bronchitis are discouraged • Use call centers, nurse hotlines, or pharmacist consultations such as triage systems to prevent unnecessary outpatient visits • Find a way to reduce unnecessary visits to an outpatient clinic such as treatment for a simple and uncomplicated common cold
PRIMARY DRIVER: Tracking and Reporting	SECONDARY DRIVER: Assess progress in improvement and enhancement of antibiotic prescribing practices through audit and feedback CHANGE IDEAS: • Track antibiotic prescribing at the individual clinician level and provide feedback to clinicians so they can compare themselves to their peers • Utilize tracking and reporting to identify high-priority conditions • Analyze this data to determine whether the selected antibiotic was the recommended agent and the correct dose and duration • Provide feedback on the percentage of acute bronchitis visits in which a clinician prescribed an antibiotic and include comparisons with their peers' prescribing practices for the same syndrome • Provide feedback on the percentage of visits for which a provider prescribes antibiotics (e.g. number of all antibiotics prescribed for all diagnoses by a clinician divided by the total number of visits for all diagnoses for than provider) • Track the percentage of all visits leading to antibiotic prescriptions • Collaborate with local hospital to determine if they investigate *C. difficile* infections to assess for possible links to previous ambulatory care visits that resulted in antibiotic prescriptions • Provide self-evaluation tool to providers so they can align their antibiotic prescribing practices with the most current evidence-based recommendations and clinical practice guidelines

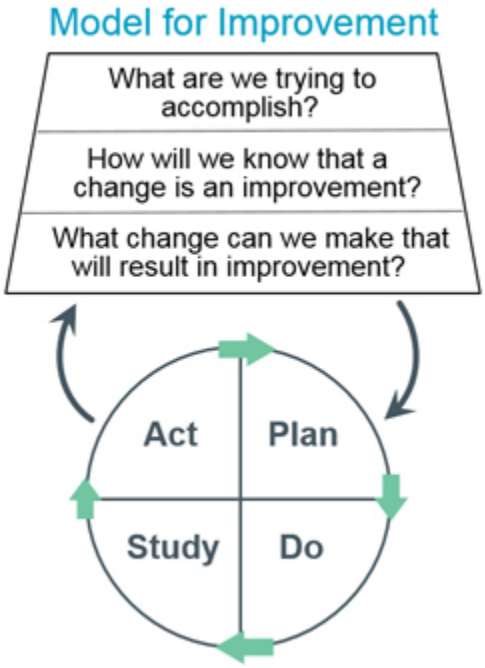
	• Promote continuing education and quality improvement training for all providers • Select one 'high-priority' condition that has been identified as an opportunity for improvement
PRIMARY DRIVER Education and Expertise	SECONDARY DRIVER: Involve community providers, partners, patients, and families in antibiotic stewardship efforts CHANGE IDEAS: • Test and tweak communication strategies to educate patients/families about when antibiotics are not necessary • Utilize the CDC Get Smart Rx pads to provide guidance on symptom management while avoiding utilization of antibiotics that are not clinically indicated • Develop a script or tool that educates patients about the potential harms of antibiotics • Design patient education materials that are age, language, and literacy appropriate • Consider the use of patient stories to make the message more relevant and memorable • Identify options for clinician education either face-to-face or virtual; consider utilizing clinical expert peers from hospital settings or local pharmacies • Offer access to training for pharmacy and clinician staff • Enroll pharmacists in programs offered by the Society of Infectious Disease Pharmacists found at https://www.sidp.org • Enroll physicians, pharmacists, infection preventionists or clinic nurses into programs offered by Making A Difference in Infectious Diseases (MAD-ID) found at http://mad-id.org/antimicrobial-stewardship-programs/

QUALITY IMPROVEMENT PRINCIPLES

All improvement requires change. Unfortunately, not all change results in improvement. System changes intended to improve quality must be tested and assessed to determine whether they produce successful outcomes. This process of identifying needed change, planning for and making change, and then testing

the outcomes of that change to evaluate effectiveness is fundamental to performance improvement in healthcare. Effective change requires an understanding not only of how one part of a system functions, but of how all the system parts are linked together and coordinated. For example, education and training for staff to enhance their knowledge and skills will only improve a system if the lack of such knowledge and skills was the major cause of deficient performance in that system. If the system has other unaddressed problems, such as lack of resources, inadequate staffing, or ineffective management or communication structures, even well-trained staff will not be able to accomplish their duties to the best of their abilities. Changes in one specific area may not lead to quality improvements if they do not significantly affect the overall quality of care the system provides.

The first step in the quality improvement process is the identification and prioritization of improvement needs, identification of an AIM statement, or improvement goal, followed by the identification of team members tasked with leading the improvement process. Key to success in team identification is the inclusion of team members involved with the system being analyzed, organizational leadership with the ability to provide resources and direction, as well as team members with expertise in quality improvement principles. Once the team is formed, the quality improvement process starts with a series of questions, followed by short, rapid cycle tests of change called the "PDSA Cycle", as demonstrated with the graphics below.

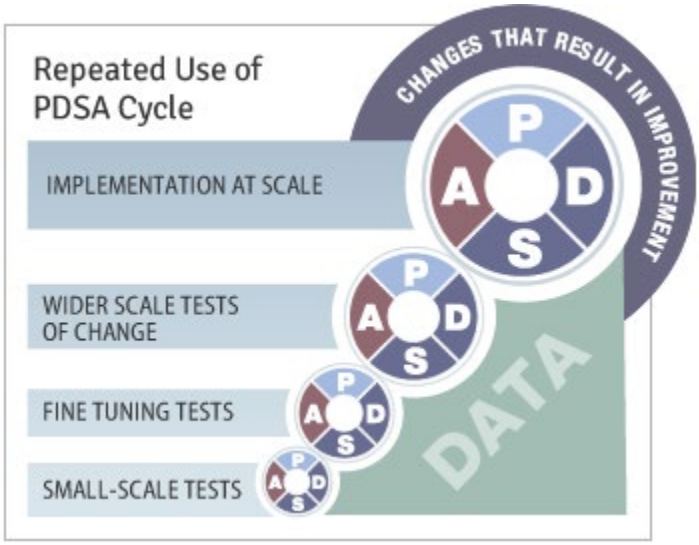


Source: The Institute for Improvement, *How to Improve*, retrieved at: http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx

It is important that the team tasked with leading improvement be willing to test multiple ideas on a small scale, while searching for the changes that result in improved care at the local level. In quality improvement models, these multiple small tests of change are referred to as the PDSA, or Plan Do Study Act cycle.

The PDSA cycle is an improvement tool which promotes improvement via the implementation of rapid-cycle tests among an increasingly larger population and a wider range of conditions. The “Plan” step in the cycle involves identifying and planning the change to be tested. The “Do” portion of the cycle is the actual act of carrying out the test on a small scale. The “Study” phase of the PDSA cycle involves rapid data collection that is done during testing through a “huddle” or “debrief” with the staff or patients involved in the newly designed process. Finally, the “Act” portion of the cycle occurs when the decision to Adapt, Abandon or Adopt is made, based on the analysis of rapidly collected information.

If revisions and changes are indicated, the process is revised or “adapted,” and a new testing cycle is instituted. If the trials have been unsuccessful, the change idea may be “abandoned.” The decision to “adopt” a new process occurs after it has been tested broadly under various circumstances and settings. PDSA cycles should be run among smaller groups (for example, one nurse, one physician, and during one shift to start) before gradually expanding to a larger population within the system or organization if the change is determined to be successful.



Source: Coaching and Leading https://coachingandleading.wordpress.com/presentation1/pdsa-and-types-of-change/

Quality improvement initiatives are best implemented by designated improvement teams composed of representatives from the relevant departments, units, or groups involved in the process or system to be addressed. Project management includes identification of team leadership and membership; creation of AIM statements; development of a Project Plan; selection of Tests of Change and tools for implementation, measurement, and analysis of change efforts; and communication with relevant stakeholders including senior management, medical staff, front-line staff, and patients and families about the progress and success of the improvement project. In the small hospital setting, large improvement groups may not be possible. In this setting a “hub and spoke” model for improvement work can be effective. Instead of convening large teams for every improvement initiative, one core quality and patient safety committee (the “hub”), led by a chairperson, initiates and oversees multiple improvement activities by designating a leader (or “spoke”) for each initiative. Individual project leaders can be selected based on topic expertise, enthusiasm, or proximity to the process being improved. Active project implementation can be conducted in ad hoc working sessions, with the leader attending quality and patient safety meetings only upon request, if the leader is not a standing

member of the quality and safety committee. This allows for improvement work to commence without interruption of duties for large groups of staff members.

BARRIERS AND CHALLENGES TO IMPROVEMENT

Partnering together to improve quality and safety is challenging work. In addition to what feels like a regular onslaught of new and competing priorities, getting on board with meaningful improvement requires a culture that supports the work, and eliminates barriers. A safety culture that supports this work requires an understanding of change management at all levels of the organization, because improvement requires change. One group that plays a significant role in the success or failure of an improvement initiative is middle managers. Without buy-in and effective leadership by middle managers to operationalize culture change, healthcare organizations will face many barriers to improvement. Few people relish the idea of changes to the comfortable status quo.

To exact positive change in the work that we do to keep patients and staff safe and improve outcomes, it takes small, incremental changes by all individuals in our organization that will build up to the large cultural shift that is needed for reliable improvement. Our frontline staff members are the eyes and ears of our organizations. Organizational leadership and middle managers can help to make this work safer and processes more reliable by listening to the frontline workforce when barriers and challenges are brought up and acting on the suggestions made. Organizational leadership input, encouragement and follow up can be the key to successful change.

A few keys to successful change management, and eventual cultural shifts includes the following:

- Create a sense of urgency: you are part of something big, we must make a difference now – reference not only what we know from research about the vast number of errors we are missing, but stories from actual events in your organization and your own department.
- Build a guiding coalition: organize opinion leaders and those in authority to help spread the message. Work with the willing before trying to engage those who are opposed to anything new. Let those who are enthusiastic about the new processes become the unit champions and help to spread the message.
- Form a strategic vision to help steer the change initiative: do you have a unit-specific strategic vision that is built by staff? Create that vision together at the outset.
- Enlist a volunteer army: Work with the willing. The others will come as they see enthusiasm grow.
- Enable action by removing barriers: what can you do to leverage work that is already being done? How can you help staff create time to make this a priority? Can you include a discussion about the new process in daily shift huddles and department meetings?
- Generate short term wins: Publicly celebrate the small, individual steps being made. Together they make a significant impact.
- Sustain acceleration: Keep the attention on the cultural shift by celebrating near misses that are caught and safety issues that are identified.

Institute change: Hardwire new processes by showing how the new way of doing things has made a positive impact. Use the power of storytelling.

REFERENCES

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RESOURCES

To assist you, we have identified a few of the key resources that you may find helpful:

Sanchez, G. V., Fleming-Dutra, K.E., Roberts, R. M., Hicks, L.A. *Core Elements of Outpatient Antibiotic Stewardship*. MMWR Recomm Rep 2016;65(No> RR-6):1-12

The Society for Healthcare Epidemiology of America (SHEA): www.shea-online.org

The Infectious Diseases Society of America (IDSA): https://www.idsociety.org

Alliance for the Prudent Use of Antibiotics: https://apua.org The Centers for Disease Control and Prevention: www.cdc.gov/getsmart/community/improving-prescribing/outpatient-stewardship.html

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