Stratis Health

- Independent, nonprofit, Minnesota-based organization founded in 1971
  - Lead collaboration and innovation in health care quality and safety, and serve as a trusted expert in facilitating improvement for people and communities
- Work at intersection of research, policy, and practice

Rural Quality Improvement Technical Assistance Center (RQITA)

- Cooperative agreement awarded to Stratis Health from Health Resources and Services Administration (HRSA) Federal Office of Rural Health Policy (FORHP)
- Improve quality and health outcomes in rural communities through technical assistance to beneficiaries of FORHP quality initiatives
  - Flex/Medicare Beneficiary Quality Improvement Project (MBQIP)
  - Small Health Care Provider Quality Improvement Grantees (SHCPQI)

Objectives

- Explain the importance of antibiotic stewardship for critical access hospitals (CAHs) and the related MBQIP measure
- Identify the core elements of antibiotic stewardship as defined by the National Health Care Safety Network (NHSN) Annual Facility Survey
- Analyze current Georgia and Kansas CAH performance in implementing antibiotic stewardship as captured through the 2019 NHSN Annual Facility Survey (submitted in 2020)
- Review suggested strategies for implementing and enhancing antibiotic stewardship programs shared by high performing critical access hospitals

Acronyms

- ASP – antibiotic stewardship program
- CAH – critical access hospital
- CDC – Centers for Disease Control & Prevention
- CMS – Centers for Medicare & Medicaid Services
- EHR – electronic health record
- MBQIP – Medicare Beneficiary Quality Improvement Project
- NHSN – National Healthcare Safety Network

Antibiotic Stewardship in MBQIP

Goals of MBQIP

- CAHs report common set of rural-relevant measures
- Measure and demonstrate improvement

Why Antibiotic Stewardship?

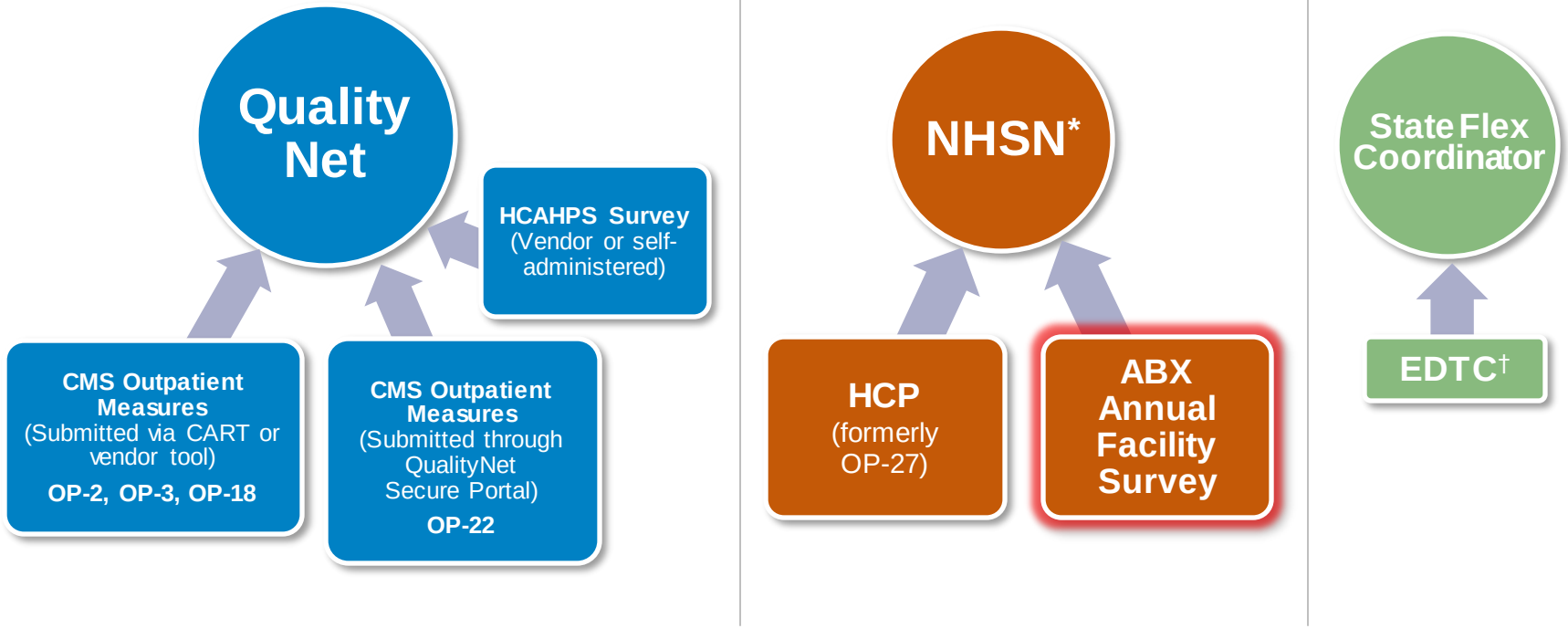
- Antibiotic use has well known unintended consequences (e.g. *Clostridioides difficile)*
- Inappropriate antibiotic use is contributing to a growing crisis of antibiotic resistance
- Antibiotic stewardship programs have been proven effective to mitigate these threats
  - Improve infection cure rates
  - Reduce *C. difficile infection rates*
  - Reduce adverse events from antibiotics
  - Reduce antibiotic resistance

Centers for Disease Control and Prevention, Implementation of Antibiotic Stewardship Core Elements at Small and Critical Access Hospitals - https://www.cdc.gov/antibiotic-use/healthcare/pdfs/core-elements-small-critical.pdf

Antibiotic Stewardship in MBQIP

- Patient Safety measure
- Implement seven core elements of antibiotic stewardship
- Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) Annual Facility Survey will be used for evaluation
- CAHs to fully implement an antibiotic stewardship program by August 31, 2022
  - Since then, CMS passed a final rule making antibiotic stewardship a condition of participation with implementation required by March 2020

Quality Data Reporting Channels for MBQIP Required Measures



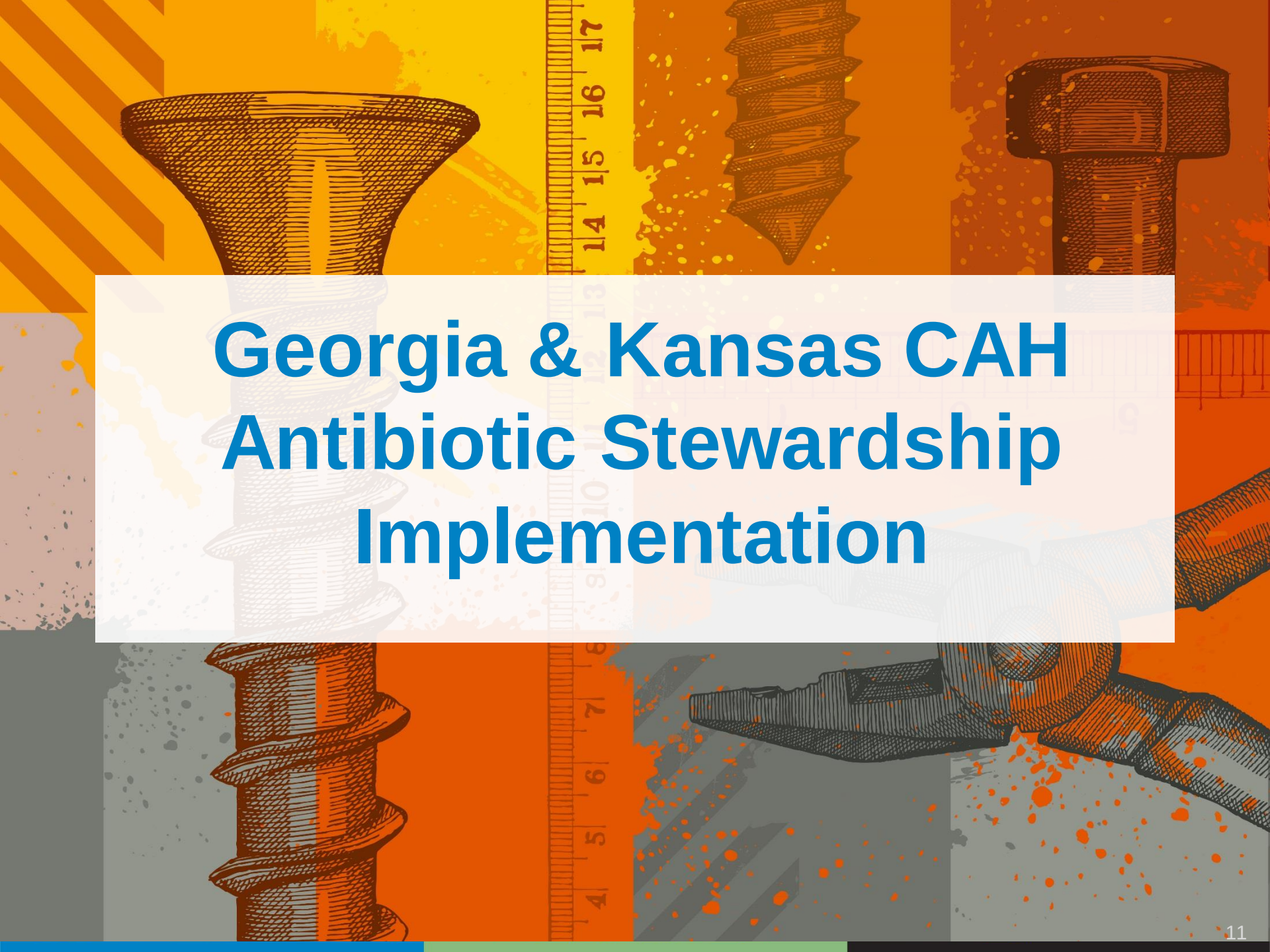
*National Healthcare Safety Network †Emergency Department Transfer Communication

NHSN Annual Facility Survey

- Facilities must be enrolled in NHSN

  https://www.cdc.gov/nhsn/enrollment/index.html
- Add Patient Safety Component

  https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/add-edit-psc-survey-508.pdf
- Complete annual facility survey by March 1 each year



Georgia & Kansas CAH Antibiotic Stewardship Implementation

Core Elements of Hospital Antibiotic Stewardship

- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education

Core Elements – 2019

Nationally: 1,074 of 1,338 CAHs (80%) completed the 2019 survey
Georgia: 27 of 30 CAHs (90%) completed the 2019 survey
Kansas: 82 of 82 CAHs (100% completed the 2019 survey

# of Core Elements Met	% CAHs Nationally	GA CAHs	% GA CAHs	KS CAHs	% KS CAHs
0	<1%	1	3%	0	0%
1	<1%	1	3%	0	0%
2	<1%	0	0%	2	2%
3	~1%	1	3%	4	5%
4	2%	0	0%	4	5%
5	4%	0	0%	7	9%
6	8%	2	7%	9	11%
7	64%	22	73%	56	68%
Survey not completed	20%	3	10%	0	0%

Leadership

Our facility has a formal statement of support for antibiotic stewardship (e.g., a written policy or statement approved by the board).	24 GA CAHs	71 KS CAHs
Facility leadership has demonstrated a commitment to antibiotic stewardship efforts by:		
○ Communicating to staff about stewardship activities, via email, newsletters, events, or other avenues	19 GA CAHs	61 KS CAHs
○ Providing opportunities for staff training and development on antibiotic stewardship	20 GA CAHs	55 KS CAHs
○ Allocating information technology resources to support antibiotic stewardship efforts	21 GA CAHs	41 KS CAHs
Our facility has a committee responsible for antibiotic stewardship.	24 GA CAHs	74 KS CAHs
If a physician and/or pharmacist are leading antibiotic stewardship activities, are antibiotic stewardship responsibilities in their contract or job description?	6 GA CAHs	13 KS CAHs

Accountability

Our facility has a leader (or co-leaders) responsible for antibiotic stewardship outcomes.

24 GA CAHs | 71 KS CAHs

Drug Expertise

Our facility has pharmacist lead or co-lead responsible for antibiotic stewardship

21 GA CAHs | 36 KS CAHs

Our facility has a physician or other lead responsible for antibiotic stewardship and at least one pharmacist is responsible for improving antibiotic use at the facility.

3 GA CAHs | 28 KS CAHs

Leadership, Accountability, & Drug Expertise

Core Element	State Level - Georgia	State Level - Kansas	Nationally
Leadership	25 out of 30 CAHs (83%)	81 out of 82 CAHs (99%)	1,056 out of 1,338 CAHs (79%)
Accountability	24 out of 30 CAHs (80%)	71 out of 82 CAHs (87%)	1,014 out of 1,338 CAHs (76%)
Drug Expertise	24 out of 30 CAHs (80%)	64 out of 82 CAHs (78%)	989 out of 1,338 CAHs (74%)

Action

Our facility has a policy or formal procedure for:

○ Required documentation of indication for antibiotic orders	20 GA CAHs	55 KS CAHs
○ Required documentation of duration for antibiotic orders	14 GA CAHs	47 KS CAHs
○ The treating team to review antibiotics 48-72 hours after initial order (i.e., antibiotic time-out)	17 GA CAHs	42 KS CAHs
○ The stewardship team to review courses of therapy for specific antibiotic agents and provide real-time feedback and recommendations to the treatment team (i.e., prospective audit and feedback)	12 GA CAHs	24 KS CAHs
○ Required authorization by the stewardship team before restricted antibiotics on the formulary can be dispensed (i.e., prior authorization)	4 GA CAHs	7 KS CAHs

Action Cont'd

Providers have access to facility- or region-specific treatment guidelines or recommendations for commonly encountered infections.

21 GA CAHs

76 KS CAHs

Our facility targets select diagnoses for active interventions to optimize antibiotic use (e.g., intervening on duration of therapy for patients with community-acquired pneumonia according to clinical response)

22 GA CAHs

43 KS CAHs

Core Element	State Level - Georgia	State Level - Kansas	Nationally
Action	26 out of 30 CAHs (87%)	80 out of 82 CAHs (98%)	1,055 out of 1,338 CAHs (79%)

Tracking

Our facility has a policy or formal procedure for required documentation of indication for antibiotic orders and our stewardship team monitors adherence to that policy or formal procedure.	16 GA CAHs	43 GA CAHs
Providers have access to facility- or region-specific treatment guidelines or recommendations for commonly encountered infections and our stewardship team monitors adherence to those guidelines or recommendations.	17 GA CAHs	51 GA CAHs
Our stewardship team monitors:	21 GA CAHs	57 GA CAHs
○ Antibiotic resistance patterns		
○ Antibiotic use in days of therapy (DOT) per 1000 patient days or days present, at least quarterly	14 GA CAHs	32 GA CAHs
○ Antibiotic use in defined daily doses (DDD) per 1000 patient days, at least quarterly	4 GA CAHs	6 GA CAHs
○ Antibiotic expenditures (i.e., purchasing costs), at least quarterly	11 GA CAHs	14 GA CAHs

Reporting

Our facility has a policy or formal procedure for the stewardship team to review courses of therapy for specific antibiotic agents and provide real-time feedback and recommendations to the treatment team (i.e., prospective audit and feedback)	12 GA CAHs	24 KS CAHs
If antibiotic use in DOT, DDD, or some other means of monitoring are selected, our stewardship team provides individual-, unit-, or service-specific reports on antibiotic use to prescribers, at least annually.	12 GA CAHs	38 KS CAHs
Our stewardship team provides the following updates or reports, at least annually:		
○ Updates to facility leadership on antibiotic use and stewardship efforts	23 GA CAHs	59 KS CAHs
○ Outcomes for antibiotic stewardship interventions to staff	17 GA CAHs	30 KS CAHs

Tracking & Reporting

Core Elements	State Level - Georgia	State Level - Kansas	Nationally
Tracking	25 out of 30 CAHs (83%)	78 out of 82 CAHs (95%)	1,024 out of 1,338 CAHs (77%)
Reporting	24 out of 30 CAHs (80%)	68 out of 82 CAHs (83%)	960 out of 1,338 CAHs (72%)

Education

Which of the following groups receive education on appropriate antibiotic use at least annually? (Check all that apply)

- Prescribers — 18 GA CAHs — 60 KS CAHs
- Nursing staff — 11 GA CAHs — 45 KS CAHs
- Pharmacists — 20 GA CAHs — 50 KS CAHs

Core Element	State Level - Georgia	State Level - Kansas	Nationally
Education	22 out of 30 CAHs (73%)	71 out of 82 CAHs (87%)	960 out of 1,338 CAHs (72%)

Suggested Strategies from High Performing CAHs

Focus Groups Methodology

- Stratified hospitals into two groups:
  - Independent
  - Part of a health system
- Identified high performers based on 2017 NHSN Annual Facility Survey Data
- Ensuring national geographic distribution, utilized a random sampling method to identify 30 independent CAHs and 30 CAHs that are part of health system to invite to participate

High Performing CAHs

- Implemented all 7 Core Elements as reported in the 2017 Annual Facility Survey
- Answered “Yes” to at least four of the five Action questions
- Answered “Yes” to all three Tracking questions

Focus Group Breakdown

- Four two-hour long focus groups
  - Two with independent CAHs
  - Two with CAHs that are part of a health system
- Sent questions in advance and encouraged inviting or getting insights from team members
- Sent follow-up questions to all participants

7 Core Elements

Leadership & Accountability

- Many focus group participants identified leadership as one of the easiest elements to meet
- Driving factors:
  - Joint Commission Standards
  - CMS Proposed Rule
  - Health system initiatives
- Roughly half of focus group participants indicated salary support for dedicated time for antibiotic stewardship leadership activities on the 2017 NHSN Annual Facility Survey (compared to 26% nationally)

Drug Expertise

- 29 out of 34 participating hospitals had pharmacists on site
- Society of Infectious Diseases Pharmacists (SIDP) certification
- Some identified hurdles with after hour coverage
  - Tele-pharmacy (video-phones, Zoom, etc.)
  - Remote verification through contract services
  - Limited formulary

Action

Facility-specific treatment recommendations

- Biggest barriers
  - Who will be involved in making the decision
  - Low volumes and limited resources
- Most focus group participants are using facility specific-antibiogram updated at least annually
  - Work with health system affiliates, nearby universities, other partners
- Use empiric guidelines
- Leverage EHR to drive behavior

Action
Prospective audit and feedback

- Biggest barriers
  - Determining who will conduct the audit; resources
  - Clinician buy-in
- Most focus group participants identified a pharmacist at the CAH or infectious disease physician at the health system as responsible for audits
- Determining what to share and when will depend on the culture of the team
  - Individualized data shared one-on-one
  - Aggregate data shared with the team
  - Physician-specific un-blinded data

Action

Prior authorization for specific antibiotic agents

- Biggest barriers
  - Lack of 24-hour pharmacy coverage
  - Clinician buy-in
- Most focus group participants have pharmacy on-site during the day and after hours coverage through contract or a health system affiliate site
- Limited formulary
- EHR workflows drive recommended treatment

Action

Documentation of indication for all antibiotics

- Biggest barriers
  - Lack of EHR functionality
  - Clinician buy-in
- Most focus group participants are leveraging the EHR to assist with this, in many cases making it a requirement for ordering
- Others using open notes and manual audits
- Some tie adherence to clinician performance reviews

Action
Antibiotic time out

- Biggest barriers
  - Lack of EHR functionality to support activity
  - Documentation
- Re: timing - most focus group participants noted that it usually takes more than 48 hours to get culture results
- Alternative or additional options for making it a standard part of workflow:
  - Pharmacy sends nursing a report daily of how long patients have been on antibiotics
  - Review appropriateness of antibiotics during daily rounds
  - Pharmacy manually generates a note on the chart reminding clinician to complete a time out

Tracking & Reporting

- Most focus group participants indicated they are sharing tracking data at medical staff meetings
- Many are using scorecards or dashboards to convey performance data
- Examples of additional metrics:
  - Days of therapy/1000 patients
  - Immune dosing
  - Frequency of use for specific antibiotics
  - Orders accepted/rejected during prior authorization process
  - IV to PO conversion
- Leverage knowledge from tracking (and EHR!) to drive workflow

Education

- Many focus group participants identified this as a major barrier – easy to tick the box, but difficult to make it meaningful and garner clinician buy-in
- Get it on the agenda! Medical staff and nursing meetings
- Learning management system
- Webinars, newsletters, orientation/on-boarding
- Identify physician and nursing champions

Resources

Key Resources

- Antibiotic Stewardship Strategies from High Performing Critical Access Hospitals

  https://www.ruralcenter.org/resource-library/antibiotic-stewardship-implementation-suggested-strategies-from-high-performing
- MBQIP Monthly CAH Antibiotic Stewardship Profiles (November and December 2019, February 2020)

  https://www.ruralcenter.org/tasc/mbqip/mbqip-monthly
- National Healthcare Safety Network Annual Survey Resources

  https://www.ruralcenter.org/resource-library/national-healthcare-safety-network-annual-survey-resources
- Implementation of Antibiotic Stewardship Core Elements at Small and Critical Access Hospitals

  https://www.cdc.gov/antibiotic-use/healthcare/implementation/core-elements-small-critical.html
- Jump Start Stewardship Toolkit: Implementing Antimicrobial Stewardship in a Small, Rural Hospital

  https://www.ruralcenter.org/resource-library/jump-start-stewardship-toolkit-implementing-antimicrobial-stewardship-in-a-small

Discussion

- What have been the biggest barriers to antibiotic stewardship in your hospitals?
- What strategies gathered from the focus groups will you take back with you?
- What are different strategies that have been successful at your hospital?

Questions?

Sarah Brinkman, Program Manager

952-853-8552 or 877-787-2847

sbrinkman@stratishealth.org

www.stratishealth.org

Stratis Health is a nonprofit organization that leads collaboration and innovation in health care quality and safety, and serves as a trusted expert in facilitating improvement for people and communities.

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling $625,000 with 0% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official view of, nor an endorsement, by HRSA, HHS or the U.S. Government. *(2/2021)*