# Antimicrobial Stewardship Projects for Critical Access Hospitals (CAHs)

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# Introduction & Tips for Getting Started:



This is a list of stewardship projects designed to inspire you or get you started. Each project is divided into smaller subprojects to work towards the larger goal. Always obtain proper approvals before making any changes to institution policies and procedures. Correlate any project suggestions with current best practices and clinical evidence. These project ideas are intended to give guidance, but do not replace clinical judgement.

Tips for Getting Started in Stewardship:

- Figure out what has been done or what is in progress before getting started on a new project.

- Small steps turn into big leaps. Start each project with a small SMART goal (instructions and definition here) and reassess at regular intervals throughout the project. Remember, knowledge and comfort levels will naturally increase over time.

- Get to know multiple people throughout the hospital and learn how this new stewardship program can help them to meet their goals! Building relationships is essential for a successful stewardship program.

- Pick only one project to start with.
    o Handshake stewardship implementation is suggested as a first project.

- Identify a stewardship champion to provide support for all projects.

- Celebrate all successes along the way

# Handshake Stewardship Implementation

## Background and Rationale

Handshake stewardship, or the delivery of antimicrobial stewardship recommendations in-person, has been shown to lead to significant decreases in antibiotic usage[1]. The in-person nature of handshake stewardship can also promote relationship-building between the stewardship program and the clinical care team, a key element to a successful stewardship program[2]. This stewardship intervention can be customized to fit the needs and resources of any institution.

## Prework

- ☐ Determine which policies are already in place (IV to PO, renal dose adjustment, pharmacokinetic analysis, and dosing consults).

- ☐ Network with other facilities through collaboratives such as the University of Washington's Centers for Stewardship in Medicine (UW-CSiM) to share ideas and to learn from other's experiences.

- ☐ Consider rounding with emergency or hospitalist services for a day or a few hours to build relationships and determine current workflows.

## Instructions:

- ☐ Determine a method of keeping track of which patients are currently on antibiotics.
  - o The facility EMR may have a report that can be printed. Consider creating a daily census report based upon an already-existing report.

- ☐ Find a way to keep track of interventions.
  - o Nebraska ASAP offers an intervention database template that can assist with tracking intervention types made on rounds, as well as acceptance rate (example image below)



- o The electronic medical record (EMR) may have specific intervention forms that can be filled out on specific orders. These interventions can sometimes be printed out on a customized report. Talk to the facility's IT resource.

☐ Select which metric(s) to track (see next page).

☐ Write a SMART goal (instructions and definition here).

- o Suggestions for how to focus efforts are below:
    - ▪ Focus on one intervention type (de-escalation, bug-drug matching, duration of therapy).
    - ▪ Focus on one disease syndrome (community-acquired pneumonia, urinary tract infections, or skin and soft tissue infections).
    - ▪ Focus on a certain # of patients, beginning with 2 or 3 at a time.

☐ Start reviewing patients and making recommendations as per the SMART goal.

☐ Present progress in all appropriate hospital committee settings.

☐ Review SMART goal at 6 months and increase frequency or scope of stewardship as per comfort level.

## Metrics:

☐ Pick 1 or more to track monthly or quarterly:

| Workload Measures | Process Measures |
|---|---|
| ☐ Rate of patients reviewed (Total number of patients reviewed/total census) <br><br> ☐ Time spent by the steward performing prospective and feedback activities | ☐ Number of recommendations made overall or by disease syndrome <br><br> ☐ Acceptance rate of recommendations (# recommendations accepted/total # of recommendations) |

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month / weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

- ☐ Emergency Medicine

- ☐ Pharmacy and Therapeutics

- ☐ Hospitalists

- ☐ Medical Staff

- ☐ Other _____

Other project notes (meetings, important project dates):

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# Oral Azithromycin for Mild/Moderate Community-Acquired Pneumonia (CAP)

## Background and Rationale:

Intravenous (IV) to oral (PO) antibiotic switches promote cost savings, decrease nursing workload, and lower the rate of line complications[3,4]. Data has shown that an early switch to oral antibiotics is as effective as continuous intravenous treatment in patients with moderate (CAP)[5,6]. Azithromycin, an antibiotic commonly used as part of a combination to treat CAP, is frequently listed in IV to PO conversion protocols due to good bioavailability. Integrating PO azithromycin orders into an order set is an easy and automated way to promote this best practice for those less critically ill community-acquired pneumonia patients who can take PO antibiotics.

## Prework:

☐ Track the rate at which PO azithromycin is currently being ordered over a period of time to determine the intervention baseline.

  o Monthly # of orders for PO azithromycin/monthly # of total orders for azithromycin, expressed as a percentage.

    ▪ These variables may be found in a report in your EMR or can be manually tracked during order verification & handshake stewardship processes. Consider utilizing this template from Nebraska ASAP to assist with this effort (example shown below).



[Insert Facility Logo]

| Types of Interventions | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Trend |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IV to PO | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | |
| Dose adjustment | 2 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 11 | |
| PK consultation | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 5 | |
| De-escalation | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 2 | 1 | 0 | 11 | |
| Discontinued therapy | 4 | 1 | 0 | 1 | 0 | 2 | 2 | 2 | 2 | 2 | 0 | 1 | 17 | |
| Resolve Bug Drug Mismatch | 1 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | |
| ASP education | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Number of Patients Reviewed | 11 | 5 | 2 | 1 | 1 | 5 | 4 | 5 | 5 | 5 | 1 | 1 | 48 | |
| Number of Intervention | 14 | 8 | 1 | 3 | 1 | 7 | 4 | 5 | 6 | 6 | 1 | 1 | 60 | |
| Interventions Accepted | 9 | 5 | 1 | 2 | 0 | 4 | 2 | 2 | 2 | 1 | 1 | 0 | 33 | |
| Intervention Acceptance Rate | 64% | 62% | 50% | 67% | 0% | 57% | 50% | 40% | 33% | 50% | 100% | 0% | 55% | |

  o Example: In the month of February, only 5/24 total orders (21%) of all azithromycin orders placed on emergency department (ED) patients with the diagnosis of community-acquired pneumonia were PO orders.

☐ Map the process for hanging an IV. Quantify the time that each step takes.

☐ Get a list of the most used order sets in the facility.

  o This may be available via a report in the EMR. If no report is available, ask the providers in the facility which sets they use.

# Instructions:

☐ Select a measure to track (see next page).

☐ Write a SMART goal (instructions and definition here).

☐ Obtain proper approvals and buy-in.

☐ Update applicable policies.

☐ Work with the facility's IT resource to either create a brand-new PO azithromycin order set/sentence or embed sentences for PO azithromycin into a commonly used respiratory illness order set.

☐ Educate the primary prescriber group utilizing this set about the new order set on a regular basis (at least quarterly)

☐ Ask them to add the order set to their "favorites," if this feature is available in the EMR.

☐ Present progress in all appropriate hospital committee meetings.

☐ Review SMART goal at regular intervals and adjust as appropriate.

# Metrics:

☐ Pick 1 or more to track monthly or quarterly:

| Workload Measures | Process Measures |
|---|---|
| ☐ Time saved for nursing staff<br><br>☐ # of times that a pharmacy technician had to run to the floor to deliver IV azithromycin that month | ☐ Change from baseline metric above.<br><br>☐ # of times that the new order set was used<br><br>☐ Cost savings (total purchasing cost of IV azithromycin over a select time period – total purchasing cost of PO azithromycin over same time period = cost savings) |

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month /  weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

☐ Emergency Medicine

☐ Pharmacy and Therapeutics

☐ Hospitalists

☐ Medical Staff

☐ Other _____

Other project notes (meetings, important project dates):

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# Promoting Guideline-Concordant Therapies (Part 1): Existing Order Sets

## Background & Rationale:

According to the Centers for Medicare and Medicaid Services (CMS), proper and consistent use of order sets can promote patient safety and quality of care[7]. They are also a resource-friendly way to assist facilities with promoting guideline-concordant antibiotic choices and durations of therapy[8]. Common disease syndromes that may benefit from an order set include sepsis, skin and skin structure infections, urinary tract infections, and community-acquired pneumonia.

## Prework:

☐ Select an infectious disease based on insights gained from prospective audit and feedback.

☐ Track the frequency of guideline-concordant antibiotic prescribing over a period of time to establish an intervention baseline.

    o Monthly # of times that guideline-concordant therapy was prescribed for a specific disease syndrome/Monthly total # of times that an antibiotic therapy is prescribed for a specific infectious disease, expressed as a percentage.

        ▪ These variables may be found in a report in the EMR or can be manually tracked during order verification & handshake stewardship processes. Consider utilizing this template from Nebraska ASAP to assist with this effort (see image of template below).



    o Example: In the month of March, only 25/100 total orders (25%) of all empiric antibiotic orders placed on Med/Surg patients with the diagnosis of community-acquired pneumonia were concordant with Infectious Diseases of America guideline recommendations

☐ Obtain a list of the most used order sets in the facility.

      ○ This may be available via a report in the EMR. If no report is available, ask the providers in the facility which sets they use.

☐ Learn which provider groups will be using this future order set.

☐ Look for order sets that providers are already using for the selected disease syndrome.

# Instructions:

☐ Select a measure to track (see next page).

☐ Write SMART goal (instructions and definition here).

☐ Obtain proper approvals and buy-in.

☐ Update applicable policies.

☐ Work with your IT resource to insert guideline-recommended antibiotic choices or durations for the selected disease syndrome into the selected order set.

☐ Educate applicable providers about the order set on a regular basis (at least quarterly)

      ○ Include an order set cheat sheet into new provider orientation to promote awareness for new hires.

☐ Ask them to add the order set to their "favorites," if this feature is available in the facility EMR.

☐ Present progress in all appropriate hospital committee meetings.

☐ Review SMART goal at regular intervals.

# Metrics:

☐ Pick 1 or more to track monthly or quarterly:

| Process Measures | |
|---|---|
| ☐ # of times that the new order set was used<br><br>☐ Pharmacy budget cost savings* | ☐ SEP-1 compliance rate before and after the intervention (if sepsis is selected)<br><br>☐ Change from baseline metric provided previously |

*Pharmacy budget cost savings can be calculated using purchasing reports from a vendor. Examples of potential budget savings include fewer orders being placed for an expensive antibiotic & fewer antibiotic orders for a specific class.

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month / weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

☐ Emergency Medicine

☐ Pharmacy and Therapeutics

☐ Hospitalists

☐ Medical Staff

☐ Other _____

Other project notes (meetings, important project dates):

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# Promoting Guideline-Concordant Therapies (Part 2) - Building an Order Set

## Background & Rationale:

According to the Centers for Medicare and Medicaid Services (CMS), proper and consistent use of order sets can promote patient safety and quality of care[7]. They are also a resource-friendly way to assist facilities with promoting guideline-concordant antibiotic choices and durations of therapy[8]. Common disease syndromes that may benefit from an order set include sepsis, skin and skin structure infections, urinary tract infections, and community-acquired pneumonia.

## Prework:

☐ Network with other facilities through collaboratives such as the University of Washington's Centers for Stewardship in Medicine (UW-CSiM) to share ideas and to learn from other's experiences.

☐ Network within the facility to determine who will use the order set and to determine current workflows for ordering.

☐ Select an infectious disease based on insights gained from prospective audit and feedback.

☐ Track the frequency of guideline-concordant antibiotic prescribing over a period of time to establish an intervention baseline.

   o Monthly # of times that guideline-concordant therapy was prescribed for a specific infectious disease /Monthly total # of times that any antibiotic therapy was prescribed for a specific infectious disease, expressed as a percentage.

      ▪ These variables may be found in a report in the EMR or can be manually tracked during order verification & handshake stewardship processes. Consider utilizing this template from Nebraska ASAP to assist with this effort.

   o Example: In the month of March, only 25/100 (25%) of all empiric antibiotic orders placed on Med/Surg patients with the diagnosis of community-acquired pneumonia were concordant with Infectious Diseases of America guideline recommendations

☐ Learn which provider groups will be using this future order set.

## Instructions:

☐ Decide the size and scope of the order set to be created based upon the multidisciplinary expertise available for this project.

   o If there is limited multidisciplinary expertise to dedicate to this project, consider making just a small antibiotic-only order set to start off with. Plan to revisit the set later to make it more comprehensive as resources allow.

☐ Select a measure to track (see next page).

☐ Write a SMART goal [(instructions and definition here)](.)

☐ Obtain proper approvals and buy-in.

☐ Update applicable policies.

☐ Work with the facility's IT resource to create the set; consider also embedding it into a relevant set that is already popular in the facility.

☐ Educate applicable providers about the order set on a regular basis (at least quarterly)

    o   Include an order set cheat sheet into new provider orientation to promote awareness for new hires.

☐ Ask providers to add the order set to their "favorites," if this feature is available in the facility EMR.

☐ Present progress in all appropriate hospital committee meetings.

☐ Review SMART goal at regular intervals and adjust as appropriate.

## Metrics:

☐ Pick 1 or more to track monthly or quarterly:

| Process Measures |
| --- |
| ☐ # of times that the new order set was used |
| ☐ Pharmacy budget cost savings* |
| ☐ Change from baseline metric above. |

*Pharmacy budget cost savings can be calculated using purchasing reports from a vendor. Examples of potential budget savings include fewer orders being placed for an expensive antibiotic & fewer antibiotic orders for a specific class post-intervention.

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month / weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

☐ Emergency Medicine

☐ Pharmacy and Therapeutics

☐ Hospitalists

☐ Medical Staff

☐ Other _____

Other project notes (meetings, important project dates):

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# Reduce Unneeded Urinalysis (UA) Testing

## Background and Rationale:

Asymptomatic bacteriuria is a significant driver of unnecessary antibiotic prescribing in the acute care setting. This is driven by many factors, including the practice of obtaining urine testing when not clinically indicated[9]. Removing an unnecessary UA order from a commonly used order set (i.e., non-urological preoperative order sets) has been shown to reduce urinalysis testing and antibiotic usage for asymptomatic bacteriuria[10].

## Prework:

☐ Consider joining the intensive quality improvement cohort (IQIC) hosted by the University of Washington's Centers for Stewardship in Medicine (UW-CSiM) for access to expert guidance and mentoring for this project.

☐ Map the current urinalysis ordering process. This process begins with a provider placing the order before the specimen is collected by the nurse and finally processed in the microbiology lab. Quantify the time it takes for each step to be completed.

☐ Select a metric to create a baseline over a specific period of time and to track as the initiative continues (see next page)

☐ Obtain a list of the most used order sets in the facility and examine them for unnecessary urinalysis orders.

    o   This may be available via a report in the EMR. If no report is available, ask the providers which sets they use.

## Instructions:

☐ Write a SMART goal (instructions and definition here).

☐ Obtain proper approvals and buy-in.

☐ Update applicable policies.

☐ Work with your IT resource to remove or uncheck the urinalysis order.

☐ Educate applicable providers about the change on recurring basis.

☐ Present progress in all appropriate hospital committee meetings.

☐ Review SMART goal at regular intervals.

# Metrics:

☐ Pick 1 or more to track monthly or quarterly:

| Workload Measures | Process Measures |
|---|---|
| ☐ Time saved performing UAs by nursing staff<br><br>☐ Time saved processing UAs by microbiology lab staff | ☐ Rate of treatment for asymptomatic bacteriuria in a specific department (obtain by chart review)<br><br>☐ # of UAs ordered pre-and-post intervention in the department of interest<br><br>☐ Days of therapy of ceftriaxone, fluoroquinolones, or the most popular antibiotic for urinary tract infections (UTI) in the facility<br><br>☐ Cost savings* |

*Pharmacy budget cost savings can be calculated using purchasing reports from a vendor. Examples of potential budget savings include fewer orders being placed for an expensive antibiotic & fewer antibiotic orders for a specific class. Other potential cost savings include urinalysis supplies and microbiology supplies. Count these supply costs only if significant.

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month /  weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

☐ Emergency Medicine

☐ Pharmacy and Therapeutics

☐ Hospitalists

☐ Medical Staff

☐ Other _____

Other project notes (meetings, important project dates):

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# Promoting Guideline-Concordant Therapies – Uncommon Diseases

## Background & Rationale:

According to the Centers for Medicare and Medicaid Services (CMS), proper and consistent use of order sets can promote patient safety and quality of care[7]. They are also a resource-friendly way to assist facilities with promoting guideline-concordant antibiotic choices and durations of therapy[8]. Creating an order set for a disease syndrome that is less commonly seen in the facility (i.e., meningitis, pelvic inflammatory disease, pediatric pneumonia) can assist providers and prevent errors related to infrequent use.

## Prework:

☐ Network with other facilities through collaboratives such as the University of Washington's Centers for Stewardship in Medicine (UW-CSiM) to share ideas and to learn from other's experiences.

☐ Network within the facility to determine who will use the order set and to determine current workflows for ordering.

☐ Select an infectious disease based on insights gained from prospective audit and feedback.

☐ Learn which provider groups will be using this future order set.

## Instructions:

☐ Decide the size and scope of the order set to be created based upon the multidisciplinary expertise available for this project.

    o If there is limited multidisciplinary expertise to dedicate to this project, consider making just a small antibiotic-only order set to start off with. Plan to revisit the set later to make it more comprehensive as resources allow.

☐ Select a measure to track (see next page).

☐ Write a SMART goal (instructions and definition here).

☐ Obtain proper approvals and buy-in.

☐ Update applicable policies.

☐ Work with the facility's IT resource to create the set; consider also embedding it into a relevant set that is already popular in the facility.

☐ Educate applicable providers about the order set as needed.

    o Include an order set cheat sheet into new provider orientation to promote awareness for new hires.

☐ Ask providers to add the order set to their "favorites," if this feature is available in the facility EMR.

☐ Present progress in all appropriate hospital committee meetings.

☐ Review SMART goal at regular intervals and adjust as appropriate.

## Metrics:

☐ Track annually:

| Process Measures |
| --- |
| ☐ # of times that the new order set was used |

# Notes:

Our team's SMART goal for this project is: _____

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Our team will re-evaluate our progress every _____ month / weeks (circle one)

Our team will share our SMART goal progress as part of regular report processes with the following provider groups or committees:

☐ Emergency Medicine

☐ Pharmacy and Therapeutics

☐ Hospitalists

☐ Medical Staff

☐ Other _____

Other project notes (meetings, important project dates):

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