

North Carolina Surveillance for Healthcare Associated and Resistant Pathogens Patient Safety Program (NC SHARPPS) STAR PARTNERS

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I. ELIGIBILITY & REQUIREMENTS

(A) STEWARDSHIP COMMITMENT*

Eligibility

STAR Partner Stewardship Commitment status is suitable for facilities[§] which have not yet established an antibiotic stewardship program or are in the initial stages of antibiotic stewardship activities. A facility[§] is eligible to apply for STAR Partner Stewardship Commitment status if they meet the following criteria:

Requirements

1. Provide a written “**Stewardship Commitment Statement of Commitment**” signed by leadership of the facility[§] (CEO/CMO and one other member of leadership). A [template statement](#) is available for download from our webpage.
2. Identify a physician and pharmacist leader.
 - a. Provide a list of at least four prospective stewardship team members, their potential job titles and their roles. The team needs to include a physician and a clinical pharmacist. Other members may include other physicians and pharmacists, infection preventionists, nurses, clinical microbiology staff, patient advocates, administrators, information technology and quality improvement professionals, etc. Access to infectious disease expertise has been demonstrated to be valuable in guiding stewardship activities. While the selected physician and pharmacist do not necessarily need to have advanced training in infectious diseases, this is preferable.
3. Implement basic polices to support and track optimal antibiotic use:
 - a. Provide documentation of a written policy which requires prescribers[#] to document in the medical record a dose, duration, and indication for all antibiotic prescriptions.
 - b. Provide documentation of tracking CDI rates in the facility[§].
 - c. Provide documentation of tracking antimicrobial use by one of three methods:

- i. Days of Therapy (DOT): Each calendar day a patient receives an antimicrobial is a DOT. Tracking DOT requires monitoring the total DOT for all patients, facility^s wide, during a given time frame (i.e. monthly or quarterly).
 - ii. Defined Daily Dose (DDD): The assumed average maintenance dose per day for a drug used for its main indication facility^s wide
(https://www.whooc.no/ddd/definition_and_general_considera/)
 - iii. Tracking of antimicrobial purchasing costs over specific time intervals
 - iv. Tracking should be done for a minimum of 10 antimicrobial drugs consistent with NHSN SAAR agent groups
(<https://www.cdc.gov/nhsn/PDFs/pscManual/11pscAURcurrent.pdf>) with a focus on frequently used or selected high-risk agents and agent groups.
 - d. Provide documentation that antibiotic use education is provided as needed or upon request to patients and families and resource materials (e.g. pamphlets, posters) are available to patients and families.
 - i. Applicable materials can be found on the CDC's website
(<https://www.cdc.gov/antibiotic-use/week/educational-resources/resources.html>)
- 4. The team must commit to:
 - a. Meeting at least quarterly. Written confirmation that the meetings took place is required before the facility^s can apply to Level 1 STAR Partner status.
 - b. Further developing formal written policies regarding antibiotic stewardship
 - c. Identifying at least 2 stewardship interventions (At least one active and one passive intervention – refer to the [antibiotic stewardship checklist](#) of requirements for STAR Partners for examples of each to implement in the facility^s and developing a written plan for implementation. Please also read more about interventions in the Appendix (Section V (A), page 7).
 - d. Identifying at least one additional stewardship tracking/monitoring activity as well as antimicrobial use reporting activity:
 - i. Monitoring of adherence to a documentation policy is required to apply for Level 1 Partner status.
 - ii. Providing regular facility^s specific reports on antimicrobial use to prescribers[#] is required to apply for Level 1 Partner status.
 - iii. Please read more about tracking and reporting antibiotic use and outcomes in the Appendix (Section V (A), page 7).
 - e. Conducting **at least one staff educational event** in a 12-month period, and as needed thereafter. The educational event must be noted in the Statement of Commitment. Please see Appendix (Section V (C), page 8) for more information of educational activities.
- 5. Agree to participate in the North Carolina Division of Public Health's SHARPPS Program's antimicrobial resistance surveillance and antibiotic stewardship annual evaluation survey.
- 6. Indicate if the facility^s has an interest in mentorship from a STAR Partner facility^s in their Statement of Commitment. Please read more about mentorship in the Appendix (Section V (D), page 8).

*STAR Partners Stewardship Pledges will not be listed on the NCDPH website or receive a STAR Partners certificate, this is reserved for Levels 1-3 of the STAR Partners program.

(B) LEVEL 1 STEWARDSHIP BEGINNER

Eligibility

Level 1 STAR Partner Hospital status is suitable for facilities[§] that have an established antibiotic stewardship program including a core team with identified leaders and have met all requirements of Stewardship Commitment status above.

Requirements

1. Meet all Stewardship Commitment requirements (See section IA, Requirements, page 1).
2. Provide a written “**Level 1 Statement of Commitment**” indicating that the facility[§] has met Stewardship Commitment requirements. This statement should be signed by leadership of the facility[§] (CEO/CMO and one other member of leadership). A [Level 1 template statement](#) is available for download from our webpage.
3. Facility[§] has an established core stewardship team and have identified leaders. The team must include at least one physician and one pharmacist leader, preferably with infectious disease training.
4. Implementation of at least 2 stewardship interventions (At least one active and one passive intervention – refer to the [antibiotic stewardship checklist](#) of requirements for STAR Partners for examples of each). Please read more about interventions in the Appendix (Section V (A), page 7).
5. Facility[§] must have a process in place for monitoring adherence to its antimicrobial documentation policy (recording dose, duration and indication for all antimicrobial orders)
6. The facility[§] must provide regular facility[§] specific reports on antimicrobial use to prescribers[#].
7. Perform at least annual educational activities related to antimicrobial resistance and stewardship tailored to their needs. Commit to enhancement of these educational activities and plan to implement enhancements within the next 12 months. Please see Appendix (Section V (B), page 7) for more information on educational activities.
8. Agree to participate in Division of Public Health’s SHARPPS Program’s antimicrobial resistance and antibiotic stewardship annual evaluation survey.
9. Agree to display the name of your facility[§], its antibiotic stewardship achievements and STAR Partner Level on the North Carolina Division of Public Health’s website
10. Indicate if the facility[§] has an interest in mentorship from a STAR Partner facility[§] in their Statement of Commitment. You can read more about mentorship in the Appendix (Section V (D), page 8).

(C) LEVEL 2 STEWARDSHIP ADVANCED

Eligibility

Level 2 STAR Partner facility^s status is suitable for facilities^s that have an active antibiotic stewardship program with clear facility^s leadership endorsement including salary contribution for members, a program budget and have met all requirements of Level 1 Stewardship Beginner status above.

Requirements

1. Meet all Stewardship Commitment and Beginner requirements (See section IA and B, Requirements, pages 1-3).
2. Provide a written “**Level 2 Statement of Commitment**” indicating that the facility^s has met Stewardship Commitment and Beginner requirements. This statement should be signed by leadership of the facility^s (CEO/CMO and one other member of leadership). A [Level 2 template statement](#) is available for download from our webpage.
3. Facility^s has an established stewardship team including representatives from all CDC identified key support groups: physicians, pharmacists, infection preventionists, nursing, IT, and the microbiology lab.
4. Facility^s must have stewardship activities written into team job descriptions and stewardship activities are assessed in annual reviews.
5. Facility^s must have a dedicated stewardship budget.
6. Facility^s must have developed facility^s specific treatment recommendations for common infectious syndromes based on national guidelines and disseminated this to facility^s providers.
7. Implementation of at least 5 stewardship interventions (At least two active and three passive interventions – refer to the antibiotic stewardship [checklist of requirements](#) for STAR Partners for examples of each. Please read more about interventions in the Appendix (Section V (A), page 7).
8. The facility^s must have monitoring processes in place for not only their previously required documentation policy but also for adherence to written facility^s specific treatment guidelines OR compliance with at least one of the implemented stewardship interventions.
9. The facility^s must provide documentation of tracking antimicrobial use by one of two** methods (**note this is a change compared to the Stewardship Pledge requirement which allows use of antimicrobial purchasing costs over time, which is no longer acceptable at this level):
 - a. Days of Therapy (DOT): Each calendar day a patient receives an antimicrobial is a DOT. Tracking DOT requires monitoring the total DOT for all patients, facility^s wide, during a given time frame (i.e. monthly or quarterly).
 - b. Defined Daily Dose (DDD): The assumed average maintenance dose per day for a drug used for its main indication facility^s wide
(https://www.whocc.no/ddd/definition_and_general_considera/)
10. The facility^s must produce a regular periodic facility^s-specific antibiogram **at least every two years**, and distribute this to providers.
11. In addition to providing facility^s specific reports on antimicrobial use to prescribers[#], the facility^s must provide personalized feedback on antimicrobial prescribing to individual providers (e.g. “provider report cards”, individual feedback through post-prescription review, periodic audits of personal practice patterns, or ASP “rounds”)
12. Commit to continue at least annual educational activities related to antimicrobial resistance and stewardship tailored to their needs. Commit to enhancement of these educational activities and

plan to implement enhancements within the next 12 months. Please see Appendix (Section V (B), page 7) for more information on educational activities.

13. Agree to participate in Division of Public Health's SHARPPS Program's antimicrobial resistance and antibiotic stewardship annual evaluation survey.
14. Agree to display the name of your facility^s, its antibiotic stewardship achievements and STAR Partner Level on the North Carolina Division of Public Health's website
15. Indicate if the facility^s has an interest in mentorship from a Level 3 facility^s in their Statement of Commitment. You can read more about mentorship in the Appendix (Section V (D), page 8).

(D) LEVEL 3 STEWARDSHIP CHAMPION

Eligibility

Level 3 STAR Partner Hospital status is suited for facilities^s with a thriving stewardship program that has met Level 1 and Level 2 requirements. In addition, Level 3 STAR Partners are expected to engage in mentorship activities. Please read more about minimum mentorship activities in the Appendix (Section V (D), page 8).

Requirements

1. Meet all Level 1 and Level 2 requirements (See section IA, B and C Requirements, pages 1-4). Provide a written **"Level 3 Statement of Commitment"** indicating that the facility^s has met level 1 and 2 requirements and its commitment to enhance antibiotic stewardship activities. This statement should be signed by leadership of the facility^s (CEO/CMO and one other member of leadership). A [Level 3 template statement](#) is available for download from our webpage.
2. Stewardship team leads have completed a recognized stewardship training course once every five years (acceptable courses are [CDC's Antibiotic Stewardship Training Series](#), SIDP, MAD-ID, SHEA, and LEAP IDSA Fellowship graduates).
3. Implementation of at least 9 stewardship interventions (At least four active and five passive interventions – refer to the [antibiotic stewardship checklist](#) of requirements for STAR Partners for examples of each. Please read more about interventions in the Appendix (Section V (A), page 7).
4. The facility^s must monitor adherence to documentation policies and BOTH adherence to written facility^s-specific treatment recommendations AND compliance with all implemented stewardship interventions.
5. In addition to producing a periodic facility^s-wide periodic antibiogram at least annually the facility^s must produce unit-specific antibiograms for at least two individual units preferably units with higher rates of resistance.
6. Facility^s must use the antibiogram data to inform the antimicrobial formulary.
7. Facility^s must implement external benchmarking of antimicrobial use (i.e. via the NHSN antimicrobial use module or through a regional stewardship collaborative).
8. Antibiotic use patient educational materials are integrated into discharge materials.
9. Agree to participate in Division of Public Health's SHARPPS Program's antimicrobial resistance and antibiotic stewardship annual evaluation survey.
10. Agree to display the name of your facility^s, its antibiotic stewardship achievements and STAR Partner Level on the North Carolina Division of Public Health's website.

11. Agree to mentor at least one STAR Partner Stewardship Commitment, Level 1 or Level 2 facility[§]. Please read more about mentorship in the Appendix (Section V (D), page 8).

§ Multi-facility healthcare organizations may submit a single application for all facilities within the organization only if they can provide adequate documentation that all facilities within the organization implement all stewardship interventions required of the level applied for equally. Acceptance of blanket organizational applications will be determined on a case by case basis.

Any provider that is able to prescribe antimicrobials to patients within the facility

II. HOW TO APPLY

Interested facilities can identify the level they are eligible for and send a signed Statement of Commitment to the attention of NC SHARPPS via fax (919-733-0490) or email to nchai@dhhs.nc.gov

III. APPROVAL PROCESS

The approval process may take up to 4 weeks. Approvals and certificates will be disseminated via email. Approval will be contingent upon fulfillment of all requirements specific to the requested level. Once a facility is approved for a level, it will remain at that level unless annual survey results indicate that the facility no longer meets that level's requirements or until the facility meets requirements for and applies for a higher level.

IV. OPPORTUNITIES AND INCENTIVES FOR STAR PARTNERS

a. Recognition and certification:

- i. All facilities approved for level 1-3 will receive certification and acknowledgement on the NC Division of Public Health's website. Facilities approved for Level 1 will receive a **Stewardship Beginner NC SHARPPS STAR Partner** Certificate. Facilities approved for Level 2 will receive a **Stewardship Advanced NC SHARPPS STAR Partner** Certificate. Facilities approved for Level 3 will receive a **Stewardship Champion NC SHARPPS STAR Partner** Certificate.
 - ii. Certificates will be emailed to the appropriate contacts in the facilities upon approval.
- b. **SHARPPS Newsletter:** This newsletter is created quarterly and broadly disseminated. All STAR Partner facilities will have the opportunity to subscribe to it. Select stewardship achievements will be highlighted in the newsletter. STAR Partners may advertise educational events and highlight select achievements. All content submitted for publication in the newsletter is subject to approval by the Division of Public Health.
 - c. **Highlight-A-STAR Partner Twitter feeds:** We intend to initiate a "Highlight A Partner" Twitter feed which would mention salient achievements of STAR Partners. If a facility feels they have an antimicrobial stewardship related achievement which deserves to be highlighted, we encourage them to send us a message for NC SHARPPS to tweet via email to nchai@dhhs.nc.gov. The subject of the email should be labeled "Highlight-A-STAR Partner" for ease of identification. All

statements should be less than 140 characters. If approved, NC SHARPPS would be proud to tweet your achievement from its Twitter handle.

- d. **Carbapenem-resistant Enterobacteriaceae (CRE) mechanism testing:** STAR Partners will have the ability to connect with North Carolina State Laboratory of Public Health and the Antimicrobial Resistance Laboratory Network for antimicrobial susceptibility testing and to conduct mechanism testing via PCR on any CRE isolates identified at participating inpatient and outpatient settings. This testing will be free of charge. Shipping of isolates will also be arranged by the State.
- **NC SHARPPS education and training:** NC SHARPPS plans to collaborate with various health agencies and organizations for stewardship awareness activities. Division of Public Health and its partnering agencies also offer webinars, presentations and trainings related to infection control and patient safety. Information about these educational activities will be sent to all STAR Partners on a priority basis. Antimicrobial resistance and stewardship related educational material on NC SHARPPS website will be available for use by STAR Partners.
- e. **Mentorship opportunities:** Mentorship opportunities will be available for interested facilities.

V. APPENDIX

(A) Antibiotic Stewardship Interventions

Antibiotic stewardship interventions are divided into three categories: (a) broad, (b) pharmacy-driven, and (c) infection and syndrome specific. These interventions can be further broken down into active (requires regular, often daily, direct intervention by the stewardship team) or passive (may require regular actions from individual providers but not from the stewardship team directly).

- Broad interventions include antibiotic timeouts (passive); formulary restriction or pre-authorization of certain antibiotics based on cost, spectrum of activity or toxicity (active); and prospective audit feedback which involves an external review of antibiotic therapy by an expert in antibiotic use (active).
- Pharmacy-driven interventions include automatic changes from intravenous to oral therapy (passive); dose adjustments in case of organ dysfunction (active); dose optimization based on therapeutic drug monitoring, resistance patterns, and body distribution dynamics (active); automatic alerts for duplicative therapy (passive); time sensitive stop orders (passive); and detection and prevention of antibiotic related drug-drug interactions (passive).
- Infection and syndrome specific interventions include development of evidence based guidelines and clinical pathways for selection of antibiotics for common syndromes like community acquired pneumonia, urinary tract infections, skin and soft tissue infections, etc., that incorporate local microbiology and resistance patterns (passive).

(B) Educational Events

Educational events may include but are not limited to educating staff on antibiotic stewardship efforts at your facility, integrating/updating antibiotic stewardship practices into medical school curricula, integrating antibiotic stewardship training into new employee orientation, holding live or online presentations or trainings, conferences, provision of written guidelines or clinical pathways to clinicians

and students, and setting up time-bound email alerts related to antibiotic stewardship messages. Facilities are encouraged to host interactive educational activities (not passive activities like posters and flyers). The objective of the event should be to inform staff of antibiotic stewardship and associated issues. The event audience should be specified in the Statement of Commitment. Links to some resources that facilities may use for education are provided here.

- [Centers for Disease Control and Prevention CE Program: Get Smart: Continuing Education and Training](#)
- [CDC online training on Antimicrobial Stewardship](#)
- [Training on Measurement of Antibiotic Stewardship](#)
- [Wake Forest School of Medicine: An Antibiotic Stewardship Curriculum for Medical Students](#)

(C) Tracking Antibiotic Use and Outcomes

Some measures that CDC recommends for tracking antibiotic utilization and assessing effectiveness of stewardship activities are:

- **Process measures:** These are assessments that provide information on the quality of antibiotic use. These can include monitoring adherence to optimal antibiotic prescribing by reviewing dose, duration and indication of antibiotic use, or monitoring adherence to facility specific treatment recommendations.
- **Antibiotic use measures:** These measures track antibiotic use quantitatively as days of therapy (DOT) or defined daily dose (DDD) measurement. Assessing direct expenditure on antibiotics (purchasing costs) before and after an intervention can also be considered, but is less desirable.
- **Outcome measures:** These measures track clinical outcomes that assess the impact of interventions to improve antibiotic use. Rates of *Clostridium difficile* infection or infections caused by multidrug resistant organisms can be utilized to track effectiveness of antibiotic stewardship activities. Periodic antibiogram production also helps trend cumulative facility specific antimicrobial susceptibility patterns.
- **National Healthcare Safety Network (NHSN) Antibiotic Use (AU) module:** This module provides a tool for facilities to assist with risk adjusted inter- and intra-facility analysis of antibiotic use. It also helps assess trends of antibiotic use over time.
- **Reporting Antibiotic Use and Resistance:** CDC describes reporting antibiotic use as providing feedback on appropriateness of antibiotic use to prescribers in the facility. CDC describes reporting antibiotic resistance by distributing current a antibiogram among relevant staff.

Additional information about these measures may be found here: [Core Elements of Hospital Antibiotic Stewardship Programs.](#)

(D) Mentorship

Mentorship provides an opportunity to share professional skills and education among partners. Pledge, Level 1 and Level 2 facilities are afforded an option to request assistance to address specific challenges as they implement an antimicrobial resistance and stewardship program in their facility. A list of facilities interested in receiving mentorship will be maintained and provided to every Champion Facility along with their Championship Certificate, Level 1 and 2 facilities interested in mentoring lower level STAR Partner facilities should contact DPH for further information. The Champion Facilities will be

encouraged to contact interested mentee facilities and identify the facilities with whom they can best partner. Mentee facilities will also be encouraged to directly reach out to other facilities to explore possibilities of partnership. The Division of Public Health will not be involved in the partnership agreements.

Minimum mentorship activities: For the purpose of this initiative, the mentorship activities at a minimum should include facilitating participation of the mentee facility staff in antimicrobial resistance and stewardship related educational activities conducted by the Champion facility. Facilitating participation could include, but is not limited to, disseminating information about educational activities to encourage mentee participants to join as an audience member or speaker, offering paid activities at a discounted rate or gratis to mentee facilities, and inviting mentee facility staff to antimicrobial resistance and stewardship related trainings.

Other mentorship activities could include provision of external pharmacy audit support, provision of physician/pharmacist troubleshooting support, participation in quarterly mentee team meetings, assistance in the development of antibiogram, assistance with staff training etc. The facilities will have complete autonomy to decide on mutually achievable partnership goals based on their resources and interests.

(E) Annual Survey

Antimicrobial resistance and stewardship activities and mentorship efforts will be assessed in a survey which will be sent out electronically every 12 months from Division of Public Health.

For any questions or concerns regarding the program please email nchai@dhhs.nc.gov.