**Antibiotic Stewardship**

**Date Implemented:**

**Review/Updated Date:**

**Policy**

As a part of the infection prevention and control program, an antibiotic stewardship program must be established. An antibiotic stewardship program promotes the appropriate use of antibiotics and includes a system of monitoring to improve resident outcomes and reduce antibiotic resistance, including prescribing antibiotics for the correct indications, doses, and durations to appropriately treat the resident while also attempting to reduce the development of antibiotic-resistant organisms.

**Definitions:**

***Antibiotic*** is a medication used to treat bacterial infections. Antibiotics are not effective for infections caused by viruses such as influenza.

***Antibiotic Stewardship*** refers to a set of commitments and actions designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use. This can be accomplished through improving antibiotic prescribing, administration, and management practices thus reducing inappropriate use to ensure that residents receive the right antibiotic for the right indication, dose, and duration.

***Clostridioides difficile*** (previously known as clostridium difficile) or C-diff or CDI is an infection from a bacterium that causes colitis, an inflammation of the colon, causing diarrhea.

***Colonization*** is the presence of microorganisms on or within body sites without detectable host immune response, cellular damage, or clinical expression.

***Methicillin-resistant Staphylococcus aureus*** (MRSA) is the presence of Staphylococcus aureus bacteria that are resistant to treatment with one of the semi-synthetic penicillins.

***Multidrug-resistant organisms*** (MDROs) are microorganisms, predominately bacteria, that are resistant to one or more classes of antimicrobial agents. Although the names of certain MDROs describe resistance to only one agent, these pathogens are frequently resistant to most available antimicrobial agents and include multidrug-resistant gram-negative bacteria (GNB), Carbapenem-resistant Enterobacteriaceae (CRE), and extended spectrum beta-lactamase-producing Enterobacteriaceae (ESBLs).

***Vancomycin resistant enterococcus*** (VRE) is a species of enterococcus which have developed resistance to the antibiotic vancomycin.

The antibiotic stewardship program must contain the core elements as recommended by the CDC, including:

* Organizational leadership commitment to safe and appropriate antibiotic use;
* Appropriate organizational staff accountability for promoting and overseeing antibiotic stewardship;
* Accessing pharmacists and others with experience or training in antibiotic stewardship;
* Implementation of policy(ies) or practice to improve antibiotic use;
* Tracking measures of antibiotic use;
* Regular reporting of antibiotic use and resistance to relevant staff such as prescribing clinicians and nursing staff; and
* Educating staff and residents about antibiotic stewardship.

The antibiotic stewardship program must incorporate:

* An annual and as needed review including updates to the antibiotic stewardship program as appropriate.
* Contain a system of reports related to monitoring antibiotic usage and resistance data. Examples of reports may include:
	+ Summarizing antibiotic use from pharmacy data, such as the rate of new starts, types of antibiotics prescribed, or days of antibiotic treatment per 1,000 resident days.
	+ Summarizing antibiotic resistance based on laboratory data from a specific period in time (such as 18 months).
	+ Tracking measures of outcome surveillance related to antibiotic use such as presence of C-diff, MRSA, and/or CRE.
* Incorporate monitoring use, including the frequency of monitoring/review. The monitor/review must be completed when a resident is new to the facility, during each monthly medication regimen review and when the resident has been prescribed or is taking an antibiotic or any antibiotic regimen review as requested by the QAA committee. In addition, establish the frequency and mode or mechanism of feedback (such as verbal, written note in record) to prescribing practitioners regarding antibiotic resistance data, their antibiotics use and their compliance with facility antibiotic use protocols. Feedback on prescribing practices and compliance with facility antibiotic use protocols may include information from medical record reviews for new antibiotic starts to determine whether the resident had signs or symptoms of an infection; laboratory tests ordered and the results; prescription documentation including the indication for use (such as whether or not an infection or communicable disease has been documented), dosage and duration; and clinical justification for the use of an antibiotic beyond the initial duration ordered such as a review of laboratory reports/cultures in order to determine if the antibiotic remains indicated or if adjustments to therapy should be made.
* Assess residents for any infection using standardized tools and criteria.
* Include the mode (such as verbal, written, electronic) and frequency of education for prescribing practitioners and nursing staff on antibiotic use (stewardship) and the antibiotic use protocols.

**Procedures**

Organizational leadership commitment to safe and appropriate antibiotic use:

* Key leadership personnel must review the components of the antibiotic stewardship program and implement additional measures as appropriate.
* Could include the medical director discussing with all attending physician’s appropriate antibiotic prescribing based on the antibiotic stewardship program.
* The infection preventionist in conjunction with the DON could develop strategies to assure appropriate indications for use are identified and appropriately communicated with each resident’s attending physician. This could include established criteria for determining presence of infection such as a UTI protocol, respiratory infection protocol, etc.

Appropriate organizational staff accountability for promoting and overseeing antibiotic stewardship:

* The infection preventionist or designee shall report on the antibiotic stewardship measures to the Quality Assurance Committee. Monitoring could include:
	+ Tracking antibiotic prescribing processes and outcomes.
	+ Process measures including:
		- Adherence to antibiotic prescribing practices.
		- Auditing use of resident assessment and communication tools.
		- Evaluating adherence to the guidelines for antibiotic use.
	+ Outcome measures including:
		- Rates of C-diff, MDRO or MRSA.
		- Trends in antibiotic-related adverse events including allergies, side effects and drug interactions.
		- Trends in antibiotic resistance.

Accessing pharmacists and others with experience or training in antibiotic stewardship:

* The consultant pharmacist must perform a medication regimen review at least monthly, including review of the medical record and identify any irregularities, including unnecessary drugs.
* A best practice would include having the consultant pharmacist complete a medication regimen review following prescribing of an antibiotic to determine if antibiotic stewardship measures are implemented appropriately and if any additional monitoring is warranted based on polypharmacy. (For example, some antibiotics can increase the effectiveness of warfarin, which would indicate a need for increased laboratory testing to assure that anticoagulation remains therapeutic in the resident and is not at a critical high level, further increasing complications related to the antibiotic.)

Implementation of policy(ies) or practice to improve antibiotic use:

* This could include policies and procedures related to establishing protocols for requesting antibiotics from a physician, communication methods to the physician based on laboratory and diagnostic tests completed, antibiotic time outs, and ensuring that the documentation is appropriate for antibiotic use including the diagnosis, drug, dose, duration, and de-escalation (if the prescription has been reviewed and adjusted based on clinical information).

Tracking measures of antibiotic use (see information contained above).

Regular reporting of antibiotic use and resistance to relevant staff such as prescribing clinicians and nursing staff (see information contained above).

Educating staff and residents about antibiotic stewardship:

* Infection prevention and control must be a focus of staff education based on the organization’s determination of frequency. Antibiotic stewardship must be included in staff education.
* Staff should educate residents, families and attending physicians on the organization’s antibiotic stewardship procedures including the rationales for supportive diagnosis and implementation of antibiotic use.

**Antibiotic Stewardship During Care Transitions:**

Care transitions include movement of a resident from one healthcare setting to another to meet changes in their needs over the course of an illness. Care transitions increase the chances that information is not communicated effectively from one level of care to another. This can have negative consequences for the resident including delays in treatment, implementation of inappropriate care plans, prolonged exposure to unnecessary medications or devices, risks for readmission, frustration for the residents and/or their families, increased staff time, wasted resources and staff dissatisfaction.

Nursing staff should ensure that clinical information is relevant for implementing infection prevention and antibiotic use practices including but not limited to:

* Obtaining clinical information before accepting a resident including antibiotic prescriptions and indications for use including diagnostic testing completed.
* Ensuring that clinical information is shared when a resident is being transferred or discharged to another facility.

To ensure that adequate information is obtained or communicated during a care transition, nursing staff must:

* Review the dose of antibiotics including dosing intervals and duration of medications.
* Identify and monitor for potential drug interactions, side effects or toxicities.
* Avoid antibiotic duplication or disruption on the date of transfer.
* Incorporating antibiotic stewardship opportunities into existing medication review and reconciliation for new and/or re-admissions.
* Ensure that nursing staff are communicating and requesting results after transfer as residents may be transferred before all diagnostic data has been finalized. Additional measures include but are not limited to:
	+ Ensure that nursing staff are promptly relaying clinical findings to receiving facilities when received.
	+ Establishing a process to communicate results that are received after the resident has been transferred.
	+ Seek clinical information about residents who are transferred urgently before an explanation for their change in condition has been determined. This information may have infection prevention implications for other residents and/or staff in the nursing home setting.

Coordinating care transitions among partners:

* Coordination with all partners helps ensure a safe and appropriate care transition.
* Effective coordination promotes continuity of care and prevents breakdowns with care delivery.
* Whenever possible, incorporate a verbal report before or after transfer to prepare the receiving provider.
* For planned transfers, share information in advance to reduce the likelihood of disruptions to treatments or services.
* When communication barriers exists or information exchange is inadequate, work with staff and other providers from both facilities to understand the gaps and identify solutions.

**Resources**

CMS. (2017, Nov. 2). *State Operations Manual, Appendix PP – Guidance to Surveyors for Long Term Care Facilities, F881*. <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/GuidanceforLawsAndRegulations/Downloads/Appendix-PP-State-Operations-Manual.pdf>

CDC. (2020, June 10). *Infection Prevention Training | LTCF*. <https://www.cdc.gov/longtermcare/training.html>