

Antimicrobial Use Assessment for Long-term Care Facilities

Overview:

Assessing antimicrobial use is essential for determining antimicrobial use trends. Antimicrobial use assessments should be conducted regularly to measure progress of antimicrobial stewardship activities. After completing the assessment, the facility should be able to describe who is getting antibiotics and why. Additionally, the results are useful to identify gaps in communication, inconsistencies in documentation, and compliance with facility policies and evidence-based recommendations for antimicrobial prescribing.

The term “providers” includes all licensed providers in the facility (e.g. MD, DO, NP, PA) regardless of employment status (e.g. full-time, part-time or casual status; on-call; external consultant; etc.).

Preparation for the assessment:

- Select a timeframe (e.g. 3 months)
- Gain access to available data sources
 - Essential data sources:
 - Antimicrobial orders/prescriptions
 - Clinical documentation (medical records and rounding/daily reports)
 - Supplementary data sources (include any other useful data sources): consider using infection surveillance logs/linelists, microbiology testing, and/or imaging/radiology testing

Assessment:

1. Obtain the list of antimicrobials ordered for your selected timeframe.
2. For the first antimicrobial on the list, note the resident name, date of the order, drug, dose, duration, route, and indication as stated by the provider.
3. Review the additional data source(s) for infection-related documentation. For example, review clinical documentation (medical record progress notes, provider notifications, rounding report, etc.) for documented signs/symptoms of infection for that resident around the time period that the antimicrobial was prescribed.
4. *If reviewing only essential data sources, please skip to #6.* Determine whether microbiology testing was done; document tests that were done and the results.
5. Review the infection surveillance log: document whether the resident was included on the infection log and the type of infection.
6. When all of the data sources have been reviewed for infection-related information, move on to the next antimicrobial on the list and repeat the process until you reach the end of the list.
7. When the end of the list of antimicrobials is reached, summarize the information in the table. Look for trends in the documentation to identify improvement goals. Consider the following trends:
 - Trends by infectious syndrome
 - Trends by provider
 - Trends by antimicrobial
 - Drug dose, route, frequency (consider engaging consulting pharmacist)
 - Appropriateness of use (consider engaging consulting pharmacist)
 - Other notable prescribing trends
8. Use the results of the assessment to develop a plan to resolve gaps and barriers for optimizing antimicrobial prescribing through:
 - Effective communication among nursing staff and between nurses and providers
 - Thorough documentation of resident signs and symptoms
 - Communicating results to the antimicrobial stewardship committee/workgroup
 - Communicating aggregate and/or individual antimicrobial use results to providers

Summarize the data:

Total number of antibiotics reviewed: _____

Total number of data sources reviewed (in addition to antimicrobial orders): _____

	Number	%
Indication documented for antimicrobial*		
Antimicrobial indication aligned with clinical documentation*		
Antimicrobial indication aligned with microbiology/imaging data		
Antimicrobial indication aligned with infection surveillance data		
Antimicrobial indication aligned with expectations outlined in facility policies/protocols		
Antimicrobial indication aligned with Loeb minimum criteria for initiating antibiotics (Loeb, 2001)		
Antimicrobial indication aligned with CDC standard definitions for HAI surveillance in long-term care (Stone, 2012)		

* Essential data sources to review

Overall:

Number (%) antimicrobial indication aligned with all data sources _____ (_____%)

Number (%) antimicrobial indication aligned with 3 data sources _____ (_____%)

Number (%) antimicrobial indication aligned with 2 data sources _____ (_____%)

Number (%) antimicrobial indication aligned with no data sources _____ (_____%)

Conclusions:

Goals:

Example Assessment:

Time period: January 1 – March 30, 2013

Location(s) in the facility: Facility-wide

Primary data source used: Antibiotic orders

Additional data sources used: Clinical documentation, infection surveillance, microbiology

Resident	Antibiotic order	Antibiotic indication	Clinical documentation	Microbiology testing results	Infection surveillance linelist/log	Loeb minimum criteria for initiating antibiotics in LTC (Loeb, 2001)	CDC infection surveillance criteria (Stone, 2012)
A 1/2/2014	Cipro 250 mg p.o. BID x 14 days	UTI	Urgency, history of UTI	UC: 10 ⁵ CFU/ml E. coli	UTI	Minimum criteria not met	Criteria not met
B 1/5/2014	Cipro 500 mg p.o. daily x 3 days	UTI	Resident fall	UA: +bacteria UC: not done	UTI	No criteria met	Criteria not met
A 2/2/2014	Keflex 250 mg p.o. QID x 7 days	UTI	None	UA: +bacteria UC: E. coli	UTI	No criteria met	Criteria not met
C 2/14/14	Bactrim DS p.o. Q Monday, Tuesday	Prophylaxis	Urinary catheter	Not done	Not on linelist/log	No criteria met	Criteria not met
D 2/17/14	Bactrim DS p.o. BID x 10 days	UTI	Urine catheter in place, cloudy urine	UA: +bacteria UC: 10 ⁵ CFU/ml E. coli (ESBL)	UTI	No criteria met	Criteria not met
B 2/24/14	Cipro 250 mg p.o. BID x 10 days	UTI	Foul-smelling urine	UC: Enterococcus	UTI	No criteria met	Criteria not met
E 3/01/14	Levaquin 250 mg p.o. daily x 3 days	UTI	Temp=101.2 New frequency	UA: +bacteria +nitrites +WBCs UC: 10 ⁵ CFU/ml K. pneumo	UTI	Minimum criteria met (fever plus new frequency)	Criteria for UTI met in resident without urinary catheter (fever plus new frequency)
F 3/08/14	Cipro 250 mg p.o. BID x 3 days	UTI	Cloudy, smelly urine	UA: +bacteria UC: 10 ⁵ CFU/ml E. coli	UTI	No criteria met	Criteria not met
G 3/18/14	Bactrim DS p.o. BID x 14 days	UTI	Agitation, no vitals noted	UA: +WBCs	UTI	No criteria met	Criteria not met