

Assessment and Implementation of Antimicrobial Stewardship Programs in Long-Term Care Facilities

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BACKGROUND

- New Centers for Medicare and Medicaid Services (CMS) regulations require long-term care facilities (LTCF) to develop antimicrobial stewardship programs (ASP) that include antibiotic use protocols and systems to monitor antibiotic use
- The Nebraska Antimicrobial Stewardship Assessment and Promotion Program (NE ASAP) is a statewide initiative supported by the NE Department of Health and Human Services, Healthcare-Associated Infection Team and CDC
- The main goals of the program are to assess ASP in NE LTCF and provide facility-specific recommendations to implement new or augment existing ASP activities

METHODS

- NE ASAP recruited 5 NE LTCF that were interested in initiating or improving ASP for participation
- Participating facilities were required to perform self-assessment of ASP activities, and provide antibiogram and antimicrobial use (AU) data prior to onsite visit
- During onsite visit, ASAP team interviewed LTCF leadership to assess ASP efforts using a 64-item questionnaire based on CDC ASP core elements (CE)¹
- Items assessed included number of ASP CE implemented, barriers encountered and top areas of perceived antibiotic (AB) misuse
- Written report with assessment findings and facility-specific recommendations were made available to LTCF

RESULTS

Table 1. Characteristics of Long-Term Care Facilities Assessed (N = 5)

Characteristic*	No. of Facilities
Bed size – median (range)	140 (42-293) beds
Average census – median (range)	127 (22-225) beds
Infectious diseases physician availability	
For antimicrobial stewardship activities	0
For consultation on specific residents	3
Medical director involved with antimicrobial stewardship activities	4
Pharmacist availability	
At facility	1
From consultant pharmacy	4
Type of ownership	
Not-for-profit, other	2
For profit, corporation	2
Not-for-profit, corporation	1

* Data are presented as number of facilities except bed size and average census

Figure 1. Frequency of Core Element Implementation According to Different Evaluators

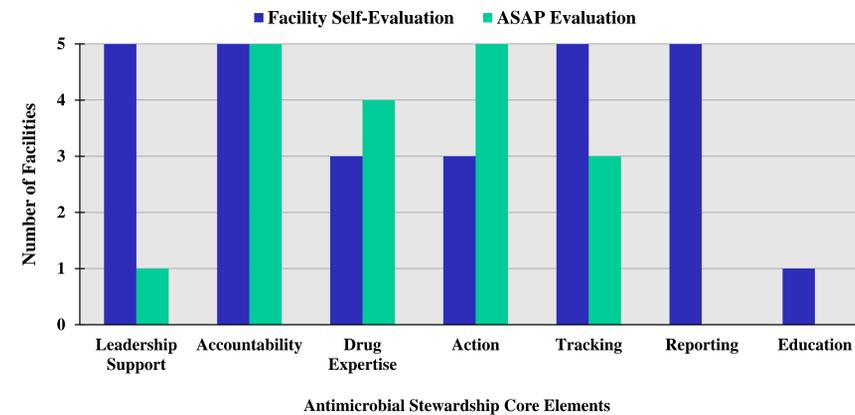
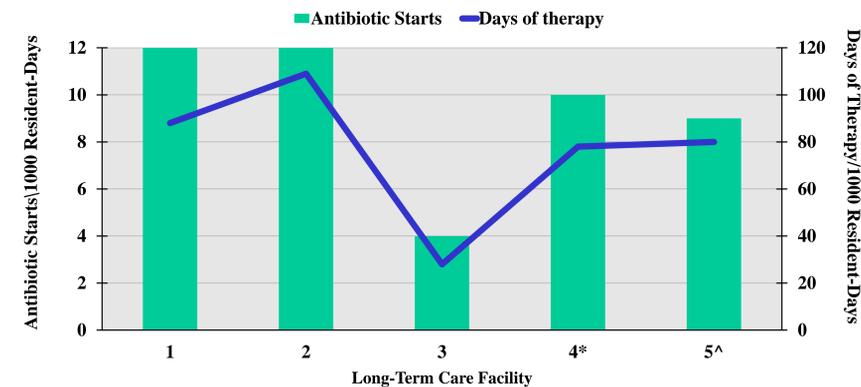


Table 2. Number of Core Elements Implemented Based on Different Evaluators

Long-Term Care Facility	Number of Core Elements Implemented	
	Facility Self-Evaluation	NE ASAP Evaluation
1	6	4
2	4	5
3	4	3
4	7	4
5	6	3
Median (range)	6 (4 – 7)	4 (3 – 5)

Abbreviation: NE ASAP = Nebraska Antimicrobial Stewardship Assessment & Promotion Program

Figure 2. Baseline Antibiotic Starts and Days of Therapy Among Long-Term Care Facilities



* Days of therapy was extrapolated for 16.8% of antibiotic starts using facility average days of therapy of 7.5 days

^ Days of therapy was extrapolated for 7.2% of antibiotic starts using facility average days of therapy of 8.4 days.

DISCLOSURE

The authors of this study have nothing to disclose pertaining to the content of this poster.

Table 3. Antimicrobial Susceptibilities of *E. coli* in Long-Term Care Facilities Evaluated

Long-Term Care Facility	No. Tested	Percent Susceptible						
		Ampicillin	Cefazolin	Ceftriaxone	Imipenem or Meropenem	Levofloxacin	TMP/SMX	Nitrofurantoin*
1	49	57	86	94	100	49	71	92
2	27	52	78	89	100	70	85	83
3	22	45	64	91	100	45	73	100
4	41	61	76	93	100	51	68	93
5	111	53	86	97	100	59	76	99

* Only reported for urine isolates. Abbreviation: TMP/SMX = trimethoprim/sulfamethoxazole

Table 4. Barriers to Antimicrobial Stewardship Program and Areas of Antibiotic Misuse (N = 5)

Perceived Barrier	No. of Facilities	Area of Misuse	No. of Facilities
Financial considerations	4	Treatment of asymptomatic bacteriuria	5
Competing initiatives	4	Antibiotic for viral infections	4
Lack of expertise	4	Excessive duration of therapy	2
Lack of familiarity with resources	4	Diagnostic tests not sent before treatment	2
Personnel shortage	3		
Opposition from administration/prescribers	2		

Table 5. Recommendations Provided by NE ASAP for Improvement of Facility ASP

Core Element	Recommendation Provided	Long-Term Care Facility				
		1	2	3	4	5
Leadership support	Draft leadership support statement	X	X	X	X	X
Accountability	Form ASP committee or assign role/responsibilities	X	X	X	X	X
Drug expertise	ASP training for pharmacists <u>NOT</u> already in training			X		
Action	Introduce/revise SBAR tool for suspected UTI	X	X	X	X	X
Tracking	Track antibiotic use	X	X	X	X	X
	Prepare facility-specific antibiogram	X	X	X	X	X
Reporting	Report antibiotic use and resistance to staff	X	X	X	X	X
Education	Provide ASP education to providers and staff	X	X	X	X	X

Abbreviations: NE ASAP = Nebraska Antimicrobial Stewardship Assessment and Promotion Program; ASP = antimicrobial stewardship program; SBAR = situation, background, assessment, recommendations; UTI = urinary tract infection

CONCLUSIONS

- AU and AB resistance vary greatly among LTCF even though all facilities face similar challenges in ASP implementation**
 - Baseline AU was lowest at the LTCF with onsite pharmacist
- NE ASAP provided a number of recommendations to promote implementation of ASP with all CE**
- Further evaluation is needed to determine the impact of these recommendations on AU, AB resistance, and AU-associated adverse outcomes**

REFERENCE

- CDC. The core elements of antimicrobial stewardship for nursing homes, checklist. Available at <https://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship-checklist.pdf>. Accessed March 14, 2018.