ABSTRACT

BACKGROUND: Antimicrobial stewardship (AS) recommendations are available for acute care hospitals (ACH), but guidance is lacking for long-term care facilities (LTCFs). Developing LTCF AS guidance is more complex than adapting ACH AS strategies. A refined perspective is required due to population and care delivery differences. Minnesota Department of Health (MDH) collaborated with LTCFs on AS capacity-building. We developed a toolkit to aid LTCFs in the implementation of evidence-based AS practices, with a focus on nursing activities. METHODS: MDH recruited five Minnesota LTCFs (represented by nurses, nursing assistants, nursing leadership, consulting pharmacists, medical directors, and administrators) to participate in a one-year pilot, which enabled piloting and provided feedback on toolkit resources, including: 1) LTCF AS guidance/audit tools; 2) nursing/physician audit tools; 3) nursing process evaluation; 4) antimicrobial use assessment; and 5) communication tools. RESULTS: While, administrative, clinical, and pharmacy leadership expectations were consistent with evidence-based antimicrobial-prescribing recommendations are vitally important, nursing leadership and direct care staff drive AS efforts in LTCFs. AS guidance and audit tools were refined from a checklist to determine exist- ing AS components into a comprehensive list of strategies and recommenda- tions. (Figure 1 - Images 1,2) The need for potential interventions (e.g., education, policy changes) was identified by nursing and provider attitudes and beliefs surveys. (Figures 2 and 3) Evaluations focused on the process that occurs when a resident has a suspected urinary tract infection. (Two LTCFs subsequently implemented process changes, including introducing the use of a SBAR form to facilitate communicating resident care changes in condition. (Figure 1 - Image 4)

RESULTS: The need for potential interventions (e.g., education, policy changes) was identified by nursing and provider attitudes and beliefs surveys. (Figures 2 and 3) Evaluations focused on the process that occurs when a resident has a suspected urinary tract infection. (Two LTCFs subsequently implemented process changes, including introducing the use of a SBAR form to facilitate communicating resident care changes in condition. (Figure 1 - Image 4)

Methods

- MDH recruited five Minnesota LTCFs (represented by nurses, nursing assistants, nursing leadership, consulting pharmacists, medical directors, and administrators) to participate in a one-year pilot.
- Bi-monthly conference calls, and an average of two on-site meetings were held with participating facilities.
- LTCFs piloted and provided feedback on toolkit resources, including but not limited to: 1) LTCF AS guidance and audit tools; 2) nursing and provider antibiotic use attitudes and beliefs surveys; 3) nursing process evaluation; 4) antimicrobial use assessment; and 5) communication tools (e.g., Situation-Background-Assessment-Request, or SBAR)

Figure 1: Images from the Minnesota Antimicrobial Stewardship Program Toolkit for Long-Term Care Facilities

Results

- Four of five LTCFs performed nursing process evaluations to identify strengths and weaknesses in facility processes for the assessment, communication, and documentation of resident changes in condition. (Figure 1 - Image 3)
- Evaluations focused on the process that occurs when a resident has a suspected urinary tract infection.
- Two LTCFs subsequently implemented process changes, including introducing the use of a SBAR form to facilitate communicating resident care changes in condition from nurses to off-shift or on-call providers. (Figure 1 - Image 4)

Conclusions

- A comprehensive toolkit Minnesota Antimicrobial Stewardship Program Toolkit for Long-Term Care Facilities was developed, distributed to LTCF partners, and posted on the MDH website at http://www.health.state.mn.us/divs/depoc/dpopc/antisepsis/antimicrobialstewardship/pdfs/index.html
- Implementation of AS strategies in LTCFs requires a systems-level, primary prevention approach that values the contribution of all involved resident care, including nurses, nursing assistants, and aides.
- The Minnesota Antimicrobial Stewardship Program Toolkit for Long-Term Care Facilities uses a "bottom-up" approach by recognizing nursing’s central role in facilitating the flow of resident data among clinical partners.
- Accurate, timely, and consistent nursing assessment, communication, and documentation of resident changes in condition is essential component of AS in LTCFs.

Figure 2: Nursing Survey Question 3 and Responses

Figure 3: Nursing Survey Question 4 and Responses

Future resistance to antibiotics

Family perceptions of high-quality care

Change in status and family concern

New confusion and altered mental status

New problems/medication changes

Figure 4: Nursing Survey Question 5 and Responses

Results: The need for potential interventions (e.g., education, policy changes) was identified by nursing and provider attitudes and beliefs surveys. (Figures 2 and 3) Evaluations focused on the process that occurs when a resident has a suspected urinary tract infection. (Two LTCFs subsequently implemented process changes, including introducing the use of a SBAR form to facilitate communicating resident care changes in condition from nurses to off-shift or on-call providers. (Figure 1 - Image 4)

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Three LTCFs performed antimicrobial use assessments which included detailed inspection of resident data for documentation of potential infections. (Figure 5)

- Assessments revealed that many conditions for which antibiotics were prescribed did not meet antibiotic initiation criteria (e.g., Loeb, et. al. 2001) or infection surveillance criteria (e.g., revised McGeer definitions 2013).
- One LTCF engaged the consulting pharmacist in the process to facilitate evaluation of antibiotic appropriateness.

Figure 5: Assessing and Enhancing Capacity in Long-Term Care to Implement Antimicrobial Stewardship: Toolkit Development Annastasia Gross, MT(ASCP), Linn Warnke, RN, MPH, Lindsey Lesher, MPH, and Jane E Harper, BSN, MS, CIC Minnesota Department of Health, St. Paul, MN

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Antimicrobial and provider antibiotic use attitudes and beliefs surveys identified areas for potential interventions (e.g., education, policy changes). Four of five LTCFs performed nurse and provider antibiotic use attitudes and beliefs surveys. (Figures 2 and 3) Antimicrobial resistance and Clostridium difficile infections are a urgent threat to public health and are mainly driven by antimicrobial use.

Published antimicrobial stewardship (AS) recommendations and guidelines are available for acute care hospitals (ACH), but guidance is lacking for long-term care facilities (LTCFs).

Antimicrobial use in LTCFs is high; antimicrobials are often prescribed empirically, and for extended durations.

AS facilitates the responsible use and protection of all antimicrobials and in turn, improves patient safety, reduces healthcare costs and potentially im- pact rates of antimicrobial resistance.

Development of LTCF AS guidance is more complex than adapting existing ACH strategies, requiring a refined perspective due to population and care delivery differences.

Priority work with two Minnesota LTCFs identified the need for a resource tool- kit to support AS efforts in LTCFs.

Methods

- MDH recruited five Minnesota LTCFs (represented by nurses, nursing as- sistsants, nursing leadership, consulting pharmacists, medical directors, and administrators) to participate in a one-year pilot.
- Bi-monthly conference calls, and an average of two on-site meetings were held with participating facilities.
- LTCFs piloted and provided feedback on toolkit resources, including but not limited to: 1) LTCF AS guidance and audit tools; 2) nursing and provider antibiotic use attitudes and beliefs surveys; 3) nursing process evaluation; 4) antimicrobial use assessment; and 5) communication tools (e.g., Situation-Background-Assessment-Request, or SBAR)

Figure 3: Nursing Survey Question #3 and Responses

Figure 4: Nursing Survey Question #4 and Responses

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