Developing Capacity in Long-Term Care to Implement Antimicrobial Stewardship: The Need for Synergy

#4710

Linn Warnke, RN, MPH, Annastasia Gross, MT(ASCP), Lindsey Lesher, MPH, Jane E Harper, BSN, MS, CIC
Minnesota Department of Health, St. Paul, MN

Linn Warnke
Minnesota Department of Health
PO Box 64975, St. Paul, MN 55164
651-201-5414, www.health.state.mn.us
linn.warnke@state.mn.us

ABSTRACT

BACKGROUND: Despite myriad publications regarding antimicrobial stewardship (AS) in acute care hospitals (ACH), guidance is lacking for long-term care facilities (LTCF). Minnesota Department of Health (MDH) collaborated with Minnesota LTCF to develop LTCF AS guidance based on ACH AS recommendations. **METHODS:** MDH identified infection preventionists and directors of nursing from two hospital-attached LTCF, and key hospital staff (e.g., administrators, pharmacists, laboratorians, quality). One to three on-site meetings and bi-monthly conference calls were held over 6 months to review hospital AS recommendations and discuss adaptations necessary for LTCF. The following LTCF AS foundational components were identified: 1) physician/ pharmacist AS champion; 2) AS Team; 3) medical leadership involvement; 4) establishment of antimicrobial utilization baseline; 5) access to microbiology data; 6) access to antimicrobial prescribing data; and 7) access to an antibiogram. Organizational assessments identified existing LTCF AS foundational components and gap analyses were conducted in both LTCF. **RESULTS:** Organizational assessments and gap analyses demonstrated that elements of each LTCF AS foundational component existed, yet resident infection-related data (e.g., antibiotic starts, nursing assessment, laboratory results) were collected for discrete record keeping purposes and not integrated with clinical documentation. Microbiology data were available for individuals, but were not aggregated by facility type at the laboratory; no LTCF-specific antibiogram was available. Hospital pharmacies provided line lists of prescribed antibiotics, but these lists were not representative of all antibiotics prescribed for LTCF residents, as prescriptions were filled by numerous outside pharmacies. Infection surveillance was conducted retrospectively, and was based on sparse clinical documentation; these data were utilized only to meet quarterly quality meeting reporting requirements. Nursing staff served as the hub of resident data, often facilitating the flow of data to and from relevant clinical partners. **CONCLUSIONS:** LTCF AS foundational components adapted from ACH AS recommendations provide necessary AS infrastructure. However, adequate processes for nursing assessment, communication and documentation of resident data are essential to provide the synergy required to conduct comprehensive AS. Synergy can be achieved through implementation of LTCF-specific tools that facilitate in-depth analyses to determine strategies for integrating AS foundational components into existing LTCF processes. The importance of LTCF nursing staff involvement in AS capacity-building interventions cannot be overstated.

BACKGROUND

- Antimicrobial stewardship (AS) is a multidisciplinary process of integrating and interpreting clinical data through the lens of evidence-based recommendations intended to:
  1) optimize resident clinical outcomes
  2) minimize unintended consequences, including adverse effects, antimicrobial resistance, and healthcare costs.
- Numerous publications describe acute care hospital (ACH) AS recommendations.
- Barriers to LTCF AS implementation of ACH AS recommendations include:
  - Limited dedicated time for AS among medical directors and infection preventionists (IPs).
  - Lack of accessible, aggregated data (e.g., antimicrobial prescribing/ utilization baseline, microbiology, antibiogram) needed for trend identification.
  - Infection data reported at quarterly quality meetings, but perceived as having limited AS value.

OBJECTIVE

- Minnesota Department of Health (MDH) sought to determine the foundational AS components for LTCF.

METHODS

- IPs and directors of nursing from 2 hospital-attached LTCF engaged ACH administrators, medical directors, pharmacists, laboratorians, nursing leadership and IPs.
- Over 6 months, MDH conducted organizational assessments and gap analyses via on-site meetings and conference calls with LTCF/ACH teams.

RESULTS

- Providers' time on-site is limited; providers rely on nursing assessments communicated via phone.
  - Nurses need to be prepared to provide appropriate resident assessment data to providers (e.g., presence and absence of resident symptoms); providers need to know the information they need, and if they don't receive that data, they need to request it.
- Nursing processes (assessment, communication, documentation of resident changes in condition) facilitate providers' decision-making regarding the "5 Ds" of AS (Right Diagnosis, Drug, Dose, Duration, De-escalation):
  - Diagnosis: Does the condition require antibiotic therapy (consider infection vs. colonization, bacteria vs. virus)?
  - Drug: Is the bacterium susceptible? Is a narrower-spectrum option available?
  - Dose: Based on the diagnosis, what is the recommended dose? Is this the lowest effective dose?
  - Duration: What is the shortest effective duration, according to evidence-based recommendations?
  - De-escalation: Once culture/sensitivity results are available, take an antibiotic time-out to reconsider diagnosis, drug, dose, and duration. Is antibiotic still warranted? If so, consider IV-to-p.o. switch.

Figure 1. LTCF Data Sources Integral to AS Decision-making

Figure 2. Long-Term Care Facility Capacity to Implement an Antimicrobial Stewardship Program- A Conceptual Model

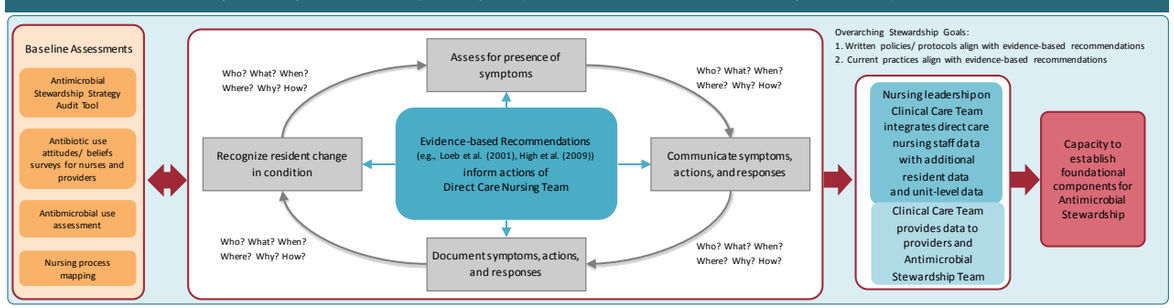
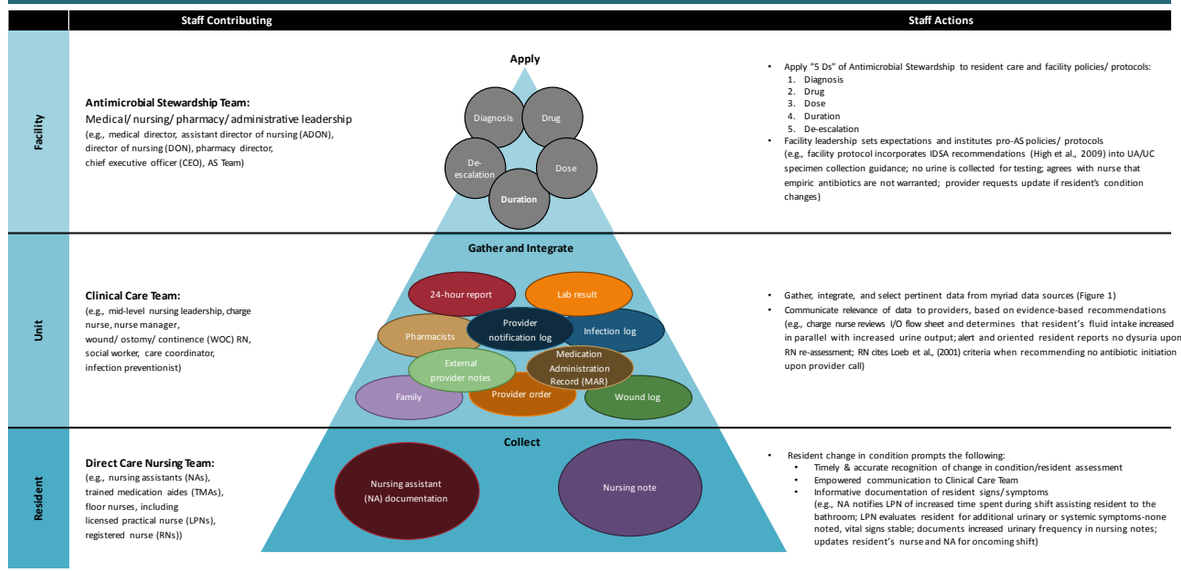


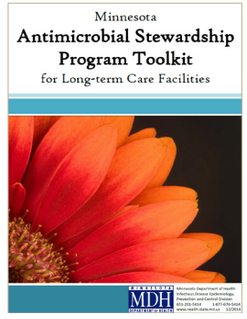
Figure 3. Organizational Levels at which Antimicrobial Stewardship Occurs: Opportunities for Synergy



- Resident clinical data originate from numerous internal and external sources and reside in multiple formats and locations (Figure 1).
  - Data elements are not integrated into a comprehensive format useful for AS.
- Clinical data are often not filtered through evidence-based recommendations
  - Loeb et al. (2001) *Minimum Criteria for Initiation of Antibiotics in Long-Term Care Residents.*
  - High et al. (2009) *Clinical Practice Guideline for the Evaluation of Fever and Infection in Older Adult Residents of Long-Term Care Facilities: 2008 Update by the Infectious Diseases Society of America (IDSA).*

CONCLUSIONS

- State health departments are well-positioned to provide LTCFs opportunities to recognize how AS fits into existing processes (Figure 2).
- Capacity to implement LTCF AS requires synergy within and between infrastructure constructs; back-to-basics nursing principles promote synergy.
- Nursing processes that facilitate providers' decision-making regarding the "5 Ds" of AS constitute the primary LTCF AS foundation.
- Robust nursing processes at the resident- and unit-levels will first improve resident care and secondarily promote AS.
- AS occurs at the resident-, unit-, and facility-levels (Figure 3); staff must be valued, trained and supported at each level.
- The *Minnesota Antimicrobial Stewardship Program Toolkit for Long-term Care Facilities* contains LTCF-specific tools that build nursing capacity at the resident- and unit-levels (Figure 3).



This project was funded by the ELC CDC Cooperative Agreement 3U50CI000888. We thank our Minnesota LTCF partners and Elly Pretzel from MDH for all their contributions.