Antibiotic Stewardship for Asymptomatic Bacteriuria in Long-Term Care

Laura Giovannoli, MSN, APRN, A-BC
Online Post-Master DNP Program

Introduction/Purpose/Significance

This DNP Scholarly project addresses the problem of inappropriate antibiotic (ABX) use and ABX stewardship in patients with asymptomatic bacteriuria in the long-term care setting.

Importance to healthcare:

- Use of an evidence-based decision-making tool (SBAR) to standardize identification of treatable UTIs versus ABU.

DNP Essentials addressed:

Scientific underpinnings for practice

Clinical scholarship and analytical methods for evidence-based practice

Clinical prevention and population health for improving the nation's health

Advanced nursing practice

Problem Statement

The diagnosis of UTIs in Residents of long-term care facilities is often based on vague symptoms and a positive urine culture. The high prevalence of ABU, which is difficult to differentiate from an acute infection in this population, leads to an over-prescription of antibiotics. Educating of frontline nursing staff to identify treatable UTIs versus ABU using an evidence-based decision-making tool, the Suspected UTI SBAR, will improve the accuracy of communication with prescribing healthcare providers, antibiotic stewardship, and outcomes of care.

Background

Searches done in CINAHL Complete, MEDLINE with Full Text, and SHU Library

- high rate of inappropriate ABX treatment for misdiagnosed UTIs
  (Doernberg et al.,2015, Pulia et al., 2018)
- need for improved antibiotic stewardship
  (Doernberg et al., 2015, Pulia et al., 2018)
- positive impact of a decision-making aid for suspected UTIs on ABX use for patients in long-term care
  (Enure et al., 2017, McMaughan et al., 2016)

Donabedian's Theoretical Framework

Provides framework to examine health services & quality of care
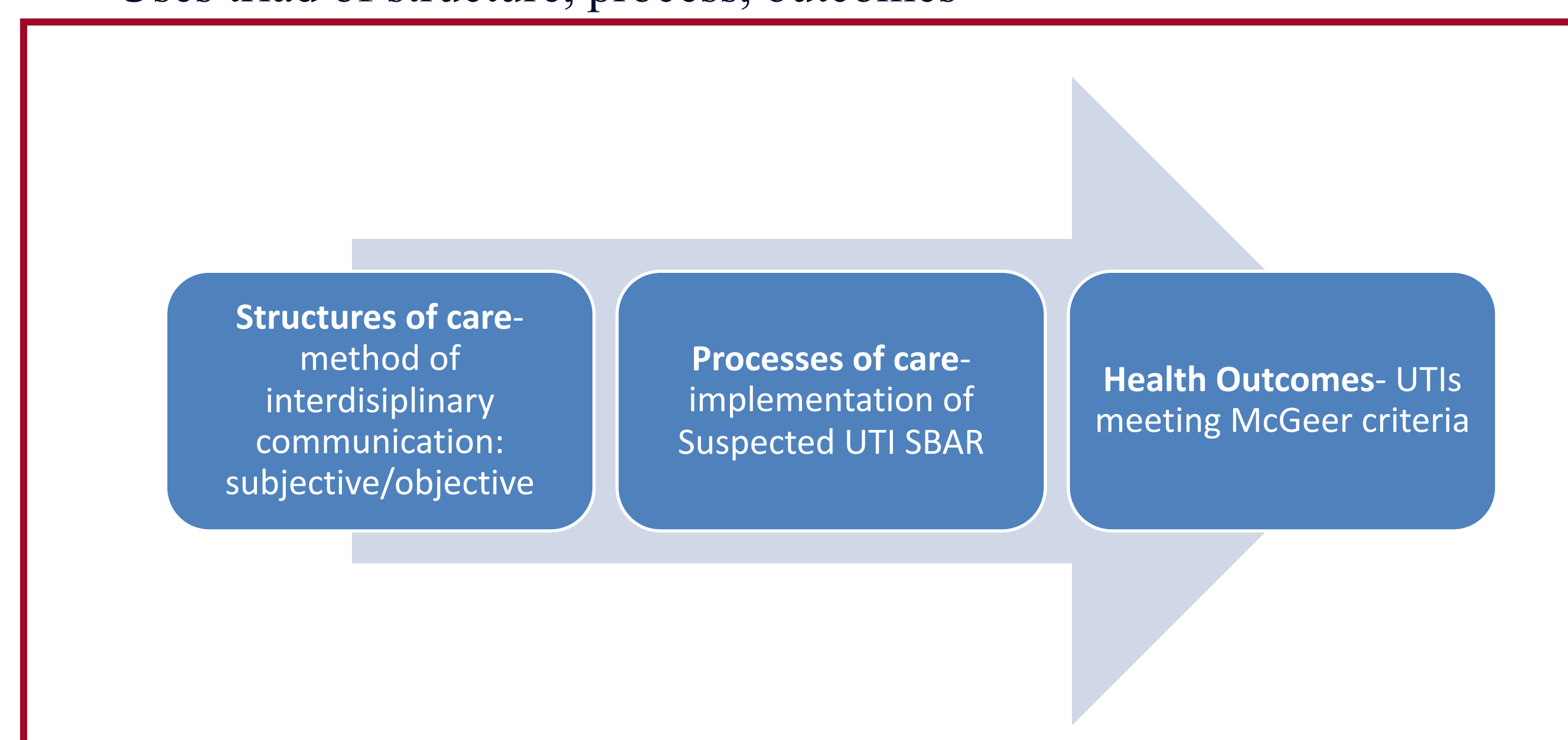
- Uses triad of structure, process, outcomes

Structures of care- method of interdisciplinary communication: subjective/objective

Processes of care- implementation of Suspected UTI SBAR

Health Outcomes- UTIs meeting McGeer criteria

Figure 1. Project using Donabedian's Quality Framework

Methods

Design: Quality improvement project utilizes Lewin's three step model of change and Plan-Do -Study-Act (PDSA) Cycle

Setting: Long-term care facility long-term care units (156 beds on four units)

Participants: Direct care nurses, long term care Residents

Project Measures: Pre- post- survey to measure nurses' perceived knowledge

Project Implementation Process: Utilized Suspected UTI SBAR decision making toolkit (AHRQ, 2019) Education provided to prescribing clinicians, nursing leadership, and nursing staff

Barriers: cancellation of scheduled education teaching sessions, lack of designated team meeting times, COVID19 pandemic

Solutions: small education session, provide regular project updates to stakeholders, PDSA cycle, provide nursing support

Barriers: inconsistent project support due to organizational leadership turnover

Solutions: perseverant efforts to champion project, provide regular updates in the absence of scheduled meetings
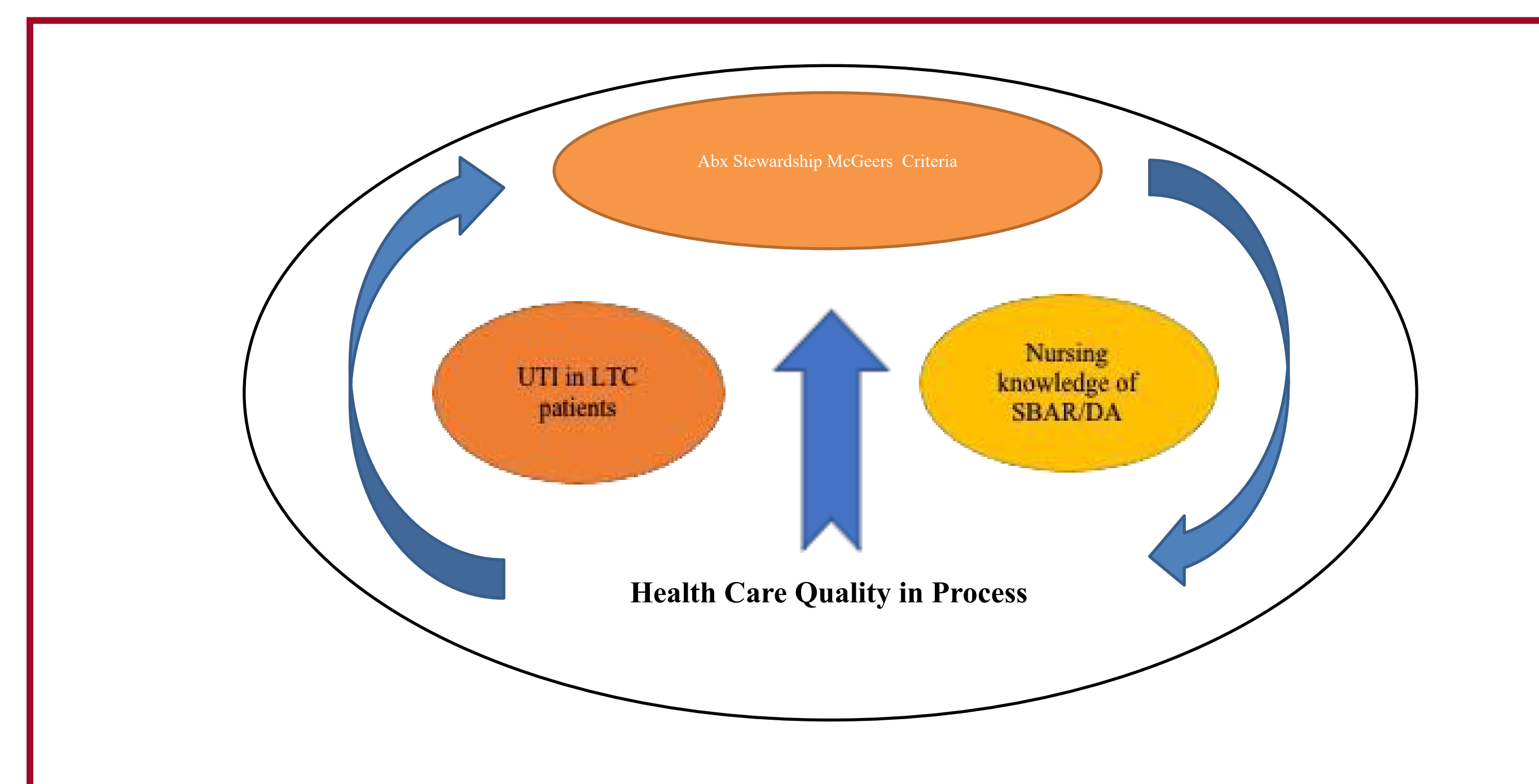

Figure 2 . Health Care Quality in Process
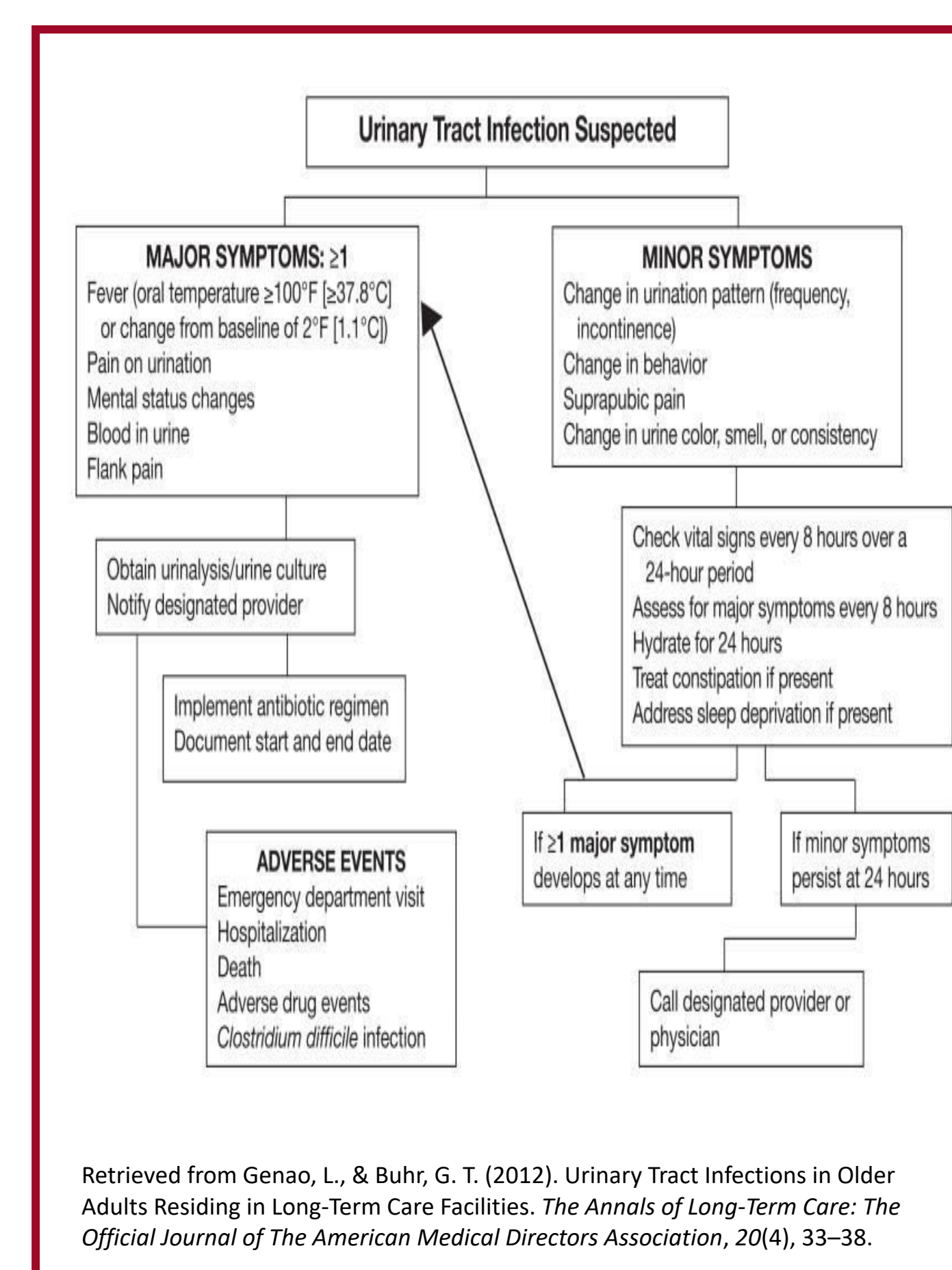

Retrieved from Genao, L., & Buhr, G. T. (2012). Urinary Tract Infections in Older Adults Residing in Long-Term Care Facilities. *The Annals of Long-Term Care: The Official Journal of The American Medical Directors Association*, 20(4), 33–38.

Figure 3. . Diagnostic Algorithm, National Institute of Health

Figure 4. Survey of Suspected UTI SBAR decision-making form

Results

Survey scores for nurses' perceived knowledge:

No significant difference: knowledge of overuse of ABX perceived ability to communicate to clinicians

Significant difference: knowledge of McGeer criteria for identification of UTI

knowledge of use of SBAR tool

Due to the low UTI rates insufficient data to analyze impact of Suspected UTI SBAR tool
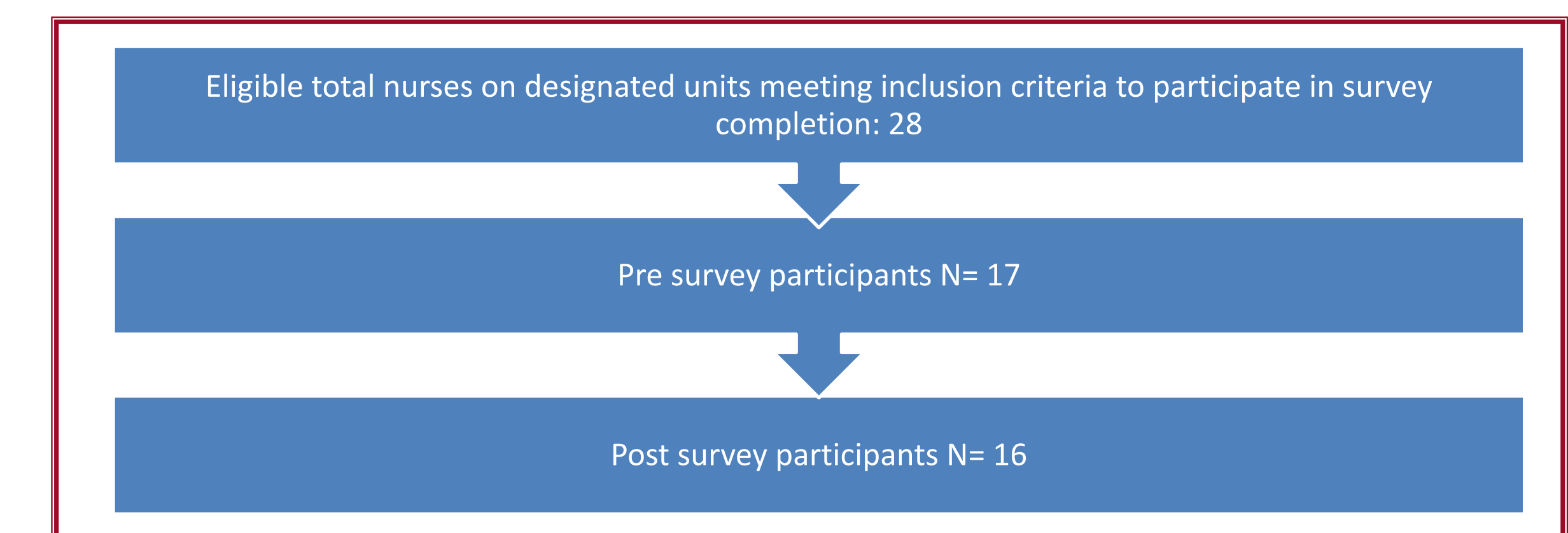

Figure 5: Nurses Surveyed

Conclusion

DNP Project addressed problem of inappropriate ABX use and antimicrobial stewardship in patients with ABU in the long-term care setting by standardizing practice with a decision aid tool

Implications for Nursing Practice, Health Policy, and Education

- Lack of a standardized decision-making tool to identify treatable UTI's versus ABU leads to inaccurate identification and communication with the treating clinician

- September 30, 2019, CMS final rule addressed ABX stewardship, requires Medicare/Medicaid facilities to develop and implement ABX stewardship program

- Suspected UTI SBAR decision-making tool to identify UTI meeting McGeer criteria aligns with the final rule

- Sustainability of this project depends on acceptance by facility DON & Infection Preventionist. Education and perseverance are required

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