Fall 12-5-2021

A Formal Antibiotic Stewardship Protocol To Reduce Antibiotic Use

SHALESE LADAWNE COLLINS
The University of Texas at Tyler, SWalker35@patriots.uttyler.edu

Formal Antibiotic Stewardship Protocol Benchmark Study

Dr. Colleen Marzilli

The University of Texas at Tyler School of Nursing

In Partial fulfillment of

NURS 5382: Capstone

December 5, 2021

Contents

Acknowledgments

I would like to take this moment to thank all of those who have helped me to reach such a pinnacle point in my educational journey. First, I would like to thank God for his sufficient grace and the strength he has given me to balance life and school. Thank you Dr. Barbara McAlister for your guidance, insight, and most importantly your patience during the choosing of my project. Your assistance and support was appreciated because without you I would have not have the knowledge of what a change project truly signifies. Dr. Melinda Hermanns thank you for always being available and uplifting. Your gracious and encouraging words will never be forgotten. Dr. Colleen Marzilli, thank you as well for being welcoming, accessible, and always choosing to inspire your students to do our best. Finally, I would like to thank my husband, Keyron and my children, JaCorien, Sakari, Alex, and Alek, for being my motivation and inspiration. Your unwavering support has allowed me to fulfill one of my most passionate goals─ because of the sacrifices that you have made I will always choose to make you proud.

Executive Summary

Unnecessarily prescribed antibiotics have been a substantial issue in long-term care. Antibiotics are the most frequently prescribed medications in nursing homes; each year 50%-75% of residents receive one or more courses of systemic antibiotic (CDC, 2019). Nursing home leaders are able to promote the reduction of antibiotic use. The issue with providers who are overprescribing antibiotics and at times with no criteria for the use of antibiotics─ approximately 75% of those antibiotics are prescribed incorrectly (CDC, 2019). In the long-term care setting ambiguous clinical signs, ordering of urine cultures without a clear indication, and a lack of education among providers have been documented as the main motivators for antibiotic overuse (Eyer et al., 2016). Some antibiotic prescriptions can cause harm to the elderly population and lead to increased rates of adverse effects, multi-drug resistance, morbidity, and mortality (Passay et al., 2019; Eyer et al., 2016). New nursing home guidelines include an obligation to evaluate and monitor antibiotic use (CDC, 2019).

Infection surveillance descriptions, such as McGeer and Loeb clinical consensus criteria, were created to identify common signs and symptoms of urinary tract infection (UTI) and establish constitutional classifications for nursing homes (Ryan et al., 2018). Since the conception of the criteria only a small number of presumed infections for which antibiotic therapy was initiated have met the clinical criteria (Ryan et al., 2018). The Centers for Disease Control and Prevention (CDC) and the Agency for Healthcare and Research Quality (AHRQ) both specify that nursing staff must be trained on signs and symptoms of UTI since providers frequently rely on nurse assessments communicated to the provider via phone, and there is no specific criterion to ensure conditions were met to initiate an antibiotic (Eyer et al., 2016). Antimicrobial stewardship is a key instrument to prevent antimicrobial resistance and

purposefully seeks to accomplish this by improving antimicrobial use (Morrill et al., 2016). It is critically important to the safety of patients that antimicrobial use is corrected in long-term care facilities. Leadership can help correct this problem by having a clear policy for antibiotic stewardship and training staff to use the suspected UTI Situation Background Assessment Recommendation (SBAR) toolkit protocol and holding staff accountable for its application. Therefore, it is recommended that antimicrobial stewardship educational training sessions be held in person and include specifics about the diagnosis and treatment of UTI, locally developed guidelines, and prescriber feedback

1. Rationale for the Project

Antimicrobial resistance is a worldwide public health emergency and a nationwide safety threat to the United States (Morrill et al., 2016). The 1.4 million older adults residing in American nursing homes are at particularly high risk of multi-drug resistant organism (MDRO) infection due to antibiotic overuse. It is estimated that one in three nursing home residents are colonized with an MDRO and that as many as 75% of the 3 million annual antibiotic prescriptions for presumed infections in this setting may be inappropriate (Feldstein et al., 2017). According to the Centers for Disease Control (CDC) 2019, more than 2.8 million antibiotic-resistant infections occur in the U.S. each year, and more than 35,000 people die as a result.

As antibiotics have become more widespread in the long-term care setting, complications from the overuse of antibiotics have impelled the CDC to begin compelling nursing homes to set up an antibiotic stewardship program (ASP). The CDC recommends seven core elements of ASP for long-term care facilities: leadership commitment, pharmacy expertise, education, action, accountability, tracking, and reporting data (Centers for Disease Control and Prevention [CDC], 2019). However, no clear guidelines are available to guide the implementation of such programs

in nursing homes, except the CDC core elements of antibiotic stewardship for nursing homes (Belan et al., 2020). Determining the appropriateness of antibiotic use in nursing homes is challenging. The staff nurses who are most commonly licensed vocational nurses (LVNs) are the sole eyes and ears of the provider to evaluate the patient and as a result of lack of sufficient diagnostic testing in nursing homes, several antibiotics are started empirically (Feldstein et al., 2017). In the skilled nursing facilities where a decision-making aid/toolkit and ASP was implemented, the number of antibiotics prescribed for UTI and the rate of unnecessary microbiologic testing lowered considerably while the prevalence of appropriate antibiotic use drastically increased leading to a significant patient safety initiative (Passay et al., 2021; Belan et al., 2020; Wu et al., 2019; Feldstein et al., 2017; Morrill et al., 2016; Doernberg et al., 2015). Christian Care Skilled Nursing Facility has an ASP that requires some improvements for quality assurance and performance improvement. Previously, UTIs have been managed with antibiotics without accurate assessment.

A guide or toolkit can help leadership, clinicians, and staff to monitor and improve antibiotic use (Passay et al., 2021). Leadership accountability will help to strengthen and maintain the protocol for safe and appropriate antibiotic use. Incorporating leadership engagement and a systematic process for problem-solving and change are key ingredients to successful evidenced-based change projects (Fisher et al., 2016). Application of the SBAR toolkit will add to the awareness to improve ASP and the outcome would reduce the number of inappropriate antibiotic use.

1.1 Project Goals

The purpose of this Benchmark Study is to bring awareness of the need for effective ASP in long-term care facilities. Antimicrobial resistance is an international public health crisis and a

national security threat to the United States. Enhancing the use of antibiotics to safeguard patients and decrease antibiotic resistance is a national priority (Morrill et al., 2016). Ambiguous clinical signs, ordering of urine cultures without clear indication, limited resources, and lack of education among nursing staff and providers are documented as the main motivators for antibiotic overuse in nursing homes (Feldstein et al., 2017; Eyer et al., 2016). When nursing staff and clinical providers lack the proper education and correct understanding of the decision-making involved in antibiotic prescribing it leads to a substantial increase in a resident's risk of acquiring antibiotic-resistant bacteria, which may result in expensive subsequent infections and adverse health outcomes.

In order to reduce the morbidity and mortality associated with antibiotic resistance it is imperative to establish an efficacious and sustainable ASP by having initial and continuing education and good leadership support. The goal of this project is to develop a protocol for patients presumed to have a UTI with guidelines to reduce unnecessary use of antibiotics.

2. Literature Discussion to Support Project

During a review of the literature, many articles and studies were examined and analyzed that indicated the importance of having an effective ASP in nursing homes to reduce the overuse of antibiotics. The most effective antimicrobial stewardship strategies included educational training sessions, academic detailing regarding the diagnosis and treatment of UTI, established guidelines, and prescriber feedback (Belan et al., 2020; Wu et al., 2019; Feldstein et al., 2017; Morrill et al., 2016). Implementing and sustaining antibiotic stewardship in nursing home culture also requires commitment and support from leadership (Fisher et al., 2016). This includes helping to improve antibiotic overuse by having clear policies and training for staff to use a decision-making aid and holding staff accountable for its use. Laka et al. (2020) investigated the

effectiveness of an evidence-based clinical decision support tool for reducing unnecessary and suboptimal antibiotics. The results indicated that appropriate antibiotic therapy was twice as likely to occur following the implementation of a clinical decision support system. Its use was also associated with an 18% decrease in mortality. Wu et al. (2019) conducted a study to examine a comprehensive assessment of antimicrobial stewardship interventions that could be implemented in long-term care facilities and discovered that the three most commonly executed strategies include education materials, educational meetings, and guideline implementation. Doernberg et al. (2015) conducted a quasi-experimental study that targeted antibiotic prescriptions for UTI using time series analysis at three community long-term care facilities. The ASP team performed a weekly prospective audit and feedback of consecutive prescriptions for UTIs. The Loeb clinical consensus criteria was used to assess the appropriateness of antibiotics. An immediate 26% decrease in antibiotic prescriptions for UTIs during the ASP was identified with a 6% reduction continuing through the intervention period.

In a qualitative study by Scales et al. (2017) that explored perspectives of antibiotic use and antibiotic stewardship of nurses and medical providers in nursing homes. The study identified that all participants supported reducing antibiotic use. Participants also indicated that residents and families favor antibiotic use and influence prescribing decisions. It was also identified that antibiotic stewardship interventions should foster cooperation and build competency to implement alternative management approaches and to educate residents and families. Nguyen et al. (2019) provided a systematic review of literature that evaluated the effects of interventions to improve antimicrobial stewardship for older people in nursing homes. Even though the interventions had little impact on adherence to the guidelines they appeared to decrease overall antimicrobial consumption. The study provided sufficient evidence about the

importance of ASP in nursing homes. Falcone et al. (2018) discussed the urgent need for ASPs tailored for long-term care facilities. The article discussed the importance of effective comprehensive and organized educational interventions, involving both clinicians and nursing staff.

In a systematic review conducted by Lee et al. (2018) the studies reported reduced antibiotic usage and cost savings as a consequence of antibiotic stewardship programs. Mortality rates were also significantly improved by ASP using drug monitoring. McMaughan et al. (2016) observed a significant reduction in antibiotic use from 65% to 57% with a decision-making guide being utilized in long-term care facilities that were reviewed. The study concluded that while the correctly used decision-making aid reduced unnecessary antibiotic use during the intervention period, it was not maintained during everyday use. This suggests that leadership needs to monitor compliance with the aid.

The articles reviewed showed consistent findings that long-term care facilities who have clear policies, effective evidence-based tools, educational training for healthcare clinicians, prescriber feedback, monitoring, and supportive leadership are successful at reducing and preventing unnecessary antibiotic use and poor outcomes. These strategies are the foundation for the implementation of the benchmark project.

3. Project Stakeholders

A stakeholder is an individual, group, corporation or institution who affects or can be affected by organizational actions (Chism, 2019). Stakeholders have a vested interest in evidence that endorses clinical decisions that have a subsequent effective outcome. The key project stakeholders for this benchmark study include the Licensed Nursing Facility Administrator

(LNFA), the Director of Nursing (DON), the Medical Director, and the infectious disease pharmacist. Facility stakeholders for the eventual evidence-based training will include: attending physicians, infection control Registered Nurse, nurse managers, nurse educators, staff nurses, patients, and family members. Implementing and sustaining antibiotic stewardship in nursing home culture requires commitment at an organizational level. Leadership responsibility will help support and sustain the protocol for safe and appropriate antibiotic use (Fisher et al., 2016). Support and cooperation of management and clinicians are key to the success of any antimicrobial stewardship program (Morrill et al., 2016).

4. Proposed Outcomes

This project will concentrate on the improvement and application of a suspected UTI SBAR toolkit protocol to reduce the number of antibiotics prescribed in long-term care facilities. In 2013, South Dakota created a statewide program to improve antibiotic prescribing practices program as a result of an outbreak of Carbapenem-resistant Enterobacteriaceae (CRE) and this program remains effective and used for fewer than 900,000 residents. The need for ASP is increased because the health department in South Dakota investigated long-term care facilities and found that only 21% had an effective ASP in place. The Secretary of Health of South Dakota urged United States healthcare leaders to correct antibiotic prescribing habits across the nation and leading facilities executed ASP to combat the core obstacle of antibiotic resistant organisms as a whole (CDC, 2021). This ASP project is proposed to reduce the overprescribing practices for antibiotics.

Initiating a protocol to manage unwarranted use of antibiotics is an important patient and public health issue as well as a national priority (Morrill et al., 2016). Therefore, the U.S. health department developed a program to educate healthcare professionals with the purpose to improve

antibiotic prescribing practices (CDC, 2019). This model serves as national curriculum, and it is equivalent to the needs of this organization and will be the blueprint for this change project. The clinicians and nursing staff will use the SBAR toolkit as a standard guideline for assessing the need for antibiotic treatment in the presence of specific symptoms related to UTI.

The outcomes of the program include the following: 1. Develop a protocol for residents presumed to have a UTI with guidelines to reduce unnecessary use of antibiotics; 2. Present new SBAR toolkit to healthcare team members and assess their knowledge of it.; 3. Evaluate changes in staff learning regarding existing, evidenced-based UTI protocols.; 4. Assess the impact on the reduction of inappropriate antibiotic ordering through chart analysis with the goal of an antibiotic reduction rate of at least 20% in all patients presumed to have a UTI over a period of three months.

5. Evaluation Design

Evaluation of the participants understanding in this antibiotic stewardship protocol will be obtained with pre-tests (online modules) and after the educative PowerPoint presentation through post-tests (face-to-face assessment). The pre and post-test questionnaire that will be utilized during the educational training sessions consists of 10 questions concerning the application of the toolkit where a score of 80% must be obtained (see Appendix A). Antimicrobials will be documented on an antibiotic log and monitored and evaluated for the rate of antibiotics used to treat UTI. Patient charts will be reviewed each week by the DON and infection control RN and monthly by the infectious disease pharmacists.

6. Timetable/Flowchart

The Benchmark Study was expected to be introduced to management in mid- October but was subsequently cancelled due to COVID. Optimistically, the presentation will be presented in

January 2022. Once approved by senior management, the project timeline will be twelve weeks. The timeframe includes data collection, analysis/interpretation of data, and implementation of the project. Weeks one through two will include participant recruitment and organizing content for the training sessions. Weeks three through six will include educating the nursing staff and providers and the execution of the antibiotic protocol. Weeks seven through twelve will concentrate on collecting antibiotic prescription rates from patient charts and will include project evaluation through statistical analysis of the assembled data and antibiograms.

7. Data Collection Methods

Prior to and after the implementation of the intervention an analysis of antibiotic prescription rates initiated as treatment for UTI will be assessed. Data collection and evaluation of the formal antibiotic stewardship protocol (based on approval) will be completed from assessing the online modules and pre- and post-test submissions after the completion of each module. The clinical educators will then examine the post-test results of each participant after receiving educational face-to-face training to determine staff knowledge of the SBAR toolkit. Analysis of the pre- and post-test intervention antibiotic prescribing rates will then be evaluated for comparison to ascertain whether there is significant evidence to establish a contrast after the implementation of the intervention.

8. Discussion of Evaluation

Currently, as a result COVID and not being able to hold an official meeting with the entire administrative team there is not a formal evaluation of this benchmark study. The input and feedback from senior leadership is valuable and will be conducive to the success of the intervention. Nevertheless, there has been encouraging critique from the Registered nurse clinical educator, who is a member of the executive administrative team. The Director of Nursing

expresses that it is a well-organized plan and recommendation that includes applicable and essential evidence-based research to foster the approval of the project by senior leadership. Ensuing successful educational training and the implementation of the new ASP protocol the expectation is to observe a substantial increase in the knowledge of the SBAR toolkit and a significant reduction of antibiotic prescriptions for UTIs.

9. Costs/Benefits

Implementation of a new antimicrobial stewardship program is demanding, and it requires increased resources and time (Morrill et al., 2016). The budget of this project was analyzed in terms of office supplies, food, employee training and development, and human resources. Office supplies (paper, pens, folders, certificates) needed for the five day in-person training on average is $300.00. Meals including breakfast, snacks, and lunch average $500.00. The program requires budgeting four staff RNs, 15 LVNs, and 25 CNAs for this project with a total cost of $25, 800. The clinical nurse educator's salary is averaged at $35/hr. for five days (40 hours) to amount to $1400. The human resources personnel will be needed for five days (40 hours) averaged at $20/hr. with a total cost of $720.

The benefit of implementing this project far outweigh the expenses. Inappropriate antibiotic prescribing increases side effects and costs. The estimated cost of antimicrobial resistance is $55 billion every year in the United States, $20 billion for health care and about $35 billion for loss of productivity (CDC, 2019). The projected budget to implement this intervention is $28, 720.

Conclusions/Recommendations

The unnecessary or inappropriate use of prescription antibiotics is a public health problem that could have the potential effects of antibiotic resistance. Antibiotic resistance was

included by the World Health Organization (WHO) on the list of the ten threats to global health in 2019 (Belan et al. 2020). An estimated 40% to 75% of antibiotics prescribed in U.S. nursing homes may be unwarranted, and moreover, the most commonly treated infection in nursing homes is a urinary tract infection. Each year more than 2.8 million antibiotic-resistant infections occur in the U.S. each year, and more than 35,000 people die as a result (CDC, 2019).

Antimicrobial stewardship is an important measure to combat antimicrobial resistance and distinctively seeks to accomplish this by improving antibiotic use (Morrill et al., 2016). Establishing an antibiotic stewardship program (ASP) and having surveillance in long-term care facilities is crucial.

Several studies have shown that ASP significantly reduces the incidence of infections and colonization with antibiotic resistance bacteria (Baur et al., 2017). The current performance at Christian Care Skilled Nursing Facility is not appropriate and does not meet best practice standards. The Centers for Disease Control and Prevention recommends that all nursing homes take steps to improve antibiotic prescribing practices through the utilization of antibiotic stewardship activities to protect residents from the adverse events of antimicrobial resistant infections, such as Clostridium difficile. Adopting an ASP that embraces leadership commitment, education, action, accountability, and monitoring will foster a healthcare culture of patient safety and reduce the adverse effects of antibiotic resistance (CDC, 2019). The UTI SBAR toolkit helps to reduce the inappropriate use of antibiotics. An evidenced-based protocol should be established to help guide nursing staff and providers to improve the management of UTIs. The UTI SBAR toolkit helps to reduce the inappropriate use of antibiotics and improve patient outcomes (Agency for Healthcare Research and Quality, 2021).

References

Agency for Healthcare and Research Quality. (2021). Improving antibiotic use is a patient safety issue. https://www.ahrq.gov/antibiotic-use/long-term-care/safety/improve-use.html

Baur, D., Gladstone, B. P., Burkert, F., Carrara, E., Foschi, F., Döbele, S., & Tacconelli, E. (2017). Effect of antibiotic stewardship on the incidence of infection and colonisation with antibiotic-resistant bacteria and clostridium difficile infection: A systematic review and meta-analysis. *Lancet Infectious Diseases, 17*(9), 990–1001. https://doi-org.ezproxy.uttyler.edu/10.1016/S1473-3099(17)30325-0

Belan, M., Thilly, N., Pulcini, C. (2020). Antimicrobial stewardship programmes in nursing homes: A systematic review and inventory of tools. *Journal of Antimicrobial Chemotherapy, 75*(6), 1390-1397. https://doi-org.ezproxy.uttyler.edu/10.1093/jac/dkaa103

Centers for Disease Control and Prevention. (2021, June 28). South Dakota. State-based HAI prevention. https://www.cdc.gov/hai/stateplans/state-hai-plans/sd.html.

Centers for Disease Control and Prevention. (2019, August 08). Improving antibiotic use in outpatient settings. https://www.cdc.gov/antibiotic-use/stewardship-report/nursing-homes.html

Chism, L. (2019). The doctor of nursing practice: A guidebook for role development and professional issues (4th ed.). Sudbury, MA: Jones and Bartlett Learning.

Doernberg, S. B., Dudas, V., & Trivedi, K. K. (2015). Implementation of an antimicrobial stewardship program targeting residents with urinary tract infections in three community

long-term care facilities: A quasi-experimental study using time-series analysis. *Antimicrobial Resistance and Infection Control 54*(4). https://doi.org/10.1186/s13756-015-0095-y

Eyer, M.M., Lang, M., Aujesky, D., & Marschall, J. (2016). Overtreatment of asymptomatic bacteriuria: A qualitative study. *Journal of Hospital Infection, 93*(3), 297-303. https://doi-org.ezproxy.uttyler.edu/10.1016/j.jhin.2016.04.007

Falcone, M., Paul, M., Yahav, D., Orlando, G., Tiseo, G., Prendki, V., Guerri-Fernandez, R., Gavazzi, G., Mutters, N. T., Cookson, B., Marco, M. T. (2018). Antimicrobial consumption and impact of antimicrobial stewardship programmes in long-term care facilities. *Clinical Microbiology and Infection 25*(5), 562-569. https://doi.org/10.1016/j.cmi.2018.07.028

Feldstein, D., Sloane, P.D., & Feltner, C. (2017). Antibiotic stewardship programs in nursing homes: A systematic review. *Journal of the American Medical Directors Association, 19*(2), 110-116. http://dx.doi.org/10.1016/j.jamda.2017.06.019

Fisher, C., Cusack, G., Cox, K., Feigenbaum, K., & Wallen, G. R. (2016). Developing competency to sustain evidence-based practice. The Journal of nursing administration. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5120868/

Laka, M., Milazzo, A., & Merlin, T. (2020). Can evidence-based decision support tools transform antibiotic management? A systematic review and meta-analyses. *Journal of Antimicrobial Chemotherapy (JAC), 75*(5), 1099–1111. https://doi-org.ezproxy.uttyler.edu/10.1093/jac/dkz543

Lee, C. F., Cowling, B. J., Feng, S., Aso, H., Wu, P., Fukuda, K., & Seto, W. H. (2018, January 11). Impact of antibiotic Stewardship programmes in Asia: A systematic review and meta-analysis. OUP Academic. https://academic.oup.com/jac/article/73/4/844/4799055?login=true.

McMaughan, D. K., Nwaiwu, O., Hongwei Zhao, Frentzel, E., Mehr, D., Imanpour, S., Garfinkel, S., Phillips, C. D., & Zhao, H. (2016). Impact of a decision-making aid for suspected urinary tract infections on antibiotic overuse in nursing homes. *BMC Geriatrics*, *16*, 1–9. https://doi-org.ezproxy.uttyler.edu/10.1186/s12877-016-0255-9

Morrill, H. J., Caffrey, A. R., Jump, R. L. P., Dosa, D., & LaPlante, K. L. (2016). Antimicrobial stewardship in long-term care facilities: A call to action. *Journal of the American Medical Directors Association 17*(2). https://doi.1016/j.jamda.2015.11.013

Nguyen, H. Q., Tunney, M. M., & Hughes, C. M. (2019). Interventions to Improve Antimicrobial Stewardship for Older People in Care Homes: A systematic review. *Drugs & Aging*, *36*(4), 355–369. https://doi-org.ezproxy.uttyler.edu/10.1007/s40266-019-00637-0

Pasay, D., Guirguis, M., Shkrobot, R., Slobodan, J., Wagg, A., Sadowski, C., Conly, J., Saxinger, L., & Bresee, L. (2019). Antimicrobial stewardship in rural nursing homes: Impact of interprofessional education and clinical decision tool implementation on urinary tract infection treatment in a cluster randomized trial. *Infection Control & Hospital Epidemiology*, *40*(4), 432-437. https://doi:10.1017/ice.2019.9

Ryan, S., Gillespie, E., & Stuart, R.L. (2018). Urinary tract infection surveillance in residential aged care. *American Journal of Infection Control*, *46*(1), 67-72. https://doi-org.ezproxy.uttyler.edu/10.1016/j.ajic.2017.07.002

Scales, K., Zimmerman, S., Reed, D., Beeber, A. S., Kistler, C. E., Preisser, J. S., Weiner, B. J., Ward, K., Fann, A., & Sloane, P. D. (2017). Nurse and medical provider perspectives on antibiotic stewardship in nursing homes. *Journal of the American Geriatrics Society*, *65*(1), 165–171. https://doi-org.ezproxy.uttyler.edu/10.1111/jgs.14504

Wu, J., Langford, B., Daneman, N., Friedrich, J., & Garber, G. (2018). Antimicrobial stewardship programs in long-term care settings: A meta-analysis and systematic review. *Journal of the American Geriatrics Society 67*(2), 392-399. https://agsjournals.onlinelibrary.wiley.com/doi/full/10.1111/jgs.15675

Appendix A

Suspected UTI SBAR

Suspected UTI SBAR

Complete this form before contacting the resident's physician.

Date/Time_____

Resident Name_____ Date of Birth_____

Nurse_____ Phone_____

SITUATION

I am contacting you about a suspected UTI for the above resident.

Vital Signs BP_____/_____ HR _____ Resp. rate _____ Temp. _____

BACKGROUND

Active diagnoses

☐ No ☐ Yes The resident has an indwelling catheter

☐ No ☐ Yes Patient is on dialysis

☐ No ☐ Yes The resident is incontinent If yes, new/worsening? ☐ No ☐ Yes

☐ No ☐ Yes Advance directives. Specify_____

☐ No ☐ Yes Medication Allergies. Specify_____

☐ No ☐ Yes The resident is on Warfarin (Coumadin®)

ASSESSMENT

Resident WITH indwelling catheter

The criteria are met to initiate antibiotics if one of the below are selected

No Yes

☐ ☐ Fever of 100°F (38°C) or repeated temperatures of 99°F (37°C)*

☐ ☐ New back or flank pain

☐ ☐ Acute pain

☐ ☐ Rigors /shaking chills

☐ ☐ New dramatic change in mental status

☐ ☐ Hypotension (significant change from baseline BP or a systolic BP <90)

Resident WITHOUT indwelling catheter

Criteria are met if one of the three situations are met

No Yes

☐ ☐ 1. Acute dysuria alone

OR

☐ ☐ 2. Single temperature of 100°F (38°C) **and** at least one new or worsening of the following:

- ☐ urgency
- ☐ frequency
- ☐ back or flank pain
- ☐ suprapubic pain
- ☐ gross hematuria
- ☐ urinary incontinence

OR

☐ ☐ 3. No fever, but two or more of the following symptoms:

- ☐ urgency
- ☐ frequency
- ☐ incontinence
- ☐ suprapubic pain
- ☐ gross hematuria

* For residents who regularly run a lower temperature, use a temperature of 2°F (1°C) above the baseline as a definition of a fever.

REQUEST FOR ORDERS

Physician's signature_____ Date_____

www.ahrq.gov/NH-ASPGUIDE· June 2014
AHRQ Pub. No. 14-0010-2-EF
(Agency for Healthcare Research and Quality, 2016)

Appendix B
Survey Instrument Tool (Pre-test/Post-test)
Knowledge About the SBAR Toolkit

Survey Questions	Yes	No
1. Does SBAR stand for Situation, Background, Assessment Input, and Request?		
2. Do you use SBAR to document a resident's condition to make it easier to determine whether antibiotics are appropriate?		
3. Is there an ASP in the facility?		
4. Even though a change in mental status can be related to an infection, does is necessarily mean that someone has a UTI?		
5.Are the following key symptoms of urinary tract infections are: — Dysuria or acute pain when urinating — Fever with another symptom resident. ▪ Note that fever should evaluated for each individual resident. Some residents regularly run a lower temperature. — Back or flank pain — Frequent urination — Incontinence — A strong, persistent urge to urinate — Suprapubic pain — Gross hematuria — New or dramatic change in mental status for residents with an indwelling catheter — Hypotension		
6. Is it true that signs or symptoms of a UTI, sometimes they could be related to some other issue or problem?		
7. If a resident has a suspected UTI, should the nursing staff communicate with the physician or NP about symptoms and the resident's condition?		
8. Could ordering excess antibiotics lead to C-Diff or antibiotic resistance?		
9. Is using the SUTISTP is a new policy and mandatory for assessment of UTI?		
10. Is encouragement of liquids multiple times a day an intervention for suspected UTI?		

(Agency for Healthcare Research and Quality, 2021)