

Nursing and Provider Antibiotic Use Attitudes and Beliefs Surveys- Table of Contents:

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Antibiotic Use Attitudes and Beliefs Survey Cover Letter Template for Nurses

«Date»

«Mr. / Ms.» «First_Name» «Last_Name»

«Address»

«City», «State» «ZIP»

Dear «Mr. / Ms.» «Last_Name»:

«Facility Name» is conducting an anonymous survey about infections and antibiotic use in long-term care facilities; your participation is kindly requested.

While I strongly support this effort, I am very aware of the constraints on your time. Only the most pertinent survey questions are included; the survey will take less than 15 minutes to complete. Please answer the questions as honestly and completely as possible.

Please return your completed survey to «location» by «date 2 weeks from distribution». Thank you in advance for your participation!

If you have any questions about the survey please don't hesitate to contact «Name» at «phone number and/or email address».

Sincerely,

«Name», «Credentials»

Director of Nursing

«Facility»

Enclosure: Antibiotic Use Attitudes and Beliefs: Nursing Survey

Antibiotic Use Attitudes and Beliefs: Nursing Survey

1. Please check your current role: RN LPN Other: _____
2. How many years have you been working in a long-term care facility?
 0 – 5 6 – 10 11 – 20 More than 20

The following are questions about antibiotic use and urinary tract infections.

3. When selecting a response that most accurately reflects your opinion regarding antibiotic use, please choose from the following options: ‘antibiotics rarely contribute,’ ‘antibiotics sometimes contribute,’ or ‘antibiotics often contribute.’

I believe that using antibiotics contributes to:

	Rarely	Sometimes	Often
3a. Diarrhea in the person taking antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3b. Future resistance to antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3c. Reduced rates of influenza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3d. High quality care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3e. Interaction with other medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3f. Rash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3g. Family perception of high quality care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITH** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: ‘rarely appropriate,’ ‘sometimes appropriate,’ or ‘often appropriate.’

	Rarely	Sometimes	Often
4a. Resident with foul-smelling urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4b. Resident with bacteria in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4c. Resident with bacteria and white blood cells (WBC) in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4d. Change in functional status and family concern about a possible infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4e. New confusion and history of urinary tract infection (UTI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4f. Positive influenza rapid test	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4g. Cough and green or yellow nasal discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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5. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITHOUT** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: ‘rarely appropriate,’ ‘sometimes appropriate,’ or ‘often appropriate.’

	Rarely	Sometimes	Often
5a. Resident with foul-smelling urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5b. Resident with bacteria in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5c. Resident with bacteria and white blood cells (WBCs) in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5d. Change in functional status and family concern about a possible infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5e. New confusion and history of urinary tract infection (UTI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5f. Positive influenza rapid test	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5g. Cough and green or yellow nasal discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. When selecting a response that most accurately reflects your opinion about when action should be taken, please choose from the following options: ‘rarely take the following action,’ ‘sometimes take the following action,’ or ‘often take the following action.’

When assessing an otherwise stable and alert resident with a fever, no other complaints, and a history of urinary tract infections (UTIs), would you:

	Rarely	Sometimes	Often
6a. Increase frequency of monitoring vital signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6b. Obtain an order for urinalysis and culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6c. Recommend this resident receive antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6d. Review resident history and symptoms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6e. Review resident’s current medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6f. Encourage fluids (if no fluid restrictions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6g. Recommend this resident be evaluated in an Emergency Department (ED) / clinic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. When selecting a response that most accurately reflects your beliefs about ways to prevent the spread of diseases, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

	Disagree	Neutral	Agree
7a. I don't have to change gloves between resident rooms if I am just emptying Foley bags.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7b. I only need to remove gloves when they look dirty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7c. Flu can be spread to others before the infected person has symptoms of influenza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7d. You can get the flu from the flu shot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. **Scenario:** A resident has cloudy, foul-smelling urine; is agitated; slightly more confused than baseline; and has a history of UTI; T = 99.1°F. What would you do? (Circle all that apply)

- a. Recommend this resident receive antibiotics
- b. Document resident status and continue to monitor
- c. Contact the provider for an order to send a urine specimen to the lab for a urinalysis (UA) / urine culture (UC)

9. I believe antibiotics are effective against infections caused by viruses such as influenza ("flu").

___ True or ___ False

10. I believe that other than an allergy to an antibiotic, there are no side effects to taking antibiotics.

___ True or ___ False

11. When selecting a response that most accurately reflects your beliefs about *Clostridium difficile* (*C. diff*) infection, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

	Disagree	Neutral	Agree
11a. Antibiotics are a major risk factor for developing <i>C. diff</i> infection (CDI).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11b. <i>C. diff</i> testing requires 3 stool samples.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11c. A test-of-cure should be done after completion of <i>C. diff</i> treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11d. <i>C. diff</i> can be spread by healthcare worker hands.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11e. Test only unformed stool (stool that takes the shape of the container).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Antibiotic Use Attitudes and Beliefs: Nursing Survey Response Facilitator Guide

For each question, summarize the responses for each category among all survey respondents.

1. Please check your current role: RN LPN Other: _____
 # / % of RN respondents: ___ / ___
 # / % of LPN respondents: ___ / ___
 # / % of 'Other' respondents: ___ / ___

2. How many years have you been working in a long-term care facility (LTCF)?
 # / % of respondents working in LTCF for 0 – 5 years: ___ / ___
 # / % of respondents working in LTCF for 6 – 10 years: ___ / ___
 # / % of respondents working in LTCF for 11 – 20 years: ___ / ___
 # / % of respondents working in LTCF for more than 20 years: ___ / ___

The following are questions about antibiotic use and urinary tract infections.

3. When selecting a response that most accurately reflects your opinion regarding antibiotic use, please choose from the following options: 'antibiotics rarely contribute,' 'antibiotics sometimes contribute,' or 'antibiotics often contribute.' I believe that using antibiotics contributes to:

	Rarely	Sometimes	Often
3a. Diarrhea in the person taking antibiotics	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: Antibiotics can cause side effects for some residents, including diarrhea. Diarrhea may result from the antibiotics killing the helpful gut bacteria, allowing harmful bacteria such as Clostridium difficile, or C. diff, to overgrow. Every exposure to antibiotics puts residents at risk for developing what the Centers for Disease Control and Prevention (CDC) have called 'deadly diarrhea.'

	Rarely	Sometimes	Often
3b. Future resistance to antibiotics	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: Antibiotics have been used so widely and for so long that some bacteria have adapted to antibiotics designed to kill them, making the bacteria resistant and the drugs less effective. People infected with antimicrobial-resistant organisms are more likely to have longer, more expensive hospital stays, and may be more likely to die as a result of the infection. Preserving effective antibiotic treatments requires all of us to do our part.

	Rarely	Sometimes	Often
3c. Reduced rates of influenza	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: Antibiotics are powerful tools for fighting bacterial illnesses (like strep throat), but they DO NOT work for viral illnesses (like the common cold or influenza). According to the CDC, flu vaccination can reduce flu illness, antibiotic use, doctor visits and lost time from work, as well as prevent hospitalizations and deaths. Flu vaccination is important for all healthcare providers as well as residents.

	Rarely	Sometimes	Often
3d. High quality care	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: A thorough resident assessment may reveal that antibiotics are indicated for optimal resident care. High quality care can also be demonstrated by providing symptomatic cares, performing regular reassessments, spending extra time with residents, and implementing other non-pharmacologic nursing interventions.</i>			
	Rarely	Sometimes	Often
3e. Interaction with other medications	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: All antibiotics have the potential to interact with other medications. Prescribing antibiotics when they are not needed can increase residents' chances of experiencing an adverse drug reaction.</i>			
	Rarely	Sometimes	Often
3f. Rash	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: While antibiotics are powerful medicines and are essential to the treatment of some infections, antibiotics can also cause harmful side effects. Side effects of antibiotics may include: upset stomach, rash, interaction with other medications, and diarrhea.</i>			
	Rarely	Sometimes	Often
3g. Family perception of high quality care	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Use evidence-based recommendations to guide practice, and ensure families are aware of facility policies and protocols regarding when antibiotics are warranted.</i>			

4. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITH** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: 'rarely appropriate,' 'sometimes appropriate,' or 'often appropriate.'

Suggested facilitator response: Note that Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics in LTC Residents differs for residents with or without an indwelling catheter. For LTC residents with an indwelling catheter, at least one of the following should be present in order to initiate antibiotics for urinary tract infection (UTI) (Loeb et al., 2001):

- *Fever (>37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature)*
- *New costovertebral angle tenderness*
- *Rigors (shaking chills) with or without identified cause*
- *New onset of delirium*

	Rarely	Sometimes	Often
4a. Resident with foul-smelling urine	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: Foul-smelling or cloudy urine has historically been used by nurses and other health care providers as an indicator of a UTI. However, malodorous urine can be caused by several factors, including dehydration, diet, medication, or the presence of specific bacteria. Using urine odor to identify the presence of bacteria in urine resulted in error in 1/3 of cases in one published study. Foul-smelling urine without clinical symptoms of a UTI does not indicate the presence of a UTI, and is not a valid indication for initiating antibiotics, according to Loeb et al. (2001).

	Rarely	Sometimes	Often
4b. Resident with bacteria in urine	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: Urine does not typically contain bacteria, yeast, or white blood cells (pus or pyuria) in younger, healthy people. However, bacteria and pus are frequently found in the urine of elderly and debilitated people due to increased age, chronic disease, functional impairment, invasive devices, dehydration, and other risk factors. Asymptomatic bacteriuria (the presence of bacteria in urine without clinical symptoms of infection) should not be treated with antibiotics, according to evidence-based recommendations (Loeb et al., 2001).

	Rarely	Sometimes	Often
4c. Resident with bacteria and white blood cells (WBC) in urine	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: Pyuria (the accumulation of white blood cells in the urine) is considered an immune response to the presence of bacteria. However, pyuria is neither sensitive nor specific to the diagnosis of a UTI. If a resident has bacteria in his or her urine, he or she will almost always have pyuria. Pyuria without clinical symptoms should not be treated with antibiotics according to evidence-based recommendations (Loeb et al., 2001).

	Rarely	Sometimes	Often
4d. Change in functional status and family concern about a possible infection	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: There are many myths about what symptoms indicate a UTI. While the following symptoms warrant evaluation, they do not warrant antibiotic treatment for UTI, according to Loeb et al. (2001):

- *Chronic incontinence (during sleep or when awake, when coughing or sneezing)*
- *Anorexia*
- *Difficulty falling asleep or staying asleep*
- *Fatigue*
- *Malaise*
- *Weakness*

Use evidence-based recommendations to guide practice, and ensure families are aware of facility policies and protocols regarding when antibiotics are warranted.

	Rarely	Sometimes	Often
4e. New confusion and history of urinary tract infection (UTI)	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: New confusion and altered mental status may be indicators of a potential UTI, and should be evaluated, but do not meet evidence-based recommendations for antibiotic initiation (Loeb et al., 2001). While it is important to know if the resident has had a UTI as part of his or her medical history, assessments regarding a potential UTI should be based on current symptoms.

	Rarely	Sometimes	Often
4f. Positive influenza rapid test	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: Influenza is caused by a virus. Antibiotics only treat conditions caused by bacteria. Antivirals are medications that can shorten the severity or duration of symptoms caused by viruses, such as influenza, and may be prescribed for some viral illnesses if diagnosed early. Getting a flu shot at the beginning of each flu season, covering your coughs/sneezes, frequent hand hygiene, and staying home when you are sick are the best ways to avoid getting influenza and prevent the spread of the flu.

	Rarely	Sometimes	Often
4g. Cough and green or yellow nasal discharge	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: Viruses cause most coughs and nasal discharge (even the thick, yellow-green stuff!). Viral infections almost always get better on their own – with comfort measures to ease the symptoms. Taking antibiotics does not shorten the duration of the illness.

5. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITHOUT** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: ‘rarely appropriate,’ ‘sometimes appropriate,’ or ‘often appropriate.’

Suggested facilitator response: Note that Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics in LTC Residents differs for residents with or without an indwelling catheter. For LTC residents without an indwelling catheter, at least one of the following must be present to meet Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics for UTI:

- Acute dysuria (painful urination)
Note: Dysuria alone is an indication to start antibiotics without any other symptoms

OR

- Fever: >37.9°C [100°F]; or a 1.5°C [2.4°F] increase above baseline

PLUS at least one of the following symptoms:

- New or worsening:
- Urgency
- Frequency
- Suprapubic pain
- Gross hematuria (blood in urine)
- Costovertebral angle (CVA) tenderness
- Urinary incontinence

	Rarely	Sometimes	Often
5a. Resident with foul-smelling urine	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: Foul-smelling or cloudy urine has historically been used by nurses and other health care providers as an indicator of a UTI. However, malodorous urine can be caused by several factors, including dehydration, diet, medication, or the presence of specific bacteria. Using urine odor to identify the presence of bacteria in urine resulted in error in 1/3 of cases in one published study. Foul-smelling urine without clinical symptoms of a UTI does not indicate the presence of a UTI, and is not a valid indication for initiating antibiotics.

5b. Resident with bacteria in urine	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Urine does not typically contain bacteria, yeast, or white blood cells (pus or pyuria) in younger, healthy people. However, bacteria and pus are frequently found in the urine of elderly and debilitated people due to increased age, chronic disease, functional impairment, invasive devices, dehydration, and other risk factors. Asymptomatic bacteriuria (the presence of bacteria in urine without clinical symptoms of infection) should not be treated with antibiotics, according to evidence-based recommendations (Loeb et al., 2001).</i>			
5c. Resident with bacteria and white blood cells (WBCs) in urine	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Pyuria (the accumulation of white blood cells in the urine) is considered an immune response to the presence of bacteria. However, pyuria is neither sensitive nor specific to the diagnosis of a UTI. If a resident has bacteria in his or her urine, he or she will almost always have pyuria. Pyuria without clinical symptoms should <u>not</u> be treated with antibiotics (Loeb et al., 2001).</i>			
5d. Change in functional status and family concern about a possible infection	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: There are many myths about what symptoms indicate a UTI. While the following symptoms warrant evaluation, they do <u>not</u> warrant antibiotic initiation for UTI:</i> <ul style="list-style-type: none"> • Chronic incontinence (during sleep or when awake, when coughing or sneezing) • Anorexia • Difficulty falling asleep or staying asleep • Fatigue • Malaise • Weakness <i>Use evidence-based recommendations to guide practice, and ensure families are aware of facility policies and protocols regarding when antibiotics are warranted.</i>			
5e. New confusion and history of urinary tract infection (UTI)	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: New confusion and altered mental status may be indicators of a potential UTI, and should be evaluated, but do not meet evidence-based recommendations for antibiotic initiation (Loeb et al., 2001). Knowledge of a resident's UTI history may be helpful when making care decisions, such as teaching regarding perineal hygiene, wiping front-to-back, promoting/prompting regular urination, and adequate fluid intake, if not contraindicated. However, a resident's current clinical signs and symptoms should be considered when assessing for a UTI.</i>			
5f. Positive influenza rapid test	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Influenza is caused by a virus. Antibiotics only treat conditions caused by bacteria. Antivirals are medications that can shorten the severity or duration of symptoms caused by some viruses, such as influenza. These medications may be prescribed in some situations and if the viral illness is diagnosed early. Getting a flu shot at the beginning of each flu season, covering your coughs/sneezes, frequent hand hygiene, and staying home when you are sick are the best ways to prevent influenza.</i>			

5g. Cough and green or yellow nasal discharge	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Viruses cause most coughs and nasal discharge (even the thick, yellow-green stuff!) Viral infections almost always get better on their own – with comfort measures to ease the symptoms. Taking antibiotics while the viral infection runs its course does not shorten the duration of the illness.</i>			

6. When selecting a response that most accurately reflects your opinion about when action should be taken, please choose from the following options: ‘rarely take the following action,’ ‘sometimes take the following action,’ or ‘often take the following action.’

When assessing an otherwise stable and alert resident with a fever, no other complaints, and a history of urinary tract infections (UTIs), would you:

6a. Increase frequency of monitoring vital signs	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Increasing the frequency of monitoring a resident’s temperature, pulse, respirations, blood pressure, oxygenation saturations, and pain can help determine whether resident’s status is improving, worsening, or remaining the same.</i>			
6b. Obtain an order for urinalysis and culture	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Consult facility protocol. In the absence of localizing urinary tract symptoms, a fever alone may not be indicative of a potential UTI, and therefore a urinalysis and urine culture may not be required.</i>			
6c. Recommend this resident receive antibiotics	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Based on evidence-based recommendations (Loeb et al., 2001), a fever in the absence of other localizing urinary tract symptoms, such as new or worsening urgency, frequency, suprapubic pain, gross hematuria, costovertebral angle tenderness, or urinary incontinence, does not meet the criteria for antibiotic initiation.</i>			
6d. Review resident history and symptoms	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: (Incorporate facility protocol into discussion.) Knowledge of a resident’s history, and an ongoing assessment of current symptoms to determine whether the resident’s status is improving, worsening, or remaining the same, can help guide nursing interventions.</i>			
6e. Review resident’s current medications	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Review of a resident’s scheduled, prn, and recently discontinued medications is an important component of a comprehensive assessment. A medication history may reveal potential drug-drug interactions, contraindications for dietary or therapeutic regimens, over- or under-dosing, or other adverse effects that may help explain the resident’s status.</i>			
6f. Encourage fluids (if no fluid restrictions)	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Increased fluids help promote urination, which may help flush bacteria out of the bladder and urethra.</i>			

6g. Recommend this resident be evaluated in an Emergency Department (ED) / clinic	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: The resident's individual circumstances would need to be taken into account, as a fever may be indicative of more serious illness in the presence of some underlying conditions. The American Medical Directors Association provides guidance on when to transfer a resident with a fever to the ED. For a resident who has a fever without an obvious focus of infection, recommendations for initiating antibiotics include the presence of a fever (>37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline) and at least one of the following: new onset of delirium or rigors (Loeb et al., 2001).</i></p>			

7. When selecting a response that most accurately reflects your beliefs about ways to prevent the spread of diseases, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

7a. I don't have to change gloves between resident rooms if I am just emptying Foley bags.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: Every time you empty urine from a Foley, urinal, bedpan, or after helping a resident use the toilet) gloves should be removed immediately and hands should be cleaned. This is true even if you stay with the same resident and help him/her with other cares, and is also true if you leave the room and perform other duties elsewhere, even if you're going to empty another resident's Foley bag. Germs from one resident's urine can be spread elsewhere unless gloves are removed and hands are cleaned right away.</i></p>			
7b. I only need to remove gloves when they look dirty.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: Germs can live on people and objects in the environment, including hard surfaces like tables, faucets, and pens, as well as soft surfaces like papers, clothing, blankets, etc. Touching any of these objects- with gloves or bare hands- and then touching another surface, including a resident (or yourself) can transmit germs that can cause infections. Remove your gloves and clean your hands after performing dirty or potentially dirty cares, after touching contaminated or potentially contaminated environmental surfaces, and prior to performing clean cares for the same resident or in between different residents.</i></p>			
7c. Flu can be spread to others before the infected person has symptoms of influenza	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: People infected with influenza, including healthcare workers, can spread influenza before flu symptoms even develop. According to CDC, adults shed influenza virus from the day before symptoms begin through 5—10 days after illness onset, and shedding may last longer in persons with underlying health conditions. Getting a flu shot protects vulnerable residents, improves patient safety, and can significantly decrease morbidity and mortality.</i></p>			
7d. You can get the flu from the flu shot.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: You cannot get influenza from the flu shot. Some people get mild flu-like symptoms shortly after being vaccinated; this can be for a couple reasons. 1) It is a sign that your body is responding to the vaccine and you are developing an immune response (protection against the flu). OR 2) Many cold viruses circulate in the fall, when most people get the flu shot, and it is possible that a person could be infected with one of these viruses and become ill at the same time they receive the flu shot.</i></p>			

8. **Scenario:** A resident has cloudy, foul-smelling urine; is agitated; slightly more confused than baseline; and has a history of UTI; T = 99.1°F. What would you do? (Circle all that apply)

- a. Recommend this resident receive antibiotics
(# / % of responses: ___ / ___)
- b. Document resident status and continue to monitor
(# / % of responses: ___ / ___)
- c. Contact the provider for an order to send a urine specimen to the lab for a urinalysis (UA) / urine culture (UC)
(# / % of responses: ___ / ___)

Suggested facilitator response: (Incorporate facility protocol into discussion).

An agitated, confused resident with cloudy, foul-smelling urine and a history of UTI does not meet recommendations for initiating antibiotics in LTC residents (Loeb et al. 2001). The 99.1°F temperature would not meet the recommendations unless the resident's baseline temperature was 96.7°F or lower (meeting the 2.4°F increase above baseline temperature criterion). A provider notification to evaluate the resident's change in status would be appropriate; however, in the absence of needing to determine an effective antimicrobial selection, a urine culture (UC) may be of little benefit. A urinalysis (UA) could be considered if evaluating for other conditions that may be contributing to the resident's condition. Documenting resident status and continuing to monitor while implementing nursing interventions would generally be appropriate. Interventions should reflect guidance outlined in facility policy/ protocol.

9. I believe antibiotics are effective against infections caused by viruses such as influenza ("flu").

- True (# / % of responses: ___ / ___)
- False (# / % of responses: ___ / ___)

Suggested facilitator response: Antibiotics will not prevent, treat, or shorten the course of a viral illness; antibiotics only treat infections caused by bacteria. Viral infections almost always get better on their own – with comfort measures to ease the symptoms. Taking antibiotics while the viral infection runs its course does not shorten the duration of the illness.

10. I believe that other than an allergy to an antibiotic, there are no side effects to taking antibiotics.

- True (# / % of responses: ___ / ___)
- False (# / % of responses: ___ / ___)

Suggested facilitator response: Inappropriate antibiotic use contributes to antibiotic resistance. Infections caused by antibiotic-resistant bacteria can be more severe, require more powerful and toxic antibiotics, and can lead to secondary infections, longer hospital stays, and increased healthcare costs. Additionally, antibiotics can cause adverse reactions and side effects; some of these can be severe. Adverse effects caused by antibiotics can include:

- Allergic reactions
- Adverse drug interactions
- Increased rates of re-infection with resistant organisms
- Yeast infections (antibiotics alter normal flora, allowing *Candida albicans*, a common yeast, to over-grow and cause an infection)
- Diarrhea
- Disruption of normal bowel flora (antibiotics kill normal bowel flora, leaving space for disease-causing bacteria such as *Clostridium difficile* to multiply).

11. When selecting a response that most accurately reflects your beliefs about *Clostridium difficile* (*C. diff*) infection, please choose from the following options: ‘disagree,’ ‘neutral,’ or ‘agree.’

11a. Antibiotics are a major risk factor for developing <i>C. diff</i> infection (CDI).	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<p><i>Suggested facilitator response: The colon is home to hundreds of types of bacteria that perform important digestive functions. Bacteria that ordinarily live in the digestive tract are called the normal bowel flora. Normal bowel flora may include C. diff bacteria. When a person takes antibiotics the normal bowel flora is disrupted, allowing C. diff bacteria to overgrow.</i></p> <ul style="list-style-type: none"> • <i>More than 90% of all cases of CDI occur during or after antibiotic treatment.</i> • <i>Essentially all antibiotics can increase the risk of CDI, but broad-spectrum antibiotics are more likely to be associated with CDI.</i> <p><i>In order for C. diff bacteria to cause symptoms, the following must occur:</i></p> <ol style="list-style-type: none"> 1. <i>Disruption of the normal bowel flora (most commonly due to exposure to antibiotics)</i> 2. <i>Exposure to spores or vegetative bacteria from a toxigenic C. diff strain; and</i> 3. <i>Host factors or strain virulence factors are present.</i> 			
11b. <i>C. diff</i> testing requires 3 stool samples.	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<p><i>Suggested facilitator response: Become familiar with your laboratory’s stool testing policy for C. diff. The recommendation is to submit one specimen per resident at the onset of symptomatic illness; do not perform repeat testing (Cohen, 2010).</i></p>			
11c. A test-of-cure should be done after completion of <i>C. diff</i> treatment.	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<p><i>Suggested facilitator response: Testing of stool from asymptomatic residents is not recommended, including use as a test-of-cure. In the absence of symptoms, a positive C. diff test result may reveal colonization, for which treatment is generally not recommended. Residents can have recurrent CDI due to relapse or reinfection. Recurrence of CDI symptoms occurs in 6-35% of patients.</i></p> <ul style="list-style-type: none"> • <i>Retest for CDI only if symptoms continue after 10 days of treatment or resolve and then come back</i> • <i>Do not repeat testing during the same episode of diarrhea for a resident with confirmed CDI</i> 			
11d. <i>C. diff</i> can be spread by healthcare worker hands	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<p><i>Suggested facilitator response: C. diff bacteria are spread through the fecal-oral route. This occurs when the hands of healthcare workers have direct contact with fecally-contaminated items/ surfaces in the environment such as commodes, bedrails, sinks, doorknobs, telephones, bathing tubs, and rectal thermometers and then touch other residents or surfaces prior to performing hand hygiene. C. diff bacteria produce spores that are difficult to remove from environmental surfaces, so when these bacteria contaminate the environment, and staff or residents touch these surfaces and then touch their mouth or anything that goes into their mouth, they become exposed to the bacteria. Hand hygiene and environmental cleaning are required to prevent transmission and subsequent infection.</i></p>			
11e. Test only unformed stool (stool that takes the shape of the container).	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<p><i>Suggested facilitator response: Testing for C. diff or its toxins should be performed only on diarrheal (watery, loose, unformed) stool, unless ileus due to C. diff is suspected (Cohen, 2010).</i></p>			

References

Cohen SH, Gerding DN, Johnson S, et al; IDSA. Clinical practice guidelines for *Clostridium difficile* infection in adults: 2010 update by the society for healthcare epidemiology of America (SHEA) and the infectious diseases society of America (IDSA). *Infect Control Hosp Epidemiol*. 2010 May;31(5):431-55.

Dellit TH, Owens RC, McGowen, Jr JE, et al. Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA) developed guidelines for hospital-based antimicrobial stewardship programs. *Clin Inf Dis*. 2007;44:159-77.

Gokula M, House K, Wester RM, et al.; American Medical Directors Association. Know-It-All™ When You're Called Diagnosing System. 2011.

Loeb M, Bentley DW, Bradley S, et al. Development of minimum criteria for the initiation of antibiotics in residents of long-term care facilities: Results of a consensus conference. *Inf Control Hosp Epidemiol*. 2001 February;22(2):120-124.

Antibiotic Use Attitudes and Beliefs Survey Cover Letter Template for Providers

«Date»

Dr. «First_Name» «Last_Name»
«Address»
«City», «State» «ZIP»

Dear Dr. «Last_Name»:

«Facility Name» is conducting an anonymous survey about infections and antibiotic use in long-term care facilities; your participation is kindly requested.

While I strongly support this effort, I am very aware of the constraints on your time. Only the most pertinent survey questions are included; the survey will take less than 15 minutes to complete. Please answer the questions as honestly and completely as possible. Please return your completed survey to «location» by «date 2 weeks from distribution». Thank you in advance for your participation!

If you have any questions about the survey please don't hesitate to contact «Name» at «phone number and/or email address».

Sincerely,

«Name», «Credentials»
Medical Director
«Facility»

Enclosure: Antimicrobial Use Attitudes and Beliefs: Provider Survey

Antibiotic Use Attitudes and Beliefs: Provider Survey

1. Please check your current role: MD / DO NP PA Other: _____

2. How many years have you been providing direct care in a long-term care facility?

0-5 6-10 11-20 More than 20

The following are questions about antibiotic use and urinary tract infections.

3. When selecting a response that most accurately reflects your opinion regarding antibiotic use, please choose from the following options: 'antibiotics rarely contribute,' 'antibiotics sometimes contribute,' or 'antibiotics often contribute.'

I believe that using antibiotics contributes to:

	Rarely	Sometimes	Often
3a. Diarrhea in the person taking antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3b. Future resistance to antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3c. Reduced rates of influenza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3d. High quality care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3e. Interaction with other medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3f. Rash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3g. Family perception of high quality care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITH** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: 'rarely appropriate,' 'sometimes appropriate,' or 'often appropriate.'

	Rarely	Sometimes	Often
4a. Resident with foul-smelling urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4b. Resident with bacteria in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4c. Resident with bacteria and white blood cells (WBC) in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4d. Change in functional status and family concern about a possible infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4e. New confusion and history of urinary tract infection (UTI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4f. Positive influenza rapid test	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4g. Cough and green or yellow nasal discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITHOUT** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: 'rarely appropriate,' 'sometimes appropriate,' or 'often appropriate.'

	Rarely	Sometimes	Often
5a. Resident with foul smelling urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5b. Resident with bacteria in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5c. Resident with bacteria and white blood cells (WBCs) in urine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5d. Change in functional status and family concern about a possible infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5e. New confusion and history of urinary tract infection (UTI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5f. Positive influenza rapid test	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5g. Cough and green or yellow nasal discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. When selecting a response that most accurately reflects your opinion about when action should be taken, please choose from the following options: 'rarely take the following action,' 'sometimes take the following action,' or 'often take the following action.'

When assessing an otherwise stable and alert resident with a fever, no other complaints, and a history of urinary tract infections (UTIs), would you:

	Rarely	Sometimes	Often
6a. Increase frequency of monitoring vital signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6b. Order urinalysis and culture (UA/UC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6c. Initiate empiric antibiotic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6d. Review resident history and symptoms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6e. Review resident's current medications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6f. Encourage fluids (if no fluid restrictions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6g. Refer resident to Emergency Department (ED) /clinic for evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. When selecting a response that most accurately reflects your beliefs about ways to prevent the spread of diseases, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

	Disagree	Neutral	Agree
7a. I only need to remove gloves when they look dirty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7b. Flu can be spread to others before the infected person has symptoms of influenza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7c. You can get the flu from the flu shot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. **Scenario:** A resident has cloudy, foul-smelling urine; is agitated; slightly more confused than baseline; and has a history of UTI. T = 99.1°F. What would you do? (Circle all that apply)

- a. Initiate empiric antibiotic
- b. Order a urinalysis (UA) / urine culture (UC)
- c. Encourage fluids (if not contraindicated) and continue to monitor

9. I believe antibiotics are effective against infections caused by viruses such as influenza ("flu").
 ___ True or ___ False

10. I believe that other than an allergy to an antibiotic, there are no side effects to taking antibiotics.
 ___ True or ___ False

11. When selecting a response that most accurately reflects your beliefs about *Clostridium difficile* (*C. diff*) infection, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

	Disagree	Neutral	Agree
11a. Antibiotics are a major risk factor for developing <i>C. diff</i> infection (CDI).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11b. <i>C. diff</i> testing requires 3 stool samples.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11c. A test-of-cure should be done after completion of <i>C. diff</i> treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11d. Test only unformed stool (stool that takes the shape of the container).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. When selecting a response that most accurately reflects your beliefs regarding the usefulness of the antimicrobial stewardship strategies below, please choose from the following options: 'rarely useful,' 'sometimes useful,' or 'often useful.'

	Rarely	Sometimes	Often
12a. Available order sets to guide antibiotic prescribing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12b. Facility process for reviewing empirically prescribed antibiotics based on culture results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12c. Lab summary report of antibiotic resistance among facility residents (e.g., antibiogram)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12d. Feedback from a pharmacist on antibiotic prescribing practices to medical personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12e. Nursing education to enhance capacity to accurately assess and report resident condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12f. Education to residents and family about antibiotic use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Antibiotic Use Attitudes and Beliefs: Provider Survey

Response Facilitator Guide

For each question, summarize the responses for each category among all survey respondents.

1. Please check your current role:

/ % of MD / DO respondents: ___ / ___

/ % of NP respondents: ___ / ___

/ % of PA respondents: ___ / ___

/ % of 'Other' respondents: ___ / ___

2. How many years have you been providing direct care in a long-term care facility (LTCF)?

/ % of respondents providing direct care in LTCF for 0 – 5 years: ___ / ___

/ % of respondents providing direct care in LTCF for 6 – 10 years: ___ / ___

/ % of respondents providing direct care in LTCF for 11 – 20 years: ___ / ___

/ % of respondents providing direct care in LTCF for more than 20 years: ___ / ___

The following are questions about antibiotic use and urinary tract infections.

3. When selecting a response that most accurately reflects your opinion regarding antibiotic use, please choose from the following options: 'antibiotics rarely contribute,' 'antibiotics sometimes contribute,' or 'antibiotics often contribute.' I believe that using antibiotics contributes to:

3a. Diarrhea in the person taking antibiotics	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Antibiotics can disrupt normal bowel flora, allowing harmful bacteria such as Clostridium difficile to multiply, leading to diarrhea. Every exposure to antibiotics puts residents at risk for developing what the Centers for Disease Control and Prevention (CDC) have dubbed 'deadly diarrhea'.</i>			
3b. Future resistance to antibiotics	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Antibiotics have been used so widely and for so long that some bacteria have adapted to antibiotics designed to kill them, making the bacteria resistant and the drugs less effective. People infected with antimicrobial-resistant organisms are more likely to have longer, more expensive hospital stays, and may be more likely to die as a result of the infection. Preserving effective antibiotic treatments requires all of us to do our part.</i>			
3c. Reduced rates of influenza	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Flu vaccination is important for all healthcare providers as well as residents. According to the CDC, flu vaccination can reduce flu illness, antibiotic use, doctor visits and lost time from work, as well as prevent hospitalizations and deaths. Studies have shown repeatedly that a health care provider's recommendation plays a critical role in a patient's decision to get a seasonal flu vaccine.</i>			
3d. High quality care	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____

Suggested facilitator response: A thorough resident assessment may reveal that antibiotics are indicated for optimal resident care. High quality care can also be demonstrated by 1) preventing infections through the use of vaccinations, preventing conditions that lead to infections, and removing unnecessary devices; 2) effectively diagnosing and treating infections through the use of established criteria and microbiology data; 3) optimizing use of antibiotics by prescribing only when clinical criteria for antibiotics are met, not prescribing antibiotics for colonization, and by following published guidelines for the appropriate dose and duration of antibiotics; and 4) preventing transmission by isolating the pathogen, breaking the chain of infection, performing hand hygiene, and identifying residents with multi-drug resistant organisms (MDRO).

	Rarely	Sometimes	Often
3e. Interaction with other medications	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: All antibiotics have the potential to interact with other medications. Prescribing antibiotics when they are not needed can increase residents' chances of experiencing an adverse drug reaction.

	Rarely	Sometimes	Often
3f. Rash	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: While antibiotics are powerful medicines and are essential to the treatment of some infections, antibiotics can also cause harmful side effects. Side effects of antibiotics may include: upset stomach, rashes, interactions with other medications, and diarrhea.

	Rarely	Sometimes	Often
3g. Family perception of high quality care	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Use evidence-based recommendations to guide practice, and ensure families are aware of facility policies and protocols regarding when antibiotics are warranted.

4. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITH** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: 'rarely appropriate,' 'sometimes appropriate,' or 'often appropriate.'

Suggested facilitator response: Note that Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics in LTC Residents differs for residents with or without an indwelling catheter. For LTC residents with an indwelling catheter, at least one of the following should be present in order to initiate antibiotics for UTI (Loeb et al., 2001):

- *Fever (>37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature)*
- *New costovertebral angle tenderness*
- *Rigors (shaking chills) with or without identified cause*
- *New onset of delirium*

	Rarely	Sometimes	Often
4a. Resident with foul-smelling urine	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Foul-smelling or cloudy urine has historically been used by health care providers as an indicator of a urinary tract infection (UTI). However, malodorous urine can be caused by several factors, including dehydration, diet, medication, or the presence of specific bacteria. Using urine odor to identify the presence of bacteria in urine resulted in error in 1/3 of cases in one published study. Foul-smelling urine without clinical symptoms of a UTI is not a valid indication for initiating antibiotics, according to Loeb et al. (2001).

	Rarely	Sometimes	Often
4b. Resident with bacteria in urine	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Urine does not typically contain bacteria, yeast, or white blood cells (pus or pyuria) in younger, healthy people. However, bacteria and pus are frequently found in the urine of elderly and

<i>debilitated people due to increased age, chronic disease, functional impairment, invasive devices, dehydration, and other risk factors. Asymptomatic bacteriuria (the presence of bacteria in urine without clinical symptoms of infection) should not be treated with antibiotics, according to evidence-based recommendations (Loeb et al., 2001).</i>			
4c. Resident with bacteria and white blood cells (WBC) in urine	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Pyuria (the accumulation of white blood cells in the urine) is considered an immune response to the presence of bacteria. However, pyuria is neither sensitive nor specific to the diagnosis of a UTI. If a resident has bacteria in his or her urine, he or she will almost always have pyuria. Pyuria without clinical symptoms should <u>not</u> be treated with antibiotics according to evidence-based recommendations (Loeb et al., 2001).</i>			
4d. Change in functional status and family concern about a possible infection	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: There are many myths about what symptoms indicate a UTI. While the following symptoms warrant evaluation, they do <u>not</u> warrant antibiotic treatment for UTI, according to Loeb et al. (2001):</i> <ul style="list-style-type: none"> • <i>Chronic incontinence (during sleep or when awake, when coughing or sneezing)</i> • <i>Anorexia</i> • <i>Difficulty falling asleep or staying asleep</i> • <i>Fatigue</i> • <i>Malaise</i> • <i>Weakness</i> <i>Use evidence-based recommendations to guide practice, and ensure families are aware of facility policies and protocols regarding when antibiotics are warranted.</i>			
4e. New confusion and history of urinary tract infection (UTI)	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: New confusion and altered mental status may be indicators of a potential UTI, and should be evaluated, but do not meet evidence-based recommendations for antibiotic initiation (Loeb et al., 2001).</i> <i>While it is important to know if the resident has a UTI as part of his or her medical history, deciding if antibiotics are needed to treat a potential UTI should be based on current symptoms.</i>			
4f. Positive influenza rapid test	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Influenza is caused by a virus. Antibiotics only treat conditions caused by bacteria. Antivirals are medications that can shorten the severity or duration of symptoms caused by viruses, such as influenza, and may be prescribed for some viral illnesses if diagnosed early. Getting a flu shot at the beginning of each flu season, covering your coughs/sneezes, and frequent hand hygiene, and staying home when you are sick are the best ways to avoid getting influenza and prevent the spread of the flu.</i>			
4g. Cough and green or yellow nasal discharge	Rarely	Sometimes	Often
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<i>Suggested facilitator response: Viruses cause most coughs and nasal discharge (even the thick, yellow-green stuff!). Viral infections almost always get better on their own – with comfort measures to ease the symptoms. Taking antibiotics does not shorten the duration of the illness.</i>			

5. When selecting a response that most accurately reflects your opinion about when antibiotics are appropriate for a resident **WITHOUT** an indwelling catheter and **ONLY** the following symptoms/findings, please choose from the following options: 'rarely appropriate,' 'sometimes appropriate,' or 'often appropriate.'

Suggested facilitator response: Note that Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics in LTC Residents differs for residents with or without an indwelling catheter. For LTC residents without an indwelling catheter, at least one of the following must be present to meet Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics for UTI:

- *Acute dysuria (painful urination)*
Note: *Dysuria alone is an indication to start antibiotics without any other symptoms*

OR

- *Fever: >37.9°C [100°F]; or a 1.5°C [2.4°F] increase above baseline*
PLUS *at least one of the following symptoms:*
 - *New or worsening:*
 - *Urgency*
 - *Frequency*
 - *Suprapubic pain*
 - *Gross hematuria (blood in urine)*
 - *Costovertebral angle (CVA) tenderness*
 - *Urinary incontinence*

	Rarely	Sometimes	Often
5a. Resident with foul-smelling urine	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Foul-smelling or cloudy urine has historically been used by health care providers as an indicator of a urinary tract infection (UTI). However, malodorous urine can be caused by several factors, including dehydration, diet, medication, or the presence of specific bacteria. Using urine odor to identify the presence of bacteria in urine resulted in error in 1/3 of cases in one published study. Foul-smelling urine without clinical symptoms of a UTI does not indicate the presence of a UTI, and is not a valid indication for initiating antibiotics.</i>			
5b. Resident with bacteria in urine	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Urine does not typically contain bacteria, yeast, or white blood cells (pus or pyuria) in younger, healthy people. However, bacteria and pus are frequently found in the urine of elderly and debilitated people due to increased age, chronic disease, functional impairment, invasive devices, and dehydration, and other risk factors. Asymptomatic bacteriuria (the presence of bacteria in urine without clinical symptoms of infection) should not be treated with antibiotics, according to evidence-based recommendations (Loeb et al., 2001).</i>			
5c. Resident with bacteria and white blood cells (WBCs) in urine	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Pyuria (the accumulation of white blood cells in the urine) is considered an immune response to the presence of bacteria. However, pyuria is neither sensitive nor specific to the diagnosis of a UTI. If a resident has bacteria in his or her urine, he or she will almost always have pyuria. Pyuria without clinical symptoms should <u>not</u> be treated with antibiotics (Loeb et al., 2001).</i>			
5d. Change in functional status and family concern about a possible infection	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: There are many myths about what symptoms indicate a UTI. While the following symptoms warrant evaluation, they do not warrant antibiotic initiation for UTI:

- *Chronic incontinence (during sleep or when awake, when coughing or sneezing)*
- *Anorexia*
- *Difficulty falling asleep or staying asleep*
- *Fatigue*
- *Malaise*
- *Weakness*

5e. New confusion and history of urinary tract infection (UTI)	Rarely	Sometimes	Often
	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: New confusion and altered mental status may be indicators of a potential UTI, and should be evaluated, but do not meet Loeb et al. (2001) Minimum Criteria for Initiation of Antibiotics in Long-term Care (LTC) Residents. Knowledge of a resident’s UTI history may be helpful when making care decisions, such as teaching regarding perineal hygiene, wiping front-to-back, promoting/promoting regular urination, and adequate fluid intake, if not contraindicated. However, a resident’s current clinical signs and symptoms should be considered when assessing for a UTI.

5f. Positive influenza rapid test	Rarely	Sometimes	Often
	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Influenza is caused by a virus. Antibiotics only treat conditions caused by bacteria. Antivirals are medications that can shorten the severity or duration of symptoms caused by some viruses, such as influenza. These medications may be prescribed in some situations and if the viral illness is diagnosed early. Getting a flu shot at the beginning of each flu season, covering your coughs/sneezes, frequent hand hygiene, and staying home when you are sick are the best ways to prevent influenza.

5g. Cough and green or yellow nasal discharge	Rarely	Sometimes	Often
	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Viruses cause most coughs and nasal discharge (even the thick, yellow-green stuff!) Viral infections almost always get better on their own – with comfort measures to ease the symptoms. Taking antibiotics while the viral infection runs its course does not shorten the duration of the illness.

6. When selecting a response that most accurately reflects your opinion about when action should be taken, please choose from the following options: ‘rarely take the following action,’ ‘sometimes take the following action,’ or ‘often take the following action.’

When assessing an otherwise stable and alert resident with a fever, no other complaints, and a history of urinary tract infections (UTIs), would you:

6a. Increase frequency of monitoring vital signs	Rarely	Sometimes	Often
	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Increasing the frequency of monitoring a resident’s temperature, pulse, respirations, blood pressure, oxygenation saturations, and pain can help determine whether resident’s status is improving, worsening, or remaining the same.

6b. Order urinalysis and culture (UA/UC)	Rarely	Sometimes	Often
	# of responses: ____	# of responses: ____	# of responses: ____
	% of responses: ____	% of responses: ____	% of responses: ____

Suggested facilitator response: Consult facility protocol. In the absence of localizing urinary tract symptoms, a

<i>fever alone may not be indicative of a potential UTI, and therefore a urinalysis and urine culture may not be required.</i>			
6c. Initiate empiric antibiotic	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Based on evidence-based recommendations (Loeb et al., 2001), a fever in the absence of other localizing urinary tract symptoms, such as new or worsening urgency, frequency, suprapubic pain, gross hematuria, costovertebral angle tenderness, or urinary incontinence, does not meet the criteria for antibiotic initiation.</i>			
6d. Review resident history and symptoms	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: (Incorporate facility protocol into discussion.) Knowledge of a resident's history, and an ongoing assessment of current symptoms to determine whether the resident's status is improving, worsening, or remaining the same, can help guide interventions.</i>			
6e. Review resident's current medications	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Review of a resident's scheduled, prn, and recently discharged medications is an important component of a comprehensive assessment. A medication history may reveal potential drug-drug interactions, contraindications for dietary or therapeutic regimens, over- or under-dosing, or other adverse effects that may help explain the resident's status.</i>			
6f. Encourage fluids (if not contraindicated)	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Increased fluids help promote urination, which may help flush bacteria out of the bladder and urethra.</i>			
6g. Refer resident to Emergency Department (ED) / clinic for evaluation	Rarely	Sometimes	Often
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: The resident's individual circumstances would need to be taken into account, as a fever may be indicative of more serious illness in the presence of some underlying conditions. The American Medical Directors Association provides guidance on when to transfer a resident with a fever to the ED. For a resident who has a fever without an obvious focus of infection, recommendations for initiating antibiotics include the presence of a fever (>37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline) and at least one of the following: new onset of delirium or rigors (Loeb et al., 2001).</i>			

7. When selecting a response that most accurately reflects your beliefs about ways to prevent the spread of diseases, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

7a. I only need to remove gloves when they look dirty.	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Organisms can live on people and objects in the environment, including hard surfaces like tables, faucets, and pens, as well as soft surfaces like papers, clothing, blankets, etc. Touching any of these objects- with gloves or bare hands- and then touching another surface, including a resident (or yourself) can transmit pathogenic organisms. Remove your gloves and clean your hands after resident examinations/ procedures where hands have come into contact with bodily fluids/ mucous membranes or the resident's environment, and prior to subsequent examinations/ procedures for the same resident and in between different residents.</i>			

7b. Flu can be spread to others before the infected person has symptoms of influenza.	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: Infected people, including healthcare workers, can spread influenza before flu symptoms even develop. According to CDC, adults shed influenza virus from the day before symptoms begin through 5–10 days after illness onset, although shedding may last longer in persons with underlying health conditions. Getting a flu shot protects vulnerable residents, improves patient safety, and can significantly decrease morbidity and mortality.</i>			
7c. You can get the flu from the flu shot.	Disagree	Neutral	Agree
	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
<i>Suggested facilitator response: You cannot get influenza from the flu shot. Some people get mild flu-like symptoms shortly after being vaccinated; this can be for a couple reasons. 1) It is a sign that your body is responding to the vaccine and you are developing an immune response (protection against the flu). OR 2) Many cold viruses circulate in the fall, when most people get the flu shot, and it is possible that a person could be infected with one of these viruses and become ill at the same time they receive the flu shot.</i>			

8. **Scenario:** A resident has cloudy, foul-smelling urine; is agitated; slightly more confused than baseline; and has a history of UTI. T = 99.1°F. What would you do?

- a. Initiate empiric antibiotic
(# / % of responses: ___ / ___)
- b. Order a urinalysis (UA) / urine culture (UC)
(# / % of responses: ___ / ___)
- c. Encourage fluids (if not contraindicated) and continue to monitor
(# / % of responses: ___ / ___)

Suggested facilitator response: (incorporate facility protocol into discussion) An agitated, confused resident with cloudy, foul-smelling urine and a history of UTI does not meet recommendations for initiating antibiotics in LTC residents (Loeb et al. 2001). The 99.1°F temperature would not meet the recommendations unless the resident’s baseline temperature was 96.7°F or lower (meeting the 2.4°F increase above baseline temperature criterion). Even in the presence of an elevated temperature, if localizing urinary tract signs and symptoms (e.g. urgency, frequency, suprapubic pain, hematuria, CVA tenderness, and incontinence) are absent, this resident would not meet the evidence-based recommendations. Evaluating the resident’s change in status would be appropriate; however, in the absence of needing to determine an effective antimicrobial selection, UC may be of little benefit. A UA could be considered if evaluating for other conditions that may be contributing to the resident’s condition. Documenting resident status and continuing to monitor while promoting hydration (in the absence of contraindications) would generally be appropriate in addressing the cloudy, foul-smelling urine.

9. I believe antibiotics are effective against infections caused by viruses such as influenza (“flu”).
True (# / % of responses: ___ / ___) False (# / % of responses: ___ / ___)

Suggested facilitator response: Antibiotics will not prevent, treat, or shorten the course of a viral illness; antibiotics only treat conditions caused by bacteria. Viral infections frequently get better on their own – with comfort measures to ease the symptoms. Taking antibiotics while the viral infection runs its course does not shorten the duration of the illness.

10. I believe that other than an allergy to an antibiotic, there are no side effects to taking antibiotics.
True (# / % of responses: ___ / ___) False (# / % of responses: ___ / ___)

Suggested facilitator response: Inappropriate antibiotic use contributes to antibiotic resistance. Infections caused by antibiotic-resistant organisms can be more severe, require more powerful and toxic antibiotics, and can lead to secondary infections, longer hospital stays, and increased healthcare costs. Additionally, antibiotics can cause adverse reactions and side effects; some of these can be severe. Adverse effects caused by antibiotics can include:

- Allergic reactions
- Adverse drug interactions
- Increased rates of re-infection with resistant organisms
- Yeast infections (antibiotics alter normal flora, allowing *Candida albicans*, a common yeast, to over-grow and cause an infection)
- Diarrhea
- Disruption of normal bowel flora (antibiotics kill normal bowel flora, leaving space for disease-causing bacteria such as *Clostridium difficile* to multiply).

11. When selecting a response that most accurately reflects your beliefs about *Clostridium difficile* (*C. diff*) infection, please choose from the following options: 'disagree,' 'neutral,' or 'agree.'

11a. Antibiotics are a major risk factor for developing <i>C. diff</i> infection.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: The colon is home to hundreds of types of bacteria that perform important digestive functions. Bacteria that ordinarily live in the digestive tract are called the normal bowel flora. Normal bowel flora may include C. diff bacteria. When a person takes antibiotics the normal bowel flora is disrupted allowing C. diff bacteria to overgrow.</i></p> <ul style="list-style-type: none"> • More than 90% of all cases of CDI occur during or after antibiotic treatment. • Essentially all antibiotics can increase the risk of CDI, but broad-spectrum antibiotics are more likely to be associated with CDI. <p><i>In order for C. diff bacteria to cause symptoms, the following must occur:</i></p> <ol style="list-style-type: none"> 1. Disruption of the normal bowel flora (most commonly due to exposure to antibiotics) 2. Exposure to spores or vegetative bacteria from a toxigenic <i>C. difficile</i> strain; and 3. Host factors or strain virulence factors are present. 			
11b. <i>C. diff</i> testing requires 3 stool samples.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: Become familiar with your laboratory's stool testing policy for C. diff. The recommendation is to submit one specimen per resident at the onset of symptomatic illness; do not perform repeat testing (Cohen, 2010).</i></p>			
11c. A test-of-cure should be done after completion of <i>C. diff</i> treatment.	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: Stool testing for asymptomatic residents is not clinically useful, including use as a test of cure; it is not recommended.</i></p> <p><i>In the absence of symptoms, a positive C. diff test result may reveal colonization, for which treatment is not generally recommended. Residents can have recurrent C. diff infection due to relapse or reinfection. Recurrence of C. diff infection symptoms occurs in 6-35% of patients.</i></p> <ul style="list-style-type: none"> • Retest for <i>C. diff</i> infection only if symptoms continue after 10 days of treatment or resolve and then come back • Do not repeat testing during the same episode of diarrhea for a resident with confirmed <i>C. diff</i> infection 			
11d. Test only unformed stool (stool that takes the shape of the container).	Disagree	Neutral	Agree
	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____	# of responses: _____ % of responses: _____
<p><i>Suggested facilitator response: Testing for C. difficile or its toxins should only be performed on diarrheal (watery, loose, unformed) stool, unless ileus due to C. difficile is suspected (Cohen, 2010).</i></p>			

12. When selecting a response that most accurately reflects your beliefs regarding the usefulness of the antimicrobial stewardship strategies below, please choose from the following options: 'rarely useful,' 'sometimes useful,' or 'often useful.'

	Rarely	Sometimes	Often
12a. Available order sets to guide antibiotic prescribing	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
12b. Facility process for reviewing empirically prescribed antibiotics based on culture results	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
12c. Lab summary report of antibiotic resistance among facility residents (e.g., antibiogram)	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
12d. Feedback from a pharmacist on antibiotic prescribing practices to medical personnel	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
12e. Nursing education to enhance capacity to accurately assess and report resident condition	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____
12f. Education to residents and family about antibiotic use	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____	# of responses: ____ % of responses: ____

Suggested facilitator response: Strategies to optimize antimicrobial prescribing are important for antimicrobial stewardship. The Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA) developed guidelines for hospital-based antimicrobial stewardship programs (Dellit et al., 2007). The IDSA/SHEA guidelines acknowledge the limited data available to support antimicrobial stewardship interventions in the long-term care setting, but offer the core and supplementary strategies for acute care hospitals listed below. Providers' beliefs, when considered in conjunction with published recommendations, may help prioritize the implementation of antimicrobial stewardship strategies.

Core strategies

- Prospective audit of antimicrobial use with intervention by an infectious diseases physician or a clinical pharmacist and feedback to the prescriber
- Formulary restriction and preauthorization requirements

Supplementary strategies

- Education that incorporates active intervention
- Evidence-based practice guideline development
- Antimicrobial order forms to facilitate the implementation of practice guidelines
- Streamlining or de-escalation of therapy
- Dose optimization
- Parenteral to oral conversion

References

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