

**ATTACHMENT C:**  
**SAUL QI PROGRAM GUIDE**  
**FOR LONG-TERM CARE FACILITIES**

SAUL Quality Improvement Program Guide  
for  
Long-Term Care Facilities

1. Facility Protocol
2. Supplemental Materials



*A program of research to promote the quality of life  
and quality of care in residential care/ assisted living  
and nursing homes*

# **Standardizing Antibiotic Use in Long-Term Care (SAUL)**

## **A Quality Improvement Program for Nursing Homes**

The Collaborative Studies of Long-Term Care  
Program on Aging, Disability and Long-Term Care  
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*In collaboration with:*  
Abt Associates

*Supported by:*  
Agency for Healthcare Research and Quality (AHRQ)

# INTRODUCTION

Inappropriate antibiotic prescribing practices by primary care clinicians caring for residents in long-term care (LTC) facilities is becoming a major public health concern as it is a risk factor for morbidity and mortality among LTC residents. In an effort to reduce inappropriate prescribing of antibiotics, a panel of experts lead by Dr. Mark Loeb set forth a set of guidelines for antibiotic prescribing in long-term care settings. These guidelines focus on the most common infections in long-term care:

- urinary tract
- respiratory tract
- skin and soft tissue infections

In addition, signs and symptoms related to unexplained fever are included.

The purpose of the *Standardizing Antibiotic Prescribing in Long-Term Care Quality Improvement Program (SAUL)* is to reduce inappropriate antibiotic prescribing in your community. To accomplish this goal, this program includes materials that will allow you to:

- train your staff to provide the information that clinicians need to assess the appropriateness of prescribing an antibiotic for a resident and
- monitor your progress as you implement the program.

Also, as part of the program, you will communicate to the clinicians who care for your residents your intention to initiate this program in your community. Informational materials will be sent to them describing these guidelines and will specify what information you will provide about a resident when an infection is suspected.

In addition, a physician champion who cares for residents in your community will work with you on your QI team and will be available to answer questions from other clinicians. As part of this process, the UNC team of experts will provide informational materials and training to your leadership staff, so they may train your key nursing staff. Also, a training session will be offered by the UNC team of experts to interested clinicians.

## WHY IS THIS IMPORTANT FOR YOUR COMMUNITY?

- Antibiotics account for up to 40% of all systemic drugs prescribed in LTC
- Between 25 – 75% may be inappropriately prescribed
- Consequences of inappropriate use include
  - Poor patient outcomes related to adverse effects
  - Development of antibiotic resistant bacteria
  - Increased healthcare costs
- For long-term care residents, adverse effects of antibiotics are more likely to occur and are often more severe. Adverse effects include
  - Diarrhea
  - Vomiting
  - Skin rash
  - C. difficile
  - Hospitalization
- Antibiotic resistance can cause significant danger and suffering for residents in LTC
  - longer-lasting illnesses
  - more doctor visits
  - extended hospital stays
  - the need for more expensive and toxic medications
  - death
- Increased costs result from
  - More doctor visits
  - More medications
  - More hospitalizations

# THE PROGRAM

## 1. SAUL QI PROGRAM KICK-OFF MEETING

The UNC team of experts will present information about the quality improvement program and its implementation at a two-hour in-person meeting held at the community. The UNC team will use a train-the-trainer model to provide guidance on educating key staff on how to implement the QI program. In addition to the physician champion, staff members from the community who will serve on the SAUL QI Team (See Section 5) will attend this kick-off meeting. Training materials will be provided by the UNC team and reviewed during this meeting. (See Appendix D).

Steps:

1. Identify members of the QI Team (see below)
2. Schedule meeting with the UNC team for leadership team training

## 2. INFORMING RESIDENTS AND FAMILIES

Before beginning the SAUL QI program, it will be important to inform residents and their families about this effort. Two information sessions will be held for residents and families and will focus on the importance of reducing inappropriate antibiotic prescribing and on what they can do to help. An invitational letter to the families asking them to attend one of the sessions should be sent at the same time the residents receive an invitational letter. Also, follow-up communication to residents and families will provide helpful reminders. These may include newsletter articles, bulletin board postings, or the availability of brochures in public areas. The CDC informational brochure, CDC fast-facts sheet, or the FDA antibiotic resistance sheet can be included in the initial letter sent to residents and their families or as source material for subsequent communication. (See Appendix) A reference to the CDC podcast on appropriate use of antibiotics can be included in these materials.

([http://www2c.cdc.gov/podcasts/media/mp3/mmwr5\\_100109.mp3](http://www2c.cdc.gov/podcasts/media/mp3/mmwr5_100109.mp3))

Steps:

1. Once you have established the date you will begin the SAUL QI program, schedule a meeting for residents and families.
2. Send out letters to residents and families informing them about the program and the informational sessions.

3. Prepare a brief presentation (See Appendix) with handouts from CDC or FDA. The UNC team of experts will be available to respond to questions from families and staff.
4. Include reminders about the program in newsletters and other regular community level communication. Facts sheets should be posted on community bulletin boards.

### **3. TRAINING NURSING STAFF**

Nursing staff training will be provided in two in-service sessions. It is recommended that the training materials include a variety of instructional methods. The accompanying slides are provided for the staff in-service. (See Appendix) Participants should hear the content and also read it in a handout; in this way, the material is reinforced, and individual preferences for learning are met. . The CDC 12-step brochure can be included in the materials given to staff. (See Appendix)

The focus of the training is on what information needs to be communicated to a physician when an infection is suspected and how to report the information on the *Suspected Infection Signs and Symptoms Form*. Copies of the form should be provided to all in-service attendees. At the end of the training, participants should know specifically where or how to obtain the information needed information to complete the *Suspected Infection Signs and Symptoms Form* and how to complete the form.

#### Steps:

1. Schedule two in-service sessions for training key nursing staff
2. Arrange for adequate coverage so all key staff will be able to attend the in-service
3. Prepare materials for the staff training
4. Send reminders to key staff and be sure there are no schedule conflicts for these participants.
5. Conduct staff in-service
6. Provide copies of *Suspected Infection Signs and Symptoms Forms* for staff to use when calling/faxing a clinician of a resident suspected of having an infection. These should be in locations that are easy to access. A master copy should be available at each nursing station in case copies need to be made.

## **4. TRAINING PRIMARY CARE PROVIDERS**

The community will notify all primary care providers of its quality improvement program to reduce inappropriate antibiotic prescribing. A letter faxed or mailed to physicians should be signed by the administrator (See Appendix) and followed by a letter from the collaborating physician champion. Also, because some physicians work in partnership with other health professionals, the community may want to alert these individuals about the program. The CDC 12-step brochure can be included in the materials sent to providers. Schedule a training session for providers with the UNC team and physician champion.

Steps:

1. Identify possible dates for the training session with the UNC team and physician champion.
2. Send notification letters and informational materials to clinician regarding the implementation of the SAUL program in your community. Include the training session dates in the notification letter.
3. Be prepared to answer questions from clinicians about the QI program
4. Refer questions about the clinical guidelines to the physician champion. The UNC team will be available for questions if the physician champion is unavailable.

## **5. THE SAUL QUALITY IMPROVEMENT LEADERSHIP TEAM**

The quality improvement team will include:

- the administrator
- the director of nursing
- a nurse educator and
- the physician champion

The goal of this team is to effectively implement and monitor the progress of the SAUL QI program. This team will meet on a regular basis (at least monthly) to review the charts of residents receiving antibiotics to determine compliance with the protocol. If necessary, a random sample of residents' charts may be used for the review.



At the end of the meeting, the number of charts reviewed, the number of these charts containing the *Suspected Infection Signs and Symptoms Form* for the current antibiotic(s), and the number of forms with complete information for the suspected infection will be recorded on the SAUL QI Team Meeting Reporting Form. Results of this review will be shared with nursing staff during regular staff meetings and may be posted on break room bulletin boards. Issues related to communication with clinicians will be shared with the physician champion.

Steps:

1. Schedule the first leadership team meeting.
2. At the first meeting, discuss roles and responsibilities, identify regular meeting times, and set times for key personnel in-services.
3. The team leader should send a meeting reminder prior to each meeting.

## 1. References

- Warren J W; Palumbo F B; Fitterman L; Speedie S M. 1991. Incidence and characteristics of antibiotic use in aged nursing home patients. *Journal of the American Geriatrics Society*, 39(10):963-72.
- Loeb, M., Bendey, D.W., Bradley, S., et al. (2001). Development of minimum criteria for the initiation of antibiotics in residents of long-term care facilities: results of a consensus conference. *Infect Control Hosp Epidemiol* 22, 120-124.

## Facility Letterhead

Date

Resident Name (or name of legal guardian for residents with cognitive impairment)

Address

City, ST Zipcode

Dear [Name]:

We are pleased to announce a new program that we are beginning here at [Name of facility]. We are working with a team of experts from the University of North Carolina at Chapel Hill to standardize the way we report to physicians the signs and symptoms of infection that our residents may develop. The purpose of these new procedures is to ensure that your [your relative's] physician will have the information he or she needs to determine whether it is appropriate to prescribe an antibiotic.

Why is this program important? While antibiotics play an important role in treating bacterial infections, they do account for a significant number of adverse side effects for residents in long-term care settings. Also, the more antibiotics are prescribed the greater the likelihood that the bacteria causing these infections will become resistant to antibiotics. Antibiotic resistance can lead to longer-lasting illnesses, an increase in the number of doctor visits, and hospitalization. We want to be sure that we provide the best information we can to your [your relative's] provider. In doing so, we believe we will reduce the number of antibiotics that are unnecessarily prescribed and thus eliminate the possibility of serious side effects and widespread resistance among our residents.

We have enclosed an information sheet from the Centers for Disease Control about antibiotic resistance. However, if you have questions about specific medications prescribed for you [your relative], it is best to discuss these with your [your relative's] physician.

Please let us know if you have any questions.

Sincerely,

Executive Director

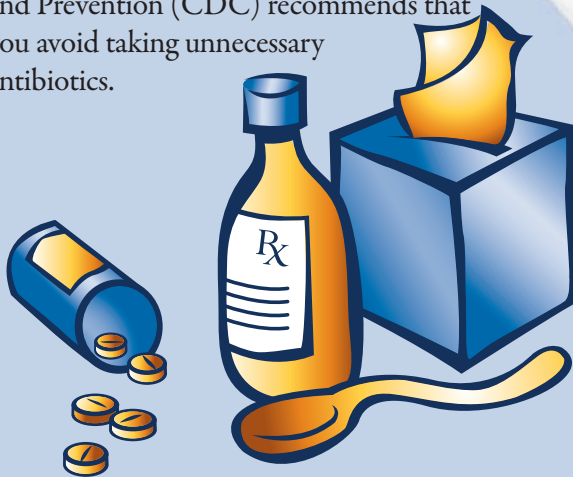
When you feel sick, you want to feel better fast. But antibiotics aren't the answer for every illness. This brochure can help you know when antibiotics work – and when they won't. For more information, talk to your healthcare provider or visit [www.cdc.gov/getsmart](http://www.cdc.gov/getsmart).

## The Risk: Bacteria Become Resistant

What's the harm in taking antibiotics anytime? Using antibiotics when they are not needed causes some bacteria to become resistant to the antibiotic.

These resistant bacteria are stronger and harder to kill. They can stay in your body and can cause severe illnesses that cannot be cured with antibiotics. A cure for resistant bacteria may require stronger treatment – and possibly a stay in the hospital.

To avoid the threat of antibiotic-resistant infections, the Centers for Disease Control and Prevention (CDC) recommends that you avoid taking unnecessary antibiotics.



## Antibiotics Aren't Always the Answer

Most illnesses are caused by two kinds of germs: bacteria or viruses. Antibiotics can cure bacterial infections – not viral infections.

**Bacteria** cause strep throat, some pneumonia and sinus infections. *Antibiotics can work.*

**Viruses** cause the common cold, most coughs and the flu. *Antibiotics don't work.*

Using antibiotics for a virus:

- Will NOT cure the infection
- Will NOT help you feel better
- Will NOT keep others from catching your illness

### Protect Yourself With the Best Care



You should not use antibiotics to treat the common cold or the flu.

If antibiotics are prescribed for you to treat a bacterial infection – such as strep throat – be sure to take all of the medicine. Only using part of the prescription means that only part of the infection has been treated. Not finishing the medicine can cause resistant bacteria to develop.

**Talk to Your Healthcare  
Provider to Learn More**

## Commonly Asked Questions:

### How Do I Know if I Have a Viral or Bacterial Infection?

Ask your healthcare provider and follow his or her advice on what to do about your illness.

Remember, colds are caused by viruses and should not be treated with antibiotics.

### Won't an Antibiotic Help Me Feel Better Quicker so That I Can Get Back to Work When I Get a Cold or the Flu?

No, antibiotics do nothing to help a viral illness. They will not help you feel better sooner. Ask your healthcare provider what other treatments are available to treat your symptoms.

### If Mucus from the Nose Changes from Clear to Yellow or Green — Does This Mean I Need an Antibiotic?

No. Yellow or green mucus does not mean that you have a bacterial infection. It is normal for mucus to get thick and change color during a viral cold.

## GET SMART...

- Antibiotics are strong medicines, but they don't cure everything.
- When not used correctly, antibiotics can actually be harmful to your health.
- Antibiotics can cure most bacterial infections. Antibiotics cannot cure viral illnesses.
- Antibiotics kill bacteria – not viruses.
- When you are sick, antibiotics are not always the answer.



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### USE ANTIBIOTICS WISELY

*Talk with your healthcare provider  
about the right medicines  
for your health.*

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Cold or Flu.  
Antibiotics Don't  
Work for You.



For more information, see the Centers for  
Disease Control and Prevention website at:  
[www.cdc.gov/getsmart](http://www.cdc.gov/getsmart) or call 1-800-CDC-INFO






## Fast Facts

### Facts About Antibiotic Resistance

- Antibiotic resistance has been called one of the world's most pressing public health problems.
- The number of bacteria resistant to antibiotics has increased in the last decade. Many bacterial infections are becoming resistant to the most commonly prescribed antibiotic treatments.
- Every time a person takes antibiotics, sensitive bacteria are killed, but resistant germs may be left to grow and multiply. Repeated and improper uses of antibiotics are primary causes of the increase in drug-resistant bacteria.
- Misuse of antibiotics jeopardizes the usefulness of essential drugs. Decreasing inappropriate antibiotic use is the best way to control resistance.
- Children are of particular concern because they have the highest rates of antibiotic use. They also have one of the highest rates of infections caused by antibiotic-resistant pathogens.
- Parent pressure makes a difference. For pediatric care, a study showed that doctors prescribe antibiotics 65% of the time if they perceive parents expect them and 12% of the time if they feel parents do not expect them.
- Antibiotic resistance can cause significant danger and suffering for people who have common infections that once were easily treatable with antibiotics. When antibiotics fail to work, the consequences are longer-lasting illnesses, more doctor visits or extended hospital stays, and the need for more expensive and toxic medications. Some resistant infections can even cause death.

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### How You Can Help Prevent Antibiotic Resistance


- Do not take an antibiotic for a viral infection like a cold, a cough or the flu. Antibiotics should be used only to treat bacterial infections.
- Take an antibiotic exactly as your healthcare provider tells you. Do not skip doses. Complete the prescribed course of treatment, even if you are feeling better.
- Do not save any antibiotics for the next time you get sick. Discard any leftover medication once you have completed your prescribed course of treatment. [Visit the EPA website for how to properly dispose of antibiotics](http://www.smarxtdisposal.net/)  (<http://www.smarxtdisposal.net/>).
- Do not take antibiotics prescribed for someone else, not even those from friends and family members. The antibiotic may not be appropriate for your illness. Taking the wrong medicine may delay correct treatment and allow bacteria to multiply.
- Antibiotic prescriptions in outpatient settings can be reduced dramatically – without adversely affecting patient health – by not prescribing antibiotics for viral illnesses, such as colds, most sore throats, coughs, bronchitis, and the flu.
- Do not demand antibiotics when a healthcare provider has determined they are not needed.
- Talk with a healthcare provider about antibiotic resistance.

## Related Materials

- [Antibiotic Resistance Questions & Answers \(antibiotic-resistance-faqs.html\)](#)
- [FOOD AND DRUG ADMINISTRATION VIDEO ABOUT ANTIMICROBIAL RESISTANCE](#)  
 <http://www.fda.gov/AnimalVeterinary/SafetyHealth/AntimicrobialResistance/ucm134359.htm>

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Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA  
30333, USA  
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day -  
[cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)



# Antibiotic Resistance

Antibiotic drugs can save lives. But some germs get so strong that they can resist the drugs. This is called resistance. The drugs don't work as well. Germs can even pass on resistance to other germs.

Antibiotics normally work by killing germs called bacteria. Or they stop the bacteria from growing. But sometimes not all of them are stopped or killed. The strongest ones are left to grow and spread. A person can get sick again. This time the germs are harder to kill.

The more often a person uses an antibiotic, the more likely it is that the germs will resist it. This can make some diseases very hard to control. It can make you sick longer and require more doctor visits. You may need to take drugs that are even stronger.

## Two main types of germs

Bacteria and viruses are the two main types of germs. They cause most illness. Antibiotics can kill bacteria, but they do not work against viruses.

Viruses cause:

- Colds
- Sore throats
- Bronchitis
- Ear infections
- Coughs
- Flu
- Sinus problems

Bacteria live in drinking water, food, and soil. They live in plants, animals, and people. Most of them do not hurt people. Some even help us to digest food. But other bacteria cause bad diseases like tuberculosis (TB) and lyme disease.

## Does this affect me?

If you have a virus, taking antibiotics is not a good idea. Antibiotics don't work against viruses. The medicine will not help you. It might even harm you. Each time you take one, you add to the chances that bacteria in your body will be able to resist them. Later that could make you very sick. Finding the right treatment could be a problem.

## What common mistakes do patients make?

- Patients ask for antibiotics they don't need. For example, they ask for antibiotics to treat a cold.
- They don't take antibiotics the way the doctor says. For example, they stop taking the drug before all the pills are used. That can leave the strongest germs to grow.
- They save antibiotics and take them on their own later.





# Antibiotic Resistance

## Why do doctors give antibiotics when these drugs are not needed?

- Doctors are not sure what is causing an illness.
- They are pressed for time.
- They give in to what patients ask for.

## What is the FDA doing about the problem?

The FDA wants doctors to be more careful about giving antibiotics when they are not needed.

- The FDA will require new labeling for doctors.
- One of the new labels must say that these drugs should be used only for infections caused by bacteria.
- Another label will ask doctors to explain the right way to use the drugs to their patients.

## What should I do?

- Don't demand an antibiotic when your doctor says you don't need it.
- Don't take an antibiotic for a virus (cold, cough, or flu).
- Take your medicine exactly the way the doctor says. Don't skip doses.
- Don't stop taking your medicine when you feel better. Take all the doses.
- Don't take leftover medicine.
- Don't take someone else's medicine.
- Don't rely on antibacterial products (soaps, detergents, and lotions). There is no proof that these products really help.

**FDA Office of Women's Health** <http://www.fda.gov/womens>

## To Learn More:

**Food and Drug Administration (FDA)**  
<http://www.fda.gov>

**Centers for Disease Control and Prevention (CDC)**  
<http://www.cdc.gov>

## Facility Letterhead

Date

Physician Name  
Physician Address  
Physician City State Zip

Re: Optimizing Antibiotic Use in Long-Term Care Settings

Dear Dr. \_\_\_\_\_:

As a primary care provider to one or more patients in our nursing home, we wanted you to be aware that [Name of Facility] is starting a new quality improvement (QI) program aimed at optimizing the use of antibiotics among our residents. Our hope is to be able to provide you with the information you need to make the best antibiotic prescribing decisions for your patients who reside in our community.

**Purpose of the Program:** This QI program is designed to help our staff provide you with information about a resident's condition that is consistent with the clinical guidelines developed by an expert panel lead by Dr. Mark Loeb. The Loeb criteria and other related guidelines are described in the attached document that we hope you will carefully review. Also, we have included the standardized format that we will use to report the signs and symptoms of suspected infections. If you have questions about this effort, you may contact [Name of facility QI team leader] who is our QI team leader at [phone or email].

**The QI Team:** The QI team includes key facility administrative and nursing staff, and Dr. [Name of lead physician], a community physician. In addition to Dr. [Lead MD last name], a team of experts from the University of North Carolina at Chapel Hill (UNC), Philip Sloane, MD, MPH, a nationally recognized geriatrician, David Weber, MD, an infectious disease specialist, Sheryl Zimmerman, PhD, a social gerontologist, and Anna Beeber, PhD, RN, a geriatric nursing specialist, will advise our team throughout the process. Also, the UNC team will evaluate the effectiveness of the program at the end of six months. The QI program evaluation is sponsored and funded by the Agency for Healthcare Research and Quality and is supported by the American Medical Directors Association.

**CME Opportunity:** The University of North Carolina at Chapel Hill is offering CME credit for attending an educational session on optimal prescribing of antibiotics in the long-term care setting. We will be hosting [# of sessions] of these sessions at the following date(s) and time(s).

[Dates and times]

If you are interested in attending, please complete the attached registration form.

Our leadership is committed to this program and to working with you to provide the best care for our residents. We look forward to our continued partnership.

Sincerely,

Executive Director

## CDC CAMPAIGN TO PREVENT ANTIMICROBIAL RESISTANCE IN HEALTHCARE SETTINGS

### 12 Steps to Prevent Antimicrobial Resistance Among Long-term Care Residents

#### Prevent Infection

##### Step 1. Vaccinate

- Give influenza and pneumococcal vaccinations to residents
- Promote vaccination among all staff

##### Step 2. Prevent conditions that lead to infection

- Prevent aspiration
- Prevent pressure ulcers
- Maintain hydration

##### Step 3. Get the unnecessary devices out

- Insert catheters and devices only when essential and minimize duration of exposure
- Use proper insertion and catheter-care protocols
- Reassess catheters regularly
- Remove catheters and other devices when no longer essential



#### Diagnose and Treat Infection Effectively

##### Step 4. Use established criteria for diagnosis of infection

- Target empiric therapy to likely pathogens
- Target definitive therapy to known pathogens
- Obtain appropriate cultures and interpret results with care
- Consider *C. difficile* in patients with diarrhea and antibiotic exposure

##### Step 5. Use local resources

- Consult the infectious disease experts for complicated infections and potential outbreaks
- Know your local and/or regional data
- Get previous microbiology data for transfer residents



# CDC CAMPAIGN TO PREVENT ANTIMICROBIAL RESISTANCE IN HEALTHCARE SETTINGS

## Use Antimicrobials Wisely

### Step 6. Know when to say “no”

- Minimize use of broad-spectrum antibiotics
- Avoid chronic or long-term antimicrobial prophylaxis
- Develop a system to monitor antibiotic use and provide feedback to appropriate personnel



### Step 7. Treat infection, not colonization or contamination

- Perform proper antisepsis with culture collection
- Re-evaluate the need for continued therapy after 48-72 hours
- Do not treat asymptomatic bacteriuria

### Step 8. Stop antimicrobial treatment

- When cultures are negative and infection is unlikely
- When infection has resolved

## Prevent Transmission

### Step 9. Isolate the pathogen

- Use Standard Precautions
- Contain infectious body fluids (use approved Droplet and Contact isolation precautions)



### Step 10. Break the chain of contagion

- Follow CDC recommendations for work restrictions and stay home when sick
- Cover your mouth when you cough or sneeze
- Educate staff, residents, and families
- Promote wellness in staff and residents

### Step 11. Perform hand hygiene

- Use alcohol-based handrubs or wash your hands
- Encourage staff and visitors

### Step 12. Identify residents with multi-drug resistant organisms (MDROs)

- Identify both new admissions and existing residents with MDROs
- Follow standard recommendations for MDRO case management

The Campaign to Prevent Antimicrobial Resistance in Healthcare Settings is funded by the CDC Foundation with support from Pharmacia Corporation, the Sally S. Potter Endowment Fund, and Premier.

March 2004

# Standardizing Antibiotic Use in Long-Term Care


## A Quality Improvement Program




# Antibiotic Use in Long-Term Care

- Up to 40% of all systemic drugs prescribed in LTC †
- Between 25 – 75% may be inappropriately prescribed †
- Consequences of inappropriate use †
  - Poor patient outcomes related to adverse effects
  - Antibiotic resistant bacteria
  - Increased healthcare costs

† Benoit, et al., 2008

- 
- Increased costs result from
    - More doctor visits
    - More medications
    - More hospitalizations

- 
- For long-term care residents, adverse effects of antibiotics:
    - more likely
    - more severe
      - Diarrhea
      - Vomiting
      - Skin rash
      - C. difficile
      - Hospitalization




- Antibiotic resistance can cause significant danger and suffering for residents in LTC
  - longer-lasting illnesses
  - more doctor visits
  - extended hospital stays
  - the need for more expensive and toxic medications
  - death

Source: CDC - Get Smart: Fast Facts About Antibiotic Resistance  
<http://www.cdc.gov/getsmart/antibiotic-use/fast-facts.html>

# Prevention

- **Conditions that lead to infection**
  - aspiration
  - pressure ulcers
  - dehydration
  - ineffective infection control

- 
- Most common infections in LTC
    - Urinary tract
    - Respiratory tract
    - Skin, soft tissue

# Partnership for Change

- Prescribing Physicians
- You and your staff

# Prescribing Physicians

- Physician champion – part of your QI team
- Prescribing guidelines for providers
- Need to know specific signs and symptoms related to guidelines

# Your QI team

- Recommended members
  - Administrator
  - Director(s) of nursing
  - Nurse educators (staff trainers)
  - Physician champion

# QI Program

- Signs and Symptoms of Infection form
  - Complete before calling/faxing provider
  - File each report in the resident's chart
  - Use for any suspected infection

# QI Program

- QI team meets on a regular basis (at least monthly)
- Reviews charts of residents currently receiving antibiotics (or at least a random selection of charts)
  - record on QI Team Review form
    - # of charts reviewed
    - # of missing “Suspected Signs and Symptoms of Infection Form”
    - # of forms with incomplete but available data



# QI Program

- Create/revise plan for staff reminders
- Plan a short report for nursing staff meetings
- Send guideline reminder to frequent prescribers (signed by physician champion)

# Suspected Infection Signs and Symptoms

- **Respiratory infection report**
  - Temperature
  - Age
  - Respiratory rate
  - Pulse rate
  - New or increased cough
  - Delirium
  - Rigors (shaking chills)
  - Productive cough
    - describe sputum (Clear, green, yellow, white and creamy, blood-tinged, dark red blood, bright red blood)

# Suspected Infection Signs and Symptoms

- **Urinary tract infection report**
  - Temperature
  - Chronic indwelling catheter
  - New or increased urgency, frequency, suprapubic pain, or gross hematuria
  - Pulse rate
  - Urinary incontinence
  - Costovertebral tenderness
  - Rigors (shaking chills) with or without cause
  - New onset delirium

# Suspected Infection Signs and Symptoms

- **Skin/soft tissue infection report**
  - Site of suspected infection
  - Temperature
  - New or increasing purulent drainage
  - Redness
  - Tenderness
  - Warmth
  - Swelling (new or increasing at the affected site)

# Suspected Infection Signs and Symptoms

- **Unexplained fever**
  - Temperature
  - Duration
  - New onset of delirium
  - Rigors (shaking chills)

# Suspected Infection Signs and Symptoms

- **Other suspected infection**
  - Temperature
  - Describe pertinent signs and symptoms
  - Symptom onset



**Questions?**

Resident Name: \_\_\_\_\_ Date: \_\_\_\_\_

Primary Care Provider: \_\_\_\_\_ Phone: \_\_\_\_\_ FAX: \_\_\_\_\_

## Signs and Symptoms of Suspected Infections

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**Instructions:** Prior to contacting the resident's primary care provider, record the signs/symptoms for the suspected infection below. Report the presence or absence of each sign/symptom to the provider.

**I. Respiratory Infection?**   1  Yes   0  No

1. Temperature :	
2. Age:	
3. Respiratory rate:	
4. Pulse rate:	
5. New or increased cough	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
6. Delirium	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
7. Rigors (shaking chills)	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
8. Productive cough: If yes, describe sputum (Clear, green, yellow, white and creamy, blood-tinged, dark red blood, bright red blood)	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No

**II. Urinary Tract Infection**   1  Yes   0  No

1. Temperature:	
2. Chronic indwelling catheter	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
3. New or increased urgency, frequency, suprapubic pain, or gross hematuria, specify:	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
4. Urinary incontinence	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
5. Costovertebral tenderness	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
6. Rigors (shaking chills) with or without cause	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
7. New onset delirium	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No

**III. Skin or Soft Tissue Infection**   1  Yes   0  No   Infection Site:

1. Temperature:	
2. New or increasing purulent drainage	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
3. Redness, describe:	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
4. Tenderness, describe:	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
5. Warmth, describe:	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
6. Swelling (new or increasing at the affected site)	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No

**IV. Unexplained Fever**   1  Yes   0  No   When did it begin:

1. Temperature:	
2. New onset of delirium	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No
3. Rigors (shaking chills)	1 <input type="checkbox"/> Yes   0 <input type="checkbox"/> No

**V. Other Infection**   1  Yes   0  No   When did it begin:

1. Temperature:	
<b>Describe other signs and or symptoms (use back if needed):</b>	



SAUL Quality Improvement Program Guide  
for  
Long-Term Care Clinicians

1. Training Slides
2. Supplemental Materials

# Standardizing Antibiotic Use in Long-Term Care

A Quality Improvement Program


**Guidelines for Clinicians**




# Antibiotic Use in Long-Term Care

- Up to 40% of all systemic drugs prescribed in LTC †
- Between 25 – 75% may be inappropriately prescribed †
- Consequences of inappropriate use †
  - Poor patient outcomes related to adverse effects
  - Antibiotic resistant bacteria
  - Increased healthcare costs

† Benoit, et al., 2008

- 
- Increased costs result from
    - More doctor visits
    - More medications
    - More hospitalizations


- 
- For long-term care residents, adverse effects of antibiotics:
    - more likely
    - more severe
      - Diarrhea
      - Vomiting
      - Skin rash
      - C. difficile
      - Hospitalization

- Antibiotic resistance can cause significant danger and suffering for residents in LTC
  - longer-lasting illnesses
  - more doctor visits
  - extended hospital stays
  - the need for more expensive and toxic medications
  - death

Source: CDC - Get Smart: Fast Facts About Antibiotic Resistance  
<http://www.cdc.gov/getsmart/antibiotic-use/fast-facts.html>

# Prevention

- **Conditions that lead to infection**
  - aspiration
  - pressure ulcers
  - dehydration
  - ineffective infection control

- 
- Most common infections in LTC
    - Urinary tract
    - Respiratory tract
    - Skin, soft tissue



# Partnership for Change

- Prescribing Physicians
- Facility staff

# Prescribing Physicians

- Physician champion – part of the QI team
- Prescribing guidelines for providers
- Providers need to know specific signs and symptoms related to guidelines

# Minimum Prescribing Criteria

- Guidelines set forth by Loeb, et al
- Developed to minimize inappropriate prescribing

# Respiratory Tract Infections

A. With fever	A. Without fever
1. Fever $>38.9^{\circ}\text{C}$ [ $102^{\circ}\text{F}$ ] and at least one of the following:	1. With COPD AND age $>65$ and at least <b><u>one</u></b> of the following:
a) respiratory rate $>25$ breaths per minute	a) new or increased cough
b) productive cough	b) with purulent sputum production
<b>OR</b>	<b>OR</b>
2. Fever $>37.9^{\circ}\text{C}$ [ $100^{\circ}\text{F}$ ] or a $1.5^{\circ}\text{C}$ [ $2.4^{\circ}\text{F}$ ] increase above baseline temperature AND $<38.9^{\circ}\text{C}$ [ $102^{\circ}\text{F}$ ] and at least one of the following:	2. Without COPD, a new cough with purulent sputum production <b>AND</b> at least <b><u>one</u></b> of the following:
a) pulse $>100$	a) respiratory rate $>25$ breaths per minute
b) delirium	b) delirium
c) rigors (shaking chills)	
d) respiratory rate $>25$	

# Urinary Tract Infections

A. With chronic indwelling catheter	B. Without an indwelling catheter
1. Fever $>37.9^{\circ}\text{C}$ [ $100^{\circ}\text{F}$ ] or a $1.5^{\circ}\text{C}$ [ $2.4^{\circ}\text{F}$ ] increase above baseline temperature AND $< 38.9^{\circ}\text{C}$ [ $102^{\circ}\text{F}$ ] and at least one of the following:	1. Fever $>37.9^{\circ}\text{C}$ [ $100^{\circ}\text{F}$ ] or a $1.5^{\circ}\text{C}$ [ $2.4^{\circ}\text{F}$ ] increase above baseline temperature AND $< 38.9^{\circ}\text{C}$ [ $102^{\circ}\text{F}$ ] and at least one of the following:
a) new or increased urgency, frequency, suprapubic pain, gross hematuria, costovertebral angle tenderness	a) new costovertebral tenderness
b) urinary incontinence	b) rigors (shaking chills)
	c) new onset delirium

# Skin and Soft Tissue Infections

1. New or increasing purulent drainage at a wound, skin, or soft-tissue site

**OR**

2. Two of the following

a) Fever  $>37.9^{\circ}\text{C}$  [ $100^{\circ}\text{F}$ ] or a  $1.5^{\circ}\text{C}$  [ $2.4^{\circ}\text{F}$ ] increase above baseline temperature AND  $< 38.9^{\circ}\text{C}$  [ $102^{\circ}\text{F}$ ]

a) Redness

a) Tenderness

a) Warmth

a) Swelling that was new or increasing at the affected site

# Unexplained Fever

1. Fever  $>37.9^{\circ}\text{C}$  [ $100^{\circ}\text{F}$ ] or a  $1.5^{\circ}\text{C}$  [ $2.4^{\circ}\text{F}$ ] increase above baseline temperature AND  $\leq 38.9^{\circ}\text{C}$  [ $102^{\circ}\text{F}$ ] and **one** of the following:

a) New onset of delirium

b) Rigors (shaking chills)

# QI Program

- Signs and Symptoms of Infection form
  - Will be completed by staff before calling/faxing provider
  - Each report filed in the resident's chart
  - Used for any suspected infection



# QI Program

- What specific information will nursing home staff provide to clinicians?

# Suspected Infection Signs and Symptoms

- **Respiratory infection report**
  - Temperature
  - Age
  - Respiratory rate
  - Pulse rate
  - New or increased cough
  - Delirium
  - Rigors (shaking chills)
  - Productive cough
    - describe sputum (Clear, green, yellow, white and creamy, blood-tinged, dark red blood, bright red blood)

# Suspected Infection Signs and Symptoms

- **Urinary tract infection report**
  - Temperature
  - Chronic indwelling catheter
  - New or increased urgency, frequency, suprapubic pain, or gross hematuria
  - Pulse rate
  - Urinary incontinence
  - Costovertebral tenderness
  - Rigors (shaking chills) with or without cause
  - New onset delirium

# Suspected Infection Signs and Symptoms

- **Skin/soft tissue infection report**
  - Site of suspected infection
  - Temperature
  - New or increasing purulent drainage
  - Redness
  - Tenderness
  - Warmth
  - Swelling (new or increasing at the affected site)

# Suspected Infection Signs and Symptoms

- **Unexplained fever**
  - Temperature
  - Duration
  - New onset of delirium
  - Rigors (shaking chills)

# Suspected Infection Signs and Symptoms

- **Other suspected infection**
  - Temperature
  - Describe pertinent signs and symptoms
  - Symptom onset



**Questions?**

# Consensus Minimum Criteria For Prescribing Antibiotics

## I. Respiratory Infection

1. With fever	2. Without fever
1. Fever >38.9°C [102°F] and at least one of the following:	1. With COPD AND age >65 and at least <b>one</b> of the following:
a) respiratory rate >25 breaths per minute	a) new or increased cough
b) productive cough	b) with purulent sputum production
<b>OR</b>	<b>OR</b>
2. Fever >37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature AND < 38.9°C [102°F] and at least one of the following:	2. Without COPD, a new cough with purulent sputum production <b>AND</b> at least <b>one</b> of the following:
a) pulse >100	a) respiratory rate >25 breaths per minute
b) delirium	b) delirium
c) rigors (shaking chills)	
d) respiratory rate >25	

## II. Urinary Tract Infection

1. With chronic indwelling catheter	2. Without an indwelling catheter
1. Fever >37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature AND < 38.9°C [102°F] and at least one of the following:	1. Fever >37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature AND < 38.9°C [102°F] and at least one of the following:
a) new or increased urgency, frequency, suprapubic pain, gross hematuria, costovertebral angle tenderness	a) new costovertebral tenderness
b) urinary incontinence	b) rigors (shaking chills)
	c) new onset delirium

## III. Skin or Soft Tissue Infection

1. New or increasing purulent drainage at a wound, skin, or soft-tissue site
<b>OR</b>
2. Two of the following
a) Fever >37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature AND < 38.9°C [102°F]
b) Redness
c) Tenderness
d) Warmth
e) Swelling that was new or increasing at the affected site

## IV. Unexplained Fever

1. Fever >37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature AND < 38.9°C [102°F] and <b>one</b> of the following:
a) New onset of delirium
b) Rigors (shaking chills)