

## **Attachment D: Staff Training Guide**

Public burden for this training is estimated to average 1 hour. Send comments regarding this burden estimate or any other aspect of this training, including suggestions for reducing this burden, to: AHRQ Reports Clearance Officer Attention: PRA, Paperwork Reduction Project (0935-XXXX) AHRQ, 540 Gaither Road, Room # 5036, Rockville, MD 20850.

## Long-Term Care Setting (SAUL Study)

Small Scale Test and Implementation of the Communication and  
Order Tool

Name of Facility

Date of Education

Name of Educator/Consultant

TMF Health Quality Institute

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## SAUL Project Team



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## Agenda

- Background and Purpose of the Study
- Loeb Criteria for Antibiotic Use
- Design of the SAUL Study
- Small Scale Trial
- Communication and Order Tool (“the Tool”)
- Implementation of “the Tool”
- Next Steps

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## Background and Purpose of the Study Antibiotic Use in Nursing Homes

- Between 50% and 70% of nursing home residents will receive at least one course of systemic antimicrobial agent during the calendar year\*
- 20% - 30% of residents may receive multiple courses during the calendar year\*
- Prolific use of antibiotics has produced a variety of antibiotic-resistant bacteria (e.g. MRSA, VRE and flouroquinolone-resistant strains of a variety of bacteria, and multi-drug resistant organisms)
- Between 2003 – 2008, one of the most commonly cited deficiencies across the 16,000 nursing homes in America was improper infection control (F441). (2003: 15% citation rate, 2008: 20% citation rate)

\*Jones, Parker, Usslow, Kimbrough & Frey, 1997; Loeb, Simon, Landry, Walter, McArthur, et al., 2001; Montgomery, Semonehuk & Nicolli, 1995; Warren, Palumbo, Pittman & Seebie, 1997

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## Loeb Criteria for Antibiotic Use

- Society for Healthcare Epidemiology of America (SHEA)
- Consensus conference held in Atlanta, Georgia (March 2000) to “formulate minimum criteria for initiating antibiotics”
- Attendees had “Expertise in the area of infections in residents of long term care (including infectious disease physicians, geriatricians, microbiologists, and epidemiologists) and actively provided care to long term care residents”
- Publication: Mark Loeb, MD, MSc; et al (Nov. 2001). Development of Minimum Criteria for the Initiation of Antibiotics in Residents of Long-Term-Care Facilities: Results of a Consensus Conference. *Infection Control and Hospital Epidemiology*. pp. 120-124.

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## Loeb Criteria for Antibiotic Use

- Skin and Soft-Tissue Infections
- Urinary Tract Infections
- Lower Respiratory Infections
  - (e.g. Bronchitis, Pneumonia)
- Fever Where the Focus of Infection is Unknown

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## Design of the SAUL Project

- Initial Intervention Plan
- Technical Expert Panel
- Usability Test
- Small Scale Test
- Field Test
- Evaluation of intervention(s)

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## Field Test

- 12 Nursing Homes
- 4 monthly visits
  - 3 month baseline data collection
  - Monthly data collection
  - Monthly evaluation of intervention(s)
  - Interviews with key leadership and champions, attending physicians, and nurses

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## Field Test (Data Collection)

- Monthly Infection Log/Report
- Most current Minimum Data Set (MDS)
  - Prior to infection
- Medical Record
  - Nurses Notes
  - Physician Notes / Orders
  - Lab Work / Orders

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## Loeb Criteria for Antibiotic Use

### Skin and Soft Tissue Infection Criteria

1a) New or increasing purulent drainage at wound/skin/soft tissue site alone **OR**

1b) **Two** of the following symptoms:

- Fever of 100°F or an increase of 2.4°F;
- Redness;
- Tenderness;
- Warmth; or
- Swelling that was new or increasing at the affected site.

**Notes:** (1) Herpes zoster is viral and therefore does not require antibiotics but can pose a diagnostic difficulties; (2) deeper infections such as olecranon bursitis may present with similar signs/symptoms; (3) underlying osteomyelitis may need to be considered when managing a resident with an infected diabetic or decubitus ulcer; (4) thromboembolic disease should be considered when a resident presents with an erythematous or swollen leg; (5) these criteria do not apply to residents with burns; and (6) gout can be at times mistaken for cellulitis.

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## Loeb Criteria for Antibiotic Use

### Urinary Tract Infections Criteria

Residents without an indwelling catheter or intermittent catheterization

- 1a) Acute dysuria alone **OR**
- 1b) Fever of 100°F or a 2.4°F increase in baseline temp. **AND** a new or increase for at least one of the following:
  - 2a) Urgency,
  - 2b) Frequency,
  - 2c) Suprapubic pain,
  - 2d) Gross hematuria,
  - 2e) Costovertebral angle tenderness,**OR**
- 2f) Urinary incontinence.

Residents with a chronic indwelling catheter (Foley or suprapubic)

- Presence of **ONE** of the following:
- 1a) Fever of 100°F or a 2.4°F increase in baseline temperature,
  - 1b) New costovertebral tenderness,
  - 1c) Rigors (shaking chills) with or without cause, **OR**
  - 1d) New delirium.

**Note:** Regardless of symptoms, urine cultures should be obtained to rule out UTIs.

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## Loeb Criteria for Antibiotic Use

### Respiratory Infections Criteria

**I.** For residents with fevers, initiate antibiotic use if:

- 1) Fever of 102°F **AND** at least **ONE** of the following:
  - 2a) Respiratory rate of >25 breaths/min **OR**
  - 2b) Productive cough

- 1) Fever between 100°F and 102°F or a 2.4°F increase in baseline temp **AND**
- 2) Cough **AND** at least **ONE** of the following:
  - 3a) Pulse >100;
  - 3b) Delirium;
  - 3c) Rigors / shaking chills; or
  - 3d) Respiratory rate of >25.

**II.** For patients without fevers:

- 1) COPD and older than age 65 **AND**
- 2) New or increased cough with purulent sputum production

- 1) No COPD, but:
- 2) A new cough with purulent sputum production **AND** at least **ONE** of the following:
  - 3a) Respiratory rate of >25 breaths/min **OR**
  - 3b) Delirium.

**Note:** If a new infiltrate is shown on a chest radiograph thought to represent pneumonia, any one of the following symptoms would constitute appropriate criteria: a) respiratory rate of >25 breaths/min; b) productive cough; c) a fever of 100°F. The importance of the epidemiological setting (e.g., flu outbreak) is important in interpreting clinical features. Obtaining a CBC count is strongly encouraged.

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## Loeb Criteria for Antibiotic Use

### Criteria for Fever and Where the Focus of Infection is Unknown

1) Fever of 100°F or 2.49°F increase above base line **AND** at least **ONE** of the following:

2a) New onset of delirium **OR**

2b) Rigors.

**Note:** Fever and mental status changes that do not meet the criteria for delirium (e.g., reduced functional activities, withdrawal, loss of appetite) need to be investigated, but antibiotics need not be started empirically.

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## Communication and Order Tool

**Purpose:** To provide information to prescribing clinicians prior to their decisions concerning the treatment of suspected infections

### Components of “the tool”

**Step One:** Resident/Patient/Clinician Information  
**Step Two:** (Sect. I) Vital Signs  
**Step Three:** (Sect. II) Infections and Fevers  
**Step Four:** (Sect. III) Additional Information / Other Concerns  
**Step Five:** (Sect. IV) Physician / Clinician Orders

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## Communication and Order Tool (The Process)

### Step One: Resident/Patient/Clinician Information

Physician/Clinician:	Facility:
Fax:	Facility Name:
Phone:	Phone:
Resident/Room:	Date & Time faxed/reported:

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## Communication and Order Tool

### Step Two: I. Vital Signs

Temp.: \_\_\_\_\_ BP: \_\_\_\_\_ Resp. Rate: \_\_\_\_\_ Heart Rate: \_\_\_\_\_ O<sub>2</sub>Sat: \_\_\_\_\_

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## Communication and Order Tool

### Step Three: II. Infections and Fevers

#### Loeb Criteria for Antibiotic Use (*CHECK ALL THAT APPLY*)

<input type="checkbox"/> Skin or Soft Tissue Infection, check all that apply Site: _____ <input type="checkbox"/> New or increasing purulent discharge or odor <input type="checkbox"/> <b>OR</b> AT LEAST TWO of the following: <input type="checkbox"/> Fever over 100°F or increase of 1.4°F above baseline temp.; <input type="checkbox"/> Redness; <input type="checkbox"/> Tenderness; <input type="checkbox"/> Warmth; <input type="checkbox"/> New/increased swelling <input type="checkbox"/> Loeb criteria met	<input type="checkbox"/> Fever of Unknown Origin, check all that apply <input type="checkbox"/> Fever over 100°F or increase in 2.4°F above baseline - patient needs to have AT LEAST ONE of the following: <input type="checkbox"/> Delirium; <input type="checkbox"/> Rigors (shaking chills) <input type="checkbox"/> Leukopenia/met
<input type="checkbox"/> Suspected Urinary Tract Infection (choose 1 of 2) (1) <input type="checkbox"/> For Pts. with a chronic indwelling catheter, check at least 0: <input type="checkbox"/> Fever over 100°F or increase of 2.4°F above baseline <input type="checkbox"/> New costovertebral angle tenderness (flank pain) <input type="checkbox"/> Rigors (shaking chills) <input type="checkbox"/> Delirium (sudden onset of confusion) (2) <input type="checkbox"/> For Pts. without a chronic indwelling catheter, check all that apply: <input type="checkbox"/> Acute dysuria <b>OR</b> <input type="checkbox"/> Fever over 100°F or increase in 2.4°F above baseline temp. AND AT LEAST ONE new symptom: <input type="checkbox"/> Urgency; <input type="checkbox"/> Frequency; <input type="checkbox"/> Suprapubic pain; <input type="checkbox"/> Gross hematuria; <input type="checkbox"/> Costovertebral angle tenderness; or <input type="checkbox"/> Urinary incontinence <input type="checkbox"/> Loeb criteria met	<input type="checkbox"/> Suspected Lower Respiratory Infection (choose 1 of 2) (for essential symptoms, see below) <input type="checkbox"/> For patients with a fever: (1) <input type="checkbox"/> If fever is 100°F or greater Pt. must also have AT LEAST ONE of the following: <input type="checkbox"/> Resp. rate >20 breaths/min. <input type="checkbox"/> Productive cough (2) <input type="checkbox"/> If fever is between 100 - 100.9°F, MUST have a <input type="checkbox"/> Cough AND AT LEAST ONE of the following: <input type="checkbox"/> Pulse >100 <input type="checkbox"/> Delirium <input type="checkbox"/> Rigors <input type="checkbox"/> Resp. rate >20 breaths/min <input type="checkbox"/> For patients without a fever: (3) <input type="checkbox"/> If Pt. does not have COPD, Pt. must have <input type="checkbox"/> New or increased cough with purulent sputum production AND AT LEAST ONE of the following: <input type="checkbox"/> Resp. rate >20 breaths/min. <input type="checkbox"/> Delirium (4) <input type="checkbox"/> If Pt. has COPD Pt. must have <input type="checkbox"/> New or increased cough with purulent sputum production <input type="checkbox"/> Loeb criteria met

## Communication and Order Tool

### Step Four: III. Additional Information / Other Concerns

III. Additional Information / Other Concerns

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\_\_\_\_\_  
 Nurse Signature

\_\_\_\_\_  
 Date/Time

FAMILY/POA NOTIFIED: Date & Time reported: \_\_\_\_\_ Name: \_\_\_\_\_

## Communication and Order Tool

### Step Five: IV. Physician/Clinician Orders

Treatment # 1: _____	Treatment #2: _____	<input type="checkbox"/> Lab Tests: _____
Dosage: _____	Dosage: _____	<input type="checkbox"/> X-ray ordered
Frequency: _____	Frequency: _____	<input type="checkbox"/> No changes at this time
Other: _____	Other: _____	
Comments/Other Instructions:		
Physician/Clinician Signature	Date/Time	<input type="checkbox"/> Telephone order received

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## Implementation of “the Tool”

- Facility Specific Slide

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## Next Steps

- Facility Specific Slide

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Any Additional Questions????

Thank you!

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