OPTIMISTIC

A Demonstration Project in the CMS Initiative to **Reduce** Avoidable Hospitalizations Among Nursing Facility Residents

Visit our website for supportive resources and FAQs

*optimistic-care.org*
Providers Learning Community Webinar

March 17, 2017
• Please mute your line (*2) during the initial slides
• Unmute (*2 again) to speak
Billing Updates
Fielding questions today …

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optimistic-care.org
Pneumonia

Jennifer Carnahan MD, MPH, MA
Assistant Professor of Medicine, Indiana University
Outline

- OPTIMISTIC updates
- Pneumonia prevention
- Diagnosis
- OPTIMISTICIC recommendations
- Treatment options
- OPTIMISTIC updates
  - Pneumonia prevention
  - Diagnosis
  - OPTIMISTIC recommendations
  - Treatment options
Quarter 1 Data

These percentages are estimated from your data, as reported to CMS on the first quarterly report.
Phase I

MEDICARE INNOVATION

By Melvin J. Ingber, Zhanlian Feng, Galina Khatutsky, Joyce M. Wang, Lawren E. Bercaw, Nan Tracy Zheng, Alison Vadnais, Nicole M. Coomer, and Micah Segelman

AGING & HEALTH

Initiative To Reduce Avoidable Hospitalizations Among Nursing Facility Residents Shows Promising Results

DOI: 10.1377/hlthaff.2016.1310
HEALTH AFFAIRS 36, NO. 3 (2017): 441-450
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Phase I

- 2015 Data

- 19 OPTIMISTIC NHs vs Indiana Control NHs:
  - 25% reduction in all cause hospitalizations
  - 40% reduction in potentially avoidable hospitalizations

https://innovation.cms.gov/Files/reports/irahnfr-finalyrfourevalrpt.pdf
HEALTH AFFAIRS 36, NO. 3 (2017): 441–450
Outline

• OPTIMISTIC updates
• **Pneumonia prevention**
  • Diagnosis
  • OPTIMISTIC recommendations
  • Treatment options
Pneumonia

Inflammatory/infectious condition of the lung parenchyma esp. affecting the alveoli and consolidation (liquid in spaces normally filled w air)

www.uptodate.com
Prevention

- Vaccines
Vaccines

- PSV-23 “Pneumovax”
- PCV-13 “Prevnar”
- (Tdap → pertussis)

Prevention

http://www.paltc.org/pneumococcal-vaccination-guidance

**High risk**: asplenia; CSF leak; cochlear implant, B- or T-lymphocyte, complement or phagocytic deficiency; HIV; chronic renal failure; nephrotic syndrome; leukemia; lymphoma; multiple myeloma; generalized malignancy; iatrogenic immune suppression (radiation, chronic steroids, biologics etc.); solid organ transplant.

**Chronic organ disease**: cirrhosis, heart failure, chronic obstructive pulmonary disease
Prevention

• Vaccines

• Risk factors
  – *Facility hygiene ➔ hand washing*
  – Medical risk factors: hx pneumonia, hx other lung diseases, neuromuscular disorder, hx stroke, cognitive impairment, tube feeds, dysphagia etc
Prevention

• Vaccines

• Risk factors
  – Facility hygiene ➔ hand washing
  – **Medical risk factors:** hx pneumonia, hx other lung diseases, neuromuscular disorder, hx stroke, cognitive impairment, tube feeds, dysphagia etc

**BMC Geriatr.** 2016 Mar 7;16:60
Prevention

• Vaccines

• Risk factors
  – Facility hygiene ➞ hand washing
  – Medical risk factors: hx pneumonia, hx other lung diseases, neuromuscular disorder, hx stroke, cognitive impairment, tube feeds, dysphagia etc ➞ aspiration

BMC Geriatr. 2016 Mar 7;16:60
At Risk of Aspiration

- Difficulty managing secretions
- Food pocketing
- Multi swallows per mouthful
- Unusual head/neck posture
- Painful swallow
- Cough/choke during swallow
Reducing Aspiration Risk

- Avoid rush feeding
- Provide rest before eating
- Chin-down or Chin-Tuck maneuver
- Keep resident at 90 degree angle
- Cueing and redirection
Symptoms of Aspiration

- Sudden respiratory symptoms
- Voice Change
- Delirium
- Fever, chills, pleuritic chest pain
Phases of Swallow

- From POGO-e website by K. Denson et al at Medical College of Wisconsin
- Swallow is series of 3 phases:
  - Oral Phase
  - Pharyngeal Phase
  - Esophageal Phase

https://www.pogoe.org/productid/21760
Voluntary initiation of the swallow by tongue

https://www.pogoe.org/productid/21760
Triggering of the pharyngeal swallow

A

B

C

D

E

https://www.pogoe.org/productid/21760
Arrival of the bolus at the vallecula
Tongue base retraction to pharyngeal wall
Bolus in cervical esophagus

https://www.pogoe.org/productid/21760
Prevention

Normal Swallow-Old

https://www.pogoe.org/productid/21760
Prevention

Thin Liquid Aspiration

https://www.pogoe.org/productid/21760
Goals of Care

- Physician Orders for Scope of Treatment
  - Code status
  - Medical interventions
  - Antibiotic choices
  - Artificial nutrition choices

http://www.indianapost.org/
Outline

- OPTIMISTIC updates
- Pneumonia prevention
- **Diagnosis**
- OPTIMISTIC recommendations
- Treatment options
www.optimistic-care.org

• Demonstration Project

• Provider Resources
  – 6 conditions checklist
  – Pocket card
  – Recommended monitoring
# CMS Criteria

## 6 Condition Diagnostic Checklist & Billing Form

**Patient Name:**

- [ ] Resident is NOT enrolled in OPTIMISTIC→STOP—patient not eligible.
- [ ] Resident is currently receiving hospice benefit→STOP—patient not eligible.

<table>
<thead>
<tr>
<th>Acute Condition</th>
<th>Qualifying Diagnosis Criteria (check those that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pneumonia</strong></td>
<td>One or more of the following:</td>
</tr>
<tr>
<td>(7 days)</td>
<td>- CXR confirmation of a <em>new</em> pulmonary infiltrate</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong> Two or more of the following:</td>
</tr>
<tr>
<td></td>
<td>- Fever &gt; 100°F (oral) or ≥ 2° above baseline</td>
</tr>
<tr>
<td></td>
<td>- Oxygen saturation &lt; 92% on room air or on patient’s usual oxygen settings if chronic oxygen requirements</td>
</tr>
<tr>
<td></td>
<td>- Respiratory rate &gt; 24 breaths/minute</td>
</tr>
<tr>
<td></td>
<td>- Evidence of focal pulmonary consolidation on exam (rales, rhonchi, decreased breath sounds, or dullness to percussion)</td>
</tr>
<tr>
<td><strong>CHF exacerbation</strong></td>
<td>One or more of the following:</td>
</tr>
<tr>
<td>(7 days)</td>
<td>- CXR confirmation of <em>new</em> pulmonary congestion</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong> Two or more of the following:</td>
</tr>
<tr>
<td></td>
<td>- Oxygen saturation &lt; 92% on room air or on patient’s usual oxygen settings if chronic oxygen requirements</td>
</tr>
<tr>
<td></td>
<td>- New or worsening pulmonary rales</td>
</tr>
<tr>
<td></td>
<td>- New or worsening edema</td>
</tr>
<tr>
<td></td>
<td>- New or increased jugulo-venous distension</td>
</tr>
<tr>
<td></td>
<td>- BNP &gt; 300 pg/mL</td>
</tr>
<tr>
<td><strong>Skin Infection</strong></td>
<td>[ ] New onset painful, <em>warm and/or swollen</em>/indurated skin infection requiring antibiotic treatment</td>
</tr>
<tr>
<td>(7 days)</td>
<td>[ ] If associated with skin ulcer or wound there is an acute change in condition with signs of infection including purulence, exudate, fever, new onset of pain, and/or induration</td>
</tr>
<tr>
<td><strong>Fluid/Electrolyte Disorder or Dehydration</strong></td>
<td>MUST have:</td>
</tr>
<tr>
<td>(5 days)</td>
<td>- ANY acute change in condition</td>
</tr>
<tr>
<td></td>
<td><strong>AND</strong> Two or more of the following:</td>
</tr>
<tr>
<td></td>
<td>- Reduced urine output in 24 hours OR reduced oral intake by ≥ 25% of average intake over 3 consecutive days</td>
</tr>
<tr>
<td></td>
<td>- New onset systolic BP ≤ 100 mmHg (lying, sitting or standing)</td>
</tr>
<tr>
<td></td>
<td>- 20% increase in Blood Urea Nitrogen (BUN)—e.g. from 20 to 24</td>
</tr>
<tr>
<td></td>
<td>- 20% increase in BUN—e.g. from 1.0 to 1.2</td>
</tr>
</tbody>
</table>

http://www.optimistic-care.org/
## CMS Criteria

### Qualifying Diagnosis

**THIS OR TWO or more of THESE**

<table>
<thead>
<tr>
<th>Chest x-ray confirmation of a new pulmonary infiltrate</th>
<th>* Fever &gt;100 F (oral) or two degrees above baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>* Blood Oxygen saturation level &lt; 92% on room air or on usual O2 settings in patients with chronic oxygen requirements</td>
</tr>
<tr>
<td></td>
<td>* Respiratory rate above 24 breaths/minute</td>
</tr>
<tr>
<td></td>
<td>* Evidence of focal pulmonary consolidation including rales, rhonchi, decreased breathe sounds, or dullness to percussion</td>
</tr>
</tbody>
</table>

[Link](http://www.optimistic-care.org/)
Diagnostic Criteria

Keys to diagnosis:

• Vitals

• Nursing assessment

• Chest x-ray
Chest X-rays and Pneumonia

- 226 NH CXR:
  - 52% low likelihood PNA
  - 30% high likelihood PNA
  - 18% vague PNA

- Who gets treatment?
Chest X-rays and Pneumonia

• 226 NH CXR:
  – 52% low likelihood PNA ➔ 34% received abx
  – 30% high likelihood PNA ➔ 78% abx
  – 18% vague PNA ➔ 71% abx

• Who gets treatment?
Inspiration

https://www.med-ed.virginia.edu/courses/rad/cxr/technique3chest.html
Outline

- OPTIMISTIC updates
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- Diagnosis
- **OPTIMISTIC recommendations**
- Treatment options
OPTIMISTIC Recommendations

Empowering nursing facilities to transform care by implementing evidence-based strategies to improve medical, transitional, and palliative care

ABOUT

Overview
Mission and Vision
History
The OPTIMISTIC Model
Find a Facility
Goals of OPTIMISTIC
  Improving Medical Care
  Enhancing Transitional Care

Home / About / Provider Resources

Provider Resources

Payment Model Overview

6 Condition Diagnostic Checklist & Billing - Form that lists CMS’ criteria for billing and how to bill

Pocket Card - 6 qualifying conditions reference card

Recommended Monitoring during Benefit Period - Lists recommended clinical monitoring of patients during the treatment period
Recommended Monitoring During Benefit Period

Best Practices for **each condition**:

1. **Pneumonia**
   - Daily CBC with differential until the WBC trends down
   - O2 saturation (indicate whether room air or on oxygen)
   - See special considerations for any patient on an antibiotic
Recommended Monitoring During Benefit Period

For **ANY** patient receiving treatment for the **6 Conditions** under the OPTIMISTIC CMS Benefit:

- Vitals Every shift: temperature, blood pressure, heart rate, respiratory rate, O2 saturation
- Daily discussion of patient’s progress during nursing rounds
- Daily nursing assessment documented
- Pharmacy monitoring of any new medications ordered for significant interactions

**SPECIAL** considerations for any patient prescribed an **antibiotic**:

- Antibiotic stewardship is key: avoid excessive antibiotic use and limit dose, duration, and antibiotic choice to match condition and pathogen
- Set a stop date
- Facility nurse should inform primary provider when culture and sensitivity come back for consideration of antibiotic change
- Monitor INR closely if on warfarin
- Pharmacy to monitor dosing and medication blood levels when appropriate
Outline

- OPTIMISTIC updates
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- **Treatment options**
Treatment

✓ OPTIMISTIC recommended monitoring
✓ Risk reduction
✓ Goals of care
  • Antibiotic selection
Treatment

- Is it community acquired or hospital acquired pneumonia?

NHAP = hybrid of CAP &/or HAP

Treatment

• Is it community acquired or healthcare associated pneumonia?
  – 2012 study: 56% of NH patients in HK had viral etiology
  – MDRO: NHAP (7.5%) > CAP (1.4%)
  – Most frequent bacteria: *Strep pneumoniae*, GNB (*Haemophilus influenzae*, *Klebsiella* spp, *Pseudomonas aeruginosa*)

Ma et al JAMDA 2012; 13(8): 727-731.
Treatment

- Principles of treatment:
  - Highest safe dose
  - Shortest reasonable duration
  - Narrow spectrum
Treatment

- Fluroquinolones’ possible effects:
  - Neuropathy
  - QT interval
  - Arthropathy
- FDA recommends against tx for:
  - Sinusitis
  - UTI
  - Bronchitis
  - Myasthenia G. exacerbation
  - Tendonitis/tendon rupture
Treatment

- No risk factors: macrolide or doxycycline
- If comorbidities: respiratory fluoroquinolone or beta lactam plus macrolide
- $2^{nd}/3^{rd}$ generation cephalosporin plus macrolide

http://www.id society.org/IDSA_Practice_Guidelines/
Treatment

• Expert consensus on NHAP

Treatment: Aspiration PNA

- Ampicillin-sulbactam (IV/IM)
- Metronidazole (PO, IV) + amoxicillin
- Clindamycin (PO, IM, IV)
- Ceftriaxone (IV, IM)
- Amoxicillin-clavulanate (PO)
Local pathogens

Partnerships:

Health Department
Hospitals
Labs
Any success stories partnering with local resources?
• Thank you!

• Jennifer Carnahan
• jennccarn@iupui.edu
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