TUESDAY, APRIL 12, 2016:
IOWA PHARMACY RESIDENTS LEADING PRACTICE CHANGE
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Executive Vice President and CEO
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A Survey of Pharmacists’ Preparedness for Provider Status Implementation

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Disclosure statement: these individuals have the following to disclose concerning possible financial or personal relationships with commercial entities (or their competitors) that may be referenced in this presentation.

- **Resident**: Erica Tolle has nothing to disclose
- **Project Director, Advisors, & Co-Investigators**: William Doucette, Ali Azeez Ali Al Jumali, Scott Egerton, Stevie Veach, Christine Catney, Randy McDonough have nothing to disclose
Background

- Provider status legislation was introduced into the US House and Senate in January 2015.
- The aim of this legislation is to improve Medicare beneficiaries’ access to pharmacists.
- Pharmacists’ clinical interventions may improve BP, A1c, LDL, LOS, mortality and errors.
- There is little known about the readiness of pharmacists to perform as providers.
Objectives

- Assess pharmacists’ perceived preparedness for provider status implementation with respect to:
  - a) Individual pharmacists
  - b) Pharmacy sites
  - c) Patients
  - d) Prescribers
  - e) Payers
Methodology

- **Design:** Cross-sectional Qualtrics online survey
- **Participants:** 132 Iowa pharmacists
  - University of Iowa alumni
  - State association members
  - Regional association members
  - College of pharmacy faculty members
- 24-item survey distributed via email & social media
- Elements of domains extracted from literature
- Human subjects research approved by IRB
## Results

<table>
<thead>
<tr>
<th>Table 1. Pharmacist Characteristics</th>
<th>n=132</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Mean, ±SD)</td>
<td>38.1 years old (± 11.3 years)</td>
</tr>
</tbody>
</table>
| Gender (N, %)                      | Male: 34, (25.8%)   
Female: 68, (74.2%) |
| BSPharm (N,%)                      | 46, (34.8%) |
| PharmD (N, %)                      | 106, (80.3%) |
| PGY-1 (N, %)                       | 42, (31.8%) |
Fig 1. Services Offered at Pharmacists’ Practice Sites

%, n = 132

SYNC = Medication Synchronization; MTM = Medication Therapy Management; TOC = Transitions of Care; IMM = Immunizations; POC = Point of Care Testing; CMPD = Compounding; DSM = Disease State Management
### Table 2. Pharmacists’ Reported Confidence for Providing Clinical Services

Mean (±SD), n=129

1-3= not confident, 4= neutral, 5-7= confident

<table>
<thead>
<tr>
<th>Task</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain medication history</td>
<td>6.6 (0.86)</td>
</tr>
<tr>
<td>Obtain past medical history</td>
<td>6.2 (1.14)</td>
</tr>
<tr>
<td>Obtain current symptoms</td>
<td>6.1 (1.11)</td>
</tr>
<tr>
<td>Make a recommendation</td>
<td>6.1 (1.08)</td>
</tr>
<tr>
<td>Document an intervention</td>
<td>6.1 (1.14)</td>
</tr>
<tr>
<td>Identify drug-related problems</td>
<td>6.0 (1.08)</td>
</tr>
<tr>
<td>Identify therapeutic goals</td>
<td>5.8 (1.19)</td>
</tr>
<tr>
<td>Monitor outcomes</td>
<td>5.8 (1.26)</td>
</tr>
<tr>
<td>Establish monitoring plan</td>
<td>5.7 (1.22)</td>
</tr>
<tr>
<td>Individualize treatment</td>
<td>5.6 (1.27)</td>
</tr>
<tr>
<td>Measure vital signs</td>
<td>5.4 (1.59)</td>
</tr>
<tr>
<td>Provide point of care testing</td>
<td>5.1 (1.70)</td>
</tr>
</tbody>
</table>
Fig 2. Pharmacists’ Reported Adequacy of Resources
Mean, n=132
1-3 = not confident, 4 = neutral, 5-7 = confident
Table 3. Pharmacists’ Perceived Preparedness of Stakeholders

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Mean (±SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Pharmacists</td>
<td>5.1 (1.45)</td>
</tr>
<tr>
<td>Patients</td>
<td>4.8 (1.72)</td>
</tr>
<tr>
<td>Pharmacy Sites</td>
<td>4.6 (1.21)</td>
</tr>
<tr>
<td>Prescribers</td>
<td>4.4 (1.26)</td>
</tr>
<tr>
<td>Payers</td>
<td>3.3 (1.17)</td>
</tr>
</tbody>
</table>

Mean (±SD), n=132
1-3= not confident, 4= neutral, 5-7= confident
Discussion

- Less than 40% of respondents’ practice sites offered SYNC, TOC, POC testing and DSM
- A large percentage (87.5%) of respondents reported feeling confident providing each clinical service listed in Table 2
- Obtaining a medication history and past medical history received the highest confidence rankings
- Respondents reported being less confident measuring their patients’ vital signs and providing point of care testing
- Iowa pharmacists reported low confidence in the preparedness of payers to support pharmacist provider status
Limitations:

- Generalizability of findings is uncertain due to survey distribution methods
- Low number of respondents
Iowa pharmacists may benefit from programming focused on delivering certain components of clinical services, such as measuring vital signs & point of care testing.

Pharmacy stakeholders should continue to work with payers to support pharmacists as providers.
A Survey of Pharmacists’ Preparedness for Provider Status Implementation

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IOWA RESIDENTS LEADING PRACTICE CHANGE

Nicole McSweeney, PharmD
PGY-1 Pharmacy Practice Resident
Iowa Methodist Medical Center
Impact of a Pharmacist-Led Emergency Department Culture Review Service: A Retrospective Review

Nicole McSweeney, Amanda Bushman, Megan Lewis, Hayden Smith, Taylor Monson, Talli Smith, Grant Stimes, and Danielle Walla

UnityPoint Health – Des Moines
Iowa Methodist Medical Center
Conflict of Interest

• The speaker has no actual or potential conflicts of interest in relation to this presentation.
Learning Objectives

1. Describe the pharmacist’s role in an Emergency Department-based microbiology culture review service.

2. Discuss the pharmacist's influence on antimicrobial stewardship efforts in an Emergency Department (ED).
Antimicrobial Stewardship

- An estimated 2 million individuals are infected with resistant microorganisms, resulting in approximately 23,000 deaths each year.
- Antimicrobial Stewardship Programs (ASPs) assist health care organizations in using antimicrobial agents appropriately and effectively.
- ASPs evaluate the 4 R’s to assess antimicrobial use:
  - Right Antibiotic
  - Right Time
  - Right Dose
  - Right Duration
Antimicrobial Stewardship

Antimicrobial Stewardship teams include pharmacists, physicians, and nurses who:

- Optimize antimicrobial treatment regimens
- Reduce the incidence of hospital-acquired *Clostridium difficile* infections
- Prevent antibiotic-related adverse events
- Adjust antimicrobial doses based on patient characteristics and indications for use
Pharmacist-Led ED Culture Review

Many nationally published studies demonstrate the positive impact of pharmacist-led antimicrobial stewardship programs on appropriate antimicrobial use, medication compliance, and antibiotic expenditures.

Effect of Clinical Pharmacist on Care in the Emergency Department: A Systematic Review

• Cohen and colleagues conducted a systematic review of 12 institutions with clinical pharmacists located in the ED
• The researchers found that ED pharmacists provide drug therapy recommendations and staff education, monitor patients for adverse drug events, serve as preceptors, and discuss patient compliance
Pharmacist-Led ED Culture Review

Pharmacist-Managed Antimicrobial Stewardship Program for Patients Discharged from the Emergency Department

• Baker and associates evaluated a pharmacist-managed ASP in the ED of a university teaching hospital
• The researchers found a statistically significant reduction in time to culture review as well as time to patient or physician notification of a culture result
• The team also found an improvement in appropriate empiric and final therapy after the program’s initiation
Pharmacist-Led ED Culture Review

Effect of Pharmacist-Managed Culture Review Process on Antimicrobial Therapy in an Emergency Department

• Randolph and colleagues evaluated a pharmacist-led culture review service in a large, public hospital.

• The researchers found a reduction in antibiotic treatment failure, patient noncompliance, and adverse drug reactions after initiation of this pharmacist-driven program.
Primary Purpose and Objectives

- Examine outcomes associated with Iowa Methodist Medical Center (IMMC)’s pharmacist-driven ED culture review service
  - Determine if initial antibiotic choices are the most narrow spectrum possible, based on patient characteristics, local susceptibility patterns, and indications for use
  - Assess the use and documentation of patient follow-up after ED discharge
  - Evaluate the appropriateness of pharmacist intervention to adjust antimicrobial therapies
  - Identify readmission rates to the ED
Secondary Purpose and Objectives

• Evaluate local prescribing patterns and identify potential areas for improvement
  – Determine the impact of ED pharmacists on the narrowness of empiric antibiotic selection
  – Recognize barriers to the successful continuation of this culture review program
  – Design education for the ED staff, including pharmacists and physicians, regarding appropriate empiric antimicrobial selection
IMMC’s Pharmacist-Led ED Culture Review Service

• Prior to September of 2013, Physician Assistants (PAs) and Nurse Practitioners (NPs) reviewed all microbiology cultures for patients discharged from the ED
  – Using the culture result, the PAs and NPs evaluated the microorganism’s sensitivity to the empiric antibiotic
  • Interventions to adjust antimicrobial therapy were conducted if appropriate
  – Any adjustments to drug therapy or follow-up phone calls with discharged patients were documented in the patient’s electronic medical record
IMMC’s Pharmacist-Led ED Culture Review Service

- In September of 2013, a pharmacist-led ED culture review service was implemented at the three UnityPoint – Des Moines hospital campuses
- A pharmacist reviews all microbiology cultures for patients discharged from the ED
- Based on the culture result, the pharmacist determines if the empiric antibiotic choice was appropriate
  - If the microorganism is resistant to the empiric antibiotic, the pharmacist works with the prescriber to create a new antimicrobial treatment plan
  - The pharmacist communicates culture results and changes in antibiotic therapy, if any, to the patient
- Interventions are documented in the patient’s electronic medical record
Methodology

• Retrospective chart review comparing:
  – **Time Period 1**: One year of patient data collected from the PA- and NP-driven ED culture review service (9/9/2012 to 9/8/2013)
  – **Time Period 2**: Two years of patient data since the implementation of the pharmacist-driven ED culture review service (9/9/2013 to 9/8/2015)
Methodology

• The appropriateness of empiric antimicrobial therapy selection was determined by a group of two Infectious Disease physicians, an Infectious Disease pharmacist, an ED pharmacist, and a pharmacy resident, who evaluated:
  – IDSA Guidelines
  – Culture Results
  – Local Expert Opinion
  – IMMC’s Standard of Care
  – IMMC’s 18 Month Antibiogram Data
  – Antibiotic Cost
# Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients aged 18 years or older</td>
<td>Patients less than 18 years of age</td>
</tr>
<tr>
<td>Discharge from the ED between 9/9/2012 and 9/8/2015</td>
<td>Positive STD screenings</td>
</tr>
<tr>
<td>Positive blood, sputum, wound, or urine cultures</td>
<td>Positive genital cultures</td>
</tr>
<tr>
<td></td>
<td>Admission to an inpatient hospital service from the ED</td>
</tr>
</tbody>
</table>
Data Collection Points

The following data points were collected for each patient included in the study. This data represents subjective and objective information collected by the ED provider before the patient’s discharge from the ED.

- Age
- Gender
- Antibiotic allergies and reaction
- Height and weight
- Serum Creatinine and Estimated Creatinine Clearance
- Culture type and results (quantity and species)
- Empiric antibiotic (drug, dose, frequency, and duration)
- Ordering provider
Data Collection Points

• The following questions were evaluated for each patient included in the study. This data represents subjective and objective information collected after the patient’s culture finalized with the identification of the pathogen and antibiotic susceptibilities.
  – Was the bacterium sensitive, intermediate, or resistant to the empiric antibiotic?
  – Was the most narrow spectrum empiric antibiotic chosen?
  – Did the pharmacist follow-up with the patient to reinforce compliance with the empiric antibiotic?
  – Did the pharmacist intervene to adjust antibiotic therapy?
  – Was the most narrow spectrum antibiotic chosen after a pharmacist-led intervention to adjust antimicrobial therapy?
  – Did the pharmacist document a follow-up phone call in the patient’s electronic medical record?
  – Was the patient readmitted to the ED due to our intervention?
## Preliminary Results

| Variable                                                                 | Time Period 1  
|---------------------------------------------------------------------------|-----------------|
|                                                                           | N = 293 (PAs and NPs) | Time Period 2  
|                                                                           | N = 972 (RPh)    | Effect Size:  
|                                                                           |                  | Odds Ratio (95% CI) or Cohen’s D | P-Value |
| Was the initial antibiotic choice the most narrow spectrum possible, based on patient allergies, age, renal function, diagnosis, and local susceptibility patterns? | 119 (51%)        | 371 (50%)        | 0.9 (0.7,1.3) | 0.7074 |
| Time to Appropriate Antibiotic                                           | 2.7 (SD: 0.9, n=35) | 2.9 (SD: 1.4, n=197) | 0.12 (-0.24,0.48) | 0.5319 |
| Patient Follow-Up                                                        | 102 (35%)         | 783 (81%)         | 7.8 (5.8,10.3) | <0.0001 |
| Documentation of Patient Follow-Up                                      | 100 (34%)         | 785 (81%)         | 8.1 (6.1,10.8) | <0.0001 |
| Recorded Intervention to Adjust Antibiotic Therapy                       | 40 (14%)          | 219 (23%)         | 1.8 (1.3,2.7)  | 0.0009  |
| Readmission to the ED Identified Via Culture Review                      | 6 (2%)            | 36 (4%)           | 1.9 (0.7,4.4)  | 0.1953  |
Readmission to the ED

- Based on culture results and potential antibiotic options, the pharmacist and provider discuss potential treatment options for the patient
  - If a patient requires further medical evaluation or inpatient treatment, the pharmacist contacts the patient by phone
  - In this conversation, the pharmacist identifies the positive culture result and explains the need for advanced care and evaluation in the ED and/or inpatient setting
  - Patients are asked to return to the ED to receive the appropriate level of care for their culture result and diagnosis
Preliminary Conclusions

• Preliminary results show a statistically significant improvement in patient follow-up, documentation of patient follow-up, and recorded interventions in the pharmacist-led service

• Data collection is currently ongoing and final conclusions will be drawn at the completion of this analysis
Ongoing Data Analysis

As data analysis continues, the following data is still being evaluated:

• The role of fluoroquinolones in the treatment of pyelonephritis
  – Cost analysis of intravenous and oral antibiotics used to treat pyelonephritis
  – Local susceptibilities of ED isolates to the fluoroquinolones
  – Local prescribing patterns for patients diagnosed with pyelonephritis
• Demographic patient data, including age and gender
• Most common microbiology cultures collected, pathogens identified, and diagnoses evaluated in the ED
• Common antibiotics prescribed at ED discharge
• Local susceptibility patterns of common bacterial pathogens
• Appropriateness of antibiotic selection after pharmacist intervention to adjust therapy
Implications of this Study

• The results of this study will:
  – Assist our hospital system in evaluating this pharmacy-based service
  – Identify areas for improvement within the program, including pharmacist evaluation of culture results and empiric antibiotic prescribing habits
  – Recognize local antimicrobial prescribing patterns in the ED
  – Assess the need for expansion of this pharmacist-led service
  – Educate pharmacy and physician staff in the ED on appropriate empiric antimicrobial selection
References


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Iowa Methodist Medical Center

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IOWA RESIDENTS LEADING PRACTICE CHANGE

Ashley Clark, PharmD
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CarePro Liberty Pharmacy/A-Avenue Pharmacy
Exploration of an Incident-To Billing Model for Chronic Care Management Services in a Community Pharmacy

Ashley Clark, PharmD
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PGY-1 Community Pharmacy Practice Resident
CarePro Pharmacy-North Liberty, Iowa
CarePro A Avenue Pharmacy- Cedar Rapids, IA
DISCLOSURE

• Project team members
  • Julie Urmie, Ph.D.
  • Christine Catney, PharmD
  • Marla Tonn, RPh, BCACCP
  • Stevie Veach, PharmD, BCACCP

• Neither the presenter or the project team members have financial disclosures.
BACKGROUND OF STUDY

• Chronic Care Management (CCM)
  • Centers for Medicare & Medicaid Services (CMS) will pay!
  • Non-face-to-face care coordination services
  • Twenty minutes per month
  • Two or more chronic conditions
  • Clinical staff includes pharmacists

• Medicare Physician Fee Schedule (PFS) Updated
  • Exception to the incident-to bill rules
  • General supervision allowed
PURPOSE

To provide an example of an attempt to create an incident-to billing model for CCM services in a community pharmacy.
STUDY OBJECTIVES

(1) Develop a documentation process compliant to Medicare Part B incident-to-billing requirements for chronic care management (CCM) services

(2) Describe opportunities and barriers associated with the design and implementation of the incident-to-billing model for CCM services in a community pharmacy.
STUDY METHODS

- Identified CCM requirements

- Developed templates for systematic assessments of chronic diseases and time tracking.

- Examined the CCM Service model to identify and evaluate opportunities and barriers.
## RESULTS

### CCM REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured Data Recording</td>
<td>• Clinical summary records</td>
</tr>
<tr>
<td>Comprehensive Care Plan</td>
<td>• Preventive care services</td>
</tr>
<tr>
<td>Manage Care</td>
<td>• Care management services</td>
</tr>
<tr>
<td>Access to Care</td>
<td>• 24/7 access to care</td>
</tr>
<tr>
<td>Electronic Technology</td>
<td>• Certain elements required</td>
</tr>
</tbody>
</table>

### Initial visit*

*Annual Wellness Visit (AWV), Initial Preventive Physical Exam (IPPE), or Comprehensive Evaluation & Management (E/M)

---

**Non-Face-to-Face Care Coordination**

1. Chronic care management services, at least 20 minutes of clinical staff time directed by a physician or other qualified health care professional, per calendar month, with the following required elements:
   - Multiple (two or more) chronic conditions expected to last at least 12 months, or until the death of the patient,
   - Chronic conditions place the patient at significant risk of death, acute exacerbation/decompensation, or functional decline,
   - Comprehensive care plan established, implemented, revised, or monitored.

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**College of PHARMACY**

The University of Iowa

REAL WORLD | REAL EXCELLENCE | REAL IMPACT
## Results

### Opportunities and Barriers

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Medication management</td>
<td>➢ EHR Access</td>
</tr>
<tr>
<td>➢ Adherence</td>
<td>➢ Certified Technology</td>
</tr>
<tr>
<td>➢ Drug Interactions</td>
<td>➢ Minimum of 20 minutes</td>
</tr>
<tr>
<td>➢ Patient Education</td>
<td>➢ Software capabilities and compatibilities</td>
</tr>
<tr>
<td>➢ Preventive care services</td>
<td>➢ Time tracking</td>
</tr>
<tr>
<td>➢ Twenty minutes non-face-to-face care</td>
<td></td>
</tr>
<tr>
<td>services</td>
<td></td>
</tr>
<tr>
<td>➢ Annual Wellness Visits</td>
<td></td>
</tr>
<tr>
<td>➢ Reimbursement</td>
<td></td>
</tr>
</tbody>
</table>

### Electronic Documentation

<table>
<thead>
<tr>
<th>Documentation Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Time spent providing service</td>
</tr>
<tr>
<td>➢ Who provided the service</td>
</tr>
<tr>
<td>➢ What service was provided</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment Templates</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ Goals</td>
</tr>
<tr>
<td>➢ Drug therapy</td>
</tr>
<tr>
<td>➢ Monitoring</td>
</tr>
<tr>
<td>➢ Lifestyle prevention</td>
</tr>
<tr>
<td>➢ Immunizations</td>
</tr>
</tbody>
</table>
DISCUSSION

• Pharmacists have expertise in medication management which is required in CCM.

• Pharmacists can work to collaborate with local providers on CCM services and assess the feasibility of care coordination.

• Future directions include establishing a protocol to enhance the coordination of patient care services within healthcare team.
CONCLUSIONS

• Non-physician health professionals, including pharmacists, can now be reimbursed for the time spent non-face-to-face providing care management.

• Documentation requirements were identified and electronic documentation was established. Templates were developed to create a systematic assessment of chronic conditions.

• New rules create opportunity for community pharmacists to provide care management services, including medication management.

• Barriers identified involved technology requirements and electronic health record access.
Question: Which of the following best describes pharmacist opportunities in chronic care management services?

a. Providing medication management only
b. Establishing a comprehensive care plan
c. Billing Medicare for CCM services
d. Providing 20 minutes of non-face-to-face care management services
REFERENCES


QUESTIONS?

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IOWA RESIDENTS LEADING PRACTICE CHANGE

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PGY1 Pharmacy Practice Resident
Iowa Methodist Medical Center
Blank Children’s Hospital
The Utility of Procalcitonin in Pediatric Patients with Viral Pneumonia with a Suspected Co-Bacterial Infection; A Retrospective Review

By: Erica Erixon, PharmD
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PGY1 Pharmacy Practice Resident
UnityPoint Health - Des Moines
Disclosure Statement

• The speaker has no relevant financial or nonfinancial relationships to disclose.
Objectives

• Describe the role of procalcitonin (PCT) in the body in response to an infectious process.

• Assess the utility of procalcitonin as a laboratory marker for the detection of bacterial pneumonia in pediatric patients compared to commonly use laboratory markers, such as C-Reactive Protein (CRP) and white blood cell count (WBC).
Procalcitonin Overview\textsuperscript{1-2}

- PCT is a protein composed of 116 amino acids
- Produced in the C-cells of the thyroid and neuro-endocrine (small cell) cells of the lungs, but to a lesser extent.
- During bacterial infections transcription is up-regulated
  - Due to: bacterial toxins and pro-inflammatory mediators
Procalcitonin Overview (Cont.)

- PCT has a high negative predictive value
- Direction of the trend is more indicative than a single value
- Local infections do not increase PCT (e.g. AOM and cystitis)

<table>
<thead>
<tr>
<th>PCT</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.05 ng/mL</td>
<td>Normal value</td>
</tr>
<tr>
<td>0.05-1.5 ng/mL</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>&gt; 1.5 ng/mL</td>
<td>Consistent with bacterial infection</td>
</tr>
</tbody>
</table>
### PCT vs CRP\(^{1-2}\)

<table>
<thead>
<tr>
<th>Lab</th>
<th>Detection</th>
<th>Peak</th>
<th>Half-life</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCT</td>
<td>2-4 hours</td>
<td>6-12 hours</td>
<td>~24 hours</td>
</tr>
<tr>
<td>CRP</td>
<td>12 hours</td>
<td>20-72 hours</td>
<td>~18 hours</td>
</tr>
</tbody>
</table>

- **Goal**: Removal of stimulus will result in ~50% reduction in PCT per day
Study Design

• Two Parts
  – 2014: obtained a baseline for Blank Children’s hospital on the number of patients with a viral respiratory illness that we treated for a co-bacterial infection
  – 2015: looked at PCT values of patients (ages > 31 days to ≤ 18 years) that have clinical viral bronchiolitis pictures, but a questionable/possible evolving pneumonia
Evaluation of Pediatric Co-bacterial Infections with Viral Bronchiolitis; a Retrospective Chart Review

• Primary Objective:
  – Review patients with an upper respiratory infection and evaluate the number treated for co-bacterial infection and compare to the national average

• Methods:
  – Retrospective chart review on patients admitted from October 1, 2014 to March 31, 2015 with an upper respiratory tract illness
Evaluation of Pediatric Co-bacterial Infections with Viral Bronchiolitis; a Retrospective Chart Review

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric Patients (ages 31 days to ≤ 18 years)</td>
<td>Age ≤ 30 days or &gt; 18 years</td>
</tr>
<tr>
<td>Admitted between October 1(^{st}), 2014 and March 31(^{st}), 2015</td>
<td>Chronic lung disease</td>
</tr>
<tr>
<td>Any upper respiratory tract illness</td>
<td>Immunocompromised</td>
</tr>
<tr>
<td></td>
<td>Residents of long term care facilities</td>
</tr>
<tr>
<td></td>
<td>NICU patients</td>
</tr>
<tr>
<td></td>
<td>Cystic Fibrosis</td>
</tr>
<tr>
<td></td>
<td>Medical conditions that compromise lung function</td>
</tr>
</tbody>
</table>
Evaluation of Pediatric Co-bacterial Infections with Viral Bronchiolitis; a Retrospective Chart Review

• Results:
  – 301 patients
    • Female: 44%
  – Average day of presentation: Day 4
  – Average temperature: 37.4°C
  – Average WBC: 10.7
  – Average CRP: 2.6

• Results (Cont.):
  – Average length of therapy: 2 days
  – About 70% of patients that presented to the ER did not receive antibiotics.
The Utility of Procalcitonin in Pediatric Patients with Viral Pneumonia with a Suspected Co-bacterial Infection; a Retrospective Review.

• Primary Objective:
  – Determine if procalcitonin is a helpful biomarker in identifying patients that have a viral respiratory infection with a questionable secondary co-bacterial pneumonia.

• Methods:
  – Retrospective chart review on patients admitted from October 1, 2015 to March 15, 2016 with an upper respiratory tract illness
The Utility of Procalcitonin in Pediatric Patients with Viral Pneumonia with a Suspected Co-bacterial Infection; a Retrospective Review.

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</tr>
<tr>
<td>Admitted between October 1\textsuperscript{st}, 2015 and March 31\textsuperscript{st}, 2016</td>
<td>No PCT values</td>
</tr>
<tr>
<td>Any upper respiratory tract illness with at least one PCT level drawn during the encounter</td>
<td>Past medical history including: Chronic lung disease, immunocompromised state, long-term care residents, NICU patients, other conditions that impact lung function</td>
</tr>
</tbody>
</table>
The Utility of Procalcitonin in Pediatric Patients with Viral Pneumonia with a Suspected Co-bacterial Infection; a Retrospective Review.

• Results:
  – Statistical analysis of this data is currently in process

• Limitations:
  – Ongoing Quality Improvement project
References


The Utility of Procalcitonin in Pediatric Patients with Viral Pneumonia with a Suspected Co-Bacterial Infection; A Retrospective Review

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OPEN FORUM ON PROPOSED IPA POLICIES

Questions? Contact David Schaaf at dschaaf@iarx.org or 515-270-0713