2222
TUESDAY, APRIL 11, 2017:
IOWA PHARMACY RESIDENTS LEADING PRACTICE CHANGE
WELCOME

Anthony Pudlo, PharmD, MBA, BCACP
Vice President of Professional Affairs
Iowa Pharmacy Association
Ambulatory Care Self-Assessment

• Assess how your practice aligns with the national ambulatory care recommendations
• Reflect on where you are and showcase what is going well
• Identify areas of need
• Two versions of the self-assessment (system and practitioner)
• Create an action plan to improve practice
  – Put data to use (e.g., strategic planning priorities, business plan development)
  – Determine steps to move from current state to a desired future state
• Benchmark against other pharmacies/facilities and measure progress over time

http://www.amcareassessment.org/
Ambulatory Care Opportunities
Top 3 Action List Priorities (System Approach)

• Ambulatory care pharmacists actively engaged in transitions of care activities
  – Decrease care fragmentation across the continuum
  – Establishing and engaging in a comprehensive ambulatory care strategy (e.g., community pharmacy, specialty pharmacy, ambulatory care pharmacist in a primary care setting)

• Use of billing codes when providing ambulatory pharmacist patient-care services
  – Use of standardized framework for clinical documentation (i.e., SNOMED CT)
  – Clinical pharmacist engaged in team-based, patient centered care (e.g., Patient Centered Medical Homes, ACOs, bundled payment-arrangements, aging in place demonstration pilots)
  – Creating financially sustainable services

• Active participation by ambulatory care pharmacists in organization-wide committees

Data from 6/24/15 ~ 1631 assessments and 664 Action plans
Michael Thiefault, PharmD
PGY1
Mercy – Des Moines
Low Dose Naloxone for Opioid Induced Respiratory Depression in the ED

Michael Thiefaul, Pharm.D.
PGY1 Pharmacy Resident
Mercy Medical Center
Des Moines, Iowa
Disclosure Statement

• These individuals have the following to disclose concerning possible financial or personal relationships with commercial entities that may be referenced in this presentation
  – Michael Thiefault, PharmD : nothing to disclose
  – Ashley Cook, PharmD, BCPS : nothing to disclose
  – Matt Hubble, PharmD, BCPS : nothing to disclose
Background

• Drug overdose is the leading cause of accidental death in the US
  – 52,404 lethal overdoses in 2015

• Overdose death rate continues to rise as well as opioid addiction
  – 20,101 deaths related to prescription medications in 2015
  – 12,990 related to heroin in 2015

MMWR Morb Mortal 2016;65:1445-1452
Naloxone

Reversal

Acute withdrawal
Naloxone

• Standard dosing (0.4mg) originated from literature in the 1960s
• Current dosing recommendations range from 0.04mg-2mg
• Review of 22 medical textbooks/resources
  – 55% recommend 0.04mg-0.05mg
  – 41% recommend 0.4mg-0.5mg
Adverse effects of Naloxone

- No opioid exposure = little to no harm
- Opioid exposure
  - Safe when administered appropriately
  - May precipitate acute withdrawal due to excessive or rapid reversal
    - Vomiting, agitation, delirium and seizures
    - Hypertensive emergency, aspiration, pulmonary edema, ventricular tachycardia/fibrillation and sudden death
    - Violent behavior / safety concern

Purpose

• To determine if low dose naloxone (0.04mg) is as safe and effective starting point for opioid induced respiratory depression, compared to standard doses (>0.04mg). Also, to determine if low dose naloxone is associated with lower occurrence of acute withdrawal symptoms.
Objectives

• Primary objective
  – Proportion of subjects with reversal of opioid induced respiratory or CNS depression within 1 hour of initial naloxone administration

• Secondary objective
  – Proportion of subjects developing acute withdrawal symptoms post naloxone administration
Methodology

• Inclusion criteria
  – ≥18 years old, Suspected opioid overdose by ED provider, Naloxone given 1\textsuperscript{st} in ED, at least two of the following can be obtained from chart (RASS, RR, pulse ox) RASS will be calculated from ED assessment on form browser.

• Exclusion criteria
  – Respiratory arrest or apneic
Methodology

• Patients were identified using acudose dispensing data retrospectively and prospectively.
  
  – **Retrospective**: Standard dose group (>0.04mg) Acudose dispensing data from Feb 1 2016 – Aug 31 2016
  
  – **Prospective**: Low dose group (0.04mg) Acudose dispensing data from Nov 1 2016 – March 1 2017
Methodology

• Statistical analysis
  – Primary and secondary outcomes analyzed by Fischer’s exact test

• Definitions
  – Reversal: Oxygen saturation (O2 sats) >95%, Respiratory rate (RR) ≥12, or documented reversal per medical record.
  – Acute withdrawal: Richmond agitation-sedation scale (RASS) of +1 plus one of the following: Heart rate (HR) >100, Blood pressure (BP) > 140/90, diaphoretic, restraints, pharmacological intervention or documented withdrawal per medical record.
Study Protocol

• If the patient is apneic or in respiratory arrest from suspected opioid overdose, DO NOT follow this protocol. Administer at least 0.4-2mg IV immediately.

• Pharmacy department will provide low dose naloxone kits for the acudose. The kit will include naloxone, NS, label, syringe, needle and instructions.

  Study Protocol

• Administer an initial dose of 0.04mg (1 mL) via slow IV push [diluted syringe].
• If an increase in respiratory rate does not occur in 2-3 min; administer 0.08mg (2 mL).
• If no response in 2-3 minutes; administer 0.16mg (4 mL) naloxone.
• Continue to double the dose of naloxone until desired response.
• After reversal the patient may require naloxone at a later interval depending on the dosage form ingested.
Standard Dose Group

Naloxone Acudose Report
Feb 1-Aug 31 2016
N=78

Patient < 18 years old
N=6

Resp/cardiac arrest
N=6

Determined not opioid OD
N=36

1st dose given EMS
N=9

Standard dose group (>0.04mg)
N=21
Low Dose Group

Naloxone Acudose Report
Nov 1 2016 – March 1 2017
N= 45
Low dose protocol ordered
N=7

1st dose given EMS
N= 2

Determined not opioid OD
N= 2

Low dose group
N= 3
# Demographics

<table>
<thead>
<tr>
<th></th>
<th>Standard dose (&gt;0.04mg)</th>
<th>Low dose (0.04mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=21</td>
<td>N=3</td>
</tr>
<tr>
<td><strong>Average age</strong></td>
<td>50 years old</td>
<td>35 years old</td>
</tr>
<tr>
<td><strong>% females</strong></td>
<td>61% (13/21)</td>
<td>66% (2/3)</td>
</tr>
<tr>
<td><strong>Opioid home med</strong></td>
<td>76% (16/21)</td>
<td>0% (0/3)</td>
</tr>
<tr>
<td><strong>Drug abuse hx</strong></td>
<td>28.5% (6/21)</td>
<td>100% (3/3)</td>
</tr>
<tr>
<td><strong>Left AMA</strong></td>
<td>9.5% (2/21)</td>
<td>33% (1/3)</td>
</tr>
<tr>
<td><strong>Avg. LOS ED (hours)</strong></td>
<td>4 h</td>
<td>7 h</td>
</tr>
<tr>
<td><strong>Avg. LOS Hosp (days)</strong></td>
<td>2.6 d</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Avg. initial naloxone dose</strong></td>
<td>0.36 mg</td>
<td>0.04 mg</td>
</tr>
<tr>
<td><strong>Avg. total naloxone dose</strong></td>
<td>0.66 mg</td>
<td>0.24 mg</td>
</tr>
</tbody>
</table>
## Results – Primary objective

<table>
<thead>
<tr>
<th></th>
<th>Reversal achieved?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Low dose group (N=3)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Standard dose group (N=21)</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>22</td>
<td>2</td>
</tr>
</tbody>
</table>

P Value = 0.23913 not significant at p<0.05
Results – Secondary objective

<table>
<thead>
<tr>
<th>Agitation/withdrawal?</th>
<th>YES</th>
<th>NO</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low dose group (N=3)</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Standard dose group (N=21)</td>
<td>3</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>Totals</td>
<td>3</td>
<td>21</td>
<td>24</td>
</tr>
</tbody>
</table>

P Value = 1 not significant at p<0.05
Discussion

• Low dose protocol reversal rate
  – Effective reversal in 2 of 3 patients with known opioid induced respiratory depression
  – Patient #3 had complicated overdose with polysubstance abuse and questionable time of heroin ingestion

• Standard dose signs of acute withdrawal
  – 3 of 22 patients had documented agitation/withdrawal
  – 2 patients left AMA right after reversal
  – 1 patient in this group received 0.4mg when provider intended 0.04mg protocol. Immediately became manic, violent and required intubation.
Discussion

• The goal of naloxone is to reverse respiratory depression only

• Overestimating the dose of naloxone causes full respiratory and CNS reversal
  – May lead to precipitation of acute withdrawal syndrome and other adverse events

• Low dose naloxone (0.04mg) may be a safer approach to reversing opioid induced respiratory depression
Limitations

• Small sample size
  – 1st dose given by EMS
  – Determined not opioid overdose

• Staff education
  – 26 ED physicians & 7 APCs
  – 135 Nurses to educate
  – Lack of familiarity with protocol

• Documentation
Self Assessment Question

• What is the rationale behind low dose naloxone for opioid induced respiratory depression?
  A. Full reversal of opioid effects
  B. Reverse respiratory depression and avoid precipitating acute withdrawal
  C. Save money
Questions?

Contact: Michael Thiefault, PharmD
mthiefault@mercydesmoines.org
Becky Halbur, PharmD
PGY1
CarePro Pharmacy/A Ave Pharmacy
Impact of Community Pharmacist Intervention to Increase Statin Utilization in Patients with Type 2 Diabetes

Becky Halbur, Pharm.D.
PGY1 Community-Based Pharmacy Resident
University of Iowa
CarePro Pharmacy- North Liberty
CarePro Pharmacy- A Avenue
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.

- Becky Halbur- nothing to disclose
- Marla Tonn, Kim Van Schepen, Stevie Veach, Amber Goedken, Chris Catney, Matt Witry- nothing to disclose
BACKGROUND

• ASCVD: Leading source of morbidity, mortality, and costs in diabetes
  • Heart attack and stroke most common
• Statins lower ASCVD risk but remain underutilized
• Evidence-based interventions by community pharmacists help optimize disease state management
  • Prescribers: increasing pressure to perform, limited time with patients
  • Community pharmacists: strong rapport, frequent interaction, relatable
• Studies evaluating patient and prescriber acceptance of community pharmacist interventions are needed
RELEVANCE TO PHARMACISTS

• Current and future opportunities for reimbursement
  • MTM- usually ~$12 for addressing omission of therapy
  • Star Ratings
    • Ensuring statin use in patients with diabetes age 40 to 75 years
      “This measure will look at the percentage of plan members between 40-75 years who receive ≥2 diabetes medication fills and a statin. This will be a Display Measure for 2017 and 2018, and is planned to become a full measure for 2019 Star Ratings (based on 2017 data).”

• Value-based care
  • MACRA
  • Wellmark initiative

• Fantastic initial step to gain trust of prescribers and collaborate
  • Very strong evidence → “low-hanging fruit”
RELEVANCE TO PHARMACISTS
NO MATTER THE SETTING!
MOST IMPORTANTLY....

EMPOWERING our patients,
EXPANDING their understanding,
RESOLVING barriers,
and
ADVOCATING on their behalf

“"I will apply my knowledge, experience, and skills to the best of my ability to assure optimal outcomes for my patients"
PURPOSE

• Improve care for our patients with diabetes
• Take a proactive approach to the upcoming Star Measure changes
• Encourage more collaboration with prescribers
OBJECTIVES

- **Primary objective**: To describe statin initiation in patients with type 2 diabetes following community pharmacist intervention
- **Secondary objectives**: To determine patient and prescriber acceptance levels of the intervention and specific reasons for refusal
METHODOLOGY

• **Design:** Pre-post comparison

• **Setting:** 2 employee-owned pharmacies in Eastern Iowa
  - North Liberty- ‘typical’ patients
  - A Avenue- mostly mental/behavioral health patients

• **Population:** Ages 40-75 with type 2 diabetes not taking a statin, identified using PrescribeWellness software
  - Looks at past 6 months from dispensing software
  - Uses same medications as PQA to assume if patient has diabetes

• **Key Components:** standard patient conversation flowsheet and prescriber fax prompt, recommendations based on American Diabetes Association 2016 Standards of Care
METHODOLOGY

• Patient communication (intervention): phone call
  • Standard conversation algorithm
  • Emphasized purpose and benefits of statins in patients with diabetes
  • Recommended statin therapy based on patient-specific factors
  • Identified reasons for refusal

• Prescriber communication: fax
  • Standard fax template
  • Requested evaluation and initiation of statin therapy if appropriate
  • Made recommendation for intensity based on patient-reported factors
  • Identified reasons for refusal
Patient Conversation Log

**Do you have a few minutes to talk about your diabetes medications?**

**DATE:__**

**START:**

- **YES**
- **NO**

If you do not have diabetes:

- **YES**
- **NO**

Do you take these medications for type 2 diabetes?

- **YES**
- **NO**

Attempt to contact patient at least 3 times.

Is there a different day and time that would be more convenient? **Schedule:**

- **YES**
- **NO**

If not type 2 diabetes: **DISQUALIFIED**

- **YES**
- **NO**

You may be missing a medication that would provide some additional benefit to you. My records show that you are **NOT** currently taking a statin medication. Is this correct?

- **YES**
- **NO**

If patient currently taking statin: **DISQUALIFIED**

- **YES**
- **NO**

What is the reason?

- **YES**
- **NO**

Have you been taking a statin medication before?

- **YES**
- **NO**

**ABANDON BENEFIT**

- **YES**
- **NO**

- **YES**
- **NO**

**END**

---

**CarePro Pharmacy - North Liberty**

535 West Cherry Street
North Liberty, IA 52317
Phone: 319-626-6180
Fax: 319-626-6195

Dear,

**PHARMACIST RECOMMENDATION TO INITIATE STATIN THERAPY**

The current AHA guidelines recommend initiating statin therapy for all patients age 40-75 with diabetes to reduce the incidence or progression of atherosclerotic cardiovascular disease (ASCVD). Currently, we do not have any new records of a statin being dispensed for this patient.

**American Diabetes Association Recommendations for Statin Treatment**

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-75 years with diabetes</td>
<td>ASCVD High</td>
</tr>
<tr>
<td>ASCVD High</td>
<td>Moderate + estimate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Risk Factors</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-75 years with diabetes</td>
<td>ASCVD High</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors</th>
<th>High Intensity</th>
<th>Moderate Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Overweight</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Family History</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>LDL &gt; 130 mg/dl</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Pharmacist recommendation:**

- **HIGH INTENSITY**
- **MODERATE INTENSITY**

Please evaluate whether your patient with diabetes is a good candidate for the addition of a statin.

**PRESCRIBER ACTION: Initiate statin therapy**

- Choose one statin and note your choice.

**Sig:** TAKE 1 TABLET DAILY

<table>
<thead>
<tr>
<th>Statin</th>
<th>High Intensity</th>
<th>Moderate Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atorvastatin</td>
<td>40 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Rosuvastatin</td>
<td>20 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Simvastatin</td>
<td>20 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Pravastatin</td>
<td>40 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Lovastatin</td>
<td>40 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Fluvastatin XL</td>
<td>80 mg</td>
<td>40 mg</td>
</tr>
<tr>
<td>Ezetimibe</td>
<td>2 mg</td>
<td>1 mg</td>
</tr>
</tbody>
</table>

**Prescriber Signature:**

**Date:**

**PRESCRIBER ACTION: Do not initiate statin therapy**

- Provide a reasonable explanation below.

- I will discuss initiation of a statin at the next appointment and address it at that time.

- Other:

**PLEASE FAX BACK TO 319-626-6155, THANK YOU FOR YOUR TIME!**
RESULTS

- 78 patients identified → spoke with 65 → 47 eligible → 32 accepted and 15 refused
  - Excluded:
    - 1 pilot patient
    - 12 unable to reach
    - 18 ineligible
      - Not type 2 diabetes: 5 (type 1 diabetes, polycystic ovarian syndrome, prediabetes)
      - Already taking statin: 11 (samples, other pharmacy, statin started before pharmacist intervention)
      - Pharmacist judgment: 2 (active alcohol abuse, terminal autoimmune rheumatoid disease)
  - Faxed prescriber for 32 patients → 18 accepted
    - 4 refused
    - 8 appointment first
    - 2 other

### Table 1. Patient Demographics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>74.5%</td>
</tr>
<tr>
<td>Previous Statin Use</td>
<td>32%</td>
</tr>
<tr>
<td>Average Duration of Diabetes (Years)</td>
<td>6.9</td>
</tr>
</tbody>
</table>
RESULTS

• Primary objective: A statin was initiated in 38% (n=18) of patients with type 2 diabetes following intervention by a community pharmacist.

• 67% (n=12) of the statins prescribed following the intervention matched the intensity recommended by the pharmacist.

• Average duration of patient phone call: 10 min (range 3-25 min).
RESULTS

• Secondary objectives
  • Reasons for patient refusal of the intervention:
    • Pill burden (unwilling to take another medication)
    • Previous intolerance to statin therapy
    • Concerns regarding side effects
    • Preference that pharmacist not talk to prescriber
    • View that pharmacists do not provide clinical care
  • Reasons for prescriber refusal of the intervention:
    • LDL < 100
    • Cholesterol within normal limits

• Patient interactions: all positive but 2 (role perceptions)
  “Why are you even calling? You’re not my doctor!”
DISCUSSION

• **Limitations**
  • Identification of study population based on dispensing software data (medications)
    • False indication of type 2 diabetes/statin use
    • Recommendations based on patient-reported risk factors

• **Strengths**
  • Practical, quick intervention for community pharmacy
  • Standard templates utilized were reviewed/revised by physicians and pharmacists to optimize response rates
    • Visually pleasing, concise, reference to guidelines, action items with clear instructions
  • Pilot conducted before study for process improvement
  • Strong internal/external validity: consistent, generalizable
DISCUSSION

• Implications
  • Community pharmacists help implement evidence-based medicine in an efficient, meaningful manner
  • Community pharmacists need ready access to electronic health records and improved dashboards to efficiently and accurately identify patients in need of evidence-based interventions

• Tips for Success
  • Conversations must be at convenient time for patient!
  • Have a ‘statin reference sheet’ available (anticipate patient barriers)
  • Prescriber templates that reference guidelines help support your recommendation
  • **YOU** have to believe it and sell it!
YOUR THOUGHTS?

QUESTIONS?
Impact of Community Pharmacist Intervention to Increase Statin Utilization in Patients with Type 2 Diabetes

Rebecca Helbig, Amber Goedken, Stevie Veatch, Mada Tonn, Kim Van Schepen, Christine Catney, Matthew Winty

1CarePro Pharmacy-North Liberty, 2CarePro Pharmacy-Avenue, 3University of Iowa College of Pharmacy

Key Findings
- Statin initiation in 38% of patients with type 2 diabetes following intervention by a community pharmacist
- Reasons for patient refusal of the intervention:
  - Pill burden unwilling to take another medication
  - Previous intolerance to statin therapy
  - Concerns regarding side effects
  - Preference that pharmacist not talk to prescriber
  - View that pharmacists do not provide clinical care
  - Reasons for prescriber refusal of the intervention:
    - LDL 100
    - Cholesterol within normal limits

Background
- Leading source of morbidity, mortality, and costs in diabetes: atherosclerotic cardiovascular disease (ASCVD)
- Statins lower ASCVD risk but remain underutilized in patients with diabetes
- Evidence-based interventions by community pharmacists help optimize disease state management, but studies evaluating patient and prescriber acceptance of these interventions are needed

Objectives
- To describe statin initiation in patients with type 2 diabetes following community pharmacist intervention
- To determine patient and prescriber acceptance levels of the intervention and specific reasons for refusal

Methods
- Settings: 2 employee-owned pharmacies in Eastern Iowa
- Population: Ages 40-71 with type 2 diabetes not taking a statin, identified using PrescribeWellness software
- Key components: Phone call at convenience of patient intervention; standard patient conversation flowchart and prescriber fax prompt; recommendations based on American Diabetes Association 2016 Standards of Care

Results/Discussion
- 61% of the statins prescribed following the intervention matched the intensity recommended by the pharmacist
- Eligible patients:
  - Not type 2 diabetes
  - Not type 1 diabetes, polycystic ovary syndrome, prediabetes
  - Already taking statin
  - Atrial fibrillation
  - Overweight
  - Age 10 years
  - Patient interactions: all positive but 2 (role perception)
  - "Why are you even calling? You're not my doctor!"

Limitations
- Identification of study population based on dispensing software data (medications)
- False indication of type 2 diabetes/statin use
- Recommendations based on patient-reported risk factors
- Practical, quick intervention for community pharmacy
- Standard templates utilized were reviewed/evaluated by physicians and pharmacists to optimize response rates
- Visually pleasing, concise, reference to guidelines, action terms with clear instructions
- Pilot conducted before study for process improvement
- Strong internal/external validity: consistent, generalizable

Implications
- Community pharmacists help implement evidence-based medicine in an efficient, meaningful manner
- Conversations must be at convenient time for patient
- Current and future opportunities for remuneration of evidence-based interventions exist
- MTH, value-based care collaboration, Star Ratings
- Statistics in diabetes: full Star measure in 2018
- Community pharmacists need ready access to electronic health records and improved dashboards to efficiently and accurately identify patients in need of evidence-based interventions

Table 1. Patient Demographics

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>74.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Statin Use</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Average Duration of Diabetes (Years)</td>
<td>6.2</td>
<td></td>
</tr>
</tbody>
</table>
PHARMACIST-LED MEDICATION EDUCATION IN A CARDIAC REHABILITATION PROGRAM TO REDUCE 30-DAY HOSPITAL READMISSIONS

Kayla Stein, Pharm.D.
PGY-1 Pharmacy Resident
Covenant Medical Center
Waterloo, IA
Disclosure Statement

- Kayla Stein reports no actual or potential conflicts of interest
Background

Literature

- 14.6% of Medicare patients are re-hospitalized after percutaneous coronary intervention (PCI)
- Average cost of various cardiac readmissions costs ~$13,100
- Pharmacist interaction with cardiac rehabilitation teams are limited
- Studies available lack meaningful outcome measures

J Am Coll Cardiol. 2009;54:903-7
HCUP Statistical Brief #140. Aug 2012. Agency for Healthcare Research and Quality, Rockville, MD
HCUP Statistical Brief #142. Sept 2012. Agency for Healthcare Research and Quality, Rockville, MD
J Allied Health 2012;3:113-17
Background

- Present situation
  - Lack of pharmacy educational services for cardiac rehab patients at Covenant Medical Center

- Goal
  - Establish pharmacy services in cardiac rehabilitation department
Objective(s)

Primary
- Analyze the impact of pharmacist-led medication education and intervention in a cardiac rehabilitation program through use of 30-day hospital readmissions

Secondary
- Assess potential cost-savings of pharmacist involvement in cardiac rehab
Methodology

- Covenant Medical Center, Waterloo IA
- IRB-approved quality improvement project
- Patients initially identified through post-catheterization order sets
- Follow-up with cardiac rehab department for enrollment
## Methodology

### Inclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-10 code permitting participation in cardiac rehab</td>
</tr>
<tr>
<td>Participation in cardiac rehab at Covenant Medical Center</td>
</tr>
</tbody>
</table>

### Exclusion Criteria

<table>
<thead>
<tr>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac rehab at facility other than Covenant Medical Center</td>
</tr>
<tr>
<td>Declined participation in cardiac rehab</td>
</tr>
<tr>
<td>If specified by cardiologist</td>
</tr>
</tbody>
</table>
Methodology

- Patient-pharmacist meeting upon admission to cardiac rehab
- 6-question survey to assess current medication understanding
- Intervention, education, and follow-up as appropriate
Methodology

Chart review
- Pre-project: Oct 2015 – Jan 2016
- Project period: Oct 2016 – Jan 2017

Statistics
- SPSS software
- $x^2$ tests for categorical data
- Pearson $x^2$ for significance (<0.05)
- Phi and Cramer’s V for effect size
Results – Enrollment

- Retrospective chart review (n=95)
- Project inclusion (n=92)
- Patient-pharmacist meetings (n=60)

Evaluated for inclusion: 213

- Excluded: 121
- Enrolled: 92

Met with pharmacist: 60
## Results – Demographics

<table>
<thead>
<tr>
<th></th>
<th>Pre-Study (n=95)</th>
<th>Study-All (n=92)</th>
<th>Study-Rx (n=60)</th>
</tr>
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<tbody>
<tr>
<td><strong>Age</strong></td>
<td>66.6 years (37-91)</td>
<td>67.7 years (40-91)</td>
<td>68.1 years (46-87)</td>
</tr>
<tr>
<td><strong>Age ≥65</strong></td>
<td>57% (54/95)</td>
<td>64% (59/92)</td>
<td>67% (40/60)</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>63% (60/95)</td>
<td>62% (57/92)</td>
<td>65% (39/60)</td>
</tr>
<tr>
<td><strong>PCI/Stent</strong></td>
<td>84% (80/95)</td>
<td>77% (71/92)</td>
<td>82% (49/60)</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aspirin</strong></td>
<td>96% (91/95)</td>
<td>95% (87/92)</td>
<td>97% (58/60)</td>
</tr>
<tr>
<td><strong>Anti-Platelet</strong></td>
<td>86% (82/95)</td>
<td>91% (84/92)</td>
<td>95% (57/60)</td>
</tr>
<tr>
<td><strong>Beta-Blocker</strong></td>
<td>86% (82/95)</td>
<td>91% (84/92)</td>
<td>90% (54/60)</td>
</tr>
<tr>
<td><strong>Statin/PCSK9</strong></td>
<td>93% (88/95)</td>
<td>92% (85/92)</td>
<td>93% (56/60)</td>
</tr>
<tr>
<td><strong>ACE/ARB/ARNI</strong></td>
<td>53% (50/95)</td>
<td>58% (53/92)</td>
<td>63% (38/60)</td>
</tr>
<tr>
<td><strong>Diuretic</strong></td>
<td>46% (44/95)</td>
<td>42% (39/92)</td>
<td>45% (27/60)</td>
</tr>
</tbody>
</table>
Results – Primary Objective

30-Day Hospital Readmissions

- Pre-Study: 14/95 (14.7%)
- Study (All): 11/92 (12.0%)
- Study (Rx): 6/60 (10.0%)
Results – Primary Objective

<table>
<thead>
<tr>
<th></th>
<th>Pre- vs. Post-Study (All)</th>
<th>Pre- vs. Post-Study (Rx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson $x^2$</td>
<td>0.118</td>
<td>0.882</td>
</tr>
<tr>
<td>Significance factor</td>
<td>0.731</td>
<td>0.643</td>
</tr>
<tr>
<td>Association factor</td>
<td>0.041*</td>
<td>0.069^</td>
</tr>
</tbody>
</table>

* = Phi coefficient
^ = Cramer’s V coefficient
Results – Secondary Objective

When meeting with a pharmacist...

- Cost per 30-day cardiac readmission: $13,100*
- Annual readmission prevention: 13^*
- Annual cost-savings: $170,300^*

* = national average
^ = derived from data extrapolation

HCUP Statistical Brief #140. Aug 2012. Agency for Healthcare Research and Quality, Rockville, MD
HCUP Statistical Brief #142. Sept 2012. Agency for Healthcare Research and Quality, Rockville, MD
Discussion

- Pharmacist education and intervention assisted in reduction of 30-day hospital readmissions
- Potential cost-savings
- Limitations
  - Small sample size
  - Short study period
  - Poor follow-up coordination with rehab department
Discussion

Future direction
- Larger sample size
- Patient/provider satisfaction surveys
- Enhanced coordination at discharge from cardiac rehab
- Pharmacy resident longitudinal rotation
- Potential billable service
Acknowledgements

- Preceptors
  - Jodi Mills, Pharm.D.
  - Arlene Wright, B.S. Pharm

- Statistician
  - Dana McDougall, Pharm.D., BCPS
PHARMACIST-LED MEDICATION EDUCATION IN A CARDIAC REHABILITATION PROGRAM TO REDUCE 30-DAY HOSPITAL READMISSIONS

Kayla Stein, Pharm.D.
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Covenant Medical Center
Waterloo, IA
Taylor Reed, PharmD
PGY1
Osterhaus Pharmacy
Pharmacist and Patient Perspectives of Community Pharmacist Provided PHQ-9 and Targeted Medication Review in Depression Management

R. Taylor Reed, PharmD; Matthew C. Osterhaus, BSPharm, FAPhA; Angie Spannagel, PharmD; Farah Towfic, PharmD; Matthew J. Witry, PharmD, PhD; Stevie R. Veach, PharmD; Christine M. Catney, PharmD

Key Findings
- Overall, patients report discussing their depression and treatment with pharmacists was appreciated and beneficial.
- Pharmacists found the PHQ-9 to be useful in deconstructing depression management from an emotional topic to specific areas for intervention.
- For many patients, feelings of depression were well controlled, but stress and sleep were still poorly managed.
- Patients report using antidepressant medicines for many conditions other than depression.
- Technology was useful in identifying patients; diagnosis codes would aid in this process.
- Time and payment for value-added services emerged as focal points for continued work.

Background
- Depression is the 3rd leading cause of global disease burden, with more than 15 million adults in the United States having at least one major depressive episode in 2014.
- Pharmacists are ideally positioned to play a greater role in supporting patients with depression, given medicines are a major treatment modality for many mental illnesses including depression.
- Value-based pharmacy networks are beginning to form between community pharmacies and payers. A large private payer in the state of Iowa has identified depression among their highest cost chronic disease states.

Objective
- To describe the acceptability, feasibility, and implementation of pharmacist-provided Patient Health Questionnaire (PHQ-9) depression scoring tools in a community pharmacy setting.

Acceptability

Feasibility
- Pharmacist comfort
  - Initial reluctance to bring up mental health
  - Due to emotions of patients, time required, refreshing knowledge of antidepressants, and finding a way to initiate conversation
  - Previous rapport with patient beneficial
  - Presenting the PHQ-9 and asking the questions can open up counseling and improve information exchange

Barriers
- Time constraints
  - Patients distracted by children or in a hurry
  - Easier to engage, if another pharmacist was staffing and able to support continued workflow
  - Drive up window – waited until the patient came in
  - Payment structure not yet in place
  - Lack of diagnosis codes with prescriptions

Lessons learned
- Incorporate into workflow, use technology and all staff
- Private counseling area is essential
- Keep clinical notes, build upon prior discussions
- Be familiar with the questionnaire, and think through potential scenarios in advance

References
1. Patient Health Questionnaire-9 (PHQ-9). Prier Inc. 1990
EFFECTIVENESS OF AN ACADEMIC DETAILING PROGRAM ON ANTIBIOTIC USE IN OUTPATIENT URINARY TRACT INFECTIONS

Geena Hopwood, PharmD
PGY1 Pharmacy Resident
VA Central Iowa Health System
Disclosure Statement

- Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

- This quality improvement project was performed to improve patient care at the VA Central Iowa Health Care System. It was approved by the Chief of Staff, Chief of Pharmacy, and Pharmacy and Therapeutics Committee. It is an assessment of a quality improvement project and is exempt from institutional review board. As a quality improvement project, this data is not generalizable. The contents of this presentation represent the views of the author. They do not represent the views of the Department of Veterans Affairs or the United States Government.
Background

- CDC’s *Core Elements of Outpatient Antibiotic Stewardship*¹
  - “Education and expertise: Provide educational resources to clinicians and patients on antibiotic prescribing, and ensure access to needed expertise on optimizing antibiotic prescribing”

- UTIs are among the most common reasons to receive an antibiotic as an outpatient²
  - Especially targeted as a place to reduce fluoroquinolone use³

- Academic detailing has been shown to be effective for reducing URI treatment in outpatient settings⁴⁵
To determine if academic detailing can be used to improve antimicrobial stewardship in the outpatient setting
Objectives

Primary:
- Change in percent of antibiotic prescribing consistent with current practice guidelines

Secondary:
- Change in number of fluoroquinolones prescribed
- Composite of barriers/resolutions to appropriate antibiotic selection
- Time required for each academic detailing visit
Population: 3 Clinics (Urology, ER, and 1 Primary Care/Women’s Clinic team.)
  - Clinics with highest volume of UTI prescribing
Intervention: Academic Detailing Visit regarding UTI management
Pre- and Post- Visit MUE to determine effectiveness of the visit
One-on-One meetings with clinic providers
- Shift change meetings with ED providers
- Presented evidence-based treatment information
- Discussed barriers and questions/concerns
- Provided follow-up as requested
Educational Guide

- 12 page guide for UTI treatment
- Discusses: diagnosis, treatment, duration, CDSS, antibiogram, fluoroquinolones
- Includes literature specific to males and a UTI treatment Algorithm

Urinary Tract Infection Management

Provider Guide (2016)
February-March 2016
29 total patients included
17.2% of patients were appropriately managed per guidelines
62.1% received fluoroquinolones
86% positive urinalysis; only 50% positive urine cultures
15 out of 29 had symptoms of a UTI
  • Most common: dysuria and increased frequency
Some cases had more than one reason for inappropriate therapy.
Fluoroquinolone Use

- With FQs: 62%
- Without FQs: 38%
## Physician Provided Barriers

<table>
<thead>
<tr>
<th>Barrier Type</th>
<th>Details</th>
<th>Number of Providers</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication</td>
<td>Adherence to more complicated regimens</td>
<td>1</td>
<td>Discussion of other BID or daily options</td>
</tr>
<tr>
<td>Communication</td>
<td>Who should follow-up: ER or PCP</td>
<td>2</td>
<td>Pending</td>
</tr>
<tr>
<td>Communication</td>
<td>Culture data won’t alert PCP</td>
<td>2</td>
<td>Pending</td>
</tr>
<tr>
<td>Education</td>
<td>Poor teaching on clean catch specimens</td>
<td>2</td>
<td>Handouts for restrooms/lab</td>
</tr>
<tr>
<td>Education</td>
<td>How to treat patients on suppressive therapy</td>
<td>2</td>
<td>One-on-one information sharing by pharmacist</td>
</tr>
<tr>
<td>Education</td>
<td>Patients are trained to seek ABX for delirium</td>
<td>2</td>
<td>Patient handouts</td>
</tr>
<tr>
<td>Information</td>
<td>How to treat menopausal patients, delirious patients</td>
<td>2</td>
<td>One-on-one information sharing by pharmacist</td>
</tr>
</tbody>
</table>
13/19 providers met in 8 visits
All 19 providers received a copy of the Educational Guide
Excellent feedback from all providers, even those who only received the guide
Total Intervention took 17.5 hours spread out over 2 months (30 mins/day)
Average visit time was 15 minutes
Next Steps

- Waiting to collect data for Feb/March 2017 for Post-Visits MUE
- Will present full results at MPRC in May
Acknowledgements

- Kimberly Redeker PharmD, BCACP
- Jenny Phabmixay PharmD, BCPS


Questions?

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STAY ENGAGED. STAY INFORMED.

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OPEN FORUM ON
PROPOSED IPA POLICIES

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