Pharmacy-Initiated Naloxone Co-Prescribing Service

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PGY-1 Pharmacy Resident
Lawton Indian Hospital

Mentors:
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Pharmacist, Lawton Indian Hospital

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Acting Resident Program Director

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Acting Chief Pharmacist, Lawton Indian Hospital

Disclosure

Under guidelines established by the Accreditation Council for Pharmacy Education, disclosure must be made regarding financial relationships with commercial interests within the last 12 months.

Miaka Huynh, Tyler Chia, James Foster, and Jessica Steinert have no relevant financial relationships or affiliations with commercial interests to disclose.
Learning Objectives

At the completion of this activity, pharmacists will be able to:
- Describe the number of drug overdoses in the state of Oklahoma
- Indicate the need for a pharmacy-initiated naloxone co-prescribing service
- Outline the naloxone consultation process at a federal IHS site

At the completion of this activity, pharmacy technicians will be able to:
- Indicate the need for a pharmacy-initiated naloxone co-prescribing service

Pre-Assessment Question #1

In 2017, how many overdose deaths involving opioids occurred in Oklahoma?

A. Less than 200
B. 200 – 300
C. 301 – 400
D. More than 400
Pre-Assessment Question #2

Why should pharmacy initiate a naloxone co-prescribing service?
A. House Bill 2039 (2017) allows pharmacists the authority to prescribe and dispense naloxone
B. Title 535 - Oklahoma State Board of Pharmacy, chapter 10, subchapter 9, allows pharmacist to “prescribe and dispense Naloxone without a protocol or prescription to any person at risk of experiencing an opioid-related drug overdose”
C. As of 2018, the Department of Mental Health and Substance Abuse Services has promoted an initiative called Prescription for Change to combat the opioid epidemic in Oklahoma
D. All of the above

Pre-Assessment Question #3

What is the correct naloxone consultation process at the Lawton Indian Hospital?
A. Provider enters consult, pharmacist educates patient, pharmacist dispenses naloxone
B. Provider enters consult, patient signs consent form, pharmacist dispenses naloxone
C. Provider/pharmacist enters consult, pharmacist educates patient, patient signs consent form, pharmacist dispenses naloxone
D. Provider/pharmacist enters consult, pharmacist educates patient, pharmacist dispenses naloxone
Oklahoma Data

2013

- Total drug overdose deaths = 777
  - 477 from opioids pain relievers (61%)
Oklahoma Data

2017
- Total drug overdose deaths = 388
  - 251 from prescription opioids (65%)

Why Pharmacy-Initiated?
An Act

ENROLLED HOUSE
BILL NO. 2039

By: Wallace of the House
and
Standridge of the Senate

An Act relating to pharmacies; amending 59 O.S. 2011, Section 353.24, as last amended by Section 5, Chapter 285, O.S.L. 2016 (59 O.S. Supp. 2016, Section 353.24), which relates to the Oklahoma Pharmacy Act; clarifying term; amending Section 6, Chapter 154, O.S.L. 2014 (63 O.S. Supp. 2016, Section 2-312.2), which relates to the sale or dispensation of naloxone; authorizing pharmacist to prescribe and dispense naloxone; providing that no dispensing protocol shall be required; authorizing pharmacists to exercise professional judgment in dispensing refill medications in certain circumstances; excluding certain medications; providing quantity limitations; providing for codification; and providing an effective date.

(a) Purpose. The purpose of this subsection is to implement Title 63 OS 2-312.25 provisions for pharmacists.

(b) Definitions. [RESERVED]

(c) A Pharmacist may prescribe and dispense Naloxone without a protocol or prescription to any person at risk of experiencing an opioid-related drug overdose, family or friend of an at-risk person, or first responder. Naloxone may only be dispensed by, or under the supervision, of a licensed pharmacist.

[Source: Added at 35 Ok Reg 1916, eff 9-14-18]
why not?

Naloxone Co-Prescribing Service
Objectives

Primary objective:
- Expand a pharmacy-initiated program to identify patients at high risk for opioid overdose and provide them with naloxone for overdose reversal

Secondary objective:
- Follow up with patients who received naloxone to assess their knowledge of naloxone's indication, administration technique, and usage history

Inclusion Criteria

Inclusion criteria:
- Patients ≥ 18 years old and at high risk for opioid overdose:
  - Opioid dose ≥ 50 Morphine Milligram Equivalents (MME) per day
  - Concurrent use of a benzodiazepine
  - Current poly-opioid use
- Patients ≥ 65 years old with prescribed long term duration of opioid treatment (≥ 3 months)
Exclusion Criteria

**Exclusion criteria:**
- Patients who are not prescribed opioid medications
- Patients taking opioids for acute pain (< 30 days)

Naloxone Co-Prescribing Process

1. Identify high risk patient
2. Consult entered by provider and/or pharmacist
3. Educate patient and obtain informed consent
4. Dispense naloxone kit
5. Follow-up via telephone
Results

389 charts reviewed from July - September 2018
- 119 patients identified as high risk
  - 7 patients unable to be contacted
  - 112 patients educated on the availability of naloxone at LIH (94%)
    - 76 patients counseled and received naloxone (64%)
    - 36 opted out on receiving naloxone (30%)

Results Continued

Patient Characteristics

- ≥65 years old
- ≥65 years old + Benzodiazepine
- ≥65 years old + Poly-opiates
- Poly-opiates
- Opiates + Benzodiazepine
- ≥50 MME
Post-Assessment Question #1

In 2017, how many overdose deaths involving opioids occurred in Oklahoma?
A. Less than 200
B. 200 – 300
C. 301 – 400
D. More than 400
**Post-Assessment Question #2**

Why should pharmacy initiate a naloxone co-prescribing service?

A. House Bill 2039 (2017) allows pharmacists the authority to prescribe and dispense naloxone  
B. Title 535 - Oklahoma State Board of Pharmacy, chapter 10, subchapter 9, allows pharmacist to “prescribe and dispense Naloxone without a protocol or prescription to any person at risk of experiencing an opioid-related drug overdose”  
C. As of 2018, the Department of Mental Health and Substance Abuse Services has promoted an initiative called *Prescription for Change* to combat the opioid epidemic in Oklahoma  
D. All of the above
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A. Provider enters consult, pharmacist educates patient, pharmacist dispenses naloxone

B. Provider enters consult, patient signs consent form, pharmacist dispenses naloxone

C. Provider/pharmacist enters consult, pharmacist educates patient, patient signs consent form, pharmacist dispenses naloxone

D. Provider/pharmacist enters consult, pharmacist educates patient, pharmacist dispenses naloxone
Conclusion

Lawton Indian Hospital (LIH) created a collaborative practice agreement for pharmacists to dispense naloxone to high risk patients to combat the growing trend of opioid misuse

- Increased naloxone access for high risk patients
- Educated patients on naloxone service offered at LIH
- Dispensed 76 naloxone rescue kits

References

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Effects of a Pharmacy-led Educational Intervention on Penicillin Allergy Documentation in an Ambulatory Care Setting

Stephen Riley, Pharm.D.
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Mentors:
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Pharmacist, Lawton Indian Hospital
James Foster, Pharm.D., BCPS
Acting Resident Program Director
Jessica Steinert, Pharm.D., MHA, BCGP
Acting Chief Pharmacist, Lawton Indian Hospital

Disclosure

Under guidelines established by the Accreditation Council for Pharmacy Education, disclosure must be made regarding financial relationships with commercial interests within the last 12 months.

- Stephen Riley, Tyler Chia, James Foster, and Jessica Steinert have no relevant financial relationships or affiliations with commercial interests to disclose.
Learning Objectives

At the completion of this activity, pharmacists and pharmacy technicians will be able to:

• Discuss the importance of proper penicillin allergy documentation and its impact on patient care

• Identify the potential consequences of inaccurately documented penicillin allergies

• Identify proper medication allergy practices and services

Pre-assessment question #1

What percentage of the American population has a “true” penicillin allergy?

A. 10%
B. 20%
C. 1%
D. 5%
Pre-assessment question #2

What is an example of a potential consequence of inaccurately documented penicillin allergies?

A. Increase healthcare costs
B. Increase broad-spectrum antibiotic use
C. Increase antibiotic resistance potential
D. All the above

Pre-assessment question #3

What question should always be asked when performing an allergy history?

A. What was the reaction?
B. How long ago did the reaction occur?
C. How was the reaction managed?
D. All the above
Drug allergy or adverse reaction

• Many patients state that they have an allergy to a medication, however, many can be labeled as an adverse reaction.

• Common signs of drug allergy:
  - Hives
  - Wheezing/dyspnea
  - Itching
  - Swelling

• Adverse reactions differ from allergies because they are common and expected with certain medications, such as experiencing diarrhea with metformin.

Statistics

• Approximately 10% of all patients in the United States (U.S.) report having an allergy to penicillin antibiotics.

• Only about 1% of the U.S. population have a “true” penicillin allergy.

• Patients can lose their sensitivity to penicillin antibiotics over time.
Potential implications

• Second-line, broad-spectrum, and potentially toxic antibiotics may be used for patients who report a penicillin allergy.

• Using alternative antibiotics may result in:
  • Increased healthcare costs
  • Increased antibiotic resistance
  • Worse outcomes

• Accurate and complete allergy documentation reduces the use of alternative antibiotics and their associated risks.


Previous data

• In a retrospective study, patients were evaluated to assess how beta-lactam allergy documentation affected subsequent antibiotic choice.

• The data included 232,616 patients from 198 primary care providers, of which 36,193 were labeled as having a beta-lactam allergy.

• Of the patients that were labeled to have a beta-lactam allergy only 22.7% had allergy reaction documentation.

Previous data (continued)

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Allergy reaction documented</th>
<th>Allergy reaction not documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillins</td>
<td>6.1%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Cephalosporins</td>
<td>7.3%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Fluoroquinolones</td>
<td>24.2%</td>
<td>24.8%</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>10.4%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Vancomycin</td>
<td>1.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Macrolides</td>
<td>40.3%</td>
<td>44.4%</td>
</tr>
</tbody>
</table>


Residency project

- Primary objective
  - Assess the intervention rate on incompletely documented penicillin allergies in adult care clinics before and after a pharmacy-led educational seminar.

- Secondary objective
  - Assess the overall prevalence of inaccurately documented penicillin allergies in the outpatient pharmacy before and after a pharmacy-led educational seminar.
Residency project (continued)

• Inclusion criteria
  • Patients having an allergy to any agent in the penicillin class of antibiotics
  • Patients over the age of 18

• Exclusion criteria
  • Patients who do not have an allergy to any agent in the penicillin class of antibiotics
  • Patients under the age of 18

Data collection

• Data was collected for 3 months prior to the educational intervention.

• After the educational intervention was given, data was collected for an additional 3 months in order to assess the effectiveness of the session.
Adult care data collection

Online scheduling system reviewed at start of day
Qualifying patient identified through chart analysis
Scheduling system reviewed for patient attendance
Chart analysis conducted for allergy intervention
Data recorded
Data analyzed

Adult care data

<table>
<thead>
<tr>
<th></th>
<th>Number of visits</th>
<th>Number of interventions made</th>
<th>Intervention percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No allergy reaction specified (before midpoint)</td>
<td>112</td>
<td>4</td>
<td>3.6%</td>
</tr>
<tr>
<td>No allergy reaction specified (after midpoint through 5/14/2019)</td>
<td>97</td>
<td>14</td>
<td>14.4%</td>
</tr>
</tbody>
</table>
Pharmacy data collection

Qualifying patient identified through chart analysis

Patient asked about allergy history when presenting to the pharmacy

History compared to patient’s chart

Data recorded

Data analyzed

Pharmacy data

<table>
<thead>
<tr>
<th></th>
<th>Penicillin allergies documented accurately</th>
<th>Penicillin allergies documented inaccurately</th>
<th>Inaccuracy rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 months prior to midpoint intervention</td>
<td>28</td>
<td>34</td>
<td>54.8%</td>
</tr>
<tr>
<td>3 months following midpoint up to 5/14/2019</td>
<td>9</td>
<td>10</td>
<td>52.6%</td>
</tr>
</tbody>
</table>
Study conclusion

• According to the data that has been collected, the overall intervention rate on incompletely documented penicillin antibiotics did increase in the adult care clinic after the educational intervention.

• However, the overall prevalence of inaccurately documented penicillin allergies in the outpatient pharmacy did not share the same degree of improvement.

What to ask

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have any medication allergies?</td>
<td></td>
</tr>
<tr>
<td>What reaction occurred?</td>
<td></td>
</tr>
<tr>
<td>How long ago did the reaction occur?</td>
<td></td>
</tr>
<tr>
<td>What was the outcome of the reaction?</td>
<td></td>
</tr>
<tr>
<td>When was the last time you received the reacting medication?</td>
<td></td>
</tr>
</tbody>
</table>

Future considerations

• If a medication allergy history is not effective at obtaining accurate information more objective tests can be utilized.

• Penicillin skin tests have a negative predictive value of more than 95% and can be extremely useful in patients who are unable to remember their allergy reaction.

• A penicillin oral challenge can also be utilized to help further validate allergy presence.


Post assessment question #1

What percentage of the American population have a “true” penicillin allergy?

A. 10%
B. 20%
C. 1%
D. 5%
Post assessment question #2

What is an example of a potential consequence of inaccurately documented penicillin allergies?

A. Increase healthcare costs
B. Increase broad spectrum antibiotic use
C. Increase antibiotic resistance potential
D. All the above

Post assessment question #3

What question should always be asked when performing an allergy history?

A. What reaction occurred?
B. How long ago was the reaction?
C. What was the outcome of the reaction?
D. All the above
Summary

• Inappropriately documented penicillin allergies can lead to increased healthcare costs and increased antibiotic resistance potential.

• Performing an allergy history is an important first step in obtaining the most up-to-date patient allergy information.

• Penicillin skin allergy tests and oral penicillin challenge are other methods that can be potentially utilized to confirm penicillin allergies.

References


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Acting Chief Pharmacist, Lawton Indian Hospital
Decentralization of the Pharmacist to an Endocrinology Service in a Diabetes Wellness Center

LIEUTENANT ASHLEY D. DEVAUGHAN, PHARM.D., M.B.A.
PGY-1 PHARMACY RESIDENT, CHOCTAW NATION HEALTH CARE CENTER

MENTOR: CHRISTOPHER PACK, PHARM.D., AE-C
CLINICAL PHARMACIST & RESIDENCY DIRECTOR, CHOCTAW NATION OF OKLAHOMA

PRESENTER DISCLOSURES

Under guidelines established by the Accreditation Council for Pharmacy Education, disclosure must be made regarding financial relationships with commercial interests within the last 12 months.

- Ashley DeVaughan and Christopher Pack have no relevant financial relationships or affiliations with commercial interests to disclose.
- This presentation is educational in nature and abides by non-commercial guidelines.
LEARNING OBJECTIVES

At the completion of this activity, pharmacists will be able to:

- Measure improvements in diabetes and co-morbid disease state management after pharmacist involvement in endocrinology visit by assessing certain objective measures such as hemoglobin A1c, lipid panel, blood pressure, etc.
- Calculate adherence rates through proportion of days covered and medication possession ratio calculations.
- Assess patient/provider satisfaction with the involvement of a decentralized pharmacist service.

At the completion of this activity, pharmacy technicians will be able to:

- Assess patient/provider satisfaction with the involvement of a decentralized pharmacist service.

PRE-ASSESSMENT QUESTIONS

- Which adherence measure can produce a value of greater than 100% adherence?
  A. Proportion of Days Covered
  B. Medication Possession Ratio

- Which adherence measure may overestimate adherence, especially for patients who consistently refill medications early?
  A. Proportion of Days Covered
  B. Medication Possession Ratio
OUTLINE

► Background and Significance
► Project Design
  ► Objectives
  ► Phases of Implementation
  ► Program Goals
► Preliminary Data
► Study Limitations
► Conclusion
► References

BACKGROUND AND SIGNIFICANCE

Several studies have evaluated the outcomes of including a pharmacist on the primary care team.

Shown that patients are likely to have a greater improvement in:
  ► medication adherence
  ► health-related quality of life
  ► BMI
  ► better disease-specific measures such as A1c, blood pressure, cholesterol, and ASCVD risk.¹
BACKGROUND AND SIGNIFICANCE

One study in ambulatory care clinics showed significantly more improvement in:
- A1c
- LDL
- disease-related screenings

Also found comprehensive medication reviews by pharmacists led to significantly more patients appropriately taking:
- an antiplatelet agent
- an ARB
- and a statin

A cost-effectiveness study found that pharmacist-endocrinologist collaborative practices showed an average cost avoidance of $5,000 per patient in the health system.

This project was based on a previous successful project at the Choctaw Nation Health Care Center.
PROJECT OBJECTIVES

- The objective of this study will be to assess the outcomes and interventions that occur from the decentralization of a pharmacist to the endocrinology service.

- This project has been approved by the Choctaw Nation Institutional Review Board

PROJECT OBJECTIVES

- OBJECTIVE MEASURES
  - Adherence Rates: MPR and PDC
  - Disease state measures
    - Hemoglobin A1c, Blood Pressure, Lipids Profile, Etc.
  - Other miscellaneous interventions

- SUBJECTIVE MEASURES
  - Patient Satisfaction
  - Provider Satisfaction
PROJECT DESIGN

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient has a diagnosis of Type I or Type II Diabetes Mellitus</td>
<td>Patient is seen by another provider in DWC</td>
</tr>
<tr>
<td>Patient is seen in endocrinologist’s service</td>
<td>Patient does not receive chronic care from the Choctaw Nation of Oklahoma</td>
</tr>
<tr>
<td>Between the ages of 18-95</td>
<td></td>
</tr>
</tbody>
</table>

PHASES OF IMPLEMENTATION

- Patients seen in endocrinology clinic and meet criteria for enrollment (Patient consent required)
- Patient’s data gathered and compared to equal number of patient’s seen without decentralized pharmacist services in endocrinology service
- Data analyzed and assessed for improvements in disease state conditions using objective data such as: hemoglobin A1c, blood pressure, lipid panel, vaccines etc.
- Data analyzed and assessed for improvements in medication adherence using MPR and PDC
- Satisfaction surveys given to both patient and provider at approximately 3, 6, and 9 months
PROGRAM GOALS

Improvements in disease state management

Increase patient medication adherence

Develop patient and provider satisfaction with decentralized pharmacy services

Implementation of decentralized pharmacy service at CNHSA

METHODS TO MEASURE ADHERENCE

- MPR = Medication Possession Ratio
  
  \[
  \text{Sum of days' supply for all fills in period} \times \frac{\text{100}}{\text{Last Rx date - First Rx date + Last Rx days of supply}} \times 100\%
  \]

  - May overestimate adherence
    - Patients who fill their medications early will have an inflated MPR
    - Some MPR may be calculated as >100%
METHODS TO MEASURE ADHERENCE

PDC = Proportion of Days Covered

\[
\text{PDC} = \frac{\text{Number of days in period “covered”}}{\text{Number of days in period}} \times 100\%
\]

- Think of each Rx as an “array” of days supplied
- Moving these arrays forward to the first day the patient would not have medication from the previous dispensing (array)
  - Impossible to calculate PDC of >100%

ADHERENCE RATES

- In the United States, 3.8 billion prescriptions are written annually.\(^5\)
  - Approximately one in five new prescriptions are never filled.
  - Among those filled, **approximately 50%** are taken incorrectly, particularly with regard to timing, dosage, frequency, and duration.
ADHERENCE RATE DATA

- Adherence rates above 70% for all medication classes for 6 months
  - 3 months before and 3 months after being seen by pharmacist
  - 14 patients consented

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>3 Months Before PDC</th>
<th>3 Months After PDC</th>
<th>3 Months Before MPR</th>
<th>3 Months After MPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidiabetic</td>
<td>70.9</td>
<td>81.8</td>
<td>90.7</td>
<td>95.4</td>
</tr>
<tr>
<td>Antihypertensive</td>
<td>89.7</td>
<td>78.9</td>
<td>96.0</td>
<td>99.1</td>
</tr>
<tr>
<td>Antihyperlipidemic</td>
<td>73.4</td>
<td>82.5</td>
<td>96.9</td>
<td>87.1</td>
</tr>
<tr>
<td>All Classes</td>
<td>78.0</td>
<td>81.1</td>
<td>94.5</td>
<td>93.9</td>
</tr>
</tbody>
</table>
ADHERENCE RATE DATA

MPR Adherence Data

A1C MEASUREMENTS

<table>
<thead>
<tr>
<th>A1C Statistics (All Patients)</th>
<th>Initial</th>
<th>Visit 2</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>9.3428</td>
<td>9.4214</td>
<td>-0.08</td>
</tr>
<tr>
<td>Variance</td>
<td>5.2149</td>
<td>3.8171</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>14</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.575796</td>
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</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>t Stat</td>
<td>-0.14898</td>
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<td></td>
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<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.883857</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.160369</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>A1C Statistics (without outlier)</th>
<th>Initial</th>
<th>Visit 2</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>9.4153</td>
<td>9.0923</td>
<td>-0.32</td>
</tr>
<tr>
<td>Variance</td>
<td>5.5697</td>
<td>2.4924</td>
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</tr>
<tr>
<td>Observations</td>
<td>13</td>
<td>13</td>
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<tr>
<td>Pearson Correlation</td>
<td>0.844129</td>
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<td>Hypothesized Mean Difference</td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>0.875095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.398699</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.178813</td>
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### BLOOD PRESSURE MEASUREMENTS

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systolic BP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>132.35</td>
<td>127.64</td>
</tr>
<tr>
<td>Variance</td>
<td>257.32</td>
<td>359.48</td>
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<tr>
<td>Observations</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.263487</td>
<td></td>
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<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>0.825556</td>
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</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.423948</td>
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</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.160369</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>2nd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diastolic BP</strong></td>
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<td></td>
</tr>
<tr>
<td>Mean</td>
<td>77.29</td>
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<td>Variance</td>
<td>66.22</td>
<td>72.29</td>
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<tr>
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### PHARMACIST INTERVENTIONS

- DM medications adjusted: 4
- Statins ordered: 3
  - 1 patient met LDL goal after 3 months
- Labs ordered: 5 (2 A1C, 3 Lipid)
- Vaccinations: 5 vaccines to 4 patients
- Drug interactions found: 2
  - Multiple PPIs, Multiple sedating drugs
- All patients received disease state and adherence counseling
PATIENT SATISFACTION

► Patient 1:
1. Do you feel more comfortable taking your medications after the pharmacists
   service?
   a. Yes, “I like talking to a pharmacist because it makes me feel better about taking
      my medications.”
2. Do you feel more knowledgeable about your medications after the pharmacists
   services?
   a. Yes
3. On scale of 1-10 how helpful was the pharmacist service?
   a. 10
4. Would you recommend the decentralized pharmacy service to others?
   a. Yes

PATIENT SATISFACTION

► Patient 2:
1. Do you feel more comfortable taking your medications after the pharmacists
   service?
   a. Yes
2. Do you feel more knowledgeable about your medications after the pharmacists
   services?
   a. Yes
3. On scale of 1-10 how helpful was the pharmacist service?
   a. 10
4. Would you recommend the decentralized pharmacy service to others?
   a. Yes
PROVIDER SATISFACTION SURVEY

1. How comfortable are you with the incorporation of decentralized pharmacy services?
   o Very Comfortable
2. Do you feel that the pharmacist provided recommendations that were beneficial for overall patient care?
   o Yes
3. On scale of 1-10 how beneficial was the service in improving patient care?
   o 8
4. Would you like a decentralized pharmacy service in your department?
   o Yes
5. Would you recommend the decentralized pharmacy service to other providers?
   o Yes

STUDY LIMITATIONS

► Low number of “follow-up” visits = low number of consented patients
► Chronic disease states have longer follow up times
  ► 3 months- 1 year
► Working with only one provider
POST-ASSESSMENT QUESTIONS

- Which adherence measure can produce a value of greater than 100% adherence?
  A. Proportion of Days Covered  
  B. Medication Possession Ratio

- Which adherence measure may overestimate adherence, especially for patients who consistently refill medications early?
  A. Proportion of Days Covered  
  B. Medication Possession Ratio

CONCLUSION

- Decentralized pharmacy services have the potential to bring positive impact to overall patient care while improving workflow and patient/provider satisfaction.
  - Disease state counseling
  - Medication counseling
  - Vaccinations
  - Blood pressure/ cholesterol
REFERENCES


4. Rose CL, Pack, CC. Decentralization of the Pharmacist to Family Practice Clinic in a Small Rural Hospital. Choctaw Nation Health Care Center.


Decentralization of the Pharmacist to an Endocrinology Service in a Diabetes Wellness Center

LIEUTENANT ASHLEY D. DEVAUGHAN, PHARM.D., M.B.A.
PGY-1 PHARMACY RESIDENT, CHOCTAW NATION HEALTH CARE CENTER

MENTOR: CHRISTOPHER PACK, PHARM.D., AE-C
CLINICAL PHARMACIST & RESIDENCY DIRECTOR, CHOCTAW NATION OF OKLAHOMA
RECOGNIZE THE IMPACT OF PHARMACIST-LED DIABETES MANAGEMENT ON TREATMENT GOALS

Presented by: LT Kristen Young
PGY-1 Pharmacy Resident

Mentor: CDR John Bousum, Pharm.D.
Clinical Pharmacist, Claremore Indian Hospital
Mentor: CAPT Tim Murray, Pharm.D., BCPS-AQ Cardiology, NCPS
Inpatient Pharmacy Clinical Coordinator, Claremore Indian Hospital

Disclosure

- Under guidelines established by the Accreditation Council for Pharmacy Education, disclosure must be made regarding financial relationships with commercial interests within the last 12 months.
- Kristen Young, John Bousum and Tim Murray have no relevant financial relationships or affiliations with commercial interests to disclose.
- The opinions expressed in this presentation are those of the author and do not necessarily reflect the views of the Indian Health Service.
Learning Objective

- At the completion of this activity, pharmacists will be able to:
  Recognize the impact of pharmacist-led diabetes management on medication adherence and treatment goals

Pre-Test Assessment Questions

1. Initiating a pharmacist-led Cardiovascular Risk Reduction Clinic in your facility would:
   a) Increase access to care
   b) Allow for closer follow-up times between Primary Care appointments
   c) Both A & B

2. How often should you have pertinent labs drawn such as A1C and Lipid Panels to assess current therapy optimization?
   a) Every month
   b) Every 2 weeks
   c) Every 3 months

3. Pharmacists play a valuable role in optimizing therapy and achieving treatment goals within diabetes management?
   a) True
   b) False
Background

- Diabetes is one of the most common chronic conditions within primary care
- Complications related to the disease state
- Evaluate the impact of pharmacist-led cardiovascular risk reduction management in our facility

Methods

- Select Adult Medicine Clinic patients referred to the Cardiovascular Risk Reduction Clinic between August 2018 - October 2018
- Initial, up-to-date, baseline labs
  - *Follow-up labs every 3 months or as needed*
- Adjust medication regimen as warranted
- Provide dietary and lifestyle modification counseling
- Monitor clinical outcomes
- Follow-up with patients in-person or via telephone at least monthly
Methods

■ Inclusion Criteria
  - Diagnosis of Type 2 Diabetes
  - Seen by their primary care provider within the 3 months prior to referral

■ Exclusion Criteria
  - > 70 years old
  - A1C < 8.0%

Clinical Outcome Changes Observed

■ Primary Outcome
  - A1C

■ Secondary Outcomes
  - Total Cholesterol
  - LDL
  - HDL
  - Triglycerides
  - Blood Pressure
Results

113 Charts Reviewed

- 29 patients received a consult from PCP for CRRC within timeframe
- 84 patients excluded

Pharmacist Intervention (n=19)

- Actively participated in CRRC (n=14)
- Lost to follow-up (n=5)

No Intervention (n=10)

84 patients excluded

Results

Hemoglobin A1C

- 17.6% decrease

Baseline | Follow-Up
10.2% | 8.4%

Systolic Blood Pressure

- 3.5% decrease

Baseline | Follow-Up
144 mmHg | 139 mmHg

Diastolic Blood Pressure

- 10.7% decrease

Baseline | Follow-Up
75 mmHg | 67 mmHg
Results

<table>
<thead>
<tr>
<th>Total Cholesterol</th>
<th>Triglycerides</th>
<th>LDL</th>
<th>HDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0% decrease</td>
<td>48.0% decrease</td>
<td>8.2% decrease</td>
<td>No change</td>
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</table>

Baseline Follow-Up
- Total Cholesterol: Baseline 175 mg/dl, Follow-Up 154 mg/dl
- Triglycerides: Baseline 306 mg/dl, Follow-Up 159 mg/dl
- LDL: Baseline 85 mg/dl, Follow-Up 78 mg/dl
- HDL: Baseline 44 mg/dl, Follow-Up 44 mg/dl

Conclusion

- Pharmacist led Cardiovascular Risk Reduction Clinic positively impacted clinical outcomes
- Providing closer follow-up and offering telephone follow-up options for patients was well received and increased access to care
- An increase in consults to the clinic from our Primary Care team as been seen at our facility
Post-Test Assessment Questions

1. Initiating a pharmacist-led Cardiovascular Risk Reduction Clinic in your facility would:
   a) Increase access to care
   b) Allow for closer follow-up times between Primary Care appointments
   c) Both A & B

2. How often should you have pertinent labs drawn such as A1C and Lipid Panels to assess current therapy optimization?
   a) Every month
   b) Every 2 weeks
   c) Every 3 months

3. Pharmacists play a valuable role in optimizing therapy and achieving treatment goals within diabetes management?
   a) True
   b) False
References


RECOGNIZE THE IMPACT OF PHARMACIST-LED DIABETES MANAGEMENT ON TREATMENT GOALS

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Medication Utilization Management

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Disclosure

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► Inga Merry and Kari Barrett have no relevant financial relationships or affiliations with commercial interests to disclose
Learning Objective

- At the completion of this activity, pharmacists will be able to:
  - Describe the benefits of automated dispensing cabinet report analysis on medication utilization and safety

Pre-Assessment Question 1

- Why should controlled substances be wasted at time of removal?
  - A) To maintain a somewhat appropriate inventory
  - B) To ensure the correct medication is being administered to the patient
  - C) To eliminate opportunity for diversion
  - D) To allow for teamwork among the nursing staff
Pre-Assessment Question 2

- Automated Dispensing Cabinets are primarily used for:
  - A) Manage distribution of controlled substances
  - B) Medication inventory and access reports
  - C) To limit access of medications to authorized staff for administration to specific patients
  - D) All of the above

Pre-Assessment Question 3

- Medication overrides are appropriate when:
  (mark all that apply)
  - A) The nurse pulled wrong medication from an open matrix drawer and wants to obtain the correct medication
  - B) The automated dispensing cabinet is not functioning properly
  - C) When the provider declares an emergent need for a medication
  - D) If the nurse is tired of waiting for a medication to be verified
Automated Dispensing Cabinet (ADC)

- Distribution of patient specific medication
- Records each encounter
- Monitors wasting of controlled substances
- Inventory of medication

Medication Override

- Possible errors
  - Allergy
  - Drug-drug
  - Drug-disease
  - Wrong medication
  - Inventory discrepancies
  - Medication diversion
Medication Override

- Appropriate override
  - Emergent access to medication
  - Error in processing
  - Delay in verification

ADC Overrides

![Bar chart showing the number of overrides from Jul-18 to Apr-19](chart.png)
Controlled Substance Wasting

- Controlled substances administered in partial doses require wasting
- Wasting should be done at time of removal from ADC
- Late wasting - any wasting done after initial removal from the ADC

Controlled Substance Wasting

- Waste at time of removal
  - Requires a witness
- Time to waste monitored
- Appropriate vs Inappropriate late waste
Controlled Substance Wasting

- Possible issues with late wasting
  - Diversion
  - Error in administration

Controlled Substance Wasting

- Appropriate late wasting
  - Epidurals
  - Patches
  - Drips
  - Patient Controlled Analgesia (PCA)
Review of Late Waste

![Bar chart showing percentage of late waste over different months.]

Post-Assessment Question 1

- Why should controlled substances be wasted at time of removal?
  - A) To maintain a somewhat appropriate inventory
  - B) To ensure the correct medication is being administered to the patient
  - C) To eliminate opportunity for diversion
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  - D) If the nurse is tired of waiting for a medication to be verified
Conclusion

- The Automated Dispensing Cabinet is used to ensure the correct medication is dispensed for the appropriate patient, produce reports which evaluate encounters with the ADC, monitor to controlled substance wasting and medication overrides.
- Issues which could result from late wasting - possible diversion of controlled substances and accidental administration of incorrect medication to patient
- Challenges associated with medication overrides include - lack of review by a pharmacist, incorrect medication withdrawn from ADC and errors in inventory.

Medication Utilization Management

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