PHCA Assisted Living & Personal Care Educational Summit
March 31, 2016

Preventing Medication Errors and Related Deficiencies
A Review of Best Practices

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Disclosure / Contact

• Jennifer Hardesty is a shareholder at Remedi SeniorCare
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“Welcome to the ISMP Long-Term Care Advise-ERR, a medication safety newsletter designed specifically to meet the needs of administrators, nursing directors, and nurses who transcribe medication orders, administer medications, monitor the effects of medications on residents, and/or supervise those who carry out these important tasks.”

http://www.ismp.org/Newsletters/longtermcare/default.aspx
Medication “Error”

Regulations
- Right Patient
- Right Drug
- Right Dose
- Etc ...

Best Practice
- Non-pharm
- Best Drug
- Lowest Dose
- Etc ...
Common Deficiencies in AL/PCH [1]

• Glucometers
  – Calibration
  – Multi-resident use
  – Resident specific labeling
  – Discrepancy (glucometer / MAR)

[1] Personal communication, Bureau of Human Services Licensing, 2/10/16
Common Deficiencies in AL/PCH

March 17, 2015

“Specifically, we require that each individual who uses insulin or has other blood glucose testing needs have his or her own glucometer ...”

- Matthew J. Jones, Director
  BHSL

Common Deficiencies in AL/PCH

• Insulin = high risk
  – Failure to document dose administered
  – Failure to check blood glucose
  – Failure to document blood glucose
Common Deficiencies in AL/PCH

• Process failures
  – Overt med errors
  – PRNs “unavailable”
  – Label/MAR/Order
  – Non-current meds on MAR
  – Promptly document MAR
    • Not written, not done???
Common Deficiencies in AL/PCH

• Storage / Safety
  – Unsecured / accessible meds
  – Dating time sensitive meds
  – Outdated / discontinued meds on cart
  – OTCs without names
  – Self-administration → assessment / order
    • Ongoing
Case Study: Enforcement

• July 14 → October 22, 2015: 7 surveys
• December 14, 2015: Notice
  – License revocation
  – Ban on admissions effective immediately
• December 17, 2015: Appeal
Case Study: Enforcement

• Medication related violations
  – Unavailable meds (routine & PRN)
    • Morphine
    • Acetaminophen
    • Ranitidine
    • Alprazolam
    • Allopurinol
  – Failure to report to BHSL
Case Study: Enforcement

• Medication related violations
  – Infection control
    • Shared glucometers
  – Labeling / storage
    • Insulin pens -> no label
    • Expired meds
    • Undated insulin
    • Eye drops -> nightstand
    • Loose pills -> med cart
Case Study: Enforcement

- Medication related violations
  - Documentation / process
    - Transcription (glucometer -> MAR)
    - Following orders (unnecessary assessment)
      - F/S q Monday & Friday
  - Failure to sign MAR
  - No diagnosis / purpose for Rx
  - Exposed PHI (MAR)
Case Study: Enforcement

• Medication related violations
  – § 2600.58. Awake staff persons.
  • (a) If a home serves 16 or more residents, all direct care staff persons on duty in the home shall be awake at all times one or more residents are present in the home.
The Vaughan List

• Warfarin
• Diuretics
• Potassium
• Phenytoin
• Levothyroxine
• Prednisone
• Lithium
• NSAID
• Antibiotic/steroid ophthalmic
CHAPTER 2600. PERSONAL CARE HOMES

Medications

• 2600.181. Self-administration
  – “A resident who desires to self-administer medications shall be assessed by a physician, physician’s assistant or certified registered nurse practitioner ...”

• 2600.182. Medication administration
  – “If indicated by the prescriber’s orders, measure vital signs and administer medications accordingly.”
CHAPTER 2600. PERSONAL CARE HOMES

Medications

• 2600.188. Medication errors
  – “There shall be a system in place to identify and document medication errors ...”

• 2600.191. Resident education
  – The home shall educate the resident of the right to question or refuse a medication if the resident believes there may be a medication error.
Specific Preparation of Varying Medication Forms

- Suspensions
- Inhalers/Nebulizers
- Sublingual
- Injectables
- Nasal Sprays
- Eye/Ear meds
- Patches
- Enterals
Suspensions & Liquids

- Shake suspensions vigorously before measuring
- Measure accurately - flat surface, at eye level
- Use an appropriate measuring device
- Check expiration date
- Bottle markings are only a guide!
Inhaled Medications

- Metered Dose Inhalers
- Spacers
- Dry Powder Inhaler
- Nebulizer Solution
• If more than one inhaled medication is ordered at the same time, administer sequence according to pharmacist recommendations

1\textsuperscript{st}: Beta Agonist (albuterol, albuterol/ipratropium, salmeterol, formoterol)

2\textsuperscript{nd}: Anticholinergics (ipratropium, tiotriopium)

3\textsuperscript{rd}: Corticosteroids (fluticasone, budesonide, mometasone, etc)
Inhaled Medications: General Instructions

*If more than 1 inhalation is required, wait 1-2 minutes between puffs; regardless if same or different medication.*

**Shaking Devices:**
- MDI - shake before use
- Dry powder inhalers – no shaking
- *Rinse and spit with water after corticosteroid use to reduce risk for oral Candidiasis infection*

**Washing Devices:**
- MDI - wash mouthpiece upon completion of administration
- Dry Powder Inhalers - do not wash; may wipe with cloth
- May wash device used for “capsule” dry powder inhalers (i.e. Spiriva)
- Wash spacers once a month
# Inhaled Products: Expiration Dating

<table>
<thead>
<tr>
<th>Product</th>
<th>Discard After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advair Diskus</td>
<td>1 month</td>
</tr>
<tr>
<td>Albuterol nebulizer solutn</td>
<td>1 week outside foil</td>
</tr>
<tr>
<td>Asmanex Twisthaler</td>
<td>45 days</td>
</tr>
<tr>
<td>Azmacort</td>
<td>240 puffs</td>
</tr>
<tr>
<td>Combivent Respimat</td>
<td>3 months</td>
</tr>
<tr>
<td>Flovent Diskus</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Foradil</td>
<td>4 months</td>
</tr>
<tr>
<td>Pulmicort Flexhaler</td>
<td>6 months</td>
</tr>
<tr>
<td>Serevent Diskus</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Spiriva Handihaler</td>
<td>Per Strip – 2 days</td>
</tr>
<tr>
<td>Symbicort</td>
<td>3 months or 120</td>
</tr>
<tr>
<td>Ventolin HFA</td>
<td>12 months</td>
</tr>
<tr>
<td>Xoponex Solution</td>
<td>2 weeks outside foil</td>
</tr>
</tbody>
</table>
Inhaled Medications: Dry Powder Inhalers

Each device may have slightly different instructions

**Generally:**
- Do not use spacers
- Do not swallow capsules
- Do not push lever more than once
- Exhale first, then close lips around mouthpiece and breathe in quickly and deeply
- Do not exhale into device
- Do not wash inhaler device
- Throw out old device
Injectables

- Insulin
- Anticoagulants
- Pen Devices
Insulin Action: Comparison of Types
Pen Delivery Devices

- Each device has unique instructions - consult package insert before using
Insulin

- ONLY use insulin syringes marked in insulin units
- **DO NOT** pre-fill syringes
- "Roll", do not shake suspensions; priming of pens
- Document site of injection & rotate sites
- Dispose of sharps properly
- Rule of "Clear" and "Cloudy" no longer applies
INSULIN: Storage and Expiration

• **Storage:**
  • Refrigerate unopened product – Do Not Freeze
  • May store at room temperature once opened
  • Date upon opening or removing from refrigerator

• **Expiration Dates: ‘General Rule’- 28 days once opened**

• **Exceptions:**
  • Levemir, Novolin N & R, Toujeo - 42 days
  • Humulin N & R- 31 days
  • Humalog 50/50, 75/25 insulin pens- 10 days
  • Humulin 70/30 pens- 10 days
  • Novolog 70/30 pens- 14 days
### Insulin Pen Quick Reference Guide

<table>
<thead>
<tr>
<th>Insulin Pen Name</th>
<th>Manufacturer</th>
<th>Roll/Shake</th>
<th>Safety Info</th>
<th>Clean Pen Tip with Alcohol</th>
<th>Air Shot Before Each Use</th>
<th>Repeat Air Shot if Needed</th>
<th>Diaz to Dose</th>
<th>Hold Pen in Skin</th>
<th>Discard Before Pen Empty</th>
<th>In Use Storage**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levenir (detemir) FlexPen</td>
<td>Novo Nordisk</td>
<td>NA</td>
<td>Use only if clear and colorless with no visible particiles</td>
<td>Yes</td>
<td>Up to 6 times</td>
<td>Yes</td>
<td>6 seconds</td>
<td>NA</td>
<td>Room temp x 42 days</td>
<td></td>
</tr>
<tr>
<td>Novolog (insulin) FlexPen</td>
<td>Novo Nordisk</td>
<td>NA</td>
<td>Use only if clear and colorless with no visible particiles</td>
<td>Yes</td>
<td>Up to 6 times</td>
<td>Yes</td>
<td>6 seconds</td>
<td>NA</td>
<td>Room temp x 28 days</td>
<td></td>
</tr>
<tr>
<td>Novolog (insulin) Mix 70/30 FlexPen</td>
<td>Novo Nordisk</td>
<td>Roll and gently shake 10 times each</td>
<td>Once mixed, insulin should be white and cloudy with no visible particiles</td>
<td>Yes</td>
<td>Up to 6 times</td>
<td>Yes</td>
<td>6 seconds</td>
<td>Discard when less than 12 units remaining in pen</td>
<td>Room temp x 14 days</td>
<td></td>
</tr>
<tr>
<td>Lantus (glargine) SoloSTAR Pen</td>
<td>Sanofi</td>
<td>NA</td>
<td>Use only if clear and colorless with no visible particiles</td>
<td>Yes</td>
<td>Up to 2 times</td>
<td>Yes</td>
<td>10 seconds</td>
<td>NA</td>
<td>Room temp x 28 days</td>
<td></td>
</tr>
<tr>
<td>Apidra (glulisine) SoloSTAR Pen</td>
<td>Sanofi</td>
<td>NA</td>
<td>Use only if clear and colorless with no visible particiles</td>
<td>Yes</td>
<td>Up to 2 times</td>
<td>Yes</td>
<td>10 seconds</td>
<td>NA</td>
<td>Room temp x 28 days</td>
<td></td>
</tr>
<tr>
<td>Humalog (lispro) KwikPen</td>
<td>Eli Lilly</td>
<td>NA</td>
<td>Use only if clear and colorless with no visible particiles</td>
<td>Yes</td>
<td>Up to 4 times</td>
<td>Yes</td>
<td>5 seconds</td>
<td>NA</td>
<td>Room temp x 28 days</td>
<td></td>
</tr>
<tr>
<td>Humalog Mix (lispro) 75/25 and 50/50 KwikPen</td>
<td>Eli Lilly</td>
<td>Roll and gently shake 10 times each</td>
<td>Once mixed, insulin should be white and cloudy with no visible particiles</td>
<td>Yes</td>
<td>Hold dose for 5 secs</td>
<td>Yes</td>
<td>5 seconds</td>
<td>NA</td>
<td>Room temp x 10 days</td>
<td></td>
</tr>
<tr>
<td>Humulin N KwikPen</td>
<td>Eli Lilly</td>
<td>Roll and gently shake 10 times each</td>
<td>Once mixed, insulin should be white and cloudy with no visible particiles</td>
<td>Yes</td>
<td>Hold dose for 5 secs</td>
<td>Yes</td>
<td>5 seconds</td>
<td>NA</td>
<td>Room temp x 14 days</td>
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<td>NA</td>
<td>Room temp x 10 days</td>
<td></td>
</tr>
</tbody>
</table>

*Surveys may need to be followed.
**Unpack insulin pens can be used until min. exp. date if stored in refrigerator.
In-use pens should be protected from heat but not stored in refrigerator.

Ophthalmics: Special Instructions

- **Timoptic XE** – (gel-forming)
  - Administer 10 minutes after all other eye medications
  - Invert closed container
  - Shake once before each use

- **Pilocarpine HS** – (ophthalmic gel)
  - Administer at least five (5) minutes after use of other eye drops

- **Trusopt/Cosopt** –
  - Administered 10 minutes apart from other ophthalmics

- **Xalatan** – discard 6 weeks after opening or once stored at room temperature
  - Travatan – discard per pharmacy label
Transdermal Patches: General Information

Sources of Error:

• Patch left on for longer than the required time
• Failure to remove previous patch
• Check specific product information prior to cutting or altering patch
• Occluding patch- *(Bioclusive etc)*
Medications with Special Instructions: Common Refrigerated Items

Examples of high-use refrigerated items

- Procrit/ Aranesp
- Neupogen
- Influenza (Fluzone, Flulaval)
- Tubersol
- Xalatan, Calcitonin, Forteo
- Insulin Products

Be sure to date when opened and discard when expired
Medications with Special Instructions

Calcitonin Nasal Spray:
• Alternate nostrils (every other day).
• Store in the upright position.
• Before opening store in refrigerator at 36-46ºF - Do not freeze
• After opening may keep at room temperature.
• When assembling a new bottle, the unit must be primed.

Bisphosphonates (alendronate, risedronate, etc):
• Administer 30-60 minutes prior to first food or drink of the day with a full glass of plain water.
• Resident must remain in upright position x 30-60 minutes.
• The medication may be dosed daily, weekly, monthly.
• It should not be crushed if given PO (irritating to mucous membranes).
Medications with Special Instructions

Carafate and Reglan:
- Administer on an empty stomach
- *Carafate* should not be given within two hours of any other medication because it may inhibit absorption of other meds

Metamucil, Cholestyramine –
- Administer two hours before or two hours after other prescribed medications (binds drugs)

Phenytoin:
- Narrow Therapeutic Index drug
- Suspension: SHAKE WELL (at least 15 seconds) Recommend to stop a continuous tube feeding one hour before and one hour after dose.
Identifying Causes of Pharmacy Errors:

**Medication Storage**

1. Keeping personal items in or on medication cart
2. Not dating multi-dose vials when opened / Not removing expired multi-dose vials
3. Inadequate security or disposition process for Controlled Substances
4. Taping over backs of punctured or damaged blister cards
5. Hoarding extra or discontinued medications
6. Expired medications
Identifying Causes of Pharmacy Errors:

**Medication Administration**

1. Failing to hold a medication when hold parameters are defined
2. Failure to document efficacy of PRN medications
3. Out of compliance for time parameters
4. Crushing Medications that should not be crushed
5. Administration technique

**Documentation**

1. Controlled substance disposition and documentation
2. MAR documentation – ‘holes’
Resources:

- **Medpass Checklist**
  - [http://www.remedirx.com/resources-innovation/blog/2013/medication-pass-checklist.aspx](http://www.remedirx.com/resources-innovation/blog/2013/medication-pass-checklist.aspx)

- **Insulin Resource Guide**

- **Expiration Guide for Inhalation Products**

- **Infection Control Guidelines for Medpass**
  - [http://www.remedirx.com/resources-innovation/blog/2013/infection-control-guidelines-for-your-medication-pass.aspx](http://www.remedirx.com/resources-innovation/blog/2013/infection-control-guidelines-for-your-medication-pass.aspx)
Thank You