Deploying the Pharmacy Team to Provide Patient Medication Education

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The Johns Hopkins Hospital
Objectives

• State the process for establishing medication education services at your institution.

• Utilizing the strategies discussed in the presentation, design services for the delivery of medication education at your institution.
Pharmacy-managed program for providing education and discharge instructions for patients with heart failure

- **Discharge instructions:**
  - HF pathophysiology
  - Lifestyle modifications
  - Daily weight monitoring
  - HF exacerbation s/sx and management
  - Discharge medication education
  - Follow-up appointment information

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Systolic heart failure diagnosis

Admission medication reconciliation

Acute care medication optimization

Discharge medication reconciliation

Discharge instructions and medication list

Two follow-up phone calls: 2 weeks and 30 days
Implementation of an inpatient anticoagulation teaching service

- Staffed by students and residents
  - Structured training session (resident or specialist)
  - Demonstrate teaching and documentation
  - Assigned to staff 1 – 4x/rotation
  - Schedule developed by pharmacy resident

M/W/F 10 a – 3 p

Paged service pager if rounding pharmacist unable to educate

Completed and documented education, communicated completion to rounding pharmacist
Pharmacist-led discharge counseling on subcutaneous insulin use and administration

M – F
8 a – 4 p

18 years and older
Type 1 or 2 Insulin prescribed at discharge

Referral placed by any team member

Education provided by pharmacist via checklist tool

Assess learning via teach back technique
Changing transplant recipient education and inpatient transplant pharmacy practices

Primary patient medication educator posttransplant day 1 – discharge

Focused on immunosuppressant maintenance therapy and antimicrobial prophylaxis

Standard medication list provided, pill box filling taught and observed

First outpatient pharmacy education visit within 3 days post-discharge

- Medication education primer developed
  - Promote consistency
  - Informational for other team members

- MedActionplan.com
Peapack Hospital  
Organ Transplant Department  
908 555-5555

**My Daily Schedule**  
12/10/12 09:44  
Revised by: Mike Jones

Doe, Jane S  
DOB: 12-21-1950  
MRN: B93-228-776

Allergies: **No Known Drug Allergies (NKDA)**

<table>
<thead>
<tr>
<th>Take These Medications</th>
<th>At These Times</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rapamune®</strong> (Sirolimus) 1mg Tablet(s)</td>
<td>2 Tablet(s)</td>
<td>Prevents rejection</td>
</tr>
<tr>
<td><strong>Valcyte®</strong> (Valganciclovir Hydrochloride) 450mg Tablet(s)</td>
<td>1 Tablet(s)</td>
<td>Treats/prevents viral infections</td>
</tr>
<tr>
<td><strong>Prograf®</strong> (Tacrolimus) 1mg Capsule(s)</td>
<td>3 Capsule(s)</td>
<td>Prevents rejection</td>
</tr>
<tr>
<td><strong>Mufortic®</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Implementation of a specialized pharmacy team to monitor high-risk medications during discharge

- High-risk medications
  - Anticoagulants, antiarrhythmics, anticonvulsants
- Coronary stent placement
- Heart failure
- High-risk medication team:
  - 3 pharmacist FTEs
  - 7 days/week 7:30 a – 8 p

Daily report of target medications

Tracked discharged via online bed tracking system (q20 minutes)

Reviewed discharge medication list once discharge order was written

Education provided for oral anticoagulants and antiplatelet agents

Post-discharge telephone calls for those patients who were not educated pre-discharge
All patients should have a right to the care of a pharmacist.

Provision of discharge education to patients should be considered essential to pharmacist-provided drug therapy management.

Pharmacists should actively facilitate medication-related continuity of care.

Training for all pharmacy students on transitions of care is a critical component in the implementation of optimal pharmacy practice models.
Johns Hopkins Hospital
Department of Pharmacy

- Comprised of over 300 employees
- On a daily basis, the Department of Pharmacy’s four inpatient pharmacy divisions:
  - Service 1,059 inpatient beds
  - Process 3,000 orders
  - Supply 15,000 medication doses
- Support ~125 APPE students annually
Adult Inpatient Pharmacy

- Services 500 inpatient beds
  - OB, surgery, medicine, psychiatry, surgery
- 45.5 FTEs
  - 8.5 Clinical pharmacy specialists
  - 20 Pharmacists
  - 17 Technicians
- 52 students for 2016-17 academic year
  - 35 Acute care
  - 17 Institutional
Pharmacy-Provided Care Transitions Services

- Attendance at multidisciplinary rounds
- Medication reconciliation
- Patient education
- Bedside discharge medication delivery
- Follow-up phone calls
- Home-based pharmacy visit
HCAHPS

How often did hospital staff tell you what the medicine was for?

How often did hospital staff describe possible side effects in a way you could understand?

When I left the hospital, I clearly understood the purpose for taking each of my medications.
Student Orientation

- For students starting first rotation of 3- or 4-rotation block
- Completed during first two days of each rotation block
- Orientation manual emailed prior to start of rotation block
Example Assessment Schedule

- Pharmacists from each division serve as evaluators
- Students on rotation in oncology division have additional competencies
Dry Powder Inhaler Patient Education

- Introduces self (and observer, if applicable) and states reason for session
- Reviews medication
  - Name(s)
    - Fluticasone/Salmeterol (Advair)
    - Tiotropium (Spiriva)
  - Mechanism of action
    - Fluticasone – inhaled corticosteroid produces anti-inflammatory effect
    - Salmeterol – long acting b 2 agonist relaxes smooth muscle in bronchiole
    - Tiotropium – long acting anticholinergic
  - How to monitor (pulmonary function test [pft])

<table>
<thead>
<tr>
<th>Advair</th>
<th>Spiriva</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check expiration date on inhaler</td>
<td>Open the inhaler by pulling on the dustcap and then pulling up on the mouthpiece to expose center chamber</td>
</tr>
<tr>
<td>Hold diskus in one hand and put the thumb of your other hand on thumb grip</td>
<td>Pull back on the wrapper and take one capsule</td>
</tr>
<tr>
<td>Push your thumb away from you as far as it will go until you hear a click</td>
<td>Place the capsule in the center chamber</td>
</tr>
<tr>
<td>Hold diskus level with the mouthpiece facing you</td>
<td>Close the mouthpiece over the capsule until you hear a click</td>
</tr>
<tr>
<td>Check for debris or foreign objects on mouthpiece</td>
<td>Press the button on the side of the handihaler just once (this will break the capsule open and release the powder for you to breathe in)</td>
</tr>
</tbody>
</table>
Case: CO is a 55 year old female who has a past medical history of hypertension and COPD. She is currently hospitalized for a COPD exacerbation. Prior to this hospitalization she was on salmeterol monotherapy without any short-acting bronchodilator. Based on her recent symptoms and PFTs obtained this admission, the team would like to send her home on fluticasone/salmeterol 250/50 mcg 1 puff BID and an albuterol MDI 1-2 puffs q4-6h PRN. The team would like pharmacy to educate the patient on these inhalers prior to discharge.

Student: Please educate CO on her fluticasone/salmeterol and her albuterol MDI.

<table>
<thead>
<tr>
<th>Category</th>
<th>Essential Components</th>
<th>Initials</th>
</tr>
</thead>
</table>
| General Patient Education Criteria | □ Correctly Identifies the patient  
 □ Introduces Self  
 □ Explains purpose of education  
 □ Uses plain language and medical terms the patient understands  
 □ Uses open ended questions  
 □ Asks patient to explain in his/her own terms what was understood using teach-back questions  
 □ Identifies gaps in understanding and provides clarification and additional teaching until the patient is able to teach back the information that was given |          |
Student Satisfaction

• Increased confidence with:
  – Speaking to patients
  – Completing medication history
  – Counseling on high-risk medications
Considerations

• Tasks should be value-added for the patients, department, *and students*
• Standardize as much as possible
• Utilize your resources
• Continuously reevaluate your services/processes
Pharmacy Ambassador Program

• Provided by pharmacy students

• Responsibilities:
  – Greet patient within 24 hours of admission
  – Explain the role/availability of a pharmacist
  – Solicit questions about medications
  – Introduce bedside medication card
“Good morning/afternoon. My name is ___________ and I am a pharmacy student representative from the Department of Pharmacy. I am here to discuss your medicines with you. You are likely to receive new medications while you are in the hospital and possibly when you go home as well. We want to make sure you have a good understanding of these medicines including what they are for and **what you can expect in terms of side effects**. Depending on your preferences, we have a number of options available to provide medication information, including paper handouts, videos, and this medication card [take card off of wall]. This card has some brief information about the purpose and side effects of common medications you may receive during your stay, and you may see your nurse using it when they give you your medicines. To access the medication videos, you can press the “home” button on your remote, or ask your nurse for further assistance. Additionally, there is a pharmacist who is a part of your healthcare team who is happy to speak with you. What questions do you have right now that I can answer or relay to the pharmacist?”
Pharmacy Ambassador Pilot

• Completed in 16 units covered by Adult Inpatient Pharmacy
• 1,609 patients visited over 3 months
• 20% of patients visited had questions for the ambassador
Types of Questions Asked by Patients

- Non-med related
- Duration
- Drug interactions
- Cost/Acquisition
- Dosing/Admin
- Alternative options
- Purpose
- Side Effects
- Home/Inpt/DC meds

The graph shows the frequency distribution of different types of questions asked by patients, with 'Home/Inpt/DC meds' being the most common and 'Non-med related' the least common.
HCAHPS: AIP Ambassador Pilot

<table>
<thead>
<tr>
<th>HCAHPS Question</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>75.94</td>
<td>78.69</td>
</tr>
<tr>
<td>Side effects</td>
<td>48.8</td>
<td>53.01</td>
</tr>
</tbody>
</table>

% Top Box Responses

Legend:
- Light blue: Pre
- Dark blue: Post
Group Activity

• Brainstorm education activities that your Department of Pharmacy could champion
Leveraging the Electronic Medical Record to Optimize Education Delivery within the Pharmacy Team
Ambassador Patient Identification

- List specific to student assigned unit/service(s)
- “Days in Unit” allows student to quickly identify target patients
- “Pharmacy Education” allows easy identification of completed patients
Ambassador Documentation

- “Education Activity” in Epic vs. progress notes
- Custom teaching point
Ambassador Visit Tracking

• **Daily tracking**
  – “Pharmacy Education” column

• **Longitudinal tracking**
  – Data server pulls Pharmacy Ambassador Program teaching “Points”
Ambassador Summary

Improvements
• Streamlined mechanism for student identification of patients
• Ease of data acquisition from system

Continued Optimization
• Customized “point” for ambassador activity
• Internal communication method for patient needs within EMR
Targeted Medication Education

- Dual antiplatelet therapy
- Insulin
- Multi-dose inhalers
- Anticoagulants
- Opioids
- Complex bowel regimens

- Chemotherapy-induced nausea and vomiting
- Myeloid growth factors
- Immunosuppression for BMT patients
- Infection prophylaxis for leukemia and BMT patients
Identification of Newly Initiated High-Risk Medications

1. Provider places order
2. Verifying Pharmacist identifies medication as an education target
3. Verifying Pharmacist reviews prior to admission list
   - Medication is a home medication
     - Proceed with order verification
   - Medication is not on home medication list
     - Open I-vent
       1. I-vent type: Patient Education
       2. I-vent subtype: Medication Education
Pharmacist Workstation Cues

- Signs posted next to and on pharmacist workstations with target meds and key workflow steps
Streamlining Access to PTA List
Leveraging Side Bar for I-Vent Entry

- Allows for entry of I-Vent while on order verification screen
- Minimizes distraction during order verification
### Deploying Education Teams

- Created I-Vent type and subtypes specifically for education
- List functionality allows for easy identification of patients
- Team structure determined by each pharmacy area

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Primary Team</th>
<th>Patient Location</th>
<th>Patient Education I-Vents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beacon Validation, Ccuadmittest</td>
<td>JHH NELSON 6 676A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge, Demo</td>
<td>JHH EEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hhval, James</td>
<td>JHH BLALOCK MRI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jen, Hopkins</td>
<td>JHH NELSON 6 659B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orders, Goldenstate</td>
<td>JHH NELSON 6 674A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orders, Warriors</td>
<td>JHH NELSON 6 678A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pochobob, Antietamcreek</td>
<td>JHH EEG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test, Dctransportone</td>
<td>JHH NELSON 6 639A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test, Dctransporttwo</td>
<td>JHH CARDIAC CT SCAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train, Madelyn</td>
<td>JHH ZAYED IR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport, Test</td>
<td>JHH EMERGENCY MEDICINE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tstcuraspan, Patientid</td>
<td>JHH NELSON 6 643A</td>
<td></td>
<td></td>
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<tr>
<td>Willow, Jhh Amy</td>
<td>JHH NELSON 6 637A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow, Jhh Lonnie</td>
<td>KKI BROADWAY</td>
<td></td>
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</tr>
</tbody>
</table>
Communication with Education Team Members

- Created free text column to make communication easy
- Con: no time stamp or identification of person leaving comment

<table>
<thead>
<tr>
<th>Patient Education I-Vents</th>
<th>Patient Education Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patient is being discharged Wednesday, please counsel on Lantus on Tuesday, be sure that wife is present as well, will arrive after 1pm Tues. Assigned to: John</td>
</tr>
</tbody>
</table>
• Once patient is educated, I-Vent must be closed and progress note entered

• Progress note creation via I-Vent decreases number of clicks

• Closed I-Vents key productivity metric
# Viewing I-Vent Reports

- **Medication Education**
  - **Status**: Closed
  - **Pharmacy**: JHH ADULT INPATIENT PHARMACY [1084014]
  - **Patient**: JHH NELSON S
  - **I-Vent Department**: JHH NELSON S
  - **Meds**: ASPRIN 81 MG CHEWABLE TABLET [675], TICAGRELOR 96 MG TABLET [110427]
  - **Intervention Scratch Notes**: Dual antiplatelet therapy of Asprin and Ticagrelor
  - **Intervention Documentation**: DUNKLEY, KISHAA 4/26/2017 17:11
  - The patient was educated on the safe use of dual antiplatelet therapy (Asprin & Ticagrelor). Education included: mechanism of action, indication, missed doses, factors influencing drug-drug interactions, signs and symptoms of bleeding and clotting, and when to - View I-Vent for complete documentation

- **Open**
  - **Pharmacy**: JHH WEINBERG ONCOLOGY PHARMACY [1084016]
  - **Patient**: JHH WEINBERG SC
  - **Meds**: SIROLIMUS 1 MG/ML ORAL SOLUTION [26338]
  - **Intervention Scratch Notes**: [Information not visible]
  - **Intervention Documentation**: Patel, Shafali 0
### Longitudinal Reporting

#### Patient Education iVents

<table>
<thead>
<tr>
<th>By iVent Subtype</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Education</td>
<td>2,252</td>
</tr>
<tr>
<td>Null</td>
<td>123</td>
</tr>
<tr>
<td>Patient Request</td>
<td>27</td>
</tr>
<tr>
<td>Adherence Counseling</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
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<tr>
<td>Glucometer Education</td>
<td>12</td>
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</table>

#### Therapeutic Class

<table>
<thead>
<tr>
<th>By Therapeutic Class</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>ANTICOAGULANTS</td>
<td>1,189</td>
</tr>
<tr>
<td>IMMUNOSUPPRESSANTS</td>
<td>458</td>
</tr>
<tr>
<td>Null</td>
<td>439</td>
</tr>
<tr>
<td>ANTIHYPERGLYCEMICS</td>
<td>306</td>
</tr>
<tr>
<td>ANTIBIOTICS</td>
<td>160</td>
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<tr>
<td>ANTIASTHMATICS</td>
<td>122</td>
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</tbody>
</table>

#### By Medication

<table>
<thead>
<tr>
<th>By Medication</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null</td>
<td>432</td>
</tr>
<tr>
<td>WARFARIN 5 MG TABLET</td>
<td>208</td>
</tr>
<tr>
<td>INSULIN GLARGINE 100 UNIT/ML</td>
<td>197</td>
</tr>
<tr>
<td>MYCOPHENOLATE MOFETIL 500 (TABLET)</td>
<td>191</td>
</tr>
<tr>
<td>TACROLIMUS (GENERIC) 1 MG CAPSULE</td>
<td>125</td>
</tr>
<tr>
<td>WARFARIN 2.5 MG TABLET</td>
<td>124</td>
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</tbody>
</table>

#### By Department

<table>
<thead>
<tr>
<th>Department</th>
<th>Count</th>
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<tbody>
<tr>
<td>JHH ZAYED 9W</td>
<td>286</td>
</tr>
<tr>
<td>JHH MEYER 8</td>
<td>277</td>
</tr>
<tr>
<td>JHH ZAYED 10W</td>
<td>259</td>
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<tr>
<td>JHH NELSON 7</td>
<td>162</td>
</tr>
<tr>
<td>JHH BLOOMBERG 5S</td>
<td>156</td>
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<tr>
<td>JHH NELSON 3</td>
<td>146</td>
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</table>

#### Autoclose on DC

<table>
<thead>
<tr>
<th>Department</th>
<th>July 2017</th>
<th>August 2017</th>
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<tbody>
<tr>
<td>AIP</td>
<td>20.9%</td>
<td>15.0%</td>
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<tr>
<td>CCS</td>
<td>61.0%</td>
<td>38.2%</td>
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<tr>
<td>Pediatrics</td>
<td>73.3%</td>
<td>150.0%</td>
</tr>
<tr>
<td>Weinberg</td>
<td>32.0%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>
Longitudinal Reporting

Pharmacy Ambassador Program (PAP)
PAP Visits by Division (Running Total)

<table>
<thead>
<tr>
<th></th>
<th>Jan 17</th>
<th>Feb 17</th>
<th>Mar 17</th>
<th>Apr 17</th>
<th>May 17</th>
<th>Jun 17</th>
<th>Jul 17</th>
<th>Aug 17</th>
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</thead>
<tbody>
<tr>
<td>AIP</td>
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<td>14.3%</td>
<td>13.5%</td>
<td>10.8%</td>
<td>23.2%</td>
<td>34.2%</td>
<td>36.5%</td>
<td>39.2%</td>
</tr>
<tr>
<td>CCS</td>
<td>15.7%</td>
<td>23.0%</td>
<td>22.5%</td>
<td>19.2%</td>
<td>41.0%</td>
<td>44.9%</td>
<td>44.5%</td>
<td>30.8%</td>
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<tr>
<td>Weinberg</td>
<td>45.9%</td>
<td>30.4%</td>
<td>7.1%</td>
<td>9.3%</td>
<td>41.0%</td>
<td>29.2%</td>
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<td>9.2%</td>
<td>3.6%</td>
<td>11.7%</td>
<td>10.7%</td>
<td>12.2%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
EHR Key Components

- Unit/service specific lists
- “Flag” in system to identify high-risk meds
- Visual communication of both to be completed and completed tasks
- Ability to easily export productivity measures for reporting purposes
Standardized Education Summary

**Improvements**
- Involvement of all pharmacy team members
- Transparency of education needs
- Ease of reporting pharmacy team medication education

**Continued Optimization**
- Automatic flag for newly initiated medications
- Single location for multidisciplinary documentation
- Automatic close of I-Vent upon documentation
Group Activity

• Given the information shared, discuss 2-3 optimizations that could be made to your EMR to improve Department of Pharmacy delivery of medication education at your institution