LOWER HOSPITAL READMISSIONS THROUGH MEDICATION MANAGEMENT PARTNERSHIP'S

NOVEMBER 18, 2015

OBJECTIVES

• Understand potential implications of poor medication management during transitions of care and the impact it can have on hospital readmissions.
• Examine the importance of collaboration and partnership between healthcare professionals and healthcare organizations in order to improve patient outcomes and reduce hospital readmissions by improving medication management.
• Learn about programs and collaborative work being developed to improve medication management, reduce hospital readmissions and improve overall patient outcomes.

THRIFTY WHITE PHARMACY

95+ stores located throughout the Midwest

THRIFTY WHITE PHARMACY
The ability to remain independent depends largely on a patient’s ability to manage their medication regimen.

Non-adherence to medication regimens is a major cause of nursing home placement of frail older adults.

Lewis A. Non-compliance is a $100 billion problem. The Remington Report. JAMS 7(4):44-5.
Medication Management Concerns

- Poor medication adherence results in 33% to 69% of medication-related hospital admissions in the United States.\(^4\)
- Approximately ½ of adults experience a medical error after hospital discharge and 19-23% experience an adverse event which is most commonly related to medications.\(^5\)
- 1/5 Medicare patients - A significant number are medication related.\(^6\)

Costs of Readmissions

- Readmissions range from $15 billion to $25 billion per year.\(^1\)
- Medicare payment Advisory Commission (MedPAC) concluded 2/3 of readmissions were preventable representing $12 billion in Medicare spending.\(^2\)
- Medicare costs for SNF-related hospital readmissions comprise about 20% of the total cost of all Medicare readmissions.
- MedPAC estimates that readmissions cost about $7,200 per case.
- Cost of hospital admissions related to medication adherence ≈ $100 billion/yr.\(^3\)

Penalties of Readmissions

- Medicare payments reduced for hospitals.
  - 1% reduction in 2012 -- up to 3% reduction in 2015\(^7\)
  - SNF Value-Based Purchasing Program: Included in the “Protecting Access to Medicare Act of 2014”\(^8\)
  - Readmission reduction incentive program for SNFs.
    - Establishment of a readmission performance standard.
    - Medicare payment rates will be based on performance beginning 10/1/18.
    - SNFs with highest rankings receive the highest incentive payments. SNFs with the lowest rankings receive the lowest (zero) incentive payments.
UNDERSTANDING MEDICATION MANAGEMENT AND READMISSIONS

REDUCING READMISSION CAMPAIGN

5 key areas of reducing hospital readmissions
1. Comprehensive discharge planning
2. Medication management
3. Patient and family engagement
4. Transition care support
5. Transition communications

MEDICATION MANAGEMENT

Evaluation
- Indication
- Administration
- Monitoring
- Dose/Duplication
- Duration

Handling
- Storage
- Accountability
- Procurement
- Other
MEDICATION INDICATION

Presence → Accurate → Location

MEDICATION ADMINISTRATION

1. Resident
2. Mediation
3. Dose
4. Route
5. Time
6. Documentation
7. Reason
8. Response

ADMINISTRATION PROBLEMS

Timing, Crushing or Chewing, Technique
MEDICATION MONITORING

Intended effect

Side effect

MEDICATION DOSE & DUPLICATION

Dose needs to be listed with order
- Eye drops; inhaler;

Dosing Range
- AVOID... if used:
  - Consistent parameters should be established
  - Dose must be documented

Poly-pharmacy
- Multiple psychotropic medications
- Multiple PRN medications (psychotropics, analgesics)
- Anticholinergics

DOSE/DUPLICATION - FURTHER DISCUSSION

"Apparently, too much of a good thing is a bad thing."
ANTICHOLINERGIC MEDICATIONS

Anticholinergic Side Effects

Rating scale of 1, 2, or 3
1=minimal ACH activity
3=significant ACH activity

ANTICHOLINERGIC COGNITIVE BURDEN LIST (ACB)

Score 1
- Alprazolam (Xanax)
- Furosemide (Lasix)
- Metoprolol (Lopressor)
- Ranitidine (Zantac)
- Trazodone
- Warfarin (Coumadin)

Score 2
- Loratadine (Claritin)
- Cetirizine (Zyrtec)
- Cyclobenzaprine (Flexeril)
- Tiotropium (Spiriva)
- Carbamazepine (Tegretal)
- Oxcarbazepine (Trileptal)

Score 3
- Amitriptyline (Elavil)
- Olanzapine (Zyprexa)
- Quetiapine (Seroquel)
- Benztropine (Cogentin)
- Diphenhydramine (Benadryl)
- Oxybutynin (Ditropan)
- Betaxolol (Betoptic)

CASE STUDY: 1

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose/route</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digoxin</td>
<td>0.125mg</td>
<td>Daily</td>
</tr>
<tr>
<td>Furosemide</td>
<td>40mg</td>
<td>Daily</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>5mg</td>
<td>Daily</td>
</tr>
<tr>
<td>Carbamazepine</td>
<td>200mg</td>
<td>Three time daily</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>25mg</td>
<td>QHS PRN</td>
</tr>
<tr>
<td>Xalatan Ophthalmic</td>
<td>1 g t b o both eyes</td>
<td>QHS</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>20mg</td>
<td>Daily</td>
</tr>
<tr>
<td>Norvasc</td>
<td>10mg PO</td>
<td>QD</td>
</tr>
<tr>
<td>Timosulfate (Zestor)</td>
<td>40mg PO</td>
<td>QD</td>
</tr>
<tr>
<td>Metoprolol Succ.</td>
<td>100mg PO</td>
<td>Daily</td>
</tr>
<tr>
<td>Oxybutynin ER</td>
<td>10mg</td>
<td>Daily</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>5mg</td>
<td>Q4-6hrs PRN</td>
</tr>
<tr>
<td>Zantac</td>
<td>300mg PO</td>
<td>Twice Daily</td>
</tr>
<tr>
<td>Albuterol Inhaler</td>
<td>2 puffs</td>
<td>As needed PRN</td>
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CASE STUDY: 1

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose/route</th>
<th>Anticholinergic score</th>
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<td>Digoxin</td>
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<td>1</td>
</tr>
<tr>
<td>Furosemide</td>
<td>40mg</td>
<td>1</td>
</tr>
<tr>
<td>Zolpidem</td>
<td>15mg</td>
<td>3</td>
</tr>
<tr>
<td>Carbenzepine</td>
<td>200mg</td>
<td>2</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>25mg</td>
<td>3</td>
</tr>
<tr>
<td>Paracetamol</td>
<td>20mg</td>
<td>3</td>
</tr>
<tr>
<td>Metoprolol Succ.</td>
<td>100mg PO</td>
<td>1</td>
</tr>
<tr>
<td>Oxybutynin ER</td>
<td>10mg</td>
<td>3</td>
</tr>
<tr>
<td>Ranitidine</td>
<td>150mg PO</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Score: 18

MEDICATION MANAGEMENT - DURATION

How Many Medications are indicated for... The Rest of Your Life?

DURATION - FURTHER DISCUSSION

DEMENTIA

Antidepressants Antipsychotics Hypnotics Cognitive enhancers

Cough, Cold Allergy Meds

Antihistamines Eye drops

Urinary incontinence

Antibiotic prophylaxis
# AS NEEDED “PRN” ORDERS

<table>
<thead>
<tr>
<th>Avoid Multiple PRNs same condition</th>
<th>Lorazepam 0.5mg 1-2 tabs Q4-6hrs PRN anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid Dosing Ranges</td>
<td>Seroquel 25mg-50mg Q4hrs PRN anxiety</td>
</tr>
<tr>
<td></td>
<td>Hydrocodone/APAP 5/325 1-2 tabs Q4-6hrs PRN</td>
</tr>
<tr>
<td></td>
<td>Oxycodone/APAP 5/325 1-2 tabs Q4-6hrs PRN</td>
</tr>
</tbody>
</table>

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# MEDICATION HANDLING

**Med Room and Carts**
- Locked, clean, proper temperature
- Multi-dose vials dated
- Refrigerator 36-46 degrees F
- Internal and External stored separately
- No open UD packets
- NO “taped” blister cards

**Med Accountability**
- Prescribing
- Preparation/dispensing
- Procurement/storage
- Administration
- Disposal

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# MEDICATION ACCOUNTABILITY (BEST PRACTICE SUGGESTIONS)

- Prescribing
- Procurement
- Storage and security
- Preparation and dispensing
- Administration
IMPROVE MEDICATION MANAGEMENT TO REDUCE HOSPITAL READMISSIONS
A CHANGING PARADIGM

MEDICATION MANAGEMENT DURING TRANSITIONS

Home | Hospital | Long Term Care | Home

Ongoing Medication Review/Evaluation

Changing Paradigm

Full Circle Care Coordination
Prospective Medication Review
Pharmacy evaluating the patient's medication history
SNF admission decision - facility sends to pharmacy:
1. Hospital Medication List or interagency transfer form [containing pertinent information of patient's hospital stay]
2. Anticipated admission date/time
Pharmacy evaluates medication orders and notifies facility of medication therapy concerns
Facility communicates with admitting physician or hospitalist for follow-up action.
PROSPECTIVE MEDICATION REVIEW:
JANE DOE

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose/Route</th>
<th>Frequency</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyburide</td>
<td>5mg PO</td>
<td>BID</td>
<td>DM</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>25mg PRN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isosorbide</td>
<td>10mg PO</td>
<td>BID</td>
<td></td>
</tr>
<tr>
<td>Diazepam (Valium)</td>
<td>5mg PO BID PRN</td>
<td>Anxiety</td>
<td></td>
</tr>
<tr>
<td>Lisinopril</td>
<td>150 SQ</td>
<td>QHS</td>
<td>DM</td>
</tr>
<tr>
<td>Xalatan Ophthalmic</td>
<td>1 gtt QHS</td>
<td>Glaucoma</td>
<td></td>
</tr>
<tr>
<td>Celecoxib</td>
<td>100mg PO</td>
<td>QD</td>
<td>Depression</td>
</tr>
<tr>
<td>Norvasc</td>
<td>10mg PO</td>
<td>QD</td>
<td>CV insufficiency</td>
</tr>
<tr>
<td>Simvastatin (Zocor)</td>
<td>40mg PO</td>
<td>Hyperlipidemia</td>
<td></td>
</tr>
<tr>
<td>Lantus</td>
<td>1500 PO</td>
<td>QD</td>
<td>DM</td>
</tr>
<tr>
<td>Xalatan Ophthalmic</td>
<td>1 gtt QHS</td>
<td>Glaucoma</td>
<td></td>
</tr>
<tr>
<td>Celexa</td>
<td>30mg PO</td>
<td>QD</td>
<td>Depression</td>
</tr>
<tr>
<td>Norvasc</td>
<td>10mg PO</td>
<td>QD</td>
<td>CV insufficiency</td>
</tr>
<tr>
<td>Metoprolol</td>
<td>200mg PO</td>
<td>QD</td>
<td>HTN</td>
</tr>
<tr>
<td>Hydrocodone/APAP</td>
<td>1-2 tabs PO</td>
<td>Q4d-PRN</td>
<td>Pain</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>5-10mg PO</td>
<td>Q4d-PRN</td>
<td>Pain</td>
</tr>
<tr>
<td>Zantac</td>
<td>150mg PO</td>
<td>BID</td>
<td></td>
</tr>
<tr>
<td>Combivent</td>
<td>Inhaler</td>
<td>Q2 PRN</td>
<td>COPD</td>
</tr>
</tbody>
</table>

MEDICATION RECONCILIATION AND MEDICATION REGIMEN REVIEW

Thrifty White Care Coordination

76% of recommendations made by consultant pharmacists are implemented by prescribers and can affect their future prescribing decisions.

- Thrifty White Consultant Pharmacists are specialists in "Senior Care" pharmacy
- Services include, but not limited to:
  - Medication Regimen Review of each patient
  - Policy and Procedure review
  - Facility audits
  - Quality Improvement Reports
  - Controlled medication accountability guidance
  - Educational opportunities
  - Review and evaluation of medication errors and adverse drug reactions (upon request)

100% of facilities would recommend our consulting services to others. (Results from a 2014 Survey)
CONSULTING: MEDICATION REVIEW

- Jane Doe (BD: 5/33; Weight: 125lbs)
  - BP: 100/50
  - Serum Creatinine: 2.1
  - History of falls
  - Confusion
  - Dementia

Can further medication related problems be identified?

JANE DOE (BD: 5/33; WEIGHT: 125LBS) [BP: 100/50; SERUM CREAT: 2.1; HX FALLS, CONFUSION]

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<tbody>
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<td>Glyburide</td>
<td>5mg PO</td>
<td>BID</td>
<td>DM</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>25mg</td>
<td>Q6hrs PRN</td>
<td>Allergy/reaction</td>
</tr>
<tr>
<td>Isosorbide mono.</td>
<td>10mg PO</td>
<td>BID</td>
<td>Angina, CAD</td>
</tr>
<tr>
<td>Duacapem (Valium)</td>
<td>5mg PO</td>
<td>BID PRN</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Lantus</td>
<td>15u SQ</td>
<td>QHS</td>
<td>DM</td>
</tr>
<tr>
<td>Xalatan Ophthalmic</td>
<td>1 gtt OU</td>
<td>QHS</td>
<td>Glaucoma</td>
</tr>
<tr>
<td>Celexa</td>
<td>10mg PO</td>
<td>QD</td>
<td>Depression</td>
</tr>
<tr>
<td>Norvasc</td>
<td>10mg PO</td>
<td>QD</td>
<td>HTN</td>
</tr>
<tr>
<td>Metronidazole (ripar)</td>
<td>10mg</td>
<td>QD</td>
<td>Hyperglycemia</td>
</tr>
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<td>Metoprolol Succinate</td>
<td>100mg PO</td>
<td>QD</td>
<td>HTN</td>
</tr>
<tr>
<td>Hydrocodone/AAP</td>
<td>5/325 - 1 tab PO</td>
<td>Q4hrs PRN</td>
<td>Pain</td>
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<tr>
<td>Acetaminophen</td>
<td>650mg PO</td>
<td>Q6hrs PRN</td>
<td>Pain</td>
</tr>
<tr>
<td>Exact</td>
<td>100mg PO</td>
<td>BID</td>
<td>GERD</td>
</tr>
<tr>
<td>Spiriva</td>
<td>1 puff</td>
<td>QD</td>
<td>COPD</td>
</tr>
</tbody>
</table>

MEDICATION RECONCILIATION AND MEDICATION REGIMEN REVIEW
• Medication reconciliation and patient education at discharge
• Engage patient and family in the overall understanding of medications and the importance of compliance
• Patient satisfaction survey
• Follow up phone calls via Thrifty White Patient Care Center at 72 hours and 3 weeks after discharge

RESULT: Reduction in hospital readmissions and improved patient satisfaction

<table>
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<th>Indication</th>
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<tbody>
<tr>
<td>Glyburide</td>
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<td>PO</td>
<td>BID</td>
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<td>Zyrtec</td>
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<td>QD PRN</td>
</tr>
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<td>Losartan</td>
<td>100mg</td>
<td>PO</td>
<td>BID</td>
</tr>
<tr>
<td>Lantus</td>
<td>15mg</td>
<td>SQ</td>
<td>QHS</td>
</tr>
<tr>
<td>Cefoxa</td>
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<td>PO</td>
<td>QD</td>
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<td>PO</td>
<td>QD</td>
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<tr>
<td>Metronidazole</td>
<td>10mg</td>
<td></td>
<td>QD</td>
</tr>
<tr>
<td>Metoprolol</td>
<td>100mg</td>
<td>PO</td>
<td>QD</td>
</tr>
<tr>
<td>Nitroprusside</td>
<td>10mcg</td>
<td>SQ</td>
<td>QHS</td>
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<tr>
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<td>PO</td>
<td>QD PRN</td>
</tr>
<tr>
<td>Zocor</td>
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<td>QD</td>
</tr>
<tr>
<td>Spiriva</td>
<td>1 puff</td>
<td></td>
<td>QD</td>
</tr>
</tbody>
</table>

Thrifty White Care Coordination

**JANE DOE (BD: 5/33; WEIGHT: 125LBS)**

[BP: 100/50; SERUM CREAT: 2.1; HX FALLS, CONFUSION]

**PMR Cost Savings for facility: November-March**
• 1298 PMRs involving 23351 medications
• 432 resulted in discontinuation or a more cost effective medication

Facility Count TOTALS*

<table>
<thead>
<tr>
<th>Facility</th>
<th>Count</th>
<th>Total **</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE</td>
<td>411</td>
<td>$1,717.81</td>
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<tr>
<td>TWO</td>
<td>116</td>
<td>$217.19</td>
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<tr>
<td>THREE</td>
<td>37</td>
<td>$774.10</td>
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<tr>
<td>FOUR</td>
<td>9</td>
<td>$164.91</td>
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<tr>
<td>FIVE</td>
<td>15</td>
<td>$113.50</td>
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<tr>
<td>SIX</td>
<td>77</td>
<td>$978.00</td>
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<tr>
<td>SEVEN</td>
<td>32</td>
<td>$577.40</td>
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<td>EIGHT</td>
<td>37</td>
<td>$534.60</td>
</tr>
<tr>
<td>NINE</td>
<td>17</td>
<td>$830.09</td>
</tr>
<tr>
<td>TOTAL</td>
<td>432</td>
<td>$30,233.72</td>
</tr>
</tbody>
</table>

Average $69.99/patient/month
• >$2.25/day

*Costs are reflected as a 1 time fill

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Thrifty White Care Coordination

Discharge-Total

<table>
<thead>
<tr>
<th>Facility</th>
<th>Discharges Initiated</th>
<th>Discharges Taken Place</th>
<th>Discharges Canceled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility ONE</td>
<td>27</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>TWO</td>
<td>40</td>
<td>34</td>
<td>6</td>
</tr>
<tr>
<td>THREE</td>
<td>22</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>FOUR</td>
<td>20</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>FIVE</td>
<td>5</td>
<td>5</td>
<td>0</td>
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<tr>
<td>SIX</td>
<td>68</td>
<td>61</td>
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<tr>
<td>SEVEN</td>
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<td>25</td>
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<td>30</td>
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</tr>
<tr>
<td>NINE</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTALS</td>
<td>246</td>
<td>208</td>
<td>38</td>
</tr>
</tbody>
</table>

Thrifty White Care Coordination

Discharge-Initial Survey

- Did the pharmacy consultation improve your understanding regarding what your medications are for?
  - Yes 86.06%
  - No 6.25%
  - N/A 7.69%
- Did the pharmacy consultation improve your understanding regarding how to correctly take your medications?
  - Yes 88.46%
  - No 6.73%
  - N/A 4.81%
- Did the pharmacy consultation improve your understanding regarding the importance of taking your medications?
  - Yes 85.10%
  - No 5.29%
  - N/A 9.62%
- Was the pharmacy consultation helpful?
  - Yes 87.02%
  - No 5.77%
  - N/A 7.21%

Thrifty White Care Coordination

Discharge follow up

- 72 hour
  - Did you get ahold of the patient?
    - Yes 84.16%
    - No 15.84%
- 3 week
  - Did you get ahold of the patient?
    - Yes 79.14%
    - No 20.86%
  - Was the patient readmitted to the hospital?
    - Yes 7.49%
    - No 92.51%
• Of completed Discharge Sessions:
  • 253 Drug Therapy problems identified
  • 111 - Potential excess dose, duration or duplication of therapy
  • 4 - Absence of monitoring or assessment data
  • 9 - Medication administration problem
  • 121 - Suggest adding medication, increasing dose or alternative medication
  • 6 - Medication need and/or benefit documentation lacking
  • 2 - Other

SUMMARY

Sound medication management can reduce overall healthcare expenditures and reduce unnecessary hospital readmissions. Allowing the patient to age in place and thus increasing marketability and attractiveness of facility as a preferred provider and referral center.

• 1 Intervention made by a pharmacist can result in tens of thousands of dollars of savings in total healthcare expenditure
  • Preventing a COPD exacerbation > $10,000
  • Preventing a bowel obstruction > $38,000
  • Preventing a hip fracture > $40,000

SUMMARY

• Readmission prevention strategies are based on common sense... the hard part is creating integration across different healthcare professionals, institutions and organizations.
QUESTIONS?

J JOE LITSEY, PHARM.D. C.G.P.
JLITSEY@THRIFTYWHITE.COM
612-965-4883

References