The Changing Face of Pharmacy: Advancement of Pharmacist Services in Rhode Island

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Agenda

- Background
  - Scope of the problem
  - Pharmacist training and expertise

- The Changing Face of Pharmacy
  - Community pharmacy
  - Hospital pharmacy
  - Ambulatory Care
    - Primary Care: Coastal Medical
    - Specialists: University Medicine
Scope of the Problem

“Pharmaceuticals are the most common medical intervention, and their potential for both help and harm is enormous. Ensuring that the American people get the most benefit from advances in pharmacology is a critical component of improving the national health care system.”

The Institute of Medicine (IOM)¹

“Drugs Don’t Work in People that Don’t Take Them”
C. Everett Koop, MD
Former Surgeon General


Annual US Costs Due to Incorrect Use of Medications ($177.4 B)
The $200-300 Billion problem

Exhibit 1: Avoidable U.S. healthcare costs add up to $213 billion

<table>
<thead>
<tr>
<th>Nonadherence</th>
<th>Delayed evidence-based treatment practice</th>
<th>Antibiotic misuse</th>
<th>Medication errors</th>
<th>Suboptimal generics use</th>
<th>Mismanaged polypharmacy in the elderly</th>
<th>Total avoidable costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>105.4</td>
<td>39.5</td>
<td>35.1</td>
<td>20.0</td>
<td>11.9</td>
<td>1.3</td>
<td>213.2</td>
</tr>
</tbody>
</table>

Source: Avoidable costs in healthcare study


The Facts

- 75% of all healthcare costs are related to chronic disease
- 5% of patients account for 50% cost
- Appropriate use of medications can
  - Improve health
  - Enhance quality of life
  - Increase productivity
“The Invisible Epidemic”
Medication Nonadherence

- 50% of patients take their meds as prescribed
- Costs: ~ $177 billion/year (direct & indirect)
- Consequences:

<table>
<thead>
<tr>
<th>Disease progression</th>
<th>Disease complications</th>
<th>Reduced functional abilities</th>
<th>Lower quality of life</th>
<th>Premature death</th>
</tr>
</thead>
</table>

- Non-adherence affects people of all ages, both genders, and is just as likely to involve high-income, well-educated people as those at lower socioeconomic levels

Pharmacists = Medication Experts

- Education and Training
  - Entry-level 6-yr degree (PharmD) 2 yr pre-pharmacy + 4 yr pharmacy curriculum
  - 2-3 yrs Pharmacotherapeutics
  - 1.5 yr Drug Info/Literature Evaluation
  - 3 yrs integrated pharmacy problem-solving seminars
  - 4 yrs patient-care experience + clinical rotations

- Postgraduate Residencies and Fellowships (optional)

- Board-certified specialties (optional)
  - Ambulatory Care, Geriatrics, Pharmacotherapy, Nutrition Support, Psychopharmacy, Oncology, Nuclear Pharmacy
Collaborating with pharmacists is key to achieving IHI: Triple Aim

- Preventative care & Immunizations
- Needs drug therapy
- High risk medications
- Medication non-adherence
- Patient satisfaction
- Health outcomes
- Safety
- Quality
- Cost effective alternatives/Comparative efficacy
- Generic utilization
- Reduction in medication-related adverse events
- Reduced hospitalizations

What is going on in Rhode Island currently?

- Payer funded pharmacy programs are evolving
  - BCBSRI
  - United Health Care
  - Neighborhood Health
  - Accountable Care Organizations
COMMUNITY/RETAIL PERSPECTIVE

■ Medication Therapy Management
  ❑ Outcomes MTM
  ❑ Mirixa

■ Medication Quality Measures
  ❑ High risk medications
  ❑ Diabetes treatment
  ❑ Medication adherence
    ■ Diabetes (oral medications)
    ■ Hypertension
    ■ Cholesterol

How to Expand Opportunities for Pharmacists?

1. Update the laws to improve opportunities/remove barriers
2. Secure funding sources for sustainable payment models

Some suggestions:
- Recognize pharmacists as providers
- Collaborative practice agreements
- Perform CLIA waived tests/limited function laboratory tests
HOSPITAL INITIATIVES

Transitions of Care (TOC)

Why is there such a focus in healthcare on TOC?
- $25-45 billion in wasteful spending
- Avoidable

What is being done in RI?
- TOC Pharmacy Services in RI
  - Collaboration with Lifespan / Coastal
    - Patients discharged to home from hospital
      - High readmission risk
    - Goal is to prevent readmissions
Antimicrobial Stewardship

Why is this ASP important?

- 50% of antibiotic use inappropriate in hospitals, 70% in LTCF = Antibiotic Resistance

  - Consequences:
    - Increased morbidity
    - Increased mortality
    - Increased healthcare costs

  - Rhode Island Antimicrobial Stewardship Task Force

  - Hospital ASP Programs

### Table 1: Hospital bloodstream infections in New England states, first quarter of 2015

<table>
<thead>
<tr>
<th>State</th>
<th>Observed Cases</th>
<th>Predicted Cases</th>
<th>SIR</th>
<th>95% CI</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>23</td>
<td>37.4</td>
<td>0.61</td>
<td>0.385-0.923</td>
<td>4</td>
</tr>
<tr>
<td>Maine</td>
<td>65</td>
<td>97.9</td>
<td>0.68</td>
<td>0.410-0.947</td>
<td>8</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>77</td>
<td>94.9</td>
<td>0.81</td>
<td>0.482-1.317</td>
<td>96</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>853</td>
<td>840.0</td>
<td>1.02</td>
<td>0.984-1.016</td>
<td>36</td>
</tr>
<tr>
<td>Connecticut</td>
<td>107</td>
<td>105.6</td>
<td>1.00</td>
<td>0.984-1.013</td>
<td>40</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>170</td>
<td>125.2</td>
<td>1.35</td>
<td>1.162-1.578</td>
<td>51</td>
</tr>
</tbody>
</table>

SIR, standardized incidence ratio; CI, confidence interval.

Note: Data from the Hospital Compare Website: https://data.medicare.gov/

Other Initiatives

- Specialty Clinics
  - Hepatitis Clinic
  - Hypertension monitoring

- Retail pharmacy

- ED Pharmacists
  - Medication Reconciliation

- Naroxone program

- BCBS quality outcomes

- VNA
Role of Pharmacist in PCMH (Patient-Centered Medical Homes)

National and Regional Relevance

- PCMH concept introduced to RI in 2008
- Model is centerpiece of Affordable Care Act, 2009
- Meaningful Use
- Accountable Care Organization
- NCQA (National Committee for Quality Assurance) Patient Centered Medical Home certification

Pharmacist integration is more widespread, locally and nationally

They all require:
- A new practice focus on quality outcomes.
- Exchange level data systems to track and report outcomes.
- Care delivery systems require team-based care to achieve outcomes.

www.cms.gov for meaningful use
www.innovation.cms.gov for accountable care organizations
Role of the PCMH Pharmacist

- Medication Therapy Management
- Disease Management
- Safety
- Transitions of Care
- Utilization
- Staff Training

Coastal Medical: A Snapshot

- Founded in 1995 as a group practice with 27 doctors
- Today: a primary care driven ACO
- 84 physicians, 27 advanced practitioners, 21 NCMs, 10 Pharmacists, and 5 Pharmacy Technicians
- Mostly primary care
- 120,000 patients at 20 sites across RI
2015 Care Model

<table>
<thead>
<tr>
<th>PCMH</th>
<th>Population Health Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Team based care</td>
<td>• Team of analysts</td>
</tr>
<tr>
<td>• Enhanced access</td>
<td>• Data management</td>
</tr>
<tr>
<td>• Patient engagement</td>
<td>• Population segmentation</td>
</tr>
<tr>
<td>• Central medication refills</td>
<td>• Portfolio of clinical initiatives</td>
</tr>
</tbody>
</table>

Coastal Medical Pharmacy Services

<table>
<thead>
<tr>
<th>Population Health</th>
<th>Centralized</th>
<th>Office Based Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diabetes Management Program</td>
<td>• Pharmacy Refills and Prior Authorizations</td>
<td>• MTM consults</td>
</tr>
<tr>
<td>• Pain Management</td>
<td>• Medication Reconciliation Staff Training</td>
<td>• Collaborative Disease Management</td>
</tr>
<tr>
<td>• Transitions of Care</td>
<td></td>
<td>• Cardiac Risk Reduction</td>
</tr>
<tr>
<td>• Preventive Care</td>
<td></td>
<td>• Medication Conversion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Safety</td>
</tr>
</tbody>
</table>
What quality measures can pharmacists impact the most?

Pharmacy Quality Metrics

- Over 140 clinical quality measures = **Opportunity!**
- Medication Measures
- Medication reconciliation after admission
  - Developed training program for Medical Assistants
Pharmacy Quality Metrics

- Disease Management Quality Metrics
  - Diabetes measures
  - LDL screening rates for cardiovascular conditions
  - Blood pressure control
- Medication Therapy Management Services
  - MTM visits
  - Targeted medication reviews
  - Pharmacy cost and utilization

Coastal Medical Pharmacy Interventions

<table>
<thead>
<tr>
<th>Pharmacy Interventions</th>
<th>Interventions</th>
<th>Annualized Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statin Conversions</td>
<td>433</td>
<td>$777,228</td>
</tr>
<tr>
<td>Prescription Assistance</td>
<td>61</td>
<td>$145,354</td>
</tr>
<tr>
<td>ARB Switch</td>
<td>95</td>
<td>$114,708</td>
</tr>
<tr>
<td>PPI Switch</td>
<td>70</td>
<td>$107,520</td>
</tr>
<tr>
<td>Discontinue Meds</td>
<td>48</td>
<td>$73,500</td>
</tr>
<tr>
<td>Non-preferred to preferred brand</td>
<td>13</td>
<td>$20,412</td>
</tr>
<tr>
<td>Inhaler Conversions</td>
<td>33</td>
<td>$15,060</td>
</tr>
<tr>
<td>Other</td>
<td>30</td>
<td>$3,948</td>
</tr>
<tr>
<td>Total</td>
<td>733</td>
<td>$1,320,088</td>
</tr>
</tbody>
</table>
Pharmacy Activity 2013

<table>
<thead>
<tr>
<th>Face to Face encounters</th>
<th>Total Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1289</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Telephone Encounters</th>
<th>Total Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7044</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Programs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Conversion Reviews</td>
<td>957</td>
</tr>
<tr>
<td>Care Conferences</td>
<td>1453</td>
</tr>
<tr>
<td>Cardiac Risk Reduction Clinic</td>
<td>2724</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Activity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>13467</td>
</tr>
<tr>
<td>Total/PharmD</td>
<td>3848</td>
</tr>
</tbody>
</table>

Improvements in Quality

ACO Quality Measures for 2014

■ Diabetes A1C <9%
  □ Coastal rate: 9.48%; 90th percentile: 10%

■ Diabetes composite
  □ Coastal rate: 45%; 90th percentile: 36%

■ CAD composite
  □ Coastal rate: 86%; 90th percentile: 80%
Proving the ROI

- Medication Utilization
  - Identified top medications prescribed by cost and volume
  - Identified medications that were clinically appropriate to recommend generic substitution

- Quality Measures
  - 90th percentile for ACO medication measures

- Disease Management
  - Better A1C control in Diabetic population
  - Increased adherence to evidence based recommendations

Patient Experience

“I received some very useful information from my visit and commend Coastal for getting to those over 65 and making a great effort to keep them healthy and informed.”

Answer to question: Did you learn anything new about your medications from the pharmacist? “Very helpful. This was the high point of the visit.”
PCMH Pharmacists in RI

- 2014 BCBS supported the expansion of PCMH Pharmacist Model
  - Rhode Island Primary Care
  - Anchor Medical
  - University Medicine
  - South County Hospital
  - Medical Associates of Rhode Island

- Coastal Medical has supported expansion of Pharmacy services from 3 pharmacists to 11
University Medicine

- Largest non-profit, academic, multi-specialty medical group in Rhode Island
  - ~ 190 physicians
  - Affiliated with Warren Alpert Medical School of Brown University
- Primary Care and Specialty Outpatient Services
- Primary Care Services are offered at 8 locations throughout RI
- Specialties include:
  - Endocrinology
  - Gastroenterology
  - Geriatrics & Palliative Medicine
  - Hematology/Oncology
  - Hospital Medicine
  - Hypertension & Kidney Disease
  - Infectious Disease
  - Pulmonary, Critical Care & Sleep Medicine
  - Rheumatology
  - Travel Medicine Clinic
- UM physicians also lead many inpatient medical services at RIH and TMH

Welcome to the Patient-Centered Medical Neighborhood

http://www.hin.com/infographics/Medical_home_neighborhood_infographic.html
Building a Pharmacy Program for CKD

- CKD patients cost 6 times more than avg patient
  - $22,647 vs. $3,829
- Complications are common in this population
- Co-morbidities are common
  - High Blood Pressure
  - Heart Failure
  - Diabetes
- Early identification of patients with Chronic Kidney Disease and collaboration within the healthcare team (PCP, Nephrologist, NCM, Pharmacist, etc) will lead to better management, reduced complications, improved health outcomes, and reduced costs in this population
  - Project team used EMR to identify population

Incorporating Pharmacists in the Patient-Centered Medical Neighborhood

- 2 Pharmacists practicing at the “top of their license”
- Collaborate with providers to:
  - Identify, resolve and monitor medication use and safety
  - Optimize cost-effectiveness of medications
  - Improve medication compliance and persistence = adherence
  - Perform medication reconciliation and communicate med info to patient, providers, and all other entities in care transitions
- Enhance Access to Care
  - Pharmacists can provide patient services in multiple locations
- Address Health Disparities
  - Health literacy issues
  - Motivational interviewing
Early Lessons Learned

- > 5 physicians involved in a CKD patient’s care
- New to patients but experience/feedback has been overwhelmingly positive
- Avg # drug therapy opportunities identified/encounter= 4
  - Indication: Untreated/undertreated conditions
  - Indication: Unnecessary medications
  - Effectiveness: Changing timing of administration
  - Effectiveness: Suboptimal therapy
  - Safety: Side effect due to drug
  - Safety: Inappropriate dosing based on kidney function
  - Safety: High risk medications
  - Adherence
  - Cost effective therapy
  - Lab monitoring

Establishing/Solidifying the Framework

1) Clinical data-sharing
2) Patient-centered focus
3) Strong community links
4) Carefully managed care transitions
5) Clear agreement on neighbors’ roles
6) Individualized care plans for complex patients
Pharmacists can help patients based on their individual needs

- Simplifying drug therapy
- Organizing medications

- Avoiding medication side effects
- Reducing/managing symptoms

- Reducing med expenses
- Using generic meds

IMPACT OF PHARMACIST SERVICES
Return on Investment

- On average, $16.70 saved for every $1 invested in clinical pharmacy services (review of 104 studies)
  

- Benefit: cost ratio ranged from 1.7:1 - 17.0:1 (literature review)
  

Return on Investment

- Asheville Project ** - Pharmacist MTM program for diabetics saved $1200/pt/yr with improved outcomes
  

  ** Scope of MTM services provided in some programs may differ from the comprehensive framework described and recommended for the PCMH.
Questions??