Population Health: The Role of the Pharmacy and New Opportunities in Practice

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Ambulatory Care Clinical Pharmacist
Mount Sinai Beth Israel

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MTM Clinical Pharmacist
Mount Sinai Beth Israel
Objectives for Pharmacists

1. Describe a general overview of ambulatory practice centered on population health management
2. Discuss key activities and opportunities of the pharmacist role as a population health manager
3. Describe current barriers to initiatives for population health programs
4. Discuss the emerging use and impact of technology in the current healthcare system
5. Identify ways pharmacists can use technology to get involved in providing patient care services
6. Describe best practices in providing patient care through innovative means
7. Identify the role and importance of pharmacy home visits in transitions of care
8. Describe how to implement a Medication Therapy Management (MTM) service model as a part of a home visiting pharmacy service
9. Discuss future prospects for the involvement of pharmacy home visits in population health initiatives
Objectives for Pharmacy Technicians

1. Describe general role of a pharmacy technician in organizations centered on population health
2. Discuss key activities and opportunities of the technician role
3. Discuss current barriers to initiatives for population health programs
4. Discuss the emerging use and impact of technology in the current healthcare system
5. Identify ways pharmacy technicians can use technology to get involved in providing patient care services
6. Describe best practices in providing patient care through innovative means
7. Define the role of pharmacy technicians in a pharmacy home visit program
8. Discuss how to identify patients who may benefit from pharmacy home visits
9. Identify pertinent patient information that should be obtained prior to visit
Population Health
Can Mount Sinai be serious? The answer is a resounding yes. In fact, we couldn’t be more serious.

Mount Sinai’s number one mission is to keep people out of the hospital. We’re focused on population health management, as opposed to the traditional fee-for-service medicine. So instead of receiving care that’s isolated and intermittent, patients receive care that’s continuous and coordinated, much of it outside of the traditional hospital setting.

Thus the tremendous emphasis on wellness programs designed to help people stop smoking, lose weight and battle obesity, lower their blood pressure and reduce the risk of a heart attack. By being as proactive as possible, patients can better maintain their health and avoid disease.

Our Mobile Acute Care Team will treat patients at home who would otherwise require a hospital admission for certain conditions. The core team involves physicians, nurse practitioners, registered nurses, social workers, community paramedics, care coaches, physical therapists, occupational therapists, speech therapists, and home health aides.

Meanwhile, Mount Sinai’s Preventable Admissions Care Team provides transitional care services to patients at high risk for readmission. After comprehensive bedside assessment, social workers partner with patients, family caregivers, and healthcare providers to identify known risks such as problems with medication management and provide continuing support after discharge.

It’s a sweeping change in the way that health care is delivered. And with the new system comes a new way to measure success. The number of empty beds...
Mount Sinai Health Partners (MSHP)

~2,400 full time faculty physicians

About 1,200 voluntary physicians

Integration with ASCs & FQHCs across New York City

7 hospitals spanning Manhattan, Brooklyn, and Queens

Over 300 community locations

Geographic access and coverage across the five boroughs, Long Island, and beyond

Committed to a vision of transforming healthcare in New York towards value-based care and population health
“Health outcomes of a group of individuals, including the distribution of health outcomes within the group”

- Morbidity, mortality
- Health status
- Functional status
- Disease burden
- Behavioral factors
- Metabolic factors

Kindig D, Stoddart G. What is population health?
Population Health

Goal: To provide high-quality healthcare and improve patient satisfaction

- Care provided employing best practices based on current scientific evidence
- Reimbursement based on delivery of efficient care to improve patients’ health
Population Health Capabilities

Management of Population Health Organization

- Technology & Data Management
- Analytics & Reporting
- Physician Engagement
- Clinical Care Delivery Improvement
- Care Management
- Value-Based Contracting
Value-Based Care

Quality

- Clinical gap closures
- Clinically effective care

Cost

- Preventable ED visits and inpatient admissions
- Medication selection

Ongoing health improvement across patient populations
Care Models Before Value-Based Care

- Primary Care
- Specialist
- Care Manager
- Behavioral Health
- Social Services
- Community Providers
- Home Health
- Transportation
- Missing Pharmacist
Need for Change

Nonadherence

- Time
  - Education
- Cost
  - Relationships
  - Patient-Specific Barriers
National Health Expenditure

- **2017 – $3.5 trillion**
  - 17.9% of Gross Domestic Product
  - ↑ Medicare and Medicaid spending – **37% of NHE**
  - ↑ Out of pocket spending – **10% of NHE**
  - ↑ Prescription drug spending

- **Projections**
  - Spending growth ~5.5%/year
  - ↑ Prices for healthcare goods and services
  - Medicare spending > Medicaid, private health insurance

Pharmacy in Population Health

Focus on clinical quality improvements

Accessible chronic disease management resource

Expanded access to primary care
Pharmacy in Population Health

- **Patient-centered medical home**
  - Care coordination through primary care services
  - Comprehensive care
  - Use of technology

- **Pharmacist role in**
  - Medication use
  - Medication adherence
  - Outcomes

Image from: http://www.foma.org/patient-centered-medical-home.html
MSHP Primary Care Pharmacy Services

- Diabetes
- Hypertension
- Asthma/COPD
- Polypharmacy, Medication Reconciliation
- Annual Wellness Visits

CDTM established
MSHP Primary Care Pharmacy Services

Patient Identification
- Provider referrals
- Care coordinator referrals
- Population health patient identification tools

Patient Enrolled
- Patient contacted for scheduling of initial appointment

PharmD Visits
- Initial appointment conducted, follow-ups scheduled and conducted as in-person or telemonitoring visits
MSHP Primary Care Pharmacy Services

- Medication reconciliation and review
  - Updating electronic medical record medication list
- Assessment of current health status
  - Achievement of therapeutic goals
  - Functional status, quality of life
- Identification of preventative care needs
  - Immunizations, screenings, etc.
- Individualized goal-setting
- Care plan preparation and execution
## MSHP Primary Care Pharmacy Services

### Interventions

<table>
<thead>
<tr>
<th>Medication initiation</th>
<th>Patient education: disease state</th>
<th>Medication reconciliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication discontinuation</td>
<td>Patient education: self-management strategies, lifestyle counseling</td>
<td>Telephonic outreach to pharmacy</td>
</tr>
<tr>
<td>Dosage adjustment</td>
<td>Device teaching</td>
<td>Blisterpack, pill tray initiation</td>
</tr>
<tr>
<td>Therapeutic interchange</td>
<td>E-prescribing: new meds &amp; refills</td>
<td>Referrals</td>
</tr>
<tr>
<td>Medication adherence barrier identified &amp; resolved</td>
<td>Medication-related monitoring</td>
<td>Coordination of care</td>
</tr>
</tbody>
</table>
### MSHP Primary Care Pharmacy Services

#### Embedded clinical pharmacy services
- High-volume faculty and resident practice sites
- Large concentration of patients with uncontrolled chronic diseases

#### Clinical support for providers
- Medication management and chronic disease care plan execution
- Clinical coordination across care team members

#### Clinical support for MSHP
- Clinic-based resource for high-risk patients with complex needs
- Greater opportunity for measure achievements and gap closures

#### Support system for patients
- Patients report higher satisfaction when pharmacists are offered as part of their clinical team
### Value-Based Care: Leveraging Pharmacy

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Quality</th>
<th>Patient &amp; Provider Satisfaction</th>
<th>Cost / Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ambulatory Clinical Pharmacists Delivered Support</strong></td>
<td>✓ Medication Optimization ✓ Chronic Disease Management ✓ AWVs* ✓ Complex Medication Reconciliation ✓ Medication Adherence</td>
<td>✓ Improved patient understanding &amp; self-management skills ✓ Personalized patient care experience ✓ Coordination with care management team</td>
<td>✓ Decrease preventable visits related to chronic diseases and complications ✓ MTM services ✓ Medication clinical support</td>
</tr>
</tbody>
</table>

*AWV = Annual Wellness Visit
Technology in Healthcare
Telehealth – Definition

TELEMEDICINE
remote clinical services/consultations involving diagnosis and/or treatment

TELEHEALTH

MOBILE HEALTH
use of mobile and wireless devices to improve health outcomes, health care services, and health research

TELECARE
remote monitoring for care at home

Telehealth – History

- 1948: First Radiological Images Sent Via Telephone
- 1993: Founding of the American Telemedicine Association
- 2009: American Recovery and Reinvestment Act created funds for HITECH (Health Information for Economic and Clinical Health)
- 2010: CMS Rules on Meaningful Use of Electronic Health Records
- 2016: The Health Resources and Services Administration received $16 million to expand access to telehealth services in rural areas

Use of Telehealth

- Currently, ~200 telemedicine networks with ~3,500 service sites exist in the US

- In 2011, the Veterans Health Administration delivered over 300,000 remote consultations using telemedicine

- More than 50% of U.S. hospitals now use some form of telemedicine

- Nationwide survey showed that 3.5% of patients had utilized a video consultation, but 52% were willing to

American Telemedicine Association
Big Data in Healthcare

- Health data accumulated from multiple sources available in high volume
- Technology converts this data into useful, actionable information
- Healthcare industry has growing interest in Big Data
  - Shift from pay-for-service model to a value-based care model
  - Improve medical and financial decision making
  - Increase efficiency in delivering quality evidence-based healthcare

Sources of Big Data in Health Care

Big Data in Healthcare Examples

- Improve health, diagnostic, errors, and cost
  - FitBit partnered with UHC to reward members for exercising regularly
  - OneDrop ties data from multiple sources (nutrition trackers, food libraries, Dexcom) for DM management
  - Apple’s HealthKit, CareKit, ResearchKit
  - Apple Heart Study – ongoing
  - Precision Medicine Initiative
  - MedAware uses big data to alert for potential prescription errors
  - Analytic technology to identify high users of healthcare

AND MORE!

Telehealth Success Stories

- **Intermountain Healthcare**
  - Virtual visits resulted in a total claims cost reduction of $367 and patients saw an average savings of $146.93 per visit with telehealth.

- **BayCare System System**
  - Virtual wound care platform to reduce wait time from weeks to hours.

- **Beacon Health System**
  - Platform for urgent care, nutrition and behavioral health services to reduce wait time.

- **Mercy Virtual Care Center**
  - Digital-only hospital specializing in telehealth nationally resulting in cost savings.

Remote Patient Monitoring (RPM)

- Use of digital technology to collect health data from individuals and electronically transmit the information to healthcare providers
- Examples: blood pressure, blood glucose, electrocardiogram, fluid status, INR, oxygen saturation, pulse, spirometry, temperature, and weight

# RPM – Pharmacist-Led Services

<table>
<thead>
<tr>
<th>Study</th>
<th>Patient Population</th>
<th>Study Design/Duration</th>
<th>Intervention</th>
<th>Comparator</th>
<th>Key Findings</th>
</tr>
</thead>
</table>
| Green et al           | Uncontrolled hypertension (n=730)         | RCT / 12 month        | Home BP monitor and web-based interaction with PharmD                         | 1. Usual Care  
2. Home BP/Web interaction with physician | BP improved 25% more with PharmD intervention |
| Shane-McWhorter et al | Uncontrolled diabetes and/or hypertension (n=109) | Pre-Post observational/7 months | Authentidate™ Electronic House Call™ or Interactive Voice Response system with BP monitor, patient glucometer, electronic digital scale | None                                                                 | Decrease in mean Hgba1c, BP, LDL post-intervention |
| Aberger EW et al      | Uncontrolled hypertension (n=66)          | Pre-Post observational/1 month | Electronic, uploadable BP monitor and web-based interaction with PharmD       | None                                                                 | Decrease in mean BP post-intervention              |

Video Consultation – Pharmacist-Led Services

Two-way interactive audio-video technology which connects users in a real-time encounter

<table>
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<th>Study</th>
<th>Patient Population</th>
<th>Study Design/Duration</th>
<th>Intervention</th>
<th>Comparator Group</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young et al (2014)</td>
<td>Inmates in a correctional facility with HIV</td>
<td>Cohort study/6 months</td>
<td>Scheduled Video Consultation with multidisciplinary team</td>
<td>Usual Care</td>
<td>Improved virologic suppression, viral load, and CD4 values</td>
</tr>
<tr>
<td>Baker et al (2019)</td>
<td>Uncontrolled Type 2 Diabetes</td>
<td>Cohort study/6 months</td>
<td>Clinical video telehealth (CVT) with PharmD</td>
<td>None</td>
<td>Reduction in HgbA1c</td>
</tr>
</tbody>
</table>


Telephone Services – Pharmacist-Led Services

- Systematic review evaluating impact of clinical pharmacists services delivered via telemedicine in ambulatory care setting
  - Majority mode of communication was telephone
  - Largely chronic care disease management
  - Higher positive impact rate observed for scheduled and continuous models compared to responsive/reactive

Mobile Health – (mHealth)

- Use of mobile and wireless technologies to support the achievement of health objectives

- Examples in chronic disease management
  - Bluetooth connected wireless inflation blood pressure cuffs
    - Withings, iHealthLabs, IcMe
  - Diabetes glucometers
    - iBG Star, Dario, OneDrop
  - Medication adherence
    - GlowCap, Clever Cap, AiCure
Telehealth – Provider to Provider

- Interoperability within health systems
  - Allows for seamless communication between providers

- Secure video conferencing

- Secure messaging platforms

- E-Consults
  - Systematic review shows that overall impact on access measures, acceptability, cost, and provider satisfaction is positive

Telehealth – Reimbursement

● New York State Telehealth Parity Law
  ○ Requires commercial, Medicaid and state employee health plans to cover telehealth services
  ○ Does NOT require coverage for store-and-forward and remote patient monitoring telehealth

● Medicare CMS update 2019
  ○ Now reimbursing for virtual check-ins, remote evaluation of pre-recorded patient information and inter-professional internet consultation - no restrictions
  ○ New CPT codes for Chronic Care Remote Physiologic Monitoring – no restrictions
    ■ Ex: CPT code 99457: “Remote physiologic monitoring treatment management services, 20 minutes or more of clinical staff/physician/other qualified healthcare professional time in a calendar month requiring interactive communication with the patient/caregiver during the month.”
Mount Sinai Health System

● Telemedicine/Remote Patient Monitoring
  ○ Clinical pharmacists conduct telephone visits for chronic disease management (diabetes, hypertension, smoking cessation)
  ○ Livongo for diabetes management used by Diabetes Alliance CDE’s

● mHealth
  ○ MountSinaiNow - phone or video visit for employee
  ○ Text for patient adherence

● Big Data analytics
  ○ Lumeris for value-based care delivery

● Provider-to-Provider
  ○ Pharmacist E-Consults (hypertension, medication management, mental health)
  ○ Cureatr for secure messaging
Home-Based Care
Implementing a Home Visiting Pharmacist Program
Transitions of Care

Admission
- Patient interview
- Medication Reconciliation
- Communication of discrepancies with provider
- Update Medication List in EHR

Inpatient Stay
- Monitoring for appropriateness, efficacy and safety
- Dose adjustments
- Drug/disease interactions
- Proper administration
- Interventions

Discharge
- Medication Reconciliation
- Medication Access
- Medication/disease state counseling
- Care Coordination
Transitions of Care

TRANSITIONAL CARE CONTINUITY

Hospital

Skilled Nursing Facility

Rehabilitation Center

Home

## What Happens at Home?

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
</table>
| **2003** | - 19% of patients had adverse reaction after discharge  
- 66% of these were drug events |
| **2005** | - 11% ADE  
- 27% preventable  
- Risk for ADE increased as number of prescriptions at discharge increased |

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Transitions of Care Activities

- Medication reconciliation
- Discharge medication counseling
- Follow-up phone calls
- Post-discharge clinic visits/medication therapy management (MTM) sessions

Medication Therapy Management

- “A distinct service or group of services that optimize therapeutic outcomes for individual patients. Medication Therapy Management services are independent of, but can occur in conjunction with the provision of a medication product”

Core Elements of MTM

Medication Therapy Review (MTR)

Personal Medication Record (PMR)

Medication-related Action Plan (MAP)

Intervention/Referral

Documentation and Follow-up

Barriers to Traditional MTM Services

- Lack of pharmacists resources
- Patient appointment non-compliance
- Caregiver unavailability
- Patients refusal/forgetting to bring medications
Benefits of Home Visits

- Improve Transitions of Care
- Reinforce Medication Education
- Improve Medication use
- Improve Therapeutic outcomes
- Reduce Risk of Adverse Events
- Identify non-compliance
- Bringing care to the patient

Who Can Perform Home Visits?

Pharmacy Providers

- Community Pharmacists
- Acute Care Pharmacists
- Ambulatory Care Pharmacists
- Pharmacy Residents

- Community
- Acute Care
- Ambulatory Care
Home Visits: What is the Evidence?
Populations Studied

- Medicare Advantage
- High risk medications
- Post-discharge
- Clinic referral
- Heart failure
Australia
## Home Medicines Review – Australia

<table>
<thead>
<tr>
<th>Primary Care</th>
<th>Residential Aged Care Facilities</th>
<th>Government Funded</th>
<th>Referral by GP</th>
<th>Goal: Achieve Quality Use of Medicines (QUM)</th>
<th>Pharmacist Certification Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Medicines Review</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Residential Medication Management Review</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Key Steps in Process

<table>
<thead>
<tr>
<th>Step</th>
<th>Home Medicines Review</th>
<th>Residential Medication Management Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identification of patient, based on need</td>
<td>Identification of the resident in the aged care facility, based on need</td>
</tr>
<tr>
<td>2</td>
<td>Referral of the patient to their preferred pharmacy or pharmacist by GP</td>
<td>Referral of the resident to RMMR service provider</td>
</tr>
<tr>
<td>3</td>
<td>Pharmacist visits patient at home and obtains comprehensive medication history</td>
<td>Pharmacist gathers resident information from resident, family or next of kin, aged care facility staff members, and resident’s case notes</td>
</tr>
<tr>
<td>4</td>
<td>Pharmacist documents their medication review findings and recommendations in a report for the GP</td>
<td>Pharmacist documents their medication review findings and recommendations in a report for the GP and notes that this has been completed on the medication chart and resident’s case notes</td>
</tr>
<tr>
<td>5</td>
<td>GP and patient formulate a medication plan based on the pharmacist medication review report</td>
<td>Post-RMMR discussion between pharmacist and GP, preferably face-to-face</td>
</tr>
</tbody>
</table>
Hennepin County Medical Center
### Background

**Hennepin Health**
- Minneapolis, MN
- Pharmacists in 18 clinics
- 10,000 MTM encounters annually
- Full time MTM Support Analyst

**Pharmacist Training**
- Credentialing/Privileging
- Credentialed through insurance plans

**Services Provided**
- Comprehensive Medication Review
- Targeted disease state management
- Therapeutic drug monitoring
- Patient education
- Adherence support

Referral Process

1. Patient fits criteria for referral
2. Provider ordered a referral in EHR
3. MTM Support Analyst contacted patient

Program Referral

### Referrals by Provider

<table>
<thead>
<tr>
<th>Clinic</th>
<th># of Referrals (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>27 (51)</td>
</tr>
<tr>
<td>NP, PA</td>
<td>11 (21)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>12 (23)</td>
</tr>
<tr>
<td>RN</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Patient self-referral</td>
<td>2 (4)</td>
</tr>
</tbody>
</table>

### Referrals by Clinic

<table>
<thead>
<tr>
<th>Clinic</th>
<th># of Referrals (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>33 (62)</td>
</tr>
<tr>
<td>Senior Care</td>
<td>12 (23)</td>
</tr>
<tr>
<td>Coordinated Care</td>
<td>7 (13)</td>
</tr>
<tr>
<td>Psychology</td>
<td>1 (2)</td>
</tr>
</tbody>
</table>

Majority of referrals were due to either patient non-adherence, transportation barriers or that a medication reconciliation was required for a home health care nurse.
## Results

<table>
<thead>
<tr>
<th>Medication Related Problems</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication</td>
<td>35 (18)</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>44 (22)</td>
</tr>
<tr>
<td>Safety</td>
<td>39 (20)</td>
</tr>
<tr>
<td>Compliance</td>
<td>80 (40)</td>
</tr>
<tr>
<td>Total</td>
<td>198</td>
</tr>
</tbody>
</table>

Takeaway

- Opportunity to bridge communication gaps
- Offer chance for caregivers to be involved
- Pharmacist ability to observe environmental factors
- Pharmacists as a bridge to ambulatory clinic visits
Patients Perception of Home Visits
Patients Perception

**Referral**
Referred by Harris County Area Agency on Aging (HCAA)

**Home Visit**
1. Medication Review
2. Medication Reconciliation
3. Medication Action Plan
4. Emergency Preparedness Plan
5. Documentation and Referral

**Survey**
1. Patient satisfaction
2. Opinion of Knowledge level gained
3. Impact counseling would have on physician visits

Moultrie AM, Poon IO. Consult Pharm. 2008 Nov; 23(11): 877-885
## Program Assessment

<table>
<thead>
<tr>
<th>Survey Question</th>
<th># of Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of medication before home visit</td>
<td>12</td>
<td>66.7</td>
</tr>
<tr>
<td>Very Knowledgeable</td>
<td>5</td>
<td>27.8</td>
</tr>
<tr>
<td>Somewhat Knowledgeable</td>
<td>1</td>
<td>5.6</td>
</tr>
<tr>
<td>Not Knowledgeable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of medication after home visit</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Very Knowledgeable</td>
<td>5</td>
<td>27.8</td>
</tr>
<tr>
<td>Somewhat Knowledgeable</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not Knowledgeable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received explanation of importance of dietary and lifestyle modifications</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>27.8</td>
</tr>
<tr>
<td>Suggested Frequency of Drug Regimen Review</td>
<td>6</td>
<td>33.3</td>
</tr>
<tr>
<td>Every 6 months</td>
<td>6</td>
<td>33.3</td>
</tr>
<tr>
<td>Every 12 months</td>
<td>4</td>
<td>22.2</td>
</tr>
<tr>
<td>As needed</td>
<td>3</td>
<td>16.7</td>
</tr>
<tr>
<td>With every change of med</td>
<td>5</td>
<td>27.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Question</th>
<th># of Responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with service</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>13</td>
<td>72.2</td>
</tr>
<tr>
<td>Somewhat satisfied</td>
<td>4</td>
<td>22.2</td>
</tr>
<tr>
<td>Not satisfied</td>
<td>1</td>
<td>5.6</td>
</tr>
<tr>
<td>Will recommend service to others</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>Strongly recommend</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>Have doubts about recommending</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Will advise others against it</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Preferred Location of Service</td>
<td>15</td>
<td>83.3</td>
</tr>
<tr>
<td>Home</td>
<td>15</td>
<td>83.3</td>
</tr>
<tr>
<td>Community Pharmacy</td>
<td>3</td>
<td>16.7</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Feels service would reduce doctor visits</td>
<td>11</td>
<td>73.3</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>73.3</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>26.7</td>
</tr>
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Moultry AM, Poon IO. Consult Pharm. 2008 Nov; 23(11): 877-885
Visiting Pharmacist Program at MSBI
Goals of Visiting Pharmacist Program

- Promote safe and effective medication use
- Provide comprehensive patient education
- Prevent adverse drug reactions during transitions of care
- Resolve medication access issues
- Improve medication adherence
- Reduce readmission rates
# Program Eligibility

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
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</thead>
<tbody>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
</tr>
<tr>
<td>COPD</td>
<td>Homeless</td>
</tr>
<tr>
<td>Heart Failure</td>
<td></td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
</tr>
<tr>
<td>Uncontrolled HTN</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
</tr>
<tr>
<td>Discharged from MSBI</td>
<td></td>
</tr>
<tr>
<td>History of Non-compliance</td>
<td>Out of Area</td>
</tr>
<tr>
<td></td>
<td>Discharged to Skilled Nursing Facility</td>
</tr>
</tbody>
</table>
Referrals at MSBI

- Telephone or face-to-face referrals
- Admissions report generated from ED daily
- Providers who refer to program
  - Attending Physicians
  - Resident Physicians
  - Unit-based pharmacists
  - Transitions of Care pharmacists
  - Registered Nurses
  - Nurse Practitioners
  - Hospital at Home Program Admitting Physician
### Scheduling and Pre-Visit Planning

<table>
<thead>
<tr>
<th>Prior to discharge</th>
<th>Prior to visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient counseling</td>
<td>• Call patient to confirm appointment</td>
</tr>
<tr>
<td>• Appointment scheduling (5-7 days after discharge)</td>
<td>• Confirm address</td>
</tr>
<tr>
<td>• Get follow-up phone number address</td>
<td>• Ask about potential barriers to entering home</td>
</tr>
<tr>
<td>• Provide pharmacist contact information</td>
<td>• Address potential safety issues</td>
</tr>
<tr>
<td></td>
<td>• Review medication records</td>
</tr>
</tbody>
</table>
The Visit
Visit Components

- Core Components of MTM Session
  - Complete Medication Review (CMR)
  - Personal Medication Record (PMR) – Delivered via mail
  - Medication Action Plan (MAP) – Delivered via mail
  - Documentation
  - Intervention
- Medication Reconciliation
- Device/Inhaler education
- Care coordination
- Resolving medication access issues
Comprehensive Medication Review

- Medication Reconciliation
  - Call to pharmacy
  - Patient interview
  - Hospital Discharge Instructions
  - EHR records (if available)
  - Call to providers (if necessary)
- Identification of Medication Related Problems (MRPs)
- Medication Counseling
# Personal Medication Record

## PERSONAL MEDICATION RECORD

<table>
<thead>
<tr>
<th>Name</th>
<th>DOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Date</td>
</tr>
<tr>
<td>My Pharmacy:</td>
<td>Phone</td>
</tr>
</tbody>
</table>

### DRUG ALLERGIES:

#### In the morning I take:

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose</th>
<th>How many?</th>
<th>What it’s for</th>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

#### In the afternoon I take:

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose</th>
<th>How many?</th>
<th>What it’s for</th>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### At bedtime I take:

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose</th>
<th>How many?</th>
<th>What it’s for</th>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Medicines I only take as needed

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Dose</th>
<th>How many?</th>
<th>What it’s for</th>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Medication Action Plan

<table>
<thead>
<tr>
<th>WHAT WE TALKED ABOUT:</th>
<th>WHAT I NEED TO DO:</th>
<th>WHAT I DID AND WHEN I DID IT:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| DATE PREPARED: 1/10/2019 |

**MEDICATION ACTION PLAN** for XXXXX DOB: X/XX/XXXX

This action plan will help you get the best results from your medications if you:

1. Read “what we talked about”
2. Take the steps listed in the “What I need to do” boxes
3. Fill in “What I did and when I did it.”
4. Fill in “My follow-up plan” and “Questions I want to ask.”
Documentation/Referral

- Document in outpatient EHR
- Document Interventions
- Reconcile Medications
- Fax note to provider if not within the Mount Sinai system
- Referral
  - Smoking Cessation
  - Care management
  - Social Work
  - PCP/specialist
<table>
<thead>
<tr>
<th>Intervention</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication reconciliation</td>
<td>15.5</td>
</tr>
<tr>
<td>Device training*</td>
<td>26.77</td>
</tr>
<tr>
<td>Therapeutic recommendation</td>
<td>9.86</td>
</tr>
<tr>
<td>Therapeutic duplication</td>
<td>12.68</td>
</tr>
<tr>
<td>Drug has no indication</td>
<td>1.41</td>
</tr>
<tr>
<td>Drug counseling</td>
<td>23.94</td>
</tr>
<tr>
<td>Contraindication</td>
<td>4.23</td>
</tr>
<tr>
<td>Lab monitoring request</td>
<td>1.41</td>
</tr>
<tr>
<td>Referral</td>
<td>1.41</td>
</tr>
<tr>
<td>Pill box organization</td>
<td>2.82</td>
</tr>
</tbody>
</table>

*Includes inhaler teaching, insulin teaching, blood sugar monitor teaching
Barriers at Beth Israel

- Resources
- Provider referral
- Patient refusal
- Demographics and discharge plan

<table>
<thead>
<tr>
<th>Reason for Exclusion</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelter/homeless</td>
<td>18 (15.8)</td>
</tr>
<tr>
<td>Discharged to rehab facility</td>
<td>34 (29.8)</td>
</tr>
<tr>
<td>Active drug use</td>
<td>17 (14.9)</td>
</tr>
<tr>
<td>Out of geographic area</td>
<td>45 (38.5)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114</strong></td>
</tr>
</tbody>
</table>

22 Patients have declined service
Future Considerations
Mount Sinai Health System Ambulatory Care Pharmacy Services

Credentialing and privileging

Billing
- Medication Therapy Management (MTM/CDTM)
- Annual Wellness Visit (AWV)

Expansion of services
- Pharmacy residents
- Pharmacy technicians

Expansion of CDTM
- Behavioral Health
- Heart Failure

Collaboration
- Inpatient transitions of care team
- Care management
- Ambulatory P&T Committee
Expansion of Services

- **PGY-2 Ambulatory Care Pharmacy residency**
  - Population health focus
  - Clinic-based, resident-led services

- **Pharmacy technicians**
  - Telephonic outreach
  - Support for:
    - Population health initiatives
    - Medication adherence measures, MTM
    - Prior authorizations
References

4. Image from: http://www.foma.org/patient-centered-medical-home.html
References


Thank You

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