Implementation of a Medication Management Clinic

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Implementation of a Heart Failure (HF) Medication Management Clinic: August 2010

- Director of Ambulatory Care recognized the success of the pharmacist-run anticoagulation clinic
  - Evaluation of readmission data

- Hospital administration (C-Suite)
  - Presentation of a HF clinic proposal
  - Reduce HF readmission rates
    - 29.4% in 2010
  - Buy-in from C-suite

- Meeting occurred between the departments of pharmacy and ambulatory care, and hospital administration (C-Suite)
Pharmacy Involvement During the Initial Stage

- Recruitment of pharmacists
  - Staff meeting
  - Workshops

- Involvement of pharmacy resident
  - PGY-1 pharmacy practice resident

- Forms for documentation of clinic notes
  - Development and approval

- Preparation of educational materials

- Preparation of clinic advertisement
  - Flyers
  - Meetings with healthcare providers
# Referral Form

## Referral to the Heart Failure Clinic

**Date of Request**

**In-Hospital Attending Physician's Name**

**Primary Care Physician (PCP)**

### I. Patient Demographics:

- **Weight:**
- **HPI:**
- **PMHx:**
- **Allergies:**

### II. Discharge Medications:

<table>
<thead>
<tr>
<th>Rx Class</th>
<th>Name</th>
<th>Dose</th>
<th>Route</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta-Blocker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACE Inhibitor/ARB</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Loop Diuretic</td>
<td></td>
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<tr>
<td>Potassium-Sparing Diuretic</td>
<td></td>
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</tr>
<tr>
<td>Digoxin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydralazine/Nitrate</td>
<td></td>
<td></td>
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<tr>
<td>Calcium Channel blocker</td>
<td></td>
<td></td>
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</tbody>
</table>

*Note: if not on ACE-inhibitor, Beta-blocker or Diuretic, list reason(s)/contraindication(s):*
- **ACE-inhibitor:**
- **Beta-blocker:**
- **Diuretic(s):**

### III. Vaccinations:

- Pneumococcal:
  - Date:
- Influenza:
  - Date:

### IV. Referring Physician:

- **Print Name**
- **Date:**
- **Pagers/Contact #:**

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**Information for the Patient:**

Heart Failure clinic meets on Thursdays from 1 – 5 pm in Station Q on the 2nd floor. If you have any questions, please call the clinic at (718) 240-9062.

***Please arrive in a timely manner***

White copy – Pharmacy
Yellow copy – Patient
Pink copy – Clinic
# Follow-Up Clinic Visit Note

**CHRONIC HEART FAILURE CLINIC VISIT NOTE – FOLLOW-UP**

1. **CURRENT VITALS:**
   - BP:
   - HR:
   - WT:
   - PULSE:
   - HT:

2. **LAST CLINIC VISIT:**
   - MOST RECENT ACTIVITY:

3. **CHF TYPE:**
   - SYSTOLIC:
   - DIASTOLIC:
   - BOTH:

4. **NYHA CLASSIFICATION:**
   - STAGE I
   - STAGE II
   - STAGE III
   - STAGE IV

5. **LABS:**
   - NO LABORATORY CHANGES SINCE LAST CLINIC VISIT, PLEASE REFER TO PREVIOUS CLINIC NOTE FOR LABS

<table>
<thead>
<tr>
<th>Lab</th>
<th>Ca</th>
<th>Mg</th>
<th>Phos</th>
<th>AST/ALT</th>
<th>Albumin</th>
<th>Trop</th>
<th>OPK</th>
<th>BNP</th>
<th>TSH/T4</th>
<th>LDH/HDL/TG/CHOL</th>
<th>DRUG LEVELS</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

6. **MEDICATIONS:**
   - **CHF MEDICATIONS:**
     - BETA-BLOCKER:
     - ACE/ARB:
     - DIURETICS:
     - HYDRAZINE:
     - NITRATE:
     - DIGOXIN:
     - CC BLOCKER:
     - OTHER MEDICATIONS:

7. **ASSESSMENT:**
   - **MEDICATION ISSUE:**
     - BETA-BLOCKER/ACE/ARB NOT AT TARGET DOSE
     - INAPPROPRIATE MEDICATION
     - DUPLICATE THERAPY
     - NO INSURANCE/NEED COST-SAVING ALTERNATIVE
     - INAPPROPRIATE DOSAGE/FREQUENCY
     - PT DID NOT BRING MEDICATIONS
     - EDUCATION ISSUE (WRITE FOLLOWING): PT KNOWS THE FOLLOWING
     - PRESCRIPTION NAME: YES/NO
     - DIRECTIONS: YES/NO
     - PRECAUTIONS: YES/NO
     - PT EXPERIENCING ADVERSE SUSPECTED MEDICATION: YES/NO
     - NO ISSUES AT THIS TIME
     - OTHER:

8. **PATIENT ISSUES:**
   - **COMPLIANCE ISSUE:**
     - NUMBER OF MISSED DOSES:
     - CHF DIT CONFORMACE REC:
     - PT VITALS DO NOT SUPPORT DOSE TITRATION:
     - LAB ISSUE:

9. **RECOMMENDATIONS:**
   - **PHARMACOLOGIC:**
     - INCREASE MEDICATION DOSE:
     - NEED NEW PRESCRIPTION:
     - D/D MEDICATION
     - ADD MEDICATION
     - OTHER:
   - **NON-PHARMACOLOGIC:**
     - GST WEIGHTING SCALE/BP MONITOR - 2QUI SODIUM & FLUID DIET
     - RX COMPLIANCE
     - QUIT SMOKING/GET EXERCISE
     - OTHER:
   - **ORDER LABS:**
     - OTHER:
   - **REFERRAL TO:**
     - PHARMACIST:
     - CARDIOLOGIST:
     - NUTRITIONIST:
     - DATE:
Implementation Process: Second Stage - September 2010

- Projected start date
- Location
- Equipment availability
  - Computers
  - Weighing scales
  - Blood pressure monitors
- Anticipated number of patients

- Required staff
  - Physician
  - Nurse
  - Pharmacist
  - Clerk

- Recruitment of patients
  - Medical floors vs hospital wide
Patient Recruitment

Identification of CHF Patients → Diagnosis Confirmation → Inpatient Medication Counseling

Documentation ← Discharge Medication Counseling/Schedule Appt ← Referral Form
Recruitment of Patients
Providing inpatient referrals and medication counseling
Heart Failure Clinic: Go Live

- Started date: October 28th, 2010
- Location: Hospital- 2nd floor
- Day and Time: Thursdays, 1-5 PM
- Heart failure clinic team
  - Physician
  - Pharmacist
  - Nurse
  - Clerk
HF Clinic Flow

Check-In Clerk -> Vitals/Weight Nurse -> Medication Management RPh

New Prescriptions +/- F/U Appointment -> CHF Team Discussion MD/RPh/RN

Physical Exam MD
Success of the HF Clinic led to the development of the Medication Management Clinic (MMC) in June 2012.
Medication Management Clinic

- Target disease states
  - Heart failure
  - COPD
  - Asthma
  - Diabetes Mellitus
    - Newly diagnosed

- Clinic open twice a week

- Two primary care physicians
  - Medical residents
The Clinical Pharmacists and Pharmacy Residents’ Role in the Clinic

- Participate in multidisciplinary meetings
- Advertise MMC services
- Develop education materials
- Organize and present MMC workshops to pharmacists
- Provide feedback for process improvement
- Schedule clinic appointment in collaboration with ambulatory care clerk
- Participate in the MMC
- Document all clinic notes in EPIC
- Prepare reports
  - P&T, hospital administration
EPIC Documentation

[Image of EPIC Documentation interface]

Healthfirst 2014 Spring Provider Symposium
Innovations in Population Health Management
Patient Demographics - 2013

<table>
<thead>
<tr>
<th>Variables</th>
<th>n=114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years, mean (range)</td>
<td>61 (27-87)</td>
</tr>
<tr>
<td>Female, n(%)</td>
<td>66 (58%)</td>
</tr>
<tr>
<td>Comorbidities, n (%)</td>
<td></td>
</tr>
<tr>
<td>Asthma/COPD</td>
<td>40 (35%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>55 (48%)</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>87 (76%)</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>87 (76%)</td>
</tr>
<tr>
<td>Caucasian</td>
<td>2 (2%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>14 (12%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>11 (10%)</td>
</tr>
<tr>
<td>Number of medications, mean (range)</td>
<td>9 (1-21)</td>
</tr>
</tbody>
</table>
583 Pharmacist Interventions - 2013

- Discontinued Agent: 8%
- Referred to Specialist: 4%
- Initiation of Therapy: 13%
- Dose/Frequency Decrease: 3%
- Dose/Frequency Increase: 8%
- Polypharmacy Recognized: 3%
- DDI or ADR Recognized: 1%
- Medication Refills Provided: 20%
- Disease State Education: 16%
- Lab Markers Ordered: 3%
- Lifestyle/Medication Education: 21%
## Comparing Readmission Rates

Data from April 2012 through March 2013*

<table>
<thead>
<tr>
<th></th>
<th>U.S. National Rate</th>
<th>Brookdale Rate</th>
<th>MMC Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Cause</td>
<td>16.0 %</td>
<td>17.7 %</td>
<td>7.9 %</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>23.0 %</td>
<td>24.2 %</td>
<td>4.4 %</td>
</tr>
</tbody>
</table>

Barriers to Medication Adherence

- Cost
- Insurance issues
- Health Literacy
- High pill burden
- Depression
- Denial
- Alcohol/Substance Abuse
Actual Patient Case

- Decreased number of medications from 38 to 24 (36% decrease in pill burden)
Reasons for Missed Appointments

- Lack of transportation
- Unfavorable weather conditions
- Elderly patient population
- Resistance from the patient’s primary care physician
- Clinic visit date, time, or location uncertainty
Feedback from Patients

- You make me feel better
- You keep me out of the hospital
- I can live my life close to normal again
- You saved my life
The Pharmacist’s Role in the Clinic

- Call patients to remind them of appointments
- Medication reconciliation
- Assessment of ADRs
- Medication titration
- Assessment of drug and diet compliance
- Self-care education
- Reinforce non-pharmacological treatment
- Medication counseling
- Preparation of pill trays
Medication Management Clinic: Challenges

- **Patients attendance**
  - Transportation
  - Conflict with other clinic appointments
  - Insurance
  - Private physicians

- **Patient recruitment**
  - Pharmacist participation
  - Physician referral

- **Staffing**
  - Physician
  - Nurse
  - Pharmacist
  - Other

- **Patients**
  - Discharging patients from the clinic

- **Communication with primary care physicians**
MMC Challenges (cont.)

- Small clinic space
- Few computers in the clinic for lab monitoring
- No weighing scales to provide to patients
- Medical residents do not fill out the referral form
- Lack of staff pharmacists
- Twice a week clinic
Pharmacists at Work in the Medication Management Clinic
ASHP Best Practice Award
December 2012

“Advancing Pharmacy Practice through the Implementation of a Heart Failure Medication Management Clinic”
Future Goals

- Expand number of days
  - Goal: M-F 8:30 am to 4:30 pm

- Recruit patients
  - Disease states: example Pneumonia

- Expand pharmacy ambulatory clinic services
  - Ambulatory Care pharmacist

- Addition of social worker and full time nutritionist

- Collaborative Drug Therapy Management (CDTM) Agreement
Medication Management Clinic Team