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Rose Pavlakos is a clinical pharmacist for the Division of Cardiology and serves as volunteer faculty and assistant clinical professor at the School of Pharmacy. Her primary role includes developing pharmacy services and serving as a preceptor to pharmacy students and residents at UCSF Cardiovascular Care and Prevention Center. Her areas of focus for clinical services include comprehensive medication management, transitional care management, chronic disease management, and working collaboratively with the cardiology team to develop an innovative hypertension center.
Pharmacy Telehealth Services

Presented by:

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&

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UCSF Cardiology Clinics

UCSF Cardiovascular Care & Prevention Center

Visual Guide for Direct Scheduling

7 Clinic sites, 60 Cardiology faculty, & 17,000 patients
Pharmacy Team

- 2 Clinical Pharmacists
  - 0.8 FTE (General Cards)
  - 0.4 FTE (Prevention/Rehab)
- 1 Pharmacy Technician
  - 1.0 FTE
- 1-2 pharmacy students
- 1 pharmacy resident
- 1 medical student (pilot)
Pharmacy Comprehensive Medication Management Services

- Chronic Disease Management (HTN, HLD, Heart Failure, etc…)
- Polypharmacy
- Transitional Care Management
- Anticoagulation Bridging
- Medication Access
- Medication Side Effects
- Drug Information
- Drug-Drug Interactions
- Medicare Part D Enrollment
- Prior Authorizations (Prepared by front desk staff and completed by Pharmacy technician)
Pre-COVID-19 Pharmacy Schedule

Referral to Cardiology Pharmacy Service

Initial Consult: Medication Management In-Person Visit

Telephone Follow Up Visits
Pharmacy Outcomes: Hypertension

Hypertension: Innovating Personalized Strategies For Excellent Results (HIPSTER)

Rose Pavlakos, Geoffrey Tison, Marilyn Stebbings, Hannah Gittleman, Lisa Kroon, Valerie Clinard, Donald Grandis, Nelson Schiller, Tuhin Sinha, Lauren Closson, Rebecca Coelius, Rajni Rao

BACKGROUND
- Americans visit their health care providers more than 35 million times per year to treat high blood pressure (BP/HTN).
- Only 64% of patients with HTN achieve blood pressure control.
- Studies demonstrate improvement in HTN management at 6 and 12 months through improved feedback and communication with the patient and care team.
- The Institute for Healthcare Improvement Triple Aim challenges health care providers to improve patient experience.

PURPOSE
- Evaluate the feasibility of using a mobile application intervention and technology platform for HTN management.
- Assess the engagement and acceptability of the mobile application intervention and technology platform among patients and providers.
- Evaluate the preliminary effectiveness of a mobile application intervention on HTN control, time to control, and time spent under control.
- Develop a collaborative and inter-professional approach to improve the quality of HTN management in the ambulatory cardiology setting.

METHODS
- This was a 120-patient pilot observational study.
- Included patients of UCSF Cardiology presenting for management of hypertension.
- Study enrollment and goal setting was performed by the cardiologist at clinic visit.
- Participants downloaded the Vital Labs smartphone application.
- Home BP monitoring was performed using an Omron wrist cuff and recorded in Vital Labs mobile app.
- The app scheduled blood pressure reminders, allowed for virtual communication via direct messaging, and provided access to patient data.
- Medication management (e.g., medication adjustments, dose titrations, and side effect management) was performed by the pharmacist via virtual communication.
- A health coach screened engagement with the app and regularly contacted patients and providers via app.
- Features of the app included engagement tools, surveys, and communication platform.

RESULTS

Time to Control

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<th>Number of Patients</th>
<th>Days to Control</th>
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Average: 17 Days

Time Spent Under Control

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>Percentage of Readings</th>
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Average: 74%

LIMITATIONS
- Limited study period
- Single center study
- No control group

CONCLUSION
- 84% of patients met their INCB BP goal, versus an estimated 53% nationally.
- It took patients an average of 17 days to reach their goal BP.
- A mobile app facilitated remote HTN management platform, coupled with team-based care, can be used to increase achievement of BP control and decrease the time required to achieve BP control.
- Patients can safely and effectively be engaged via a mobile technology platform for BP management.
- Trust and rapport can be established quickly among patients, pharmacists, cardiologists, and coaches.
- Self-management habits may be formed through frequent home BP monitoring.

REFERENCES
3. Dear, et al.
4. 42008, Medicine, et al.
5. Epilepsie, Anderson, Markert, & Trafic, 2012

Approved by the UCSF Committee on Human Research
Cardiac Outpatient Recovery (COR)

**A Team-based Approach To Cardiac Outpatient Recovery (COR)**

**Project Plan and Intervention(s)**

1. **COR Team Workflow**
   - VP identified COR patients using CPR criteria
   - VP identified patients prior to appointment with COR to perform comprehensive medication review, medication changes, lab monitoring, and nutrition
   - VP communicated with COR team to provide medication reconciliation and resolve MRPs prior to discharge
   - VP identified MPRs and categorized potential harm using MDCR MRP chart

2. **Project Evaluation & Impact**
   - Data from systematic review on medication reconciliation at UCSF
   - Chart shows number of MPRs reported

3. **Next Steps, Dissemination & Lessons Learned**
   - Funding for additional pharmacy services
   - Identifying MPRs prior to discharge
   - Workflow to allow completing patient within 48 hours of discharge
   - Aligning with CMS medication reconciliation post-discharge (MDCR: Medicare 2010 measure)

**Project Goals**

- Improve the care for the patients with better outcomes, improved patient experience, lower costs, and improved clinical experience
- Reduce readmissions related to MPRs as part of the Quality and Safety Health Plan
- Reduce readmissions due to MPRs
- Achieve a "perfect" medication plan for patients
- Add a clinical pharmacist to identify and work with MPRs to prevent and resolve MPRs
- Address the issue of medication adherence

**Project Objectives**

1. Integrate a VP in COR clinic
2. Identify and resolve MPRs through home visits
3. Categorize MPRs into severity

**Background**

- Readmission rates within UCSF cardiology patients are higher than the University Hospital System Consortium goal of 7.7% to 9.7%
- Barriers to improving appropriate post-hospital transitions include quality metrics and surrounding medications
- UCSF has championed medication reconciliation at a 2016 HEDS meeting
- Initial COR data consisted of 1 cardiologist nurse practitioner (CMP), who opened the COR clinic
- Initial medication-related problems included hyperglycemia, medication errors, and medication-related problems (MRPs)

**2018 UCSF Health Improvement Symposium**
2019 Medicare Outreach

- 32 patients attended outreach event
- 14 changed their plan
- Average cost savings $1,725/pt
Patients need timely information when a consumer-level drug recall affects them:

- Consumer-level recalls require action by individual patients.
- The manufacturer or pharmacy notifies patients of recalls that may affect them, but patients may not receive the notification, and may learn about the recall from other, less reliable, sources.
- Prescribers are not proactively notified about recalls and do not have sufficient information to know which patients are affected.
- Patients who contact their prescribers about a recall are routed instead to community pharmacists.
- Community pharmacists are the only provider aware of the NDC dispensed and whether patient received medications from a recalled lot. Pharmacists are overwhelmed with requests for information.
- The process is not conducive to trust and may lead some patients to stop taking their medications appropriately.

**MyChart Message & Example Prescription Label**

- Message to patient with recalled drug's name & strength
- NDC code may not be on the bottle. Testing whether patient can easily find manufacturer on label and example label
- Link to launch the FDA widget

**Design**

- Affected patients must be informed of a drug recall promptly and accurately.
- Current process lacks clarity on when and who to contact for help.
- UCSF used the FDA’s Healthy Citizen SMART-on-FHIR to automatically notify patients of a drug recall through the MyChart patient portal.

UCSF scans FDA API to detect consumer-level recall

UCSF compares recall to patient medication list in Epic EHR

Patient receives MyChart message with link to customized widget

**Methods**

- Tested using synthetic recall and patient medication data.
- Developed workflow for a General Medicine and Cardiology clinic.
- Qualitative study of user interface with interviewer controlling the interface: 9 patients interviewed over Zoom (by RP and MG).
- Themes independently extracted by 2 researchers per interview and overall themes reconciled by RP, MG, SC, and IS.

**User Feedback Results**

- N = 9 patients, convenience sample (5 Female / 4 Male)
- 2/9 had personal experience with recalls
- 9/9 understood the purpose of the MyChart message
- 9/9 identified the medication manufacturer on the example prescription label
- 2/9 would have clicked on the link to the widget without guidance
- 9/9 would contact their pharmacist
- 5/9 would also contact their doctor’s office
- 9/9 wanted to receive MyChart notification of potential recalls from UCSF

**Themes**

- Notification of recalls from UCSF appreciated, even with uncertainty in the information: it shows UCSF is aware of patient medication issues.
- Notification is preferred from UCSF — a trusted source — and via MyChart as an efficient and reliable method.
- MyChart message was too wordy and detailed. Bullets or numbers identifying action steps with all relevant information in body of message would help.
- Widget contained irrelevant information for consumers (e.g., recall start date). Recall Reason was appreciated but not necessary.
- Patients wanted to involve their physician to “close the loop” even though only the pharmacist knows if they are affected by the recall.

**Summary and Recommendations**

- Easier EHR methods for matching of prescribed and dispensed medications, and matching of dispensed to recall at level of RxNorm SBD/SCD, lot #.
- Simplify MyChart message by providing step-by-step actions.
- Provide manufacturer name directly in the MyChart message.
- Widget content should be re-designed for consumers, and should not ask patients to contact their provider.
- Accommodate non-standard situations, e.g., mail-order pharmacy not as easy to contact as local pharmacy; patient altering or discarding original packaging so prescription label not available.

**Limitations**

- While N small, feedback received was consistent.
- Interviewers had control of the interface, so we do not know how patients would have explored the MyChart message and widget on their own.
- Did not test patient’s understanding of not being affected by the recall when the manufacturer in the recall did NOT match that on the pill bottle.
- We may not always have an updated medication list.
COVID-19

COVID-19 Cardiology Research Group

- Develop protocols and collaborate on research projects
- Provide up-to-date information to our patients

- Patient Smart Phrases
  - NSAIDs
  - ACEI/ARB
  - OTCs safe if cardiac patients
  - Concern for current medication SE
COVID-19: The Transition To Telehealth

Cardiology Ambulatory Telecommuting Conversion Rates

- %FTE staff remote PRE-SIP vs. %FTE staff remote 1 Week POST-SIP
- MB vs. DBC
Success Depends on Interprofessional Teams and Robust Systems
Post-COVID-19 Pharmacy Schedule

- Referral to Cardiology Pharmacy Service
- Initial Consult: Zoom/Doximity Video Visit
- Follow up: Telephone (Doximity)
Telehealth Platforms and Tools for Pharmacy Visits

**Zoom**

- Used as supplement to in-person pharmacy visits
- Allow for team-based care with multiple people having access to meeting ID and password

**Doximity**

- Remote telephone calls and video visits (for pts who do not have MyChart or email access)
- Allow for team-based care with option to 3-way call or add multiple people to video visit through online portal
Doximity

Phone App

Desktop Platform
Telehealth Platforms and Tools for Prior Authorizations

**CenterXPayor**
- Available through Epic
- Does not work for Medicare Part D

**Cover My Meds**
- All insurance
- Auto reminder
- Renewal
Communication Tools for Team Based Care

**E-fax:**
- All fax and voicemail messages are forwarded to email pool
- Staff assigned to push messages to appropriate party.
- All messages are received via secure email

**Telephone**
- Cisco ADE extensions
- Morning check-in with providers
### Telephone Reports Generated Daily

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Communication Tools for Team Based Care

**Jabber**
- Allows for instant messaging to all faculty and staff.
- Messages saved from previous day and are searchable

**Apex Inbasket**
- Communication to and from cardiologists and other providers/team members

**Zoom**
- Student/resident orientation (screen sharing)
- Daily huddle clinic staff updates
- Faculty meetings/Grand Rounds
COVID-19 Lessons Learned

1. Both patients and providers appear to be satisfied with remote telehealth services
2. Potential for more accurate patient health data
3. Efficiency with limited interruptions in workflow
4. Lifestyle modifications work and should be encouraged
Plan and Goal Moving Forward

- Clinic reopens at limited capacity
- Re-assess pharmacy team workflow to include more remote work
- Further develop our HTN program (exploring different platform to allow patient home data as discrete data in Epic)
- Pharmacy tech refill protocol
- Group medication classes for Cardiac Rehab
- Continue to explore pharmacist billing opportunities
- Expand pharmacy services with goal to get pharmacist/technician at each clinic site