


# Implementation of a Transitions of Care Service After Hospital Discharge

Sonja Clausen, MS, PharmD  
PGY1 Pharmacy Resident  
Bozeman Health Deaconess Hospital





## Disclosure Statement

- IRB Exempt - granted by University of Montana Institutional Review Board (IRB)
- Funded by:
  - ASHP Foundation Pharmacy Practice Residency Research Grant
- No conflicts of interest
- Co-Investigators:
  - Lindsey Firman, PharmD
  - Pamela Hiebert, MD
  - Amanda Woloszyn, PharmD, BCPS
- Contributors:
  - Emily Steed, PharmD, Kristal Barker, PharmD, & Melissa Hance, PharmD


## Bozeman Health Deaconess Hospital

- 86-bed hospital facility in Bozeman, Montana
- DNV (Det Norske Veritas) accredited
- Level III Trauma center
- Bozeman Health organization includes: Bozeman Health Deaconess Hospital, Bozeman Health Medical group, Big Sky Medical Center (Big Sky, MT), Bozeman Health Urgent Care (2 locations), and a clinical research group
- Largest private employer in Bozeman and includes over 200 providers representing 35 specialties



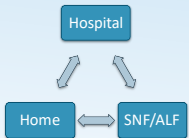
## Learning Objectives

- By the conclusion of this presentation, participants will be able to:
  - Understand the impact of post-discharge transitions of care pharmacists on patient care
  - Identify opportunities for post-discharge patient follow-up with pharmacist prior to the patient's primary care provider appointment



## Background

- Transitions of care (TOC) is the period when a patient is moving from one care setting to another
- During this time period patients are at increased risk for potentially life-threatening medication errors
  - 20% of patients experienced adverse events
    - 66% of those adverse events were medication related
  - Medicare pays ~\$15 billion dollars each year to cover costs of hospital readmissions
    - ~80% of those costs are due to preventable causes



## Background (cont)

- Bozeman Health currently has an inpatient TOC pharmacist
  - Hours: 8 am – 4 pm Monday through Friday
  - Medical flood patients
  - Medication review, patient education, and
- Bozeman Health Clinical Pharmacy Services
  - Anticoagulation clinic
  - Drug information services
  - Med box filling
  - Medication refill service



## Background (cont)

- Opportunity exists for a pharmacy service to follow up with these patients after discharge to provide:
  - Medication education
  - Medication adherence tools
  - Guideline directed medication therapy recommendations

## Purpose

- This project will attempt to:
  - Decrease hospital readmission rates
  - Decrease preventable medication errors
  - Increase patient medication education and adherence
  - Improve patient/provider satisfaction



## Specific Aims

### Specific Aim 1:

- Retrospectively evaluate inpatient TOC interventions and medication data to identify potential for continued patient education and optimization of medication therapy after hospital discharge

### Specific Aim 2:

- Evaluate patient impact, pharmacist interventions, and patient/provider satisfaction after pharmacist-led appointments to provide medication education and therapy recommendations to their PCP

## Methods

- Inpatient TOC pharmacists provide discharge education/medication review
- Patient discharged from hospital
- TOC data analyzed to identify opportunity for outpatient pharmacist follow-up appointment
- Patient at home with new medication regimen/diagnoses
- Patients identified by care coordinator RN and/or pharmacist
- Ambulatory care pharmacist sets up patient appointment on same day as PCP follow-up appointment
- Pharmacy-led patient appointment at clinic
- Education and adherence tools provided to patient
- Medication recommendations made to PCP
- Patient/provider satisfaction surveys

## Specific Aims

### Specific Aim 1:

- Retrospectively evaluate inpatient TOC interventions and medication data to identify potential for continued patient education and optimization of medication therapy after hospital discharge

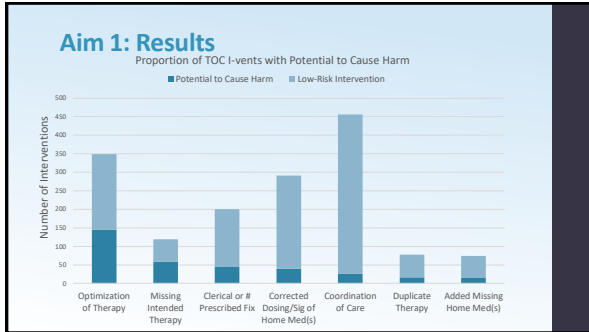
### Specific Aim 2:

- Evaluate patient impact, pharmacist interventions, and patient/provider satisfaction after pharmacist-led appointments to provide medication education and therapy recommendations to their PCP

## Aim 1: Results

- Inpatient TOC pharmacists interventions were documented and analyzed from October 1, 2016 until October 29, 2017.

<b>Total TOC Days</b>	<b>275</b>
Total Number of Patients	2,368
Total Number of Interventions	4,145
Average Number of Patients per Day	8.6
Average Number of Interventions per Patient	1.7
Percentage of Interventions with Potential to Cause Harm	20.2%
Total Non-TOC Days (Total # days – TOC days)	118
Potentially Missed Interventions (Non-TOC days x patients/day x I-vents per day)	1,725
Potentially Missed Interventions with Potential to Cause Harm	348



### Aim 1: Conclusions

- TOC pharmacists provide an average of 1.7 medication interventions per patient, with 20.2% of all interventions having the potential to cause patient harm
- From October 2016 to the end of October 2017, there were an estimated 1,725 missed patient interventions
- Patients discharged on evenings or weekends do not have opportunity for TOC review
- Opportunity exists for additional post-discharge medication education, medication review, and guideline-directed therapy recommendations

### Specific Aims

**Specific Aim 1:**

- Retrospectively evaluate inpatient TOC interventions and medication data to identify potential for continued patient education and optimization of medication therapy after hospital discharge

**Specific Aim 2:**

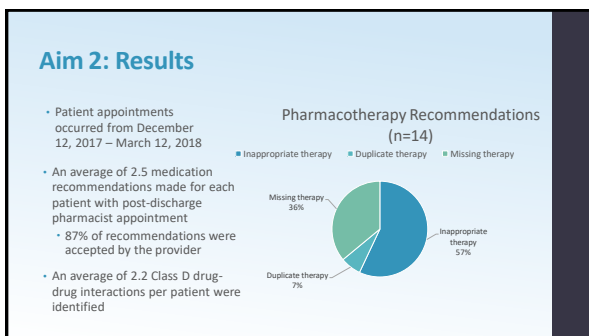
- Evaluate patient impact, pharmacist interventions, and patient/provider satisfaction after pharmacist-led appointments to provide medication education and therapy recommendations to their PCP

### Aim 2: Patient Population

Demographics (n=22)	n	%
Male	9	41%
Female	13	59%
Accepted Appointment	14	64%
Declined Service	8	36%

Patient Characteristics (n=22)	Average	Range
Age (years)	66.1	41-93
LACE+ Score	64.2	43-79
Number of chronic disease states	6.2	2-11
Number of medications	13.5	5-25
Hospital stay duration (days)	2	1-4
Number of new medications at hospital discharge	2.3	0-8



### Aim 2: Survey Results

Scale of 1 to 5, with 5 being strongly agree (n=13):

Overall Satisfaction	4.9
Increased knowledge about their medications	5
Recommend this service to others	4.9
Accurate medication list is helpful	5

Comments:

- "I don't just recommend this service: I think it is an essential part of on-boarding patients to their pharma regimes."
- "Info about side effects of the various meds I've been taking was very informative and will be helpful."
- "She made me understand better about my medications, how to take them, and what it does."
- "This meeting helped me with my overall understanding of my Rx's and made me feel more confident about my regime."
- "Very helpful session....would have enjoyed more time."

- Provider satisfaction surveys will be obtained at the end of the project

## Conclusions

- Pre-discharge TOC pharmacists provide a valuable service, but there still exists opportunity for an outpatient TOC appointment
- Post-discharge pharmacist-led TOC appointments provided clinically significant pharmacotherapy interventions
- Due to limited patients included in the study, hospital readmission data is not significantly different between patients using the service and patients declining the service

## Study Limitations

### Limitation

Small sample size – due to initially starting with one group of providers

Some providers did not have time between patients for hand-off/recommendations from the pharmacist TOC appointment

Potential patients occasionally missed during follow-up phone call by care coordinator nurses

### Solutions

Mid-project expanded to 2 groups and now including all groups of providers

Considering patient appointments on a different day than PCP or even telephone follow-up

Pharmacist will run discharge report weekly and contact qualifying patients to offer this service

## Future Directions

- Project will continue to collect more pharmacist interventions/readmission data
- Provider satisfaction survey collection and analysis
- Continue pharmacy involvement in post-discharge TOC
  - Follow-up post-discharge phone call
  - SNF to Home
  - SNF and ALF MAR reviews
- Develop collaborative practice agreements for common disease states to ensure appropriate guideline-directed pharmacotherapy
  - Hypertension, Diabetes, Antimicrobial stewardship
- Coordinate follow-up appointments with other clinical pharmacy services:
  - Medication box filling
  - Anticoagulation clinic

## Assessment

- 1) For this project, post-discharge pharmacist-led patient appointments *prior* to the patient's PCP appointment provided all of the following benefits *except*:
- a. Medications recommendations are made to the PCP prior to the provider seeing the patient to avoid drug interactions, adverse effects, and dosing errors
  - b. Accurate medication refills
  - c. Ensuring guideline-directed medication management
  - d. Develop and strengthen both patient and provider relationships

## Assessment

- 2) Potential opportunity exists for post-discharge TOC pharmacist-led appointments in the following area or areas:
- a. Antimicrobial stewardship
  - b. Developing collaborative practice agreements with providers for various disease states/diagnoses
  - c. Coordinating follow-up appointments for the anticoagulation other clinical pharmacy services
  - d. Decrease hospital readmissions and increase patient satisfaction
  - e. All of the above



## Questions?

Thank you for your time!

## References:

1. Coleman EA, Bruik C. Improving the quality of transitional care for persons with complex care needs. *J Am Geriatr Soc*. 2003; 51(4):556-557.
2. Tang J, Martiner A, Adam S, Dong MT. Pharmacist Advancement of Transitions of Care to Home (PATCO) Service. *Hosp Pharm*. 2015; 50(11):994-1002.
3. Fortner A, Murrell HG, Peterson J, Gandy TR, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med*. 2002; 136(3):161-167.
4. Mostetter RK, et al. Avoiding preventable hospital readmissions by filling in gaps in care - the community-based care transitions program. Commonwealth Fund. Available at: [commonwealthfund.org/publications/newsletter/quality-matters/2013/avoiding-eps-in-focus](http://commonwealthfund.org/publications/newsletter/quality-matters/2013/avoiding-eps-in-focus). Published September 2012.
5. American College of Physicians. What practices need to know about transition care management codes. [www.acponline.org/practice-resources/business-resources/coding/general-coding-resources/what-practices-need-to-know-about-transition-care-management-codes](http://www.acponline.org/practice-resources/business-resources/coding/general-coding-resources/what-practices-need-to-know-about-transition-care-management-codes).
6. Theohemer B. The Role of the Transitional Care Management Pharmacist. *Pharmacy Times*. Sept 2016.
7. Cox AB, Choe HM. Pharmacists supporting population health in patient-centered medical homes. *Am J Health-Syst Pharm*. 2017; 74(18):1461-1466.
8. Bodenheimer T, Gorbob A, Willard-Grace R, Grumbach K. The 10 building blocks of high-performing primary care. *Ann Rev Med*. 2014; 156:171.
9. Brunsholz ED, Olson J, Anderson JW, et al. "Pharming out" support: a promising approach to integrating clinical pharmacists into established primary care medical home practices. *Journal of International Medical Research*. 2017;00(1):1-15.
8. Greater Bozeman Population Demographics. Available at: <https://www.pom2homes.com/US/Neighborhood/MT/Greater-Bozeman-Demographics.html>. Updated 2014. Accessed October 2, 2017.
10. Decision chart to assist in determining whether a project is human subjects research. US HHS Office of Human Research Protections (OHRP). Available at: <http://www.hhs.gov/ohrp/policy/checklist/decisionchart.html>.