New pharmacy practice opportunity: Enhancement of the transitions of care process

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Disclosures

- Nothing to disclose

Objectives for pharmacists

1. Explain the need for pharmacy involvement in transitions of care
2. Describe the requirements for implementation and reimbursement for transitions of care services
3. Identify opportunities for pharmacy involvement in transitions of care
4. Evaluate potential benefits of implementing transition of care processes with pharmacy involvement
5. Identify an area of need within your practice site and resources available to assist with designing a future transition of care program

Objectives for technicians

1. Define transitions of care and medication reconciliation
2. Recognize need for pharmacy involvement in the transitions of care process
3. Identify opportunities for pharmacy technician involvement in transitions of care
4. Recognize potential benefits to pharmacy involvement in transitions of care

Background

Polling question

How involved are pharmacists at your institution with transitions of care?

A. They are not involved
B. Little to no involvement, but things are changing
C. Moderately involved in some aspects
D. Heavily involved, pharmacy-driven
E. I'm not sure what "transitions of care" is – that's why I'm here!

Transitions of care

" A set of actions designed to ***ensure the coordination and continuity of healthcare*** *as patients* ***transfer between different locations*** *or* ***different levels of care*** *within the same location … "*

Coleman EA, et al. JAGS. 2003; 51(4):549-555.

Transitions of care

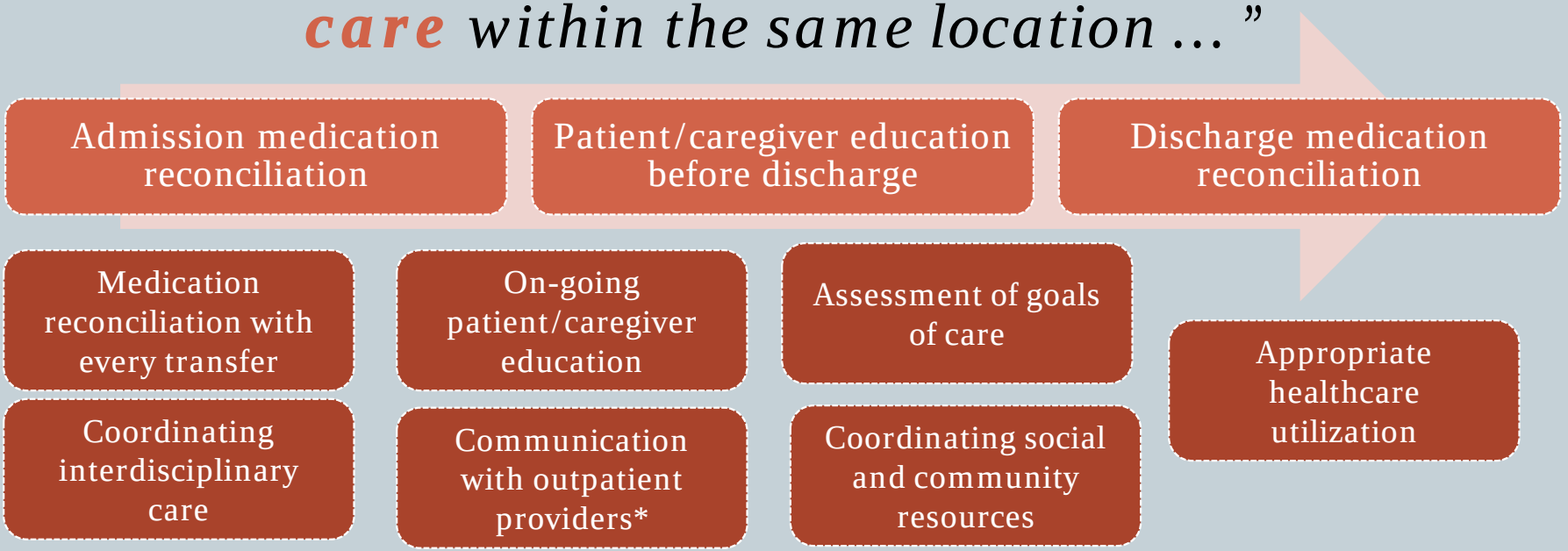
" A set of actions designed to ***ensure the coordination and continuity of healthcare*** *as patients* ***transfer between different locations*** *or* ***different levels of care*** *within the same location … "*

- Admission medication reconciliation
- Patient/caregiver education
- Discharge medication reconciliation

Coleman EA, et al. JAGS. 2003; 51(4):549-555.

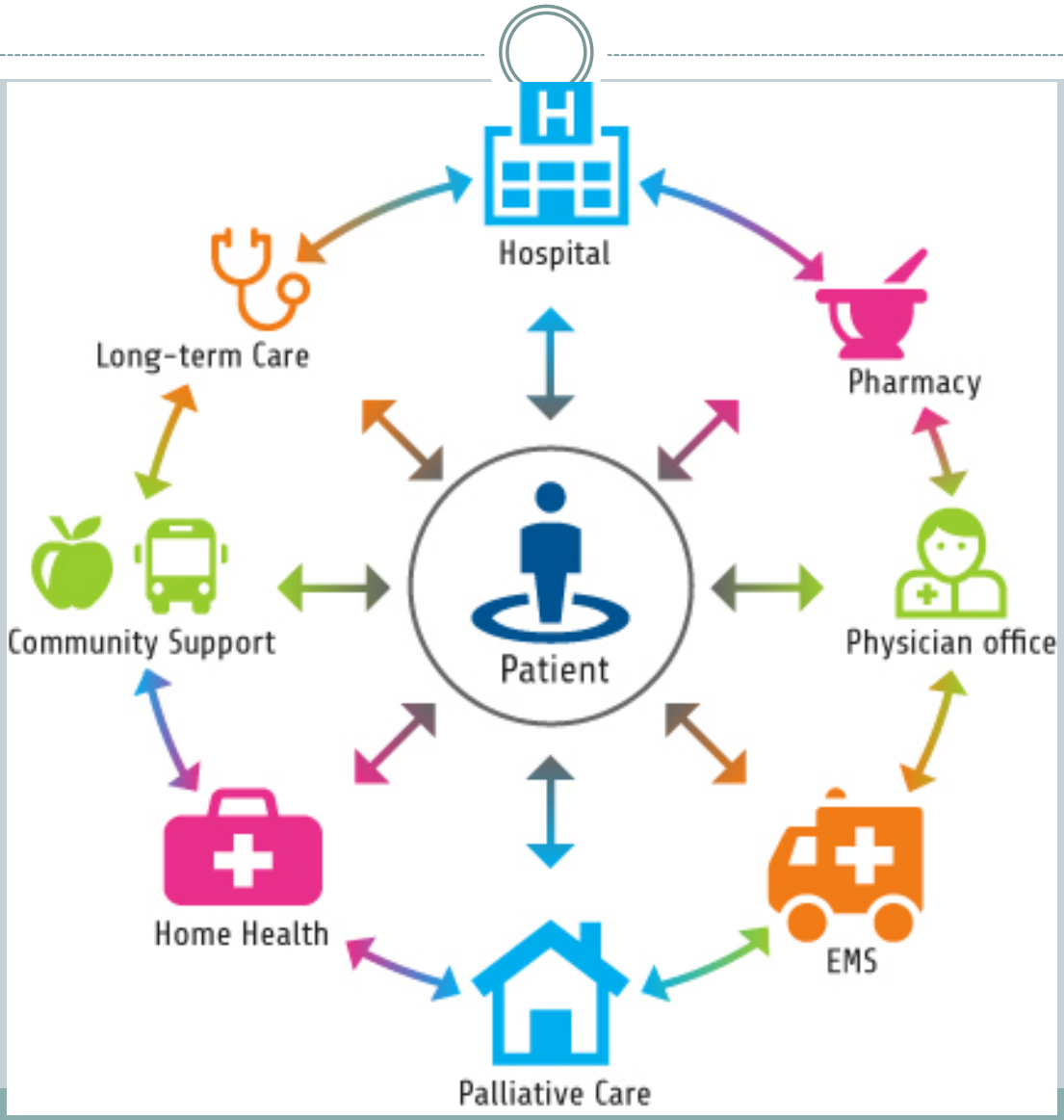
Transitions of care

" A set of actions designed to ***ensure the coordination and continuity of healthcare*** *as patients* ***transfer between different locations*** *or* ***different levels of care*** *within the same location … "*



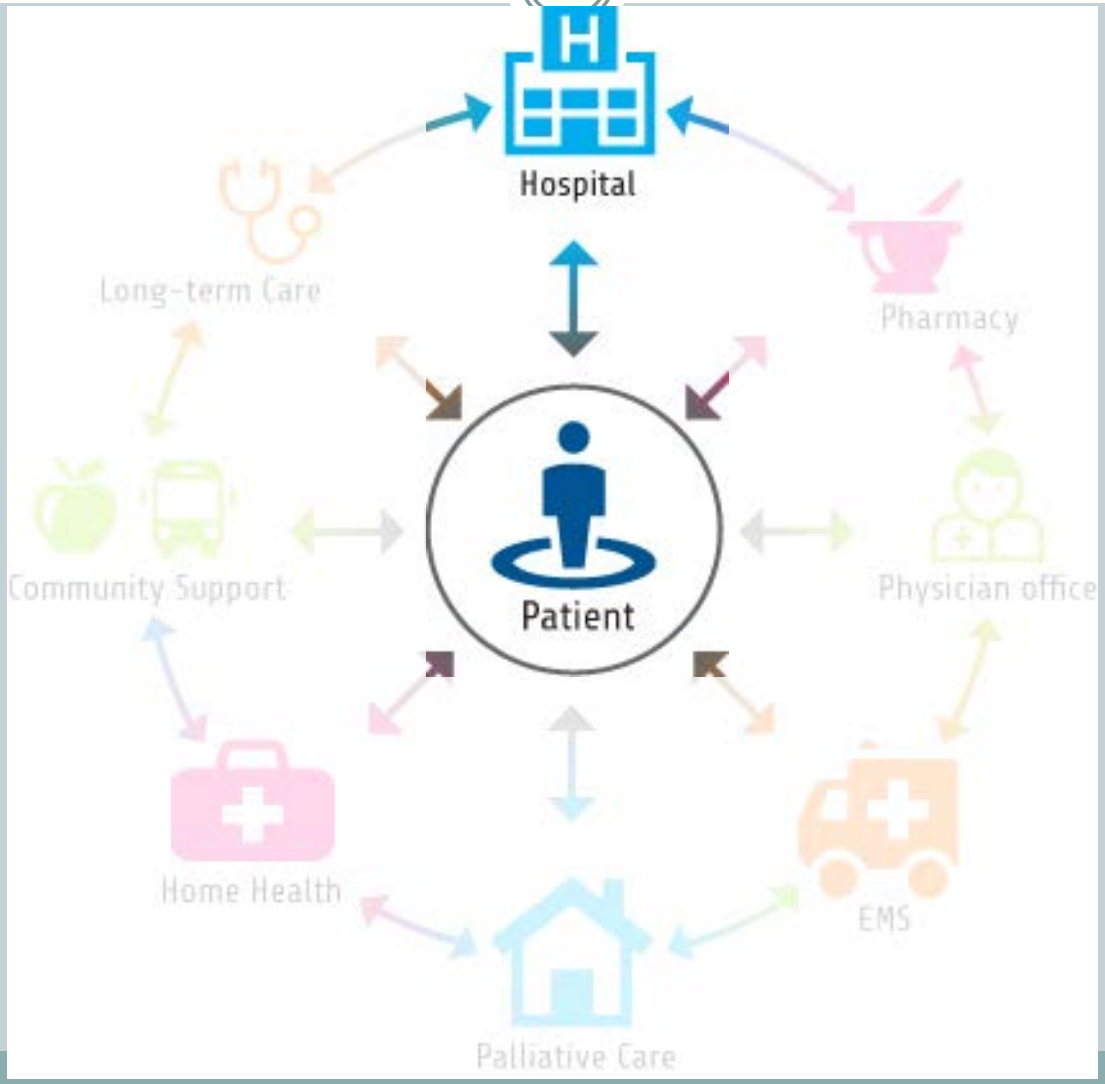
Coleman EA, et al. JAGS. 2003; 51(4):549-555.

Where are transitions of care occurring?



http://www.healthy.ohio.gov

Where are transitions of care occurring?

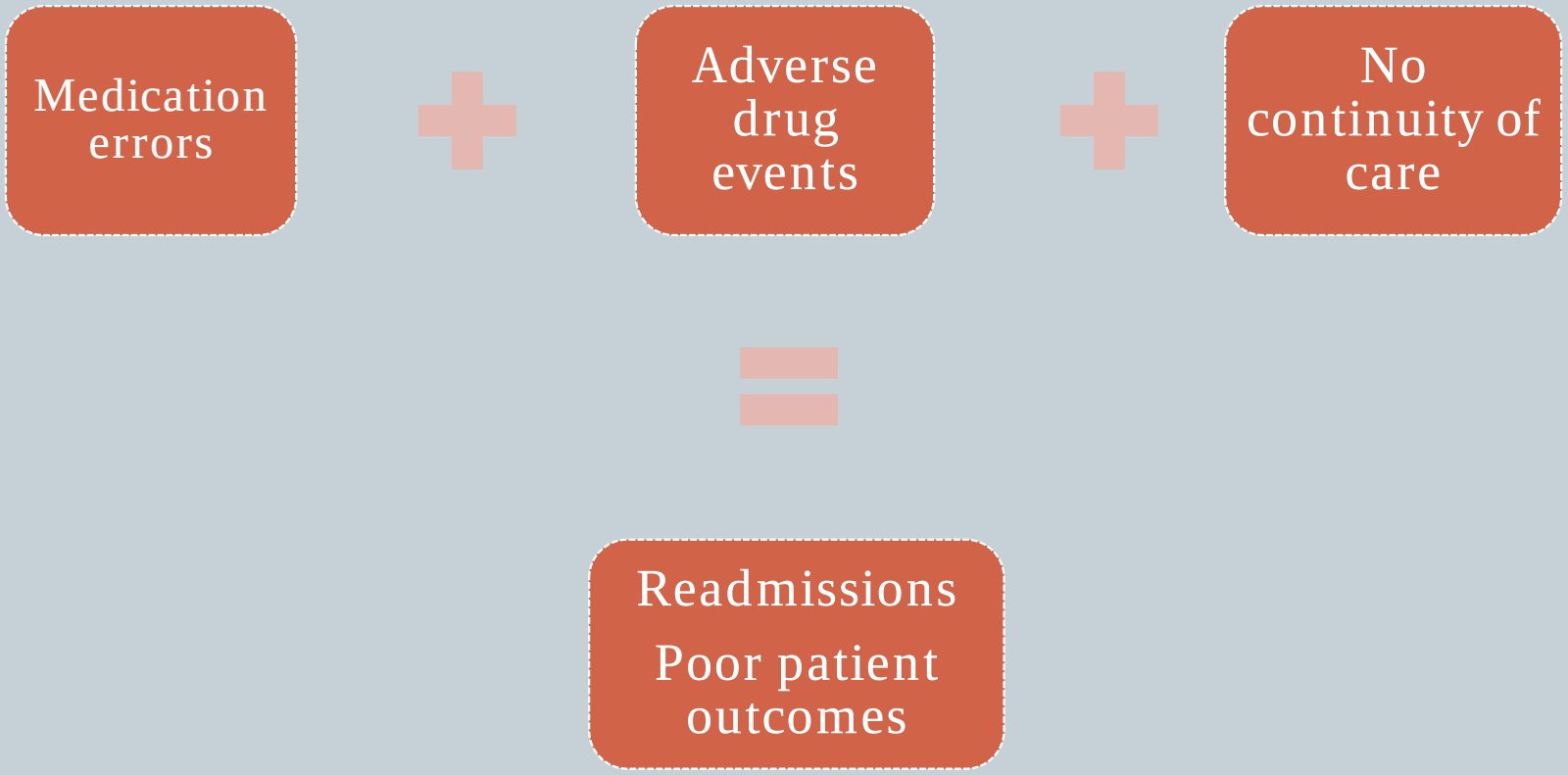


http://www.healthy.ohio.gov

Consequences of poor care transitions

Medication errors + Adverse drug events + No continuity of care =

Consequences of poor care transitions



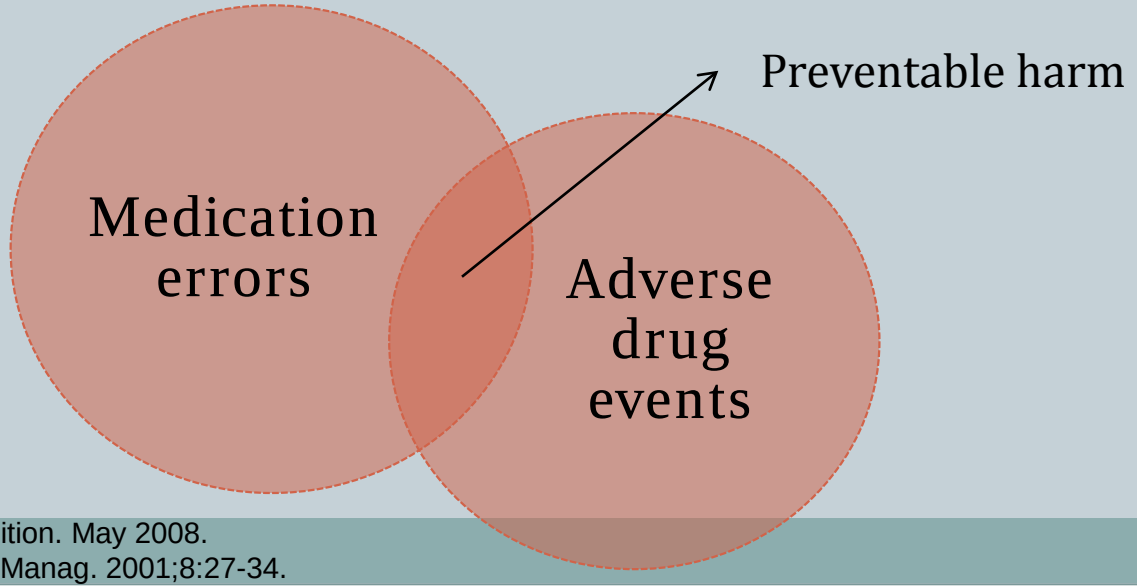
Medication errors

- *"Any preventable event that may cause or lead to inappropriate medication use or patient harm"*
- **60%** occur during transitions of care
  - Miscommunication between medical providers contributes to **80%** of serious medical errors
- Medication discrepancies were noted in **14.3%** of patients discharged from hospital to home
  - Patients with medication discrepancies were more likely to be readmitted to the hospital

National Transitions of Care Coalition. May 2008.
Am J Health Syst Pharm. 2013; 70:453-456.
Coleman EA, et al. Arch Intern Med. 2005; 165:1842-1847.

Adverse drug events

- An estimated **20%** of people experience an adverse event within the first 3 weeks of discharge from the hospital
  - Of these, **60%** were medication-related and could have been avoided
- **20%** of all hospital-related adverse drug events are attributable to poor communications at care transitions



National Transitions of Care Coalition. May 2008.
Rozich J, et al. J Clin Outcomes Manag. 2001;8:27-34.

No continuity of care

- **70%** of patients see **10+** physicians during their hospital stay
  - Patients see **> 7** physicians per year on average
- Half of all Medicare beneficiaries readmitted within 30 days had no bill for physician follow-up

National Transitions of Care Coalition. May 2008.
Jencks SF, et al. NEJM. 2009; 360:1418-1428.

Readmissions

Publicly Reported

- Centers for Medicare and Medicaid (CMS) *core measure*
  - 30-day risk-standardized
- Publicly reported since 2007
  - Acute coronary syndromes
  - Heart failure
  - Pneumonia
  - Hip and knee replacement

Common & Costly

- One-in-five Medicare beneficiaries is readmitted to the hospital within 30 days
  - **76%** of readmissions in 2007 were potentially avoidable = **$12 billion**
- Readmission rates from post-acute care are reported to be **25%**
  - Rates of inappropriate and potentially preventable readmissions have been reported as **45%** and **67%** respectively
- Penalties under the *Hospital Readmissions Reduction Program* (HRRP)

Medicare Payment Advisory Commission: Report to Congress; 2007.
Ouslander JG, et al. JAGS. 2010; 58:627-635.
Mor V, et al. Health Aff (Millwood). 2010; 29(1):57-64.

Hospital Readmissions Reductions Program

- Penalty for above average readmissions
  - Maximum 3%

Acute myocardial infarction	Heart failure	Pneumonia
COPD	Elective total knee or total hip replacement	Coronary Artery Bypass Graft surgery

Medicare Payment Advisory Commission: Report to Congress; 2007.

The solution?

National Transitions of Care Coalition. May 2008.

Opportunities & Evidence

Medication reconciliation

*" The **comprehensive evaluation** of a patient's medication regimen any time there is a change in therapy in an **effort to avoid medication errors** … This process should include a comparison of the existing and previous medication regimens and **should occur at every transition of care** … "*

Voss R, et al. Arch Intern Med. 2011; 171:1232-1237.

Polling question

Who is primarily responsible for medication reconciliation at your institution?

A. Pharmacists
B. Nurses
C. Shared responsibility between disciplines
D. Medication reconciliation technicians

Medication reconciliation

- In one medication reconciliation study, **36%** of patients had medication errors at admission
  - **85%** originated from the medication history
- Implementation of a pharmacist-driven medication reconciliation process has been shown to reduce rates of medication errors, readmission, and emergency department visits
  - One study estimated a **$16 million yearly cost avoidance** with the addition of a dedicated pharmacist-run medication reconciliation service

	Admission		Discharge	
Year	Nurse	Pharmacist	Nurse	Pharmacist
2012	79.4%	2.0%	81.4%	1.6%
2015	67.1%	5.5%	81.5%	5.3%

Bluml BM. JAPhA. 2005; 45(5):566-572.
Am J Health Syst Pharm. 2016; 73:e489-e512
Sebaaly J, et al. Hosp Pharm. 2015; 50(6):505-513.
Mekonnen AB, et al. BMJ. 2016; 6(2): doi: 10.1136/bmjopen-2015-010003

Pharmacy technicians and medication reconciliation

- In a national survey, **5%** of respondents indicated they involved a pharmacy technician in admission medication reconciliation
  - Medication reconciliation conducted by trained pharmacy technicians had **50%** less errors compared to non-pharmacy personnel
- ASHP Practice Advancement Initiative
  - Initiating medication reconciliation
  - Reviewing charts to identify issues that require pharmacist follow-up
  - Scheduling outpatient drug therapy management visits
  - Managing medication assistance programs

Rubin EC, et al. Hosp Pharm. 2016; 51(5):396-404.
ASHP Consensus on PPM Summit. AJHP. 2011; 68:1148-1152.

Clinical pharmacy involvement in team-based care

- Addition of a clinical pharmacist to a cardiovascular team resulted in increased utilization of guideline recommended therapy for heart failure patients and those with acute coronary syndromes
- Team-based care that utilized a clinical pharmacist also found a significant reduction in readmission rates in several disease states

Gitts WA, et al. Arch Intern Med. 1999; 159:1939-1945.
Dorsch MP, et al. Pharmacotherapy. 2014; 34(8):803-808.
Markowsky MJ, et al. Med Care. 2009; 47(6):642-650.

Polling question

Who is primarily responsible for discharge counseling at your institution?

A. Pharmacists
B. Nurses
C. Shared responsibility between disciplines
D. Other

Discharge counseling

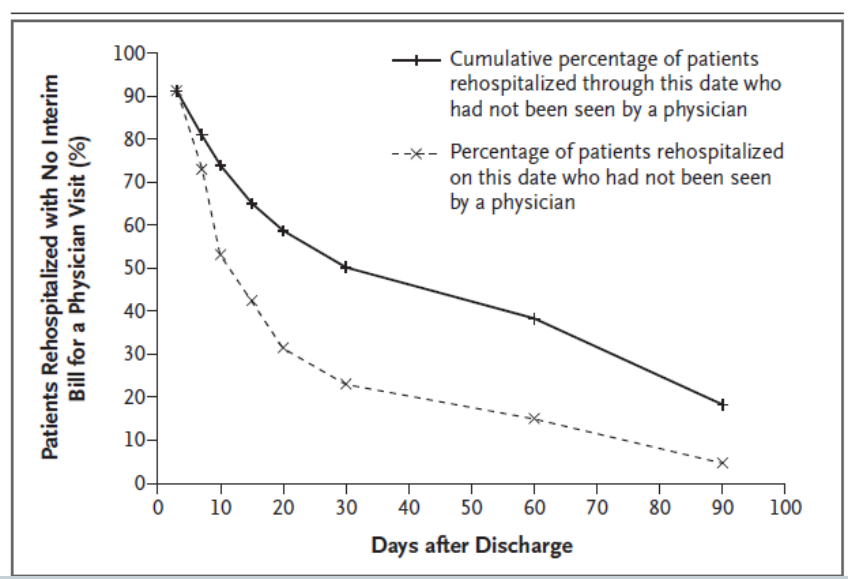
- Addition of a pharmacist in the discharge process resulted in less readmissions
  - Pharmacists made an intervention on over **44%** of patients
- Discharge counseling by a pharmacist has also been shown to improve primary medication adherence

Year	Discharge counseling
2012	21.5%
2013	27.5%
2014	35.5%
2015	33.8%

Am J Health Syst Pharm. 2016; 73:e489-e512.
Balling L, et al. JAPhA. 2015; 55:443-448.
Sarangarm P, et al. Am J Med Qual. 2013; 28(4):292-300.

Early follow-up

- Patients without early follow-up are at a higher risk of readmission within the first 30 days



Hernandez AF, et al. JAMA. 2010; 303(17):1716-1722.
Jencks SF, et al. NEJM. 2009; 360(14):1418-1428.

Phone call follow-up

- Patients contacted after discharge by a pharmacist are less likely visit the emergency department or be readmitted within 30 days of discharge
  - Also report better satisfaction with discharge instructions

Year	Follow-up after discharge
2012	9.4%
2013	10.4%
2014	11.0%
2015	10.6%

Sanchez GM, et al. Pharmacotherapy. 2015; 35(9):805-812.
Am J Health Syst Pharm. 2016; 73:e489-e512.
Dudas V, et al. Am J Med. 2001; 111(9B):26S-30S.

Barriers to implementation of pharmacy-driven transition of care services

Perceived barriers

- Almost **90%** of survey responders indicated that it is important for pharmacists to be involved in transitions of care
  - Despite this, **70%** of respondents indicated that pharmacists spent **<10%** of the work week on transitions of care activities

Barrier	% of respondents
Lack of pharmacy resources	91%
Insufficient recognition	40%
Pharmacist involvement not a priority of the institution	38%
Lack of leadership support	32%
Lack of technology connectivity	30%
Lack of qualified pharmacy technician staff	23%

Kern KA, et al. AJHP. 2014; 71:648-656.

Practice advancement initiative

- Barriers to the development of optimal pharmacy practice models:
  - Insufficient leadership
  - *Resistance to change from current staff*
  - Lack of resources
  - Lack of qualified technician staff
  - Insufficient recognition
  - *Lack of health-system support*
  - *State laws and regulations that limit pharmacists' scope of practice*

ASHP Consensus on PPM Summit. AJHP. 2011; 68:1148-1152.

Examples of best practice

Einstein Healthcare Network: Medication REACH

Reconciliation → **E**ducation → **A**ccess → **C**ounseling → **H**ealthy patients

- Targeted high-risk patients for intervention:
  - 5 or more prescription medications and 2 or more chronic conditions
- Pharmacy involvement in all aspects of the REACH program
  - Creation of a new position: ambulatory pharmacy patient liaison empowerment (APPLE)
    - Attends discharge rounds, triaging patients to pharmacists, interviewing patients to assess medication needs
- The 30-day hospital readmission rate was **21.4%** in the control group vs **10.6%** in the REACH group

ASHP-APhA Best Practices in Care Transitions; February 2013. Available from: http://media.pharmacist.com/practice/ASHP_APhA_MedicationManagementinCareTransitionsBestPracticesReport2_2013.pdf

Froedtert Hospital

- Pharmacy involvement
  - Attend daily multidisciplinary rounds
  - Medication reconciliation at admission, transfer, and discharge
  - Discharge counseling
  - Technician support in insurance verification, prior authorization, and delivery
  - Outpatient pharmacy follow-up and education for high-risk patients
- Saw a **10%** decrease in all-cause readmission rates in their heart failure population
- Data from their pilot program has funded the approval of 9 FTEs (6 pharmacists, 3 technicians)
  - Expanded program hospital-wide
  - Utilize ROI from outpatient prescription volume and billing for pharmacy services

ASHP-APhA Best Practices in Care Transitions; February 2013. Available from: http://media.pharmacist.com/practice/ASHP_APhA_MedicationManagementinCareTransitionsBestPracticesReport2_2013.pdf

Transitional Care Management Services (TCM)

- Billable for Medicare fee-for-service beneficiaries as of January 1, 2013
  - CPT codes 99495, 99496
- Includes services provided to patients' medical and/or psychosocial problems during transitions in care
  - Up to 29 days after discharge date
- Billable by physicians and non-physician practitioners who are legally authorized
  - Certified nurse-midwives, clinical nurse specialists, nurse practitioners, physician assistants
- All elements must be documented in medical record

DHHS, CMS. Medicare Learning Network: Transitional care management services; 2016.

Requirements

Interactive contact within 2 days

- Telephone, email, or face-to-face

Non-face-to-face services

- Review discharge information
- Follow-up pending diagnostics
- Provide education to support self-management, independent living, and activities of daily living
- Establish referrals/follow-ups
- Assess and support treatment adherence and medication management
- Assist in accessing needed care and services

Moderate Complexity → ***Face-to-face visit within 14 days***

High Complexity → ***Face-to-face visit within 7 days***

DHHS, CMS. Medicare Learning Network: Transitional care management services; 2016.

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Pharmacist involvement?

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Pharmacist involvement?

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DHHS, CMS. Medicare Learning Network: Transitional care management services; 2016.

Project RED

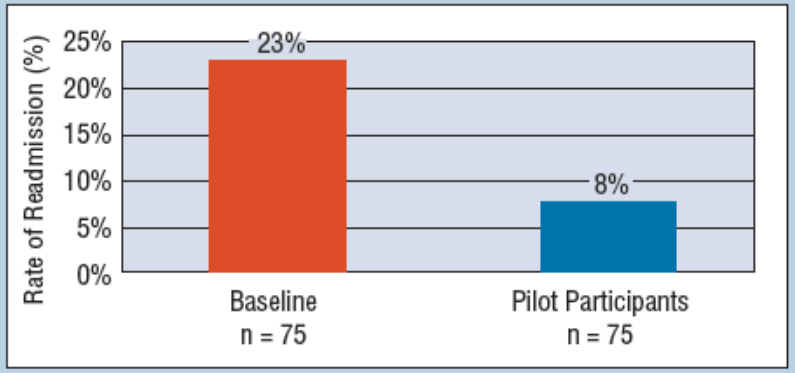
- **R**e-**E**ngineered **D**ischarge
  - Boston University Medical Center
  - Designs discharge processes to promote patient safety and reduce hospital readmissions
- Toolkit published by the AHRQ in 2013
  - Involve pharmacy leadership in implementation
  - Involve pharmacists in medication reconciliation
    - Admission
    - Collaboration with the medical team
    - Discharge
  - Involve pharmacists in post-discharge phone calls

Project RED Implementation Toolkit. AHRQ; 2013.

Hennepin County Medical Center

- Pilot modeled after Project RED for general medicine patients
  - Expanded to include associated primary care clinics
    - Enhanced discharge clinic with MTM pharmacist
  - Patients admitted to general medicine service for:
    - CHF, AMI, PNA
    - Readmitted within 30 days
    - ≥ 3 admissions within 1 year
- Pharmacists are responsible for:
  - Transfer of patient information to outpatient providers
  - Follow-up via phone call or in-person consultation
  - Medication therapy reviews
  - Discharge education

Figure 4. Hennepin County Medical Center : 30-Day Readmission Rates



Project BOOST

- **B**etter **O**utcomes by **O**ptimizing **S**afe **T**ransitions
  - National initiative led by the Society of Hospital Medicine
- Free toolkit on the implementation of BOOST goals and objectives
  - Measurable and meaningful data collection
  - Risk assessment tool – the 8 Ps
    - Problem medications, psychological issues, principal diagnoses, polypharmacy, patient support, prior hospitalizations, palliative care
  - Sample ROI calculator

Project BOOST Implementation Toolkit, 1st ed. Society of Hospital Medicine; 2008.

In the literature

Anderegg et al

- Evaluated the impact of a restructured pharmacy practice model that included:
  - Medication reconciliation for all patients
  - Discharge education for high-risk patients:
    - Acute coronary syndrome, heart failure, pneumonia, COPD, oral anticoagulant use
- Utilized a technician medication reconciliation team
- Resulted in a significant reduction in 30-day hospital readmission rate in the high-risk population (n = 3316)
  - 17.8% vs 12.3% (p = 0.042)
  - Annual cost savings of ~ $780,000

Anderegg SV, et al. AJHP. 2014; 71(1):1469-1479.

Warden et al

- Evaluated the impact of medication reconciliation and discharge counseling provided by a pharmacist to patients admitted to a cardiology service with the primary diagnosis of heart failure (EF $\leq$ 40%)
  - Follow-up calls were made within 2 weeks of discharge and on day 30
- There was a significant decrease in all-cause readmission for patients who received pharmacist intervention (17% vs 38%, p = 0.02)
  - There was also an increase in the amount of patients that received an ACE/ARB prescribed at discharge (100% vs 87%, p = 0.02)

Warden BA, et al. Am J Health Syst Pharm. 2014; 71:134-139.

Salas et al

- Assessed the success of a heart failure transition of care service managed by pharmacy residents
  - Conducted medication review, provided discharge medication counseling and education
  - Met with patients in a transition of care clinic appointment within 1 week of discharge and made monthly phone calls for 6 months
- There was a significant decrease seen in the 30-day all cause readmission rate for patients who received pharmacist intervention (28.1% versus 16.6%)
  - Almost 90% of patients kept their follow-up appointments

Salas CM, et al. Am J Health Syst Pharm. 2015; 72(S1):S43-S47.

Phatak et al

- Evaluated the impact of pharmacist involvement in transitions of care
  - Services were rendered to patients with ≥ 3 medications at discharge or use of at least one high risk medication
    - Anticoagulants, antiplatelets, hypoglycemic agents, immunosuppressives, antimicrobials
- Patients received discharge medication reconciliation and counseling and post-discharge phone calls on days 3, 14 and 30
- There was a significant decrease in the amount of ED visit and readmissions in the pharmacist intervention group (24.8% vs 38.7%, p = 0.001)
  - Non-significant decrease in adverse drug events and medication errors reported after discharge
  - Also a 9% improvement in HCAHPS

Phatak A, et al. Journal Hosp Med. 2016; 11(1):39-44.

Predictors of readmission

Predictors of readmission

- Anemia
- Arrhythmias (atrial fibrillation)
- Depression
- Hyponatremia
- Worsening renal function
- COPD
- African American
- Older age
- Low health literacy
- Medication non-adherence
- Dietary non-adherence
- Low socioeconomic status
- Lack of adequate social support

Identifying high-risk patients

- **LACE** score
  - **L**ength of stay
  - **A**cuity
  - **C**harlson Comorbidity Index
  - **E**D visits in the previous 6 months
- High risk: > 10 points

Wang H, et al. BMC Cardiovasc Disord. 2014; 14(97):1-8.

Charlson Comorbidity Index

Points	Comorbidity
1	Coronary artery disease Congestive heart failure Peripheral vascular disease Cerebrovascular disease Dementia Chronic pulmonary disease Connective tissue disorder Peptic ulcer disease Mild liver disease
2	Hemiplegia Moderate or severe renal disease Diabetes with end-organ damage Tumor (solid, or liquid)
3	Moderate or severe liver disease
6	Metastatic solid tumor AIDS

Beddhu S, et al. Am J Med. 2000; 108:609-613.

Identifying high-risk patients

- **HOSPITAL** tool
  - **H**emoglobin < 12g/dL
  - Discharge from **O**ncology service
  - **S**odium < 135 mEq/L
  - **P**rocedure during hospitalization
  - **I**ndex admission type (urgent or emergent vs elective)
  - Hospi**T**al admissions during previous year
  - **L**ength of stay
- Maximum of 13 points
  - Low risk: 0-4
  - Medium risk: 5-6
  - High risk: ≥ 7

Donze JD, et al. JAMA Internal Medicine. 2016; 176(4):496-502.

Identifying high-risk patients

- Readmission risk calculators created by Yale-New Haven Center for Outcomes Research and Evaluation
  - Heart attack
  - Heart failure
  - Pneumonia

http://www.readmissionscore.org/

Resources

Toolkits

- *Project RED*
- *Project BOOST*
- Hospital-To-Home (H2H): American College of Cardiology

- ASHP Practice Advancement Initiative
  - ASHP Medication Reconciliation Toolkit
- AHRQ's Medications at transitions and clinical handoffs (MATCH) toolkit

ACCP White Paper: Systematic changes to improve care transitions

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

ACCP White Paper

1. Education and training of health care providers
   - Involvement of student pharmacists on IPPE and APPE rotations
     - Medication reconciliation
     - Drug-related problems
     - Work on interdisciplinary teams
   - Involvement of resident pharmacists
     - Promote optimal medication outcomes
     - Communicate medication information to patients
   - Medical students, residents, and fellows
     - Reimbursement
     - CMS core measures

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

ACCP White Paper

2. Reimbursement
   - CPT codes specific for services provided by pharmacists
   - In conjunction with a provider
   - Involvement of pharmacists with PCMH, ACOs and bundled payment models

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

ACCP White Paper

3. Health information technology
   - Engaging the community pharmacists with better communication of health information
   - Good HIT will ideally have:
     - Standardized processes
     - Good communication
     - Performance measures
     - Accountability
     - Care coordination
     - *Accurate, timely*

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

ACCP White Paper

4. Patient empowerment through improved health literacy
   - Addressing barriers to care
   - Relieving anxiety
   - Readiness for discharge
   - HCAHPS

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

ACCP White Paper

1. Participate on medical rounds
   - Anticipate and resolve drug related problems
     - Appropriateness
     - Adherence
     - Health literacy
2. Thorough medication reconciliation at care transitions
   - Hand-offs
3. Patient and caregiver education
   - During hospitalization and at discharge
4. Participate in *interdisciplinary* discharge rounds
   - Communicate discharge medication list
   - Follow-up and monitoring
5. Telephone follow-up 2-4 days after discharge
6. Collaborate
   - Long term care
   - Ambulatory care
   - Community

Hume AL, et al. Pharmacotherapy. 2012; 32(11):e326-e337.

Assessment

Assessment Q1:

What percentage of Medicare beneficiaries are readmitted within 30 days of hospital discharge?

A. 10%
B. 20%
C. 25%
D. 35%

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Assessment Q2:

Involving pharmacists in patient care transitions has shown to:

A. Improve HCAHPS scores
B. Prevent medication errors
C. Improve medication adherence
D. Increase health literacy
E. All of the above

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Assessment Q3:

True or false:

Pharmacists can participate in transitional care services billable to physician and non-physician practitioners

Assessment Q3:

True or false:

Pharmacists can participate in transitional care services billable to physician and non-physician practitioners

Assessment Q4:

The hospital readmissions reduction program withholds a % of reimbursement for which conditions?

A. Diabetes
B. Heart failure
C. COPD
D. Acute Coronary Syndromes
E. CABG

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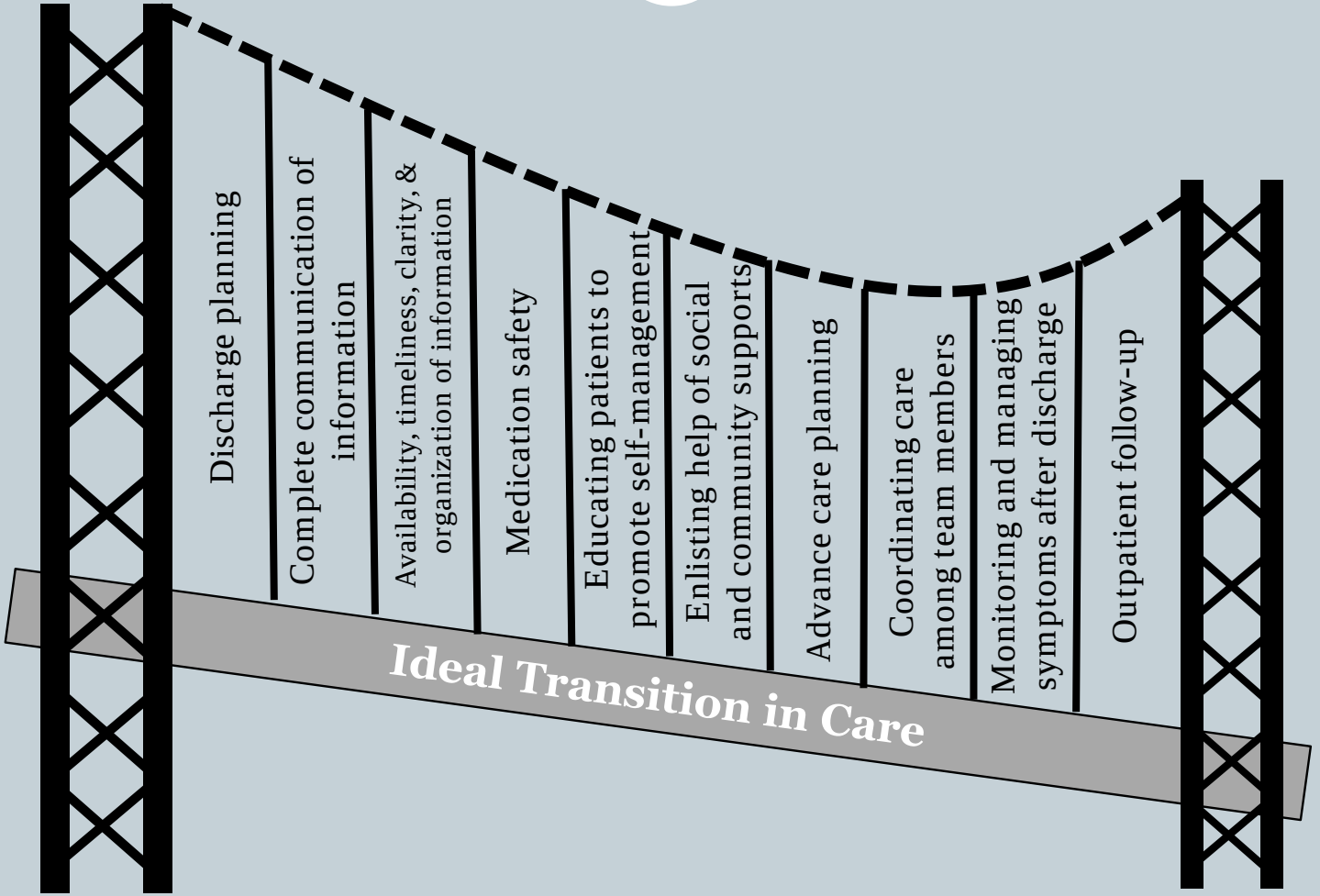
The ideal transition



Burke RE, et al. J Hosp Med. 2013; 8(2):102-109.

Conclusions

- Ineffective transitions of care can lead to significant medication errors and adverse drug events leading to increased readmissions and cost
  - Pharmacy involvement has been shown to reduce readmission rates and save money
- Pharmacist involvement in transitions of care is essential
  - We have training and expertise in managing complex medication regimens and assessing and encouraging medication adherence
- There are a multitude of resources available once an opportunity is identified
- Start small – utilize students and residents and aim for the low-hanging fruit (medication reconciliation, discharge counseling)
  - Opportunities also exist to involve pharmacy technicians

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