ADVANCING QUALITY OUTCOMES AND INNOVATIONS:
Preparing pharmacy for the future

**Transitions of Care :
Best practices and business models**

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Transitions Opportunities from the Inpatient Perspective

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Learning Objectives

- Describe the health system imperative to improve care transitions
- Identify core elements, outcome metrics, and financial drivers for developing pharmacy transitions of care services
- Compare best practices in transitions models focusing on the inpatient pharmacy perspective
- Apply knowledge of current pharmacy transition models to develop one appropriate for your health system

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Waste in U.S. Health Care

- <u>One-third</u> of health care spending is wasteful
  - Failure in care delivery – lack of execution of best practices, patient safety
  - **Failure in care coordination–fragmented care, hospital readmissions ($25 - $45 billion)**
  - Overtreatment – e.g. medications
  - Administrative complexity–government, accreditation agencies, payers
  - Pricing failures and lack of transparency
  - Fraud and abuse

Berwick, D. et al (2012)

Bending the Health Care Cost Curve

- 10% of patients account for 64% of health costs
- Chronic conditions requiring coordinated care to avoid complications
- Requires redesign of care delivery systems and payment models
  - Accountable Care Organizations (ACOs)
  - Medical Home
  - Restructure payment for hospital-acquired conditions (HAC) and readmissions, bundled payments

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Why Focus on Improving Care Transitions?

- 20% of Medicare patients are readmitted within 30 days of hospital discharge - $17 billion cost to Medicare
- ~75% are considered potentially preventable

	7 days	15 days	30 days
Rate of potentially preventable readmissions	5.2%	8.8%	13.3%
Readmission spend (in billions)	$5	$8	$12

- 50% of readmitted patients failed to follow up with their PCP after hospital discharge

Medicare Payment Advisory Commission, (2007)
Jencks et al., (2009)

ACA Reform & Care Transitions

- Hospital Readmissions Reduction Program
  - CMS penalties to hospitals with higher than expected readmission rates
- Community Care Transitions Program
  - $500 million funding for interventions to improve care transitions
- Reality: fee for service and pay for performance
  - Hospitals still get paid for admissions (including readmissions > 24 hour)

Business Case for Action

- ALOS for readmitted patients 13.2% higher
- Medicare payment for readmission 4% lower than index hospitalization
- Medicare penalties for excess readmission
  - 3 initial conditions: AMI, HF, Pneumonia
    - FY15' : COPD, THA/TKA
  - FY13' 1%, FY14' 2%, FY15' 3% (capped)
- Value based purchasing penalty 1-2%
  - 30% tied to HCAHPS including care transitions questions

Jencks et al., (2009)
CMS, (2014)

HCAHPS–Care Transitions Questions

- During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.
- When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
- **When I left the hospital, I clearly understood the purpose for taking each of my medications.**

How Can Hospitals Reduce Readmissions?

- Better, safer care during inpatient stay
- Attend to medication needs at discharge
- Improve communication with patients before and after discharge
- Improve communication with other providers
- Review practice patterns

Medicare Payment Advisory Commission, (2007)

Audience Poll – What TOC Services Have You Implemented?

?

- Admission medication reconciliation
- Discharge medication reconciliation
- Discharge education/counseling service
- Medication financial assistance program
- Bedside medication delivery service
- Post-discharge follow up services
- Medication therapy management referral service

Care Transitions Models

- Five bundles of interventions proven:
  - Early systematic discharge planning–Evans
  - Care Transitions Intervention–Coleman Model
  - Project RED–Jack
  - Transitional Care Model–Naylor
  - Pharmacist patient education, med rec, discharge phone call follow up–Koehler
- Many of the indiv. parts are not proven alone

Hansen et al, *(2011);*
HCAHPS webinar (2012)

Selected Pharmacy Interventions

- Project RED – RPh post-discharge phone call
  - Fewer readmissions and emergency room visits in intervention group at 30 days post-discharge (p = 0.009)
- Pharmacist-facilitated hospital discharge program
  - Medication therapy assessment, medication reconciliation, screening for adherence, counseling and education, post discharge phone call
  - Medication discrepancies at discharge reduced (33.5% vs. 59.6%, p < 0.001)
  - No impact on readmission or emergency visits at 14 days or 30 days

Jack B et al., (2009);
Walker P, et al., (2009)

ASHP-APhA Medication Management in Care Transitions Best Practices

- Elements of Success
  - Collaboration with multidisciplinary teams
  - Integration of Rx team – RPh, tech, student, resident
  - Outcomes to justify resources: readmissions, discharge Rx capture rate, LOS, ED visits, patient satisfaction, pharmacy interventions
  - Integration of health information technology to improve access to necessary patient information
  - Strong partnership network - communication with patients, providers across the care continuum before, during and after discharge

ASHP, (2012)

Einstein Healthcare Network Program (Philadelphia)

- REACH program – pharmacist provides:
  - **(R)** Medication <u>Reconciliation</u>
  - **(E)** Patient-centered <u>Education</u>
  - **(A)** Medication <u>Access</u> issues
  - **(C)** Comprehensive <u>Counseling</u>
  - **(H)** <u>Healthy</u> patient
- Pilot: decreased readmissions 21.4% to 10.6%, maintained 14-17%
- Justified on prescription volume

Johns Hopkins Medicine

- System approach – pilots at 5 acute care hospitals
- Team approach – RPh, students, residents, technicians
- Adapted screening tool to determine "medication bundle"
  - Medication reconciliation
  - Patient education – high risk meds
  - Post-discharge phone call within 72 hours of discharge and/or home-based medication reconciliation
  - MTM consult
- Pharmacy technicians process insurance claims, discusses payment options with the patient, referrals to social work
- Outcomes: improvements readmission, LOS, HCAHPS
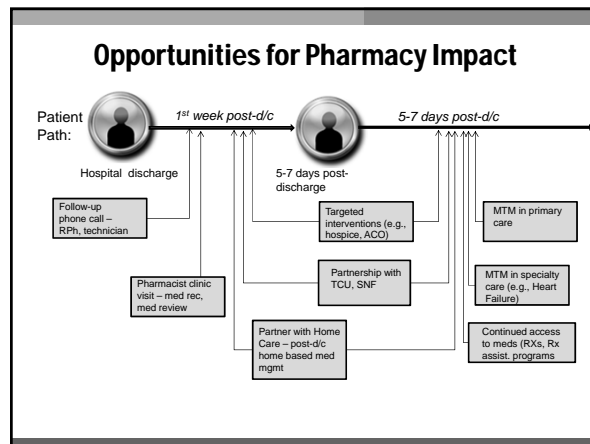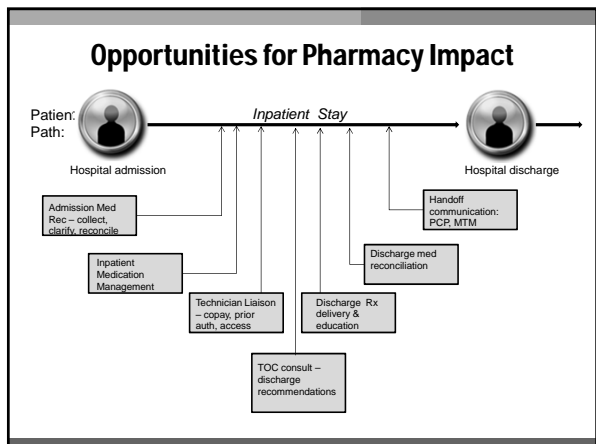
Mission Hospitals (North Carolina)

Mission Uninsured Safe Transitions (MUST)
- Medical assistance and high risk patients referred to MUST after hospital discharge
- Pharmacy technician conducts follow-up calls and can refer to RPh
  - Within 72 hours
  - After the first visit with PCP
  - within 1 week of first refill (ongoing as needed)
- Pharmacists provide chronic disease management, education – 60% of visits resulted in ADE prevention
- Outcomes: studying readmits, HCAHPS, disease

The 7 T's of Transitions

- **T**eamwork – interdisciplinary collaboration and communication across the continuum
- **T**herapeutics – get the drugs right
- **T**echnology – identify and measure impact
- **T**echnicians – optimize skills mix/leverage existing resources; pharmacists oversee medication management systems
- **T**iming – provide patient what they need when they need it (right drug, access, and information)
- **T**each back – communication with patients
- **T**esting - additional research is needed to identify specific evidence-based pharmacy approaches

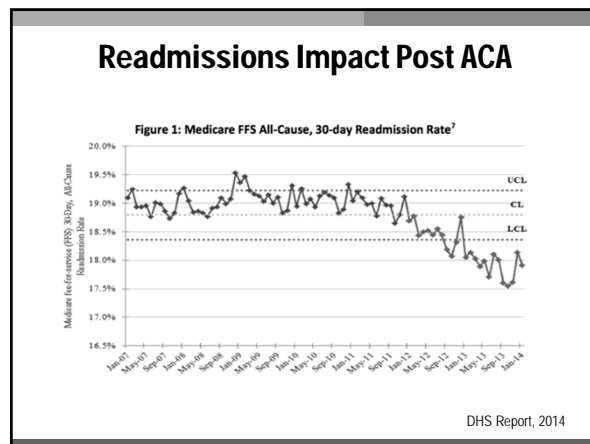Senst, B., VHA (2013).
With permission.

Opportunities for Pharmacy Impact

Patient Path: Hospital admission → Inpatient Stay → Hospital discharge

- Admission Med Rec – collect, clarify, reconcile
- Inpatient Medication Management
- Technician Liaison – copay, prior auth, access
- Discharge Rx delivery & education
- TOC consult – discharge recommendations
- Discharge med reconciliation
- Handoff communication: PCP, MTM

Opportunities for Pharmacy Impact

Patient Path: Hospital discharge → 1st week post-d/c → 5-7 days post-discharge → 5-7 days post-d/c

- Follow-up phone call – RPh, technician
- Pharmacist clinic visit – med rec, med review
- Partner with Home Care – post-d/c home based med mgmt
- Targeted interventions (e.g., hospice, ACO)
- Partnership with TCU, SNF
- MTM in primary care
- MTM in specialty care (e.g., Heart Failure)
- Continued access to meds (RXs, Rx assist. programs)

ASHP Transitions of Care Survey

Survey Item	% Completing
Complete medication history at admission	RPh 27%, Tech 5%
Complete med history in the ED	12%
Initiative targeting special populations (e.g. high risk)	25%
Pharmacist provided patient education	56% selected groups
Involve student pharmacists in TOC activities	30%
Involve technicians in TOC activities	14%
Review discharge med lists	27%
Discharge counseling, med rec	24%, 22%
Post-discharge follow-up phone calls, upon request	9%
Follow up at outpatient clinic after discharge	6%

Kern K., et al. (2014)

ASHP Transitions of Care Survey

- 70% indicated that pharmacists spend <u>less than 10%</u> of 40-hr workweek on TOC activities
- Barriers
  - resources (91%), lack of recognition of RPh role, TOC not prioritized in health system, lack qualified techs
- Novel approaches
  - Protocols for RPh med reconciliation per protocol, CMS core measure review, TOC RPh consult service, Rx assistance programs, post D/C referrals for MTM,

Kern K., et al. (2014)

ASHP TOC Survey Recommendations

- Reallocate resources to medication history activities – inpatient, ambulatory care
- Prioritize TOC activities in RPh amb care service
- Involve students/residents in TOC activities
- Redeploy inpatient staff toward delivery of formalized TOC consult service
  - Med history, optimization, high risk assessment, follow up post discharge, adherence tools
  - Document in EHR
  - Provide recs to inpatient and outpatient providers

Kern K., et al. (2014)

Readmissions Impact Post ACA

Figure 1: Medicare FFS All-Cause, 30-day Readmission Rate[7]

DHS Report, 2014

Abbott Northwestern Hospital

– Tertiary referral, community, teaching hospital
  • Part of Allina Health
  • 12 hospitals, 90+ clinics
  • CMS Pioneer ACO member
– 626 staffed beds
– 40,000 admissions annually
– Epic EMR with CPOE
– 2014 US News & World Report: #1 hospital in Twin Cities

Inpatient Pharmacy Department

• Integrated patient-centered practice model
  • Decentralized pharmacist coverage all units 16 hours per day
• 104 FTE for inpatient services
  – Five PGY1 and two PGY2 residency positions
  – 21 student interns
  • 130% increase from 2011 to 2013
  • Pharmacist Extenders

Care Transitions & Readmissions

• Aligns health system, hospital, and pharmacy department goals
• ASHP PPMI - pharmacist-provided drug therapy management in optimal practice models includes:
– Establish process to ensure med-related continuity of care for discharged patients
– Medication reconciliation and provision of discharge education to patients

Where to Begin

• Get on the train, before it leaves without you!
  – Readmissions, LOS, patient satisfaction
• Pilot.. Pilot.. Pilot
  – Team collaboration, get staff on board
  – Small tests of change
  – Data to support success, identify barriers
  – Outcomes to support resource ask – what is ROI
  – Communicate results broadly
  – Stop pilot, create outcry of support to continue

ANW Transitions Pilots (2011-Present)

• CHF transition
  – Inpt to VAD clinic
• Hospital to TCU pilot
  – Discharge med rec
• Care Transition Team pilot
  – High risk for readmit
• Med Rec
  – Admit med history

• Multidisc Rounding Program (MDR)
  – LOS focus
• Communication to next level of care
  – Interdisc planning tool (IDP)
  – Rec for outpt provider (ROP)

Care Transitions Team Pilot

• Transitions care team
  - Social worker, hospitalist, RN, RPh, primary care
  - Inpatient pharmacist referral to MTM if indicated
  - Community pharmacy technician liaisons
• High-risk patient identification
  • Medication needs assessment
• Transition conference
• Hand-off to next level provider
  • Chronic disease follow up

How quickly do patients return to Allina Health hospitals?

39% of potentially preventable readmissions (PPRs) occurred within seven days of discharge

Days to Readmit
April 1, 2011 through March 31, 2012

Legend: PPRs Count; Accumulated Total PPRs %
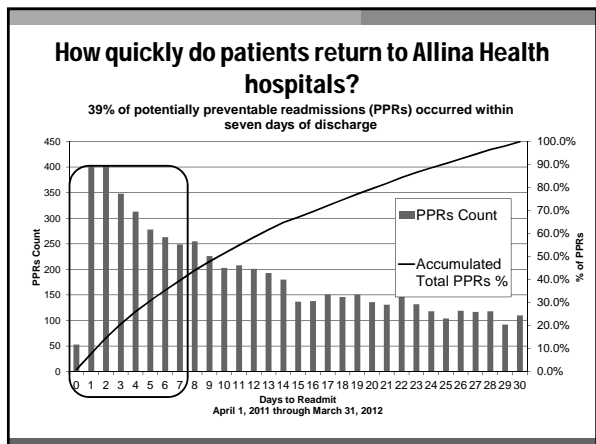
Example Readmission Filter

Care Transitions Team Pilot

Inpatient RPh role:

– Admission: medication history, assessment

– Prep for transition: transition conference

– Discharge: standardize communication and hand-off to next level of care including MTM referral

Pilot outcomes:

– 50 minutes per patient– interview, documentation, communication

– Three recommendations per patient

– **~50% of interventions were medication reconciliation related!**

Communication to Next Level of Care

- Interdisciplinary Planning Tool (IDP)
  - "One stop shopping" info for discharging provider
  - Identify medication barriers
    - prescription cost, poly-pharmacy, med understanding
  - Medication adherence concerns
    - Med box, forgetting doses, etc.
  - Understanding of emergency medications
    - Rescue inhalers, nitro tabs
- Recommendation for outpatient provider (ROP) – targeted info for receiving provider

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Interdisciplinary Planning Tool (IDP)

Discharge Summary

- MD ROP – medication management focus

Medication Reconciliation

- Patient safety issue
- Unintended medication discrepancies at time of hospital admissions range from 30% to 70%
- 50% of medication errors and 20% of adverse drug events (ADE) are attributed to poor communication at care transitions
- Preventable ADEs in hospitals are estimated to cost $4,800 per event

ASHP, (2012); Bates, et al.,(1997)

Medication Reconciliation Process Improvement

- 2012 goal to improve admission process
  - Accuracy of medication list, efficiency in process
- Clarify expectations for all roles
  - Collect, Clarify, Reconcile
- PILOT–pharmacy medication history service
  - Use of pharmacist extenders - interns
  - Temporary hours extension
  - Started in the emergency department (30% of admits)

Medication Reconciliation Process Improvement

- Definition – IHI 3 step process
  - Collect – pharmacy intern, pharmacist
  - Clarify – pharmacist verification
  - Reconcile – physician
- Old process – clarification occurs AFTER physician has written admit orders
- New process – clarification occurs BEFORE physician has written admit orders
  - Goal: more accurate med list at admission

Medication History Pilot– Emergency Department

- ED pharmacist practice
  - Antibiotic culture follow up, physician consults, order verification, medication therapy optimization, STAB team and code participation, patient education
- Med history conducted by nursing… sometimes.
- Pharmacy staffing changes for pilot:
  - Expanded to day shift (Mon-Fri) – not dedicated to med rec
  - Added pharmacist intern shift, 5 to 10 p.m. (Mon-Fri)– dedicated to medication list acquisition

ED Pilot Data Analysis (Jan - April 2012)

- 2,300 med rec discrepancies (2.7 per patient)
- Average pharmacy time = 23 minutes per admission
- ADE prevention
  - Chart analysis of 138 patients showed 17 adverse drug events "prevented" (1% of interventions)
- Patient satisfaction (HCAHPS)–overall score
  - 81.45% pharmacy model (n=130) vs 77.79% current state (n=505) = p <0.0001.
- Medication reconciliation ED throughput
  - 40 minutes faster with pharmacy model; no difference overall ED

ROI: Cost Avoidance Annual Extrapolation - ED admits

Metric	ANW pilot data
Number of pharmacist-patient encounters (annualized)	6,500 (18 patients/day x 365 days)
Number of med interventions (annualized)	13,000 (2 interventions per patient)
Number of preventable ADEs (annualized)	130 (1% of interventions prevent an ADE)
Cost per avoidable ADE prevented	$4800 per intervention
Total potential cost impact	$624,0000 (minus labor)

Bates, et al., 1997

Keep the Momentum Going

- ED experience – stopped pilot
- Physician outcry for service – ED, hospitalist
  – Multiple meetings with hospital administration
- Achieved approval for 4.2 FTE over 2 years
  – ED RPh day shift (1 FTE)
  – Med History RPh service (1.4 FTE)
  – Intern med history model (1.8 FTE)
    • 5-10 pm ED med history
    • 5-10 pm med history service

Medication History Service

- Hospitalist consult service
  - Mid-shift 12:30 pm - 9 pm; RPh paired with intern
  - Consult via: in-basket message; dedicated phone
  - Leave progress note
- Standard education, training, competency
- What can we stop doing to expand?
  • Kaizen event July 2014
  • Lower RPh/patient decentral team ratio – build in

Another pilot? Yes!
Multidisc. Rounding Program (MDR)

- Dedicated hospitalist, "rapid fire" discharge rounds
- Pharmacy medication history (goal 100% of admits)
  • Repurposed existing staffing, med history service
- MDR outcomes - preliminary results
  - 16% reduction in length of stay on unit
  - Improvement HCAHPS - communication about medications on pilot units

MDR – Patient Experience Outcomes

- Pilot units compared to total hospital

Medication History Expansion

- Determine staffing needs for house-wide expansion
- # admits by time of day and location
- Estimate 23 minutes per patient
- Start focus in ED; add from there
- Leverage pharmacy student intern program
- Leverage residents and APPE students to help

Where are Admissions Coming From?

	Admits per day	Percentage of admits
ED admissions	33	35%
Direct admissions	25	25%
Outpatient admissions	15	15%
Surgical admissions	25	25%
Totals	~100* *excludes newborns	

Admit Data Drives Staffing Plan

	Total patients	Patients per day	Staffing need (FTE)
0700-1059	3,103	11.4	0.6
1100-1459	7,874	28.8	1.5
1500-1859	9,285	34	1.8
1900-2259	6,476	23.7	1.2
2300-0259	3,578	13.1	0.7
0300-0659	2,216	8.1	0.4
Total	32,532	119.2	6.25

Medication History Summary

- Multiple pilots demonstrated improved safety, quality and cost effectiveness
  - Errors in the medication list
  - Preventable ADEs (1% national benchmark)
  - Physician time–efficiency in completion of admission process with pharmacy list vs current state
  - Nursing time–offset, need to quantify
  - Potential patient satisfaction effects HCAHPS
  - Potential length of stay impact

Allina Health System Approach

- Additional resource need – ROI
  - Nursing offset? Duplication of list collection
- 3 other metro hospitals requested "starter pack" to get to par with ANW Jan 2014 – Approved!
- Regional hospital assessment
  - Several non-24 hr sites
  - Critical access sites already reviewing all admits w/in 24 hr; some completing discharge
  - Leverage telehealth options?
- Additional outcomes: readmissions, LOS

Allina Health Medication Reconciliation Analysis

- Recognition: Lisa Gersema, MHA, PharmD, FASHP; Ami Davis, Allina Health Data Analytics
- Outcome metrics - 952 patients
  - 1/1/14 – 4/30/14 versus historical control (2013)
  - Length of stay
  - Potentially preventable complications (PPCs)
  - Potentially preventable readmissions (PPRs)
  - Unplanned 30-day readmissions
  - HCAHPS care transitions measure

Allina Health Medication Reconciliation Analysis

- Control group outcomes were risk-adjusted according to the diagnostic distribution of the case group.
  - Length of stay and HCAHPS care transition measures for the control group adjusted according to the MSDRG distribution of the cases population.
  - PPCs, PPRs, and 30-Day unplanned readmissions for the control group adjusted according to the APR-DRG distribution of the cases population.

Data – LOS and Readmissions

Length of Stay

Encounters	ALOS	MSDRG GMLOS	Performance to GMLOS	Historical GMLOS Performance of Similar Pt Population	Result
929	4.14	3.78	109.4%	156.5%	Favorable

PPR

PPRs	Eligible Discharges	PPR Rate	Expected PPRs	Actual-to-Expected PPR Ratio	Historical PPR Ratio Performance of Similar Pt Population	Result
61	740	8.2%	69.15	0.88	1.00	Favorable

30-Day Unplanned Readmissions

30-Day Unplanned Readmissions	Discharges	30-Day Unplanned Readmission Rate	Historical 30-Day Unplanned Readmission Performance of Similar Pt Population	Result
119	938	12.7%	13.2%	Favorable

Challenges

- Workflows – integration of pharmacist into admission process
- Challenge of two standards of care – one with pharmacy team completing collect/clarify and one with RN collection (error prone)
- Resources at all sites - this is new work
- Pharmacy productivity stat – doesn't reflect new medication reconciliation work
- Data analysis is labor intensive

Allina Health Med History Accomplishments

- 12 hospital strategy in place
  - completing med history 30-100% of admits
- Reductions in LOS, ADEs
- Reductions in PPR and 30 day readmissions
- Improvements in patient experience
- Overwhelming provider and nursing support
- System safety initiative for 2014-2015
  - 18 additional FTEs requested for 2015 budget
  - tentative All President Committee approval despite initiative to take out $100million across system by end of 2014
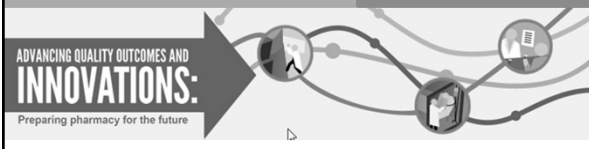
Summary

- Care transitions – opportunity for pharmacy leadership and collaboration
- Remember the 7 T's of Transitions
- ROI is there! Multiple studies supporting
  - Triple aim; health system goals
  - Readmissions, LOS, patient experience, ADEs
- Pilot at your site and demonstrate outcomes
- One size does NOT fit all – find your niche
- Pharmacy must be at the table driving the work

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Preparing pharmacy for the future

Part 2: Outside the Four Walls of the Hospital

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Learning Objectives

- Compare best practice program elements that have been shown to improve transitions of care
- Analyze 2 pre- and/or post- pharmacy led interventions that have been shown to improve transitions of care
- Given a scenario, evaluate a method for reducing avoidable hospital admissions through medication adherence
- Develop a plan to include a pharmacist in a medical home

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Riverside Health System Overview

Riverside Health System

- Integrated Health Delivery Network
  - Located in Southeastern Virginia
  - 3 divisions
    - Medical Group
    - Acute Care
    - Lifelong Health and Aging-related Services

Riverside Health System

- Acute Care
  - 5 acute care hospitals
    - 4 of 5 are small, community based hospitals
      - Census less than 75
      - Two sole community
  - 1 inpatient psychiatric hospital

Riverside Health Sytem

- Riverside Medical Group
  - Over 500 providers across 132 sites
  - One of the largest and most diverse multi-specialty group practices in the state of Virginia
  - Goal of NCQA Patient-Center Medical Home™ certification of all primary care offices (35) by the end of 2014

Riverside Health System

- Lifelong Health and Aging Related Services
  - 6 Program of All Inclusive Care for the Elderly (PACE) Centers
  - Home-based services (Home Health/Private Duty, Hospice, DME, Home Technology Services)
  - House calls program
  - Continuing Care Retirement Communities (4)
  - Acute Inpatient Rehabilitation
  - Long-term Acute Care
  - Skilled Nursing Facilities
  - Assisted Living
  - Nursing Home
  - Adult Day Care
  - Physical Therapy
  - Wellness

Riverside Health System

- Managed Care
  - Do not have own insurance product
  - Partnership with payers
    - ACO (Aetna)
    - Shared Savings (Humana)
    - Virginia Medicare Medicaid Plan
      - CMS dual eligible demonstration project
    - Employee plan (self insured)
    - PACE

RHS Mission and Care Difference

"To care for others as we would care for those we love"

The Riverside Care Difference
- To keep you safe
- To help you heal
- To treat you with kindness
- To respect your wishes

Riverside 2014 Commitments

Focus Area #2 - Integration
- 2.4 Develop and implement a Case Management Program for **medically complex, high-risk patients** across the system by December 14, 2014

Focus Area # 3- Safety, Quality, Service Experience
- 3.2 Improve health outcomes through a commitment to evidence-based practice and reliability of performance as demonstrated by **improved transitions in care**, compliance with preventive care measures and integration of predictive tools to manage the health of defined populations cared for by our team members.

Improving Care Transitions

- Care Transitions
  - "Describes a continuous process in which a patient's care shifts from being provided in one setting of care to another."
  - If poorly managed, can diminish health and increase costs
  - Estimate that inadequate care coordination was responsible for $25-$45 billion in wasteful spending in 2011
    - Includes inadequate management of care transitions
      - Avoidable complications
      - Unnecessary hospital readmission

Health Policy Brief: Care Transitions 2012

Improving Care Transitions

- 2001 Institute of Medicine report, *Crossing the Quality Chasm*
  - US Health System decentralized, complicated and poorly organized
    "layers of processes and handoffs that patients and families find bewildering and clinicians view as wasteful"

Crossing the Quality Chasm, 2001

Improving Care Transitions

- Upon leaving one setting for another, patients receive little information on
  - How to care for themselves
  - When to resume activities
  - What medication side effects to be aware of
  - How to get answers to their questions
- Leads to preventable admissions/readmissions

Crossing the Quality Chasm, 2001

Improving Care Transitions

- Root Causes of poor care coordination
  - Lack of interoperability between electronic health records
  - Hospitals faced few consequences for failing to send information at discharge
  - Payment policies did not create incentives for hospitals to invest in care transitions
  - Implementation of hospitalist model of care
    - Few PCPs are involved in the care of their patients during the hospital stay

Improving Care Transitions

- 2007 JAMA literature review
  - Direct communication between hospital physicians and primary care physicians occurred infrequently
  - Discharge summary
    - Availability at first post-discharge visit low (12%-34%)
    - Remained poor at 4 weeks (51%-77%)
    - Affected quality of care in ~25% of follow-up visits
    - Often lacked important information (e.g., lab results, discharge medications, treatment, follow-up plan)

Kripalani, Sunil, et al., (2007).

Improving Care Transitions

- To date, most successful programs have focused on transitions from hospital to home
  - Driven by reimbursement changes under ACA
    - " carrots" and "sticks"
- New payment models create incentives to better coordinate transitions of care at all levels
  - Accountable Care Organizations
  - Shared Savings Programs
  - Bundled payments
- Rewarded for providing care in less intensive settings

www.chrt.org

Best Practices in Care Transitions

- Transition from hospital to home: best practice program elements
  - Comprehensive discharge planning
  - Complete and timely communication of discharge
  - Medication reconciliation
  - Patient/caregiver education using the "teach-back" method
  - Open communication between providers
  - Prompt follow-up visit with outpatient provider after discharge

www.chrt.org

Riverside Focus Areas

Transitions Cross In and Out of Direct System Management
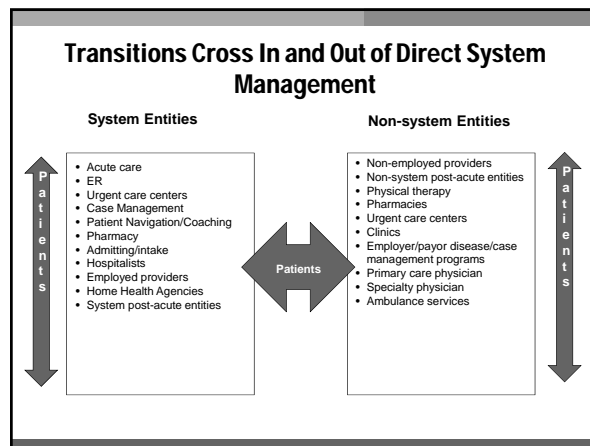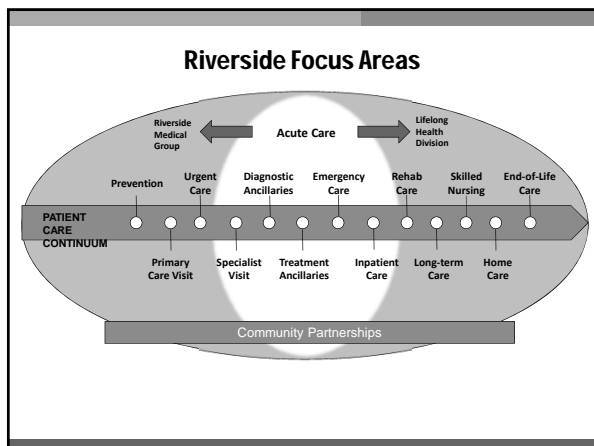
Riverside Challenges-overall

- Lack of fully integrated EHR
- Lack of robust care management program across care continuum
- Lack of risk-stratification tools to allow focus of limited resources
- Impact of re-admission penalty
- Identified opportunities in transition from acute to post-acute care
  - Specifically acute to skilled
  - Poor discharge medication reconciliation a contributor

Where do we start???

- Overall Health System
  - Implementation of internal HIE
    - To better aggregate critical patient information across continuum of care
  - Health System Care Transitions Team
    - Process
    - Data
  - Development of Complex Case Management program
  - Implementation of risk-stratification tools to target interventions
  - Engagement with community partners
    - E.g. Eastern Virginia Care Transitions Program

Riverside Challenges-Pharmacy

- Variations of engagement of inpatient pharmacy staff in care transitions
  - Greatest engagement at large teaching hospital
  - Some staff uncomfortable in new role
- Limited pharmacist activity outside four walls of hospital
  - Nursing Home Consultant Pharmacists
  - PACE
- Limited retail pharmacy footprint
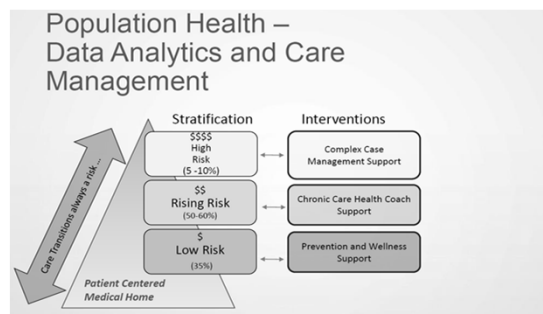 - Only pharmacy located at main hospital

Where do we start???

- Acute Care Pharmacy
  - Development/implementation of inpatient pharmacy care transitions program
    - Incorporation of transitions of care into daily IPOC rounds
    - Leverage best practice methods/consumer friendly tools/pharmacy student resources for enhancement of discharge medication teaching
    - Implementation of bedside delivery of discharge medications
    - Focus on high-risk population
      - Re-admission penalty diagnoses
      - Newly prescribed high-risk medications
    - Increased role in medication reconciliation process

Where do we start???

- Pharmacy across the continuum
  - Active role in system Care Transitions team
  - Involvement with Complex Care Management program
    - Development of new ambulatory pharmacy role
    - Leverage partnership with local school of pharmacy
  - Use of predictive modeling to target pharmacist interventions
  - Engagement with community partners

Riverside Complex Case Management

Riverside Complex Case Management

Pharmacy and the Patient Centered Medical Home

Opportunities for Pharmacy

- Focus on both High and Rising Risk population
  - Medication adherence review/counseling
  - Medication therapy review (MTM/CMR)
  - Medication reconciliation
  - Medication monitoring
  - Education
    - Staff
    - Patient/caregiver
  - Disease state management

Opportunities for Pharmacy

- Patient identification for pharmacy intervention
  - Referrals
    - Complex Case Management
    - PCMH
    - Other settings of care (acute care, home health)
  - Predictive modeling
    - Target those most likely to benefit based on organizational data

RHS Medication Risk Predictive Model Pilot

- General Principles
  - Evidence-based
    - Published evidence (external)
    - Riverside EMR evidence (internal)
  - Focus on ED visits as "outcome"
    - ED visits can signal decompensation
    - ED visits are expensive
    - ED visits lead to admissions
  - Focus on factors that might specifically be related to potential medication problems

RHS Medication Risk Predictive Model Pilot

- Based on 6 point scale (6=highest risk)
  - Age: 1 point for age 80 or above
    - age where see rise in ED visit rates
  - Comorbidity: 1 point for HCC > 2
    - Mean HCC score for patients with no ER visits in the last 6 months=0.494, mean HCC score for patients with at least 1 ER visit in last 6 months=0.827
  - Behavioral Health: 1 point for psychiatric diagnosis, depression or for dementia

RHS Medication Risk Predictive Model Pilot

- Specific medication classes
  - 1 point if anticoagulation, insulin, digoxin, antiarrhythmics, antianginal
- Polypharmacy: 1 point for $\geq$ 9 meds
- Anticholinergic Cognitive Burden Scale: 1 point for ACB $\geq$ 3

Risk Total Distribution

RISK_TOTAL	NUM_PTS	PCT_POPULATION	ER_PATS	ER_RATE
0	68640	57	3711	0.054
1	33944	28.2	3373	0.099
2	11965	9.9	2027	0.169
3	4343	3.6	1036	0.239
4	1245	1	396	0.318
5	212	0.2	72	0.34
6	18	0	10	0.556

RHS Medication Risk Predictive Model Pilot

- Ambulatory care evaluation and follow-up
  - Conduct medication reconciliation between discharge medication list from hospital, PCP med list, and interview with patient.
    - Contact provider/update medication list as appropriate
    - Provide patient with updated medication list
  - Use validated tool to assess adherence
  - Ensure patient has appropriate access to medications
    - Cost: evaluate regimen, referral to RHS medication patient assistance program
    - Transportation: arrange for mail order option from Pavilion Pharmacy

RHS Medication Risk Predictive Model Pilot

- Ambulatory care evaluation and follow-up (cont)
  - Review current medication regimen for appropriateness and streamlining opportunity
    - Renal dosing
    - Age appropriate dosing (BEERs, ACB, etc)
    - Reduction of medication dosing times
    - Drug-drug interactions
    - Condition vs drug, drug vs condition
  - Collaboration with patient and patient care team on recommendations for change
  - Document review/recommendations in OP EMR

RHS Medication Risk Predictive Model Pilot

- Conducted pilot at medical residency run clinic
- Staffed with PGY1 Pharmacy Practice Residents
- Initial pilot 15 weeks (April-June 2014)
- De-brief on pilot every 5 weeks with pharmacy team
  - Shared what worked, what did not
- Pilot continues with support from pharmacy faculty/students

RMG Medication Risk Predictive Model Pilot

- Feedback from pilot
  - More education of providers on goal of program
    - Initially faced some provider push-back
  - Due to timeline of pilot, difficult to target only highest risk patients based on appointment schedule
    - Goal of pre-visit assessment, then participate in clinic visit with provider and patient
  - Challenges with acceptance of recommendations when medication ordered by a specialist
- Results on avoidance of ED visits pending

How many have a formal medication adherence program? **?**

a. Established program of 1 year or greater
b. Established program within last 12 months
c. In process of planning/implementing program in next 12 months
d. No plans at this time

Medication Adherence

- Poor adherence shown to result in complications, death and increased health care costs
- WHO Health Report 2003
  - More people worldwide would benefit from efforts to improve medication adherence than from the development of new medical treatments
- In developed countries, adherence rates of 50-60% in those with chronic conditions
- Adherence drops significantly after first 6 months of therapy in chronic conditions

Adherence to long-term therapy: Evidence for action, WHO 2003
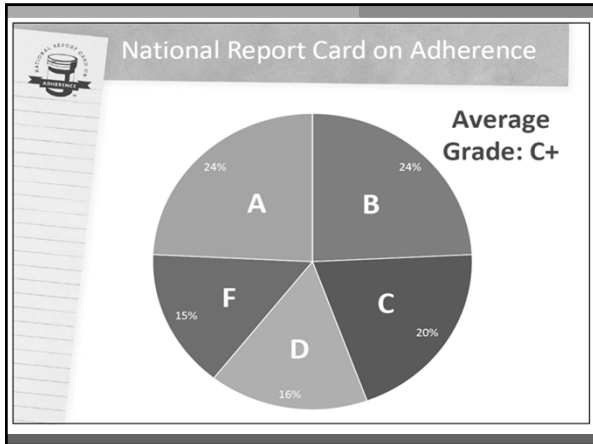

Medication Adherence

- Improving Patient Medication Adherence: A $100+ Billion Opportunity
  - 33-69% of medication-related hospital admissions due to poor adherence
  - Estimated 125,000 deaths annually in US can be attributed to medication non-adherence
    - Patients who are diabetic or who have heart disease 48% less likely to die prematurely when adherent to medication regimen
    - Asthma patients who are adherent to their medications are 11% less likely to have an ER visit or to be hospitalized

National Priorities Partnership April 2011

National Report Card on Medication Adherence

- Commissioned by NCPA in 2013
- American adults age 40+ with one or more chronic conditions for which they have been prescribed maintenance medication(s)
  - 48% reported having been prescribed a medication for a chronic condition
    - Hypertension(57%), high cholesterol (47%)
  - 2/3 have been taking medication for chronic condition for 6+ years
  - 40% have seen provider 5 or more times in last year
    - 20% have had 10+ visits
  - 1 in 6 relies on others for reminders about medications

Medication Adherence in America: A national report card 2013

Non-Compliant Behaviors: Past 12 Mo.

National Report Card on Adherence

Average Grade: C+
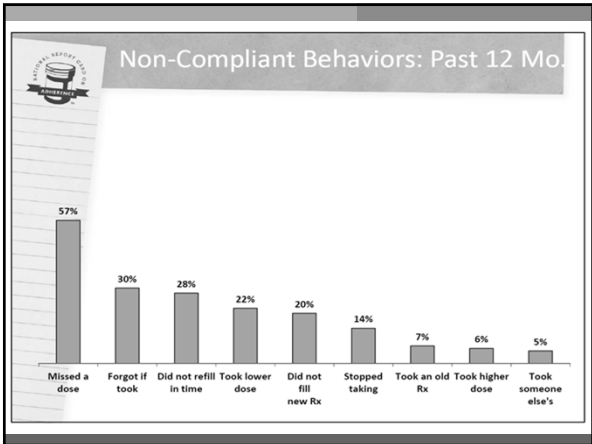
Six Key Predictors of Adherence

- Patient's personal connection with a pharmacist or pharmacy staff
- Ease of affording medication
- Continuity of care
- Recognizing the importance of taking medication as prescribed
- Feeling informed about health
- Extent medication causes unpleasant side effects

Defining Adherence

- Adherence: The degree to which the patient's behavior is in agreement with the health care provider's recommendations
  - Collaborative approach between patient and provider in which patient's values, lifestyle and beliefs coincide with the provider's medical advice and opinion

Defining Adherence

- Compliance: patient's obedience to therapy, under the authority of the provider
  - Not collaborative

- Persistence: patient's ability to continue taking the medication for the duration of treatment

WHO 5 Dimensions of Adherence
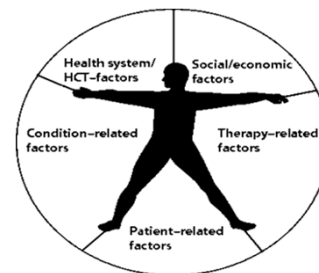
Adherence to long-term therapy: Evidence for action, WHO 2003

Root Causes of Non-Adherence

- High out-of-pocket costs
- Lack of care coordination, follow-up and shared decision making among team
  - Including patient/caregiver
- Materials/communication not patient appropriate
- Complex/burdensome regimens
- Co-morbidities, such as mental illness
- Side effects, real or perceived
- Personal factors, such as lifestyle, cultural and belief system

Osterberg L, Blaschke T (2005)

Leveraging Community Partners

- Pharmacists Advancing Medication Adherence (PAMA)
  - Sponsored by National Community Pharmacists Association (NCPA)
  - PAMA Vision: By 2015, actions taken by community pharmacists will result in improvement in medication adherence rates.
  - PAMA Goal: Influence community pharmacists to recognize and provide adherence services as a core component of the profession making it as equally important as dispensing and counseling

http://www.ncpanet.org

PAMA Simplify My Meds™

- Turnkey program to help pharmacists boost medication adherence and improve pharmacy operations
- Based on the concept of medication synchronization
  - Consolidate and coordinate all chronic medications to be filled on the same date each month
  - Decreases regimen complexity
  - Boosts adherence
  - Provides the opportunity to review entire profile each month to ensure safe and appropriate care
  - Helps promote the idea of "pharmacy home"
- One program has shown improvement in compliance with chronic medications by 30% with an additional 100 days of therapy each year.

http://www.ncpanet.org

Patient Safety and Clinical Pharmacy Services Collaborative (PSPC)

- Promotes integration of enhanced medication management into the work of inter-professional health care teams
- Teams formed in approx 200 communities
- Use of evidence-based practices
- Significant reductions in adverse drug events
- Improved health status for those with out of control chronic conditions

http://www.pspcnationalperformancereport.org

PSPC Approach

- Patient-centered, coordinated care for defined high-risk population
- Application of identified best practices
- Use of rapid, iterative performance improvement cycles (IHI model)
- Intentional inter-professional care
- Registries to manage high risk patients and track their care

http://www.pspcnationalperformancereport.org

PSPC Results

- Diabetes: 35% achieved desired A1c
- Hypertension: 43% achieved desired BP
- Dyslipidemia: 37% achieved desired level
- Anticoagulation: 51% achieved INR in safe range
- Asthma: 32% achieved control
- Depression: 11% with improved depression
- Decrease in ADE from 0.7 to 0.5 per patient
- Average potential med errors from 1.5 to 0.8 per patient/per encounter

http://www.pspcnationalperformancereport.org

ADVANCING QUALITY OUTCOMES AND
INNOVATIONS:
Preparing pharmacy for the future

Transition to Post-acute Care (PAC) Facilities

Transition to PAC

Transfers and Adverse Events
Adverse drug events (ADEs) attributable
to medication changes occurred in
20% of bi-directional transfers

*50% of ADEs were caused
by discontinuation of medications
during hospital stay*

Boockvar et al (2004)

Transition to PAC

- Up to 25% hospital readmission rate at 30 days
  - Many interventions implemented in acute care not deployed in this population
- Risk for medication discrepancies at many junctures
  - Home medication list versus hospital medication list
  - May have multiple medication lists provided during transition process
    - Medication lists often do not match, causing significant confusion
  - Rarely includes a prospective plan for managing medications

Myers A, Neal E, Mixon, A (2014)

Transition to PAC

- PAC may not have daily provider or pharmacist coverage
  - Pharmacy services often provided by outside vendor
  - Difficulty in clarifying medication orders
  - Medication Regimen Review may be unavailable in certain care settings (ALF)
- Other challenges
  - Availability of urgently needed medications at facility
    - Content of stat boxes
  - Effective pain management at transition
    - Challenges with controlled substances
  - Cost of medications
    - Medicare D considerations

Current Riverside Initiatives

- "Commit to Admit"
  - Program aimed at timely acceptance of patients to post-acute care
  - Includes elements to smooth transition process
    - Centralized transition team
      - Nursing led, pharmacy consult
    - Medication regimen review/Med Rec
    - Transfer orders
      - Includes prescriptions when appropriate
    - Ensure patient has access to needed medications
      - Current focus on pain management in total joint

Current Riverside Initiatives

- Use of technology to facilitate patient hand-off
  - Skilled facility attends daily IPOC rounds via video conferencing
    - Discussion of patients scheduled for transition
    - Pharmacy participates in process
  - Prior to transition, "face to face" handoff between sending and receiving nursing staff
    - Patient/caregiver involvement

Current Riverside Initiatives

- Insert photo of video conferencing

Practice Model: Vanderbilt University

- CMS IMPACT grant (Improved Post-Acute Care Transitions)
- Transition intervention for Medicare patients transferring to 1 of 23 PAC in Nashville area
- Interdisciplinary
  - Nurse transitions advocate meeting
    - Includes patient, family, acute care and PAC
  - Transfer-oriented medication reconciliation by clinical pharmacist

Myers A, Neal E, Mixon, A (2014)

Practice Model: Vanderbilt University

- Clinical Pharmacist Role
  - Reconcile transfer orders at discharge
  - Create a medication management plan (MMP) for PAC providers. Includes
    - Pre-hospital medications
    - Medications to be ordered at the PAC facility
    - Indications for each medications
    - Additional comments
    - Last administration time for medications in acute care
    - Side-by-side comparison allows for quick review of medications throughout the continuum of care

Myers A, Neal E, Mixon, A (2014)

Practice Model: Vanderbilt University

- Medication Management Plan
  - Pre-hospital medications reconciled with transfer orders
    - Clearly marked as continued, changed, held or d/c including rationale for changes
  - Specific instructions to restart any pre-hospital medications that were held
  - Review of CMS core measures

Myers A, Neal E, Mixon, A (2014)

Practice Model: Vanderbilt University

- Medication Management Plan
  - Inclusion of indication helps in assessment of need for continuation at transition of care
  - Removal of hospital specific medications (eg. IVs)
  - Over age 65, review of age inappropriate medications (Beers, high ACB risk)
- Pharmacist facilitates clarification/changes to medication regimen before transition

Myers A, Neal E, Mixon, A (2014)

Practice Model: Vanderbilt University

- Focus on high risk medications
  - Warfarin orders include:
    - Indication for therapy and INR goal
    - at least 3 days of INR history and plan for follow-up
    - dosage history

Target INR: 2.0-3.0 Therapy: indefinite	Duration of		
	2 days before discharge	Day before discharge	Day of discharge
INR	4.0	3.3	2.7
Warfarin given (mg)	Held	Held	2mg

Myers A, Neal E, Mixon, A (2014)

Practice Model: Vanderbilt University

- Focus on high risk medications
  - Insulin
    - Include blood glucose readings
    - All scheduled and correction insulin administered
  - Diuretics
    - Daily serum creatinine
    - Daily weight
  - Prospective medication plan for other drugs as needed
    - Titration schedules, monitoring plans, stop dates, warnings for patient specific problems

Myers A, Neal E, Mixon, A (2014)

ADVANCING QUALITY OUTCOMES AND
INNOVATIONS:
Preparing pharmacy for the future

Transition to Home

Transition to Home

- Includes many variations
  - Hospital to home with
    - Home Care
    - Complex Case Management
    - Care Transitions Coach
    - PCP follow-up care
    - Family/caregiver
    - No support
  - PAC to home

Practice Model: Summa Health

- Diabetes Outpatient Transitional Care Clinic
  - Used as "bridge" clinic post discharge
  - Housed in private practice endocrinology practice
- Process starts as inpatient
  - Includes education, plan development and medication reconciliation
  - Inpatient team determines need for transitional care visit
    - Appointment scheduled before discharge

ASHP, (2012)

Practice Model: Summa Health

- Transitional Care Clinic
  - Review of discharge medication list
  - Goals of therapy reviewed
  - Education/Literature provided
  - Medication therapy review performed if needed
    - Collaborative practice agreement
  - Follow-up plan established
  - All information sent to primary care

ASHP, (2012)

Practice Model: Froedtert Hospital

- Post-discharge from Froedtert Hospital, all patients with a PCP associated with the hospital
  - receive a call from a pharmacist high-risk manager
  - Are counseled on
    - Medications
    - Self-management
  - In person visit scheduled as appropriate

ASHP, (2012)

Practice Model: Froedtert Hospital

- Results
  - Increase in medication adherence
  - 71% of INR within range for those managed by pharmacist clinic
  - Reduction in readmissions (30.37% to 20.13% in 30-day all cause readmissions for heart failure)

ASHP, (2012)

Practice Model: Hennepin County Medical Center

- Enhanced discharge clinic
  - At risk patients without established primary care services
  - Unable to schedule follow-up appointment with primary care provider
  - Scheduled with nurse practitioner and MTM pharmacist within 7 days of discharge
    - Emphasis on medications added, discontinued or changed during hospital stay
  - As required, MTM home visits for high-risk patients not able to travel to clinic
    - Position co-funded with College of Pharmacy

ASHP, (2012)

Practice Model: Hennepin County Medical Center

- Results
  - 30-day readmission rate of 8.8% for those seen in enhanced discharge clinic vs 23.4% for those referred to clinic but did not attend.
  - Average of 2.5 medication related problems identified per patient
    - Adherence (44%)
    - Medication safety issue (23%)
    - Inappropriate indication (23%)
    - Poor efficacy requiring dosage adjustment (10%)

ASHP, (2012)

Summary

- Transitions of care occur at many levels and across the entire spectrum of health care
  - Within and between health systems
- Pharmacy can play a vital role in care transitions outside of the four walls of the hospital
  - Medication history/medication reconciliation
  - Anticipate and resolve medication related problems during transitions
  - Communicate changes in drug regimens between providers and care settings
  - Assess appropriateness and patient understanding of drug regimens
  - Promote adherence
  - Assess health literacy

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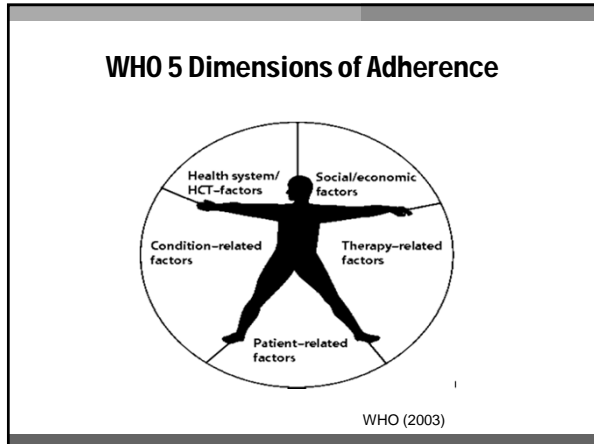
ADVANCING QUALITY OUTCOMES AND
INNOVATIONS:
Preparing pharmacy for the future

Transitions of Care :
Best practices and business models
Small Group Session #2

Kristine Gullickson, PharmD, FASHP

Allina Health, Abbott Northwestern Hospital Minneapolis, MN

Cynthia Williams, R.Ph.

System Director of Pharmacy

Riverside Health System

Resources

- Adult Meducation: Improving Medication Adherence in Older Adults. American Society on Aging (ASA) and American Society of Consultant Pharmacists (ASCP) Foundation program. (http://www.adultmeducation.com/SocialandEconomicFactors.html)
- Improving Care Transitions: Current Practice and Future Opportunities for Pharmacists. American College of Clinical Pharmacy White Paper. *Pharmacotherapy* 2012;32(11):e326–e337

WHO 5 Dimensions of Adherence

Health system/ HCT–factors

Social/economic factors

Condition–related factors

Therapy–related factors

Patient–related factors

WHO (2003)

Social and Economic Dimension

Health Literacy	• Use plain language, 5th grade level • Use of pictures, diagrams, video • "Teach-back" • Involve family/caregiver • Telephone follow-up
Limited Language Proficiency	• Provide information in relevant language • Use translation services • Use of pictures, diagrams • "Teach-back" • Involve family/caregiver
Lack of family/support network	• Involve family members • Refer to support group • Tailor medication regimen to daily routine • Reminders or compliance aids

Social and Economic Dimension

Transportation	• Mail order pharmacy • Pharmacy delivery service
Medication Cost	• Switch to generic or lower cost alternative • Referral to local program/agency that provides medication assistance • Assistance with selection and enrollment in Medicare D program • Pharmaceutical Assistance Programs • 340B discount prescription access
Cultural Beliefs	• Establish trusting and supportive relationship (non-judgmental) • Seek understanding of patients cultural point of view • Elicit information about non-traditional • Acquire skills needed for quality cross-cultural care

Social and Economic Toolkit

– The Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R) http://www.adultmeducation.com/AssessmentTools_1.html
– The Newest Vital Sign http://www.pfizer.com/health/literacy/public_policy_researchers/nvs_toolkit
– Ask Me 3   http://www.npsf.org/for-healthcare-professionals/programs/ask-me-3/
– USP Pictograms http://www.usp.org/usp-healthcare-professionals/related-topics-resources/usp-pictograms
– Adult Meducation: Improving Medication Adherence in Older Adults. American Society on Aging (ASA) and American Society of Consultant Pharmacists (ASCP) Foundation program. http://www.adultmeducation.com/SocialandEconomicFactors.html
– Benefits Check Up https://www.benefitscheckup.org/
– Pharmaceutical Assistance Programs http://www.helppatients.org/

Health Care System Dimension

Patient/Provider Relationship	• Establish a positive, supportive, trusting relationship with the patient • Involve the patient in the decision-making process • Assess the patient's understanding of the illness and treatment • Clearly communicate the benefits of treatment • Involve the patient in setting treatment goals • Assess the patient's readiness to carry out the treatment plan • Identify and discuss any barriers or obstacles to adherence the patient may • have and formulate strategies for overcoming them with the patient • Tailor medication regimens to the patient's daily routine • Reduce complexity of medication regimen • Reward adherence and good or improving performance • Involve family members for social support
Provider Communication	• Adopt a friendly rather than a business-like attitude • Spend some time conversing about nonmedical topics • Avoid medical jargon • Use short words and short sentences • Give clear instructions on the exact treatment regimen, preferably in writing • Repeat instructions • Make advice as specific and detailed as possible • Ask the patient to repeat what has to be done

Condition-related Dimension

Chronic Conditions	• Therapy for asymptomatic conditions Inform about disease process, importance of treatment or prevention, and consequences if not treated • Preventative therapies with no immediately discernible benefit. Reinforce benefits of prevention/treatment versus risks
Depression	• Discuss depression as a common, treatable condition • Refer to depression as a medical condition • Discuss efficacy of medications • Discuss delayed onset of therapeutic effects • Review most common side effects and that over time side effects should lessen • Discuss importance of adequate duration
Psychotic Disorders	• Education about illness and treatment • Minimize complexity of medication regimen • Select medications with fewest side effects/minimize impact of side effects • Titrate to optimum dose • Provide clear instructions on medication use

Therapy-related Dimension

Complexity of Medication Regimen
- Identify and discontinue unnecessary medications
- Reduce dose frequency for medications where possible; use long-acting dosage forms where possible
- Identify combination medications that can replace two separate prescriptions
- Identify opportunities to use one drug to treat more than one medical condition
- Identify medications prescribed to treat the side effects of other medications
- Introduce reminder strategies tailored to the individual, such as pill organizers, calendars, phone reminder systems, etc.
- Provide updated written list of medications

Lack of Immediate Benefit of Therapy
- Educate about what to expect from treatment (e.g., how medication works, time to onset of effect, expected goals of therapy, how to monitor for effectiveness)

Therapy-related Dimension

Chronic or Long-term Therapy
- Simplify regimen
- Refer to support group
- Use reminder strategies
- Involve family members
- Cue medication taking to daily tasks or routine

Actual or perceived unpleasant side effects
- Educate about what to expect from treatment and risks vs. benefits (e.g., tolerance might develop to certain side effects)
- Suggest ways to manage minor side effects
- Identify alternative medications with less side effect potential

General treatment regimen concerns
- Explore preferences and issues with treatment regimen:
  - Does person believe treatment is needed or effective?
  - Does person want to use medicine to treat condition?
  - Does person have concerns about long-term treatment?
- Involve person in determining goals of therapy
- Address medication-related issues that make adherence difficult, such as the need to master specific administration techniques (e.g., injections, inhalers)

Patient-related Dimension

Visual Impairment/Blindness
- Do not talk down or patronize patient
- Clear verbal instructions
- Use of visual/non-visual aids (color coding bottles, different size bottles)
- Technology (automated dispensing systems, alarms)
- Large print
- Prefilled syringes/pre-cut tablets
- Audio tape instructions

Hearing Impairment/Deafness
- Do not talk down or patronize patient
- Counsel in quiet area/limit background noise
- Use patient's preferred communication method (sign language, lip reading, written)
- Provide written instructions
- Use of pictures/diagrams
- Confirm understanding

Cognition/Memory
- Speak slowly and clearly; use simple language
- Repeat and rephrase information
- Confirm understanding; have person repeat information
- Provide written document using simple language to support verbal instructions
- Introduce reminder strategies tailored to the individual, such as pill organizers, calendars, phone reminder systems, electronic medication dispensing devices
- Involve caregiver

Patient-related Dimension

Impaired mobility
- Mail order pharmacy
- Pharmacy delivery service
- Store medications in easy-to-access location (unless children in household)

Impaired dexterity
- Use easy-to-open, non-childproof medication containers
- Use pill organizer
- Use easy-to-open unit-of-use packaging
- Pre-measure liquid dosages
- Pre-cut tablets
- Pre-fill syringes
- Use dosage forms that are easy to administer

Swallowing problems
- Identify alternative dosage forms that might be easier to swallow, e.g., liquids, smaller tablets, transdermal products
- Switch to medications that can be crushed or capsules that can be opened and mixed with soft foods