Opportunities for Pharmacy to Impact Inpatient Quality Measures

Robert J. DiDomenico, PharmD, FCCP
Clinical Associate Professor
Cardiovascular Clinical Pharmacist
Member, Cardiovascular Quality Committee

Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Disclosures

- Consulting
  - Cassiday Schade LLP
  - Edwards Wildman LLP
- Speaker
  - Paradigm Medical Communications

Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Learning Objectives

Pharmacists

- Explain the current environment regarding quality measures & their impact on medication therapy management throughout the continuum of care
- List key strategies to implement quality measures that impact patient outcomes in the inpatient setting
- Review current incentives for pharmacists to assure quality measures are achieved in the inpatient setting

Technicians

- Explain the current environment regarding quality measures & their impact on medication therapy management throughout the continuum of care
- List key strategies to implement quality measures that impact patient outcomes in the inpatient setting
- Describe ways for pharmacy technicians to assist in quality measure initiatives

CURRENT STATE OF INPATIENT QUALITY MEASURES

A Historical Perspective

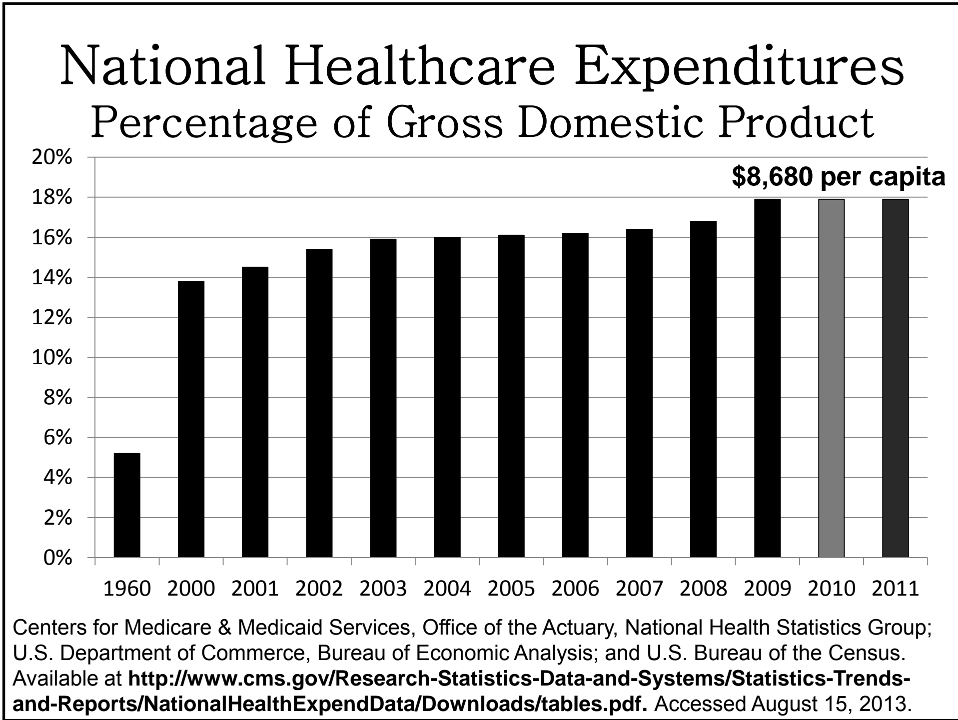
Quality: What is it?

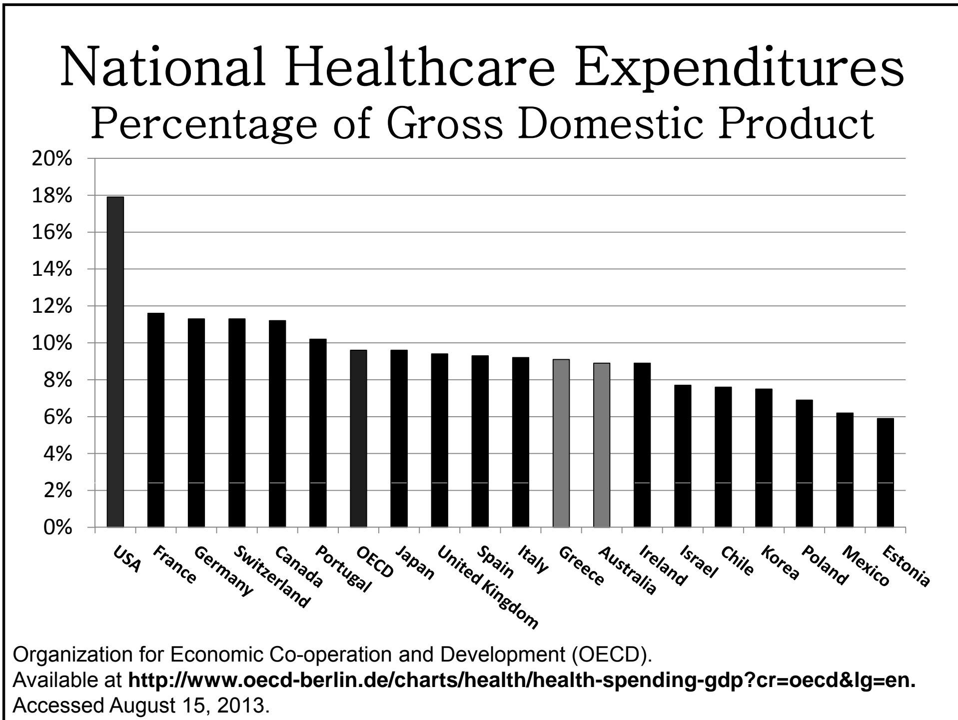
- Quality
  - New World Dictionary
    - Degree of excellence which a thing possesses
    - Excellence; superiority
- Quality of Medical Care
  - Institute of Medicine
    - Degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge

Why the Focus on Quality?

- Committee on the Quality of Healthcare in America (1998)
  - Observations
    - ***Care delivered ≠ Care that should be received***
    - ⇑⇑⇑ in research, research spending, & technological advances
    - > 70 publications demonstrating "serious quality shortcomings" (1990s)
    - Inconsistent, fragmented care, over/under use
    - Lack of access/insurance: 16.7% of population (2010)
    - **Escalating healthcare costs**

Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington: National Academy Press, 2001. **www.nap.edu**.


National Healthcare Expenditures
Percentage of Gross Domestic Product
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
$8,680 per capita
1960
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group; U.S. Department of Commerce, Bureau of Economic Analysis; and U.S. Bureau of the Census. Available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/tables.pdf. Accessed August 15, 2013.


National Healthcare Expenditures
Percentage of Gross Domestic Product
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
USA
France
Germany
Switzerland
Canada
Portugal
OECD
Japan
United Kingdom
Spain
Italy
Greece
Australia
Ireland
Israel
Chile
Korea
Poland
Mexico
Estonia
Organization for Economic Co-operation and Development (OECD).
Available at http://www.oecd-berlin.de/charts/health/health-spending-gdp?cr=oecd&lg=en.
Accessed August 15, 2013.

Aims for Improving Healthcare Quality

Committee on the Quality of Healthcare in America

Healthcare should be:

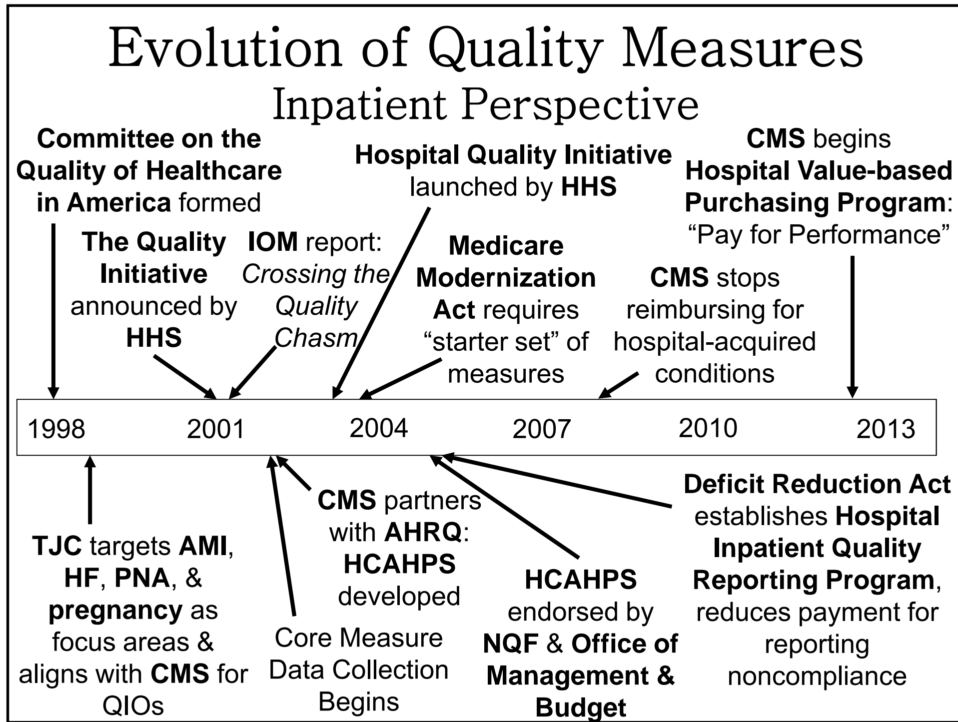
1. Safe
2. Effective
3. Patient-centered
4. Timely
5. Efficient
6. Equitable

Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington: National Academy Press, 2001. **www.nap.edu**.

Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Quality Stakeholders

- ***PATIENTS***
- Providers
- Regulatory agencies
  - ***The Joint Commission*** (**TJC**), Dept. of Public Health
- Third party payers
  - ***Centers for Medicare & Medicaid Services*** (**CMS**), Dept. of Public Aid, private insurers
- Healthcare organizations
  - ***Agency for Healthcare Research & Quality*** (**AHRQ**), Institute of Medicine (**IOM**), American Hospital Association (**AHA**), National Quality Forum (**NQF**), Federation of American Hospitals (**FAH**), Hospital Quality Alliance (**HQA**)
- Medical/Specialty organizations
  - American College of Cardiology Foundation (**ACCF**), American Heart Association (**AHA**), American Medical Association (**AMA**), American Association of Medical Colleges (**AAMC**), ***American College of Clinical Pharmacy (ACCP)***, ***American Society of Health-System Pharmacists (ASHP)***



Quality Measures Defined

- **Performance measures**
  - A quantitative tool that provides an indication of an organization's performance in relation to a specified process or outcome.
  - **Process measures**
    - A measure used to assess a goal directed, interrelated series of actions, events, mechanisms, or steps, such as measure of performance that describes what is done to, for, or by patients, as in performance of a procedure.
  - **Outcome measures**
    - A measure that indicates the result of performance (or non-performance) of a function(s) or process(es).

TJC/CMS Core Measures (2013)

Year	Core Measures	Process	Outcome	Total
2002	**Acute MI (AMI), Heart Failure (HF), Pneumonia (PNA),** Pregnancy & related conditions (PRC)	18	6	24
2004	**+ Surgical Infection Prevention (SIP)** Changed to **Surgical Care Improvement Project (SCIP)** in 2006 & measures added	10	0	10
2007	**+ Children's Asthma Care (CAC)** (+ mortality & readmission for AMI & HF)	3	0	3
2008	**+ Hospital-based Inpatient Psychiatric Services (HBIPS)** **+ Healthcare-associated conditions (HAC)** (+ mortality & readmission for PNA)	7	23	30
2009	**+ Venous thromboembolism (VTE)** **+ Stroke (STK)**	13	1	14
2010	**Perinatal Care replaced PRC**	4	1	5
2011	**+ Healthcare-associated Infection (HAI)**	0	6	6
2012	**+ Substance abuse (SUB)** **+ Tobacco treatment (TOB)** **+ Immunization (IMM)**	14	2	16
	TOTAL:	**69**	**49**	**118**
2013	**+ TAH/TKA readmission & complications**	0	10	10

TJC/CMS Core Measures (2013)

(Potential) Pharmacy-Related Measures

Drug (36)

- AMI (7)
- HF (1)
- PNA (3)
- SCIP (7)
- CAC (2)
- HBIPS (2)
- VTE (4)
- STK (6)
- PC (1)
- IMM (4)
- TOB (2)

Education (13)

- o AMI (1)
- o HF (1)
- o CAC (1)
- o HBIPS (2)
- o VTE (1)
- o STK (1)
- o TOB (3)
- o SUB (3)

Outcome (25)

- AMI (2)
- HF (2)
- PNA (2)
- VTE (1)
- HAC (9)
- HAI (4)
- TOB (1)
- SUB (1)
- THA/TKA (3)

Pharmacy has the potential to impact ~60% of existing quality measures & ~1/2 of outcome measures

Quality Measures, Medication Therapy Management, & Continuity of Care

Pharmacy Opportunities

Admission

- Use of evidence-based therapies upon admission
  - Aspirin in acute MI
  - Fibrinolytics in MI/stroke
    - Timeliness
  - Appropriate antibiotic selection
  - VTE prophylaxis
- Screening (Med History)
  - Substance use/abuse
  - Immunization history
  - Contraindications to evidence-based therapies

Discharge

- Use of evidence-based therapies at discharge
  - Documentation of contraindications, if present
- Immunizations
- Patient education

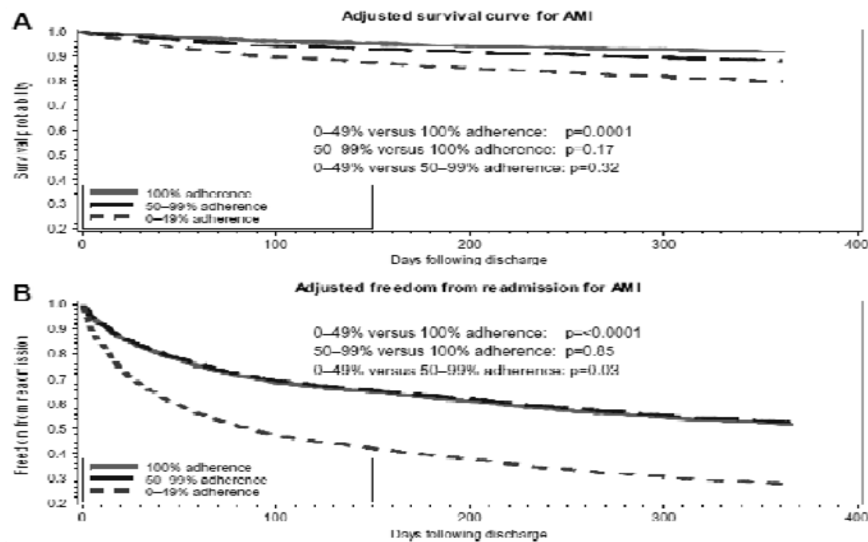
HEALTHCARE QUALITY MEASURES & INPATIENT PHARMACY PRACTICE

Current Incentives to Get Involved

Inpatient Pharmacist & Technician Incentives to Participate in Quality Initiatives

- Good patient care

Quality Performance & Outcomes



Reproduced from *BMJ Qual Saf*; Shahian DM, et al; volume 21, pages 325-36, Copyright ©2012 with permission from BMJ Publishing Group Ltd.

Quality Performance & Outcomes

Disease/Measure	Mortality/90 days Adj. HR (95% CI)	Readmit/90 days Adj. HR (95% CI)
ACUTE MI		
PCI within 90 minutes	n/a	**2.36 (1.14 – 4.85)**
Smoking cessation	2.51 (0.71 – 8.93)	**2.02 (1.13 – 3.62)**
Failure of any measure	**2.67 (1.51 – 4.73)**	**1.47 (1.12 – 1.93)**
HEART FAILURE		
ACE/ARB for LVSD	**1.98 (1.10 – 3.55)**	**1.53 (1.09 – 2.16)**
Discharge instructions	1.22 (0.84 – 1.78)	**1.20 (1.006 – 1.42)**
PNEUMONIA		
Blood culture timing	**1.86 (1.07 – 3.21)**	1.00 (0.73 – 1.37)
Smoking cessation	1.19 (0.53 – 2.68)	**1.59 (1.08 – 2.34)**

Shahian DM, et al. *BMJ Qual Saf* 2012;21:325-36.

Quality Performance & Outcomes

Superior adherence to Quality Measures vs not	Inpatient mortality Adj. OR (95% CI)
Overall inpatient mortality	
Both	**0.79 (0.63 – 0.99)**
Acute MI only	0.96 (0.77 – 1.20)
Heart failure only	0.86 (0.68 – 1.08)
Acute MI inpatient mortality	
Both	**0.78 (0.60 – 1.00)**
Acute MI only	0.83 (0.64 – 1.06)
Heart failure only	0.92 (0.71 – 1.20)
Heart failure inpatient mortality	
Both	0.88 (0.71 – 1.09)
Acute MI only	1.08 (0.91 – 1.29)
Heart failure only	0.99 (0.79 – 1.25)

Wang TY, et al. *J Am Coll Cardiol* 2011;58:637-44.

Process Measures & Outcomes
Case for Pharmacy Involvement?

Review of 12 papers evaluating adherence with heart failure quality measures & outcomes

- ***ACE/ARB for LV dysfunction***
  - 5 papers
  - Mortality and/or readmission lower in 4
- ***Beta-blocker at discharge***
  - 1 paper
  - Mortality & readmission lower
- ***Anticoagulation in patients with AFib/Flutter***
  - 2 papers
  - Mortality & readmission lower in 1
- Assessment of LV function
  - 2 papers
  - No difference
- ***Discharge Instructions***
  - 5 papers
  - Readmission (+ mortality) lower in 2
- Smoking cessation
  - 2 papers
  - No difference
- **Composite score**
  - 3 papers
  - Mortality ± readmission lower in 2

Maeda JL. *J Cardiac Fail* 2010;16:411-8.

Excelling on Process Measures Has Small Effect on Outcome Measures

Acute Myocardial Infarction Process Measure	% Variance in 30-day Risk-Adjusted Mortality Explained by Each Measure
Beta-blocker on admission	0.1
Beta-blocker at discharge	2.6
Aspirin on admission	0.3
Aspirin at discharge	3.3
ACE/ARB for LV dysfunction	0.9
Smoking Cessation	0.1
Timely reperfusion therapy	3.3
Composite Score	6.0

Bradley EH, et al. *JAMA* 2006;296:72-8.

Inpatient Pharmacist & Technician Incentives to Participate in Quality Initiatives

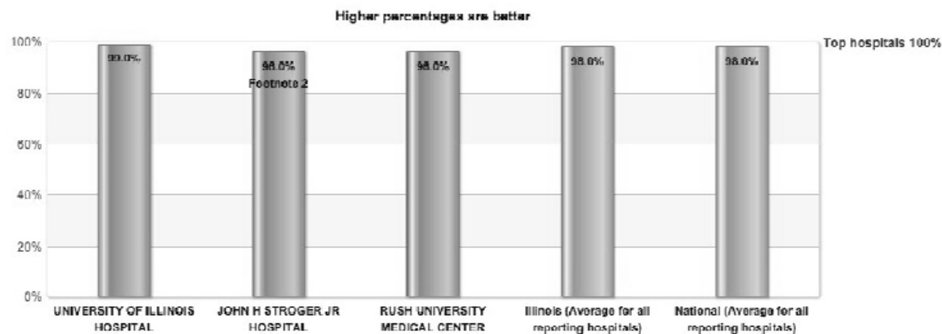
- Good patient care
- Good public relations

Core Measure Data
Freedom of Information!

Heart attack patients given a prescription for a statin at discharge

Why is this important?

Hide Graph



Available at: http://**www.medicare.gov/hospitalcompare/compare.html**
#cmprTab=2&vwgraph=1&cmprID=140150%2C140124%2C140119&loc=60612@lat=41.8816606&lng=-87.6926257&AspxAutoDetecteCookieSupport=1. Accessed 8/16/2013.

Performance Used to Generate Business

- Distinguish from competing institutions
  - Commercial advertising
- Attract new patients
- Generate new contracts
  - Provider groups
  - Third party payers
  - Referrals from other institutions

Inpatient Pharmacist & Technician Incentives to Participate in Quality Initiatives

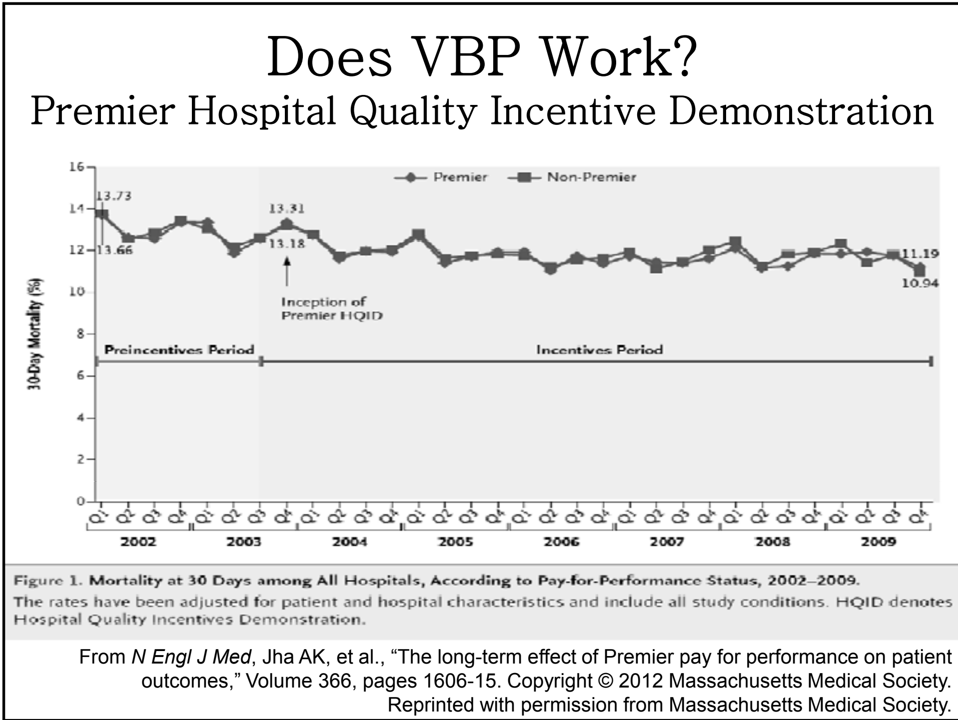
- Good patient care
- Good public relations
- Tied to reimbursement

Financial Incentives for Quality
Money Talks!

- Non-payment for non-performance
  - Deficit Reduction Act (2005)
    - New requirements for Hospital Inpatient Quality Reporting Program (formerly Reporting Hospital Quality Data Annual Payment Update or RHQDAPU)
      - Inpatient Prospective Payment System (IPPS) hospitals expected to submit additional quality measures in FY 2007 & subsequent years
        - » **Medicare Annual Payment Update subject to 2% reduction if failure to report**
    - 2008: Hospital-acquired conditions no longer reimbursed

Financial Incentives for Quality
Value-Based Purchasing (VBP) Program

- Affordable Care Act (2010)
  - Rewards hospitals with incentive payments for high quality care
  - All participating hospitals will have base DRG payments reduced each year
    - **FY2013: 1%, FY2014: 1.25%,** FY2015 1.5%, FY 2016: 1.75%, FY2017 & beyond: 2%
  - This money funds incentive payments to hospitals performing highly on Clinical Care Process Measures & Patient Experience of Care (HCAHPS)
  - **Effective 10/1/2012**



Inpatient Pharmacist & Technician Incentives to Participate in Quality Initiatives

- Good patient care
- Good public relations
- Tied to reimbursement
- Job security!

STRATEGIES TO IMPLEMENT INPATIENT QUALITY MEASURES & IMPACT PATIENT OUTCOMES

Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Implementation of Quality Performance Initiatives

Strategies for Pharmacists & Technicians

- Know your institutional plan
  - Who are the champions for quality and pay-for-performance?
  - What are the priority areas?
  - What are the key elements of the institutions plan for quality initiatives?
  - Is pharmacy involved in these discussions?

The AHSP Discussion Guide on The Pharmacist's Role in Quality Improvement. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Discussion-Guide.aspx**
Pay-For-Performance (P4P): Evaluating Current and Future Implications: Issues for Pharmacy. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Pay-For-Performance.aspx**.
Vermeulen LC, et al. *Am J Health-Syst Pharm* 2007;64:1699-710. ASHP. *Am J Heath-Syst Pharm* 2010;67:578-9.
Brennan C, et al. *Am J Health-Syst Pharm* 2011;68:e50-60. Shane R. *Am J Health-Syst Pharm* 2011;68:e65-75.

Implementation of Quality Performance Initiatives

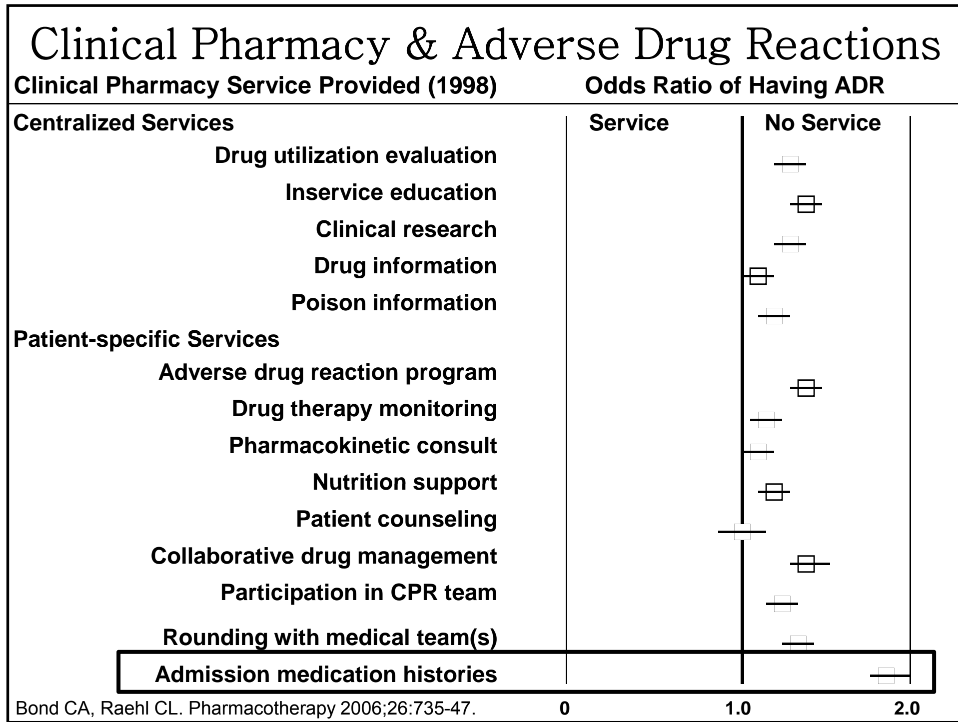
Strategies for Pharmacists & Technicians

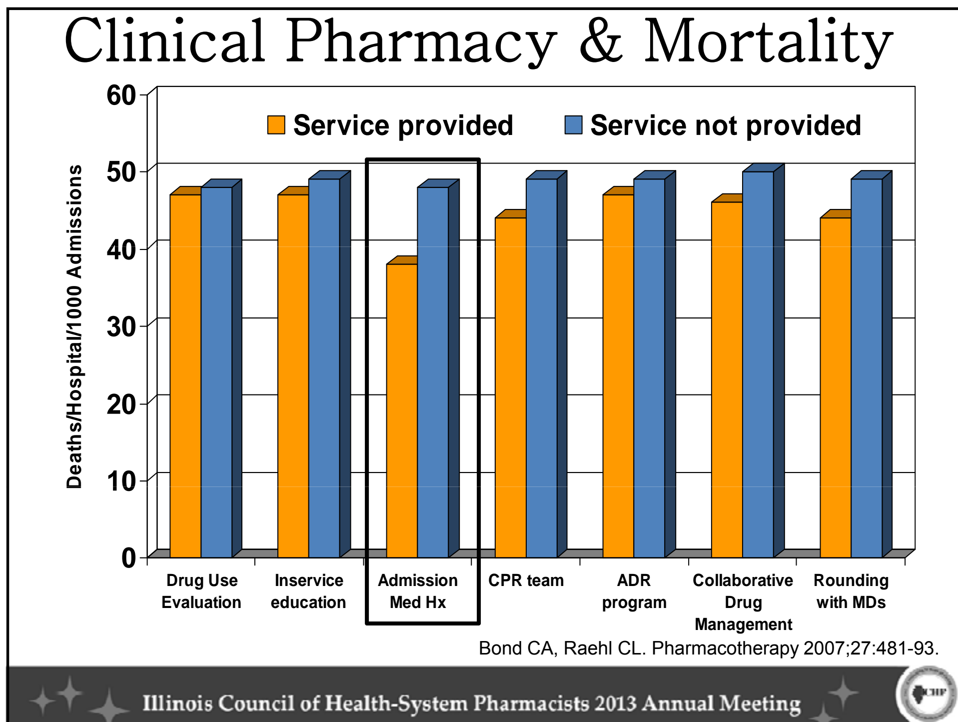
- Know your institutional plan
- Develop a pharmacy strategic plan that delivers value

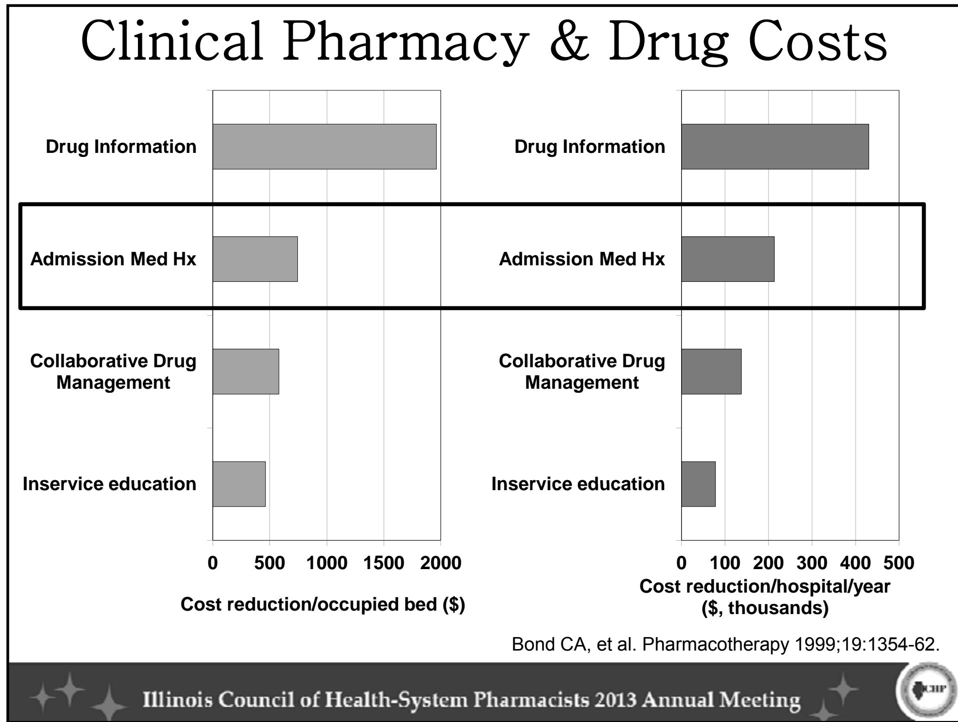
The AHSP Discussion Guide on The Pharmacist's Role in Quality Improvement. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Discussion-Guide.aspx**
Pay-For-Performance (P4P): Evaluating Current and Future Implications: Issues for Pharmacy. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Pay-For-Performance.aspx**.
Vermeulen LC, et al. *Am J Health-Syst Pharm* 2007;64:1699-710. ASHP. *Am J Heath-Syst Pharm* 2010;67:578-9.
Brennan C, et al. *Am J Health-Syst Pharm* 2011;68:e50-60. Shane R. *Am J Health-Syst Pharm* 2011;68:e65-75.

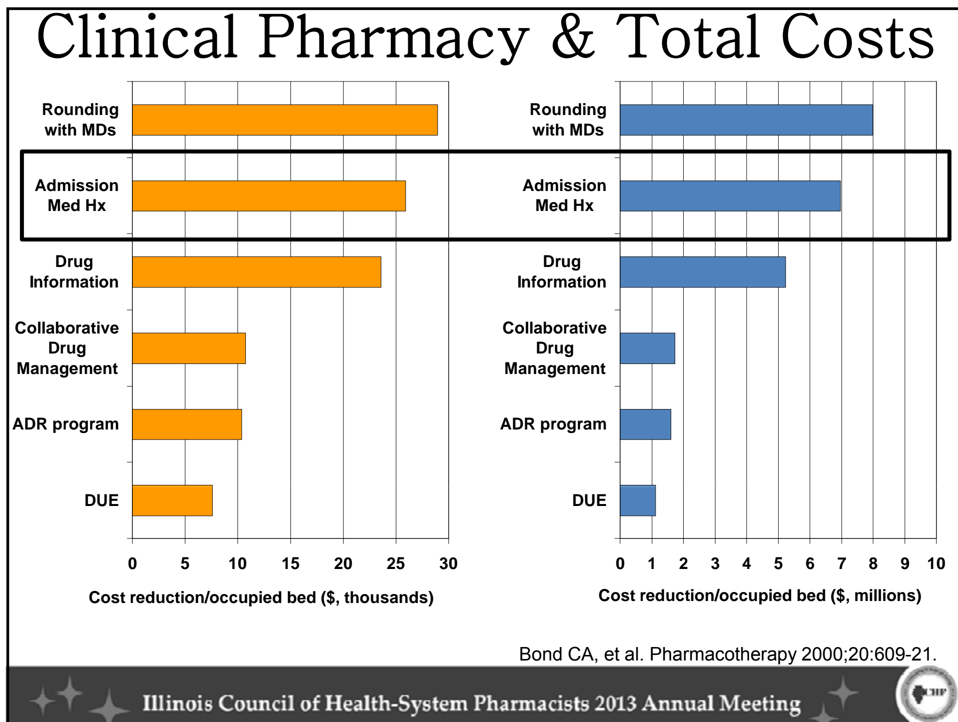
Pharmacy Strategic Plan for Quality Initiatives

- Should align with institutional plan
- Select appropriate initiatives & measures
  - ***Services pharmacists & technicians perform well***
  - ***Services that (may) affect outcomes, not just processes***
  - ***Focus on care transitions?***
    - ***Admission***
    - ***Discharge***
- Reassess pharmacy model
  - Patient-centered
  - Outcome-based
  - Efficient
- Accountability


Clinical Pharmacy & Adverse Drug Reactions
Clinical Pharmacy Service Provided (1998)
Odds Ratio of Having ADR
Centralized Services
Service
No Service
Drug utilization evaluation
Inservice education
Clinical research
Drug information
Poison information
Patient-specific Services
Adverse drug reaction program
Drug therapy monitoring
Pharmacokinetic consult
Nutrition support
Patient counseling
Collaborative drug management
Participation in CPR team
Rounding with medical team(s)
Admission medication histories
Bond CA, Raehl CL. Pharmacotherapy 2006;26:735-47.
0
1.0
2.0


Clinical Pharmacy & Mortality
Service provided
Service not provided
Deaths/Hospital/1000 Admissions
60
50
40
30
20
10
0
Drug Use Evaluation
Inservice education
Admission Med Hx
CPR team
ADR program
Collaborative Drug Management
Rounding with MDs
Bond CA, Raehl CL. Pharmacotherapy 2007;27:481-93.
Illinois Council of Health-System Pharmacists 2013 Annual Meeting


Clinical Pharmacy & Drug Costs
Drug Information
Admission Med Hx
Collaborative Drug Management
Inservice education
0 500 1000 1500 2000
Cost reduction/occupied bed ($)
Drug Information
Admission Med Hx
Collaborative Drug Management
Inservice education
0 100 200 300 400 500
Cost reduction/hospital/year ($, thousands)
Bond CA, et al. Pharmacotherapy 1999;19:1354-62.
Illinois Council of Health-System Pharmacists 2013 Annual Meeting


Clinical Pharmacy & Total Costs
Rounding with MDs
Admission Med Hx
Drug Information
Collaborative Drug Management
ADR program
DUE
0 5 10 15 20 25 30
Cost reduction/occupied bed ($, thousands)
Rounding with MDs
Admission Med Hx
Drug Information
Collaborative Drug Management
ADR program
DUE
0 1 2 3 4 5 6 7 8 9 10
Cost reduction/occupied bed ($, millions)
Bond CA, et al. Pharmacotherapy 2000;20:609-21.
Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Core Clinical Pharmacy Services
The Most Value ("Bang") for Your Buck!

- Services with at least 2 favorable associations health or economic outcomes
  - Drug information
  - ***Admission medication histories***
  - ADR program/management
  - Collaborative drug management
  - Participation on medical rounds

Bond CA, et al. Pharmacotherapy 2004;24:427-40.

Hospital Strategies Associated with HF Readmissions
PHARMACY CALL TO ACTION!

Lower Readmissions

- ***Med rec by RNs***
- Partnership with MD groups
- Partnership with other hospitals
- Follow-up appt at discharge
- Discharge summary sent to PCP
- Hospital staff assigned to follow-up on test results available after discharge
- Pacific region of US
- 200 – 399 hospital beds

Higher Readmissions

- *Electronic linking of outpatient & inpatient Rx records*
- Written emergency plan on discharge
- Alerting of PCP within 48 hours of discharge
- Post-discharge phone call
- Teaching hospital

Bradley EH, et al. Circ Cardiovasc Qual Outcomes 2013;06:444-50.

Pharmacist & Technician Opportunities for Improving Quality

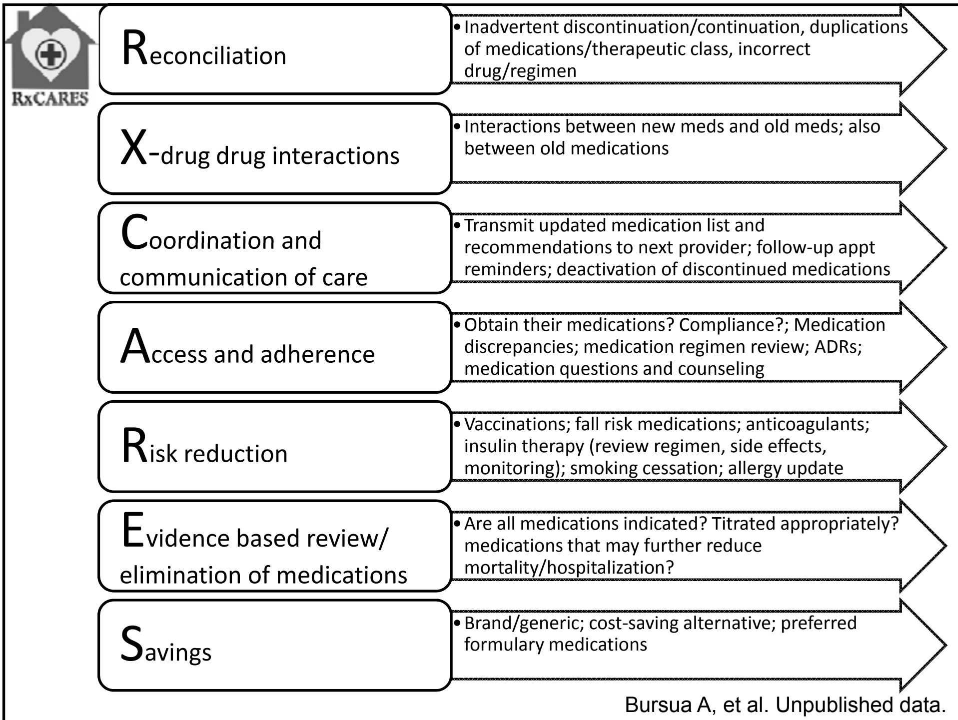
Care Transitions & Medication Reconciliation

Rationale

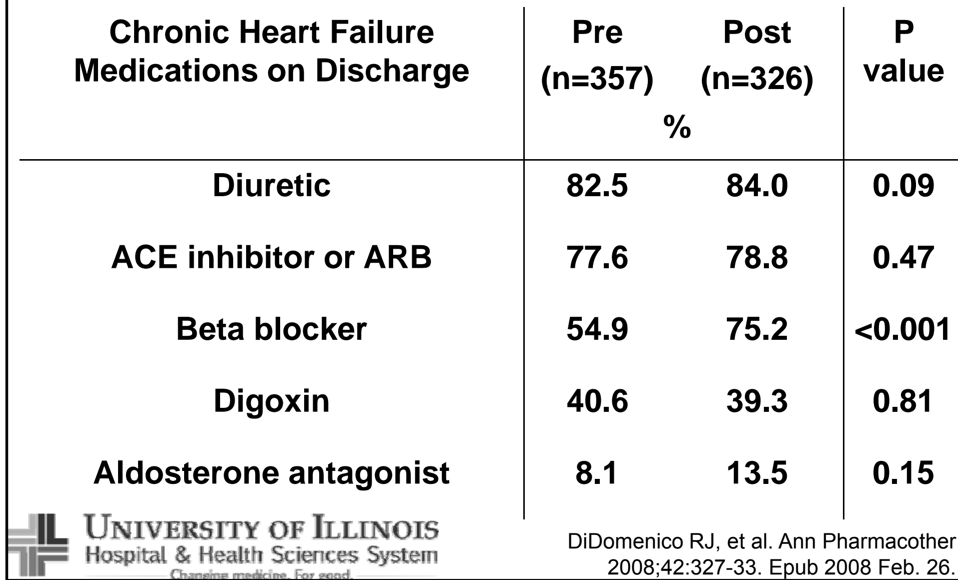
- Inaccurate medication histories/reconciliation account for many adverse drug events & suboptimal care
- It is one of the most basic pharmacy tasks
- ***WE EXCEL AT THIS!***
- ***IT IMPROVES OUTCOMES!!***

Potential Strategies

- Reconsider pharmacy models
  - Mobilize “staff” pharmacists to the bedside
  - Utilize technicians
    - ⇑ responsibilities within pharmacy to free up RPh
    - Incorporate into medication history taking?
  - Utilize pharmacy students
    - APPE, IPPE



Multidisciplinary Approach to ADHF Treatment: Role for Pharmacy



Chronic Heart Failure Medications on Discharge	Pre (n=357) %	Post (n=326) %	P value
Diuretic	82.5	84.0	0.09
ACE inhibitor or ARB	77.6	78.8	0.47
Beta blocker	54.9	75.2	<0.001
Digoxin	40.6	39.3	0.81
Aldosterone antagonist	8.1	13.5	0.15

DiDomenico RJ, et al. Ann Pharmacother 2008;42:327-33. Epub 2008 Feb. 26.

Implementation of Quality Performance Initiatives

Strategies for Pharmacists & Technicians

- Know your institutional plan
- Develop a pharmacy strategic plan that delivers value
- Utilize data to drive performance & value

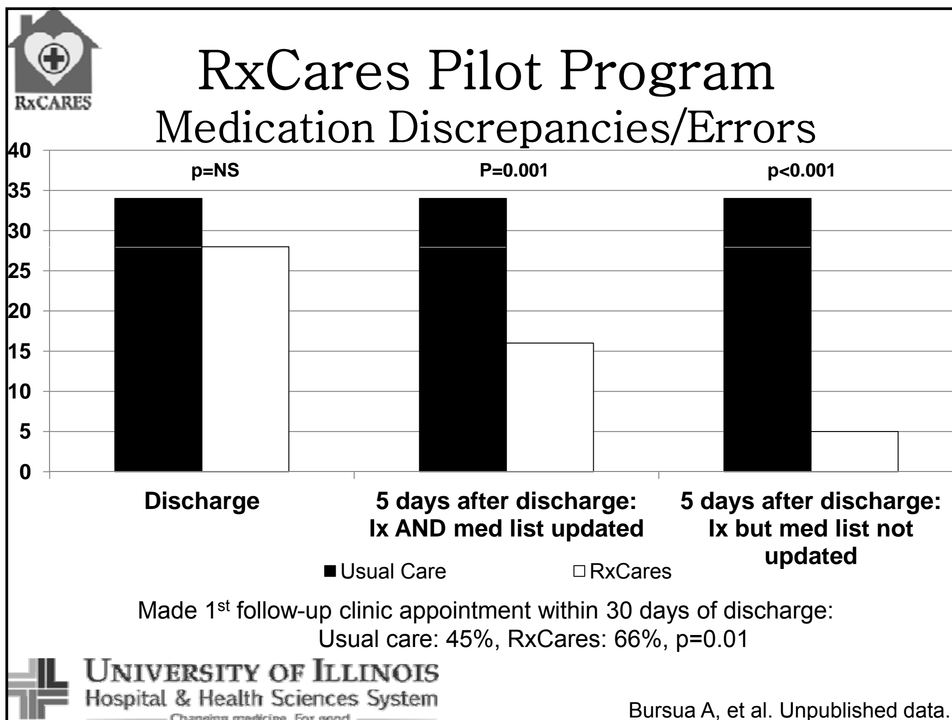
The AHSP Discussion Guide on The Pharmacist's Role in Quality Improvement. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Discussion-Guide.aspx**
Pay-For-Performance (P4P): Evaluating Current and Future Implications: Issues for Pharmacy. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Pay-For-Performance.aspx**.
Vermeulen LC, et al. *Am J Health-Syst Pharm* 2007;64:1699-710. ASHP. *Am J Heath-Syst Pharm* 2010;67:578-9.
Brennan C, et al. *Am J Health-Syst Pharm* 2011;68:e50-60. Shane R. *Am J Health-Syst Pharm* 2011;68:e65-75.

Utilize Data to Drive Performance & Value

- Determine the various data sources for quality performance & get access
- Utilize pharmacy databases
- Utilize technology
  - Electronic databases, "real-time" data, decision support
- Identify benchmarks
- Establish "dashboards"
- "Drill down" to patient-level data to investigate factors influencing performance
  - **P**lan, **D**o, **S**tudy, **A**ct…repeat…

RxCares Pilot Program

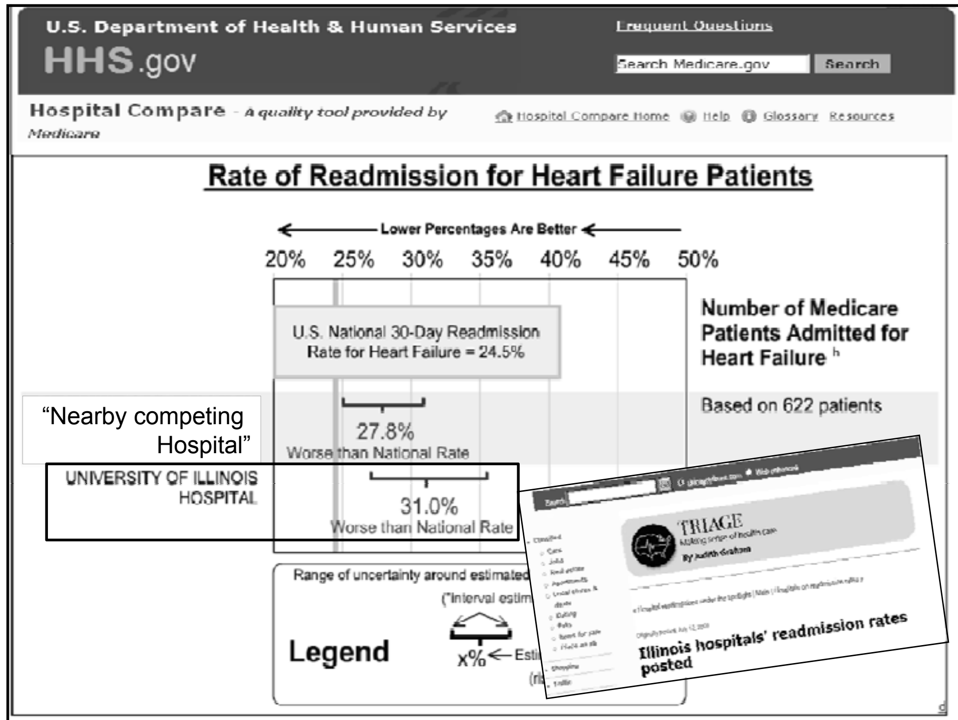
Medication Discrepancies/Errors

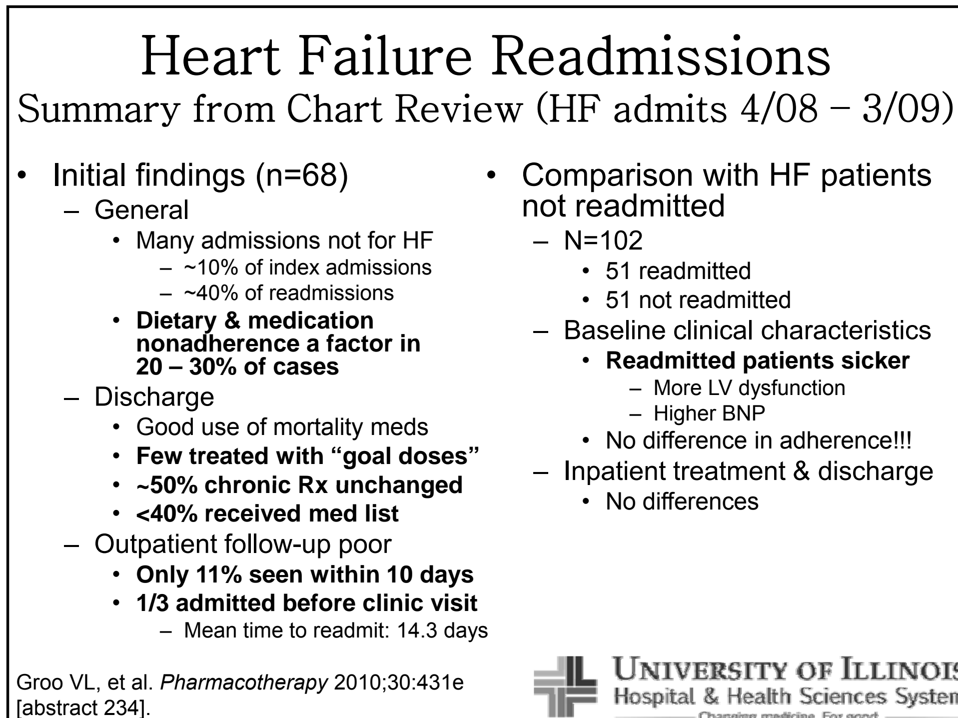


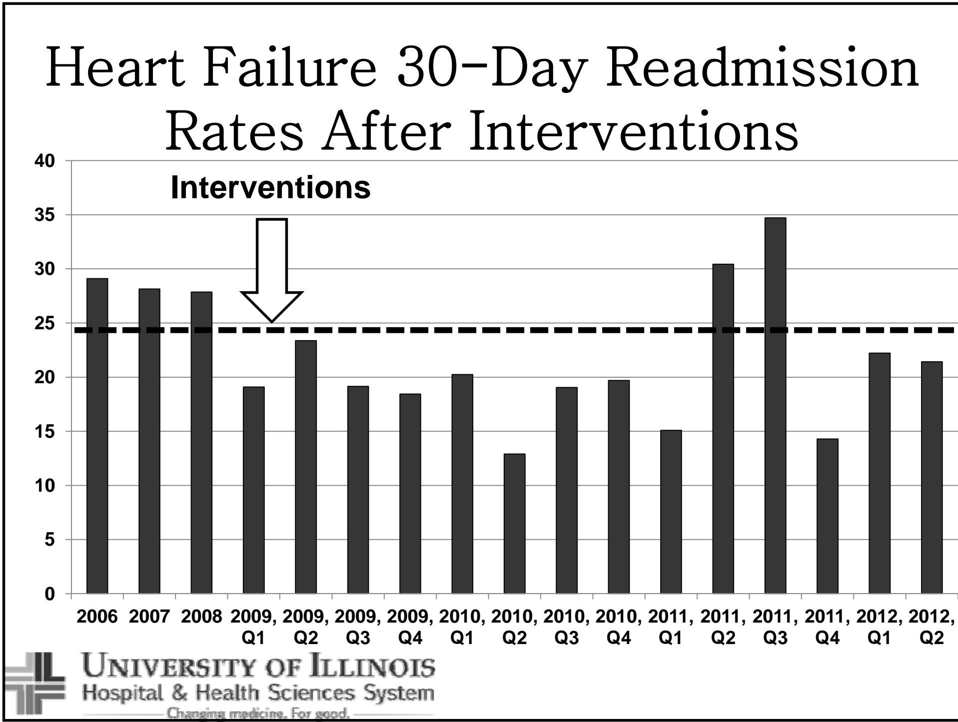
Made 1st follow-up clinic appointment within 30 days of discharge:
Usual care: 45%, RxCares: 66%, p=0.01

University of Illinois Hospital & Health Sciences System — Changing medicine. For good.

Bursua A, et al. Unpublished data.


U.S. Department of Health & Human Services
HHS.gov
Frequent Questions
Search
Hospital Compare - A quality tool provided by Medicare
Hospital Compare Home
Help
Glossary
Resources
Rate of Readmission for Heart Failure Patients
Lower Percentages Are Better
20% 25% 30% 35% 40% 45% 50%
U.S. National 30-Day Readmission Rate for Heart Failure = 24.5%
Number of Medicare Patients Admitted for Heart Failure
Based on 622 patients
"Nearby competing Hospital"
27.8%
Worse than National Rate
UNIVERSITY OF ILLINOIS HOSPITAL
31.0%
Worse than National Rate
Range of uncertainty around estimated
Legend
TRIAGE
Illinois hospitals' readmission rates posted


Heart Failure Readmissions
Summary from Chart Review (HF admits 4/08 – 3/09)
• Initial findings (n=68)
– General
• Many admissions not for HF
– ~10% of index admissions
– ~40% of readmissions
• Dietary & medication nonadherence a factor in 20 – 30% of cases
– Discharge
• Good use of mortality meds
• Few treated with "goal doses"
• ~50% chronic Rx unchanged
• <40% received med list
– Outpatient follow-up poor
• Only 11% seen within 10 days
• 1/3 admitted before clinic visit
– Mean time to readmit: 14.3 days
• Comparison with HF patients not readmitted
– N=102
• 51 readmitted
• 51 not readmitted
– Baseline clinical characteristics
• Readmitted patients sicker
– More LV dysfunction
– Higher BNP
• No difference in adherence!!!
– Inpatient treatment & discharge
• No differences
Groo VL, et al. Pharmacotherapy 2010;30:431e [abstract 234].
UNIVERSITY OF ILLINOIS
Hospital & Health Sciences System
Changing medicine. For good.



Quality, Pharmacy, & Technology

DVT Risk Assessment & Prophylaxis

UNIVERSITY OF ILLINOIS
Hospital & Health Sciences System
Changing medicine. For good.

DVT Risk Assessment

To SIGN this form, click on GREEN check mark at upper left-hand corner of the form.
The form CANNOT be signed as long as a white X appears in the left-hand side of the form, indicating that required field(s) have not been completed.

Is the intent to fully anticoagulate this patient (warfarin, IV heparin, treatment dose enoxaparin)?

- ○ Yes
- ○ No

Does the patient have any of the following contraindications to pharmacologic prophylaxis?

- ☐ None
- ☐ High risk of or current major bleeding
- ☐ Spinal tap or epidural removal within last 2 hours

If pharmacologic prophylaxis is contraindicated and patient is at risk, consider use of elastic stockings or sequential compression devices (SCD).

Has the patient undergone or suffered any of the following this admission ?

- ☐ None
- ☐ Hip arthroplasty or hip fracture surgery
- ☐ Knee arthroplasty
- ☐ Major trauma (multiple organ system injuries, multiple extremity fractures or pelvic fractures)
- ☐ Acute spinal cord injury resulting in lower extremity paralysis

If "hip arthroplasty or hip fracture surgery" is checked, use one of the following:

warfarin (goal INR 2-3) starting the evening of surgery
enoxaparin 30 mg SC Q12 hr starting 12-24 hr post-op
enoxaparin 40 mg SC Q24 hr starting 12 hr pre-op
fondaparinux 2.5 mg SC Q24 hr starting 6-8 hr post-op

If knee arthroplasty is checked, use one of the following:

warfarin (goal INR 2-3) starting the evening of surgery
enoxaparin 30 mg SC Q12 hr starting 12-24 hr post-op
fondaparinux 2.5 mg SC Q24 hr starting 6-8 hr post-op

If "Major trauma" or "Acute spinal cord injury..." is checked, use enoxaparin 30 mg SC Q12 hr once primary hemostatis is ensured.

WARNINGS

Warfarin is absolutely contraindicated during pregnancy.
Enoxaparin dose in patients with creatinine clearance <30 ml/min is 30 mg SC Q24 hr.
Enoxaparin dose in extremely obese patients (BMI >50 kg/m2) is 40 mg SC Q12 hr.

Fondaparinux is contraindicated in patients with creatinine clearance <30 ml/min.
Enoxaparin and heparin are absolutely contraindicated in patients with a history of being heparin-induced-thrombocytopenia antibody positive (HIT+).

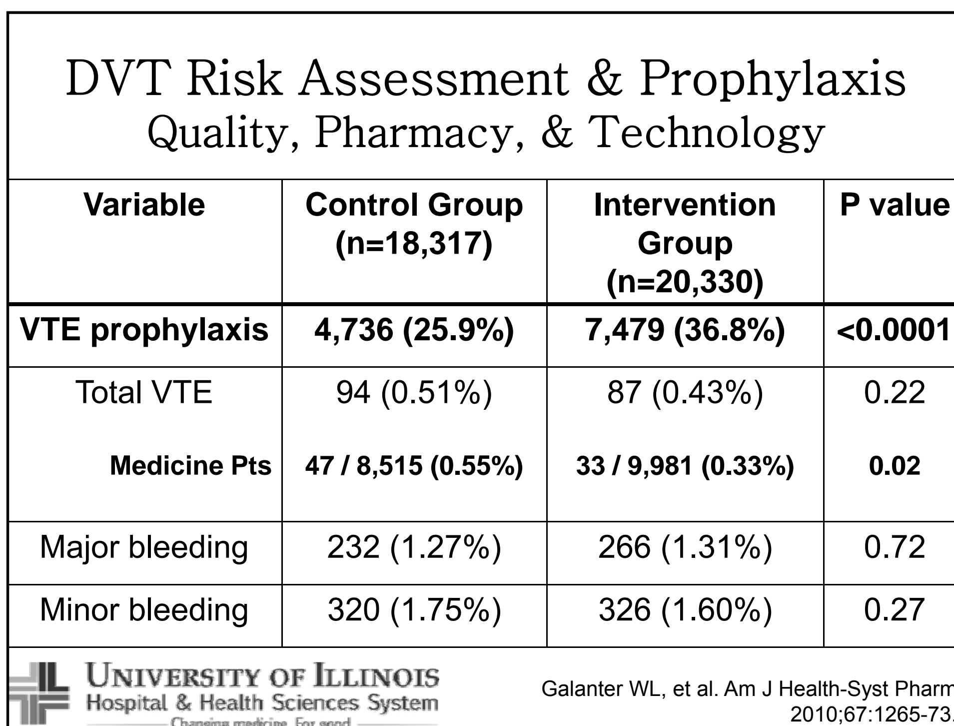
Does the patient have any of the following risk factors for DVT?

- ☐ None
- ☐ Acute ischemic stroke
- ☐ Age >60 years
- ☐ Cancer or brain tumor
- ☐ Congestive Heart Failure
- ☐ Current estrogen or estrogen receptor modulator (tamoxifen) use
- ☐ Expected or current immobility >24 hours
- ☐ History of DVT or PE
- ☐ Hypercoagulable state (e. g., protein C deficiency, protein S deficiency, antithrombin deficiency, antiphospholipid syndrome, prothrombin G20210A, etc.)
- ☐ Lung disease requiring oxygen or inability to walk >1 block
- ☐ Obesity (BMI >30 kg/m2)
- ☐ Surgery requiring full admission

If anything other than "None" is checked, use heparin 5,000 Units SC Q8-12 hr.

WARNING

Enoxaparin and heparin are absolutely contraindicated in patients with a history of being heparin-induced-thrombocytopenia antibody positive (HIT+).



DVT Risk Assessment & Prophylaxis
Quality, Pharmacy, & Technology

Variable	Control Group (n=18,317)	Intervention Group (n=20,330)	P value
VTE prophylaxis	**4,736 (25.9%)**	**7,479 (36.8%)**	**<0.0001**
Total VTE	94 (0.51%)	87 (0.43%)	0.22
Medicine Pts	**47 / 8,515 (0.55%)**	**33 / 9,981 (0.33%)**	**0.02**
Major bleeding	232 (1.27%)	266 (1.31%)	0.72
Minor bleeding	320 (1.75%)	326 (1.60%)	0.27

Galanter WL, et al. Am J Health-Syst Pharm 2010;67:1265-73.

Implementation of Quality Performance Initiatives
Strategies for Pharmacists & Technicians

- Know your institutional plan
- Develop a pharmacy strategic plan that delivers value
- Utilize data to drive performance & value
- Collaborate & communicate

The AHSP Discussion Guide on The Pharmacist's Role in Quality Improvement. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Discussion-Guide.aspx**
Pay-For-Performance (P4P): Evaluating Current and Future Implications: Issues for Pharmacy. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Pay-For-Performance.aspx**.
Vermeulen LC, et al. *Am J Health-Syst Pharm* 2007;64:1699-710. ASHP. *Am J Heath-Syst Pharm* 2010;67:578-9.
Brennan C, et al. *Am J Health-Syst Pharm* 2011;68:e50-60. Shane R. *Am J Health-Syst Pharm* 2011;68:e65-75.

Communicate & Collaborate

- Multidisciplinary interventions are essential
  - Take advantage of each discipline's unique skills
- Make quality an agenda item at departmental meetings
- Publicize performance
  - Good & bad
- Reward success

Implementation of Quality Performance Initiatives

Strategies for Pharmacists & Technicians

- Know your institutional plan
- Develop a pharmacy strategic plan that delivers value
- Utilize data to drive performance & value
- Communicate & collaborate
- Increase awareness of quality initiatives, current performance, & opportunities

The AHSP Discussion Guide on The Pharmacist's Role in Quality Improvement. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Discussion-Guide.aspx**
Pay-For-Performance (P4P): Evaluating Current and Future Implications: Issues for Pharmacy. ASHP. Available at: **http://www.ashp.org/DocLibrary/Policy/QII/Pay-For-Performance.aspx**.
Vermeulen LC, et al. *Am J Health-Syst Pharm* 2007;64:1699-710. ASHP. *Am J Heath-Syst Pharm* 2010;67:578-9.
Brennan C, et al. *Am J Health-Syst Pharm* 2011;68:e50-60. Shane R. *Am J Health-Syst Pharm* 2011;68:e65-75.

Conclusions

- Focus on quality of care has escalated in the last decade
  - Early emphasis on process measures
  - Outcome measures a focus recently
- Pharmacy can play a key role in > 50% of existing quality measures
- Incentives for pharmacists to participate in quality measures include:
  - Optimization of care, public relations, FINANCIAL, job security
- Several strategies are necessary to successfully implement quality measures across the continuum of care
  - Performance on process measures may not translate to improvements in outcome measures
  - Target services tailored to pharmacist & technician skill set & outcomes
  - Multidisciplinary approach

References That May Help

- ASHP Quality Improvements and Health-System Pharmacy
  - http://www.ashp.org/menu/PracticePolicy/ResourceCenters/QII/Learn-About-QI.aspx
    - ***The ASHP Discussion Guide on The Pharmacist's Role in Quality Improvement.***
      - **http://www.ashp.org/DocLibrary/Policy/QII/RoleinQI.aspx**
- *Hospital Quality Improvement: Strategies and Lessons from U.S. Hospitals.* The Commonwealth Fund. Publication no. 1009. April, 2007.
  - http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2007/Apr/Hospital%20Quality%20Improvement%20%20Strategies%20and%20Lessons%20From%20U%20S%20%20Hospitals/Silow%20Carroll_hosp_quality_improve_strategies_lessons_1009%20pdf.pdf
- Pharmacy Practice Model Initiative (PPMI) Summit.
  - http://www.ashpmedia.org/ppmi/ppmi-summit.html
  - http://www.ajhp.org/content/68/12.toc

APPENDIX

TJC/CMS/AHRQ INPATIENT QUALITY MEASURES

Drug-related and pharmacy opportunities highlighted in Bold/Red

http://www.jointcommission.org/specifications_manual_for_national_hospital_inpatient_quality_measures.aspx
http://www.jointcommission.org/core_measure_sets.aspx
http://www.ahrq.gov/professionals/clinicians-providers/resources/nursing/resources/nurseshdbk/FarquharM_IS.pdf

Inpatient Quality Measures Acute Myocardial Infarction (AMI)

- Clinical Care
  - Arrival
    - *Aspirin at arrival*
    - *Median time to fibrinolysis*
    - *Door-to-needle time (fibrinolysis) ≤ 30 minutes*
    - Median time to PCI
    - Door-to-balloon time (PCI) ≤ 90 minutes
  - Discharge
    - *Aspirin at discharge*
    - *ACE/ARB for LVSD*
    - *Beta-blocker at discharge*
    - *Statin at discharge*
- Education-related
  - *Smoking cessation counseling*
- Outcomes
  - *Separate measures*
    - *30-day mortality*
    - *30-day readmission*

http://www.jointcommission.org/assets/1/6/Acute%20Myocardial%20Infarction.pdf

Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Inpatient Quality Measures Heart Failure (HF)

- Clinical Care
  - Arrival
    - n/a
  - During hospitalization
    - Assessment of LV function during hospitalization
  - Discharge
    - *ACE/ARB for LVSD*
- Education-related
  - *Discharge instructions*
- Outcomes
  - *Separate measures*
    - *30-day mortality*
    - *30-day readmission*

http://www.jointcommission.org/assets/1/6/Heart%20Failure.pdf

Inpatient Quality Measures Pneumonia (PNA)

- Clinical Care
  - Arrival
    - Blood Cx in ED before initial antibiotic
    - Blood Cx 24 hours pre/post arrival for ICU patients
    - *Initial antibiotic selection*
      - ICU
      - Non-ICU
  - Discharge
    - n/a
- Education-related
  - n/a
- Outcomes
  - *Separate measures*
    - *30-day mortality*
    - *30-day readmission*

http://www.jointcommission.org/assets/1/6/Pneumonia.pdf

Inpatient Quality Measures Perinatal Care (PC)

- Clinical Care
  - Arrival
    - Elective delivery
    - Cesarean delivery
    - *Antenatal steroids*
  - During hospitalization
    - Exclusive breast-feeding
- Education-related
  - n/a
- Outcomes
  - Healthcare-associated bloodstream infection in newborn

http://www.jointcommission.org/assets/1/6/Perinatal%20Care.pdf

Inpatient Quality Measures
Surgical Care Improvement Project (SCIP)

- Clinical Care
  - *Perioperative drug-related*
    - Prophylactic antibiotic use: overall & for select procedures
      - Given within 1 hour of surgery
      - Appropriate drug selection
      - d/c'd within 24 hours of surgery
    - 6AM glycemic control in cardiac surgery patients
    - Continuation of beta-blocker perioperatively
    - Appropriate VTE prophylaxis
    - Appropriate VTE prophylaxis 24 hours pre/post-surgery
- Clinical Care
  - Non-drug-related
    - Surgery site hair removal
    - d/c of urinary catheter POD 1 or 2
    - Perioperative temperature monitoring
- Education-related
  - n/a
- Outcomes
  - n/a

http://www.jointcommission.org/assets/1/6/Surgical%20Care%20Improvement%20Project.pdf

Inpatient Quality Measures Children's Asthma Care (CAC)

- Clinical Care
  - During hospitalization
    - *Relievers used (e.g., beta-agonists)*
    - *Corticosteroid use*
  - Discharge
    - n/a
- Education-related
  - *Home management plan of care (HMPC) given to patient or caregiver*
- Outcomes
  - n/a

http://www.jointcommission.org/assets/1/6/Childrens%20Asthma%20Care.pdf

Inpatient Quality Measures
Mortality & Readmission

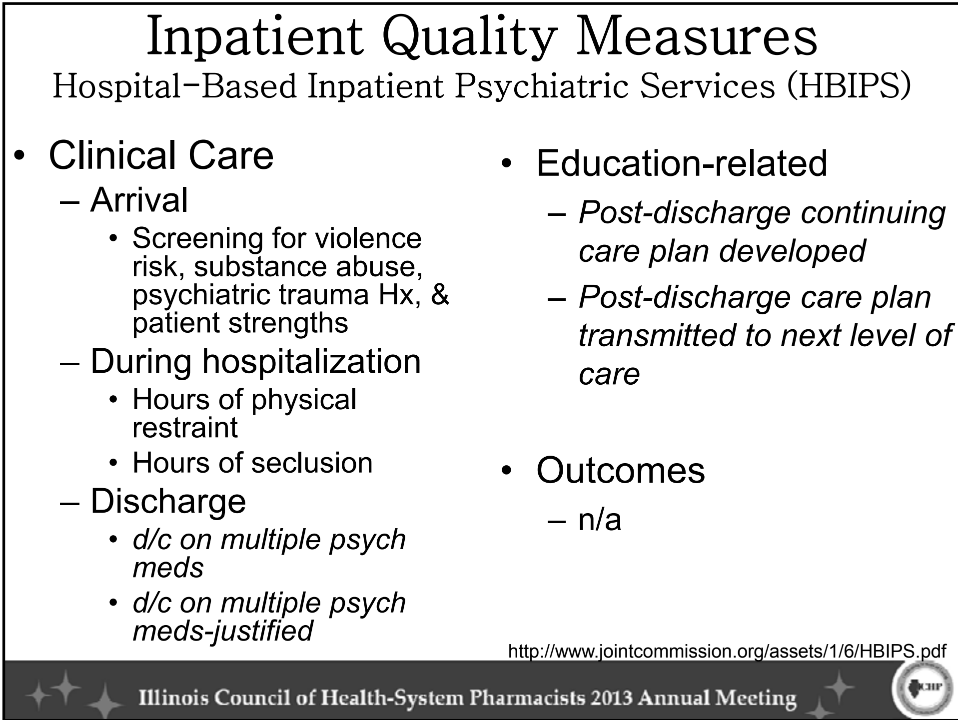
Mortality

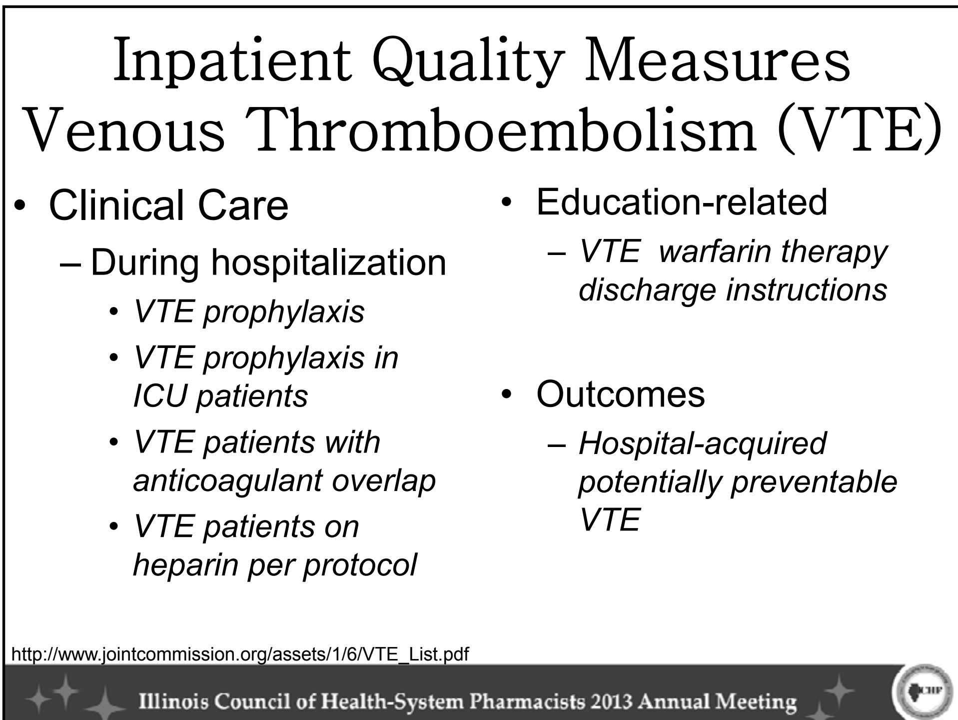
- Disease states of interest
  - AMI
  - HF
  - PNA

30-day Readmission

- Hospital-wide all-cause unplanned
- Disease states of interest
  - AMI
  - HF
  - PNA
  - THA/TKA

http://www.jointcommission.org/specifications_manual_for_national_hospital_inpatient_quality_measures.aspx


Inpatient Quality Measures
Hospital-Based Inpatient Psychiatric Services (HBIPS)
• Clinical Care
– Arrival
• Screening for violence risk, substance abuse, psychiatric trauma Hx, & patient strengths
– During hospitalization
• Hours of physical restraint
• Hours of seclusion
– Discharge
• d/c on multiple psych meds
• d/c on multiple psych meds-justified
• Education-related
– Post-discharge continuing care plan developed
– Post-discharge care plan transmitted to next level of care
• Outcomes
– n/a
http://www.jointcommission.org/assets/1/6/HBIPS.pdf
Illinois Council of Health-System Pharmacists 2013 Annual Meeting


Inpatient Quality Measures
Venous Thromboembolism (VTE)
• Clinical Care
– During hospitalization
• VTE prophylaxis
• VTE prophylaxis in ICU patients
• VTE patients with anticoagulant overlap
• VTE patients on heparin per protocol
• Education-related
– VTE warfarin therapy discharge instructions
• Outcomes
– Hospital-acquired potentially preventable VTE
http://www.jointcommission.org/assets/1/6/VTE_List.pdf
Illinois Council of Health-System Pharmacists 2013 Annual Meeting

Inpatient Quality Measures Stroke(STK)

- Clinical Care
  - Arrival
    - *Fibrinolysis*
    - *Anticoagulant therapy by Day 2*
  - Discharge
    - *VTE prophylaxis received*
    - *Antithrombotic therapy at discharge*
    - *Anticoagulation for atrial fibrillation/flutter*
    - *Statin at discharge*
    - Assessed for rehab
- Education-related
  - *Stroke education*
- Outcomes
  - n/a

http://www.jointcommission.org/assets/1/6/Stroke.pdf

Inpatient Quality Measures Substance Use (SUB)

- Clinical Care
  - During hospitalization
    - *Alcohol use screening*
    - *Alcohol use brief intervention offered*
    - Alcohol use brief intervention
  - Discharge
    - *Alcohol or other substance abuse treatment offered at d/c*
    - Alcohol or other substance abuse treatment at d/c
- Education-related
  - n/a
- Outcomes
  - *Assessing substance use within 30 days*

http://www.jointcommission.org/assets/1/6/Substance_Use_Measures_List.doc.pdf

Inpatient Quality Measures Tobacco Treatment (TOB)

- Clinical Care
  - During hospitalization
    - *Tobacco use screening*
    - *Tobacco use treatment offered*
    - *Tobacco use treatment*
  - Discharge
    - *Tobacco use treatment offered at d/c*
    - *Tobacco use treatment at d/c*
- Education-related
  - n/a
- Outcomes
  - *Assessing tobacco use within 30 days*

http://www.jointcommission.org/assets/1/6/Tobacco_Treatment_Measures_List.doc.pdf

Inpatient Quality Measures Immunization (IMM)

- Clinical Care
  - Admission
    - n/a
  - Discharge
    - *Pneumococcal immunization*
      - *Overall & select populations*
    - *Influenza immunization*

http://www.jointcommission.org/core_measure_sets.aspx

Inpatient Quality Measures
Hospital-Acquired Conditions (HAC)

TJC/CMS HACs

- Foreign body retained after surgery
- Air embolism
- Blood incompatibility
- Stage III or IV pressure ulcer
- Falls & trauma
- Vascular catheter-associated infection
- Catheter-associated UTI
- *Manifestations of poor glycemic control*
- *Surgical site infections for specific procedures*
- *VTE following THA/TKA*
- Iatrogenic pneumothorax after venous catheter insertion

http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/Downloads/FY_2013_Final_HACsCodeList.pdf

AHRQ Quality Indicators

- Post-op
  - Respiratory failure
  - *VTE*
  - Wound dehiscence
  - *Sepsis*
  - Hip fracture
  - *Hemorrhage/hematoma*
  - Physiologic/metabolic derangements
  - *Death (serious, treatable complications)*
- Decubitus ulcer
- Selected infections from med care
- Iatrogenic pneumothorax (adult)
- Foreign body left in during procedure
- Accidental puncture or laceration
- Birth/obstetric trauma
- *Anesthesia complications*
- *Death in low-mortality DRGs*
- Transfusion reaction

http://www.ahrq.gov/professionals/clinicians-providers/resources/nursing/resources/nurseshdbk/FarquharM_IS.pdf

Inpatient Quality Measures
Hospital-Associated Infection (HAI)

- Central-line-associated bloodstream infection
- Catheter-associated UTI
- *Surgical site infection (SSI)*
- *Methicillin-resistant Staph aureus (MRSA)*
- *Clostridium difficile (CDiff)*
- *Healthcare personnel influenza vaccination*

http://www.jointcommission.org/specifications_manual_for_national_hospital_inpatient_quality_measures.aspx
http://www.qualitynet.org/dcs/ContentServer?pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228760487021

Inpatient Quality Measures
Complication Rate for Elective Total Hip/Knee Arthroplasty (COMP-THA/TKA)

- During hospitalization or within 7 days
  - AMI, PNA, sepsis/septicemia/shock
- During hospitalization or within 30 days
  - *Surgical site bleeding, PE*, death
- During hospitalization or within 90 days
  - Mechanical complications, *periprosthetic joint/wound infection*

http://www.jointcommission.org/specifications_manual_for_national_hospital_inpatient_quality_measures.aspx

Opportunities for Pharmacy to Impact Inpatient Quality Measures
0121-0000-13-053-L05-P
0121-0000-13-053-L05-T
Robert J. DiDomenico, PharmD, FCCP
Email: rdidom1@uic.edu

Post Test Questions:

1. The Medicare Value-Based Purchasing Program, which provides incentive payments to hospitals meeting or exceeding quality benchmarks, is funded through which of the following mechanisms?
    a. 2% reduction in the Medicare Annual Payment Update for hospitals failing to report quality measures
    b. Reduced base DRG payments for all participating hospitals
    c. Savings realized by not reimbursing for conditions acquired during the index hospitalization
    d. Savings realized from lower readmission rates

2. What type of quality measures make up the majority of hospital quality measures mandated by the Centers for Medicare and Medicaid Services (CMS) for hospitals?
    a. Composite of outcomes and financial measures.
    b. Financial measures
    c. Outcome measures
    d. Process measures

3. Which of the following best describes why pharmacists can play a major role in improving performance with hospital quality measures?
    a. Clinical pharmacists working on multidisciplinary medical teams improve quality by lowering adverse drug reactions.
    b. Clinical pharmacy services are known to improve the outcome measures mandated by CMS (e.g., 30-day mortality and readmission).
    c. More than 50% of existing measures focus on specific drugs or patient education that can be performed by pharmacists.
    d. Pharmacists effectively maintain hospital formularies, resulting in both improved quality and lower drug costs.

4. When determining the pharmacy strategic plan for quality improvement, which of the following outcomes would be a preferred target for the initiatives selected?
    a. Drug costs
    b. Drug interactions
    c. Medication errors
    d. Readmission

5. Which of the following strategies may allow for pharmacy to take a more active role in care transitions and medication reconciliation?
    a. Centralize pharmacy operations
    b. Delegate some of the medication history taking responsibilities to pharmacy technicians and student pharmacists
    c. Develop collaborative practice agreements with the medical staff that allow credentialized pharmacists to place orders.
    d. Require clinical pharmacists to perform this task on all hospitalized patients