Lebanese Society for Quality and Safety in Health Care

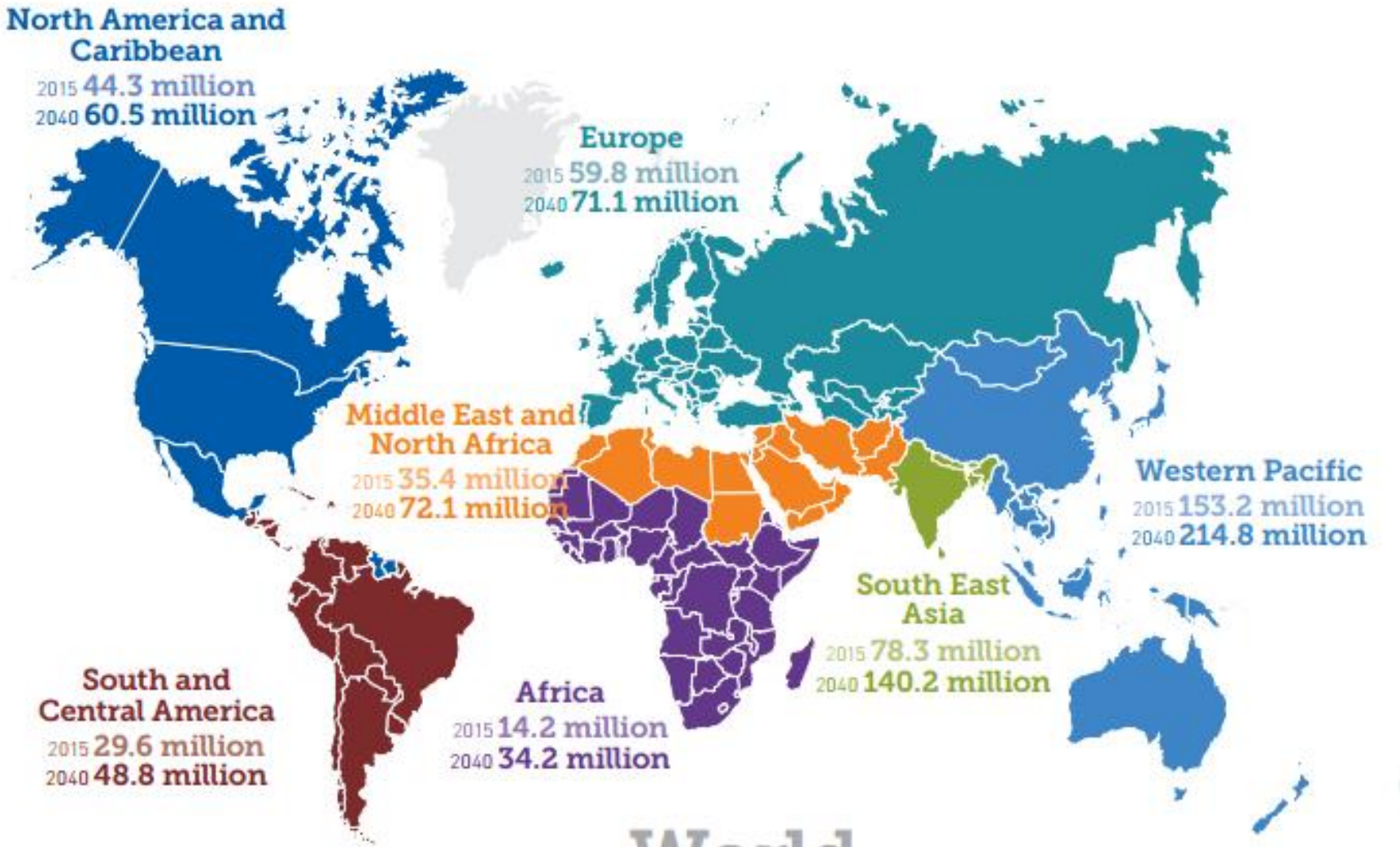
الجمعية اللبنانية للجودة والسلامة الصحية

4TH ANNUAL CONGRESS

QUALITY & SAFETY IN HEALTHCARE: LUXURY OR NECESSITY ?

SEPTEMBER 23RD AND 24TH 2016

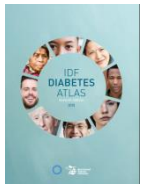
MONROE HOTEL- BEIRUT, LEBANON



World

2015 **415 million**

2040 **642 million**



Clinical Pharmacy Accountability Measures: preventable harm linked to medications

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Pharmacy Impact on Safety & Quality

- Pharmacists as members of the healthcare team:
  - Improve the quality of patient care by preventing medication errors (MEs)[1,2]
  - Contribute to achieving high quality patient outcomes [3]

- Current challenges: what is the best way to quantify the impact of pharmacy contribution to patient care?
    - Interventions
    - Medication error reports according to NCCMERP
    - Variable definitions of what was considered a medication error in the literature (ex. Wrong dose? Renal dose adjustment? Giving a vitamin K antagonist in the presence of high INR?)

1. J Clin Pharmacol 2003;43:760–7

2. J Qual Clin Pract 2001, 21(4):99–103

3.*Med Care*.2010; 48:923-33.

Pharmacy Impact on Safety & Quality

- **Pharmacy interventions:** defined as any recommendation to a healthcare provider by pharmacists that aim to change patient management or therapy. [6]
  - Definition well understood by pharmacist vernacular
  - However the scope of interpretation may be ambiguous to other healthcare providers and hospital administrators.[6]

- **Medication errors (ME):** any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is within the control of the healthcare professional, patient, or consumer.[1,2]
  - Any error in the medication use process (whether an injury or the potential for an injury occurred)[3]
  - At any stage of the drug-use process including prescribing, dispensing, administering, monitoring, and documenting.[4]

1. J Clin Pharmacol 2003;43:760–7 2. Quality Chasm series. Washington DC: The National Academies Press, 2007. ISBN: 978-0-309-10147-9 3. Mayo Clin Proc 2014; 89(8):1116-25
4. Pharmacotherapy 2013;33(3):253-65 5. Am J Geriatr Pharmacother. 2011 December ; 9(6): 451–460. doi:10.1016 6.J Qual Clin Pract 2001, 21(4):99–103

Outline

- Identify the measures that address preventable harm linked to medications that reflect pharmacy accountability.

- Encourage health-system pharmacists to adopt accountability metrics in an effort to contribute to benchmarking results with other healthcare organizations and highlight the importance of pharmacists' contribution to patient safety.

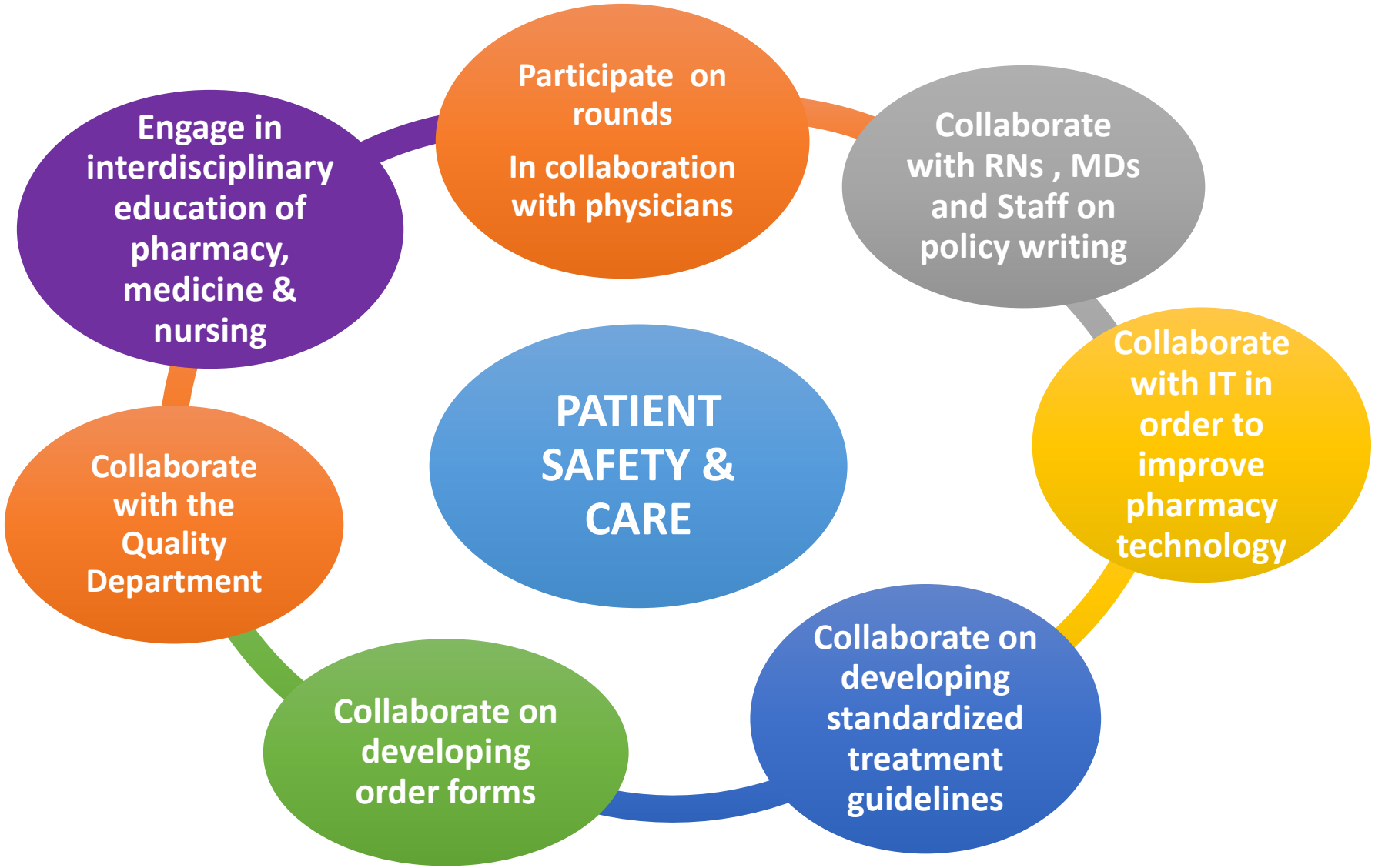
- Share the experience of Clinical Pharmacy at LAUMC-RH in terms of pharmacy interventions and what type of medication errors were prospectively prevented during interdisciplinary collaboration.

Clinical Pharmacy Practice at LAU& LAUMC-RH

- The school of pharmacy (SOP) at the Lebanese American University is accredited by the ACPE (Accreditation Council for Pharmacy Education)

- In 2012, implemented a **faculty-based clinical pharmacy practice model** at LAUMC-RH
  - LAU SOP Faculty
  - Full time hospital based clinical pharmacists
  - PharmD Students (2 students/faculty)

Clinical Pharmacy Practice at LAU& LAUMC-RH



Important Papers published in 2014 on Clinical Pharmacy, Quality and Patient Care

American Society of Health System Pharmacists (ASHP)

A suite of inpatient and outpatient clinical measures for pharmacy accountability: Recommendations from the Pharmacy Accountability Measures Work Group

Andrawis et al. Am J Health-Syst Pharm. 2014; 71:1669-78

American College of Clinical Pharmacy (ACCP)

ACCP WHITE PAPER

Clinical Pharmacy Should Adopt a Consistent Process of Direct Patient Care

Harris et al. Pharmacotherapy 2014;34(8):2133-e148

ASHP: A suite of inpatient and outpatient clinical measures for pharmacy accountability: Recommendations from the Pharmacy Accountability Measures Work Group

- The main goals:
  - Identify **measures that address preventable harm linked to medications** in the inpatient and outpatient settings (e.g., adverse drug events, drug-related hospital admissions) that can be adopted universally on pharmacy dashboards to **reflect pharmacy accountability.**
  - Encourage health-system pharmacists to adopt these metrics in an effort to:
    - Contribute to the assessment of the impact of pharmacy
    - **Benchmark results** with other **healthcare partners and organizations**

Am J Health-Syst Pharm. 2014; 71:1669-78

ASHP: Pharmacy Accountability Measures Work Group

- National quality metrics were reviewed to evaluate which of the existing measures reflect the quality of pharmacy services

- Highlight best practices that have demonstrated to significantly improve patient outcomes and reduce hospital-acquired conditions and hospital admissions

Am J Health-Syst Pharm. 2014; 71:1669-78

ASHP: Pharmacy Accountability Measures Work Group

- Identified four clinical topics for pharmacy metrics:
  - anticoagulant therapy
  - glycemic control
  - antibiotic stewardship
  - pain management

Am J Health-Syst Pharm. 2014; 71:1669-78

Sample Recommendations by the Pharmacy Accountability Measures Work Group: Anticoagulant Safety

Appendix A—Accountability measures recommended by the ASHP Pharmacy Accountability Measures (PAM) Work Group

Measure Title/Description	Numerator	Denominator	Implementation Guidance	Measure Developer/ Endorsement Status
Anticoagulant safety				
Inpatient venous thromboembolism (VTE) measures				
VTE-1 Venous Thromboembolism Prophylaxis	Patients who receive VTE prophylaxis or have documentation why no VTE prophylaxis was given	All patients	Centers for Medicare and Medicaid Services (CMS) core measure: aligns with the National Quality Strategy (NQS)	Joint Commission/ National Quality Forum (NQF) endorsed: NQF# 371
VTE-2 Intensive Care Unit Venous Thromboembolism Prophylaxis	Patients who receive VTE prophylaxis or have documentation why no VTE prophylaxis was given: 1. The day of or the day after ICU admission (or transfer) 2. The day of or the day after surgery end date for surgeries that start the day of or the day after ICU admission (or transfer)	Patients directly admitted or transferred to the ICU	CMS core measure: aligns with the NQS	Joint Commission/NQF endorsed: NQF# 372
VTE-3 Venous Thromboembolism Patients with Anticoagulation Overlap Therapy	Patients who received overlap therapy	Patients with confirmed VTE who received warfarin	CMS core measure: aligns with the NQS	Joint Commission/NQF endorsed: NQF# 373
VTE-5 Venous Thromboembolism Warfarin Therapy Discharge Instructions	Patients with documentation that they or their caregivers were given written discharge instructions or other educational material about warfarin that addressed all of the following: 1. Compliance issues 2. Dietary advice 3. Follow-up monitoring 4. Potential for adverse drug reactions and interactions	Patients with confirmed VTE discharged on warfarin therapy	CMS core measure: aligns with the NQS	Joint Commission/ no longer endorsed (previously NQF# 375)
VTE-6 Hospital Acquired Potentially Preventable Venous Thromboembolism	Patients who receive no VTE prophylaxis before the VTE diagnostic test order date	Patients who developed confirmed VTE during hospitalization	CMS core measure: aligns with the NQS	Joint Commission/ no longer endorsed (previously NQF# 376)

Am J Health-Syst Pharm. 2014; 71:1669-78

Antibiotic Stewardship & Anticoagulant Therapy

Measure Title/Description	Numerator	Denominator
SCIP-Inf-2a Prophylactic Antibiotic Selection for Surgical Patients	Number of surgical patients who received prophylactic antibiotics recommended for their specific surgical procedure	All selected surgical patients with no evidence of prior infection
VTE-5 Venous Thromboembolism Warfarin Therapy Discharge Instructions	Patients with documentation that they or their caregivers were given written discharge instructions or other educational material about warfarin that addressed all of the following: 1. Compliance issues 2. Dietary advice 3. Follow-up monitoring 4. Potential for adverse drug reactions and interactions	Patients with confirmed VTE discharged on warfarin therapy

Am J Health-Syst Pharm. 2014; 71:1669-78

Glycemic Control & Pain Management

Measure Title/Description	Numerator	Denominator
Hypoglycemia	Total number of hypoglycemic events (<40 mg/dL) that were preceded by administration of short-acting insulin within 12 hours or an antidiabetic agent other than short acting insulin within 24 hours, were not followed by another glucose value greater than 80 mg/ dL within five minutes, and were at least 20 hours apart	Total number of hospital days with at least one antidiabetic agent administered
Second-level review by pharmacist or pain specialist for patient's prescribed high risk opioids	Number of patients with documentation of a second-level review by a pharmacist or pain specialist	Patients prescribed a high-risk opioid (methadone, fentanyl i.v. and patches, hydromorphone i.v., meperidine)

Am J Health-Syst Pharm. 2014; 71:1669-78

Sample Metrics:
ASHP Section of Pharmacy Practice Managers' Advisory Group on Patient Care Quality

Outcome	Why is this outcome important to track and report?	How is the outcome measured?	Ideas on how to obtain the data	Example
Pharmacist Interventions				
Medication reconciliation completed within 24 hours of admission, completed at discharge	Joint Commission National Patient Safety Goal	Number of inpatients that had a home medication history list reviewed by a pharmacist	EMR-specific report	Medication reconciliation completed within 24 hours of admission for ≥ 90% of patients
Inpatient counseling	CMS Core Measures HCAHPS question about transitions of care	Tracking through EMR, pharmacy clinical information system, or external IT system	Report or manual capture	Certain percentage of patients educated by a pharmacist prior to discharge
Specific clinical interventions -Anticoagulation monitoring -Pharmacokinetic monitoring -Dose adjustment -Drug interaction management -Drug-allergy management	Literature supporting cost savings, cost avoidance, and/or reduced adverse events	Tracking through EMR, pharmacy clinical information system, or external IT system		
Antimicrobial stewardship -Compliance with protocols / guidelines / order sets -Duration of therapy and length of stay for specific infections (eg, bacteremia) -Days of therapy for key antimicrobials -Changes in antibiogram over time	Antibiotic stewardship as a condition of CMS participation by FY 2017		EMR-specific report (days of therapy, compliance with order sets) Manual abstraction	
Medication Safety				
Smart-pump guardrail usage	ISMP guidelines support as a patient safety metric	% of patients having IVs run through library	Smart pump software report	Carefusion benchmark: 90% use of guardrails
Near Misses / Good Catches	Tracking of near miss reports placed into error reporting system to encourage potential error reports	Calculation from software or looking at NCCMERP category A and B coded errors	Software report or manual tallying of data each month	
Barcode scanning % (patient and medication)	HIMSS stage criteria for Medicare/Medicaid meaningful use incentive program; ISMP guidelines for patient safety	% of patients that have armband scanned and medication scanned during administration	EMR-specific report or scanning software report	Goal to have medication scanning > 95% for month house-wide

ASHP SAG on Patient Care Quality (Last Updated 04.16.15)

http://www.ashp.org/DocLibrary/Policy/Practice-Managers/MBR-SAG-Inpatient-Quality-Metrics-2015.pd

ashp Pharmacy Practice Managers

How can we establish Clinical Pharmacy Accountability Measures in Lebanon?

What did ASHP do?	What can we do in Lebanon?
National quality metrics were reviewed to evaluate which of the existing measures reflect the quality of pharmacy services	What's important to your hospital? - Joint Commission International? - Lebanese Hospital Accreditation? - Identify common goals across all hospitals?
Developed a suite of inpatient and outpatient measures to benchmark	Agree on a phase approach of metrics?
BENCHMARK	BENCHMARK

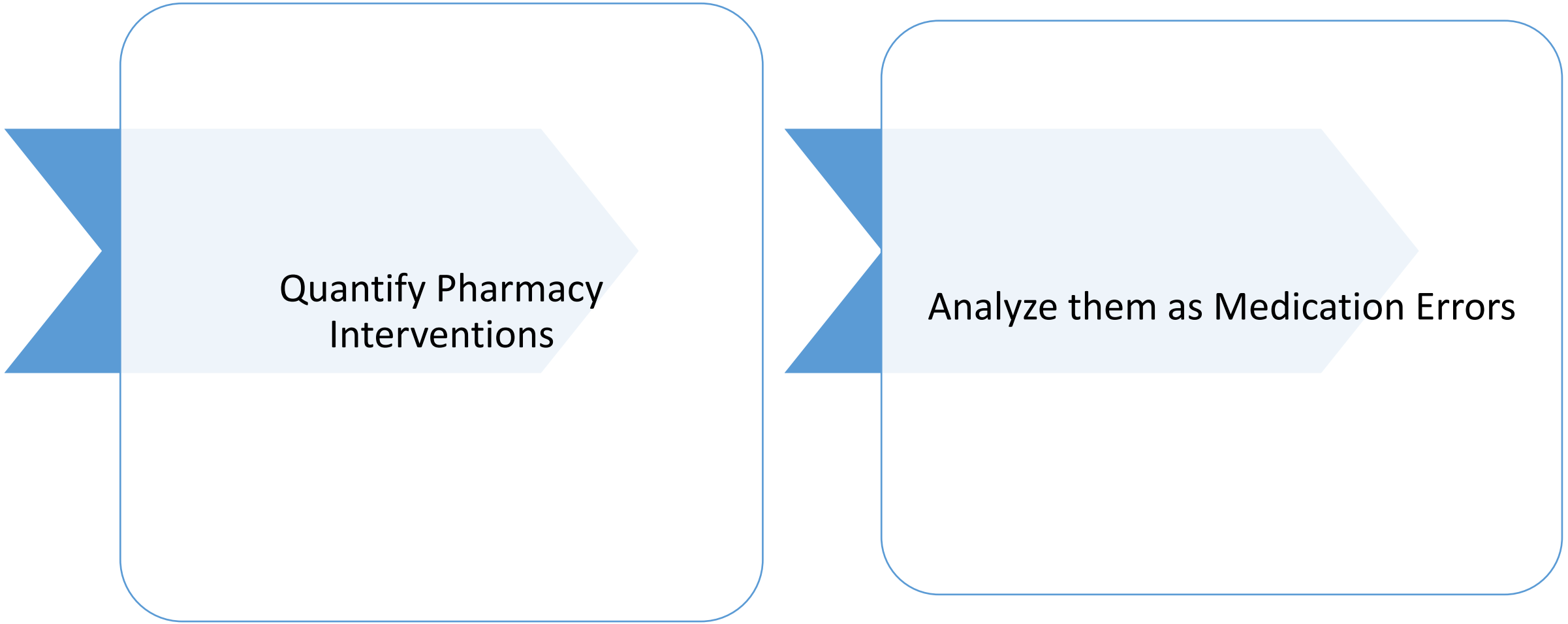
ACCP WHITE PAPER: Clinical Pharmacy Should Adopt a Consistent Process of Direct Patient Care

- In 2014 the ACCP recognized that the pharmacy practice lacks a consistent process for direct patient care and discussed several options for a pharmaceutical care plan
- Pharmaceutical care plan includes:
  - assessment of medication therapy
  - development and implementation of a pharmaceutical care plan
  - evaluation of the outcome
- Proposed pharmaceutical care plan examples published in the literature:
  - Patient Centered Primary Care Collaborative's (PCPCC's), comprehensive medication management (CMM) in the PCMH,MTM, individualized Medication, Assessment and Planning (iMAP),and the Society of Hospital Pharmacists of Australia(SHPA) Standards of Practice for Clinical Pharmacy Services

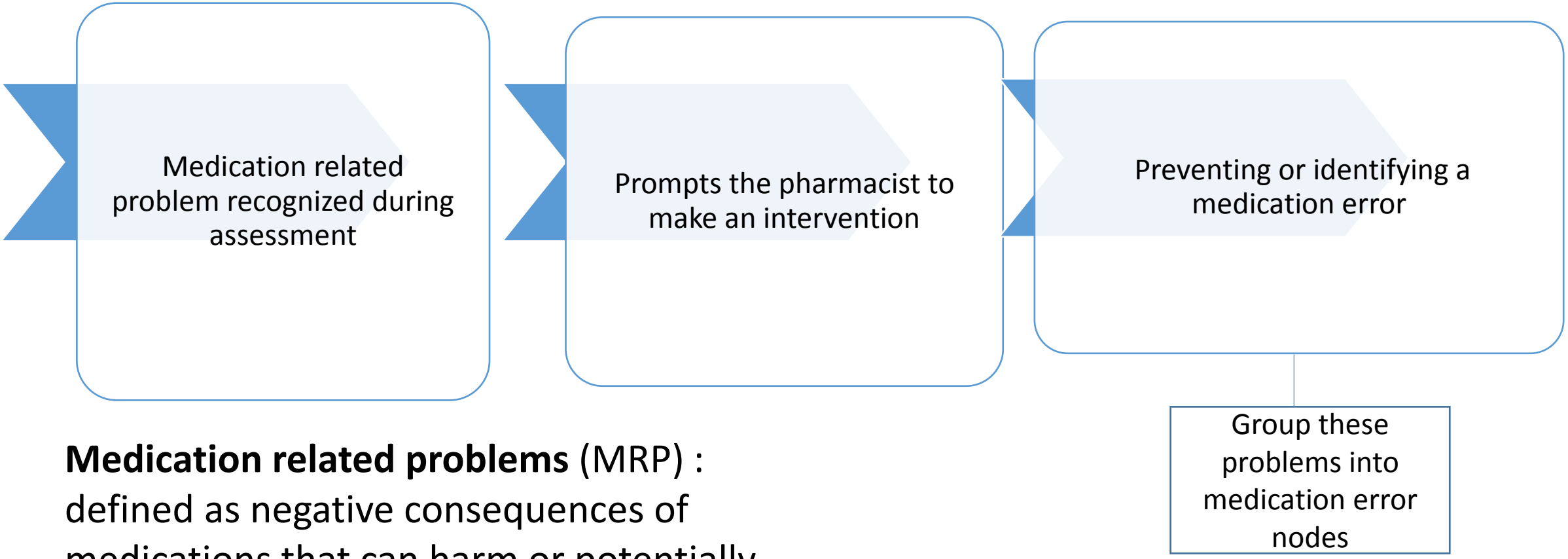
Pharmacotherapy 2014;34(8):2133-e148

Preliminary Results from our Experience at LAUMC-RH

Process for Documenting Pharmacy's Impact on Patient Care



After the ACCP White Paper:
We started thinking in a more process oriented manner



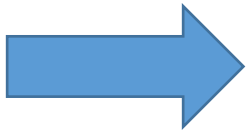
Medication related problems (MRP) : defined as negative consequences of medications that can harm or potentially harm patients.

Am J Geriatr Pharmacother. 2011 December ; 9(6): 451–460. doi:10.1016

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

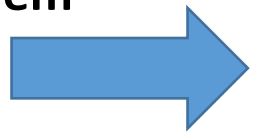
Clinical Pharmacy Intervention Categories

- Allergy/disease state contraindication
- Alternate route
- Drug information
- Interactions/incompatibility
- Order clarification
- Patient care
- Pharmacotherapeutic recommendation



Medication Related Problem Categories

- Drug therapy needed
- Suboptimal dosing
- Medication monitoring needed
- Suboptimal drug
- Documentation problems
- Suboptimal duration, frequency, or administration
- Fear of non-adherence



ME NODES (Medication use process)

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

Medication Related Problems grouped into Medication Error Nodes	
Medication Related Problems **(reasons for the medication error)**	**Medication Error Node** (Where the initial error occurred)
• **Drug therapy needed including prescription omissions** • **Suboptimal dosing** • **Suboptimal drug** • **Suboptimal duration, frequency or administration when related to the prescribing process such as a physician prescribed a suboptimal duration, frequency or administration.**	**Prescribing**
• **Suboptimal duration, frequency or administration when related to the administering process such as a nurse administered the medication with a suboptimal duration, frequency or administration despite having an appropriate physician prescription.**	**Administration**
• **Medication monitoring needed**	**Monitoring**
• **Documentation error including incomplete orders, medication discrepancy due to lack of reconciliation and transcription errors**	**Documenting**
• **Suboptimal drug**	**Dispensing**
Note: Drug information and medication counseling were not classified into medication error nodes	

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

- **Design:**
  - Retrospective descriptive analysis of pharmacy interventions

- **Setting:**
  - Cardiology and Infectious diseases services at the Lebanese American University Medical Center period of September 2012 -May 2013

- **Objective**
  - Attempt to document and quantify pharmacy interventions in terms of medication error preventions might result in a greater appreciation of pharmacists by hospital administrators and risk management

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

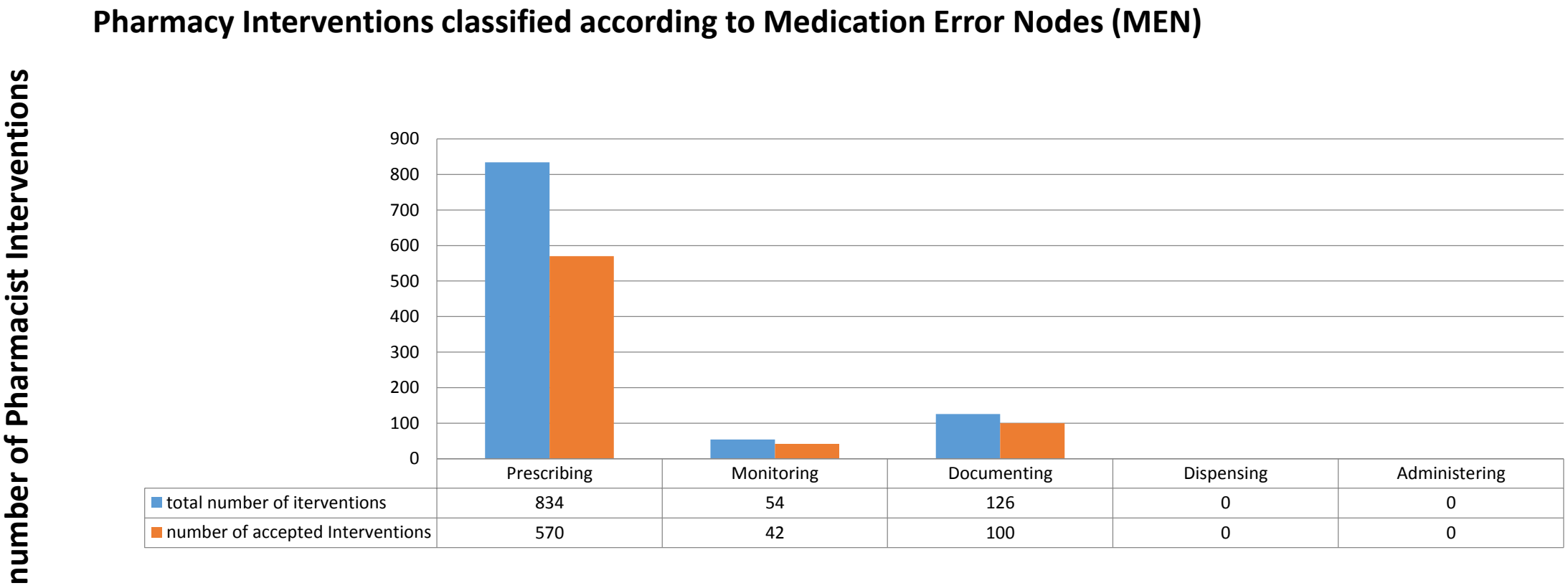
- **Methods:**
  - Developed a new reporting sheet:
    - prompt the user to focus on assessing the medication regimen for MRPs and then to road map a plan, via an intervention.
    - group interventions within 7 MRP categories.
  - Classified the MRPs into 5 nodes of MEs based on where they originate in the drug-use process.
- **Outcome:**
  - Quantify the reduction in medication related problems across ME nodes

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

- Results
  - A total of n=1174 interventions were documented
  - N=1091 interventions were classified as MRPs
  - The most common MRPs :
    - suboptimal dosing, suboptimal drug and suboptimal duration, frequency or administration.
  - The most common origins for error (ME nodes):
    - prescribing, followed by documentation errors, then monitoring errors. This is also in line with the MEDAP study where prescribing administering and monitoring were in the top three common origins for error.[4]
  - Analysis of interventions accepted per ME nodes:
    - prescribing (68.30%)
    - monitoring (77.7%)
    - documenting(79.36%)
  - Overall reduction of 72% in MRP across all ME nodes was seen.

Pharmacotherapy 2013;33(3):253-65

Impact of Clinical Pharmacy Interventions on Medication Error Nodes



- The role of pharmacists in reducing preventable MRPs can be shown when pharmacy interventions are analyzed according to corresponding MRP and ME nodes.

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

- Strengths
  - Interventions analyzed per medication error node
  - It facilitates the identification of performance improvement projects and helps advocate for optimal patient care.
  - Pharmacists were intervening on medications associated with important, well documented clinical outcome measures related to antibiotic stewardship and anticoagulation dosing [1].
  - Serves as an educational tool train student pharmacists on how to use a stepwise approach in identifying MRPs, developing care plans and quantifying medication error nodes to target improvement projects.

Am J Health-Syst Pharm. 2014; 71:1669-78

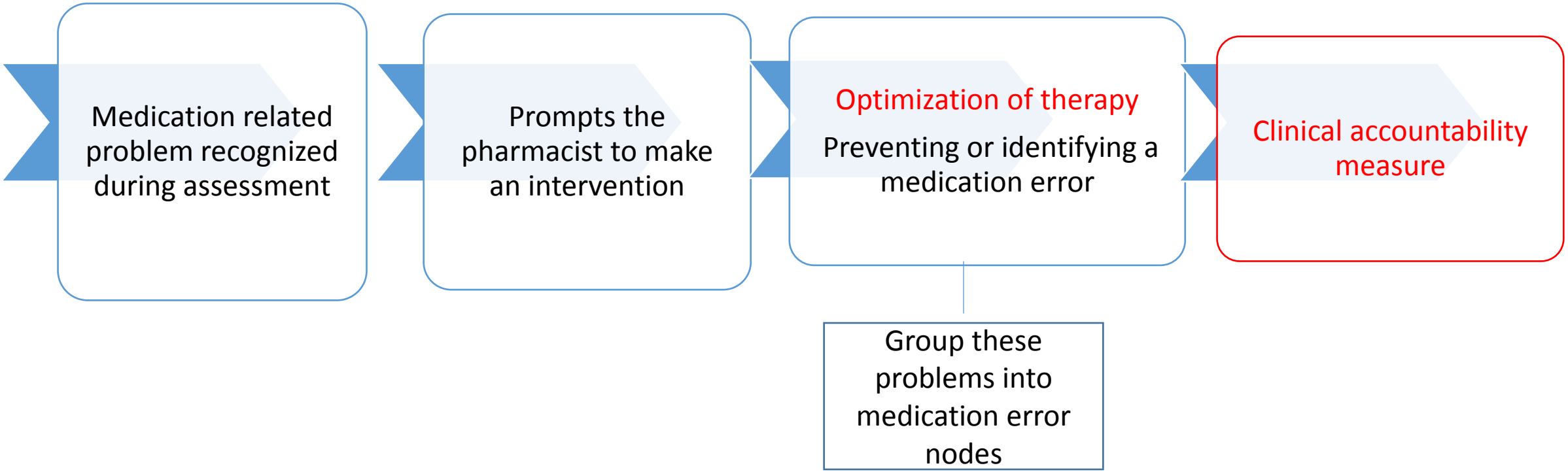
Impact of Clinical Pharmacy Interventions on Medication Error Nodes

- Limitation
  - Did not report on the severity of the interventions or the associated cost
  - Analyzed the interventions are medication error preventions & didn’t consider “optimization of therapy” as an outcome
  - Retrospective documentation, we didn’t know if the problem has reached the patient or was intercepted prior to reaching the patient

Impact of Clinical Pharmacy Interventions on Medication Error Nodes

- Conclusion:
- These findings further emphasize the :
  - Need to promote documentation and analysis of interventions according to a medication related problem assessment approach
  - Support the presence of a clinical pharmacist on rounds to decrease medication related problems & potential medication errors
  - Potentially decrease the reluctance of hospital administrators to recruit clinical pharmacists

A Consistent Patient Care Process & Clinical Accountability Measures



Take Home Message

- As the country is in the process of developing clinical pharmacy, there should be a national effort to agree on a consistent form of documentation

- As we document interventions we need to keep in mind how this data will allow us to assess pharmacy's contribution to clinical accountability measures

Thank You

- Acknowledgement:
  - Rony Zeenny, PharmD, BCPS (AQ-ID)
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  - PharmD students

Questions?