

Interdisciplinary
Nursing Quality
Research Initiative

Robert Wood Johnson Foundation

**Nurse-Pharmacist Collaboration
on Medication Reconciliation:
A Novel Approach to Information Management**

Linda L Costa, PhD, RN, NEA-BC

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Nurse-Pharmacist Collaboration
on Medication Reconciliation:
A Novel Approach to Information Management

Robert Wood Johnson Foundation

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The Study Team:

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Outline

Robert Wood Johnson Foundation

- Background**
- Purpose of Study**
- Methods**
- Results**
- Importance of Findings**
- Next Steps**

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Background


Robert Wood Johnson Foundation

**Adverse Drug Event (ADE): Harm caused by the use
of a drug**

Background

Robert Wood Johnson Foundation

**Adverse Drug Event (ADE): Harm caused by the use
of a drug**



Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug




A Venn diagram with a large white circle labeled "Medication Errors" and a smaller red circle with a grid pattern labeled "ADE". The two circles overlap, with the intersection shaded in a darker red.

Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug




A Venn diagram with a large white circle labeled "Medication Errors" and a smaller red circle with a grid pattern labeled "ADE". The two circles overlap, with the intersection shaded in a darker red.


Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug

- Preventable

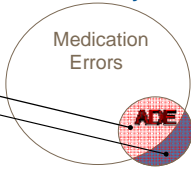


A Venn diagram with a large white circle labeled "Medication Errors" and a smaller red circle with a grid pattern labeled "ADE". A black arrow points from the word "Preventable" in the list to the "ADE" circle.


Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug

- Preventable
- Not Preventable




A Venn diagram with a large white circle labeled "Medication Errors" and a smaller red circle with a grid pattern labeled "ADE". Two black arrows point from the words "Preventable" and "Not Preventable" in the list to the "ADE" circle.


Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug

- Preventable
- Non Preventable




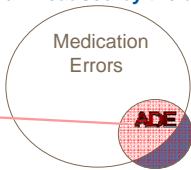
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Background Robert Wood Johnson Foundation 

Adverse Drug Event (ADE): Harm caused by the use of a drug

- Preventable
- Non Preventable

Preventable ADE ← 



A Venn diagram with a large white circle labeled "Medication Errors" and a smaller red circle with a grid pattern labeled "ADE". The two circles overlap, with the intersection shaded in a darker red. A red arrow points from the "ADE" circle to the text "Preventable ADE".

Background Robert Wood Johnson Foundation

Adverse Drug Event (ADE): Harm caused by the use of a drug

- Preventable
- Non Preventable

Preventable ADE ←

- Yearly Impact in Hospitals
 - Patients Affected 400,000
 - Excess cost \$3,500,000,000

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Method to decrease preventable ADEs

- Medication Reconciliation

Med. Rec. mandated by The Joint Commission

- 2005 National Patient Safety Goal established
- 2009 Implementation difficulty recognized by TJC

Background Robert Wood Johnson Foundation

Method to decrease preventable ADEs

- Medication Reconciliation

Med. Rec. Medication Reconciliation

- 2005
- 2009 A process, occurring at transitions in care, whereby medications received by the patient prior to care transition are considered when developing the next therapeutic regimen

Background Robert Wood Johnson Foundation

Method to decrease preventable ADEs

- Medication Reconciliation

Med. Rec. mandated by The Joint Commission

- 2005 National Patient Safety Goal established
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Purpose of Study Robert Wood Johnson Foundation

- 1) To reduce preventable ADEs by improving the medication reconciliation process
- 2) Determine the cost-benefit implications for hospitals of performing medication reconciliation for patients upon admission and discharge.

Outline

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- Methods
- Study team verified/improved “active” medication list used by the care team**
Nurse-pharmacist team conducted med. rec. on admission and discharge at a 1,000 bed academic tertiary care hospital
 - Patient interview – Average 10 minutes**
Other sources e.g. community pharmacies – Average 29 minutes
 - Potential discrepancies discussed with prescriber**
Unintended discrepancy = prescriber changed therapy
Intended discrepancy = prescriber did not change therapy

Methods

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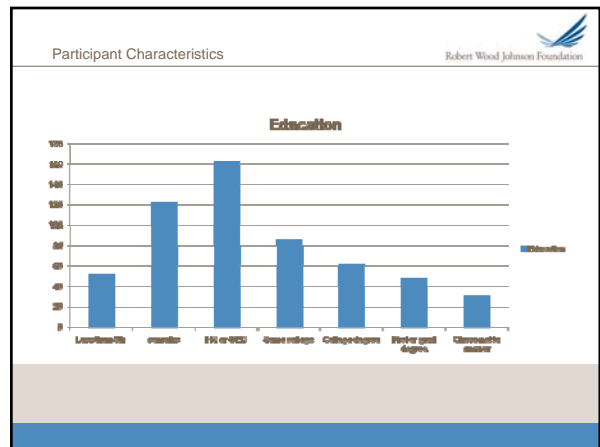
Importance of Findings

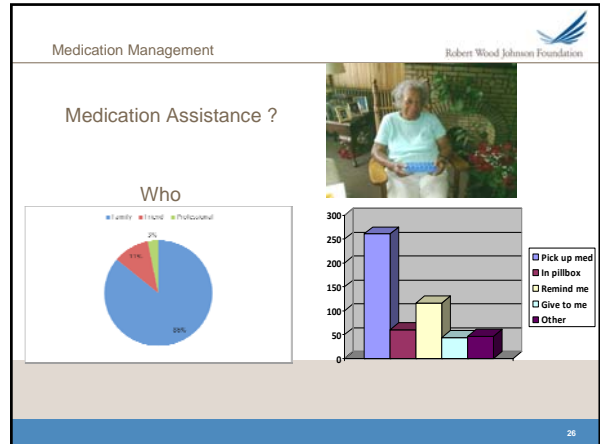
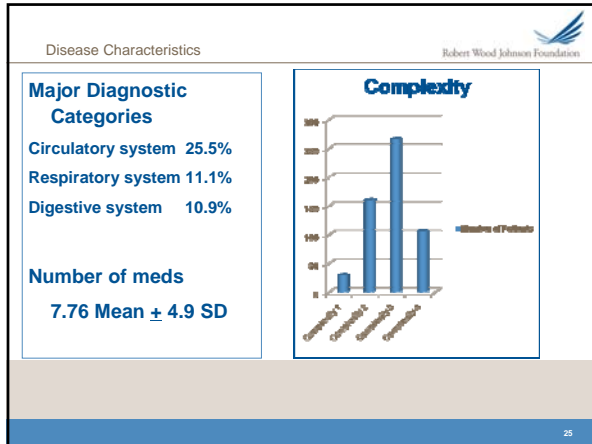
Next Steps

Participant Characteristics

563 Patients entered the study:

Emergency Admissions	Age
87 percent	< 65 years 69.5%
	65 – 85 27.5%
	> 85 3.0%
	Race
	African-American 65%
	White 33%
Live ≤ 5 miles	Primary Payor
58 percent	Medicare 38%
	Medicaid Managed 16.5%



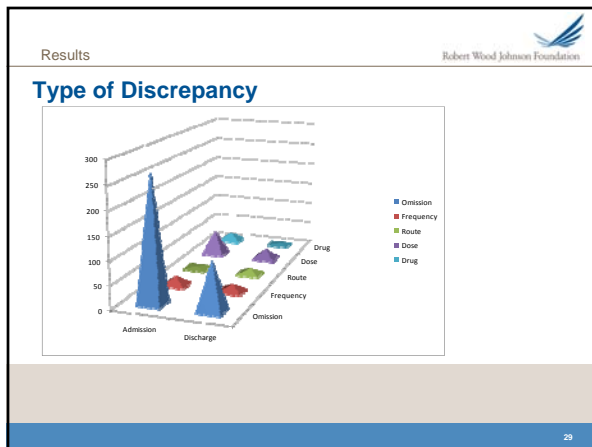
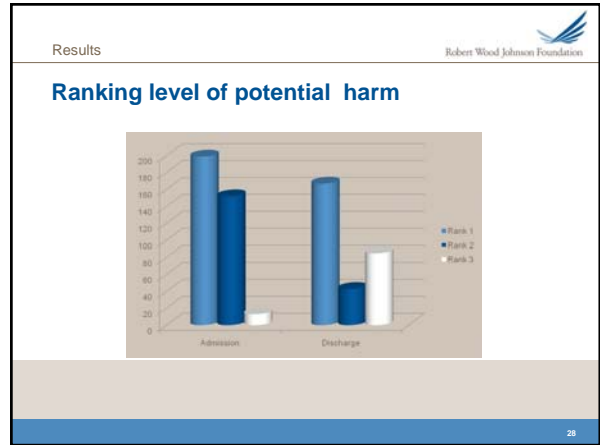


Results Robert Wood Johnson Foundation

563 Patients entered the study:

- 226 patients experienced discrepancies on admission or discharge
 - 162 patients had discrepancies rated as having the potential to cause harm.
 - Discrepancy Raters –MDs and Pharmacists (Intra-class correlation 0.58)
- Logistic regression to predict the occurrence of discrepancies
 - number of medications significantly associated with discrepancy


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Purpose of Study Robert Wood Johnson Foundation

Determine the cost-benefit implications for hospitals of performing medication reconciliation for patients upon admission and discharge

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Methods Robert Wood Johnson Foundation 

Business case: Nurse-Pharmacist Team


Cost of ADE:

- Inflation ratio (2008:1996) = 1.595
- Bates (1997) = \$5857
- Bates inf adj = \$9344


Cost of Team:


- Intervention time * team wages/benefits
- Cost per patient = \$32

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Out of 100 pts



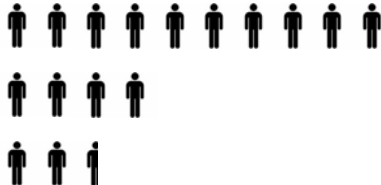
Results Robert Wood Johnson Foundation 


Out of 100 pts, 40 had ≥1 unintended discrepancy



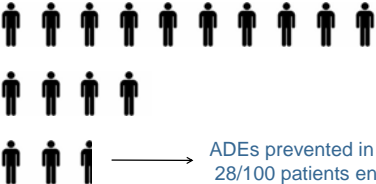
Results Robert Wood Johnson Foundation 

Out of 100 pts, 40 had ≥1 unintended discrepancy
Of those, 72% had a discrepancy that could cause harm




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→ ADEs prevented in 28/100 patients encounters

Results Robert Wood Johnson Foundation 


Business case: Nurse-Pharmacist Team


Each ADE projected to cost \$9300

Intervention cost per patient = \$32

Break-even: One prevented ADE in 290 patient encounters

Our data: 28 ADEs prevented in 100 patient encounters



Results Robert Wood Johnson Foundation 


Business case: Nurse-Pharmacist Team


Each ADE projected to cost \$9300

Intervention cost per patient = \$32

Break-even: One prevented ADE in 290 patient encounters

Our data: 81 ADEs prevented in 290 patient encounters



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Importance of Findings Robert Wood Johnson Foundation 

- **Improves Patient Safety**
- **Improves Appropriateness of Care**
- **Reduces Cost of Healthcare**

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Next Steps Robert Wood Johnson Foundation 

Get the word out

JOHNS HOPKINS MEDICINE

The Joint Commission
HELPING HEALTH CARE ORGANIZATIONS HELP PATIENTS

Community Robert Wood Johnson Foundation 



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