

# **Nurses & Informatics: Transforming Healthcare Conference**

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## TURNING DATA INTO KNOWLEDGE TO POWER CARE DELIVERY AND TRANSFORM OUTCOMES

- We all believe that clinical interventions (e.g., skin assessment, turning, mobility, positioning etc. prevent the occurrence of decubitus ulcers.
- Do we really know the combination of clinical interventions that produces the best result?

# Study Objective

- To link MDS assessment data with workload data to analyze the relationship between the occurrence of decubitus ulcers and nursing, physiotherapy, and occupational therapy interventions.

# Research Questions

- What is the relationship between the occurrence of decubitus ulcers and the consumption of professional resources?
- Does the composition of the inter-disciplinary team affect the outcome?
- Does the amount of resources provided by each discipline affect the outcome?

# Study Sample

- All complex care patients at St. Peter's Hospital during last quarter 2004/2005 and first quarter 2005/2006
- Sample size (n=130)
  - Pts. In hospital at the start of the study = 100
  - Pts. admitted during the period = 30
  - Even distribution of admissions across both quarters of the study

# Description of St. Peter's Patients

	<b>SPH</b>	<b>Province</b>
Higher than average percentage admitted with a decubitus ulcer	43%	21%
Resource Intensity Weight (RIW) is high relative to other similar hospitals	1.15	1.02

# MDS Data

- **Drawn from Momentum MDS Module**
  - Data captured on admission, quarterly after admission and with any significant change in patient status
- **Data Included:**
  - Presence of New Ulcers
  - Presence of Stage 2/3/4 ulcers
  - Presence of Healed Ulcers
  - Mobility Status
  - Presence of Nutritional Problems
  - Occurrence of Skin Treatments
  - Use of Restraints
  - Physiotherapy & Occupational Therapy Attendance Days

# ***Dynamine***<sup>TM</sup> **Workload Data**

## **Drawn from Emerald's *Dynamine* software**

Data captured daily by patient by nursing and all allied health disciplines (number of days selected and total minutes)

- **Nursing**
  - Toileting
  - Ambulation
  - Transfer
  - Skin Assessment
  - Mechanical Lift
  - ROM
  - Turning/Positioning
- **Clinical Nurse Specialist**
  - Skin Assessment
- **Physiotherapy**
  - ROM/Gait/Balance
  - Group Exercise
- **Occupational Therapy**
  - Wound Assessment
  - Seating/Bed Positioning/Transfer Assessment
  - Training re Seating/Mobility/Transfer



# Analysis

- Data from both sources linked by patient name and compiled in Excel
- Data analyzed by SPSS

# Study Numbers

	<b>Patients With Ulcer</b>	<b>Patients Without Ulcers</b>
<b>On Admission</b>	N = 1	N = 29 Avg. LOS = 55
<b>On Quarterly Assessment</b>	N = 9 Avg. LOS = 88	N = 91 Avg. LOS = 85

# Findings

- Mobility, Nutrition and use of restraints were not significantly different
- Mechanical lifts were used more often for those with ulcers
- Patients Who Were Admitted in Previous Quarter:
  - 5 of the 9 with ulcers were new ulcers
  - 18 of the 91 without ulcers reported healed ulcers from previous quarter
  - Those without ulcers required less assistance with toileting, ambulation and transfer

# Findings

## For patients with Decubitus Ulcers:

- **More workload reported for:**
  - Physiotherapy ROM/gait/balance
  - OT seating assessment/intervention
  - CNS wound assessment
- **Less workload reported for:**
  - Nursing ROM
  - OT wound assessment/wound intervention
  - OT training

# Study Limitations

In addition to the typical questions about compliance in the collection of data, there are two primary limitations:

- **Sample Size**

- Small number of patients limits the inferences that can be made using standard statistical techniques

- **Elapsed Time of Study**

- The limitation of two data quarters does not allow sufficient analysis of the distribution of resource usage pre and post ulcer to determine cause and effect relationships

# Observations and Questions?

## **Patients with ulcers consume more resources than those without:**

- How cost-effective is investment of resources in ulcer prevention versus treatment interventions once an ulcer is present?
- What is the best timing for the delivery of interventions?
  - E.g., Does wound assessment and training by OT reduce the need for seating interventions or the reverse?
- What is the effectiveness of resources when there is shared responsibility for interventions?
  - E.g., Nursing vs Physio time spent in ROM exercises

# Next Steps

- Continue to collect and analyze data in upcoming fiscal quarters
- Enhance ability to choose workload interventions and reduce/eliminate the need for external linkage to MDS data
- Share findings with clinical leaders and staff to:
  - improve quality of data collection
  - identify other interventions that should be measured (e.g., therapeutic mattresses which could be used as a controlling factor in future analysis)
- Discussion with other similar organizations re participation in similar data collection

# Importance of Understanding the Impact of Staffing Decisions on Clinical Outcomes

- **Accountability Agreement**

- Workload provides insight on the factors that contribute to clinical outcomes
- Quality indicator for Chronic Care - Decubitus Ulcers

- **Resource Intensity Weights**

- Workload provides insight regarding the appropriateness of current weights
- Weights used in the funding methodology for chronic hospitals





**Questions?**