



## ***Improving Clinical Practice By Examining Multi-Disciplinary Workload and Patient Outcomes***

St. Peter's Hospital (Hamilton), in conjunction with Emerald Health Information Systems Ltd., evaluated the relationships between the occurrence of decubitus ulcers and the consumption of nursing, occupational therapy and physiotherapy resources (2005). The study used MDS assessment data and workload from *Dynamine*<sup>TM</sup>.<sup>1</sup>

The objective of the analysis was to determine the combination of clinical interventions (e.g., skin/seating/wound assessment, turning, mobility, positioning etc.) that produces the best clinical outcome. The analysis specifically focused on three practice 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?***

The limited patient sample size (n=130) and the short elapsed study time (2 fiscal quarters) allowed us to make preliminary observations:

- ***Elimination of mobility or nutrition activities as a contributing factor to the occurrence of ulcers*** (there was no difference in the type or amount of time spent in these activities between the two patient groups).
- ***It takes more resources overall to care for patients who have ulcers*** (e.g., more assistance with toileting, ambulation and transfer and more use of mechanical lifts).
- ***A different mix of nursing and allied health resources are consumed by patients with ulcers:***
  - More workload reported for Physiotherapy ROM/gait/balance activities), Occupational Therapy seating assessment/interventions, and Clinical Nurse Specialist wound assessment.
  - Less workload reported for Nursing ROM, and Occupational Therapy wound assessment/wound intervention and training.

Inferences from the decubitus ulcer outcome study are:

- The presence of ulcers creates the need for more resources;
- Decreasing the staffing/skill mix complement of services offered to patients has the potential to increase the number of patients who develop ulcers; and
- There is an appropriate balance of resources available that must be provided to prevent ulcer formation.

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<sup>1</sup> *Dynamine* is a trademark of Emerald Health Information Systems Ltd. and refers to their Workload Decision Support Module.



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

Outcome as an indicator only has the power to effect positive change when effectively linked to the inputs and outputs that created the outcome. Worked Hours (input) and workload (output), linked to other data (such as provider and facility characteristics) can provide outcomes with contextual meaning that has the power to drive change in healthcare policy and delivery.

In the study cited on our web site, the outcome showed that the overall costs of preventing ulcers are less than the costs of treating patients with existing ulcers. However, prevention required a specific set of nursing and allied health skills and interventions. Being able to easily conduct operational performance analysis on outcomes will allow hospitals/Ministries of Health determine the right balance of resources for effective use of health dollars.

Using data integration and analysis tools (such as Emerald's **DynaBoard™ Dashboard and Analysis Toolkit**) managers are able to link large amounts of data easily without have to understand complex databases. This allows clinicians to:

- Question, test and quantify the linkages between clinical interventions provided to patients (and their frequency) and patient outcomes.
- Share data analysis with other similar organizations to determine facility specific differences and/or confirm consistency of results across clinical settings.