

## **Multivariate Hierarchical Analysis in Development of Pressure Ulcer Prevalence Surveillance and Prevention Tool**

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Pressure ulcers have been increasingly recognized as both a patient safety issue and a nurse-sensitive outcome indicator of patient care. In the near future, health care organizations will be required to report on more outcomes of care including the prevalence (P) and incidence (I) of pressure ulcers. For the most part, hospitals in Canada report P & I of pressure ulcers by retrospective chart audit. A few hospitals conduct prospective, observational data primarily through the use of existing data collection tools and processes sponsored by industry partners.

It is needed to develop a surveillance and prevention tool with validity and reliability that can be used by all acute care hospitals.

Based on a literature review, data elements were selected and a data collection tool was developed and piloted at the three teaching hospital sites with a sample population of more than 3,000 patients. The hierarchical multivariate model was developed in identifying factors significantly associated with pressure ulcer based on the data collected in the study. The validation sample was collected to measure the overall validity. The preventive and management treatment have been investigated as well. Furthermore, intervention factors were investigated based on the first level outcomes.

A valid model has been established to evaluate the risk of suffering of pressure ulcer. And a procedure for preventive and interventional management treatments based on the risk evaluation has been established.

The tool will be further evaluated through statistical analysis to confirm whether the data elements are associated with pressure ulcer development based on data collected in more hospitals. An evidence-based surveillance and prevention tool will help hospital staffs well manage pressure ulcer prevention.