Evidence summary: Pressure injury identification benchmarking

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ABSTRACT

Pressure injuries (PIs) are a significant health issue worldwide, and contribute substantially towards the economic burden in healthcare systems. This is primarily because PIs increase the length of hospital stays; and longer hospital stays also predict PI development. PIs are also used to measure the performance of health staff and facilities in a variety of settings. Inappropriate management of PIs can lead to further complications, necessitating an increase in resources in the hospital for assessment, monitoring and treatment. However, over time, challenges in regard to identifying, assessing and reporting PIs have proven to be problematic for a number of reasons. This paper explains the main challenges to PI assessment, and presents a series of best practice recommendations to rectify these challenges.

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CLINICAL QUESTION

What are the main challenges with data collection and benchmarking in identifying pressure injury (PI) rates, and how can PI detection rates be improved?

EVIDENCE SUMMARY

Pressure injury (PI) rates are a key indicator for the performance of health care services[1-4]. However, significant challenges and barriers exist in measuring PI rates accurately[5-7]. This may result in an inability to identify health care facilities that require further help or funding, or incorrect allegations of inadequate care. The main challenges in identifying, coding, and reporting PIs include (but are not limited to) inconsistency in measuring and identifying PIs at admittance[5,6], the extent (or intensity) of the search for PIs upon assessment (that is, risk assessment[2,8]), the use of various risk assessment scales, the variety in coding approaches[9], and the adjustment over time against a specific patient's risk factors (for example, being assigned different levels of risk against length of stay, presenting illness, and age[10,11]). Furthermore, the accuracy in reporting PI rates may be further affected by differences in epidemiological approaches to data collection, including conducting cross-sectional studies (for example, Pressure Ulcer Point Prevalence Surveys [PUPPS] conducted once a year), reported or records made at discharge. Finally, financial incentives may also affect PI reporting[12-14]. To improve the accuracy of PI rate reporting and to allow data harmonisation, the authors of this research suggest that a systematic, accurate and reproducible measurement of PI be adopted across a health care system. This includes a consistent standard of risk assessment, systematic examinations at admission, uniform training for staff, improved documentation, continuous assessment of PIs through regular intervals, trained observers to audit against pre-specified protocols (especially if used to benchmark performance), and a common protocol to monitor and document PIs in discharge summaries across acute health care settings.

BACKGROUND

PIs are a significant health issue worldwide, and contribute substantially towards the economic burden in health care systems[15-17]. This is primarily because PIs increase the length of hospital stays; and longer hospital stays also predict PI development[18,19]. PIs are also used to measure the performance of health care staff and facilities in a variety of settings[1-4]. Inappropriate management of PIs can lead to further complications, necessitating an increase in resources in the hospital for assessment, monitoring and treatment[20]. However, over time, challenges in regard to identifying, assessing and reporting PIs have proven to be problematic for a number of reasons. This paper explains the main challenges to PI assessment, and presents a series of best practice recommendations to rectify these challenges.

METHOD AND CHARACTERISTICS OF THE EVIDENCE

This evidence summary is based on a non-systematic review of national standards, national or state statistics, systematic reviews, longitudinal, experimental, and cross-sectional studies. However, as part of the problem with measuring PIs and the lack of consensus on measurement, ranking based on levels of evidence would be deceptive. As per the Oxford Centre of Evidence Based Medicine Levels of Measurement guidelines[21], judgement against each individual study is needed, depending on the measurement and purpose of the assessor when determining usefulness of the study. Instead, we have simply provided the categories of evidence below:

- Systematic reviews of various designs[10,22-25]
- Studies (cross-sectional, experimental, and longitudinal)[1-4,8,11,15-20,26-32]
- Expert consensus and government reports[5-7,9,14,33-35]
- Expert opinion (analyses on cost savings/current practice)[12,13,36]

MAIN CHALLENGES

Broadly, the challenges with PI measurement can be classified into four inter-related categories: measurement, detection, coding and reporting.

Measurement challenges

There are a number of challenges with PI measurement, as there are a variety of ways PI rates can be assessed. These include point prevalence, period prevalence, incidence, and incidence density[20]. Often, the way PIs are assessed include PIs found at time of admission, rather than only including those developing or worsening PIs at the institution being evaluated[26]. Furthermore, PI incidence and prevalence are not the same, and studies examining each cannot be compared. This lack of standardisation in PI measures is an issue of international concern[5,6]. Finally, the lack of controls for case-mixing is a serious issue; patients are often classified on the basis of high risk and low risk, but these risk factors are not differentiated on the basis of factors within or outside an institution's control (for example, advanced age). Therefore, when PI rates are used to benchmark a health care institution, they must be adjusted against the factors and whether they were in the institution's control[33]. There is no current consensus on how this should be done.

Evidence used: Cross-sectional research on entire Australian population[20], longitudinal research on one hospital in Australia[26], and expert consensus by health advisory panels[5,6,33].

Detection challenges

The current ways in which PIs are detected have some serious challenges. First, some of the risk assessment tools are quite dated (for example, developed in 1962;[27]), and there is no consensus on which tool should be used[22], as there is insufficient evidence to show that one tool is better than another[23]. Difference in assessor's knowledge and skills have not been examined[24,28], and some evidence suggests that the benefit of the tool is the increased attention on searching and presenting PI on behalf of the assessor[22]. Finally, PI detection rates may vary because of this increased intensity of the search on behalf of the assessor[2,8], or the use of new technologies[29,30].

Evidence used: Cross-sectional study comparing measurement scales[27], expert consensus by a health advisory panel[22], systematic reviews[23,24], experimental study[28], cross-sectional study on entire Swedish population[2], cross-sectional study on long term hospitals in Japan[8], and cross-sectional studies testing new technologies[29,30].

Coding challenges

Clinical PI staging is main issue with the coding of PIs. The threshold at which a PI should be recorded can vary (especially at PIs where skin integrity is maintained, that is, Stage 1[36]), and reporting of the stage of PIs can be inconsistent, as inter- and intra-observer reliability is poor[25]. Another issue comes from incorrect coding; inexperienced individuals often use unspecified pressure ulcers instead of un-stageable code in the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD 10), or individuals fail to record the relevant co-morbid condition[11].

Evidence used: Cross-sectional study on UK in-patient facilities[36], systematic review[25], and cross-sectional study on an American data repository[11].

Reporting challenges

There are two challenges with PI rate reporting: practice-related and financial. Some routine practices, such as documenting PIs by two professional areas in two systems, have resulted in significant differences in PI reporting[31]. This was suspected to be largely due to under-reporting hospital-acquired pressure injuries (HAPIs) in the discharge documents by physician-led discharge documents,

compared to the hospital- and nurse-based documenting patient health records. This suggests another problem: the financial incentives and penalties in regard to hospital statistics. Some government agencies fine hospitals or do not reimburse hospitals for treatment costs when PI rates are above a certain threshold[32,34], and thus there may be an incentive for staff members to under-report a PI when at an incidental stage, or classify as present on admission. This is particularly likely when PI assessment has a subjective element[12].

Evidence used: Cross-sectional study on proof of concept of new technology for tracking in an American hospital[32], cross-sectional study on Canadian data set[31], Australian State Government report[34], and expert consensus[12].

BEST PRACTICE RECOMMENDATIONS

From this evidence, a series of recommendations can be made. PI incidence density should be used as a quality indicator, as it allows for a comparison between settings of all sizes, but requires risk adjustment[35]. Upon admission, clinicians should document PIs and risk factors by completing a thorough and systematic examination using one standard risk assessment tool. When using PIs as a quality indicator, it is critical to agree on a systematic approach to risk adjustment for factors beyond an institution's control. Furthermore, risk adjustment should be standardised against the differences in the inherent risk of PIs, using incidence density as the measure. Only PI Stages 2, 3 or 4 should be used, as they are more likely to be identified objectively. All hospital personnel involved in recording and coding PIs should receive uniform training, including simplified, easy to understand instructions. Furthermore, all hospital-acquired PIs should be documented in discharge summaries. A uniform protocol should be developed and used to monitor those at high risk of PIs across Australian acute health care settings, including a routine for regular re-assessment for a duration of hospital stay. Quality and safety audits should also be used to improve the integrity of data provided by acute health care settings. We also recommend the use of new technology to assess PI risk. This assessment method will ensure systematic, objective and accurate data comparison of PI incidence across health care settings.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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