

Hospital Pressure Injury Metrics, an Unfulfilled Need of Paramount Importance

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Commentary

An important September 2019 Government Accountability Office (GAO) Report on the effectiveness of Center for Medicare/Medicaid Services (CMS's) quality measurement strategies has been widely overlooked by the media and national policymakers. One of the report's main findings was that CMS lacks assurances that the quality metrics it uses in value-based initiatives are effective in promoting healthcare quality.(1) These same concerns have been echoed by the healthcare industry which points to the plethora of process measures which they are mandated to report and the "burden" this reporting has placed on healthcare delivery systems.

Metric prioritization is an important issue. Process measures are important at the organizational level because they can help organizations measure and improve upon the degree to which they follow evidence-based practices. However, when measuring and comparing quality across organizations, outcome metrics which encompass multiple procedures are often less burdensome to the institution and more relevant to the consumer than process metrics.(2) Outcome metrics which are nursing sensitive, measure outcomes which are dependent upon sufficient numbers of well-trained nursing staff functioning in an optimal work environment. Nursing-sensitive metrics have the potential of improving multiple areas of patient care, not just the measured outcome. In addition, metrics should also be prioritized based upon how common the incident occurs and the impact the event has on the patient.

Patient Safety is of utmost importance. The most recent comprehensive comparison of hospital acquired conditions (HACs) was published in 2013 by AHRQ using data derived from the Partnership for Patient's initiative.(3) This data calculated that there were over 1 million pressure ulcer adverse events comprising 26.8% of all hospital-acquired conditions, second only to adverse drug events (33.4%). The estimated average cost of a pressure ulcer event was \$17,000 compared to \$5,000 for an adverse drug event.

Although, there are a number of metrics which measure drug events, there are only a few pressure injury metrics. In the acute care hospital setting, there are two metrics which measure hospital-acquired pressure injuries. One designed by the Joint Commission which could be used during hospital surveys (National Quality Forum's (NQF) metric 0201). This metric excluded patients who refused evaluation, were medically unstable, off ward or "actively dying" at the time of a survey. NQF endorsement for this metric has been removed. The other, (NQF Patient Safety Indicator #3 (PSI 3)), was developed by Agency for Healthcare Research and Quality and operationalized by the Centers for Medicare & Medicaid Services (CMS) using hospital billing (administrative) diagnostic codes for Stage III and IV pressure ulcers(4) for use in the comparison of facility performance. PSI 3 has undergone significant criticism by the healthcare industry which has resulted in its mitigation in financial incentive strategies.

However, the measurement and public reporting of pressure injury is of utmost importance. Not only are pressure injuries common events which can inflict severe patient disability and death, but their measurement implements an important nursing sensitive metric which would have a generalized positive impact on patient care.

Most pressure injuries can be prevented but their prevention is a complex and resource intense endeavor. A prompt and comprehensive nursing assessment is key in pressure injury prevention. Pressure injury may occur in as little as 2 to 6 hours.(5) No single factor can explain pressure injury

risk.(6) A nurse's clinical judgment alone is not enough to predict pressure injuries but should be used in combination with a complete and accurate assessment.(7) If risk assessment is flawed or not implemented in a timely fashion, then the incidence and severity of pressure injuries will not be reduced. Electronic Health Records (EHRs) have potential for providing more complete risk assessment but, despite advances in predictive modeling, a recent systematic review by Shi, et al. concluded: "The methods used for pressure injury risk model development are generally flawed which reduces the potential for using these models in practice."(8)

The diverse characteristics of pressure injuries also pose challenges and necessitates a personalized interdisciplinary approach. The vast majority of pressure injuries are preventable or can be mitigated. However, some may still occur.(9) Some risk factors for developing pressure injuries are unalterable (e.g., spinal cord injury, age 40 and older)(10) or unlikely to be altered (such as: prolonged exposure to pressure during long surgical procedures, vasopressor use postoperatively)(11). Race is not a risk factor for pressure formation.(12) Some risk factors may be altered (e.g., mobility and friction/shear, moisture, nutrition). Aggressive preventive measures (e.g., appropriate support surfaces, good nutrition, turning and positioning, keeping the patient dry and avoidance of overmedication and sedation) are detailed in practice guidelines and can prevent the majority of pressure injury but may not be well integrated at the bedside.(13) In addition, patients if able, should be engaged in the prevention process.(14,15)

There are clearly many processes which are involved in the prevention of pressure injury. A facility must be willing to allocate significant resources and implement and monitor these processes in order to achieve an optimal outcome. Outcome metrics are the most useful and have the least facility burden in determining overall facility performance. For interfacility performance measures and value-based purchasing, an outcome metric would be the preferential choice.

Because of the frequency, cost and complexity of prevention of pressure injuries, there may be wide variance in the implementation of effective preventative strategies by facilities. Hence, financial incentives have been proposed and used to promote quality care and decrease the occurrence of this adverse event.

The first strategy to prevent hospital acquired conditions (HACs) was The Deficit Reduction Act of 2005. It mandated that CMS not pay for 14 categories of HACs including Stage III and IV pressure ulcers(16). The strategy was based upon billing (administrative) data and this act was largely viewed as ineffective due to two problems. First, is that early electronic billing systems allowed the billing of 25 diagnoses, but CMS only captured the first 9 diagnostic code slots.(17) Thus, facilities could avoid public reporting by placing diagnostic codes for HACs in the latter billing slots and still comply with the mandatory reporting requirement. A quick fix would have been to require the reporting of all HACs in the first 9 slots. Finally, CMS does not use line item billing but largely bases facility payment on the admitting diagnosis. Although we have no data on how many diagnoses were not captured, there is data available for fiscal year 2012 which reports 96,646 stage III and IV pressure ulcers treated in hospitals, but only 1770 are denoted as hospital acquired and only 286 of these affected hospital reimbursement.(18)

CMS has since enacted three additional value purchasing initiatives. The Hospital Acquired Condition Reduction Program (HACRP), The Hospital Value-Based Purchasing (HVBP) program and the Readmission

Reduction Program. The pressure ulcer metric can only be found in the HACRP as part of the Patient Safety Indicator (PSI-90) domain(19). Despite Pressure Ulcer administrative data (PSI 03) being found to have the second highest median reliability of the PSI 90 HACs(20) and the HVBP Safety Domain comprises 25% of the weight in the HVBP financial incentive calculation(21), pressure injury is not a component.(22)

Although pressure injury has been estimated to comprise just under one third of all adverse events, it's weight in the HACRP program has been mitigated until it comprises only 2% of the total penalty calculation.(23,24) This mitigation is presumably in response to industry's concerns regarding the metric's reliability.

Recently, CMS submitted a developed replacement metric to the National Quality Forum (NQF) for Pressure Ulcers in 2018. (NQF is the U.S. Congressional designated and funded organization which serves as a major advisor to CMS for quality metric adoption.) Unlike PSI 03, the newly developed metric derived its data from the electronic medical record, lowering the facility's burden, and captured any pressure ulcers with skin breakdown (Stage II, III and IV). The latter change in the metric's denominator removed the judgement of ulcer size and would be expected to increase the metric's reliability.

The metric had a 24 hour grace period for ulcer development. However, this grace period may have been too lenient. As mentioned above, a prompt nursing assessment is crucial, since pressure ulcers can develop in as little as 2 to 6 hours, along with patients sometimes having to wait in suboptimal conditions for an available room.

The metric passed the NQF's Patient Safety Standing Committee unanimously and passed the Scientific Methods Panel which evaluates the metric's validity and reliability.(25) However, three weeks before the final determination by the NQF's Consensus Standards Approval Committee, whose function is to assure if the metric fits into the NQF's total portfolio, the metric was withdrawn. According the NQF the reasons given was that the developer was "considering substantive changes and assessing potential impacts"(email communication NQF Oct. 21, 2019). It is not clear what exactly the substantive changes and potential impacts were.

The decade long struggle to have the second most common adverse event publicly reportable and to have a meaningful impact in value-based purchasing programs may well be a testament to the observation that public health is at the intersection of politics and medicine. The healthcare industry needs to place patients first and implement a publicly reported pressure injury metric which has a weighting in value-based purchasing initiatives commensurate to the impact this event has on patients.

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