Establishing the feasibility of using a generic risk screening model to identify the risk of hospital-acquired complications

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The problem

Screening for the risk of harm is central to safe and quality care[1]. Despite organisational efforts to prevent harm, many patients experience Hospital Acquired Complications (HACs).

We investigated the possibility of using risk-prediction models designed by the Independent Hospital Pricing Authority (IHPA)[2] as a screening method for HACs.

What we did

1. Analysed 2,800 medical records from Jul-Oct 2018 to compare the risk rating for falls and pressure injuries from the Fall Risk Assessment Tool (FRAT) and Waterlow Screening Tool (WST) with the IHPA risk-prediction models.

2. Analysed Riskman and Bossnet data to identify IHPA prediction model risk classifications for patients who had a HAC in the study period.

What we found

Concordance of the IHPA model falls risk classification with WST

2% (n=7) of patients aged ≥65 years who classified as high to very high risk for pressure injuries using the WST were classified as moderate/high risk using the IHPA model (Figure 2).

The sensitivity of the IHPA models in identifying pressure injuries was 1.8% (95% CI: 0.6% - 4.0%) . Specificity was 99.8% (95% CI: 99.0% - 100.0%).

Concordance of the IHPA model falls risk classification with FRAT

12.6% (n=65) of patients aged ≥65 years classified as moderate to high risk for falls using the FRAT and IHPA model (Figure 1).

The sensitivity of the IHPA model in identifying falls was 12.6% (95% CI: 9.8%-15.7%) . Specificity was 95.7% (95 CI: 93.3%-97.4%)

Figure 1: Concordance and discordance of the IHPA model falls risk classification and FRAT classification

Figure 2: Concordance and discordance of the IHPA model pressure injury risk classification and WST risk tool classification

Take home message

The findings did not support the use of the IHPA risk-prediction models as a screening method for HACs.

Continued efforts are required to develop screening and assessment tools that can aid an integrated approach to identifying patients at risk of HACs so clinicians can improve delivery of targeted comprehensive care.
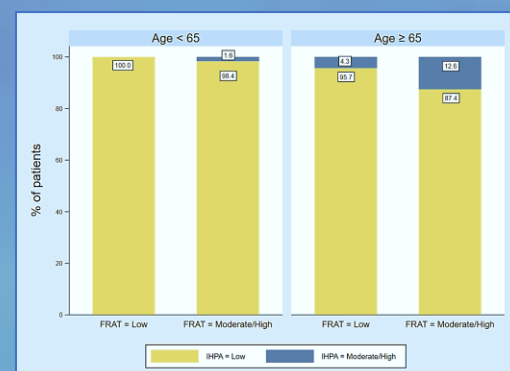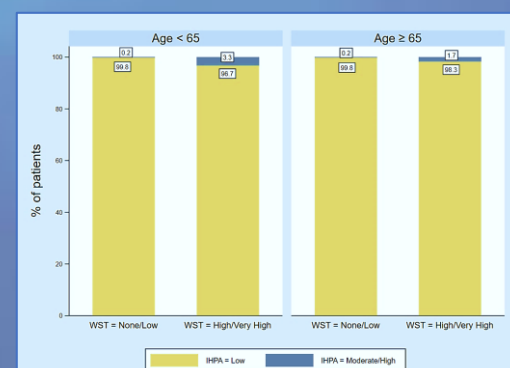
References
1. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. 2nd ed. Sydney: ACSQHC; 2017.
2. Independent Hospital Pricing Authority 2018. Pricing and Funding for Safety and Quality – Risk Adjustment Model for Hospital Acquired Complications – Version 3 March 2018.

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