

To conduct an updated assessment of the validity and reliability of administrative coded data (ACD) in identifying hospital-acquired infections (HAIs)” Redondo-González et al (2017).

Abstract:

OBJECTIVE: To conduct an updated assessment of the validity and reliability of administrative coded data (ACD) in identifying hospital-acquired infections (HAIs).

METHODS: We systematically searched three libraries for studies on ACD detecting HAIs compared to manual chart review. Meta-analyses were conducted for prosthetic and nonprosthetic surgical site infections (SSIs), Clostridium difficile infections (CDIs), ventilator-associated pneumonias/events (VAPs/VAEs) and non-VAPs/VAEs, catheter-associated urinary tract infections (CAUTIs), and central venous catheter-related bloodstream infections (CLABSIs). A random-effects meta-regression model was constructed.

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RESULTS: Of 1,906 references found, we retrieved 38 documents, of which 33 provided meta-analyzable data (N = 567,826 patients). ACD identified HAI incidence with high specificity (≥ 93 percent), prosthetic SSIs with high sensitivity (95 percent), and both CDIs and nonprosthetic SSIs with moderate sensitivity (65 percent). ACD exhibited substantial agreement with traditional surveillance methods for CDI ($\kappa = 0.70$) and provided strong diagnostic odds ratios (DORs) for the identification of CDIs (DOR = 772.07) and SSIs (DOR = 78.20). ACD performance in identifying nosocomial pneumonia depended on the ICD coding system (DORICD-10/ICD-9-CM = 0.05; $p = .036$). Algorithmic coding improved ACD's sensitivity for SSIs up to 22 percent. Overall, high heterogeneity was observed, without significant publication bias.

CONCLUSIONS: Administrative coded data may not be sufficiently accurate or reliable for the majority of HAIs. Still, subgrouping and algorithmic coding as tools for improving ACD

validity deserve further investigation, specifically for prosthetic SSIs. Analyzing a potential lower discriminative ability of ICD-10 coding system is also a pending issue.

Reference:

Redondo-González, O., Tenías, J.M., Arias, Á. and Lucendo, A.J. (2017) Validity and Reliability of Administrative Coded Data for the Identification of Hospital-Acquired Infections: An Updated Systematic Review with Meta-Analysis and Meta-Regression Analysis. Health Services Research. April 11th. .

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