



Improved Accuracy of Coding

Monitoring the use of current procedural terminology (CPT) codes can help organizations determine whether health information technology (health IT) improves coding accuracy and completeness by providing decision support for documentation activities. This can subsequently lead to enhanced revenue because visits could be coded with higher complexity level-of-service billing codes.

Measure Category: Financial Impact

Quality Domain: Efficiency

Current Findings in the Literature: Billing in health care organizations is based primarily on CPT codes. These codes reflect the level of service for the patient visit and are based on multiple factors, including the severity of the problem, the complexity of the medical decision, and the duration of the examination. However, coding guidelines are complicated and substantial disagreement often exists over assigning codes.¹ Studies have found that coding is accurate approximately half of the time, while the rest of cases are under or overcoded.^{2,3}

One explanation for inaccurate and incomplete coding could be the complexity of the coding system and a poor understanding on the part of clinicians regarding its use. In general, the more highly compensated encounters require the most rigorous documentation. Therefore, providers may be overly conservative to protect themselves from fraud and “downcode” the encounter, choosing the lower compensated reimbursement code. This downcoding translates to lost revenue. Health IT

could improve coding accuracy through better documentation and coding-decision support to providers, translating into enhanced revenue.

A rural, family practice implementing a commercial electronic medical record (EMR) with an electronic billing system developed an average practice case mix based on evaluation and management codes (E/M), with higher weights reflecting increased reimbursement.⁴ They found that their average case mix increased by 10 percent over the 2-year, postimplementation period, from 1.34 to 1.47 ($p < 0.01$), suggesting that patient visits were undercoded pre-EMR implementation. This change had a financial impact: they reported that average monthly revenue increased 11 percent in the first year and 20 percent in the second year.

In another study, researchers evaluated the impact of an EMR at a large, multispecialty ambulatory practice.⁵ The EMR provided templates to help better document the level of care by recommending the appropriate evaluation and management code based on the documentation. This increased the accuracy of coding by reducing the incidence of under- and overcoding. The study compared the percentage of patient visits that were coded 99213 (problems of low-to-moderate severity) and 99214 (problems of moderate-to-high severity) and found an 11 percent overall increase in the use of 99214 codes that would previously have been coded 99213. They estimated that this decrease in downcoding would produce an average billable gain of \$26 per patient during the study period, for increased revenue of \$103,059.

Source of Data for the Measure: Electronic Medical Record Data, Financial or Billing Data from Practice Management Systems.



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Methodology for Measurement

Study Design: Pre- and post-health IT implementation

Study Design: Define baseline and intervention time periods (e.g., number of months).

Evaluation: Examine the change in the percentage of categories of CPT codes. Assign costs to different code levels and extrapolate. Compare the costs pre to postimplementation.

Analysis Considerations

Several issues should be addressed before proceeding with an analysis plan:

1. Evaluators may want to have experts in coding review a sample of patient notes manually to confirm the reliability of coding in their electronic environment.
2. Your data collection and analysis plan should be based on sound methodology. To achieve valid, robust results, consider using the input of a trained statistician to determine sample size and appropriate statistical techniques. It is not uncommon to begin analyzing data, only to find the original statistical plan was flawed, leaving you with data that is inadequate for analysis.
3. A simple chart or graph that visually displays changes in coding over time is an effective way to communicate this information to stakeholders.

Relative Cost: Low, as most organizations already track this billing information electronically, although may be higher if a billing expert is needed to review coding of encounters.

Potential Risks: Evaluators should be aware of a possible Hawthorne effect. If providers know that their billing is being monitored for a study, they will tend to be more careful with their coding. Billing and reimbursement regulations are constantly changing and new billing rules go into effect often. Evaluators will want to consider how these changes in billing rules might impact their measurement.

References

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