Feasibility of Linking External Valuation Sources to Bedside-Caregiver Activities in Interdisciplinary Patient Care Standards

Jeff Washburn RN, MSN, Sidney N. Thornton, PhD, John Hansmann BSIE, MSIE, Sharon M. Bigelow RN, MS, Jeff Worthen, BSIE, MBA, Roberto A. Rocha MD, PhD

1 Intermountain Healthcare, Salt Lake City, UT, USA
2 Department of Biomedical Informatics, University of Utah, Salt Lake City, UT, USA
3 RemedyMD, Sandy, UT, USA

Establishing accurate and standardized values for bedside-care activities is crucial to the development of resource utilization prediction and management systems. We describe our experience of associating a representative sample of activities extracted from interdisciplinary patient care standards developed at Intermountain Healthcare with an external database of time & motion valued actions. The association exercise revealed important considerations for the development of a standard methodology for linking activities to future national or international standardized value units.

INTRODUCTION

In much the same way that documentation of physician-performed procedures has been associated with standardized value units such as Current Procedural Terminology (CPT) to Resource Based Relative Value Scales (RBRVS), pressure is emerging to establish and associate standard value scales for bedside-care activities. One goal of such associations is to support resource utilization prediction and management systems. In 2006 we described a process for extracting bedside-caregiver activities (i.e., “actions”) from Intermountain’s Collaborative Practice Guidelines (CPGs) and mapping them to a compositional terminology model comprised of fundamental cost variable constructs (i.e., minimum clinical role, skill setting, and relative effort), excluding any valuation such as time. We also described an objective care-provision cost and clinician resource workload prediction infrastructure utilizing CPG actions as the foundation for application development. We now want to determine if acceptable valuation sets exist for actions, including a methodology for linking the data sets.

METHODS

We identified a third-party workload measurement system vendor with an extensive database of validated time & motion valued bedside-caregiver activities (“database”). We then developed a methodology to determine the feasibility of linking the CPG actions to action values in the database. Action concepts (n=100) from a convenience sample of six CPG documents were provided to the vendor, who then proposed equivalent actions and associated time values from the database. Comparison and analysis of the two sets of actions and their respective data models occurred over a period of five months and yielded generalized principles for linking the data sets.

RESULTS

For actions of equivalent granularity, acceptable time valuation was achieved for 86% of the concepts. We identified the following considerations to resolve to complete the valuation linking of the two sources: 1) Simultaneity (i.e., valuation of actions performed at the same time); 2) Adjacency (i.e., all actions occurring around a care event); 3) Care setting; 4) Action delivery mode; 5) Action intensity; 6) Undocumented work; 7) Development of values for unmatched actions; and 8) Validation of valuations.

CONCLUSION

From this exercise we surmise that maintaining linkage with an external valuation source of bedside care activities is feasible. If successfully developed this resource may support the standardization and benchmarking of bedside-care resource utilization and prediction leading to the implementation of advanced computerized documentation and care management systems.

References
