Title

Pilot experiences in the UK and Australia - Journey to Computer Assisted Coding and Automation

Introduction*

Clinical coding and classification processes were established in an era of paper documentation. The way coding processes were built to standardise data collection were necessarily complex to harmonise disparate ways of working. In many countries, Electronic Health Records (EHR) and other electronic systems have created opportunities to innovate clinical coding collections for parts or whole of the health activity and engineer workflows to leverage advancements in electronically collected documentation and aid coders and automation where the sensitivity and confidence is high.

There is a shared vision between healthcare providers and technology companies to expand use of computer-assisted automation to ease the burden of clinical and administrative tasks and improve documentation and collection standardisation. This paper represents a cooperative industry, health service and academic collaboration to validate progress.

Methods*

Beamtree has partnered with one Australian and two UK health services to pilot integration of historical and real-time structured (discreet value) and unstructured clinical/EHR data (clinical notes, pathology, radiology, medications) and apply rules written by expert clinicians and coders to link data sources to produce a coded summary. The results can be validated or automated by the human coder, creating standardisation and efficiency opportunities.

Results*

In one UK hospital Beamtree has extracted and decrypted the full EHR, so it can be processed for assisted coding. We believe this is the first example globally. Machine leaning will be used to code four specialities which represent up to 28% of inpatient activity across maternity, newborn babies, paediatrics and simple elective surgery. Outpatient activity will be addressed in phase two. At another hospital Beamtree is addressing alternate case specialties.

Early results are showing up to 40% of selected groups could be automated (with 100% direct match of what a human coder would produce) and in adtion 30% more could be assisted (information available presented to the coder in the coding workflow with some input or review required) with minimal coder review to improve productivity and accuracy.

The presentation will include values that can be used for assisted coding, level of confidence in the output compared to human coding, assessment of gains/losses in efficiency/cost, and what is possible with further work.

Conclusion*

Technology-assisted coding in all its forms will create collectively more standardised datasets, relieving the unnecessary burden of simple pattern recognition and freeing coders to work on complex clinical documentation, audit and discussion in the clinical setting. To move to automation, we may need to look differently at traditional models and standards of coding, and challenge historical standards to use more discreet value data. The way in which traditional coding standards are applied may constrain automation opportunities. We need to be able to drive prototypes that might meet standards in a new way for a more reliable future. A more accurate and comparable coded output will improve the reliability of benchmarking and costing processes and ensuring equitable revenue distribution in health and the monitoring of safe health care.

Author(s)

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