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Computer-Assisted Coding Software Standard Recommendations from a Workshop

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Abstract

Standards for computer-assisted coding (CAC) software development are important while CAC is used for administrative purposes and are crucial when CAC is utilized in clinical care applications and clinical decision support. A workshop of CAC vendors and other stakeholders convened in September 2006 to begin a dialogue about these standards. The stated intention of the program was and is to promote a future state where automated tools are used to capture discrete coded data that can be mutually understood and shared for multiple uses within the healthcare industry. Following presentations on current CAC research the attendees divided into 5 workgroups: Software Management and Use, Audit Mechanisms, Metrics and Evaluation, Certification and Test Suite. The participants were asked to discuss issues and develop recommendations. The synthesis of the workgroup discussions revealed a series of next steps requiring input from a wide variety of stakeholders. They are presented here for discussion with interested parties.

Keywords:

software validation, information management

Introduction

Purpose of the conference

This conference was organized by the Foundation of Research and Education (FORE) of the American Health Information Management Association (AHIMA) to prepare for the future of coding and classification. The goals included: 1) raising the awareness of the need for computer-assisted coding (CAC) software standards, 2) delineating the scope of the challenge, 3) gathering input from a variety of stakeholders, 4) recommending a framework for CAC software standards, and 5) determining the necessary and desired next steps.

Methods

Conference content

The first day of the conference consisted of technical papers solicited via a call for participation. The titles are the papers presented are as follows:

1. Assessing Coder Change Rates as an Evaluation Metric by *Michael Nossal, MA; Philip Resnik, PhD; and Jean Stoner, CPC, RCC -CodeRyte, Inc.*
2. Computer-Assisted Auditing For High Volume Medical Coding by *Daniel T. Heinze, Peter Feller, Jerry McCorkle, Mark Morsch - A-Life Medical, Inc.*
3. Using Intrinsic and Extrinsic Metrics to Evaluate Accuracy And Facilitation In Computer Assisted Coding by Philip Resnik, PhD, Michael Niv, Michael Nossal, Gregory Schnitzer, RN, CCS, CCS-P, CPC, CPC-H, RCC, Jean Stoner, CPC, RCC; Andrew Kapit, and Richard Toren - CodeRyte, Inc.
4. Software Engineering of NLP-Based Computer Assisted Coding Applications by *Mark Morsch; Carol Stoyla; and Ronald Sheffer, Jr .- A-Life Medical, Inc.*
5. Computer Assisted Coding For Inpatients - A Case Study by *Cheryl Servais, MPH, RHIA - Precyse Solutions, LLC.*
6. How Does the System Know It's Right? Automated Confidence Assessment for Compliant Coding by *Yuankai Jiang, PhD; Michael Nossal, MA; and Philip Resnik, PhD, - CodeRyte, Inc.*
7. Computer Assisted Coding Software Improves Documentation, Coding, Compliance and Revenue by *Sean Benson, - ProVation Medical.*
8. Automated Coding and Fraud Prevention by *Jennifer Garvin, Ph.D. - Medical Informatics Postdoctoral Fellow, Center for Health Equity Research and Promotion; and Valerie Watzlaf, Ph.D., RHIA, FAHIMA - University of Pittsburgh.*

The second day consisted of 5 workgroup breakouts:

1. Software Management and Use – including implementation issues. CAC must interface with other systems to provider adequate Return on Investment for its use. Quality checks on CAC data will be required for the foreseeable future.
2. Audit Mechanisms – also called Quality Assurance. These checks are integral to all healthcare data, not just data coded with a computer. Sample size and acceptable accuracy rate issues remain to be resolved for all coding.

3. Metrics and Evaluation – how to determine the accuracy of CAC software. There are multiple levels of evaluation requiring different types of metrics. This group believed it to be vital to have a reference or "gold" standard for evaluation purposes.
4. Certification – possibly needed to promote user acceptance. Different possible certifi-cation models were discussed and a list of desirable certification criteria constructed. This group felt it was too early in the standard development process to discuss certification.
5. Test Suite – a standard source for testing functionality and accuracy. The group felt that development of a test suite would not only require a high level of government involvement and cooperation, but would also be very expensive. Overall, while this might be a desirable objective, the group felt the industry needed to understand the issue more thoroughly before beginning on a project like this.

A more detailed summary of the breakout group results can be found in the proceedings.

The final morning featured a reactor panel whose purpose was to present different perspectives on the issue of CAC software standards.

The entire proceedings can be found at http://www.ahima.org/perspectives/conference_papers.asp.

Results

Next steps for beginning the CAC software standards development process emerged over the course of the conference. Short term next steps included:

1. establishing a public forum for continued dialogue and development,
2. benchmarking current U.S. coding processes in order to better understand the impact of CAC,
3. begin an education process with all stakeholders,
4. reconvene in 2007 (in Philadelphia, PA on October 5, 2007), and
5. develop a consensus on a standard U.S. coding process as a precursor to a best practice and metrics.

Long-term steps were also discussed including:

1. fully defining a coding gold standard for accuracy – dependent upon consensus and benchmark results,
2. determining what combination of testing, certification and conformance are the best, correct choices to achieve standardization,
3. educating current and future coding professionals to ensure they can effectively use CAC software, and
4. continued pursuit of the "right" code – assigned with 100% certainty.

Conclusions

CAC is an emerging technology having an effect on all purposes for which coded data is used. AHIMA/FORE will continue to sponsor the development of consensus standards as the technology matures. We welcome opportunities for discussion with all interested parties.