Evaluation standards for clinical coder training programs [1]

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Abstract

This paper reports on an evaluation of clinical coder training programs, recently carried out in Ireland. In building an evaluation framework, the literature was reviewed to identify best practice standards, current practice, and professional opinion against which a sound judgment could be made. The literature was variable but nevertheless useful for the identification of evaluation standards. These standards are reproduced here in order to add to the literature. We also discuss the areas that would benefit from further research, thus contributing to the discourse on best practice in evaluating clinical coder training programs.

Introduction

The authors were commissioned to perform an evaluation of clinical coder training programs for morbidity coders in Ireland (Bramley & Reid 2005). In building an evaluation framework, the literature was reviewed to identify the best practice standards, current practice, and professional opinion against which a sound judgement could be made. The literature was drawn predominantly from four developed countries that are similar to Ireland in many ways, and where the clinical coding profession is well established: Australia, Canada, the United States and the United Kingdom. Indeed, the literature search did not reveal any relevant literature from other countries.

The literature search was limited to coder training programs for morbidity data collections. The published literature was not extensive and was of variable quality. The main focus of the search was on peer-reviewed papers (primary literature) but many of the papers located during the search fell into the current practice and professional opinion categories (secondary literature). Nonetheless, the literature was still useful for identifying evaluation standards for the purpose of the evaluation research.

Our aim in publishing this paper is to reproduce the standards, in order to contribute to the literature. Some areas that would benefit from further research are also discussed, thus contributing to the discourse on best practice in evaluating clinical coder training programs.

Clinical coder training programs

Training options

Clinical coders have several training options available to them, but the extent to which these are offered vary nationally and internationally. Coders can be trained locally (on-the-job), but generally receive no formal recognition of that training, unless they seek coder accreditation through assessments conducted by professional associations or statutory health authorities. Certificate training programs are available through the World Health Organization, further education (technical or vocational) training facilities, professional associations, or statutory health authorities. Some further education training

facilities will also offer diploma programs; these are found predominantly in the United States.

Degrees in Health Information Management[2], of which clinical coding is a core component, are available through universities in Australia, Canada and the United States. Health Information Managers can choose to specialise in clinical coding, or in the management of coding services and staff within a health care facility. The difference between the two professions (clinical coding and Health Information Management) is that the Health Information Management degree further extends the person's skills and knowledge in the areas of information management science (the economics of information and the design, implementation and management of information systems); health informatics (information and communications technology and its application, integration and implementation); management (leadership, planning, human resources, financial); and research (research methods and analytical skills).

Course curricula

Curricula for clinical coder training programs are very similar internationally in the area of fundamental nosological skills and knowledge. Where they differ is in the different health care legislative and regulatory frameworks in each country. As one illustration, in the United States morbidity coding is mandated for physicians' offices, outpatient settings, and inpatient facilities, and clinical coders apply many different morbidity and casemix classification systems for reporting and reimbursement across the various settings. The health legislative and regulatory environment is complex and there are stringent state and national compliance audit programs in place to detect and deter fraudulent claims for reimbursement, the outcomes of which can be punitive (Hanna 2002).

In Australia however, morbidity coding is mandated only for inpatient settings. Clinical coders apply only two classification systems for reporting and funding purposes, one for morbidity and one for casemix. The health

legislation and regulatory environment is less complex than in the United States. State and territory health authorities conduct audits, but generally not on a routine basis (Australian Institute of Health and Welfare 2003; 2005) and the outcomes are educative, rather than punitive. Thus, a model curriculum for coder training programs in the United States will have only partial relevance in Australia, and vice versa.

The American Health Information Management Association (AHIMA) (2005b; 2005c) has developed foundation documents for a model curriculum. Although the model relates to Health Information Management, the intention is that it be used to also guide the development of curricula for clinical coder training programs. Indeed, the World Health Organization's core curriculum for morbidity coders (Skurka & Walker 2005) is largely based on the American model. The US curriculum is built from competency standards (AHIMA n.d.; 2005a; 2005b; 2006b), and this premise was consistent in the scant literature on curriculum design for coder training programs offered in Australia, Canada and the United Kingdom (Canadian Health Information Management Association 2006; Health Information Management Association of Australia 1996; Institute of Health Record and Information Management 2002; Mitchell 1997/1998; Roberts 2000). Another consistent premise in the literature cited above was that assessment is competency-based.

Competency based assessment

Assessments based on competency provide credible and tangible evidence of an individual's skills (Mitchell 1997/1998). Assessment outcomes for coder training programs were not easy to determine from the limited literature, particularly for the degree programs. In general terms, it seems that coder certification programs assessed competency on a pass/fail basis, while degree programs assessed competency on a graded basis. This distinction seems to be reflective of industry expectations that an employee is either competent or not competent (Clinton, Murrells & Robinson 2005; Mitchell 1997/1998), or higher education facilities approaches to assessment that there are discernable levels of competence (AHIMA 2005a; Clinton, Murrells &

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2   Each country has variations in the titles of the degrees. For simplicity in description in this paper, we will apply 'health information management' generically to refer to the degree programs in Canada, The United States and Australia.

Robinson 2005; Fink 2003; Rethans et al. 2002; Sadler 2005).

Internationally, there is variation in the minimum pass marks set for the coder certification programs: 60% in Canada (Canadian Health Information Management Association 2006), 65% in the United States (AHIMA 2006c), 80% in Australia (Health Information Management Association of Australia 2006), and 90% in England (Institute of Health Record and Information Management 2002). There is also variation in assessment methods (Smith 2006), and the mix of practical and theoretical components in assessments. Theoretical components tested recall and knowledge through multiple choice questions, short answer questions or short essays. Practical components tested performance in application of the classification by coding case studies or clinical records.

Clinical coder continuing education

Professional development activities

Professional development activities specifically related to coding, such as updates in medical science, refresher training courses, workshops, seminars, conferences, and coder accreditation, generally fall to the professional associations, with some activities offered by national regulatory bodies, state health authorities, and health care facilities.

National and state activities

In Australia, the National Centre for Classification in Health conducts workshops for clinical coders, in association with the Clinical Coders' Society of Australia, before the release of an updated edition of the morbidity classification (McKenzie et al. 2004; Roberts 2000). The Health Information Management Association of Australia (HIMAA) provides professional development activities and accreditation of clinical coders (HIMAA 2006). The Open Training and Education Network (2003), a further education facility, also provides opportunities for entry-level and continuing education[3].

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[3]   Certificate courses in coding and medical terminology for those coders who received their initial training on the job, or entry level training for others who are interested in a change of career, for example nurses who wish to become clinical coders.

In England, the National Health Service is the primary body that provides certified training courses, coder accreditation, and continuing education activities for clinical coders, in partnership with the Institute of Health Record and Information Management, the certifying body (National Health Service 2005). In the United States, professional development activities are offered through professional associations, accredited colleges, universities, and commercial training companies (McKenzie et al. 2004).

Local activities

Initiatives conducted at the local level (health care facilities) are often described as in-house educational activities and support the on-the-job training or continuing education of clinical coders. Coder orientation or residency programs provide coders with support and additional training as they build their experience (Carol 2004; Featheringham 2005; Groom 2003; Thomson & Koch 1999). Over a dedicated timeframe, coders are oriented to the facility, local practices, policies, regulations and guidelines, and slowly build their skills. A coding mentor regularly assesses the new coder's competency and provides advice. In building skill levels, a principal strategy involves the division of work, where the new coder becomes proficient in one clinical specialty at a time, beginning with simple cases and progressing to more complex cases (Groom 2003; Haggarty & Ives 2005; Wooding 2004).

Creating the position of an in-house educator or building a team of in-house educators that includes clinical staff, is a positive measure to improve the competency of coding staff (Carol 2004; Groom 2003; Logan, O'Neill & Martin 2003; McKenzie & Walker 2003: 114; Stavely 2000; Stegman 2003; Thomson & Koch 1999). In-house educators can act as mentors, auditors, and analysts, and provide continuing education to all hospital staff about the coding function and the benefits of using the data produced. They can also act as a clinician liaison to solve coding and clinical documentation issues.

Local training initiatives were found to be beneficial in four ways. First, these initiatives help to determine a new coder's potential. External measures of coding skills are made inde-

pendent of the working environment (Mitchell 1997/1998), however, it is just as important to assess competency in the workplace, for it is only through ongoing assessment that the potential of a new coder can be determined. There is little point in expending time and effort into training someone who turns out to be unsuitable for the task (Logan, O'Neill & Martin 2003). Second, a coder's career path can be built on local training initiatives. Through experience and professional development, coders can progress to become analysts and educators (Carol 2004). Third, local training initiatives can be certified by regulatory bodies or professional associations; certification is an endorsement that trainees have met certain standards. The more professional development credentials coding staff have increases their employment opportunities (Scichilone & Mackenzie 2006), and also raises stakeholder confidence in the quality of the data they produce (Thomson & Koch 1999). Finally, these initiatives effectively involve the local level in training initiatives and share some of the responsibility for coder training (Canadian Institute for Health Information 2003; Cook 1998).

Accreditation or program approval of Health Information Management/clinical coder training programs

An accreditation or program approval process provides an indicator of the quality of a program to prospective learners. In the United States, the process of accreditation for Health Information Management undergraduate degree programs is exacting. Accreditation must be gained through a candidacy process which can take up to two years and then maintained on a yearly basis through a body established for that purpose, the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) (AHIMA 2005b; CAHIIM 2006a). CAHIIM also conducts the review process and grants approval, rather than accreditation, for the graduate level Health Information Management degree programs. Approval is granted for a period of five years when standards are met (CAHIIM 2006b).

For certificate level coder training programs, AHIMA conducts the review process and grants approval, rather than accreditation, for a period of five years when standards are met. Seeking program approval is voluntary. Competencies are the basis for all standards (AHIMA 2005b).

The Canadian Health Information Management Association (CHIMA) approves coder training programs, but explanations about the process and the standards are cursory at best (CHIMA n.d.; McKenzie et al. 2004). The Health Information Management Association of Australia (HIMAA) (2003) accredits Health Information Management degree programs. Accreditation is awarded for a period of three years if a program has demonstrated compliance with the competency standards (HIMAA 2001) and the standards for approval of programs. There was no documentation found addressing accreditation of coder training programs in the United Kingdom.

The World Health Organization through its Family of International Classifications Network[4] has established a working committee to develop core curricula for morbidity coder training programs. The committee also plans to develop standard criteria for assessing educators and trainers, and a coder certification program (Skurka & Walker 2005). It is notable that the body responsible for developing and maintaining the statistical disease classification used worldwide for over a century has only recently developed its core international curriculum for coder training programs.

Of all these programs, the United States has the most clearly articulated, transparent and accessible standards for core curriculum and the approval/accreditation process. However, this has not necessarily translated into the best training programs on offer. AHIMA voiced its concerns in a recent presentation, that in some HIM training programs in the United States '… students are not being taught and/or tested at the appropriate cognitive level for entry-level competency' (AHIMA n.d.b). To counteract this trend, AHIMA now provides a number of resources and evaluation standards for downloading from its website

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4   "WHO has designated a number of collaborating centres to work with it in the development, dissemination, maintenance and use of the WHO Family of International Classifications to support national and international health information systems, statistics and evidence" Source: http://www.who.int/classifications/network/en/ (Accessed 28 May 2006).

with the aim of supporting educators in developing appropriate training courses.

Evaluation standards for clinical coder training programs

The CAHIIM (2005) and AHIMA (2005c; 2006a) accreditation standards that guide the evaluation of degree based and certification clinical coder training programs in the United States take a goal-based approach to evaluation (AHIMA n.d.a; Wadsworth 1997) and measure programs solely against their objectives. Key stakeholder input into the evaluation is not sought.

These standards are tools for accrediting training programs and focus more on the institution itself and its administrative functions and therefore not all of the standards were useful or appropriate for our evaluation research, which was more focused on curriculum. To compensate, we supplemented the CAHIIM and AHIMA standards with standards drawn from the other literature available to guide best practice in evaluating coder training programs, and removed the standards that were not relevant to curriculum. The standards are reproduced in Table 1.

Identifying the training needs of clinical coders

Judging by the literature, the needs of clinical coders in respect to their training are rarely assessed, therefore they have little influence on the direction their training programs take. No independent evaluation of coder training programs is complete unless it includes feedback from the perspective of clinical coders and their employers or managers about what coders need or expect from the training programs.

The only empirical study we found that identified the training needs from the perspectives of clinical coders and their managers was McKenzie and Walker's (2003) survey of the Australian Coder Workforce. For continuing education, coders prefer face-to-face workshops or conferences and distance learning (print-based courses), rather than online learning. Clinical updates (medical science/surgical procedures) are ranked high on their list of training priorities, but they also want more training in clinical terminology, anatomy and physiology, and coding standards. Computing skills, quality assurance, casemix, and research were also seen as areas for further education (McKenzie & Walker 2003). Coding managers agreed with the need for broader education for coders because they foresaw a greater involvement in casemix funding, electronic health records (and thus a need for computing skills), quality assurance, and research. In an increasingly electronic environment, managers believed that communication skills would be crucial as coders interacted more with clinicians (McKenzie & Walker 2003). Other studies also reflected the importance of communication skills as coders interact more with clinicians (MacDonald 1999; Thomson & Koch 1999).

Coders, and their managers, believed that coders need more opportunities for ongoing education and training support throughout their careers with managers expressing concern at the lack of external opportunities for continuing education. Almost all managers supported coders' attendance at external continuing education activities through funding and time off work (McKenzie & Walker 2003). Managers did not compensate for the lack of external continuing education activities by providing local activities. Less than half of the managers provided internal continuing education activities. Of those that did, the majority spent less than 5% of their time developing or organising activities. Clinical coders also spend little time on continuing education, with the majority allocating less than 5% of their time to their continuing education (McKenzie & Walker 2003).

Almost 40% of coders surveyed believed their training was inadequate in preparing them for the workforce (McKenzie & Walker 2003). Coders thought that some of the coding scenarios provided in an educational environment were very different from the actual clinical records seen in the work environment (McKenzie & Walker 2003: 85). They believed that they were inadequately prepared for illegible and incomplete clinical records, and how to deal with these issues in the workplace. The use of de-identified copies of actual clinical records, covering all clinical specialties, and of varying complexity, is a crucial element of any coder training program, as outlined in the evaluation standards (AHIMA 2006a; CAHIIM 2005; HIMAA 2003 Appendix: 1).

Table 1: Evaluation standards for clinical coder training programs

STANDARDS	MEASURES
Program goals and objectives	▪ The program's goals and objectives must form the basis for program planning, implementation and evaluation. ▪ The program's goals and objectives must be stated in terms of measurable outcomes.
Program advisory committee	▪ An advisory committee should be established, with representation from all key stakeholders, to assist with program evaluation and continuing development (HIMAA 2003). ▪ Committee meetings should be held at least once a year.
Access, equity and resources	▪ Programs should facilitate access to all, particularly those who live in isolated and rural regions. ▪ Flexibility is important to consider for those who work full time (Eagar & Innes 1992: 77) or who have disabling conditions. ▪ Participants should have ready access to resources and facilities that support their study (HIMAA 2003).
Staffing	▪ Teaching staff must incorporate current knowledge in their curriculum design and should be suitably qualified. HIMAA (2003: 8) stipulates a minimum of three years professional experience, coupled with research experience. ▪ Clinicians should be involved in delivering relevant course content, particularly in the biomedical science subjects (Carol 2004; McKenzie & Walker 2003).
Curriculum	▪ Learning and teaching objectives must demonstrate a relationship to competency standards (Eagar & Innes 1992). ▪ The length of the program should be sufficient to demonstrate competency. AHIMA (2006a) suggests approximately 500 contact hours for certification programs which equates to almost 63 working days. Stegman (2003) suggests that two to three months (around 44 to 66 working days) is sufficient for beginning practitioners receiving in-house (hospital) training. ▪ Classes should be structured to deliver a mix of didactic and practical sessions. ▪ Innovative teaching methods, such as problem-based learning should be used (Eagar & Innes 1992). ▪ Innovative modes of delivery should be considered, such as on-line learning, distance learning, self-learning, web-based seminars, intranet, audio conferences (Carol 2004; Eagar & Innes 1992; Roberts 2000). ▪ Professional practice placements in health care facilities should be a part of the program (unless training is supplemented by on-the-job experience). ▪ Manual (books) and automated methods (electronic books, encoders) of coding should be taught. ▪ Course material should be provided to each participant and this material should clearly describe the course learning objectives, the assessments to be undertaken, the frequency of testing and the competencies required for completion. ▪ Course content should cover: biomedical sciences, basic computing, data abstraction skills, clinical coding and classification systems, health care data content and structure, funding methods and policies, ethical practice, quality assurance (including audits), health care delivery systems, and relevant legislation and regulations and the legal issues pertaining to them (Eagar & Innes 1992; HIMAA 2001; Skurka & Walker 2005). ▪ Content should be sequenced appropriately to develop the necessary competencies for entry-level practitioners. For example, foundation subjects such as clinical terminology and anatomy should be taught before clinical coding. ▪ Participants should work with de-identified copies of actual clinical records, in addition to workbook exercises (HIMAA 2003, Appendix: 1). The records should be of a varied casemix and complexity to provide participants with experience across all clinical specialties.
Assessment	▪ Participants must demonstrate their competency through assessment. ▪ Assessment should be matched to learning objectives. ▪ Assessment tasks should be varied (different types of assessment) and increase in complexity as participants progress through the program. ▪ The other principles of good practice in assessment (as evidenced by the literature) should be followed (Fink 2003; Ramsden 2003). ▪ Assessment should be conducted throughout various stages of the program so that participants receive an indication of their progression through the course (Eagar & Innes 1992; Kirkpatrick 1994).
Evaluation and monitoring	▪ A monitoring and evaluation plan should be in place. ▪ Program evaluation should be conducted annually. ▪ Measures should include participant performance, educator performance, employer satisfaction, participant satisfaction, yearly attrition rates, national certification scores, and program completion rates. ▪ Results should be reported in terms of meeting goals and objectives. ▪ Action taken must be documented and reported (Kirkpatrick 1994).

Modified from AHIMA n.d.a; AHIMA 2006a: 9, 20-9; CAHIIM 2005: 2, 3, and supplemented or supported by the references stated in the appropriate sections of the table.

Some coders found their course too basic for complex situations encountered in the working environment, particularly their limited training in anatomy and physiology. One coder stated: 'I learned how to find codes in the coding books, not how to find the problems in a medical record' (McKenzie & Walker 2003: 85). They wanted more practical ('hands-on') coding experience in the course. Their managers supported their coders here, but focused on the university setting for their criticisms. They noted that graduates have a lack of clinical knowledge, and practical experience in reading and understanding medical documentation (McKenzie & Walker 2003).

Discussion

One aspect of our evaluation of clinical coder training programs in Ireland explored what is best practice in evaluating coder training programs (Bramley & Reid 2005). The literature is lacking in a number of areas and we discuss some of them here in the hope that further research in this area will be conducted.

Two areas that are intrinsically linked are the differences in the length of various training programs and the differences in course content, for these may well be factors in coder competency. The AHIMA standard for the length of a coder training program is that it should be sufficient to demonstrate competency, and they suggest approximately 500 contact hours (or 63 working days) for certification programs. However, we could find no empirical basis for the standard in our search of the literature. Australia, Canada and the United Kingdom all had different timeframes for their professional association certification programs; 120 hours of study, via distance, over a 9-12 months period, a 2-day workshop (14 hours), and a 15 day course (105 hours) respectively. Each country has different expectations of proficiency (60% in Canada, 75% in the United States, 80% in Australia, and 90% in United Kingdom). Only the United States stipulated the minimum number of hours expected to be undertaken in the coding component of the degree based Health Information Management programs (500 contact hours).

Course content obviously underpins the AHIMA standard, as do the assessments used to measure competency. Any variation in course content or measures of competency would erode the validity of the standard. Our search of the literature revealed variation internationally in course content and in the type of assessments applied to measure competency. Only one peer-reviewed paper described the various assessment methods used to assess student learning in HIM educational facilities in the United States (Smith 2006). Smith (2006) also described the extent to which the programs have incorporated the principles of good practice in assessment, in their assessment of student learning. However, Smith's research did not extend to determining equivalence between the instruments used for assessment, which could then in turn lead to an evaluation of the effectiveness of the various assessment methods applied.

Any variation in assessment standards makes it difficult to evaluate whether the higher pass mark set for Australia and England, is indicative of a more proficient coding workforce, and thus an indicator of good curriculum design and the effectiveness of learning and teaching. In educational institutions, the number of participants passing the course and participants' exam scores infer judgements about the quality of learning and teaching (AHIMA n.d.a; Hornby 2003). This is an effective indicator for internal use, but it should be used cautiously when benchmarking where it is not possible to determine equivalence between instruments used for assessment in similar courses taught at different educational facilities. Participants may score highly if simple coding scenarios or line coding exercises are used in assessment, and not so well if actual clinical records of varying complexity are used. Recall that coders in Australia took their educators to task for using exercises that are not a valid reflection of the workplace. Irish coders expressed similar sentiments in a recent study (Bramley & Reid 2005).

Research is needed to give substance to the value of different types of assessments used to develop and assess coding skills. Specifically, one project could focus on the coding exercises applied in assessments and the development of a complexity scale to grade them appropriately. Research substantiating AHIMA's standard for the length of coder training programs would be useful. The literature was also lacking in

measuring the degree to which participants learn and the extent to which participants apply what they learnt in the training program to their workplace (transferance).

Also of benefit would be research to determine the impact of local training initiatives on coder proficiency. Some of the findings of McKenzie and Walker's study (2003) are disconcerting. Australian coding managers did not compensate for the lack of external continuing education activities by providing local activities, and Australian clinical coders spent little time on their continuing education. The workload of both managers and coders is perhaps one explanation for these results. Another, too, could be the lack of external training opportunities available to coders. Australian coders stated that they prefer face-to-face and distance education to online learning, and this could be because these are the traditional ways of delivering this education. However, we believe they could also benefit from some innovative ways of delivering education, particularly using electronic media, as one solution to the workload factor.

Conclusion

The literature was variable but still useful for identifying evaluation standards for our evaluation research. The real benefit of these standards reproduced here is that they apply to both certificate courses and coding components of HIM degree courses. These standards therefore enable a more comprehensive evaluation than the existing standards, because they draw on all the published literature, and focus on curriculum rather than the institution delivering the training program.

This paper has contributed to the body of literature on evaluating coder training programs and also highlighted a number of areas in which more research would be valuable, particularly if the outcomes of such research are benchmarks against which training programs could be compared.

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