IMIA Accreditation of Health Informatics Programs

A. Hasman
Dept. of Medical Informatics, AMC-University of Amsterdam, The Netherlands

Summary

Objective: To develop a procedure for accrediting health informatics programs.

Methods: Development of a procedure for accreditation. Test of the accreditation procedure via a trial including four or five health informatics programs. A site visit committee consisting of three members evaluates the program based on a self-assessment report written by the program and the experiences and observations of the site visit committee during the site visit.

Results: A procedure for accreditation has been developed. The instructions for health informatics programs have been written and a checklist for the site visit committee members is available. In total six subjects are considered, each one consisting of one or more facets. Each facet is judged using its corresponding criterion. Five health informatics programs volunteered. One health informatics program in Finland has already been visited and a report has been produced by the site visit committee. The next site visits are in June and July 2012. The site visit in Finland showed that English summaries of master theses are not enough to get a first impression of the methods used in the thesis. A table of contents is also needed. This information then can be used to select theses written in a language other than English for discussion.

Conclusions: The accreditation procedure document with instructions about writing the self-assessment report was very well structured and the instructions were clear according to the Finnish program. The site visit team could work well with the checklist. Self-assessment report model was very well structured and the instructions were clear.

Keywords

Accreditation, health informatics program, IMIA

Yearb Med Inform 2012:139-43

Introduction

The use of information systems in healthcare – with applications like medical records, guidelines, order entry, other types of decision support and medical knowledge provision - is steadily increasing. These information systems are usually maintained by often technically orientated personnel (with a computer science background) having limited insight in the problems of medical practice. There is therefore a need for health informaticians, functioning as intermediaries between the technical personnel on the one side and physicians and nurses on the other. They can be helpful in defining the requirements for new applications and can also be involved in the design of systems.
The above distinction between technical computer science personnel and health informaticians is also made by Musen: (health) informatics is not the application of computer science, image processing, and statistics to a particular domain. Rather, (health) informatics is a primary field of study that may be targeted toward a wide variety of disciplines (health care and the life sciences being particularly important). What sets informatics apart from computer science and from other potentially confluent fields is a matter of priorities: Ours is the discipline that cares about the content [1].

Although we use the term health informatics, different terms are used to indicate the field. We refer to Bernstam et al [2], also referred to by Musen, about the definitions of biomedical informatics and related concepts such as medical informatics, health informatics, clinical informatics and others. We use here the term health informatics to refer to the field.

There is an increasing need for health informaticians [3] and an increasing number of health informatics programs exist that deliver health informaticians with different kinds of expertise. The IMIA educational recommendations [4] define the knowledge and skills necessary for each of these different types of health informaticians.

As for accreditation we may ask the question: do health informatics programs need accreditation? We think the answer is: yes. Programs may want to attract the best students in their country. Their programs are usually evaluated by national accreditation committees. However, not always do the members of national accreditation committees have a clear understanding of the level of international health informatics programs or of the international level of health informatics itself. An accreditation by an international organization like IMIA may convince students that it is worthwhile to enter the program because the IMIA accreditation shows that the education is of an international level. There are also institutions that may want to attract foreign students in addition to the best national students and also in that case an IMIA accreditation can be helpful. Also programs can use the accreditation internally in the university to show colleagues the quality of the program.

For evaluation of research activities universities invite international experts. In a similar way international health informatics experts may be invited to evaluate a health informatics program.

If more institutions are interested in an international evaluation of their health informatics programs, then IMIA can serve as the organization that coordinates this type of evaluation. The accreditation process can be less costly when individual IMIA members agree to carry out the peer review for free (expecting only remuneration of travelling expenses and accommodation). With the above ideas in mind a proposal to set up an IMIA accreditation was submitted to the IMIA Board. The accreditation procedure was worked out in the proposal. In 2011 the IMIA General Assembly accepted a proposal to test the accreditation procedure in a trial phase with four or five institutions, spread over the IMIA regions. It appeared not to be difficult to find enough institutions wanting to participate in the trial phase, proving that IMIA accreditation is considered an asset by health informatics programs.

Accreditation

How does one organize the accreditation process? The author of this contribution was involved in some accreditation committees in the Netherlands and Belgium. For the evaluators involved in the accreditation a framework was available that described the criteria that should be used in the assessment. This framework served as a model for designing the IMIA Accreditation procedure. Institutions interested in accreditation should write a self-assessment report that in addition to a site visit will provide the members of the site visit committee enough information to make a judgement of the program. In the self-assessment report an answer should be given to the following six main questions:

1. What are the goals of the program for which the institute asks for accreditation?
2. How are the goals implemented in a curriculum?
3. What is the size and quality of the staff?
4. Which facilities for teaching are available?
5. How does the institute guarantee the quality of the program?
6. Are the goals reached?

Each question concerns a specific subject: (1) Goals of the program, (2) Educational program, (3) Staff, (4) Facilities, (5) Quality Care and (6) Results. The subjects are subdivided in a varying number of so-called facets that have to be evaluated (see table 1). In total 16 facets are distinguished. For each facet a criterion is specified (see fig. 1). For each facet the site visit committee formulates a motivated judgement on a four-point scale: excellent, good, sufficient, insufficient. The judgement 'insufficient' for a facet means that the facet does not meet the minimum requirements, the judgement 'sufficient' means that the facet meets the basic requirements, the judgement 'good' means that the quality of the facet rises above the basic requirements and the judgement 'excellent' means that this facet is 'best practice' and can serve internationally as an example for other programs.

In the checklist a number of aspects are mentioned that should be judged as part of the corresponding facet (see fig. 1 for an example). The IMIA educational recommendations also serve as a reference.

The way the site visit committee members score the facet is for a good part based on their experience with and knowledge of health informatics programs. The members score the facets individually. The judgement is admittedly subjective, but the final judgement is more objective due to the discussion that follows between the site visit committee members. The site visit committee members first individually

Table 1 Part of a checklist page, summarizing the results recorded in later pages

	Score facet	Score subject
Subject 1: Goals of the program		S/IS
Facet1: Domain specific requirements	E/G/S/IS	
Subject 2: Educational program		S/IS
Facet 2: Academic requirements	E/G/S/IS	
Facet 3: Relation between goal and content	E/G/S/IS	
Facet 4: Rapport between form and content	E/G/S/IS	
Facet 5: Study load	E/G/S/IS	
Facet 6: Relation between intake and program	E/G/S/IS	
Facet 7: Legal requirements	E/G/S/IS	
Facet 8: Judgement and examinations	E/G/S/IS	
Subject 3: Staff		S/IS
Facet 9: Quality of staff	E/G/S/IS	
Facet 10: Quantity of staff	E/G/S/IS	
Subject 4: Facilities		S/IS
Facet 11: Material facilities	E/G/S/IS	
Facet 12: Study counselling and support	E/G/S/IS	
Subject 5: Quality care		S/IS
Facet 13: Evaluation results	E/G/S/IS	
Facet 14: Measures for improvement	E/G/S/IS	
Facet 15: Involvement of staff, students, etc.	E/G/S/IS	
Subject 6: Results		S/IS
Facet 16: Realized end qualifications	E/G/S/IS	

Subject 2: Educational program

Score Subject o insufficient o sufficient

Facet 4: Rapport between form and content

Judgement facet: o insufficient o sufficient o good o excellent

a. Criterion:

The design of the program stimulates study and offers students the possibility to reach the intended end qualifications.	

b. Take into account:

The didactic concept is in line with the goals of the program and the educational format and the format of the tests fit in with the didactic concept. Figures should be provided about the format of educational sessions (number of lectures, working groups, practicals, etc.) and the format of tests (number of oral, written tests, presentations, etc.) for each module of the curriculum.

Remarks and motivation for the judgement

Fig.1 Copy of a part of the checklist concerning the subject Educational program and the facet Rapport between form and content.

score the facets. They record the reasons for their judgement under the heading: Remarks and motivation for the judgement (see fig. 1). The final judgements are based on consensus and again the reasons for the judgement have to be recorded.

Each subject is given the score sufficient or insufficient, based on a weighted judgement of the related facets. Subsequently the quality of the entire program is determined: the quality is positive if all subjects are judged 'sufficient', else the quality is negative. Only positively evaluated programs obtain an IMIA Accreditation.

Table 1 shows the first page of the checklist used by the members of the site visit committee that summarizes the scores recorded in later pages. In the third column the score of each facet is entered (E means Excellent, G means Good, S Sufficient and IS Insufficient). The last column contains the score of each subject (S is Sufficient and IS Insufficient).

In later pages for each subject and facet the corresponding criterion is provided as exemplified in fig. 1 for facet 4 of the subject Educational program.

The Self-Assessment Report

To ease the work of the site visit committee, the program management delivers a document (called the Self-Assessment report), containing a critical reflection about the program. The six subjects should be described in sufficient detail so that it is possible for the site visit members to evaluate the 16 facets of the accreditation review framework. Both strong and weak points should be described. The report should present the program in such a way that teachers and students recognize their program and agree with its content. The critical reflection is pre-eminently a means to let teachers, students and the members of the site visit committee discuss the quality of the program.

Supporting evidence (like books and other study material) has to be available during the site visit for possible inspection. The program has to provide - in addition to the Self-Assessment report - a limited number of additional documents. It is assumed that the information for these documents is readily available within the program. The documents serve to substantiate and are possibly used for verification. The following documents are requested:

1. End qualifications of the program
2. Time schedule of the program
3. Description of the content (main features) of the program components with mention of the end qualifications, learning goals, format of education, way of testing, literature (mandatory, recommended), teachers and credits
4. Overview of the staff involved, with name, position, extent of the appointment, title, expertise and list of publications
5. A list with the most recent 25 theses together with a summary and (added after the first site visit) a table of contents in English and the marks given to the theses. A number of theses are selected based on this information and from these theses a good impression of the final qualifications of the student can be obtained. In case of vocational education the projects a student carried out will be examined.
6. An overview of the contacts with the professional field (if relevant).

How the self-assessment report should be structured, which additional documents should be added to the self-assessment report and which documents should be available at the site is mentioned in the IMIA Accreditation procedure document that is sent to the institution that asks for accreditation. In this report also the review framework is described. This framework offers the possibility not only to discuss the results of the past but also the ambitions for the future. What are the choices for

the future, in which direction will the program develop? The plans for the future therefore should also be mentioned at the end of the document. Information about the Accreditation procedure can be obtained from the author (a.hasman@amc.uva.nl) and after the trial period it will be available on the IMIA website.

The Accreditation Procedure

An institution that wants a health informatics program to be evaluated can contact IMIA. The chairman of the Accreditation Committee receives the request and sends the IMIA Accreditation procedure document to the institution. As explained above this document contains all information needed by the institution to start the process. The documents have to be in the possession of the chairman of the Accreditation Committee six weeks before the site visit takes place. After sending the IMIA Accreditation procedure document the chairman contacts the institution to settle a date for the site visit. The site visit committee, consisting of three experts, can be suggested by the institution or by the Accreditation Committee chairman. In both cases the other party has to agree about the composition of the site visit committee. The members should not have ties with the institution.

The chairman of the site visit committee writes a concept Accreditation report of around 10 to 20 pages. The report contains the motivated judgements about the subjects of the review framework. It underpins its judgements with references to the Self-Assessment report, the discussions with representatives of the program and data from the material that could be inspected during the visit. For each facet in the report first the findings are presented, then considerations for the judgement and finally the judgement itself. Possible actions for improvement are presented at the end of the report. In a number of appendices the curriculum vitae of the site visit committee members, the documents delivered by the program and the agenda for the site visit are presented.

The report starts with a summarized advice that finishes with the advice to the IMIA Accreditation Committee whether or not to grant the accreditation.

The report is sent to the Accreditation Committee of IMIA after all site visit committee members have agreed with the content. The Accreditation Committee receives the report from the site visit committee within three weeks after the site visit. The Accreditation Committee will check whether in the report all subjects have been covered, discussed and assessed and then will send the report to the requesting institution within two weeks after the receipt of the report from the site visit committee. The institution can suggest corrections in case of factual errors and provide relevant additional information within a period of two weeks. After the corrections have been made by the site visit committee, the Accreditation Committee decides whether the program will be accredited. The institution is informed about the decision. If the judgment is positive the program can use the label 'Accredited by the International Medical Informatics Association'.

The institution can appeal against a negative decision. The institution can apply again for accreditation after they have corrected identified shortcomings. Depending on the circumstances a new site visit will be necessary.

In the next section the impressions of the faculty of the Health and Human Services Informatics as described by Prof. Saranto are presented.

Impressions of the First Application of the Accreditation Procedure

The programme Health and Human Services Informatics (HHSI) is a two year master's degree program in the University of Eastern Finland (UEF). As being one-of-a-kind in Finland it has been obvious to network internationally. Thus the IMIA recommendations to teach health informatics have been of great help when preparing the curricula and planning the teaching arrangements. From the beginning of the education it was also obvious to join perspectives of two important service sectors - health and social care - in the education programme based on the development activities in the Finnish society.

The structure for the two year curriculum (120 credits in European Credit Transfer System ECTS; one credit corresponds to 27 hours of work) has been compiled on the basis of the IMIA recommendations' three knowledge and skills areas: health informatics core knowledge and skills, health organization and informatics/computer science. As located in the Faculty of Social Sciences and Business Studies and in the Department of Health and Social Management these areas are overlapping with the curricula of other majors e.g. Health Management and Health Economics. Thus the HHSI program has had the advantage to utilize the course supply and personnel resources of the faculty and the department as well as to offer the HHSI contents to the students in other majors. It is easy to share resources in joint courses as well.

However, as being the youngest major in the department and also a newcomer among other sciences at the university it has not been obvious for HHSI that the knowledge areas or research focuses are familiar to the faculty colleagues. Thus, it has been really important to be able to participate in an international evaluation from the IMIA community. Even the timeframe for both the self-assessment report and site- visit were optimal for the HHSI program evaluation, since the program has now established its position, being one of the first master´s level programs at the UEF.

Our objectives for the evaluation were firstly, to have an expert opinion

about our practices, i.e., those implications we have made from the recommendations based on our national legislation and university regulation as well as quality of the Finnish health and social care delivery system. Secondly, to give our students and alumni the knowledge about our status among HI programmes internationally, in case they are willing to continue their studies abroad. Thirdly, it is our wish to make the programme more visible locally, nationally and internationally.

The self-assessment report model was very well structured and the instructions were clear. It was very rewarding to analyze the statistics although we noticed that the university's administrative information systems are not producing data for our needs and we had to create new manual files as well! Additionally, looking into a mirror is not fun when you have to find explanations about missing students or length of studies or age of the students. Most of the students are health professionals, meaning that they have passed already two degrees before they enter the master's degree programme. This leads to the fact that the mean age of the students is relatively high. However, students are highly motivated when they already know about the new field where their knowledge and skills are needed.

The goal of the HHSI programme is to give the students an in-depth understanding of the service systems and to develop informatics from the viewpoint of the special characteristics of the social and health care sectors. Especially, the goal is to strengthen planning, implementation, evaluation and administration of information resources in health and social sectors. In the Finnish higher education system students have to pass their studies according to an accepted study plan. In the HHSI programme the biggest challenge is not usually in the program but in the prerequisites of the programme. The students have to complete the necessary supplementary studies (max 60 ECTS) in order to acquire the knowledge and skills needed for the studies. Thus, students are expected to have studies in Computer Science before entering the programme and students with IT background have to complete studies in the health and social service system. Nevertheless supplementary studies create always extra study load which can be facilitated with effective counseling.

The large national development activities during the last ten years concerning ICT use in health and social care have created possibilities to various process evaluations and have given impulse to many master theses as well. Students have been eager to be involved in "real life" research in their future work environment. The main focus in the research has been qualitative, mainly due to the strong influence of qualitative orientation in social sciences, but every year also theoretical theses in e.g. concept evaluation or enterprise architecture modelling have been finalised. However, in the future there is a need to focus the research to quantitative orientation as was recommended based on the evaluation, to reach a more balanced research strategy.

As the theorists say there are always the written curricula and the lived curricula. Bearing this in mind the work of the evaluation panel is very challenging and only real experts in the field can manage with diverse legislation, language and administrative issues in educational context of various countries. Thus, their work is highly valued and appreciated. In our case, the evaluation has already had effects on the planning of the curricula of the next term and forward.

Conclusion

The IMIA Accreditation can be useful for institutions to show to potential students, whether national or international, that their program in health informatics is of an international level. It can enhance the competitive position of the institution. The first site visit was recently carried out in Finland. The self-assessment report of the institution contained most of the requested details. The site visit went smoothly. The theses were written in Finnish but contained summaries in English. These thesis summaries did not provide enough information to get a sufficient impression of the content of the theses when reading them before the site visit. It was concluded that a translation of the Table of Contents would also be needed. Of course individual theses (examples of the ones with the highest and the lowest marks) were extensively discussed with the faculty who translated relevant pieces of the theses.

Acknowledgement

The author thanks Prof. Saranto for sharing with us her impressions concerning the accreditation procedure.

References

1. Hasman A, Ammenwerth E, Dickhaus H, Knaup P, Lovis C, Mantas J, et al. Biomedical informatics—a confluence of disciplines? Methods Inf Med 2011 50(6):508-24.
2. Bernstam EV, Smith JW, Johnson TR. What is biomedical informatics? J Biomed Inform 2010;43:104–10.
3. Hersh W, Wright A. What workforce is needed to implement the health information technology agenda? An analysis from the HIMMS Analytics Database. AMIA Annu Symp Proc 2008:303-7.
4. Mantas J, Ammenwerth E, Demiris G, Hasman A, Haux R, Hersh W, et al. Recommendations of the International Medical Informatics Association (IMIA) on Education in Biomedical and Health Informatics. First Revision. Methods Inf Med 2010;49(2):105-20.

Correspondence to:
Department of Medical Informatics
Academic Medical Center
University of Amsterdam
Amsterdam
The Netherlands
E-Mail: a.hasman@amc.uva.nl