

FINAL ASSESSMENT REPORT
Institutional Quality Assurance Program (IQAP) Review

MSc eHEALTH PROGRAM

Date of Review: April 3 – 4, 2013

In accordance with the McMaster's Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response and assessments of the graduate program delivered by eHealth. This report identifies the significant strengths of the program, together with opportunities for program improvement and enhancement, and it sets out and prioritizes the recommendations that have been selected for implementation.

This Final Assessment Report includes an Implementation Plan that identifies who will be responsible to lead the follow up for the proposed recommendations; any changes in organization, policy or governance that will be necessary to meet the recommendations; and timelines for acting on and monitoring the implementation of those recommendations.

Executive Summary of the MSc eHealth Cyclical Program Review

The McMaster M.Sc. eHealth Program is an interdisciplinary program that is offered through the Business, Health Sciences and Engineering Faculties. The program is mainly supported through faculty members from the area of Information Systems in Business, the Department of Clinical Epidemiology and Biostatistics in Health Sciences, and the Department of Computing and Software (CAS) in Engineering. In accordance with the IQAP, M.Sc. eHealth submitted a self-study to the School of Graduate Studies in February 2013. The self-study presented the program descriptions and learning outcomes, an analytical assessment of the program including the data collected from students along with the standard data package prepared by the Office of Institutional Research and Analysis. Appended were the course outlines for all courses in the program and the CVs for each full-time faculty member in the program.

Two arm's-length reviewers one from Quebec and one from British Columbia and one internal reviewer participated in a two-day site visit organized by the School of Graduate Studies. The visit consisted of separate meetings with students, alumni and faculty members in addition to the Provost, Associate VP & Dean of Graduate Studies, Associate VP (Academic), Graduate Associate Deans (Engineering, Business, and Health Science), Acting Dean of Engineering and Dean of Business, Program Director and faculty leads, Department Chairs, and program administrators. In addition to the site visit, all students and alumni were invited to send emails with their confidential comments directly to the review team. After the visit, the review team analyzed the email responses, the program self-study and program website according to the evaluation criteria comprised in the review guidelines. The review team worked collaboratively over a 4-week period to produce a report, which was intended to provide counsel rather than prescriptive courses of action.

The Review Team highlighted their findings in a very thoughtful and comprehensive report submitted on April 30, 2013. The reviewers made some of the following observations:

- The M.Sc. eHealth Program is well positioned to meet the **goals and priorities** of McMaster University.
- It offers a solid **interdisciplinary, experiential and self-directed learning experience** for students, an engaged community through its external advisory board with well connected people in the health industry, and eHealth innovations through related research from faculty members.
- The **admission requirements** are aligned with the learning outcomes of the program and at an appropriate level for a masters' program, demand some background in the technologies related to eHealth and encourage preparation in the health field.
- The program is aligned with Ontario's **Graduate Degree Level Expectations** criteria and with the **COACH core competency** matrix, showing that it reflects the current state of the eHealth field.
- However, they noted that the program leaves **hands-on technical knowledge and skills** for eHealth (i.e. systems analysis, agile methodologies and interoperability standards) to be taught by employers during internships rather than including them systematically in the curriculum to prepare students for internships and post degree employment.
- The **teaching and assessment** processes were generally found to be appropriate and effective for meeting the goals of the program.
- The **administrative resources** for the program are comparable to similar programs in the university, are considered adequate by senior administration and students and faculty did not have negative comments about them.
- In addition, the **library and computer lab resources** appear adequate and students commented on their frequent use of the university library holdings to access eHealth related literature
- Unfortunately, reviewers did note that the **financial support** for students appears to be lopsided with thesis-based students currently receiving \$13,200 per year for each of two years whereas course-based students receive \$3,000 per year.
- The list of **core faculty** was found to be impressive in terms of their supervisory experience, academic publications and research funding.
- Their recommendations revolved mainly around the need to better define the program vision, plan leadership succession and classify the role of Computer Science in the program.

The following program strengths and weakness were also noted:

- **Strengths**
 - Interdisciplinary nature of the program has been clearly identified in the self-report and valued by all involved
 - 8-month internship is a key distinctive feature. Most comparable programs in Canada include a 4-month internship. Spending 8 months in the field gives eHealth students an excellent opportunity for in-depth learning
 - Quality of students is high and the students are willing to learn from and teach their peers, are comfortable with charting their way through a flexible program (self-directed

learners), and work hard to achieve goals related to courses, projects, presentations at conference, and final papers and theses

- The quality of the faculty members is also high, their eHealth experience diverse and strong, and they are eager to be more involved in the program
- Overall flexibility of the program offered represents another characteristic that was often mentioned, especially by students. Program is offered full-time and part-time, therefore, it is possible for full-time students to choose between two distinct profiles (thesis and paper-based)

- **Weaknesses**

- Program lacks a clear vision
- Program does not have a succession plan for the two current program leaders
- Computer Science does not have a well-defined role in the program which raises the issue of whether they should continue as a full partner or explicitly take on a service/support role

The Program Director and Dean submitted an in-depth response to the Reviewers' Report outlining the strategies the program will use to address each of the Reviewer's recommendations (see below). This Final Assessment Report was prepared by the Quality Assurance Committee. The 18 month report will show progress against items addressed in this review. The program has been approved to continue and is scheduled for its next full review in eight years.

Summary of the Reviewers' Recommendations with the Program Director and Dean's Responses & Follow Up Process

Recommendation #1: A visioning exercise should be organized in the very near future to tackle the issue of the program vision and related issues.

Response: This recommendation was said to need broad support and buy-in from involved faculty, staff, and administration. A formal visioning exercise was proposed for June 25, 2013 in order to prioritize these questions and tackle the mission and vision of the program and general future directions.

Responsibility for following up: Program Director with input from senior management

Timeline: First session is scheduled for June 25 2013. Update at 18 month report.

Recommendation #2: An action oriented plan for developing and/or finding suitable successors for the two current leads of the program should be formulated and acted upon in the very near future.

Response: It was decided that the succession issue would be addressed during the visionary exercise scheduled for June 25 2013. The Program does believe that the future and success of the eHealth Program at McMaster University will largely depend on its leaders. Planning for succession must also be initiated by higher level administration and representatives from all three faculties.

Responsibility for following up: Senior administration with advice from Program Director and program coordinators

Timeline: Fall 2013. Update at 18 month report.

Recommendation #3: Increased efforts should be made to recruit more students with computer science backgrounds to the program to enhance its interdisciplinary nature.

Response: There is strong support for the goal of full and equal involvement for CAS and Engineering in the Program. The CAS Graduate Curriculum and Policy Committee will develop a plan for how increased recruitment can be tied in with advertisement of the Computer Science and Software Engineering graduate programs. The CAS Program Coordinator will work together with the eHealth Career Development and Relationship Associate to identify venues for recruitment, contacting alumni, employers, etc. This planning is already in place and the program plans to attend recruitment fairs at McMaster and at other universities.

Responsibility for following up: CAS and engineering senior management. CAS Graduate Curriculum and Policy Committee in conjunction with eHealth program as needed.

Timeline: Plan to attend recruitment fairs for the academic year 2013-2014. Update at 18 month report.

Recommendation #4: More core faculty members should be directly engaged to teach and supervise students and the lack of participation from computer science faculty should be particularly addressed.

Responsibility for following up: Program Director and CAS

Timeline: Late 2013, early 2014. Update at 18 month report.

Recommendation #5: An action oriented plan for resolving the role of computer science in the program should be formalized and acted up on in the very near future.

Response to Recommendations 4&5: New eHealth faculty members (100% tenure track CLA position for late 2013 or early 2014 is at the approval stage from the Provost) will be the main connection to eHealth. Two new faculty members recently hired in CAS have an interest in eHealth and can bring their expertise to courses and student supervision. Discussion within CAS of expanding the connection to eHealth will also need to continue. Finally, in the early summer of 2013, eHealth will survey health sciences faculty to ascertain their involvement in more teaching and address the issue of more team teaching opportunities. This topic will also be featured in the visioning exercise.

Responsibility for following up: CAS

Timeline: Update at 18 month report

Recommendation #6: Accessibility of eHealth students to computer science and health sciences courses should be improved.

Response:

- (1) Increase participation of eHealth students in CAS courses:** Under the lead of the new eHealth faculty member (tenure track, 100%), CAS will develop two eHealth courses (CAS 757 which is a core eHealth course plus a new course) that address the topics of user acceptance and interoperability as highlighted by the reviewers, including hands-on technical knowledge and skills. The CS prerequisites for admission into the program are continuously revisited with the goal of ensuring that incoming students have the background for taking certain CAS courses. Finally, CAS Graduate Curriculum and Policy Committee will identify graduate courses that can be made more accessible to eHealth students, revisits their prerequisites, and suggest scheduling them such that part-time students can take them easier (since about one-third of eHealth students study part-time).

Responsibility for following up: CAS

Timeline: Update at 18 month report

(2) *Problems enrolling in Health Research Methodology (HRM) courses:* HRM courses are traditionally oversubscribed and inaccessible. eHealth students have the same access to course registration as HRM students to enroll in HRM courses. The program indicates that nothing can be done to increase registration in HRM courses for our students beyond stating their need for space to the HRM administration and encouraging eHealth students to register for courses early.

Responsibility for following up: Program Director and supervisors

Timeline: Update at 18 month report

Recommendation #7: Interventions to enhance students' perceived identity with the program should be developed and implemented.

Response: For physical space there used to be a dedicated room for eHealth students in the School of Business but that is no longer available. The program does agree that this needs to be addressed has tasked TIPs Task Force with this issue.

Responsibility for following up: Senior administration

Timeline: July 2013

Recommendation #8: A stronger and more formalized mentorship element should be introduced to the program to help students map out better course plans in this highly flexible program.

Response: With the implementation of a new governance plan, the committee in charge of assigning supervisors to students can do that assignment earlier in each student's program (i.e. in September to October of their first term in the program), so students will be able to begin interacting with their supervisors earlier and develop plans for their research work well before they leave for their internships. This will also spread the supervision load more evenly across available supervisors.

Responsibility for following up: eHealth program and new governance structure implementation

Timeline: Update at 18 month report

Recommendation #9: More team and collaborative teaching should be included in the program to strengthen its interdisciplinary nature for both students and faculty.

Response: All partners consider team-teaching an eHealth course, so as to give students within a single course an overview of a number of core Computer Science topics.

Responsibility for following up: Program, Departments & Instructors

Timeline: Update at 18 month report

Recommendation #10: The curriculum should include more hands-on technical skills.

Response: The program highlights that skills are embedded within courses and also featured during weekly seminars although the program agrees that these may not be the best way to manage skills acquisition.

Responsibility for following up: Program Director, and Curriculum Committee

Timeline: Update at 18 month report

Recommendation #11: The feasibility of providing more equitable financial support for different categories of students should be investigated and implemented if appropriate.

Response: Financial support and distribution can be revisited, now that program enrolment is much higher than in the beginning. The program will seek input from other programs, which have both a thesis and internship component to see how best to address this recommendation.

Responsibility for following up: Program with input from other programs and senior administration

Timeline: Update at 18 month report

Additional concerns (itemized below) were raised by reviewers and also addressed in the response package:

1) More formal recognition of faculty contribution to eHealth program

Response: The program agrees that this needs to be the case.

Responsibility for following up: Senior administration, especially related to the TIPS report and its implementation.

Timeline: Visioning exercise; June 25, 2013.

2) Institution of new governance structure

Response: Program agrees that the new structure is needed especially in relation to broadening the foundation of student supervision and faculty involvement. The new governance structure has been approved by the Faculties of Engineering and Business. The new structure also needs to be re-reviewed by the Faculty of Health Sciences Executive Committee in mid 2013.

Responsibility for following up: eHealth Program implements the new governance document. Input will be sought through the visioning task.

Timeline: Summer of 2013

3) Electives are not eHealth specific

Response: Although the program agrees, they believe that this need for eHealth electives must be balanced with resource issues.

Responsibility for following up: Program and Visioning exercise

Timeline: Visioning exercise; June 25, 2013.

4) Consider additional courses

Response: The program is now considering new courses planned in patient safety, health analytics and imaging but their offering will largely depend on resource availability and enrolment. At this time, a graduate course is being introduced in the Marketing Area in Marketing Analytics, and eHealth students will be able to take advantage of this course. In addition another course offered by the Information Systems Area is Data Mining, which is taken regularly by a number of our students. Depending on the demand, expertise is available to offer a course in Health Analytics, but such a course might be seen as competing with the Marketing Analytics course.

Responsibility for following up: Program, Visioning task, Advisory Board

Timeline: Not defined

5) Variable quality of professors, feedback on course content, large amounts of group work, and grading of assignments.

Response: Faculty members will be asked to include specific guidelines in their course outlines on group interaction and expectations. Core courses are monitored continuously and adjustments are made as needed. The program has stated it will continue to do this review. Students will be surveyed to determine which courses this comment refers to.

Responsibility for following up: Program and Instructors

Timeline: Ongoing

6) Lack of online courses

Response: Program agrees that this is an area that needs to be addressed as more students want this option and the Southern Ontario landscape is becoming saturated with eHealth/Informatics programs at all levels.

Responsibility for following up: Program and Visioning exercise

Timeline: Visioning exercise; June 25, 2013.

7) Shortness of thesis writing period

Response: The program plans to address the issue of timing at least partially through the new governance process so that thesis students can become more engaged before they leave for their internships, which will help considerably, especially since many already choose to do their scholarly papers or theses based on experience in their internship assignments.

Responsibility for following up: Program and new committees from the governance implementation.

Timeline: Summer 2013

8) No educational objectives for the internship

Response: Program will create educational objectives in conjunction with the Internship and Relational coordinator and the new committees.

Responsibility for following up: Program

Timeline: Not defined.

Quality Assurance Committee Recommendation

The program has been approved to continue and is scheduled for its next full review in eight years with a progress report due in 18 months.

