

**Program Review Final Report**

<b>Program</b>	717 Diagnostic Cardiac Sonography
<b>Ministry of Training, Colleges, Universities Vocational Standard</b>	71610
<b>Credential</b>	Ontario College Graduate Certificate
<b>Dean</b>	Paul Armstrong
<b>Associate Dean</b>	Diane Barrafato
<b>Program Review Membership</b>	Diane Barrafato, Associate Dean Lori Koziol, Acting Associate Dean Margaret McDonald, Coordinator (pre-Fall 2011) Jennifer Lisac, Coordinator (as of Fall 2011) Carmelinda Del Conte, Research and Planning Analyst Catharine Ozols, Curriculum Design Specialist Lisa Pegg, Curriculum Design Specialist
<b>Program of Studies</b>	2011/12
<b>Final Analysis Session</b>	Winter 2012
<b>Date of Interim Status Report</b>	Winter 2013
<b>Date of Next Program Review</b>	2016
<b>Date Submitted to VPA Office</b>	October 4, 2012

**For the Program (Dean or Associate Dean):**

Signature *Diane Barrafato* Date Oct. 4, 2012

**For the Vice President Academic:**

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Overall Findings by Program Review Component

Program Review Phase	Program Review Component	Met	Partially Met	Not Met	Evidence
<b>Phase One Curriculum</b>	Course Outlines	✓			CORE
	Curriculum Mapping Matrix	✓			Appendix 9
	Framework for Programs of Instruction	✓			Appendix 5
	Program Advisory Committee	✓			Given the specialized and complementary nature of the programs, CVT and DCS share a PAC
<b>Phase Two Environmental Scan</b>	Key Performance Indicators	✓			Appendix 13
	Program Performance Indicators	✓			Appendix 14
	Applicant/Enrolment	✓			Appendix 12
	Student Success and Retention (Course Grades)	NA			Current data not available at time of analysis
<b>Phase Three Program Quality and Strategic Initiatives</b>	Quality—Curriculum and Content	✓			Appendices 15, 16, 17
	Quality—Flexible Delivery	✓			
	Quality—Flexible Operationally	✓			
	Quality—Experiential Learning	✓			
	Innovation—Applied Research	✓			
	Innovation—Entre/ Intrapreneurship	✓			
	Sustainability--Curriculum	✓			
	Sustainability--Practices	✓			
	PLAR	✓			Appendix 18
	Learning Plans	✓			
	eLearn	✓			
	General Education	✓			
	Student Feedback on Progress	✓			

## Summary of Findings

### Introduction

Launched in September 2000, the Diagnostic Cardiac Sonography (DCS) Ontario College Graduate Certificate program is a 4 semester program offered in a compressed format with no break between semesters. The first 2 semesters are class/lab based letting students apply their theoretical knowledge in a laboratory setting using state-of-the-art equipment. The last 2, twelve week semesters are spent in a minimum of two clinical settings training with affiliated clinical agencies. Graduates are eligible to take the required examinations to register with the Canadian Association of Registered Diagnostic Ultrasound Professionals.

This program is unique in the Ontario college system. Applications for this program, which continue to grow on a yearly basis, exceed the 40 seats available each year. The program has one full time faculty, Jennifer Lisac, as well as several part the faculty.

Although program reviews often take between 12-18 months, the DCS Program Review took place over an extended period of time, beginning in Summer 2009 and ending Winter 2012. The course outline review and CLinking were completed in Summer 2009 in preparation for Program Accreditation. The remainder of program review was put on hold until after the accreditation was finished. Following accreditation, the Curriculum Mapping Matrix (CMM) for ES (Appendix 4) was updated based on the 2011/12 Program of Studies (POS) and subsequently reviewed in June 2011. The focus group and stakeholder survey took place in Spring 2011. The final report was written in Winter 2012.

Although diagnostic cardiac sonography is an unregulated profession, the program received a 6 year accreditation from the Canadian Medical Association (CMA). The accreditation will end February 28, 2017.

The following summarizes findings from each phase of program review.

### Phase 1 - Curriculum

The 2011/12 DCS program of studies was compliant with the Canadian Association of Registered Diagnostic Ultrasound Professionals (CARDUP) competency profiles and also met Credentials Framework guidelines for graduate certificates. Graduates of the program do extremely well when writing the ARDMS exams; one hundred percent of students who wrote the exams between 2004 and 2009 were successful. Graduates indicate that they were satisfied with the program and that they were well prepared as entry-level practitioners. Employers also felt graduates were well prepared and showed a high degree of professionalism and maturity as entry level practitioners.

The program is designed so that students have a wide variety of learning opportunities in academic, simulated, and clinical settings. Patterns of emphasis on competencies relate closely to the core skills that run through a number of courses classified as foundational, specialized, and/or integrational.

### Phase 2 - Environmental Scan

Mohawk's DCS program has traditionally had a strong applicant pool and, for Fall 2011, was the first choice program for 46% of applicants to the program. The program attracts applicants and registrants from across Canada, the vast majority of who are mature students from outside the Mohawk catchment area. DCS is a strong program in terms of quality, financial contribution, and graduate satisfaction rate. KPI results show that students are satisfied with the knowledge and skills they are learning as well as with the quality of their learning experiences. However, their satisfaction with college resources and quality of service declined between 2009/10 and 2010/11 KPI surveys. Students also indicated that they:

- had few chances to improve their reading and writing skills;
- felt the opportunity for interactions with faculty outside class were limited;
- were dissatisfied with course materials (Note: *this could be the result of moving to blended learning*)
- were dissatisfied with the lack of peer tutors.

It was noted that part time faculty who teach specialized courses are not available between classes thus students do not have time to interact with them outside of class time. The move to blended learning could have affected student's satisfaction with their course materials. And, finally, there are difficulties with providing peer tutoring in a post-grad program. It is generally limited and, in this case, 2<sup>nd</sup> year students are on clinical when 1<sup>st</sup> year students are in school.

### **Phase 3-Program Quality and Strategic Initiatives:**

DCS is a strong program with established quality and student success practices. The program has established PLAR requirements for each course in the POS, has learning plans for most courses, and has moved toward integrating web enhanced elements into most courses as well. Margaret McDonald, the former coordinator of the program had completed Re-thinking Assessment; current program faculty will be attending a workshop in May 2012. The DCS program is closely aligned with 2 of the Key Strategic Priorities - Sustainability (in faculty practice and course delivery) and Quality - Experiential Learning. Given the prescribed nature of the CARDUP competencies and related performance environments that must be adhered to during the semester, there is little room for flexibility of curriculum or content. There is, however, some flexibility in the delivery and this flexibility is expected to increase as courses become increasingly web facilitated or blended.

DCS shares an Advisory Committee with Cardiovascular Technology and, given the overlap in profession between stakeholders in the two fields, will continue to do so but with an expanded membership to ensure diversity and wider geographic representation.

### **Commendations**

There are a number of areas that the DCS program demonstrated best practices and leadership. They are:

- The program is congratulated for the consistently high success rate of its graduates in the ARDMS exams. One hundred percent of students who wrote the exams between 2004 and 2009 were successful.
- Employers are highly satisfied with graduates as entry-level practitioners. Graduates also indicated that they were satisfied with the program and that they were well prepared as entry-level practitioners.
- Twenty four (24) weeks of experiential learning through clinical placements.

### **Affirmations**

Affirmations are declarations, which may/may not have evidence as a result of program review, that the program faculty identify are areas required to support program quality improvements. The areas identified include:

- Scheduling courses over 4 days a week to accommodate students working outside school and providing care for dependents.

- Conduct professional development with part time faculty re: course performance and brainstorm ideas on how to overcome teaching/engagement and assessment issues.

## Recommendations

The detailed recommendations that evolved from each phase of program review are summarized below.

- Strengthen the processes and practices around faculty meetings and clinical supervisor meetings to ensure effective coordination of all policies and program elements. Test use of teleconferencing and/or videoconferencing and/or use of eLearn as communication tools.
- Integrate DCS into the centralized clinical placement office as this would contribute to the effective administration of student placements within the DCS program and enable the program coordinator to concentrate on other important aspects of clinical coordination.
- Expand Program Advisory Committee by increasing the representation from a diversity of stakeholders and geographic locations.
- Try to schedule courses over 4 days a week to accommodate students working outside school and providing care for dependents.
- Analyze and enhance, as appropriate, curriculum to include:
  - standard documentation for preliminary echo reporting
  - demonstration of stress echo testing
  - additional echo practice
  - additional practice in left-hand scanning skills
  - more opportunities for students to develop their writing and speaking skills (e.g. reports and oral presentations)
  - interpersonal learning
  - use of videos for simulated scenarios students may not encounter until clinical settings
  - contrast and 3D
- Provide professional development for faculty with regard to assessment strategies and processes (e.g. formal assessment and feedback on writing, formative and summative, mid-semester advising), as well as student engagement
- Analyze feedback data to ensure it is closely aligned to outcomes.
- Improve percentage of qualified and well informed applicants/registrants by clarifying marketing communications:
  - Oversubscribed
  - 4 Continuous Semesters
  - Clinical Placements are available across Canada
  - Applicants from high school are not accepted. Completion of related post-secondary education is required to be eligible for this program.
  - Functional Requirements of Sonography

## 5 Year Program Quality Enhancement Action Plan

Objectives	Action Strategies	Timelines	Responsibility	Status
<b>Short Term (within the next 18 months)</b>				
<b>Applicants</b>				
Improve percentage of qualified and well informed applicants	Clarify marketing communications, including OCAS notes, if possible, to specify that the program: <ul style="list-style-type: none"> <li>• accepts applicants that have completed related post-secondary education</li> <li>• does not accept applicants from high school</li> <li>• is oversubscribed</li> <li>• runs for 4 continuous semesters</li> <li>• has clinical placements available across Canada</li> </ul>	Summer 2012	DCS Team / Registrar's Office / Marketing	<u>In progress</u>
<b>Curriculum/Scheduling</b>				
Improve KPI results	Try to schedule courses over 4 days a week to accommodate students working outside school and providing care for dependents.	Summer 2011	DCS Team	<u>Complete</u> Courses for both didactic semesters are scheduled over 4 days.
	Evaluate ways to include more opportunities for students to develop their writing (e.g. reports), speaking skills (e.g. oral presentations), structured reporting, and provision of feedback on student's writing.	Summer 2012	DCS Team	<u>Complete</u> Discussed at faculty meeting May 2012. Additional opportunities discussed to be implemented into 2012/13 POS.
	Provide professional development with regard to course performance (i.e. teaching/engagement issues, feedback, assessment)	Summer 2012 / Fall 2012	CTL/DCS Teams	<u>In progress</u> 3 PT and 1 FT DCS faculty attended 'Re-thinking Assessment' workshop offered through CTL. Additional PD to be planned.
	Evaluate ways to ensure that: <ul style="list-style-type: none"> <li>• Tests are marked in a timely manner</li> <li>• Students are aware of standing by midterm</li> <li>• Students are advised when they are doing poorly.</li> </ul>	Fall 2011 / Winter 2012	CTL / DCS Teams	<u>Complete</u> Discussed and implemented PT faculty feedback of student standing (week 5-6) to program coordinator to identify students at risk - advisement

Increase opportunity for additional scanning practice sessions.	Schedule increased practice time for scanning. Encourage students to follow prudent use of ultrasound on each other for personal safety.	Winter 2011	DCS Team	<u>Complete</u> Practice time has been increased from 2 to 3 sessions a week.
Include additional learning with regard to standard documentation for preliminary echo reporting.	Determine if the skill is being practiced sufficiently.  Look at general ultrasound re: • documentation practice; • class on image analysis and standard echo report; • representatives from various vendors come to class.	Fall 2012 / Winter 2013	DCS Team / Ultrasonography	<u>In progress</u> Image analysis and preliminary reporting class to be added to MRSC DCS08, DCS27, and MRSC 10009. To review general ultrasound practices.
Consider including additional lab time in order to enable the students to become more proficient in left-handed scanning skills.	Investigate feasibility of establishing a clinical outcome for left-hand scanning (i.e. 1 left hand procedure/wk?) in one clinical rotation.	Summer 2012	DCS Team	<u>In progress</u>
Enhance course content	Access or create instructional audiovisual materials and case studies for skill courses to assist student learning.	Ongoing	DCS Team / Ultrasonography	<u>Not started</u>
	Explore use of videos for simulated scenarios so students aren't shocked when they encounter things (i.e. ICU) in clinical or on-the-job.	Summer 2012 / Fall 2012	DCS Team / Library Resource Team	<u>Not started</u>
	Explore options for including stress echo testing in simulated environment during didactic semester	Winter 2013	DCS Team/ CVT Team	<u>In progress</u> Discussions with CVT faculty re: feasibility of interprogram teaching/learning/demonstration
	Explore options for including contrast and 3D echocardiography	Fall 2012 / Winter 2013	DCS Team	<u>Complete</u> Guest speakers – Definity rep /Philips rep / Physician used last academic year. More content into curriculum
Enhance program of studies	Review and revise POS as necessary, to enhance competencies of graduates as per program review findings.	Ongoing	DCS Team	<u>Ongoing</u>
<b>Clinical</b>				
Build stronger linkages with placement and graduate employers	Explore networking opportunities with graduates to obtain and share information	Ongoing	DCS Team / Alumni Office	<u>Ongoing</u>

	Profile graduates to employers (see Advertising graduate bios)	Ongoing	DCS Team / Marketing	<u>Ongoing</u>
<b>Accreditation Requirements</b>				
Adopt use of summative assessment tool(s) for clinical placements.	Pilot the CARDUP Clinical Skills Assessment Manual (CSAM), a summative assessment, during the academic year 2010 summative evaluation tool.	Summer 2011	DCS Team	<u>Complete</u>
	Adapt tool in the Clinical Training Manual as a formative evaluation to more closely align with the CARDUP summative tool.	Summer 2011	DCS Team	<u>Complete</u> Needs to be modified based on CS feedback
	Ensure that all sites are fully briefed on the CSAM document and plans for incorporating it prior to making it a requirement for graduation.	Summer 2012 / Fall 2012 / Winter 2013	DCS Clinical Coordinator	<u>In progress</u>
Place additional focus on the documented analysis of feedback data to ensure that it is closely aligned to outcomes.	Explore adapting student feedback survey for clinical courses used in MRSC program	Summer 2012 / Fall 2012	DCS Clinical Coordinator	<u>In progress</u>
Strengthen the processes and practices around faculty meetings and clinical supervisor meetings to ensure effective coordination of all program elements.	Test use of Skype teleconferencing and/or videoconferencing capabilities (e.g. Group Video Call using Skype business) by remote clinical sites (free 7 day trial). Investigate using eLearn online course for clinical supervisors.	Winter 2013	DCS Team	<u>In progress</u>
Review policy with regard to the management and retention of student records.	Retain clinical verification of competencies (i.e. CSAM, log book, monthly progress reports, etc.) at college for duration of accreditation period.	Fall 2011 / ongoing	DCS Team	<u>Complete</u>
	Ensure clinical sites are reminded to confidentially dispose of student records after one year.	Fall 2011 / ongoing	DCS Team / Clinical Placement Office / Paramed	<u>Complete</u>
Integrate DCS into the centralized clinical placement office.	Pilot Paramed to clears students of clinical requirements. Investigate opportunities for integration of	Fall 2012 / Winter 2013	DCS Team / AD / Paramed / CPO	<u>In progress</u>



	DCS clinical into CPO			
Submit report on changes made in order to comply with accreditation requirements for criteria not met		Ongoing as required	DCS Team	<u>Ongoing</u>
Prepare for CMA Accreditation	Maintain course documents and data in preparation	Ongoing	DCS Team / CD Team / IR	<u>Ongoing</u>
<b>Program Advisory Committee</b>				
Expand Program Advisory Committee by increasing the representation from a diversity of stakeholders and geographic locations.	Look to invite new members.	Fall 2012	DCS Team / CVT Team	<u>In progress</u>
<b>Medium Term (within the next 18-36 months)</b>				
Perform ongoing program of studies enhancement	Review and revise POS as necessary, to enhance competencies of graduates.	Fall 2012 the annually	DCS Team	
Perform ongoing curriculum enhancement	Re-develop at least one course in a blended delivery model	Summer 2012 & 2013	DCS / eLearn / Library Team	
	Integrate new or enhanced content	Summer 2012/13	DCS Team	
Continue to refine clinical requirements supporting consistent learning and evaluation experiences for students.	Review student clinical feedback	Ongoing	DCS Team / PAC/ other external stakeholders	
	Maintain clinical site database	Ongoing	DCS Clinical Coordinator / CPO	
	Consult with other programs, clinical partners to develop guidelines	Summer 2012/13	DCS Clinical Coordinator	
<b>Long Term (within the next 36-60 months)</b>				
Prepare for Program Review and CMA Accreditation	Maintain requirements for CMA Accreditation	Annually	DCS Team	
Monitor short-term and long-term program quality enhancements and adjust as required	Utilize Annual Program Review process to monitor program quality enhancements.	To be determined pending outcome of medium term objectives	DCS Team / AD	
	Submit interim program quality	Winter 2013		

	report to Program quality area			
	Plan and prepare for Comprehensive Program Review	Winter 2016		