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Improving Student Outcomes and Patient Care

Study of Clinical Education in Ontario's Colleges of Applied Arts and Technology Health Sciences Programs:

Final Report

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Improving Student Outcomes and Patient Care

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May 1, 2006

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1 Introduction

1.1 Background to the Study

Clinical education, the opportunity to learn in actual health care settings, is an essential part of the education and formation of most health care professions. It provides students opportunities to apply theory and gain the necessary practice and judgment abilities while under supervision in real clinical settings. However, there is little or no research on the fiscal pressures of clinical education in the college system, or on the impact of health services reforms over the past several years, nor are there any studies that provide a financial analysis of clinical education models used by college programs.

This deficiency of information is becoming critical in light of burgeoning health human resources concerns in an environment of increased accountability and heightened risk management issues, within Ontario and throughout the rest of Canada. Ontario's demographic shift is placing an increasing pressure on the heath care system on at least two fronts. An aging population is causing the demand for health care to rise, even as more health care professionals are aging out of the workforce. Already, there is a deficit of qualified professionals in the field and that deficit is accelerating. As a result, there is a crucial need to examine strategic health human resources issues and overall health practitioner development, beginning with access to education and clinical placement opportunities.

To better understand and address the fiscal pressures of clinical education in the college system and the impact of health services reforms over the past several years, the Association of Colleges of Applied Arts and Technology ("ACAATO") conducted a survey of Deans of Health Sciences programs in April of 2005. The research identified program specific pressures in clinical education, warranting further investigation and analysis.

1.2 Steering Team Guidance

ACAATO established a project Steering Team ("ST") to guide the study. The ST was comprised of the following representatives:

Dean Representatives	Finance Representatives	ACAATO Representatives
Judy Oliver, Lambton College Linda Love, Sheridan College Peter Armstrong, Cambrian College	Ken Jenkins, Canadore College Ric Ho, George Brown College	Bill Summers Monica Reilly

1.3 Purpose and Objectives of the Study

ACAATO and the project ST have established 5 objectives for this study:

1. Inventory current clinical education models and specific issues for the programs included in the study.

2. Identify the scope and magnitude of the major challenges to the provision of clinical education in Ontario colleges' health sciences programs, including regional issues.

3. Develop a costing framework.

4. Conduct a financial analysis of the clinical education component of the college programs and identify pressures and opportunities for efficiencies.

5. Provide recommendations on findings to address future sustainability of clinical education.

The clinical education delivery survey, in conjunction with the clinical cost study and stakeholder interviews, will increase understanding of the challenges faced in the delivery of clinical education, with the overall aim to improve student outcomes and patient care.

ACAATO gratefully acknowledges the receipt of a financial contribution from the Ontario Ministry of Training, Colleges and Universities ("MTCU") in support of the study.

1.4 Scope of the Study

The scope of the study included Ontario's twenty four publicly funded Colleges of Applied Arts and Technology[1] in the following health sciences programs:

- Dental Assistant
- Dental Hygienist
- Denturist
- Medical Diagnostic Ultrasonagrapher
- Diagnostic Cardiac Sonographer
- Medical Radiation Technologist[2]
- Medical Laboratory Technician
- Medical Laboratory Technologist
- Occupational Therapy Assistant
- Physiotherapy Assistant
- Paramedic
- Personal Support Worker
- Pharmacy Technician
- Nursing – Collaborative with Universities[3]
- Nursing – Critical Care (post graduate)
- Nursing – Operating Room (post graduate)
- Practical Nursing
- Respiratory Therapy

1.5 Survey Response Rates

The study examined the above listed full time programs in the 2004/2005 academic year at the twenty four Ontario colleges funded by MTCU. The response rate for the clinical cost study was 100%, with data being collected on one hundred and twenty three programs within the twenty four colleges. The response rate for the clinical education delivery survey was 91.7%, with data being collected from twenty two colleges.

[1] A complete list of Ontario's Colleges of Applied Arts and Technology is provided in Appendix A.
[2] This program is recognised as a Technologist program, but is recorded as a Technician program by MTCU.
[3] Due to the complexities of the Agreements for the Collaborative Nursing programs, including the variety of partnership models utilized, this program was eliminated from the cost study.

1.6 Methodology and Approach

Our methodology and approach for the study incorporated four stages:

- Planning / Scoping;
- Design and Acceptance;
- Data Collection and Review; and
- Analysis and Reporting.

Prior to the design of the costing framework, survey, and interview guides, planning sessions were conducted with ACAATO and the Steering Team to confirm the scope and deliverables, identify key stakeholders and contact points, and document potential issues.

1.6.1 Clinical Cost Study

Once the project planning and scoping was complete, a draft costing framework and data collection template were prepared. Working sessions and meetings with ACAATO and the Finance Sub-Committee of the Steering Team were held to test the costing framework prior to the data collection phase. This permitted the documentation of assumptions, the identification of information gaps, and the testing of the accessibility of the data collection tool.

Following the design and acceptance of the clinical education program costing framework and data collection tool, the cost study was conducted in two concurrent stages. The first stage consisted of the collection of fiscal data consisting of macro program revenues and expenses related to the delivery of clinical education by each college. The Deans of Health Sciences of all twenty four colleges were emailed a Microsoft Excel spreadsheet template and were provided with instructions for completion. Where necessary, follow up conversations took place to answer questions, provide clarification, and to ensure the consistency of responses and the completeness of data. The second stage consisted of collection of data regarding the MTCU General Purpose Operating Grant revenue, enrolment, and funding parameter data. ACAATO staff undertook to complete this task and provided the data and analysis as inputs for the overall study. Two working sessions with ACAATO were conducted to review all the data to ensure its integrity, consistency, reasonableness, and completeness.

The final stage of the study consisted of the organization and analysis of the data, and the final reporting. The financial analysis at the program and college level was completed and consolidated to a system-wide level. The findings of the analysis are presented in summary in this report.

1.6.2 Clinical Education Delivery Survey

Following the identification of survey and interview participants, a draft survey and interview guide was designed and submitted to the Steering Team. Working sessions with ACAATO and the Steering Team were conducted to test the design documents prior to the data collection stage.

The survey was both conducted and analysed using the secure on-line software, Websurveyor. A copy of the survey outline is provided in Appendix B. All twenty four Colleges of Applied Arts and Technology were invited to participate in the survey. An email invitation provided the Dean of each college with a login identification,

password, and link to the survey website. Additionally, a portion of the data was collected by means of a Microsoft Word version of the survey. Where necessary, follow up conversations took place.

Forty eight stakeholder interviews were also conducted with representatives from all twenty four colleges, MTCU, Ministry of Health and Long Term Care ("MOHLTC"), Ontario Hospital Association, Council of Ontario Universities, the Chief Nursing Officer of Ontario, and clinical site providers throughout the province.

1.7 Limitations

The reader should consider the following limitations when interpreting the results of the study:

1. **Unaudited Financial Information**. PricewaterhouseCoopers LLP has not audited or otherwise verified the information supplied to us in connection with this study, from whatever source, and the procedures we have performed do not constitute an audit in accordance with generally accepted auditing standards. In particular, we have not completed any independent audit or verification of the financial information or analysis contained in any of the information provided nor express any opinion on such information, analysis, or projections contained in any source documents provided by ACAATO, MTCU, or Ontario's colleges.

2. **Reliance on College Financial Information**. The cost study focused on broad program cost components and not on the individual cost of discrete activities or tasks. For example, clinical supervision is covered in the study as an allocated cost rather than costing of individual activities or tasks. In addition, the study relied on program cost reporting and budgeting systems data in each college rather than creating new data from direct observations of discrete or individual tasks or component steps in the activities involved in the programs.

3. **Time Series Limitation**. Due to scope, timing, and budget, only one year was considered in the cost study analysis. Thus the analysis of trends in revenues, expenses and enrolment could not be completed to identify particular issues and opportunities in clinical education.

4. **Use of Allocation Methodologies**. In order to complete the cost study, allocation methodologies were applied to tuition revenue, MTCU General Purpose Operating Grant revenue, and all expenses in order to define the portions attributable to clinical education. The specific methodologies are described in Section 3.

5. **Methodology**. While there is no established methodology for such a costing study, the methodology and attribution assumptions used in this study are reasonable.

2 Clinical Education Program Characteristics

The following section summarizes the key findings and analysis from the clinical education delivery survey.

2.1 Number of Programs

The information presented in section two is taken from the survey portion of the study. As such, the following responses represent a combined total of one hundred and twenty four offered programs, in eighteen clinical education disciplines, at twenty two colleges across Ontario. This data reflects a response rate of 91.7%. The programs offering the greatest access across the province – as represented by the number of colleges offering the programs – are Practical Nursing, Personal Support Worker, Paramedic, and Nursing – Collaborative with Universities.

2.2 Clinical Teaching Models by Program

2.2.1 Clinical Teaching Model

Clinical teaching models vary widely within programs across the college system. The definition of each model is provided in Appendix C. In fact, only one program in the scope of the study – the Physiotherapy Assistant program – reported the use of only one type of clinical teaching model. The variability in clinical teaching models within specific programs is consistent with the varying costs of clinical education within the same programs across the college system. The table following outlines the clinical teaching models currently used by respondents. For each program, the most frequently used model is highlighted in bold.

Clinical Teaching Model	Clinical Teaching %	Preceptor-ship %	On-Site Teaching Clinic %	Other %	Total %
Dental Assistant	11	26	**42**	21	100
Dental Hygienist	25	19	**56**	0	100
Denturist	**33**	**33**	**33**	0	100
Diagnostic Cardiac Sonographer	**50**	0	0	**50**	100
Medical Diagnostic Ultrasonographer	0	0	0	0	0
Medical Imaging Technologist	**50**	0	0	**50**	100
Medical Laboratory Technician	25	**75**	0	0	100
Medical Laboratory Technologist	20	**60**	20	0	100
Medical Radiation Technologist	**60**	20	0	20	100
Nursing – Collaborative with Universities	**50**	43	7	0	100
Nursing – Critical Care (Post-Graduate)	20	**80**	0	0	100
Nursing – Operating Room (Post-Graduate)	37.5	**62.5**	0	0	100
Occupational Therapy Assistant	29	**71**	0	0	100
Paramedic	**48**	**48**	0	4	100
Personal Support Worker	**53**	40	0	7	100
Pharmacy Technician	10	**70**	10	10	100
Physiotherapy Assistant	0	**100**	0	0	100
Practical Nursing	**47.5**	45	5	2.5	100
Respiratory Therapy	**50**	**50**	0	0	100

Other responses identified for the Dental Assistant program:

- Field placement (2 responses)
- Dental offices

Other responses identified for the Diagnostic Cardiac Sonographer program:

- Paid preceptorship – hospital personnel contracted to supervise and teach students in the clinical setting.

Other responses identified for the Medical Imaging Technologist program:

- Paid preceptorship – hospital personnel contracted to supervise and teach students in the clinical setting.

Other responses identified for the Medical Radiation Technologist program:

- The program contracts one MRT from the hospital to work with all students on a rotational basis.

Other responses identified for the Personal Support Worker program:

- Supervised clinical practice placement for PSW students for a period of 9 weeks total. This implies that groups of 9 or 10 students go on placement to an agency, with a clinical teacher for each group. Following that supervised experience, students have a full-time, preceptored consolidation placement for a period of 7 weeks.

2.3 Clinical Sites

Ontario's colleges manage several hundred clinical sites, ranging from large urban hospitals with multiple opportunities to remote community care sites with single placement opportunities. In terms of specific clinical sites, there is a growing need for colleges to move outside their normal catchment area to adequately place students in clinical education programs. As the survey results show, there are a number of reasons for this. With 92% of respondents sharing clinical sites with other Postsecondary Education (PSE) institutions, both colleges and their students are competing for a limited number of placements. This makes the challenge of placing students in appropriate clinical settings more difficult. Already, 63% of respondents state that when placement difficulties arise, it is due to the availability of clinical sites.

To deal with this situation, colleges are being forced to move outside their normal catchment area. For instance, the following three results show that colleges are looking outside of their normal jurisdiction to place their students, with some even going out of the province to do so.

- *83% of respondents assign their students to more than one clinical site during a semester;*
- *83% of respondents place students out of their town or natural catchment area; and*
- *36% of respondents place students out of province*

The lack of placements in a college's natural catchment area can be attributed in part to the health care labour shortage. However, 71% of respondents also stated that they have clinical sites, either within or outside their region, which could be, but are not, routinely used at present.

Also relevant to finding appropriate placements is the ability to learn of openings and/or potential clinical placement locations that exist. In fact, such a function would appear instrumental.

The best method of finding out about placements was not definitive according to the survey. What the survey found is that 40% of respondents utilize their informal network for information sharing identify clinical placement

opportunities, while only 38% of respondents use their formal network (i.e., frequent, structured meetings with potential partners), and 15% use formal development programs or processes.

The rationale for this could be connected to the administrative placement function at each college. 65% of survey respondents stated that the clinical placement administrative function at their college is performed by instructors and professors, as compared to 20% who have dedicated administrative staff to perform this task. While professors and instructors might have excellent informal networks, their ability to maintain trends for current and future opportunities may be limited by their other responsibilities.

2.4 Outcomes – Matching Students to Placement Opportunities

A number of colleges are experiencing problems matching students to placement opportunities. 71% of respondents indicated that difficulties in placing students in first or subsequent years of a program prevented them from expanding enrolment. While both the province and the nation are in a health care human resources crisis, the need for quality clinical placement opportunities is restricting enrolment at the first fundamental stage that contributes to the bigger problem: access to education.

In addition to this, 58% of respondents are experiencing lower enrolment than expected, or than can be provided, in their health sciences programs. This reveals an interesting issue. A number of colleges could add more students to their programs, however, they are being limited by the ability to place students in clinical placement opportunities. Were these placements easier to fill, it could lead to an overall increase in enrolment as enrolment capacity was met.

Another outcome variable that must be examined in terms of clinical education is the graduation rates per program. The following chart outlines the average graduation rates per program within the college system.

Response	**Average Graduation Rate**
Practical Nursing	74%
Personal Support Worker	91%
Nursing - Collaborative with Universities	71%
Paramedic	78%
Dental Hygienist	89%
Dental Assistant	82%
Pharmacy Technician	67%
Nursing - Operating Room (Post-Graduate)	91.25%
Occupational Therapy Assistant	83.6%
Nursing – Critical Care (Post-Graduate)	63%
Medical Laboratory Technician	94%
Medical Laboratory Technologist	63%
Physiotherapy Assistant	82.5%
Medical Radiation Technologist	94%
Denturist	N/A
Diagnostic Cardiac Sonographer	65%
Medical Imaging Technologist	79%
Respiratory Therapy	59%
Medical Diagnostic Ultrasonographer	N/A

3 Clinical Education Costs

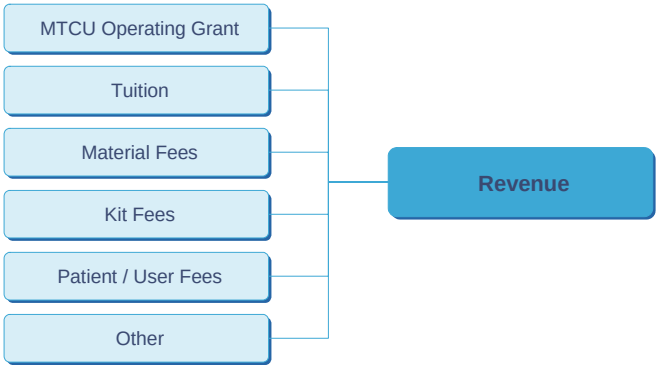
The following section summarizes the key findings and analysis from the clinical cost study. Programs only offered by one college (Denturist, Medical Diagnostic Ultrasonagrapher, and Diagnostic Cardiac Sonographer) have been grouped under "Other Programs."

3.1 Period of Analysis

All revenue and cost data are reported in Canadian dollars for the period April-1-2004 to March-31-2005.

3.2 Revenue Drivers

The sources of revenue for the purpose of this study are defined as follows:



The challenge that the data posed was allocating MTCU operating grant and tuition revenue to the clinical education portion of the programs. The study's methodology for doing so is presented in the next section.

3.3 Tuition and MTCU Operating Grant Revenue Allocation Methodology

Students pay tuition fees for the health science programs; tuition revenue is not specifically allocated among the didactic, lab and clinical portions of any college program. Similarly, MTCU operating grant revenue is not separated; MTCU funds contribute towards the costs of delivering entire health science programs, not parts thereof.

3.3.1 Tuition Revenue Allocation Methodology

The allocation is based on two key assumptions:

1. Tuition revenue was allocated to the didactic and clinical portions of the program based on MTCU funding parameters. The MTCU funding parameters reflect the unique nature of each program and the

percentage of clinical hours to total program hours. The funding parameters used to allocate tuition between the didactic and clinical portion of each program are provided in Appendix D[4].

All tuition revenue contributes to general college administration and service costs (such as student services, registration, library resources, physical plan operating and maintenance and central administration costs such as human resources and finance) and thus must be reduced by the agreed upon amount of 35%. The agreed upon amount is based on a survey of a sample of colleges.

For example, if total program tuition was $100,000, and the specific clinical education program parameter was 60%, the calculation would yield:

Tuition Attributable to Clinical Education = *($100,000 ×65%) x 60%*
= *$65,000 x 60%*
= *$39,000*

3.3.2 MTCU General Purpose Operating Grant Revenue Allocation Methodology

The allocation is based on two key assumptions:

1. All MTCU operating grant revenue was allocated to the didactic and clinical portions of the program based on MTCU funding parameters. The MTCU funding parameters reflect the unique nature of each program and the percentage of total teaching hours that were allocated to clinical education. The parameters used to allocate MTCU operating grant revenue between the didactic and clinical portion of each program are provided in Appendix E.

2. All MTCU operating grant revenue contributes to general college administration and service costs (such as student services, registration, library resources, physical plan operating and maintenance and central administration costs such as human resources and finance) and thus must be reduced by the agreed upon amount of 35%. The agreed upon amount is based on a survey of colleges.

For example, if total MTCU operating grant revenue was $200,000, and the specific clinical education program parameter was 40%, the calculation would yield:

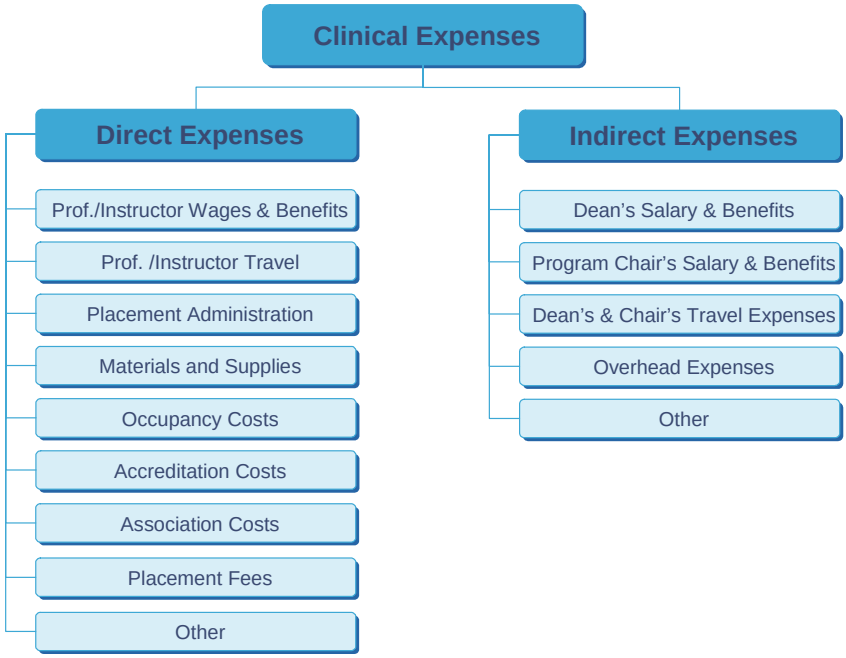
MTCU Grant Revenue Attributable to Clinical Education = *($200,000 × 65%) × 40%*
= *$130,000 x 40%*
= *$52,000*

This methodology was applied consistently across all programs in the scope of the study.

[4] For programs with an average annual tuition fee of greater than $3000, the same methodology that was applied to GPOG revenue was applied to these programs to attribute clinical education revenue. This methodology applied to only two programs, Dental Hygiene and Denturism.

3.4 Cost Drivers

While costs incurred by the clinical placement site and the student are relevant costs of delivery of clinical education, the study focused only on those incurred by the college. The key drivers or classes of costs for the purpose of this study are defined as follows:



The data posed a similar challenge to that of revenue; allocating direct and indirect costs to the clinical education portion of the program. The agreed upon methodology for doing so is presented in the next section.

3.5 Cost Allocation Methodology

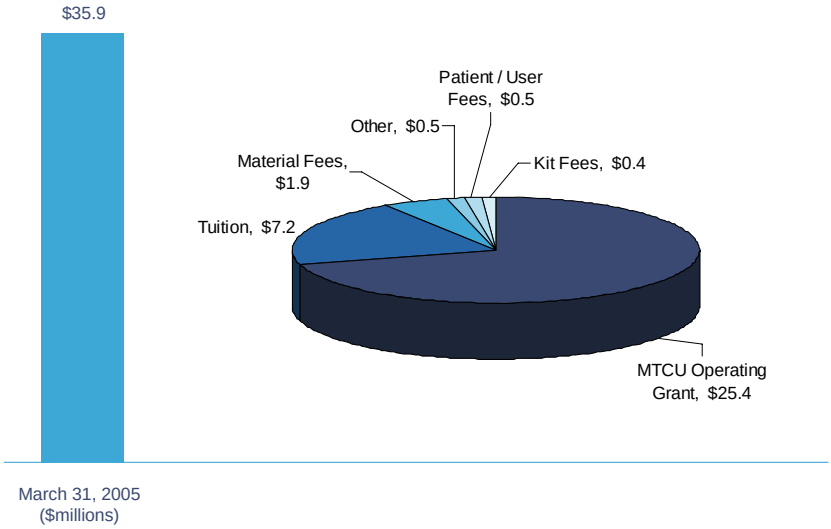
For the purpose of the study, costs were classified as direct or indirect. If direct costs were solely incurred for the delivery of the clinical education portion of the program (i.e., cost of a clinical placement administrator), the total cost was captured. For all other direct and indirect costs attributable to the clinical education portion of the program, total program costs were apportioned based on the ratio of **Clinical Teaching Contact Hours to Total Teaching Contact Hours** in the Health Sciences School/Department. This methodology was applied by the College in each specific program in the scope of the study.

3.6 Performance Measures

Based on the limitations of the data, the only performance measures used to compare programs were revenue, cost, and surplus / deficit per student. Full time equivalent students were used as the student measure, with the data provided by MTCU. Full time equivalent by program is presented in Section 3.12.

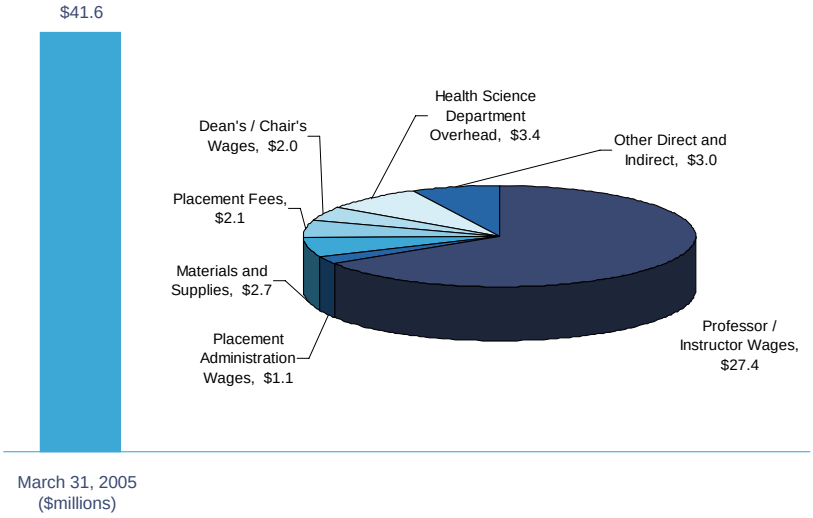
3.7 College System Revenues Attributable to Clinical Education

For the period ended March 31, 2005, system revenues attributable to clinical education were $35.9 million, with the MTCU operating grant contributing $25.4 million, or 71%, and tuition contributing $7.2 million, or 20%. The composition of total system revenues attributable to clinical education is presented below.



3.8 College System Costs Attributable to Clinical Education

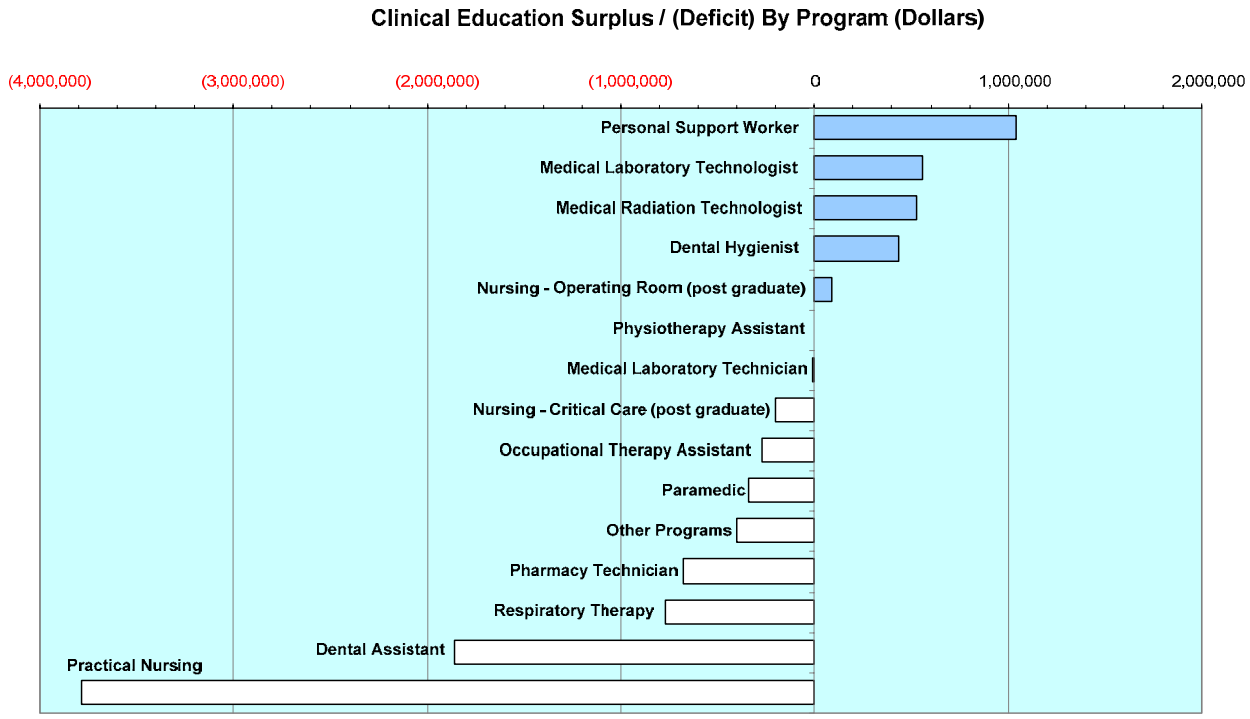
For the period ended March 31, 2005, system costs attributable to clinical education were $41.6 million, with professor / instructor wages and benefits accounting for $27.4 million, or 66%. Placement fees, defined as fees paid directly to clinical sites / health care agencies, amounted to $2.1 million, or 5%. The composition of total system costs attributable to clinical education is presented below.



3.9 College System Net Surplus / Deficit

For the period ended March 31, 2005, eleven programs recorded system-wide deficits totalling $8.3 million. Of the seventeen programs analyzed in the study, only the Personal Support Worker, Medical Laboratory Technologist, Medical Radiation Technologist, Dental Hygienist, Physiotherapy Assistant, and Nursing – Operating Room programs recorded surpluses of clinical education revenue over expenses. Overall, total system clinical education revenues were calculated as $35.9 million, while total system clinical costs were calculated as $41.6 million, yielding a net system deficit position of $5.7 million.

The Net surplus/deficit per program across the college system for the period ending March 31, 2005, is presented in the following chart.

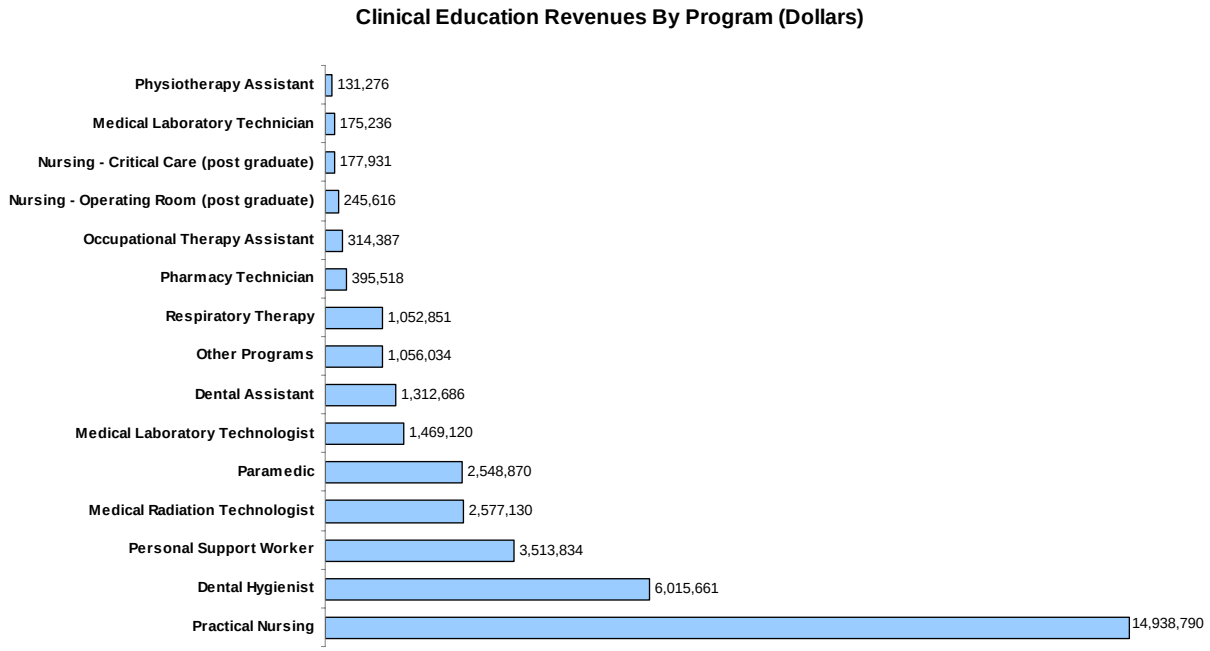


3.10 College System Revenues by Program and Full Time Equivalent Student

3.10.1 College System Clinical Revenues by Program

Based on the revenue attribution methodology, the largest contributors to total system clinical education revenues are the Practical Nursing ($14.9 million), Dental Hygienist ($6 million), Personal Support Worker ($3.5 million), and Paramedic ($2.5 million) programs. Differences in total revenue are explained by the number of colleges offering the program, the number of students enrolled, and the MTCU funding formula, which is designed to reflect the difference in programs. In addition, dental programs – Assistant, Hygiene and Denturist – record additional revenues from patient/user fees; no other programs record this stream of revenue. The smallest contributors to total system clinical education revenues are the Physiotherapy Assistant ($131 thousand), Medical Laboratory Technician ($175 thousand) and Nursing – Critical Care ($178 thousand) programs.

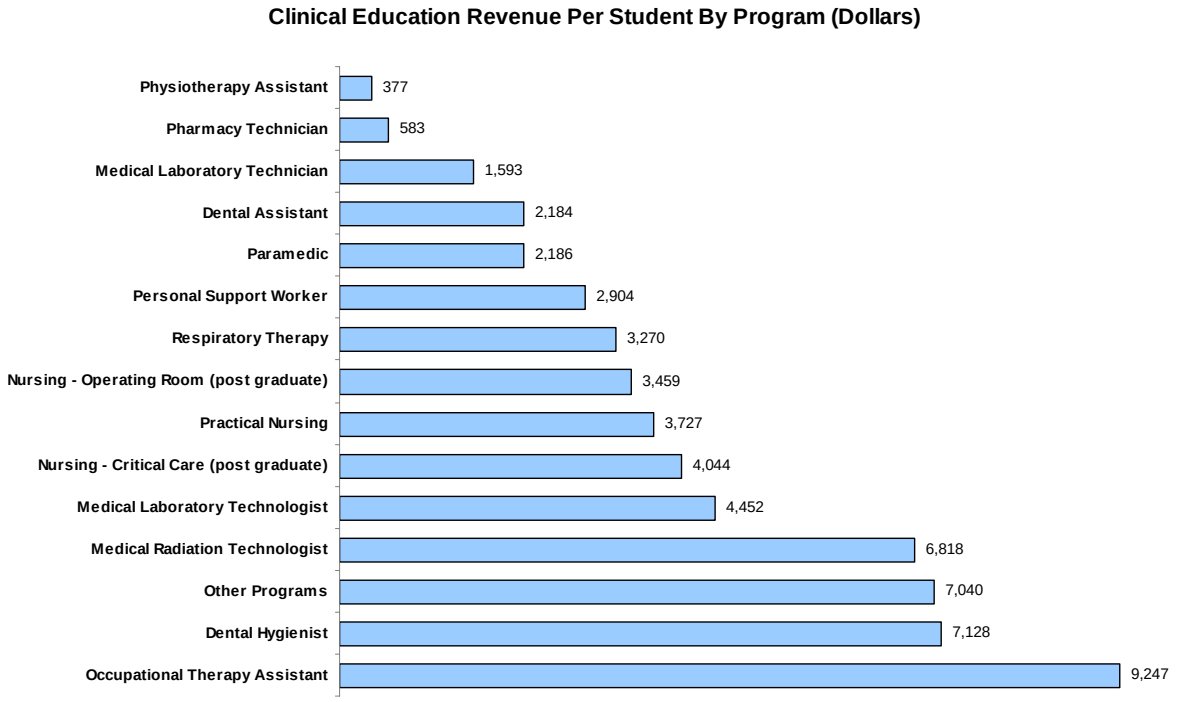
Total clinical education revenues by program for the period ended March 31, 2005, are presented in the following chart.



3.10.2 College System Clinical Revenues per Full Time Equivalent Student by Program

When total revenue per full time equivalent student is measured, a different ranking of programs emerges. The programs that rank the highest in revenue attributable to clinical education per student are the Occupational Therapy Assistant ($9,247), Dental Hygienist ($7,128) and Medical Radiation Technologist ($6,818) programs. The lowest clinical education revenue per student comes from the Physiotherapy Assistant ($377), Pharmacy Technician ($583), and Medical Laboratory Technician ($1,593) programs. The average revenue attributable to clinical education per student over all programs and colleges was $3,934.

Total revenues attributable to clinical education per full time equivalent student by program for the period ended March 31, 2005, are presented in the following chart.

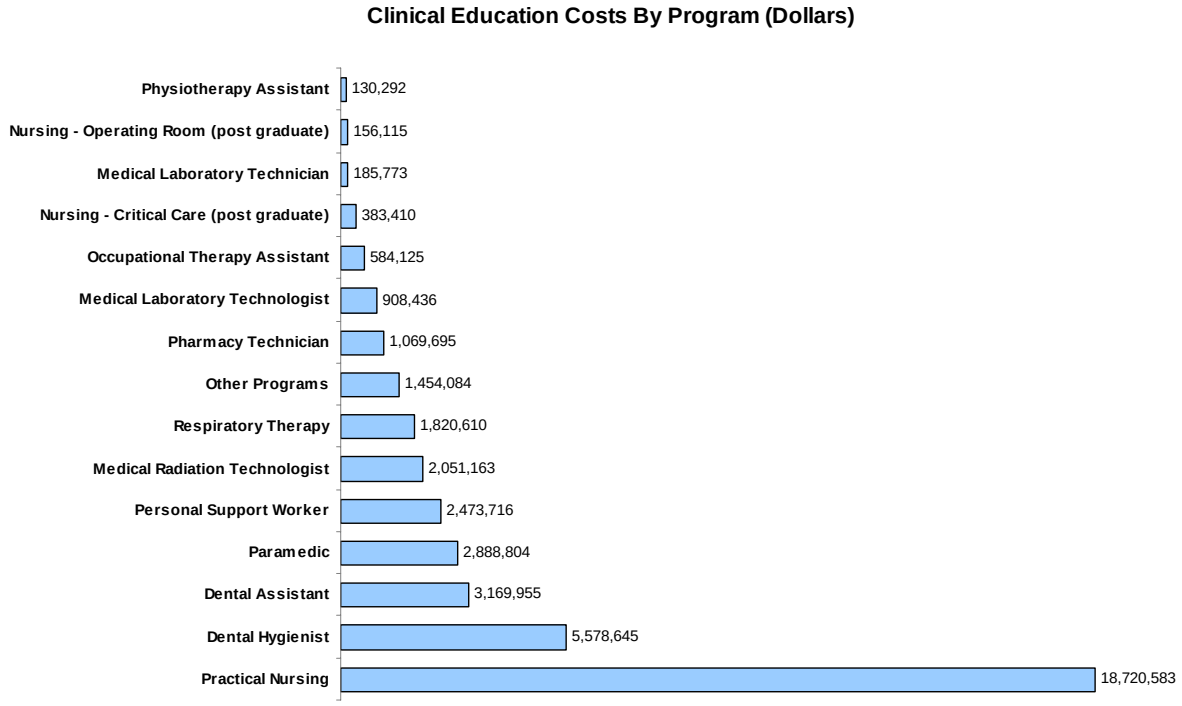


3.11 College System Clinical Costs by Program and Full Time Equivalent Student

3.11.1 College System Clinical Costs by Program

Based on the cost allocation methodology, the programs contributing the largest share of total system costs attributable to clinical education are the Practical Nursing ($18.7 million), Dental Hygienist ($5.6 million), Dental Assistant ($3.2 million), Paramedic ($2.9 million), and Personal Support Worker ($2.5 million) programs. Differences in absolute costs are explained by the number of colleges offering the program and the number of students enrolled.

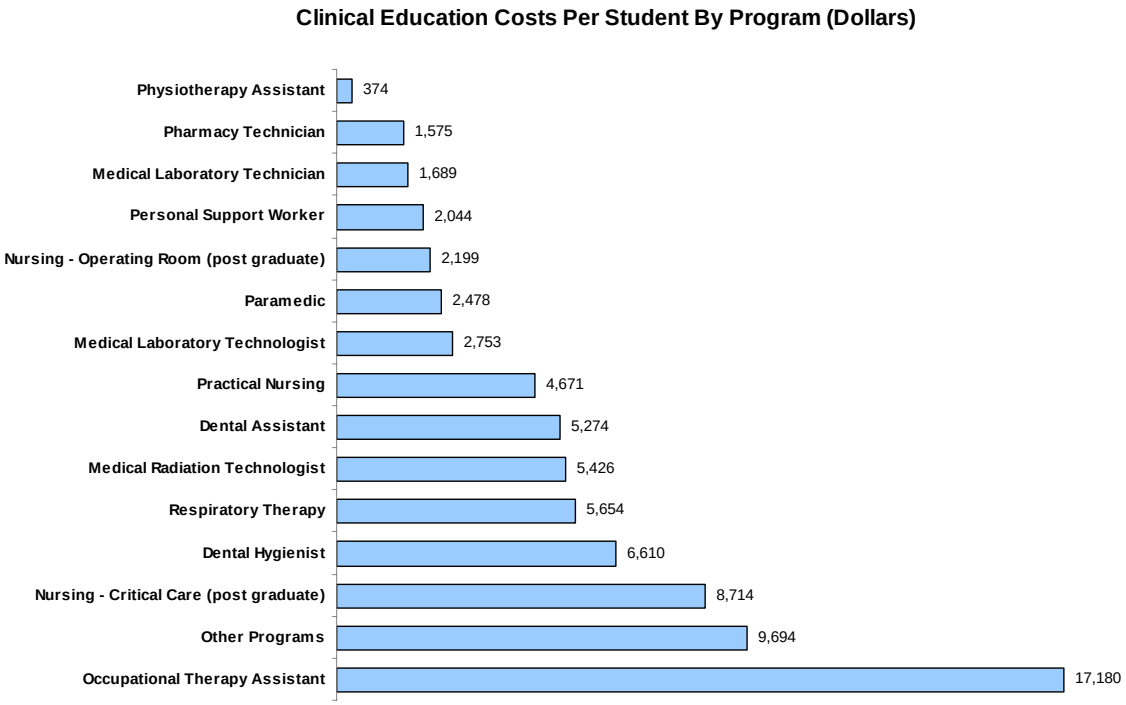
Total costs attributable to clinical education by program for the period ended March 31, 2005, are presented in the following chart.



3.11.2 College System Clinical Costs per Full Time Equivalent Student by Program

When costs per full time equivalent student are measured, again, a different ranking of programs emerges. The programs that rank as the highest cost programs on a per student basis are the Occupational Therapy Assistant ($17,180), Nursing – Critical Care ($8,714) and Dental Hygienist ($6,610) programs. The lowest cost programs on a per student basis are the Physiotherapy Assistant ($374), Pharmacy Technician ($1,575), and Medical Laboratory Technician ($1,689) programs. The average cost per student over all programs and colleges was $5,089.

Total costs attributable to clinical education per full time equivalent student for the period ended March 31, 2005, are presented in the following chart.

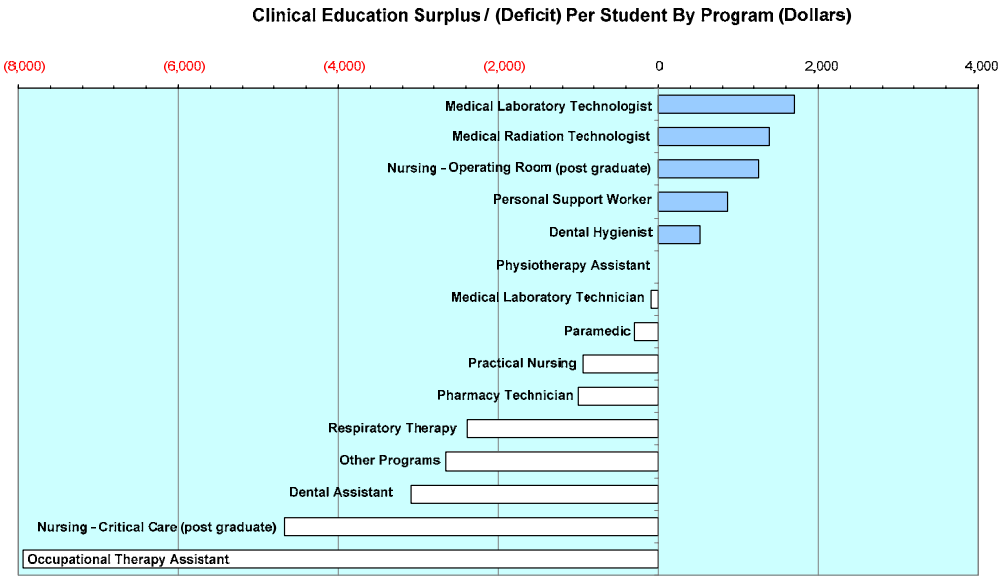


3.12 College System Surplus / Deficit by Program and Full Time Equivalent Student

For the period ended March 31, 2005, total system clinical revenues were calculated as $35.9 million, while total system clinical costs were calculated as $41.6 million, yielding a total deficit position of $5.7 million across the college system, or $549 per full time equivalent student.

Eleven of the seventeen programs in the study recorded deficits totalling $8.3 million, which were offset by surpluses in the remaining six programs totalling $2.7 million. Details of surpluses and deficits by program are presented in the following two charts.

(Dollars)	Full Time Equivalents	Clinical Education Revenues	Per FTE	Clinical Education Costs	Per FTE	Net Surplus / (Deficit)	Per FTE
Dental Assistant	601	1,312,686	2,184	3,169,955	5,274	(1,857,269)	(3,090)
Dental Hygienist	844	6,015,661	7,128	5,578,645	6,610	437,016	518
Medical Radiation Technologist	378	2,577,130	6,818	2,051,163	5,426	525,966	1,391
Medical Laboratory Technician	110	175,236	1,593	185,773	1,689	(10,537)	(96)
Medical Laboratory Technologist	330	1,469,120	4,452	908,436	2,753	560,684	1,699
Occupational Therapy Assistant	34	314,387	9,247	584,125	17,180	(269,738)	(7,933)
Physiotherapy Assistant	348	131,276	377	130,292	374	983	3
Paramedic	1,166	2,548,870	2,186	2,888,804	2,478	(339,933)	(292)
Personal Support Worker	1,210	3,513,834	2,904	2,473,716	2,044	1,040,118	860
Pharmacy Technician	679	395,518	583	1,069,695	1,575	(674,177)	(993)
Nursing - Critical Care (post graduate)	44	177,931	4,044	383,410	8,714	(205,478)	(4,670)
Nursing - Operating Room (post graduate)	71	245,616	3,459	156,115	2,199	89,502	1,261
Practical Nursing	4,008	14,938,790	3,727	18,720,583	4,671	(3,781,793)	(944)
Respiratory Therapy	322	1,052,851	3,270	1,820,610	5,654	(767,759)	(2,384)
Other Programs	150	1,056,034	7,040	1,454,084	9,694	(398,049)	(2,654)
	10,295	**$35,924,942**	**$3,490**	**$41,575,406**	**$4,038**	**($5,650,464)**	**($549)**



4 Issues and Challenges in Clinical Education

The delivery of clinical education by Ontario's colleges is at a crossroads, with a need to select a path that will lead to long term sustainability, improved student outcomes, and improved patient care. There are significant challenges in specific programs at regional levels, and system-wide, that must be addressed for clinical education to continue to provide its essential piece of Ontario's current and future health care platform. The scope of these issues cannot be underplayed. Fiscal deficits across the majority of programs system-wide, and the growing shortage of health care professionals who can help train the next generation, must be addressed in a strategic and broadminded manner. Failure to address the fiscal deficit could result in colleges making decisions to restrict enrolment levels. The following section offers an overview of the key problem facing clinical education today, along with an examination of the main contributing factors.

4.1 The Nature of the Problem

Clinical education is a foundational building block of the health care system in Ontario. Without a well-realised ability to educate our upcoming health care practitioners, the province's ability to meet the burgeoning health human resources crisis will be at risk. However, the roadblock is not inherently at the classic classroom level of study. Rather, the nature of the problem for Ontario's Colleges of Applied Arts and Technology health sciences programs comes down to their ability to provide quality clinical placement opportunities for their students. This fundamental capacity issue has forced colleges to become innovative in identifying new clinical placement opportunities. And all have responded. However, in some cases, colleges have been forced to stretch the definition of clinical to a point which may not achieve the students' learning experience and objectives.

If colleges are unable to provide the necessary quality clinical placement opportunities in high demand programs, the entire stability of clinical education in particular, and health sciences programs in general, will be at risk. As current health care professionals retire, there will be even fewer experienced instructors and preceptors available in clinical sites, and fewer graduates to help relieve the health care human resources deficiency. Moreover, this fundamental incapacity to improve student outcomes and experiences, and to deliver colleges' critical piece of Ontario's health human resources objectives, will mean colleges will be unable to do their part to improve patient care for Ontarians.

4.2 Contributing Factors

This study has found that while the nature of the problem is providing quality clinical placement opportunities for students, there are also a number of factors that both impact and exacerbate the situation. The following is a look at the key contributing factors inhibiting placement capacity and impacting on the sustainability of clinical education.

Clinical Site Human Resources Issues. A growing shortage in health care professionals through restructuring and retirement has led to a corresponding shortage of professionals qualified and able to teach students in the clinical site setting. This is a major capacity constraint for clinical education. The professionals who are preceptors are trying to manage a full case-load (to maintain the standard of patient care) in addition to providing students with quality learning experiences. As a result, and as the research found, many of these professionals are "burning out." In some clinical sites, where case load burden and stress levels run high, students are perceived as an additional burden and an impediment to providing patient care. As a result, there is a reluctance to provide

additional clinical placement opportunities. Regardless, the perception of students as a burden detracts from their ability to obtain a quality clinical experience.

Scheduling Constraints. Historically, the majority of clinical placement demands revolve around the classic September to April college semester system. As a result, placements are desired between September and April during the day shift at clinical sites. Considering the demand for health services operates for 24 hours a day, 365 days a year, the system experiences periods of natural incapacity followed by periods of excess capacity. At certain times of the year a clinical site might have a dozen students on-site with a waiting list, and at other times of the year, there are no students at all. Naturally, this pattern exacerbates the problem of competition during periods of incapacity.

Changes in Health Care Delivery. The Ontario Government has placed a major emphasis on moving long term and palliative care out of hospitals and into the community. This strong movement toward community based care is changing the demands placed on clinical education sites at all levels. In hospitals particularly, the move toward treating patients with more acute problems is leading health care professionals in those locations to demand fewer students and/or to demand students with a higher skill base. In addition, long term care is moving from hospitals into alternative community-based delivery systems. As a result, the number of smaller sites will continue to increase. However, this increase may not equal historical clinical placement opportunities under the old model. Additionally, there is a growing mismatch between the requirement for colleges to ensure training in complex competencies and the changes in the health care environment where there is a decrease in the locations where students can train in such competencies. As the health care system continues to restructure and reorganize, physical space limitations have also been encountered and have prevented the growth in clinical placement opportunities.

Furthermore, with the control of health care funding and provision of services being decentralized to Local Health Integrated Networks ("LHINs") in the near future, some services in hospitals within a LHIN may be centralised in a specific region. As such, there could be a decreased availability of site locations for specific fields in a college's catchment area. As a result, students may be forced into greater competition in a specific centralised region as the number of colleges applying for particular placements increases.

Competition. Competition for clinical placement opportunities comes on a variety of fronts. Most recognised is the competition between colleges and universities for clinical sites that may be located in an accessible catchment area or region. However, there is also increasing competition from outside the public education sector, with more and more private colleges and institutions offering health sciences programs. These private colleges are able to pay more than public colleges typically can to clinical sites for clinical placement opportunities as they operate under a significantly different business and funding model. In a number of programs, such as the Personal Support Worker and Pharmacy programs, colleges are also experiencing growing competition from high-school co-op programs. This competition is heightened as colleges, universities, and high-schools all compete around a very particular timetable.

Increase in Payments to Clinical Sites. Clinical sites are increasingly demanding payment from colleges for clinical placement opportunities. In some cases, this comes from a perceived additional demand of time placed on preceptors and on-site instructors for educating students. A number of placement sites are also requesting that colleges cover the cost of materials and equipment (i.e., gloves, masks, and other consumables) used by students, as private institutions are offering to cover such costs. There are also clinical sites used in Ontario where

collective bargaining agreements specify a levy for allowing students in the clinical setting. For instance, one respondent to the delivery survey stated that certain Paramedic-site preceptors have to be paid for an additional .50 hours, per hour, per student. Payments to clinical sites represented $2.1 million across the college system in 04-05, and are expected to increase.

Attracting Qualified Instructors at the Colleges. In order to deliver quality clinical placements and quality didactic experiences, colleges must be able to attract qualified instructors to their colleges. However, the health human resources shortage has led to increased competition among colleges, other Post-Secondary Education institutions, and health care institutions for staff and instructors for their practical education programs. For instance, nurses can make significantly more money by working at a hospital than they can at a college, and due to the nursing shortage, they have no trouble attaining adequate hours at their primary place of employment. Finding qualified instructors, and then keeping them, is a challenge many colleges face. As a result, many colleges use part-time instructors, which has lead to a lack of continuity in the instruction experience.

Changes in Clinical Site Demands. In many clinical sites, there is a growing demand for smaller group sizes. This demand has arisen for a number of reasons. For example, the increased acuity of the patients being cared for, the workload and stress levels of the preceptors, and the size of the clinical facilities, are all combining to shrink the number of student placement opportunities available at individual clinical sites. Also of strong concern is the decreasing number of placements in complex care and high technology care settings, skills that are required by students to graduate. In the largest program, the Practical Nursing program, many colleges are experiencing capacity issues in clinical placement opportunities due to a shift in clinical site preferences for Baccalaureate Nurses over Practical Nurses. Furthermore, many clinical sites are focused on risk management and are decreasing their number of clinical placement opportunities in order to decrease risk.

External Pressures. There have been a number of changes to the health care environment, and chronic under-funding has only exacerbated this effect. Many of these changes have come as a result of external pressures, including changing practice patterns and competencies required to graduate from health sciences programs, yet colleges continue to operate within the historical funding envelope.

5 Strategies for Sustainability

Clinical education provides students with the opportunity to apply theory and gain practical experience while under supervision in real clinical settings. However, the ability to provide clinical education students with the value-added experiential learning they need is becoming increasingly difficult. This report highlights the fundamental capacity problem facing clinical education, and now will offer strategies for Ontario's Colleges of Applied Arts and Technology, and for the Ontario government, that could ensure clinical education can achieve its ultimate potential: improving student outcomes and patient care for years to come.

5.1 Strategies for Colleges of Applied Arts and Technology

Colleges of Applied Arts and Technology are instrumental in providing the clinical education programs needed to teach Ontario's future health care practitioners. However, the reality is that the need for quality clinical placement capacity is limiting their ability to improve student outcomes and improve overall patient care. The following are strategies colleges can use individually and collectively to maximize, create, and improve the clinical placement structure so that they can address capacity issues and create long term sustainability for their health sciences programs.

Maximize Utilization of Existing Clinical Sites. As this study shows, there is focused competition on the day shift, September to April schedule when scheduling clinical placement opportunities. By rethinking the curriculum of the clinical education program, colleges should be able to maximize the less competitive clinical placement timeslots. Timing clinical placements for weekends, evenings, and the summer could lead to an increased level of access for students. While a number of colleges are utilizing "off peak" clinical placement opportunities, underutilized capacity opportunities still exist – recognizing that, not all programs can provide such opportunities due to structural constraints (i.e., collective agreements, level of supervision). The possibility of including a curriculum that revolves around flexible placement hours will give colleges a broader range of access to clinical placements, and could also increase utilization of students in the clinical placement sites. Nevertheless, the colleges will have to address additional staffing, cost and risk management issues.

Create Strategic Approach for Developing Placement Opportunities. At present, it appears that there is no definitive method for developing new placement opportunities, a problem colleges associate with the lack of investment dollars and the need for long term committed funding. The survey found that 40% of respondents find out about clinical opportunities through their informal network for information sharing, while only 38% of respondents use their formal network, and 15% use formal development programs or processes. There is a need for colleges to create a strategic mechanism for utilizing existing inventory of clinical sites and identifying and developing clinical placement opportunities. Making the search for and development of placements an integral part of the administrative function of clinical education programs could increase the number of clinical placement opportunities available. An example is utilization of HSPnet as a tool to manage inventory of clinical opportunities. Currently, a pilot implementation is underway including colleges, universities and clinical sites for the nursing program.

Improve Integration and Collaboration with Clinical Partners. By continuing to work collaboratively with clinical site partners to determine what needs exist, how sites can best be utilized, and when placements should occur, colleges will be incorporating their partners into the administrative processes of the respective programs from the beginning of the placement process. Making concrete efforts to work together to define program, student,

and clinical site needs, and formulating a program of action that will meet all three, could be the most effective means of increasing placements, not only in number but also in quality. For example, by improving the administrative process, timeliness and the information flow to the clinical site co-ordinator, clinical placement sites would be better equipped to manage and supervise incoming students. Creating a communications link between students and the placement site prior to the beginning of the placement could also make the integration of the students more effective as it would allow for information to be exchanged prior to arrival rather than relying on on-site information exchange. Furthermore, providing students with basic information on the clinical site, such as standard operating procedures, in advance of placements would also ensure a timely integration. By achieving buy-in and participation from the clinical sites, colleges can build long term relationships with them to ensure their overarching goals of improving student outcomes and patient care can be achieved.

Additionally, colleges will need to communicate and work with the Local Health Integrated Network (LHIN) under which they fall. By actively engaging the LHINs, colleges would have a better opportunity to make them aware of the trials they face with placing students, and the vital role clinical placements play in terms of building those who will sustain and build our health care system in the future. By working cooperatively with the LHINs, colleges may be able to position themselves effectively to see that clinical education within the LHIN is incorporated into the LHINs' thinking, networking, and decision-making processes.

Improve Integration and Collaboration with Other Colleges and Universities. Currently, many colleges cite competition for space as a crucial issue at the heart of finding the appropriate number of quality clinical placement opportunities. One could argue that a college or university does not "own" a clinical site, as it is a public good. By collaborating with other health sciences programs in their catchment or geographic area, colleges may be able to co-ordinate placements in advance to ensure that all of the students at all of the schools are properly placed. Building an open dialogue with other PSE institutions would allow for common issues such as contracts and/or placement timing to be discussed in a forum conducive to the learning each college provides. In addition, the use of a common technology to manage the inventory of clinical opportunities and students would help manage clinical placement imbalances in a region. Realistically, such an initiative would need government support and leadership to ensure a common framework for such a system-wide integration project.

Investment in Curriculum Development. The government is currently working toward a health system based on collaboration between health care professionals and a seamless delivery of health care. In order to ensure students are prepared to enter such a collaborative environment upon graduation, the colleges, with the support and leadership of the Ministry of Health and Long Term Care and the Ministry of Training, Colleges and Universities, will need to invest in the redesign of the health sciences curriculum to incorporate a collaborative and interprofessional approach to health care. This will ensure that students will be prepared to work within their full scope of practice. To this end, colleges must increase the use of simulation and interprofessional training within their curriculum.

To the extent possible, and recognising that funding needs to be provided, colleges need to continue to strengthen the use of simulation in the health sciences curriculum in general, and in clinical education in particular. A number of respondents to the survey admitted to a problem with clinical sites considering students too immature, or lacking in sufficient basic skills, to make a significant contribution in the clinical placement setting; this only enhances the perception that each student adds more weight to the workload of instructors and preceptors at clinical sites. By increasing the level and complexity of simulation experience, especially in early years, colleges have the opportunity to increase the base learning of each student before they have to face situations in the field.

Like commercial pilots who must record numerous hours in flight simulation training under various conditions not always possible in actual flight before sitting at the controls of a commercial aircraft, students can face the trials of clinical simulation before facing the real experience. This also allows for students to learn how to react to situations which may not exist on any given day in a hospital or clinical site. The benefit is an improved student experience and improved patient care.

Interprofessional education is also important for all health sciences students, to ensure they are prepared to work in the growing collaborative health care environment. Health Canada offers funding for health care professionals to learn how to deliver their services in the more flexible community based care health system. By working with practitioners from other disciplines, health professionals are learning where they fit in the broader health care provision model. This is an experience that should be instituted at the educational level. The students in clinical education placements today will be our health services providers in the future. In order to improve student outcomes and improve patient care, didactic and clinical models need to reflect the shift towards community based care and interprofessional training. Ontario has recently established a number of Family Health Teams, coalitions of practitioners from multiple health care fields. Colleges, with the support of the government, can work with these groups, and with the LHINs, to ensure their students are properly prepared for the reality of today's health services delivery model. This inherently impacts teaching curriculum models, which is beyond the scope of this study, nonetheless, it will have a significant impact on clinical education.

By learning to work under a new model of collaborative practice, students will be prepared to work in their full scope of practice, ultimately improving student outcomes and patient care.

5.2 Strategies for the Government of Ontario

The Government of Ontario needs to recognise the unique nature of clinical education programs, with the understanding that these programs are the centrepiece for being able to meet the health human resources crisis. At present, colleges are having considerable difficulty providing their students with quality placement opportunities; this fundamental capacity issue will keep colleges from being able to fulfil their key role in Ontario's health care system. Furthermore, without sustainable health sciences programs in general, and clinical education programs in particular, Ontario will increasingly lack the capability to improve and invigorate its health care system. The following are strategies for the Government of Ontario – integrating both the Ministry of Training, Colleges and Universities and the Ministry of Health and Long Term Care – so that it can create long term sustainability for the province's college health sciences programs, which will in turn lead to improved patient care for all Ontarians.

Provide Funding to Reflect the True Cost of Clinical Education. The funding level provided through the MTCU may no longer reflect the realities of funding clinical education programs. The fiscal deficits across the majority of programs and regions are creating a growing risk for the long term sustainability of clinical education. For such a fundamental aspect of addressing the health human resources deficiency, there needs to be improved funding to allow programs to meet the unique costs associated with delivering this specialised type of education. Clinical education is not a choice; it is a requirement of the sector these students are entering. Without clinical placements, there is no ability to improve student outcomes and patient care. As such, funding college health sciences programs through a model that is both sustainable and fiscally sound becomes a critical factor in success. Addressing the college fiscal deficits must be a component of the provincial response if colleges are to maintain and expand their health sciences enrolment levels.

Leadership in Capacity Development. There is a strong need for the government to take a leadership role in ensuring that colleges can provide their students with opportunities conducive to training health care professionals able to work within the new system of health care being implemented. The government should act to bring together colleges and their respective LHINs, and act to ensure that the LHINs have the necessary tools to invest in health human resources planning and development. In collaboration with the colleges, universities, and LHINs, this should include building a computerized placement opportunities network that would ensure placement opportunities are not missed, and that opportunities can be found for all students. If Ontario is to be able to address the health human resources crisis, there is a desperate need to ensure there is a strategic, collaborative method in place to develop clinical placement opportunities.

As a part of this, the government should also provide clarity to colleges and clinical sites that would facilitate full use of the clinical environment. By clarifying the roles and responsibilities of both the colleges and the clinical sites on a system-wide basis, the government could lessen the administrative burden of the colleges in terms of negotiating responsibilities and liabilities associated with student placements.

Provide Funding for Clinical Sites to Hire Clinical Instructors. Funding needs to be provided for the clinical sites to ensure that there are staff qualified to teach clinical students. By incorporating the need for teaching staff into the funding model, the government will be able to make teaching a part of the overall job description, and to hold clinical sites accountable for meeting teaching objectives while delivering patient care. This will also help to foster an atmosphere of continuous learning within the health care industry as new graduates enter the workforce and eventually become instructors and teachers themselves. By making funding available to encourage teaching roles in clinical sites, the shortfall in capacity – the major driver of colleges' problems with meeting clinical education objectives – could be overcome. This coordinated approach, integrating education and health care, is consistent with the government's overall health care strategy.

Provide Funding to Colleges for Simulation in All Allied Health Professions. Simulation is becoming an instrumental teaching tool in building skills in clinical education students. It could be utilized even more effectively if it were used strategically across the system, within all applicable health sciences programs. College students already learn fundamental skills through basic simulation in laboratory settings. With access to more complex simulated learning tools, more advanced students could learn how to address problems only rarely faced in clinical placement settings. However, the need for proper funding is crucial for simulation education to take hold. Funding should be multi-year, and include funds for capital purchases, operating costs, and training. One time funding will not build the sustainability needed to make simulation an integral part of clinical education and alleviate capacity issues. Ontario has the opportunity to become an innovative leader in the use of simulation technology, thereby improving student outcomes and patient care.

Appendix A – Colleges Included in the Study

Algonquin College
Boréal College
Cambrian College
Canadore College
Centennial College
Conestoga College
Confederation College
Durham College
Fanshawe College
George Brown College
Georgian College
Humber College
La Cité Collegial
Lambton College
Loyalist College
Mohawk College
Niagara College
Northern College
Sault College
Seneca College
Sheridan College
Sir Sanford Fleming College
St. Clair College
St. Lawrence College

Appendix B – Survey Outline

Study of Clinical Education in College Health Sciences Programs

PricewaterhouseCoopers is conducting the following survey on behalf of ACAATO. Your participation in this survey will help to create an accurate understanding of current clinical education models in the province of Ontario.

We estimate you will require approximately 30 minutes to complete the survey. Please complete all questions, but if you need to take a break, you will be able to come back later and complete the remainder of the questions. Simply close your browser, and when you would like to finish the survey, click on the link provided in your email.

All information will be kept strictly confidential.

This survey is divided into two sections – the first section asks general questions about the programs offered by your institution and the second section asks for specific information on each program. Please complete the second section for each program offered. The survey seeks information on the following areas:

A. Clinical Programs
B. Clinical Sites & Placement Agencies
C. Outcomes
D. Communication & Administration

Please complete the survey by Friday January 6, 2006.

Thank-you for participating in the Study of Clinical Education in College Health Programs.

Part 1: General Questions

Your name:
Your title:
Your institution's name:

A. Clinical Programs

Select the clinical programs offered by your institution in 2004-2005 from the following list:

- ☐ Dental Assistant
- ☐ Dental Hygienist
- ☐ Denturists
- ☐ Medical Diagnostic Ultrasonographer
- ☐ Diagnostic Cardiac Sonographer
- ☐ Medical Radiation Technician
- ☐ Medical Imaging Technician
- ☐ Medical Laboratory Technician
- ☐ Medical Laboratory Technologist
- ☐ Occupational Therapy Assistant
- ☐ Physiotherapy Assistant
- ☐ Paramedic
- ☐ Personal Support Worker
- ☐ Pharmacy Technician
- ☐ Nursing - Collaborative with Universities
- ☐ Nursing - Critical Care (Post-Graduate)
- ☐ Nursing - Operating Room (Post-Graduate)
- ☐ Practical Nursing
- ☐ Respiratory Therapy

Select the clinical programs that are accredited or are currently undergoing accreditation:

- ☐ Dental Assistant
- ☐ Dental Hygienist
- ☐ Denturists
- ☐ Medical Diagnostic Ultrasonographer
- ☐ Diagnostic Cardiac Sonographer
- ☐ Medical Radiation Technician
- ☐ Medical Imaging Technician
- ☐ Medical Laboratory Technician
- ☐ Medical Laboratory Technologist
- ☐ Occupational Therapy Assistant
- ☐ Physiotherapy Assistant
- ☐ Paramedic
- ☐ Personal Support Worker
- ☐ Pharmacy Technician
- ☐ Nursing - Collaborative with Universities
- ☐ Nursing - Critical Care (Post-Graduate)
- ☐ Nursing - Operating Room (Post-Graduate)
- ☐ Practical Nursing
- ☐ Respiratory Therapy

B. Clinical Sites & Placement Agencies

Does your institution share clinical sites with other PSE institutions?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Are students assigned to more than one clinical site during a semester?

- ☐ Yes
- ☐ No

Are there clinical sites either within or outside your region which could be available but are not used routinely at present?

- ☑ Yes
- ☐ No
- ☐ Not Sure

If yes, please provide the program name and clinical site.

Does your institution place students out of town or out of natural catchment reason?

- ☐ Yes
- ☐ No

Has your institution ceased to use any clinical sites or placement agencies within the last three (3) years?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Does your institution place students out of province?

- ☐ Yes
- ☐ No

C. Outcomes

Are you currently experiencing lower enrolment than expected or than you can provide in any program?

☐ Yes
☐ No

If yes, list program and number of students in programs with lower than expected enrolment.

Have difficulties in placing students prevented you from expanding enrolment?

☐ Yes
☐ No

If yes, list which programs are in highest demand and quantify restrictions on enrollment.

Describe the major challenges to the provision of clinical education.

D. Communication & Administration

How are you informed of clinical site opportunities?

- ☐ Formal network / information sharing
- ☐ Informal network / information sharing
- ☐ Formal development program or process
- ☐ Other (please specify)

If you selected other, please specify:

Who performs the clinical placement administrative function at your institution?

- ☐ Dedicated administrative staff for health sciences programs
- ☐ Instructors / Professors
- ☐ Shared with other placement functions in the college
- ☐ Other (please specify)

If you selected other, please specify:

List the key risks in the delivery of clinical education.

How often do you evaluate the student clinical learning experience?

- ◉ Never
- ○ Annually
- ○ Every 2 years
- ○ Other (please specify

If you selected other, please specify:

How often do you evaluate the role of the health agency in the delivery of clinical education?

- ☐ Never
- ☐ Annually
- ☐ Every 2 years
- ☐ Other (please specify)

If you selected other, please specify:

Now please complete Part II: Program-Specific Questions for each program offered by your institution.

Part II: Program-Specific Questions – Please replicate this section for each program offered by your institution.

Program Name:

A. Clinical Programs

Indicate the clinical teaching model for this program. ***Select all that apply. Select "Other" only if the model is significantly different from those listed.***

- ☐ Clinical Teaching
- ☐ Preceptorship
- ☐ On-site Teaching Clinic
- ☐ Other (please specify)

If you selected other, please specify:

Indicate 2004-2005 student-teacher ratio including all staff (full- and part-time faculty, preceptors, instructors, coordinators) paid by the college for each semester. ***Please use the following format: students:teachers. If you split semesters (i.e., semester 4a and semester 4b), please consolidate your answer for the purpose of the survey.***

Semester 1
Semester 2
Semester 3
Semester 4
Semester 5
Semester 6
Semester 7
Semester 8

Indicate 2004-2005 clinical program hours for each semester. ***If you split semesters (i.e., semester 4a and semester 4b), please consolidate your answer for the purpose of the survey.***

Semester 1
Semester 2
Semester 3
Semester 4
Semester 5
Semester 6
Semester 7
Semester 8

Indicate 2004-2005 total program hours for each semester. ***Please include all curriculum hours, for example, English and general education courses. If you split semesters (i.e., semester 4a and semester 4b), please consolidate your answer for the purpose of the survey.***

Semester 1
Semester 2
Semester 3
Semester 4
Semester 5
Semester 6
Semester 7
Semester 8

B. Clinical Sites & Placement Agencies

How many placement agencies are used for this program?

Provide a percentage breakdown of the type of written agreements used with placement agencies used by this program. ***Total to 100%.***

% Standard template
% Customized at the agency's request
% No agreement
% Other (please specify)

If you selected other, please specify:

What percentage of placement agencies are paid fees for this program?

%

For agencies that you pay fees to place students, have fees changed over the last three years?

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Not applicable - no agency used for placements in this program receives fees

For agencies that you do not pay fees for placements, would you expect to increase the number of clinical placements if fees were offered?

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Not applicable - all agencies receive fees for placements

C. Outcomes

What was the 2004-2005 graduation rate for this program? ***Please provide a percentage. Refer to graduation rates published on your website.***

☐ %

Is there difficulty matching students during first or subsequent years with placement opportunities?

- ☐ Never
- ☐ Seldom
- ☐ Occasionally
- ☐ Frequently

What factors best describe reasons for not being able to match students to placement opportunities? *Select all that apply.*

- ☐ Match between program requirements and clinical site requirements
- ☐ Student skills and clinical site complexities
- ☐ Availability of clinical sites
- ☐ Restrictions on clinical group size
- ☐ Competition with private programs
- ☐ Clinical site workload
- ☐ Availability of teachers / staff / preceptors
- ☐ Collective agreements
- ☐ Clinical site policies
- ☐ Other (please specify)

If you selected other, please specify:

Thank you for completing this survey. Please return both parts of your completed survey to PricewaterhouseCoopers via one of the following methods:

Email: joleen.wright@ca.pwc.com

Fax: 604 806 7806 attention: Joleen Wright

Mail: Attention: Joleen Wright

PricewaterhouseCoopers

250 Howe Street, Suite 700

Vancouver, BC, V6C 3S7

Appendix C – Clinical Model Definitions

For the purpose of the study, the following definitions were used:

- **Clinical Teacher Model** – Faculty members employed by colleges enter the clinical site to provide direct supervision to a group of students. This model is used in early clinical education courses for the Nursing and Personal Support Worker programs.

- **Preceptorship Model** – Preceptors employed by clinical sites supervise students in the clinical setting. College faculty members are responsible for documentation of student progress and assignment of grades and work closely with preceptors to provide support and guidance. Preceptors also communicate directly with students to advise them of their progress and manage issues. This model is generally used in years three and four of four-year Nursing programs, and in the pre-graduate/consolidation clinical component of the Practical Nursing program. It is also used by most other health sciences programs, although clinical educators are not referred to as preceptors in these other programs.

- **On-site Teaching Clinic** – The college operates a teaching clinic for the purpose of providing clinical education to students in a controlled environment. The clinic is open to the public and usually offers services at a reduced rate. The college is responsible for the administration of the clinic, including marketing, financial transactions with patients, retention of medical records, and the provision of clinical supervisors. This model is used to prepare students for professions in private practice settings. (i.e., Dental Assistant and Dental Hygiene programs). In some cases, a combination of the Preceptorship and On-site Teaching Clinic model may be used.

- **Clinical Education / Hours** – Any placement of students in the workplace environment under supervision. In dental programs this includes an on-site or off-site environment where patient treatments are carried out.

Appendix D – Tuition Revenue Allocation Methodology

For the purpose of the study, Tuition Revenue was allocated to clinical education as follows:

Program Code	Program Name	% Clinical Hours
41469	Personal Support Worker	48%
41501	Physio Assistant	29%
41502	OT/PT Assistant	52%
51501	Physio Assistant	28%
51502	OT/PT Assistant	33%
51503	OT Assistant	28%
41609	Medical Lab Technician (ass't)	39%
41629	Dental Assistant Levels 1&2	8%
51407	Practical Nursing	51%
71455	Reg Practical Nurse(refresher)	43%
51623	Pharmacy Tech	21%
51628	Dental Hygienist	71%
51637	Paramedic	37%
61605	Medical Radiation Tech -Imaging	58%
61609	Med Lab Technology	50%
61610	Med Imaging Tech-Ultrasonography	59%
71609	Med Diagnostic Ultrasonography	63%
71610	Diagnostic Cardiac Sonography	70%
61615	Respiratory Therapy	50%
71413	RN Operating Room	51%
71423	RN Critical Care	44%
61626	Denturism	59%

For programs with an average annual tuition fee of greater than $3000, the same methodology that was applied to GPOG revenue was applied to these programs to attribute clinical education revenue. This methodology applied to only two programs, Dental Hygiene and Denturism.

Appendix E – MTCU GPOG Revenue Allocation Methodology

For the purpose of the study, MTCU General Purpose Operating Grant Revenue was allocated to clinical education as follows:

Program Code	Program Name	% of Funds for Clinical & Field
41469	Personal Support Worker	64%
41501	Physio Assistant	50%
41502	OT/PT Assistant	68%
51501	Physio Assistant	12%
51502	OT/PT Assistant	40%
51503	OT Assistant	12%
41609	Medical Lab Technician (ass't)	33%
41629	Dental Assistant Levels 1&2	3%
51407	Practical Nursing	63%
71455	Reg Practical Nurse(refresher)	68%
51623	Pharmacy Tech	7%
51628	Dental Hygienist	71%
51637	Paramedic	48%
61605	Medical Radiation Tech -Imaging	86%
61609	Med Lab Technology	83%
61610	Med Imaging Tech-Ultrasonography	69%
71609	Med Diagnostic Ultrasonography	57%
71610	Diagnostic Cardiac Sonography	83%
61615	Respiratory Therapy	61%
71413	RN Operating Room	74%
71423	RN Critical Care	71%
61626	Denturism	59%