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College-to-University Transfer Arrangements and Undergraduate Education: Ontario in a National and International Context

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Executive Summary

This paper examines the implications of expanding the number and scope of college-to-university transfer arrangements as a means of meeting the demand for undergraduate degrees in Ontario. It focuses on two research questions:

1. What are the differences in the learning outcomes of students in college-to-university transfer arrangements compared with those in four-year university programs?
2. What are the differences in the cost per student for college-to-university transfer arrangements compared with four-year university programs?

We investigated these questions for 14 jurisdictions outside Ontario – Alberta, British Columbia, Australia, New Zealand, Scotland, and nine U.S. states – using published data supplemented by interviews with higher education officials. We also gathered Ontario evidence from statistical publications and interviews.

College-to-university transfer arrangements in other jurisdictions vary significantly in their policy purpose and in the policy tools used to support transfer. In U.S. states with large numbers of transfer students, most transfer students are in Arts and Sciences, Business, and sometimes Social Services. Transfer is used as a way of providing broad access to baccalaureate education. Several jurisdictions also make university transfer available to students in career-oriented college programs, such as technology or trades. Most jurisdictions take a jurisdiction-wide approach to transfer, but a regional approach is used in Scotland. Only one of the 14 jurisdictions, New Zealand, has no system-wide goals for transfer.

Student Learning

We found evidence from seven jurisdictions to show that students who transfer from college to university have Grade Point Averages (GPAs) that are similar to, or sometimes only slightly below, the GPAs of direct-entry university students. We found no jurisdictions with evidence to the contrary.¹

We found mixed evidence on the graduation rates of students who transfer. Evidence from five jurisdictions shows that transfer students have graduation rates as high as or higher than those of direct-entry university students. Graduation rates for transfer students were somewhat lower than those for direct-entry students in three jurisdictions. Where graduation rates for transfer students were lower, there is some evidence that this can be attributed to the greater propensity for transfer students to study part-time.

The principal challenge in operating an effective transfer system arises in the years before students transfer. Evidence from five jurisdictions with highly accessible colleges suggests that many students indicate an intention to transfer but do not complete the requirements to become transfer-ready. Failure to become transfer-ready in these jurisdictions is associated with weak secondary school preparation, competition from non-academic demands such as paid employment and family responsibilities, attending college part-time, and stopping out for one or more semesters.

Once a student succeeds in becoming transfer-ready, we found evidence from several jurisdictions showing that large numbers of transfer-ready students do in fact transfer. In addition, many students who do not meet the stated requirements for transfer may succeed in transferring and completing a degree.

¹For some jurisdictions, no evidence was found to confirm or disprove this and other points.

Cost Differences

In most jurisdictions, the combined cost to the government and the student of a degree achieved through a 2+2 program (in other words, two years at college followed by two years at university) is lower than the cost of a four-year university program. This finding assumes that each student attends for four years of full-time study. It is not adjusted for differences in attrition or student aid.

Using a costing model for college-to-university transfer arrangements in Ontario, we found cost savings for a student in a 2+2 transfer arrangement in Ontario relative to a four-year university student. The cost advantage diminishes or disappears in programs that require the transfer student to take extra semesters to make up courses not studied at college. As a rule of thumb, the break-even for total costs is between four-and-a-half and five years of total study. Longer programs produce few or no total financial benefits, although they may produce other types of benefits for students, such as avoiding repetition of prior learning, or being able to obtain a degree that otherwise they might never have achieved.

Possible Pathways for Ontario

While it is not the purpose of this paper to make a recommendation, the evidence from other jurisdictions suggests three ways that Ontario might move forward:

- **Creating two-year university transfer programs at colleges in Arts and Business:** As part of an overall plan to accommodate students who seek a baccalaureate degree, the government might create a specified number of first- and second-year places in colleges, with the promise that students completing these two years could transfer smoothly to a university to complete their degrees. The programs would be designed to transfer; in other words, the policy would require newly-designed programs (or significantly revised versions of existing programs). This pathway might be of special interest in regions of the province where the number of baccalaureate seats is lower than the forecast demand.
- **Expanding pathways from college career-oriented programs to university:** Creating pathways from college career-oriented programs to university has not been easy in any jurisdiction we studied. The typical approach in Ontario has been for the two-year college student to transfer to university and take specialized upper-year courses in a related field of study. Some jurisdictions have created new types of baccalaureate degrees for students who begin in career-oriented college programs. These degrees are less specialized than traditional university degrees, and they may focus on preparing students for management positions related to their college fields of study.
- **Giving greater attention to student transfer from college diploma programs to college degree programs:** Better transfer from college diploma programs to college degree programs would give more students access to baccalaureate degrees, while avoiding many of the challenges that students in career-oriented college programs face in transferring from college to university. Adopting this approach would in many cases require significant curriculum revisions to address differences in programs. Some college degree students will eventually want to proceed to graduate and professional programs; greater clarity upfront may be needed about whether this will be possible.

These three approaches are not mutually exclusive. One could imagine, for example, setting a goal that every graduate from a two-year college program with adequate marks should have at least one pathway to a degree offered in his or her region. All three of the approaches we have identified could be expanded to make this goal a reality.

The experience of other jurisdictions suggests that policymakers need to establish clear and quantifiable goals, including appropriate deadlines and accountability. Students require clear communications about whether transfer is guaranteed and, if so, under what conditions. Government funding for university seats reserved for qualified transfer students would create better incentives.

Introduction

This paper examines the implications of expanding the number and scope of college-to-university transfer arrangements as a means of meeting the demand for undergraduate degrees in Ontario. It focuses on two research questions:

1. What are the differences in the learning outcomes of students in college-to-university transfer arrangements compared with those in four-year university programs? In other words, taking into account differences in the incoming students, is there evidence of differences in the knowledge or abilities of the graduating students?
2. What are the differences in the cost per student for college-to-university transfer arrangements compared with four-year university programs?

We investigate these questions for 14 jurisdictions outside Ontario. We situate our findings within the policy framework for higher education in each jurisdiction. Based on these findings, we suggest three possible pathways that Ontario might follow to develop better pathways to baccalaureate degrees.

Ontario's Current Model

The fullest articulation of the Ontario government's policy on higher education transfer can be found in the Ministry of Training, Colleges and Universities' "Policy Statement for Ontario's Credit Transfer System," which sets out this vision:

Ontario will have a comprehensive, transparent and consistently applied credit transfer system that will improve student pathways and mobility, support student success and make Ontario a postsecondary education destination of choice. The credit transfer system will assist qualified students to move between postsecondary institutions or programs without repeating prior, relevant learning. (Ontario MTCU, 2011)

As described in this statement, the government's role is to clearly set out the vision, goals, strategy, system roles and accountability measures for credit transfer in Ontario, informed by postsecondary institutions and students. The system is to be carried out through the leadership of the colleges and universities. It is to be coordinated by an arm's-length body, the Ontario Council on Articulation and Transfer (ONCAT), which "facilitates and supports academic collaboration and the development of transfer pathways among Ontario's publicly funded colleges and universities to optimize postsecondary options for students and reduce duplication of prior learning." Among other roles, ONCAT maintains an online credit transfer guide and portal for students, and it oversees targeted government programs that are launched from time to time to fund the development of new transfer arrangements.

Several features of the current policy are noteworthy:

- The policy is intended to build on a large number of transfer arrangements that have been agreed to over the years, most of which are bilateral, but with an increasing number of multilateral agreements in recent years.
- The policy is intended to increase accessibility and student choice, but it is not premised on any quantitative goals with respect to student participation or number of transfers. To date it has not been Ontario government policy to use colleges as a significant means of providing access to university.
- One of the goals is to "realize cost savings for students and their families, government and the public through the elimination of credit duplication." In other words, the policy seeks to ensure that a student who chooses to transfer does not have to repeat credits.

- Participation by universities and colleges is mandatory, but the extent of participation is voluntarily determined: there must be “participation by all postsecondary institutions, with the nature and extent of institutional participation to be determined by individual institutions.”

The policy statement reflects the current state of a transfer policy that has evolved in Ontario over the past two decades. The possibility of transfer from college to university was contemplated when the colleges were founded in the 1960s, but no process for facilitating transfer was put in place. Transfer arrangements that granted credit for learning at college were rare until the 1980s (Skolnik 2010, 7, 14).

In the 1980s it became increasingly apparent that the labour market paradigm on which Ontario’s higher education system was premised had become outdated. The premise from the 1960s was a binary labour market, with some jobs that required three to four years or more of academic study at universities, and others that required one to three years of technical training beyond the secondary school levels in fields that universities did not typically offer. A government advisory report led by the colleges in 1990 recommended greater opportunities for “advanced training,” defined as “education that combines the strong applied focus of college career-oriented programs with a strong foundation of theory and analytical skills.” The report envisaged that some advanced training would be undertaken by colleges alone, and that a “unique college credential” would be created for these programs. Other advanced training programs would be offered jointly with universities and would lead to a university degree. However, recognizing the great reluctance that many universities had shown in working with colleges, the report recommended that if no university displayed interest within eighteen months, the government should confer degree-granting powers on a provincial institute of advanced training that would grant degrees to students who had completed appropriate programs offered at colleges (Vision 2000 Steering Committee 1990, 16-17). In 1993, a follow-up advisory committee recommended creating an Ontario Institute for Advanced Training (OIAT) to “initiate, negotiate, coordinate, promote and allocate funds for” advanced training, and it recommended that “the OIAT be granted specific designated degree-granting power” (Task Force on Advanced Training 1993, 11-13).

The prospect of losing the universities’ collective monopoly on degree granting led the Council of Ontario Universities to hold discussions with the Association of Colleges of Applied Arts and Technology (ACAATO, now Colleges Ontario) between 1990 and 1992 to develop a more voluntary approach to credit transfer. In 1994, the Ministry announced its intention to establish a voluntary consortium of colleges and universities that would promote cooperation and would publish a guide for students on credit-transfer arrangements. Originally this organization – to be known as the College-University Consortium Council (CUCC) – was to have involved a selected group of universities who were especially interested in working with colleges. However, some universities feared that the non-participants would be perceived by the minister as uncooperative, and so all universities agreed to be participants. CUCC was formed in 1996 and with changes became the Ontario Council for Articulation and Transfer (ONCAT) in 2011.

Many of the voluntary bilateral and multilateral arrangements now in place took shape during the period from 1996 to 2011. The government used capital grants in 1994 and again in 2000 to support selected bilateral college-university partnerships that wished to construct a purpose-built facility. The College of Nurses of Ontario’s requirement that new entrants to the profession after 2005 must hold a university degree led to a large number of quasi-voluntary partnerships in Nursing, supported by targeted government funding. Additional funding was provided between 2009 and 2011 to develop multilateral pathways involving graduates of all colleges offering specified programs.

Other policy changes have sharpened the competition between colleges and universities. The government’s decision in 2000 to authorize colleges meeting certain requirements to offer four-year baccalaureate degrees has led some colleges to compete directly with universities for students seeking degrees. Changes in the labour market and in students’ preferences have led many universities to introduce new career-oriented baccalaureate programs that compete with longstanding college programs. In effect, each college and each university makes its own choices about where to collaborate and where to complete in offering baccalaureate programs.

Some Observations from the Literature

There is an extensive academic literature in the United States, and increasingly in Canada and other jurisdictions, about the potential role of transfer in meeting public goals for higher education. The literature from the United States is in some cases critical of state policies to facilitate transfer, arguing that these policies have not increased transfer rates or reduced costs. Other writers have emphasized the role of transfer in increasing access for students and have argued for complementary social and educational policies to improve the success rate of students intending to transfer. Still others have noted the important role of postsecondary system design and institutional incentives in making transfer arrangements work.

Use of College-to-University Pathway to a Baccalaureate Degree

The U.S. literature accepts as a given that a large number of students who complete a baccalaureate degree have previously attended a college. The most comprehensive U.S. database shows that 45 per cent of U.S. students who completed a four-year baccalaureate in 2010-2011 had earlier attended college. The percentage by state ranges from 19 per cent (Alaska) to 78 per cent (Texas), as shown in Table 1. These figures include all baccalaureate graduates who previously attended a college, regardless of how long they attended, what program they studied, or how much credit transfer they received.

Table 1: Percentage of Students Completing Degrees at Four-Year Institutions Who Previously Enrolled at Two-Year Institutions, United States, 2010-2011

State of 4-Year Institution Awarding Degree	State Name	2010-2011 Degree Completions at 4-Year Institutions*	Degree Completions at 4-Year Institutions with Prior Enrolments at 2-Year Institutions**	Percentage of Students Completing Degrees at 4-Year Institutions Who Previously Enrolled at 2-Year Institutions
TX	Texas	148,980	116,776	78%
WY	Wyoming	2,404	1,709	71%
CA	California	237,780	154,717	65%
KS	Kansas	22,458	14,651	65%
OR	Oregon	26,870	16,604	62%
MS	Mississippi	18,637	11,213	60%
OK	Oklahoma	26,215	15,164	58%
NE	Nebraska	19,343	11,034	57%
IA	Iowa	27,090	15,281	56%
MO	Missouri	62,119	34,870	56%
FL	Florida	112,371	61,644	55%
IL	Illinois	109,734	59,138	54%
AZ	Arizona	142,973	73,869	52%
AL	Alabama	37,631	18,185	48%
AR	Arkansas	19,353	9,115	47%
NM	New Mexico	10,459	4,888	47%
TN	Tennessee	40,736	18,410	45%
VA	Virginia	69,969	31,239	45%
SC	South Carolina	30,628	13,401	44%
KY	Kentucky	30,882	13,355	43%
UT	Utah	36,533	15,618	43%
CO	Colorado	34,471	14,577	42%
MI	Michigan	85,222	35,902	42%
WA	Washington	48,058	19,973	42%
MD	Maryland	39,733	15,949	40%
NV	Nevada	11,628	4,644	40%
HI	Hawaii	6,937	2,727	39%
NC	North Carolina	65,366	25,547	39%
MN	Minnesota	57,016	21,501	38%

State of 4-Year Institution Awarding Degree	State Name	2010-2011 Degree Completions at 4-Year Institutions*	Degree Completions at 4-Year Institutions with Prior Enrolments at 2-Year Institutions**	Percentage of Students Completing Degrees at 4-Year Institutions Who Previously Enrolled at 2-Year Institutions
NJ	New Jersey	52,003	19,750	38%
LA	Louisiana	30,520	10,557	35%
WI	Wisconsin	45,871	16,207	35%
IN	Indiana	69,144	23,620	34%
ND	North Dakota	8,253	2,807	34%
NY	New York	202,842	67,883	33%
ID	Idaho	12,962	3,991	31%
OH	Ohio	93,543	28,893	31%
WV	West Virginia	14,677	4,593	31%
MT	Montana	6,369	1,887	30%
PA	Pennsylvania	126,093	37,375	30%
VT	Vermont	9,143	2,754	30%
CT	Connecticut	27,392	7,894	29%
GA	Georgia	57,717	17,002	29%
DC	District of Columbia	23,853	6,608	28%
RI	Rhode Island	16,645	4,608	28%
SD	South Dakota	6,834	1,699	25%
MA	Massachusetts	83,975	19,215	23%
ME	Maine	9,460	2,191	23%
DE	Delaware	8,844	1,935	22%
NH	New Hampshire	14,127	3,041	22%
AK	Alaska	3,733	718	19%
U.S. Total		2,505,596	1,136,812	45%
U.S. Average				41%
U.S. Median				40%

Notes to Table 1:

*Students were counted once in each state where they earned a degree between July 1, 2010, and June 30, 2011.

**Includes any enrolment at a two-year institution that occurred on or before the 2010-2011 graduation date. Includes both public and private two-year institutions.

Note: Data are from student-level college enrolment and degree data provided to the National Student Clearinghouse by its participating institutions. The Clearinghouse covers 93 per cent of national student enrolments and over 80 per cent of degrees.

Source: National Student Clearinghouse (2012).

The Canadian literature views transfer as a phenomenon that is prominent in some provinces but not in others. Some of these provincial differences are reported in our analysis of Alberta, British Columbia and Ontario below.

Relationship of Articulation Policies to Transfer Rates

There is an active debate in the U.S. literature about whether state-mandated articulation arrangements have been successful in increasing the number of college-to-university transfers – or indeed, whether higher transfer rates are actually the purpose of these policies.

Banks (1992) found only a moderately positive effect on transfer rates from a state-wide articulation policy when she compared Texas and California. Anderson, Sun, and Alfonso (2006) found that students who enrol in states with mandatory articulation agreements do not experience a higher probability of transferring, and they found that the probability of transfer was enhanced by other contributing factors such as financial aid, effective compensatory and counselling programs, and improvement in K-12 public schools. Roksa (2009) also found that having a legislated articulation policy is not closely related to having high transfer rates.

Garcia Falconetti (2009) found that Florida's 2+2 transfer policy was successful in reducing duplication of credits and that transfer students graduated from university with similar grades to those of students who entered university directly, but that transfer students had lower completion rates.

Doyle (2009) found that, among students who entered PSE seeking a bachelor's degree, those who initially enrolled in a community college had 32 per cent lower probability of earning a bachelor's degree than did comparable students who initially enrolled in a four-year institution. Doyle raises the concern that students who begin their studies at a college may be diverted from their initial educational goals. Melguizo and Dowd (2009) acknowledge this diversion effect but find that its size is small.

Roksa and Keith (2008) argue that the stated purpose of legislated articulation policies is simply to preserve credits for students who choose to transfer, rather than to increase transfer rates; these policies do not address societal factors that may affect transfer, such as high school preparation, family responsibilities, and factors that prevent full-time and continuous study. In a similar vein, Gross and Goldhaber (2009) have argued that comparisons of transfer students with those who enter university directly do not adjust (or do not adjust adequately) for differences in family income, academic preparation, social expectations, or geographic location, or for rules that restrict the transfer student from entering the university program of choice.

An important caveat in this debate is that U.S. states that do not have a state-mandated transfer arrangement may nevertheless have other means to support transfer, such as a transfer arrangement led by the state higher education coordinating body, or voluntary arrangements between the university sector and the college sector or between individual institutions (Roksa and Keith 2008, 248-249). The finding that states with legislated transfer arrangements do not have higher transfer rates than other states is therefore not as telling as it may initially appear.

Relationship of Articulation to Costs

There is a limited U.S. literature on the cost-effectiveness of transfer arrangements as a means of meeting demand for undergraduate degrees. Rouse (1998) concluded that it costs the government about the same amount or less to provide two years of education at a college as the first two years at a four-year institution. Romano and Djajalaksana (2011) argue that most of the costs of a four-year institution are attributable to students in the third and fourth year of their programs. On this basis, they conclude that the public subsidy is higher for college education than for the first two years of university study. Neither Rouse nor Romano and Djajalaksana include tuition in their calculations.

Roksa and Keith (2008) found that transfer students who complete a four-year degree graduate with more credits than are required. However, they found that the same is true for direct-entry four-year students, and the number of "wasted" credits is about the same in both cases.

System Planning Context

Roksa (2010) has emphasized that postsecondary education policies need to be assessed within the context of a postsecondary system as a whole. In particular, she found that states with a high ratio of college students to university students have higher degree completion rates, because fewer students attempt degree-level studies. This observation suggests the flaw of trying to compare jurisdictions without giving full consideration to the actual range of opportunities and incentives available to students in each jurisdiction.

Kisker et al. (2011) have emphasized the importance of effective implementation to ensure that state-wide policies are carried out at the institutional level. Separate studies have found that, in California, Florida and Illinois, state-wide transfer policies have been hampered at times by universities' independent decisions to introduce new prerequisites beyond those prescribed by the state-wide policy (California Legislative Analyst's Office; Florida Office of Program Policy Analysis and Government Accountability 2008; Sack 2006). This

observation again suggests the importance of evaluating jurisdictions based on their overall higher education policies, rather than simply their transfer policies.

Complex Pathways

There is a very broad literature on patterns of mobility among PSE students, much of which describes the complex paths that students may take through PSE. This complexity has caused some (e.g., Townsend 2001) to advocate expanding transfer research to include university-to-college transfer, university-to-college-to-university transfer, and other paths. Numerous jurisdictions have expanded their transfer policies and evaluation to embrace these complex paths, so the effectiveness of policies is measured by transfers from college to university, university to college, and transfers within a postsecondary segment. In Canada, drawing on work from the Canadian Policy Research Networks, Hango and de Broucker (2007) have identified 20 distinct pathways that a secondary school student may take to reach the labour market.

The scope of the current project focuses on expanding the number and scope of college-to-university transfer arrangements as a means of meeting the demand for undergraduate degrees. We will nevertheless recognize that other models are possible and that student behaviour is more complex than models prescribed by policymakers.

Summary

This literature review leads to some observations that are pertinent to this project:

- The potential policy goal examined in this paper – i.e., whether to respond to increased baccalaureate demand by encouraging some students to attend college and then transfer to university – would be a new goal for Ontario. Past studies of Ontario student behaviour offer insights but are unlikely to be fully predictive of behaviour in this new context.
- Studies of actual college-to-university transfer arrangements in Ontario may be useful in assessing whether these arrangements, if expanded, would help meet this new policy goal. They may also be useful in identifying design and implementation issues in introducing the new policy goal.
- In comparing Ontario with other jurisdictions, clarity about policy goals will be important. A jurisdiction's goals for transfer may be student choice, more spaces, less duplication of credits, smoother administration, or other goals. The design and outcome of a jurisdiction's policies are likely to reflect their goals, which may differ from Ontario's goals.
- Terms such as "transfer arrangement" can mean different things in different jurisdictions. In some cases, broad programmatic goals may not be aligned with actual administrative practices.
- Policy context is important. Transfer policies exist within a broader framework of policies relating to institutional structure, academic standards, accessibility, financial assistance and student services. Postsecondary institutions make choices within this overall policy framework. Students make choices in the context of the opportunities that they see are available to them. We should therefore avoid uncausal explanations for a jurisdiction's success or failure in meeting its goals.

Methodology

We gathered publicly available information from a total of 14 jurisdictions outside Ontario. The purpose of this broad sample was to capture the variety of approaches, to avoid possible "cherry-picking," and to recognize that the quantity and quality of available data would likely be more substantial for some jurisdictions than others. Our selection of jurisdictions was based on jurisdictions with a reasonably large population and a PSE system with two or more sectors. We investigated two provinces (Alberta and British Columbia), nine U.S. states (California, Colorado, Florida, Kentucky, New York, Ohio, Oregon, Texas, Washington), and three countries (Scotland, New Zealand and Australia).

For each jurisdiction we produced a short research note that describes the transfer arrangement, situates it in the context of the jurisdiction's PSE system, answers the two research questions based on the available information, and identifies gaps or weaknesses in the available information. Much of the research underlying this paper, including bibliographic references, appears in these 14 research notes, which are available upon request from the Higher Education Quality Council of Ontario.

We also gathered publicly available information on Ontario experiences. To provide a point of reference, we looked more closely at six cases in Ontario that represent a range of transfer types. These types include: transfer of General Arts students from a college to a university (Seneca College and York University; Seneca College and University of Toronto); transfer of students from colleges to a university in a multilateral arrangement (Lakehead University Faculty of Engineering; Ryerson University Ted Rogers School of Business; McMaster University Bachelor of Technology, with Mohawk College and other colleges); transfer of students from a college to a university on a shared campus (Durham College, University of Ontario Institute of Technology). We excluded Ontario's college-university partnerships in Nursing because they are driven by regulatory and financial issues that are particular to Nursing education and so may be seen as having fewer lessons for other disciplines.

Policy Design in Other Jurisdictions

While each jurisdiction is unique, we found that several of the jurisdictions we studied take similar or overlapping approaches to encouraging college-to-university transfer. Jurisdictions nevertheless have some crucial differences in the range of academic programs that are available for transfer. They use a number of ways of creating incentives for colleges and universities to participate, and they differ in how much certainty the policies provide for students.

Transfer Policy Design

Among the jurisdictions we examined, the most common approach to facilitating transfer is to design a set of courses offered at colleges that are intended to transfer to university. These are typical features of such an approach:

- The courses are designed to transfer. Students are advised in advance which courses are transferable and which are not. Transfer is often contingent on earning a minimum grade such as a C or C-plus.
- Courses are integrated into a coherent program such that, after two years of full-time study at a college, a student can transfer to university, study full-time for two more years, and earn a four-year baccalaureate.
- The responsibility for design of transferable programs and designation of transferable courses is shared between the universities and the colleges. In four cases we found detailed descriptions of processes that involved faculty from both colleges and universities (Alberta, British Columbia, Florida, Ohio). For example, British Columbia has more than 60 permanent articulation committees, covering academic, applied and vocational fields of study. Committees meet annually and involve every university and college offering a program in the field.
- There is an authoritative body to represent the colleges and the universities in this process. In other words, the process does not rely on the direct participation of each college and each university in the creation of each transferable course. There is a widespread expectation that each institution will honour system-wide agreements. The authoritative body may represent a sector, such as the chancellor's office of a university system or a college system (California), or it may be a council that brings together representatives of the universities and colleges (Florida, Alberta, British Columbia).

There are several possible approaches to designing a two-year block of transferable courses. These are not mutually exclusive.

- Some jurisdictions offer a two-year associate degree or similar block of courses specifically designed for transfer to university (Alberta, British Columbia, California, Florida, Washington, Oregon, Texas, Colorado, New York). The associate degree may be intended to replicate the learning in the first two years of university in Arts, Sciences or other non-vocational fields; or it may be offered in career-oriented fields preparing students for the workforce or for university transfer.
- Some jurisdictions mandate a common set of general education courses, typically equivalent to about one and a half years of full-time study; a student who completes this block is deemed to have completed the general education requirements of any college or university in the jurisdiction (California, Florida, Washington, Oregon, Texas, Colorado).
- Some jurisdictions have created common pre-major blocks in specific disciplines, so the student who transfers from college to university can begin at the third-year level, without needing to reach back to take the introductory courses in that discipline (Florida, California, Washington, Texas, Colorado, British Columbia).

In addition to block transfers, many students seek to transfer individual courses. A few jurisdictions have adopted a common course numbering system to assist registrars and students in recognizing courses that transfer (California, Florida, Texas). These common numbers may be layered on top of the pre-existing course numbers at each institution, rather than replacing them.

Web-based guides of transfer arrangements are commonplace. In one jurisdiction, Florida, these are integrated with a jurisdiction-wide student information system that records all of the credits a student has taken at any university or college within the jurisdiction. Graduation requirements for the student's major are also integrated into the system, so a student can see which courses he/she must take in order to earn a degree. A separate portion of the website, labeled "Finish Up, Florida!", provides guidance for those who have left school and want to earn credits to complete a degree.

Jurisdictions generally do not prescribe how transfer courses are to be taught. Florida and Texas follow the guidelines of the Southern Association of Colleges and Schools, which require that faculty who teach transfer courses must have completed either a master's degree or doctorate in the academic discipline in which they are teaching, or a master's degree with a minimum of 18 graduate-level credit-hours in that discipline. There is no requirement for a minimum number of Ph.D.-trained faculty (Southern Association of Colleges and Schools 2006). In Florida, this guideline appears in state legislation.

Most jurisdictions have developed transfer arrangements that cover the entire jurisdiction. Scotland is developing a regionally based set of transfer arrangements, through partnerships among colleges and universities in geographic regions.

Among the jurisdictions we surveyed outside Ontario, only one (New Zealand) has a highly decentralized transfer policy that relies on individual universities to decide which credits they will accept from colleges, with no system-wide goals or institutions to promote transfer. The available data show low rates of transfer: about 4 per cent of college students transfer to a university degree program.

Programs of Study

There are important differences among the jurisdictions in the range of academic programs that are available for transfer. In U.S. states with large numbers of transfer students, most transfer students are in Arts and Sciences and in Business. There may also be significant numbers in Social Services. Typically these students are in two-year programs that are designed to prepare the student to transfer to university, rather than to enter the workforce directly. The two-year program in effect provides the first two years of university in a

college setting, taught by college faculty, using a curriculum that the universities and the colleges in the jurisdiction have agreed will prepare the student to enter university in a 2+2 arrangement.

Several jurisdictions have gone beyond these arrangements to make university transfer available to students in career-oriented college programs, such as technology or trades. These arrangements are different because the student takes a two-year college program that prepares her for the workforce, but still has the option of transferring to the university and completing a degree in a 2+2 arrangement. British Columbia, Washington and Kentucky provide examples:

- British Columbia is noteworthy in reporting high transfer rates in all program categories among students who have completed most or all of an applied credential, including Trades (30% of college and institute students transferred) and Visual and Performing Arts (42% transferred).
- Washington has introduced a two-year Associate in Applied Science (A.A.S) degree at colleges that serves a dual purpose of preparing students for the workforce or preparing them to transfer. The degree transfers to a limited number of university programs that are custom-designed for A.A.S. graduates in fields such as nursing, information technology, food service management, health and safety management, industrial technology, computer technology, electronics technology, mechanical engineering technology, civil engineering technology, and drafting/design technology.
- Kentucky has required every public university to create a “completer degree” that allows two-year college graduates with a minimum grade point average to complete a four-year baccalaureate in two additional years of study. The completer degrees meet the university’s overall requirements for the baccalaureate but are less specialized than direct-entry baccalaureate degrees.

Incentives for Colleges and Universities

Transfer is affected in part by the number of available seats in colleges and in universities. We found evidence from three jurisdictions of policies that deliberately constrained the number of universities and/or first-year university seats and used college transfer programs to provide accessibility for students not directly admitted to university (British Columbia, California, Florida). In California, this policy, coupled with the division of public universities into research-oriented and teaching-oriented segments, is widely credited with making it affordable for California to create a system of internationally recognized research universities. California has five public universities that rank in the Times Higher Education top 50 universities in the world.

A risk of this model is that access to degrees will be constrained. Florida and British Columbia have increased their reliance on direct-entry university spaces in recent years, because of concerns that their aggregate levels of degree attainment were low relative to other states and provinces.

Scotland has developed accountability arrangements that provide funding to institutions in return for an agreement to increase the number of transfer students beyond a base level.

We found one jurisdiction (Texas) that imposes a financial penalty on any institution that “inappropriately or unnecessarily require[s] a student to retake a course that is substantially equivalent to a course already taken at another institution” (Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter B, Rule 4.26). The penalty is to withhold funding for the credit hours in the repeated course.

Certainty for Students

From a student perspective, a key design issue is whether successful completion of two years of transferable credits at a college guarantees admission to a university.

- California’s universities are required to give transfer students priority over direct-entry students in admissions. California’s two public university systems are expected to maintain a 40-60 ratio between students in the first two years of undergraduate programs and students in the third and

fourth years, and they are required to account publicly for how closely they adhere to this ratio. In practice this guarantees that a significant number of third-year seats are available to college transfer students. Transfer students are not guaranteed their first choice of university or program. Recent funding constraints have meant that some universities and some programs are able to offer few or no seats to transfer students at present.

- Florida guarantees that students who earn an Associate in Arts degree will receive an offer of admission to university, though not necessarily to the university or program of first choice.
- Florida and Kentucky mandate that universities give priority to college transfer applicants over out-of-state applicants. Out-of-state students pay much higher tuition fees and so, in the absence of this mandate, universities would find them to be a more attractive revenue source.
- We found several other jurisdictions where transfer applicants have no priority over other applicants, although individual institutions may agree to provide such guarantees (Alberta, British Columbia, Colorado, Texas, Australia, New Zealand).

Effects of System Evolution

Several jurisdictions designed their transfer systems at the time that their college system was founded or expanded, usually in the 1960s (California, Colorado, Florida, Washington). These systems might be perceived to have had an advantage in that transfer was built into the design of the colleges' programs.

Ohio and Scotland provide examples of systems where a transfer arrangement was introduced into an historically binary postsecondary system. In both cases the initiative was driven by elected officials and carried out by leaders from the postsecondary education system – some enthusiastic, others less so.

Four jurisdictions with well-established transfer systems subsequently moved to permit some institutions in the colleges sector to offer their own degrees (Florida, Washington, Alberta, British Columbia).

- Florida granted all colleges the authority to grant their own baccalaureate degrees in specified circumstances. Some colleges offer several baccalaureate programs, while others have chosen to continue to offer degrees through longstanding transfer relationships with nearby universities. This change has not led to a decline in the number of college students transferring to universities: an active transfer system operates side-by-side with college baccalaureates. Washington has a similar arrangement, although only one college offers more than one college baccalaureate.
- Alberta and British Columbia both converted selected college-sector institutions into teaching-oriented universities that offer both diplomas and degrees. In both cases the number of college-to-university transfers declined, as students who might otherwise have transferred have instead been accommodated within the teaching-oriented universities.

Policy Outcomes in Other Jurisdictions

The policy outcomes of greatest interest for this project are the academic performance in university of students who transfer from college, and the potential cost savings of a college-to-university transfer program relative to the cost of educating a student entirely at university. We also gathered evidence about the proportion of students who transfer, and the academic programs in which transfer was most common.

Our observations from other jurisdictions are summarized in Table 2.

Table 2: Summary of Observations from other Jurisdictions

NOTE: Where a jurisdiction is not listed in a row, it means that no direct evidence was found with respect to that jurisdiction.

	YES	NO
TRANSFER POLICY AND DESIGN		
Associate degree or similar 2-year block transfer	AB, BC, CA, FL, WA, OR, TX, CO, NY	All others
Common general education model	CA, FL, WA, OR, TX, CO,	All others
Common pre-major model	FL, WA, TX, CO, BC,	All others
Common course numbering system	CA, FL, TX	
Deep faculty involvement in planning courses that will transfer	BC, FL, AB, OH, SCOT	
Minimum academic credential requirement for faculty teaching transfer courses	FL	
INCENTIVES FOR COLLEGES AND UNIVERSITIES		
Number of first-year university seats is constrained to encourage enrolment in college transfer programs	CA, BC (past), FL (past)	
Number of third- and fourth- year university seats is deliberately expanded/funded to accommodate transfers	CA, WA	
Funding provided in return for a commitment to increase transfer enrolments above a base level	SCOT	
Financial penalty for institutions that unnecessarily require a student to repeat a course already taken	TX	
CERTAINTY FOR STUDENTS		
Transfer applicants have admissions priority over secondary school applicants	CA	AB, BC, TX, CO, NY, AUS, NZ, SCOT
Transfer students have admissions priority over out-of-jurisdiction applicants	FL, KY	AB, BC, TX, CO, NY, AUS, NZ, SCOT
EFFECTS OF INSTITUTIONAL EVOLUTION		
Transfer system was added onto a system that historically was binary	OH, SCOT	CA, FL, WA, CO
Number of transfers declined as more colleges were given a degree-granting role	AB, BC	FL, WA
ACADEMIC OUTCOMES		
Evidence that transfer students receive comparable (or better) GPAs than four-year students	BC, CA, FL, AB, WA, OR, TX	
Evidence that transfer students have comparable (or better) graduation rates than four-year students	BC, CA, AB, CO, NY	FL (somewhat lower), OR (somewhat lower), TX (somewhat lower), AUS (same or lower)
Evidence that transfer students have comparable (or better) labour market outcomes than four-year students	BC	
High completion rates during first two years of study, prior to transfer		CA, FL, WA, TX, NY
High transfer rates among those eligible to transfer	CA, WA, CO	TX
High transfer rates in applied/vocational programs	BC, KY, WA (some)	
Many students transfer outside of the articulated process	CA, CO, NY	
Students say they mostly get the credit they expected	BC, AB	
COST SAVINGS AND OTHER BENEFITS		
Cost is lower in transfer model than four-year university model for the student	BC, CA, FL, WA, OR, TX, CO, NY, AUS, NZ	

	YES	NO
Cost is lower in transfer model than four-year university model for the government	BC, CA, WA (about the same or lower), TX (about the same or lower), NY, AUS, NZ, SCOT	FL (about the same), AB, OR, CO (about the same or higher)
Transfer students are demographically different from four-year students (e.g., low income, racial minority, older students)	CA, WA, KY, AUS, SCOT	
Student debt is lower in transfer model than four-year university model		BC
Many transfer students take more than the minimum number of credits	CA, FL, KY, OR, TX, SCOT	
Many direct-entry students take more than the minimum number of credits	CA, FL, KY, OR, TX	

University Academic Performance of Students who Transfer

There is much evidence to show that students who successfully transfer from college to university have GPAs that are similar to, or sometimes only slightly below, the GPAs of direct-entry university students. We found evidence that transfer students receive comparable or better Grade Point Averages than direct-entry students in Alberta, British Columbia, California, Florida, Oregon, Texas and Washington. We found no jurisdictions with evidence to the contrary.

University Graduation Rates of Students who Transfer

We found mixed evidence on the graduation rates of students who transfer. Evidence from five jurisdictions shows that transfer students have graduation rates as high as, or higher than, those of direct-entry university students (Alberta, British Columbia, California, Colorado, New York). Graduation rates for transfer students were somewhat lower than those for direct-entry students in Florida, Oregon and Texas. Conflicting evidence shows that the rates were either the same or lower in Australia.

Where graduation rates for transfer students were lower, there is some evidence that this can be attributed to the greater propensity of transfer students to study part-time. Evidence for Florida and Texas shows that transfer students' graduation rates are the same as those for direct-entry students among full-time students, but much lower for part-time students.

Transfer Rates

Measuring transfer rates is notoriously difficult. Comparisons of transfer rates must be done with caution, because the basis of measurement is often inconsistent from one jurisdiction to another. Jurisdictions that attempt to measure transfer rates may do so by asking some or all of these questions:

- Does the student, at the time of admission to college, express an intention to transfer to university or to complete a degree?
- Does the student, in his or her selection of courses, demonstrate that he or she is on a transfer path? For example, by the end of the first year of study, has the student completed some of the courses that will be required for transfer?
- Does the student become “transfer-ready”? In other words, does he or she complete the prescribed program of study and meet the minimum grade requirements to qualify for university transfer?
- Does the transfer-ready student actually transfer?

This logical sequence of questions is confounded by actual student behaviour:

- Simply asking what share of students who enter college subsequently complete a university degree is a misleading measure of how well a transfer policy is working, because it does not take account of students' goals. Many students who enter college do not intend to transfer; indeed, many simply wish to take a few courses and do not intend to earn a credential of any kind.
- Some students who say they intend to transfer do not take courses which reflect that intention.
- Many students transfer who did not intend to do so at the time of admission to college.
- Many students transfer outside of the articulated transfer pathway. In other words, they are not counted as transfer-ready, but they transfer.

Despite these data limitations, there is clear evidence from the jurisdictions we studied that the principal challenge in operating an effective transfer system arises in the years before students transfer. Jurisdictions that have highly accessible colleges find that many students indicate an intention to transfer but do not become transfer-ready (California, Florida, Texas, Washington, New York). For example, in California the number of students who enter college and transfer within six years is about half of the number who said they intended to transfer. In Florida, only 26 per cent of those who start an Associate in Arts degree complete the degree within six years.

Failure to become transfer-ready in the jurisdictions we studied is associated with:

- weak secondary school preparation, and delays while a student takes remediation courses in college
- open-access college admission policies that attempt to accommodate students regardless of academic preparation
- difficulties in postsecondary-level courses, especially in mathematics
- competition from non-academic demands such as paid employment and family responsibilities
- attending college part-time and/or stopping out for one or more semesters

Once a student succeeds in becoming transfer-ready, we found several jurisdictions where large numbers of transfer-ready students do transfer (California, Colorado, Washington), but the transfer rate of course is not 100 per cent. In California, Florida and Washington, for example, about two-thirds of the students deemed transfer-ready actually transfer.

Even if a student fails to become transfer-ready, he or she may succeed in transferring and completing a degree. For example, in California, about two-thirds of the students who transfer to state public universities do not follow the articulated 2+2 system. These students may represent a variety of situations: some may simply be one or two courses short of being transfer-ready and so are accepted with less than two full years of credits, while others may receive few or no credits when they transfer. Evidence from both Alberta and British Columbia suggests that most transfer students in those jurisdictions received about as much credit as they were expecting. This may be attributable in part to credit transfer websites in both jurisdictions that definitively identify courses that will transfer.

Failure to transfer may be especially problematic because many students in the jurisdictions we studied are enrolled in college programs intended for university transfer, so their college studies do not prepare them for the workforce. From this perspective, the students might have been better off if they had completed a career-oriented college diploma course. We should nevertheless acknowledge that drop-out rates in career-oriented college programs and in the first two years of university may also be high. The situation of a student in a transfer program who does not transfer may be no worse than that of a direct-entry university student who drops out after one or two years of study. In all of these cases, reducing attrition may require additional supports so that students complete a credential that prepares them for the workforce or other goals.

Cost Savings and Other Benefits

In most jurisdictions, the combined cost to the government and the student of a degree achieved through a 2+2 program is lower than the cost of a four-year direct-entry program. For each jurisdiction we attempted to calculate the combined cost to the student and the government of a four-year degree earned by transfer, compared with a four-year degree earned by a direct-entry student. The data suggest total cost savings of 8 to 29 per cent per student over the course of four years. These calculations assume that each student attends for four years of full-time study. They are not adjusted for differences in attrition or student aid.

This calculation is difficult because in most jurisdictions government funding to universities and colleges does not take the form of a per-student amount weighted by program. The actual cost to the university or college of delivering a program may differ from what the government and the students pay. We were unable to identify actual costs because institutions generally do not publish studies on their internal costs.

In most jurisdictions the cost saving to the student (in the form of lower tuition) is more significant than the saving to the government.

- In every jurisdiction where data were available, we found that the tuition cost to the student was lower in the transfer model than in the direct-entry model (British Columbia, California, Florida, Kentucky, Washington, Oregon, Texas, Colorado, New York, Australia, New Zealand).
- The cost to the government was lower in some jurisdictions (British Columbia, California, New York, Australia, New Zealand), about the same or lower in some (Texas, Kentucky, Washington), about the same in one (Florida), about the same or higher in one (Colorado), and actually higher in two (Alberta, Oregon).

The reasons for lower tuition at colleges are typically historical. They may reflect a belief that degree-level students in a college setting should pay fees similar to those paid by non-degree students, and/or a belief that lower tuitions will facilitate accessibility. The amounts paid by government to the college and university are also historically driven: most jurisdictions pay lower operating grants per student to colleges than to universities. Some of the higher grant to universities is intended to support faculty research.

Several jurisdictions report that students who enrol in college transfer programs disproportionately come from groups that are underrepresented among direct-entry university students (California, Washington, Australia, British Columbia). British Columbia has found that student debt at graduation is higher for transfer students than for direct-entry university students: this may be evidence that transfer students come from lower-income backgrounds, although it may also reflect other factors.

An important qualifier in any cost comparison of transfer programs and direct-entry programs is how to treat students who do not successfully complete a degree in four years. There is U.S. evidence that a typical college transfer student completes about 140 semester credits before graduating (where 120 credits is the normal requirement for a four-year degree). There is evidence too that the typical direct-entry student also completes about 140 credits. In other words, neither the transfer route nor the direct-entry route is producing the most efficient outcome: about one-seventh of university seats in the U.S. are occupied by students who have completed more than the minimum 120 credits. Students may complete extra credits because they change their majors, because they do not understand graduation requirements, or for other reasons.

A direct comparison of the costs of college-to-university transfer programs and direct-entry programs provides a limited perspective on the overall costs and benefits of each of these programs. We discuss this issue more fully when we consider the costs of Ontario programs below.

Policy Outcomes in Ontario

Several good studies have assessed the overall state of college-university transfer in Ontario, notably Decock, McCloy, Liu, and Hu (2011), CCI Research (2006, 2011) and Colleges Ontario (2009). These studies are noteworthy for their use of student survey data to investigate transfer patterns, in the absence of a jurisdiction-wide student tracking system. It is not our intention here to fully summarize or replicate this work. Some of the findings for Ontario students are pertinent to the issues we identified when we looked at other jurisdictions:

- Almost one-quarter of Ontario college applicants have identified preparation for university as a major reason for enrolling in college (Colleges Ontario 2009, ii).
- University applicants with college education (but not necessarily a college credential) represented 11.4 per cent of all Canadian applicants to Ontario universities in 2008, and 6.1 per cent of Canadian applicants who actually enrolled (Colleges Ontario 2009, 5).
- The number of college graduates pursuing a degree rose from 2001 to 2006 but declined slightly in the next two years: as of 2008-2009, 7.7 per cent of college graduates were pursuing a baccalaureate, of whom 5.6 per cent were pursuing a university degree (the rest were seeking a college degree or collaborative degree) (Kerr, McCloy, and Liu 2010, Figure 3). A separate study found that about 8 per cent of college graduates in 2007 were attending university six months later; this does not include transfers by non-graduates, or students who started university more than six months after graduating from college (Decock, McCloy, Liu, and Hu 2011, 23; CCI Research 2011, 9). If the survey respondents were representative of the total population of graduates, this suggests that about 4,600 graduates transferred. A different estimate found that 8.7 per cent of college graduates transferred to a university somewhere in the world, but only 7.0 per cent of college graduates were at an Ontario university (Colleges Ontario 2009, 6).
- Transfer patterns are closely related to geographic proximity. The largest partners for Centennial, George Brown, Humber, Seneca and Sheridan are York and Ryerson. Outside the Toronto area, each college's largest partner is a nearby university, with the exception of seven colleges that do not have a dominant partner (Conestoga, Georgian, Lambton, Loyalist, Northern, Sault, and St. Lawrence) (Decock, McCloy, Liu, and Hu 2011, 89).
- Most students who transfer from college to university say there is affinity between their programs. Forty-four per cent said their new program was very related to their former one, and 43 per cent said it was somewhat related (Decock, McCloy, Liu, and Hu 2011, 47).
- Forty-one per cent of students transferring from college to university said they decided to do so before starting college; 43 per cent said they made the decision during their college program (Decock, McCloy, Liu, and Hu 2011, 44; CCI Research 2011, 24).
- Eighty-four per cent of students transferring from college to university said they were satisfied with their academic preparation, including 91 per cent of graduates from preparatory General Arts programs (Decock, McCloy, Liu, and Hu 2011, 69-70).
- Forty-five per cent of college-to-university transfer students believe they would have been admitted to university without graduating from college. The data do not explain the basis for this belief (Decock, McCloy, Liu, and Hu 2011, 64; CCI Research 2011, 27).
- Seventy-two per cent of college-to-university transfer students say they received at least as much credit for prior learning as they expected; 29 per cent received less than expected (Decock, McCloy, Liu, and Hu 2011, 60). These data are based on expectations and so do not directly assess how well the Ontario government's goal of reducing duplication of learning is being met.

These data tend to confirm earlier findings from the literature. Decock (2006) found that a subset of students at one large college clearly entered college with the intention of proceeding to university; the majority of these students would not have been directly admissible to universities, and many were from families with limited postsecondary experience and/or from the middle to lower socio-economic strata. Lang (2009) found that, for a group of students who were directly admissible to both college and university and who initially chose to attend college, the decision to transfer to university was not made until after college registration. From this he

concluded that, for these students, greater conventional articulation will not significantly affect rates of transfer and that the rate of transfer is highly dependent on the availability of corresponding university programs.

Comparing Ontario's transfer rates to those of other jurisdictions is difficult, for reasons that we observed when we reviewed the evidence from other jurisdictions: the respective roles of colleges and universities can differ greatly between jurisdictions, there is no agreement among experts about how to define a transfer rate, and cross-jurisdictional data sets are scarce. The best recent survey of transfer rates across Canada suggests that Ontario's rate is comparatively low, while acknowledging the methodological challenges that make direct comparison difficult (Colleges Ontario 2009, 10-13). An earlier comparison of Ontario with several other provinces and states found that Ontario's college-to-university transfer rate is near the low end of the range for graduates from career-oriented college programs and is well below the rates of other jurisdictions for graduates from Arts and Science programs (Colleges Ontario 2005, 6, 17).

The available system-wide data do not directly address the core questions we have asked about other jurisdictions: How well do college-to-university transfer students perform academically relative to direct-entry university students? What are the differences in the cost per student for college-to-university transfer arrangements compared with four-year university programs?

University Academic Performance and Graduation Rates of Students who Transfer

We attempted to find insights about students' academic performance by examining the six cases listed under "Methodology" above. We were fortunate in every case to receive generous cooperation from academic leaders in the participating institutions. For a variety of reasons the available data on students' academic performance are not as ample as in some of the other jurisdictions we studied. These reasons include the absence of information systems that permit easy matching of student records across institutions or that readily distinguish transfer students from other university students, and also the short history of some of the programs we selected. The limited data we found generally support the hypothesis that students who transfer perform well in a university environment:

- Seneca College and the University of Toronto have initiated a transfer program in Liberal Arts for students whose academic preparation would probably not have qualified them for direct entrance to university. Students spend most of their first two years at Seneca, with one or more Toronto courses during this time to acclimatize them to a university learning environment. They then enter Toronto, potentially in third year depending on the number of Toronto courses previously taken. Students who transfer have university grades similar to those for direct-entry university students, with a median grade of 71 per cent (Decock 2012).
- McMaster University offers a Bachelor of Technology degree for colleges graduates who hold a three-year technology diploma, with Mohawk College being the largest partner. Lakehead University offers a Bachelor of Engineering degree for college graduates who hold a three-year engineering technology program. Both universities report high graduation rates, comparable to those for direct-entry students who successfully complete the first two years of university.
- York University offers a block transfer arrangement that allows any college graduate with a 70 per cent average or better to be admitted with advanced standing, subject to space availability. In 2010-2011, York admitted 2,100 students from colleges under this block transfer credit policy (800 into first year and 1,300 into upper years), making it the largest transfer arrangement in the province. The retention rate of college transfer students in 2010 was 76.1 per cent – lower than for students entering directly from secondary school (85.8%), but somewhat higher than for other non-direct-entry students (73.3%) (Craney 2012).

A noteworthy feature is that none of the Ontario programs we studied offer a 2+2 model leading to a four-year baccalaureate degree. All of them require additional courses beyond a simple 2+2 model.

Where a college program is not specifically designed to prepare the student to transfer, it is not surprising that adaptations are needed so that students can transfer and succeed in their programs. Institutions have adapted in different ways. For example:

- Ryerson University's Business program has adopted a 3+2 model and also requires college transfer students to take additional courses, primarily in accounting and finance.
- Lakehead University's Engineering program is based on a 3+2 model with a summer bridging program focusing on mathematics and science.
- McMaster University has created a 3+2 degree completion program in partnership with Mohawk College that leads to a Bachelor of Technology degree. The program offers a more practical education than a Bachelor of Engineering program would supply (although some graduates have successfully written the P.Eng. qualifying examinations). The program offers a special mathematics course for college transfer students that assumes less prior knowledge than the course for direct-entry students.
- Durham College and the University of Ontario Institute of Technology (UOIT) have adopted a 2+2 model with a summer bridging program for college graduates wishing to transfer to high-affinity degree programs at UOIT. The bridge is normally two to five courses. In programs with less affinity (such as Business), a 3+2 model is available.

The Ontario programs that are most similar to the 2+2 models we observed in many U.S. states are the two-year General Arts and Sciences programs offered by several colleges with the explicit purpose of preparing the student to transfer to the third year of a university. These programs have evolved from – but are decidedly different from – one-year General Arts and Science programs that were designed to provide remediation to students who were not adequately prepared to start a college program. An example is Seneca College's two-year Liberal Arts program, which aims to prepare students to enter third year at either York University or the University of Toronto. Students who lack academic preparation or other skills to enter university directly are taught in a small-classroom environment by Seneca faculty with a strong orientation to teaching. During their first two years, students take at least one course at university, and they may take additional university courses in the summer after their second year. In the best case, a student can complete a four-year degree in a 2+2 arrangement with a summer bridge semester.

Cost Savings and Other Benefits

These models provide some insights into whether a transfer arrangement can be less expensive than a direct-entry program. The answer depends in part on how many years of study the transfer arrangement requires. It also depends on the student's program of study, since the government operating grant to colleges and universities varies by program of study.

We might consider three different comparisons:

- A two-year General Arts college graduate who wants to pursue a four-year university degree, compared with a direct-entry four-year university student.
- A three-year Business college graduate who wants to pursue a four-year university degree, compared with a direct-entry four-year university student.
- A three-year Technology college graduate who wants to pursue a four-year university degree, compared with a direct-entry four-year university student.

For each of these comparisons, the principal variable is how many additional years of university study the college transfer student faces before completing the degree. The table below shows several comparisons for each case.

Table 3: Cost Scenarios for College-to-University Transfer Programs in Ontario

Program	Assumptions												Additional cost (savings) compared to direct entry		
	Years			Government funding (2 semesters)			Student tuition and fees (2 semesters)		Total cost (full program)						
	College	Univ Yr 1	Univ Upper	College	Univ Yr 1	Univ Upper	College	University	To government	To student	Total	To government	To student	Total	
ARTS															
Direct-entry		1	3	4,400	3,100	5,800	3,300	6,500	20,500	26,000	46,500				
Transfer: 2 + 2	2		2	4,400	3,100	5,800	3,300	6,500	20,400	19,600	40,000	-0.5%	-24.6%	-14.0%	
Transfer: 2 + 2.5	2		2.5	4,400	3,100	5,800	3,300	6,500	23,300	22,850	46,150	13.7%	-12.1%	-0.8%	
Transfer: 2 + 3	2		3	4,400	3,100	5,800	3,300	6,500	26,200	26,100	52,300	27.8%	0.4%	12.5%	
BUSINESS															
Direct-entry		1	3	4,400	5,800	5,800	3,300	6,500	23,200	26,000	49,200				
Transfer: 3 + 1	3		1	4,400	5,800	5,800	3,300	6,500	19,000	16,400	35,400	-18.1%	-36.9%	-28.0%	
Transfer: 2 + 2	2		2	4,400	5,800	5,800	3,300	6,500	20,400	19,600	40,000	-12.1%	-24.6%	-18.7%	
Transfer: 3 + 1.5	3		1.5	4,400	5,800	5,800	3,300	6,500	21,900	19,650	41,550	-5.6%	-24.4%	-15.5%	
Transfer: 3 + 2	3		2	4,400	5,800	5,800	3,300	6,500	24,800	22,900	47,700	6.9%	-11.9%	-3.0%	
Transfer: 3 + 2.5	3		2.5	4,400	5,800	5,800	3,300	6,500	27,700	26,150	53,850	19.4%	0.6%	9.5%	
Transfer: 3 + 3	3		3	4,400	5,800	5,800	3,300	6,500	30,600	29,400	60,000	31.9%	13.1%	22.0%	
TECHNOLOGY															
Direct-entry		1	3	5,700	8,300	8,300	3,300	6,500	33,200	26,000	59,200				
Transfer: 3 + 1	3		1	5,700	8,300	8,300	3,300	6,500	25,400	16,400	41,800	-23.5%	-36.9%	-29.4%	
Transfer: 2 + 2	2		2	5,700	8,300	8,300	3,300	6,500	28,000	19,600	47,600	-15.7%	-24.6%	-19.6%	
Transfer: 3 + 1.5	3		2.5	5,700	8,300	8,300	3,300	6,500	29,550	19,650	49,200	-11.0%	-24.4%	-16.9%	
Transfer: 3 + 2	3		2	5,700	8,300	8,300	3,300	6,500	33,700	22,900	56,600	1.5%	-11.9%	-4.4%	

Source: Author's calculations. Assumptions are based on MTCU data and institutional websites.

From this table we can observe:

- If the college student can complete a university degree in a total of **four years of study** (2+2 or 3+1), the transfer program is unambiguously less expensive than the direct-entry program. The total savings equal 14 to 30 per cent of the cost of the direct entry program. There are savings for both the government and the student (although in the case of Arts, the savings for government are minimal because the government provides very low funding for students in Year One of Arts and Science at a university).
- If the college student completes a university Arts degree in a total of **four and a half years of study** (which is typical of a 2+2 program with a bridge), the total cost is about the same as for a direct-entry program.
- If the college student requires a total of **five years of study**, there are no savings in Arts, but there are modest savings in Business and Technology.
- If the college student requires **more than five years of study**, there are no savings in any of the programs.

Clearly program length is a primary cost driver. The total cost (to the government and the student) of a student-year at a college is usually less than the total cost of a student-year at a university, but the cost advantage diminishes or disappears when the transfer student is required to study longer. As a rule of thumb, the break-even for total costs is between four-and-a-half and five years of total study. The break-even for government costs is between four and five years of total study.

Some Qualifications to this Cost Analysis

We should recognize that the preceding analysis is based on assumptions about students that do not apply in all cases. In particular it assumes that:

- The student knows at the time of admission to higher education that he or she wants to earn a degree and chooses his or her program and courses accordingly.
- The student who chooses the college-to-university transfer pathway is just as likely to earn the degree as the student who chooses the direct-entry university pathway.
- The student follows an efficient pathway, i.e., he or she takes only enough courses to earn the degree.
- Both pathways prepare the student equally well for the workforce or other goals.
- There is no difference in student aid costs among the cases.

The evidence reported above from Ontario and elsewhere shows that many students behave differently from these assumptions:

- Many successful transfer students do not decide to transfer until after they start their college pathways. For these students, the financial benefit of transfer comes from not having to repeat prior learning.
- Some students choose college because they do not have the required grades or entry subjects for university or may lack confidence in their learning skills. Ontario's increasing reliance on large university campuses and large lectures in introductory university classes may be especially unwelcoming for these students. The financial benefit of transfer for these students is that they are able to obtain a degree that otherwise they might never have achieved. We reported above that, in Ontario and other jurisdictions, the college transfer pathway is relatively more attractive to students with low incomes or from other underrepresented groups.
- We know very little about how many Ontario students graduate from university with more than the minimum number of credits required. Many U.S. states have decided that accumulation of excess credits is a major source of cost inefficiency. Although the number of excess credits is about the same for transfer students as for direct-entry students.

- We have very little information to test the assumption that both pathways prepare the student equally well for the workforce or other goals. In some cases the transfer student may be better prepared: college courses that do not transfer well to university may provide the student with important career-related skills that a direct-entry university program does not. This is the premise of some blended college-university programs such as those offered at the University of Guelph-Humber. Some limited evidence at the national level suggests that the combination of college and university leads to higher earnings for Liberal Arts graduates but not for university graduates in fields such as health and engineering (Kerr, McCloy, and Liu 2010, 24).
- Lower-income students in Ontario are more likely to attend colleges than university. Several other jurisdictions have found that lower-income students are more likely to start their baccalaureate studies at a college than at a university. The college-to-university transfer pathway may reduce the per-year cost of student assistance, because the student attending a college may pay lower tuition and is more likely to live at home. The principal driver of student aid costs will be program duration.

This cost analysis focuses on block transfers of credits from college to university. Additional analysis would consider the potential savings from course-by-course transfer from college to university, in cases where this pathway fits students' needs better. Popovic (2012) has shown how, even when a university grants credit for a college course, there may be no tuition saving to the student because of flat-fee tuition models that are not based on the number of university courses a student is taking.

We should also note that the relative costs of a student-year at a college and a student-year at a university are not unalterably fixed. Changes in government policy with respect to grants and tuition can change the cost to the government and the student. The actual costs experienced by a college or a university in delivering a program to a student may also change over time. At present universities typically have a cost disadvantage relative to colleges with respect to the compensation of full-time faculty and faculty teaching loads. They may offset this in part by offering larger class sizes, especially in the first two years of study, and/or by relying more on low-cost part-time faculty. Any of these cost drivers might change over time.

Implications: Possible Pathways for Ontario

The evidence from other jurisdictions suggests several ways that Ontario might move forward, of which three are of special interest:

- Creating two-year university transfer programs at colleges in Arts and Business
- Expanding pathways from college career-oriented programs to university
- Expanding pathways from college career-oriented programs to college degrees

It is not our purpose here to make a recommendation among these three pathways. They are not mutually exclusive. We do want to highlight the potential benefits and issues associated with each, based on the research we have presented.

Creating Two-year University Transfer Programs at Colleges in Arts and Business

We have projected elsewhere that the number of students seeking a baccalaureate education will increase by 50,000 to 104,000 FTEs between 2009 and 2025. This increase will be concentrated in the Greater Toronto Area, and it exceeds what the GTA universities can reasonably expand to accommodate based on current academic models and plans (Clark, Trick, and Van Loon, 2011). We suggested that the government should take the lead in developing a plan to accommodate the additional students, based on some combination of new teaching-oriented universities, expanding the number of students who choose three-year degrees, and increasing transfers from college to university.

Using the college-to-university pathway as a means of increasing the number of spaces for students in degree-level programs would be a new goal for Ontario. In effect the policy would be that, as part of an overall plan to accommodate students who seek a baccalaureate degree, the government will create a specified number of first- and second-year places in colleges, with the promise that students completing these two years could transfer smoothly to a university to complete their degree. The programs would be designed to transfer: in other words, the policy would require newly designed programs (or significantly revised versions of existing programs).

The two-year General Arts programs offered by some Ontario colleges might be a model. Examples from other jurisdictions suggest that the range of courses offered in a two-year university transfer program should be highly focused. By the end of two years, the student should have completed general education requirements and the introductory courses in his or her intended field of study. The university portion of the program should offer specialized courses as well as forms of experiential learning and services that help the student in making a transition to the workplace or further study. It would be reasonable to focus these programs in Arts and Business: these fields are attractive for a large number of students, they are compatible with the current academic strengths of both colleges and universities in Ontario, and they require little in the way of laboratories or other specialized infrastructure.

Such a policy would have merit if it could be shown that, compared with the option of expanding existing universities, this new pathway would provide better access for certain types of students, better education for certain types of students, and/or a lower cost to the student and the government. There is good reason to believe that it could provide better access and better education for some students, and it may also provide a financial benefit.

From an access perspective we know that colleges have succeeded in attracting many demographic groups that are statistically underrepresented at universities. Students from the lower income quartiles, Aboriginal students and students with disabilities are all well-represented on college campuses. Thirty-six per cent of college applicants come from communities with fewer than 50,000 people – higher than the share of Ontarians who live in communities of this size (28%). About two-thirds of college students entering directly from secondary school had marks above 70 per cent, and one-third had marks below 70 per cent (HEQCO (2010), Figures 2.1 and 2.2; Colleges Ontario (2011), Figures 11-16).

From an education perspective, colleges are primarily teaching-oriented institutions. The incentives for faculty are to be effective teachers. Colleges may engage in applied research, but there is little of the pull towards research that is characteristic of full-time university faculty positions. Large lecture halls are a rarity on college campuses: MYAA reports show that 59.8 per cent of college classes in 2010 had fewer than 30 students, and another 36.2 per cent had between 30 and 60 students. By contrast, 25 to 40 per cent of the first-year classes taught in most universities (and an estimated 80 per cent of the first-year seats offered) are in lectures of 100 or more students (CUDO, 2010 data). Even the largest college campuses have fewer than 18,000 students, compared with more than 50,000 students at each of the two largest university campuses that provide the majority of undergraduate seats in Toronto.

From a system planning perspective, this pathway may be especially valuable for regions where demand for direct-entry university spaces will exceed the supply (such as the Greater Toronto Area), or for communities that are not near a university (such as Barrie, Sarnia and Belleville) or where the mission of the local university does not emphasize broad accessibility to students whose secondary school marks are below the mid-80s (such as Kingston).

By implication, there may not be a pressing need to develop this college-to-university pathway in Arts and Business in cities that are already served by a university and a college and where no additional capacity will be required in the foreseeable future. In some regions, the population aged 18 to 24 is projected to decline steadily for the next decade or more. There is little reason for the provincial government to force an institution with declining enrolments to share its students with another local institution on a greatly expanded scale.

Quantifying the new goal would be important. As part of a plan for meeting the projected increase in demand, the government might reasonably set a target that 10,000 to 20,000 spaces will be created at colleges, where students will take the first two years of degree-level studies before transferring to third and fourth year at universities. Put another way, approximately 5 to 10 per cent of Ontario's first-year baccalaureate students would be attending colleges by 2025.

The potential savings for the government take several forms. We saw above that a 2+2 model is substantially less expensive for the student than a direct-entry university model. The cost to the government is about the same for both, because Ontario's university operating grant formula provides very low funding for Year One students in Arts and Science. The real benefits come in the form of greater access and higher success rates for students who might otherwise never complete a baccalaureate degree. Even if the programs required bridging courses for some students (equivalent to a 2+2.5 model), the economic returns would be high relative to those for a student who never enrolls in university or who does not complete.

Other financial benefits to the government come in the form of managing the shape of the higher education system. Every Ontario university that has a plan for future enrolments has set a goal of increasing the proportion of its enrolments that are in graduate programs. If the government accommodates all future undergraduate enrolments in the existing universities, it will quickly face expectations from each university to expand graduate enrolments in order to maintain and improve the graduate-to-undergraduate ratio. The high cost of graduate spaces should make this an unattractive proposition for the government. A better proposition would be to make it possible for participating universities to improve the ratio of their third- and fourth-year undergraduate spaces compared with their first- and second-year spaces.

A reasonable operational plan for creating this pathway would start by setting an enrolment target for these college-to-university transfer programs, within the context of a larger plan for accommodating enrolment growth. The enrolment needs should be broken down by region, and participating college and university partners need to be identified in each region. There is no need for universal coverage: arrangements are needed in Toronto and a few other cities. If more than one university is involved, the model of a university centre located at a college may be appropriate, with clear roles and accountability for each of the participating universities.

A critical incentive will be to fund targeted seats in these programs, so that both the colleges and the universities have a financial incentive to enrol students. Several universities and colleges, especially in the Greater Toronto Area, have little or no excess capacity; even with much goodwill, they cannot accommodate additional students unless the seats are funded. This targeted funding will provide an important basis for accountability.

Providing a transfer guarantee will be essential in gaining student acceptance of these programs. Several U.S. jurisdictions provide priority to transfer students over students entering directly from secondary school, although typically these jurisdictions have system-wide university governance and so the student is guaranteed a space somewhere in the university system rather than at any particular university. Given the propensity of transfer students to seek transfer within their own region, a regionally based transfer guarantee might be more attractive in Ontario. For example: "A student who completes the two-year program in Arts [or Business] at College X with an average grade of B or better will be guaranteed admission to third year in University Y or University Z in the same region, but not necessarily to the university of first choice or program of first choice." Encouraging institutions within the same region to develop transfer arrangements will be more achievable than province-wide arrangements and will build on relationships that in many cases are already in place.

This pathway may relate to the government's commitment to establish three innovative postsecondary campuses. Several colleges have expressed interest in changing their status to be able to offer university degrees while continuing to offer many of their diploma and certificate programs. The evolution of selected colleges into teaching-oriented universities in Alberta and British Columbia has caused many potential transfer students to transfer within their own institution – moving from a diploma program to a degree program

within the same institution. Teaching-oriented universities of this sort may have institutional capacity to manage diploma-to-degree transfers successfully without the issues that arise in trans-institutional transfer. They may also develop capacity to accept a large number of transfer students from colleges.

This pathway may also be consistent with the government's expressed interest in three-year degrees. While existing models in Ontario and elsewhere typically focus on the four-year degree, there is no reason in principle why they would not work with a three-year credential, subject to appropriate university residency requirements.

Expanding Pathways from College Career-oriented Programs to University

Ontario has devoted two decades of public effort to creating and expanding pathways between college career-oriented program and university programs. Many strong pathways have developed. Special-purpose grants have been provided to assist with start-up costs and evaluation of individual programs. In recent years there has been a welcome move towards multilateral arrangements that create opportunities for more students. Yet there is also frustration and a sense – difficult to prove with the available data – that many students are unnecessarily prevented from transferring and completing a university degree, or, if they do transfer, are given too little credit for what they have already learned. Policy has sometimes proceeded on the premise that cooperation between large organizations is a natural state of affairs, despite manifest evidence from both public and private organizations that this is not so (Boggs and Trick 2009, 2-4).

Creating pathways from college career-oriented programs to university has not been easy in any jurisdiction we studied. Most U.S. states have made little progress on this front: their large transfer numbers primarily derive from offering the first two years of university at colleges in General Arts or similar non-vocational fields. British Columbia and Alberta have had more success, based partly on a longstanding culture of colleges and universities working together, and founded on a policy that (until recent years) tightly constrained the number of first-year university spaces available. Kentucky and Washington have introduced innovative university programs designed to help graduates from career-oriented college programs complete a university baccalaureate.

The literature from the United States has found three basic types of degrees for students who begin in a career-oriented college program:

- **Career ladder programs** offer a substantial number of upper-level courses in the technical major of the applied associate degree, in addition to general education courses.
- **Inverse (or upside-down) degrees** are typically titled bachelor of general studies, bachelor of professional studies, or bachelor of applied studies. The student takes technical courses and some general education courses in the first two years at college, then transfers to university for upper-year courses in a field of specialization as well as upper-year electives.
- **Management ladder degrees** are a specialized form of inverse degree that provides the degree recipient with organizational and supervisory skills for a managerial position. Many of these degree programs emphasize human resources and organizational development as their subject matter. Recipients of this degree frequently seek to advance into supervisory positions in the technical fields where they have substantial work experience (Ignash and Kotun 2005, Bragg and Ruud 2011, Ignash 2012; see also Clark, Moran, Skolnik, and Trick 2009, 158, and Skolnik 2010, 7).

Many of Ontario's current efforts focus on career ladder programs. They sometimes founder because the student's two years of college are not the same as what would be taken in the first two years of university, and so the focus of college-to-university discussions is what the student needs to "make up" in order to enter university at the third-year level. The other two models – the inverse degree and the management ladder degree – may be easier to negotiate, because the university and the college have distinct roles. They may also provide better workforce preparation for the career-oriented student.

A reasonable operational plan for expanding pathways from college career-oriented programs to university would start by setting an enrolment target. Setting clear goals and clear measures of success would go a long way to reducing the contention that often arises on college-university issues. In some jurisdictions the goal is simply to ensure that students who transfer do not repeat prior learning; whether the number of transfer students is large or small is considered unimportant. If this is the Ontario government's goal, better data collection would assist in confirming whether the goal is being achieved.

In other jurisdictions, the flow of students from colleges to universities is an important part of meeting the jurisdiction's overall goals for baccalaureate attainment and workforce preparation, and so the number of students transferring is very important. If the Ontario government establishes quantitative goals for transfer, it will be important to break these down by region and program area. We have seen that most Ontario students who transfer do so within their own geographic region. While system-wide agreements are desirable, Ontario lacks any institutional basis for imposing academic decisions on the 20 universities and the 24 colleges, and there is not a strong tradition of the two sectors working together on a province-wide basis. The development of a culture of academic cooperation would be highly desirable, and others have shown that it is essential for effective system-wide arrangements (Jones and Skolnik 1993; Jones, Skolnik, and Soren 1998). But current discussions in Ontario about institutional differentiation have increased anxieties among institutions, and these may for the time being make it difficult to build relationships of trust where these do not already exist.

In the near term, provincial goals may be more readily achieved by building on regional partnerships, and by holding institutions accountable for building partnerships in regions where no effective partnership exists. A set of transfer relationships that covers every region would be a significant and achievable step forward. Once established, these transfer arrangements can be opened to students from other regions as well. Targets and deadlines have been shown to be effective in other jurisdictions. For example, we note that Kentucky has had significant success simply by mandating that every university should create at least one degree program (using the inverse degree model or management ladder model) that allows graduates from any two-year career-oriented college program who have achieved a minimum grade point average to complete a baccalaureate in two additional years of study.

One of the building blocks of a policy to support a larger number of students moving from college career-oriented programs to university should be financial incentives to enrol transfer students. Long experience shows that, when the Ontario government funds university seats that are reserved for certain types of students, universities will make every effort to find qualified students to fill those seats. For universities, finding and enrolling transfer students is not as easy as finding and enrolling secondary school students: the latter exist in very large numbers, there are well-established processes for marketing to them, they present their marks in a standard and easily assessable format, and once enrolled they potentially stay enrolled for four years. In most cases it is much easier to fill a university seat with a direct-entry student than to find a transfer student. Government funding for university seats reserved for transfer students would go a long way to redress this imbalance of incentives. Such funding might be made conditional on the student having completed a college credential and being granted a minimum level of advanced standing. California and Scotland provide two models of how funding for dedicated seats can be provided.

It is reasonable for the government to expect that pathways from college career-oriented programs to university should be designed in a way that saves money for the government. We observed earlier that a 2+2 transfer arrangement in Ontario is almost always cheaper for the government than a four-year direct-entry university program. This saving for the government starts to disappear if the total program exceeds four years. The tuition saving for the student also starts to disappear as programs grow longer, and the opportunity cost is much higher. Yet the gold standard of 2+2 arrangements has proved elusive in Ontario. The transfer arrangements we observed in Ontario have total program lengths of four and a half to five and a half years – sometimes due to a deliberate effort to make university transfer available to college entrants with weaker academic preparation, and sometimes due to imperfect alignment between college and university programs, especially with respect to mathematics and science. We do not question the value of these programs, especially when they provide a route to a degree for students who would otherwise not attain one. When new transfer arrangements are developed, the government might do well to set a target for overall program length

and challenge the partners to design courses to meet this target. For example, universities have reported that many college graduates who transfer to university are under-prepared in mathematics: colleges might offer enhanced mathematics courses for students wishing to transfer, so there is less need for universities to teach additional mathematics to students after transfer.

Expanding Pathways from College Career-oriented Diploma Programs to College Degrees

A third potential pathway is to give greater attention to student transfer from college diploma programs to college degree programs. The objective would be to give more students access to baccalaureate degrees, while avoiding many of the challenges that students in career-oriented college programs face in transferring from college to university. It would improve on the current transfer pathway from college diploma programs to college degree programs, which, where it exists, normally involves a total of five years of study (i.e., 2+3 or 3+2).

The new pathway might take any of several forms. One approach would be to see colleges' three-year programs become degree-level programs, with appropriate modifications. This change alone could greatly expand the number of degrees awarded. In most cases the curriculum in the first two years of a three-year program overlaps with the curriculum of a related two year-program, so transfer from a two-year program to a degree program could be achieved. A caveat is that each college offers three-year programs only in selected fields of study, so many two-year students would need to transfer to another college to complete the third year.

A more thorough approach might seek to align colleges' two-year programs with their three-year degree programs and four-year degree programs, where these exist – much as a university student with a three-year degree and adequate marks can proceed with little difficulty to a four-year degree in the same field. Adopting this approach would in many cases require a significant re-write of the curriculum for the three-year program or four-year program or both. The reason is that, when four-year degrees at colleges were introduced in 2000, distinct quality standards were applied to make them comparable in quality to university degrees. Standards adopted by the Postsecondary Education Quality Assessment Board discouraged colleges from structuring their degree programs as an add-on to the existing three-year programs (Postsecondary Education Quality Assessment Board 2006, 17). This approach was formalized in two documents – the 2007 Ministerial Statement on Quality Assurance in Degree Education in Canada and the Ontario Qualifications Framework – that confirm a single standard of quality for baccalaureate degrees, offered by either universities or colleges.

The Ontario Qualifications Framework also confirms that college baccalaureates are intended to prepare students for graduate study as well as employment. In introducing college degrees in 2000, the government was silent about whether the degrees would prepare students for graduate study. This issue eventually proved impossible to avoid. Universities initially raised doubts about whether graduates from college degree programs would receive full consideration for admission to graduate programs (Alphonso 2006). The universities subsequently promised that “[e]ach applicant [would be] considered on his or her own merits, according to standards set by each institution, program by program” (Council of Ontario Universities 2006). In practice, very few college baccalaureate graduates proceed to university graduate or professional program within six months of graduation: in the past three years, 1.3 per cent of graduates have done so. By comparison, six months after graduation, 13 per cent of university graduates from 2009 said they were in graduate school and another 10 per cent said they were in a university professional school (MTCU, Survey of Graduates, special tabulation). Whether the low rate of transfer from college degree programs to advanced studies at universities is due to students' lack of interest, the absence of graduate programs with a high affinity to the college degree programs, or other constraints in the transfer process is unknown.

The important lesson from this experience is that some college degree students will eventually want to proceed to advanced education. The government and the colleges will want to be clear with them up-front about whether this will be possible and, if so, what steps will be taken to ensure that these degrees will be

fairly recognized in the admissions process for graduate and professional education. This is true for degrees awarded by colleges, and it is also true for inverse transfer degrees and management ladder degrees if those models are adopted.

Conclusion and Areas for Further Research

The premise of comparative public policy is that jurisdictions can learn from one another, even though differences in economic, cultural and political factors make it unlikely that a jurisdiction will choose to duplicate exactly policies from other jurisdictions. Our research from other jurisdictions has suggested a number of relevant factors to consider in designing better college-to-university pathways for Ontario. We have suggested here three pathways that merit further consideration.

These three pathways are not mutually exclusive, and in fact they could be combined in ways that serve students well while respecting the diverse transfer arrangements that now exist. One could imagine, for example, a policy such as this:

- Every student who graduates from a two-year college program with adequate marks will be guaranteed admission to a baccalaureate degree program in his or her region. This program may be either a university program or a college program, it may be either a three-year program or a four-year program, and it may not necessarily be the student's first choice of institution or program.
- Every student who graduates from a three-year college program with adequate marks will be guaranteed admission to an honours baccalaureate program. This program may be either a university program or a college program, and it may not necessarily be the student's first choice of institution or program.
- The transferring student may be required to take a bridging program of up to one semester in length.
- Exceptions to this policy will be clearly noted at the time the student applies to his or her initial college program.

With such a policy in place, Ontario could measure progress by determining how many programs are exceptions to the general rule. The policy could be accompanied by quantitative targets for transfer, if the government determines these are required as part of a broader strategy for accommodating student demand for baccalaureate degrees. It could also be accompanied by financial incentives to support curriculum redevelopment and to ensure that an adequate number of places are made available for transfer students, and by accountability requirements and deadlines where voluntary arrangements are inadequate.

In the course of our research we have noted a number of related issues that are worthy of further research. Some of these are being investigated as part of the Higher Education Quality Council of Ontario's current work on non-traditional student pathways.

- **Alignment of learning outcomes:** Mobility and credit transfer would be facilitated if we had a clearer understanding of the learning outcomes associated with each postsecondary education in each field of study. HEQCO has initiated a project to assess the applicability of the European Tuning initiative in Ontario, bringing faculty members from various disciplines together into sector groups of social sciences, physical sciences and life and health sciences to identify learning outcomes across diploma, degree and master's levels.
- **University-to-college transfer:** There is a large flow of Ontario students who make their way from university to college. The Survey of Graduates shows that 11 per cent of Ontario university baccalaureate graduates from 2009 were attending a college six months after graduation and 10 per cent were doing so two years after graduation. Many college programs are one year in duration, so the aggregate is greater than either of these figures. Student surveys show that 16.5 per cent of college students in 2007-2008 had previous university experience, with half of those having completed a university degree (Colleges Ontario 2009, 3). There is much that could be learned about

the reasons for these transfers, cost issues, and student success in college. Many colleges have successfully created one-year career-oriented programs marketed to university graduates. The combination of a three-year university degree and a one-year college program provides an alternative for students who would otherwise pursue a four-year honours degree.

- **Complex pathways:** There is increasing evidence that large numbers of students create their own pathways rather than following the pathways that higher education experts design. Institutional loyalty appears to be in decline as students move from one institution to another to pursue their educational goals in the face of a rapidly-evolving job market, family responsibilities, employment responsibilities, and other challenges. When students use the higher education system in ways that differ from the designers' intentions, there may be an opportunity to re-think and re-design. Learning more about the reasons for complex pathways, and the extent to which students successfully navigate them, may tell us more about how to design effective transfer arrangements that meet students' needs and avoid the accumulation of excess credits.
- **Pathways to graduate and professional programs:** Ontario's admission processes to graduate and professional programs are highly decentralized, and we have far less information about them than we do about admissions from secondary school to colleges and universities. Public acceptance of new pathways to the baccalaureate degree will depend in part on assurance that students taking new pathways will be treated fairly if they choose to apply to graduate and professional programs. As we move from a highly elite graduate system to a more accessible one, we should care about how well this pathway is working. It has been argued that Ontario is producing more Ph.D. graduates than the academy can accommodate while at the same time under-producing career-oriented master's degrees in Business and other fields (Clark, Trick, and Van Loon 2011, 108-113; Martin and Milway 2007, 8). Effective planning of graduate and professional studies, including effective pathways for undergraduate students from universities and colleges, will be an increasingly important factor in the success of Ontario's higher education system.

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