



Third-Year Review of the Indirect Costs Program

Final Review Report

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For:
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Executive Summary

Introduction

The Indirect Costs program was established in 2003 to provide support for a portion of the indirect costs of federally funded research incurred by Canadian institutions. Funding under the Indirect Costs program has increased from \$225 million in 2003-04 to \$260 million in 2005-06. In addition to the contribution of the federal government, the provinces are also expected to provide financial support for the indirect costs of research (supported in part by the federal government through the Canada Social Transfer).

Along with other research funding programs, the Indirect Costs program is expected to improve the Canadian research system, compliance with regulatory requirements, and knowledge transfer and commercialization. Further, the program is intended to develop research capacity at smaller institutions. The program supports these objectives by funding research facilities, library and other resources, management and administration of the research enterprise, accreditation and regulation activities, and knowledge transfer.

Objectives of the Review

The Treasury Board submission that resulted in the creation of the Indirect Costs program included a requirement to review the program in its third year in order to:

- examine the design and operations of the program and identify potential adjustments;
- assess whether the program is progressing towards meeting its objectives and identify the extent to which it has resulted in immediate outcomes.

The review process was guided and overseen by an Inter-agency Evaluation Steering Committee composed of representatives of the three granting agencies and Industry Canada as well as observers from the Department of Finance, Treasury Board, Industry Canada and Indirect Costs Secretariat.

The Inter-agency Evaluation Steering Committee commissioned an independent education and evaluation research firm, R.A. Malatest & Associates Ltd to carry out the review.

Methodologies

As part of this review, multiple lines of evidence were used to address review issues. A summary of the methodologies follows:

- review of program documentation and administrative data:
- Documents related to the inception of the program including the Results-based Management and Accountability Framework/Risk-Based Audit Framework (RMAF/RBAF), Memorandum to Cabinet, Treasury Board submissions etc.
- program and granting agency administrative data

- institution-affiliate agreements (73 agreements representing 51 affiliates)
- outcomes reports (2003/04 and 2004/05)
- request forms (2003/04, 2004/05 and 2005/06)
- statements of account (2003/04 and 2004/05)
- analysis of 67 similar initiatives in Canada and internationally
- interviews with 23 stakeholders and 20 institution representatives
- surveys with 75 institutions (response rate of 70.8%)
- On-site case studies (8) with institutions across Canada

Limitations of the current evaluation methodology include:

- short time frame since the implementation of the Indirect Costs program in 2003/04, limiting the ability to assess early program results;
- variation in the quality of outcome data, as well as incomplete outcome report data for 2004/05;
- limitations of survey, outcomes reports, and other self-report data due to errors associated with memory or potential for misunderstanding questions;
- challenges in estimating an appropriate rate of indirect costs due to difficulties comparing programs in other jurisdictions to the Indirect Costs program, and difficulties that institutions experienced in estimating their actual indirect costs of research as part of the case studies.

Findings

The following conclusions emerged as a result of the third-year review:

Design Issues – Program Management:

1. **Communication with institutions.** Communications with institutions and reporting requirements were described as clear by institutions. However, data reported in outcomes reports vary in quality and reliability. While the majority of institutions indicated that reporting requirements were clear, over one-third (40 of 111 institutions) were required by the program to resubmit their 2004/05 outcomes reports in most cases because expenditures had been reported in the wrong categories or because the qualitative data was insufficient.

2. **Reporting – meaningfulness of outcome data.** Not all quantitative measures tracked by the program are viewed as meaningful by institutions. Indeed, some measures, such as the proportion of researchers involved in international research, were not tracked by institutions.

Alternative measures suggested by institutions included:

- level of deferred maintenance (in \$);
- number of square feet renovated;
- growth in the research enterprise (research funding); and
- changes in library holdings.

Design Issues – Current Design and Alternative Delivery Models

3. **Funding formula.** Funding sources (i.e. eligible granting agency expenditures) included in the formula are consistent with the program objective of helping institutions “make optimal use of the total federal investment in academic research.” Accordingly, research funding from other sources such as provinces, , not-for-profit organizations, and private sector research funding is excluded from the funding formula.

The funding formula is appropriate and accepted by a majority of institutions, perhaps because institutions are familiar with it (the formula is also used to allocate Canada Research Chairs). Smaller institutions experiencing rapid growth in the level of federal research funding experienced a lag in indirect costs reimbursement; however, overall the three-year historical average used to calculate institutions’ allocations helps to smooth out year-to-year fluctuations in funding.

4. **Eligible indirect costs.** Institutions interviewed as part of the review identified a gap in available funding for basic equipment, as opposed to “state of the art” equipment. Other suggestions for expansions to the list of eligible costs included: start-up funds; funds for teaching release; and travel. However, without additional program funding, expansions to the list were viewed as of limited usefulness.
5. **Level of funding.** The rate of funding for the Indirect Costs program (19.6%¹) was on par with or lower than international rates of funding. Other countries reimburse indirect costs of research at rates ranging between 20% and 50%.² Challenges in generalizing findings from the international review include: differences between the expenses covered by international programs and those covered by the Indirect Costs program; and different support mechanisms used in Canada and other countries, which makes estimation of the rate of reimbursement for indirect costs difficult to calculate.

Since the Indirect Costs program was established, its funding has declined as a percentage of eligible granting agency expenditures (historical three-year average) by 7.6%. This decline affected large institutions the most, as described later in this section.

¹ Defined as Indirect Costs program funding for 2003/04, divided by the eligible tri-council research grants for the same year.

² Multiple rates of F&A reimbursement were reported in the literature (United States).

- 6. Delivering program funds to affiliates through parent institutions.** The program requires that institutions (i.e., parent institutions) and their affiliates develop a mutually acceptable agreement concerning the distribution of Indirect Costs funds.

Six out of eight affiliates interviewed reported dissatisfaction with the distribution of funds. Several affiliates found that the current approach lacked transparency. However, the current approach is advantageous given the wide variety of services provided by parent institutions to affiliates, as well as the significant cost associated with treating affiliates separately. It allows both parent institutions and affiliates to determine an appropriate distribution of program funds.

- 7. Current delivery mechanism relative to alternative delivery models.** Key components (funding formula, eligible costs etc.) of the current delivery model were examined as described above . In addition, the current model was assessed against potential alternative models based on efficiency and accountability. Alternative delivery models included administering program funds through the granting agencies, delivering funds through the Canada Social Transfer, and administering funds using a contribution funding model. Review results did not identify any issues with the current model that would warrant changes at this time. An in-depth analysis of alternative delivery models should be carried out during the summative evaluation when more data is available on program outcomes.

Program Results:

- 8. Incremental use of program funds.** Incremental use of funds was at times difficult to establish mainly because institutions administered program funds through one central budget. Three of eight institutions included in case studies requested that the expectation for incrementality be clarified, particularly in light of future evaluations.

Based on interview research and a review of documentation, four provinces have implemented changes to funding for the indirect costs of research, most significantly in Québec. While none of these provinces reduced their funding overall for post-secondary education,³ the results of the current review do indicate that some provincial governments may be redirecting funds away from support for indirect costs of research.

Survey of institutions indicated that prior to the Indirect Costs program, the primary source of funding indirect costs of research was institution operating funds, and for 28 institutions,⁴ student tuitions. Institutions surveyed reported that some of the expenditures would not have occurred without the Indirect Costs Program.

During the course of the third-year review institutions reported that financial pressures had lessened as a result of the program. However, institutions still reported shortfalls in indirect costs funding.

³ Or education generally for Québec.

⁴ This figure is likely higher than that reported in this report, since institutions were not asked specifically about use of student tuitions.

9. **Setting the stage for the sixth-year evaluation.**

Given the challenges associated with incrementality, evaluating program results and establishing logical linkages between impacts and program funding will be difficult.

Potential results/measures that can be examined as part of the sixth-year evaluation include deficits, levels of deferred maintenance, use of research or technical equipment and number of researchers serviced using research equipment, changes in/use of library holdings and development of databases and other research resources, and improved quality of animal care facilities.

10. **Immediate Program Outcomes.**

Research facilities represented the largest area of investment, comprising 39% of program funds in 2003/2004. Common uses of program funds were renovation of research facilities (79.4% of outcomes reports in 2003/04 and 84.3% in 2004/05), custodial and security services (45.6% in 2003/04 and 39.2% in 2004/05), and technical support to researchers (30.9% in 2003/04 and 56.9% in 2004/05).

Research resources also represented a significant area of program investment, comprising 22% of expenditures. The most common uses of program funds included journal subscriptions (68.7% of institutions in 2003/04 and 67.2% in 2004/05), and computing and communications upgrades (44.6% in 2003/04 and 45.3% in 2004/05).

Management and administration of the research enterprise accounted for 28% of Indirect Costs program expenditures. The most common areas of investment included management of research grants and research funding (65.2% in 2003/04 and 68.1% of 2004/05) and general institution support for researchers (61.8% in 2003/04 and 55.1% of 2004/05). Half of institutions interviewed reported hiring grant facilitators or a similar function (7 of 14 institutions) with program funds.

Funding for regulatory requirements and international accreditation standards represented a more modest area of investment, accounting for 5% of expenditures. Common areas of investment in this expenditure category included support for behavioural and biomedical ethics boards (63.2% of institutions investing in this area for 2003/04 and 71.8% in 2004/05), and recruitment or salary support for employees devoted to meeting regulatory requirements (52.6% in 2003/04 and 61.5% in 2004/05).

Management of intellectual property accounted for 6% of institutions' investments in 2003/04. Institutions reported that the average increase in funding for research commercialization and technology transfer was 17.5%. Based on a comparison between institution spending on IP and reported increases in Canadian commercialization reported by secondary sources,⁵ it is likely that most of the Indirect Costs grant was directed at expenses that existed prior to the Indirect Costs program.

⁵ Statistics Canada, Survey of Intellectual Property Commercialization in the Higher Education Sector, 2001, 2003.

11. **Effect on smaller institutions compared to larger institutions.** Based on program administration data, small institutions⁶ have retained a stable program funding rate since the implementation of the program; in comparison, large institutions⁷ have witnessed a decline in program funding from 22.8% to 19.4%.⁸ Further, large institutions witnessed a more rapid growth in tri-agency research funding (46.7%) between 1999/2000 and 2003/04 compared to small institutions (22.3%).
12. **Unintended effects.** There were few unintended effects. For a minority of institutions, conflict was reported within institutions over the use of program funds.

Health charities felt that their research funding would be viewed as “second tier” since it does not include support for indirect costs of research. However, health charity representatives interviewed reported no measurable effect of the program at this point on applications received or quality of research funded by health charities.

Recommendations

The following seven recommendations have been presented based on the evidence collected as part of the review:

1. **Retain the existing program delivery model.** At the current time, no significant issues were identified which would warrant modifying the program delivery model including flowing funds through the parent institutions to affiliates. However, a more in-depth analysis of alternative delivery models should be completed as part of the sixth-year evaluation.
2. **Clarify government expectations of institutions and the program in terms of incrementality.** Further information on allocation of funds to existing and new needs will assist institutions to plan expenditures and clarify expectations with respect to the Sixth Year Evaluation.
3. **Revise institution reporting requirements.** The following modifications to reporting requirements are recommended:
 - Reporting requirements should be revised based on the logical linkages identified in the current review.
 - Outcomes reports should capture data on new investments as well as investments to maintain existing research support services.
 - Given the variability in quality and reliability of data captured through the outcomes reports, controls should be implemented to verify the validity of outcome reporting.
 - Reporting requirements should be re-examined for institutions falling below a defined threshold of Indirect Costs grant.

⁶ Defined as those institutions receiving less than \$50M or more in tri-agency funding in 2003/04

⁷ Defined as those institutions receiving \$50M or more in tri-agency funding in 2003/04

⁸ This analysis does not include the recent increase of \$15M in program funding.

4. **Establish a specific rate of indirect costs (higher than the 2003-04 rate) in order to ensure a stable funding level.** The current review indicated that the level of indirect costs funding has declined relative to granting agency funding. A stable rate of indirect costs (calculated as a percentage of direct research funding) should be maintained in order to achieve program objectives, and allow institutions (particularly large institutions) to plan their expenditures. The Indirect Costs funding rate should be revisited as part of the Sixth Year Evaluation based on results particularly with respect to strategic or incremental areas.
5. **Monitor the changes in funding of provinces and implement a mitigation strategy to address the risk of redirecting money.** In light of the results of the review, the risk of provinces in redirecting monies is real and should be monitored closely. The program should develop and implement a mitigation strategy for this risk since it can affect the program's ability to meet its objectives.
6. **Develop a best practices guide to document exemplary use of program funds among institutions.** This best practices guide would be developed in consultation with a sample of institutions to encourage the sharing of best practices with respect to the implementation of the program at the institution level as well as the reporting of program funds. This should include affiliate institutions and highlight agreements perceived as effective between affiliate and parent institutions.

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1. Introduction and Evaluation Methodology

1.1 Program Description

1.1.1 Background

Research conducted at Canadian institutions is financed via a dual support mechanism of federal and provincial government funding. Under this system, provinces have provided basic physical infrastructure and operating costs – supported in part through the federal government through the Canada Social Transfer program – and the federal government has provided funds to support the direct costs of research.⁹ However, due to the increasing complexity of research activities, and an increase in federal investment in academic research of \$920 million through the granting agencies between 1998/99 and 2001/02,¹⁰ institutions reported escalating financial pressures associated with federally supported research activity.

In 2003, the Government of Canada announced \$225 million per year in funding for a new program to support a portion of the indirect costs of federally funded academic research. The annual program budget was increased to \$245 million in 2004-05, and to \$260 million in 2005-06.

The program is managed by a Steering Committee composed of the Presidents of the Social Sciences and Humanities Research Council (SSHRC), the Canadian Institutes of Health Research (CIHR) and the Sciences and Engineering Research Council (NSERC) as well as the Deputy Minister of Industry Canada.

The Secretariat of the Canada Research Chairs program, housed at SSHRC, is responsible for the administration of the Indirect Costs program. The Secretariat reports to the Steering Committee on the progress of the program on an ongoing basis. In 2003/04, the operational budget comprised 0.26% of the total program budget (\$589,000 of \$225M in 2003/04).¹¹ It has been recently increased to \$ 945,000¹² (0.36% of the total program budget).

⁹ In 2004/05, the Government of Canada transferred \$14.9 billion to the provinces as part of the Canada Social Transfer, which was intended to provide support for post-secondary education, social assistance and social services. <http://www.fin.gc.ca/budget05/bp/bpc3e.htm>. Funding is provided by the federal government through the Canada Health and Social Transfer (the Canada Social Transfer started in 2004-05). Includes cash and tax transfers. http://www.fin.gc.ca/facts/tfsh2_e.html

¹⁰ Budget 2005, <http://www.fin.gc.ca/budget05/bp/bpc4be.htm>

¹¹ Source: Treasury Board Submission

¹² Treasury Board Submission for addition \$15 million (August 2005).

1.1.2 Program Objectives

The goal of the program is to enable eligible universities, colleges and their affiliated research hospitals and institutes make optimal use of the total federal investment in academic research. In addition, the program is intended to help smaller post-secondary institutions, which cannot benefit from the economies of scale realized by large institutions, and address challenges to increasing their research capacity.¹³

It is expected that in the medium term, support for the indirect costs of research, along with other sources of direct and indirect research support, should improve:

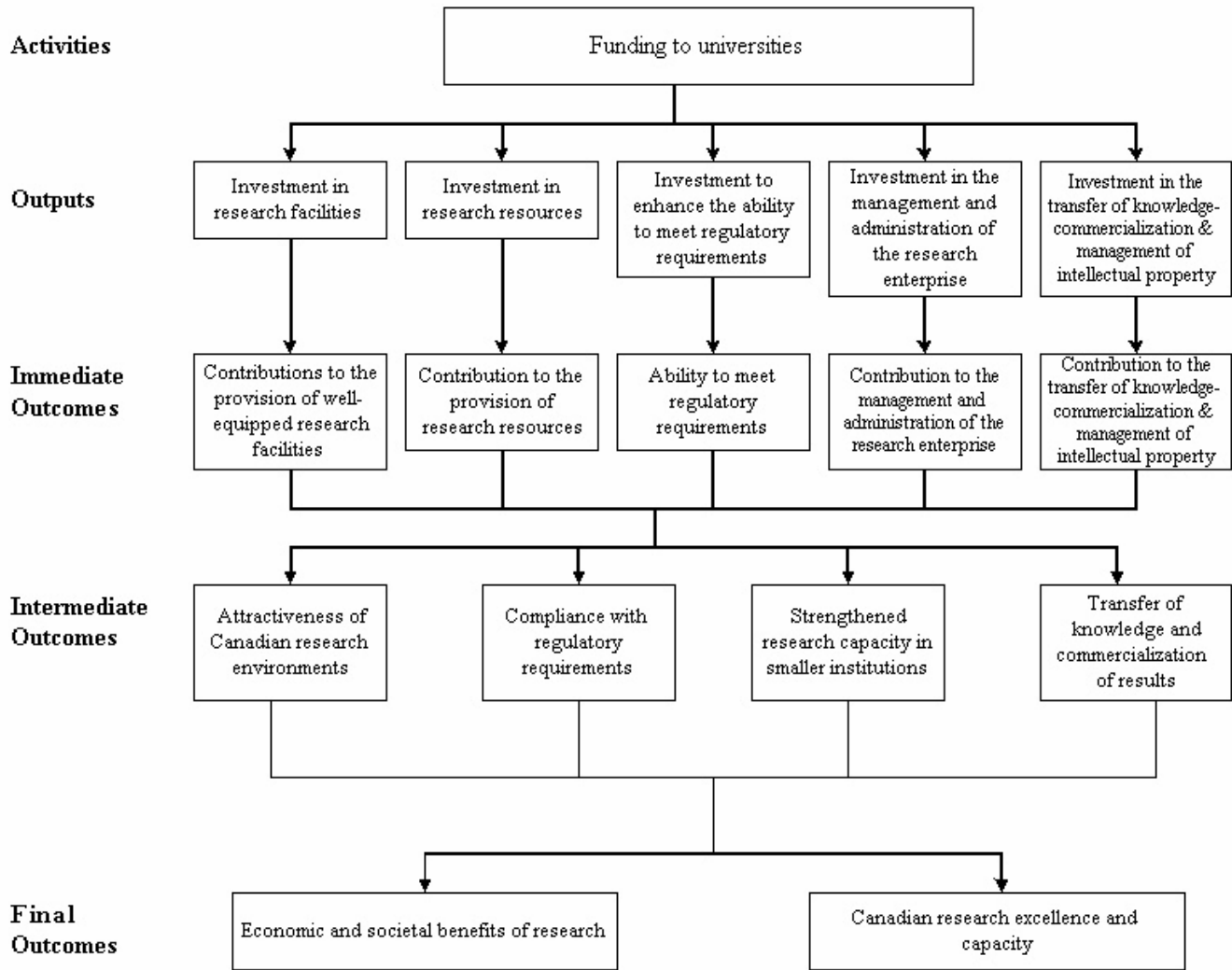
- the attractiveness of the Canadian research environment, which will be reflected in an increased capacity to retain and recruit high quality researchers;
- the research capacity at small institutions;
- compliance with regulatory requirements, particularly: animal care, human subjects research ethics, and radiation and biohazard; and
- transfer of knowledge and commercialization of results, which will be reflected in the rates of transfer and commercialization as well as in the number of spin-off companies, patent applications and licenses.

Exhibit 1.1 presents the short-term, medium term, and long term outcomes of the program in the form of a logic model.

¹³ Results-based Management and Accountability Framework and Risk-Based Audit Framework, June 2003, p. 4.

EXHIBIT 1.1: Logic Model

Support for Indirect Costs of Research - Logic Model



1.1.3 Definition of Indirect Costs

The term “indirect costs” refers to the central and departmental administrative costs that institutions incur to support research, but are not attributable to specific research projects. Indirect Costs grants may be used for expenditures falling into the five eligible categories as summarized in the table below. Institutions are free to allocate program funds across the five expenditure categories as they see fit.

EXHIBIT 1.2: Expenditures Eligible under the Indirect Costs Program

Expenditure Category	Eligible Expenditures
Facilities	<ul style="list-style-type: none"> ➤ Renovation and maintenance of research spaces and equipment. ➤ Technical support for laboratories, offices, animal care and other facilities. ➤ Custodial, security, utility, leasing and capital planning costs associated with research spaces and research equipment. ➤ Insurance on research spaces.
Resources	<ul style="list-style-type: none"> ➤ Acquisition, custodial, security, utility, leasing, and capital planning costs associated with libraries, databases, telecommunications, and information technologies, systems and research tools. ➤ Insurance on research equipment and vehicles.
Management and Administration	<ul style="list-style-type: none"> ➤ Research planning and promotion. ➤ Help for researchers to prepare research proposals. ➤ Public relations. ➤ Training of faculty and research personnel. ➤ Financial and other administrative services. ➤ Acquisition, maintenance and upgrade of information systems to track grant applications, certifications and awards. ➤ Human resources and payroll, including the salaries and benefits of employees who support the research enterprise, and who are not already funded through a direct research grant. ➤ Purchasing, audit, health and safety costs.
Regulatory Requirements and Accreditation	<ul style="list-style-type: none"> ➤ Creation and support of regulatory bodies. ➤ Training of faculty and other research personnel in animal care, ethics review, radiation and biohazards. ➤ Costs for international accreditation related to research capacity. ➤ Upgrades to facilities and equipment to meet requirements.
Intellectual Property	<ul style="list-style-type: none"> ➤ Creating, expanding or sustaining a technology transfer office or similar function. ➤ Reports of invention patent applications, licensing, and creation of spin-off companies. ➤ Communications and outreach activities undertaken to transfer knowledge through venues not eligible for funding under other federal programs. ➤ Marketing of teaching materials, scientific photo libraries, survey instruments, statistical packages, data sets and databases, software and computer models.

Source: Indirect Costs program website: http://www.indirectcosts.com/using/costs_e.asp

Program funds may not be used to support the direct costs of research projects, including the salary of the principal investigator or other members of the research team, direct and indirect costs of educating students, indirect costs supported by programs such as the Canada Research Chairs program and the Canada Foundation for Innovation, or capital expenditures.

1.1.4 Funding Formula

Any degree, applied degree or diploma granting Canadian post-secondary institutions whose researchers have received research grants from at least one of the three granting agencies during the three most recent fiscal years may receive a grant for indirect costs, subject to a number of conditions.¹⁴

The method used to allocate program funds¹⁵ is based on the amount of research funding awarded to eligible institutions by the three granting agencies, averaged over the three most recent years (three-year rolling average). The formula provides for a progressive range of rates, with higher rates applying to institutions that receive less funding from the federal granting agencies (SSHRC, NSERC, CIHR) in order to help smaller institutions that cannot realize the economies of scale available to larger institutions.

Each year, available program funds are distributed among the eligible institutions using the funding formula shown in Exhibit 1.3 below.

EXHIBIT 1.3: Indirect Costs Program Funding Formula

Average value from NSERC, SSHRC or CIHR research grants	Funding for indirect costs
First \$100,000	80%
Next \$900,000	50%
Next \$6 million	40%
Balance	Percentage calculated annually, based on the total amount available

Source: Program Guide. The rate of funding of indirect costs is expressed as a percentage of the average research funding (i.e., direct costs) that an institution has received over the three most recent fiscal years for which data was available.

1.1.5 Objectives of the Review

The Treasury Board submission that resulted in the creation of the Indirect Costs program included a requirement to review the program in its third year in order to:

- examine the design and operations of the program and identify potential adjustments;
- assess whether the program is progressing towards meeting its objectives and identify the extent to which it has resulted in immediate outcomes.

As outlined in the program integrated Results-based Management and Accountability Framework and Risk-based Audit Framework (RMAF/RBAF), a comprehensive evaluation will also be completed during the sixth year of the program to assess whether the program has achieved its objectives.

The review process was guided and overseen by an Inter-agency Evaluation Steering Committee composed of representatives of the three granting agencies and Industry Canada as well as observers from the Department of Finance, Treasury Board, Industry Canada and Indirect Costs Secretariat. The Inter-agency Evaluation Steering Committee commissioned an independent education and evaluation research firm, R.A. Malatest & Associates Ltd to carry out the review.

¹⁴ Results-based Management and Accountability Framework and Risk-Based Audit Framework, June 2003, p. 3.

¹⁵ Modeled on the method used to allocate Canada Research Chairs.

1.2 Description of Evaluation Issues

For the purposes of the third-year review, evaluation issues were grouped into two categories, as follows:

- *Design issues*, which include:
 - **program management issues** - effectiveness of program communications and reporting; and
 - **issues associated with the current program design** – funding formula, level of funding, eligible indirect costs, the requirement to fund affiliates through parent institutions, and alternative delivery models.
- *Program results*, including incremental use of program funds; contributions to research facilities, research resources, management and administration of the research enterprise, meeting regulatory and accreditation standards, management of intellectual property, effects in small institutions, and unintended effects.

During the design phase of the review, the list of evaluation issues, associated indicators, and expected data sources for the review were refined based on feedback provided by key informants, a document scan, as well as program evaluation theory and federal practice. A matrix of evaluation issues, data sources and indicators is presented in Appendix A.

1.3 Evaluation Methodology

As part of the third-year review, multiple lines of evidence were employed to answer the evaluation questions. The data collection methodologies are described in the following sections.

1.3.1 Documentation/Reports and Administrative data

Administrative data and documentation from the Indirect Costs program was reviewed, including the following:

- Documents related to the inception of the program including the RMAF/RBAF, Memorandum to Cabinet, Treasury Board submissions, etc.
- Outcomes reports (111 outcomes reports for 2003/04 and 83 outcomes reports for 2004/05);
- Request forms, as described in the following table

Year	2003/04	2004/05	2005/06
Number of forms reviewed	112	112	116

- Statements of Account (111 statements of account for 2003/04 and 83 statements of account for 2004/05);
- Agreements between institutions and affiliates (73 agreements¹⁶ representing 51 affiliates);

¹⁶ Includes agreements from different years with the same affiliates.

- Program administrative data (e.g., level of Indirect Costs funding, etc.);
- Granting agency administrative data (e.g., number of total applications received by granting agency).

1.3.2 Review of Similar Initiatives

An internet and literature scan was conducted in order to identify initiatives similar to the Indirect Costs program. As a result of this search, 67 initiatives were identified (a description of some key international initiatives is provided in Appendix B). Though many of these programs are not devoted to funding indirect costs (some of these programs also fund direct research costs or infrastructure), the identified programs do fund some level of indirect research costs. Following the development of an inventory of initiatives, 20 interviews were completed with informants from provincial governments and from other federal programs, and representatives from international initiatives.

Challenges in completing the review of other initiatives include:

- Differences between international initiatives and the Indirect Costs program (e.g., in terms of the program structure, definition of indirect costs, etc.). For example, both New Zealand and the United Kingdom have a policy of Full Economic Costing (FEC), which funds both direct and indirect research costs in an integrated manner.
- Different national contexts and environment. For instance, Canadian institutions receive a portion of their budgets from the Canada Social Transfer, increasing the complexity of calculating the total indirect costs reimbursed in Canada.

1.3.3 Interviews

Exhibit 1.4 illustrates the number of interviews completed with key stakeholders and institution representatives.

EXHIBIT 1.4: Key Informant Interviews Completed by Subgroup

Subgroup	Number of Interviews Completed	Number of Informants Interviewed
Key stakeholders (e.g., Association of Universities and Colleges of Canada, the Canadian Association of University Business Officers, program staff, health charities, and the federal granting agencies, etc.)	12	17
Statistics representatives from the federal granting agencies	2	6
Institution Representatives and Affiliates	20	20
Total	34	43

1.3.4 Survey of Institutions

The survey of institutions was administered using an online survey methodology. The survey was pre-tested between June 15 and July 4, 2005 with eleven institutions. Institutions reported no significant difficulties completing the survey as part of the pretest. Full-scale survey administration

commenced on July 13, 2005. Email messages inviting institutions to complete the survey were sent to a total of 106 institutions.¹⁷ A reminder email was sent to respondents on July 25th. Follow-up calls began on July 28th to those institutions that had not completed the survey as of this date. In total, 75 institutions completed the survey, reflecting a response rate of 70.8%.

1.3.5 Case Studies

Eight institutions participated in on-site case studies as part of the third-year review. The case studies were selected based on region, size of the institution, and the existence of affiliates. A total of 74 interviews (with 85 informants) were conducted with representatives from the Offices of Research Services, Technology Transfer offices, Finance departments, research hospitals, and institution departments (across the social sciences and humanities, natural sciences, and health disciplines). In addition, institutions were asked to provide supporting documentation to substantiate their responses.

¹⁷ 121 institution representatives were invited to participate, representing 106 unique institutions.

1.4 Context and Limitations of the Evaluation Approach

The following contextual factors and methodological challenges/limitations should be kept in mind when reviewing the results of the evaluation.

- **Short timeframe since the existence of the program.** The Indirect Costs Program has been in existence for less than three years. Institutions received their first Indirect Costs grant towards the end of 2003/04, and their second in 2004/05. The short timeframe since the inception of the program restricts the extent to which early results can be assessed. In addition, institutions interviewed reported that their spending in early years was concentrated on addressing deferred maintenance, rather than investing in enhancements of research support services. They identified the backlog of maintenance prior to the establishment of the program as the main reason for this spending trend. This context should be considered when interpreting the results of this review, particularly with respect to incrementality.
- **Variation in the quality of outcome data.** A review of the data from the outcomes reports suggests that data quality varies from institution to institution. In some cases, descriptions were not provided of how program funds were spent in some categories. In other cases, although this was a minority, outcomes reports repeated material that was in request forms. Further, qualitative research conducted as part of the review indicated that not all uses of the program funds were documented in the outcomes reports.
- **Use of self-report data (surveys and outcomes reports).** A limitation of this review is that outcomes reports and surveys represent unverified data. Self-report data is less reliable than other sources such as administrative data due to errors associated with memory and potential for misunderstanding questions. Where possible, administrative data or other data sources were used to supplement self-report data. Case studies were used to verify and provide further details with respect to institutions' use of program funds.
- **Challenges associated with estimating an appropriate rate of indirect costs.** The appropriateness of the level of funding was a key question addressed as part of the review. Various lines of evidence were used to assess this issue including reviewing the rates of indirect costs in other jurisdictions and asking institutions to estimate their indirect costs of research. Institutions experienced challenges associated with quantifying the indirect costs of research. For instance, in one case, the institution was unable to track all indirect costs of research (e.g., at the faculty level). Other institutions were unable to separate costs of research from costs of teaching (due to these functions occurring in the same facilities). Of the eight case studies, only five provided data with respect to indirect costs of research along with supporting documentation.

2. Findings on Design Issues: Program Management

The review examined two key issues related to program management:

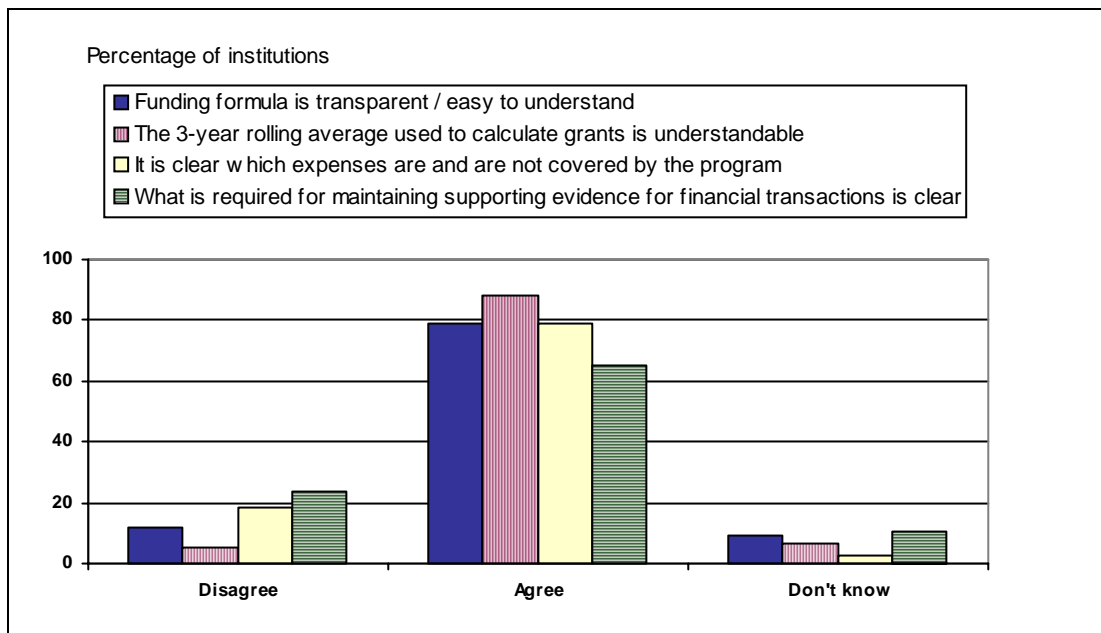
- The clarity of program communications with institutions; and
- The reporting requirements particularly, the meaningfulness of measures tracked through the outcomes report.

2.1 Communications to Institutions

The program communicates with institutions by providing guidelines and by responding to queries on various issues including financial reporting and monitoring procedures, institutions' annual grant entitlements, eligible expenses, request forms, outcomes reporting etc.

The majority of institutions that completed the survey indicated that communications with the program were clear. While most institutions reported that the funding formula was clear (see Exhibit 2.1), nine institutions reported that they did not understand how the granting agency funding base used to allocate Indirect Costs grants was calculated. Some institutions reported that they were unable to replicate the basis on which their grant was calculated, and four of the institutions surveyed reported that they had requested a breakdown of direct grants used to calculate their indirect costs grant. In comparison, administrative data showed that 20 institutions requested and were provided with a break-down in 2003-04, 28 institutions in 2004-05, and 24 institutions in 2005-06.

EXHIBIT 2.1: Perceived Effectiveness of Program Communication



Survey of Institutions, n=75

Although the majority of institutions reported no difficulty with the outcomes reports, 40 out of 111 institutions (or 36%) were required by the program to resubmit their outcomes reports mainly because expenditures had been reported in the wrong categories or because the qualitative data was insufficient.¹⁸ As a result, despite institutions' sense that the outcomes reporting requirements are clear, institutions are frequently unable to completely/correctly fill in these forms. In some cases, institutions did report some level of resistance to reporting, both in the survey, and based on a review of outcomes reports. Modifications to the outcomes reports are recommended in Section 5 to improve the quality and significance of outcome data and improve the tracking of program achievements.

With respect to reporting requirements by institution size, a review of administrative data suggests that twelve institutions received an Indirect Costs grant of less than \$20,000. Some informants interviewed raised a concern that for such institutions, the cost of administering the grant may be higher than the grant itself. Qualitative research with smaller institutions indicated that the reporting requirements were straight-forward. However, further examination of reporting requirements for institutions falling below a set threshold may be warranted as described in section 5.

Conclusion

Overall, the majority of institutions felt that communications as well as the reporting requirements were clear. Even though a majority of institutions indicated that they had no difficulty with the outcomes reports, the quality and reliability of the outcomes reports varied among institutions. Over one third of institutions were asked by the program to resubmit their outcomes reports. Review results indicated that reporting requirements might be cumbersome relative to the grant amount awarded to some of the small universities.

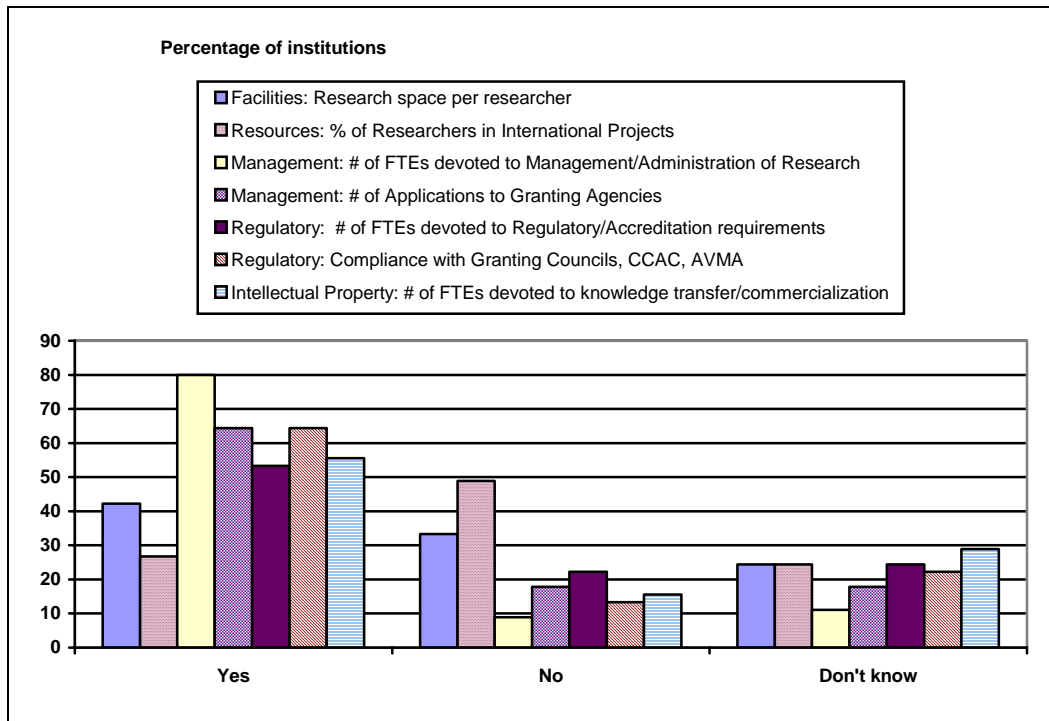
2.2 Reporting – Meaningfulness of Outcome Data

Every year, institutions receiving funding from the Indirect Costs program are required to submit an outcomes report and a statement of account describing program expenditures incurred for the current year. Quantitative and qualitative outcomes arising from program spending are reported by institutions in annual outcomes reports.

In order to assess the appropriateness of quantitative outcome measures tracked by the program, institutions were asked about the perceived meaningfulness of these measures. The following exhibit presents institutions' perceived meaningfulness of each measure.

EXHIBIT 2.2: Perceived Meaningfulness of Quantitative Measures Captured in Outcomes Reports

¹⁸ 17 of 40 institutions that were asked to resubmit their outcomes report reported no difficulties with the reporting requirements.



Source:

Survey of Institutions, n=75

* CCAC/AVMA: Canadian Council on Animal Care and American Veterinary Medical Association

Based on the survey responses, measures relating to full-time staff devoted to management and administration of research were perceived as meaningful by the highest number of institutions (55 respondents or 73.3%). Number of applications sent to the granting agencies and compliance with the ethics policies of federal granting agencies, the CCAC and the AVMA were also perceived as meaningful by most institutions (43 or 57.3% and 45 or 60% of institutions).¹⁹

¹⁹ For most categories, over 20% of institutions reported that they did not know whether the outcome was meaningful, or that the question was not applicable to them. No information was collected from respondents whether they were the individual responsible for filling out the outcomes report, so it might be the case that individuals not responsible for this function indicated that they did not know or that the question did not apply to them.

However, interviews and survey results indicated that institutions did not feel that the number of researchers involved in international projects was a meaningful measure since they do not maintain records on international research (10 institutions). Therefore, data related to this measure might not be reliable. Further, institutions indicated that this measure did not reflect an outcome that would be logically linked to how funds under the research resources category were used (14 institutions). In addition, a significant number of institutions (37.5%) indicated that research space per researcher was not a meaningful measure.

New indicators suggested by institutions included:

- level of deferred maintenance (in \$);
- number of square feet renovated;
- growth in the research enterprise (research funding); and
- change in library holdings.

In terms of technology transfer, institutions interviewed indicated that measures such as patents or revenues from research commercialization would have a significant lag between the time of investment and program results.

Conclusion

Based on data collected during this review, it appears that a few of the quantitative measures currently tracked as part of the outcomes reports are not viewed as meaningful by institutions, and in some cases, not tracked by institutions.

3. Findings on Design Issues: Current Design and Alternative Delivery Models

The review assessed the current model at two levels:

- The design of the current model including the funding formula, the definition of eligible costs, the level of funding and the requirement to fund the affiliated institutes and research hospitals through parent institutions.
- The overall delivery mechanism, by comparing the current model to alternative delivery models based on pre-defined criteria including efficiency and accountability.

3.1 Design of Current Model

The following section provides an assessment of key components of the current program design, including the funding formula, eligible indirect costs, the level of funding and the current approach to distributing program funds to affiliates through parent institutions.

3.1.1 Funding Formula

Results of the current review indicate that funding sources included as part of the funding formula are consistent with program objectives. According to the RMAF/RBAF, the primary objective of the program is “to help universities, colleges and their affiliated research hospitals and institutes provide a research environment, which will enable them to make optimal use of the total federal investment in academic research.”²⁰ Operationally, federal investment in academic research is defined as including research funding from the three federal granting agencies (NSERC, SSHRC and CIHR). Some granting agency programs such as scholarships, intellectual property, the Canadian Microelectronics Corporation, etc. are excluded from the funding formula.

Consistent with the program’s primary objective, non-federal research funding is also excluded from the formula, including provincial, private sector, and not-for-profit funding sources. Also excluded is research funding from other federal departments/agencies, such as Health Canada, FedNor, etc. Other federal government agencies provide some level of funding for the indirect costs of research they fund. For instance, FedNor funds incremental indirect costs which relate directly to the eligible activities. The Canada Foundation for Innovation (CFI) also provides funding for incremental operating maintenance costs of infrastructure funded by CFI.²¹

In terms of the number of years included in the funding formula (3), survey data from institutions indicate that, by and large, this formula is accepted by institutions; 58 of 75 institutions surveyed (77.3%) described the three-year rolling average used in the calculation of indirect cost grants as appropriate. Feedback from associations representing institutions and other stakeholders indicates that institutions are familiar with the funding formula, since the same formula is used to allocate Canada Research Chairs.

²⁰ June 2003, p. 4.

²¹ As part of CFI’s Infrastructure Operating Fund (IOF).

Through the use of the three-year rolling average described in Section 1.1.4, program allocations are adjusted annually to reflect changes in performance with respect to granting agency funding. The three-year rolling average smoothes out fluctuations in from year to year; this may help institutions plan for future Indirect Costs funding. However, for smaller institutions experiencing rapid growth in the level of federal research funding, the increases in Indirect Costs funding are not proportionate to the increases in granting agency funding.

One smaller institution reported that:

“We will always be behind by 3 years in receiving indirect grants as we are changing and research increases each year. We have no base foundation hence ALL our indirect costs are new and the Indirect Costs program does not come near to covering the basics. For example, our [research services] office is closed right now, as we can't afford staff to keep it open.”

For instance, one institution where granting agency funding increased from just under \$100,000 in 2002/03 to \$179,000 in 2003/04 received an Indirect Costs grant of \$11,184 in 2003/04. This institution's Indirect Costs grant was raised to \$82,480, but not until 2005/06 because of the historical three-year average in the funding formula. The impact on smaller universities is even higher given that these institutions receive a higher rate of Indirect Costs funding. However, in the long-term, the three-year rolling average acts to smooth out fluctuations in funding.

Conclusion:

Overall, the funding formula is working well and should be maintained. Institutions were generally satisfied with the funding formula.

3.1.2 Eligible Indirect Costs

The current evaluation included consideration of whether the definition of eligible indirect costs was appropriate.

Eligible expenditures in other countries were examined in order to contextualize the review results. There were wide differences from country to country as to which expenditures were considered eligible as indirect costs of research or “overhead.” A sample of indirect costs funded by international programs is provided in exhibit 3.1.

EXHIBIT 3.1: Indirect Costs funded by International Programs

Country	Included indirect costs (sample)
United States F&A rate	<ul style="list-style-type: none"> ➤ library expenses ➤ departmental administration ➤ student administration and services ➤ sponsored projects administration ➤ depreciation of buildings ➤ interest costs for construction ➤ equipment and capital improvements ➤ operation and maintenance expenses
Australia Research Infrastructure Block Grant (RIBG)	<ul style="list-style-type: none"> ➤ purchase of equipment ➤ provision of facilities such as libraries, computing centres, animal houses and herbaria ➤ maintenance of equipment ➤ telecommunications ➤ salaries and services for research support staff
Australia Linkage-Infrastructure	<ul style="list-style-type: none"> ➤ facilities maintenance ➤ non-capital library and information infrastructure ➤ consortium, membership, secretariat and travel costs
Denmark Ministry of Finance	<ul style="list-style-type: none"> ➤ all operating costs
Sixth Framework Programme (European Union)	<ul style="list-style-type: none"> ➤ Each participant is expected to follow its own accounting conventions, so there are no predefined cost categories.
Full cost with actual indirect costs (FC).	
Full cost with indirect flat rate costs (FCF)	
Additional costs with indirect flat rate costs (AC)	
New Zealand Full-Cost Funding Regime	<ul style="list-style-type: none"> ➤ central finance, administration and clerical ➤ repair maintenance and security activities ➤ technology dissemination

Note: The United Kingdom (UK) was not included in this table because new terms for the funding of research in the UK were introduced in September 2005.

Institutions interviewed as part of case studies indicated a gap for basic equipment, as opposed to “state of the art” infrastructure funded by CFI. Inability to purchase basic research equipment has implications for institutions with respect to CCAC requirements, and therefore should be considered for inclusion in the list of eligible indirect costs.

When recipients were asked to identify indirect costs that are not currently eligible, but can be included in the mandate of the program, the following suggestions were provided:

- Start-up funds (5) – start-up packages used in recruiting new faculty;
- Funds for teaching release for individuals engaged in research (5);
- Limited infrastructure, such as the purchase of laboratory equipment (3); and
- Travel costs, to assist researchers and research management staff develop research proposals or conferences (2).

However, in response to a question about adding to the list of eligible expenses, one respondent stated that:

“To continue to add to the range of activities that could be covered without substantially more funds... would increase the burden on institutions in the management of these funds...”

Funding for graduate students was also brought up by ¹⁰ institutions; however, as long as graduate students are engaged in technical support or research administrative support, these expenses are eligible under the program.

Conclusion

Eligible indirect costs differed from country to country. With the exception of possibly adding basic equipment to the list of eligible expenditures, the current list of eligible expenditures was found to be appropriate.

3.1.3 Level of Funding

Calculating the value of the indirect costs of research involves significant methodological challenges; it was described as “a practical impossibility,” according to a 2000 report from the Advisory Council on Science and Technology.²² The Indirect Costs program was intended to contribute a portion of the indirect costs for research at institutions, along with provincial budgets (supported in part by the Canada Social Transfer program). However, since provincial and territorial governments are free to spend the funds from the Social Transfer essentially as they see fit,²³ this mechanism makes calculation of the rate at which indirect costs are reimbursed in Canada difficult.

In order to assess the level of funding provided by the Indirect Costs Program, the following factors were examined

- Change in the rate of funding of the program (relative to direct research funding) since its creation in 2003;

²² Advisory Council on Science and Technology. Creating a Sustainable University Research Environment in Canada: The Role of the Indirect Costs of Federally Sponsored Research, September 29, 2000.

²³ http://www.fin.gc.ca/transfers/transfers_chst_e.html

- funding for indirect costs in other jurisdictions at national and international levels;
- examples of indirect costs experienced (for all research) at institutions; and
- “overhead” rates charged by institutions to outside agencies contracting with institutions to complete research.

Funding by the Indirect Costs Program Relative to Direct Research Funding

Before the introduction of the Indirect Costs program, most institutions financed indirect costs of research at least partially through their operating budgets (see Section 4.1.2). However, eligible research expenditures by the federal granting agencies²⁴ rose by 53.6% between 1999/2000 and 2003/04, or by almost \$400M (see Exhibit 3.2).

EXHIBIT 3.2: Eligible Granting Agency Funding (excluding fellowships and other granting agency programs) - 1999/2000 to 2003/2004 (in 000)

Granting Agency	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	% increase since 1999
NSERC	\$415,244	\$426,782	\$433,329	\$455,220	\$490,937	18.2%
SSHRC	\$75,872	\$80,469	\$93,761	\$108,557	\$121,129	59.6%
CIHR	\$254,387	\$309,902	\$416,481	\$486,075	\$533,052	109.5%
Total	\$745,503	\$817,153	\$943,571	\$1,049,851	\$1,145,118	53.6%

Source: Indirect Costs program administrative data

Indirect Costs program funding as a percentage of the three-year rolling average used in the funding formula has declined by 7.6% since the program was established (see Exhibit 3.5).

EXHIBIT 3.4: Indirect Costs Program Funding as a Percentage of Eligible Council Funding (in 000)

Granting Agency	2003-2004 allocation	2004-2005 allocation	2005-2006 allocation
Indirect Costs program funding	\$224,182	\$244,518	\$259,414 ²⁵
Eligible granting expenditures	\$835,409 ²⁶	\$936,858 ²⁷	\$1,046,180 ²⁸
Decline in indirect costs rate since 2003-2004	n/a	2.7%	7.6%

Source: Indirect Costs program administrative data

²⁴ excluding some granting agency programs such as scholarships, intellectual property, the Canadian Microelectronics Corporation, etc.

²⁵ Includes the additional \$15M announced in Budget 2005

²⁶ Three-year Average of eligible granting agency expenditures (1999-2000, 2000-2001 and 2001-2002)

²⁷ Three-year average of eligible granting agency expenditures (2000-2001, 2001-2002 and 2002-2003)

²⁸ Three-year Average of eligible granting agency expenditures (2001- 2002, 2002-2003, and 2003-04)

Funding for Indirect Costs of Research in Other Jurisdictions

Analysis of international programs indicates a wide range of funding levels for indirect costs of research as illustrated in exhibit 3.2. Indirect Costs program funding as a percentage of eligible granting agency expenditures for 2003/04 was less than 20% (at 19.6%)²⁹, which is at the lower end of the range of rates provided in other countries.

EXHIBIT 3.2: Funding for Indirect Costs of Research in Other Countries

Country	Indirect Costs reimbursement rate
United States F&A rate	31-39% ³⁰ 49.2% ³¹
Australia Research Infrastructure Block Grant (RIBG)	20%
Denmark Ministry of Finance	20%
Sixth Framework Programme (European Union)	
Full cost with actual indirect costs (FC).	All eligible direct and indirect costs are funded ³²
Full cost with indirect flat rate costs (FCF)	Flat rate of 20% is provided for indirect costs except for subcontracting
Additional costs with indirect flat rate costs (AC)	Flat rate of 20% for indirect costs
New Zealand Full-Cost Funding Regime	n/a ³³

Note: The United Kingdom (UK) was not included in this table because new terms for the funding of research in the UK were introduced in September 2005.

The diversity of funding rates internationally makes it difficult to use international programs as the basis for identifying an appropriate rate of funding for indirect costs in Canada. In terms of the Canadian context, a number of organizations provide support for the indirect costs of research, including Western Economic Diversification Canada, FedNor, and the Atlantic Canada Opportunities Agency (oriented towards technology transfer and trade). The Canada Foundation for Innovation funds indirect costs of infrastructure through its Operating Infrastructure Fund (IOF). Using CFI's 2003/04 annual report, the Infrastructure Operating Fund investment was \$158M. Relative to the total CFI funding of \$728.7M, the IOF represents 21.7% of total CFI funding for this year.³⁴

Expenditures on the Indirect Costs of Research at Institutions

The case study methodology was used to estimate the actual indirect costs of research incurred by institutions. Institutions were asked to quantify indirect costs of all research at their institution. This figure was then compared to the total research expenditures reported by the institution over the same period. Based on these case studies, indirect costs represent a range between 25% and 53% of direct research costs.

²⁹ Defined as Indirect Costs program funding for 2003/04, divided by the eligible tri-council research grants for the same year.

³⁰ C.A. Goldman et al. *Paying for University Research Facilities and Administration*, RAND Corporation (Research and Development), 2000, <http://www.rand.org/publications/MR/MR1135.1/>

³¹ J. Brainard. "The Ghosts of Stanford: Have federal constraints on reimbursing overhead for research grants gone too far?" *The Chronicle of Higher Education*, August 5, 2005.

³² Covers all eligible indirect costs.

³³ Covers all eligible indirect costs. Indirect costs are calculated as a multiplier of direct costs.

³⁴ CFI 2003-04 Annual Report: http://www.innovation.ca/publications/annual/annual04_e.pdf

While these percentages were calculated on the basis of all indirect costs/revenues, rather than federal indirect costs/revenues, this analysis provides some insight into the range of indirect costs experienced by a small number of institutions. This data should be viewed as qualitative, and should not be generalized to all institutions. Limitations associated with this data are described in Section 1.4. It should be noted that institutions were asked to report on the level of indirect costs experienced, not the ideal levels nor the levels which would necessarily cover all indirect costs, including costs currently deferred due to a lack of resources.

The findings from this review indicate that the rates at which institutions experience indirect costs of research vary, as do the rates charged to research partners (see below). Qualitative case study research suggested that expectations with respect to a “reasonable” rate of reimbursement differed by institutions, perhaps due to difficulty in calculating actual costs as well as the lack of a clear and consistent benchmark.

Rates charged by Institutions to outside Organizations

Case study research provided some information as to overhead rates charged to private sector organizations³⁵. The overhead rates charged by institutions are tabled below.

EXHIBIT 3.3: Indirect Costs Charged by Institutions to Outside Organizations Funding Research

Indirect Costs or “Overhead” rate	Number of Institutions
20-25%	2
40%, except for provincial government (30-35%)	1
60-65% labour ³⁶ , 40% total cost	2
50% social sciences and humanities	2
65% natural and health sciences	
No policy	1
Total	8

A number of institutions reported that the rate of indirect costs charged to outside agencies varied depending on what rate the institution was able to negotiate. For instance, one institution indicated that they “try to get what [they] can.” In two case studies, the institutions reported that the Indirect Costs program provided for a higher rate of indirect costs compared to other agencies.

Conclusion

The rate of funding provided by the Indirect Costs program has been decreasing and is at par or lower than rates offered by most similar international programs, which range between 20% to 50%.

³⁵ Institutions were asked to provide documentation to substantiate the data provided on overhead rates charged to outside organizations.

³⁶ Some institutions defined indirect costs as a percentage of “on-campus salaries, wages and benefits”.

3.1.4 Distribution of Program Funds to Affiliated Institutions

In order to assess the appropriateness of the current approach of distributing program funds to affiliates through the parent institution, the following factors were examined:

- The variety of arrangements based on a review of the agreements and interviews with parent institutions and their affiliates;
- The level of satisfaction of institutions and affiliates with the current approach; and
- An analysis of the advantages and disadvantages of the current approach relative to the alternative of funding affiliates directly.

Variety in the Agreements between Parent Institutions and Affiliates

Only degree-, applied degree- or diploma-granting Canadian post-secondary institutions are funded directly by the program. Parent institutions are required to develop a formal agreement with their affiliated hospitals/institutes, outlining the distribution of the indirect costs grant between the parent and affiliate institution. There are no requirements with respect to the content of the agreements; however, a mutually acceptable agreement must be negotiated before program funds are released to the parent institution, in order to ensure that affiliates receive an appropriate share of program funds.

The original rationale for funding only degree/diploma-granting institutions was the expectation that parent institutions would provide some level of research services to affiliates. Of eight affiliates interviewed for the review,³⁷ seven provided information with respect to the distribution of services between the parent and affiliated institution. Four out of eight affiliates indicated that some or all of research facilities, resources such as libraries (4), support to meet regulatory and accreditation requirements (5), and commercialization activities (5) were provided by the parent institution.

A review of 51 agreements between affiliates and institutions indicated a wide range of grant sharing agreements, as summarized below:³⁸

- Retention of a portion of the grant by the parent institution. Some parent institutions interviewed reported providing research support services to affiliates and keeping a portion of the Indirect Costs grant for services. The percentage retained by the parent institution varied, as indicated below:
 - The most common arrangement was parent retention of 20% of the Indirect Costs grant attributable to the affiliate (17 affiliate agreements referenced this arrangement).
 - Three agreements outlined that the parent institution would retain 10% of the Indirect Costs grant attributable to the affiliate.
 - In one case, the institution retained 40% of the Indirect Costs grant attributable to the affiliate.

³⁷ Including the case study visits, eight interviews were completed with representatives from affiliated institutions. Some interviews included several affiliates.

³⁸ When multiple agreements existed between an institution and an affiliate, for the purposes of this analysis, the most recent agreement was retained for the analysis.

- Multiple rates of reimbursement, depending on whether the research was conducted at the research hospital/affiliate or institution, and/or whether the institution administered the direct research grant (14 affiliate agreements).
- Six agreements provided that the affiliate would receive a portion of the Indirect Costs grant proportionate to their share of eligible direct research funding (where the parent institution takes no portion of the affiliate program grant). In other words, if an affiliate represented 10% of the direct research funding, then that affiliate would receive 10% of the parent institution's Indirect Costs grant.
- Ten agreements did not reference a particular break-down or indicated that the distribution would be calculated annually.

The Current Approach – Level of Satisfaction

A small number of institutions with affiliates (4) were asked about the appropriateness of distributing program funds to affiliates through parent institutions. Of these institutions, 3 reported that the current allocation method for funding to flow through parent institutions to their affiliates was appropriate. Two out of four respondents indicated that the current method avoids duplication. In addition, two institutions reported that a process framework for separation of resources was needed as researchers may conduct research at both the institutions and the affiliates.

Affiliates were interviewed concerning their satisfaction with the funding sharing agreement. Six of eight affiliates interviewed were dissatisfied with the distribution of program funds through parent institutions. Four affiliates reported a lack of transparency with respect to program funds; affiliates reported that they had no way to verify the total grant amount received by the parent institution, or what other affiliates were receiving. It should be noted, however, that amounts sent to institutions on the Indirect Costs are posted on an annual basis on the Indirect Costs website. In addition, institutions and affiliates can contact the Indirect Costs Secretariat to obtain the break-down of direct grants used to calculate their indirect costs grants. One affiliate interviewed reported that the parent institution did little in return for the fee charged out of the Indirect Costs grant.

The small number of affiliates (2) reporting satisfaction with this aspect of the allocation formula worked well cited the following reasons:

- the need for a financial agreement due to services provided by parent institutions; and
- other agreements between affiliates and parent institutions that defined a common tradition and good working relationships .

The difference in satisfaction with the distribution of program funds might be due to differences with respect to the arrangement negotiated.

Funding affiliates through parent Institutions versus funding affiliates directly

As part of the current review, consideration was given to the possibility of directly distributing program funds to affiliated institutions. A simulation based on 2005-2006 actual Indirect Costs allocation³⁹ indicated that to allocate program funds to hospitals separately:

³⁹ based on credits from 2001-2002, 2002-2003 & 2003-2004, using the same marginal percentage as in actual 2005-2006 Indirect Cost allocation.

- the program would have to reduce the marginal Indirect Costs program percentage for all universities with average tri-agency funding over \$7M.⁴⁰ This is approximated at a reduction of between 3.5% and 4% for all of these institutions⁴¹
- the overall budget of the program would have to be increased by over \$30M.

The following table summarizes the advantages and disadvantages of:

- a) maintaining the existing model (distributing program funds through parent institutions); and
- b) modifying the program delivery model to distribute indirect costs directly to affiliates.

EXHIBIT 3.6: Advantages and Disadvantages of Funding Affiliates Directly Versus Through Parent Institutions

Delivery Model	Advantages	Disadvantages
Current approach - Funding affiliates through parent institutions	<ul style="list-style-type: none"> ➤ Agreements reflect different types of services provided by parent institutions to affiliates; ➤ Under the current design, the program does not have the responsibility for negotiating or managing the distribution of funds between parents and affiliates, which would greatly add to the complexity and cost of program administration; and ➤ Encourages efficiency through common research services between parent and affiliate institutions. 	<ul style="list-style-type: none"> ➤ The level of dissatisfaction reported by affiliates (6 out of 8 affiliates) ➤ A lack of transparency with respect to the amount of direct and indirect grants received by the parent institution, increasing uncertainty among affiliates as to the appropriate distribution of funds; and ➤ The risk that affiliates might not receive their grants in a timely manner.
Funding affiliates directly	<ul style="list-style-type: none"> ➤ Affiliates would likely welcome this modification for the following reasons: <ul style="list-style-type: none"> – the calculation and distribution of Indirect Costs grants would be more transparent for affiliates; and – direct provision of grants to affiliates would likely result in a more timely transfer of funds to affiliates ➤ Parent institutions might also view this change to the program model positively, since it would relieve reporting requirements (parent institutions currently are required to summarize outcomes for affiliate institutions in program reporting) 	<ul style="list-style-type: none"> ➤ Program administration costs and requirements could increase as a result of : <ul style="list-style-type: none"> – The increase in the number of direct recipients, particularly given the range of affiliate types; and – the need to negotiate and manage the distribution of funds between the parent institutions and the affiliates. ➤ Larger institutions might resist this approach as it affects their rate of indirect costs funding; and ➤ Funding affiliates separately might discourage development of pooled resources (e.g., technology transfer offices, etc.) between parent and affiliates.

Conclusion

Six out of eight affiliates interviewed reported dissatisfaction with the distribution of funds. Several affiliates found that the current approach lacked transparency. However, the current approach is advantageous given the wide variety of services provided by parent institutions to affiliates, as well as the significant cost associated with treating affiliates separately. The current approach allows both parent institutions and affiliates to determine an appropriate distribution of program funds.

⁴⁰ average between 2001-2002 and 2003-2004

⁴¹ The marginal rate of Indirect Costs program funding for institutions with more than \$7M in direct research funding was 22.1%.

3.2 Current Delivery Mechanism Relative to Alternative Delivery Models

3.2.1 Canadian Context: Rationale for the Stand-alone Model

Prior to the establishment of the program, Industry Canada considered various models including administering indirect costs directly through the granting agencies and transferring the money to provinces through the Canada Social transfer. The rationale of the program was to:

- help smaller institutions to increase their research capacity through a progressive funding formula.
- link the use of funds to pre-identified objectives.
- track indirect costs separately from the direct research costs.
- keep administrative costs low.
- allow universities to plan and invest in central services to maximize benefits for researchers in all disciplines.

3.2.2 International Context – models used in other countries

Approaches to financing indirect costs of research in other jurisdictions were considered, in order to contextualize the review results and to provide examples of models used in other countries.

Based on the international review, the following models of program administration were identified:

- US F&A program⁴² - negotiation of a set rate with each institution which is applied to all federally funded research
- New Zealand Full-Cost Funding regime⁴³ - grants cover both direct and indirect costs
- Australia – two initiatives/models were identified:
 - The Research Infrastructure Block Grants (somewhat similar to the Indirect Costs Program) - grants are provided to institutions according to a formula, in which allocations are based on the share of competitive research grant income.
 - Australia Linkage-Infrastructure - combined funding for equipment as well as facilities.
- payment of one overhead rate to institutions for all publicly funded research – Denmark; and
- coverage of only the direct costs of research - Netherlands major programs.

⁴² F&A refers to facilities and administration, <http://www.whitehouse.gov/omb/circulars/a021/a021.html>.

⁴³ New terms for the funding of research in the United Kingdom (UK) were introduced in September 2005, which represented a full-cost funding regime. This model was introduced during the course of the review, and was therefore not included in the formal analysis.

The following section describes two key examples of models adopted by the US and New Zealand (a more complete description of the key international initiatives is provided in Appendix B).

The U.S. Model

In the United States, indirect costs (facilities and administration, or F&A costs) are administered by the U.S. Government Office of Management and Budget through the Federal F&A Costs Program. The U.S. initiative is unique among the programs reviewed for this study in that each university is required to submit a formal F & A cost rate proposal to the U.S. federal government for federally funded research. The proposal (based on the most recent year for which complete cost data is available) is evaluated by negotiators who represent all federal agencies in negotiations with the university. A simplified process is available for universities with federal projects totaling less than \$10M per year.⁴⁴

An advantage of the U.S. model is that predetermined rates are generally in effect for two to four years and are not subject to changes during the agreed period. Such predetermined rates allow universities to budget more precisely for a longer period. Disadvantages of the model include the complexity of the administrative and accounting procedures associated with the program. For instance, costs expressly unallowable are to be identified and excluded from any billing, claim, application, or proposal applicable to a sponsored agreement. Another documented potential disadvantage is that institutions sometimes accept less than they are formally entitled to, in order to increase chances of successfully negotiating an F&A rate.⁴⁵

The New Zealand Model

The “Full-Cost Funding Regime” used in New Zealand covers both direct and indirect costs. These costs include depreciation and the cost of capital; however, costs incurred for the management of intellectual property are the responsibility of the institution. The advantage of this approach is full coverage of all the costs of research. A disadvantage of the New Zealand approach is that few data exist on the legitimate direct and indirect cost components or on the amount of time and effort required to achieve the R&D objectives.

3.2.3 Comparing Current Delivery Model to Alternative Delivery Models

The following section provides a comparison of the current model relative to three potential alternative delivery models identified through a review of program documentation and interviews with institutions and stakeholders⁴⁶. Alternative delivery models included administering program funds through the granting agencies, delivering funds through the Canada Social Transfer, and administering funds using a contribution funding model.

Exhibit 3.1 presents a preliminary assessment of the current model and the alternative delivery models by the Consultant based on efficiency and accountability. Another criterion that was considered was the ability to achieve program objectives. The current model was designed particularly to address the objective of improving research capacity at small institutions through a progressive funding formula. At this stage, the consultant did not conduct any analyses on whether and how other delivery models could address current program objectives. A more in-depth analysis

⁴⁴ <http://www.whitehouse.gov/omb/circulars/a021/a021.html>.

⁴⁵ Brainard, J. The Ghosts of Stanford: *Have federal constraints on reimbursing overhead for research grants gone too far?* The Chronicle of Higher Education. August 5, 2005.

⁴⁶ Due to the differences in national contexts and environments, models used in other countries were not considered as alternative delivery models for Canada at this stage.

of the various alternative mechanisms, such as simulations to test assumptions around supposed advantages and disadvantages, was beyond the scope of the current evaluation and is recommended to be addressed as part of the sixth-year evaluation.

In describing the accountability of each model, definitions from the Treasury Board Secretariat of Canada's guidelines for contributions and grants have been used.

EXHIBIT 3.1: Current Model compared to Alternative Delivery Models

Delivery Model	Definition of funding mechanism ⁴⁷	Efficiency	Accountability
<p>Centralized grant model (current model)</p> <p>A stand-alone program, through an inter-agency Secretariat, awards indirect costs grants based on eligible granting agency expenditures (direct research).</p>	<p>Grant - transfer payment to an individual or organization which is not subject to being accounted for or audited, but for which eligibility and entitlement may be verified or for which the recipient may need to meet pre-conditions.</p>	<p>Lower costs of program administration compared to international programs and potentially, to other Canadian programs.</p>	<p>Centralized implementation of reporting strategy.</p> <p>Ability to track indirect costs separately from direct research costs.</p>
<p>Decentralized grant model</p> <p>Granting agencies award indirect costs grants proportionate to the direct research grants.</p>	<p>Grant – see definition above.</p>	<p>Administration structure might be duplicated, possibly leading to higher program administration costs (e.g. three Program Officers would be needed instead of one Program Officer).</p>	<p>Increased complexity of evaluation of program administered through individual granting agencies.</p>
<p>Transfer to provinces model -</p> <p>Federal government makes a block payment to provinces (through the Canada Social Transfer Fund) intended to support indirect costs of research.</p>	<p>Payments are made under the authority of the Fiscal Arrangements Act and target specific areas: health care, post-secondary education, early childhood development and social assistance and social services.</p>	<p>No control over efficiency since the funds would be administered by the provinces.</p>	<p>The CST is a block fund that the provinces and territories are free to spend in these areas largely as they see fit.⁴⁸ Therefore, there is no guarantee that funds would be transferred to institutions or to support research.</p> <p>No opportunity to assess the results of the investment.</p>
<p>Contribution model</p> <p>A funding mechanism with more stringent reporting requirements compared to the grant model. This model can apply to the centralized model (stand-alone program) or to the decentralized model (administration through granting agencies)</p>	<p>Contribution - conditional transfer payment to an individual or organization for a specified purpose.</p>	<p>Potentially higher administration costs due to auditing requirements.⁴⁹</p>	<p>Subject to being accounted for and audited</p>

⁴⁷ Treasury Board Secretariat of Canada, Treasury Board Accounting Standard 3.2 - Transfer Payments (Grants and Contributions), http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/accstd/tbastp1_e.asp

⁴⁸ http://www.fin.gc.ca/transfers/transfers_chst_e.html

⁴⁹ Further simulation and analysis would be required to confirm costs of program administration.

Conclusion

The current review did not identify any issues which would justify modifying the delivery model, including flowing funds through the parent institution to affiliates, after less than 3 years into the program's existence. Further analysis of alternative delivery models should be conducted as part of the sixth-year evaluation when more data is available on program outcomes.

4. Findings on Program Results

The review examined various aspects of program results including:

- Program expectations with respect to incrementality;
- Establishing linkages between program funding and potential impacts in preparation for the sixth-year evaluation;
- Immediate program results;
- Effects on smaller universities, particularly with respect to the changes in rate of indirect costs funding; and
- Unintended effects of the program.

Case studies were a key data source in addressing early program results and linkages between program funding and potential impacts of the program. Case studies included a review of supporting documentation (if available) and in-depth interviews with representatives at various levels within the institution.

4.1 Incremental Use of Program Funds

Indirect Costs program funding was intended to be “incremental to the funds provided to colleges and universities by the provincial governments and other sources.”⁵⁰ Indeed, the RMAF/RBAF for the Indirect Costs program⁵¹ stated that funds from the Indirect Cost program were to be “used incrementally, i.e., adding on to and not displacing indirect research support funds provided to institutions by the provincial governments and other federal or private sector sources for indirect costs.” Using this definition, institutions would be expected to finance the indirect costs of research at the same rate after the introduction of the Indirect Costs program as they did prior to the program. However, a significant reason for the creation of the Indirect Costs program was to help relieve financial pressures on institutions.

Partly in response to concerns expressed by institutions about early program communications concerning incrementality, a document was prepared by the Directors, Finance and Awards Administration at NSERC, SSHRC, and CIHR. In this document, incrementality was defined as follows: “[t]he generation of improvements, efficiencies and innovations in the management of the research enterprise in an institution, in the period prior to the start date of the Indirect Costs Program to the mid-term date of 2006. Incrementality can be achieved by maintaining the existing level of service and support in spite of the increased demand on an institution’s resources.”⁵² In addition, institutions are required to demonstrate in their annual outcomes reports how the indirect costs grants were used to sustain and to improve their research capacity.

The current review was intended to assess the incremental use of program funds in the following ways:

⁵⁰ Submission to Treasury Board.

⁵¹ 2003

⁵² Indirect Cost Program Financial Reporting and Monitoring Procedures, Directors, Finance and Awards Administration, NSERC, SSHRC, and CIHR, December 2004.

- Analysis of reductions in provincial government spending since or due to the introduction of the Indirect Costs program; and
- Analysis of changes in institution spending on indirect costs of research since the implementation of the program.

Results of the current review indicate that incremental use of program funds was at times difficult to establish. Because many institutions administered program funds as part of one central budget, for some case studies completed, it was difficult to isolate the true incremental results of the program (defined either as new services or provision of other services financed by funds freed up by the program). Another issue that arose as part of the review is that institutions expressed confusion as to what program expectations are with respect to new or existing services. A risk associated with the lack of guidelines concerning the proportion of new and existing expenses, according to one institution is that it “invites the simple transfer or displacement of funds from the existing budget.”

4.1.1 Changes in Provincial Government Spending

Changes in provincial government funding for the indirect costs of federally funded research were assessed using interviews with nine provincial representatives and institution surveys. Based on this research, a change or reduction in provincial indirect costs funding corresponding to the Indirect Costs program was identified in four provinces. These changes are summarized in Exhibit 4.1 below.

EXHIBIT 4.1: Changes in Provincial Programs to Support the Indirect Costs of Research Since the Indirect Costs program

Province	Prior to Indirect Costs program	Subsequent to Indirect Costs program
Atlantic Provinces	Research Development Fund (\$400,000/year) to fund indirect costs (setting up institutional research offices, and similar costs)	Redirected these provincial funds to several new initiatives.
Manitoba	Research and Innovation Fund, Health Research Initiative, intended to improve research capacity (\$3M/year) – designed to support indirect costs of research	Funding ceased, but was subsequently re-established with a reduced annual budget of \$2M.
Alberta	Alberta Heritage Foundation for Medical Research’s Health Research Fund provided 15% for indirect costs of all research	.Funding was terminated. Redirected funds to other areas.
Québec	indirect costs reimbursement was 15% for all research funds received by universities	Province contributes 50% (social sciences and humanities) or 65% (natural and health sciences) of the direct cost research funds provided by Québec funding agencies only (and some Québec public agencies).

None of the provinces identified in Exhibit 4.1 reduced their funding overall for post-secondary education since the introduction of the Indirect Costs program. However, it should be noted that in some cases, particularly for Québec, funding changes were tracked only for education spending as a whole, rather than support for research.⁵³ As a result, while it appears that provinces have not

⁵³ <http://www.budget.finances.gouv.qc.ca/budget/2004-2005/en/pdf/BudgetPlan.pdf>

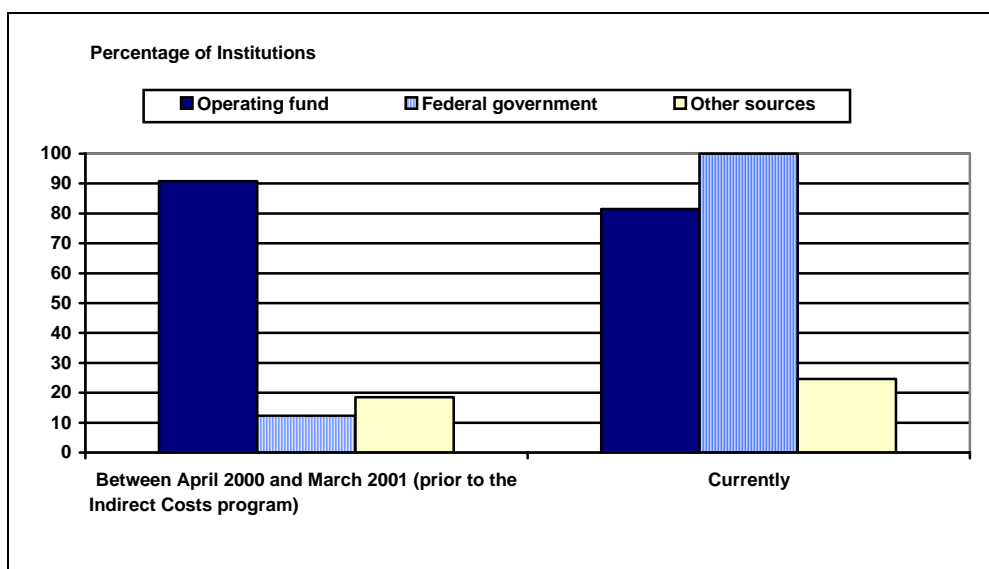
withdrawn funding overall, the risk is present that provincial governments may be redirecting funds away from the support for research. It should be noted that there were no formal agreements with the provinces to retain pre-program levels of support for the indirect costs of research.

4.1.2 Use of Indirect Costs Program Funding by Institutions

Financing of Indirect Costs of Federally funded Research prior to and after the creation of the Indirect Costs Program

According to institutions surveyed, prior to the introduction of the program, the most commonly referenced source of funding for the indirect costs of federally funded research was institutions' operating fund (59 institutions out of 65). 28 out of 65 institutions surveyed indicated that previous support for the indirect costs of federally funded research came partially from student tuitions. As a result, funding provided by the Indirect Costs program replaced other sources (e.g. operating funds) previously used by institutions to cover the indirect costs of federally funded research.

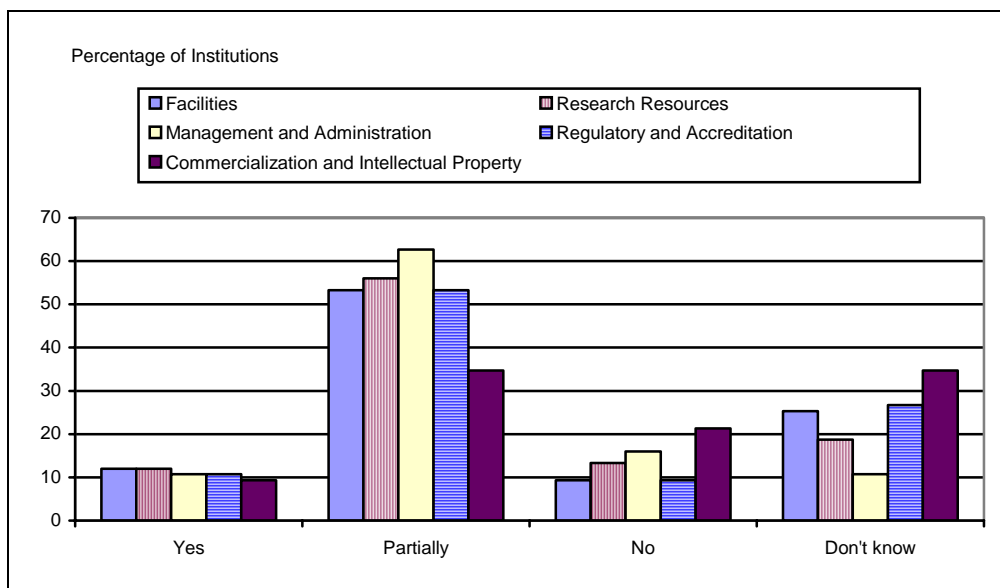
EXHIBIT 4.2: Financing of Indirect Costs of Research by Institutions Prior to the Indirect Costs Program and Currently



Source: Survey of Institutions, n=65

Institutions surveyed reported that some investment in each of the expenditure categories would not have occurred without the Indirect Costs program (see Exhibit 4.3).

EXHIBIT 4.3: Likelihood that Investments Would Have Occurred without the Indirect Costs Program



Source: Survey of Institutions, n=75

Institution representatives interviewed as part of case study research indicated that most reported indirect costs were non-discretionary and therefore couldn't be discontinued. Instead, 6 out of 12 institution representatives indicated that funding to other areas had to be sacrificed to cover the indirect costs of research. According to one institution representative, *"a shortfall in the financing of indirect costs would not be considered a good reason to refuse a research grant."* As a result, case study research indicated that prior to the Indirect Costs program, institutions were falling further into debt and accumulating significant deferred maintenance. Institutions reported that financial pressures of conducting federally funded research had lessened due to the Indirect Costs program. However, after less than 3 years institutions still reported shortfalls in indirect costs funding. One institution reported a \$24M deficit in indirect costs funding, which, if the institution received this amount, would be allocated to the teaching missions that have been suffering because of insufficient indirect costs funding. Therefore, while the Indirect Costs program has reduced financial pressures on institutions, such pressures still exist.⁵⁴ The pressures experienced by institutions are exacerbated by increasing demands associated with conducting research, such as:

- Ethical issues consume more time;
- Animal facilities must be better maintained;
- Contracts require greater legal attention;
- Management must be more transparent and accountability issues are more evident (resulting in more attention to documentation);
- Security issues are of greater concern.

⁵⁴ 6 of 14 institutions interviewed reported that current Indirect Costs program funds were insufficient.

Approaches used by Institutions in administering program funds

Case study research indicates that use of the indirect costs grant and its implementation at the institution level differed among institutions. One case study indicated a rigorous mechanism to distribute program funds within the institution. Specifically, “category research management plans” were solicited from vice-presidents across the institution, which were used as the basis for distributing Indirect Costs program funds at the institution. The institution’s executive then reviewed and evaluated these plans against a number of criteria, and funds were distributed to reflect a mix of expansion (incremental) initiatives, and activities already funded from other sources. Another institution visited as part of case study research distributed a fixed percentage of the Indirect Costs grant to faculties within the institution. Other institutions had no formal mechanism to distribute funds to faculties and made decisions centrally.

As part of the case studies, faculties reported a lack of transparency at the institution level with respect to the use and allocation of Indirect Costs grants. Specifically, faculty heads as well as researchers were not widely aware of how program funds were being used, even when these funds are having a direct impact on them. For instance, a faculty head at one university who had received Indirect Costs funding to support one specific initiative was unaware of other university-wide initiatives to improve grant revenue tracking.

Conclusions

- *Case study research indicated that the institutions were confused with respect to program expectations, particularly with respect to incrementality.*
- *Incremental use of program funds was at times difficult to establish mainly because many institutions administered program funds as part of one central budget. Case study research showed that it was difficult to isolate the true incremental results of the program (defined either as new services or provision of other services financed by funds freed up by the program).*
- *Changes in provincial funding for indirect costs were reported for four provinces.*
- *While the Indirect Costs Program has lessened financial pressures associated with indirect costs of research, financial pressures still exist, which are exacerbated by increasing demands.*
- *Based on case studies, the implementation of the indirect costs grant varied among institutions, and faculties reported a lack of transparency with respect to the use of Indirect Costs grant by their institution.*

4.2 Setting the Stage for the Sixth-Year Evaluation – Linkages between program funding and potential impacts

The complexity of the incrementality issue and the lack of clarity with respect to expectations (described in the section above) have implications for measuring program impacts. Logical linkages between the Indirect Costs funding and future program impacts associated with the five expenditure areas are more difficult to establish due to the manner in which the funds are administered at some institutions.

Following are examples of measures that can be used in evaluating program results/impacts based on case studies and interviews with institutions:

- Changes in budget deficits - to assess any reduction in financial pressures experienced by institution prior to the program;
- Levels of deferred maintenance, use of research/technical equipment, and number of researchers serviced using the equipment - to evaluate impact of investments in research facilities;
- Changes in library holdings and development of databases (and other resources) - to evaluate the impact of investments in research resources.
- Quality of animal care facilities - to assess the impact of investments in regulatory requirements and international accreditation standards

Conclusions

Evaluating program results and establishing logical linkages between impacts and program funding will be difficult due to the complexity of the incrementality issue. .

4.3 Immediate Program Results

This section describes the findings of the review with respect to immediate outcomes of the Indirect Costs program. It should be noted that because the program does not provide guidelines to institutions concerning relative (or minimum) investments in each cost category, this analysis will be used primarily to describe the use of program funds by institutions.

It should be noted that a limitation of the results presented below is that they are mainly based on self-reported data through surveys and outcomes reports. In some cases, case study research did not corroborate the results of the survey and outcome report analysis.

The following table summarizes expenditures by category for 2003/2004. A detailed description of each category is provided in the following sections.

EXHIBIT 4.4: Indirect Costs Program Expenditures by Category, 2003/2004.

Facilities	Resources	Management and Administration	Regulatory Requirements and Accreditation	Intellectual Property
\$87,441,719.65	\$49,493,436.62	\$63,360,554.75	\$10,556,811.05	\$12,402,884.94
39.2%	22.2%	28.4%	4.7%	5.6%

4.3.1 Contribution to Research Facilities

Overall, 70 out of 111 institutions (63.1%) requested funds under the research facilities expenditure category in 2003/04, and 69 institutions reported expending funds in this category in the same year. Approximately 39% of Indirect Costs grants were spent on facilities in 2003-2004, or \$87.4M.⁵⁵

The most commonly reported use of program funds in outcomes reports was general renovation and improvement of research facilities (54 institutions or 79.4% of institutions providing a response to this portion of the outcomes report for 2003/04 and 43 or 84.3% in 2004/05). Custodial and security services were also commonly reported (31 institutions or 45.6% in 2003/04 and 20 or 39.2% in 2004/05), as well as specialized systems for laboratories (29 institutions or 42.6%).

Institutions interviewed as part of case study research indicated that program funds were frequently used to maintain equipment. Without the Indirect Costs program, informants felt that maintenance would not be performed as often as it should be, leading the equipment to deteriorate more quickly.

Representatives at one institution were asked to contrast the use of two DNA sequencers, one of which had technical support funded in part by the Indirect Costs program and the other which did not. Specifically:

- The sequencer running with technical support funded in part by the Indirect Costs program resulted in 2,600 sequences over 12 months and supported 4 faculty members, 4 MSc students and 12 Honours students;
- The sequencer without technical support resulted in 960 sequences over 13 months and supported 2 faculty members and 2 Honours students.

Of course, change in usage could not be fully attributed to the Indirect Costs program; many of the improvements to the research environment were only partially funded by the program.

4.3.2 Contribution to Research Resources

Based on Indirect Costs program administrative data, 22% of Indirect Costs grants were spent on research resources in 2003-2004, or \$49.5M. Based on outcomes reports, 57 of 83 institutions used program funds for journal subscriptions or e-journal subscriptions (68.7%) in 2003/04 and 43 of 64 institutions in 2004/05 (67.2%). Computing and communications upgrades (37 institutions in 2003/04 and 29 in 2004/05), improved access to online databases (19 institutions in 2003/04 and 25 in 2004/05), and upgrades or maintenance in libraries or other common areas (19 institutions in 2003/04 and 28 in 2004/05) were also reported.

⁵⁵ Indirect Costs program administrative data. Taken from institution statements of account.

At one small institution, prior to the Indirect Costs program, the institution cancelled print acquisitions on a regular basis due to double-digit growth in licensing costs. When the program was introduced, funds were used to partially finance the Canada National Site Licensing project (CNSLP). Effects of the CNSLP include:

- An increase in access to 1600 Elsevier/Academic journals compared to 48 journals before the CNSLP at an equivalent cost.
- Of the 1,600 journals available, researchers downloaded articles from 1,190 journals.

Another example of an investment in research resources is the use of program funds to partially pay for a technician and students to scan rare plant specimen which were made available electronically to researchers across the country and internationally.

4.3.3 Contribution to Management and Administration of the Research Enterprise

In 2003/04, 28% of Indirect Costs grants were spent on management and administration, or \$63.4M.⁵⁶ Most institutions providing a description of how program funds were used in this area reported management of research/funding (58 institutions of 89 institutions or 65.2% in 2003/04 and 47 of 69 institutions or 68.1% in 2004/05), and institution support for researchers (55 institutions in 2003/04 and 38 in 2004/05). Use of program funds to hire new staff or department restructuring was reported by fewer institutions (35 in 2003/04 and 39 in 2004/05).

Administrative data from the granting agencies indicated that there generally has been an increase in the number of grant applications received between 2000/01 and 2004/05. The extent to which this outcome can be attributed to the Indirect Costs program is difficult to determine.⁵⁷ However, according to case study research, at one institution nine full-time employees were hired to assist in grant writing. Further, 7 of 14 institutions interviewed reported that Indirect Costs grants had been used to hire grant facilitators or similar positions.

Institution representatives reported that modest changes in the level of research support could have significant impacts. For instance, the research centre at one institution received a relatively small amount of funding to improve its administrative structure. The funding was used to augment the existing administrative assistant from a half-time to a full-time position which according to the informant led to improved quality controls, productivity, and supplier management.

Other research services reported as funded (at least in part) by the Indirect Costs program included:

- Better risk management (e.g., more thorough legal analysis of the implications of contracts); and
- Better contact with government and industry research funders.

Despite these reported improvements, institutions did report a need to invest even more in:

- Management of research contracts (in one example, one person managing 200 research contracts a year); and

⁵⁶ Indirect Costs program administrative data. Taken from institution statements of account.

⁵⁷ The increases in CIHR funding levels documented in Exhibit 2.1 is likely a stronger influence on the number of applications received in the health sciences fields.

- Assistance to researchers in management of research projects, including a further increase in support with writing research proposals.

One risk associated with the management and administration category is lessened efficiency of these functions. Researchers from two institutions included as part of the case studies indicated that there was a risk of over-management (by central administration at institutions). General management expenditures are capped as part of at least one international program.

4.3.4 Contribution to Regulatory Requirements and International Accreditation Standards

According to program data, 5% of Indirect Costs grants were spent on regulatory requirements and international accreditation standards in 2003-2004 (\$10.6M).⁵⁸ In outcomes reporting, most institutions reported using funds to support behavioural and biomedical ethics boards (36 of 57 institutions or 63.2% in 2003/04 and 28 of 39 institutions or 71.8% in 2004/05). A number of institutions also reported recruitment or payment for employees devoted to meeting regulatory requirements (30 institutions in 2003/04 and 24 in 2004/05), or training of personnel concerning regulatory requirements (23 in 2003/04 and 16 in 2004/05).

In terms of immediate impacts of the program, one small institution reported that they wouldn't have been able to meet ethics review and regulatory requirements without the Indirect Costs program. Prior to the program, the university did not have the money to provide assistance to faculty to ensure that regulatory requirements were being met. Another larger institution reported that without the federal support for indirect costs of research, they would have had to "cut corners" resulting in more cursory ethical reviews of research proposals, which would generate risks for the institutions.

For one institution, a large investment in animal care and ethics was required as a result of an audit of the university. The institution had received several CCAC warnings, and the institution needed to improve its animal care facility or move into new facilities. Unless the institution found a way to respond to CCAC, there was a risk that CCAC would have shut down the institution's old facilities. Using the Indirect Costs grant, the institution reported upgrading central animal care facilities and old cages, and hiring a new director in charge of animal care.

4.3.5 Contribution to Management of Intellectual Property

The Indirect Costs program is aligned with the federal government's Innovation agenda and is expected to contribute along with other programs to the transfer and application of knowledge.⁵⁹ In 2003/04, 6% of Indirect Costs grants were spent on the management of intellectual property in 2003-2004, or \$12.4M.⁶⁰ A majority of institutions reported utilizing program funds in this area to increase support of staffing for technology transfer (34 of 52 institutions or 65.4% in 2003/04 and 22 of 38 institutions or 57.9% in 2004/05). A large number of institutions also reported support for new inventions, licenses, or patents (27 institutions in 2003/04 and 17 in 2004/05). Fewer institutions reported supporting or opening a Technology Transfer office (16 institutions in 2003/04 and 10 institutions in 2004/05).

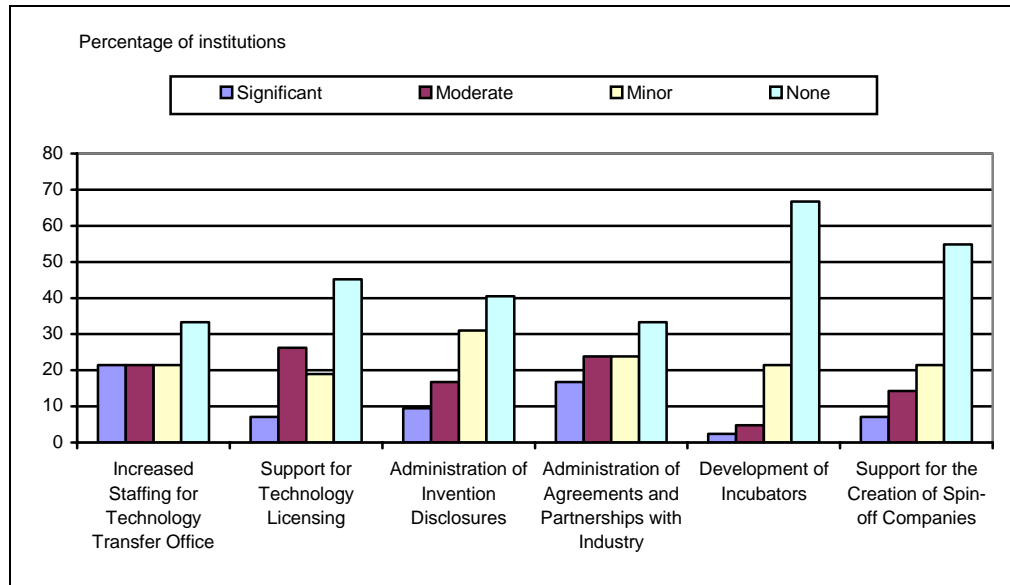
⁵⁸ Indirect Costs program administrative data. Taken from institution outcomes reports.

⁵⁹ Results-based Management and Accountability Framework and Risk-Based Audit Framework, June 2003.

⁶⁰ Indirect Costs program administrative data. Taken from institution outcomes reports.

Survey responses from institutions (respondents with responsibility for research commercialization, n=42) indicated that for most institutions, Indirect Costs grant had a minor to no effect on various research commercialization activities at their institution.

EXHIBIT 4.5: Use of Indirect Costs Program Funding on Commercialization and Intellectual Property



Source: Survey of Institutions, n=42

The extent to which Indirect Costs funds are used for new or previously existing expenses needs to be taken into account when addressing expected program outcomes. According to Budget 2004, the additional \$20M of program funding beginning in 2004/05 was to “help universities and research hospitals further strengthen their capacity for research [and] enhance the commercialization of research discoveries.” Survey responses from institutions (respondents with responsibility for research commercialization) indicate that the average increase in funding for research commercialization and technology transfer was 17.5%. Based on a comparison between institution spending on commercialization prior to the Indirect Costs program⁶¹ and after, it is probable that most of the Indirect Costs funding for intellectual property management was not invested in new areas.

In one interview with a technology transfer representative, the technology transfer office did not rely heavily on Indirect Costs funds. Rather, funding to operate the technology transfer office was derived from liquidated equity, fee for services, and income generated from IP. Other technology transfer representatives reported the following funding gaps:

- Prototype development funding. Informants interviewed indicated that even a small increase in prototype development funding could have a significant impact in terms of commercialization. For one smaller institution, \$2,000 was needed to develop a marketable

⁶¹ Based on a Statistics Canada estimate that prior to the establishment of the Indirect Costs program, total operational expenditures on IP were \$25.7M. Statistics Canada, Survey of Intellectual Property Commercialization in the Higher Education Sector, 2001. According to a representative from Statistics Canada, the total operational expenditures for IP management in 2003 were \$36.4 million (covering both hospitals and universities across Canada). This number is preliminary.

prototype, but the institution had difficulty raising this from existing sources of funding. Institutions reported that funding was most important earlier in the commercialization cycle.

- Salaries. One institution reported that provincial funding sources for commercialization did not allow institutions to fund salaries in technology transfer offices, and therefore salaries for technology transfer representatives was an area of need.

In sum, qualitative data from interviews and case studies indicate that there are funding gaps with respect to technology transfer. Interviews with technology transfer representatives indicated that relatively few new activities were being funded as a result of the Indirect Costs program. While this is allowed under current program guidelines, expectations for future program impacts should be consistent with the level of existing and new funding for commercialization.

Conclusion

With respect to the use of the Indirect Costs grants to date, funds were utilized mainly to upgrade facilities (39% of program funds) and to manage and administer the research enterprise (28%).⁶²

The Indirect Costs Program led to only few new activities in technology transfer.

⁶² Source: statements of account

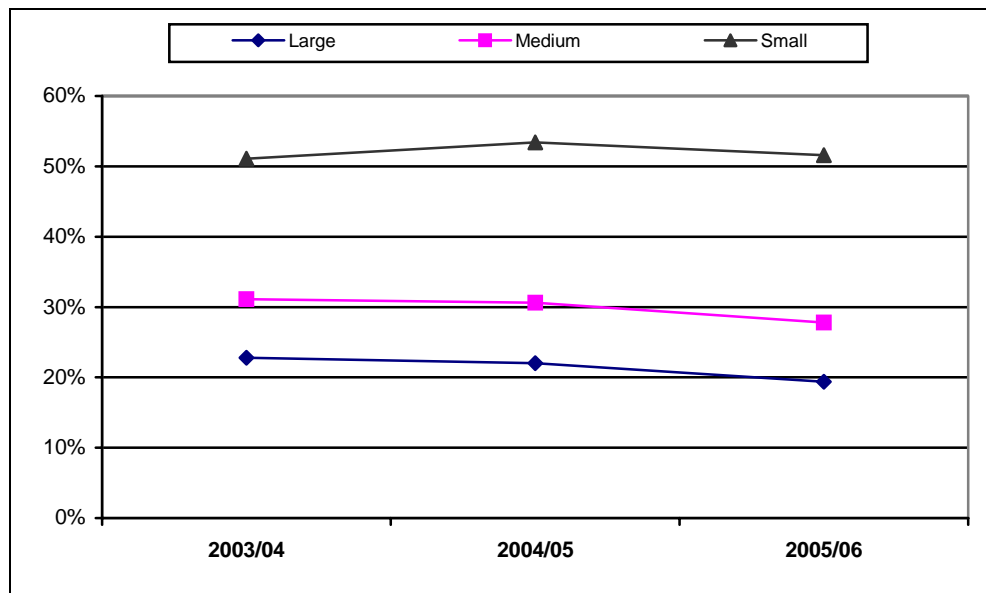
4.4 Effects on Smaller Institutions

Analysis was conducted to determine trends in Indirect Costs funds as a proportion of tri-agency direct research funding for institutions of different sizes. For the purposes of this report, the size institutions was defined based on tri-agency funding received in 2003/04, as follows

- large if they obtained \$50M or more;
- medium if they obtained more than \$1 M and less than \$50M, and
- small if they obtained less than \$1M⁶³

Based on the analysis presented in Exhibit 4.6, large institutions have experienced the largest decline in relative funding from 22.8% of direct tri-agency funding to 19.4%. In comparison, small institutions experienced a relatively stable amount of funding at 51%. It should be noted that this analysis does not reflect the recent increase of \$15M in program funding in 2005-06.

EXHIBIT 4.6: Indirect Costs grant as a percentage of direct tri-agency research funding between 2003/04 and 2005/06



Source: Indirect

Costs program administrative data. Based on three year historical council funding average

Smaller institutions were more likely to report that they had witnessed growth in non-governmental research funding. For instance, one small institution reported a jump in contract revenue from \$1.3M to \$4.1M between 2003 and 2004. However, it should be noted that program administrative data does not show a higher rate of growth in the research enterprise for small institutions relative to large institutions; while large institutions saw their research funding grow by 46.7% between 1999/2000 and 2003/04, small institutions experienced growth in granting agency funding of 22.3%.

Conclusion

Large sized institutions have experienced the largest decline in relative funding levels.

⁶³ Institutions were removed from the analysis if they received less than \$25,000 in tri-council funding in 2003/04.

4.5 Unintended Effects

A minority of institutions surveyed reported increased conflict at their institution due to the distribution of program funds as an unintended effect of the program (15 institutions or 20.0%). One institution in particular noted some conflict between the university and affiliated institutes requiring delicate negotiations.

One possible unintended effect of the program reported by informants was the perception that health charity research funding, such as that provided by the Heart and Stroke Foundation and the National Cancer Institute, will be perceived as “second tier” research due to a lack of indirect costs support from health charity research organizations. Health charity representatives interviewed reported no measurable effect of the program at this point on applications received or the quality of research funded by health charities.

Conclusion

There is no evidence that the program has led to any major unintended effects at this stage.

5. Conclusions and Recommendations

The following section summarizes conclusions and recommendations resulting from the third-year review.

5.1 Conclusions

Design Issues – program management

1. **Communication with institutions:** Communications with institutions and reporting requirements were described as clear by institutions. However, data reported in outcomes reports vary in quality and reliability. While the majority of institutions indicated that reporting requirements were clear, over one-third (40 of 111 institutions) were required by the program to resubmit their 2004/05 outcomes reports in most cases because expenditures had been reported in the wrong categories or because the qualitative data was insufficient.
2. **Reporting – meaningfulness of outcome data.** Institutions reported that a few quantitative indicators were not meaningful. Not all measures captured in the outcomes reports are tracked by institutions. Some measures, such as the number of researchers conducting international research, were not tracked by institutions. Alternative outcomes measures, such as the level of deferred maintenance and changes in library holdings, were identified by institutions.

Design Issues: current design and alternative delivery models

3. **Current delivery mechanism relative to alternative delivery models.** Key components (funding formula, eligible costs etc.) of the current delivery model were examined as described above. In addition, the current model was assessed against potential alternative models including administering program funds through the granting agencies, delivering funds through the Canada Social Transfer, and administering funds using a contribution funding model. Review results did not identify any issues with the current model that would warrant changes at this time. An in-depth analysis of alternative delivery models should be carried out during the summative evaluation when more data is available on program outcomes.
4. **Funding formula.** A majority of institutions surveyed described the funding formula as appropriate. A similar formula using the same data is used for the Canada Research Chairs allocations, and as a result, institutions are familiar with the formula. Smaller institutions did report, however, that growth in their research enterprises was not well reflected, due to the three-year rolling average used to calculate program allocations. However, overall the three-year rolling average used in the calculation of Indirect Costs grants was found to smooth out fluctuations.
5. **Eligible indirect costs.** The most common suggestion by institutions with respect to the list of eligible expenditures was to provide funding for basic equipment as opposed to “state of the art” equipment. Other suggestions included funding for start-up funds for new faculty, funds for teaching release, and travel (to develop proposals, etc.).

6. Level of funding

- The rate of funding for the Indirect Costs program (19.6%⁶⁴) was on par with or lower than international rates of funding for the indirect costs of research. Other countries reimburse indirect costs of research at rates ranging between 20% and 50%.⁶⁵ Challenges in generalizing findings from the international review include: differences between the expenses covered by international programs and those covered by the Indirect Costs program; and different support mechanisms used in Canada and other countries, which makes estimation of the rate of reimbursement for indirect costs difficult to calculate.
- Between 2003/2004 and 2005/06, Indirect Costs program funding has declined slightly by 7.6% relative to eligible Council funding

7. Delivering program funds to affiliates through parent institutions. Six out of eight affiliates interviewed reported dissatisfaction with the distribution of funds. Several affiliates found that the current approach lacked transparency. However, the current approach is advantageous given the wide variety of services provided by parent institutions to affiliates, as well as the significant cost associated with treating affiliates separately. The current approach allows both parent institutions and affiliates to determine an appropriate distribution of program funds.

Program Results

8. Incremental Use of Program funds

- Incremental use of program funds was at times difficult to establish. Institutions interviewed as part of the case studies at times had difficulty identifying what incremental expenditures had been made as a result of monies freed-up by the infusion of program funds into their operating budget, mainly because institutions administered program funds through their central budget. In addition, institutions were confused with respect to program expectations for incrementality. As a result, logical linkages between the program and future program impacts are more difficult to establish.
- Changes in provincial funding for indirect costs of research were identified for four provinces, most significantly in Québec. While no reductions in overall provincial support for post-secondary education were identified for the four provinces, the review did identify a risk that provinces are redirecting funding away from support for the indirect costs of research.
- During the course of the third-year review institutions reported that financial pressures had lessened as a result of the program. However, institutions still reported shortfalls in indirect costs funding.

⁶⁴ Defined as Indirect Costs program funding for 2003/04, divided by the eligible tri-council research grants for the same year.

⁶⁵ Multiple rates of F&A reimbursement were reported in the literature (United States).

- 9. Setting the Stage for the Sixth-year Evaluation** Given the challenges associated with measuring incrementality, evaluating program results and establishing logical linkages between impacts and program funding will be difficult.

Potential results/measures that can be examined as part of the sixth-year evaluation include deficits, levels of deferred maintenance, use of research or technical equipment and number of researchers serviced using research equipment, changes in/use of library holdings and development of databases and other research resources, and improved quality of animal care facilities.

- 10. Immediate Program Results.** Program funds were primarily used to upgrade facilities and to manage and administer the research enterprise. Expenditures in facilities accounted for the largest portion of Indirect Costs grants, with 39% of Indirect Costs grants devoted to facilities.⁶⁶ Management and administration of the research enterprise accounted for 28% of Indirect Costs grant expenditures. Expenditures on regulatory requirements and accreditation accounted for a more modest level of investment by institutions (4.7% of program funds). Six percent of Indirect Costs program funds were invested in research commercialization and intellectual property. Further, survey respondents with responsibility for research commercialization stated that the average increase in funding for research commercialization and technology transfer was 17.5%. As a result, a significant amount of funding in the area of technology transfer appears to be for expenses that existed prior to the Indirect Costs program.

- 11. Effects on Smaller Universities compared to Larger Universities.** While funding for small institutions has remained stable since the program was established, large institutions have witnessed a decline in program funding from 22.8% to 19.4% of direct research funding. This was in spite of the fact that large institutions witnessed a more rapid growth in tri-agency research funding (46.7%) between 1999/2000 and 2003/2004 compared to small institutions (22.3%).

⁶⁶ 2003/04 statements of account

5.2 Recommendations

The following recommendations have been presented based on the evidence collected as part of the review:

Recommendation 1:

Retain the existing program delivery model.

At the current time, no significant issues were identified which would warrant modifying the program delivery model, including flowing funds through parent institutions to affiliates. However, a more in-depth analysis of alternative delivery models may be completed as part of the sixth-year evaluation.

Recommendation 2:

Clarify government expectations of institutions and the program in terms of incrementality.

Further information with respect to program expectations will assist institutions to plan expenditures and clarify expectations with respect to the Sixth Year Evaluation.

Recommendation 3:

Revise institution reporting requirements.

The following modifications to reporting requirements are recommended:

- Reporting requirements should be revised based on the logical linkages identified in the current review.
- Outcomes reports should capture data on new investments as well as investments to maintain existing research support services.
- Given the variability in quality and reliability of data captured through the outcomes reports, controls should be implemented to verify the validity of outcome reporting.
- Reporting requirements should be re-examined for institutions falling below a defined threshold of Indirect Costs grant.

Recommendation 4:

Establish a specific rate of indirect costs (higher than the 2003-04 rate) in order to ensure a stable funding level.

The current review indicated that the level of program funding has declined relative to council funding. A stable rate of indirect costs funding (calculated as a percentage of direct research funding) should be maintained in order to achieve program objectives, and allow institutions (particularly large institutions) to plan their expenditures. The Indirect Costs program funding rate

should be revisited as part of the Sixth Year Evaluation based on results particularly with respect to strategic or incremental areas.

Recommendation 5:

Monitor the changes in funding of provinces and implement a mitigation strategy to address the risk of redirecting money.

In light of the results of the review, the risk of provinces in redirecting monies is real and should be monitored closely. The program should develop and implement a mitigation strategy for this risk since it can affect the program's ability to meet its objectives.

Recommendation 6:

Develop a best practices guide to document exemplary use of program funds among institutions.

This best practices guide would be developed in consultation with a sample of institutions to encourage the sharing of best practices with respect to the implementation of the program at the institution level as well as the reporting of program funds. This should include affiliate institutions and highlight agreements perceived as effective between affiliate and parent institutions.

APPENDIX A: Issues-Indicators Matrix

Evaluation Issue	Indicator	Data/Document Review						Interviews						Survey				
		Outcomes Reports	Request forms	Financial reports	Program communication	Granting council databases	Other documents	Review of Other Programs	Staff	Steering Committee	Associations (e.g., AUCC)	Health Charities	Provincial representatives	Institutions	Affiliates	Institutions	Tech. Transfer Offices	Case Studies
To what extent is the funding formula appropriate? What are the effects of the funding formula?	1	research funding sources included and excluded from the formula in light of program objectives						<	<	<								
		perceived appropriateness of funding formula								✓	✓	✓	✓					
To what extent is the overall level of funding appropriate?	2	effect of making changes in the funding formula on the administration of the program including costs			✓		✓		✓									
		level of program funding compared to similar international funding initiatives (as a percentage of direct research costs)							✓									
		federal granting agency funding over the past five years					✓											
		informed opinions							✓	✓	✓			✓				✓
		financial pressures associated with federally supported research activity on institutions pre- and post-program												✓	✓			
Is the program requirement that program funding to affiliated institutions flow through eligible parent institutions effective in ensuring that objectives of the program are met? Should this requirement be modified?	3	qualitative assessment of capacity and needs		✓														
		informed opinions of stakeholders							✓					✓	✓			✓
		distribution of funds between affiliates and institutions						✓										✓
		research services provided by affiliates and by institutions												✓	✓			✓
		difficulties in allocating funds through parent institutions to affiliates												✓	✓			
What changes to the design of the program would make it more effective and efficient?	4	possible effects of changing institutions funded directly by the program					✓		✓	✓	✓							
		informed opinions of stakeholders and institutions							✓	✓	✓			✓	✓	✓		✓
Are the outcome data being collected adequate to support the data requirements of the summative evaluation?	5	review of design features of international indirect costs funding initiatives						✓										
		qualitative assessment of indicators in light of program objectives	✓					✓										
		perceived usefulness of indicators													✓	✓		✓
		availability of data to measure indicators												✓				

Evaluation Issue	Indicator	Data/Document Review						Interviews						Survey				
		Outcomes Reports	Request forms	Financial reports	Program communication	Granting council databases	Other documents	Review of Other Programs	Staff	Steering Committee	Associations (e.g., AUCC)	Health Charities	Provincial representatives	Institutions	Affiliates	Institutions	Tech. Transfer Offices	Case Studies
How effective are communications from the program to institutions in delivering the program?	6	qualitative assessment of communications provided by the program to institutions since program initiation				✓												
		perceived clarity of program documents and reporting requirements											✓			✓		✓
Are there more efficient models of delivering the program while meeting the objectives of the program?	7	qualitative assessment of the advantages and disadvantages of alternative delivery models given the Canadian context						✓										
		informed opinions of stakeholders							✓	✓	✓		✓	✓				✓
		program delivery costs			✓		✓											
Is the list of eligible indirect costs appropriate? Are there gaps with respect to what indirect costs are eligible under the program?	8	qualitative assessment of the efficiency and effectiveness of program delivery processes			✓			✓										
		reported gaps in eligible costs											✓	✓	✓			✓
		percent of institutions requesting funds by cost category	✓		✓													
		institutions' use of program funds by cost category	✓		✓													
Program Results (Immediate)		eligible indirect costs for similar international initiatives						✓										
Are program funds being used incrementally? How is incrementality defined in the context of this program?	9	review of definitions of incrementality used in the context of the program				✓		✓		✓								
		incidences where provinces or other sources have withdrawn or redirected funding since the initiation of the program						✓				✓	✓		✓			✓
		how indirect costs of federally funded research were covered pre- and post-program											✓		✓			✓
		extent of incremental versus non-incremental spending											✓		✓			✓
		use of program funds to maintain research services											✓		✓			✓
		comparison of Statistics Canada's Survey of Intellectual Property Commercialization to spending reported through the Indirect Costs program			✓			✓										
To what extent has the program contributed to immediate	10																	

Evaluation Issue	Indicator	Data/Document Review							Interviews						Survey				
		Outcomes Reports	Request forms	Financial reports	Program communication	Granting council databases	Other documents	Review of Other Programs	Staff	Steering Committee	Associations (e.g., AUCC)	Health Charities	Provincial representatives	Institutions	Affiliates	Institutions	Tech. Transfer Offices	Case Studies	
outcomes, including:																			
Has the program contributed to the operation and maintenance of research facilities?	a	proportion of funding spent on research facilities	✓		✓														
		logical linkages between investment and possible future program impacts																	✓
		use of program funds to support operation and maintenance of research facilities	✓											✓		✓			✓
		qualitative description of the adequacy and condition of the research facilities pre and post	✓											✓					✓
Has the program helped to support research resources?	b	proportion of funding allocated to research resources	✓		✓														
		contributions of the program to the provision of research resources	✓											✓		✓			✓
		logical linkages between investment and possible future program impacts																	✓
		Use of program funds for: journal subscriptions participation in the Canadian Site Licensing Project provision of internet access in libraries/common areas	✓												✓		✓		✓
Has the program contributed to the effective management and efficient administration of institutes' research enterprise?	c	proportion of funding allocated to the management and administration of the research enterprise	✓		✓														
		logical linkages between investment and possible future program impacts																	✓
		services provided with program funds	✓												✓		✓		✓
		number of FTEs devoted to the management and administration of the research enterprise (pre and post)	✓	✓															
		change in number of applications to granting agencies	✓				✓												
Did the Indirect Costs Program help institutions meet regulatory requirements and international accreditation standards in research?	d	proportion of funding devoted to meeting regulatory and accreditation requirements	✓		✓														
		logical linkages between investment and possible future program impacts																	✓
		use of funds to meet regulatory requirements and international accreditation standards	✓												✓		✓		✓

Evaluation Issue	Indicator	Data/Document Review							Interviews							Survey		
		Outcomes Reports	Request forms	Financial reports	Program communication	Granting council databases	Other documents	Review of Other Programs	Staff	Steering Committee	Associations (e.g., AUCC)	Health Charities	Provincial representatives	Institutions	Affiliates	Institutions	Tech. Transfer Offices	Case Studies
	Status of compliance with the ethics policies of federal granting agencies, the Canadian Council on Animal Care, and the American Veterinary Medical Association	✓																
	number of FTEs devoted to meeting regulatory and accreditation requirements	✓																
Has the Indirect Costs program contributed to the effective management of the intellectual property generated by research activities and to the transfer of knowledge and commercialization?	e	proportion of funding devoted to intellectual property	✓		✓													
		number of FTEs devoted to the transfer of knowledge and commercialization of results	✓															
		logical linkages between investment and possible future program impacts																✓
		description of the program's support of management of intellectual property	✓						✓	✓	✓					✓	✓	✓
		description of the program's support of: commercialization creation and application of new knowledge	✓										✓			✓	✓	✓
Are effects produced in smaller institutions similar/larger/smaller than those created in larger institutions?	11	assessments of the contribution of the program to developing research capacity in smaller institutions	✓										✓		✓		✓	
		program funding as a percentage of direct research costs in smaller institutions versus larger institutions			✓		✓											
		percent of program funding devoted to each expenditure category in smaller versus larger institutions	✓		✓													
		effects in small and medium-sized institutions versus larger institutions given the higher rate of funding for smaller institutions	✓										✓		✓		✓	
Has the Indirect Costs Program produced unintended effects? Are program funds invested in areas that would benefit research in the three discipline groups (SSH, NSE, and health) equally?	12	unexpected results/difficulties reported by institutions	✓										✓	✓				
		reported disturbances of the program on the Canadian university system							✓	✓	✓		✓	✓				
		differential investment by discipline group											✓		✓		✓	

APPENDIX B: International Programs

Description of Research Funding Programs							
Country/ Program Name	Program Funding (2004/05)	Percentage of Direct Costs Funded	Program Delivery Costs (2004/05)	Direct Research Costs Factored into Calculation	Eligible Indirect Costs	Delivery Model	Description
International							
European Union							
The 6th Framework Programme (2002- 2006) European Commission	17.5B€ over 5 years	FC – all eligible direct and indirect costs funded FCF – flat rate of 20% for indirect costs, except subcontracti ng AC - – flat rate of 20% for indirect costs	unknown	Each participant is expected to follow its own accounting conventions, so there are no predefined cost categories.	Each participant is expected to follow its own accounting conventions, so there are no predefined cost categories.	There are three cost reporting models: Full Cost with actual indirect costs (FC) – EU Community contribution is 50%. Full Cost with indirect flat rate costs (FCF) –EU Community contribution is 100%. Additional Costs with indirect flat rate costs (AC) –EU Community contribution is 100%.	The sixth framework programme for Research and Technological Development (FP6) is the main financial and legal instrument of the European Commission to implement the European Research Area (ERA), alongside national efforts and other European co-operative research activities. The framework programme supports collaboration in research, promotes mobility and co-ordination and invests in mobilising research in support of other EU policies. The main objective of FP6 is to contribute to the creation of the ERA by improving integration and co-ordination of research in Europe. Eligible participants are research institutes, universities and industry from any country in the world.
Denmark							
Danish National Research Foundation	2.3B DKK total funding since 1993	N/A	unknown	All (including salaries and equipment) Grants are based on the principle of total funding.	All (including operating costs) Grants are based on the principle of total funding.	Grants for up to 5 years (10 in some circumstances) Grants are made to an independent group of scientists to form a centre of excellence with a director of research. The Foundation does not support individual projects.	The Danish National Research Foundation is committed to funding unique research within the basic sciences, life sciences, technical sciences, social sciences, and the humanities. The aim is to identify and support groups of scientists who are able to create innovative and creative research environments of international quality. Presently 33 centres of excellence are supported in addition to other minor activities.

Description of Research Funding Programs							
Country/ Program Name	Program Funding (2004/05)	Percentage of Direct Costs Funded	Program Delivery Costs (2004/05)	Direct Research Costs Factored into Calculation	Eligible Indirect Costs	Delivery Model	Description
United Kingdom							
Research Councils UK (RCUK) Engineering and Physical Sciences Research Council (EPSRC) Research Programmes	500M€	46%	unknown	staff project studentships visiting researchers travel and subsistence consumables (incl. equipment costs & maintenance) exceptional items (incl. tuition fees, specialist fees, etc.) public communication training funds services NOTE: The above costs are not specified as direct costs, but are also not listed as indirect costs.	Indirect Costs: financial and personnel services staff facilities public relations recruitment costs staff development and training departmental services (including contributions to departmental clerical, technical and computing support) NOTE: The above costs are specified as indirect costs.	Projects supported range from small value, short-term grants to multi- million pound research programmes. Research is funded through: responsive mode (flexible) managed programmes (joint funded) tailored funding schemes	Research Councils UK (RCUK) is a strategic partnership through which the UK's eight Research Councils work together to champion the research, training and innovation they support. RCUK works alongside the Office of Science & Technology (OST). RCUK sponsor the UK Research Office (UKRO), which promotes UK participation in European Community research and higher education programmes. The Engineering and Physical Sciences Research Council (EPSRC) is the UK Government's leading funding agency for research and training in engineering and the physical sciences. EPSRC is one of eight Research Councils funded by the UK Government. Other Research Councils include: Arts and Humanities Research Council (AHRC) Biotechnology and Biological Sciences Research Council (BBSRC) Council for the Central Laboratory of the Research Councils (CCLRC) Economic and Social Research Council (ESRC) Medical Research Council (MRC) Natural Environment Research Council (NERC) Particle Physics and Astronomy Research Council (PPARC)
Australia							
Research Infrastructure Block Grant Scheme (RIBG)	AU\$170- 180 million	20%	unknown	competitive research grant income	the provision of facilities such as libraries, computing centres, animal houses and herbaria; the purchase, hire and maintenance of equipment; telecommunications;	RIBG grants are provided to institutions according to a formula, in which allocations are based on the share of competitive research grant income over the two most recent years	The Research Infrastructure Block Grants (RIBG) Scheme assists the successful completion of research projects by contributing to their 'overhead' expenses, which are not covered though the research grants but which nevertheless underpin the research activity. The objectives of the program are to: ➤ enhance the development and maintenance

Description of Research Funding Programs							
Country/ Program Name	Program Funding (2004/05)	Percentage of Direct Costs Funded	Program Delivery Costs (2004/05)	Direct Research Costs Factored into Calculation	Eligible Indirect Costs	Delivery Model	Description
					and salaries and services for support staff	for which data are available. Payments are made to institutions on a bi-monthly basis.	<p>of research infrastructure in HEPs for the support of high quality research in all disciplines</p> <ul style="list-style-type: none"> ➤ meet project-related infrastructure costs associated with Australian Competitive Grants ➤ remedy deficiencies in current research infrastructure ➤ ensure that areas of recognised research potential, in which HEPs have taken steps to initiate high quality research activity, have access to the support necessary for development
<p>Australian Research Council (ARC)</p> <p>National Competitive Grants Program</p> <p>Linkage—Infrastructure, Equipment and Facilities</p>	unknown	unknown	unknown	facilities acquisition major equipment	<p>facilities maintenance non-capital library and information infrastructure consortium, membership, secretariat and travel costs</p> <p>Exclusions: operational costs, including salaries of staff engaged in teaching and research, outreach, community relations, and in research only.</p>	<p>Excludes direct costs provided by other sources of funding</p> <p>Minimum funding of \$100K AU</p> <p>Funding normally for one year, but can be up to five years.</p>	<p>Linkage—Infrastructure, Equipment and Facilities enhances the institutional resources including associated indirect costs for research projects. The program supports major facilities and equipment, and non-capital aspects of library and information infrastructure.</p> <p>The objectives are to: encourage institutions to develop collaborative arrangements among themselves, across the higher education sector and with organisations outside the sector, in order to develop research infrastructure support large-scale cooperative initiatives involving two or more institutions, thereby allowing expensive facilities to be shared enhance support for areas of research strength ensure that researchers in fields of recognised research potential have access to the support necessary for development</p>
New Zealand							
The Foundation for Research, Science & Technology (RS&T)	\$465M NZ	unknown	unknown	unknown	unknown	Investments (usually research proposals) are appraised or assessed, improvements are	The Foundation is a Crown entity, Public Good Science and Technology spans innovation, economic, social and environmental goals for RS&T. The portfolios of research involve partnerships with private companies, central and

Description of Research Funding Programs							
Country/ Program Name	Program Funding (2004/05)	Percentage of Direct Costs Funded	Program Delivery Costs (2004/05)	Direct Research Costs Factored into Calculation	Eligible Indirect Costs	Delivery Model	Description
Public Good Science & Technology (PGS&T) New Economy Research Fund (NERF)						negotiated or sought through tenders where appropriate. Investment decisions are made by the Foundation Board. Research programs funded for 3-6 years	local government, Maori organisations, and other communities of interest within New Zealand. PGS&T is comprised of six output classes: Non-Specific Output Funding Research for Industry Maori Knowledge and Development Research Health Research Social Research Environmental Research The New Economy Research Fund (NERF) invests in basic research with a focus on developing knowledge and capability to support the development of new, and emerging, RS&T intensive enterprises in New Zealand.
United States							
Federal F&A Costs US Government Office of Management and Budget Cost Principles for Educational Institutions (Circular No. A-21)	unknown	47.5% (national avg. for public institutions on-campus research) ⁶⁷ rates vary for off- campus research, other sponsored activities, clinical trials, training grants, etc.	unknown	N/A	Facilities: depreciation and use allowances, interest on debt associated with certain buildings, equipment and capital improvements, operation and maintenance expenses, and library expenses. Administration: general administration and general expenses, departmental administration, sponsored projects administration,	F&A (Indirect) costs are negotiated with each institution, and are variable dependent upon the federal department with which the research is associated.	This Circular establishes principles for determining costs applicable to grants, contracts, and other agreements with educational institutions. The principles deal with the subject of cost determination, and make no attempt to identify the circumstances or dictate the extent of agency and institutional participation in the financing of a particular project. The principles are designed to provide that the Federal Government bear its fair share of total costs, determined in accordance with generally accepted accounting principles, except where restricted or prohibited by law.

⁶⁷ University of Iowa website. Information on F&A. <http://research.uiowa.edu/dsp/main/?get=fandainfo> (29 Jun 05).

Description of Research Funding Programs							
Country/ Program Name	Program Funding (2004/05)	Percentage of Direct Costs Funded	Program Delivery Costs (2004/05)	Direct Research Costs Factored into Calculation	Eligible Indirect Costs	Delivery Model	Description
					student administration and services, and all other types of expenditures not listed specifically under one of the subcategories of Facilities (including cross allocations from other pools).		