

*Enhancing the effectiveness of health care
for Ontarians through research*

ICES Institute for Clinical
Evaluative Sciences



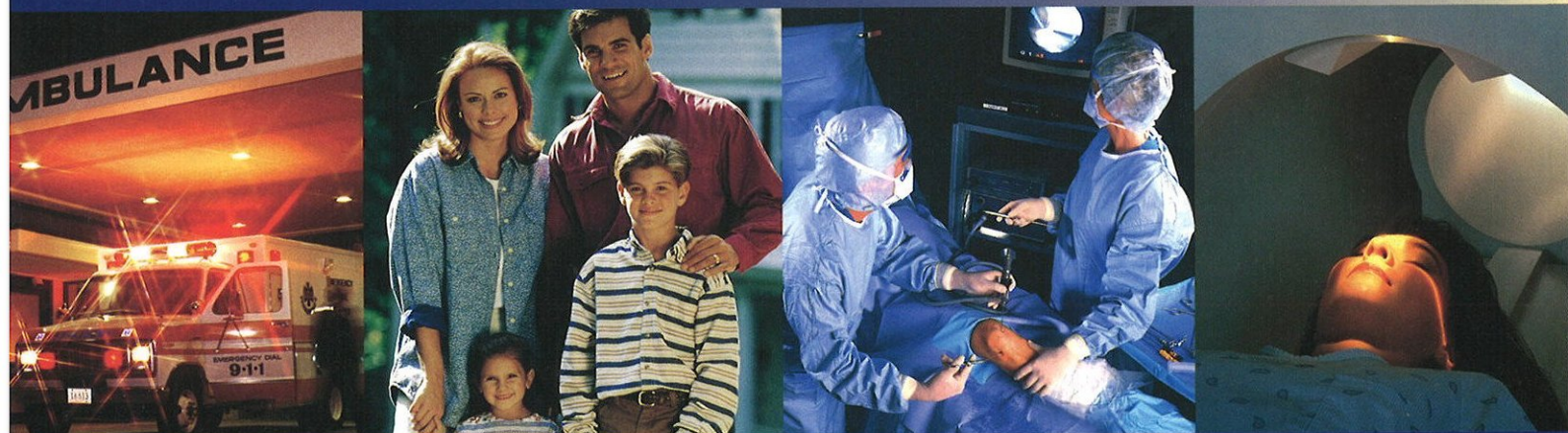
Building knowledge for a **healthier** Ontario

2004 ANNUAL REPORT

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About ICES – Ontario's Resource for Informed Health Care Decision-making



ICES is an independent, non-profit organization that conducts research on a broad range of topical issues to enhance the effectiveness of health care for Ontarians. Internationally recognized for its innovative use of population-based health information, ICES provides evidence to support health policy development and changes to the organization and delivery of health care services.

Unbiased ICES evidence provides fact-based measures of health system performance; a clearer understanding of the shifting health care needs of Ontarians; and a stimulus for discussion of practical solutions to optimize scarce resources.

Key to ICES' research is our ability to link anonymous population-based health information on an individual patient basis, using unique encrypted identifiers that ensure privacy and confidentiality. This allows scientists to obtain a more comprehensive view of specific health care issues than would otherwise be possible. Linked databases reflecting 12 million of 30 million Canadians allow researchers to follow patient populations through diagnosis and treatment, and to evaluate outcomes.

ICES brings together the best and the brightest talent under one roof. Many of our faculty are not only internationally recognized leaders in their fields, but are also practising clinicians who understand the grassroots of health care delivery, making ICES knowledge clinically-focused and useful in changing practice. Other team members have statistical training, epidemiological backgrounds, project management or communications expertise. The variety of skill sets and educational backgrounds ensures a multi-disciplinary approach to issues management and creates a real-world mosaic of perspectives that is vital to shaping Ontario's future health care.

ICES collaborates with experts from a diverse network of institutions, government agencies, professional organizations and patient groups to ensure research and policy relevance.

ICES Goals

- Carry out population-based health services research that is relevant to clinical practice and health policy development;
- Document province-wide patterns and trends in health care delivery;
- Develop and share evidence to inform decision-making by policymakers, managers, clinicians, planners and consumers;
- Promote linkages among health services researchers and decision-makers; and,
- Train researchers and promote a wider understanding of clinical epidemiology and health services research.



Message from the Board Chair & the CEO

Supporting accountability, quality improvement and better outcomes

For more than a decade, ICES has transformed raw data into meaningful information that can be used to achieve accountability and to improve health outcomes in Ontario. With expertise spanning the care continuum, ICES' capacity to produce knowledge to support policy, practice and resource allocation decisions has grown significantly.

Objective, fact-based evidence can help promote greater public understanding and acceptance of the tough, but necessary, decisions required to responsibly balance the sometimes-conflicting forces of service demand and sustainability of health care. Now, more than ever before, measures of health system productivity are needed to distinguish between services that improve outcomes and those that do not.

Without such knowledge, effective management of the system will be increasingly difficult.

Recently, national and provincial health quality councils have emerged in Canada. ICES welcomes the establishment of Ontario's Health Quality Council, and looks forward to supporting its efforts through data analysis, advice and evidence-based information. Lessons from health care systems outside Ontario have shown that important improvements can be made to quality of care by measuring current care, comparing it with accepted benchmarks, and reorganizing delivery to address deficiencies that have been identified. While Ontario has made some progress in this area, our health system would benefit from an

enhanced focus on measurement—feedback—change, which draws attention to the need for, and value of, high-calibre information to guide health care reform.

In the coming year, ICES will continue to focus on developing fact-based knowledge that is aligned with many of the central challenges of health care delivery in Ontario, such as accountability, improved clinical management and outcomes, assessment of new technologies, and effective resource use. With databases reflecting health system interactions of more than one-third of the Canadian population, ICES will produce critical information to guide the difficult choices essential to meet today's needs, and to plan for those of tomorrow.

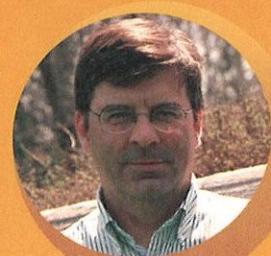


Dr. Peter Glynn
Board Chair

A handwritten signature in black ink, appearing to read 'Peter Glynn'.

Dr. Andreas Laupacis
President and CEO

A handwritten signature in black ink, appearing to read 'Andreas Laupacis'.



Board of Directors

ICES is governed by a voluntary Board of Directors, whose collective range of experience and expertise guides our strategic direction and research priorities.

Chair

Dr. Peter Glynn

HEALTH CARE CONSULTANT AND
FORMER PRESIDENT & CEO
KINGSTON GENERAL HOSPITAL

Vice-Chair

Ms. Bonnie Adamson

PRESIDENT & CEO
NORTH YORK GENERAL HOSPITAL

Directors

Mr. Paul Huras

EXECUTIVE DIRECTOR & CEO
THAMES VALLEY DISTRICT HEALTH COUNCIL

Dr. Andreas Laupacis

PRESIDENT & CEO AND SENIOR SCIENTIST
ICES

Dr. Hui Lee*

GENERAL INTERNIST

Ms. Mary Catherine Lindberg

CHIEF EXECUTIVE OFFICER
ONTARIO COUNCIL OF TEACHING HOSPITALS

Dr. Stanley Lofsky

FAMILY PHYSICIAN AND
OMA REPRESENTATIVE

Ms. Wendy McKnight Nicklin

VICE-PRESIDENT NURSING, ALLIED HEALTH,
CLINICAL PROGRAMS AND PATIENT SAFETY
THE OTTAWA HOSPITAL

Mr. Denis Morrice

PRESIDENT & CEO
ARTHRITIS SOCIETY

Dr. Bernard O'Brien*

HEALTH ECONOMIST
MCMASTER UNIVERSITY

Dr. Duncan Sinclair

FORMER CHAIR
ONTARIO HEALTH SERVICES
RESTRUCTURING COMMISSION

Dr. Catharine Whiteside

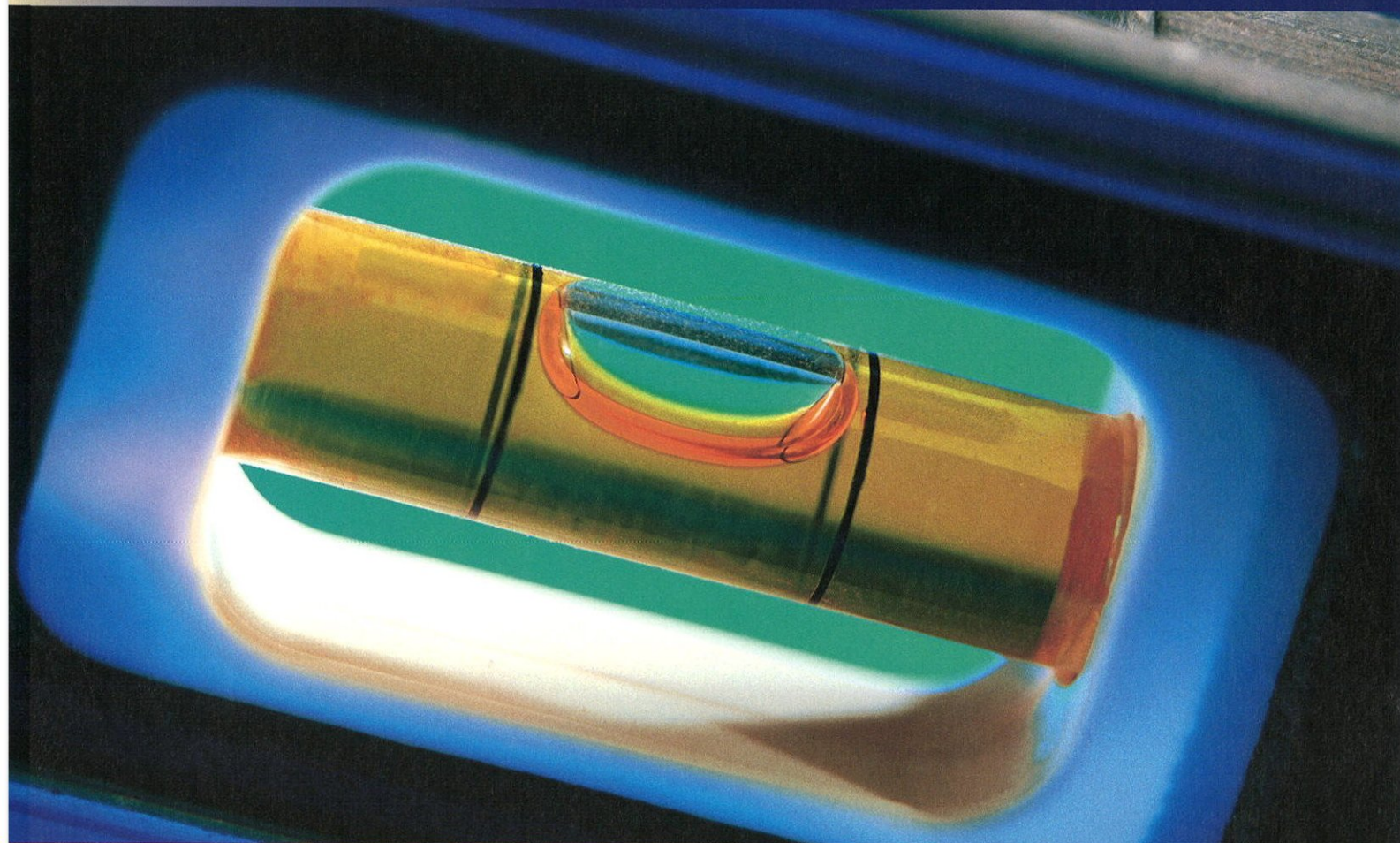
ASSOCIATE DEAN,
GRADUATE AND INTER-FACULTY AFFAIRS
UNIVERSITY OF TORONTO

Mr. John Wright

VICE-PRESIDENT,
CANADIAN PUBLIC AFFAIRS DIVISION
IPSOS-REID CORPORATION

* We respectfully acknowledge the contributions of these individuals who passed away early in 2004.

Achievements and Aspirations



*Harnessing
Ontario-specific
population-based
data to create
evidence to
support prudent
decisions in the
management of
today's scarce
health care
resources*

Achieving a balance between timely access to high-quality health care and cost containment is a challenging task in today's environment. Over the years, ICES research has played a significant role in providing fact-based knowledge to support policy development, planning and improvements in care delivery.

Producing useful information from raw data can be difficult, but "getting it out there" and getting it noticed in an era of information overload, comes with its own challenges. At ICES, research is converted into reader-friendly atlases and investigative reports targeted to key audiences across the health system. As we are always looking for ways to broaden the reach and utility of our products, in May 2003, ICES introduced *At A Glance*, a monthly e-bulletin, highlighting recent evidence-based knowledge for stakeholders in a short and easy-to-read format. The overwhelmingly positive response to this new publication has seen distribution grow to several thousand, provincially, nationally, and internationally, in less than a year. To receive this bulletin, please send your request to info@ices.on.ca, specifying your name, title and organization.

The following is a sampling of projects from the past year, as well as some future areas of research focus that ICES will engage in to support policy development and improved health care delivery across the province.

Increased public scrutiny: "Are we getting our money's worth?"

With 46% of the provincial budget devoted to health care, taxpayers must be assured that invested dollars are translating into better health outcomes in terms of survival, quality of life and satisfaction with the health care system. Some of the work contributed in this area included:

- A follow-up investigation into the impact of cardiac report cards on clinical practice for heart attack management, which revealed that 54% of physician respondents had launched some form of quality improvement initiatives at their respective hospitals in response to ICES Report Card findings.
- The release of the first report of phase 1 of the study on Enhanced Feedback for Effective Cardiac Treatment (EFFECT). Though there have been significant advances in treatments for cardiovascular disease, the uptake into practice has been slow. This report is part of the Canadian Cardiovascular Outcomes Research Team's (www.ccort.ca) effort to: set national benchmarks for cardiac care; produce cardiac report cards that measure performance; provide hospitals with the information needed to minimize the gap between current practice and ideal care; and, test the utility of report cards as a catalyst for change.
- A study on consumer expectations of health care, which found that satisfaction with heart attack care received by 2200 Ontario patients differed between the wealthiest 20% and the poorest 20% of patients. Wealthier, better-educated patients wanted more care, received more care, and yet were twice as likely to be dissatisfied with access to care and the care they received.



Introducing technology: When is the right time?

New diagnostic modalities offer considerable promise on the clinical front, but often these expensive technologies pose a significant challenge for the provincial payer. The main factor in determining whether to make a new technology available should be evidence of its effectiveness in improving patient management and outcomes.

Descriptive analyses produced by ICES can shed light on the clinical context in which the techniques are being applied, the providers that use them, and their geographic distribution across the province.

During the past year, ICES undertook:

- Quarterly updates on evidence regarding the use of positron emission tomography (PET) and its impact on patient care. Six commonly occurring categories of cancer being examined are: lung, colorectal, head and neck, breast, malignant lymphoma, and malignant melanoma.
- An evaluation of trends in the use of implantable cardiac defibrillators in Ontario over the past three years to determine the number of patients with heart failure that might benefit from these devices, now and in the future.

Looking ahead, ICES will continue to work with stakeholders to develop a strategy regarding the introduction of PET in Ontario; to assess new cardiac technologies; and, to examine the use of low-tech, but frequently used technologies such as echocardiography.

As drug costs soar, is new really better?

Drug therapy is the fastest rising component of health care expenditures and this trend is expected to continue with the introduction of innovative and costly new drugs. Often, the cost of new drug therapies is far greater than the marginal clinical benefit, relative to cheaper drug therapies that already exist and may be underutilized.

ICES made many contributions on this topic, including:

- A proposed new model for optimal drug evaluation in Canada using real world data on use and outcomes, as well as comparisons with other provincial drug funding strategies, which would allow for more frequent re-evaluation of drug reimbursement decisions to help ensure more cost-effective use of drugs.
- Research that showed restrictions to provincial drug plan coverage have a major impact on drug use and expenditures.
- An examination of heart disease drug expenditures which showed soaring costs in Canada, with an increase of 95% from 1996 (\$1.7 billion) to 2001 (\$3.3 billion), placing a tremendous strain on provincial drug budgets.
- An evaluation of interactions between drugs commonly prescribed in the elderly, which resulted in unnecessary admissions to hospital and avoidable deaths, identifying a need for greater awareness of drug interactions among clinicians to prevent such occurrences.

Achievements and Aspirations

In the coming year, ICES will continue to play an integral role in supporting drug policy decisions made by the Ontario Drug Benefit (ODB) Program by forecasting the use of specific drugs; examining the economic impact of potential drug policy options; and, monitoring the clinical and financial impact of currently approved drugs to inform efforts to revise past drug policy decisions.

In addition, ICES will continue to undertake longer-term projects to conduct in-depth examinations of drug utilization and clinical issues, for example:

- A Health Canada study to examine the impact of different drug policies on drug use and cost among provinces; and,
- Several Canadian Institutes for Health Research funded studies to examine clinical outcomes associated with various drug therapies in efforts to enhance the quality of care and outcomes for patients.

The volume/outcome relationship: Does practice make perfect?

The relationship between the volume of surgical procedures and patient outcomes has been the focus of considerable study and much debate. While there are some surgical procedures for which patients treated at high-volume hospitals do have better outcomes, there are also many procedures for which patient outcome is not tied to volume. Determining which surgical procedures would benefit from being concentrated in high-volume centres, and which surgeries would benefit from adopting best practices at lower volume centres, is the key to planning for effective service delivery and optimizing patient outcomes.

Over past year, ICES investigators conducted research that:

- Found that the benefits of regionalization are condition-specific, revealing a need for careful study before leaping toward volume-based regionalization. For example, for patients undergoing surgery for colon or rectal cancer, it was determined that sending all patients to high-volume centres would save no lives. In contrast, for surgeries to remove portions of the esophagus, pancreas and lung or for the repair of unruptured abdominal aortic aneurysms, between one and 14 deaths per year could be prevented by having patients treated at high-volume hospitals.
- Examined the association between high procedure volume and improved outcomes and found that better

outcomes in higher volume hospitals are related to the shared structure and process characteristics of large hospitals that typically perform a greater number of complex surgical procedures.

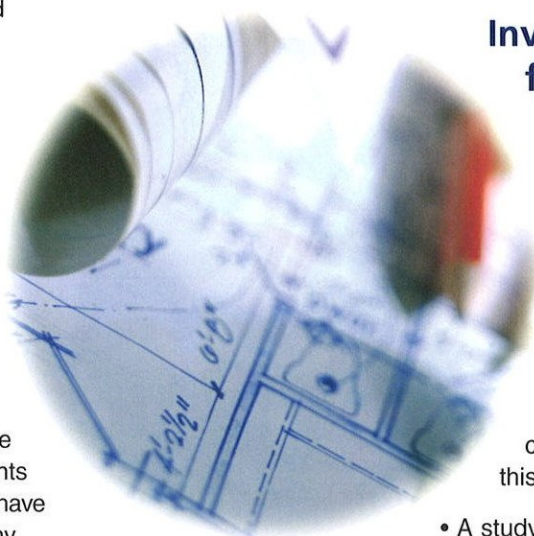
- Looked at the association between hospital volume, type of surgery and survival in patients with rectal cancer. Findings suggested that identifying processes of care that contribute to differences in mortality between high and low-volume hospitals could be significant in improving patient outcomes.

Moving forward, in collaboration with US researchers, ICES will conduct studies on cancer surgery to determine how processes of care differ between high and low volume hospitals, and identify which factors help explain observed volume-outcome relationships.

Investigating wait times for health services

"How long is the queue and why?" are urgent questions that need answers to improve access to care in Ontario. However, as it stands, much of the information needed to provide a baseline measurement and subsequent analyses is not readily available. While the data gap requires urgent resolution, ICES has completed some preliminary work in this area, including:

- A study that indicated waiting times for cardiac procedures pose significant hazards for heart attack patients. For example, it was found that delays in revascularization (bypass and angioplasty) may lead to poorer outcomes for heart attack patients. Compared to patients admitted to cardiac centres that received treatment within 12 days, patients treated at non-cardiac centres waited an average of 48 days. A 66% reduction in adverse outcomes was noted when revascularization was performed during the initial admission for heart attack, compared to procedures performed after discharge. In addition, a 36% reduction in readmission was observed for patients treated in cardiac care centres, and fewer days were spent in hospital.
- Participation in a national program to measure wait times for procedures following heart attacks. Initial results were recently published showing that Ontario patients have the second longest wait times for these procedures in Canada. ICES will continue its research into optimal waiting times for Ontario patients undergoing cardiac catheterization, angioplasty, and bypass surgery, in partnership with the Cardiac Care Network of Ontario and others.



Chronic diseases weigh heavily on health care resources

Managing the burden of chronic disease on the health care system is a tall order, and one that requires in-depth evaluation of population health, available resources, and best practice.

Research on chronic disease management included examination of:

- The use of large bowel procedures in Ontario, which found that despite a rise in the number of large bowel tests used to screen for colorectal cancer, only 7% of screen-eligible Ontarians (individuals aged 50 to 74) received a test in 2001.
- Hospitalization rates in Canada for cardiovascular conditions, indicating that heart disease accounts for a significant proportion of admissions, which are expected to increase as a result of an aging population and improved survival of heart disease patients, with effective therapies having turned an acute disease into a chronic one.
- The impact of diabetes on quality and length of life, which found that, compared to people without diabetes, those with the disease had a life expectancy of 12.8 years less for men, and 12.2 years less for women.
- The burden of Parkinson's disease on Ontario's health care system and found that the number of Parkinson's patients grew by 25% between 1992 and 1997. Compared to people without Parkinson's, this increase translated into patient OHIP claims that were 40% higher, average ODB costs that were 300% higher, and hospital admissions with a 19% longer length of stay.
- Provincial differences in risk factors (smoking, obesity, physical inactivity, low income, diabetes and hypertension) and death rates related to heart disease. Health regions with high mortality not only had more people with traditional cardiac risk factors, but also had lower socio-economic status and lower population density. Findings reinforce the importance of lifestyle choices that decrease the risk of heart disease, as well as the need to develop health promotion programs and interventions for high-risk populations.
- The relationship between hospitalizations for diabetes and socio-economic status. People with diabetes in

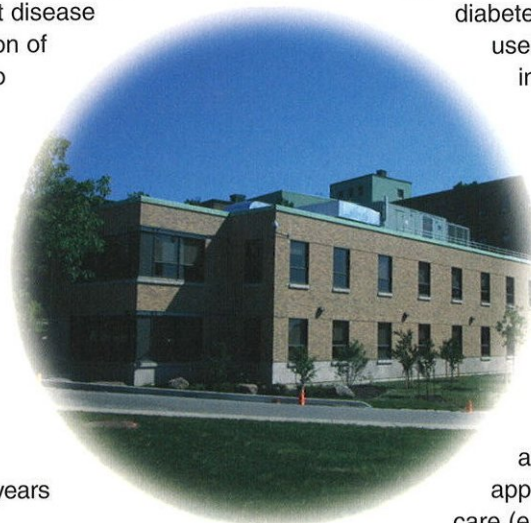
the lowest income quintile had excessive hospitalizations, with a 43% greater likelihood of having an avoidable hospitalization or emergency department visit than those in the highest income quintile.

- A risk scoring system for heart failure based on physiological factors and chronic diseases that impact mortality. This can be used to provide evidence to support rational decision-making about end-of-life care, and to improve patient care and use of resources when making decisions about when to admit a patient to a regular ward vs. an intensive care unit.

Ongoing work in this area will include an evaluation of a disease management strategy for diabetes, through validated methods applied across more than a decade of data. For example, models of care delivery are being studied to determine how the scarce resource of diabetes specialists may be most effectively used; to evaluate community-based integrated delivery models; and, to examine strategies to enhance the delivery of comprehensive primary diabetes care, such as physician, nurse practitioner and patient-directed knowledge translation activities.

ICES is also working on an extensive agenda of research largely focused on understanding intervals and delays in the diagnosis and treatment of cancer, and the appropriateness of complex processes of care (e.g. colorectal cancer, ovarian cancer, and primary cancers of the arms and legs); more effective methods of colorectal cancer screening, which has a large potential benefit for the population; and end-of-life care, to stimulate more appropriate utilization of resources.

While there have been tremendous advances in the treatment of patients with cardiac and cerebrovascular diseases over the past two decades, there continues to be substantial evidence of wide variation in practice patterns and patient outcomes in Ontario. To this end, ICES will continue its work on performance measurement, developing new indicators for cardiac surgery and stroke care in Canada; release a second round of measurement indicators in 2006 to illustrate the performance of 103 Ontario hospitals as part of the EFFECT study; use new stroke indicators to measure and improve the performance of all hospitals participating in the Ontario Stroke Strategy; and, develop a disease management program for heart failure in Ontario, expanding its scope to look at the economic and clinical benefits of such a program. ■



Auditor's Report on Summarized Financial Statements

To the Board of Directors of the Institute for Clinical Evaluative Sciences

The accompanying summarized statements of financial position, operations and cash flows are derived from the complete financial statements of the Institute for Clinical Evaluative Sciences as at March 31, 2004 and for the year then ended on which we expressed an opinion without reservation in our report dated June 3, 2004. The fair summarization of the complete financial statements is the responsibility of management. Our responsibility, in accordance with the applicable Assurance Guideline of The Canadian Institute of Chartered Accountants, is to report on the summarized financial statements.

In our opinion, the accompanying financial statements fairly summarize, in all material respects, the related complete financial statements in accordance with the criteria described in the Guideline referred to above.

These summarized financial statements do not contain all the disclosures required by Canadian generally accepted accounting principles. Readers are cautioned that these statements may not be appropriate for their purposes. For more information on the entity's financial position, results of operations and cash flows, reference should be made to the related complete financial statements.

PricewaterhouseCoopers LLP

Chartered Accountants

SUMMARIZED FINANCIAL STATEMENTS

Statement of Financial Position

As at March 31, 2004

	Capital and Operating Fund \$	2004 Restricted Fund \$	Total \$	Capital and Operating Fund \$	2003 Restricted Fund \$	Total \$
Assets						
Current Assets						
Cash	284,291	4,384,873	4,669,164	409,909	5,801,614	6,211,523
Other receivables	377,691	535,490	913,181	352,310	438,283	790,593
Prepaid expenses	43,602	-	43,602	22,890	-	22,890
	705,584	4,920,363	5,625,947	785,109	6,239,897	7,025,006
Property, plant and equipment	476,425	-	476,425	442,805	-	442,805
	1,182,009	4,920,363	6,102,372	1,227,914	6,239,897	7,467,811
Liabilities and Deferred Amounts						
Current Liabilities						
Accounts payable and accruals	138,443	285,201	423,644	322,556	-	322,556
Deferred revenue	99,379	-	99,379	-	-	-
Due to Sunnybrook and Women's College Health Sciences Centre	281,788	-	281,788	199,731	-	199,731
	519,610	285,201	804,811	522,287	-	522,287
Post-retirement benefits other than pensions	14,900	-	14,900	13,400	-	13,400
Deferred operating grant	171,074	-	171,074	249,422	-	249,422
Deferred capital grant	476,425	-	476,425	421,810	-	421,810
Deferred start-up grant	-	-	-	20,995	-	20,995
Deferred expense grants	-	4,635,162	4,635,162	-	6,239,897	6,239,897
	1,182,009	4,920,363	6,102,372	1,227,914	6,239,897	7,467,811

Full audited statements are available upon request.

Ontario Public Sector Salary Disclosure Act*

The following full-time employees of the Institute for Clinical Evaluative Sciences (ICES) received a salary of \$100,000 or more in the calendar year 2003.

	Salary paid	Taxable benefits
Dr. Benjamin T. Chan, Senior Scientist	\$ 135,970.99	-
Dr. Muhammad M. Mamdani, Scientist	\$ 127,848.65	\$ 1,232.75
Dr. Douglas G. Manuel, Scientist	\$ 106,909.97	\$ 1,363.19
Paula McColgan, Director, Policy and External Relations	\$ 101,458.26	\$ 1,185.41
Margaret M. McGill, Vice President, Corporate Services	\$ 118,756.62	\$ 1,396.86
Thérèse Stukel, Senior Scientist and Director, Research	\$ 138,634.57	\$ 1,696.53
Merrick Zwarenstein, Senior Scientist	\$ 142,051.20	\$ 1,233.03

*This information is not part of the financial statements and therefore is not audited.

Statement of Operations

For the year ended March 31, 2004

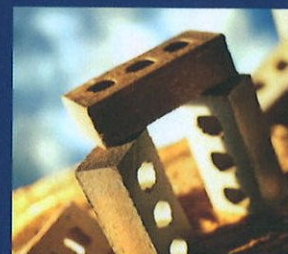
	Capital and Operating Fund		Restricted Fund		Total	
	2004 \$	2003 \$	2004 \$	2003 \$	2004 \$	2003 \$
Revenue						
Grants						
Operating	5,023,733	5,695,932	-	-	5,023,733	5,695,932
Amortization of deferred start-up grant	20,995	41,992	-	-	20,995	41,992
Interest income	35,330	44,766	-	-	35,330	44,766
Other revenue	1,845,590	1,116,569	-	-	1,845,590	1,116,569
Amortization of deferred expense grants	-	-	3,276,569	931,276	3,276,569	931,276
	6,925,648	6,899,259	3,276,569	931,276	10,202,217	7,830,535
Expenditures						
Salaries and benefits	5,011,873	5,050,371	413,499	58,290	5,425,372	5,108,661
Consultative services	315,277	331,468	446,762	557,109	762,039	888,577
Computer supplies and software	271,866	238,484	3,250	4,187	275,116	242,671
Office and general	348,875	326,567	4,063	5,316	352,938	331,883
Travel	61,063	75,357	8,986	8,893	70,049	84,250
Amortization of property, plant and equipment	216,829	230,987	-	-	216,829	230,987
Professional	57,693	24,080	-	-	57,693	24,080
Administrative	241,846	228,210	-	-	241,846	228,210
G-Wing expansion costs paid to Sunnybrook and Women's College Health Sciences Centre	-	-	2,368,572	296,549	2,368,572	296,549
Other	400,326	393,735	31,437	932	431,763	394,667
	6,925,648	6,899,259	3,276,569	931,276	10,202,217	7,830,535
Excess of revenue over expenditures for the year	-	-	-	-	-	-

Statement of Cash Flows

For the year ended March 31, 2004

	Capital and Operating Fund		Restricted Fund		Total	
	2004 \$	2003 \$	2004 \$	2003 \$	2004 \$	2003 \$
Cash provided by (used in)						
Operating activities						
Excess of revenue over expenditures for the year	-	-	-	-	-	-
Items not affecting cash						
Increase in post-retirement benefits other than pensions	1,500	13,400	-	-	1,500	13,400
(Decrease) increase in deferred operating grant	(78,348)	(931,909)	-	867,610	(78,348)	(64,299)
Amortization of deferred start-up grant	(20,995)	(41,992)	-	-	(20,995)	(41,992)
Amortization of deferred capital grant	(195,834)	(188,995)	-	-	(195,834)	(188,995)
Amortization of deferred expense grants	-	-	(3,276,569)	(931,276)	(3,276,569)	(931,276)
Amortization of property, plant and equipment	216,829	230,987	-	-	216,829	230,987
Change in non-cash working capital	(48,770)	(398,430)	187,994	196,362	139,224	(202,068)
	(125,618)	(1,316,939)	(3,088,575)	132,696	(3,214,193)	(1,184,243)
Investing activities						
Transfer from operating grant to deferred capital grant	250,449	117,398	-	-	250,449	117,398
Purchase of property, plant and equipment	(250,449)	(117,398)	-	-	(250,449)	(117,398)
	-	-	-	-	-	-
Financing activities						
Deferred grants received plus interest income	-	-	1,671,834	2,270,825	1,671,834	2,270,825
(Decrease) increase in cash for the year	(125,618)	(1,316,939)	(1,416,741)	2,403,521	(1,542,359)	1,086,582
Cash—Beginning of year	409,909	1,726,848	5,801,614	3,398,093	6,211,523	5,124,941
Cash—End of year	284,291	409,909	4,384,873	5,801,614	4,669,164	6,211,523

www.ices.on.ca



Institute for Clinical Evaluative Sciences

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