

Program Evaluation Study

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TABLE OF CONTENTS

CHAPTER.....	PAGE
I EXECUTIVE SUMMARY	3
A. Introduction.....	3
B. Current Status of CCOHS	3
C. Program Evaluation.....	5
D. Financial Capacity Issues.....	8
E. Funding Structures for Similar OHS Organizations	9
II INTRODUCTION	11
A. Project Objectives	11
B. Methodologies	11
C. Structure of This Report	13
III CURRENT STATUS OF CCOHS	15
A. Mandate, Objectives and Key Results.....	15
B. Products and Services	17
C. Strategic Outcomes and Expected Results	18
IV PROGRAM EVALUATION FINDINGS	21
A. Rationale and Relevance	21
B. Program Delivery.....	25
C. Impacts and Effects.....	36
D. Cost-Effectiveness and Program Alternatives	37
V FINANCIAL CAPACITY ISSUES AND ANALYSIS	39
A. Product Sales Performance.....	39
B. Funding Structures for Similar OHS Organizations	44
VI KEY CONCLUSIONS	49
A. CCOHS Meets its Strategic Objectives	49
B. The Reach of CCOHS Products and Services is Substantial	49
C. Financial Pressures are Threatening the Overall Effectiveness of CCOHS ..	49
APPENDIX: Survey Questionnaires	

I EXECUTIVE SUMMARY

A. INTRODUCTION

The Canadian Centre for Occupational Health and Safety (CCOHS or the Centre) was created in 1978, by the *Canadian Centre for Occupational Health and Safety Act*. The Act mandates CCOHS to promote the fundamental right of Canadians to a healthy and safe working environment. CCOHS is Canada's national centre for occupational health and safety, with a mandate to promote workplace health and safety and to promote the physical and mental health of working people in Canada. CCOHS operates under a tripartite council consisting of representatives from business, labour and government (federal, provincial and territorial).

CCOHS contracted with TNS Canadian Facts, Social and Policy Research and KPMG LLP (KPMG) to carry out a program evaluation and an assessment of financial capacity issues affecting the Centre. This study has reviewed a large number of aspects of CCOHS activities and we have conducted interviews and surveys to assess the reach, impact and effectiveness of the activities of CCOHS. Results from this study are intended to assist CCOHS in providing free and paid products and services in a way that will see CCOHS continue to achieve its core objective of promoting health and safety in Canadian workplaces. This study includes two closely related components. These components are:

- A program evaluation perspective on the operations of CCOHS, including an assessment of the relevance of the program and the effectiveness and efficiency of the program given its mandate.
- An assessment of financial capacity issues and a presentation of an approach to continued economic viability at CCOHS.

B. CURRENT STATUS OF CCOHS

CCOHS operates as a source for unbiased health and safety information and expertise to support the efforts of governments, labour organizations, employers, and individual Canadians in improving workplace health and safety. Transfer of current knowledge, essential for workplace participants to effectively address the specific health and safety issues in their workplaces in a form readily usable by them, has been a unique feature of this service. CCOHS fulfils this mandate through a portfolio of free and priced products and services that draws upon its core collection of occupational safety and health information. These products and services are made available to its clients in a user-friendly format through the application of information management technologies. Partnerships with leading national and global institutions in occupational health and safety have enabled CCOHS to base its services on current global knowledge.

The key products and services offered by the Centre are the free Inquiries Service and web site and information products and services for which it charges. The variety of free services also includes the *Health and Safety Report* newsletter, *Workscope*, some e-learning courses and a number of web portals. As well, CCOHS supports national and international initiatives promoting workplace health and safety through collaborative projects with a wide range of partners. It delivers education

and training services, including a variety of e-learning courses as well as providing specific services to help firms manage Material Safety Data Sheets (MSDSs) and to organize their health and safety programs and management programs more effectively. CCOHS' services are developed in accordance with the Guiding Principles outlined by its tripartite Council of Governors and represent the consensus of the parties of the Council.

Funding for CCOHS is provided by a combination of appropriations through the Main Estimates process plus cost recovery through the application of fees for some of its products and services as well as annual contributions from the Provinces toward the cost of the Inquiries Service. Starting in 2002/03, CCOHS was expected to generate 50% of its annual funding requirements from user fees, with the balance coming from appropriations. However, since that time the popularity of the Internet as a source of free OHS information has grown and CCOHS has achieved a level of only 46% recovery in each year from 2004/05 to 2007/08 and the forecast level for 2008/09 was only 43%¹. This reduction in the share of revenues from cost recovery has occurred despite ongoing product innovation, discontinuation of non-viable products and actions to control or reduce product costs. Even so, CCOHS achieves a high level of cost recovery, compared to that achieved by comparable agencies with mandates to disseminate OHS information and promote better workplace health and safety practices, in Canada and internationally.

The ability of CCOHS to create new revenue-generating services and to adapt existing services to respond to evolving needs of Canadians is heavily restricted by its small funding base, which also has to support Canada-wide free-of-charge services. CCOHS must keep current its core information collection and the information technologies that support the collection that the Centre's web site and many of its priced products rely on. This continuing development is necessary if CCOHS is to continue to provide up-to-date and comprehensive OHS information to users.

In dealing with the financial and competitive challenges it faces, the Centre has pursued a variety of strategies for selecting projects, focusing on activities to keep its products, services and distribution channels at the leading edge. However, the operating environment of CCOHS presents significant challenges, requiring considerable initiative and expertise to deliver its products and services competitively. Costs continue to rise whereas Main Estimates funding has been relatively constant. Cost recovery has been pursued aggressively but there are limits to pushing this farther and many core products face increasing competition, particularly from internet sources. Many users also have an expectation that information from government agencies should be available without a fee. Higher prices are also problematic in light of the survey and related data in this report indicating that higher fees may inhibit the ability of the public to access CCOHS products and services. The financial viability and sustainability of services has been a continuing challenge for CCOHS and is discussed in more detail in Chapter V of this report.

¹ Historical levels of cost recovery were derived from data published in the *Departmental Performance Reports* for CCOHS (Summary of Revenue, Expenses and Appropriations). Forecast revenues and appropriations used for 2008/09 are from the 2009/10 *Report on Plans and Priorities* (Departmental Planned Spending and Full Time Equivalent, p.20).

C. PROGRAM EVALUATION

A key component of this review was an evaluation of the activities of CCOHS as they relate to its strategic objectives. Based on the initial Evaluation Planning Matrix for this project, the following evaluation issues have been assessed:

- The rationale for and continuing relevance of CCOHS.
- Assessment of program delivery mechanisms.
- Effectiveness and efficiency of the program given its mandate, and its positioning in the context of Canada's framework of workplace health and safety programs.
- Cost-effectiveness and program alternatives.

The core strategic outcome for CCOHS is that Canadians will be provided with unbiased occupational health and safety information and services for the prevention of work-related illnesses and injuries. This objective involves CCOHS being recognized as a national clearinghouse for health and safety information and as the recognized leader in providing unbiased occupational health and safety (OHS) information and services to Canada's OHS community. This community includes workers, their unions, employers, governments, educational institutions and related OHS professionals. Access to a leading and unbiased source of health and safety information provides further benefits to Canadians through a reduction in the extent of workplace disagreement and conflict over appropriate health and safety initiatives.

The evaluation used multiple lines of evidence to assess the extent to which CCOHS has achieved this recognition as an unbiased national OHS centre. We conducted interviews with leading members of the OHS community, we surveyed paying clients and users of free services and surveyed users of the CCOHS web site.

The activities of CCOHS are related to the promotion of occupational health and safety in the context of Canada's decentralized system of internal responsibility. The benefits of these activities are difficult to measure directly. CCOHS products and services are intended to lead to improved workplace conditions that ultimately lead to fewer illnesses, fewer injuries, and fewer deaths. In addition to these risk reduction benefits, reduced time loss and increased productivity from fewer accidents and injuries are an additional source of benefits. Current research on the value of reducing occupational fatality risks and preventing accidents indicates that Canadian society assigns a very high value to such reductions in workplace risks.

Data in this evaluation study show that there have been very significant and continuing declines in workplace fatalities and injuries relative to the number of workers employed. Many factors have influenced the decline in injury and fatality rates over time so that it has not been possible to determine the independent impact of CCOHS on these declines. In this report, the extent of the improvement in workplace conditions, attributed by users to the information disseminated by CCOHS, is used as a proxy measure of the health and safety impact of CCOHS. Our analysis, based on interviews and surveys, found that the reach of CCOHS products and services is substantial. As a result, we can establish plausible linkages between CCOHS activities and its intended effects on improving workplace conditions.

The evaluation also demonstrates that current funding decisions for CCOHS to provide products and services that reduce workplace risks were made when the estimated benefits of

workplace risk reductions were lower than current estimates. New evidence on higher payoffs to risk reduction imply that the social returns to resources devoted to reducing workplace risks are higher now than in earlier time periods.

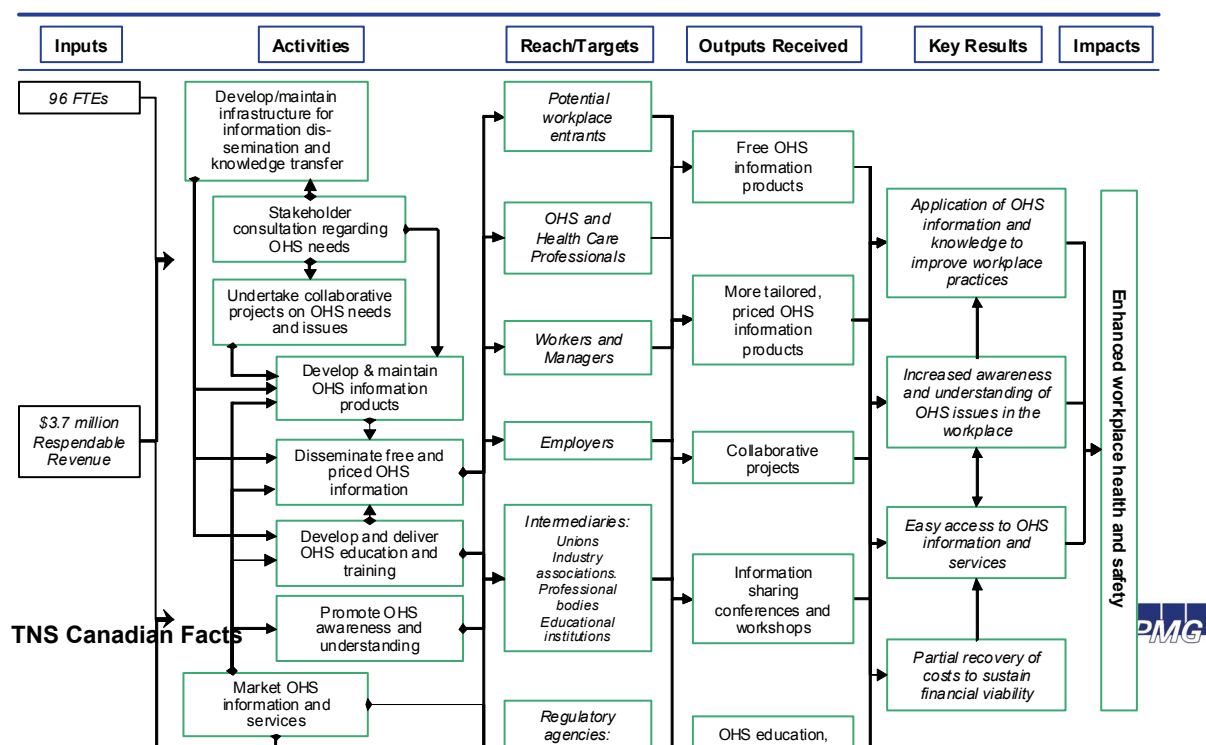
In assessing the rationale and relevance for the activities of CCOHS, we reviewed the literature on the rationale for providing health and safety information and services. The economic literature on the rationale for government support of programs and services like those provided by CCOHS has two sources. These are:

- A fairness or equity rationale in which particular groups in society are supported through program activities.
- An economic efficiency rationale in which the program is justified because market processes do not provide the best outcome from the point of view of society. This is generally referred to as the “market failure” rationale.

The literature that we reviewed shows that the activities of CCOHS are consistent with both of these sources of rationale for the program. Many types of information will have a value to society that exceeds their costs of production and they will not be produced if firms have to recover all of their costs in doing so. This is the essence of the market failure issue for information as it applies to the Centre. CCOHS provides workers and managers with information that is essential for addressing health and safety concerns in the workplace. This is a powerful and cost-effective mechanism, a strategy parallel to regulation and enforcement by governments in the area of promoting occupational health and safety. In the context of Canada’s internal responsibility system for occupational health and safety, neutral, unbiased information provided by CCOHS plays a pivotal role.

For CCOHS, the causal linkages from its activities to information dissemination and service provision to outputs and program impacts and finally to Canada’s overall health and safety performance are illustrated in the logic model in Exhibit I-1. The performance expectations in this logic model have been confirmed by the results of this evaluation that demonstrate the substantial reach and impact of CCOHS.

Exhibit I-1 CCOHS Logic Model



The improvements in workplace health and safety illustrated in Exhibit I-1 are generated by CCOHS through a variety of products and services, some of which are available for free and others of which are paid products. For this evaluation, TNS conducted surveys of purchasers of CCOHS products and services, users of the CCOHS Inquiries Service and users of the CCOHS web site. Some of the key findings include:

- Seventy five per cent of Inquiries Service respondents said that their use of CCOHS information relates to current or future changes to the workplace that may result in improved occupational health and safety.
- Similarly, 76% of customers purchasing CCOHS products and services said that their use of CCOHS information relates to current or future changes to the workplace that may result in occupational health and safety improvements.
- The nature of the information produced by CCOHS is such that the value to a firm, and to society as a whole, increases as more people access that information. This widespread use defines the “reach” of CCOHS information. Overall, web site users indicated that each information item received from CCOHS could or would benefit large numbers of workers through secondary distribution. Among web survey respondents, 27% said that 1-10 persons would benefit, 34% said between 11 and 100 persons, 16% said 101 to 500 persons would benefit and 17% said that more than 500 would benefit. This report documents that the extent of reach is also substantial for the Inquiries Service, the *Health and Safety Report* and for the paid products of CCOHS.
- Of current purchasers of CCOHS products, 84% were satisfied with timeliness in accessing the product, 90% were satisfied with the usefulness of the product; 88% were satisfied with the clarity of the information, and 85% were satisfied with the reliability of the information provided.
- Based on interviews conducted with key informants, there continues to be widespread support to have CCOHS provide free services, particularly non-technical information to individual workers.
- The majority of key informants interviewed believe that CCOHS products/services meet needs that cannot be met by other sources of information. In a small number of cases other sources of information are used but CCOHS is considered the primary source of OHS information.
- Provision of free services is strongly supported by an overwhelming majority of key informants interviewed. According to respondents, charging a fee for services currently provided for free would result in far fewer workers accessing the information they need to conduct their workplace activities safely.
- The general conclusion provided by participants in the key informant interviews is that basic information, particularly information intended for individual workers, should continue to be provided free of charge by CCOHS.

D. FINANCIAL CAPACITY ISSUES

Our report examines the financial capacity of CCOHS to continue funding the development and maintenance of its suite of free and fee-based products and services. Funding for CCOHS is provided by a combination of appropriations through the Main Estimates process plus cost recovery through the application of fees for certain of its products and services. Starting in 2002/03, CCOHS was expected to generate 50% of its annual funding requirements from user fees, with the balance coming from appropriations. However, since that time the popularity of the Internet as a source of free OHS information has grown and CCOHS has been challenged to achieve the 50% cost recovery target. CCOHS was within one percent of this 50% target in 2002/03 and 2003/04 but has recovered close to 46% in each subsequent year to the end of 2007/08.

Achievement of a recovery rate of 46% (let alone 50%) has been very difficult for CCOHS in the face of continuing growth in the availability of OHS information for free on the Internet. CCOHS has responded to this challenge by developing new products and services, and re-inventing existing products and services to better respond to, and 'lock in' customers.

Traditional CCOHS data base collections – MSDS, CHEMPendium, RTECS and the collection of data bases that we have grouped as OSH reference material – have all declined in significance, with average annual rates of revenue decline of between -4.1% (CHEMPendium/CHEMInfo) and -7.8% (MSDS). In 1996/97, these various products accounted for almost 46% of CCOHS' revenue from fee-based products but by 2002/03 the share had fallen to 37%, and then to 26% in 2008/09.

The recent focus of CCOHS has been on developing value-added products tailored to the specific needs of buyers that build on the OSH databases as well as its in-house capabilities in information collection, synthesis and product design. These products can be differentiated from free OHS information available from other sources and effectively allow client organizations to 'outsource' the provision and maintenance of their OSH information requirements.

Successful product innovations have been achieved in three main areas:

- The MSDS Management Service (MMS) which was launched in 2005/06, and accounted for over 7% of product revenues in 2008/09 without cannibalizing sales from the traditional MSDS service. OSH Works is another similar product introduced by CCOHS in 2008/09 – a customisable web-based system designed to help buyers to manage and maintain their workplace health and safety programs.
- Combining information from different sources to produce value-added bundles that meet the needs of particular types of customers. Growth has been achieved in three areas through the application of this strategy: Legislation Services (combining health, safety and environmental legislation with referenced standards), ASP (Academic Support Program; a collection of existing environmental and OHS databases packaged specifically for academic institutions), and CCOHS' own publications.
- Development and provision of online e-Learning courses to enable convenient and efficient training in workplace health and safety subjects that complement CCOHS' existing classroom-based courses. The e-Learning product was first introduced in 2004/05 and has grown rapidly in response to customer demand and expansion of the number of available courses. In 2008/09, e-Learning accounted for almost 15% of CCOHS' product revenues.

A clear lesson to be taken from this analysis of changes in the product mix is that CCOHS must continually invest in developing new products and improving existing products just to maintain its revenue base, and to thereby support the provision of high quality, comprehensive free information services. However, a consequence of the continuing shift into value-added products is that these products require high levels of investment for both initial development and ongoing maintenance.

Comparisons of cost and revenue data for established major products suggest that margins are under pressure for a number of products, such as Legislation Services and CHEMPendium/CHEMInfo. Margins on MSDS products (excluding MMS) appear to be negative, as sales have declined at a faster rate than costs. However, assessments of the costs and margins on database products need to also take the performance of related products into account, such as ASP in the case of MSDS, which includes access to MSDS/FTSS, CHEMInfo, RTECS and data bases included in the OSH reference material. The margin achieved on the combined costs and revenues of MSDS, CHEMPendium/CHEMInfo, RTECS, ASP and the OSH reference materials were +11.7%, +23.4% and 17.2% in each of the years from 2005/06 to 2007/08.

Our analysis of financial performance shows that CCOHS has had to invest considerable time and funds in supporting its core database products while developing and promoting value-added products that customers are less likely to be able to obtain for little or no charge from alternative sources. However, notwithstanding this substantial effort, CCOHS has been unable to increase the proportion of funding obtained from cost recovery beyond the 46% level. At the same time, it has experienced flat or declining gross margins on many of its traditional data base products and combinations.

The trends observed in the composition of product revenues suggest that a 50% level of cost recovery is no longer sustainable. While a degree of cost recovery ensures a level of customer focus and financial discipline for CCOHS, achievement of a 50% level in the future will likely require cuts in products and systems for both priced and free services and a loss of critical mass. In the short-to-medium term, the share of funding to be covered from public appropriations will need to be at least 60% to enable CCOHS to continue to offer a valued range of free products and services, while supporting the continuing development and renewal of both priced and free products and services.

E. FUNDING STRUCTURES FOR SIMILAR OHS ORGANIZATIONS

Additional insights into the ability of CCOHS to provide a meaningful level of service while recovering a high proportion of its costs through product and service fees can be gained by looking at the funding structures for similar public organizations whose mandates focus on, or include, the dissemination of OHS information and services. We reviewed information published on the websites of four OHS organizations in other jurisdictions to determine the centrality of information dissemination in their mandates and their sources of funding. The agencies that we reviewed are:

- European Agency for Safety and Health at Work (EU-OSHA).
- Finnish Institute of Occupational Health.
- U.K. Health and Safety Executive.
- U.S. National Institute for Occupational Safety and Health.

We found that CCOHS is quite unique compared to these other OHS organizations in that it combines a single purpose focus on promoting workplace health and safety with a high dependence on cost recovery to fund its activities. Only one other organization, FIOH, achieves a similar level of cost recovery (roughly 40%) to that achieved by CCOHS but over 70% of FIOH's fee-based income comes from its research and advisory services, and only 25% comes from training and the sale of information products.

It is also important to note that these analogous international organizations make a wide range of free and (in some cases) priced information products and services widely available through their websites and electronic newsletters. It is quite likely that at least some of the information available from these organizations – which has been carefully reviewed and validated in a way that is similar to CCOHS material– is the same or very similar to the information and guidance contained within priced CCOHS products. In other words, CCOHS is competing with other sources of free high quality OHS information that many users may be able to apply readily in the Canadian context. Individual workers and less sophisticated users are, however, much less likely to be able to do this.

II INTRODUCTION

A. PROJECT OBJECTIVES

The Canadian Centre for Occupational Health and Safety (CCOHS or the Centre) was established to promote the basic right of all Canadians to a healthy and safe workplace. CCOHS operates under a tripartite council with representatives from labour, employers and governments. CCOHS contracted with TNS Canadian Facts and KPMG LLP to carry out this program evaluation and financial capacity study. Its objectives are:

- To review the relevance of the program, how the program addresses needs and the success of the program in reaching its intended audiences and meeting its intended outcomes.
- To assess the financial capacity of CCOHS to meet its responsibilities effectively and to present an approach to continued economic viability at CCOHS.

B. METHODOLOGIES

1. Program evaluation

In order to meet the objectives of this study, a broad range of data sources have been used. A number of surveys were conducted, including: a survey of 262 current product customers; a survey of 226 users of the Inquiries Service; and a survey of 513 users of the CCOHS web site. We also conducted interviews with key informants representing business, labour and government. More details on the surveys are provided below.

Two interactive surveys were conducted as part of this evaluation. The incentive for each was a random draw to win a single year's subscription to one of CCOHS's core products.

Banner Web-site Visitor Survey: Banner invitations to complete a survey were placed on the following pages on the CCOHS site:

CCOHS Home: <http://www.ccohs.ca>

CCHST Home: <http://www.cchst.ca>

OSH Answers home and individual pages: <http://ccohs.ca/oshanswers/>

Réponses SST home: <http://www.cchst.ca/reponsesst/>

Web Information Services home: <http://ccinfoweb.ccohs.ca/>

Service d'information sur le Web home: <http://ccinfoweb.cchst.ca/>

Products and Services home: <http://www.ccohs.ca/products/>

Produits et Services home: <http://www.cchst.ca/products/>

The banner web site survey, which was hosted on the TNS Interactive survey site, was available from April 1 to April 24, 2009. It should be kept in mind that the respondents to this survey constitute a self-selected sample.

Customer survey: An invitation to participate in an online survey was e-mailed to 4,029 CCOHS clients from their database (1,855 paying customers and 2,174 Inquiries clients). E-mails bounced from 207 addresses, for a total of 3,822 successful broadcasts. Potential respondents were also e-mailed two reminders. The survey was available online from April 1 to April 29, 2009.

The sample file identified four product/service types:

- Inquiries.
- Web Services
- CD/DVD
- Publications

Web-site visitor survey: 565 visitors completed the survey over the course of the field period.

Customer survey: Completions were achieved with 500 respondents (227 paying customers and 273 Inquiries clients) for a response rate of just over 13%. After removing a small number of responses in which individuals skipped core questions, the analyzed responses in this study are from 219 paying customers and 243 Inquiries clients.

The client Internet survey questionnaire (English and French) and the CCOHS web site banner survey questionnaire (English and French) are appended to this report.

2. Financial capacity assessment

Our assessment of the financial capacity of CCOHS' capability and capacity to fund the development and delivery of services in support of its core mandate relative to the benefits provided for users of CCOHS information products and services involved:

- Interviews with CCOHS executives and managers responsible for product/service lines to identify and assess factors shaping the demand for products and services, and the ability of CCOHS to recover the costs of these services from customers.
- An examination of trends in the level and composition of product and service revenues in recent years, drawing on CCOHS' financial data.
- Inclusion of questions the key informants interviews and customer surveys to obtain external perspectives on the factors affecting the demand for OSH products and services, the willingness of users of such information to pay for such information, the extent to which cost recovery may limit the dissemination of OSH information to intended beneficiaries, and the extent to which such information is available at no charge from alternative, reputable sources.
- Comparisons of CCOHS' funding structure and results to a limited number of other organizations with mandates to disseminate OSH information and improve occupational safety and health. Information from four organizations was examined: the European Agency for Safety and Health at Work (EU-OSHA), Finnish Institute of Occupational Health (FIOH),

U.K. Health and Safety Executive (HSE), and U.S. National Institute for Occupational Health (NIOSH). This analysis examined the mandates and services of these organizations to determine the extent of commonality with CCOHS, and their funding structures and degree of reliance on cost recovery.

C. STRUCTURE OF THIS REPORT

In this report, we provide details of the current status of CCOHS, including its mandate, corporate objectives and structure in Chapter III. Chapter IV describes our findings for the program evaluation of CCOHS and a discussion of evaluation issues relating to the rationale and relevance of CCOHS, program delivery, CCOHS impacts and effects, cost-effectiveness and program alternatives. Findings from our assessment of financial capacity at CCOHS are provided in Chapter V. In the final chapter, Chapter VI, we summarize the key conclusions from the evaluation. Recommendations have been included in Chapters IV and V, following on from the program evaluation findings and the financial capacity analysis, respectively.

III CURRENT STATUS OF CCOHS

This chapter of our report provides the context for the subsequent presentation of findings relating to the program evaluation and the assessment of financial capacity. It summarizes key aspects of the Centre's mandate and key characteristics of its funding situation.

Until 1989, CCOHS was a fully funded government department with an annual operating budget of \$10 million (approximately \$15.3 million in 2008 dollars). In 1987, the Centre implemented a limited level of cost recovery aimed at recovering some of the "out of pocket" expenses associated with the production of CDs. In 1989, the Centre was directed by Treasury Board to become financially self-sufficient through cost recovery by 1991. As a result, substantial reductions in staffing and activities resulted at that time since full self-funding was not possible. Since that time, CCOHS has made a number of changes to respond to lower funding levels, primarily by developing an evolving series of occupational health and safety products and services that are sold in Canada and beyond.

Funding for CCOHS is provided by a combination of appropriations through the Main Estimates process plus cost recovery through the application of fees for certain of its products and services. CCOHS also receives contributions from the Provinces for the Inquiries Service. Starting in 2002/03, CCOHS was expected to generate 50% of its annual funding requirements from user fees, with the balance coming from appropriations. However, since that time the popularity of the Internet as a source of free OHS information has grown and CCOHS has achieved a level of only 46% recovery in each year from 2004/05 to 2007/08 and the forecast level for 2008/09 was only 43%. This has been despite ongoing product innovation, discontinuation of non-viable products and actions to control or reduce product costs. Even so, CCOHS achieves a high level of cost recovery, compared to that achieved by comparable agencies with mandates to disseminate OHS information and promote better workplace health and safety practices, in Canada and internationally.

Based on the findings outlined in this report, we believe that a 50% level of cost recovery is no longer sustainable. While a degree of cost recovery ensures a level of customer focus and financial discipline for CCOHS, achievement of a 50% level in the future will likely require cuts in products and systems for both priced and free services and a loss of critical mass. A loss of financial capacity of this order would put at risk the benefits to society of reduced workplace risks that the Centre's free and priced information and services contribute to.

A. MANDATE, OBJECTIVES AND KEY RESULTS

CCOHS is an independent departmental corporation under Schedule II of the *Financial Administration Act* and is accountable to Parliament through the Minister of Labour. The Centre's mandate, powers and authorities are defined in the *Canadian Centre for Occupational Health and Safety Act*, as summarized in Exhibit III-1. The focus in the Act is on the promotion of health and safety in the Canadian workplace, and the reduction or elimination of fatalities, injuries and illnesses. CCOHS has chosen to fulfill this mandate through the mission statement on its web site. This mission is described as follows:

It is our mission to be the Canadian Centre of Excellence for work-related injury and illness prevention initiatives and occupational health and safety information.

To promote health and safety in the workplace in Canada to:

- *Facilitate consultation and cooperation among federal, provincial and territorial jurisdictions.*
- *Facilitate participation by labour and management.*
- *Assist in the development and maintenance of policies and programs.*
- *Serve as a national centre for information relating to occupational health and safety.*

The CCOHS operates under the *Official Languages Act* and, consistent with its national mandate, provides services in both French and English.

Exhibit III-1 Powers of the Centre, as Defined in the CCOHS Act

The objectives of the Centre are:

- (a) to promote health and safety in the workplace in Canada and the physical and mental health of working people in Canada;
- (b) to facilitate:
 - (i) consultation and cooperation among federal, provincial and territorial jurisdictions, and
 - (ii) participation by labour and managementin the establishment and maintenance of high standards of occupational health and safety appropriate to the Canadian situation;
- (c) to assist in the development and maintenance of policies and programs aimed at the reduction or elimination of occupational hazards; and
- (d) to serve as a national centre for statistics and other information relating to occupational health and safety.

The Centre may in furtherance of its objects,

- (a) promote, assist, initiate and evaluate research;
- (b) establish and operate systems and facilities for collecting, recording, processing, analysing, evaluating and disseminating statistics and other information;
- (c) publish and otherwise disseminate scientific, technological and other information;
- (d) provide advice, information and service relating to existing or anticipated occupational health and safety problems to workers, trade unions, employers and government, to national, provincial and international organizations and to the public;
- (e) support and facilitate the training of personnel in and for the field of occupational health and safety;
- (f) sponsor and support public meetings, conferences and seminars;
- (g) expend, for the purposes of this Act, any money appropriated by Parliament for the work of the Centre or received by the Centre through the conduct of its operations;
- (h) give recognition to public or private organizations or individuals for outstanding contributions in the field of occupational health and safety; and
- (i) do such other things as are conducive to the carrying out of its objects.

The implicit expectation in the mandate and powers of CCOHS is that society benefits from improved levels of workplace safety and health. CCOHS contributes to the achievement of such improvements by functioning as an information clearinghouse and disseminator, and as a facilitator of health and safety improvements. The cost to Canada from workplace injuries and fatalities continues

to be high—some estimates indicate that annual costs may be as high as \$20 billion. As a result, even small improvements in safety performance can have significant payoffs relative to the public investment in CCOHS. New evidence on higher payoffs to risk reduction cited in this report implies that society should increase the resources it devotes to risk reduction.

B. PRODUCTS AND SERVICES

CCOHS maintains a portfolio of both free and priced products and services that draw upon a core collection of occupational safety and health (OHS) information and the application of information management technologies. It also undertakes a range of collaborative projects that allows the Centre to remain on the leading edge of OHS knowledge. The areas in which CCOHS provides products and services are organized into the following eight categories, including a brief description of the purpose of each:

- *Inquiries Service:* The Inquiries Service provides a bilingual free-of-charge person-to-person occupational health and safety information resource for Canadians. The Centre responds to telephone and e-mail inquiries, and all inquiries are kept confidential. The information provided is unbiased and considered relevant to workers, employers, unions and governments alike. Personalized service is given to each inquirer, and the Centre provides a verbal or written response depending on the nature of the inquiry. Usually material is sent directly to the inquirer and referrals are made to other organizations as required. Approximately 13,000 telephone and written inquiries are responded to annually through the Inquiries Service.
- *OSH Answers:* In recent years the Inquiries Service has been extended to include a self-serve model using the Internet. “OSH Answers” is a collection of over 3,000 frequently asked questions and answers concerning occupational health and safety that can be accessed via the CCOHS website 24 hours a day. This web based question and answer service delivers information essential to make decisions and take informed actions toward eliminating illness and injuries in Canadian workplaces. The OSH Answers service was accessed by approximately 2.6 million Internet users during 2008-2009 with a total of 8.4 million inquiries.
- *Publications:* To deliver a print based information service in a form and format that is conveniently useable by all workplace participants to address health and safety issues and concerns predominant in Canadian workplaces.
- *Chemical Database Service:* To make available carefully selected authoritative chemical information for occupational health and safety purposes from across the world to provide convenient and easy access to Canadians.
- *General OH&S Database Services:* To make available carefully selected and authoritative OSH information from across the world to provide convenient and easy access to Canadians.
- *Legislation Services:* To provide convenient single window access to reliable and up to date versions of all Canadian health, safety and environmental legislation, with hypertext links to related documents such as standards, guidelines and codes of practice.

- *Tailored Information and Services:* To deliver customized/tailored CCOHS information to serve the needs of specific clients/sectors/organizations in support of improving their health and safety knowledge and performance. This type of tailored product includes OSH Works services and software and CANWrite for MSDS authoring.
- *Illness and Injury Prevention Initiatives:* To undertake, promote and support initiatives aimed at eliminating work-related illnesses and injuries in collaboration with Canadian and worldwide organizations.
- *Education and Training:* To undertake, promote and support training and education aimed at eliminating work-related illnesses and injuries. This includes class room based and e-learning programs.
- *MSDS:* Provides access to over 350,000 of the most up-to-date Material Safety Data Sheets from 1,200 North American manufacturers and supplies. This area also includes FTSS French language Material Safety Data Sheets and a management program called MSDS Management Services (MMS).

CCOHS has an extensive suite of databases available to support its information services, from which a wide variety of OHS products and services are made available in various electronic formats (CD/DVD-ROM, Internet, Intranet, as well as hardcopy). These databases are used in a variety of work place applications such as developing personal protective equipment programs, conducting workplace risk assessments, assisting emergency responders, developing first aid and medical programs, developing training, meeting regulatory compliance, proper storage, handling and transporting chemicals and for research.

The most recent initiatives of CCOHS have been in the area of using its expertise to provide specialized occupational health and safety services. These services consist of a large number of e-learning courses, the MSDS Management Services, OSH Works and CANWrite. These latter three services provide employers with a full range of MSDS and WHMIS management services and MSDS authoring software. OSH Works is a customizable system of managing corporate occupational health and safety programs. These initiatives reflect a strategic shift to supplement the traditional information provision role of CCOHS to include the development of services that support the work of occupational health and safety professionals and other employees with occupational health and safety responsibilities in their organization.

C. STRATEGIC OUTCOMES AND EXPECTED RESULTS

CCOHS through the various program activities outlined above provides occupational health and safety information development, delivery services and tripartite collaboration. These activities are in support of its core strategic outcome which is described as follows:

- Canadians will be provided with unbiased occupational health and safety information and services for the prevention of work-related illnesses and injuries.

CCOHS meets this overall strategic objective by using program funding to generate the following results:

- Easy access to occupational health and safety information and services.
- Increased awareness and understanding of occupational health and safety issues in the workplace.
- Application of health and safety information to improve workplace practices.
- Partial recovery of costs from user fees.

In this evaluation, the full range of CCOHS programs and activities to achieve its strategic outcomes is assessed. This includes rationale, impacts and effects, cost effectiveness and program alternatives. The most challenging evaluation issues relate to impacts because the data on occupational health and safety outcomes are affected by so many variables, including the activities of CCOHS. Our approach to this issue is to measure the reach of CCOHS in terms of the use of CCOHS programs and services. We then make inferences about the likely extent of impacts from these uses. For the time period assessed in this study, we conclude that CCOHS has successfully achieved the strategic outcomes in its mandate.

IV PROGRAM EVALUATION FINDINGS

A. RATIONALE AND RELEVANCE

1. The role of CCOHS

The evaluation of the rationale for the programs and activities of CCOHS is based on a review of its initial mandate as this relates to current activities. The mission of CCOHS is to promote the fundamental right of Canadians to a healthy and safe working environment. As a national institute, CCOHS undertakes a wide range of activities to achieve its objectives. These activities include the following:

- The provision of technical documents, data and related safety information to the health and safety community. An important element of this activity is to improve the coordination, distribution/dissemination of workplace health and safety information.
- The promotion and evaluation of research on health and safety issues.
- The provision of expert advice and training in occupational health and safety.
- Participation in meetings and conferences throughout Canada.
- Support for improving health and safety programs and services at the enterprise level.
- Provision of education and training, including e-learning.
- Other activities consistent with the mandate of promoting health and safety in the workplace and the physical and mental health of Canadian workers.
- Initiatives leading to elimination of injuries and illnesses.

These activities generate a flow of information and services. By their nature, the impacts of CCOHS information and services are widespread and difficult to attribute to the source activities of CCOHS. The provision of information is obviously a valuable activity. However, tracing out all of the ultimate impacts and effects of information provision is a difficult task for all kinds of information, not just for health and safety information.

The ultimate objective of CCOHS is to improve workplace health and safety. The activities described above involve CCOHS being recognized as a national clearinghouse for health and safety information and as the recognized leader in the provision of useful occupational health and safety (OHS) information and services to working and OHS communities. These communities include workers, their unions, employers, governments and related OHS professionals.

This evaluation assesses the extent to which CCOHS has achieved this recognition with leading members of the OHS community. It is not possible to establish the number of injuries, illnesses and deaths prevented, or to attribute any change in numbers to the activities of CCOHS directly. Many factors influence these variables and as a result, it is not possible to determine the independent impact of CCOHS. The extent of improvement in workplace conditions, attributed by users to the information

disseminated by CCOHS, is used as a measure of the health and safety impact of CCOHS. Our analysis, based on interviews and surveys, found that the intended effects on workplace conditions do occur and are substantial.

2. Potential benefits of CCOHS activities

The activities and products of CCOHS consist of information and services that are related to the promotion of occupational health and safety. The benefits that potentially flow from these products and services consist of improved workplace conditions that ultimately lead to fewer illnesses, fewer injuries and fewer deaths. Reduced time loss and increased productivity are tied to these benefits. Linking improved workplace safety to any particular CCOHS product or activity does not seem feasible. However, to the extent that CCOHS information is used to promote workplace change and improve occupational health and safety, the ultimate social benefits and productivity impacts can be very high.

The information generated by CCOHS is distributed in a series of products and services that users purchase and through services made available to the public at no cost. How “valuable” are these products and services? From an economic perspective, the products that are paid for must have a value to purchasers of at least the purchase price otherwise they would not purchase them. However, the core value to society of the paid products is the value of the improvement in occupational health and safety that can be attributed to these products. This value to society can exceed by a large margin the private value (the amount paid for the CCOHS product) because the information, once purchased, can be used to produce safety benefits for many workers.

The value to society of the activities and products that are provided with no fee is also measured as the value of the improvement in occupational health and safety that can be attributed to them. Even though users pay no explicit price, the value to workers and, therefore, to society can still be very high.

There is an extensive economics literature on the benefits of policies to make workplaces safer. These benefits come from reduced risks of injuries, illness or death and improved productivity, reduced absenteeism, increased competitiveness of Canadian enterprises and reduced health-care costs. It is important to note, however, that the benefits of the activities of CCOHS to reduce risks have many points of comparison in other government functions. That is, there are many analogies to the question of how to determine the benefits to Canadians of reduced health and safety risks in the workplace.

Recent research results on workplace risks and the value of measures to reduce these risks indicate that the benefits of reducing these risks are much higher than had previously been estimated. Gunderson and Hyatt (2001) provide new Canadian evidence on the benefits of reducing workplace risks. Their evidence indicates that the benefits of reducing workplace risks are more than four times higher than earlier estimates. Leigh (2001) has provided related results for the United States. More specifically, the Gunderson and Hyatt estimates suggest that the benefits to society of reducing the risks that would lead to one fatality are as high as \$13 million while the benefits of reducing the risks that would lead to one non-fatal injury are approximately \$20,000.²

² Gunderson, Morley and Douglas Hyatt (2001) “Workplace Risks and Wages: Canadian Evidence from Alternative Models” *Canadian Journal of Economics*, v. 34, no. 2, May, pp. 377-395.

Leigh, J. Paul, James Cone and Robert Harrison (2001) “Costs of Occupational Injuries and Illnesses in California” *Preventive Medicine*, v. 32, no. 5, May, pp. 393-406.

In terms of the specific incidence of workplace injuries, a number of studies indicate that younger workers are particularly at risk. CCOHS recognizes this and provides information services at the *Young Workers Zone* on its website aimed at these workers who are most at risk.

3. Injuries, fatalities and program rationale

The original rationale for CCOHS was to serve as a national centre that would contribute to reductions in occupational injuries and illnesses. This core rationale remains valid. Data on Canada's history of occupational injuries and fatalities show that important improvements have been made but that the numbers of occupational injuries and fatalities are still large. The standard data sources relate occupational injuries and fatalities to the number of workers employed (the population at risk for occupational hazards). For Canada in 2007, the employed population consisted of 16.87 million persons. Of this total, nearly 318,000 suffered an injury requiring time loss from work. Occupational fatalities totaled 1,055.

Exhibit IV-1 shows comparative data on occupational injuries and fatalities for 2007 (the latest year for which published data are available), and selected earlier years going back to 1970. There have been significant reductions in injuries and fatalities relative to numbers of workers but the numbers remain high and require our continuing attention. The reductions in both injuries and fatalities likely result from a variety of factors including a changing industry mix, changing production technologies, better educated workers and industry initiatives together with occupational health and safety policies and programs, including the activities of CCOHS.

Exhibit IV-1 Occupational Injuries and Fatalities in Canada

Year	Employees (millions)	Time-Loss Injuries	Fatalities	Injuries per million workers	Fatalities per million workers
1970	7.03	301,653	918	42,909	131
1998	14.33	375,360	798	26,201	56
2003	15.80	348,854	963	22,709	61
2005	16.17	337,390	1,097	20,865	68
2007	16.87	317,524	1,055	18,822	63

Source: Human Resources Development Canada, *Occupational Injuries and their Cost in Canada, 1993-1997, 1999, and Statistical Analysis: Occupational Injuries and Fatalities, Canada, 1994-1998, 2000*. For 2003, 2005 and 2007: *Work Injuries and Diseases National Work Injuries Statistics Program, Association of Workers' Compensation Boards of Canada, 2001-2003, and 2005-2007 and Labour Force Survey, 2003, 2005, 2007, Statistics Canada*.

The data in Exhibit IV-1 imply that small and achievable reductions in injury and fatality risks can generate large benefits to society. An overall perspective on program rationale and potential program impacts, as it relates to injuries and fatalities, can be provided by combining the data in Exhibit IV-1 with the data on the value of reducing the risks of deaths and injuries cited earlier. Note that these values were \$13 million per fatality and \$20,000 per non-fatal injury. Combining these data with actual fatality and injury data for 2007 from Exhibit IV-1 produces a dollar value of approximately \$20.1 billion from reducing the risks of all of these accidents to zero. Put differently,

the cost to Canadian society of the risks leading to injuries and fatalities in 2007 was approximately \$20.1 billion.

This analysis relates directly to the CCOHS rationale. If CCOHS activities, for example, were to lead to a 1% reduction in the risks shown for 2007, then 3,175 injuries and 10.6 fatalities could be avoided. The research outlined above indicates that Canadian society would assign a value of nearly \$208 million to this reduction in risk.

4. Economic aspects of program rationale

The economic rationale for government support of programs and activities has three related sources. These are:

- A fairness or equity rationale in which particular groups in society are supported through program activities.
- An economic efficiency rationale in which the program is justified because market processes do not provide the best outcome from the point of view of society. This is generally referred to as the “market failure” rationale.
- A rationale based on the economic benefits of healthy workplaces in the form of improved productivity, increased competitiveness of Canadian enterprises and reduced health-care costs.

Support for CCOHS is consistent with all of these sources of rationale for the program.

The development of a formal rationale for a program such as CCOHS is the first step in the evaluation process. In the economic efficiency case, the evaluation seeks to identify market failures and then relate program activities to the market failure. That is, for the rationale to fit well, the program must undertake activities targeted to rectifying the original market failure. The evaluation has the task of determining whether program activities as they actually take place are plausibly linked to the underlying market failure that provides the rationale for the program. In the case of CCOHS, this chapter focuses on the failure of markets to provide adequate amounts of information and services related to occupational health and safety as the primary source of program rationale. This type of market failure is discussed in the context of the extensive literature in applied economics on the problems of information as a commodity.

In a market context, there are many ways by which users of information are able to avoid paying either entirely or an amount equal to the full value they receive from its use. The excess of the amount that a user of information would have been willing to pay relative to what is actually paid is called a spillover benefit. For example, worker A may pay to acquire safety information. Worker B then observes what worker A does to work more safely and follow A’s example. In this case, the benefits to B of using the information paid for by A constitute a spillover benefit.

Related to this example, it is clear that the safety information (used by A and B) is costly to produce and disseminate. In the above example, only one of the beneficiaries of this information contributes to its cost of production. In this context, there will be many types of information that have a value to society exceeding their costs of production that will not be produced if users have to recover all of their costs in doing so. This is the essence of the market failure issue for information as it applies to CCOHS.

There is an additional source of program rationale that focuses on the role of information related to occupational health and safety regulatory requirements. Workplaces are complex and differ from each other in a variety of ways. Governments enforce health and safety regulations but inspection is costly and even well-trained inspectors will not be as sensitive to specific workplace issues as are workers in that workplace. Providing the information essential for improving workplace health and safety to workers, managers and employers in an internal responsibility system is a powerful and cost-effective mechanism and constitutes a strategy parallel to regulation and enforcement by governments in the area of promoting occupational health and safety.

Thus, the activities of CCOHS relate directly to its mandate and to the economic and related sources of rationale for the program. CCOHS promotes occupational health and safety. It acts as a national centre for the production and dissemination of health and safety information and services used by a large number of Canadian workers. The causal linkages from activities to outputs to program impacts and finally to overall objectives are clear and have been confirmed by the results of this evaluation as described below.

B. PROGRAM DELIVERY

1. Program resources and the products and services of CCOHS

CCOHS uses its program resources and cost recovery fees to provide a wide range of products and services. Many of the resources of CCOHS support both the products that are sold and the services provided to Canadians without a fee. These services that are provided without a fee draw on the information base and expertise of CCOHS, some of which is related to producing the products that are sold. There are, in other words, common costs associated with the paid products and the free services. Calculations elsewhere in this report show that some of the costs of providing the free services are shared with the paid products. That is, in the absence of the resources used to produce paid products, it would be difficult to provide the quantity of free services that is produced now. Based on interviews conducted with key informants, there is widespread support for the continued provision of free services, particularly non-technical information provided to individual workers to promote their safety in the workplace.

2. Products and services

The products and services of CCOHS can be summarized in the following categories:

- The Inquiries Service.
- The web site and particularly OSH Answers.
- The wide range of information products sold by CCOHS.
- Other services including the development of information, training, research, and special projects.
- Education and training
- Supporting initiatives and programs for compliance and for the reduction of workplace injuries and illnesses.

- The newest services provided by CCOHS are e-learning courses, MSDS Management Services, OSH Works to manage health and safety programs and CANWrite software for MSDS authoring.

a) *Inquiries Service*

The Inquiries Service answers questions in two ways – through its person-to-person information service (telephone, e-mail and regular mail) and through its Internet service (OSH Answers). As noted earlier, the Inquiries Service deals directly with approximately 13,000 clients per year with and an additional several million users of OSH Answers. TNS Canadian Facts conducted a survey of 243 current users of the Inquiries Service. Of the 243 respondents, 30% said that they had used the Inquiries Service at least once a month over the previous twelve months.

The information obtained from the CCOHS Inquiries Service by survey respondents is put to a number of uses in the workplace and to promote workplace improvements. The most common uses of the information are:

- Resolving workplace issues.
- Informing, educating or training.
- Improving health and safety programs.
- Personal use of health and safety information.
- Complying with occupational health and safety regulations.
- For developing best practices.
- For use by occupational health and safety committees.

The survey responses indicate that most (75%) of the uses of CCOHS information relate to either current or future changes to the workplace that may result in improved workplace health and safety. This is related to the assessment of Impacts and Effects provided later in this chapter.

The survey of users is the source of key performance indicators for the Inquiries Service. These performance indicators include timeliness, the ability and courtesy of the staff, and the overall satisfaction with the service to provide a series of measures against which to evaluate the quality of the service provided. Respondents rated the CCOHS Inquiries Service very highly for all indicators. These ratings from survey respondents for the CCOHS Inquiries Service are shown in Exhibit IV-2.

**Exhibit IV-2 Level of Satisfaction with CCOHS Inquiries Service: 2009 and 2005
(% of respondents indicating either very satisfied or satisfied)**

INDICATOR	% satisfied 2009	% satisfied 2005
Timeliness	83%	78%
Knowledge and ability of staff	77%	76%
Courtesy of staff	83%	87%
Completeness	77%	75%
Usefulness	80%	77%
Clarity	77%	80%
Reliability	81%	82%
Overall satisfaction with information received	67%	62%

Source: Data for CCOHS is from surveys of users conducted by TNS Canadian Facts.

Respondents were also asked about the importance of the CCOHS Inquiries Service in meeting their occupational health and safety requirements. This included a series of questions about the extent to which information products from other organizations could have been used, the relative usefulness of these other products and whether there are occupational health and safety products not offered by the Inquiries Service that would be useful to respondents. The main findings to emerge from these questions are:

- 20% of respondents said that other organizations could have provided alternatives to the CCOHS products or services that they used. 24% said that such alternative products were not available and 56% were unable to provide an answer.
- In comparing CCOHS services with potential alternatives, 29% of respondents said the alternatives were less useful than CCOHS, 10% of respondents said that alternatives were more useful, 53% said they were about the same, and 8% did not know.
- When asked about potential other products or services not offered by CCOHS that would help respondents in their work, 17% said that there were such products, 19% said there were not and 64% did not know.
- In terms of the overall importance of the CCOHS Inquiries Service in meeting the health and safety needs of their organization, 76% of respondents said that CCOHS was either very important or important.

- For the Inquiries Service, the measures shown above in Exhibit IV-2 compare favourably with the results of the previous evaluation in 2005 as shown in the right hand column. In the case of the overall satisfaction rating for the information received from the Inquiries Service, the level is higher than in the previous study although still below the level for the individually scored items. This overall satisfaction score is the result of a separate question dealing with the information received, not an average of other scores related to service delivery.

Other products provided by CCOHS for which there is no charge include *The Health and Safety Report*. This report is a monthly electronic newsletter that has provided current occupational health and safety news since its inception in January 2003. *The Health and Safety Report* is another product that serves CCOHS' mandate to provide unbiased, relevant information to all Canadians that supports responsible decision-making and promotes safe and healthy working environments. TNS Canadian Facts did not survey readers at this time but did assess awareness of this publication. The TNS survey showed that 38% of respondents were familiar with the *Report* and 62% were not.

CCOHS did conduct a readership survey of its 25,029 subscribers that was published in April 2008. Key findings of the readership survey (221 responses) conducted by CCOHS are as follows:

- Approximately 95% of respondents were either satisfied or very satisfied with the readability (format, layout, design) of this publication.
- More than three-quarters said that they use the report to implement workplace changes.
- Approximately 90% of respondents share the *Report* with at least one other co-worker and 62% share the report with four or more people. On average, the *Report* is shared with 23.5 co-workers implying a reach of this publication of more than 585,000 readers.
- Over 95% of readers said that the *Report* provides value to them in their work.

b) Information products sold by CCOHS

CCOHS markets a wide range of products and services in a variety of formats. The major products and services of CCOHS are described in Chapter III. The products and services sold by CCOHS consist of pay for use web products and services, pay for use DVD/CDs and print publications. TNS Canadian Facts conducted a survey of 219 current purchasers of these products. Of the 219 respondents, nearly 60% had been purchasing the product or service for three years or more.

The CCOHS products purchased by respondents are used in a variety of ways to improve worker health and safety. The most common of these uses are:

- Informing, educating or training.
- Complying with occupational health and safety regulations.
- Improving health and safety programs.
- Gathering information on workplace chemicals.

- Resolving workplace issues.
- For use by occupational health and safety committees.
- Developing best practices.
- Preparing MSDSs.

Respondents who purchased CCOHS products or services were asked to rate these products and services in terms of a series of performance indicators such as timeliness, clarity, usefulness and the overall satisfaction with the service to provide a series of measures against which to measure user perceptions of the quality and usefulness of the service. Respondents rated CCOHS paid products and services quite highly for all indicators. These ratings for CCOHS products are summarized in Exhibit IV-3.

Exhibit IV-3 Level of Satisfaction with CCOHS Products 2009 and 2005
 (% of respondents indicating either very satisfied or satisfied)

INDICATOR	% satisfied 2009	% satisfied 2005
Timeliness	84%	89%
Completeness	82%	85%
Usefulness	90%	92%
Clarity	88%	86%
Reliability	85%	87%
Customer support	80%	-
Overall satisfaction with product or service	82%	80%

Source: Data for CCOHS is from surveys of users conducted by TNS Canadian Facts.

In terms of value for money, 94% of respondents who could answer this question said that CCOHS products were above average value for money or average value. Approximately 30% of all respondents to this question put CCOHS in the category of above average value for money.

Respondents were also asked about the importance of CCOHS in meeting their occupational health and safety requirements. This included a series of questions about the extent to which products from other organizations could have been used, the relative usefulness of these other products and whether there are occupational health and safety products not offered by CCOHS that would be useful to respondents. The main findings to emerge from these questions are:

- 50% of respondents said that other organizations could have provided alternatives to the CCOHS products that they purchased. 15% said that such alternative products were not available and 35% were unable to provide an answer.
- In comparing CCOHS products with potential alternatives, 21% of respondents said the alternatives were less useful than CCOHS, 11% of respondents said that alternatives were more useful, 56% said they were about the same, and 12% did not know.

- When asked about potential other products or services not offered by CCOHS that would help respondents in their work, 16% said that there were such products, 22% said there were not and 62% did not know.
- In terms of the overall importance of CCOHS in meeting the health and safety needs of their organization, 83% of respondents said that CCOHS was either very important or important.

The evaluation findings described above indicate that CCOHS products and services meet important client needs and are highly regarded by its varied clients. They represent good value for money and offer important advantages over alternative sources for many users. Consistent with earlier evaluation work for CCOHS, the paid products results continue to show high satisfaction results for all measures. This comparison is shown directly in the right column of Exhibit IV-3.

c) *Web site*

The CCOHS web site is extremely active. Data collected by CCOHS indicate continued growth in the extent to which its web site is accessed. For 2008-2009, there were approximately 3.3 million unique visitors to the main site, logging over 6.9 million sessions. In addition, there are 2.5 million annual requests for information to OSH Answers with 6.8 million pages viewed to retrieve information on more than 670 topic areas. Traffic measures by themselves do not reveal the potential impacts of web site use. Our survey of the users of the CCOHS web site, however, provides an additional perspective on the potential impact of the information that was accessed on helping users deal with workplace health and safety issues. Survey respondents indicated that their main purpose (in order of frequency of mentions) in visiting the CCOHS web site was to:

- Locate information about workplace hazards.
- Find information about injury and illness prevention.
- Locate information about hazard controls.
- Locate information about chemicals or MSDSs.
- Locate information about developing health and safety programs.

Respondents to the web survey were from a variety of locations. More specifically, respondents were distributed as follows: Eastern Canada (32%), Central Canada (19%), Western Canada (21%), USA (5%) and Other Locations (23%).

Respondents said that they were relatively successful in finding what they required on the CCOHS web site. Among respondents, 52% found what they wanted on the CCOHS site, another 13% found related useful information, only 4% said they did not find what they wanted and 31% said they were still looking at the time of the web survey.

The information that respondents found on the CCOHS web site was being used most frequently for the following purposes:

- Providing information for education or training purposes (17%).
- Improving health and safety programs (12%).

- Resolving workplace issues (11%).
- Developing best practices (11%).
- Complying with occupational health and safety regulations (11%).

As noted above, attributing actual health and safety improvements to CCOHS is difficult. However, indirect evidence is provided from the responses to the web survey. Respondents were asked how many people in their organization could or would benefit from the CCOHS information. Among respondents, 27% said that 1-10 persons would benefit, 34% said between 11 and 100 persons, 16% said 101 to 500 persons would benefit and 17% said that more than 500 would benefit. More details on the reach of CCOHS are provided below. The most frequently mentioned job responsibilities of respondents providing this information were safety (39%), management/administration (18%) and education/training (11%).

d) Interviews with Key Informants

Interviews were conducted with 30 key informants representing a wide range of CCOHS stakeholders and clients, including business, labour, government, and non-governmental organizations. Key informants were chosen based on their involvement in the OHS community internationally and within Canada. Respondents belonged primarily to Canadian organizations, although one international respondent was included. Most interviewees (87%) were direct users of CCOHS products and services, and three were members of the Council of Governors.

i) Products and Services Used

Key informants were first asked to describe the CCOHS products and services used within their organization. These respondents noted that a variety of free and paid products and services were used. Most respondents referred to more than one product or service. The most frequently cited products used were Inquiries Services, OSH Answers, CHEMINFO, MSDS products, and the website in general. A small number of respondents had contracted CCOHS to do specialized work for them. Others reported using the CD-ROMs, database subscriptions, mailing list for OHS professionals, ergonomic guides, poison control centre databases, and using the CCOHS web site to link to other websites.

CCOHS products and services were normally used as reference tools to answer client or employee questions and to assist members of workplace health and safety committees in carrying out their responsibilities. Many responses referred to “as needed” uses relating to chemical hazards or new safety concerns on which programs were being developed. CCOHS products and services were also used in libraries, and in support of regulatory enforcement work, best practice development and in developing training materials and providing training sessions. CCOHS e-learning courses were used by a number of respondents and respondents also reported using CCOHS newsletters to provide information to employees. One training provider referred to the training program having a component in which trainees were advised to use CCOHS as a safety resource on a continuing basis.

Respondents give CCOHS very positive assessments on answers to questions about the ease of use of CCOHS products and services. They were frequently referred to as “very user friendly.” In terms of developing electronic information services, CCOHS was described as providing easy to use and valuable services based on information sharing and putting often complex research findings into useful safety information. Respondents positively referred to CCOHS timeliness as an element of

ease of use and described products and services as understandable for both health and safety specialists and workers concerned with specific risks.

A number of interviewees reported sourcing OHS materials from other organizations when CCOHS did not itself offer the necessary product. These uses were frequently referred to as minor and in cases in which some very specific types of information were being sought. These materials were accessed directly from the companies that produce them and through other provincial health and safety organizations. Where other services were used, they were often referred to as less comprehensive and not fully effective substitutes for CCOHS offerings.

Most respondents reported that their use of CCOHS products and services has not changed substantially over the last three to five years. Some respondents said that they used more electronic resources but other said that it was more generally the case that changes to electronic sources had occurred more than three to five years ago. On a continuing basis, respondents referred to the growing development of other internet resources and one respondent described “Googling more” as a change in use. Interest in new issues by respondents included how workers might be affected by exposure to nanomaterials in manufacturing or industrial applications of nanotechnology. CCOHS does offer information related to working with nanomaterials consistent with the current scientific literature and best practices.

In terms of anticipated future demands for the types of products and services provided by CCOHS, most respondents saw little change in their demands for current products and services. In their focus on potential new areas, responses referred to potential new technologies and equipment changes that could introduce new hazards and safety concerns to manage. Some respondents referred to an expectation that they would increase their use of health and safety on-line learning services.

ii) Assessment of Products and Services

Most respondents felt that CCOHS’ products and services had met their organizations’ needs quite well and that paid products represented excellent value for money. The value added in specific CCOHS information products and services was referred to by interviewees as was their importance to users in providing health and safety services. Important components of value include timeliness and, for electronic products, the CCOHS interface that provides easy access to a wide range of services.

CCOHS is perceived as ‘neutral’ not favouring labour, management or government and being an organization that provides a national perspective on health and safety issues. CCOHS products and services are credible, unbiased, and good resources for employees. This credibility and lack of bias means that organizations using CCOHS products and services do not have to do further validation, in contrast with information received from organizations that may be perceived to be less independent. By effectively addressing the information needs of its clients, CCOHS was reported to increase the focus on health and safety issues and contribute to improved workplace conditions.

Among respondents, those who were users of CCOHS products and services were asked about their awareness of and use of new CCOHS services, specifically e-Learning courses, MSDS management services and OSH Works services. Approximately 75% of these respondents were aware of e-Learning courses and MSDS Management services but only a third of those who were aware had actually used these services. In the case of OSH Works Services, only 25% of these respondents were aware of these services that manage health and safety systems and none had used these services.

Respondents also provided suggestions for improvements to the products and services offered by CCOHS, centering on issues of coordination, cost and new products or services:

- More seminars, different topics and more online availability.
- Several suggested that CCOHS offer products more inexpensively, or free of charge to increase access to safety information.
- One respondent noted that new technologies are still emerging and that it is important for CCOHS to remain current. Might people want to receive information on smart phones, PDAs, and related devices? CCOHS has been a leader in adopting and making excellent use of new technologies. It should maintain that leadership position.
- Some respondents suggested that CCOHS focus more on operational issues, such as playing a more important coordinating role in the OHS community, networking, joint ventures and partnerships to leverage its resources. A similar suggestion was made for the major national information sharing OHS organizations, likely including US, Italy, UK, Australia, Canada and perhaps others. More contact at the policy level was recommended in order to avoid duplication and take advantage of the good products available among those organizations.

iii) CCOHS Effects in the OHS Community

Many respondents believe that CCOHS has successfully acted as a catalyst to improve workplace health and safety practices. CCOHS is well known in the OHS community for a variety of initiatives. Key informants referred to specific information on hazardous substances, conferences, seminars, OSH Answers, training courses and its wide variety of publications.

By making information about workplace hazards and best practices available to companies, employees and workplace health and safety committees, CCOHS has improved awareness and knowledge of workplace health and safety issues. In response to questions about the impacts of CCOHS products and services on workplace health and safety, some respondents were willing to extend the causality from information products and services to reduced accidents and lower costs. However, others were not willing to make that link directly, responding “no data” “not sure” or “hard to say”. Some said that awareness, information and training are necessary for making positive workplace changes but that the way they are implemented is also important. This attribution issue is common for a variety of organizations producing products and services similar to those of CCOHS.

CCOHS is intended to be a national centre for the promotion of workplace health and safety and should be a recognized leader in the provision of OHS products and services. Interviewees were nearly unanimous in saying that CCOHS has a strong reputation within Canada. OHS experts, professional leadership, unions, workers and employers with health and safety committees are quite familiar with CCOHS. This high level of awareness of CCOHS was attributed primarily to the quality of its programs and services and the high level of visibility maintained by CCOHS staff. Within Canada, CCOHS is well known for the national reach of the occupational health and safety information it provides and its growing range of services.

CCOHS also has a catalyst role to play in the areas of building partnerships among the various actors in the occupational health and safety community. Respondents felt that CCOHS plays a key role in this area and is supported in this role by its tripartite structure that encourages

interaction. Conferences and more formal partnership initiatives were mentioned by key informants in response to this question.

CCOHS also possesses a strong international reputation. It is perceived as one of the world's leading sources of OHS information. Respondents with more operational responsibility for health and safety in Canada were more likely to be uncertain about the international aspects of CCOHS' reputation relative to its national reputation.

iv) Fees for Products and Services

The issue of charging for products and services is a central issue for CCOHS because of the importance of access to occupational health and safety information and because of the importance of these revenues to CCOHS as an organization. Respondents were asked a number of questions about how the policy of charging for some CCOHS products and services affects different types of users of these products and services.

A number of respondents would prefer for all CCOHS products and services to be free, and for the federal government to take the lead, and pay the dominant share of the cost. Many felt that charging for services would inhibit use among smaller organizations and labour groups. The general opinion among respondents is that it continues to be important for CCOHS to provide a wide range of products and services for free. This view is related to the overall opinion of key informants that CCOHS should provide Canadians with the occupational health and safety information that is necessary to satisfy its mandate of promoting safer workplaces.

Many of the interviewees believed that the current charges for products and services limit the accessibility of CCOHS information and services. Those who felt the charges limit accessibility perceived the cost barrier to be most significant for individual workers and small and medium sized employers who may not be able to afford the information they wish to access. Other respondents felt that the prices attached to paid CCOHS products and services do not inhibit accessibility, as government, larger companies, associations, and other organizations can usually afford to pay for these products and services. Furthermore, since so much information provided by CCOHS is free, users requiring more specialized information are generally in the position to pay for it. This variation in views among respondents reflects the diverse nature of the clientele served by CCOHS. Some users of CCOHS products and services are much more price sensitive than others.

Respondents generally believed that a wide range of users benefits from the availability of the free information services of CCOHS. Individual workers, the public, members of the health and safety community, small and medium size firms and union health and safety committee members were typical responses to the question of who benefits from the free services.

A variety of differences between users of CCOHS free services and its priced products were noted by respondents. Larger institutions, unionized workplaces, more sophisticated users with special needs and HR professionals were described as being the characteristics of those who use the priced products. In terms of the types of information accessed free versus paid products, respondents mostly focussed on paid products as providing information that is more specific and which adds content or specific analysis to what is available for free.

In terms of establishing a proper balance between free and paid products, the dominant opinion was that products for workers and small businesses should be freely accessible, while larger companies and more specialized users could pay for products and services. Most believed that specialized collaborative or sophisticated services should be provided on a for-fee basis. Training and

e-learning were mentioned as services that should have a fee attached. There was a general recognition that an unlimited range of specific products could not be produced without a fee but that “as much as possible” should be free. In particular, items of direct benefit to workers, small business and the general public should be free. There was also recognition among key informants that it is not easy to draw a clear line between services that should be free and those for which a fee should be charged.

Most interviewees felt that government funding, both provincial and federal, should cover the costs not covered by sales. Many argued that since the federal government created CCOHS and provided it with its mandate, the federal government should have the primary responsibility for ensuring that CCOHS has the necessary funds to operate and specifically to provide a wide range of free services.

Most interviewees thought that provincial governments should also contribute funding to CCOHS, possibly through their workers’ compensation boards. It was observed that some provincial governments already contribute to the operations of CCOHS, and that all provinces should do so but through some type of formula based on the sizes of provincial and territorial labour forces.

v) *Overall Views of Key Informants*

In their concluding comments about CCOHS, respondents tended to provide a summary opinion and they were nearly unanimous in their positive assessments about the high quality of its products and services. Specific products and services were mentioned in terms of their value and the overall capacity of the organization and the efficiency of its staff were praised. CCOHS was described as a core resource that was known for the depth and breadth of its resources. The reliability of its information and services was linked to its tripartite nature and it was described as providing excellent value for money in its paid products. Organizations that had partnered and conducted joint projects with CCOHS were extremely positive about the relationship.

e) *CCOHS Internal Reviews*

CCOHS regularly surveys the users of its products and services. In carrying out this evaluation, TNS has reviewed the results of this active program of internal performance measurement. These positive assessments provide clear indications that the products and services that have been reviewed are used extensively and provide high levels of user satisfaction. Recent performance reviews by CCOHS include the following:

- *Health and Safety Report* Readership Survey, 2008.
- Feedback on CCOHS publication-survey, 2008.
- Canadian enviroOSH Legislation plus Standards-survey of users, 2008.
- Inquiries Service satisfaction survey, 2008.
- OSH Answers-User Satisfaction Survey, 2008.
- Feedback on CCOHS e-learning courses-survey, 2008.
- Canadian Health Network user survey, 2007.

- User Satisfaction/Needs Survey-CHEMINFO, 2007.
- Survey of users of OSH References databases, 2007.

C. IMPACTS AND EFFECTS

The logical links relating CCOHS programs and activities to improved workplace outcomes are clear and have not changed since earlier evaluations of CCOHS. CCOHS assembles, manages and disseminates information on health and safety. Some of this information is directed to workers who are dealing with a workplace issue and seek information from the Inquiries Service and/or the web site. Other users of CCOHS information include OHS professionals and workplace health and safety committees. Increasingly, CCOHS is also a service-provider, helping OHS professionals manage MSDSs and develop effective management systems for their health and safety responsibility systems.

The results of this evaluation confirm that many individual workers use CCOHS to provide them with assistance on a specific workplace health or safety issue. There is strong support among key informants for the continuation of this free service. The CCOHS information products and services that are sold also have direct application in the workplace. Our survey results show frequent use of these products by many people in the organizations that purchase them. The entire range of workplace partners-workers, their unions, employers and governments use CCOHS information products and services to promote occupational health and safety.

The conclusion that CCOHS has positive impacts on promoting workplace health and safety in Canada is based on several sources of evaluation evidence presented in this report. The evidence of widespread use of CCOHS products and services consists of survey data from customers, users of the Inquiries Service, users of the web site and key informants. Evidence from these sources provides a consistent picture of how CCOHS health and safety products and services are used to make workplace health and safety improvements. Survey respondents also indicated that there are frequently no good substitutes for what CCOHS provides and that when such alternatives do exist, they are generally less useful than CCOHS products and services.

This report has noted on a number of occasions that in spite of the evidence on the widespread use of CCOHS products and service, it is still not possible to link these data on the use of CCOHS products and services directly to accident or illness data. However, the widespread and frequent use of CCOHS information implies that there will be important workplace impacts in promoting better practices.

A summary of the quantitative data establishing the reach of CCOHS products and services in Canadian workplaces is shown in Exhibit IV-4. The key point of this exhibit is that not only does CCOHS have a large number of users and clients of its products and services but that the information and products they provide have a large number of users within the organization. Using the data in Exhibit IV-4, (together with a relatively conservative assumption that the “more than 500” category is 750) allows us to calculate the average number of workers affected by the products, services and information in each of the three columns of the exhibit. This average number of workers who could benefit from the information is 81 for the Inquiries Service, 80 for paid web products, 97 for other paid products and 208 for information supplied to users of the web site.

Exhibit IV-4 Reach of Information in Organizations Using CCOHS Products and Services

Persons using within Organization	Inquiries Service	Paid Web Products	Other Paid Products	Web Site
1-10	62.4%	62.3%	65.6%	28.7%
11-100	25.3%	26.6%	15.6%	36.1%
101-500	7.0%	4.8%	12.5%	17.0%
More than 500	5.6%	6.2%	6.3%	18.1%

Source: TNS survey of users and clients. Data are % of respondents to the reach question. Note that web site respondents tend to be from larger organizations and that this is a self-selected sample that may not be representative.

As noted, we would like to be able to establish a direct link from the reach of CCOHS products and services outlined above to actual health and safety outcome data. It is clear that the use of appropriate information on safe workplace practices will reduce risks. Exhibit IV-4 and the related calculations shows that the reach of CCOHS products and services in the workplace is substantial. Our conclusion from the evidence in this evaluation report is that there can be little reasonable doubt about the widespread use and effect of CCOHS products and services. It is still the case, however, that trying to link specific CCOHS products and services with specific reductions in occupational accidents and illness would not be credible.

D. COST-EFFECTIVENESS AND PROGRAM ALTERNATIVES

From the survey of customers carried out in this evaluation, the paid products and services of CCOHS represent good to excellent value for money to OHS professionals and other users. CCOHS is recognized as a cost-effective provider of high quality products and services. Health and safety professionals, as survey respondents and as key informants, identified the unique qualities of CCOHS as an effective information and service provider.

As noted in the previous evaluation, like most other information and service providers, CCOHS has substantial fixed costs associated with developing and maintaining data bases and with developing new products. These fixed development costs are necessary to generate and keep current the information that is sold in the form of CCOHS products and to provide the information base for the Inquiries Service and the web site services that are provided free of charge. Again, as is the standard case with information, the high fixed costs of producing information stand in contrast to the relatively low marginal cost of distributing the information. In the context of the current CCOHS focus on developing a range of health and safety services to help firms manage their safety responsibilities more effectively, an important issue is raised about how CCOHS can finance these necessary new product and new service initiatives. The following chapter addresses issues related to the continuing financial capacity of CCOHS to provide a changing mix of high quality products and services to Canadian workplaces in an increasingly competitive environment.

From an overall program evaluation perspective, the cost-effectiveness issue is the extent to which current CCOHS funding represents a cost-effective use of the tax dollars that support its programs and services. This question is a difficult one on which to provide a definitive answer because cost-effectiveness assessments require information on the value of the products or services that are being provided. In the case of CCOHS, the results of this evaluation indicate that the value of these products and services is likely to be high. Although we are not able to directly attribute reductions in injuries or accidents or improved health to CCOHS activities, the value of even small improvements in these areas is very large. These gains or benefits appear to be quite large, particularly relative to the amount of annual public expenditure. In the context of this evaluation, the assessment of cost-effectiveness is intended to provide information about the relative value of CCOHS initiatives to promote healthy and safe workplaces. The evidence in this evaluation suggests that CCOHS has been remarkably cost-effective in contributing to improved health and safety in Canada.

V FINANCIAL CAPACITY ISSUES AND ANALYSIS

This section of our report examines the financial capacity of CCOHS to continue funding the development and maintenance of its suite of free and fee-based products and services (“products”) using the existing combination of funding from public appropriations and cost recovery. The first section examines trends in the revenue and cost performance of CCOHS’ major products and the second section compares the CCOHS funding structure to that of a number of public organizations in other jurisdictions whose mandates also include the promotion of occupational health and safety through the dissemination of relevant and objective information and guidance.

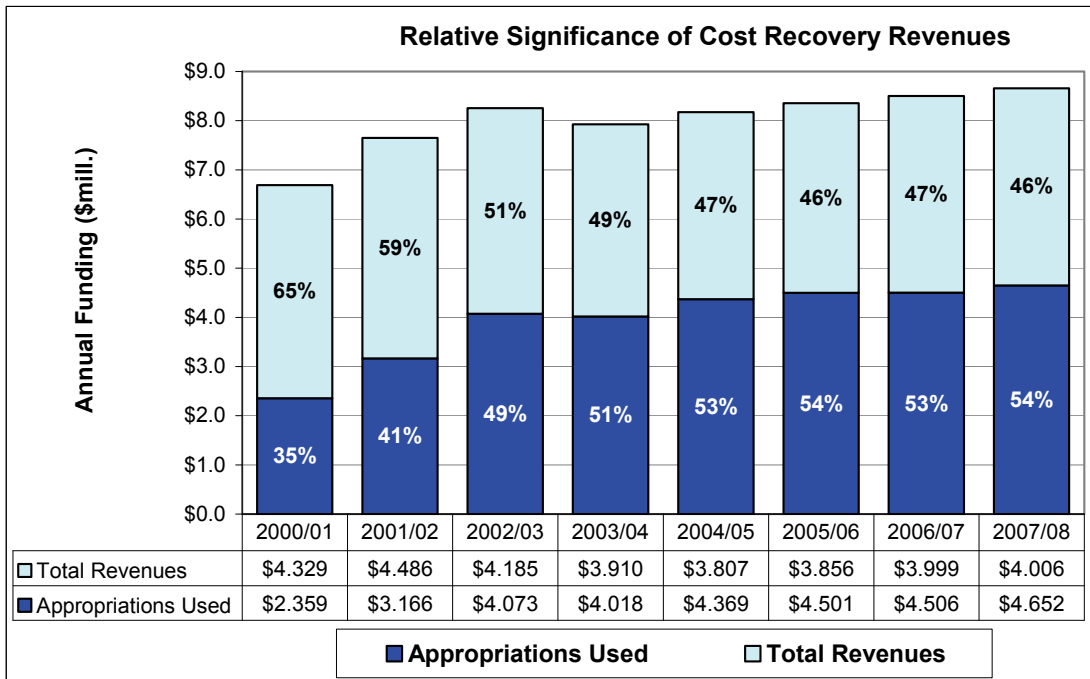
A. PRODUCT SALES PERFORMANCE

1. Trends in revenues from CCOHS’ major products

As we noted earlier in this report, funding for CCOHS is provided by a combination of appropriations through the Main Estimates process plus cost recovery through the application of fees for certain of its products and services. Starting in 2002/03, CCOHS was expected to generate 50% of its annual funding requirements from user fees, with the balance coming from appropriations. However, since that time the popularity of the Internet as a source of free OHS information has grown and CCOHS has been challenged to achieve the 50% cost recovery target. Exhibit V-1 summarizes the trend in revenue sources since 2001/02 and shows that CCOHS was within one percent of this target in 2002/03 and 2003/04 but has not exceeded approximately 46% in each subsequent year to 2007/08.

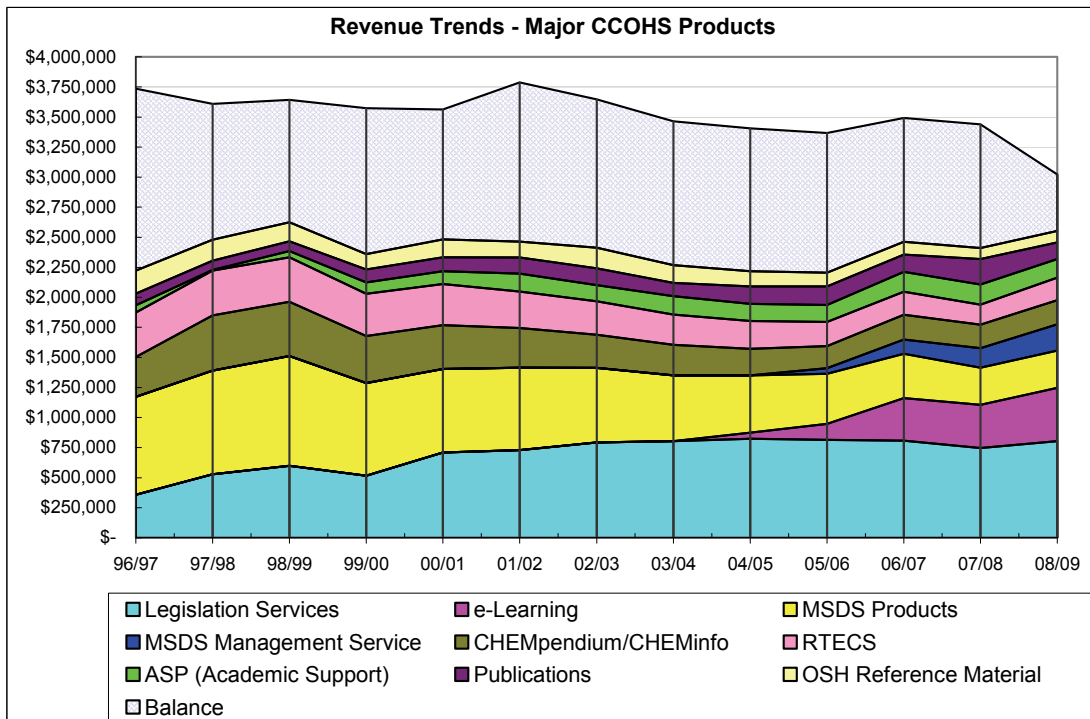
Achievement of a recovery rate of 46% (let alone 50%) has been very difficult for CCOHS in the face of continuing growth in the availability of OHS information for free on the Internet. CCOHS has responded to this challenge by developing new products and services, and re-inventing existing products and services to better respond to, and ‘lock in’ customers. This evolution is clearly apparent in Exhibit V-2, which shows the revenue trends for major CCOHS products over the period from 1996/97 to 2008/09, and Exhibit V-3, which contains ‘snapshots’ of the performance of each of the major products.

Exhibit V-1 Appropriation and cost recovery levels– 2001/02 to 2007/08



Source: Financial Statements, Annual Reports, 2000/01 to 2007/08.

Exhibit V-2 Revenue trends for major CCOHS products and services



Source: Breakdowns of products sales provided by CCOHS.

Exhibit V-3 Performance of major products – 1996/97 to 2008/09

Products	1996/97		2002/03		2008/09		CAGR (96/97 to 08/09)
	Revenue (\$,000) ¹	% of Total ¹	Revenue (\$,000) ¹	% of Total ¹	Revenue (\$,000) ¹	% of Total ¹	
Legislation Services - full text of Canadian health, safety and environmental legislation plus standards referenced in legislation	\$356.6	9.5%	\$793.2	21.7%	\$803.7	26.6%	+7.0%
e-Learning – web-based courses developed to help Canadians acquire and apply workplace health and safety knowledge.	-	-	-	-	\$444.1	14.7%	+72.5% ³
MSDS - access to up-to-date Material Safety Data Sheets including French language MSDS	\$815.3	21.8%	\$619.6	17.0%	\$308.0	10.2%	-7.8%
MMS – MSDS Management Service – web-based maintenance and workplace distribution of MSDS on behalf of individual employers.	-	-	-	-	\$219.3	7.3%	+69.7% ²
CHEMPendium - collection of databases that meet the broad needs of environmental, health and safety practitioners. CHEMInfo - summarized, reliable, understandable information on workplace chemicals.	\$331.8	8.9%	\$276.1	7.6%	\$201.0	6.7%	-4.1%
RTECS (Registry of Toxic Effects of Chemical Substances) – critical toxicological information on more than 167,000 chemical substances.	\$370.3	9.9%	\$276.9	7.6%	\$186.5	6.2%	-5.6%
ASP (Academic Support Program) – exclusive program for universities and colleges to educate students about environmental and occupational health and safety and as a guide to assist universities and colleges to achieve safe and healthy working environments.	\$59.6	1.6%	\$136.5	3.7%	\$155.0	5.1%	+8.3%
Publications - a traditional and effective way to inform and educate people about hazards, safe work practices, and other topics in occupational health and safety.	\$97.5	2.6%	\$137.4	3.8%	\$140.1	4.6%	+3.1%
OSH reference material - OSH databases: HSELine, Reference Collection, OSH Researcher.	\$192.2	5.1%	\$172.2	4.7%	\$94.9	3.1%	-5.7%

1. Revenue data is drawn from product sales breakdowns provided by CCOHS. Share of Total percentages are based on total revenue in the year in question, excluding Inquiries Funding.

2. Compound annual growth rate-the average annual percentage growth over the period.

3. Compound annual growth since 2005/06 introduction. 4. Compound annual growth since 2004/05 introduction.

The information in Exhibit V-3 shows that traditional data base collections – MSDS, CHEMPendium, RTECS and the collection of data bases that we have grouped as OSH reference material – have all declined in significance, with average annual rates of revenue decline of between -4.1% (CHEMPendium/CHEMInfo) and -7.8% (MSDS). In 1996/97, these various products accounted for almost 46% of CCOHS’ revenue from fee-based products; in 2002/03 the share had fallen to 37%, and to 26% in 2008/09.

Exhibit V-3 also shows the impact of CCOHS’ focus on developing value-added products tailored to the specific needs of buyers that build on the OSH databases as well as its in-house capabilities in information collection, synthesis and product design. These products can be differentiated from free OHS information available from other sources and effectively allow client organizations to ‘outsource’ the provision and maintenance of their OSH information requirements.

Successful product innovations have been achieved in three main areas:

- The MSDS Management Service (MMS) was launched in 2005/06, and accounted for over 7% of product revenues in 2008/09 without cannibalizing sales from the traditional MSDS service (that is, did not accelerate the rate of decline in MSDS sales). Combined MSDS and MMS sales were stable during the period from 2004/05 to 2007/08 and grew in 2008/09 (by almost 12%). OSH Works is another similar product introduced by CCOHS in 2008/09 – a customisable web-based system designed to help buyers to maintain their workplace health and safety programs.
- Combining information from different sources to produce value-added bundles of information that meet the needs of particular types of customers. Growth has been achieved in three areas through the application of this strategy: Legislation Services (combining, health, safety, and environmental legislation with referenced standards), ASP (Academic Support Program; a collection of existing environmental and OHS databases packaged specifically for academic institutions), and CCOHS’ own publications. Average annual rates of growth from 1996/97 to 2008/09 were 7.0%, 8.3% and 3.1%, respectively, and their combined share of total revenue went from almost 14% in 1996/97 to 29% in 2002/03 and 36% in 2008/09. (Note, however, that sales of Legislation Services grew strongly to 2004/05 but have since remained relatively flat or slightly declined.)
- Development and provision of online e-Learning courses to enable convenient and efficient training in workplace health and safety subjects that complement CCOHS’ existing classroom-based courses. The e-Learning product was first introduced in 2004/05 and has grown rapidly in response to customer demand and expansion of the number of available courses. In 2008/09, e-Learning accounted for almost 15% of CCOHS’ product revenues.

2. Product costs and margins

A clear lesson to be taken from the above analysis of changes in the product mix is that CCOHS must continually invest in developing new products and improving existing products just to maintain its revenue base, and to thereby support the provision of high quality, comprehensive free information services. However, a consequence of the continuing shift into value-added products is that these products also require higher levels of investment for both initial

development and ongoing maintenance. For example, the direct costs (staff time and product expenses) and revenues for the e-Learning product over the period from 2004/05 to 2008/09, shown below, shows high initial development costs relative to both the initial sales of e-Learning products and to CCOHS' total product revenues.

e-Learning – Direct Costs and Revenues (\$,000)				
Year	Direct Costs	Revenues	Margin	Cumulative Margin
2004/05	\$88.4	50.1	-76.4%	-76.4%
2005/06	\$361.7	\$132.9	-172%	-146.0%
2006/07	\$314.5	\$352.4	+10.7%	-42.8%
2007/08	\$260.9	\$358.0	+27.1%	-14.8%
2008/09	\$299.7	\$444.1	+32.5%	+0.9%

Additionally, while e-Learning has enjoyed rapid growth in revenue it is only in the last fiscal year that cumulative revenues exceeded cumulative direct costs, and is only now (after five years) making a contribution to CCOHS' administrative and overhead costs.

Comparisons of cost and revenue data shown in Exhibit V-4 for established major products suggest that margins are under pressure for a number of products, such as Legislation Services and CHEMPendium/CHEMInfo. Margins on MSDS products were negative but are now benefiting from the introduction of the MMS (MSDS Management Service). However, assessments of the costs and margins on database products need to also take the performance of related products into account, such as ASP in the case of MSDS, which includes access to MSDS/FTSS, CHEMInfo, RTECS and data bases included in the OSH reference material. The margin achieved on the combined costs and revenues of MSDS, CHEMPendium/CHEMInfo, RTECS, ASP and the OSH reference materials were +11.7%, +23.4% and 17.2% in each of the years from 2005/06 to 2007/08. Also, positive margins on traditional products, such as, RTECS and the various databases grouped as OSH Reference Material, have only been achieved or maintained by reducing product costs at a faster rate than revenue declines.

Exhibit V-4 Comparison of direct product costs and revenues

Product	Cost (\$,000)	Revenue (\$,000)	Margin	Product	Cost (\$,000)	Revenue (\$,000)	Margin
Legislation Services				e-Learning			
2004/05	\$380	\$823	+53.9%	2004/05	\$88	\$50	-76.4%
2005/06	\$317	\$813	+61.0%	2005/06	\$362	\$133	-172.2%
2006/07	\$335	\$808	+58.6%	2006/07	\$315	\$352	+10.7%
2007/08	\$365	\$747	+51.2%	2007/08	\$261	\$358	+27.1%
2008/09	\$362	\$804	+54.9%	2008/09	\$300	\$444	+32.5%
MSDS/FTSS/MMS				CHEMPendium/CHEMInfo			
2004/05	\$719	\$478	-50.4%	2004/05	\$59	\$221	+73.5%
2005/06	\$662	\$464	-42.7%	2005/06	\$32	\$184	+82.3%
2006/07	\$493	\$488	-0.9%	2006/07	\$57	\$205	+72.1%
2007/08	\$478	\$472	-1.3%	2007/08	\$114	\$196	+42.1%
2008/09	\$454	\$527	+13.9%	2008/09	\$102	\$201	+49.1%
RTECS				ASP			

2004/05	\$177	\$231	+23.7%
2005/06	\$102	\$200	+49.1%
2006/07	\$104	\$193	+45.9%
2007/08	\$88	\$166	+46.8%
2008/09	\$95	\$186	+49.0%

2004/05	\$18	\$142	+87.3%
2005/06	\$13	\$142	+91.2%
2006/07	\$20	\$165	+87.7%
2007/08	\$17	\$166	+90.0%
2008/09	\$16	\$155	+89.7%

Publications			
2004/05	\$185	\$144	-28.4%
2005/06	\$130	\$154	+15.6%
2006/07	\$92	\$144	+36.1%
2007/08	\$101	\$212	+52.4%
2008/09	\$114	\$140	+18.3%

OSH Reference Material*			
2004/05	\$172	\$128	-35.0%
2005/06	\$127	\$115	-10.4%
2006/07	\$121	\$106	-14.5%
2007/08	\$76	\$94	+19.6%
2008/09	\$23	\$95	+75.3%

(*HSE, OSH Researcher, NIOSHTIC/OSHLIne, Bibliographic Collection, and SST.)

3. Conclusion

Our analysis of CCOHS' financial performance shows that the organization has had to invest considerable time and funds in supporting its core database products while developing and promoting value-added products that customers are less likely to be able to obtain for little or no charge from alternative sources. However, despite this effort, CCOHS has been unable to increase the proportion of funding obtained from cost recovery beyond the 46% level. At the same time, it has experienced flat or declining gross margins on many of its traditional data base products and combinations despite close attention to holding or reducing the direct costs of providing these products and services.

B. FUNDING STRUCTURES FOR SIMILAR OHS ORGANIZATIONS

Additional insights into the ability of CCOHS to provide a meaningful level of service while recovering a high proportion of its costs through product and service fees can be gained by looking at the funding structures for similar public organizations whose mandates focus on, or include, the dissemination of OHS information and services. These organizations may function as both partners to CCOHS, in that they provide core databases used in CCOHS products (for example, HSELine and NIOSHTIC-2), and as alternative or competing sources of OSH information.

We reviewed information published on the websites of four OHS organizations in other jurisdictions to determine the centrality of information dissemination in their mandates and their sources of funding. The findings from that review are summarized below.

1. European Agency for Safety and Health at Work (EU-OSHA)

The European Agency for Safety and Health at Work (EU-OSHA) was established by the European Commission in 1994. The mission statement of the organization defines its role as: *the*

*European Union organization responsible for the collection, analysis and dissemination of relevant information that can serve the needs of people involved in safety and health at work.*³

The activities of EU-OSHA focus on:

- The identification of new and emerging risks in order to facilitate preventive action.
- Raising awareness of occupational safety and health risks and their prevention by identifying good practices and facilitating dissemination of information on these practices.
- Promoting cooperation and information sharing and research among the EU member states and candidate members.

Information is disseminated directly by EU-OSHA, with a variety of publications and data available from its website, and in partnership with a network of national organizations ('focal points'), usually the safety and health authorities. Publications are available free of charge.

In addition to having a similar mandate to CCOHS, EU-OSHA also has a similar governance structure in that it has a tripartite board composed of government, employer and employee organization representatives. The Agency operates with a staff of 64 according to its most recent annual report with annual expenditures of approximately 14 million Euros (~\$21.7 million). EU-OSHA does not appear to have any explicit cost recovery targets and is funded by an appropriation from the European Commission plus what appears to be a limited amount of project funding and support from focal point partners.

2. Finnish Institute of Occupational Health

The Finnish Institute of Occupational Health (FIOH) describes itself as: *a research and specialist organization that promotes health and safety at work and the well-being of workers. We seek solutions for the needs of our clients and the needs of work life by means of research, training, specialist advisory services and communications.*⁴ The target clientele consists of both policy makers and citizens, paying particular attention to the needs of OHS professionals and workplaces.

FIOH has four principal areas of activity:

- **Research and development** – The majority of FIOH's research is applied work intended to generate new OHS knowledge that can be readily applied in the workplace. Longer-term research is also performed, for example, relating to disease mechanisms.
- **Specialist advisory services** – FIOH markets fee-based specialist advisory services to help clients develop their products, working conditions and operations in general, focusing on services that prevent health hazards and promote health and well-being. Fees are set to cover the immediate production costs incurred in providing these services.

³ EU-OSHA, *EU-OSHA Strategy: 2009-13*, Bilbao, December 2008, p.2
(Accessed at: osha.europa.eu/en/publications/work_programmes/strategy2009-2013/view.)

⁴ FIOH, *Annual Report, 2007*, Helsinki, Finland, 2008, p.ii.
(Accessed at: www.ttl.fi/Internet/English/Organization/About+FIOH/Annual+Report/)

- **Training** – Training services are intended to promote development of the work environment, work communities and organizations; to enhance management of changes; and to further occupational health and expertise in these issues at workplaces. These services also include training that can be applied towards meeting the qualifications set for occupational health service professions.
- **Disseminating information and marketing** – Findings from the Institute’s research and other sources are publicly disseminated with the purpose of providing reliable information aimed at improving workplace practices and conditions. Information is made available in printed publications, and through the FIOH website and library services function. Both priced and free publications are produced.⁵

FIOH’s funding structure involves a mix of public appropriations and user fees, somewhat similar to that applied to CCOHS, with 80% of the costs of approved activities covered by public funding and the remaining 20% to be generated by FIOH. In practice, the Institute aims to achieve a higher level of fee income by *making enough profit to fund about 200 work-year equivalents (out of a total of approximately 800) entirely with income from operations* and to generate income sufficient to cover about 40% of total expenditures.⁶ According to the 2007 annual report, total expenditure in 2007 was 65.6 million Euros (~\$101 million) of which 26.6 million (40.5%) was covered by income generated directly by FIOH. As can be seen from the table below, only 25% of this income came from training activities and publications while fee-for-service consulting and research generated over 70%.

•	Income Sources	€ Mill.	%
•	Services:	11.1	42%
•	Research:	7.9	30%
•	Training:	5.2	20%
•	Publications:	1.3	5%
•	Miscellaneous:	1.0	4%

3. U.K. Health and Safety Executive

The U.K. Health and Safety Executive (HSE) is the national regulatory body responsible for promoting the cause of better health and safety at work within Great Britain. As such, inspection and enforcement of OHS is the primary purpose of the HSE and such activities as undertaking research and providing information and advice are undertaken in support of this mandate.

Information dissemination activities are undertaken, and involve a combination of campaigns to increase awareness of particular issues and risks, outreach to key stakeholder groups and target sectors (for example, small firms, farmers, industries with high rates of workplace

⁵ Synthesized from the FIOH 2006-2010 Strategy and the FIOH website (www.ttl.fi). (Strategy accessed at:

www.ttl.fi/Internet/English/Organization/About+FIOH/Strategy/)

⁶ 2006-2010 Strategy, p.11.

incidents), operation of an inquiries service and website, and the sale and distribution of publications. According to the 2007/08 annual report, the HSE website recorded around 16 million visits in 2007/08 and receives high satisfaction ratings in user surveys.⁷ Of particular note with regard to publications, the web site for publication sales notes that from September 1st, 2009, all priced HSE publications will be made available for free.

While the HSE generates a significant level of income in user fees (£65.3 million in 2007/08 versus gross expenditures of £279.4 million) only a small part comes from the sale of publications (£3.76 million). The balance relates to cost recovery fees and charges for regulatory activities (which include such activities as the licensing of nuclear installations, the authorisation of biocides and pesticides, and enforcement of offshore safety legislation), and income generated by the HSE's laboratory.⁸

4. U.S. National Institute for Occupational Safety and Health

The National Institute for Occupational Safety and Health (NIOSH) has a mandate to help assure “safe and healthful working conditions for working men and women by providing research, information, education, and training in the field of occupational safety and health.”⁹ The Institute's current Strategic Plan contains three strategic goals:

- Conduct research to reduce work-related illnesses and injuries.
- Promote safe and healthy workplaces through interventions, recommendations and capacity building. (One of the three sub-objectives for this goal is to: transfer research findings, technologies and information into practice.)
- Enhance global workplace safety and health through international collaboration.¹⁰

Research activities account for the majority of NIOSH's expenditures, with the National Occupational Research Agenda (NORA), mining and other research activities accounting for over 60% of fiscal 2008 funding. NIOSH provides a number of services similar to those offered by CCOHS, as listed below. Access to these products and services is free.

- NIOSH Topic pages on the NIOSH website provide collections of occupational safety and health information arranged by subject.
- CDC NIOSH Publications and the CDC INFO 1-800-CDC-INFO (cdcinfo@cdc.gov) service, disseminate information on preventing workplace disease, injury, and disability.
- NIOSH Training opportunities – support for graduate and continuing education and training for occupational safety and health professionals.
- Access to numerous OHS databases, including International Chemical Safety Cards, the Pocket Guide to Chemical Hazards, and NIOSHTIC-2.¹¹

⁷ HSE, *Moving Forward: Annual Report and Accounts, 2007/08*, TSO, London, 2008, p.26. (Accessed at:

⁸ *Op. cit.*, p.77

⁹ *NIOSH Fact Sheet*, Number 2003-116. (Accessed at: www.cdc.gov/niosh/pubs/fact_niosh_asc.html)

¹⁰ *NIOSH Strategic Plan Outline 2004-2009*. (Accessed at: www.cdc.gov/niosh/docs/strategic/)

¹¹ *About NIOSH*. (Accessed at: www.cdc.gov/niosh/about.html)

5. Conclusion

CCOHS is quite unique compared to the other OHS organizations profiled in this section in that it combines a single purpose focus on promoting workplace health and safety with a high dependence on cost recovery to fund its activities. One other organization among those examined has a similar mandate (EU-OSHA) but it is funded through public appropriations while others undertake information dissemination activities as a complement to their OHS research or regulatory mandates. Only one other organization, FIOH, achieves a similar level of cost recovery (approximately 40%) to that achieved by CCOHS but it must be noted that over 70% of FIOH's fee-based income comes from its research and advisory services, and only 25% comes from training and the sale of information products.

It is also important to note that these analogous international organizations make a wide range of free and (in some cases) priced information products and services widely available through their websites and electronic newsletters. It is quite likely that at least some of the information available from these organizations – which has been carefully reviewed and validated in a way that is similar to CCOHS material– is the same or very similar to the information and guidance contained within priced CCOHS products. In other words, CCOHS is competing with other sources of free high quality OHS information that many users may be able to apply readily in the Canadian context. Individual workers and less sophisticated users are, however, much less likely to be able to do this.

VI KEY CONCLUSIONS

A. CCOHS MEETS ITS STRATEGIC OBJECTIVES

The core objective of CCOHS is to provide Canadians with trustworthy and comprehensive occupational health and safety products. Products and services provided by CCOHS are used in a variety of ways to facilitate better decision-making, to promote workplace changes that improve health and safety, to increase awareness of the need for a healthy and safe working environment, and to provide and support occupational health and safety education and training.

To meet this objective, CCOHS maintains a collection of both free and priced products and services that draw upon a core collection of occupational safety and health information and that are made more valuable to users through the application of information management technologies. To be effective on a continuing basis, the Centre must remain on the leading edge of providing products and services. This evaluation has established that CCOHS is successfully achieving its core strategic outcome of providing Canadians with unbiased occupational health and safety information and services for the prevention of work-related illnesses and injuries.

B. THE REACH OF CCOHS PRODUCTS AND SERVICES IS SUBSTANTIAL

The activities and products of CCOHS consist of information and services that are related to the promotion of occupational health and safety. The benefits potentially flowing from this consist of improved workplace practices and conditions that ultimately lead to fewer illnesses, fewer injuries and fewer deaths. Reduced time loss and increased productivity are tied to these benefits. An evaluation design that relies on linking data on increased workplace safety to any particular CCOHS product or activity is not feasible because of the side range of other factors affecting this relationship. However, satisfaction with and use of information provided by CCOHS is a good proxy indicator of likely improvements in workplace safety. All of the interview and survey data that we collected support the conclusion that there is a high degree of satisfaction with and widespread use of CCOHS products and services. To the extent that CCOHS information is used to promote workplace change, the ultimate social benefits and increases in productivity can be very high.

C. FINANCIAL PRESSURES ARE THREATENING THE OVERALL EFFECTIVENESS OF CCOHS

Achievement of a 50% rate of cost recovery is a continuing challenge for CCOHS in the face of the growing availability of free OHS information on the Internet (including reliable, verified information from OHS agencies in other jurisdictions as well as less credible sources). CCOHS has responded by developing new products and services, re-inventing existing products to better differentiate their benefits and 'lock-in' customers, and controlling or reducing product

costs. Despite this, the Centre has achieved only a 46% rate of cost recovery between 2004/05 and 2007/08. At the same time, the development and maintenance of value-added products requires a higher level of investment compared to CCOHS' more traditional OHS products, which puts further pressure on its ability to maintain core systems and free services. While a cost recovery regime has the benefit of demanding customer focus and financial discipline, CCOHS is in a position where a higher level of funding through public appropriations is necessary to maintain its overall financial viability. This additional public cost needs to be viewed in light of the substantial public benefits that appear to accrue to the dissemination of OHS information and its use in strengthening workplace health and safety.