



CAREX (CARCINOGEN EXPOSURE) CANADA: INFORMING EFFORTS TO REDUCE CANADIANS' EXPOSURES TO KNOWN AND SUSPECTED CARCINOGENS IN WORKPLACES AND COMMUNITIES

2016 - 2017 Annual Report

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Message from the CAREX Canada team

This year marks the tenth anniversary of CAREX Canada. Over this time, our team has worked to establish CAREX Canada as the country's leading source of evidence on Canadians' exposures to workplace and environmental carcinogens. The highlights we've shared here and in past annual reports demonstrate how this evidence has been applied by organizations across the country to prioritize and support efforts to reduce exposures, ultimately helping to reduce the burden of cancer.

Since our knowledge translation mandate began in 2012, we have received over 205,000 visitors to our website, engaged approximately 8,000 professionals via presentations, webinars and workshops, and responded to over 300 inquiries and requests for tools. Our event surveys from the past year show that 96% of respondents found CAREX useful to their work and 82% expressed intent to use CAREX resources and tools. Our work has been referenced in almost 200 articles and reports, including calls for changes in policy and practice. Other organizations have looked to us for advice and support in how to visualize data in accessible and engaging ways.

No other organization in Canada offers the body of knowledge and expertise that CAREX Canada has developed. We are pleased to have funding to start our third mandate, where we will continue offering the support that Canadian organizations and networks need to better understand – and take action on – exposures to carcinogens at workplace and community levels.

CAREX Canada is hosted at **Simon Fraser University** and supported by the **Canadian Partnership Against Cancer**, an independent organization funded by the federal government to accelerate action on cancer control for all Canadians





About Us

CAREX Canada is a multidisciplinary team of experts based at the **Faculty of Health Sciences (FHS)** at Simon Fraser University, working in collaboration with researchers at the **School of Population and Public Health (SPPH)** at the University of British Columbia, the **Department of Health Sciences** at Carleton University, and the **Occupational Cancer Research Centre (OCRC)** at Cancer Care Ontario.



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CAREX Canada wishes to acknowledge and thank the Knowledge Translation Advisory Committee for their guidance and support over the last five years.



For a full list of contributors and biographies, please visit the About Us section of our website.



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CAREX by the numbers 2016-2017

	47,883	UNIQUE VISITS TO OUR WEBSITE unique visits to our website, an increase of 18% compared to last year (hits include our profiles and estimates library, tools page, and asbestos and environmental radon estimates)
	43	ARTICLES, REPORTS, AND OFFICIAL DOCUMENTS referencing CAREX resources in the past year
	1,407	SUBSCRIBERS TO OUR NEWSLETTERS which include a quarterly e-Bulletin and monthly Carcinogens in the News digest, a 37% increase from last year
y	623	FOLLOWERS ON TWITTER (@CAREXCanada) a 27% increase from last year
	43	PRESENTATIONS ON VARIOUS TOPICS made by team members via conferences, workshops, face-to-face meetings, and webinars
	2,362	INDIVIDUALS who attended the CAREX presentations
i	69	TOOL AND INFORMATION REQUESTS (26% general public, 25% professional associations, 17.5% academic, 9% provincial and territorial governments, 9% industry, 3% health authorities, 3% local/regional government agency, 3% labour, 3% federal government, 1.5% non-government organizations)

Updating Resources

Our goal is to offer relevant and credible information on Canadians' exposures to carcinogens. Wherever possible, we seek to present that information in accessible, useful, and visually engaging ways. The list below summarizes our efforts to achieve these goals by keeping our information up-to-date and enhancing it where needed. This year, we:

- Updated our entire suite of **75 carcinogen profiles**. This involved adding up-to-date information on regulations and guidelines, main uses, and Canadian production and trade. In particular, our metal profiles (e.g. lead, nickel, cobalt, and chromium) underwent extensive updates that reflect changes in Canadian mining priorities and practices.
- Responded to requests for quick information by incorporating a **quick summary function** to our most sought-after carcinogen profiles, including: asbestos, glyphosate, radon, and solar radiation.
- Enhanced our French language offerings by **translating a series of profiles** for priority carcinogens, guided by the **Canadian Cancer Society's** Quebec division. This list includes: asbestos, glyphosate, radon, and solar radiation.
- Developed four new **emerging issues profiles**: 3D printing, acrolein, sedentary work, and workplace stress. The latter three exposures are on the **International Agency for Research** on Cancer list of high priorities for evaluation by 2019.
- Developed a new **estimate for exposure to radon in occupational settings**. Results show that approximately 188,000 Canadians are exposed to radon at work; 55% are female. Industries with the greatest number of exposed workers are elementary and secondary schools, and provincial and territorial public administration.
- Created a summary **web page of all of our radon resources**, which includes links to our carcinogen profile, maps of household radon measurements, useful infographics, radon in schools research, and our new occupational exposure estimate. (This page is available in French and English.)
- Created a **summary web page to highlight traffic-related air pollutants** associated with cancer. These include diesel and gasoline engine exhaust, as well as individual components found within this exhaust, such as particulate air pollution. (This page is available in French and English.)

Our resources on radon in schools and antineoplastic drugs in workplaces are described elsewhere in this report.



For access links to these updated resources, visit our Reports page.

Focus on Priority Exposures – Radon in Schools

This year we expanded our work on radon, the highest priority exposure in environmental settings according to CAREX Canada risk estimates. Given that children and staff spend a considerable amount of time indoors in schools – where radon levels can build up as they are known to in homes – we sought to investigate radon testing in schools across Canada.

CAREX staff contacted **Ministries of Education** as well as **school boards**, **unions**, and **radon professionals** in an effort to determine where school testing has occurred in Canada and when possible, to obtain school testing results. Key findings from this investigation are summarized in the map below.

We shared the results of this study through a webinar in partnership with the **British Columbia Teachers' Federation** during Radon Awareness Month, and at various radon workshops, network meetings, and academic conferences across the country throughout the year. This work has helped to catalyze a national conversation on the importance of testing schools and where levels are high, mitigating the problem and communicating the risk.

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For a full list of CAREX resources on radon exposure in workplaces and communities, please visit our Radon Resources page. A video recording of our radon in schools webinar is available on our Videos page.





Radon Testing Not Mandatory



Focus on Priority Exposures - Antineoplastic Drugs in Workplaces

Antineoplastic drugs are increasingly used as less invasive treatments for cancer and other conditions making them a dynamic and important exposure issue in workplace settings. A range of possible effects arise from exposure to antineoplastic drugs, including carcinogenicity, reproductive and developmental toxicity, and organ toxicity at low doses.

Given the availability of new exposure data and user requests for support in prioritizing workers exposed, we developed updated estimates of exposure to antineoplastic drugs in Canadian workplaces. Results are summarized in the table below. They show that approximately 75,000 Canadians are occupationally exposed to antineoplastic drugs; over 75% are female. The largest occupational group exposed to antineoplastic drugs is pharmacy staff (pharmacists, technicians, and assistants); of these, most are based in community settings.

We shared these updated estimates through a webinar in partnership with **WorkSafeBC** in February 2017. Since then, we've responded to a series of requests for follow-up presentations and resources directed at pharmacy staff. We've also identified a strong need for ongoing work to support efforts to address this exposure. This is because few occupational exposure limits exist for antineoplastic drugs and standardized occupational practices are challenged by regional variations in regulating occupational health and safety and the delivery of cancer care.



Prevalence of Exposure: Antineoplastic Agents

Total number of workers exposed = 75,000 75% female, 25% male





To view our profile and exposure estimate for antineoplastic drugs, please visit our Profiles and Estimates page. A video recording of our antineoplastics webinar is available on our Videos page.



Partnerships

Strong partnerships are instrumental to putting CAREX knowledge into action. We have established engaged partnerships with various user groups across the country, where we work together to apply CAREX estimates of exposure and identify opportunities to help reduce those exposures in workplace and community settings. A series of 2016-17 updates on these partnerships is described below. The working groups included in this list are formal entities led by CAREX that involve working closely with a user group to mobilize our body of knowledge over a multi-year timeframe.

New working groups:

- Canadian Environmental Law Association (CELA): We established a formal working group with CELA to facilitate the exchange of knowledge, expertise, and tools between CELA and CAREX Canada. Our focus areas include radon and pesticides.
- Sun Safety at Work Canada (SSAWC): When the funding for this successful project expired in September 2016, we took on the coordinating role of its evolution into a national working group. This role builds on our strong involvement in the SSAWC project since 2014; as members of the Project Coordinating Team, we offered both scientific and knowledge translation expertise and support throughout. The project's successes include: recruiting 17 workplaces across Canada, influencing 23 policy changes and 137 practice changes in those workplaces, and developing 97 resources to support efforts to reduce occupational sun exposure.







Occupational Cancer

Research Centre







Results from multiple years of partnership:

- Canadian Cancer Society (CCS): After years of advocacy work on asbestos by the CCS and others (including the Canadian Labour Congress and CELA), and numerous requests for CAREX evidence to support this work, the Federal Government announced a ban on asbestos this year.
- Government of Nova Scotia (GNS): Radon awareness was identified as a priority in Nova Scotia at a local workshop we presented in spring 2014. This year, we partnered with the GNS, the Chief Medical Officer of Health, Health Canada, and others to gather stakeholders working on radon gas in Nova Scotia to discuss exposures in the region and opportunities to reduce them.
- Occupational Cancer Research Centre (OCRC): Our partnership with OCRC was strengthened this year with our associate analyst embedded within the OCRC team. We continued to work with OCRC and partners to finalize, visualize, and mobilize their burden of occupational cancer study. We also began the process of establishing a more formal working group with OCRC to advance our collaborative interests, including pesticide estimate development.
- WorkSafeBC: This marks the fifth year of our working group with WorkSafeBC's Risk Analysis Unit. Together, we've identified and prioritized emerging risks, co-developed knowledge products, presented at conferences, and offered a joint webinar on antineoplastic drugs. But beyond this, our work together has helped WorkSafeBC take a more risk-based approach to preventing occupational cancer, profiling exposures in a systematic and pro-active way.

To learn more about our partnerships, visit our interactive online map available on our Collaborations page.



"The radon workshop in Halifax created an environment to make connections and build networks among those working to reduce exposure to radon in the province."

> - Robert Strang, Chief Medical Officer of Health, Government of Nova Scotia

Knowledge Mobilization Activities

Our mission this year, and throughout our knowledge translation mandate, was to mobilize our estimates and tools in accessible, useful, and visually engaging ways. A summary of our efforts towards this in our 2016-17 fiscal year are summarized below, by priority area.

Air Quality:

- Presentation to Canadian Council of Ministers of the Environment – Air Management Committee
- Presentation to Lower Fraser Valley Air Quality Coordinating Committee and the BC Lung Air Quality and Health Steering Committee

Antineoplastic Drugs:

- Presentation on exposure estimates at Canadian Association for Research on Work and Health (CARWH) Conference
- Joint webinar with WorkSafeBC on exposures to antineoplastic drugs in Canadian workplaces

First Nations Environmental Health:

- Presentation to First Nations & Métis Cancer and Chronic Disease Network of Saskatchewan
- Presentation at Canadian Partnership Against Cancer First Nations, Inuit, and Metis Cancer Control Forum



Radon:

- Radon Exposure in Nova Scotia: Challenges and Solutions workshop in Halifax
- Joint webinar with British Columbia Teachers' Federation on radon exposure in schools
- Presentation to (plus coordination and sponsorship support of) BC Lung Association's Radon workshop
- Co-sponsorship and support for developing the Alberta Radon Network
- Support for Manitoba's radon network

Sun safety:

- Joint webinar with Ryerson and Sun Safe Nova Scotia on Sun Safety at Work Canada project
- Several presentations on sun safety for outdoor workers at conferences and meetings, including the WorkSafeBC Occupational Disease Conference

We also hosted a total of six meetings with our working groups this year. We have working groups with the Canadian Environmental Law Association and WorkSafeBC, and on Sun Safety at Work in Canada.



"CAREX is an important source of toxicology expertise and helps us to prioritize our efforts to reduce exposures to carcinogens."

> - Glen Okrainetz, Manager - Clean Air Section, BC Ministry of Environment





