

# Canadian Coalition for Green Health Care Leading the Evolution of Green

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## Abstract

Since 2000, a growing contingent of healthcare organizations, individuals and companies have embraced principles and practices of environmental stewardship with a focus on making health service delivery more environmentally sustainable. This article provides an overview of the sector's many successes, drawing upon both Coalition-sponsored initiatives and those initiated by its most engaged and forward-thinking stakeholders, many of whom are original signatories to Canada's *Joint Position Statement: Toward an Environmentally Responsible Canadian Health Sector*.

## Introduction

The Canadian Coalition for Green Health Care (the Coalition) traces its roots back to October 21, 2000 when 27 representatives from some of Canada's largest healthcare associations and environmental groups met in Ottawa at an environmental educational day organized by the Canadian Association of Physicians for the Environment ([www.cape.ca](http://www.cape.ca)). Following a day-long series of presentations on a variety of important environmental issues, formal support for a national organization with a mission to minimize environmental impacts resulting from Canada's healthcare system was confirmed.

The Coalition now drives leadership in environmentally-sustainable healthcare practices throughout Canada and has become a membership-based organization representing approximately 40% of hospital beds across Canada as an incorporated national not-for-profit.

Together with its staff, volunteers, members and supporters, the Coalition is having an increasingly significant impact upon the greening of Canada's healthcare sector and has been involved in a wide spectrum of local, provincial and national initiatives that support the triple bottom line philosophy of improved social, financial and environmental (ecological) well-being, while delivering the safest and most effective patient care possible. The Coalition provides a virtual platform for the sharing of ideas and resources and lends support to those seeking to build a stronger, healthier and more sustainable health service delivery system. It strives to improve access to best practice information, innovative goods and services that offer a clear environmental advantage to users within the sector, and provides a venue for stakeholders to work together to reduce healthcare's environmental impact.

## Joint position statement

Health, healthcare and the environment are inextricably linked, and as such, a healthier healthcare system results in healthier communities, healthier healing environments and a smaller environmental footprint in the delivery of care (Dahlgren and Whitehead 1992). In support of this understanding, the Coalition worked with 11 other national health organizations in 2009, including the Canadian Medical Association (CMA), Canadian Nurses Association (CNA), Canadian Public Health Association (CPHA), Canadian Healthcare Engineering Society (CHES) and others to produce Canada's first *Joint Position Statement: Toward an Environmentally Responsible*

*Canadian Health Sector (JPS)* – the first time such a collaborative effort succeeded in bringing together so many healthcare voices for a common cause (Canadian Coalition for Green Health Care 2009).

The JPS spelled out a new commitment to creating an environmentally responsible health sector and it is from this document that the Coalition draws its inspiration and guidance. Together, the signatories envisioned the health sector leading the integration of environmentally responsible practices into the delivery of healthcare and as an advocate in sharing information on best practices, encouraging Canadians and Canadian organizations to limit their environmental footprint.

In a green health sector, minimizing negative impact on the environment would be a priority for all organizations and individuals in their day-to-day practices and at all levels of decision-making. The two-page document goes on to issue three separate calls to action:

1. A call on *governments and policy makers* at all levels to understand and address links between health and the environment, and to incorporate these links into policy decisions through legislative and budgetary actions.
2. A call on all *healthcare organizations* to pledge to minimize the negative impact of their activity on the environment and to seek solutions to existing barriers.
3. A call on *individuals* working in the health sector to both model and advocate for environmentally responsible approaches to delivering healthcare without compromising patient safety and care.

Signatories also called on *health facilities* to adopt best practices that range from taking steps to save energy to the establishment of Green Teams that will promote environmentally sensitive practices such as waste reduction and the use of safer substitutes to reduce exposure to toxins.

### Moving the green agenda forward

The members of the Coalition are proud to have played an active role in developing the JPS 15 years ago, which preceded the more recent support shown both globally and across Canada. Progressive world leaders have begun to make decisions to improve the health of our planet predicated upon science, and governments across Canada have now embraced the environment as a major policy component (Environment and Climate Change Canada 2015).

As the only JPS signatory whose *raison d'être* is the adoption of principles and practices that will lead to an environmentally sustainable Canadian health system, the Coalition takes its role very seriously. Over the years, the Coalition has developed many innovative projects and initiatives in partnership with the public and private sectors that have led to a more sustainable sector. Table 1 provides a sampling of these initiatives. Please see the Coalition's website ([www.greenhealthcare.ca](http://www.greenhealthcare.ca)) for further details.

**TABLE 1.**  
**Coalition green initiatives**

Initiative type	Coalition initiatives
Green leadership	<ul style="list-style-type: none"> <li>• Collaborative agreements with:               <ul style="list-style-type: none"> <li>• Canadian Healthcare Engineering Society (CHES)</li> <li>• Canadian Nurses for Health and the Environment (CNHE)</li> <li>• Synergie Santé Environnement (SSE)</li> <li>• Canadian Nursing Students' Association (CNSA)</li> <li>• Canadian College of Health Leaders (CCHL)</li> <li>• HealthAchieve – Ontario Hospital Association (OHA)</li> </ul> </li> <li>• Canadian Green Health Care Digest</li> <li>• Green Hospital Scorecard (GHS) – with the Ontario Hospital Association</li> <li>• Canadian Health Care Green Revolving Fund (GRF)</li> <li>• <i>Getting to Green</i> workshops for healthcare staff</li> </ul>
Climate change resiliency and adaptation	<ul style="list-style-type: none"> <li>• Health Care Facility Climate Change Resiliency Toolkit</li> <li>• Climate Change Resiliency Profiles</li> <li>• Climate Change Resiliency Mentoring</li> </ul>
Energy management and GHG reduction	<ul style="list-style-type: none"> <li>• ENERGY STAR® 2015 Advocate of Year Award</li> <li>• HealthCare Energy Leaders Ontario (HELO)</li> <li>• Remote First Nation's Energy Management Assistance</li> <li>• RFP Templates</li> <li>• Renewable Energy for Health Care</li> <li>• GHG Reduction &amp; Water Conservation Toolkit</li> <li>• National Energy Advisory Committee (NEAC)</li> <li>• Health Care Energy Leadership Program (HELP)</li> <li>• <i>Health Care Food Service Resource Guide: Going Green in the Kitchen with ENERGY STAR®</i></li> </ul>
Environmentally preferred purchasing	<ul style="list-style-type: none"> <li>• Green Purchasing Guide</li> <li>• Sample Procurement Language (Energy)</li> </ul>
Healthy and sustainable food	<ul style="list-style-type: none"> <li>• Project SOIL – Shared Opportunities on Institutional Land</li> <li>• Local Food for Hospitals</li> <li>• Report on Food Provision in Ontario Hospitals and Long-Term Care Facilities</li> <li>• Food Origin Audits</li> <li>• Local Food Procurement</li> <li>• Healthy Food for Health Care Pledge</li> </ul>
Safer chemicals and toxics reduction	<ul style="list-style-type: none"> <li>• ChemTRAC proves to be catalyst of change</li> <li>• Reducing Toxic and Hazardous Waste in the Health Care Community</li> </ul>
Waste management and minimization	<ul style="list-style-type: none"> <li>• <i>Taking a Bite Out of Organic Waste</i> case study investigated ways healthcare facilities can reduce their ecological footprint</li> </ul>
Water conservation	<ul style="list-style-type: none"> <li>• GHG Reduction &amp; Water Conservation Toolkit</li> </ul>

### Leadership

The Coalition and supporters believe that leadership is essential to providing the health sector with the means needed to achieve environmental improvement and sustainability. "Healthcare boards, executives and medical staff have a moral obligation to include environmental stewardship as a part of governance. They need to consider the environment in their strategic

plans, establish sustainability goals and monitor performance measures to ensure continuous progress,” says Neil Ritchie of Invicta Health Inc. and former COO of Capital Health in Nova Scotia. Regular monitoring and reporting will also ensure that appropriate funds are allocated, and co-benefits, such as risk reduction, cost savings, improvements to the delivery of patient care, and reduced emissions creating cleaner safer communities, will be captured.

Despite the growing list of successes over the years, there is much to do. Moving toward a more environmentally-sustainable Canadian healthcare system means it is incumbent upon all health leadership to do their part by incorporating the JPS’s intent into their organizational activities.

**... many have created full-time positions for environmental stewardship coordinators and energy managers ...**

### **Collaborative Efforts**

Recognizing the need for collaboration with multiple stakeholders, the Coalition has signed formal partnership agreements with leading Canadian healthcare organizations (see Table 1) and routinely collaborates with others.

As collaborative relationships continue to be built, the Coalition is seeing an impressive increase in the number of healthcare organizations adopting environmental stewardship and climate change resiliency into their “business as usual” operating models. Unheard of even six or seven years ago, many have created full-time positions for environmental stewardship coordinators and energy managers, some funded by energy companies and provincial energy agencies, and are actively engaging to educate and enlighten stakeholders through green team initiatives.

Wherever possible, the Coalition is building partnerships among the original JPS signatories. In preparing this article, the authors reached out to several JPS co-signatories to share their environmental successes since 2009.

The Canadian Healthcare Engineering Society (CHES) is a national non-profit society promoting improved planning, design, operation and management of hospital technical services systems.

CHES members are the gatekeepers to Canada’s healthcare facilities and are recognized as industry leaders in promoting and supporting the integration of environmentally-responsible practices within the sector. Through partnerships, their website, journal, national conferences and webinars, CHES supports and promotes investment in renewing physical plant infrastructure that allows facilities to function more efficiently, use cleaner technologies and meet new environmental standards for energy efficiency, water management and waste management.

In collaboration with the Coalition, the CHES national conferences include the “Green Park,” which provides vendors and organizations with a high profile trade show area featuring environmentally-preferred goods and services. The quarterly CHES Journal, *Canadian Healthcare Facilities*, and national and provincial chapter conferences feature content that reflects topics of environmental concern, energy management and climate change, as do their many workshops and webinars. CHES’s Wayne McLellan Award of Excellence in Healthcare Facilities Management is CHES’s way of yearly honouring a member facility that has, in part, had outstanding success in the completion of a major capital project, an energy efficiency program or an environmental stewardship program.

“CHES has come to the green healthcare table ready, willing and able to embrace its signatory commitment and has had tremendous success in mobilizing members across Canada to be better stewards of our environment,” says past CHES President Peter Whiteman.

The Canadian Nurses Association (CNA) is the national professional voice of registered nurses in Canada, representing nearly 139,000 registered nurses. The CNA advocates for reduced environmental footprint through a variety of initiatives, including health promotion and the prevention of chronic disease, advocacy and lobbying for a Health in All Policies (<https://cna-aiic.ca/en/on-the-issues/better-health/health-in-all-policies>), which includes a tool kit (<https://nurseone.ca/tools/health-in-all-policies-toolkit/toolkit>) with health impact assessment guides and an infographic tool (<https://cna-aiic.ca/-/media/cna/files/en/cna-cityscape-e.pdf?la=en>) for spotting factors that impact health. CNA provides online educational modules on environmental health, including *Environmental Health and Nursing*, *The Role of Nurses in Greening the Health Sector* and *The Role of Nurses in Addressing Climate Change*, available at no charge on their website (<https://www.cna-aiic.ca/en/download-buy/nursing-and-environmental-health>), along with a variety of other environmental health resources for nurses, such as position statements, backgrounders and publications ([www.cna-aiic.ca](http://www.cna-aiic.ca)). CNA’s *Canadian Nurse Journal* contains numerous environmentally-focused articles including those on impacts of our environment from a number of different perspectives, issues of climate change and opportunity to work with government, factors affecting food insecurity and finding ways to go green.

Anne Sutherland Boal, Chief Executive Officer of CNA, says: “For our efforts, the CNA has noticed an increased awareness among members and partner organizations of the importance of the environment as a social determinant of health, and the role of nurses both in supporting greening the health system and in participating and leading the development of adaptation and mitigation strategies for health as it applies to various community and work settings.”

HealthCareCAN is the national voice of healthcare organizations and hospitals across Canada. Since the joint policy statement, HealthCareCAN has conducted a number of studies on physical plant infrastructure in Canadian hospitals. In a survey of its members' physical plant infrastructure needs, over 363 physical plant initiatives were identified that are intended to repair, retrofit or rebuild facilities so that they are cleaner, greener, more efficient, sustainable and resilient. In its recent submission to the Federal Sustainability Consultation, it gave examples of the types of measures its member organizations are taking to build cleaner and greener infrastructure and their impacts on the environment. It is also participating in the Let's Talk Climate Change and Green Infrastructure Consultations.

The Canadian Association of Physicians for the Environment (CAPE) is a group of physicians, allied healthcare practitioners and citizens committed to a healthy and sustainable environment. CAPE addresses issues of environmental degradation by educating healthcare professionals and the public through advocacy, and in close cooperation with partner groups. Since 2009, CAPE's many victories have been preventative approaches for health improvement including influencing the closure of all of Ontario's coal-fired generating plants, closure of Quebec's Gentilly-5 nuclear plant and influencing the Quebec government agreement to withdraw support from the Asbestos industry. CAPE has also influenced the banning of pesticides in Newfoundland, Labrador and Manitoba and a reduction in neonic pesticides in Ontario by 80% on soy and corn (Canadian Association of Physicians for the Environment 2016).

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### Environmental Sustainability Trends

The challenges of operating a healthcare facility are many, including lack of funding and manpower, while coping with numerous outside impacts such as rising energy costs, impacts of disastrous weather events and deteriorating building infrastructure. With these challenges come opportunities, innovations and the creation of champions that help get us closer to an environmentally-responsible Canadian health sector. One can see this movement by having a closer look at some of the environmental sustainability trends listed below.

### Climate change adaptation and resiliency

Climate change has been identified by the Lancet (Watts et al. 2015) as the greatest threat to public health in this century. Climate change health impacts already being witnessed include heat effects from heat waves, increases and changes in disease patterns and increases in respiratory ailments. These impacts

will drive up health costs, but more importantly, will cause harm to people and families, compelling us to find ways to adapt to our changing climate. A real opportunity for health professionals is helping their communities and patients understand how climate change can threaten their health. Health professionals, such as doctors and nurses, are trusted community leaders, who have traditionally advocated for a preventative approach. Bringing a health perspective to climate change messaging could foster behaviour changes leading to actions that are, both individually and collectively, very important.

But climate change is also creating risks that can disrupt the delivery of health services. For example, extreme weather events have already caused damage to healthcare infrastructure, costing millions of dollars. The World Health Organization (WHO) has called on the health sector to prepare for climate change impacts through efforts to increase resiliency (World Health Organization 2015). Healthcare organizations can increase resiliency by continually mainstreaming climate change into risk assessments, considering climate change when developing plans, activities, purchasing new equipment and engaging in broader community discussions and initiatives around climate-related issues.

A resilient healthcare facility is also one that commits to sustainable practices, such as water and energy conservation, promoting active and public transportation and local food procurement. These types of activities could lengthen the time a hospital can be functional when power disruptions occur during disastrous weather events – which are occurring much more frequently due to climate change. By investing in resiliency activities, healthcare facilities can reduce risks and their operating costs, avoid costly clean-ups and rebuilds, increase resilience in their communities and strive to keep hospitals and healthcare services available when disaster strikes. The Coalition's *Health Care Facility Climate Change Resiliency Toolkit* (Canadian Coalition for Green Health Care 2014) can help hospitals identify and reduce their climate change risks, and hospitals in Ontario will be offered free mentoring with funding from the Ontario Trillium Foundation and in partnership with University Health Network (UHN) in Toronto. UHN was the only Canadian hospital to win international awards from the Global Green and Healthy Hospitals presented during the 2016 UN Climate Summit in Paris. The awards were Climate Leadership (Silver), Climate Resiliency (Gold) and Energy Efficiency (Silver). UHN was the first hospital in Canada to use the toolkit to identify climate change impacts on their facility's resiliency. Commenting on UHN's awards, CEO Peter Pisters states: "This work has never been more important and UHN is proud to be recognized for leadership as a Climate Champion. We are committed to building on this remarkable achievement by continuing to make efficient, sustainable changes throughout the organization."



## Climate change mitigation

Through mitigation, healthcare facilities can reduce GHG emissions that will help keep planetary temperature increases to less than two degrees Celsius from pre-industrial levels as was agreed upon at the Paris Climate Change Summit. While there are no national healthcare-specific GHG reduction targets in Canada at this time, the province of British Columbia (BC) has been a leader in North America through their Greenhouse Gas Reduction Targets Act requiring all BC public sector buildings, including hospitals, to achieve net-zero emissions (see Fourt and Poirier 2016). Hospitals in the National Health Service (NHS) in the United Kingdom (UK) have carbon emissions reduction targets of 34% reduction by 2020 and 80% by 2050 from a 1990 baseline imposed through the Climate Change Act (Committee on Climate Change 2015), while some Canadian and US hospitals have developed internal energy reduction targets without a regulatory backdrop.

Hospitals can significantly reduce their costs and energy consumption through the combined efforts of appropriate building design, energy efficiency, purchasing energy efficient products, instituting energy behaviour practices across the organization and incorporating renewable energy systems. The Coalition estimates that of the approximately \$1 billion in utility spending by hospitals, a 15% savings could be achieved through projects with an average ROI of seven years, representing an increase of \$150 million per year as new funding for hospitals. Below are examples of emerging mitigation activities.

The World Green Building Council (WorldGBC) announced the Advancing Net Zero project that aims to achieve net-zero building performance by 2050 through the roll out of net-zero building certification and training. All new buildings and major renovations should be net-zero starting in 2030, meaning no buildings should be built below net-zero standards beyond 2030, and 100% of buildings should be net-zero by 2050. This Canada Green Building Council, a member of the Coalition, will be a part of this program.

Canada's first modular multi-unit residential passive housing building is the residence for hospital staff at the R.W. Large Memorial Hospital in Bella Bella, BC, in the Vancouver Coastal Health Authority. The 12 modular buildings use 75% less energy and emit 80% fewer GHGs than traditionally-built residences (Penner 2016).

US-based Gundersen Health became the first known energy-independent health system in the USA. To achieve this, they installed a host of green energy systems including biomass boilers that replaced natural gas ones, wind turbines on several farms, geothermal heat pumps to replace traditional heating and cooling systems, two dairy digesters that turn cow waste into biomass fuels and a landfill energy program that turns methane captured in a nearby landfill into an energy source (Herman 2013).

Kaiser Permanente, America's largest integrated health system, recently announced ambitious new goals that include becoming carbon positive by the year 2025. They will become "carbon net positive" by purchasing sufficient carbon offsets and clean energy to remove more greenhouse gases from the atmosphere than they emit (Kaiser Permanente 2016).

Large renewable energy systems are in their infancy within Canadian hospitals. There are some geothermal systems in Quebec hospitals, biomass boilers servicing hospitals in Prince Edward Island (PEI) and a system using cooling lake water for Toronto hospitals. Several hospitals have photovoltaic arrays, but most do not supply a significant portion of a facility's energy use – yet. West Coast General Hospital has one of the largest solar arrays in BC – a 404-panel system, where they are collecting energy data to make the business case for others (VIHA 2016). As the cost of fossil fuels increase and storage systems become more robust and cost-effective, the number of renewable energy systems will be on the rise.

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## Water conservation

Hospitals can be the single largest user of water in the community. A key emerging environmental issue is how to conserve, protect and make efficient use of water resources. Increasing water efficiency can result in many potential benefits for a facility, including reduced costs from lower water purchases (where applicable), but also through reduced energy use (through pumping and heating) and other associated costs. Greater water efficiency enhances emergency preparedness and resiliency to the effects of climate change, since, in the event of a disaster or extreme weather event, hospitals become dependent on the efficient use of water. Hospitals can also help to reduce water pollution and improve water quality by reducing their water waste.

Many Canadian hospitals have already implemented water conservation strategies and have realized the benefits of doing so:

- Kingston General Hospital reduced their water use by 25%, saving 76,000 cubic metres of water per year (Kingston General Hospital 2014).
- Hôpital Sainte-Anne-de-Bellevue saved 58,000 cubic metres of water per year by installing a new cooling tower, and an additional 19,000 cubic metres by replacing their water compressors (Hospital News 2015).

In the US, Kaiser Permanente has committed to reducing the quantity of water it consumes by 25% per square foot of building by 2025. This action would be very important especially in drought-prone areas (Kaiser Permanente 2016).

## Healthy sustainable food in healthcare

An important way to foster community health is through healthier nutritious diets. Greater attention to healthy local foods in healthcare facilities is catching on across Canada and internationally. Examples of such initiatives include the Partners for Care Farmers Market at the Victoria General Hospital in Nova Scotia (NS) (Capital Health 2009), and GreenWerks micro-urban farm at St. Joseph's Care Group's Lakehead Psychiatric Hospital in Ontario (ON) (TeamWerks Coop 2016). Both of these initiatives are also social enterprises, raising money for patient care. In BC, St Joseph's General Hospital in Comox, is part of the Food, Environment and Economic Development (FEED) pilot program to source vegetables locally and enhance local food security threatened by climate change-induced droughts in California (Watershed Sentinel 2016).

To help embed healthy local food with healthcare facilities, the McConnell Foundation has launched "Nourish," which is a national community of practice to develop leadership around the future of food in healthcare. The Nourish mission is to reconnect food, culture and health by supporting a cohort of 25 healthcare food innovators working to deliver a better patient experience, to better align institutional food culture with the organizational mission and to activate healthcare institutions as anchors of well-being in their communities – from urban acute care hospitals to aboriginal health centres to rural long-term care facilities across the country (Nourish 2016).

In the US, Kaiser Permanente will buy all their food locally or from farmers and producers that use sustainable farming practices by 2025 (Saito 2016).

## Your move!

Much more still needs to be done to reduce waste and promote green purchasing, which will also see the use of safer chemicals and fewer toxins discharged into our communities. There are great opportunities to innovate in the sector through lower impact products and services that can also mean lower costs. As Canada's healthcare stakeholders work toward improved patient care through more sustainable healthcare delivery, the Coalition strongly encourages executives and other leaders to make environmental sustainability and climate change resiliency a real priority by providing solid and committed leadership, and budget support for Canada's green healthcare champions. **HQ**

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