ORGANIZATIONAL READINESS FOR SUSTAINABILITY

Why • The Case for Change
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NAVIGATION

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ABOUT

This Playbook provides background information and implementation resources designed to address environmental sustainability in organizational readiness.

This Playbook was developed as an initiative of the Sustainable Health System Community of Practice (CoP), with support from CASCADES.

The Playbook provides ideas, examples and resources. It served as a template for a Level Setting report highlighting areas of expertise across TAHSN to inform efforts across the network.

TAHSN

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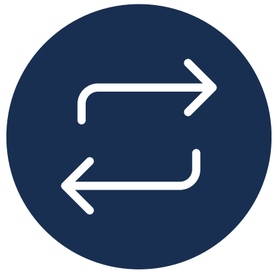


WHY

The Case for Change

WHAT

The Activity Matrix

HOW

Strategy and Partnerships

WHY

The Case for Change

CLIMATE IMPACTS ON HEALTH
Climate change is a threat to health & health equity

CLIMATE IMPACTS ON HEALTHCARE
Climate change is a threat to high quality healthcate

CLIMATE HARMS OF HEALTHCARE
Contrary to its mission, healthcare harms health

Climate Impacts on Health

ISSUE: PROTECT HEALTH & HEALTH EQUITY

Climate change threatens population health & health equity

A mean global temperature increase of 1.5° Celsius is likely by 2040.

- Canada is warming at almost twice the global average.
- Warming temperatures, increasing precipitation, sea level rise, and more extreme weather events are expected to increase throughout the century.
- Climate change interacts with and compounds ecosystem degradation and biodiversity loss.

Individual and community health is threatened by climate change, due to:

- Direct impacts such as injury from extreme weather events (e.g., flooding, wildfire).
- Increased incidence of heat-related illness and death.
- Increases in vector-borne diseases (e.g., Lyme disease, West Nile Virus)
- Food system impacts including food insecurity and food-borne illness.
- Degraded air quality increasing cardiovascular and respiratory illness.

These risks are compounded by the “increasingly severe, interconnected and often irreversible impacts of climate change on ecosystems, biodiversity, and human systems”.[1]

Risks to health are not distributed equally or equitably:

- Vulnerability, exposure and capacity to recover differ across individuals and communities.
- Climate change is a ‘threat multiplier’.

There are health co-benefits of climate action

Actions to reduce global heating can have immediate positive impacts on population health.

- Reducing air pollution, increasing active travel, improving urban design, and encouraging low-meat diets.

RESOURCES:

- Health of Canadians in a Changing Climate: Advancing our Knowledge for Action, Government of Canada
- Canada’s Changing Climate Report, Government of Canada

Climate Impacts on Healthcare

ISSUE: BUILD RESILIENCE TO ADAPT TO CLIMATE REALITIES

Acute, compounding and chronic climate shocks reduce system capacity

- Health infrastructure, such as building envelopes, can be damaged or destroyed by wind storms, floods, wildfires, or experience power outages or other service disruptions.
- Service comfort and operation may be compromised by increased heat, including challenges to heating, ventilation, and air conditioning (HVAC) systems.
- Access to critical support services, including transportation, power, water supply, and telecommunications may be disrupted.
- Access to supplies and services, such as medications, devices, food, linen, waste disposal, may be reduced by severe weather events – occurring locally or globally.
- Capacity/ availability of health workforce may be compromised by physical or mental health impacts, or disruptions from extreme weather events.
- Care quality and safety may be compromised by disrupted access to health services, e.g., surgery, radiation therapy, dialysis, medications.

Acute, compounding and chronic climate shocks increase care needs

- Healthcare use, emergency services and hospital admissions may increase due to climate-related shocks, e.g., heat emergencies, wildfires, flooding.
- Healthcare buildings may need to serve as refuges for community members, e.g., for cooling or warming.
- Heat stress, respiratory illness, heart disease, mental health consequences may increase.
- Health inequities may be exacerbated.

RESOURCES:

- Adaptation and Health System Resilience, Government of Canada
- Climate Resilience Guidelines for B.C. Health Facility Planning and Design, BC Greencare
- Ontario Climate Change & Health Toolkit, Ministry of Health and Long-Term Care
- Building Health Care Sector Resilience, US Climate Resilience Toolkit, HHS
- Climate change and health vulnerability and adaptation assessment, World Health Organization

Climate Harms of Healthcare

ISSUE: PROMOTE SUSTAINABILITY TO MITIGATE GHG'S

Healthcare Contributes to Climate Change

Healthcare is a highly polluting service industry and a significant contributor to climate change, estimated at 4.9% of global greenhouse gas (GHG) emissions. According to the Lancet Countdown on Health & Climate Change (2021), Canada has the second highest healthcare emissions per capita relative to other high income countries.[2]

A large proportion of healthcare's emissions reside in the supply chain - in the manufacturing, transportation, use and disposal of the products, materials and services used – and thus, in the design and delivery of health services and systems.

Low carbon sustainable healthcare is high quality healthcare

- Low carbon sustainable healthcare reduces demand for care through effective chronic disease management, primary prevention and health promotion.
- Low carbon sustainable healthcare is integrated, person-centred and appropriate.
- Low carbon sustainable healthcare stewards resources and facilitates coordinated and efficient care pathways.
- Low carbon sustainable healthcare fosters the use of low carbon alternatives (e.g., low carbon medical and anaesthetic gases; reusable devices & supplies).
- Efforts to deliver low carbon, sustainable healthcare can be coordinated with efforts to adapt and build climate resilience.

RESOURCES:

- How to produce a Green Plan: A three-year strategy toward net zero, National Health Service England
- Low Carbon Resilience and Environmental Sustainability Guidelines for Health-care New Construction, BC Greencare
- Planetary health care: a framework for sustainable health systems, The Lancet Planetary Health
- Net zero healthcare: a call for clinician action, BMJ

WHAT

The Activity Matrix

1 Four domains of concern

- Reduce GHGs
- Climate resilient
- Nature positive
- Socially sustainable

2 Four action areas

- Service design & delivery
- Procure & supply
- Facilities & estates
- Food & nutrition

Four Domains of Concern

ISSUE: IDENTIFY PRIORITY DOMAINS OF CONCERN

CLIMATE CHANGE		SUSTAINABILITY	
Greenhouse gas reductions	**Climate adaptation & resilience**	**Natural environment**	**Social sustainability**
Reduce the climate harms of care • Emissions associated with fuel combustion in boilers, furnaces, and owned/ leased vehicles; anesthetic and fugitive gases (Scope 1) • Indirect emissions from the consumption of purchased electricity, steam, heating and cooling (Scope 2) • Emissions embedded in purchased products and services; business and staff travel; construction processes and investments (Scope 3)	Develop resilience to climate shocks • Infrastructure design, land use & workforce preparedness • Disaster response and recovery • Climate informed practice (clinician education, climate risk assessment) • Community collaboration & integration (support health, mitigate inequities)	Restore, maintain & protect nature • Minimize resource use & depletion • Reduce air pollution • Minimize use of toxic chemicals • Protect & support ecosystems • Leverage the natural world for health, wellbeing and climate adaptation (natural buffers, heat island mitigation, management of storm water)	Support sustainable development • Environmental sustainability as element of overall sustainability, e.g., “Triple Bottom Line,” or “Environmental, Social & Governance (ESG)”. • Healthcare “anchor institutions” support health through employment, purchasing, land use, investment, etc.
Priority domain • High • Medium • Low, N/A	Priority domain • High • Medium • Low, N/A	Priority domain • High • Medium • Low, N/A	Priority domain • High • Medium • Low, N/A

DOMAIN OF CONCERN 1: GREENHOUSE GAS EMISSIONS

REDUCE GHG EMISSIONS FROM HEALTHCARE

Across Canada, GHG reduction efforts have been facility-focused – the minority of healthcare emissions.

- Emissions associated with fuel combustion in boilers, furnaces, owned/leased vehicles; fugitive emissions such as refrigerant leaks (Scope 1).
- Indirect emissions from the consumption of purchased electricity, steam, heating and cooling (Scope 2).

Internationally, the focus has expanded to include the majority of GHG emissions, which are built into the organization and delivery of care.

- Additional on-site emissions, such as the release of anesthetic gases (Scope 1).
- Emissions embedded in purchased products and services; in business and staff travel; in construction processes and investments (Scope 3).

Leading low carbon commitments demonstrate an expanded mandate, with some variation.

- The COP26 low carbon commitment includes supply chains (i.e., purchased products and services).
- The English NHS net zero commitment includes all three emission scopes plus patient & visitor travel.
- Providence's commitment to be climate negative includes financial investments.[3]

EXAMPLES

- The COP26 Health Programme at the 2021 UN Conference of Parties:
  - 59 countries committed to deliver "low carbon sustainable health systems;" 22 of these countries also made a net zero commitment.
- The English National Health Service (NHS) committed in 2020 to become a net zero health service.
  - By 2040 for the NHS Carbon Footprint (Figure 1).
  - By 2045 for the NHS Carbon Footprint Plus (Figure 1).
  - To be "net zero," the NHS will reduce emissions as close as possible to zero supplemented by offsetting, though offsets are not yet permitted.
  - A year after making its net zero commitment, the NHS has reported significant success.
- Providence, a US health system, committed in 2021 to become carbon negative by 2030 – for all emissions across the entire organization (Figure 2).
  - To be "net negative," Providence will significantly reduce emissions and will also purchase carbon offsets or pursue carbon capture strategies.
  - A year after making its net negative commitment, Providence has reported significant success.

DOMAIN OF CONCERN 2: CLIMATE RESILIENCE

DEVELOP RESILIENCE TO CLIMATE SHOCKS

There is potential for alignment between climate resilience and mitigation strategies – to deliver what has been termed "climate smart" healthcare.[4]

Resilience must be embedded in healthcare's built environment.[5]

- Design & operation of resilient facilities.
- Built to withstand extreme weather events and with attention to site-specific vulnerabilities (e.g., flood plains, wildfire risks).
- Leverage the natural world for climate adaptation.
- Protect and support ecosystems and natural buffers, including for stormwater management and heat island mitigation.

Resilience strategies require organizational planning for continued and climate-sensitive service design & delivery.

- Disaster response and recovery.
- Workforce preparedness.
- Climate informed practice (clinician education, climate risk assessment).

Resilience strategies involve community engagement to address localized risks, which are compounded by socio-economic and structural inequities.

- For example, community collaboration to prepare for and manage the health effects of extreme health therapy, dialysis, and or medications.

EXAMPLES

- The COP26 Health Programme at the 2021 UN Conference of Parties:
  - 64 countries committed to deliver "climate resilient health systems"
- Guidance exists for facilities and the built environment:
  - Climate Resilience Guidelines for B.C. Health Facility Planning and Design, BC Greencare
  - Building Health Care Sector Resilience, US Climate Resilience Toolkit, HHS
  - WHO guidance for climate-resilient and environmentally sustainable health care facilities, World Health Organization
- Growing attention to the need for health system resilience in the design and operation of health services and systems, including through community engagement
  - In the US, the Department of Health and Human Services pledge calls for health systems to commit to "develop and release a climate resilience plan for continuous operations by the end of 2023, anticipating the needs of groups in our community that experience disproportionate risk of climate-related harm"
  - In BC, the work of Vancouver Coastal Health, a lower mainland health authority, on climate change integrates resilience alongside mitigation
  - Training and guidance for clinicians
    - For example, Global Consortium on Climate & Health Education
    - For example, Health Canada, Extreme heat and human health: For pharmacists and pharmacist technicians, 2021.

DOMAIN OF CONCERN 3: NATURAL ENVIRONMENT

RESTORE, MAINTAIN & PROTECT NATURE

Exacerbated by climate change, human activities are polluting air, water and soil; damaging ecosystems; and threatening biodiversity.

As a resource intensive sector, healthcare contributes to these problems – relying on materials and services extracted from the natural world and producing large quantities of pollution and waste.

Many strategies to reduce healthcare's GHG emissions are inherently nature positive, for example by:

- Minimizing resource depletion and use.
- Reducing air pollution – much of which is produced from burning fossil fuels for energy & transport.[6]
- Reducing single use plastics, including packaging and supplies.
- Leveraging the natural world to support health & wellbeing.[7]
- Efforts to protect & support the natural world can also contribute to health system resilience (see Domain of concern #2).

Alignment is not necessarily automatic:

- Some efforts to be nature positive have no necessary relationship with GHG reduction, for example, minimizing the use of toxic chemicals.
- As well, some low carbon strategies risk harm to the natural environment.
  - For example, the digital supply chain has substantive environmental impacts including from mining and E-waste, which is the world's fastest growing waste stream.
  - For example, some climate resilient facility efforts (e.g., cogeneration) may increase GHG emissions (i.e., they reduce the use of low carbon electricity).

EXAMPLES

- Efforts to reduce healthcare's negative impact on the natural environment are longstanding:
  - The elimination of mercury from healthcare has been a longstanding and largely successful global initiative.
  - In Canada, the Joint Statement: Toward an Environmentally Responsible Canadian Health Sector, September 2009 united many leading health organizations in a commitment to reduce healthcare's negative impact on the natural world.
- Efforts to reduce the climate impact of healthcare retain a focus on sustainability:
  - The COP26 Health Programme at the 2021 UN Conference of Parties commits countries to both low carbon and sustainable health systems.
  - Stockholm Region, which is a significant supplier of healthcare, has an ambitious environmental program, including climate goals and longstanding work to reduce the volume of hazardous chemicals.

DOMAIN OF CONCERN 4: SOCIAL SUSTAINABILITY

CONSIDER THE THREE PILLARS OF SUSTAINABLE DEVELOPMENT – ENVIRONMENTAL, SOCIAL & ECONOMIC

"Sustainable Procurement" includes consideration of environmental, social and economic impacts, see for example: ISO 20400.[8]

- Some low carbon care strategies, such as the turn to digital health, create significant ethical concerns due to risks of modern slavery and child labour, conflict minerals and rare earth elements in the digital supply chain.
- There are longstanding concerns about the risk of child labour and modern slavery in the medical supply chain.[9]

Healthcare organizations can serve as "anchor institutions" – large, typically non-profit organizations that are rooted in place, with the capacity to support community wealth and well-being, as:

- Employers and workforce developers
- Purchasers of goods and services
- Managers of land and capital assets
- Environmental stewards
- Partners across place, to engage communities and address community needs

Healthcare organizations can commit to:

- The "Triple Bottom Line" - Environmental, Social & Economic impacts - in strategy & accounting.[10]
- Sustainability reporting including "Environmental, Social & Governance (ESG)" criteria for strategy & investments.[11]

EXAMPLES

- Sustainability & the Health Sector, New Zealand Ministry of Health:
  - Commits to sustainability across 3 pillars – economic, social and environmental.
  - Recognizes the importance of Māori perspectives; this "ensures that they are recognised as kaitiaki (guardians), contributes to the needs and aspirations of Māori and gives due effect to Te Tiriti o Waitangi, as well as reinforcing the messages of environmental sustainability".
- Providence's climate action plan, positions environmental justice at the heart of environmental stewardship.
  - It has convened an "Environmental Justice Collaborative" to recommend actions to leadership.
- NHS England:
  - Aims at net zero and social value through procurement.
  - The NHS Long Term Plan identifies the NHS as an anchor institution.
- NHS Wales:
  - Has a Decarbonisation Strategic Delivery Plan
  - Aims to leverage its role as an anchor institution to drive improvements in the foundational economy.

Four Action Areas

ISSUE: IDENTIFY PRIORITY AREAS OF ACTIVITY

SERVICE DESIGN & DELIVERY	• Leverage the climate benefits of health system transformation, e.g., digital health, integrated health and community-based care, investments in social determinants • Improve time and resource efficiency of care pathways • Ensure appropriate and optimized use of medicines & other clinical resources • Implement low carbon, sustainable clinical products & services, e.g., anesthetic gases; devices & supplies	**Priority domain** • High • Medium • Low, N/A
PROCUREMENT & SUPPLY CHAIN	• Use purchasing power to secure toward low carbon, sustainable products and services, including through logistics - reduce emissions & pollution, promote circular economy principles, reduce consumption and waste • Use purchasing power to ensure resilient supply, and address social sustainability issues, e.g., labour standards, living wages, diverse suppliers	**Priority domain** • High • Medium • Low, N/A
FACILITIES & ESTATES	• Facilities – Design & construction of new builds and refurbishments; smart energy & water design and demand management; minimize waste and toxics • Estates – Foster accessible green space, protect and support ecosystems and natural buffers • Travel & transport - Support active travel and public transport, invest in ultra-low and zero emission vehicles (owned, leased), maximize efficiencies in business travel, patient transport, courier services, and deliveries	**Priority domain** • High • Medium • Low, N/A
FOOD & NUTRITION	• Reduce emissions from food made, processed or served • Ensure healthy, culturally appropriate, locally sourced or seasonal menus for patients, staff or visitors • Reduce food waste	**Priority domain** • High • Medium • Low, N/A

ACTION AREA 1: SERVICE DESIGN AND DELIVERY

Rethink care to improve patient outcomes, make care less carbon and resource intensive and reduce the need for care.

- Leverage the climate benefits of health system transformation.
  - Shifts to more integrated health and community-based care can support patient wellbeing, improve chronic disease management, and reduce duplication and delay.
  - Digital health offers opportunities to reduce carbon through electronic health record systems and by reducing unnecessary travel using virtual care for uncomplicated follow-up visits, so long as digital innovation does not increase environmental harms.
- Improve the time and resource efficiency of care pathways to improve timely and responsive care and reduce use of unnecessary resources.
- Ensure appropriate care.
  - Use quality improvement to reduce unnecessary interventions and resource use (e.g., non-sterile gloves, unnecessary cannulation).[12,13]
  - Optimize medicines to reduce overprescribing, improve patient care and reduce carbon emissions.[14]
- Choose wisely to reduce risks to patients and improve resource stewardship; many Choosing Wisely recommendations can reduce environmental harms – recommendations are available for specialties and to make changes in hospitals, long term care homes and primary care.[15,16,17]
- Implement low carbon, sustainable alternatives.
  - Use lower carbon inhalation anesthetics, including nitrous oxide; in discussion with patients, consider the option of lower carbon inhalers.
  - Consider reusable devices & supplies.[18,19,20]

Practice climate informed care (clinician education, climate risk assessment) & collaborate with communities to support health, and reduce inequities (see Domain of concern #2).

EXAMPLES

- NHS Wales Decarbonisation Strategic Delivery Plan (2021):
  - Redesign the patient journey, with care closer to home, reduced need to visit hospitals and "a carbon-friendly primary care estate".
  - "Take a patient-centric approach to optimise inhaler use, including reduced use of reliever inhalers, lower carbon inhalers and careful disposal and recycling.
- NHS England's Green Plan Guidance recommends:
  - Sustainable models of care – e.g., care closer to home, default to lower-carbon interventions (when clinically equivalent), reducing unwanted variation in care delivery and outcomes that result in unnecessary increases in carbon emissions.
- The UK Royal College of Nursing asks members to:
  - 'Make one change' to reduce unnecessary glove use and make healthcare more sustainable.

ACTION AREA 2: PROCUREMENT AND SUPPLY CHAIN

Leverage purchasing power to influence vendors and shape markets for sustainable health sector products and services.

Use purchasing power to secure low carbon, sustainable products and services, including through logistics.

Reduce emissions & air pollution, consumption and waste – Implement the '5 Rs' of sustainable procurement:

- Reduce: Can you do without the product?
- Reuse: Can you buy reusable products instead of single use?
- (Buy) Reprocessed: Can you buy reprocessed or refurbished?
- (Buy) Renewable: What is the product made of?
- (Buy) Recyclable: Is the product recyclable?

Promote circular economy principles – design for repair and reuse; maintain materials in highest value state for as long as possible.

Use purchasing power to ensure resilient supply & fair medical trade.[9]

TOOLS INCLUDE:

- NHS England (2022) net zero and social value procurement.[20]
  - NHS Supply Chain compliant frameworks (e.g., for maternity, obstetrics and gynaecological products; surgical instruments).[20,21,22,23]
- Practice Greenhealth, a US member organization offers sustainable procurement guidance (some info for members only).[24]
- Kaiser Permanente – one of the largest non-profit health systems in the US – has a strong environmentally preferable purchasing initiative, including principles and standards for vendors.[25]
- The UNDP Sustainable Health in Procurement Project provides a sustainable procurement tool for supplier assessment.[26]
- Many resources are not specific to healthcare., for example:
  - European Commission materials on green and sustainable procurement, with healthcare as one example among others in the public sector.[27]
  - The Canadian Collaboration for Sustainable Procurement (formerly the Municipal Collaboration for Sustainable Procurement) aims to support sustainable procurement efforts in the broader public sector.[28]

EXAMPLES

- NHS England has a Roadmap for Suppliers to Reach Net Zero by 2045, which includes:
  - As of 2022, has implemented the net zero and social value procurement model, including at least 10% weighting for these commitments in all tenders.
  - By 2023, all large suppliers must publish a carbon reduction plan for direct emissions.
  - By 2027, all suppliers must publish emissions and a carbon reduction plan for direct and indirect emissions.
  - By 2030, only suppliers that can demonstrate progress will receive NHS contracts.
- Sustainable procurement is part of NHS Wales' Decarbonization Strategic Delivery Plan (2021):
  - By 2022, a framework for assessing supplier credentials for Sustainable Procurement Code of Practice.
  - By 2023, contractually mandated decarbonisation in major projects.
  - By 2024, improved supply-chain logistics and distribution.
- Growing support from industry & procurers:
  - The International Leadership Group for a Net Zero NHS, including Unilever, J&J, GSK, Medtronic, NovoNordisk, Biogen, AstraZeneca and others, support the transition to a net zero NHS supply chain.
  - MedTech Canada has adopted a Sustainable Development and Environmental Protection Charter.
  - HealthPro has called for Canadian healthcare organizations to take the Healthcare Without Harm pledge.

ACTION AREA 3: FACILITIES AND ESTATES

Increase ambition in areas of traditional sustainability expertise.

Facilities	• Design & construct new builds and refurbishments to ensure climate resilience, low carbon and sustainability operations, accounting for embodied and operational emissions. • Implement smart energy & water design and demand management. • Explore opportunities for low carbon heating and cooling plants (e.g., district energy).
Estates	• Maximize greenspace and protect ecosystems. • Foster access to greenspace for patients/clients, the health workforce and communities. • Support climate resilience (see Domain of concern #2).
Travel and transport	• Support active travel and public transport. • Invest in ultra-low and zero emission vehicles (owned, leased). • Maximize efficiencies in business travel, patient transport, courier services, and deliveries.
Waste and toxics	• Ensure good practice in the management of pharmaceutical and other toxic waste. • Reduce single use plastics waste, including from single use items and packaging. • Facilitate reduction, reuse, repair, reprocessing, remanufacturing and recycling.

EXAMPLES

- Manchester University NHS Foundation Trust Green Plan commits to:
  - Ensure that both embodied and in-use zero carbon measures are fully considered and costed into life cycling, refurbishment and new build projects.
- NHS England's net zero plan includes:
  - New hospitals and buildings will be net zero compatible.
  - A wide range of interventions will be supported for existing buildings to reduce carbon emissions, including air conditioning and cooling, building fabric, LED lighting, space heating, ventilation and hot water could all be rolled out to further reduce carbon emissions.
  - The NHS has committed to having a zero emission non-emergency patient transport fleet by 2035; as well, the NHS transport will reduce unnecessary journeys and enable healthier, active forms of travel such as cycling and walking.
- NHS Wales decarbonisation strategy includes:
  - All new-build developments and major refurbishments will be designed and accredited to a net zero framework.
  - Large-scale renewable energy generation will be implemented by collaborating with public sector partners, landowners, developers, and local communities.
  - Every building will have undergone an energy-efficient upgrade – low carbon heating will be utilised and renewable energy will be generated on site.
  - Aim for all natural-gas combined heat and power plant to be decommissioned.
  - Will aim for new ambulances procured to be plug-in electric, or alternative low carbon fuelled.

ACTION AREA 4: FOOD AND NUTRITION

Mobilize food services to support health & wellbeing.

Food affects multiple environmental, social and quality domains – for patients, communities and the health workforce.

- Food is medicine.
- Food is a lever to reduce GHG emissions and the ecological harms of care.
- Food is a support to community health wellbeing.
- Food is an element of culturally safe care.

Nourish Leadership, a Canadian charity working at the intersection of food and healthcare, identifies a range of possible actions by healthcare organizations, including:

- Make changes to menus, portion sizes, ordering, food service and waste systems to improve patient experience and health, and reduce food waste.
- Celebrate delicious planet-friendly menus that feature more plant-based proteins, whole grains, fruits and vegetables and less processed foods for patients, visitors and the health workforce.
- Ensure culturally appropriate meals for culturally safe care.
- Purchase to account for the social and environmental attributes of food, including fair labour practices and protection of biodiversity and ecosystems.
- Develop new supplier relationships with local producers and processors, to help support a diversified and more resilient food economy and supply chain.
- Host farmers markets and Community Shared Agriculture programs to enable fresh food access in communities, and create healthy food environments.[29]

EXAMPLES

- Stockholm Region - a significant supplier of healthcare - has committed to deliver sustainable patient meals by 2021, including:
  - Sustainability requirements for food procurement.
  - 50% of food to be organic.
  - 20% reduction in carbon emissions from food relative to 2016.
  - 40% reduction of food waste volume relative to 2017.
  - 20% of food to be locally produced.
- NHS England's Green Plan Guidance highlights food and nutrition as areas for effort:
  - To reduce carbon emissions from food made, processed or served; reduce food waste; ensure healthier, locally sourced and seasonal menus.
- As part of its environmental sustainability strategy, Vancouver Coastal Health aims to:
  - Develop plant-forward, local, culturally relevant and equitable food service to advance food as medicine.

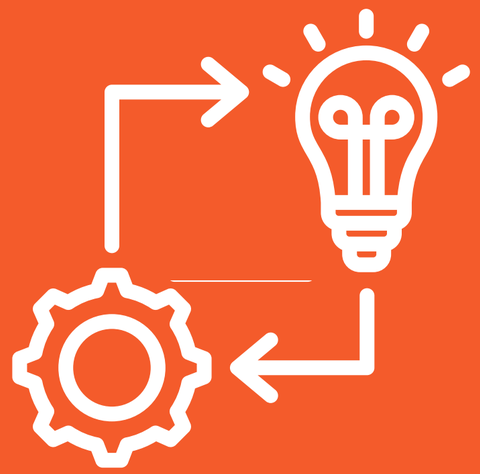
4 x 4 Activity Matrix

ISSUE: SELECT OPPORTUNITIES BY DOMAIN OF CONCERN & AREA OF ACTIVITY

AREA OF ACTIVITY	DOMAIN OF CONCERN			
	Climate Change		Sustainability	
	Greenhouse gas reductions	Climate adaptation & resilience	Natural environment	Social sustainability
Service design & delivery	☐	☐	☐	☐
Procurement & supply chain	☐	☐	☐	☐
Facilities & estates	☐	☐	☐	☐
Food & nutrition	☐	☐	☐	☐

EXAMPLES

- Ireland's National Health Sustainability Office addresses:
  - Climate change and health – adaptation
  - Energy efficiency
  - Water conservation
  - Waste prevention
  - Sustainable transport
  - Green procurement
  - Designing the built environment
- In the UK, the English NHS Greenplan addresses:
  - Sustainable models of care
  - Digital transformation
  - Travel and transport
  - Estates and facilities
  - Medicines
  - Supply chain and procurement
  - Food and nutrition
  - Adaptation
- In the US, Providence's climate action plan addresses:
  - Emissions reduction via WE ACT
  - Waste
  - Energy & Water
  - Agriculture & Food
  - Chemicals
  - Transportation
  - Health & resilience – climate justice
- In BC, Greencare acts on:
  - Climate change – adaptation & mitigation
  - Energy & carbon
  - Food
  - Materials
  - Transportation
  - Water



HOW

Strategy & Partnerships

Establish organizational interest and commitment → **Develop** goals and indicators, and action steps to achieve them → **Measure** status of sustainability activity → **Implement** strategy → **Monitor** and evaluate progress, and adjust plans as needed

Leadership and Governance

ISSUE: ENGAGE SENIOR LEADERS AND GOVERNORS

Leadership & good governance are needed to develop and deliver effective climate and sustainability strategy

- Effective leadership requires environmental stewardship (HSO A2001:2020 (E) Leadership).[30]
- SUSTAINABILITY LEADERSHIP NORMS:
  - Promote an expansive and ambitious sustainability strategy.
  - Monitor progress and ensure adherence to strategy.
  - Ensure cross sectoral working and implementation.
  - Liaise with external partners.
  - Seek specialist advice where appropriate.
- Effective governance requires environmental stewardship (CAN/HSO 1001:2022 - Governance).[31]
- Sustainability governance norms:
  - The climate governance initiative, a global network of directors' forums, calls for Board leadership to "prepare for a transition that will be unprecedented in both scale and pace".[32]
  - The stakeholder-centric view of the corporation calls for boards to take a broader ESG and stakeholder-centric view of corporate governance, including but not limited to climate governance.[33]
- Priorities for leaders & governors:
  - To appraise the full scope of risks and opportunities.
  - To leverage and extend traditional expertise in facility-based GHG reduction and waste management.
  - To engage clinical and management fields.
  - To consider opportunities for impact through partnerships.
  - To advocate with various levels of government for policy and funding support.
  - To incorporate sustainability within strategic plans, with metrics reportable to the Board.

EXAMPLES

LEADERSHIP

- US Health & Human Services has issued a call for climate commitments; including:
  - To designate an executive-level lead for work on reducing emissions by 2023.
- Providence's ambitious climate action plan includes:
  - A system-wide executive performance metric related to environmental stewardship, with a specific GHG emissions reduction target for each Providence operating region.

GOVERNANCE

- NHS England, (2021):
  - Every trust to ensure a board member is responsible for their net zero targets and their Green Plan.
  - Three-year plans, approved by and reported to the Board annually, updated annually as necessary to reflect new expectations and opportunities.
- NHS Wales (2021):
  - A 'Decarbonisation Board' to oversee implementation of the Delivery Plan.
  - A sub-group of the Welsh Government NHS Wales Climate Change Group.
  - Board will report to the existing Executive Directors Board and the NHS Wales Chief.

Capacity & Coordination

ISSUE: BUILD CROSS ORGANIZATIONAL CAPACITY

Ensure sustainability activity is embedded and enabled across the organization.

BUILD CAPACITY ACROSS THE ORGANIZATION

- Develop structures for coordinated cross-organization action – e.g., organization-wide committee or task force.
- Deepen capacity in traditional sustainability areas - e.g., facilities, environmental services.
- Build capacity and engagement beyond traditional sustainability areas – e.g., clinical operations, procurement, biomedical engineering, infection prevention and control, food services, etc.
- Facilitate opportunities for staff, clinicians and leaders to develop and share knowledge and skills, including through continuing professional development.
- Encourage & monitor staff, clinician, patient and family interest and engagement.
- Leverage aligned organizational commitments.
- Use quality improvement capacity, methods and metrics (e.g., team huddles, Quality Improvement Plans).
- Pursue Choosing Wisely designations - for hospitals, long term care homes and primary care.[15,16,17]
- Foster sustainability through the organization's educational and research mandate.

ENSURE WELL-RESOURCED TEAMS

- Identify designated staff to implement action steps and track progress.
- Consider ways to support clinical engagement, given the limits of volunteerism.

EXAMPLES

- Providence's ambitious climate action plan includes:
  - A cross-divisional leadership team.
    - To meet the goal of becoming carbon negative by 2030.
    - Regional liaisons represent the 7 regions and their ministries where the transformation happens.
    - The group tracks outcomes, helps establish priorities, identifies resources, and ensures strategic goals are met.
  - Strategic planning and integration.
    - Vertical and lateral integration strategies to build and maintain cohesive plans, goal setting, and reporting of outcomes.
- Manchester University NHS Foundation Trust Green Plan (2022) commits to:
  - A fully resourced sustainability team to coordinate the sustainability work program and monitor and report performance.
  - Dedicated time from clinicians to lead programs of work.
  - Invest in training staff in key positions of leadership and influence.
  - An annual non-pay sustainability budget that reflects the requirements of delivering the Green Plan annual work program.
- Approaches to engage clinicians as sustainability leaders:
  - Dr. Andrea MacNeill, a surgical oncologist, is the Medical Director for Planetary Health at Vancouver Coastal Health in BC.
  - Dr. Beth Schenk, a nurse and scientist is the Executive Director for Environmental Stewardship at Providence, a US health system.
  - Dr. Nick Watts, a physician, is the Chief Sustainability Officer of NHS England.

Parterships and Impact

ISSUE: PURSUE PARTNERSHIPS FOR IMPACT

Secure opportunities for impact through sectoral and cross-sectoral partnerships & actions.

LEVERAGE DIVERSE PARTNERSHIPS

- Across sister organizations – coordinate across the hospital, hospital foundation, and hospital research institute.
- Across the health sector – coordinate across hospital systems, health authorities, primary care providers, community service agencies.
- Across multiple sectors – coordinate with other broader public sector entities such as universities, colleges or municipalities.

PURSUE IMPACT

- For the built environment:
  - Leverage or anchor low carbon district energy systems.
  - Coordinate the development of facilities and estates for community access and wellbeing.
- For adaptation & resilience:
  - Explore ways to partner with communities, public health and health and social care organizations for community resilience to climate risks.
- For sustainable procurement:
  - Leverage buying power through coordinated action across the health sector and broader public sector.
- For sustainable systems of care:
  - Work across the health and social service sector to support population health and promote low carbon services and supports.

EXAMPLES

PARTNERSHIPS IN ACTION

- NHS England, (2021) uses integrated care systems (ICS) to foster coordinated action for sustainability.
  - ICS are required to develop green plans integrating plans from constituent Trusts and identifying system-wide priorities and co-ordination opportunities, including with primary care, local authorities and other local care partners.
- The US Healthcare Anchor Network unites healthcare organizations as anchors; it includes some of the most ambitious climate actors in healthcare, including:
  - Providence with its ambitious climate action plan to be climate negative by 2030.
  - Kaiser Permanente, which achieved net zero in 2020 for scope 1 & 2 emissions.

Measurement and Reporting

ISSUE: ADVANCE MEASUREMENT & REPORTING

Develop an integrated measurement strategy, recognizing the importance and limitations of metrics

PURSUE A MEASUREMENT STRATEGY FOR ORGANIZATIONAL EXCELLENCE & SYSTEM TRANSFORMATION

- Strategy to support organization-focused efforts.
  - To innovate within the organization's formal scope – e.g., hospital or health authority.
- Strategy to support inter-sectoral action and system change.
  - To innovate for system change - e.g., infrastructure and energy for community/city transformation; procurement for sustainable spend and impact; integrated health system action.

USE MULTIPLE APPROACHES TO MEASURE AND TRACK SUSTAINABILITY PERFORMANCE.

- Waste audits and benchmarking (e.g., from Ireland).[34]
- Sustainable procurement - per cent spend; RFP weighting.
- Virtual care calculator to estimate the carbon savings from travel averted.[35]
- Human resources – Full time employees & non-staff budget allocated; number of people engaged/ equipped.
- Activity scorecards and benchmarking tools– e.g., the ANZCA Environmental Sustainability Audit Tool.[36]

CONSIDER GHG EMISSIONS ESTIMATION AS AND WHERE RELEVANT

- Scopes 1 and 2 – commonly done in large healthcare organizations across Canada.
  - Anesthetic gases should be included (see the Anaesthesia Carbon Calculator).[37]
- Scope 3 emissions – estimation capacity is developing but remains highly limited.
  - "Sense of scale" estimation tools that use simple calculations and emissions intensities exist or are under development
    - The Aga Khan Development Network uses and has published a Carbon Management Tool.[38]
    - Practice Greenhealth in the US has developed a Scope 3 GHG Emissions Accounting Tool, which is only available to members.[39]
- Further tools and more sophisticated data, models and tracking systems will be needed for "track and verify" GHG footprinting.

EXAMPLES

MEASUREMENT STRATEGY

- NHS England, (2021)
  - Use a three-year timeframe to strike an appropriate balance between immediate carbon reductions in some areas, alongside strategic development of capability in others.
  - Recommend SMART (specific, measurable, achievable, relevant and time-bound) actions focused on early efforts to directly reduce carbon emissions.
  - Recommend systems and processes to measure and report on progress against plans and commitments, annually.
  - Ensure NHS Trusts and Integrated Care Systems develop green plans.
- Scope 3 emissions estimation
  - WHO has convened experts to support countries and healthcare organizations to estimate their GHG and other environmental emissions.
  - US Health & Human Services has issued a call for climate commitments; this includes:
    - To reduce organizational emissions by 50% by 2030 (from a baseline no earlier than 2008) and achieve net-zero by 2050, publicly accounting for progress every year.
    - To conduct an inventory of Scope 3 (supply chain) emissions by the end of 2024.

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About this playbook

These materials were developed from a rapid environmental scan and discussions with sustainability professionals and leaders from the CoP and TAHSN hospitals from January through June 2022.

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