

CASCADES SUSTAINABLE PERIOPERATIVE CARE SCORECARD

The CASCADES Sustainable Perioperative Care Scorecard helps perioperative teams:

- Identify sustainability opportunities and access related implementation resources
- Establish a baseline and track progress on sustainability goals
- Share these metrics with the broader community to track collective progress

See additional resources to support the implementation of the Scorecard:

- [Frequently Asked Questions](#)
- [A How-To Guide](#)
- [A Brief Introduction](#)
- [Project Charters](#)
- [Best Practices in Surgery Guidelines](#)



Feedback Survey

Share your feedback and areas of focus by completing this [survey](#). To showcase all the great work sites are doing across Canada to improve the sustainability and environmental impact of perioperative care, some of your survey responses will be used to populate the Scorecard [dashboard](#)

CASCADES is also seeking opportunities for networking and mentorship from sites utilizing the Scorecard. Contact us at CASCADES@utoronto.ca to learn more.

This version of the tool has been adapted from an earlier scorecard in collaboration with the Best Practice in Surgery, University of Toronto (see below for further details).



Background information and implementation resources related to most of the sustainability opportunities presented below can be found in the CASCADES Sustainable Perioperative Care Playbook (linked throughout).

To access the full playbook, go to: <https://cascadescanada.ca/>

Status Options:



NOT WORKING ON



WORKING ON (NOT YET PARTIALLY ACHIEVED/ACHIEVED)



PARTIALLY ACHIEVED



ACHIEVED

OPPORTUNITIES	STATUS			GOALS
SUSTAINABILITY LEADERSHIP				
→ See The Strategy for Change in the CASCADES SPC Playbook				
Implement leadership structure to support perioperative environmental sustainability				<ul style="list-style-type: none"> • Formalized Environmental Sustainability Perioperative Committee in place with broad representation that reports at perioperative meetings and has an executive sponsor, <u>AND</u> • Committee structure allows for protected time for clinical staff to participate in regular meetings and implementations • A green team of volunteers who engage in activities to improve sustainability of the OR has been established
LOW-VALUE CARE				
→ See Avoiding Unnecessary Care in the CASCADES SPC Playbook				
Reduce low-value pre- and post-op visits and testing				<ul style="list-style-type: none"> • Low-value pre- and post-op testing is eliminated, <u>AND</u> • Lower-carbon test options are considered when testing is necessary, <u>AND</u> • Virtual visits are offered when appropriate • Decision-tool to aid in consensus around necessity of specific tests in place
Playbook: Tests & Visits				
Reduce unnecessary blood product wastage				<ul style="list-style-type: none"> • Transfusions only done when clinically indicated, <u>AND</u> • Blood products are ordered in accordance with use (avoid excessive overordering; monitor expiration dates) • Delivered education around wise blood use, <u>AND</u> • Stock of blood products audited to determine proper ordering frequency/volume
Playbook: Wise Blood Use				
ANESTHETIC GASES				
→ See Minimize Direct Emissions in the CASCADES SPC Playbook				
Eliminate desflurane for surgical procedures requiring general anesthesia				<ul style="list-style-type: none"> • Desflurane removed from formulary, <u>OR</u> • Desflurane eliminated from use • Provided education on environmentally friendly gases, <u>AND</u> • Implementation of one of the following strategies to reduce desflurane use: <ul style="list-style-type: none"> ◦ Carbon intensity warning stickers placed on desflurane vaporizers, or ◦ Sevoflurane is the default gas on the vaporizer, or ◦ Desflurane vaporizers removed from anesthetic machine, or ◦ Desflurane not available in ORs, but can still be accessed from automated medication dispensing system (i.e., Omnicell, Pyxis MedStation)
Playbook: Desflurane				



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OPPORTUNITIES	STATUS			GOALS
ANESTHETIC GASES (CONTINUED)				→ See Minimize Direct Emissions in the CASCADES SPC Playbook
Use 0.5L/min fresh gas flow  Playbook: Low Flow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Routine use of automated control of end-tidal inhalation anesthetic concentration programs with minimal fresh gas flows of 0.5L/min (EtControl TM on GE or Target Controlled Anesthesia on Dräger) Provided education to encourage minimal fresh gas flows 0.5L/min
Minimize environmental impact of nitrous oxide Playbook: Nitrous Oxide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> N₂O no longer used as a carrier gas, AND No longer using bulk N₂O tank or centralized piped nitrous as a supply source (switch to cylinders at point of use) Provided education/training on minimizing clinical use of N₂O, AND Working group established to engage relevant partners, including clinical users, pharmacy, biomedical engineering, and facilities
REUSABLES				→ See Substitute Reusable Alternatives in the CASCADES SPC Playbook
Use reusable medical devices and equipment Playbook: Reusable LMAs Playbook: Breathing Circuits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Reusables used instead of single-use products for 3-4 of the following items: <ul style="list-style-type: none"> Circuit face masks LMAs Breathing circuits (or extended use circuits in lieu of reusables, for ≥ 24 hrs) Laryngoscope blades (standard, Glidescope, C-Mac) Sharps containers Reusables used instead of single-use products for 1-2 of the above items
Use reusable sterile surgical gowns Playbook: Reusable Gowns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Routine use of reusable sterile surgical gowns In the process of transitioning to sterile surgical reusable gowns, including the following steps: removing disposable gowns from the sterile core, developing support from OR management/leadership and clinical staff, and/or implementing trials of reusable gowns, AND Routine use of reusable drapes and scrub hats, where appropriate, in the OR
Encourage patients to bring their own reusable belongings bags  Playbook: Garment Bags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Plastic patient belongings bags are given to no more than 30% of patients Patients are encouraged to bring their own reusable garment bags (through appointment communications, surgery pamphlets, and/or posters)
Use rigid containers or reusable linens in place of blue polypropylene wrap to protect sterilized trays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Rigid containers and reusable linens are used to protect at least 75% of sterilized trays, AND Blue wrap is used only for equipment that is too irregular in shape or size to be inserted into a hard case and is unsuitable to be wrapped in reusable linens Rigid containers and linens are used to wrap at least 50% of trays
WASTE				→ See Reduce & Manage Waste in the CASCADES SPC Playbook
Lean trays and/or custom packs to include only frequently used items Playbook: Surgical Trays Playbook: Custom Packs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Criteria below, AND Each surgical division has at least one lean surgical tray and/or custom pack for at least one high-volume surgical procedure Developed a process for yearly review/audit of trays and/or packs, AND Developed a process to make changes to trays and/or packs based on review

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OPPORTUNITIES	STATUS			GOALS
WASTE (CONTINUED)				
→ See Reduce & Manage Waste in the CASCADES SPC Playbook				
Segregate biomedical, plastic waste and pharmaceutical waste accurately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Criteria below, AND Regular waste audits (minimum once per year)
Playbook: Biomedical Waste Playbook: Plastic Waste Playbook: Pharmaceutical Waste				<ul style="list-style-type: none"> Posted clear signage on accurate waste segregation, OR Conducted education/training on proper waste segregation (pharmaceutical, biomedical and sharps)
Pursue remanufacturing of single-use devices (where reusables are not available)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Criteria below, AND Remanufactured devices are purchased back when reusable devices are not available
Playbook: Device Remanufacturing				<ul style="list-style-type: none"> Where reusable devices are not available and single-use devices are in use, these are collected for remanufacturing
ENERGY				
→ See Best Practice in Surgery's recommendations				
Reduce energy consumption from HVAC systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> CSA air changes per hour (ACH), temperature, humidity and pressure recommendations are respected without being exceeded. Occupied ACH are at 20 total air changes per hour with 6 outdoor ACH. HVAC setbacks are employed in all ORs when they are unoccupied, with 6 total air changes per hour or less if temperature, humidity and pressure recommendations are respected, AND Occupied ACH has been tested within last 5 years and does not exceed the required CSA ACH requirements for ORs and recovery areas by over 15%, and respect without exceeding CSA fresh air changes per hour requirement
				<ul style="list-style-type: none"> In process of assessing feasibility of HVAC setbacks or in process of negotiating upgrades to allow for HVAC setbacks, AND In process of evaluating for HVAC setbacks to be employed in OR blocks that operate on a set schedule
Implementation of a 'Good Night Policy'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Oxygen, lights, computers and equipment are turned off at the end of the day; this policy is enforced as part of regular duties of OR staff (i.e., AA's ensure anesthesia machines are turned off and all oxygen sources turned off at end of day), OR Lights have occupancy sensors and only mandatory fire routes remain lit during unoccupied periods
				<ul style="list-style-type: none"> Educate staff on a "Good Night Policy" with signage and suggestions to decrease energy, AND Encourage staff to manually turn off lights in ORs when not operational

Next Steps

After completing the Scorecard, you can act on your findings to improve sustainability in your hospital by:

- Completing our post-Scorecard [survey](#) and contributing to the national [dashboard](#).
- Choosing an area where your hospital can perform better, utilizing the [CASCADES Playbook](#) and [Project Charters](#).
- Sharing your Scorecard with your hospital's leadership team.
- Completing this Scorecard again in one year's time to track your site's progress - and repeating the steps above!



The [Sustainable Health System Community of Practice](#) developed the first version of this assessment as a scorecard to establish the current state of sustainable practices in operating rooms across the Toronto Academic Health Science Network (TAHSN). The scorecard was developed and updated by the Sustainable Operating Rooms Working Group, which has representation from all TAHSN organizations, and in consultation with additional experts and evidence in literature. Results can be viewed [here](#).

This version of the scorecard has been updated in collaboration with Best Practices in Surgery, Department of Surgery, University of Toronto, based on their Greening the ORs guidelines.



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