

Fillable 2023 Sustainable Operating Room Scorecard

Sustainability Strategies	Score			Criteria
Sustainability Leadership				→ See The Strategy for Change in the CASCADES Sustainable Perioperative Care Playbook
1. Implement leadership structure to support perioperative environmental sustainability <div>Playbook Section: Green Teams</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Formalized Environmental Sustainability Perioperative Committee with broad representation that reports at perioperative meetings and has an executive sponsor, ANDCommittee structure allows for protected time for clinical staff to participate in regular meetings and implementations <p>Amber score:</p> <ul style="list-style-type: none">Green team of volunteers who engage in activities to improve sustainability of the OR
Anesthetic gases				→ See Minimize Direct Emissions in the CASCADES Sustainable Perioperative Care Playbook
2. Eliminate desflurane for surgical procedures requiring general anesthesia <div>Playbook Section: Desflurane</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Desflurane removed from formulary, <i>OR</i>Desflurane completely removed from operating rooms <p>Amber score:</p> <ul style="list-style-type: none">Implement formal program to discourage use of desflurane, e.g:<ul style="list-style-type: none">Remove desflurane vaporizers from anesthetic machinesMake sevoflurane the default gas on the vaporizerDesflurane not available in operating rooms but can still be accessed from automated medication dispensing system (i.e., Omnicell, Pyxis MedStation)Implement continuous education on environmentally friendly gasesAdd warning stickers about carbon intensity placed on desflurane vaporizers
3. Use ≤0.5L/min fresh gas flow <div>Playbook Section: Use Low Flow</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <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 Draeger) <p>Amber score:</p> <ul style="list-style-type: none">Implement education and encourage minimal fresh gas flows ≤ 0.5L/min
Reusables				→ See Substitute Reusable Alternatives in the CASCADES Sustainable Perioperative Care Playbook
4. Establish reusable anesthesia equipment in place of single use products <div>Playbook Section: Reusable LMAs</div> <div>Playbook Section: Breathing Circuits</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Implement reusables in place of single use/disposable products for 2-3 of the following anesthesia equipment:<ol style="list-style-type: none">LMAsCircuit face masksBreathing circuits (or extended use circuits in lieu of reusables, for ≥ 24 hrs) <p>Amber score:</p> <ul style="list-style-type: none">Implement reusables in place of single use/disposable products for 1 of the above anesthesia equipment
5. Use reusable sterile surgical gowns <div>Playbook Section: Reusable Gowns</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Routine use of reusable sterile surgical gowns <p>Amber score:</p> <ul style="list-style-type: none">In the process of transitioning to sterile surgical reusable gowns, including the following steps:<ul style="list-style-type: none">Removing from custom packsRemoving from sterile coreDeveloping support from operating room management/leadershipDeveloping support from clinical staffImplementing trials of reusable gowns

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Reusables (Continued)				→ See Substitute Reusable Alternatives in the CASCADES Sustainable Perioperative Care Playbook
6. Encourage patients to bring their own reusable belongings bags <div>Playbook Section: Garment Bags</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Amber criteria, <i>AND</i>Plastic patient belongings bags are not distributed <p>Amber score:</p> <ul style="list-style-type: none">Patients are encouraged to bring their own reusable garment bags (through appointment communications, surgery pamphlets, and posters)
Waste Reduction & Management				→ See Reduce & Manage Waste in the CASCADES Sustainable Perioperative Care Playbook
7. Segregate biomedical and pharmaceutical waste accurately <div>Playbook Section: Pharmaceutical Waste</div> <div>Playbook Section: Biomedical Waste</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Education/training on proper waste segregation (pharmaceutical, biomedical and sharps), <i>AND</i>Regular waste audits (minimum once per year) <p>Amber score:</p> <ul style="list-style-type: none">Educational signage on accurate waste segregation, <i>OR</i>Education/training on proper waste segregation (pharmaceutical, biomedical and sharps)
8. Reduce use of blue polypropylene wrap	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Hard cases and reusable linens are used primarily to protect at least 75% of sterilized trays, <i>AND</i>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 <p>Amber score:</p> <ul style="list-style-type: none">Hard cases and linens are used to wrap ≥ 50% of trays (i.e., 50% or less of trays are wrapped in blue wrap)
9. Lean custom packs to include only frequently used items <div>Playbook Section: Custom Packs</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Amber criteria, <i>AND</i>Each surgical division has at least one lean surgical tray and/or custom pack for at least one high-volume surgical procedure <p>Amber score:</p> <ul style="list-style-type: none">A process for yearly review/audit of surgical trays and/or custom packs, <i>AND</i>A formalized process to make changes to surgical trays and/or custom packs based on results
Operations & Infrastructure				→ See Minimize Direct Emissions in the CASCADES Sustainable Perioperative Care Playbook
10. Reduce nitrous oxide use and leaks <div>Playbook Section: Nitrous Oxide</div>	<div></div>	<div></div>	<div></div>	<p>Green score:</p> <ul style="list-style-type: none">Implement 2-3 of the following strategies to reduce nitrous oxide use and leaks:<ul style="list-style-type: none">No longer using bulk N₂O tank or centralized piped nitrous as a supply sourceAn education program on minimizing clinical use to eliminate N₂O useProgram in place to assess and mitigate system leaks at tanks, manifolds and piped N₂O infrastructure <p>Amber score:</p> <ul style="list-style-type: none">Education/training on minimizing clinical use to eliminate N₂O use

Achieved the sustainability strategy

Partially achieved the sustainability strategy

Did not achieve the sustainability strategy

■ Achieved the sustainability strategy
■ Partially achieved the sustainability strategy
■ Did not achieve the sustainability strategy



The CASCADES Sustainable Perioperative Care Playbook provides background information and implementation resources designed to address environmental sustainability in perioperative care.

To access the full playbook, go to cascadescanada.ca/resources/sustainable-perioperative-care-playbook/

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Additional Sustainability Strategies

1. Reduce pharmaceutical drug waste	<ul style="list-style-type: none"> • Use prefilled syringes whenever appropriate for medication/patient • Appropriately sized vials • Constantly monitor expiry dates and label medications that will expire soon as "use first" • Reuse multi-use medications until the vial is empty instead of throwing them out at the end of every case (according to Public Health Ontario Policy) • Use single-dose vials when possible • Create a program for pharmaceutical waste bins with appropriate education
	→ See Reduce & Manage Waste in the CASCADES Sustainable Perioperative Care Playbook
2. Reduce energy consumption from HVAC systems	<ul style="list-style-type: none"> • Implement HVAC timer/setback system for when OR not in use • Implement OR-specific heating/cooling system • Implement heat reclamation system
3. Reduce energy use from operating room lights	<ul style="list-style-type: none"> • Implement LED surgical lights and LED operating room lights • Implement 'Good Night Policy' (i.e. shut off oxygen, lights, and equipment as feasible when room is unoccupied. For lights, either implement a setback to ambient lighting or manually turn them off)
4. Use reusable linens	<ul style="list-style-type: none"> • Use exclusively reusable drapes, where appropriate • Wear exclusively reusable scrub hats • Have a program in place that raises awareness of reusable linens and encourages their use
	→ See Substitute Reusable Alternatives in the CASCADES Sustainable Perioperative Care Playbook
5. Use single peel pouches to decrease waste	<ul style="list-style-type: none"> • When sterilizing individual instruments, use a single peel pouch to decrease waste, unless the manufacturer's instructions (IFU) differ
6. Implement specialized recycling programs	<ul style="list-style-type: none"> • Implement medical PVC 123 or PVC 123+ recycling program • Implement collection of surgical devices for remanufacturing, i.e. Stryker Sustainability Program
	→ See Reduce & Manage Waste in the CASCADES Sustainable Perioperative Care Playbook
7. Prioritize re-manufactured single-use medical devices	<ul style="list-style-type: none"> • Identify opportunities to introduce re-manufactured single-use medical devices and address procurement barriers as appropriate
	→ See Reduce & Manage Waste in the CASCADES Sustainable Perioperative Care Playbook
8. Reuse laryngoscopes	<ul style="list-style-type: none"> • Use exclusively reusable laryngoscope blades (standard, Glidescope, C-Mac)
	→ See Substitute Reusable Alternatives in the CASCADES Sustainable Perioperative Care Playbook
9. Reuse policy	<ul style="list-style-type: none"> • Review OR policies to ensure that items in the operating room (but not on the sterile field or ones that come in contact with the patient) can be returned to shelves, reused, or recycled
10. Reduce unnecessary pre-operative testing	<ul style="list-style-type: none"> • Implement Choosing Wisely Canada preoperative testing grid
	→ See Avoid Unnecessary Care in the CASCADES Sustainable Perioperative Care Playbook
11. Reduce paper use	<ul style="list-style-type: none"> • Reduce and wherever possible, eliminate the printing of daily operating room lists • Implement electronic dashboards to support communication, and ensure that the OR lists are available electronically
12. Eliminate use of "bunny suits"/ white disposable polypropylene suits	<ul style="list-style-type: none"> • Use reusable gowns (e.g. yellow or green surgical gowns) for visitors into the operating room (e.g. in Obstetrics, parents who accompany children for induction, construction workers) • All hospital staff should change into OR-issued scrubs before entering the operating room
	→ See Substitute Reusable Alternatives in the CASCADES Sustainable Perioperative Care Playbook

2023 Sustainable Operating Room Working Group

The Sustainable Health System Community of Practice developed this scorecard to assess the current state of sustainable practices in operating rooms across the Toronto Academic Health Science Network (TAHSN). The 2022 version of this scorecard was 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. See below for working group members.

TAHSN Representatives	
SickKids	<ul style="list-style-type: none"> • Dr. Elaine Ng, Staff Anesthesiologist; Co-chair, Perioperative Care Unit Green Committee; Director of Education, Department of Anesthesia and Pain Medicine • Cameron Irani, RN, MN
Humber River Hospital	<ul style="list-style-type: none"> • Jhanvi Solanki, RN, MN, Vice President, Clinical Programs
Michael Garron Hospital	<ul style="list-style-type: none"> • Dr. Tenille Ragoonanan, Anesthesiologist; Perioperative Team Champion for Sustainability • Wissam Halimeh, Quality Manager
North York General Hospital	<ul style="list-style-type: none"> • Dr. Melissa Ho, Anesthesiologist; Co-lead Perioperative Sustainability
Scarborough Health Network	<ul style="list-style-type: none"> • Dr. Kim-Chi Tran, Urologist
Sinai Health	<ul style="list-style-type: none"> • Dr. Soniya Sharma, Anesthesiologist
Sunnybrook Health Sciences Centre	<ul style="list-style-type: none"> • Dr. Martin Van der Vyver, Anesthesiologist; Co-Chair, Green OR Task Force • Barbara McArthur, Patient Care Manager; Co-Chair, Green OR Task Force
Trillium Health Partners	<ul style="list-style-type: none"> • Dr. Anita Rao, Anesthesiologist (Working Group Chair); Physician Lead of Environmental Sustainability • Dr. Munir Jamal, Head, Division of Urology
Unity Health Toronto	<ul style="list-style-type: none"> • Laurie Thomas, Senior Clinical Director of Surgery • Jack Li, Operating Room – Clinical Nursing Educator • Dr. Sarah Ward, Orthopaedic Surgeon, St. Michael's Hospital • Dr. Ali Abbass, Anesthesiologist; Chief of Environmental Stewardship and Sustainability, St. Joseph's Hospital
University Health Network	<ul style="list-style-type: none"> • Dr. Laura Donahoe, Thoracic & Lung Transplant Surgeon; Operating Room Green Team Lead, Toronto General Hospital
Women's College Hospital	<ul style="list-style-type: none"> • Dr. Karen Devon, Endocrine and Thyroid Surgeon
Department of Surgery, University of Toronto	<ul style="list-style-type: none"> • Emily Pearsall, Manager, Best Practice in Surgery
Secretariat	
Centre for Sustainable Health Systems, University of Toronto	<ul style="list-style-type: none"> • Fiona Miller, Professor, Institute of Health Policy, Management and Evaluation, Dalla Lana School of Public Health, University of Toronto; Director, Centre for Sustainable Health Systems • Brittany Maguire, Managing Director, Centre for Sustainable Health Systems, University of Toronto

Notes