

# ANATOMICAL PATHOLOGY SUSTAINABILITY CHECKLIST

## SUSTAINABLE GUIDELINES IN ANATOMICAL PATHOLOGY LABORATORIES



## CONTENTS

### Organizational Commitment to Sustainability

### Anatomical Pathology (AP) Sustainability Guidelines:

- AP follows general principles of sound lab practice including:
  - A quality assurance program.
  - Lean Six Sigma principles.
  - Reduction of unnecessary testing through:
    - An evidence-based list of material exempt from submission from the OR to the lab
    - An evidence-based list of material exempt from microscopic examination
    - Ensuring appropriate specimen submission practice
- AP follows other sustainable lab practices, with details in checklists below:
  - Waste management
  - Energy conservation
  - Water conservation
  - Procurement and asset management
  - Sustainable events
  - Education
- Acknowledgements

For more resources, view the sustainable laboratories page at <https://cascadescanada.ca/acti-on-areas/clinical-specialties/>



This project was undertaken with the financial support of the Government of Canada.  
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.



## ORGANIZATIONAL COMMITMENT TO SUSTAINABILITY

NSH and the Department of Pathology value and support sustainability in healthcare as outlined in the NSH Environmental Stewardship Policy and Department of Pathology Strategic Plan.

**NSH Environmental Stewardship Policy Number: [AD-PSE-020](#)**

Nova Scotia Health Authority (NSHA) adheres to federal and provincial environmental laws, regulations, and other accepted environmental standards. NSHA is committed to providing a safe and healthy environment for patients, visitors, and NSHA Team Members at all of our Facilities.

The intent of this policy is to incorporate environmental considerations in the planning and implementation of all projects, programs, and general operations undertaken by NSHA.

## GUIDING PRINCIPLES AND VALUES

Nova Scotia Health Authority is committed to:

- Ensuring that we are compliant with all relevant federal and provincial environmental laws and regulations, monitoring new developments, and being prepared to adapt to new legislation;
- Taking a responsible approach to energy conservation and managing water use, waste, emissions, and hazardous products and processes. This includes updating and modernizing existing buildings and equipment to reduce our environmental footprint where practical;
- Encouraging environmental responsibility and awareness in Team Members by implementing recycling, reducing, and reusing initiatives; and engagement with environmental policy;
- The prevention of environmental incidents (anything that causes an Environmental Impact - see above) associated with our operations, and putting measures in place to respond to incidents if they occur;
- Periodically review operational processes to improve our environmental performance;
- Conducting periodic audits to ensure adherence to our established environmental policies; and
- Resolving environmental issues by cooperating/forming partnerships with federal and provincial agencies, other public agencies, public interest groups, and the private sector.

## **POLICY STATEMENTS**

- Environmental Impacts must be considered in all relevant planning, decision-making, and actions at NSHA.
- NSHA evaluates the environmental benefits and consequences of its activities to inform future practices towards eliminating and/or minimizing negative Environmental Impacts.

## **DEPARTMENT OF PATHOLOGY STRATEGIC PLAN 2024 TO 2028**

- Assess capability to pursue One Health and “green laboratories” to improve sustainability.
- Continue to guide appropriate Utilization and Lab Stewardship.
- Work towards a sustainable evidence-based service with an enhanced environmental lens and develop initiatives for Population-Scale Disease Prevention.

The Department of Pathology has a Green Team which makes recommendations on sustainable lab practices to the Clinical Laboratory Administration Committee and welcomes suggestions from all Department members.

## **AP WELLNESS AND GREEN HEALTHCARE COMMITTEE AND AP GREEN TEAM**

AP has a Wellness and Green Healthcare Committee, and an AP Green Team which make recommendations on sustainable lab practices to the AP leadership and welcome suggestions from all Division members.

The Cytopathology Section and the AP lab as a whole underwent green lab certification and subscribes to a continuing green lab self-assessment through the Dalhousie Office of Sustainability.

# SUSTAINABILITY CHECKLISTS

## WASTE MANAGEMENT IN ANATOMICAL PATHOLOGY

AP follows the NSH Waste Categories guidelines in general, and the guidelines specific for AP in the table below with bag placement as follows:

- Accessioning – One yellow bag, one regular waste bag, and one recycling bag
- Gross room – One small yellow bag and one regular waste bag for each pathologist assistant
- Histology – Regular waste and recycling bags
- Morgue – One red bag, one yellow bag, and one regular waste bag

## REFERENCES

- Canadian Council of Ministers of the Environment. Guidelines for the management of biomedical waste in Canada. [Cited November 22, 2024.] Available from: [https://publications.gc.ca/collections/collection\\_2015/ec/En108-3-1-42-eng.pdf](https://publications.gc.ca/collections/collection_2015/ec/En108-3-1-42-eng.pdf)
- Nova Scotia Health Waste Categories. [Cited November 22, 2024.] Available from: [https://policy.nshealth.ca/Site\\_Published/NSHA/document\\_render.aspx?documentRender.IdType=5&documentRender.GenericField=&documentRender.Id=82257](https://policy.nshealth.ca/Site_Published/NSHA/document_render.aspx?documentRender.IdType=5&documentRender.GenericField=&documentRender.Id=82257)

WASTE CATEGORY AND COLOUR CODE	EXAMPLES
<p style="text-align: center;"><b>Red</b></p> <p style="text-align: center;"><b>Biohazardous Waste - Anatomical</b></p>	<ul style="list-style-type: none"> <li>• Tissues, organs, body parts</li> </ul>
<p style="text-align: center;"><b>Yellow</b></p> <p style="text-align: center;"><b>Biohazardous Waste - Fluid</b></p>	<ul style="list-style-type: none"> <li>• Blood, body fluids and other materials that will release liquid or semi-liquid blood if compressed (i.e., soaked PPE and towels)</li> <li>• Plastic specimen bags with patient labels or biohazard labels</li> </ul>
<p style="text-align: center;"><b>Black</b></p> <p style="text-align: center;"><b>General Waste</b></p>	<ul style="list-style-type: none"> <li>• Incontinent pads, PPE, tubing, catheters, unlabeled empty specimen containers, lab coats and aprons</li> <li>• Materials that will not release liquid or semi-liquid blood if compressed</li> </ul>
<p style="text-align: center;"><b>Clear</b></p> <p style="text-align: center;"><b>Recycling</b></p>	<ul style="list-style-type: none"> <li>• Clean plastic bags without patient labels and/or biohazard label</li> <li>• HE 660 plastics with masked chemical label</li> <li>• Printmate sleeves</li> </ul>

## WASTE MANAGEMENT CHECKLIST

- Recycle batteries and printer cartridges.
- Print only when necessary, and then double sided and in black and white if possible.
- Use chlorine-free paper with recycled content.
- Use suppliers' take-back programs.
- Reuse or recycle gel packs or use to fill empty space in freezers.
- Follow lab guidelines for safe disposal of toxic chemicals.
- Reuse packaging material for shipping of consults and movement of case material within the Department.
- Unused patient labels can be disposed of in a shredder.
- Unused paraffin microtomy tissue ribbons can be disposed of in general waste rather than in biohazardous waste.
- Reuse microtome blades used to cut blocks for molecular testing for routine cutting.
- Plastic containers slated for disposal or cardboard containers with double yellow bag lining and labeled "SHARPS" can be used for discard of histology slides.
- Recycle solvents, including formalin, xylene, and alcohol.
- Follow retention guidelines by discarding specimens retained beyond the required periods.
- Use IHC antibodies beyond their expiration date when appropriate by following the AP Expired IHC Antibody Use Procedure.
- Use PPE only when needed and use reusable PPE if possible.
- Use gloves only when needed and discard in general garbage, rather than biohazardous waste, unless indicated.

## ENERGY CONSERVATION CHECKLIST

- Fume hoods
  - Shut the sash in fume hoods and biosafety cabinets.
  - Turn off the light when not in use.
- Cold storage
  - Regularly maintain, clean, including the coil at the back, and defrost.
  - Maintain a record of inventory.
  - Discard unnecessary samples.

- Lab equipment
  - Turn off when not in use.
  - Use timers where needed.
  - Turn off cryostats when not in use.
  - Turn off incubators when not in use, using a timer if needed.
  - Ensure water baths for cutting and ovens for drying slides are set at the optimal temperature.
- Other actions
  - Turn off lights at the end of the day.
  - Turn off computers or put them to sleep when not in use.

## **WATER CONSERVATION CHECKLIST**

- Promptly repair leaky faucets or leaks from equipment.
- Close taps when not in use.
- Use the appropriate water purity level for the job.

## **PROCUREMENT AND ASSET MANAGEMENT CHECKLIST**

- Maintain the inventory of lab supplies and consumables and check your inventory before purchasing.
- Adopt a first in, first out system so that older supplies are used first.
- Determine if the item can be borrowed from or shared with another lab.
- Consolidate orders.
- Source from local generic suppliers, rather than remotely from medical suppliers if possible.

## **SUSTAINABLE EVENTS CHECKLIST**

When hosting an event, follow the sustainable event checklist available from the Dalhousie Office of Sustainability.

## EDUCATION CHECKLIST

AP includes sustainability education in:

- Orientation of new staff.
- Periodic mandatory online staff education.
- Lunch and learn sessions.
- Bulletin boards.
- Recommending optional online sustainability educational resources are available from these groups:
  - CASCADES: [Integrating Environmental Sustainability into Clinical Laboratories Playbook](#)
  - CASCADES: [Sustainable AP Playbook](#)
  - McGill Sustainable Labs: <https://www.mcgill.ca/sustainability/engage/lab-certification/sustainable-labs-guide>
  - Canadian Coalition for Green Healthcare. [Environmental Stewardship: An implementation guide for boards, executive leaders, and clinical staff](#)
  - Canadian Association of Physicians for the Environment (CAPE)
  - CAP-ACP Environment Special Interest Group:
    - The CAP-ACP offers an annual Green Lab Award. [The Green Lab Award](#) recognizes a Canadian laboratory for an impactful initiative or series of initiatives reducing material waste in the laboratory. The recipient laboratory presents their initiatives at the Green Lab Symposium during the week in the following April that includes April 22, Earth Day.
  - [My Green Lab](#)
  - My Green Lab [Accredited Professional Program on Lab Sustainability](#)

## ACKNOWLEDGEMENTS

### Authors:

- Laurette Geldenhuys, MBBCH FFPATH MMED FRCPC MAEd, Professor, Dalhousie University, Nephropathologist, Nova Scotia Health
- Maxine Adams-Small, Quality Technical Specialist, Anatomical Pathology, Nova Scotia Health
- Gillian Bethune, MD FRCPC, Associate Professor, Dalhousie University, Pathologist, Nova Scotia Health
- Syndy Leblanc, Histology Supervisor, Anatomical Pathology, Nova Scotia Health

### Design:

- Shugri Nour, Clinical Specialties Associate, CASCADES