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REVIEW

Climate change and gastroenterology: urgent action for planetary and digestive health

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The World Health Organization (WHO) has declared climate change the single biggest threat to humanity.[1] Climate change represents a major global health challenge that affects gastrointestinal (GI) disease patterns, healthcare delivery, and health system sustainability. Healthcare and gastroenterology contribute significantly to greenhouse gas emissions and environmental degradation.[2] Endoscopy, in particular, is a high-waste, resource-intensive domain. This article reviews the relationship between climate and digestive health and proposes simple implementable strategies for healthcare workers to reduce their environmental impact while maintaining high standards of clinical care. Strategies draw upon guidance from the World Gastroenterology Organisation (WGO), the British Society of Gastroenterology (BSG), and the American Gastroenterological Association (AGA).[3-5]

Keywords: climate change, healthcare, gastrointestinal

Introduction

Climate change is widely recognised as the greatest health threat of the 21st century. It alters disease patterns, impairs food systems, increases vector- and waterborne diseases, and exacerbates chronic conditions, including GI diseases, across populations. Paradoxically, healthcare itself contributes substantially to climate change. The sector accounts for approximately 4.4% of global net greenhouse gas emissions. Endoscopy and GI procedures are particularly implicated by energy consumption, reprocessing demands, single-use devices, and waste generation.

Professional societies are increasingly emphasising sustainability. The WGO highlighted the need for climate action in gastroenterology, including reducing non-recyclable waste and supporting education. The BSG adopted a climate change and sustainability strategy embedded within its activities and clinical guidance. The AGA, as part of a multisociety task force, developed a strategic plan to promote environmentally sustainable GI practices. In 2025, the South African Gastroenterology Society (SAGES) established a sub-committee dedicated to climate change to raise awareness among our members and other healthcare workers. SAGES aims to educate GI healthcare workers regarding implementable actions that can mitigate and, more importantly, reduce our impact on our precious planet.

How climate change affects gastroenterology

Climate change can influence GI health through several mechanisms:

- Altered food safety and nutrition: warmer temperatures increase bacterial growth and the risk of foodborne illness.
- Water scarcity and contamination: changes in rainfall and water quality increase the risk of waterborne infections.
- Shifts in disease distribution: heat stress and air pollution may affect inflammatory and chronic GI disorders.

Why gastroenterology must act

Climate mitigation in gastroenterology not only aids planetary health but also improves public health outcomes. Healthcare's environmental impact directly contributes to the climate crisis. In gastroenterology:

- Endoscopy services are among the highest producers of hazardous clinical waste in hospitals.
- Single-use plastics and high-energy sterilisation procedures contribute to waste and emissions.
- Patient and staff travel adds to the carbon footprint of routine care.

Practical, implementable strategies for healthcare workers

The following interventions align with recommendations from the WGO, BSG, and AGA strategic documents to reduce endoscopy and clinical practice carbon footprints.

Prioritise procedure appropriateness:

- Adopt evidence-based guidelines (e.g. SAGES dyspepsia guidelines) to avoid unnecessary endoscopic procedures (especially in patients aged < 45 years), reducing emissions and waste. Precision diagnostic tools can support this (e.g. advanced imaging, such as intestinal ultrasound).
- Use non-invasive alternatives when clinically appropriate to reduce procedural burden (e.g. faecal biomarkers for inflammatory bowel disease).

Optimise energy use:

- Ask facility management about energy-efficient devices and lighting in procedure rooms.
- Turn off equipment when not in use and optimise scheduling to reduce idle energy consumption.

Waste segregation and reduction:

- Separate general waste from recyclable and biohazard waste at the point of use.
- When safe and evidence-based, prefer reusable instruments over single-use alternatives.

Support green procurement:

- Advocate for lower-impact consumables and packaging with suppliers.
- Clinicians can influence purchasing decisions by prioritising sustainability in product evaluation.

Education and cultural change:

- Integrate climate and sustainability training into staff education programmes (e.g. educating nurses, technicians, and other physicians). Doctors should be role models.
- Use initiatives like the free AGA Quality Improvement (QI) Climate Change Programme to build quality-improvement skills aligned with environmental goals.
- Display reminders about waste sorting and energy conservation in workspaces.

Patient-centred sustainability:

- When appropriate, discuss telemedicine options for follow-up to reduce travel-related emissions.
- Provide patients with guidance on lifestyle factors (diet and physical activity) that support both digestive health and planetary health.

Unit-level quality improvement projects:

- Participate in sustainability challenges (such as the United Kingdom-based Green Gastroenterology Challenge) to implement and monitor environmental improvements locally.
- Collect unit data on waste and energy use to identify areas for targeted improvements.

Research and advocacy

Professional societies play essential roles in setting policy, supporting evidence generation, and advocating for systemic change. Healthcare workers should contribute and advocate for more research on:

- Measuring the true carbon footprints of GI procedures.
- Innovations in reusable technologies and low-impact clinical workflows.

Conclusion

Climate change is both a threat to digestive health and a consequence of healthcare operations. Gastroenterology professionals have an ethical and clinical imperative to reduce environmental impact whilst delivering high-quality care. By adopting simple practical changes, such as reducing unnecessary procedures, optimising energy and waste practices, engaging in education and quality improvement, and advocating within professional societies, healthcare workers can meaningfully contribute to sustainability and planetary health. Gastroenterologists in South Africa are well-positioned to lead in mitigating climate change and serve as role models for colleagues in healthcare.

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