

Review

A greener gastroenterology service in a greener NHS

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ABSTRACT

The current climate crisis is the biggest risk to health in recent years. As a result the National Health Service (NHS) has a commitment to reduce carbon emissions to net zero by 2040. As healthcare professionals in Gastroenterology, we have a responsibility to ensure that our services are sustainable. By making changes to practice and re-examine the way we deliver patient care, we can safeguard a greener NHS for future generations.

BACKGROUND

The National Health Service (NHS) contributes around 4%–5% of total UK carbon emissions and the NHS in England alone is responsible for 40% of the public sector's emissions.¹ In October 2020, the NHS became the world's first health service for committing to reduce carbon emissions to net zero by 2040. This was in response to the profound and growing threat to health posed by climate change. This has the aim of setting out two evidence-based targets:

- ▶ The NHS Carbon Footprint: for the emissions we control directly net zero by 2040.
- ▶ The NHS Carbon Footprint Plus: for the emissions we can influence net zero by 2045.²

To prioritise as to what is sustainable, researchers, policy-makers and stakeholders must analyse the full and accurate use of resources, in other words the triple bottom line. The triple bottom line of sustainability is a theoretical fundamental framework that suggests sustainability can be achieved by balancing environmental and social outcomes with economic benefits. In healthcare, this means that the sustainable value of a service is determined by measuring the health outcomes against its environmental, social and economic cost and impacts. By considering outcomes for the whole population as well as for patients, sustainable value can be used to drive improvements to

KEY MESSAGES

- ⇒ NHS key points towards net zero
- ⇒ Understanding the impact climate change has on Gastrointestinal health.
- ⇒ Understanding principles of Green Gastroenterology
- ⇒ Key areas for change in Gastroenterology
- ⇒ Impact of sustainable practices
- ⇒ Nursing contribution to sustainable practices

health equity, for example, through allocating resources to people with greater health needs or who are not currently receiving care.³

Gastroenterology is among a group of specialities who have taken to lead to develop sustainable service delivery. Services which include anaesthetics, emergency services and operating departments have made a significant impact on improving and developing sustainable ways of service provision. Given the critical threat that climate change poses to public health, healthcare services have a responsibility to reduce emissions and help safeguard the health of future generations. Furthermore, they have a duty to become expert resources for patients, committees, stakeholders and policy-makers.⁴

GREEN GASTROENTEROLOGY

It is acknowledged that climate change has adverse effects on health, but it has a specific impact on gastrointestinal (GI) and liver disease. The impact can be identified at a global level; this includes a rise in infectious diseases from increased rainfall and flooding, declining fish stocks and human displacement due to rising sea levels and the risk of further pandemics due to the potential risk of transmission of pathogens between wild and domestic animals due to population displacement.⁵ Furthermore, in a recent review of climate change and the impact on GI disease



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suggests that although the impact of climate change on the GI system is undervalued, environmental factors could potentially have an important role in changing the patterns of GI diseases such as inflammatory bowel disease (IBD), functional GI disorders and GI disease cancers.⁶

GI and liver diseases are growing health problems and cause more than 8 million deaths per year worldwide. These include a range of long-term health conditions, such as cancers, reflux disease, *Helicobacter pylori* infection, peptic ulcer disease, liver diseases, IBD, coeliac disease and functional GI disorders.⁷ Therefore, GI diseases are a source of substantial burden and costs, and this burden is likely to continue increasing. From this perspective, endoscopy, gastroenterology and hepatology have a responsibility to ensure that service delivery becomes sustainable and fit for future generations.

GREENER ENDOSCOPY

In the last few years, there has been a drive to improve sustainability within endoscopy departments. The publication of the British Society of Gastroenterology (BSG) Consensus⁸ and European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastroenterology and Endoscopy Nurses and Associates (ESGENA) joint position statement⁹ has made significant progress in advocating the development of greener endoscopy units. Both documents aim to raise awareness of the ecological footprint of GI endoscopy and to provide guidance to reduce its environmental impact in clinical practice, education and research.

As endoscopy is the third highest producer of waste in the NHS,^{10 11} endoscopy services are particularly suited to lead the way with sustainable initiatives due to the amount of packaging, sterile water, disposable instruments and the decontamination used within the service. However, endoscopy services need to actively seek new sustainable initiatives to become more sustainable. To engage with teams to become sustainable, successful change in practice means taking small steps. These would involve making the changes that are easy to achieve by staff members but have significant impact on sustainability, these are termed the 'low hanging fruit'. Some examples of these are successful waste management, double-sided report printing and digital patient information. By taking advantage of the low hanging fruit, our sustainability journey is more likely to be successful.

Endoscopy units in the UK are slowly beginning to embrace the challenge and are keen to employ sustainable initiatives; however, this is a slow process. Embracing the green journey has led to successful implementation of several initiatives. Some of these initiatives are detailed below.

Green champions

In the UK, we have had various successes in our greener endoscopy journey. Many units have now employed a team of Green Champions to help facilitate sustainable strategies. These are enthusiastic team members with a keen interest in sustainability. Their role is the somewhat difficult task of imbedding the initial changes in current practice at the department level. However, this role has been crucial in maintaining momentum and improving green practices.

Waste segregation

Embracing the green journey has led to successful implementation of appropriate waste segregation which is a priority in developing green endoscopy units. The achievement has been made through establishing links with various organisation waste management departments, recycling officers from the local county councils and, importantly, with engagement with the Infection Control Team. With the support of these networks, many units have now completely changed the way they discarded their physical waste and made effective use of domestic, clinical and recycling waste streams.

Whole team collaboration

To generate collaboration with the whole team, adding a Green Endoscopy discussion to the Endoscopy User Group (EUG) as a standing item introduces the concept of sustainability to the wider EUG. It is vital to open channels of communication to ensure that sustainability is one of the key areas of quality practice. It also gave us an opportunity to introduce and ratify new ways of working regarding our greener endoscopy practice.

These are just a few examples that endoscopy services are becoming sustainable; however, there are many other changes being made across the UK.

The BSG and Joint Advisory Group had made a commitment to support and promote the implementation of green endoscopy units¹²; however, more could be done to make some sustainable changes mandatory and embedded in the standards of our endoscopy service provision. By collaborating with each other and sharing good sustainable practices, endoscopy, GI and hepatology services will be leaders in contributing towards NHS net zero targets.

SUSTAINABLE PROCUREMENT

Gastroenterology as a specialty uses many consumables and accessories. Therefore, procurement becomes an important process. Sustainable procurement is defined as a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole-life basis in terms of generating benefits not only to the organisation, but also to society and the economy, while minimising damage to the environment. As the NHS is a

huge organisation, it has a large external impact as a major buyer of goods and services from local, national and international economies and as such has a major opportunity to improve economic, environmental and social sustainability.

STREAMLINING PATIENT PATHWAYS

The environmental impact of the GI patient care extends beyond the endoscopy unit and must be considered throughout the entire care pathway. There are opportunities to mitigate these effects by reducing the number of inappropriate contacts/appointments within the patient of journey that do not add value to patient care. By reducing these inappropriate contacts, it is likely that significant financial savings will be made. An estimated 20% of total healthcare expenditures is deemed wasteful due to overtreatment, lack of coordination and administrative complexity.¹³

It is often said that the appropriate patient selection will have the biggest impact in reducing the carbon footprint in endoscopy. According to a recent study conducted in Italy, Gastroscopy has a carbon footprint of 5.43 kg CO₂ per procedure with colonoscopy at 6.71 kg CO₂ per procedure. The study suggests inappropriate endoscopy accounts for 4133 miles travelled per year which equates to 1 700 446 L of gasoline.¹⁴

VIRTUAL CLINICS

Over the last decade, virtual clinics have been proposed as a convenient and cost-effective way to deliver care. A virtual clinic is a form of telemedicine where contact between clinical teams and patients occur without face-to-face consultation.¹⁵ During COVID-19, these became essential in meeting the demands of service provision and many specialities including gastroenterology embraced this form of patient consultation. With the increasing demand on services, virtual clinics are viable solution for several reasons: they improve patient waiting times by more efficient use of clinic time, there is no reliance on patient punctuality, fewer interruptions to working day and for more sustainable working by reducing miles travelled for both the patient and in some cases the clinician. While there are limitations to patient assessment, this has proven to be a useful form of patient follow-up with the additional benefit of being financially beneficial and more sustainable.

VIRTUAL WARDS

Virtual wards are a rapidly evolving area of healthcare transformation. These allow patients to get hospital-level care at home safely and in familiar surroundings. The model for developing virtual wards began as a method for reducing the impact on hospital beds during COVID-19. Despite the COVID-19 pandemic's immense pressure on health systems, it has been a catalyst for innovation, including the development of virtual wards also known as 'Hospital at Home'.¹⁶

However, now the emphasis is very much on using virtual wards to help hospitals cope with growing demand to beds. The latest NHS England figures for adult general and acute beds show an occupancy rate of around 94%. Virtual wards will be used to help preventing avoidable admissions into hospital or they can support early discharge out of hospital.¹⁷

But do virtual wards offer any benefit with regards to sustainability? Following a review of the current literature, there is very little evidence to support this; however, it could be argued that this type of care offers a more sustainable approach to conventional care in hospital.

NURSING IMPACT ON SUSTAINABLE PRACTICES

Nursing teams are increasingly aware about the impact healthcare has on climate change. As the largest workforce group in healthcare, Nurses are powerful agents of change and can have a significant impact on greener working practices.¹⁸ However, being an advocate for climate change is considered as low priority in the day-to-day priorities for nursing teams. It is also suggested that practising nurses do not readily recognise their role in addressing climate change.¹⁹ Nevertheless, it could be argued that there needs to be an increased awareness of issues and methods that are crucial for the healthcare sector to respond to climate change and more work is needed to clarify this role and bring it into the forefront of every-day nursing practice.

Nursing teams are in a pivotal position to be the catalyst for change and can be the earlier implementors of green strategies and initiatives on wards or departments. Such change requires collaboration between clinical teams and hospital management. Enacting change in cultures and behaviours can be complex and requires a considered approach from the whole multi-disciplinary team.

There is also the notion that involving nurses in improving sustainability in the environment will add to the workload of an already demotivated and depleted profession. However, within gastroenterology, hepatology and endoscopy, small changes in practice can have a significant impact on sustainable working practices without contributing to an increased workload.

Climate change is a complex public health issue that influences every area of nursing practice. Nursing education needs to prepare future nurses to address climate mitigation and adaptation across the life cycle and nursing practice continuum.

CONCLUSION

Climate change is without doubt one of the biggest challenges we face as healthcare professionals. Over the last few years, we have made a significant impact in raising awareness; however, we have a long way to go. There are many initiatives we can do to make a positive impact; however, there needs to be a will from all professional groups within gastroenterology,

endoscopy and hepatology. Collaborative working is one of the key elements for success in our sustainable journey.

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