



Llywodraeth Cymru  
Welsh Government

## CNO PROJECT REPORT

# Sustainability in Nursing: Maximising the nursing contribution to the public sector aim of net-zero by 2030

April 2024



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## Purpose of Document

This report is a primary milestone of the Sustainability in Nursing project. It serves to provide the findings of the project thus far and produce recommendations for consideration by the Chief Nursing Officer to enact within NHS Wales. The report will describe the rationale for this project, the unique role that the nursing professions can play in addressing the challenge and how this can be enacted within NHS Wales organisations.

This report will be presented to the Chief Nursing Officer, followed by the Executive Directors of Nursing for each NHS Wales organisation for consideration, with a view to being implemented within the remainder of the secondment period of the appointed Professional Secondee for Nurse Sustainability.

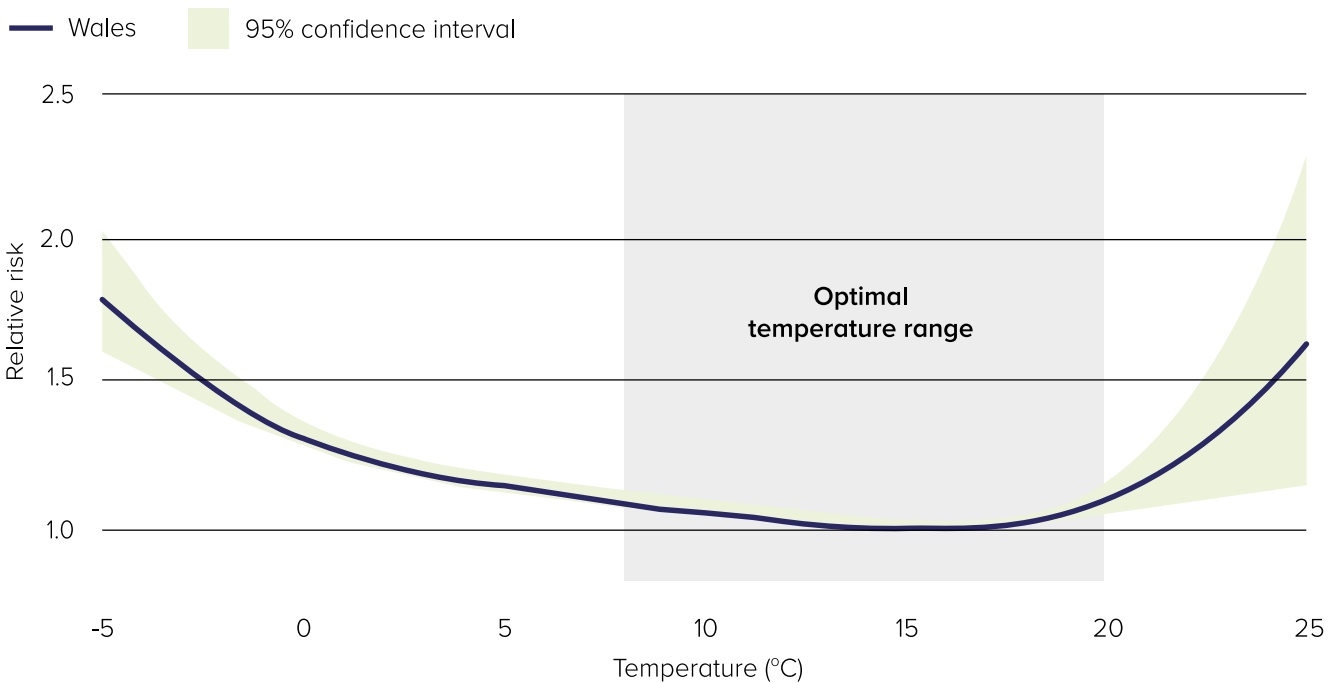
The terms “nurse” and “nursing” are used throughout this document as umbrella terms that include all registered professionals regulated by the Nursing and Midwifery Council (NMC) and support workers who support these professionals.

# The challenge of the climate emergency

The World Health Organisation identified the climate emergency as the singular most urgent global health challenge (WHO, 2021). Climate change is exacerbated by human activity that causes harmful pollutants (greenhouse gases) to be released into the Earth’s atmosphere, which in turn trap heat and have gradually increased Earth’s average temperature (ANA, 2023).

Climate change is currently having a significant effect on human health, with extreme temperatures leading to over 5 million deaths globally, per annum (Zhao *et al*, 2021). The WHO predicts climate change related mortality rate to increase by an additional 250,000 deaths per annum between 2030 and 2050 (WHO, 2018). Extremes of temperature have been linked to an increased mortality risk within Wales (figure 1) and increasing extreme weather events are reflective of a growing risk to human life (ONS, 2023).

Figure 1 – Relative mortality risk related to extreme temperatures in Wales, ONS 2023



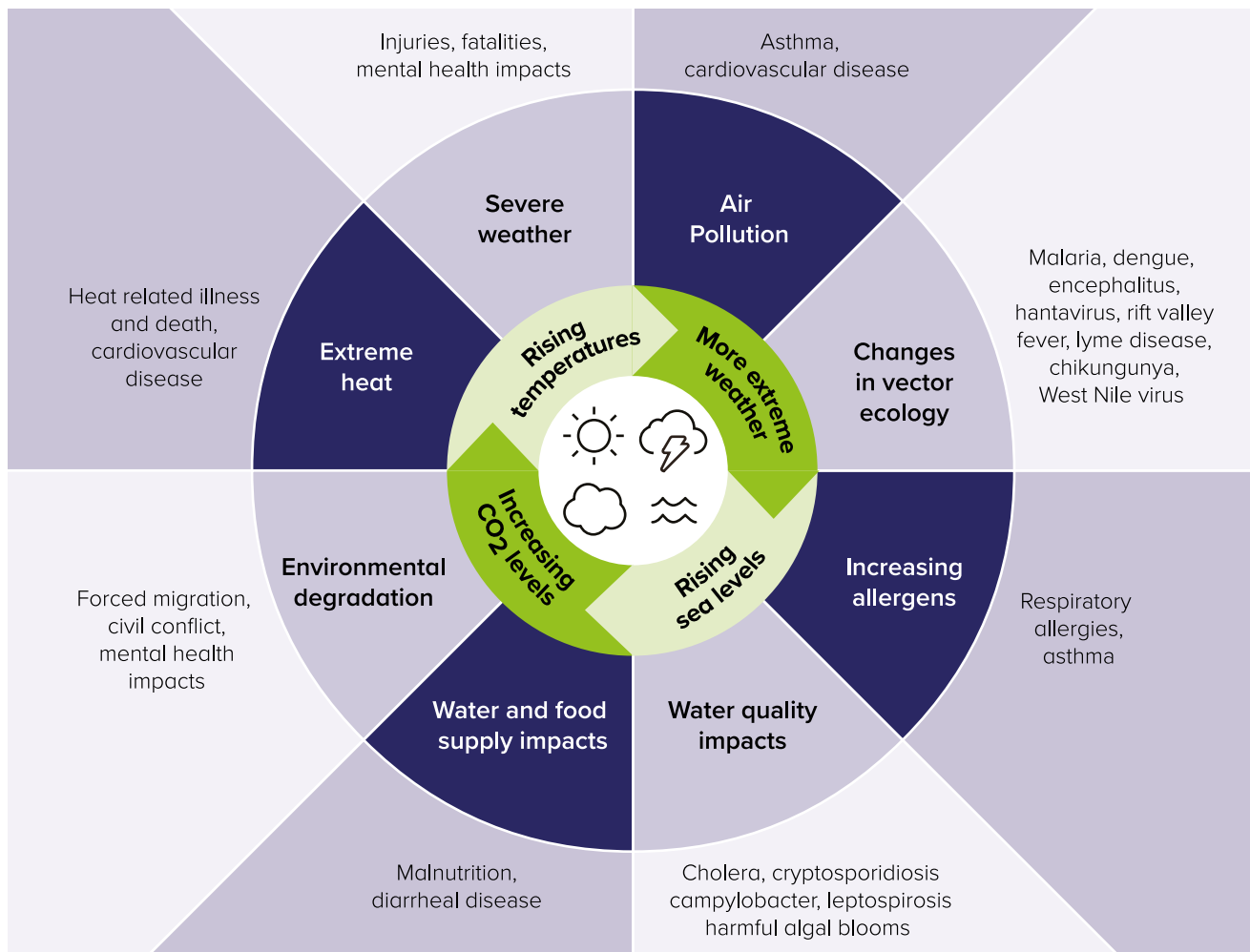


Similarly to other European countries, Wales has seen increasing frequencies of extreme weather events in recent years, resulting in a wide range of environmental impacts such as severe

flooding, wildfires and storms, increasing the risk to health (PHW, 2023). This brings the inevitable risk of adverse health connotations which will require adaptation strategies to minimise this risk.



The wide-ranging health effects that are directly caused by climate change are displayed in Figure 2.

Figure 2 – Ebi *et al*, 2017

With natural disasters occurring at increasingly unprecedented frequencies, the demand on health services will consequently increase rapidly (ACN, 2023). Poor planetary health leads to poor public health, resulting in poor individual patient outcomes, particularly for the most deprived socio-economic populations (Benevolenza and DeRigne, 2019). The prevention and treatment of climate-associated ill-health presents a significant demand for the healthcare sector, which itself is recovering from the COVID-19 global pandemic response.

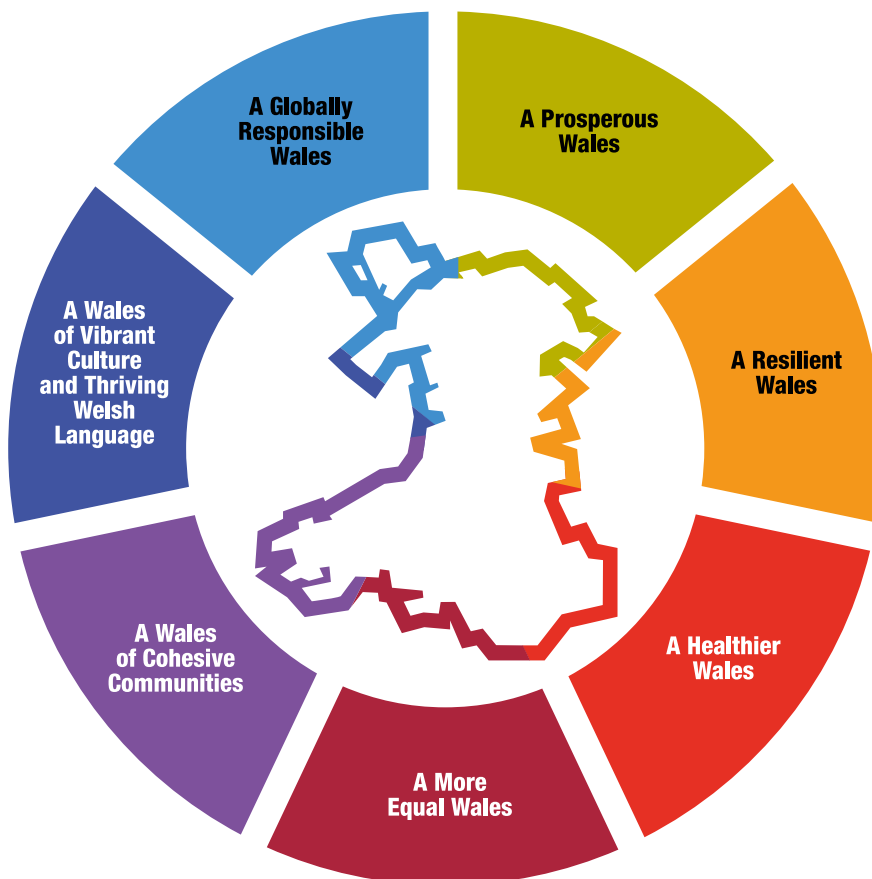
Paradoxically, the healthcare sector is a significant contributor to global carbon emissions. If the healthcare sector were a country, it would be the 5th highest carbon emitting country globally, with the carbon footprint of the healthcare sector equating to 4.4% of global net emissions (HCWH, 2019). This presents a unique dual challenge for the healthcare sector in not only managing the public health connotations of the climate emergency, but also reducing its own significant carbon footprint.

The Paris Agreement (2015), a legally binding international treaty, was established following world leaders' agreement to hold warming below 2 degrees Celsius above pre-industrial levels, and to pursue further efforts to limit warming to 1.5 degrees Celsius above pre-industrial levels (UNFCCC, 2016). However, scientists have reported that warming is likely to surpass the 1.5 degrees Celsius threshold in the early 2030's or sooner (IPCC, 2018).

The Wellbeing of Future Generations (Wales) Act (2015) set out seven goals which aimed to improve the social, economic, environmental and

cultural well-being of Wales. The Act identified climate change as a key threat to the public health of the Welsh population which led to one of the seven goals calling for Wales to become a globally responsible nation (figure 3). The Act placed a duty on public bodies in Wales to carry out sustainable development, with an expectation that public bodies take into account the impact their decisions could have on people living their lives in Wales in the future. The Act is a cornerstone for climate action within Wales which gave rise to further Welsh Government strategies to protect public health.

**Figure 3 – Wellbeing of Future Generations (Wales) Act, 2015**



A Healthier Wales (WG, 2018) reinforced the importance of good public health in Wales, which requires the acknowledgement of climate change as a key driver of public health. This builds on the ambition of the Wellbeing of Future Generations (Wales) Act (2015) in promoting good public health through climate action.

In 2019, the increasing effects of climate change led the minister for Environment, Energy and Rural Affairs in Welsh Government to declare a climate emergency and committed to reaching a carbon neutral public sector in Wales by 2030 (WG, 2019). This followed with the establishment of the Health and Social Care Climate Emergency National Programme in recognition of the significant opportunity for health and social care systems to lead the way on reducing carbon emissions within the public sector.

In 2020, NHS Wales Shared Services Partnership commissioned the Carbon Trust to undertake an assessment of the carbon footprint of NHS Wales based on 2018/19 data (Carbon Trust, 2020). This exercise identified NHS Wales is the biggest public sector carbon emitter with an annual carbon footprint of 1.00 MtCO<sub>2</sub>e – one megatonne of carbon dioxide equivalent (Carbon Trust, 2020). Positively, the assessment exercise demonstrated a 4.8% reduction of carbon emissions by NHS Wales when compared to 2016/17 (Carbon Trust, 2020).

**“NHS Wales is the biggest emitting public sector organisation in Wales with a carbon footprint of over one megatonne of carbon dioxide equivalent per year” (Carbon Trust, 2020)**

In March 2021 the NHS Wales Decarbonisation Strategic Delivery Plan 2021-2030 was published (Carbon Trust, 2021). The plan sets out 46 commitments for delivery by 2025 across NHS Wales’ highest emissions areas including procurement, buildings, land use and transport. This national plan is underpinned by Decarbonisation Action Plans developed and delivered by each NHS Wales organisation. Collectively these plans are a clear mandate for action and these plans are driving increasingly meaningful progress towards decarbonisation within NHS Wales.



# Current position for nursing in Wales

In recognition of the unequivocal positive impact the nursing professions can have on climate action, a dedicated nursing sustainability secondment role has been commissioned within the office of the Chief Nursing Officer to undertake a Sustainability

in Nursing project. Given the financial and time constraints of the project, the scope centred on principle 4 of the principles of sustainable healthcare (figure 4), low carbon alternatives, with the aim of taking forward a priority initiative within the nursing profession.





**Figure 4 – Principles of Sustainable Healthcare (Mortimer, 2010; Centre of Sustainable Healthcare, 2022)**

### 1. PREVENTION

Promoting health and preventing disease by tackling the causes of illnesses and inequalities

### 3. LEAN SERVICE DELIVERY

Streamlining care systems to minimise wasteful activities



### 2. PATIENT SELF-CARE

Empowering patients to take a greater role in managing their own health and healthcare

### 4. LOW CARBON ALTERNATIVES

Prioritising treatments and technologies with a lower environmental impact

Mortimer, F. The Sustainable Physician. Clin Med 10(2). April 1, 2010. D110-111.



The scoping phase of the Sustainability in Nursing project has so far:

- examined the current status of nurse action towards climate change within NHS Wales;
- explored environmental sustainability initiatives that nurses are taking forward or could be taken forward by the nursing professions;
- gained the views of key stakeholders and front-line nurses with what action can be taken.

## Current status of nurse-led climate action in Wales

Health Board led Decarbonisation Action Plans, that are aligned to the NHS Wales Decarbonisation Strategic Delivery Plan (Carbon Trust, 2021), are centred around the primary contributors towards NHS Wales emissions – procurement, buildings and estates and travel. As a result, there are relatively few sections within the Decarbonisation Action Plans that are dedicated to clinical services becoming more environmentally sustainable, and those that are present tend to be focussed around medical gases, pharmaceutical initiatives and asthma inhalers. NHS sustainability has traditionally been viewed as an estates function, focussed on cutting energy use, water and waste (Nash, 2023). As a result of

this, and that a large proponent of initiatives within organisation led Decarbonisation Action Plans do not directly link to nursing services, there is reduced representation of the nursing professions at organisational Decarbonisation Boards. This has contributed to subdued nursing awareness and engagement with the environmental sustainability agenda within each NHS Wales organisations. Many NHS Wales organisations operate a “Green Group” as an informal network of employees with an interest in environmental sustainability. These groups commonly operate with an open invite to health professionals interested in this area. “Green Groups” offer an increased nursing input than the more formal, decision-making Decarbonisation Boards, however there is variation of nursing representation between organisations. Of the nurses who are engaged in their organisation’s decarbonisation agenda, few hold a senior position which presents limited opportunities for decision making or to inspire widespread action on behalf of the professions. The reduced nursing representation at these groups has led to relatively little nurse involvement in environmental sustainability initiatives, with a recent survey of NHS Wales nurses (Appendix 1) demonstrating that only 25% of respondents were directly involved with environmental sustainability initiatives within their organisation.

There is a lack of published evidence of nurses’ attitudes towards climate change, but a recent survey of NHS Wales nurses demonstrated that they recognise that action is required, with 88% of respondents saying they felt their clinical area could be more environmentally sustainable (Appendix 1). However, anecdotal evidence shows that nurses often lack confidence in this area and feel ill equipped to introduce measures that improve the carbon footprint of their clinical area. Training or education for sustainable healthcare is not commonplace within NHS Wales

organisations, although there are developments within this area. For example, Health Education and Improvement Wales offer outsourced climate literacy education that is available to all clinical staff within NHS Wales and Cwm Taf Morgannwg University Health Board have developed an e-learning package “Achieving net zero in Wales”. Commonly, sustainable healthcare training and education offered within NHS Wales is outsourced to external providers, which comes at a financial cost to NHS Wales organisations. Encouragingly, there is a desire from within the nursing professions to learn more about environmentally sustainable healthcare, with 79% of nurses stating they would like to learn more about how healthcare services can support environmental sustainability in a recent NHS Wales survey (Appendix 1).

**88% of nurses within NHS Wales feel their clinical area could be more environmentally sustainable, yet only 25% are currently involved in sustainability initiatives.**

## Nurse-led initiatives

The Sustainability in Nursing project identified a number of valuable nurse-led environmentally sustainable initiatives that had been undertaken globally, with a view to consider applicability to NHS Wales. These initiatives were categorised under the headings of: Infection, Prevention and Control initiatives, waste avoidance/reduction initiatives, medical gas initiatives, lifestyle initiatives and procurement initiatives. Many of the initiatives overlapped into multiple categories, where this happened initiatives were placed in a best-fit category.

The value of sustainable initiatives can be measured using the “triple bottom line” as this captures the three central pillars of sustainable

healthcare: environmental protection, social justice and financial impacts (figure 5).

**Figure 5 – the triple bottom line, Centre of Sustainable Healthcare (2022)**



The triple bottom line methodology was utilised to establish the potential impact of nurse-led sustainability initiatives that were examined as part of the Sustainability in Nursing project. These initiatives are summarised in Appendix 2.



# The role of nurses in tackling the climate emergency

Nurses have a duty to protect and promote public health in the face of threats posed by climate change (RCN, 2019). Their expertise, diverse roles and the trust invested in them by the public mean they can be leaders in protecting the health of the public from the consequences of climate change (RCN, 2019). The collective potential for nurses to change the trajectory of climate action is unparalleled (Butterfield *et al*, 2021).

Nurses are well placed within NHS Wales settings to influence environmentally friendly behaviours within the health sector. Nursing is the largest professional group within NHS Wales, making up 40% of the workforce, with nurses working within the vast majority of clinical settings in NHS Wales.

Climate change is a moral problem and nurses are inherently adept at rationalising and addressing ethical issues within their professional roles. This makes nurses influential allies of the climate emergency response. The unwavering resolve of the professions to protect public health was clearly displayed in the response to the recent COVID-19 pandemic, where nurses were at the forefront of NHS Wales' management and response of this unprecedented event. Frequent discussion and debate of moral issues encourages positive action, and the influence of nurses can play a significant part in encouraging action for all through addressing this moral issue.

**Recommendation – environmentally sustainable healthcare principles must be embedded in nursing operations at all levels to increase awareness and consideration in all areas of practice.**

Nurses are consistently voted by the public as the most trusted profession in the UK (Ipsos, 2022) which places them in an influential position to strengthen climate action within the health sector and with the public and local communities (ACN, 2023). The influence of the nursing professions is far-reaching, with the profession being one of few to resonate with the public and local communities. This allows nurses to effectively engage and promote good environmental behaviours with the public, cementing the importance of environmental sustainability being at the forefront of the nursing consciousness.

The nursing professions possess a strong political voice that can lobby for beneficial change. Nurses are frequently at the forefront of healthcare revolution, and the nursing professions possess all the qualities required to lead the clinical charge towards carbon neutrality. As leaders in healthcare, nurses are responsible to their communities in the advocacy of public health policy that will preserve public health (Turale and Kunaviktikul,



2019), with climate action being a key area in improving the health of our communities. Climate action policy must draw on the collective influence of nurses to mobilise a far-reaching advocate that can champion and drive the healthcare contributions towards a greener future. The climate emergency will not be solved by one profession acting alone (ANA, 2023), therefore the cross-cutting presence of the nursing professions will provide a wide impact on the health and social care system.

Evidence shows that strong nursing representation and leadership in environmental sustainability discussions provides accelerated climate action (Butterfield *et al*, 2021). Nurses must be at the table in discussions and developing strategies relating to environmental sustainability. The focus needs to switch from the longstanding practice of nurses are asked to “help” with climate initiatives to a position where nurses are actively leading the charge towards climate action (Butterfield *et al*, 2021).



# How the nursing professions can make a difference

The nursing professions can make an immeasurable contribution towards reducing the environmental impact of the healthcare sector. These can be summarised into three broad categories:

1. **Empower – through nurse leadership and advocacy**
2. **Educate – giving nurses the skills to act**
3. **Enable – supporting nurses to act.**

## Empower – through nurse leadership and advocacy

Climate change is the biggest challenge facing the nursing profession and this must be reflected through the engagement of senior nursing leaders in organisational decarbonisation boards. The presence and involvement of nurse leaders in climate action accelerates positive environmental outcomes within clinical



areas (Butterfield *et al*, 2021) and will have an empowering effect on the nursing workforce as the presence of senior nurse leaders will demonstrate the gravitas of the climate emergency to the nursing profession.

**Recommendation – the presence of senior nursing figures at NHS Wales decarbonisation boards permits and promotes action from the nursing professions to reduce their environmental impact.**

In addition to visibility, nurse leaders should advocate for climate action within nursing at every opportunity. Nurses should be encouraged to tackle the climate emergency with the same vigour that they show towards patient safety and become champions of sustainability (Frampton, 2023). Advocacy of climate action should include supporting environmentally responsible clinical policies within NHS Wales. Appraisal of the environmental impact of healthcare policies will contribute to the development of practical guidelines that prioritise sustainability, leading to valuable collective action through daily operations.

Leadership of this agenda requires more than just encouraging environmental sustainability initiatives within their services. Nurse leaders should explore ways in which climate consciousness can be threaded through daily operational procedures. This ensures that sustainability is not a competing demand and is a key consideration in all areas of nursing practice. The inclusion of environmental sustainability as a frequent topic of discussion within nursing services raises eco-awareness within the profession and champions action in this area.

## Educate – giving nurses the skills to act

Fostering greener nursing practices begins with education. Nurses are not routinely educated in sustainable healthcare within NHS Wales. This must change for nurses to support environmental practices. Whilst nurses recognise that their services could be more environmentally friendly (Appendix 1), they often lack the confidence to take decisive action with environmental sustainability action. This confidence can grow through the delivery of fundamental education within NHS Wales.

It is recommended that sustainable healthcare education is tiered, so that the appropriate level of education is delivered to the optimal audience. There needs to be an initial focus on building a widespread fundamental knowledge within each NHS Wales organisation to improve climate consciousness and inspire action. The majority of nurses generally do not need to become climate experts, nor should they be expected to, but a baseline knowledge and awareness will ensure action is widespread and meaningful. This can be supplemented through a minority of nurse climate champions, who possess advanced knowledge of how healthcare services can positively contribute to climate change and can initiate and steer sustainability initiatives within NHS Wales organisations.

**A majority of imperfect environmentalists will produce a greater impact than a minority of perfect environmentalists.**

The delivery of training and education to nurses in amongst a demanding job role is challenging, often resulting in nurses needing to cancel or postpone vital education and training due to

time constraints (RCN, 2022). This is an important consideration to maximise the effectiveness of environmental sustainability education. This education should not be an additional burden to nursing staff who struggle to complete the vast array of mandatory training that is required of them. Therefore it is recommended that climate education and awareness is delivered through existing mechanisms and structures and weaved through existing educational delivery.

Of similar importance is the inclusion of environmental sustainability within formal nurse education, at pre-registration nursing degrees and post-registration nursing courses. Integrating environmental sustainability into nursing curricula can raise awareness among student nurses about the impact of healthcare on the environment (ANA, 2023). Our future workforce will be central to future NHS Wales climate efforts, and therefore must possess the fundamental knowledge and skills to allow them to recognise high carbon pathways and challenge this in practice. By incorporating sustainable practices into nurse training, nurses can develop the skills and mindset needed to address environmental challenges in their future careers. Health Education and Improvement Wales are developing a framework to support delivery of training/learning across all professional pathways through pre-registration and post-registration education and training.

## **Enable – supporting nurses to act**

Nurses who deliver direct services to patients at the heart of healthcare systems are best placed to identify processes that require improvement. Therefore, nurse managers must structure the work setting to facilitate nurses' ability to undertake constructive action for improvement (Moran and Johnson, 1992).

Nursing services within NHS Wales are experiencing significant operational pressures resulting from a perfect storm of influencing factors: the COVID-19 pandemic recovery and associated seasonal viral peaks, a significantly high number of nursing vacancies and increasing activity across all NHS Wales services. This presents a significant challenge for nurses to engage with climate change activities. Consequently, strategies to support nursing engagement in these workstreams are required to ensure a greater nursing representation and a louder professional voice in climate action efforts. Including sustainability as part of daily operations ensures that environmental sustainability work is not additional work for nurses, but is a welcome byproduct of daily nursing practice.

It is recommended that a number of enabling mechanisms are collated into an NHS Wales NHS Wales Environmental Sustainability Supporting Strategy to ensure environmental considerations are reflected in wide-reaching areas of nursing practice. This strategy document will guide and support NHS Wales organisations to embed environmental sustainability as a core theme of nursing practice into existing processes within the health board. This will ensure that nurses are exposed to and are making environmental considerations during daily practice.

**Recommendation – develop an NHS Wales Environmental Sustainability Supporting Strategy to guide NHS Wales organisations in embedding sustainability principles into existing operations.**



## Scale and spread of a priority nurse-led sustainability initiative

The engagement phase of the Sustainability in Nursing project set out to examine what decarbonisation initiatives were being driven by nurses globally, with a view to consider how these could be supported and implemented within NHS Wales. A key aim of the project is to support the implementation of a priority initiative across NHS Wales as a vehicle to demonstrate the environmental impact that nursing services can have.

A number of initiatives were discovered during the engagement phase, which have been discussed in Appendix 2.

Experts of environmental sustainability in healthcare were consulted to establish the viability and impact of initiatives. All projects were found to be valuable in their contribution to supporting the professions becoming more environmentally friendly, but due to the constraints of the project, one priority initiative will be progressed.

The prioritisation process considered the following factors:

- The constraints of the project and how this would impact implementation:
  - Time constraints
  - Financial constraints
  - Focus on decarbonisation as a priority principle
- The waste hierarchy (figure 6) as a means of prioritising actions with greater impact.
- The financial implications of the initiative.
- The maturity of the initiative.
- The scalability of the initiative.
- The calculated carbon saving of the initiative (if available).

The financial implications of considered initiatives was an important consideration in the refinement of initiatives. Given the challenging financial position within NHS Wales, any initiatives of substantial financial costs that could not be recouped through savings were not considered as part of this exercise.

In addition to progressing one priority initiative, the remaining initiatives have been refined to produce a list of initiatives that would be valuable in supporting within NHS Wales (Appendix 2). Strategies to support implementation of these initiatives within NHS Wales will be explored by the project lead.

## Initiative selection

Following an assessment of the considered initiatives (Appendix 2) against the criteria identified above, a PPE initiative was selected as the best option to pursue within NHS Wales.

Firstly, it is important to recognise the vital importance of the appropriate use of PPE in clinical settings in reducing the transmission of pathogens. Therefore, this initiative is focused on the prevention of **inappropriate** PPE use i.e. in situations where PPE is not clinically indicated. This includes scenarios such as wearing PPE to take patient observations, writing in nursing documentation, making beds etc. To compound these poor practices, the COVID-19 pandemic and the associated anxiety towards contracting and spreading the virus has exacerbated this issue, leading to overuse of PPE.

PPE initiatives have been carried out in a number of NHS organisations across the UK and have produced multiple benefits. These include an environmental benefit, a social benefit and a demonstrable financial benefit. Additionally, a reduction of inappropriate PPE use has the potential to reduce infection transmission in

clinical settings. The array of benefits associated with this initiative provides a range of incentives and is likely to result in widespread support for adoption, which is key to the success of a scaled initiative.

PPE is widely used by nurses in most clinical settings and is something that nurses in all clinical settings can relate to. Not only does this emphasise the scalability of the initiative, it also demonstrates the value of a PPE initiative given its relevance to the nursing profession. Relating climate action to a commonly used item can drive and support related positive environmental behaviours and create climate consciousness amongst the profession.

There is potential for this initiative to be adopted by other professions within the NHS, of which nurses have close links with as part of the clinical MDT. Using PPE as a vehicle for climate action, nurses can encourage wider greener behaviours through an initiative that other professions can also relate to.



# Recommendations

	Recommendation	Rationale
1	<p>The delivery of a joint position statement from the Heads of Professions in Welsh Government outlining the integral value of clinical engagement in addressing the climate emergency in healthcare settings.</p>	<p><b>Empower – through nurse leadership and advocacy</b></p> <ul style="list-style-type: none"> <li>• Advocacy is at the core of driving systemic, structural, and policy change (Leffers and Butterfield, 2018; Chiu, 2021; Cook et al, 2019).</li> <li>• Act as a call to action for clinicians to advocate for net-zero carbon emissions within NHS Wales by 2030.</li> <li>• A statement from the Heads of Professions will demonstrate the gravitas and urgency of the climate emergency for clinical practitioners across NHS Wales.</li> <li>• Initiate a sense of responsibility and urgency for professionals to act now.</li> </ul>
2	<p>Each NHS Wales organisation to have a visible, responsible nursing lead for environmental sustainability, at a senior level of influence to support, drive and champion the nursing sustainability efforts of their organisation.</p> <p>These nominated individuals must:</p> <ul style="list-style-type: none"> <li>• possess a working knowledge of the climate emergency and be carbon literate</li> <li>• be a visible presence and provide regular updates to their EDON, organisational decarbonisation board and Approach to Healthcare national group</li> <li>• ensure nursing sustainability efforts are clearly demonstrated in their organisation’s decarbonisation action plan</li> <li>• support nursing sustainability champions throughout the organisation.</li> </ul>	<p><b>Empower – through nurse leadership and advocacy</b></p> <ul style="list-style-type: none"> <li>• Nurses in climate emergency leadership roles is linked to accelerated emissions reductions (ACN, 2021).</li> <li>• Senior representation will influence sustainable action in all areas of nursing and will demonstrate the commitment of nursing services to the environmental agenda.</li> <li>• A figurehead will provide nursing direction and leadership for their organisation’s nursing environmental response.</li> <li>• Visible, influential senior nursing representatives will encourage organisational support for nurses to take forward initiatives.</li> </ul>

	Recommendation	Rationale
3	<p><b>Create a climate-aware nursing workforce through embedding the principles of sustainable healthcare within existing clinical training to ensure the delivery of environmental sustainability education:</b></p> <ul style="list-style-type: none"> <li>• <b>Ensure existing training and education packages delivered to nurses are climate-informed through the inclusion of sustainability as a key component of training and education.</b></li> <li>• <b>Promotion of an NHS Wales sustainability awareness video using wide communication channels to raise climate consciousness.</b></li> <li>• <b>Two tiers of eLearning to be available to all, and delivered as part of structured systems:</b> <ul style="list-style-type: none"> <li>– <b>Achieving Net Zero in Wales (as part of a nurse induction programme)</b></li> <li>– <b>Environmental Sustainability in Quality Improvement (as part of QI training).</b></li> </ul> </li> </ul>	<p><b>Educate – giving nurses the skills to act</b></p> <p>Nurses often need to cancel or postpone vital education and training due to time constraints (RCN, 2022), therefore it would be prudent to deliver this within existing offerings.</p> <p>Education within health care settings for the nursing workforce improves the ability of the profession to reduce emissions, manage waste, and respond to the unfolding climate emergency (Ward et al, 2022).</p> <p>Nurses with climate and sustainability knowledge should be embedded in every local health service (ACN, 2023).</p> <p>Whilst pre-registration and post-registration curricula is currently being reviewed for environmental sustainability inclusion, this recommendation would support the existing workforce to be cognisant of the sustainability agenda.</p>



	<b>Recommendation</b>	<b>Rationale</b>
4	<p>The development of an NHS Wales Environmental Sustainability Supporting Strategy to guide and assist NHS Wales organisations to embed environmental sustainability into existing nursing operations.</p> <p>This will include measures such as:</p> <ul style="list-style-type: none"> <li>• ensuring environmental considerations are made as part of nursing policy through the use of environmental impact assessments</li> <li>• the inclusion of environmental sustainability efforts as part of the highest level of organisational ward/team accreditation programs</li> <li>• the inclusion of environmental sustainability metrics as a part of each organisation’s quality improvement methodology.</li> </ul>	<p><b>Enable – supporting nurses to act</b></p> <ul style="list-style-type: none"> <li>• A strategy document will provide standardised methods for NHS Wales organisations to embed climate consideration into daily nursing operations.</li> <li>• This recommendation will support the acknowledgement of environmental sustainability benefits as a by-product of existing workstreams.</li> <li>• A strategy document will provide consistency of approach within NHS Wales.</li> <li>• There is potential for this strategy to become a multi-professional document in order to embed sustainability into clinical practice across NHS Wales.</li> </ul>
5	<p>The creation of a CNO sponsored annual Sustainable Nurse award as part of the NHS Wales Sustainability Awards.</p>	<p><b>Enable – supporting nurses to act</b></p> <ul style="list-style-type: none"> <li>• A dedicated sustainable nurse award is positive reinforcement of nursing sustainability efforts.</li> <li>• This demonstrates the value placed upon nurse-led sustainability efforts by CNO’s office.</li> <li>• The award will inspire further action within NHS Wales or encourage scale and spread of good practice by publicising worthwhile initiatives.</li> </ul>

	Recommendation	Rationale
6	<p><b>The implementation of an “appropriate use of PPE” initiative in each NHS Wales organisation as a driver of decarbonisation efforts for nursing services. This will include:</b></p> <ul style="list-style-type: none"> <li>• <b>Learning from various successful initiatives across the UK.</b></li> <li>• <b>Exploration of a joint initiative with key stakeholders to maximise the impact.</b></li> <li>• <b>The support and leadership of Nurse Sustainability Leads from each organisation.</b></li> <li>• <b>Championing by IPC nurses across Wales.</b></li> </ul>	<ul style="list-style-type: none"> <li>• The aim of this initiative is to prevent inappropriate use of PPE to reduce PPE waste and ensure PPE is only used when clinically required.</li> <li>• Waste avoidance is a high-value strategy for decarbonising nursing services.</li> <li>• This initiative will address pandemic-associated overuse of PPE.</li> <li>• This initiative has demonstrable financial, environmental and social benefits.</li> <li>• This recommendation has the potential to transcend the nursing profession by extending to other professional groups within NHS Wales and the social care sector.</li> </ul>

# Summary

**There is increasing urgency to involve the nursing professions in tackling the climate emergency. As advocates for both patient health and the wellbeing of the planet, nurses can lead the way in transforming healthcare into a sector that values sustainability. Nurses are key allies in supporting behaviour change at scale and pace, which can have a valuable contribution towards a more environmentally responsible sector. However, this requires increased recognition of the challenge, awareness and engagement with climate action to enact change within the nursing professions.**

Immediate action is required from nursing leaders within NHS Wales to ensure nurses are at the table with decarbonisation efforts and to embed reduction strategies at all levels of nursing practice. Climate action must be included in nursing processes to allow for regular and sustained conversations about how the professions can maximise their impact. This ensures that sustainability is not an additional ask, but part of core practice for nurses across NHS Wales.

Nurses must be supported to act in the best interests of the planet. In order to maximise widespread behavioural change and enact the

wide-reaching influence of nurses, endorsement of climate action is required from nursing leaders to permit a nurse-led environmental revolution.

To facilitate this revolution, nurses must be given the tools to enact change. Education and knowledge is the first step in equipping the profession with the fundamental basis to provoke social responsibility. The offer and delivery of a baseline knowledge of environmental sustainability in healthcare needs to become commonplace in NHS Wales organisations. To enact this knowledge into practice, a supporting strategy will help guide NHS Wales organisations in fostering an environment to culture active involvement from their nursing workforce.

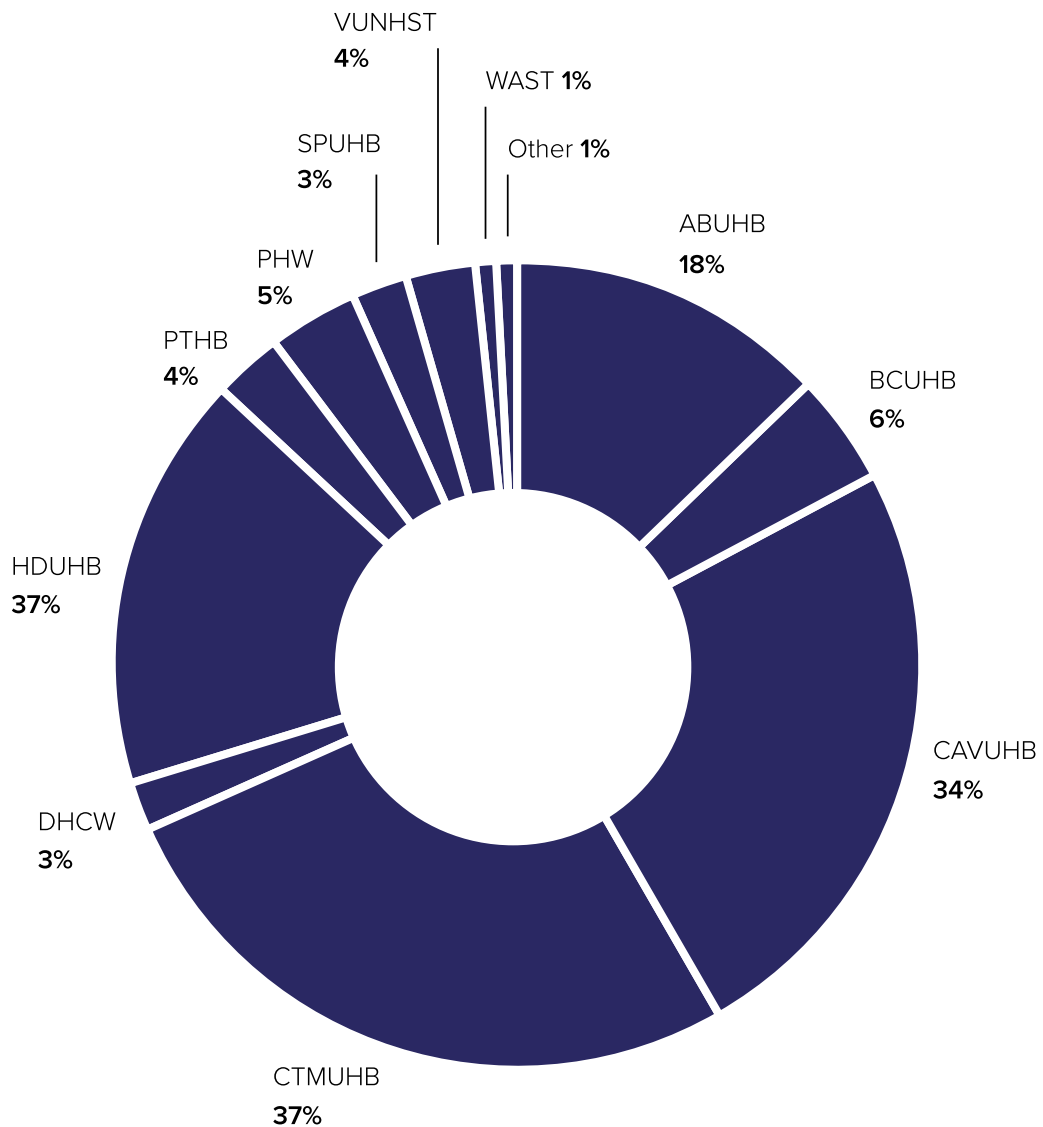
Climate action efforts by nurses must be recognised and positively reinforced as effective population health strategies.

The impact of the nursing professions on environmental sustainability goes beyond patient care; it extends to shaping the future of healthcare delivery. In the ever-evolving landscape of healthcare, the nursing professions stand as a powerful force that can drive positive change towards environmental sustainability.

Appendix 1

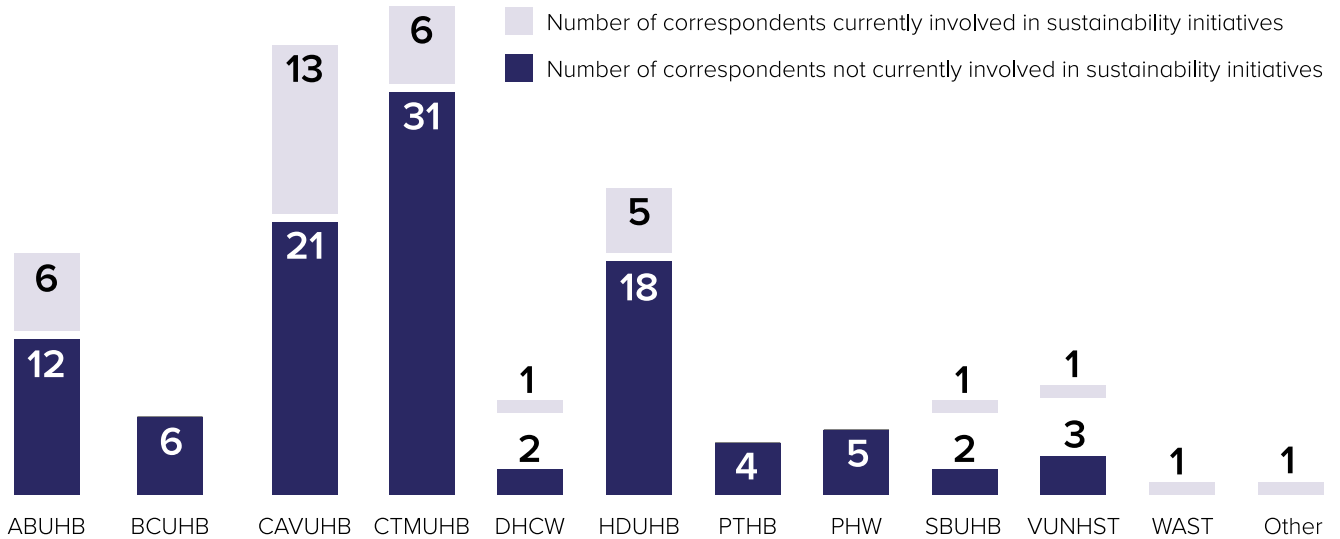
# NHS Wales nursing environmental sustainability survey results

## Spread of respondents from across NHS Wales





### Number of nurses involved in environmental sustainability initiatives

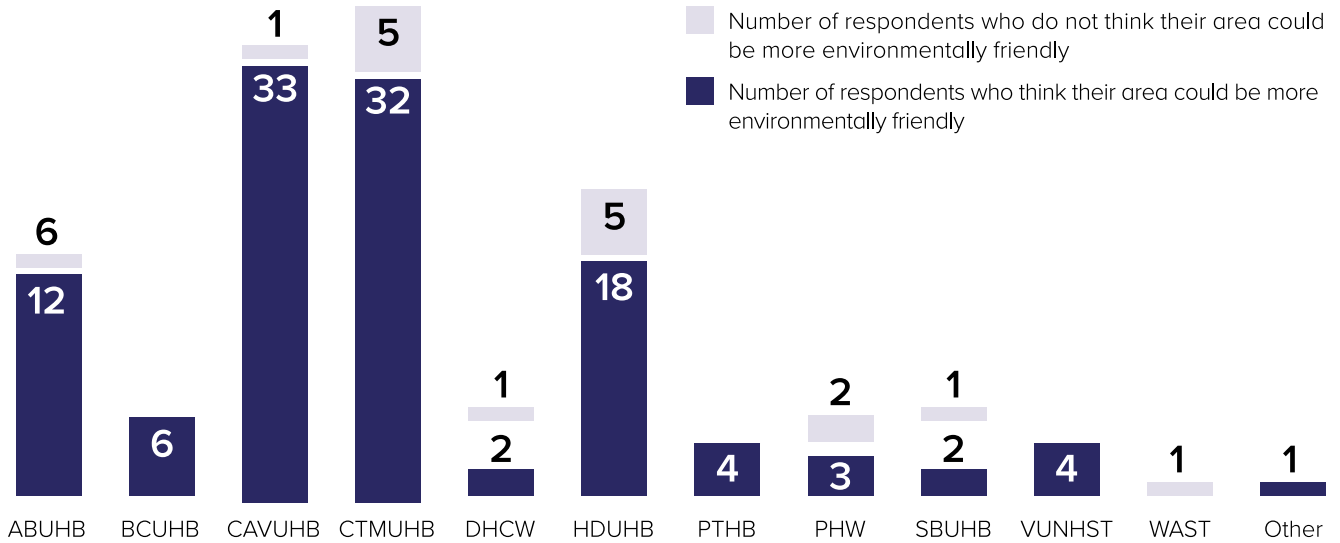


25% of respondents are currently involved in environmental sustainability initiatives.

### Word cloud summary of initiatives that nurses are currently involved with



### Number of nurses who think their clinical area could be more environmentally sustainable

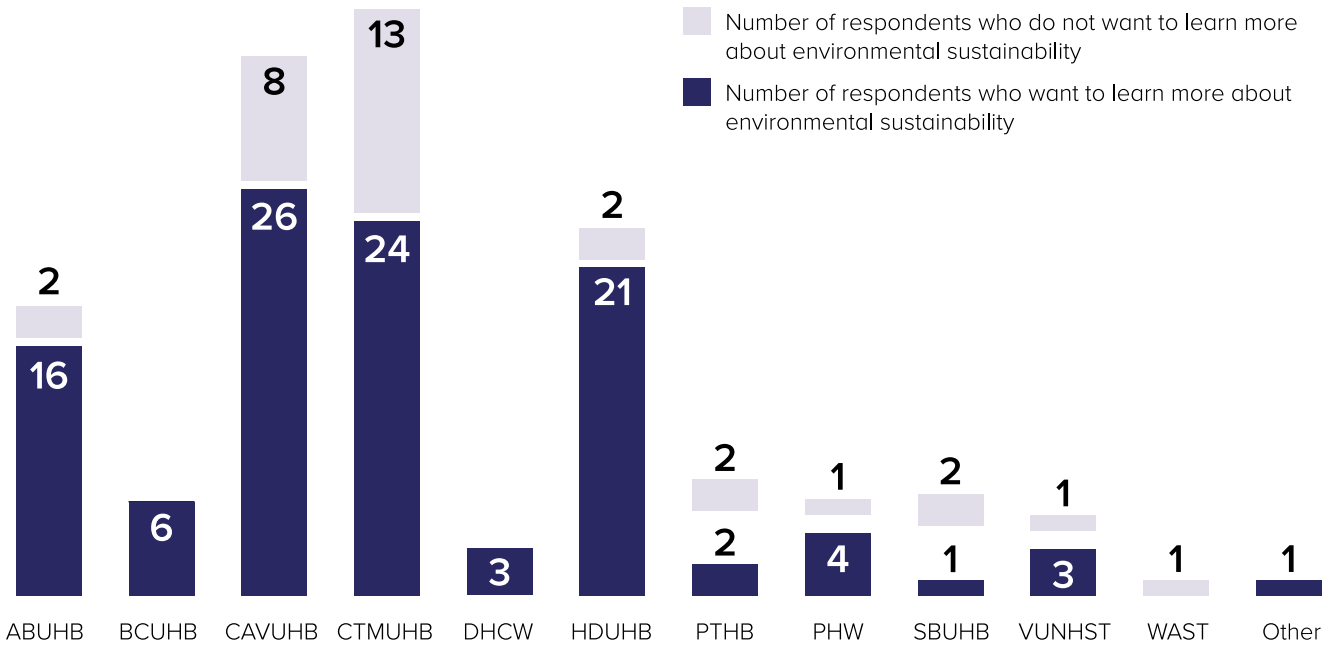


88% of respondents believe their clinical area could be more environmentally friendly.

### Word cloud summary of how respondents thought their area could be more environmentally friendly



### Number of nurses who want to learn more about sustainable healthcare



79% of respondents would like to learn more about environmentally sustainable healthcare.

## Appendix 2

# Priority nurse-led initiatives to support in NHS Wales

## Infection, prevention and control initiatives

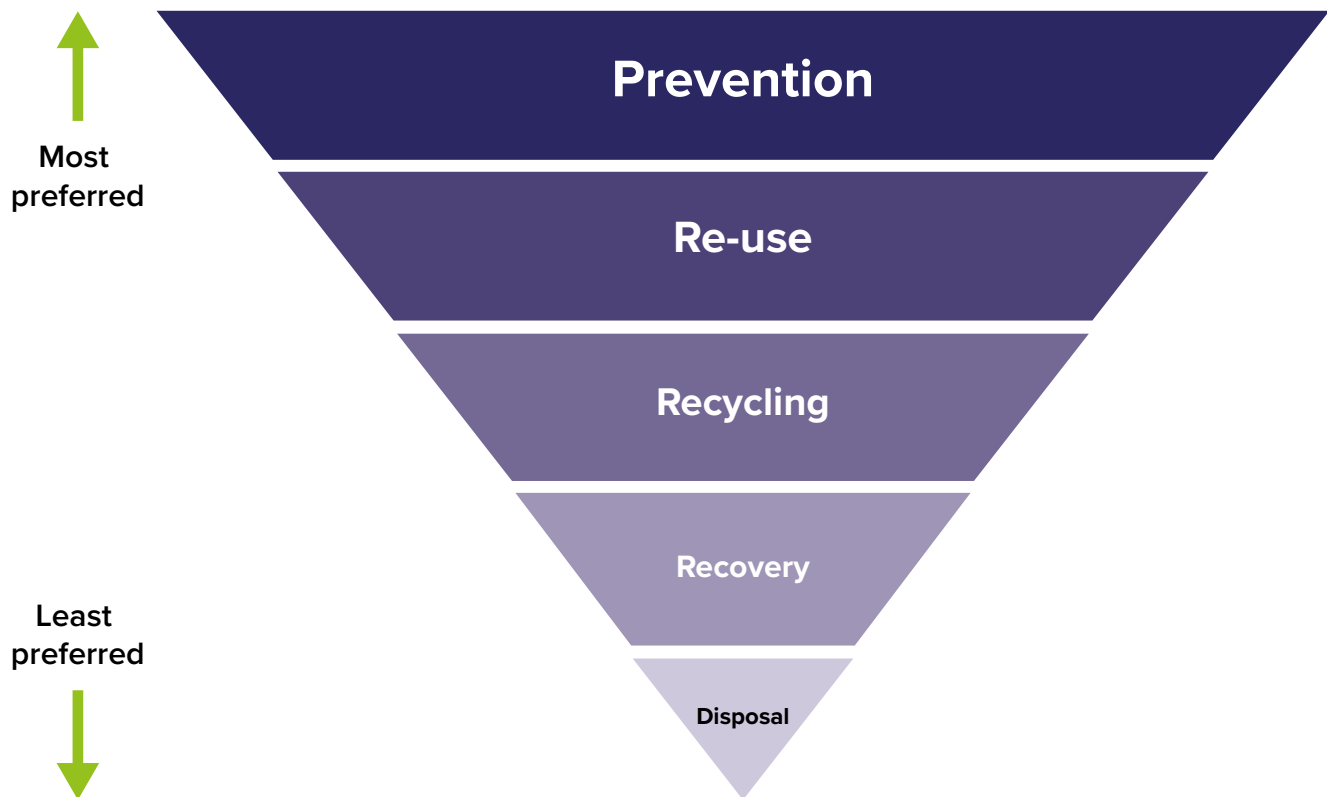
A relatively mature area of environmental sustainability in nursing relates to the reduction of inappropriate PPE use. The best-known example of this is Great Ormond Street Hospital’s “gloves off” project which gave rise to similar initiatives including Northamptonshire NHS Foundation Trust’s “be PPE free!” project. PPE projects have shown to produce clinical, environmental, social and financial benefits to organisations and address the highest priority of the waste hierarchy by reducing the need for equipment that is costly and harmful to the environment. PPE initiatives are a valuable starting point for nursing services in addressing the climate challenge, as nurses in almost all clinical areas can relate to PPE use and there is potential for wider adoption into areas such as social care.

Another area for attention for the infection, prevention and control community is addressing the use of single use, plastic containing wipes that are commonplace throughout the healthcare sector. Whilst single use wipes are convenient to use, the plastic within the wipes is harmful to the environment whether it’s incinerated or ends up in landfill. Work is planned to examine this issue in NHS Wales, and alternative practices should be explored by the nursing workforce at each opportunity.

## Waste avoidance/reduction strategies

Waste avoidance or reduction initiatives are high value given their high preference on the waste hierarchy (figure 6). Producing and using less products will lessen the burden of repurposing or ethical disposal of these products when they reach the end of their lifespan.

Figure 6 – the waste hierarchy, Waste (England and Wales) Regulations, 2011



Simple measures such as ensuring accurate waste segregation can have a positive impact on the carbon footprint of NHS Wales. The correct processing of waste products ensures that items that have the potential to be processed and recycled do not end up in landfill or being incinerated. Improper waste segregation has the potential to undermine other sustainability efforts and therefore must be prioritised as a means of ensuring waste is processed as intended.

Some initiatives have sought to focus on eliminating unnecessary practices from healthcare with many being undertaken through habitual or precautionary practices. These include the cessation of unnecessary cannulation in emergency departments, eliminating unnecessary venepuncture episodes and cessation of couch covers in clinical areas. Eliminating clinical interventions that are not required meet all aspects of the triple bottom line methodology, therefore should be encouraged in all clinical settings within NHS Wales.



A number of initiatives have been designed to encourage the transition from single use items to reusable items. This lessens the disposal burden of single use items and scales down production processes that are harmful to the environment. Examples of this are:

- theatre gowns and drapes that can be processed and reused
- tourniquets that can be disinfected and reused between patients
- the use of reusable parent-provided feeding bottles in neonatal settings
- the use of washable continence products where suitable
- the use of reusable sharps containers.

A number of the above reusable product initiatives have either been piloted within NHS Wales or are currently being piloted within NHS Wales. These are positive steps which could result in national scale and spread.

It is imperative that NHS Wales organisations are fully utilising existing resources to minimise waste and prevent unnecessary purchasing of additional equipment. Schemes that maximise full utilisation of equipment include improving clinical stock management for nursing environments and using stock redistribution systems such as Warp It. Ensuring that clinical areas are rotating clinical stock effectively, redistributing excess of stock, reducing over-ordering of stock are essential methods of managing resources effectively in clinical areas. To support the redistribution of equipment, Warp It is a digital platform that has been successfully used by NHS Wales organisations, and should be considered for scale and spread to maximise these benefits.

For waste that is unavoidably created and cannot be repurposed, ethical disposal of this waste must be maximised. An example of this is a scheme encouraging the recycling of plastic insulin pens by a leading pharmaceutical provider of these devices.

## Medical gas initiatives

Some anaesthetic gases are potent greenhouse gases that have a marked adverse impact on the environment. As an example, nitrous oxide is 300 times more potent than carbon dioxide as a greenhouse gas ([Tian et al, 2020](#)) and is widely used within NHS Wales settings as an anaesthetic and analgesic agent. In recognition of this, there are multiple initiatives being undertaken to reduce the impact of nitrous oxide, including decommissioning nitrous oxide manifolds that are prone to leaking gas into the atmosphere, using destruction units to purify nitrous oxide that escapes into the air, and substituting Entonox with, the more environmentally-friendly, Pentrox for the treatment of acute pain. Additionally, work is being progressed by midwifery services in areas of NHS Wales exploring the impact of disconnecting unused Entonox valves from the bedside, which reduces the likelihood of the valves from leaking nitrous oxide into the clinical area.

## Lifestyle initiatives

Some clinical areas have focussed on initiatives that individuals can carry out in their day-to-day activities that will have a positive environmental benefit. These include a review of commuting arrangements to and from the workplace to reduce road travel, the use of electric vehicles (particularly for community nurses), encouraging staff to switch off electronic devices and heating systems when not being used.

Additionally, the use of digital systems is a popular method of reducing paper consumption, although further work is required to establish the circular environmental impact of digital solutions.

Clinical area-specific initiatives are having a positive impact in this area, namely the Green ED program that is provided by the Royal College of Emergency Medicine that guides emergency departments with incentives that improve the carbon impact of the department.

## Procurement initiatives

The procurement of clinical supplies within NHS Wales has a significant carbon footprint, making up 62% of NHS Wales' total carbon

emissions (Carbon Trust, 2020) and is therefore a high priority for Welsh Government's Health and Social Care Climate Emergency National Programme.

A procurement decision tool has been produced to support nurses in making greener choices when it comes to procuring supplies. Using comparative methods to select a more environmentally product supports informed decision making and ensures that environmental considerations are at the forefront of procurement processes.



Work is underway across Wales to examine procurement processes and how these can be improved.

Category	Initiative
IPC initiatives	Reduction of inappropriate PPE use
	Reduction of single use plastic containing wipes
Waste avoidance/reduction initiatives	Reusable theatre gowns/drapes
	Reusable tourniquets
	Use of parent provided feeding bottles for neonates
	Recycling of plastic insulin pens
	Optimal stock management of clinical areas
	Organisational resource redistribution
	Washable continence products
	Avoiding unnecessary cannulation in ED
	Reducing unnecessary phlebotomy
	Continence product recycling
	Reusable sharps containers
	Optimal waste segregation
	Couch cover reduction for clinical settings
Medical gas initiatives	Entonox reduction through valve disconnection
	Use of pentrox in place of entonox
	Leak prevention of nitrous oxide manifolds
Lifestyle initiatives	Increased electric vehicle use for community staff
	Use of electronic patient information leaflets
	The “Green ED” program by RCEM
Procurement initiatives	Green nurse procurement tool

# References

American Nurses' Association (2023)

**Nurses' Role in Addressing Global Climate Change, Climate Justice, and Health**

Australian College of Nursing (2023)

**The Nursing Response to the Climate Emergency – a white paper by ACN 2023.** Canberra: ACN

Benevolenza, M.A., DeRigne, L. (2019)

**“The impact of climate change and natural disasters on vulnerable populations: A systematic review of literature”**, *Journal of Human Behavior in the Social Environment*, 29:2, pp. 266-281

Butterfield, P., Leffers, J., Vásquez, M.D. (2021)

**“Nursing’s pivotal role in global climate action”**, *BMJ*, 373, n1409

Carbon Trust (2020) *NHS Wales Carbon Footprint 2018/19.*

Available at: [nhs-wales-carbon-footprint-2018–19.pdf \(gov.wales\)](#)

Carbon Trust (2021) *NHS Wales Decarbonisation Strategic Delivery Plan 2021–2030.*

Available at: [NHS Wales Decarbonisation Strategic Delivery Plan \(gov.wales\)](#)

Centre of Sustainable Healthcare (2022) *Sustainability in Quality Improvement (SusQI).*

Available at: [Sustainability in Quality Improvement \(SusQI\) | Centre for Sustainable Healthcare](#)

Chiu, P. (2021) “Advancing Nursing Policy Advocacy Knowledge: A Theoretical Exploration”,

*Advances in Nursing Science*, 44(1), pp. 3-15

Cook, C., Demorest, S., Schenk, E. (2019) “Nurses and Climate Action”, *American Journal of Nursing*,

119(4), pp. 54–60

Ebi, K.L., Hess, J.J., Watkiss, P. (2017) **“Health Risks and Costs of Climate Variability and Change”**,

in Mock C.N., Nugent, R., Kobusingye, O. *et al Injury Prevention and Environmental Health*. 3rd edition.

Washington (DC): The International Bank for Reconstruction and Development/The World Bank

Frampton, L. (2023) **“Upscaling sustainability: nurse leadership key”**, *Clinical Services Journal*,

August 2023 edition, pp. 24–25

Health Care Without Harm (2019) *Health Care’s Climate Footprint – how the health sector contributes to the global climate crisis and opportunities for action.* [Online]

Available at: [Health care climate footprint report | Health Care Without Harm \(noharm-global.org\)](#)

Intergovernmental Panel on Climate Change (2018) **Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.** Cambridge and New York: Cambridge University Press

Ipsos (2022) *Ipsos Veracity Index*. Available at: **Ipsos Veracity Index 2022 | Ipsos**

Leffers, J., Butterfield, P. (2018) “Nurses play essential roles in reducing health problems due to climate change”, *Nursing Outlook*, 66(2), pp. 210-213

Moran, M.J., Johnson, J.E. (1992) “Quality improvement: the nurse’s role”, *American Nurses’ Association Publications*, 1992 Jun:(NP-80 7.5 M), pp. 45-61

Mortimer, F. (2010) “*The Sustainable Physician*”, *Clinical Medicine*, 10(2), D110-D111. In: Centre of Sustainable Healthcare (2022) *Nursing and climate change: How to reduce your environmental impact*. Available at: **Nursing and climate change: How to reduce your environmental impact | Centre for Sustainable Healthcare**

Nash, C. (2023) “It’s not easy being green – a tool for choosing sustainable clinical products”, *Nursing Times*, 119(8)

Office for National Statistics (2023) **Climate-related mortality, England and Wales: 1988 to 2022.** Statistical bulletin

Public Health Wales (2023) *Extreme Weather Events*. Available at: **Extreme Weather Events – Public Health Wales (nhs.wales)**

Royal College of Nursing (2019) *Responding to climate change: RCN position statement*. [Online] Available at: **Responding to climate change**

Royal College of Nursing (2022) *Nursing under unsustainable pressures: staffing for safe and effective care in the UK*. London:RCN

Tian, H., Xu, R., Canadell, J.G., Thompson, R.L., Winiwarter, W. *et al* (2020) “A comprehensive quantification of global nitrous oxide sources and sinks”, *Nature*, 586, pp. 248–256

Turale, S., Kunaviktikul, W. (2019) “**The contribution of nurses to health policy and advocacy requires leaders to provide training and mentorship**”, *International Nursing Review*, 66(3), pp. 302–304

United Nations Framework Convention on Climate Change (2016) **The Paris Agreement**

Ward, A., Heart, D., Richards, C., Bayliss, L.T., Holmes, M., Keogh, S., Best, O. (2022) “Reimagining the role of nursing education in emissions reduction”, *Teaching and Learning in Nursing*, 17(4), pp. 410–416

Waste (England and Wales) Regulations (2011). Available at: **The Waste (England and Wales) Regulations 2011 (legislation.gov.uk)**



Wellbeing of Future Generations (Wales) Act (2015).

Available at: [Well-being of Future Generations \(Wales\) Act 2015 \(legislation.gov.uk\)](#)

Welsh Government (2018) *A Healthier Wales: our plan for health and social care.*

Available at: [A Healthier Wales \(gov.wales\)](#)

Welsh Government (2019) *Welsh Government makes climate emergency declaration.*

Available at: [Welsh Government makes climate emergency declaration | GOV.WALES](#)

World Health Organisation (2018) **COP24 special report: health and climate change.**

Geneva: World Health Organisation

World Health Organisation (2021) **COP26 special report on climate change and health: the health argument for climate action.** Geneva: World Health Organisation

Zhao, Q., Guo, T., Ye, T., Gasparri, A., Tong, S., Overcenco, A. et al (2021) **“Global, regional, and national burden of mortality associated with non-optimal ambient temperatures from 2000 to 2019: a three-stage modelling study”**, *The Lancet*, 5(7), pp. E415-E425