Comisiwn Bevan Commission

Case Study Compendium

As part of the Let's Not Waste programme, the Bevan Commission has brought together a range of tried and tested examples of how to reduce waste across health and care in Wales.

These case studies provide a useful resource for others to learn from, adapt and apply to different local contexts. The adoption and spread of these innovative examples of practice will be critical to help ensure we reduce waste in all its forms across health and care in Wales. We must all work together to ensure we have a sustainable health and care system that is fit for the future - our future.

EXECUTIVE SUMMARY: THE CASE FOR CHANGE

The compendium of Let's Not Waste case studies brings together a wide range of diverse initiatives within Wales's health and care sector with a unified goal: reducing carbon emissions, fostering sustainability, improving efficiency, and enhancing patient well-being.

One pivotal takeaway from this comprehensive collection is the recognition of health and care facilities as vital anchor institutions within their communities. Embodied in initiatives like the 'NHS Forest Programme', healthcare sites go beyond their traditional role by transforming green spaces into vibrant ecosystems for people to enjoy whilst promoting their physical and mental well-being.

The compendium also highlights the importance of behavioural interventions in driving sustainable practices across health and care teams. The NHS Green Bees project, drawing on principles of behavioural psychology, showcases how simple yet targeted initiatives can yield substantial environmental and cost-saving outcomes. By empowering individuals to embrace sustainable behaviours, such as reducing car miles and recycling, these projects catalyse a culture of eco-consciousness within healthcare settings. Through collective action and shared responsibility, health and care professionals become champions of environmental sustainability, driving tangible change at both the individual and organisational levels, creating movements for change from within.

Beyond behavioural shifts, the compendium delves into innovative approaches to infrastructure and resource management, showcasing how healthcare organisations are reimagining conventional practices to mitigate their environmental footprint. Initiatives like the installation of air source heat pumps and the adoption of reusable sharps containers exemplify this transformative mindset. By leveraging cutting-edge technology and forging strategic partnerships, healthcare facilities not only reduce their carbon emissions but also pioneer sustainable solutions that have far-reaching implications. These initiatives serve as beacons of inspiration, setting new standards for low-carbon heating systems and waste management practices within the health and care industry.

Moreover, the compendium underscores the pivotal role of sustainable procurement practices in driving environmental sustainability across health and care supply chains. Through initiatives like the 'Warp It' platform for asset reuse, health and care organisations unlock the latent potential of collaborative platforms to optimise resource utilisation and minimise waste generation. By repurposing unused assets and fostering a culture of circularity, these initiatives not only yield substantial cost savings, but also foster a culture of environmental responsibility and resource stewardship.

The transformative potential of sustainability initiatives extends far beyond infrastructure and resource management; it permeates every aspect of clinical practice and patient care. Initiatives such as transitioning from intravenous to oral medication administration and implementing lean and green principles in surgical procedures demonstrate how healthcare organisations are integrating sustainability principles into core clinical practices.

EXECUTIVE SUMMARY: THE CASE FOR CHANGE

These initiatives not only enhance patient outcomes, clinical and financial efficiency, but also align with broader environmental sustainability goals and highlight the interplay between healthcare practices and environmental stewardship.

Initiatives such as the Green Endoscopy Programme and the Greener Primary Care framework and award scheme underscore the importance of holistic sustainability strategies within healthcare delivery. By embracing sustainability principles at every touchpoint, health and care organisations pave the way for a future where environmental responsibility and patient care are intertwined seamlessly.

Ultimately, the compendium serves as a testament to the transformative power of collective action and innovation from people within the system. This drives positive environmental impact within the health and care sector offering valuable insights and best practices for organisations embarking on their sustainability journey.

Now it's your turn to put these ideas into action in healthcare, making real changes that benefit patients and the environment. What can you do today?

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Case Studies

CASE STUDY 01

A PLAN TO HELP PROTECT THE PLANET

Health Education and Improvement Wales

Key Words

Climate change | Biodiversity | Decarbonisation | Greenhouse Gases | Environmental Sustainability | Carbon Reduction | Net Zero | Sustainable

Summary

This initiative comes after the publication of HEIW's Biodiversity and Decarbonisation Strategy 2021-2024 which was intended to help HEIW staff and others to take positive steps to make changes in their working and personal lives. It also supports the Welsh Government's NHS Wales Decarbonisation Strategic Delivery Plan launched in March 2021.

Approach

In line with legislation and national plans, HEIW's strategy focuses on four key areas of action including engaging and supporting staff, sustainable procurement, developing their office 'Tŷ Dysgu' and environmental sustainability.

'Engaging and supporting staff' refers to involving staff in the development of the strategy and in the adoption of new initiatives, including those focusing on biodiversity and decarbonisation. 'Sustainable procurement' relates to ensuring the supplies used in Tŷ Dysgu are sustainably sourced, such as made from reused, recycled or biodegradable materials. 'Developing Tŷ Dysgu' refers to considering opportunities to enhance biodiversity on the site and ensuring the environmental sustainability of the building in terms of carbon efficiency. Two of the aims for Tŷ Dysgu are to 1) make more recycling options available to staff, including allowing staff to bring in recycling from home and 2) having more plants in the grounds and in the office itself. 'Environmental sustainability' refers to monitoring and reducing HEIW's carbon footprint in line with Welsh Government's ambition for a net-zero public sector by 2030. Possibilities include installing solar panels, improving heating and cooling systems, and installing electrical vehicle charging points.

Outcomes and Impact

HEIW have been able to install LED lighting in Tŷ Dysgu, use green electricity, develop a recycling scheme and diverted 100% of their waste away from landfill. Staff and stakeholders are also being provided with information on how they can make a difference.

The ongoing efforts on the site demonstrate tangible progress towards environmental sustainability. Staff and stakeholders have been provided with information regarding their contributions to waste reduction and decarbonisation efforts, thereby contributing to an ongoing effort to change behaviours and promote sustainable best practice. Specific data on cost and carbon savings would provide further information.

Next Steps

HEIW are actively working towards the Welsh Government's ambition for a net zero carbon public sector in Wales by 2030.

To advance sustainability efforts, prioritising data collection to quantify cost savings and carbon reductions can provide valuable insights into the effectiveness of sustainability initiatives. Conducting a cost-benefit analysis to assess financial implications can help in making informed decisions about resource allocation. Furthermore, actively engaging staff and stakeholders through awareness campaigns and incentives is crucial for fostering a culture of sustainability. Exploring expansion opportunities and establishing robust monitoring mechanisms can enhance the effectiveness of sustainability efforts over time. Embracing a culture of continuous improvement by regularly reviewing and refining strategies based on feedback is essential for long-term success. Finally, participating in knowledge-sharing networks and collaborating with other organisations can accelerate progress towards achieving carbon neutrality and environmental stewardship goals. These actions collectively contribute to advancing sustainability efforts and driving positive change within organisations.

Further Information

https://heiw.nhs.wales/news/a-plan-to-help-protect-the-planet/

https://heiw.nhs.wales/files/heiws-biodiversity-and-decarbonisation-strategy-2021-24/

https://www.gov.wales/nhs-wales-decarbonisation-strategic-delivery-plan

https://www.nhsconfed.org/publications/how-nhs-wales-responding-climate-emergency

CASE STUDY 02

DIVERTING NAPPY AND INCONTINENCE WASTE FROM DEEP LANDFILL TO THE RECYCLING WASTE STREAM

Hywel Dda University Health Board

Key Words

Recycling | Special Care | Reduce Carbon Emissions | Disposable Nappies | Waste Stream | Behavioural Change | Collaboration

Summary

Hywel Dda University Health Board (HDUHB) s committed to improving recycling rates in line with the regulatory requirements facing all NHS Wales Health Boards. To achieve this, a Waste Strategy has been produced which is committed to meeting the annual targets aligned to the Welsh government targets of 70% of all waste to be recycled, and a maximum level of 5% landfill and 30% waste to energy to be achieved by 2030.

An initiative by the Environment Team at HDUHB has been created to help recycle disposable nappies and incontinence waste. They are piloting the programme with the Special Care Baby Unit at Glangwili General Hospital with the goal of expanding across the health board.

The initiative aims to trial nappy and incontinence waste recycling at departmental level in the Special Care Baby Unit (SCBU) and demonstrate that introducing nappy and incontinence waste recycling across HBUHB could increase overall recycling rates, reduce clinical waste figures and carbon emissions from waste disposal, and improve staff and patient awareness of greener disposal options.

Approach

The team began by reviewing and understanding current waste stream volumes using historical health board wide waste figures. Then, ensured the proposed changes would meet legislative requirements as per Natural Resource Wales and worked with the health board Infection Prevention Control team to ensure that the change to process would not compromise clinical standards to ensure continued compliance.

Purple bags were supplied to the SCBU team to trial the nappy recycling process and briefed as to which items could be disposed of in this stream. HDUHB utilised the same colour bags as Local Authorities in Pembrokeshire, Carmarthenshire, and Ceredigion for their nappy/ incontinence waste collections, which provides consistency for new parents.

Weekly collections from the compound will take place for the trial, which will identify any issues in the process. A report will be provided by the contractor to the Environment Team to show the breakdown of material recycled or recovered from the collections. Following the implementation of the process across HBUHB, an audit and evaluation will indicate if 58% of hygiene waste has been successfully diverted from landfill.

Outcomes and Impact

Parent and staff behavioural questionnaires were produced to capture qualitative data on parental knowledge and staff understanding on local nappy recycling and awareness of this practice within HDUHB.

- Staff responses showed that some felt more knowledgeable to advise parents on sustainable nappy recycling as a result of this project. All staff felt that the use of the same colour coded bags as the local authorities was beneficial and noted the importance of their personal responsibility to recycle nappies and the environmental benefit attached.

- Based on parent awareness questionnaires, 71% of parents were aware the local authorities had the purple bag scheme for recycling nappy waste with the remainder stating they were unaware. Those unaware noted their intention to sign up to this process.

Next Steps

Following the trial, the team hope to engage and roll out this initiative across the health board on a site-by-site basis, starting with other departments at Glangwili Hospital. They also aim to produce and disseminate a poster to raise awareness of sustainable nappy options. Alongside this, consideration will be given to identify other opportunities with the SCBU and Maternity Department to encourage new parents to use the nappy recycling scheme within HDUHB's catchment area and encourage the use of reusable nappies, rather than disposable.

Additionally, the team plan to engage with local authorities to explore how reusable nappies could be a collaborative venture, to share case study findings with health board colleagues across Wales, identify potential benefits to its adoption and share lessons learnt throughout the process.

Addressing the anticipated reduction in carbon emissions and kg CO2e per year resulting from the recycling initiative for nappies and incontinence waste is crucial for evaluating the programme's effectiveness. A general Bevan Commission recommendation lies in comparisons between the initial projections and actual outcomes. The health board can assess the real-world impact of their sustainability efforts. This analysis not only provides valuable insights into the success of the initiative but also guides future strategies for enhancing environmental stewardship within the health board.

Further Information

Environment Office Team

Terri Shaw - Senior Environmental Officer

Rachel Davies – Environmental Officer

https://bevancommission.org/wp-content/uploads/2023/09/DIVERTING-NAPPY-and-INCONTINENCE-WASTE-FROM-DEEP-LANDFILL.pdf

CASE STUDY 03

EMBEDDING ENVIRONMENTAL SUSTAINABILITY ACROSS THE AMBULANCE SERVICE

WELSH AMBULANCE SERVICES NHS TRUST

Key Words

Environmental | Carbon Footprint | Co2 | Sustainability

Summary

In 2016, the Welsh Ambulance Services NHS Trust (WAST) launched a new Clinical Response Model that has since become a template for ambulance services across the UK. They have been highly commended for embedding environmental sustainability into WAST working culture and have won many awards.

Approach

The Clinical Response Model has several key 'green' aims including piloting the use of electric vehicles, reducing carbon dioxide by 3% annually and continuing to develop the Advanced Paramedic Practitioner Model, which resulted in 65% of patients seen in a year being treated in their own homes (n=1,978). WAST have also put into place a long-term strategy to reduce the organisations' carbon footprint and introduce greener working practices, such as leading the way with video conferencing meetings.

Outcomes and Impact

As a result of WAST's green initiatives, all electricity is now bought from renewable sources. Additionally, solar panels have been installed on vehicles and its fleet has been modernised with 46 hybrid rapid response cars on the road across Wales, replacing diesel-powered vehicles. This will result in a reduction of around 125 tonnes of CO2 each year.

WAST's commitment to environmental sustainability has yielded impressive outcomes, including the adoption of renewable energy sources for all electricity consumption and the installation of solar panels on 46 hybrid rapid response vehicles. While specific data regarding the carbon dioxide reduction resulting from these initiatives is currently unavailable, the significant strides made in transitioning to renewable energy and implementing green transportation solutions demonstrate WAST's dedication to reducing its carbon footprint. Nonetheless, the initiative is projected to yield a reduction of approximately 125 tonnes of CO2 annually.

Next Steps

By 2030, WAST will aim for all new ambulances to be plug-in electric or low carbon fuel. In addition, the organisation is looking to address excess emissions through its environmental strategy and the trial of electric vehicles for patient transport.

Looking forward to 2030, WAST aims to make all new ambulances plug-in electric or low carbon fuel vehicles. Additionally, the organisation is addressing excess emissions through its environmental strategy and is trialing electric vehicles for patient transport. WAST's proactive approach demonstrates its commitment to environmental sustainability in healthcare.

Links

https://www.youtube.com/watch?v=IluXEu4rw4Q&list=PLZTB8BPlJ021YCS_QoWTiGIjE3iDI5AhJ&index=11

https://www.nhsconfed.org/publications/how-nhs-wales-responding-climate-emergency

CASE STUDY 04

GREENER FEEDING PRACTICES IN THE NICU

Swansea Bay University Health Board

Key Words

Family Integrated Care | Neonatal | Low Carbon | Reuseable Plastics

Summary

Family Integrated Care (FICare) is a model of neonatal care that emphasises collaboration between families and medical staff. It aims to improve infant health outcomes by empowering parents to be active participants in their child's care. FICare also promotes environmentally friendly practices, such as breastfeeding and skin-to-skin contact, which can reduce the carbon footprint of neonatal care. One area where FICare focuses on sustainability is feeding practices. The model encourages the use of reusable bottles instead of single-use as this can minimise waste and promote a smooth transition to home care for families.

Approach

The project team aimed to:

1. **Support parents to use their own bottles and increase the use of reusable bottles.**

   First, written resources were developed to inform parents about the new policy and to educate them as to the benefits of using reuseable feeding equipment, such as bottles and teats. Alongside this written information for parents, staff received 'rapid' education and reminders were embedded in daily team safety huddles.

2. **Recycled feeding equipment.**

   As per the health board waste pathway, feeding bottles that are rinsed can be recycled, whereas before they were disposed of as clinical waste. The team set out to establish an infrastructure for recycling the rinsed plastic feeding bottles and raised awareness amongst staff around what feeding-related items can be recycled.

   To enable sustainable behaviour change, effective strategies for staff education and engagement may include conducting training sessions or workshops, disseminating educational materials through staff newsletters or intranet platforms, hosting awareness events or presentations, implementing peer-to-peer learning initiatives, and incorporating reminders or updates in regular team meetings or huddles.

Outcomes and Impact

Several outcomes were recorded by the team. Firstly, the proportion of infants feeding via parent-provided bottles increased by 92% over two weeks. Secondly, recycling of feeding equipment has resulted in an annual saving of around 2,453 kg CO2e (equivalent to driving 7065 miles in an average car), and a monetary annual saving of £766.65.

In adopting this best practice, it is prudent to acknowledge the importance of assessing staff awareness levels in evaluating the effectiveness of sustainability initiatives. Monitoring staff awareness before and after the intervention can provide valuable insights into the impact of educational efforts and identify areas for improvement.

Next Steps

The team are still identifying the carbon footprint of one disposable bottle versus a reusable bottle; however, they anticipate the project will lead to significant CO2e savings in the NICU.

Recognising the potential for broader dissemination of successful initiatives, the adoption by other hospitals could be enabled by the quantification of the environmental impact. Sharing best practices can foster collaboration, and measuring the carbon footprint is essential for assessing the environmental impact of the initiative. Continuous evaluation and refinement of sustainability efforts are key for reducing carbon emissions and promoting environmental sustainability in health and care settings.

Links

Katherine Burke, Neonatal Consultant

Sharon Birch, Staff Nurse

https://familyintegratedcare.com/

https://sustainablehealthcare.org.uk/news/2023/02/swansea-bay-university-health-board-green-team-competition-expected-save

CASE STUDY 05

GREENER PRIMARY CARE

Public Health Wales

Key Words

Climate Change | Net Zero Emissions | Sustainability | Environmental | Decarbonisation Plan | Carbon Emissions | Primary Care

Summary

The Greener Primary Care Framework and Award Scheme supports the four independent primary care contractors in Wales (general practice, community pharmacy, primary care dental and community optometry) to undertake environmental sustainability actions in practice.

The framework was launched in 2022 by the Primary Care Division, Public Health Wales, and was the first of its kind in Wales. It is now in its third year and consists of approximately 50 actions for practices to consider and choose to implement. Many of these actions focus on reducing consumption or minimising waste. It also contains actions to support primary care in adapting to the impacts of climate change on their work.

The scheme is aligned to the NHS Wales Decarbonisation Strategic Delivery Plan as well as other national policy and legislation such as the Well-being of Future Generations (Wales) Act 2015 and Prudent Healthcare Principles. The online framework contains over 50 clinical and non-clinical actions and was developed in collaboration with Students Organising for Sustainability UK (SOS-UK) and with the support of an Expert Group.

Approach

The framework is designed to help the primary care sector reduce its environmental impact and to work together to collectively reach the Welsh Government net zero for Wales ambition. The ambition was to have 5% of professional contractors across Wales register with the framework.

The actions within the Scheme cover a broad range of categories such as waste, procurement, healthy behaviours, and buildings and estates. The actions focus on reducing consumption, minimising waste, and encouraging healthy behaviours. Each action is accompanied by a further information section which signposts to relevant and useful resources to support the practice to implement the action. Registered teams self-select which actions to implement within their practice, and a point is achieved per completed action. At the end of each annual cycle, teams at the threshold for an award participate in an audit and are awarded either a bronze, silver or gold level depending on the number of actions, and therefore points, accrued.

Outcomes and Impact

We have reported the following activity which will support an increase in awareness of this topic alongside carbon savings:

1. In the scheme's first year the objective was to have 5% of the professional contractors in Wales register with the framework. This was achieved. Year 1 reported over 100 teams across Wales and representing all four contractor settings registered with the scheme. These teams consisted of 162 individuals. A similar uptake was reported for Year 2.
2. Over 2362 actions were reported to have been implemented during the first two years of the scheme.
3. The early adopters have helped raise awareness of the scheme and communicated the co-benefits for the health of the planet and for their business.

The Greener Primary Care Wales 2022 Yearbook was developed to celebrate the successes of practices involved in the scheme during the first year and contains a collection of practical case studies to inspire others to register and take action.

As a national offer the identification and sharing of practice has been instrumental in engaging others to come on board. We have highlighted the importance of including primary care in local decarbonisation plans and are starting to see this become a reality.

Next Steps

The Scheme recently re-launched for Year 3 (on 31 January 2024). Since the re-launch over 80 new practices have registered on the scheme (as of 20 March 2024). During the 2024/25 financial year a number of new models will be scoped such as including actions at primary care collaborative and cluster level, involving non-traditional primary and community care settings, and building on the corporate award by partnering with Specsavers in Wales. We have already developed a corporate award for all 99 Boots community pharmacies across Wales. The actions within the framework will also be analysed according to their carbon emission saving, allowing registered practices the opportunity to prioritise action implementation according to carbon savings.

Behavioural insight work is underway and will also continue to understand the facilitators and barriers to participation in the scheme.

Data on greenhouse gas emission reductions and carbon savings will be available in Summer 2024.

Contact Details

For more information please contact Angharad Wooldridge and Sian Evans at greenerprimarycare@wales.nhs.uk

Links

https://bevancommission.org/greener-primary-care-wales-framework-and-award-scheme/ https://www.youtube.com/watch?v=BUmjKZAkW_Y&t=127s

Project Title: (bevancommission.org)

Greener Primary Care - Primary Care One (nhs.wales)

Community pharmacy in Wales reaches net-zero emissions - The Pharmaceutical Journal (pharmaceutical-journal.com)

Sink or swim (aop.org.uk)

primarycareone.nhs.wales/topics1/greener-primary-care/greener-primary-care-wales-2022-yearbook/

CASE STUDY 06

HEALTHY TRAVEL CHARTER

Aneurin Bevan University Health Board, Cardiff and Vale University Health Board, Swansea Bay University Health Board, Public Health Wales, Welsh Ambulance Services NHS Trust, Health Education and Improvement Wales

Key Words

Sustainability | Carbon Emissions | Low Emission Vehicles | Air Pollution | Climate Change | Active Travel | Sustainable Transport | Behaviour Change

Summary

There are several Healthy Travel charters across Wales, including Gwent (2020-23), Cardiff (2019-22), Vale of Glamorgan (2019-22) and Swansea Bay (2022-24). The relevant signatories for each of these charters are as follows:

- Gwent: Aneurin Bevan UHB
- Cardiff: Cardiff and Vale UHB, Public Health Wales, Welsh Ambulance Service Trust, Health Education and Improvement Wales
- Vale of Glamorgan: Cardiff and Vale UHB, Welsh Ambulance Service Trust
- Swansea Bay: Swansea Bay UHB

The charters also have a significant number of other signatories from the public sector and beyond; there are currently over 60 signatories to the charters across Wales. A charter has been agreed for North Wales, including Betsi Cadwaladr UHB; and charters are currently being developed in West Wales and Powys; Cwm Taf Morgannwg, with the respective Health Boards taking a leading role in their development.

The aim of the charters is to take necessary steps to reduce carbon emissions and improve air quality, such as supporting staff and visitors to walk and cycle, use public transport and switch to electric vehicles, to achieve the overall goal of improving staff and visitor well-being. Over-reliance on cars is contributing to air pollution and the climate emergency, alongside sedentary lifestyles and social isolation.

Approach

All four charters have similar commitments, though these have been tailored where necessary to the local area following engagement with key stakeholders. The first. 'Communications and Leadership', involves establishing a sustainable travel network, using consistent communications with the public, visitors and staff on healthy travel, considering healthy travel across wider functions such as procurement and when advertising roles and encouraging senior staff and managers to promote and model active and sustainable travel behaviours. The Swansea Bay Charter is also committed to involving staff in discussions around how to shift to more sustainable modes of travel.

The second commitment is to 'Walking, Cycling and Public Transport'. This encompasses promoting public transport discounts available to staff, providing staff with facilities to encourage active travel such as secure cycle storage, lockers and showers, offering 'Cycle to

Work' schemes and improving access to bicycles at work (e.g. pool bikes), and encouraging sustainable travel through expenses policies. The Swansea Bay Charter also suggests allowing staff to wear trainers to work if their commute involves walking or cycling under the 'active wear for active travel' initiative.

The third commitment is to 'Agile Working', which involves supporting flexible working to reduce commuting by increasing uptake of video conferencing (Cardiff, Gwent and Vale of Glamorgan), improving flexible working options such as home working and exploring hot-desking and agile working across public sector sites and partner organisation (Gwent and Swansea).

Finally, the fourth commitment is to 'Ultra-Low Emission Vehicles'. This comprises reviewing electric vehicle charging facilities and exploring options for ultra-low emission vehicles in fleets and procurement.

Each of the charters prescribe to simple self-assessment and scoring systems which is used to monitor progress through quarterly reports. The reporting involves the signatory applying a score of 0-3 to each of the commitments where 0 = 'early days', 1 = 'getting going', 2 = 'fully in place' and 3 = 'leading the way'. The scores are supported by the signatory providing a short narrative for each commitment outlining the actions taken or changes made since the previous quarterly report. The aim is for all signatories to reach a score of at least 2 for each commitment within two years of signing the charter.

Outcomes and Impact

Gwent

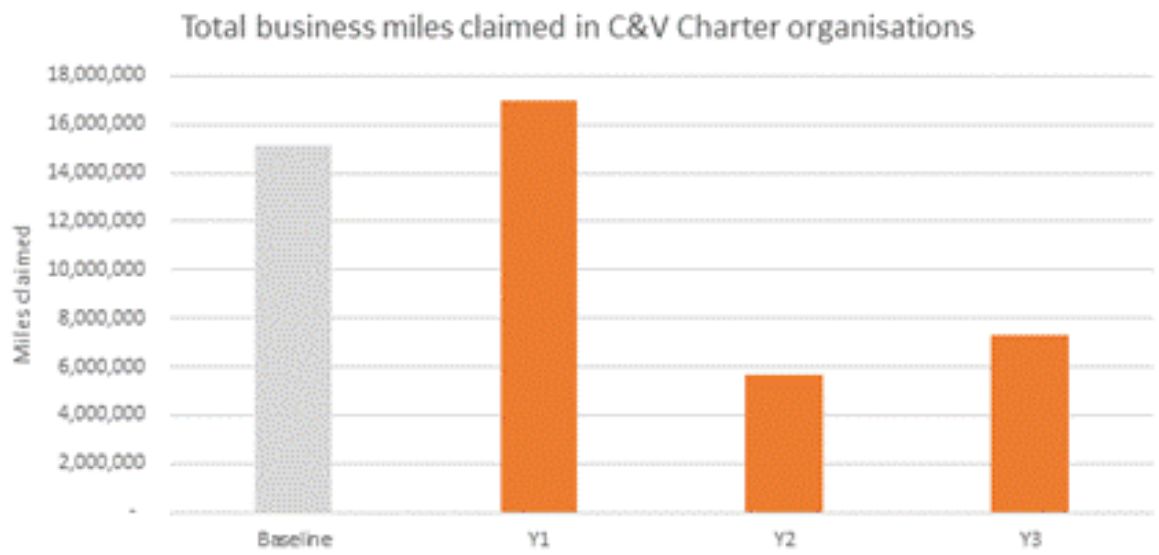
The aim of the Gwent Charter was to 1) reduce the proportion of journeys commuting to and from work made by car by 10% (87% down to 77%), 2) increase the proportion of staff who use public transport to travel to and from work by 5% (3% up to 8%), 3) increase the proportion of staff who work from home 1 or more days per week by 11% (14% up to 25%) and 4) increase the proportion of vehicles used during the day which are ultra-low emission by around 5% (<1% up to 5%).

To ensure the continued effectiveness of the charter, it is recommended to regularly review progress in addition to making necessary adjustments to strategies and targets to align with evolving circumstances and priorities. Assessment of targets met or adjusted based on data is essential for sustainable adoption.

Cardiff

The aim of the Cardiff Charter was to 1) reduce the proportion of journeys commuting to and from work made by car by 10% (62% down to 52%), 2) increase the proportion of staff cycling weekly to and from work, or at work by 9% (14% up to 23%) and 3) increase the proportion of vehicles used during the day which are plug-in hybrid or pure electric form by 2% 1% (up to 3%).

In terms of process indicators, nine organisations out of sixteen signatories have completed all the commitments in the charter. Four of these organisations have gone on to sign up to the Level 2 charter which includes more stretching commitments. In terms of business miles (mileage during the working day, not commuting) there was a significant fall in mileage claims in signatory organisations in the second two years of charter implementation in Cardiff, with the mileage in year 3 representing a fall of 52% compared with the baseline. The baseline below represents 2018/19, year 1 represents 2019/20, year 2 2020/21 and year 3 2021/2022. The fall seen in business mileage would be equivalent to around 2,000 tonnes reduction in CO_2e across the organisations.



Cycle to work purchases across the signatories increased between baseline and the latest available data, year 2 (674 to 884 bikes per year, a 31% increase). EV chargers available across the organisations increased baseline from 27 to 236 (8.7 fold increase).

In a qualitative survey of leads for charter signatory organisations regarding impact, the charter was felt to be helpful to organisations (mean score 8.4, on a scale 0-10, where 0 is very unhelpful, 5 is neutral, and 10 is very helpful). The most helpful element was 'sharing information and practice with colleagues implementing the Charter in other organisations'.

Vale of Glamorgan

The aim of the Vale of Glamorgan Charter was to 1) reduce the proportion of journeys commuting to and from work made by car and 2) increase the proportion of vehicles used during the day which are plug-in hybrid or pure electric.

Four out of nine organisations have so far completed the Vale of Glamorgan Charter. Three of these organisations have gone on to sign up to the Level 2 charter which includes more stretching commitments.

Swansea Bay

Swansea Bay is hoping to reduce carbon emissions through 17 actions to reduce carbon emissions, improve air quality and to support staff health and well-being. They are working closely with Swansea University.

Next Steps

Organisations are still able to sign up to the respective charter in their area and are being developed/ planned for launch in 2024 in West Wales/Powys and Cwm Taf Morgannwg areas. There will be an exploration of potential synergies between the charters and wider workplace travel planning with Transport for Wales.

A Level 2 charter containing more stretching commitments has been developed and is available for sign up by organisations.

Further Information

Gwent

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Cardiff

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Vale of Glamorgan

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Swansea Bay

Jayne Cornelius, Sustainable Travel Officer (Swansea University), j.cornelius@swansea.ac.uk

Philip McDonnell (Swansea Environmental Forum), lcsb@swanseaenvironmentalforum.net (Home (weebly.com))

Charlie Gordon, charlie.gordon@sustrans.org.uk (Home - Sustrans.org.uk)

Gwent - Gwent - Healthy Travel Wales

Cardiff - Cardiff - Healthy Travel Wales

Vale of Glamorgan - Vale of Glamorgan - Healthy Travel Wales

Swansea Bay - Swansea Bay Healthy Travel Charter - Healthy Travel Wales

CASE STUDY 07

HEAT PUMPS INSTALLED IN CARDIGAN INTEGRATED CARE CENTRE

Hywel Dda University Health Board

Key Words

Carbon Footprint | Temperature | Heater Batteries | Heat Pump | Climate Emergency | Greenhouse Gas Emissions | Environment

Summary

The Hywel Dda University Health Board (HDUHB) developed their ongoing commitment of reducing their buildings' carbon footprint by installing air source heat pumps at the Cardigan Integrated Care Centre (CICC).

Approach

This £325,000 project was funded by the Welsh Government (WG) after a feasibility study by the Welsh Government Energy Service recommended investigating low carbon heating solutions for the care centre. The hospital assisted the health board in choosing the best options for integrating the system into the existing building and meeting the lower temperature heating requirements. The resulting recommended solution was a 70kW heat pump system, along with supplemental upgrades to the air handling unit heater batteries to work with lower temperatures.

Outcomes and Impact

According to Dave Powlesland, Senior Manager from Welsh Government Energy Service, "Hywel Dda UHB has demonstrated how a heat pump retrofit can be achieved on a complex healthcare site – this project will help lead the way for a low carbon heat transformation across Wales."

Next Steps

When a climate emergency was declared by the Welsh Government in 2019, a long-term target was developed to reduce all greenhouse gas emissions to net zero by 2050 and an ambition for Public Sector to lead the way to Net Zero by 2030. The health board therefore are currently developing several initiatives to further contribute to this and reduce their impact on the environment.

The initiative fits into the Heat Strategy for Wales, a draft for consultation initiated by the Welsh Government in 2023 (https://www.gov.wales/sites/default/files/consultations/2023-08/draft-heat-strategy-for-wales.pdf).

Heat pumps can accelerate the Net Zero target of the NHS, particularly in hospitals, they also contribute to lower energy bills, improve local air quality, and improve energy security. Heat pumps are currently being installed across Wales in various areas and households (https://www.current-news.co.uk/wales-achieves-record-number-of-heat-pump-installations-in-2023/).

Further Information

Paul Williams – Head of Property Performance at Hywel Dda UHB

https://hduhb.nhs.wales/news/press-releases/heat-pumps-installed-at-cardigan-integrated-care-centre/

CASE STUDY 08

MAKING CONNECTIONS TO IMPROVE ENVIRONMENTAL SUSTAINABILITY AT OUR HOSPITAL

Betsi Cadwaladr University Health Board, Ysbyty Gwynedd

Key Words

Green Groups | Food Production | Sustainable Food Supplies | Procurement | Re-usable Face Masks

Summary

Context and rationale

Climate change is the biggest global health threat of this century, yet it also represents the greatest health opportunity. The healthcare sector, as well as being vital in dealing with the health impacts of climate change, also contributes to the problem. **If the global healthcare sector was a country, it would be the fifth biggest emitter of greenhouse gases.**

Individuals in a hospital can help improve the health and well-being of our community, through leading by example, starting in Ysbyty Gwynedd Green Group Hospitals. Action on climate change is prudent now.

Wales is committed to achieving net zero carbon emissions from NHS Wales by 2030, an important goal required to protect the well-being of future generations.

The project sought to connect people already working on environmental sustainability, learn from their good practices, and bring them together **creating a shared platform for transforming practice** to be climate smart. This shared platform became **Ysbyty Gwynedd Green Group.**

Approach

Initiatives included raising awareness, promoting and engaging with all hospital staff to:

- Increase recycling of waste.
- Reduce printing and reuse paper where possible.
- Reduce carbon emissions, for example, through public transport, car sharing schemes, cycling and walking routes to work.
- Increase the use of online meetings instead of traveling to meetings.
- Encourage increased use of TIVA in anaesthesia.
- Stop the use of plastic bags for medicine.
- Stop the use of plastic cups.
- Promote tree planting and green spaces on the hospital grounds.
- Increase range of vegetarian and vegan meal choices.

The Ysbyty Gwynedd Green Group was able to achieve progress through collective action, shared responsibility, and strong leadership along with the following methods:

- Holding stalls in the hospital, promoting the initiatives and engaging with staff.
- Being active with the local and national press.
- Clinicians provide training and awareness sessions to their departments on topics such as carbon hotspots, greening anaesthesia and greener inhalers.
- Creating a shared project bank where members of the group could create their own projects and provide updates. Key areas identified by staff were, Waste, Energy, Transport, Food and Biodiversity.
- Engaging with key hospital services including Estates, Facilities and Procurement.

- Providing a shared Google calendar with climate-related awareness events and webinars to help promote and boost learning.

Outcomes and Impact

85 members joined the Ysbyty Gwynedd Green Group and actively contributed to and supported the initiatives.

Ysbyty Gwynedd was the first hospital in Wales to take steps to partake in a re-useable mask pilot.

The group formed a sustainable food group, working to help local growers apply for hospital procurement contracts.

The group has created a 'meadow plan' to help improve biodiversity on-site, with plans for a health walk. Donations equaling 82 trees have been received from NHS Forests to plant on site. Some members partook in 'guerrilla gardening' during lockdown.

The group was featured in the NHS sustainability impact report, and became part of the healthy recovery campaign joining over 40 million health professionals worldwide.

Clinical staff gained representation at the health board's environmental steering group and had meetings with the Carbon Trust about the overall Healthcare Decarbonisation Strategy on how to get to net zero by 2030.

Next Steps

1. Continue growth of group, connections and opportunities for environment sustainability initiatives.
2. Planetary health integrated into the undergraduate and postgraduate curriculum of training.
3. Identify 'Green Champions' in each department.
4. Join Health Care Without Harm (HCWH) global network of 36,000 green and healthy hospitals and health centres.
5. Establish Green Groups across each hospital in Wales as part of a Welsh Climate Smart Clinical Network.

6. Encourage health professionals across Wales to pledge for planetary health.
7. Health warnings on point of sale of fossil fuel energy across Wales.
8. NHS Wales to make a statement declaring climate change as a health emergency.
9. NHS Wales to release their net zero 2030 strategy.
10. Explore the possibility of NHS Wales being a pilot country for operation zero, the global health care decarbonisation roadmap.
11. Welsh health care professionals at COP26 in Glasgow.
12. Green Groups as climate smart, sustainable and prudent health care to become the norm for each of our hospitals across Wales, on the journey to be climate smart by 2030 and the wellbeing of future generations protected, achieving a healthier Wales.

Further Information

Dr Tom Downs, Downst@doctors.org.uk

bcu.greengroupwest@wales.nhs.uk

Making connections to improve environmental sustainability at our hospital - Bevan Commission

https://bevancommission.org/making-connections-to-improve-environmental-sustainability-at-our-hospital/

CASE STUDY 09

METERED DOSE INHALERS

Swansea Bay University Health Board

Key Words

Carbon Footprint | Sustainability | Inhalers | Asthma Control

Summary

Metered Dose Inhalers (MDIs) contribute a significant 3.5% to the NHS carbon footprint. This is mainly due to the greenhouse gas propellant that they contain. Alternative to MDIs – Dry Powder Inhalers (DPIs) and Soft Mist Inhalers (SMIs) – have significantly lower carbon footprints and as such, a new National Prescribing Indicator (NPI) encourages prescribing of these instead of MDIs.

Swansea Bay University Health Board is taking action to address its high MDI prescribing rate (around 70% of inhaler prescriptions), aiming to achieve an 80% prescribing rate of DPIs and SMIs by 2025, aligning with the ambitious national goal set by NHS Wales.

Approach

The team set up a 10-week decarbonisation-focused asthma clinic targeted at improving asthma control and achieving the NPI target for an increase in DPI and SMI prescriptions. The clinics, which were set up in a GP surgery in the Health Board locality, targeted patients who receive over 6 salbutamol inhalers per year, as overuse of these inhalers a) suggests poorly controlled asthma and b) is associated with the largest carbon footprint. Utilising the All Wales Adult Asthma Guidelines, the team sought to guide management and therapy choices, such as switching to DPIs, adjusting dosage to reduce inhaler burden, educating patients on inhaler recycling and employing Maintenance and Reliever Therapy (MART) regimes where appropriate. Patients are involved in decision-making through the use of 'dummy' inhalers which are used to demonstrate different inhaler options.

Outcomes and Impact

In November 2022 the % of DPIs/SMIs in the practice in which the project took place was 29%, which is very low. This was one of the reasons for targeting this specific surgery. The % of DPIs/SMIs prescribing then increased to 32% in December 2022 on completing the project. This continued to increase to 33% in January 2023 and 35% in February 2023. The % DPIs/SMIs prescribing reached its highest in April 2023 at 36.8% showing that the work from the project was maintained. The data reflects a general improvement in the surgery which is very positive.

At the end of the 10-week period, 90% of patients involved in the clinics had switched to DPIs.

The 10% of patients who weren't able to switch to DPIs were offered a lower carbon MDI instead. The project saved 379.2kgCO2e, which will increase to around 4,550kgCO2e over one year. This is equivalent to 13,000 miles driven in an average car.

Next Steps

The project is now being extended to a second GP surgery within the health board. It is also being included as part of this year's Prescribing Management Scheme (PMS) for the GPs in Swansea – the GPs will be asked to target patients on >6 Salbutamol inhalers per annum for reviews.

Contact Details

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Rebecca Gillman, Medicines Management Pharmacy Technician – Rebecca.Gillman@wales.nhs.uk

Links

https://sustainablehealthcare.org.uk/news/2023/02/swansea-bay-university-health-board-green-team-competition-expected-save

https://sbuhb.nhs.wales/news/swansea-bay-health-news/inhaler-project-is-breath-of-fresh-air-for-patients-and-the-planet/

National Prescribing Indicators - Community Pharmacy Wales (cpwales.org.uk)

NHS Wales Decarbonisation Strategic Delivery Plan (gov.wales)

CASE STUDY 10

MOBILITY AID RECYCLING

SWANSEA BAY UNIVERSITY HEALTH BOARD

Key Words

Landfill | Recycling | Equipment | Mobility Aids | Walking Aids | Re-use

Summary

Singleton Hospital has introduced a new drop off area for unwanted walking frames and crutches after a noticeable rise in hospital equipment being found in charity shops, car boot sales or being sent to landfill.

The introduction of a new drop-off area for unwanted hospital equipment at Singleton Hospital is a positive step towards reducing waste and promoting sustainability. By offering a convenient and responsible disposal option for patients and their families, the hospital demonstrates its commitment to environmental stewardship and community engagement. Some recommendations from the Bevan Commission include tracking and monitoring the volume of equipment collected through this initiative which would provide valuable insights into its effectiveness in diverting items from landfill and further inform waste reduction strategies in the future. Data on the number of walking frames and crutches being sent to landfill would contribute to a more specific understanding of the impact.

Approach

Once the team had identified that mobility aids weren't being disposed of correctly, they created a specially designated area in Singleton hospital for members of the public to drop off used equipment. The drop off point is open until 8pm and there is parking outside to make it accessible. The service is available to all public members regardless of whether the equipment was issued by Singleton hospital. All mobility aids will now have stickers on them when issued that detail a) where they come from and b) how to return them.

Outcomes and Impact

The initiative to redirect hospital equipment away from landfill towards reuse or redistribution, including sending items to NHS partners in Syria, is undoubtedly a commendable effort in promoting sustainability and global health equity. The reported cost savings of approximately £4,000 since the introduction of the drop-off point highlight the financial benefits of this initiative.

For further adoption, and to demonstrate the ongoing impact and effectiveness of the programme, data is essential. Firstly, cost savings figures can provide insight into the continued financial benefits of diverting equipment from landfill. Additionally, having updated numbers of items returned through the drop-off point would allow for a clearer understanding of the initiative's success in preventing waste and facilitating reuse. These updated figures would enable the team to track progress over time and make informed decisions about the programme's optimisation and expansion.

Next Steps

If the initiative is a success, further drop-off points will be developed at other hospitals. For example, colleagues in Morriston Hospital are looking at implementing a similar scheme.

The potential for expanding drop-off points to other hospitals, e.g., Morriston Hospital, highlights a positive trend towards promoting environmental responsibility in healthcare. The intention to replicate the scheme suggests a growing interest in sustainable practices across healthcare facilities.

Showcasing the initiative's progress and impact, information about the drop-off points could offer insights into the programme's expansion and its reception amongst staff and patients. Sharing success stories and lessons learned from implementing drop-off points can inspire collaboration and encourage the adoption of sustainable initiatives across hospitals in the region.

Further Information

Ruth Emanuel, Head of Physiotherapy

Allison Rewbridge, Physiotherapy Technician

Kath Laws, Lead Physiotherapist

Nicola Cochrane, Physiotherapist

https://sbuhb.nhs.wales/news/swansea-bay-health-news/new-drop-off-area-for-unwanted-walking-frames-and-crutches/

CASE STUDY 11

MOBILITY AIDS

WRAP Cymru with the Welsh Health Specialised Services Committee (WHSSC)

Key Words

Sustainable Procurement | Circular Economy | Mobility Aids | Recycling | Refurbishing

Summary

The NHS Posture and Mobility Service (PAMS) for Wales – delivered by the Artificial Limb & Appliance Service (ALAS) is an exemplary model of healthcare circularity. The PAMS model follows the Sustainable Procurement Hierarchy which prioritises refurbishment and repair over purchasing new items and highlights the environmental and economic benefits of this approach. ALAS is now commissioned by the Welsh Health Specialised Services Committee. This case study describes the ongoing service model.

Approach

PAMS helps clients who require long-term use of a wheelchair. The service includes a clinical assessment, the delivery and collection of equipment, repair, reconditioning, adjustment, replacement of equipment, and equipment disposal. Services are delivered by a multidisciplinary team of clinicians. When procuring equipment, the PAMS team considers durability and reusability. Technicians ensure that wheelchairs are carefully serviced and have ongoing preventative maintenance schedules, barcodes are attached to each wheelchair to provide an accurate maintenance history. To maximise equipment returned to PAMS, guidance is provided to patients, including details of a free collection service.

Outcomes and Impact

Whilst the carbon footprint of a single 'self-propelled' wheelchair is relatively small at 107kg CO2, when considering PAMS's large volume of refurbishments undertaken, there have been savings of approximately 94,429 kg of CO2e per year. This is equivalent to 885 new wheelchairs. It is also estimated that the reconditioning of more complex powered wheelchairs results in even greater unit carbon savings.

The economic and environmental benefits of prioritising reconditioning and repair over purchasing new items was, and continues to be, a key driver of this approach.

Next Steps

The ALAS team continues to carry out this programme of repair/ preventative maintenance/ asset tracking, and hope that by sharing this case study will encourage other organisations to explore adopting similar programmes of asset tracking and repair/ maintenance. The team also continues to review and refine the programme of repair and reconditioning.

ALAS's continued monitoring is commendable and indeed essential for ensuring the effectiveness and sustainability of such programmes. Regular monitoring allows for the identification of areas for improvement, the tracking of progress towards goals, and the adaptation of strategies as needed to maximise impact and efficiency.

Further Information

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Project Management, Artificial Limb and Appliance Service, CAVUHB

Stephen Jones, stephen.jones6@wales.nhs.uk

Head of Posture and Mobility Service, BCUHB

https://bevancommission.org/wp-content/uploads/2023/10/Towards-a-Circular-Economy-in-NHS-Wales-%E2%80%93-Mobility-Equipment-Repair-and-Reconditioning.pdf

WRAP Cymru - Circular Economy & Resource Efficiency Experts

CASE STUDY 12

NHS FOREST

Betsi Cadwaladr University Health Board, Cardiff and Vale University Health Board, Cwm Taf Morgannwg University Health Board, Hywel Dda University Health Board, Swansea Bay University Health Board, Velindre University NHS Trust

Key Words

Green Space | Biodiversity | Tree Planting | Woodlands | Gardens | Rehabilitation | Net Zero

Summary

The NHS Forest is an alliance of healthcare sites in the UK that works to improve the health and well-being of people and wildlife by transforming green spaces on and around their land. The project is run by the Centre for Sustainable Healthcare as part of its Green Space for Health programme. Around 10% of the sites signed up to the alliance are in Wales.

BCUHB: 4 sites including Wrexham Maelor and Ysbyty Gwynedd

CAVUHB: 3 sites including University Hospital Llandough

CTMUHB: 23 sites including Ysbyty Cwm Rhondda, Ysbyty George Thomas, Prince Charles Hospital, Royal Glamorgan Hospital and Glanrhyd Hospital

HDUHB: 1 site (Withybush General Hospital)

SBUHB: 3 sites including Gorseinon Hospital

Velindre: 3 sites including Velindre Cancer Centre and Velindre University NHS Trust HQ

Approach

NHS Forest recognises that healthcare sites can act as ‘anchor institutions’ in communities, providing accessible spaces for socialising, exercise and learning, alongside offering benefits for physical and mental health and wellbeing. As such, examples of NHS Forest green spaces include peaceful gardens that offer patients and relatives a healing space, allotments to provide fresh and organic produce and outdoor rehabilitation activities such as yoga.

In terms of biodiversity, NHS Forest aims to cultivate vital habitats in woodlands, orchards and hedgerows for many at-risk native wildlife species. Planting wildflowers to support pollinators and other insects is also a priority.

Outcomes and Impact

Since the project started in 2009, over 105,000 trees have been planted on or around the 373 sites that have joined the alliance, around 10% of which are in Wales. During the 2023-2024 tree planting season, the NHS Forest planted 320 trees on healthcare sites in Wales. This work was funded by the NHS Forest tree sponsorship programme.

Additionally, there has been a return of wildlife such as bats and house martins on many of the sites. In 2020-2021, the NHS Forest team worked with Plantlife and the National Trust on 'Gweirgloddiau Gwych Cymru: Magnificant Meadows Wales' to create mini-meadows and 'meadow health routes' that connect people to meadows and species-rich grassland.

Next Steps

NHS Forest aims to support the NHS goal of becoming the world's first net-zero national health service, eliminating its direct carbon footprint by 2040. Plans include creating more green spaces on health care sites, including planting more trees and orchards, and introducing rangers to NHS sites to promote biodiversity and the use of nature for health and wellbeing.

Contact Details

For more information, please contact info@nhsforest.org

Links

https://nhsforest.org/

https://sustainablehealthcare.org.uk/what-we-do/green-space/nhs-forest

Magnificent Meadows Wales: Gweirgloddiau Gwych Cymru - Plantlife Digital Annual Review 2021/22 (ouryear.org)

CASE STUDY 13

NHS GREEN BEES: BRINGING ENVIRONMENTAL ACTION INTO CLINICAL PRACTICE

Powys Teaching Health Board

Key Words

Carbon Emissions | Behavioural Psychology | Behavioural Change | Sustainability | Environmental Impact

Summary

This project came from a national and global need for the NHS to reduce its carbon emissions as it currently produces 5.4% of the UK's total emissions. Through this project, it is hoped in addition to cutting waste and CO2 emissions, it will help the NHS save money and improve the natural environment.

Approach

NHS Green Bees drew on behavioural psychology that is presented in the UN "Little Book of Green Nudges". This book is designed as a guide for universities to reduce their environmental impact through behaviour change. It consisted of a pilot across eight teams in Mid-Powys including midwives, district nurses, dentists, and specialist nurses. Each team member was asked to make one new sustainable change from a selection of nine, presented on a honeycomb poster. Some of these included reducing car miles, recycling paper, turning computers and printers off, and using reusable bottles.

Outcomes and Impact

A certificate was provided to each team involved with the project to show the combined results created. The collective results for all teams together included a total carbon saving of 259 kilos of carbon dioxide and a £678 cost saving for the Powys Teaching Health Board. There has also been a reduction of 3120 plastic bottles to landfill, a total of four 'Bee Friendly' initiatives, four teams using recycled paper and four teams working to reduce waste and recycle more.

Next Steps

A Green Bees Staff Group has been set up, working closely with the sustainability team. A Carbon Literacy Training Scheme for the executive team has been organised, backed by the Chief Executive. Carbon literacy was delivered to two cohorts within the health board in November 2021. Following successful delivery, a number of participants have become members of the Environment and Sustainability Group (senior leadership group). The health board is now looking to encourage staff to undertake 1-2 hour online environmental training modules.

Additionally, the Team is continuing to work with other staff, linked through the Bevan Commission, to promote an NHS Wales Green Network.

Further Information

For more information, please contact Tamsyn Cowden at Tamsyn.cowden@wales.nhs.uk

https://bevancommission.org/nhs-green-bees-bringing-environmental-action-into-clinical-practice/

https://www.youtube.com/watch?v=VyBLIsAEQCs

CASE STUDY 14

ORAL VS. IV ANALGESICS

CARDIFF AND VALE UNIVERSITY HEALTH BOARD

Key Words

Environmental | Economic | Analgesics | Carbon Footprint | Cost | Clinical Efficiency

Summary

The use of preoperative oral analgesia is becoming more common, however, traditional intraoperative IV analgesia remains the most utilised method. Paracetamol is widely recognised as an effective analgesic worldwide, with established recommendations for its use as the first line analgesia.

Approach

The aim was to investigate a clinical change from intraoperative IV to oral paracetamol preoperatively, through creating the Improving Paracetamol use with Oral over Intra-Venous use project (IMPROVE) at Noah's Ark Children's Hospital for Wales. Improving paracetamol use with routine oral over venous administration. Guidelines were formed for both doctors and nurses involved in pre-operative patients' care.

Outcomes and Impact

The IV preparation of paracetamol is the most inexpensive, costing £1.20 per 1g, while suppositories are the most costly at £11.04 per 1g. IV Paracetamol has a notably higher carbon footprint, with 9.23 kgCO2 per 1g, compared to oral suspension at 2.79kg CO2, suppositories at 0.71kg CO2, effervescence at 0.39kg CO2 and oral tablets at 0.084kg CO2 per 1g.

Switching to oral from IV could reduce carbon emissions by 42.8 million kgCO2e/year in Wales and England, equivalent to planting 2.7 million trees over four years. Clinical efficiency is comparable across all paracetamol preparations. 90% of anaesthetists are concerned about the environmental impact of their practice and actively take measures to reduce it. 85% currently administer IV paracetamol intraoperatively, but 86% are open to prescribing oral paracetamol preoperatively.

Next Steps

Phase One of the IMPROVE project at Noah's Ark was rolled out in October 2022, with oral rates of paracetamol administration increasing from 17% to 42%. Analysis showed that anaesthetists forgetting to prescribe pre-op oral doses was the primary obstacle to improving rates. Phase Two (due roll-out in Spring/Summer 2024) will incorporate "Patient Group Directive" (PGD) nurse-led oral paracetamol prescribing and administration to all elective surgical children before theatre, with the aim of maximizing rates to our target of 90%.

IMPROVE incorporating PGD has been ratified and is awaiting implementation at Morriston Hospital, and a "1000 trees" campaign will be launched later in 2024 with the aim of rolling the project out across all paediatric surgical centers in Wales utilising links in the Welsh Anaesthetic Green Network.

Further Information

For further information, please contact Rebeca Harris at Rebeca.harris@wales.nhs.uk

Siena Hayes

Stephen Froom

https://bevancommission.org/wp-content/uploads/2023/08/Siena-Hayes-The-sustainable-value-of-analgesics-within-the-NHS.pdf

CASE STUDY 15

PIONEERING ECOTHERAPY PROGRAMME: WILD SKILLS WILD SPACES

Powys Teaching Health Board with Montgomeryshire Wildlife Trust and Cardiff Metropolitan University

Key Words

Ecotherapy | Wildlife | Nature | Environment | Community | Mental Health | Outdoors | Positive Change | Wellbeing

Summary

The ecotherapy programme, Wild Skill Wild Spaces, is a partnership between the Montgomery Wildlife Trust (MWT), Powys Teaching Health Board (PTHB), and Cardiff Metropolitan University. It is designed to improve the mental health and wellbeing of people by reconnecting them with local nature and the environment. This initiative is currently funded by The National Lottery Community Fund from July 2023 to July 2025.

Approach

Wild Skills Wild Spaces offers free ecotherapy sessions delivered at various nature reserves. It incorporates a range of outdoor activities including wildlife walks, food growing, fire lighting and green woodworking. The project aims to enable people to make a positive change for wildlife in their communities and boost participants' well-being. Participants can be referred from primary and secondary healthcare providers, including GP and mental health services. In addition, a self-referral option is also available. The project works with specialist schools, high school, Child and Adult Mental Health Services (CAMHS), Youth intervention service and Childrens services to support the wellbeing of young people aged 11-17 years old.

The rationale behind the project is the empowerment of young people and adults who wouldn't typically engage in prescribed therapeutic interventions or outdoor activities.

Outcomes and Impact

The pioneering health and wellbeing initiative at Montgomeryshire Wildlife Trust, Wild Skills Wild Spaces (WSWS), has garnered national recognition, receiving the prestigious NHS Forest 2021 Award for Engaging People with Nature.

Since its inception in June 2021, the programme has actively involved 319 individuals aged 11 and above, comprising 122 adults and 197 young people. The initiative's multifaceted nature has attracted many partners, facilitating access to nature reserves, engagement of mental health professionals, and participation from clinical and non-clinical attendees.

The programme offers an enriching blend of activities, ranging from bushcraft to wildlife conservation, providing participants with hands-on experiences in the natural environment. Detailed reports and data pertaining to its outcomes and impact are available on the Montgomeryshire Wildlife Trust website under the Wild Skills Wild Spaces (WSWS).

One featured outcome from the project is the improved psychological wellbeing of participants, particularly among adults, females, and those with low mental health scores prior to joining. Another standout from the programme is the fostering of enhanced social confidence and relationships, providing opportunities for participants to interact and form connections, addressing the issue of loneliness. Lastly, WSWS has offered valuable opportunities for physical activity, skill development, and community engagement, contributing to overall wellbeing and a sense of purpose among participants while also supporting local conservation efforts.

Next Steps

Wild Skills Wild Spaces will hopefully become a blueprint for other NHS organisations to adopt and spread similar schemes across Wales.

The project was reprofiled in 2023 and received continuation funding from the national lottery for an additional two years in (July 2023- June 2025). The project is in its third year of delivery. We developed the project to better support long-term community engagement, upskilling our participants to become volunteers through training opportunities and achieving the John Muir awards. The project has recently implemented a small social enterprise allowing our volunteers to sell items they have made through the project and using the funds to pay for training opportunities.

Further Information

Frances Louise - WSWS Project Manager at Montgomeryshire Wildlife Trust

Carla Kenyon - Head of Health & Wellbeing at Montgomeryshire Wildlife Trust

https://pthb.nhs.wales/news/health-board-news/pioneering-powys-ecotherapy-programme-wins-national-award/

How NHS Wales is responding to the climate emergency | NHS Confederation

home | Montgomeryshire Wildlife Trust (montwt.co.uk)

Wild Skills Wild Spaces (WSWS) | Montgomeryshire Wildlife Trust (montwt.co.uk)

CASE STUDY 16

REDUCING CARBON FOOTPRINT IN CARPAL TUNNEL SURGERY

BETSI CADWALADR UNIVERSITY HEALTH BOARD

Key Words

Carbon Footprint | Single Use | CO2e | Green Surgery

Summary

Betsi Cadwaladr University Health Board (BCUHB) is aiming to reduce carpal tunnel surgery by adapting an existing 'lean and green theatre set up', firstly by reducing the number of single use instruments, trays and drapes used in each procedure and secondly by transforming to a 'green patient pathway'. This involved the team using minor procedure rooms instead of surgical theatres, meaning they were able to bypass the pre-theatre ward admission process.

The project was completed as part of the Green Surgery Competition, run by Sustainable Healthcare, in 2021.

Approach

A multidisciplinary team (MDT) identified areas for improvement (e.g. where high levels of clinical waste were present), leading to a set of project aims. The MDT included patients, doctors, management, procurement, hand therapists, theatre staff, infection control, administrative staff and the Central Sterile Services Unit (CSSU). Areas of high clinical waste identified by the MDT included:

- Unused equipment and drapes in surgical kits.
- Use of surgical theatres.
- Ward admissions, which involve staff resources, paperwork, catering etc. and therefore are carbon intensive.
- Patient travel to attend post-surgery follow-ups.

The 'green patient pathway' introduced in the prior section was proposed for elective day case hand surgery under local anaesthetic. Four pilot lists involving 17 patients took place between June - July 2021.

Outcomes and Impact

A detailed itinerary of consumables used in theatres was provided by procurement. The carbon footprint of patients' journey was then calculated, from admission onto a ward to the theatre suite and back to the ward, before being discharged. The cost savings and efficiency for each procedure were then calculated.

Positive outcomes were achieved for both patients and staff. For example, reduced length of stay, reduced theatre lists and wait times and reduced numbers of staff required for each procedure. Adapting the "lean and green" model resulted in a 31kg CO_2 and £33.71 reduction per case, which is an 80% carbon footprint reduction and 65% reduction of the total cost.

Patient and staff feedback was positive. Staff felt that productivity had improved, and patients commented that the set up was "fantastic".

Next Steps

The preliminary results will hopefully soon be seen as the “Standard of Practice” in the two hospitals involved in the project. By upscaling to the whole of the UK, in which 53,000 CTRs are undertaken each year, estimated carbon footprint reduction could be 1,643,000Kg of CO2e.

Additionally, the team are exploring the use of virtual follow-up appointments, which would decrease staff time by 50%.

Further Information

Preetham Kodumuri, Consultant Hand and Orthopaedic Surgeon

Prash Jesudason, Consultant Hand and Orthopaedic Surgeon

Jack Houghton, Specialist Doctor in Orthopaedics

Shan Roberts, Theatre Practitioner

Iona Williamson, Sterile Serivces Manager

Teresa Revell, Deputy Team Leader Day Case Unit

https://networks.sustainablehealthcare.org.uk/sites/default/files/resources/Wales%20-%20SusQI%20project%20report.pdf

CASE STUDY 17

REDUCING PLASTIC BAG USAGE IN THE BRONGLAIS HOSPITAL PHARMACY DEPARTMENT

Hywel Dda University Health Board

Key Words

Reduce | Plastic Bags | Net Zero | Medication | Transportation | Reusable | Data Collection | Pharmacies

Summary

The Bronglais Hospital Pharmacy Department in Wales has implemented a project to reduce plastic bag use to align with the NHS Wales Decarbonisation Strategic Delivery Plan 2021-2030, aiming to tackle plastic waste in healthcare. The pharmacy department currently uses around 7,000 plastic bags per year, costing around £377 a year, and this project aims to reduce this number. This effort contributes to the NHS's goal of achieving a net-zero carbon footprint by 2045.

Approach

The project's main aim was to review the method used for transporting medications to patients on the wards from the Pharmacy Department, to reduce the number of plastic bags used.

To implement this, a process map was created to study the system and see how the plastic bags were being used. From this, it was discovered that individual plastic bags were used to respond to medication errors. Nurses and pharmacy staff have mixed feelings about the bags. Some throw them away for lack of time or recycling, while others haven't considered reusing them.

The overuse of plastic bags for medication delivered to wards was identified as wasteful. To address this, a reusable zip bag system was implemented. Medications would be delivered in these reusable bags, distributed to patients, and then the empty bags returned to the pharmacy through existing ward stock delivery boxes. Stakeholders were informed and involved in the change process through meetings and briefings.

Data collection was carried out by the pharmacy staff to record the number of plastic bags given out each day for a period before and after a change was implemented. Then, carbon emissions were calculated for each size of plastic bag used in the department.

Outcomes and Impact

Concerning data collected monthly from the All Wales Medicines Safety Audit, the team determined whether the changes in procedure impacted the availability of medicines on the ward for patients. The audit collects data on medications prescribed and administered, including incidents of missed medication due to 'unavailability'.

The team also found no change to frequency in incident reports made following their implementation, implying that eliminating the use of plastic bags has not impacted patients. As each box of medication is labelled with patient details, and confident that eliminating plastic bags will not increase incidents in the future.

The overall CO2e savings over the project are 117 kg CO2e per year.

Next Steps

Insightful discussions have taken place including a collaborative approach to find a new way of working. Some ideas for future projects involve paper bags for take-home medication, inhaler recycling, and reducing paper use.

Expanding established best practice to further areas would involve a wider reach of patients, pharmacists, and communities, thus achieving a larger-scale impact. This evolution not only fosters a behavioural change towards sustainability but also underscores the social responsibility aspect within healthcare practices.

Monitoring the execution of the suggested next actions, while actively seeking additional opportunities for collaboration and innovation, would contribute to the spread of the programme.

Further Information

Zoe Kennerley – Pharmacist

Farah Reaney – Pharmacist Technician

https://bevancommission.org/wp-content/uploads/2023/10/Reducing-plastic-bag-usage-in-Bronglais-Hospital-Pharmacy-Department.pdf

CASE STUDY 18

RE:FIT

SWANSEA BAY UNIVERSITY HEALTH BOARD

Key Words

Energy Conservation | Solar Farm | Electricity | Emissions | Energy | Zero-carbon Electricity | Lighting | Air Handling | Ventilation | CO2 Reduction

Summary

Working with Vital Energi, SBUHB are delivering two phases of energy improvements to various sites including Morriston, Singleton, Gorseinon and Tonna Hospitals. The first is a range of energy conservation measures across eight of the health board's highest energy buildings and the second is a Solar Farm Project in Morriston hospital.

Phase 1 (Energy Conservation Measures) was implemented in 2020-21 and Phase 2 (Solar Farm Project) between 2020-22.

Approach

Phase 1 involved introducing upgrades to the eight highest energy use buildings in SBUHB, focusing on energy conservation measures such as lighting, air handling and the building energy management system. Step 1 was to upgrade the lighting, replacing older fluorescent light fittings to more efficient LED fittings. Step 2 was to introduce air handling upgrades, such as new ventilation system units. Step 3 was to install rooftop solar PV panels in five locations across Singleton Hospital Campus. Step 4 addressed specific problems with bespoke solutions, such as faulty steam traps.

Phase 2 delivered a groundbreaking solar farm at Brynwhilach, with almost 10,000 PV panels installed across 20,000m2.

Outcomes and Impact

Phase 1 was able to demonstrate multiple outcomes. By upgrading the lighting across eight sites, SBUHB electricity usage was reduced by nearly 3.75 million kW hours, alongside saving around £500,000 per year. Installing rooftop solar panels across Singleton Hospital will save almost £20,000 per year and produce c.170,000 kW hours of zero-carbon electricity and 47 tonnes of carbon savings. Solutions to the faulty steam traps paid for themselves in the first 12 months, costing £12,000 but saving £21,000 in the first year. Overall, building emissions are down by 12%.

Phase 2 was hugely successful, reducing the health board's carbon emissions by over 20,000 tonnes. The solar farm supplies 3.5million kWh of zero-carbon electricity to Morriston Hospital via a 3km private wire network, which accounts for around 25% of its electricity usage. Initially, it was forecast that the solar farm would save around £439,000 per year, but since the increase in energy costs, this figure has now nearly doubled. Swansea Bay University Health Board is now the first hospital in the UK with a dedicated solar farm.

Next Steps

To scale impact, it advisable to explore any potential future phases of the energy improvement project and to maintain clear communication with Vital Energi regarding their continued involvement. This proactive approach ensures ongoing momentum towards sustainability goals and facilitates a collaborative partnership for the long-term success of energy efficiency initiatives within healthcare facilities.

Further Information

swansea-refit-phase-1.pdf

Swansea Bay UHB - RE:FIT Phase 1 & 2 | Solar Farm (vitalenergi.co.uk)

swanse-phase-2-solar.pdf (vitalenergi.co.uk)

Swansea Bay UHB Solar PV Farm Installation (vitalenergi.co.uk)

How NHS Wales is responding to the climate emergency | NHS Confederation

Welsh solar farm exceeds expectations in powering Swansea hospital | Wales | The Guardian

CASE STUDY 19

REHABILITATION ENGINEERING UNIT (REU)

SWANSEA BAY UNIVERSITY HEALTH BOARD

Key Words

Carbon Footprint | Sustainability | Waste | Non-recyclable | Landfill | Recycling | CO2 | Eco-friendly | Plastics

Summary

The Rehabilitation Engineer Team (REU) has in-house manufacturing facilities in which it creates bespoke devices using materials such as foam, metal, wood and plastic for both postural support and pressure relief. The REU sought to reduce the non-recyclable content in the devices they develop by switching to more sustainable materials, alongside redirecting materials away from landfill. This built on existing sustainability measures such as utilising virtual ways of working and returning old wheelchairs and accessories to the Cardiff Posture and Mobility Centre.

Approach

For the purposes of the project the team focused on custom moulded seating systems, identifying three methods to reduce the carbon footprint of the REU. Firstly, the team switched to a more eco-friendly plastic such as polypropylene that can replace the ABS plastic currently used. Secondly, applicable foam offcuts were collected and returned to the manufacturer with the aim of using these in new products such as chip foam and carpet underlay. Finally, the team sourced new materials from more local suppliers to reduce the CO2 emissions associated with delivering materials.

Outcomes and Impact

The team have projected savings of 353.867kgCO2e from the switch to eco-friendlier plastic and 38.38kgCO2e from the recycling of offcut white foam. Combined, this represents a saving of 392.247kgCO2e, which is equivalent to driving 1,129.7 miles in an average car.

Next Steps

Due to the small scale of operations in the REU, it is difficult to engage companies to repurpose non-recyclable materials that typically work on industrial scales. However, the team have recently started investigating ways of using our plastic off-cuts with Zombie Plastics, a locally based company whose primary goal is the production of goods from waste plastics.

Since the completion of the project, the team have also investigated, verified and implemented the use of the chip foam in their custom moulded seating as an alternative to Evazote, further reducing the use of non-recyclable materials.

Contact Details

Jacob Redwood-Thomas, Rehabilitation Engineer

Benjamin Lee, Rehabilitation Engineer

For more information or to get in touch with Jacob or Ben, please email SBU.REU@wales.nhs.uk

Links

Swansea Bay University Health Board Green Team Competition expected to save £33,794.65 and 4,574,021.3 kgCO2e annually | Centre for Sustainable Healthcare

CASE STUDY 20

REUSEABLE VAGINAL SPECULUMS

Cardiff and Vale University Health Board, Cardiff Royal Infirmary

Key Words

Reusables | Sustainable Practice

Summary

Single use plastic speculums are used as standard in most healthcare settings across the UK and are usually incinerated as clinical waste following use. Speculums are used for vaginal examinations in a range of healthcare settings, and around 3.5 million speculum examinations occur in the UK every year for cervical screening alone1. Every year at Cardiff Royal Infirmary, up to 3,500 plastic specula were used once and discarded. In response, the Department of Sexual Health (DoSH) had a bid approved through the Welsh Government Health and Social Care Climate Emergency National Programme Fund to buy 100 metal specula – and in March 2023 these were distributed among the examination and procedure trolleys2.

Approach

Steps were taken at several levels:

1. Talk to staff and patients to gauge their reactions to switching to metal speculums. Engage with and educate staff about the benefits of reusable metal specula. This can be delivered through training sessions and informative posters for patients. A survey by the Health Foundation showed that staff and patients generally supported the move to reusable from single use items in healthcare1.
2. Address any concerns about risk - disinfection and sterilisation removes any biological material, there is no associated risk of infection1.
3. Engage with procurement about the purchase of metal specula. There will be an initial upfront cost to switch from plastic disposable specula (significantly cheaper) to reusable metal specula1.
4. Sterilisation will need to be planned for and can be completed on site in an autoclave, or off-site. There will be costs associated with this. If using an autoclave, it will be more economical to maximally load the autoclave and clean equipment in packs not individually1.
5. Address political and organisational buy-in. There is an initial cost outlay of buying reusable metal specula, however, there is cost reduction in not having to re-purchase and incinerate the plastic single use specula. The cost of sterilising the equipment makes the investment cost neutral2. This also aligns with the Welsh Government's target of achieving net zero by 2050 (Net Zero Wales | GOV.WALES)

Outcomes and Impact

The switch from plastic to reusable metal specula was well received by patients and staff at Cardiff Royal Infirmary. With metal specula being used in up to 40% of examinations. The department is expected to save more than 500kg CO2e in the first year. The department could save up to 2 tonnes of carbon per year if maximum usage is achieved. “There’s really good evidence that there is a significant carbon saving by sterilisation of reusable instruments when compared with the manufacture of items that you’re only going to use once and incinerate.” (Dr Rachel Drayton, Clinical Director of DoSH)2.

Studies to date have evidenced that the reusable products were associated with a reduction in potential greenhouse gas emissions of 38-50% as well as reusable items being associated with reduction of waste, lowering ozone depletion, ecotoxicity, resource depletion, and improvements in air quality and human health, though a slight increase in water usage1.

Next Steps

The switch from plastic to reusable metal specula was well received by patients and staff at Cardiff Royal Infirmary. With metal specula being used in up to 40% of examinations. The department is expected to save more than 500kg CO2e in the first year. The department could save up to 2 tonnes of carbon per year if maximum usage is achieved. “There’s really good evidence that there is a significant carbon saving by sterilisation of reusable instruments when compared with the manufacture of items that you’re only going to use once and incinerate.” (Dr Rachel Drayton, Clinical Director of DoSH)2.

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Within the department, the plan is to maximise usage of the metal speculums by further staff training and looking into purchasing different sizes on the back of a staff and patient survey that has been undertaken.

Other sexual health clinics in Wales are looking at making this change. Dr Rachel Drayton has been involved in setting up a sustainability special interest group for Obstetrics and Gynaecology. One of the projects they are looking at taking forward is a ‘how to guide’ to support other services making the change.

Further Information

For further information, contact Dr Rachel Drayton at Rachel.drayton@wales.nhs.uk

Sustainable practice: Switching to reusable vaginal speculums, BMJ 2023;383:e075779

https://www.bmj.com/content/383/bmj-2023-075779

https://gvs.squarespace.com/news/plastic-free-july-how-one-department-is-doing-its-bit-for-the-environment

CASE STUDY 21

SHARPSMART

NHS Wales Shared Services Partnership and Betsi Cadwaladr University Health Board

Key Words

Clinical Waste Management | Carbon Emissions | Safety | Reusables

Summary

SharpSmart is a company that offers a safe clinical alternative for sharps and clinical waste management. They use a new standard of risk prevention by putting safety, intelligent movement, and clinical design at the forefront of their waste management practices. They have extensive experience and have environmentally friendly solutions that reduce carbon emissions through reusable products and innovative treatment technologies. In partnership with NHS Wales Shared Services Partnership, Wrexham Maelor Hospital took part in a trial in 2023 looking at reusable sharps containers.

Approach

Through collaboration with NHS Wales Shared Services Partnership, Wrexham Maelor was identified as a pilot hospital for re-useable sharps containers, owing to the hospital's proximity to SharpSmart's Stoke on Trent facility. To test the usability and practicality of the system, 5 high-usage hospital areas were selected including operating theatres and the maternity department. Following a scoping exercise, reusable sharps containers were installed to provide point-of-disposal and reduce the frequency in which containers are replaced.

Auditsmart Reports were conducted each month of the pilot in which 10 containers were audited and scored on segregation, fill optimisation and compliance. These audits, along with weekly and fortnightly site visits, allowed the pilot in Wrexham Maelor to follow a continuous improvement plan.

Outcomes and Impact

Between March and July 2023, through the use of their Safety Engineered Device, Sharpsmart prevented the purchase of 1235 sharps containers, meaning 0.73 tonnes of single-use plastics were not produced and incinerated. This therefore saved 4.08 tonnes of carbon emissions. Furthermore, the pilot collected 0.44 tonnes of metal recycling material which was diverted from high temperature incineration.

80 members of staff at Wrexham Maelor completed an evaluation survey, with the results showing that the majority of respondents thought the Sharpsmart system was better than the previous system in regard to safety. The vast majority of respondents also said they found the containers easy to use. The successful pilot has created a blueprint for how reuseable sharps containers could be implemented in clinical settings across BCU Health Board and NHS Wales.

Next Steps

In Wales, Sharpsmart estimate that 480.7 tonnes of single-use plastic could be saved through the switch to reusables, alongside a reduction of 413 needlestick injuries per year and a saving of 2% or £52,626 per year.

Contact Details

Carys Howell, Clinical Pharmacist and Respiratory Independent Prescriber – Carys.Howell@wales.nhs.uk

Rebecca Gillman, Medicines Management Pharmacy Technician – Rebecca.Gillman@wales.nhs.uk

Links

https://www.sharpsmart.co.uk/

https://bevancommission.org/wp-content/uploads/2024/01/Sharpsmart-NHS-Wales-Pilot-review-1.pdf

CASE STUDY 22

SUSTAINABLE PROCUREMENT

Hywel Dda University Health Board

Key Words

Reusable | Online Tools | Reducing Waste | Collaboration | Carbon Saving | Sustainability

Summary

In 2018, Hywel Dda University Health Board began exploring ways to save money and resources, with a focus on identifying when equipment could be re-used instead of being replaced. This was achieved through use of the 'Warp It' platform – an online tool which allows organisations to list unused assets available for re-use either within the organisation or externally.

Approach

Warp It has demonstrated that it reduces waste and saves money by allowing users to see what is available for reuse either within HDUHB or in local organisations before buying new items, therefore reducing and avoiding unnecessary waste.

Warp It users have access to a dashboard that enables them to track their activity, alongside the environmental and economic benefits of their actions. By enabling collaboration and reuse, tracking the cost and carbon savings made, using Warp It, the case for sustainable procurement is strengthened.

Outcomes and Impact

There have been several benefits to the Warp It platform including:

1. The Health Board has achieved approximately £230,000 of savings through avoiding new purchases, which represents 161 tonnes of CO2e, alongside 41 tonnes of waste being diverted from landfill.
2. Nearly £70,000 worth of unwanted equipment has successfully been repurposed and donated to local charities.
3. 10% of Hywel Dda UHB staff, c.1,000 people, are now registered users of the Warp It platform, demonstrating that even modest uptake of the platform can deliver high impact.

Next Steps

Through early adoption of Warp It, the Health Board is well-positioned to continue aligning their procurement practices with the goals set out in Welsh Government's Beyond Recycling and the NHS Wales Strategic Decarbonisation Plan.

Further Information

https://bevancommission.org/cost-savings-and-waste-reduction-through-sustainable-procurement/

https://bevancommission.org/wp-content/uploads/2023/10/Cost-savings-and-waste-reduction-through-sustainable-procurement.pdf

https://www.warp-it.co.uk

https://www.gov.wales/beyond-recycling

https://www.gov.wales/sites/default/files/publications/2021-03/nhs-wales-decarbonisation-strategic-delivery-plan.pdf

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CASE STUDY 23

THE GLOVES ARE OFF CAMPAIGN

Swansea Bay University Health Board

Key Words

Covid-19 | PPE | Hygiene | Non-sterile Gloves | Environmental Impact

Summary

The team aimed to reduce the unnecessary use of non-sterile gloves within the NICU departments at Glangwili General Hospital to improve hand hygiene practices, reduce cross contamination stemming from the overuse of non-sterile gloves and reduce the environmental impact of the NICU.

By focusing on the proactive approach to gathering comprehensive information, the initiative demonstrates a steadfast commitment to evidence-based decision-making and the pursuit of sustainable healthcare practices.

Approach

Utilising a validated glove tool, the team completed an initial audit over 6 hours to collect baseline data on the use of non-sterile gloves within the department. Procurement was also contacted to obtain information on the number of non-sterile gloves ordered in the six months leading up to the intervention. Based on the baselines collected, a training video was developed that 1) outlined the risks of infection and cross-contamination associated with overuse of non-sterile gloves, 2) educated staff on the current NHS guidelines around glove use and 3) shared the results of the audit (i.e. the baseline data). Two posters were also developed. One was aimed at family and staff; the other was an infographic to show when to use non-sterile gloves. The audit was then repeated to assess the percentage reduction.

Outcomes and Impact

Since establishing the campaign, there has been a 55.41% reduction in inappropriate non-sterile glove use, equaling just under 5000 fewer gloves being used per month. Projected over one year, 1,555.6kg CO2e and around £6500 could be saved. Additionally, there was a significant reduction in cross-contamination, with the average number of times an item was touched before reaching a patient or key site dropping to 0.4, compared to 4.6 previously. The roll out of the educational resources was found to result in a 33.61% increased understanding in correct glove use.

Next Steps

It is imperative to continue monitoring and evaluating the initiatives outcomes. The Bevan Commission recommends further research to assess the impact on infection rates and encourages the extension of successful interventions to healthcare facilities to maximise benefits across the board. Data regarding reductions in infections and environmental impact would facilitate the project's expansion to other hospitals.

Further Information

Naomi Oxberry, Medical Student at Swansea University

https://sustainablehealthcare.org.uk/news/2023/02/swansea-bay-university-health-board-green-team-competition-expected-save

SusQI Project report - gloves off .pdf (sustainablehealthcare.org.uk)

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5074137/

CASE STUDY 24

TRANSFER SHEETS IN ENDOSCOPY

Hywel Dda University Health Board

Key Words

Green | Endoscopy | Waste Walks | Reusable | Laundry Department | Slide Sheets

Summary

A Green Endoscopy programme was developed to look closely at equipment usage, waste walks, pathways etc. to find ways to become more environmentally friendly. From this, the programme identified unnecessary waste in one unit through the usage of disposable transfer sheets for all patients. The other three units were reusing washable sheets after laundering them whilst one unit continued to use single use patient transfer sheets, no matter the patient's condition or mobility.

Approach

The team aimed to prioritise sustainability and reduce waste by minimising the usage of single use sheets and implementing reusable alternatives for future purposes. They have been achieving this through their liaisons with the Procurement Laundry Department and Manual Handling.

Outcomes and Impact

The team estimated that 90% of slide sheet use (2,700 sheets) is not needed clinically, corresponding to a potential carbon saving of 3726 kgCO2e per year and an annual economic saving of £2160.

Also, there has been a growing social sustainability with patients maintaining independence throughout their endoscopy journey, including procedures and recoveries. There has been little impact on clinical care.

Next Steps

To scale up the environmental impact of the initiative, as a next step, spreading sustainable practices across all endoscopy units would be beneficial. The change to a new practice would require comprehensive staff training on reusable transfer sheets. To support sustainable change, ongoing monitoring of activities and results would provide information for further learning and adjustment of the process. Further, collaborative partnerships with procurement and waste management teams would ensure seamless integration of sustainability efforts.

Further Information

Sr Emilia Wronska - Endoscopy Pre-assessment and JAG Lead

https://sustainablehealthcare.org.uk/news/2023/02/hywel-dda-university-health-board-green-team-competition-anticipates-annual-saving-

Additional Case Studies

Mobility Aid Recycling

- ABUHB
- Key words: circular economy, recycling, waste, mobility aids

Summary

Crutches and Zimmer frames are being given a new lease of life thanks to Torfaen County Borough Council's Household Waste Recycling Centre, in partnership with Aneurin Bevan University Health Board.

Approach

In a partnership with Cefndy-Medequip (a social enterprise), mobility aids that are no longer being used can be dropped off at dedicated points and then sent for recycling. Cefndy-Medequip clean and repair the mobility aids to regulatory standard to enable further use across Gwent. Additionally, 'return to ABUHB' stickers are being placed on each item to encourage them to be returned to the Health Board when no longer needed.

Councillor Mandy Owen, Executive Member for the Environment, commented, "Many people are discharged from hospital with equipment that is designed to support recovery, but when that equipment is no longer needed a lot of it gets thrown away. This service saves reusable items from going to waste, saves money and increases the number of items available for those residents in need."

Links:

https://abuhb.nhs.wales/news/news/new-life-for-old-mobility-aids/, http://cefndy-medequip.com

Reducing Medicine Waste in Care Homes

- ABUHB
- Key words: medicine waste, care homes, overprescribing, pharmacies, prescriptions, efficiency

Summary

There has been a perceived amount of medicine waste through over-ordering in care homes, over-prescribing by GPs and overly complicated ordering processes taken in community pharmacies. The main aim of the project is to reduce medicine waste in care homes by improving the efficiency of medicine ordering.

Approach

To improve the efficiency of medicine ordering, the project has introduced alternative ways of ordering required medicines in care homes and improved routine medication ordering to give staff in care homes the confidence that medicines will be delivered safely and correctly.

Staff have encouraged the use of 'My Health Online' (a free, online service) to improve and accelerate the ordering process. The use of My Health Online will remove the initial step of using a Medication Administration Record (MAR) chart and attending the pharmacy prior to prescription requests arriving at a GP practice. It will also reduce the risk of a practice issuing a prescription that is not needed.

Link:

https://bevancommission.org/reducing-medicines-waste-in-care-homes/#:~:text=Reducing%20Medicines%20Waste%20in%20Care%20Homes%201%20Context%3A,3%20Measurement%3A%20...%204%20Impact%20and%20benefits%3A%20

Supporting the ABUHB Decarbonisations Agenda with Technology

- ABUHB
- Key words: asthma, decarbonisation, inhalers, technology

Summary

Utilising the All-Wales Asthma and COPD guidelines alongside key elements of the ABUHB Decarbonisation Strategy, an app has been developed within the Health Board that simplifies and supports inhaler reviews across all healthcare settings – without the need for specialist knowledge of inhalers.

Approach

The app uses data such as Inhaled Corticosteroids (ICS) strength classification, device resistance rating, licensed indications, and Global Warming Potential (GWP). It is a decision support tool, rather than being classed as a medical device by the Medicines and Healthcare products Regulatory Agency (MHRA).

Once an online assessment is complete, the app takes all the relevant information and uses it to produce a concise list of the most appropriate inhalers for the patient. The list shows the lower GWP inhalers first, followed by the others in descending order of the device resistance. The app is intuitive and will only show screens, questions, and inhalers relevant to the information provided in the online assessment.

Link:

https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fbevancommission.org%2Fwp-content%2Fuploads%2F2023%2F10%2FInhaler-app-presentation-004.pptx&wdOrigin=BROWSELINK

Orthopaedic Surgery Waste

- BCUHB
- Key words: sustainable, carbon footprint, patient safety

Summary

Orthopaedic trauma surgery is a major burden on the NHS. As such, the project is aimed at developing a safe, economical, and environmentally sustainable pathway for delivering trauma care service. Normally, the carbon emissions of a single surgery equal that of driving a petrol car 450 miles. This is what the project and BCUHB are seeking to improve.

Approach

The aim of this project is to reduce the carbon footprint of the five most performed procedures in the Orthopaedic trauma surgery. As such, the project seeks to reduce patient visits to the clinic. One method is via ward admissions using a 'one stop shop' and day case fracture clinic surgery for Orthopaedic trauma patients who are mobile, which will invariably reduce carbon footprint. This would then be complemented through the assessment of waste generated in the orthopaedic trauma theatre(s), alongside assessing the reduction in waste following implementation of sustainability measures. Other methods include re-auditing the 'GREEN THREATRE CHECKLIST', as proposed by the Royal College of Surgeons, as well as the cost effectiveness of fracture clinic day case surgery.

Link:

https://bevancommission.org/eliminating-woorstwaste-originating-from-orthopaedic-surgery-for-trauma-novel-model-for-day-case-surgery/

Automating Dose Badge Distribution Tracking

- CAVUHB
- Key words: radiation, radiographers

Summary

By law, any individual working with or around ionising radiation must wear a Thermoluminescent Dosimeter (TLD). These TLDs are changed and processed bi-monthly. If one is not returned within the specific time, the department is responsible for returning them and faces a fine. To counter this, a system is needed whereby the exchange of TLDs can be monitored.

These aims are threefold:

1. To reduce the number of unreturned TLDs;
2. To reduce the time spent by radiographers sorting TLDs;
3. To accurately track the timings of returns to aid dose breach investigations.

Approach

Over 14 months, a spreadsheet was used to track the exchange of TLDs by staff working in the University Hospital of Wales Radiology department. The project included a cohort of 92 Radiologists, 93 Radiographers and 41 Radiology Department Practitioners (RDAs). At the end of the study, the data from the spreadsheet was compared against the official return statistics provided by Radiation Protection Service (RPS) Velindre to assess whether the number of TLDs scanned into the spreadsheet impacted the total number of TLDs returned.

Links:

ttps://bevancommission.org/automating-dose-badge-distribution-tracking/

Mobility Aid Recycling

- CAVUHB
- Key words: reuse, landfill, mobility aids

Summary

Cardiff and Vale University Health Board is relaunching its Walking Aids Recycling Scheme to help develop upon previous success in re-issuing equipment to the community. The scheme is working in partnership with HM Prisons Probation Service.

Approach

HM Prison and Probation Service assess, clean, repair and recycle the mobility aids. Eight drop-off points for medical equipment have been set up across Cardiff and the Vale of Glamorgan. Unwanted items can then be cleaned and refurbished by support staff working within the Physiotherapy team.

Link:

https://cavuhb.nhs.wales/news/latest-news/we-are-relaunching-our-walking-aids-recycling-scheme/

Green CTM

- CTMUHB
- Key words: green, sustainable, carbon emissions, energy resources, solar power

Summary

Green CTM is a staff working group and initiative that was launched with the aim of coinciding with the 2021 United Nations Climate Change Conference, to ensure that green and sustainable principles are embedded across the Health Board.

“Going green and being sustainable in all that we do is a vital part of our approach to delivering on our responsibilities as a population health organisation for the communities of CTM.” Linda Prosser, Director of Strategy and Transformation.

Approach

‘Going green’ and implementing sustainable actions is a core aspect of the approach. This mindset will be at the centre of the Health Board’s decision-making, which will in turn be transformational for staff, communities, and future generations.

Director Linda Prosser commented that, “It can be something as simple as deciding to bring a re-fillable cup into work instead of using disposable cups, switching off lights and IT monitors that are not in use, decisions about the materials we use in the services we provide, and right through to bigger transformative projects such as our buildings and energy systems.”

Links:

https://www.nhsconfed.org/publications/how-nhs-wales-responding-climate-emergency, https://ctmuhb.nhs.wales/news/latest-news/launching-green-ctm/, https://www.un.org/en/climatechange/un-climate-conferences

Equipment Reuse and Repurposing

- HDUHB
- Key words: repurposing, reusing, carbon savings, efficiency

Summary

The health board have made use of the 'Warp It' software in order to enable the repurposing and reuse of surplus equipment and assets across the estate.

Approach

The software helps in three main areas:

1. Saving money through reducing waste disposal and purchasing costs. New owners can be found for any surplus kit an organisation may have, so there is no need to purchase new.
2. Saving time on clearances through managing building clearance in an efficient manner. New owners can be found before a clearance starts so the reuse is maximised, and delays are reduced.
3. Saving space taken up by unused resources that could be used elsewhere. The organisation is able to give or loan resources to others to bring the unused into use again and liberate the space.

Links:

https://www.warp-it.co.uk/

Local Supply Chain Initiative

- HDUHB
- Key words: climate emergency, suppliers, congestion

Summary

Glangwili General Hospital have a plan for addressing the climate emergency, as declared by Welsh Government in 2019. This includes the procurement team's long-term aim of increasing their use of local contractors.

Approach

Hywel Dda's procurement team have a long-term aim to increase their use of local contractors. As it was due for renewal, the Glangwili General Hospital automatic door contract was selected to kickstart this approach to procurement. Presently, the current supplier is based in Bristol and it can take a number of days before doors are repaired. A local supplier could reduce this time and the change to a local supplier could also reduce carbon emissions from travel.

Link:

https://sustainablehealthcare.org.uk/news/2023/02/hywel-dda-university-health-board-green-team-competition-anticipates-annual-saving-

Pathology Sample Transport

- HDUHB
- Key words: transport, carbon emissions

Summary

There are four blood science laboratories in Hywel Dda University Health Board (HDUHB), with each processing most of the samples sent to them. However, some require analysis at another hospital site or specialist centre. The normal transport between hospital sites for these tests produces 52.4 tonnes of carbon emissions, with 119,500 miles travelled per year. Hywel Dda are seeking to reduce this. Additionally, there are occasionally situations where samples are sent via 'urgent transport' i.e. in a taxi, as they cannot wait for routine collection on the following day.

Approach

The team involved have investigated if all 'urgent transport' is actually clinically urgent. They are hoping to reduce the rate of urgent transport by taking part in team education and comparing in- house versus external testing options. After an audit was conducted, the team anticipated that a 5-10% reduction in the urgent transport of samples is achievable. This could save around £10,400 and between 1950-3901 kgCO2e.

Link:

https://sustainablehealthcare.org.uk/news/2023/02/hywel-dda-university-health-board-green-team-competition-anticipates-annual-saving-#Pathology%20Sample%20Transport,%20Pathology%20Team

Reducing the Inhaler Blues: Medicines Optimisation Team

- HDUHB
- Key words: metered dose inhalers, carbon footprint, asthma, prescriptions

Summary

Wales has an ambitious target to reduce the percentage of Metered Dose Inhalers (MDIs) prescribed from 70% to less than 20% by 2025. If achieved, this could reduce the amount of CO2e by 45,000 tonnes annually.

Approach

The team have developed two work streams in order to reduce the amount of MDI inhalers (and subsequently, carbon footprint) being prescribed. The first workstream is 'lower carbon inhaler switch'. This involves changing the Ventolin and generic Salbutamol inhalers from high carbon MDIs to Salamol (a lower carbon MDI). Additionally, workstream one involves reducing the number of inhalers issued per repeat to one per patient request.

Workstream two is 'reducing exacerbations'. This involves contacting patients who are at risk of respiratory exacerbations (due to prescriptions) and asking them to attend a review appointment to reduce the number of Short-Acting Bata Agonists (SABAs) being prescribed, alongside GP and hospital visits. This will also result in a better quality of life for the patient.

Link:

https://sustainablehealthcare.org.uk/news/2023/02/hywel-dda-university-health-board-green-team-competition-anticipates-annual-saving-

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