



Circular Economy

In 2021, Welsh Government announced its plan to make the circular economy in Wales a reality in the Beyond Recycling strategy. But what exactly is the circular economy, what are the benefits and enablers, and what are the challenges we might face when moving to this way of working?

What is the circular economy?

Typically, we take resources, make something with them, consume the thing we made and then throw it away when we have finished using it or if it has broken. This is referred to as a 'linear economy', because it follows a linear process. The problem with this approach is that is wasteful, and ultimately, not sustainable.

A circular economy aims to close the loop on this linear approach, ensuring that products and resources are reused and recycled or stopping waste from being produced in the first place, by things like maintaining and repairing products or using resources that are biodegradable. This is sometimes referred to as the 5 Rs - reduce, reuse, reprocessed, renewable and recycle.

NHS Wales produces 600,000 tons of waste each year

What are the benefits of a circular economy?

Positive impact of climate and health

These two benefits are being addressed together, because they are inextricably linked. According to the World Health Organization, climate change is the biggest health threat facing humanity.

If the global health care sector were a country, it would be the 5th largest emitter on the planet

Wasting resources is a huge contributor to climate change and the health and social care sector is one of the biggest contributors to waste in the worldwide. The linear economy pollutes air, water and soil. This has a negative impact on population health and increases pressure of the health and care sector. A shift to a circular economy aims to address this by keeping resources and products in use for as long as possible and avoiding waste.

Cost-savings

A [study from 2015](#), by McKinsey & Company and the Ellen MacArthur Foundation, found that moving to a circular economy would boost Europe's resource productivity by 3% by 2030, leading to cost savings of €600 billion a year and €1.8 trillion more in other economic benefits.

Job Creation

[Research](#) suggests that the circular economy has the potential to create over 200,000 new jobs in Britain based on current developments, as well as reducing the expected decline in skilled employment.

What are the challenges for health and social care?

Transport emissions

Transport emissions are a huge environmental concern. There are multiple factors that contribute to transport emissions in health and social care, including:

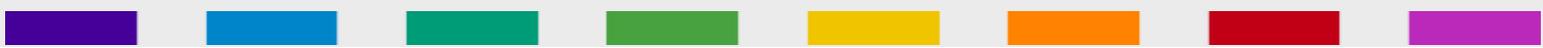
- staff and patients travelling to appointments
- transport of products and goods by suppliers
- NHS vehicles like ambulances
- Travel for meetings

However, changes that were made in response to the Covid-19 pandemic saw a drop in transport emissions during that period and by continuing and developing these changes to ways of working, we can ensure a sustainable health and care system.

[CAVUHB produces around 202k tonnes of greenhouse gases each year: the same amount as all the households in Barry combined](#)

The Welsh Ambulance Service Trust (WAST) has made a number of changes in recent years to address environmental impact. WAST have implemented hybrid rapid response cars, reducing 125 tonnes of CO2 emissions each year, and have piloted the use of electric vehicles. Additionally, WAST have fitted vehicles with solar panels, which both generates energy and negates the need to install multiple charging points. Read more about it [here](#).

Remote appointments and e-consultations became more prominent during the pandemic and health boards across Wales are continuing to use these models. Research from 2021 estimated that e-consultations save between 0.70-372kg CO2e per consultation. By using models such as [Attend Anywhere](#), not only will staff and patient travel time be reduced but it also provides patients and the public with more flexible and convenient options for attending appointments.



Disposable and single-use products

Only 7.2% of used material is cycled back into our economies after use

Disposable and single-use products are used widely in the health and social care sector, as they are used to minimise the spread of infection, however most of these disposable products end up either in landfill or are incinerated. While infection control is a very important consideration, changes will need to be made to minimise the environmental impact of using single-use disposable products. Luckily, there has been encouraging progress in this area that we can build upon to contribute to a more sustainable future.

Cardiff and Vale UHB have relaunched their Walking Aids Recycling Scheme to help build upon previous success in reissuing equipment to the community and prevent unwanted walking aids ending up in landfill. So far, the service team has been able to recycle over 1,500 walking frames and 2,000 pairs of crutches (worth over £28,000) that would have otherwise ended up in landfill sites. [Click here](#) for more information and to find out where your nearest drop point is.



NHS England alone disposed of 1.4 billion face masks between the start of the pandemic and March 2021. Revolution-ZERO aim to displace single use medical textiles with more effective, economic and sustainable alternatives. The company developed reusable facemasks, surgical gowns, operating theatre drapes and more. The company has gone beyond standard reuse models and also develops repurposing and recycling solutions. Take a look at how they are doing this on their [website](#).



Overly risk averse approaches contribute to the overuse of disposable products, such as non-sterile gloves. Great Ormand Street Hospital trialled an educational awareness programme for staff to improve risk assessing the use of non-sterile gloves. Over a six-month period, the hospital saw an average reduction of 36,608 gloves per week, which has the same weight of 2 fully laden ambulances! During the period, there was no adverse rise associated with glove use in hospital acquired infections. Read more about [the project here](#).



Pharmaceuticals

Pharmaceuticals contribute to around 20% of the NHS Carbon Footprint. It is estimated that half of all medicines are wasted, due to medicines being over-prescribed, not used in the right way or people no longer needing or using medication that continues to be prescribed. This not only has environmental impacts but is also an issue economically.

Across Wales, 72,657,354 items were dispensed with an estimated £21.6 million worth of medicines being wasted

Swansea Bay UHB is piloting the responsible disposal of inhalers containing hydrofluorocarbon (HFC) in eight pharmacies in the region's Upper Valleys Cluster. A study by the cluster indicated that 90% of inhalers were being sent to landfill via general household waste. The cluster aims to recycle 80% of all inhalers prescribed in the programme area by 2025. See more information [here](#).



The Nitrous Oxide Project at Cardiff and Vale UHB aims to reduce environmental impact by changing the way anaesthetic nitrous oxide gas is supplied from a piped manifold system to portable cylinders. All hospitals in Cardiff and the Vale have decommissioned the manifold systems, saving around 1 million litres of nitrous oxide a year, equivalent to 535 tonnes of CO₂. Take a look at the [film](#) the Hub made to showcase this for more information.

How can you get involved?



The Circular Economy Innovation Community aims to build a circular economy ecosystem in Wales. Have a look at their [website](#) for resources and training opportunities.



The Bevan Commission have formed the Let's Not Waste network to provide a focus and concerted effort to achieving demonstrable reduction in waste in health and social care. If you would like to get involved, take a look at their [website](#).



Green Health Wales is a network of health and care professionals across Wales who recognise that the climate and ecological emergency is a health emergency. Their [website](#) features a wealth of case studies and resources to learn more about what we can do to ensure a more sustainable future.

Additional Information

If you'd like to learn more about the circular economy and sustainability, take a look at the links below. You can also find links to the sustainability strategies of Vale of Glamorgan Council, Cardiff Council and Cardiff & Vale University Health Board.

[Beyond Recycling](#)

Welsh Government's strategy to make the circular economy in Wales a reality

[What a Waste](#)

A report by the Bevan Commission that looks at waste more broadly to understand inappropriate waste in health and social care

[What is a circular economy?](#)

An introductory guide to the circular economy by one of the UK's leading networks on the circular economy

[Circular Economies and Sustainable Health and Wellbeing](#)

a Public Health Wales report looking into the public health impact of public bodies refocusing on waste reduction and reuse in Wales

[Understanding the Circular Economy](#)

The Circular Economy Innovation Community have produced a introductory guide on the circular economy.

[Climate Change Challenge Plan](#)

Vale of Glamorgan Council's plan to tackle climate change

[Stronger, Greener, Fairer](#)

Cardiff Council's ambitions to ensure a more sustainable region

[Decarbonisation Action Plan](#)

Cardiff and Vale UHB's Action Plan to reduce regional NHS carbon emissions

Take a look at our [website](#) for more of our work or get in touch via Dylan.John4@wales.nhs.uk