What is the sustainability of our ‘new normal’? Ecological impact of remote healthcare on the environment, what patients, families and clinicians think, and the impact on workforce.

Gemma Johns, Research & Evaluation Lead.
There are rarely subject matters that remain untouched by the COVID-19 pandemic.

One area with positive and negative impacts (directly/indirectly) is our environment.

The spread of the virus drew many countries to a halt, with the cancellation of flights and travel, and has forced populations to socially isolate for long periods of time [1].

This is expected to have vast impacts on the psychological and physical wellbeing of populations, but it is likely to have unprecedented impacts on the environment [2, 3].

Much of the environmental impacts remain largely positive, but negative impacts are reported to be greater and more long-lasting [2].
Air Pollution & Greenhouse Gases

• One positive environmental impact is the reduction in air pollution and greenhouse gas emissions [3].

• Quarantine measures enforced many global populations into their homes, reducing the output of major air pollutant sources such as human mobility and industry [4]

• Reduced the associated emissions from travel via flights, road and rail.

• It is estimated to be up to a 30% reduction in NO₂ (Nitrogen Dioxide) emissions.

• Up to an 80% reduction in particulate matter (e.g., hazardous particles in the air) over the USA, Europe and Southeast Asia [5]

• But these impacts are considered to be short-term [3]
Increased Plastic Production & Waste

- One of the most negative environmental impacts, and likely to have a long-term impact is the increase in plastic production and waste.

- There's been a need for PPE to ensure the safe functioning of healthcare services [6].

- Since March 2020, an estimated 129 billion facemasks and 65 billion pairs of plastic gloves have been used monthly.

- Masks, gloves, plastic aprons and visor shields causing extraordinary amounts of non-recyclable plastic waste, presenting a challenge to dispose of the excess plastic.

- This impact has reversed recent single-use plastic laws across many countries [7].

- The use and mismanagement of these plastics causes local pollution. But also, small/light enough to be transported, potentially causing widespread pollution [8].
Improvements to Wildlife & Less Food Waste

• Another positive environmental impact, due to the restriction of human activity, has allowed many wildlife to reclaim previously human dominating spaces. For example,

  Reports of wild coyotes in the USA;
  Rarely seen insects remerging in England;
  Wild goat and peacock have been spotted in North Wales.

• Temporary reduction in traffic collisions involving wild animals [9]
• Improved water quality and return of fish and marine life into urban waterways [10, 11]
• 50% decrease of sewage and industrial waste in rivers [4]
• 15.9% reduction in hazardous particles in lakes [12].

• More efficient household food management has reduced food waste [13]
• Consumers switched to frozen (31% increase) and cupboard food (37% increase) as opposed to fresh food (15% reduction) [14].
Technology Enabled Care (TEC) Cymru

- Technology Enabled Care (TEC) Cymru enable the sustainable use, scale-up and spread of digital services.

- As a response to the COVID-19 pandemic, TEC Cymru developed a new NHS Wales Video Consulting Service to offer remote healthcare.

- We identified environmental impacts as a significant benefit to remote healthcare.

- A ‘benefit’ reported by professionals, patients and families which appears to be influencing VC uptake significantly.

- The ‘benefit’ itself is key to remote healthcare for the patient, and to remote working for the professional.

- The secret to sustainability, maybe?
The NHS Wales Video Consulting Service

**TEC Cymru Research Participants**

*28,000 Patients & Professionals*

**Travel Savings**

- **Time:** 564,773 mins (9,400 hours)
- **Travel:** 379,414 miles
- **Carbon:** 111,385 co2

Distance not travelled (miles saved) because of VC = 33 trips from London to Auckland

**Average Patient Travel Savings**

53 mins per patient, per appointment (excluding prep & parking time)

**Patient Age**

- <12: 17%
- 13-17: 5%
- 18-24: 6%
- 25-44: 23%
- 45-64: 29%
- 65-80: 18%
- >80: 3%

75% prevention of face to face

30% of Professionals Remote Working

**93%** of all patients rate VC as ‘Excellent, Very Good or Good’

43% Male

57% Female

**Distance not travelled (miles saved) because of VC = 33 trips from London to Auckland**
Quotes from Professionals

“I advocate for environmental issues and agree that for various reasons (paper waste, petrol, etc.) that video calls are more environmentally friendly than face-to-face…big thumbs up!” (Psychologist).

“There is less impact on the environment, with less travel” (Palliative Medicine Doctor).

“Saves travel time, especially for families with other children, saves professionals travel time” (Occupational Therapist).

“Reduces the need for patients to travel long distances to appointments” (Management Primary Care)
TEC Cymru are positively contributing to the environmental impacts of COVID-19 by way of offering remote healthcare, thus helping towards:

- **Saved travel and co2 e.g., patients report saved travel (90%) and time off work/school (additional travel) (65%).**

- Prevented the need for face-to-face of almost 100k VCs (75% of the time) thus contributing to the significant savings on plastic waste (e.g., PPE)

- **Enabling professionals to work remotely e.g., less travel, less emission and pollution, food waste, less paper waste, less unnecessary human activity and protection of wildlife.**

TEC Cymru research suggests that ‘benefits’ determine VC use and value – e.g., uptake is higher when benefits are perceived as high too. To sustain VC, then perhaps focus on the ‘benefits’ it can offer, and improve on them moving forward.
Foolish humans! Just when the air begins to get clean, they start wearing masks!
• Central to TEC Cymru aims and Welsh Government policy, we are producing a world that is suited to our ‘future generations’ [17]

• To understand more about what this means, TEC Cymru were keen to learn from our future generations – the young people of Wales.

• TEC Cymru researchers approached young people who had previously been part of the NHS Wales VC Service evaluation to contribute in further research.

• In initial discussions, the young people expressed an interest in creating a film to share their message with the wider public.

• Taking this on board, we agreed to capture and record young people’s voices by asking them one simple question:

  ‘How has the COVID-19 pandemic impacted on the environment?’
Young People in Wales: Environmental Impacts

• Due to lockdown restrictions, we asked young people to self-record and send clips to TEC Cymru.

• Total of 22 video clips (24 young people), between 2 years old and 23 years old.

• Across 5 or the 7 Health Boards in Wales.

• Provided common themes, including both good, bad and combined environmental impacts, which were comparable to the recent COVID-19 related scientific literature [1-14].

• Five dominant themes emerged, to include:

1. Travel, emission and air pollution
2. Water pollution and beaches
3. Protection of animals and wildlife
4. Recycling and plastic waste
5. Food and energy waste

The Video – Young People of Wales
References