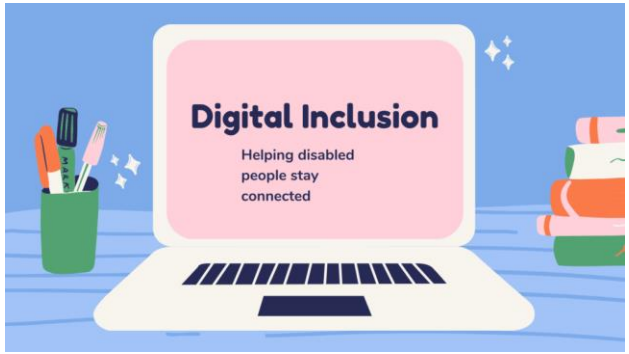
Greener NHS - Digital Workstream
An Introduction

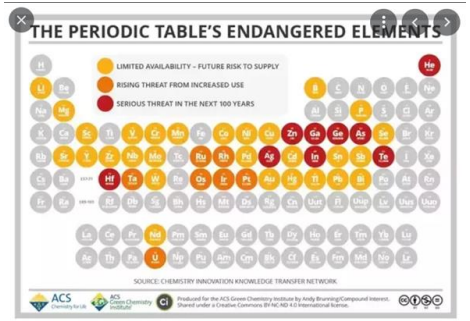
Ben Tongue - Digital Net Zero Lead

Digital sustainability concerns



electronics watch

Responsible public procurement.
Rights of electronics workers.



Greener NHS Programme

National ambition

Our Vision:

To deliver the world's first net zero health service and respond to climate change, improving health now and for future generations.

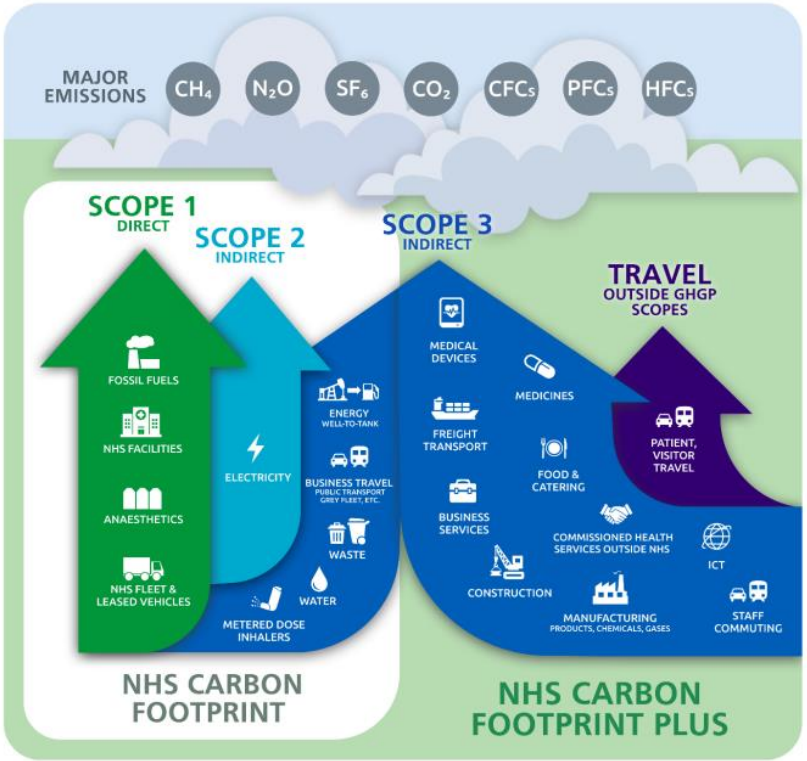
Our aim is to be the world's first net zero national health service.

We have set two targets:

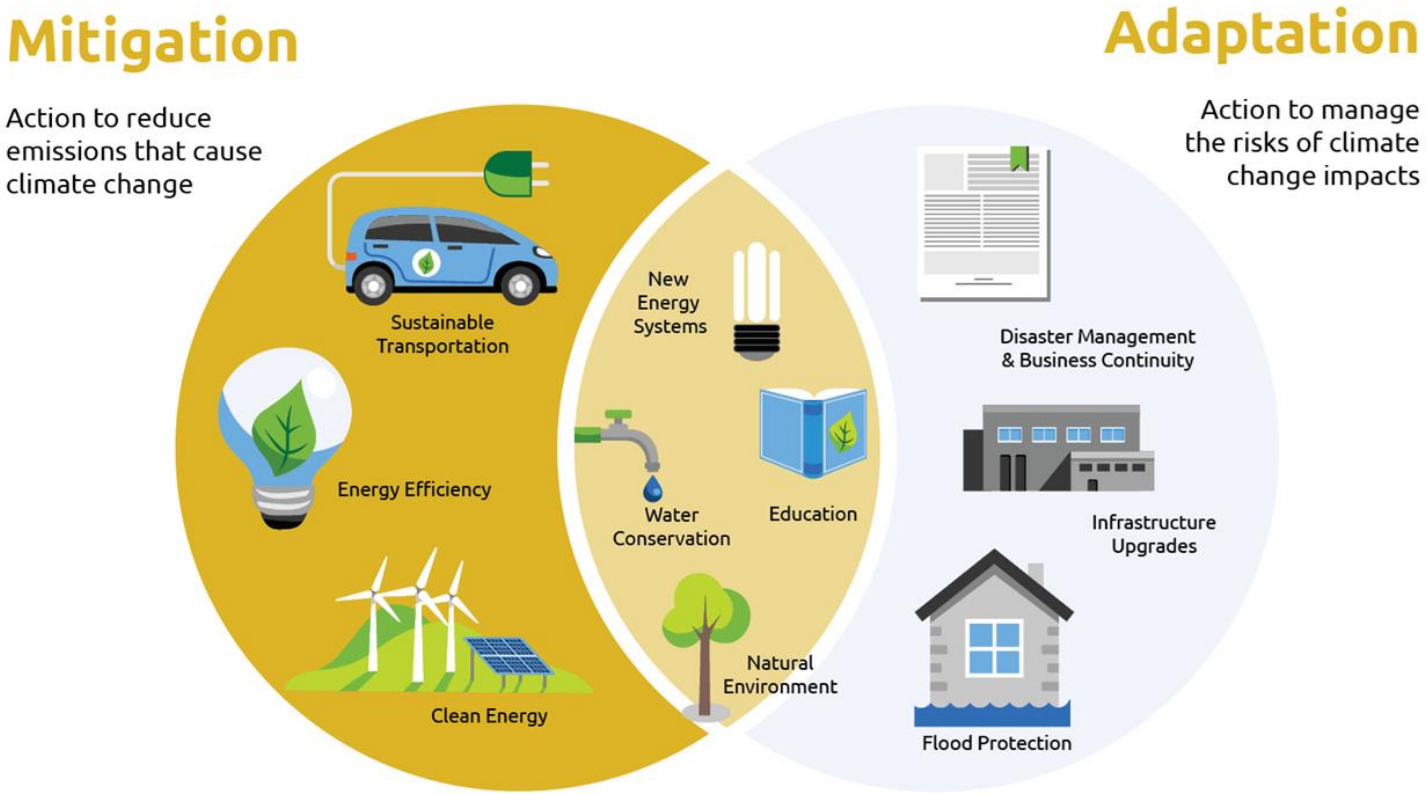
- For the emissions we control directly (the NHS Carbon Footprint), we will reach net zero by 2040, with an ambition to reach an 80% reduction by 2028 to 2032;
- For the emissions we can influence (our NHS Carbon Footprint Plus), we will reach net zero by 2045, with an ambition to reach an 80% reduction by 2036 to 2039.

Workstreams Include: Estates, Travel, Medicines, Anaesthetics, Care Pathways, Digital, Workforce, Adaptation, Innovation…

Figure 1: GHGP scopes in the context of the NHS



Mitigation and/or adaptation



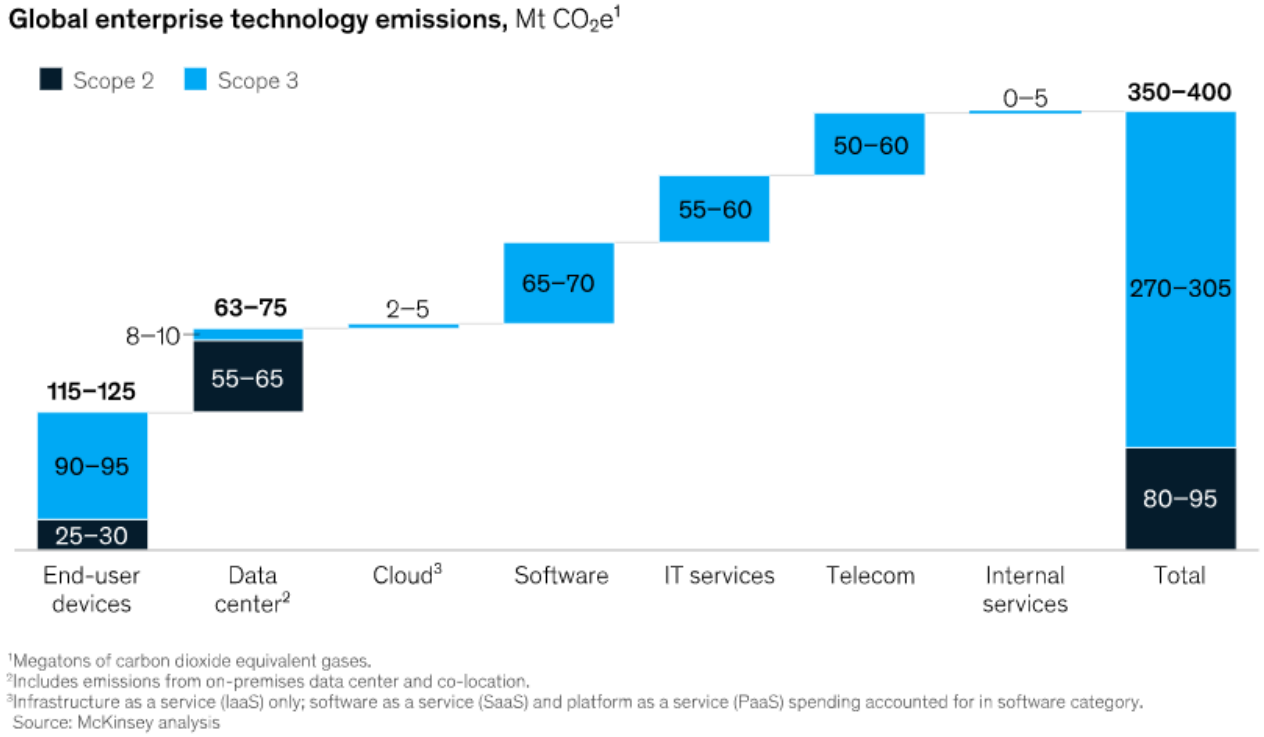
Digital worksteam (so far)

Delivering a 'Net Zero' National Health Service

The NHS will ensure that a trajectory compatible with a net zero health service is embedded in the digital transformation agenda, and work to continuously drive down residual emissions from digital services via a number of actions which include:

- digitally enabled care models and channels for citizens that will significantly reduce travel and journeys to physical healthcare locations, with care closer to home being delivered through remote consultations and monitoring
- developing a blueprint for 'What Good Looks Like' for low carbon digital care, across the system
- building net zero into the digital maturity framework
- issuing policy advice to ensure NHS data centres and companies providing these services minimise their environmental impact and support the drive to reach net zero
- utilising levers, including local spend controls for technology, to incentivise a shift to net zero
- supporting front-line digitisation of clinical records, clinical and operational workflow and communications, aided by digital messaging and electronic health and care record systems.

Carbon in the tech stack

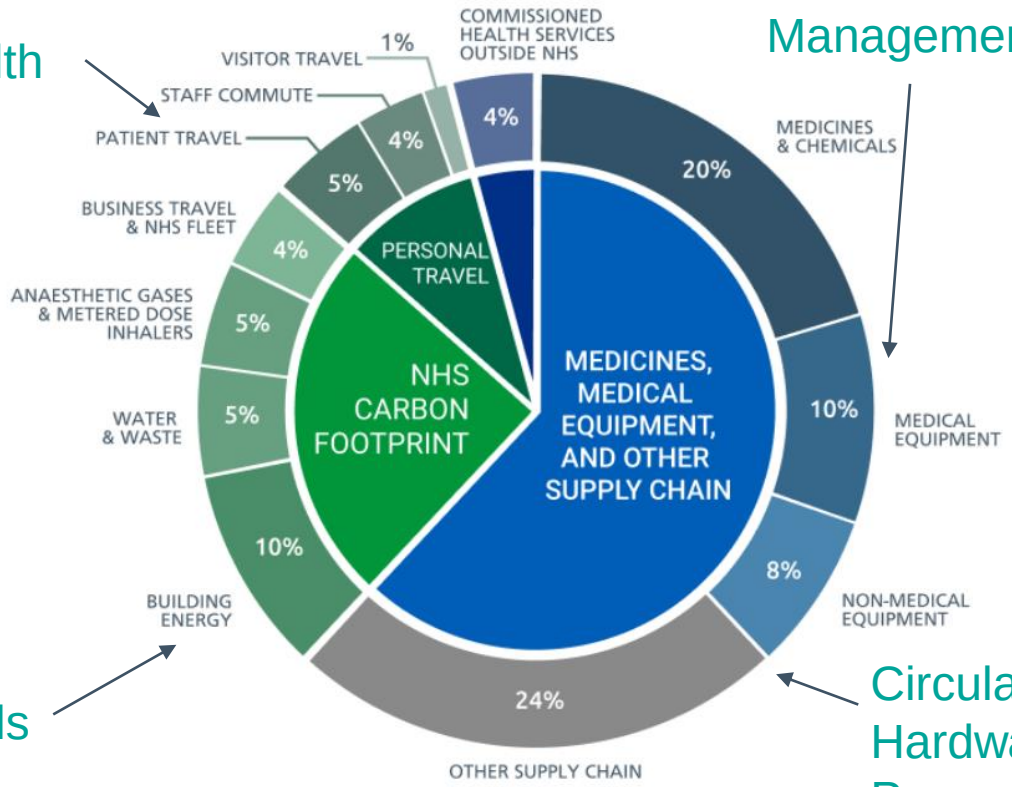


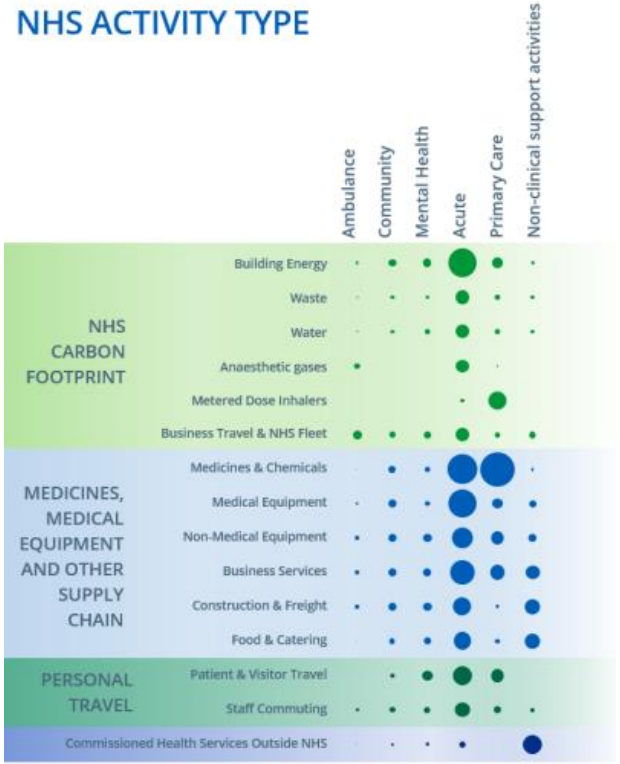
https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-green-it-revolution-a-blueprint-for-cios-to-combat-climate-change?cid=eml-web

Digital as a decarbonisation enabler

Telehealth

Asset Management





SMART Hospitals

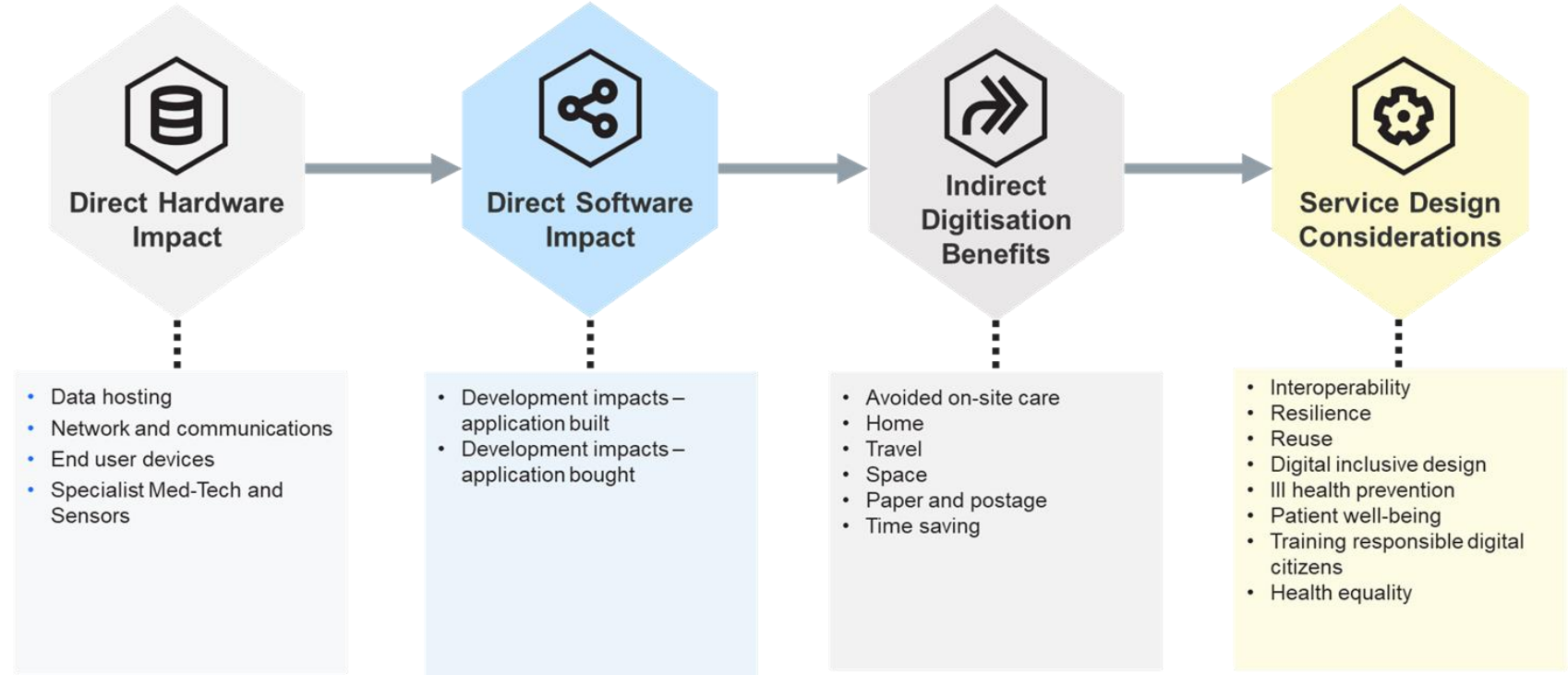
Circular Hardware Procurement

Processes and obligations

Process	Obligation	Tooling
Business Case/Benefits	HMT Green Book	Digital programme net carbon calculator
Digital Service Design	TCOP, Spend Controls / HMG Sustainable Tech Strategy	Sustainable digital service design specification, What Good Looks Like
Commercial / Procurement	PPN's - Modern Slavery, Social Value, Net Zero	PPN compliance requirements
Climate Change Risk Management	Embedded in Greening Gov, ARP and Green Plans	Climate change risk assessments and management plans
Data Collection - Baseline	Greener NHS, HMG STAR	Digital Maturity Assessment, Procurement, Cyber security (MDE)

Process development at NHS Digital

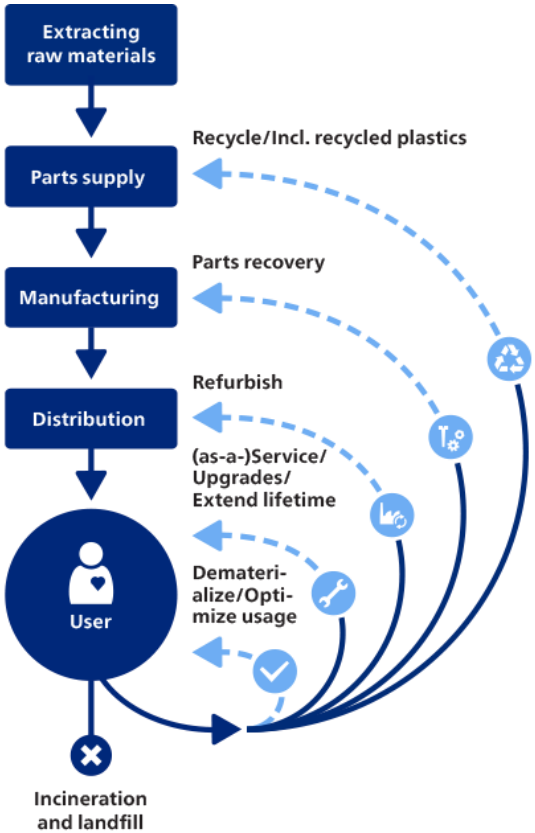
The Net-Gain Approach – A Full Systems View



Some simple low CO2 design choices

1. Is low carbon/efficient **hosting** selected and architected for sustainability?
2. Are servers and end user devices procured with **circular economy** in mind?
3. Is old infrastructure **decommissioned** to remove technical debt?
4. Does **data hygiene** actively archive, compresse, delete where possible?
5. Are services designed **lightweight web-based**?
6. Is data **sent only once** and stored in few central locations?
7. Is **audio used over imagery** where appropriate?
8. Is imagery/video **resolution minimised** without threatening outcomes?
9. Are end user devices **low energy and reused** at end of life?
10. Is **AI** only used where needed and machine learning CO2 considered?
11. Does **interoperability** mean the same hardware achieves more outcomes?
12. Are staff/patients able to **easily collaborate** on the same platforms?
13. Is energy sourcing **low/no CO2**?
14. Is **digital inclusion** considered through design for backwards compatibility?

Circular Devicing Strategies



TCO CERTIFIED

FAIRPHONE

n2s ENABLING INFINITE TECHNOLOGY

Techbuyer

Losingthewires The Mobile Solutions Company

circular computing

<u>Challenge</u> = unlocking the £ and CO2 savings by de-risking the change for decision makers – performance, reliability, cyber etc

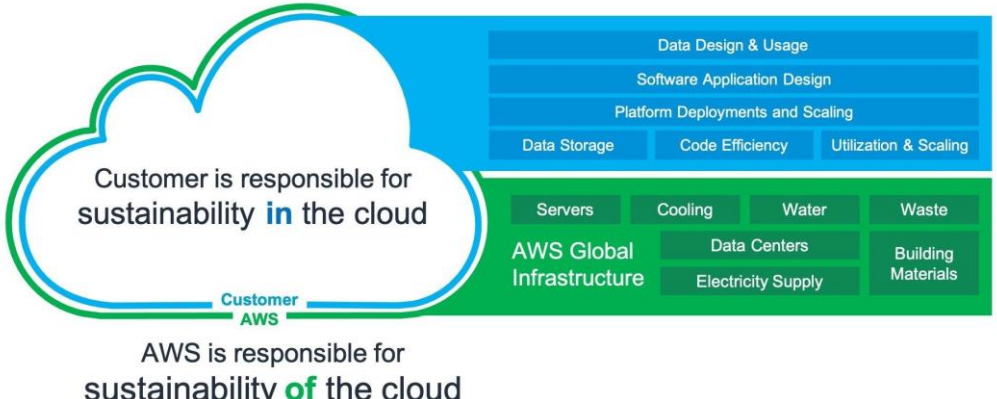
Sustainable Hosting and Cloud

SDIA SUSTAINABLE DIGITAL INFRASTRUCTURE ALLIANCE

Efficient low-carbon platforms

2010	2011	2017	2018	2020
NHS Digital moves existing physical & virtual infrastructure estate to co-located data centres with Her Majesty's Land Registry	NHS Digital's physical server foot print is reduced using virtualization technology to decrease electricity and carbon foot print	Two new strategic data centres are commissioned at Crown Hosting & Cloud First initiative announced at NHS Digital	New services commissioned to run on cloud. Data centre consolidation & migrations to cloud are commenced	Migrations to the cloud and data centre consolidations continue. Reduce HMLR cabinet foot print by 50% in financial year 2020

Sustainable Platforms Infrastructure



Technology Radar
Cloud Carbon Footprint

/thoughtworks

Climate Change Risk

NHS

This article is more than **1 month old**

London NHS trust cancels operations as IT system fails in heatwave

Guy's and St Thomas' trust having to postpone and divert appointments, with doctors unable to see patients' notes

Denis Campbell *Health policy editor*

Thu 21 Jul 2022 16.26 BST

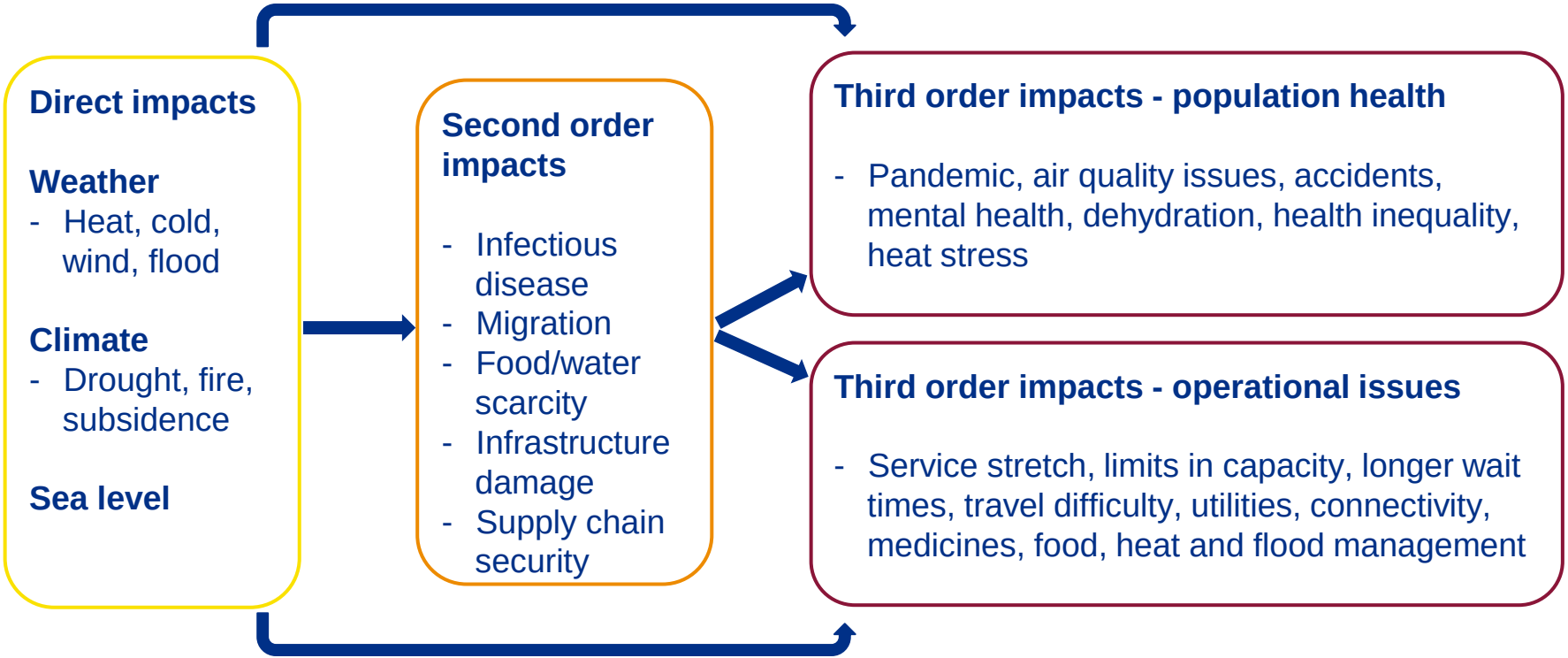
Both of the trust's data centres, one at Guy's hospital and the other at St Thomas', stopped working on Tuesday afternoon. Photograph: Maureen McLean/Rex/Shutterstock

One of the NHS's biggest hospital trusts is facing major problems after its IT system failed because of the extreme temperatures earlier this week.

Guy's and St Thomas' trust (GSTT) in London has had to cancel operations, postpone appointments and divert seriously ill patients to other hospitals in the capital as a result of its IT meltdown.

Climate change impact on the health service

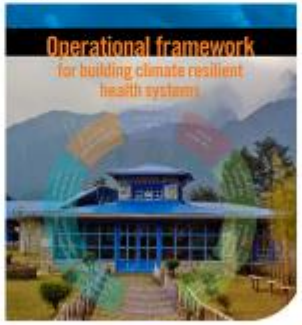
Climate change has direct and indirect impacts on health and healthcare



Digital and climate adaptation

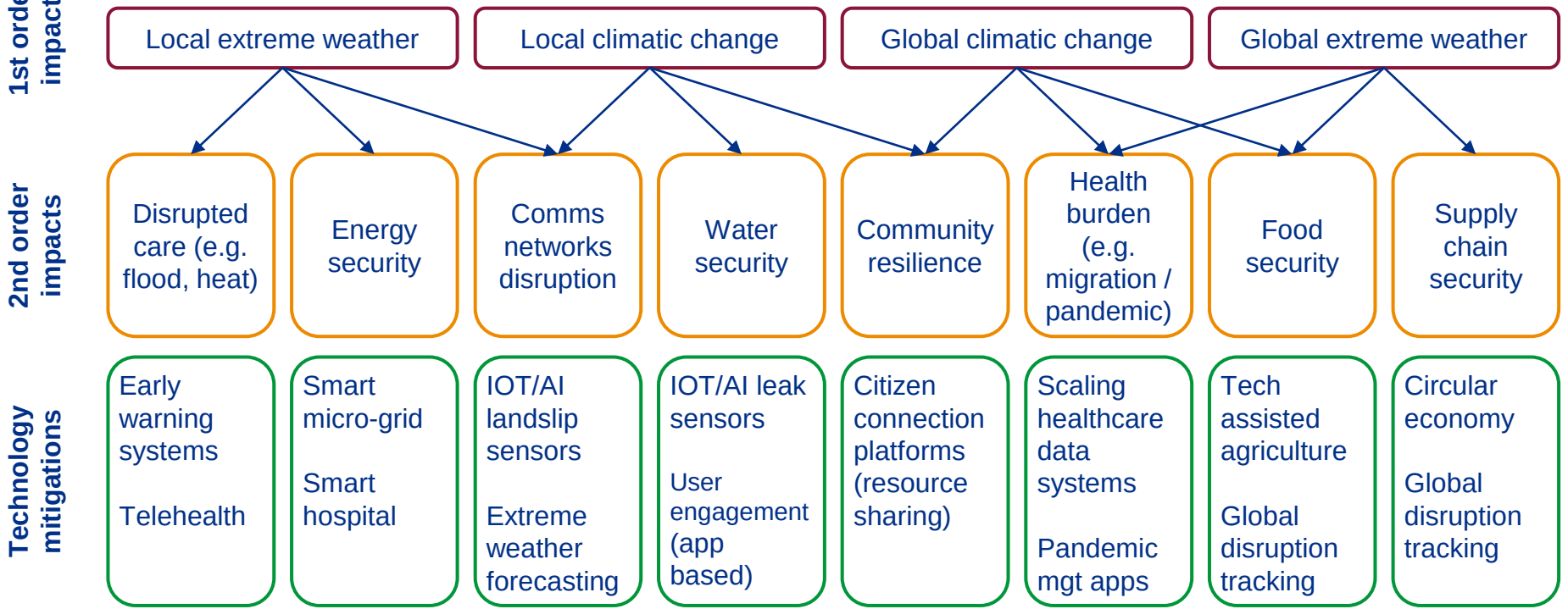
Climate Resilient ICT

How can we ensure our services are climate resilient and simultaneously bring wider climate resilience benefits?

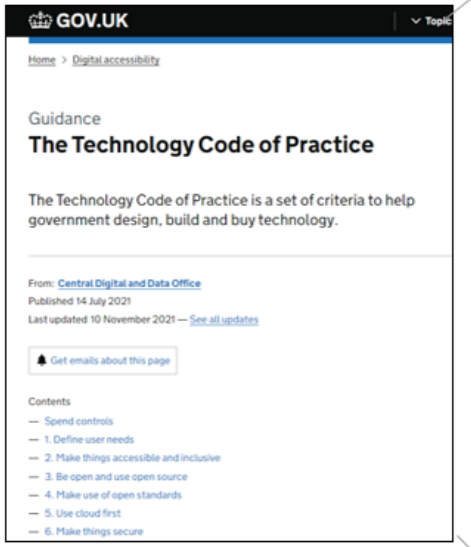


Tech as a climate resilience enabler

This diagram provides a broader view of how technology can be used to respond to or mitigate the impacts of climate change



Balancing Digital Design Objectives



The tech code of practice is a cross government agreed standard used for the cabinet office spend control process and the local digital declaration. The Tech code of practice should be used to align all programmes and align to technology strategies.

#	Code of Practice Requirement	Aligns to Green ICT	Rationale
1	Define User Needs	✓	Adoption by users reduce travel
2	Make things Accessible & Inclusive	✓	Adoption by users reduce travel
3	Be open and use open source	✓	Scalable technology
4	Make use of open standards	✓	Scalable technology
5	Use cloud first	✓	Carbon Benefit has less energy is used
6	Make things Secure	-	Reduced security updates
7	Make Privacy Integral	-	Reduced security updates
8	Share, reuse and collaborate	✓	Systems talk to each other
9	Integrate and adapt technology	✓	Systems talk to each other
10	Make better use of data	✓	Carbon benefit as less energy is used
11	Define your purchasing strategy	✓	
12	Make your technology sustainable	✓	
13	Meet Service Standard	-	

Source: https://www.gov.uk/guidance/the-technology-code-of-practice

HMG Greening Gov Sustainable Tech

Commitment Topic	Action right now (from 2020)	Outcome by 2025
To meet net zero by 2050 (or sooner)	All ICT suppliers commit to science-based net zero targets in line with the Paris Agreement (or procuring department target, whichever is sooner)	All ICT suppliers follow up the commitment they made to becoming net zero with a road map and action plan, showing proven progress towards the goals.
Moving towards the Circular Economy	HMG estates deliver 0% to landfill with an annual increase in reuse and materials recycled. All suppliers have circular ICT policies and strategies with products routinely designed for durability, ease of maintenance and recycling	HMG suppliers have established zero waste to landfill.. suppliers are meeting targets to incorporate more recycled materials in their products and eliminate the use of single use plastics…
Improving Transparency and Accountability (Supply Chains, Scope 3, Risks etc)	Supply chain data on carbon, environmental impacts, materials, chemicals, and wider business responsibilities are regularly harvested and analysed from tier 1 and tier 2 suppliers	Suppliers help HMG map supply chains to identify high risk areas and focussed mitigation work on those categories/supplier partners is in place. ….with data being monitored in real time Reporting established for management and awareness of resilience from climate and ecological breakdown.

https://www.gov.uk/government/publications/greening-government-ict-and-digital-services-strategy-2020-2025/greening-government-ict-and-digital-services-strategy-2020-2025

Questions!

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