Healthcare sustainability and environmental sustainability – two sides of the same coin (handout)

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"A sustainable health and care system works within the available environmental and social resources, protecting and improving health now and for future generations" A Sustainable Development Strategy for the NHS, Public Health and Social Care System. NHS England & Public Health England (2014)

The Royal College of Physicians of London has expanded on the Institute of Medicine's six domains of quality to include sustainability [i], stating that *"healthcare should be considered not only in terms of what can be delivered to an individual today, but also to the population in general and the patients of the future."* [ii]

Extending the responsibilities of health services to future generations calls for careful stewardship of resources – and attention to the wider impacts of providing healthcare on the determinants of health. Services must look beyond immediate financial challenges to consider all three pillars of sustainable development: economic, environmental and social sustainability. In particular, health services need to address their (significant) contribution to global emissions causing climate change, which presents a catastrophic threat to human health over the coming decades. [iii] The NHS has committed to 80% carbon reduction by 2050[iv], and since carbon emissions are linked to use of clinical resources[v], a focus on carbon can be used to drive change to radically higher value, lower cost services.

Sustainability and value

Despite progress in the last forty years, outstanding problems are found in all health services no matter how they are structured and funded: namely, huge and unwarranted variation in access, quality, cost and outcome. This variation is due to:

- Overuse, which leads to
    - waste, that is anything that does not add value to the outcome for patients or uses resources that could give greater value if used for another group of patients;
    - patient harm, even when the quality of care is high;
- Underuse, which leads to
    - inequity and
    - failure to prevent the diseases that healthcare can prevent, stroke in atrial fibrillation, for example.

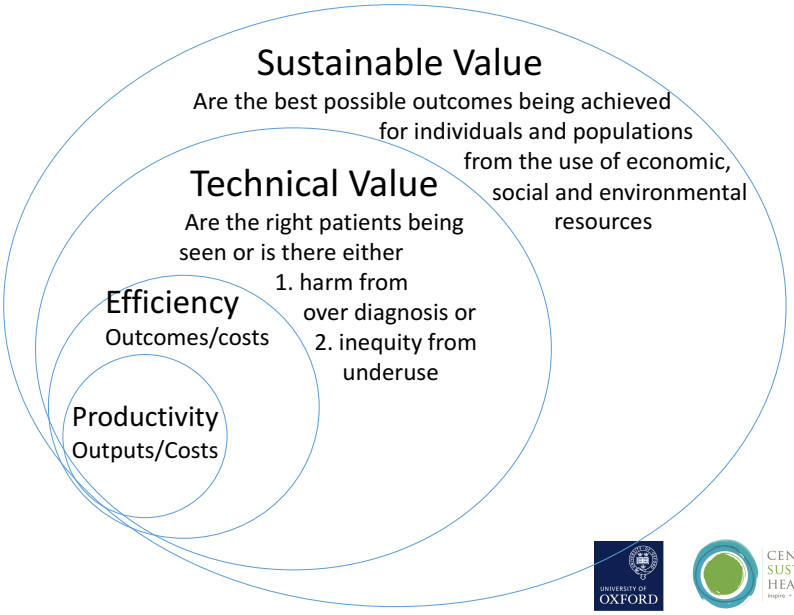
In addition, services will have to cope with rising need and demand without additional money and while reducing carbon. Improving *value* [vi] [vii] [viii] – increasing benefit for individuals and populations from the use of resources – is critical to achieving sustainability.

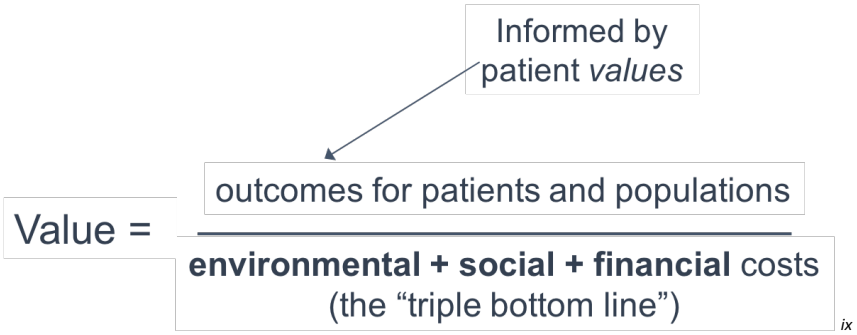
There are three dimensions to value in healthcare:

- *Personalised value*, determined by how well the outcome relates to the values of each individual
- *Allocative value*, determined by how well the assets are distributed to different sub groups in the population
    - Between programmes e.g. between cancer and musculoskeletal programmes
    - Between systems in each programme e.g. between asthma and COPD in the respiratory programme
    - Within each system, e.g. between prevention, drug therapy, rehabilitation and long term care for people with COPD
- *Utilisation or technical value*, determined by how well the allocated resources are used to for all the people in need in the population while minimising both underuse of higher value and overuse of lower value interventions; this is greater than, but includes efficiency, which relates outcomes to the resources used for the patients treated by a service.

A sustainability perspective extends thinking on value in two ways:

1. It broadens "resources" to include environmental (e.g. carbon, water) and social resources (e.g. staff time/morale, patient time/expertise) alongside financial cost.
2. It requires limits on resource use in all three categories to be set at sustainable levels. Even a high value service will not be sustainable if available resources are exceeded over time.





[ix]

Incorporating sustainability into quality and value improvement work

The SusQI framework [ix] [x], summarised in the table below, sets out four points at which sustainability can be usefully considered within standard QI methodologies. Incorporating sustainability into quality, and therefore quality and value improvement, provides a practical way for clinicians to address ethical challenges such as environmental degradation and health inequalities. At the same time, by bringing a longer term perspective, it has the potential to engage new people and stimulate creative thinking, while directing them towards the highest value improvements.

A new paradigm is needed not a new structure. In an era in which there will be insufficient money and carbon to meet need and demand we need to harness the forces driving the third healthcare revolution – citizens, knowledge and the smartphone.

QI element	***Sustainability content***	***Intended benefits***
1. Setting goals	Sustainability as a domain of quality; relationship to other domains	New motivation to contribute to QI, energy for change
2. Studying the system	Understanding environmental & social resource use/ impacts; carbon hotspots in the NHS; "seven capitals" matrix	Highlights wastes and opportunities which are often overlooked; stimulates radical thinking
3. Designing the improvement effort	CSH principles of sustainable clinical practice (prevention, patient empowerment and self-care, lean systems, low carbon alternatives)[xi] - drivers & process changes	Directs towards highest value improvements, future proofing
4. Measuring impact/ return on investment	triple bottom line/ sustainable value equation; measuring carbon	Drives sustainable change; allows benefits to be communicated to broader audience, not exclusively re financial cost-benefit

Table: Building sustainability into quality improvement ("SusQI"): intended benefits [ix]

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[i] A Strategy for quality: 2011 and beyond. Royal College of Physicians (2011)

[ii] Atkinson, S. et al. Defining Quality and Quality Improvement. *Clin Med* (2010) Vol. 10, no. 6: 537-539

[iii] UCL Lancet Commission (2009) Managing the health effects of climate change. The Lancet, 373(9676), 1693-1733.

[iv] A Sustainable Development Strategy for the NHS, Public Health and Social Care System. NHS England & Public Health England (2014)

[v] Carbon Hotspots update for the health and care sector in England 2015. NHS England & Public Health England (2016)

[vi] The Lancet (2017) The Right Care Series http://www.thelancet.com/series/right-care. This Series of four papers examines the extent of overuse and underuse worldwide, highlights the drivers of inappropriate care, and provides a framework to begin to address overuse and underuse together to achieve the right care for health and wellbeing.

[vii] Gray, J.A.M. (2017) Value Based Healthcare – Reducing unwarranted variation to maximise the value of healthcare for populations. BMJ 356:j437

[viii] Chief Medical Officer for Scotland Annual Report 2014-15: Realistic Medicine. Available at http://www.gov.scot/Resource/0049/00492520.pdf

[ix] Mortimer, F., Isherwood, J., Wilkinson, A., Vaux E. Sustainability in Quality Improvement: Redefining Value. (in submission).

[x] SusQI learning materials have been developed by the Centre for Sustainable Healthcare with grant funding from North Bristol NHS Trust (2017). Available at http://networks.sustainablehealthcare.org.uk/sus-qi-resources

[xi] Mortimer, F. The Sustainable Physician. *Clinical Medicine* (2010), Vol 10, No 2: 110-11