

Book Review by Prof Davinder Sandhu

Once in a while one comes across a book that makes a deep impact. Sustainable Healthcare is such a book, and is very timely in the context of modern healthcare and developing green policies. It is for this reason, as its message affects us all, that I have done an extensive book review to encourage the reader to embrace the sustainability challenge.

Should people working in healthcare be interested in sustainability? If the answer is yes, then we need to define what sustainable healthcare is and how to achieve it. This book discusses the above. The authors are a group of international experts and explore questions such as:

- What is the relevance of sustainability in healthcare?
- How we can recreate low carbon care pathways?
- How does climate change threaten human health?
- How can healthcare organisations do better with their waste?
- Can death and dying become more sustainable?
- How can we engage ourselves and others with this agenda?

So then, what is sustainability? Sustainability is about looking after things now so that they can be enjoyed naturally by us up to the end of our lives, but also by future generations. Sustainability, therefore, is a paradigm, a distinct way of thinking about our place in the world. Sustainability education is therefore about changing perspectives as well as acquiring knowledge.

The book focuses mainly on the environmental aspects of sustainability; but while financial and environmental sustainability are intuitive concepts, social sustainability is more complex. It is about fostering communities that build capacity, develop skills, create social cohesion, improve health equity and champion resilience, while at the same time looking after the physical environment. When people ask what health is, this is difficult to define. The WHO definition of health is “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (1946). This definition has limitations and sets an absolute standard of health that makes it practically unobtainable, given our ageing population and prevalence of long-term conditions. It is therefore helpful to explore the WHO definition to as concepts of resilience, adaption and self-management.

A much more meaningful definition of health given by the authors is the ability to adapt and self-manage in the face of social, physical and emotional challenges. Health services now increasingly deal with multi-system risk factors for chronic diseases which define the modern world, and previous concepts of ill and well have largely become outdated. Organisations that survive and prosper in the future will not necessarily be those which are the biggest or more prestigious, they are in

fact the ones that deliver today and at the same time adapt for tomorrow. Therefore defining what health means is important if health services want to become more sustainable. Although health systems prevent cure and manage health problems, they also create health problems such as patient safety and drug errors. Therefore it is important to have healthcare without harm. *Primum non nocere* - first do no harm. Knut *et al.* also bring in cultural diversity and social sustainability. Cultural diversity, like biodiversity, is something intrinsically worthy which also contributes to the health of the whole. Like plants and animals, our languages are under threat of extinction, and with them cultural perspectives, developed over thousands of years, can die too. It is estimated that by 2050, half the world's six thousand languages will no longer have living speakers. Social sustainability then is about preserving humanity's cultural heritage, while encouraging social practices that enhance resilience such as social justice, gender equality, religious tolerance, inter-generational equity, fair sharing of natural resources and basic education for all. Research shows that people with strong social networks live longer, healthier lives compared to those who are poorly connected in social terms. Building community is for this reason a legitimate part of medical enterprise. Why should we and governments drive sustainability? Firstly, sustainability can save money. Heat that is escaping from a poorly-insulated building has to be paid for by someone. Avoiding unnecessary investigations means that there is more money around to fund other more useful activities. Secondly, a sustainable approach leads to better health outcomes. If we focus on areas for improvement, such as better school meals, less advertising of processed food, and health education for mothers, we might hold back the rising tide of obesity in children who we know go on to become less healthy adults. Thirdly, sustainability nurtures the earth's system. For instance, low carbon healthcare helps stem global warming and the ensuing drought and flooding cycles. In effect sustainable care is high quality care: lean, responsive and compassionate. Doctors are the most trusted of all professionals and more recently have been instrumental in confronting many risks to health, for instance with tobacco and alcohol.

The book is clear in ideas of critical thinking, scientific evidence and practical suggestions for transformative action. They do look at climate science and review the current evidence for global warming and how this impacts on health. They also explore the concept of resilience. The difficulty is in engaging with issues that are unsettling and, at times, seemingly remote. The core ideas of the book accumulate in a vision for sustainable health systems. The authors address practical application of these ideas to the organisation of clinical care, including chapters on food, transport, buildings and end of life care. Finally, they look at how

healthcare professionals can further their engagement with sustainability. An additional strength in this book is the summary of key papers and reports, including key points from the chapters. In addition, there is a comprehensive list of references in each chapter.

There is a need to bring sustainability to its rightful place at the centre stage of healthcare policy and practice. We draw spiritual sustenance from nature in all its beauty and diversity. The science is now unequivocal: this planet is under stress due to human activity. The authors unpack these stresses such as climate change and the loss of biodiversity, and consider the various consequences for human health and a healthcare system. We are dealing with a system that itself struggles to contain costs, deal with the soaring prevalence of chronic illness and bring humanity to technological care.

This book describes a new paradigm to tackle these pressing predicaments – a collection of ideas and perspectives that fall under the banner of sustainable healthcare, thus bringing to the foreground the prevention of disease and the creation of individual and community resilience. It champions lean systems of clinical care that maximise efficiency and common humanity and minimise resource use and the creation of waste products, including greenhouse gases and toxic pollutants. A consistent observation is that many interventions that improve individual health such as fresh, local and mainly plant-based food are also good for the health of the planetary system, creating what are termed virtuous cycles. The authors cut through the jargon and challenge the rhetoric of both fear and denial. They focus on the essential questions, offering a synopsis of the main issues, with key references and links to sources of further information. Nineteenth century medicine witnessed the emergence of germ theory which revolutionised our understanding of infectious disease from the prevalent miasmatic paradigm, which held that disease arose from bad air. The majority of healthcare is going to be or is related to two extremes of life – neonatal and end of life care. The undifferentiated elderly patients, who will have several clinical morbidities making them complex, are going to be the largest group requiring healthcare. Because of demographic changes, chronic diseases such as diabetes and respiratory disease combined with modern sedentary lifestyles and the western diet will continue to take a serious toll on our health. Judicious use of investigations, medications and surgery will remain at the heart of good medicine. Just because some treatment is possible it does not mean that it is desirable. The direction they advocate is to better health with paradoxically less healthcare, putting a firmer emphasis on broad, holistic and mainly preventative interventions. A welcome and convenient truth is that such interventions, be they preventative or therapeutic, are also, typically, much kinder on the planetary system. Sometimes these things are as much about political will as the scientific theory. There is the self-realisation that what doctors see when they view a patient and their predicament is more than a purely physiological process of light and neuronal pathways. It is a process of meaning-making.

The book refers to the concept of how we know that the planet is ill. We need to develop strategies for

adaptation - which is managing the unavoidable - and mitigation - which is about avoiding the unmanageable.

Some of the other interesting concepts the authors develop are: *Connections* between parts of the system comprise two feedback groups - normative and amplificatory. Normative loops are responsible for keeping us stable. If a parameter rises, the normative loop acts to bring it down again. This applies to such physiological controls as blood pressure, glucose levels, posture and appetite. Amplificatory loops enhance their own production; physiological examples include orgasm, ovulation and childbirth. In nature, ice melts at high latitudes due to global warming. As seawater replaces the polar ice, less light is reflected and more heat is absorbed, consequently leading to higher water temperatures and even more ice melting. These are sometimes called runaway effects. *Emergence* is an established scientific phenomenon in which system components, through simple interactions, spontaneously assemble themselves into much more complex formations that emerge without any central controlling element. Living systems have an inherent tendency to take on an orderly structured function which has been termed self-organisation. Another important concept is *coherence*, which describes how parts work synergistically to achieve the purpose of the system without any overt lines of control. *Resilience* is defined as the quality or fact of being able to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness etc. There are three factors that predict resilience: individual attributes such as engaging easy temperament; relational attributes, such as parental relationships; and external support systems, good neighbourhoods and schools. Resilience also applies to much larger organisations and ecosystems and the impact of things such as fire, flood and population explosions. They describe the idea of *latitude*, which is the extent to which we can push a system before it changes beyond the point of easy recovery to its original state. Connectedness is therefore important in social sustainability, which can relate to friends, family and neighbours. The strength of resilience systems is that they are usually diverse systems. Sustainability is what happens when systems work well, when we appreciate sources, syncs and cycles rather than forgetting our open relationship with the earth's system. This awareness allows us to recognise systems that are dysfunctional and precarious - seemingly healthy, but in fact about to crash. All healthcare systems should build in resilience.

The authors' vision for future sustainable healthcare is captured within the paradigms of a changing demography, development of new technologies, different expectations, resource limitation, globalisation and environmental change. Empowerment is very important. It might sound obvious, but it might do more good than harm and create a culture where death is more normal and people have control over their final days. The triple bottom line in healthcare is people, planet and profit. We need to create health literacy. The authors give examples of how we can engage with sustainability, such as diet and exercise, prescription management, contraception management and family planning, and end of life care. People need a narrative; some



steps to latch onto. The book provides useful sources, references and key actions for individuals, healthcare organisations and policy-making departments. No longer will expert consultation require a pilgrimage, it only requires an internet connection. Telemedicine is using telecommunication and information technology. We need to avoid building designs that are more functional than aesthetic in effect, more machine than monument. The way we use health services and buildings is changing. For instance mental health conditions are increasingly being treated in the community rather than in institutions. Frail and dependent people are more and more being cared for at home, and specialist nurses manage chronic diseases in the community rather than in hospitals. The mean length of stay in hospitals has decreased by 28%. With services being relocated in the community there is an increasing need for suitably equipped primary care centres. Remember that disposing of waste will not make it go away – we only shift it to another place. The use of medicines and particularly wastage is of great concern. The NHS bill for drugs can be reduced by a billion pounds if wastage is taken into account. We need to reduce, revise, recycle, recover and then get rid of. For instance, there is a failure to recognise that when we are billed for water, we are billed three times: this is for cleaning the water, providing it, and then dealing with the sewage afterwards. The UK NHS Sustainable Development Unit – a leading ‘think tank’ - has provided a breakdown of carbon cost for NHS England as a whole. Surprisingly, three-fifths of the NHS carbon footprint stems from procurement. Of this, half is actually attributable to pharmaceuticals and medical equipment, with pharmaceuticals contributing one-fifth of the total for NHS England. Thus medication is likely to contribute considerably to the carbon cost of end of life

care. We need to change, they argue, current hospital practice - such as the term ‘do not resuscitate (DNR)’ which suggests that something is being withheld that should not. It is better to use the term ‘allow natural death (AND)’ which is more meaningful. Let us all adopt this sensible way forward.

The authors make the point that a key step would be moving from a high-intensity medical industry that focuses on treating diseases to one that concentrates more on preventing illness, for supporting people to live well and proactively with multiple and long-standing conditions. To make this happen we should change our various goals and shifts:-

- From curative to preventive healthcare;
- From a specific sickness service to a culture of wellbeing;
- From professionals “on top” to “on tap”;
- From functional buildings to healing environments;
- From sustainable structures to sustainable systems;
- From valuing only individuals now to valuing everyone, and a future in the interest of all.

We can all contribute in our private lives by simple things such as shopping locally, money-saving (switching off lights and equipment when not needed) and enjoying cycling instead of using the car. The term ‘normal’ is culture-dependent, and once a critical mass is infected with a new idea or trend it may start to spread like wildfire. So there is real hope that small gestures will do good in their own right, but also contribute to a larger shift in attitudes. The choices that we make today will be our legacy for the future. It is important for all educationalists to engage and influence sustainability through curriculum change and role-modelling the issues discussed above of reducing waste, concentrating on effective and efficient healthcare, and adapting for the demographic changes and demands for the future.



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