The impact of healthcare on the environment: improving sustainability in the health service

The Climate Change Act has brought the issue of sustainability to the fore. Nurses can dramatically influence the ways in which the NHS cuts its carbon footprint

INTRODUCTION
As climate change and natural resource management move up the scientific and political agendas, the concept of sustainability has become an important issue. This article discusses how nurses and NHS organisations can engage with the concepts of sustainability and citizenship, to reduce the negative impact of healthcare provision on the global ecosystem and public health and wellbeing.

SUSTAINABILITY AND HEALTH
The relationships between humans and the global ecosystem are complex and still the subject of debate. Although individual human activity may seem insignificant, global human activity has an enormous impact and is generally agreed to be contributing to climate change. It is also using natural resources in quantities that are unsustainable in the long term and in ways that can have a negative impact on health and wellbeing. As Fig 1 shows, these effects are the combined result of a range of factors. These are:

- Individual determinants such as age, sex and hereditary factors;
- Lifestyle including work/life balance;
- Community networks;
- The local economy including markets and investments;
- Activities;
- The built environment;
- The natural environment.

While the international community has yet to agree on how to improve sustainability by reducing the impact of human activity, the UK has introduced a range of initiatives with the aim of doing so. The most generally significant of these is the Climate Change Act, which became law in November 2008. This gave the government the right to require public bodies to report on how they have assessed the risks of climate change to their work, and what they are doing to address these risks.

Within healthcare, the NHS Sustainable Development Unit (www.sdu.nhs.uk) was launched in 2008. Its mandate is to be a source of leadership, expertise and guidance concerning sustainable development to all health service organisations in England. In 2008 the Climate and Health Council (www.climateandhealth.org) invited individuals and organisations to sign up to a declaration on the effects of climate change. This argues that climate change is having a critical impact on global health and the environment, and calls for action at government, organisation and individual level.

THE HEALTHCARE CONTEXT
As the third largest employer in the world and a major consumer of resources, the NHS has the potential to make a significant impact on the sustainability agenda. The NHS in England has an annual carbon footprint of 18 million tonnes of carbon dioxide, which consists of energy (22%), travel (18%) and procurement (60%). Although the health service has seen an increase in efficiency, its carbon footprint has risen by 40% since 1990 (NHS Sustainable Development Unit, 2009). It is estimated the health service produces 600,000 tonnes of waste – more than 1% of all domestic waste produced in the UK. It uses 50 billion litres of water and energy use

PRACTICE POINTS
- While climate change is still the subject of debate, the Climate Change Act requires public organisations such as the NHS to contribute to improving sustainability and reducing the UK’s impact on the global environment.
- As the largest group of employees in the healthcare sector, nurses can have a positive influence on the carbon footprint of the NHS.
- Nurses can make individual contributions in their daily practice to maximise the use of resources, as well as contributing on an organisational and profession wide basis.
Catherine Hollick

produces 3.5 million tonnes of carbon dioxide per year (Royal College of Nursing, 2007). As the largest employer in the UK, the health service has a duty to engage with the agendas outlined in the Climate Change Act and to contribute to proposed government targets. Sustainability is, therefore, a huge political issue.

While debates about the nature of climate change and the impact of global warming on the environment focus largely on the use of resources, the topic is much wider. The UK government argues there are two main strands in achieving sustainable development (Fig 2):

- Living within environmental limits;
- Ensuring a strong, healthy and just society.

These depend on three strategic developments:

- Achieving a sustainable economy;
- Promoting good governance;
- Using sound science responsibly (HM Government, 2009).

**RCN POSITION STATEMENT**

As the largest professional body representing nurses in the UK, the RCN can make a difference to the way in which healthcare commissioners and providers respond to contemporary professional concerns. It recognises that healthcare providers’ carbon footprints have a major impact on sustainability in the UK. The RCN (2008) suggested that sustainable products or services should be:

- Less toxic;
- Minimally polluting;
- More energy efficient;
- Safer and healthier for patients, workers and the environment;
- Easier to repair;
- Easier to recycle;
- Made with less packaging;
- More durable (have a longer lifetime);
- Locally produced (travel short transport distances).

The RCN has signed up to the Climate and Health Council’s declaration and is working to reduce its own carbon footprint. It is also actively lobbying healthcare providers to review their impact on sustainability, for example, by reducing healthcare waste. The RCN is also a member of Health Care Without Harm (www.noharm.org), an international coalition of healthcare organisations and professionals. The coalition strives to influence the healthcare sector to develop policies and services that do no harm and that aim to prevent disease and promote the health of people and the environment. It was set up in 1996 by a group of environmentalists and healthcare workers following concerns expressed by scientists in the US. The coalition now has 440 organisations as members, with a regional base in Europe. It has identified the following four aspects of unintentional harm to which the health sector contributes:

- Waste incineration: in Europe many healthcare providers use incineration to dispose of medical waste such as dressings. However, this disperses unacceptable amounts of chemical waste such as dioxins, heavy metals and other toxic chemicals into the atmosphere;
- Using dangerous materials: mercury, used until recently in pressure and temperature measuring devices in the health service, is a potent neurotoxin, while PVC in medical devices can leach toxic di(2-ethylhexyl)phthalate (DEHP) into patients and releases dioxins if burnt as medical waste;
- Poor food quality: good nutrition is...
fundamental to healing processes. However, many hospitals still fail to provide patients with adequate nutrition. They often buy in preprepared food rather than preparing meals on site. Food is also transported to them over large distances, contributing to air pollution and global warming.

- Environmentally unfriendly building standards: hospitals consume significant amounts of energy and water and many do not address the need to develop energy efficiency or use renewable resources. In addition, old building designs reduce indoor air quality and the amount of available natural light.

GOOD PRACTICE WITHIN THE HEALTH SERVICE

Recent UK guidelines (cited in Health Care Without Harm, 2008) stated that 90% of clinical waste can be treated with non-incineration technology. In response to this challenge, Nottingham University Hospitals Trust developed an initiative to turn clinical waste into building materials, through the process of rotoclaving (Health Care Without Harm, 2008). This non-incineration technology allows clinical waste to be recycled after treatment. In 2008 a plant in Nottingham began rotoclaving clinical waste and moulding it into objects including bricks and pipes. The proximity of the plant to the trust saves 50,000 road miles per year, while the rotoclave prevents air pollution caused by incineration.

In collaboration with an independent bus company, the trust also runs a free bus service between Nottingham’s two hospitals and has saved £180,000 in taxi fares and reduced staff car journeys by 400,000 per year. By sourcing 95% of its meat and all its milk from local sources, the trust has also boosted the regional economy and is now providing fresher, healthier meals to patients and staff (Health Care Without Harm, 2008).

HOW CAN NURSES MAKE A DIFFERENCE?

As a substantial part of the UK healthcare workforce, nurses can make a major contribution to improving sustainability in the health service. Individually they can make small contributions while working in clinical areas by eliminating waste and unnecessary energy use. As a profession, nursing can have a wide ranging influence, as it has already demonstrated. For example, nurses lobbied for the change from mercury thermometers to harness new technologies to protect patients and the environment, and have been consulted about the design of a range of new products from wound dressings to nutritional supplements.

Nurses are also able to influence organisational issues such as the design of new clinical buildings, food procurement and the management of clinical waste. If they consider the issue when contributing to these discussions, they can help to improve sustainability in the NHS.

The NHS Institute for Innovation and Improvement provides a useful roadmap for developing sustainability initiatives in healthcare settings (see tinyurl.com/road-map-sustain).

CONCLUSION

Healthcare providers in the UK are making real efforts to reduce the negative impact of healthcare, through a range of strategies. These range from designing environmentally sustainable buildings and ecologically sound transport systems to procuring ethically sourced foodstuffs.

As the largest group of employees in the healthcare sector, nurses can have a profound influence on these agendas. Given that they often have the most contact with patients and their families, it is nurses who often understand their concerns as well as those of the local communities they serve. They can, therefore, have a dramatic influence on the development of those services that respond to concerns about the global ecosystem as well as health and wellbeing.

REFERENCES


Royal College of Nursing (2007) Sustainability and Greening the Workplace. London: R CN. tinyurl.com/rcn-sustain