



National Audit Office

Briefing

for the House of Commons
Environmental Audit Committee

NHS and sustainability

MARCH 2015

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Introduction

- 1** This briefing has been prepared in response to a request from the Environmental Audit Committee to provide a summary of publicly available information on the NHS and sustainability in England, to inform an inquiry by the Committee.
- 2** It focuses on identifying potential good practice, opportunities and challenges, drawing on good practice criteria established by the National Audit Office reviews of sustainability at the Home Office and at the Department for Business, Innovation & Skills.
- 3** The briefing covers four aspects of sustainability within an organisation:
 - Policy and policy making
 - Governance
 - Operations
 - Procurement

Policy and policy making

Context: Major developments over this parliament

1.1 The main developments in policy and delivery in this parliament have been the changes prompted by the Health and Social Care Act 2012. The Act was designed to make the NHS more responsive, efficient and accountable. It sought to place clinicians at the centre of commissioning, thereby freeing up providers to innovate, empower patients and create a new focus on public health.¹

1.2 The transition involved significant structural change, with more than 170 organisations closed, and more than 240 new ones created. Responsibility for commissioning healthcare and public health services moved from 151 primary care trusts to NHS England, 211 clinical commissioning groups and 152 local authorities.

1.3 In the reformed system, NHS England, the Department of Health's (the Department) largest arm's length body, sets the framework for commissioning of healthcare services in England. It funds the clinical commissioning groups to enable them to commission services for their communities and aims to assure itself that clinical commissioning groups carry out this effectively. Clinical commissioning groups can draw on a group of commissioning support units in doing so. NHS England also commissions some services across the country such as primary care and specialised health services. A range of different organisations then provide healthcare. This includes NHS trusts, NHS foundation trusts, GPs, dentists, and private- and third-sector providers (**Figure 1** overleaf).

1.4 Local authorities are responsible for commissioning local public health services. The Department provides ring-fenced funding to local authorities to carry out this role, which previously rested with the NHS.² Local authorities discharge their public health role in conjunction with a new executive agency of the Department, Public Health England, established in April 2013.

1.5 The reforms are intended to secure greater public engagement with the running of the health system. A new body, Healthwatch England, has been set up to enable the collective views of people who use health and social care services to influence national policy, advice and guidance. Healthwatch England is a committee of the Care Quality Commission. There are also local Healthwatch bodies, which provide a forum for people to influence and challenge how health and social care services are provided in their local area.³

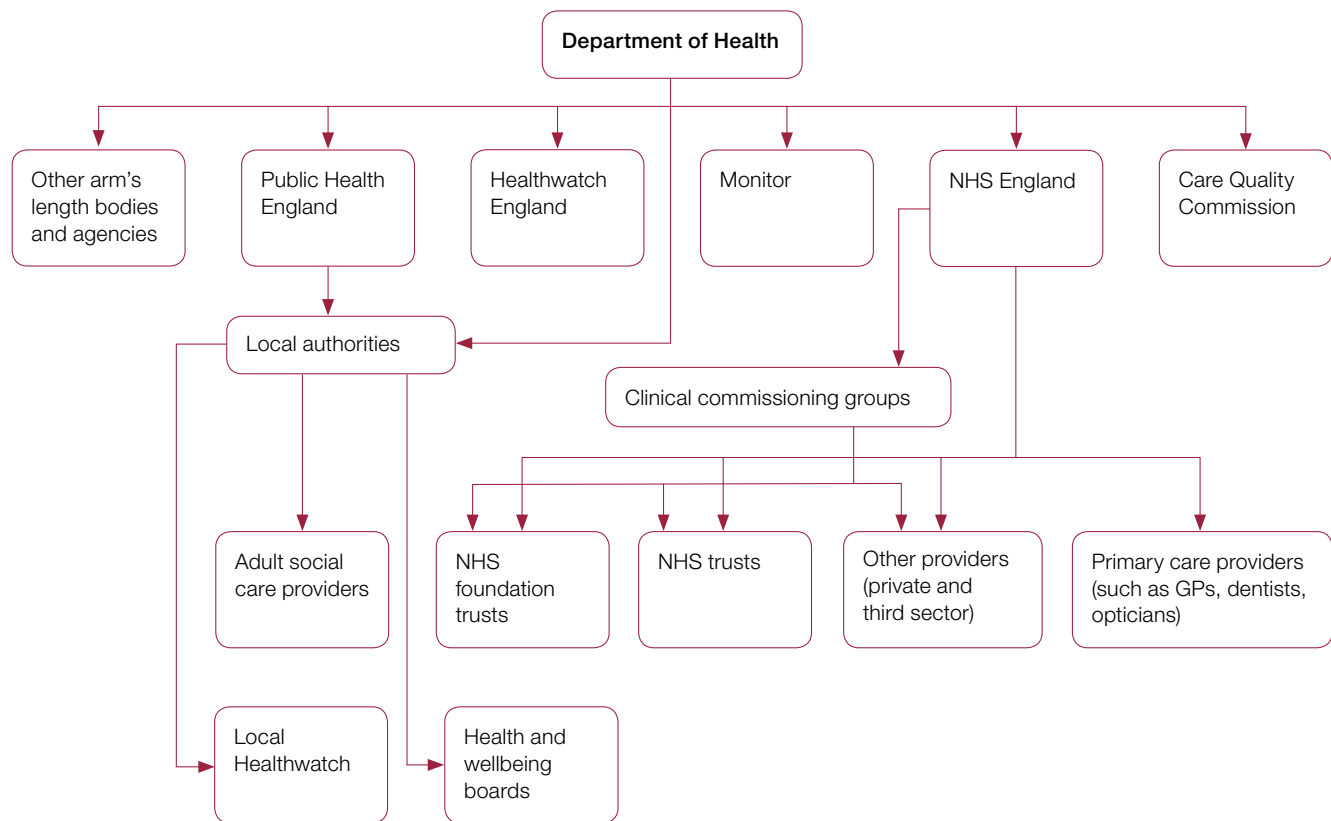
¹ For more information on the reforms see: Comptroller and Auditor General, *Department of Health, Managing the transition to the reformed health system*, Session 2013-14, HC 537, National Audit Office, July 2013 and National Audit Office, *Departmental Overview: The performance of the Department of Health 2013-14*, December 2014.

² Comptroller and Auditor General, *Managing the transition to the reformed health system*, Session 2013-14, HC 537, National Audit Office, July 2013.

³ NHS Choices, *Health watchdogs and authorities*. Available at: www.nhs.uk/nhsengland/thenhs/healthregulators/pages/healthwatch-england.aspx

Figure 1

An overview of the health and social care system



→ Funding

Note

1 This is a simplified illustration of the structure of the health system. For a more comprehensive diagram, see National Audit Office, *Departmental Overview: The performance of the Department of Health 2013-14*, December 2014, Figure 2, page 8.

Source: National Audit Office

1.6 Health and wellbeing boards have been established in each county council and unitary local authority to bring together key players in the local health and care system. The boards are responsible for encouraging integrated working, with the aim of improving the health and wellbeing of their local population and reducing health inequalities.⁴

4 Local Government Association, Health and Wellbeing Boards (HWB) Leadership Offer. Available at: www.local.gov.uk/health/-/journal_content/56/10180/3510973/ARTICLE

1.7 *The NHS five year forward view*, published in October 2014, anticipates that the healthcare sector will need to continue to adapt in response to changing demographics, new technologies and funding constraints. The paper sets out a vision for the future of the NHS, developed by organisations such as NHS England and Public Health England, and informed by consultation with patient groups, clinicians and independent experts. It advocates a ‘radical upgrade’ in prevention and public health, new models of care and greater integration across the system. For example, groups of GPs to combine with nurses, other community health services, hospital specialists and perhaps mental health and social care to create integrated out-of-hospital care.⁵

The Sustainable Development Strategy for the health and social care system

1.8 In January 2014, Public Health England and NHS England launched a *sustainable development strategy for the NHS, public health and social care system 2014–2020*.⁶ The strategy builds on a previous NHS Carbon Reduction Strategy for England and extends it to cover a broader range of sustainability issues and the health and social care system as a whole.

1.9 The strategy was informed by a wide-ranging consultation and engagement exercise which took place over four months in early 2013 (more than 900 responses received from across the healthcare system, nine ‘deep dives’ held on particular issues).⁷ The strategy was launched with the endorsement of senior leaders from the NHS, with presentations at the launch event (and available to watch again online) from Sir David Nicholson, Chief Executive of NHS England; Duncan Selbie, Chief Executive of Public Health England; and from Michael Coughlin, Executive Director of the Local Government Association.⁸

1.10 The strategy is high level and focuses on outlining a vision for sustainable health and social care, strategic goals, and what success would look like in 2020 (**Figure 2** overleaf). The strategy does not dictate mandatory requirements but instead presents the case for change and identifies key areas for action. The main strategy document is supplemented by supporting modules on each of the focus areas. These describe a high level approach and are accompanied by guidance notes to support local implementation.⁹

5 NHS England, Public Health England et al, *The NHS five year forward view*, October 2014.

6 Sustainable Development Unit, *The sustainable development strategy for the NHS, public health and social care system 2014–2020*, January 2014.

7 Sustainable Development Unit, *Summary of Responses to the Consultation on a Sustainable Development Strategy for the Health, Public Health and Social Care System 2014–2020*. Available at: www.sduhealth.org.uk/policy-strategy/engagement-resources/consultation-summary-of-responses.aspx

8 The presentations are available to watch at: www.sduhealth.org.uk/policy-strategy/engagement-resources/launch-event-29-jan-2014.aspx

9 The modules are available at: www.sduhealth.org.uk/areas-of-focus/

Figure 2

Sustainable development strategy for the NHS, public health and social care system 2014

Vision:

A sustainable health and care system works within the available environmental and social resources protecting and improving health now and for future generations.

- Reducing carbon emissions.
- Minimising waste and pollution.
- Making the best use of scarce resources.
- Building resilience to a changing climate nurturing community strengths and assets.

Goals:

- 1 A healthier environment.
- 2 Communities and services are ready and resilient for changing times and climates.
- 3 Every opportunity contributes to healthier lives, healthy communities and healthy environments.

Areas of focus:

- An integrated metrics approach.
- Innovation, technology and R&D.
- Creating social value.
- Leadership, engagement and workforce development.
- Carbon hotspots.
- Commissioning and procurement.
- Sustainable clinical and care models.
- Healthy, sustainable and resilient communities.

What success looks like in 2020:

- Reduced environmental impact: meeting or exceeding the target of a 34% reduction in CO₂e.
- Organisations and local communities are prepared to deal with climate change and have plans in place to deal with specific events.
- Leadership, proactive strategies and planning and regular reviews all at local community level.
- Sustainability is embedded at every level of decision making processes.
- Measurable progress is made against national NHS, Public Health and Social Care Outcomes Frameworks.
- Recognition and replication of the success achieved at community level and knowledge transfer to new areas.

Source: Sustainable Development Unit, *The sustainable development strategy for the NHS, public health and social care system 2014–2020*, January 2014.

Governance

Context

2.1 Governance and accountability arrangements in the healthcare sector are shared across a number of organisations, including:

- **The Department of Health** is responsible for the health service as a whole. It sets a mandate for NHS England, outlining the ambitions for the health service to be delivered. It is the formal accountability mechanism for holding NHS England to account for the money it spends and the outcomes it achieves. The Department measures progress and holds NHS England to account using the NHS Outcomes Framework.¹⁰
- **NHS England's** responsibilities include supporting the commissioning of local health services by clinical commissioning groups and assuring itself and the Department that they commission services for their communities effectively. NHS England also directly commissions some services such as primary care and specialised services and is therefore responsible for the related contract management. It is exploring new forms of collaborative commissioning with clinical commissioning groups for primary care and specialised services.¹¹
- **Clinical commissioning groups** are responsible for managing the contracts for the services they commission, for which they may engage the support of commissioning support units.¹²
- **Regulators of the healthcare sector** are responsible for overseeing the healthcare sector. Responsibilities for regulating particular aspects of care are shared across a number of different bodies including the Care Quality Commission (CQC) and Monitor.¹³

2.2 From April 2016, Manchester will become the first English region to get full control of its health and social care budget as part of an extension of devolved powers.¹⁴

¹⁰ Department of Health, *The NHS Outcomes Framework 2014-15*, November 2013.

¹¹ National Health Service Commissioning Board, *Annual report and accounts*, HC 408, 2013-14.

¹² National Health Service Commissioning Board, *Annual report and accounts*, HC 408, 2013-14.

¹³ NHS Choices, Health watchdogs and authorities. Available at: www.nhs.uk/NHSEngland/thenhs/healthregulators/Pages/health-watchdogs-explained.aspx (accessed 27 February 2015).

¹⁴ NHS England, The Five-Year Forward View into action. Available at: www.england.nhs.uk/2015/02/27/greater-manc-funding/

Governance for sustainability

2.3 The emphasis of the approach set out in the Sustainable Development Strategy is on encouraging and supporting organisations to adopt good practice. The strategy did not introduce new mandatory requirements for health organisations on sustainability though there are some pre-existing requirements. Key roles and responsibilities on sustainability across the system are summarised in **Figure 3** on page 12, with more detail in the following:

- The **Department of Health** and some of its arm's length bodies fall under the Greening Government Commitments. They therefore have targets to improve the sustainability of their own estate and business travel (for example to reduce associated greenhouse gas emissions by 25% by 2014-15 compared to a 1990 baseline).¹⁵
- The **Sustainable Development Unit** is funded by NHS England and Public Health England to provide expert advice and to support the health and care system to become more environmentally, financially and socially sustainable. It engages with health sector organisations; helps develop and monitor metrics of success; and acts as the formal reporting body for statutory processes such as on adaptation to climate change across the health sector.¹⁶
- A **Cross System Group** has been established to support the sustainability strategy by monitoring progress and by identifying barriers, opportunities and best practices. This is coordinated by the Sustainable Development Unit.¹⁷
- **Commissioners** are required by the Public Services (Social Value) Act 2012 to consider economic, social and environmental wellbeing, when negotiating public service contracts.¹⁸ They are also required by NHS England to use a standard contract for healthcare services other than primary care.¹⁹ This standard contract contains a clause requiring suppliers to take all reasonable steps to minimise adverse impacts on the environment and report on progress in line with the NHS Carbon Reduction Strategy for England, including on sustainable development and against carbon reduction plans.²⁰

¹⁵ HM Government, *Greening Government Commitments Annual Report 2013-14*, February 2015.

¹⁶ NHS Sustainable Development Unit, *What we do*. Available at: www.sduhealth.org.uk/about-us/what-we-do.aspx (accessed 24 February 2015).

¹⁷ Sustainable Development Unit, *The sustainable development strategy for the NHS, public health and social care system 2014–2020*, January 2014.

¹⁸ Procurement Policy Note – The Public Services (Social Value) Act 2012 – advice for commissioners and procurers. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/79273/Public_Services_Social_Value_Act_2012_PPN.pdf

¹⁹ NHS England, *2014/15 NHS standard contract*. Available at: www.england.nhs.uk/nhs-standard-contract/14-15/ (accessed 24 February 2015).

²⁰ Clause 15 of the service conditions in the standard NHS contract for 2014-15 refers to sustainability issues. This contract is mandated by NHS England for use by commissioners for all contracts for healthcare services other than primary care. Available at: www.england.nhs.uk/nhs-standard-contract/

- **Providers.** The Sustainable Development Unit encourages all NHS organisations to develop and publish a board-approved sustainable development management plan, and this is an indicator in the Public Health Outcomes Framework.²¹ In 2014, 36% of NHS organisations had a board approved sustainable development management plan, compared with 69% in 2013.²²
- **Health and wellbeing boards** have a potential role in persuading providers to adopt more sustainable approaches.²³ The Sustainable Development Strategy emphasises the use of joint strategic needs assessments and health and wellbeing strategies as a tool to increase sustainability. For example Kent Health and Wellbeing Board has a dedicated chapter on sustainability in its health and wellbeing strategy and joint strategic needs assessment; coverage of the issue in some other examples is more sparse.²⁴

Sustainability reporting

2.4 The Department and its arm's length bodies are required to cover sustainability issues in their annual reports under Treasury guidelines.²⁵ NHS England requires all clinical commissioning groups and the Department requires all NHS trusts to report on sustainability as part of their annual reporting process. Foundation trusts are not required to include a sustainability report in their annual report, but Monitor encourages them to follow Treasury guidelines if they choose to do so.²⁶ Guidance and a template are available to help all health organisations report appropriately on sustainability issues.²⁷

2.5 The National Audit Office's recent review of sustainability reporting in central government departments praised the Department's annual report for including a reference to the strategic approach to sustainability in the sector, and for explaining the influence the Department exerts over the health sector on sustainability via the Sustainable Development Unit. However, the NAO highlights that the strategy is only mentioned on the final page of the report in the context of the work of the Sustainable Development Unit, and the implications of this strategy for the Department are not discussed. The NAO also highlighted the Department of Health as an example which provided minimal detail on sustainable procurement in its annual report in comparison to other departments.²⁸

21 NHS Bedfordshire Clinical Commissioning Group, *Sustainable Development Management Plan: 2013 to 2014*, July 2013.

22 Sustainable Development Unit, Maps by NHS England Area Team – 2013-14 – November Update. Available at: www.sduhealth.org.uk/documents/Maps/20141201_SDU_NHSEngland_maps_Nov_update.pptx; Sustainable Development Unit, Maps by NHS England Area Team – 2012-13. Available at: www.sduhealth.org.uk/documents/Maps/NHS_area_team_maps_ALL.pptx

23 Sustainable Development Unit, *The sustainable development strategy for the NHS, public health and social care system 2014–2020*, January 2014.

24 Joint Strategic Needs Assessment for Kent, Sustainability chapter update 2013-14. Available at: www.kmpho.nhs.uk/jsna/; Kent Joint Health and Wellbeing Strategy, 2014-17. Available at: www.kent.gov.uk/__data/assets/pdf_file/0014/12407/Joint-Health-and-Wellbeing-Strategy.pdf

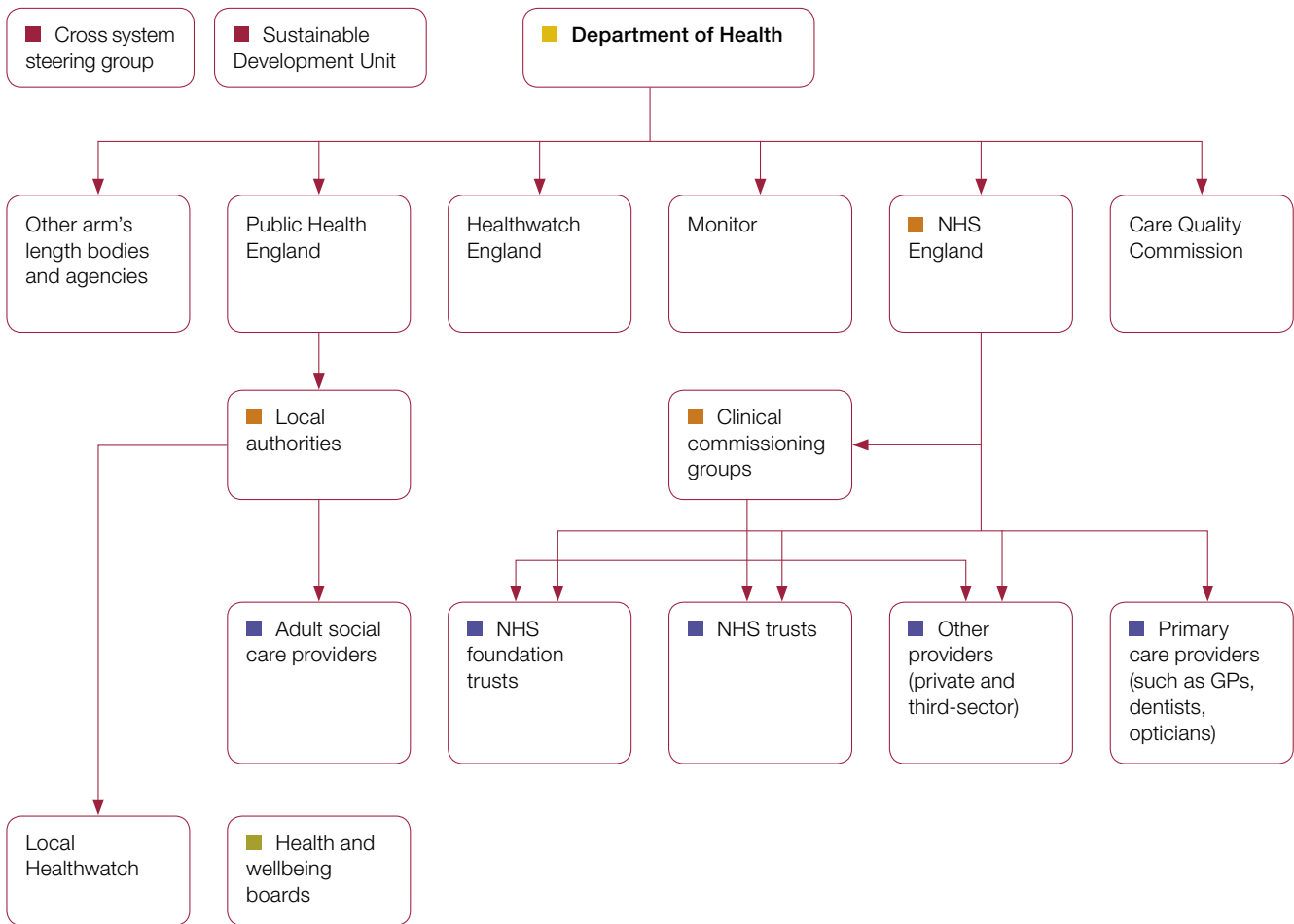
25 National Audit Office, *Sustainability reporting in central government – an update*, February 2015, Figure 2, p. 17.

26 Monitor, *NHS foundation trust, annual reporting manual 2014-15*, December 2014.

27 The guidance template is available at: www.sduhealth.org.uk/delivery/measure/reporting.aspx

28 National Audit Office, *Sustainability reporting in central government – an update*, February 2015, paragraph 2.5, Figure 5 and paragraph 2.21.

Figure 3
High level responsibilities for sustainability in the health and social care system



Responsibilities

- Responsible for monitoring national progress and promoting good practice
- Providers – Sustainability clauses in contracts. May have a sustainable development management plan
- Department of Health – Greening Government Commitments
- Health and wellbeing boards may consider sustainability as part of joint strategic needs assessments and health and wellbeing strategies
- Commissioners – Obligations under the Social Value Act
- ➔ Funding

Source: National Audit Office

2.6 A review by the Sustainable Development Unit in 2014 concluded that 36% of annual reports for clinical commissioning groups included good sustainability reporting. In 2013, the Sustainable Development Unit reported that 49% of annual reports from NHS provider organisations included good sustainability reporting.²⁹

29 See the annual reporting maps. Available at: www.sduhealth.org.uk/delivery/measure/reporting.aspx

Operations

3.1 The NHS estate is large and has significant environmental impacts including associated carbon emissions, water use and waste generation (**Figure 4** overleaf).

3.2 There are 102 NHS trusts which control an estate worth £12.6 billion and 147 foundation trusts control £19.6 billion of assets.³⁰ NHS Property Services looks after around 10% of the NHS estate (4,000 buildings worth over £3 billion), providing strategic estates management and supporting services. One of its key areas of activity is the disposal of estate that has been declared as surplus by NHS commissioners.³¹ In addition there are more than 7,000 for profit and not for profit sites providing NHS commissioned care.³²

Carbon

3.3 The Sustainable Development Unit reports that the carbon footprint of the NHS in 2012 was 25 MtCO₂e. This footprint includes an assessment of emissions from procurement and from services commissioned from outside the public sector, which together represent 70% of the footprint (**Figure 5** on page 15). The total NHS carbon footprint is of the order of 3% of the total UK carbon footprint. The UK carbon footprint for 2012 is 864 MtCO₂e, and is classed as an experimental statistic because of the inherent uncertainties associated with the estimate.³³ The next section of this report discusses procurement and commissioning issues in more detail.

3.4 The 2014 Sustainable Development Strategy set a target of 34% reduction in greenhouse gas emissions by 2020 (1990 baseline) across the health and social care system. In 2012, the NHS footprint was 6% below the 1990 baseline. A 34% reduction by 2020 would require an average of 4% reduction per year between 2013 and 2020.

30 At 31 March 2014, an analysis of net assets showed:

- NHS Trusts' net assets totalled £12.6 billion, compared with £11.3 billion at 31 March 2013. The increase is primarily due to additions of property, plant and equipment. NHS Trusts total cash balances amounted to £1.3 billion at 31 March 2014 (2012-13: £1.4 billion), a decrease of £78.4 million;
- NHS Foundation Trusts' net assets totalled £19.6 billion, compared with £18.0 billion at 31 March 2013. Of this, £0.7 billion of net assets transferred from NHS Trusts on 1 April 2013 as a result of the reorganisation of the NHS arising from the Health and Social Care Act 2012 reforms. Foundation Trusts' total cash balances amounted to £4.2 billion at 31 March 2014 (March 2013: £4.5 billion).

From Department of Health, *Annual Report and Accounts 2013-14*, HC 14, July 2014.

31 NHS Property services, About Us. Available at: www.property.nhs.uk/about-us/ (accessed 2 March 2015).

32 NHS confederation, Key statistics on the NHS. Available at: www.nhsconfed.org/resources/key-statistics-on-the-nhs (accessed March 2015).

33 DEFRA, UK's Carbon Footprint 1997–2012. UK carbon footprint updated 19 of March 2015.

Figure 4

The scale and nature of NHS operations – NHS trusts and foundation trusts

| Area | Value | Unit | Indicator |
|------------------------------|-----------|------------------------|---|
| Staff ^a | 1,163,586 | FTE | Total full-time equivalent staff |
| Buildings ^b | 24.7 | Million m ² | Occupied internal site floor area |
| | 6,252 | Sites | Number of hospitals, treatment centres and support facilities |
| Activity | 1 | Million patients | Every 36 hours ^c |
| | 21.8 | Million patients | Annual A&E attendances ^c |
| | 15.5 | Million | Total hospital admissions ^a |
| | 143,120 | Beds | Total beds available ^a |
| | 8.47 | Million | Ambulance calls ^a |
| | 435 | Million | Business miles ^b |
| Energy ^b | 4,050 | GWh | Total electricity consumption (grid, grid renewables, Combined Heat and Power and local electricity minus on-site generation exported to grid) |
| | 449 | GWh | Total electricity from renewable sources consumed (via grid not local) |
| | 11.1% | | Renewable electricity as share of total electricity from grid (might exclude local renewables as not collected) |
| | 11,732 | GWh | Total energy consumption (includes gas, electricity, oil, coal, steam and hot water) |
| | 3.8% | | Renewable energy as share of total energy consumption |
| | £636 | Million | Net total energy cost (cost of electricity, gas, oil and coal from utility supplier or local source, net of any energy sold) |
| Water and waste ^b | 34.4 | Billion litres | Water used |
| | 374,000 | Tonnes | Total waste generation. Includes high temperature and alternative treatment, landfill waste, electrical waste and waste prepared for reuse, recycled and other recovery processes |

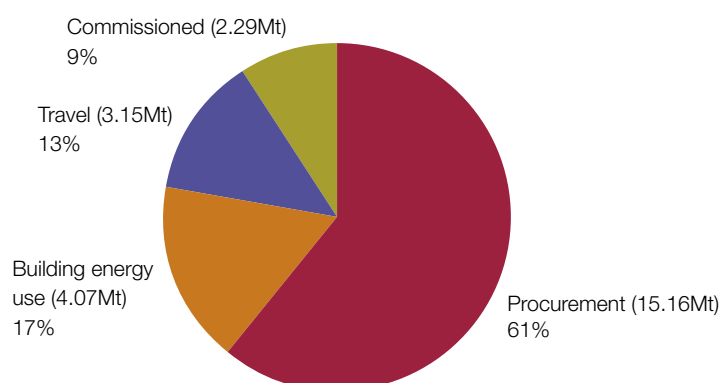
Notes

- 1 Figures refer to 2013-14.
- 2 This table covers NHS trusts (of which there are 102) and foundation trusts (of which there are 147). There are a further 7,331 for profit and not for profit sites providing NHS commissioned care.
- 3 More information is available on the Hospital Estates and Facilities Statistics. Available at: <http://hefs.hscic.gov.uk/>

Sources: a) Health and Social Care Information Centre; b) Estates Return Information Collection survey, NHS trusts England; c) NHS Confederation: Key statistics on the NHS

Figure 5
Carbon footprint breakdown by category

MtCO₂e



Notes

- 1 The carbon footprint analysis includes a mix of top down and bottom up approaches. The former approach estimates greenhouse gases emissions using data from NHS' aggregate accounts and emissions intensity associated with each financial flow; the latter uses site level measurements, such as metered gas consumption, to determine emissions associated with their use.
- 2 Energy use is calculated by using measured energy consumption for sites where this is available (information collected for all trusts with the Estates Return Information Collection) and using estimated consumption in sites not included in the data collection survey. Travel emissions are calculated using data from the National Travel Survey (patients, visitors and staff) and business travel and fleet mileage (from procurement financial flows). Emissions associated with procurement and commissioning are calculated analysing financial flows associated with their sub-components.

Sources: Sustainable Development Unit: *Carbon Footprint update for NHS in England 2012* and *Update NHS Carbon Reduction Strategy, 2010*.

3.5 A modelling exercise conducted by ARUP and the Stockholm Institute for the Environment in 2009 illustrates the transformational change that would be needed to achieve reductions in greenhouse gases emissions in line with the 2020 target.³⁴ (Figure 6 overleaf). It identified the following actions with the highest potential for emissions reductions:

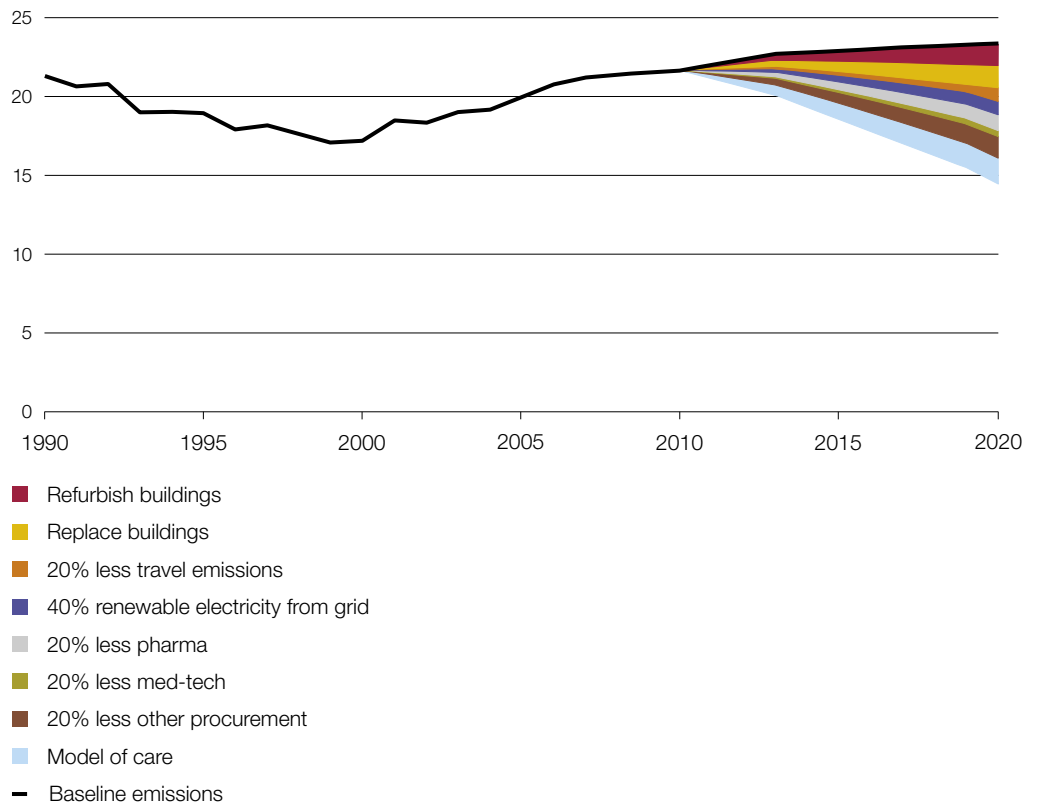
- Refurbishment/replacement of the whole building stock: 6–12% greenhouse gas emissions reduction (on 2020 projected business as usual emissions).
- Maximising procurement efficiencies: 6% reduction (with the further benefit of reducing waste generation).
- Shifts to less intensive models of care: 7% reduction.

³⁴ Sustainable Development Unit, *Saving Carbon, Improving Health – Update NHS Carbon Reduction Strategy*, January 2010.

Figure 6

CO₂e reduction potential for NHS England

NHS England annual emissions MtCO₂e



Note

1 The chart presents reduction potential in different operational areas required in order to reach the target reduction of 34% by 2020 compared to 1990 baseline (38% reduction compared to projected emissions in 2020).

Sources: Sustainable Development Unit, *Carbon Reduction Strategy Update*, published 2010.

3.6 The Marginal Abatement Cost Curves (MACC), calculated as part of the modelling exercise, imply that the NHS could save over £180 million per year by reducing its carbon emissions. The largest carbon and cost savings could be achieved by combined heat and power installations in acute trusts, while the most cost effective measures would be packaging reduction, reduction of drug waste and increased use of teleconferencing to replace business miles.

3.7 The results of these exercises have not been translated into an implementation plan and no interim milestones have been developed (such as refurbishment of a certain number of sites per year). The Department has established an NHS Energy Efficiency Fund, with the aim of reducing NHS estate operating costs by investing in selected energy efficiency projects and then reinvesting any savings back into frontline care. In 2013, £49.3 million was released to fund 117 energy efficiency projects, with projected savings of £118.7 million within ten years. The fund was heavily oversubscribed.³⁵ Individual trusts have also been actively promoting their own initiatives: see for example Barts Health NHS Trust's TLC initiative (Turn off equipment when not in use; Switch off lights where possible; Close doors and windows), and Nottingham University Hospital's carbon reduction initiatives.³⁶

Waste

3.8 The 2014 Sustainable Development Strategy does not set targets for waste reduction and reporting on waste across the system is less developed than on carbon. The carbon emissions associated with waste and water are however included in the carbon footprint and carbon target, (and amount to around 4% of emissions from procurement). National Audit Office provisional analysis of publicly available data suggests that in 2013-14, NHS trusts and foundation trusts generated 374,000 tonnes of waste (equivalent to 1.7% of household waste in England),³⁷ 24% of this waste was recycled, 17% was recovered by other means and 2% was prepared for re-use. In comparison, 22% of waste was sent to landfill and 35% was dangerous waste disposed of using high temperature treatment or alternative non burn treatment (**Figure 7** overleaf).

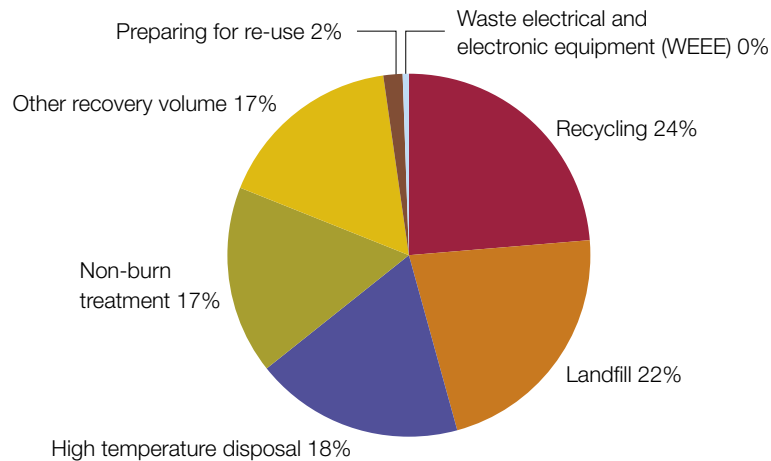
³⁵ NHS Energy Efficiency Fund, *Final Report – Summary 2014*, February 2015.

³⁶ Barts Health NHS Trust Operation TLC, available at: www.globalactionplan.org.uk/operationtlc and Nottingham University Hospital Carbon Reduction Initiatives, available at: www.nuh.nhs.uk/ultra-low-carbon/our-carbon-reduction-initiative/ (accessed March 2015).

³⁷ Total waste arising from NHS trusts in 2013-14 was 374,152 tonnes. In 2013, total 'Waste from Households' collected by local authorities in England amounted to 21.6 million tonnes (DEFRA, Statistics on waste managed by local authorities in England in 2013-2014).

Figure 7

Provisional analysis of waste generation by treatment

**Notes**

1 Disposal methods:

- high temperature: incineration, pyrolysis, plasma technology and gasification of hazardous materials;
- non-burn treatment: alternative treatments for hazardous materials that operate at temperatures lower than 1,000 degree Celsius, such as heat disinfection, microwaves, gamma irradiation and chemical treatments;
- landfill: waste sent to licensed landfill, including construction waste;
- waste of electronic equipment disposed according to the Waste Electrical and Electronic Equipment (WEEE) regulation; and
- recycling, reusing and preparing for reuse: recycling means converted to a new substance or product (such as composting).

2 The Sustainable Development Unit provides further analysis of these data at area and regional level.

3 Note that this analysis is provisional as the National Audit Office was not able to carry out full checks on the data in the time available.

Source: National Audit Office provisional analysis of Estates Return Information Collection, NHS trusts England

3.9 The Sustainable Development Unit reports that the volume of waste sent to landfill and of electric waste decreased by 33% between 2007-08 and 2013-14.³⁸ No further analysis is publicly available and, due to quality issues with the available data, the National Audit Office analysis could not validate the results. National Audit Office provisional analysis suggests that in 2013-14 total waste cost in NHS trusts and foundation trusts amounted to £86.2 million, with £15.5 million spent on recycling, recovery and preparing for re-use activities. The publicly available data suggests there was a 7% increase in waste costs between 2007-08 and 2013-14.

38 Sustainable Development Unit: Reporting on sustainability – maps 2013-14. Available at: www.sduhealth.org.uk/policy-strategy/reporting/sdmp-annual-reporting.aspx

3.10 By way of context, as part of the European Union waste strategy, the UK has a target of 50% of household waste recycled by 2020.³⁹ The National Audit Office's provisional analysis suggests that some 40% of non-hazardous waste was recycled in NHS trusts and foundation trusts in 2013-14 (this assumes that all waste disposed using high temperature and non-burn treatment is hazardous). In 2009, as part of the carbon reduction strategy, the NHS Sustainable Development Unit and the Department of Health had stated they would consider appropriate targets on waste, in terms of targets for the reduction of clinical/hazardous waste as well as domestic waste to landfill, and targets to increase recycling.⁴⁰

3.11 Hospital waste measurement does not include prescription medicines and other waste disposed of in people's homes. A 2007 National Audit Office report concludes that if all primary care trusts (now replaced by clinical commissioning groups) could prescribe as efficiently as the top 10%, over £300 million in prescription costs could be saved.⁴¹ The conclusion is validated by an analysis of the York Health Economics Consortium and the School of Pharmacy, University of London: wasted medicines cost the NHS £300 million a year, of which at least half is avoidable.⁴²

3.12 There is a range of guidance available to health organisations on minimising waste:

- Guidance on minimising waste is provided under the Carbon Hotspots section of the Sustainable Development Strategy.
- Department of Health technical guidance (*Health Technical Memorandum 07-01: Safe management of healthcare waste*).
- The Sustainable Development Unit website provides guidelines on construction waste and on environmental considerations when prescribing drugs.^{43,44} Sustainable Development Unit guidance on sustainable procurement highlights that the most effective way to reduce carbon emissions and waste is to reduce the amount of goods or services consumed or procured.⁴⁵

39 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008, on waste and repealing certain Directives.

40 Sustainable Development Unit, *Carbon Reduction Strategy, Extended Chapter – Waste*, 2009.

41 National Audit Office, *Prescribing costs in primary care*, May 2007, page 14.

42 York Health Economics Consortium & School of Pharmacy, University of London, *Evaluation of the Scale, Causes and Costs of Waste medicines – Final report*, November 2007.

43 WRAP, *Cutting the costs of waste in NHS construction: Advice for NHS Trusts as construction clients*, March 2010.

44 Steering Group on Improving the Use of Medicines, *Improving the use of medicines for better outcomes and reduced waste: an action plan*, October 2012.

45 Sustainable Development Unit, *Procuring for carbon reduction – Hierarchy of interventions slide set*, 2012. Available at: <http://www.sduhealth.org.uk/areas-of-focus/commissioning-and-procurement/procurement.aspx>

3.13 Food wastage has generated recent press interest.⁴⁶ Provisional National Audit Office analysis suggests that in 2010-11 around 7.5% of meals were unserved or untouched, at a cost of around £30 million a year.⁴⁷ From 2011-12, the NHS appears to have stopped collecting data in the same way on meals served but not eaten. In 2013-14, 6% of meals were unserved (9 million a year) at a cost of some £28 million.⁴⁸ NHS England has launched a survey on food waste in 2012 for which there are no published results.⁴⁹

3.14 New NHS food standards will become mandatory from April 2015, following the recommendations of the Hospital Food Standards Panel, with the aim to improve quality, promote healthier diets and reduce waste.⁵⁰

Water

3.15 There are no targets on water use in the Sustainable Development Strategy. Provisional National Audit Office analysis suggests that in 2013-14, NHS trusts and foundation trusts used 34.4 million m³ of water, compared to 36.5 million m³ in 2007-08 (6% reduction), while water and sewage costs amounted to £78.9 million in 2013-14.⁵¹ However, only 152 organisations (55%) have decreased water consumption in the observed period, with three NHS regions showing increase in water consumption of more than 10%.⁵²

3.16 The Department has published a technical memorandum on sustainable water management (*the Health Technical Memorandum 07-04: Water management and water efficiency*) and a brief guide titled *Water – Key actions*.⁵³

46 The Guardian, *Hospitals are wasting 82,000 meals a day*, 29 June 2013. Available at: www.theguardian.com/society/2013/jun/29/hospitals-throw-away-quarter-of-food (accessed March 2015).

47 National Audit Office analysis of the Estates Return Information Collection data.

48 The analysis was updated on the 23 March following consultation with the Sustainable Development Unit.

49 Available at: www.foodwastesurvey.co.uk/ (accessed March 2015).

50 The Guardian, *Hospital food is a recipe for disaster*, 2 March 2015. Available at: www.theguardian.com/commentisfree/2015/mar/02/hospital-food-nutrition-recovery-ministers and Department of Health, *press release: New rules to serve up better food for NHS patients and staff*. Available at: www.gov.uk/government/news/new-rules-to-serve-up-better-food-for-nhs-patients-and-staff

51 National Audit Office analysis of the Estates Return Information Collection data.

52 Sustainable Development Unit, *Maps by NHS England Area Team – 2013-14 – November Update*. Available at: www.sduhealth.org.uk/documents/Maps/20141201_SDU_NHSEngland_maps_Nov_update.pptx

53 Sustainable Development Unit, *Carbon Reduction Strategy Extended Chapter: Water*, 2009.

Procurement

4.1 As outlined in the policy and policy making section (Page 5) NHS England sets the framework for commissioning of healthcare services in England. It funds clinical commissioning groups to enable them to commission services for their communities. Clinical commissioning groups can draw on a group of commissioning support services in doing so. NHS England also commissions some services across the country such as primary care and specialised services.

4.2 Each individual organisation commissioned for its services (including NHS trusts, NHS foundation trusts, GPs, dentists, and private- and third-sector providers) will in turn procure goods, services and infrastructure. The 2013 report *Better Procurement Better Value Better Care* states that the NHS spends over £20 billion every year on goods and services which typically accounts for around 30% of the operating costs of each hospital.⁵⁴ Organisations can carry out their own procurement exercise or go through an existing framework agreement with a group of approved suppliers. NHS Business Services Authority is responsible, on behalf of the Department of Health, for the management of a variety of supply chain contracts and programmes across the health sector. It contracts with NHS Supply Chain (DHL) to supply healthcare products and supply chain services to the NHS.

4.3 The Sustainable Development Unit reports that procurement was the largest contributor (61%) of the NHS' carbon footprint, with the largest component of procurement emissions arising from pharmaceuticals and medical instruments (**Figure 8** overleaf).⁵⁵ Sustainable Development Unit analyses suggest that most (about 80%) of the pharmaceuticals' footprint is related to prescriptions by primary care and community services, with only 13% by acute services and 5% by mental health services. By contrast, the footprint of medical instruments mostly arises from acute trusts (75%), rather than primary care and community services (13%).⁵⁶

4.4 The Sustainable Development Unit also reports that 9% of the footprint arises from commissioning of healthcare services from outside the public sector. The analysis is based on a financial model which is not publicly available and which the National Audit Office has not reviewed.

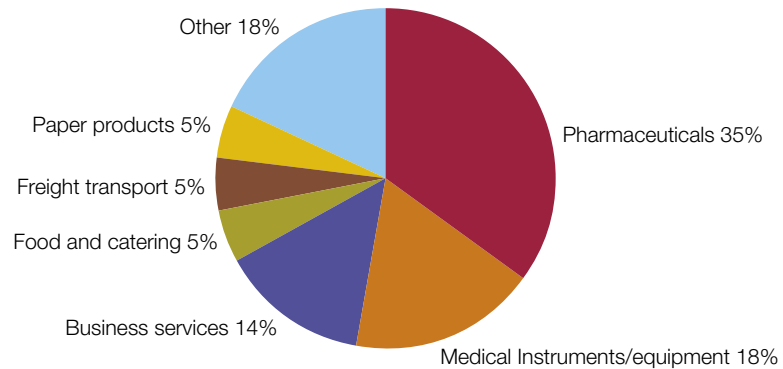
54 Department of Health and NHS England, *Better procurement, better value, better care: A procurement development programme for the NHS*, August 2013.

55 Sustainable Development Unit, *Carbon footprint update for NHS in England 2012*, December 2013.

56 Sustainable Development Unit, *Goods and Services carbon Hotspots report*, undated.

Figure 8

NHS procurement carbon footprint breakdown

**Note**

- 1 Other includes: manufactured fuels, chemicals and gases: 4%, construction: 4%, other manufactured products: 3%, waste products and recycling: 3%, information and communication technologies: 3%, and water and sanitation: 1%.

Source: Sustainable Development Unit, *Carbon footprint update for NHS in England 2012*

4.5 Initiatives to increase sustainability in procurement include:⁵⁷

- The Sustainable Development Unit has published guidance to help organisations increase sustainability in their procurement of goods and services. It provides examples of practical approaches, actions, guidance and tools.⁵⁸
- The Coalition for Sustainable Pharmaceuticals and Medical Devices was set up to increase sustainability of healthcare products and services through the promotion of best practice and the development of sustainability tools and guidelines related to pharmaceuticals and medical devices.⁵⁹
- The NHS Business Services Authority has engaged with key suppliers to undertake a self-assessment using the government-approved CAESAR tool to create a baseline for its own internal procurement and supply base. It plans to use the results of this assessment to ensure continuous improvement in its suppliers.⁶⁰
- The British Medical Association and the Royal College of General Practitioners have published guidance on how to include ethical and sustainable criteria into commissioning and procurement policies.⁶¹

57 The Department of Health has identified a range of additional procurement initiatives which include: NHS Standards of Procurement; a workbook to help Procuring for Carbon Reduction (P4CR); the National Sustainable Public Procurement Programme (NSPPP); the Department has worked with Defra and Cabinet Office on the maintenance and development of Government Buying Standards; NHS Supply Chain to address sustainability aspects in national procurement and logistics solutions for NHS providers in England; and the launch of the Centre for Procurement Efficiency (CPE) in June 2014 to allow procurement professionals across the NHS to share information on sustainable procurement.

58 Sustainable Development Unit, *Implementation notes: Commissioning and procurement*, July 2014.

59 Sustainable Development Unit, *Coalition for Sustainable Pharmaceuticals and Medical Devices*, available at: www.sduhealth.org.uk/areas-of-focus/carbon-hotspots/pharmaceuticals/cspm.aspx (accessed February 2015)

60 NHS Business Services Authority, *Annual Report and Accounts 2013/14*, June 2014.

61 BMA, *Fair Medical Trade*, available at: <http://bma.org.uk/working-for-change/international-affairs/fair-medical-trade/tools-and-resources/ethical-procurement> (accessed 5 March 2015).

Climate change adaptation

5.1 A changing climate will impact the health sector in two ways, through changes to health needs of the population and by affecting the resilience of health infrastructure. The Civil Contingencies Act (2004) requires all NHS organisations to prepare for adverse events and incidents. The government's 2012 Climate Change Risk Assessment identified a number of health risks and impacts of climate change including: hotter summers increasing the risk of heat-related deaths; increased number of casualties due to flooding and impact of floods on mental wellbeing; and a rise in health problems caused by air pollution. It is an issue which cuts across the NHS' policy and operations.

5.2 The NHS has taken action to address the risks of climate change to the health sector including:

- The *Heatwave Plan for England 2014*, published by Public Health England, which seeks to prepare for and prevent the major avoidable effects on health during periods of severe heat in England.⁶²
- The *Cold Weather Plan for England 2014*, published by Public Health England, is a framework intended to protect the population from the harm to health from cold weather.⁶³
- In 2014, Public Health England published guidance and advice to plan, manage and recover from flooding.⁶⁴
- The Environment Agency developed a toolkit to assist health and wellbeing boards in integrating climate change adaptation into the local health economy.⁶⁵

5.3 Adaptation planning guidance is produced by the Sustainable Development Unit.⁶⁶ The Sustainable Development Unit, the reporting authority on adaptation for the health and care sector, is preparing a report on how the health and care system is adapting to climate change.⁶⁷ It is due for submission to the government in May 2015.⁶⁸

62 Public Health England and NHS England, *Heatwave plan for England 2014*, May 2014.

63 Public Health England, *Cold Weather Plan for England 2014*, October 2014.

64 Public Health England, *Flooding: health guidance and advice*, December 2014.

65 Sustainable Development Unit, *Under the Weather – Improving health, wellbeing and resilience in a changing climate*, February 2014.

66 Sustainable Development Unit, *Adaptation to climate change, planning advice for Health and Social Care Organisations*, January 2014.

67 Department for Environment, Food & Rural Affairs, *Adapting to Climate Change: Ensuring Progress in Key Sectors. 2013 Strategy for Exercising the Adaptation Reporting Power and list of priority reporting authorities*, 2013.

68 Sustainable Development Unit, *Health and Care System Adaptation Report 2015*. Available at: www.sduhealth.org.uk/areas-of-focus/community-resilience/adaptation-report.aspx (accessed on 26 February 2015).

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