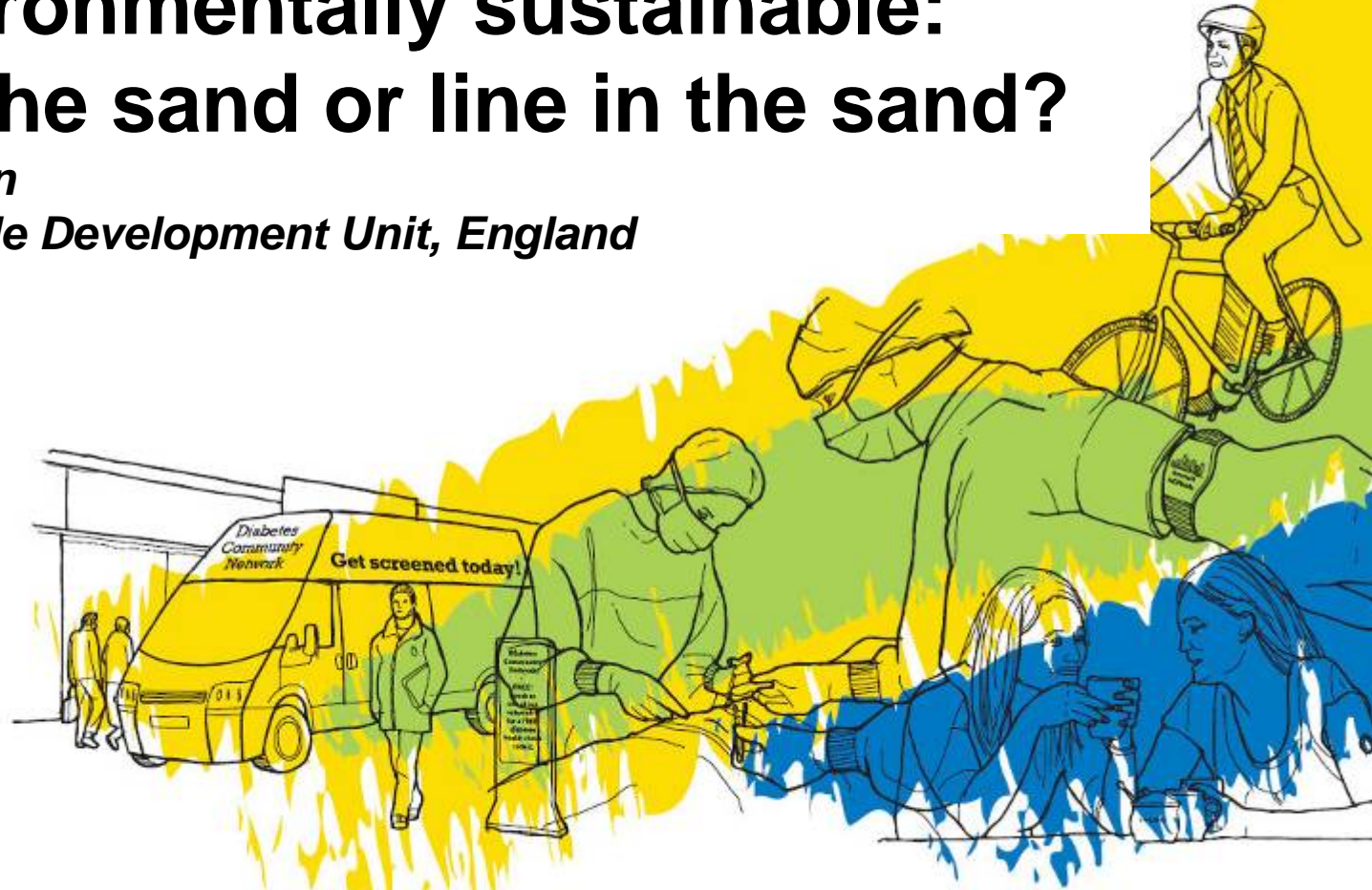



Making Primary Care economically and environmentally sustainable: head in the sand or line in the sand?

David Pencheon

NHS Sustainable Development Unit, England



NHS Alliance, Bournemouth
Friday 19th November, 2010



Many drivers are making current methods of delivering health care unsustainable....

...politically

...socially

...environmentally

...economically

1. What are the key ways in which Primary Care could evolve in order to continue to deliver the best care for all at an affordable cost for all?
2. How do we explore some radical approaches to improving **all** dimensions of quality, via innovation and collaborative risk management?



Sustainable Development

“development that meets the needs of the present...

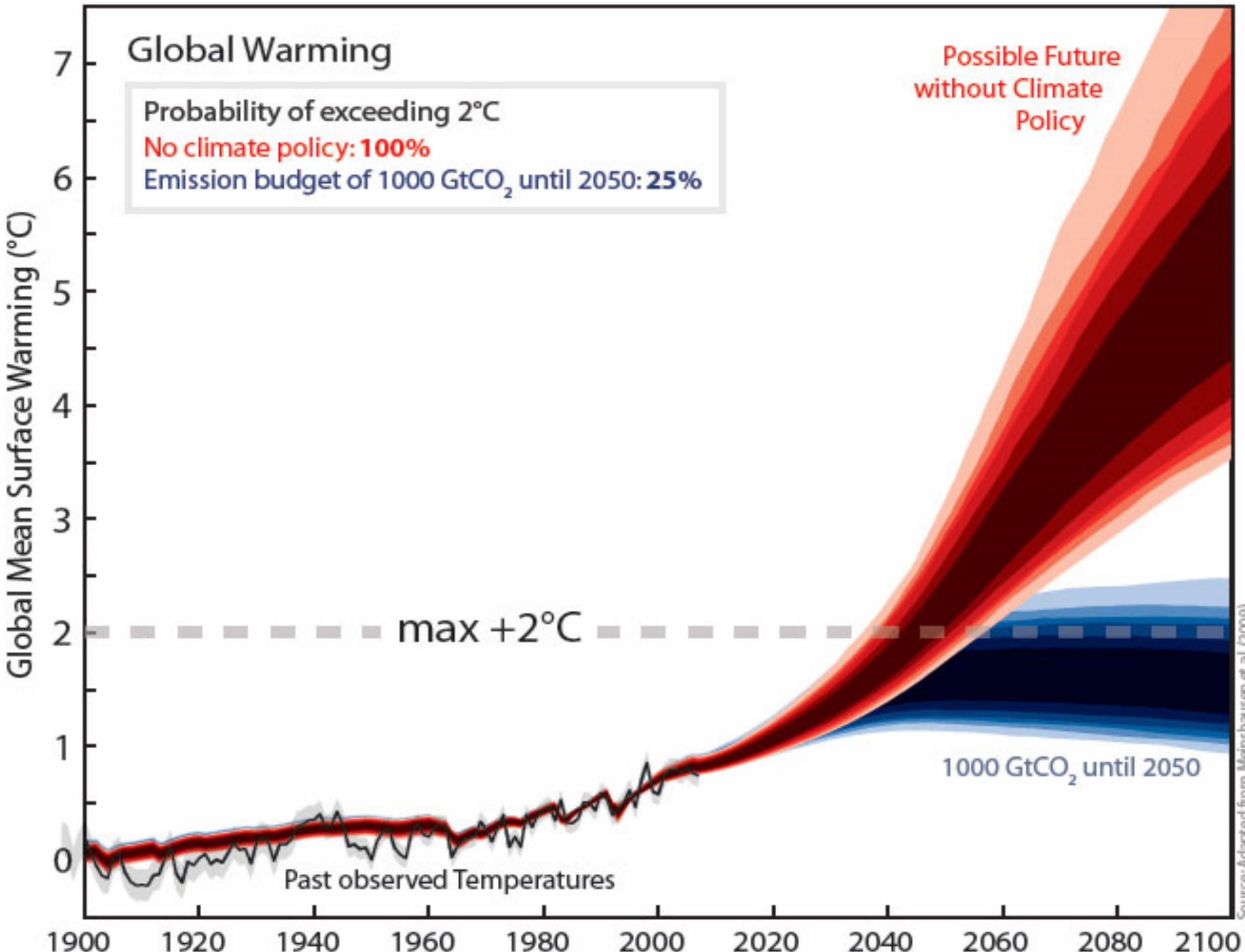
...without compromising the ability of others, in future or elsewhere now, to meet their own needs”

- Adapted from the Brundtland Commission



The SDU does four things to help deliver transformational change in the NHS in England:

1. Shape NHS policy in England
2. Provide technical expertise and leadership
3. Generate better understanding (research)
4. Develop organisations, networks, and people



Source: Adapted from Meinshausen et al. (2009)



Global addiction to oil: very cheap, very useful and very dangerous

In the last 150 years we have been releasing 350 million years-worth of carbon locked away in fossil fuels

**150
years**

**100
years**

**50
years**

NOW

**First Oil
Well**

**4000
cars in
USA**

**First
commercial
jet ticket**

**600,000,000
cars
4,000,000,000
passenger
flights p.a.**

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BMJ



Climate change

What is it? [www.bmj.com](#)

How much could generic statins save the NHS? [www.bmj.com](#)

Are older antipsychotics obsolete? [www.bmj.com](#)

The benefits of "off-pump" CABG [www.bmj.com](#)

New football boots and toxic shock [www.bmj.com](#)

Never get between a she-bear and her cubs [www.bmj.com](#)

[bmj.com](#)

THE LANCET

[www.thelancet.com](#)

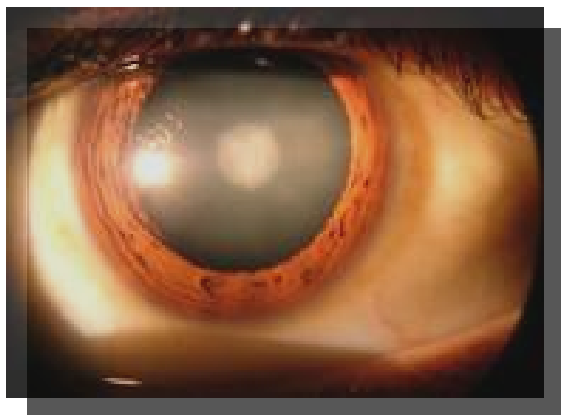
Volume 373 · Number 9676 · Pages 1659-1734 · May 16-22, 2009

"Climate change is the biggest global health threat of the 21st century."

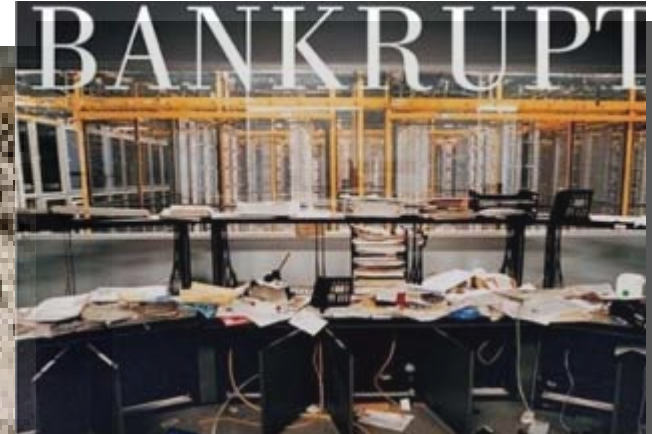
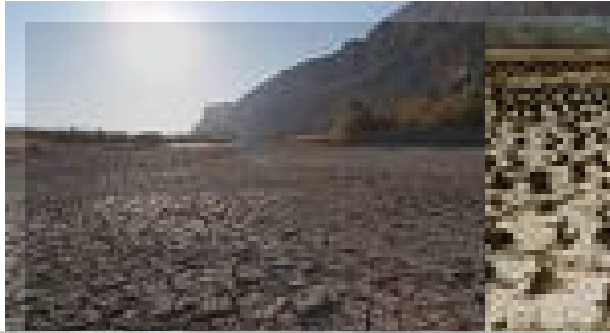
See The Lancet Commissions page 1693



Although climate change can cause illness and death directly...



...there are **MUCH** greater health risks through:



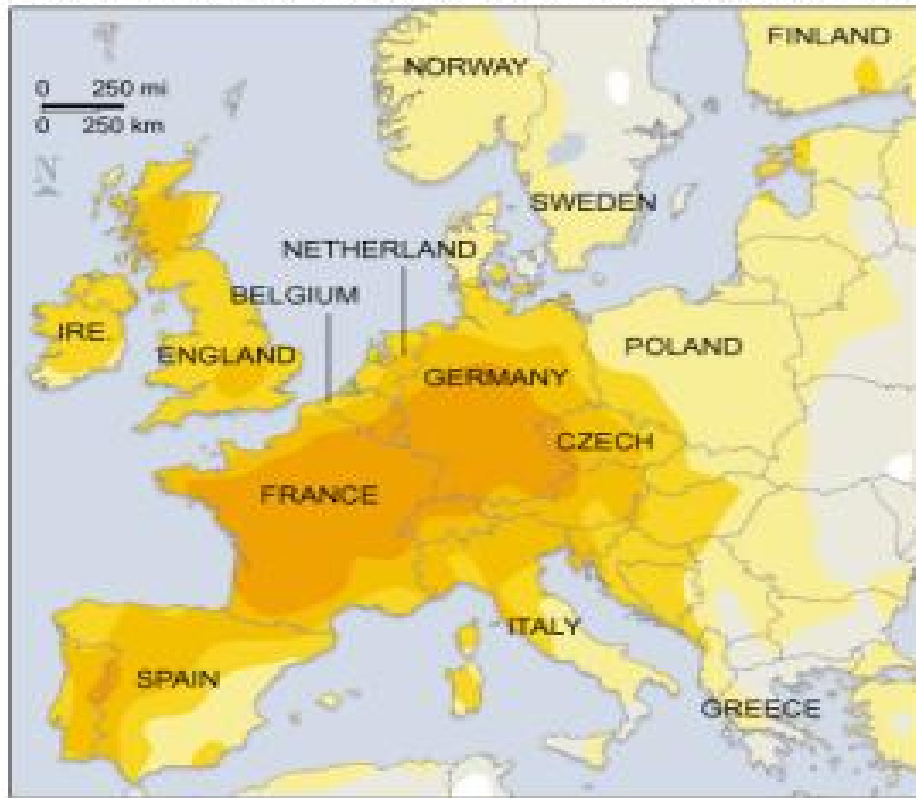


The time is now

Deadly heat wave holds firm in Europe

Temperatures throughout Europe continued above normal, as France reported as many as 3,000 deaths due to the heat.

Difference from normal temperatures Aug. 3 to Aug. 9, 2003



+16.2° F. +12.6° F. +9° F. +5.4° F. +1.8° F. -5.4° F. -5.4° F.
 +9° C. +7° C. +5° C. +3° C. +1° C. -1° C. -3° C.

SOURCE: Climate prediction center, NOAA.

AP

www.sdu.nhs.uk

At least 30,000 people died prematurely as a result of Europe's heat wave in 2003 in France¹

1. Unprecedented heat-related deaths during the 2003 heat wave in Paris: consequences on emergency departments
Jean-François Dhainaut, Yann - Erick Claessens, Christine Ginsburg, and Bruno Riou.

Crit Care. 2004; 8(1): 1-2.

Published online 2003 December 4. doi: 10.1186/cc2404.

and Bhattacharya, S. (October 2003), 'European heat wave caused 35,000 deaths', The New Scientist.
<http://www.newscientist.com/article/dn4259>



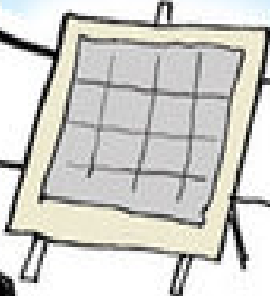
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CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- etc. etc.



JOEL PITT

10/7/19 USA TODAY



Features of wicked problems / messy issues

1. The issue is not self contained nor easy to define.
2. Every wicked problem is essentially new and unique.
3. Each solution causes other problems.
4. The solution depends on how the problem is framed and vice-versa.
5. Stakeholders have radically different world views and different frames for understanding the problem.
6. The constraints that the problem is subject to and the resources needed to solve it change over time.
7. The problem is never solved definitively.
8. Solutions to wicked problems are not easily defined as right or wrong.

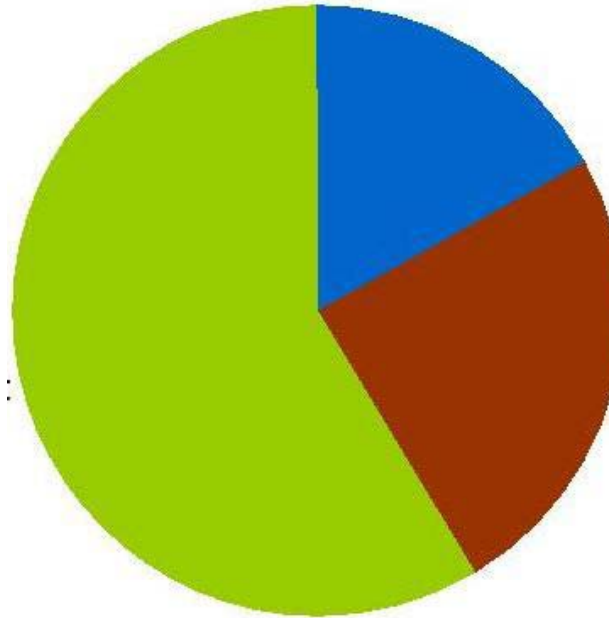


Measure and manage: The carbon footprint of NHS England

c. 21 million tonnes CO₂e every year

Procurement:
supply chain
activities of
companies
producing goods
and services
= c. 59%

Travel: patients, staff,
visitors = c.17%

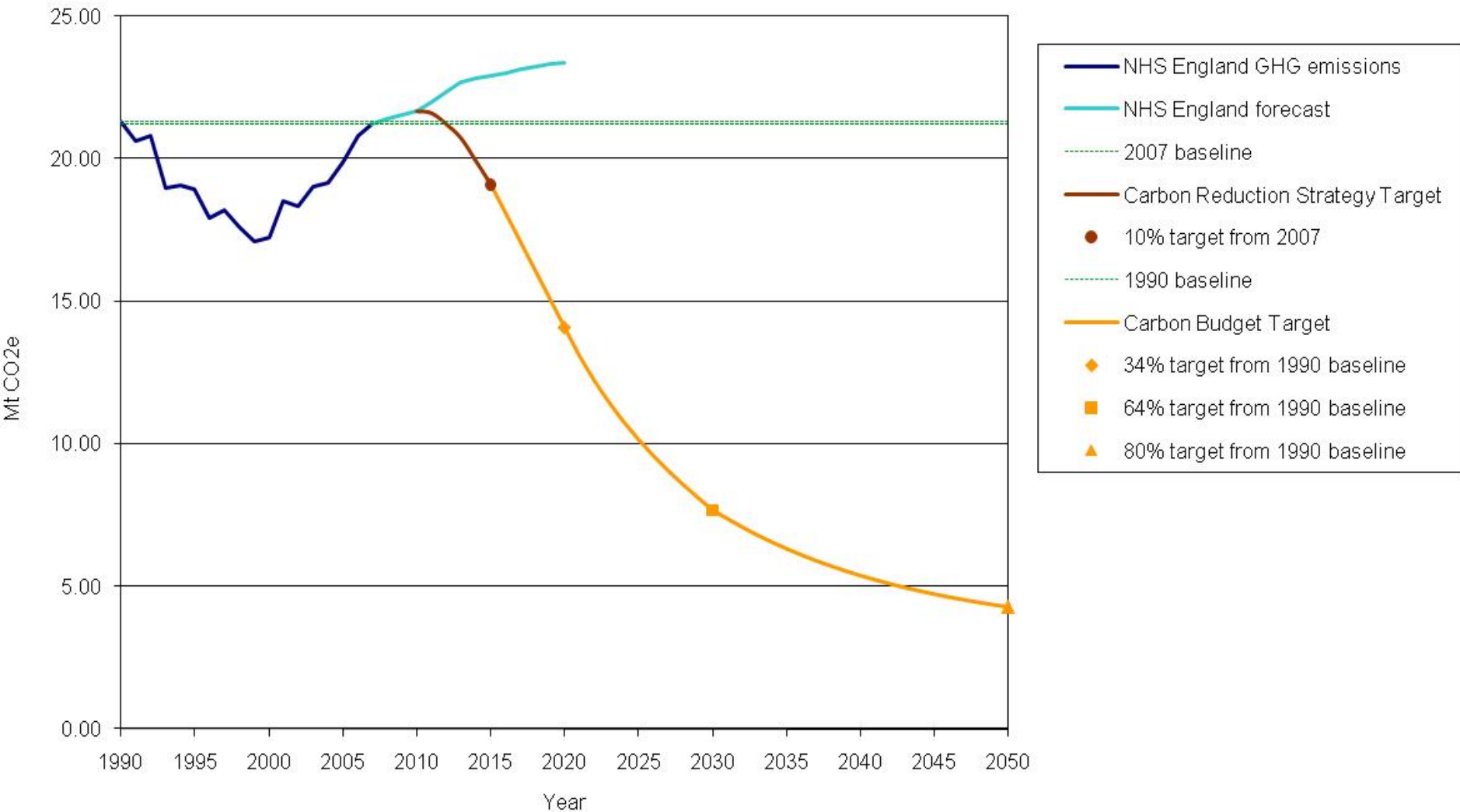


Energy: heating,
lighting, hot water,
ventilation, cooling =
c. 24%

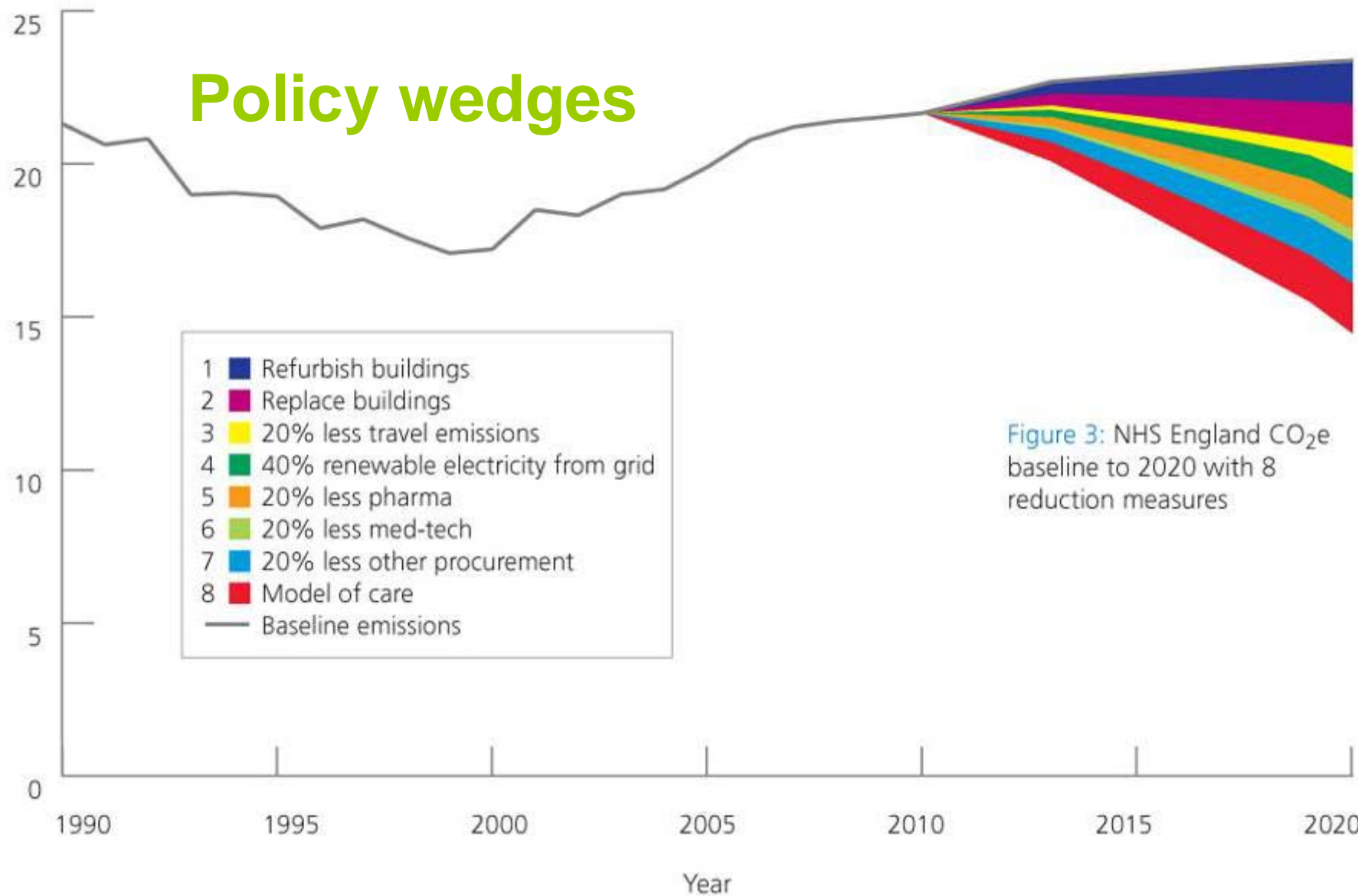


NHS England CO₂e footprint 1990 – 2020 with Climate Change Act targets

NHS England CO₂e baseline to 2020 with Climate Change targets



NHS England annual emissions MtCO₂e



Policy wedges

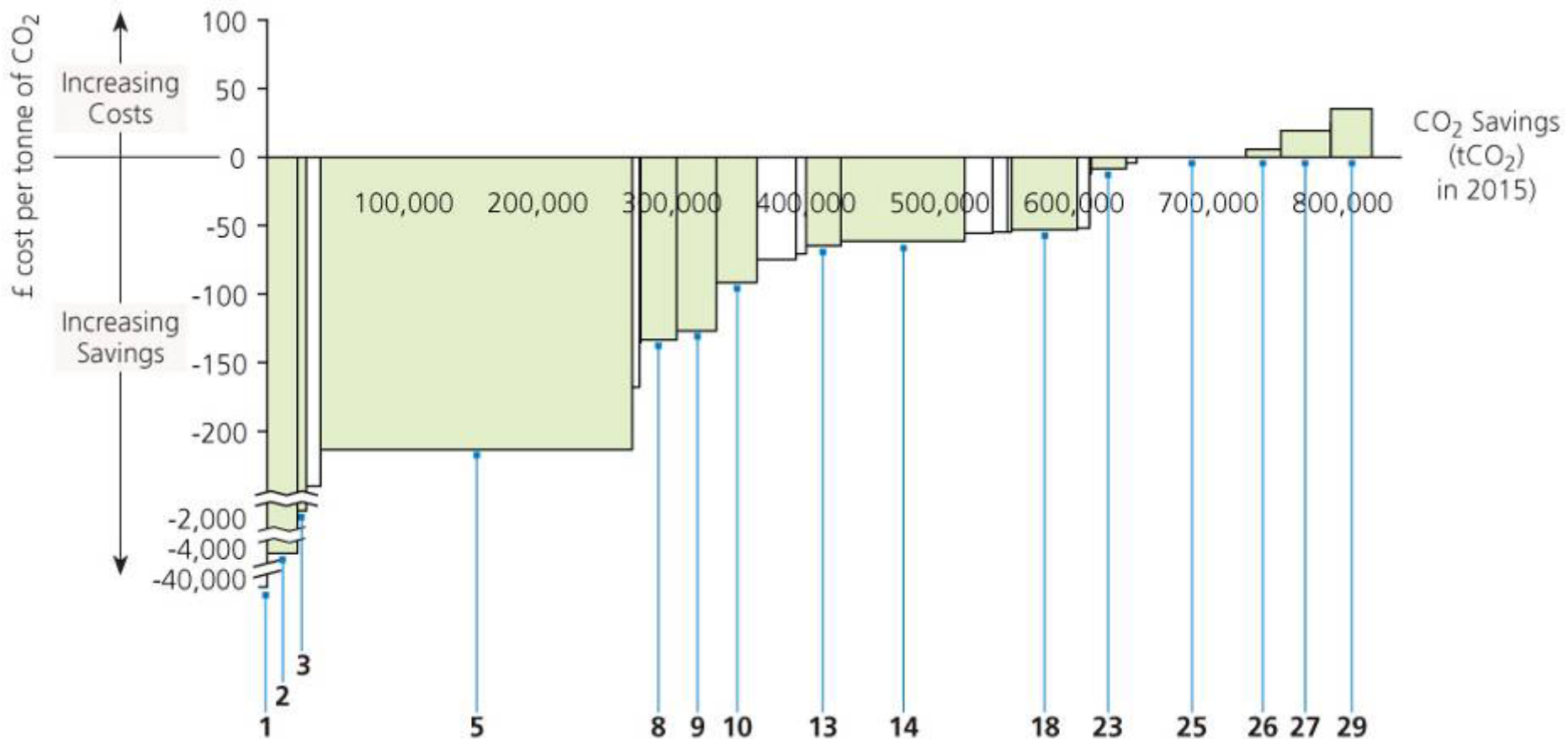
- 1 Refurbish buildings
- 2 Replace buildings
- 3 20% less travel emissions
- 4 40% renewable electricity from grid
- 5 20% less pharma
- 6 20% less med-tech
- 7 20% less other procurement
- 8 Model of care
- Baseline emissions

Figure 3: NHS England CO₂e baseline to 2020 with 8 reduction measures

This table illustrates just some of the carbon saving measures that the NHS could implement. Not all are numbered above. Some CO₂ savings are too small to depict on this scale of graph.

	(£/tCO ₂) - savings + costs	CO ₂ Savings (tCO ₂ /yr)	£000 Savings (£000/yr)
1 Packaging of medical equipment	-40,299	2	+81
2 Reduce drug wastage	-3,987	22,430	+89,428
3 Teleconferencing to replace 5% of business miles	-2,038	6,827	+13,913
4 Decentralisation of hot water boilers in non-acute/PCT	-240	10,612	+2,547
5 Combined Heat and Power installed in acute trusts	-213	232,331	+49,487
6 Variable Speed Drives	-168	5,508	+925
7 Introduce hibernation system for ambulance stations	-135	1,096	+148
8 Improve heating controls	-134	26,551	+3,558
9 Improve lighting controls	-127	29,686	+3,770
10 Energy efficient lighting	-91	30,140	+2,743
11 Voltage optimisation	-75	29,364	+2,202
12 Improve the efficiency of chillers	-71	7,313	+519
13 Roof insulation	-65	25,928	+1,685
14 Energy Awareness Campaign	-61	92,549	+5,645
15 Building Management System optimisation	-56	20,610	+1,154
16 Improve Insulation to pipework, and/in boiler house	-55	11,195	+616
17 Install high efficiency lighting/controls - ambulance trusts	-55	2,999	+165
18 1 degree C reduction in thermostat temperature	-53	49,144	+2,605
19 Improve the efficiency of steam plant or hot water boiler plant	-52	8,933	+465
20 Upgrade garage and workshop heating	-49	214	+10
21 Boiler replacement/optimisation for HQ/control centres	-12	171	+2
22 Improve building insulation levels in ambulance trusts	-12	951	+11
23 Wall insulation	-8	25,928	+207
24 Office electrical equipment improvements	-4	7,957	+32
25 Travel Planning	0	81,524	0
26 Insulation - window glazing and draught proofing	+6	25,928	-156
27 Electric vehicles	+19	36,969	-702
28 Wind Turbine	+25	245	-6
29 Biomass Boiler	+35	30,533	-1069
Total		823,638	179,987

Marginal Abatement Cost (MAC) curve





Economic and health reasons for taking action (regardless of climate change)

- 1. Saving money and avoiding taxes**
- 2. Regulation / legislation**
- 3. Reputation / example of the health service and health professionals**
- 4. Health: Promoting immediate improvements in health through: (“health co-benefits”)**
 - physical activity, better nutrition, less heart disease, diabetes, obesity, traffic trauma; more prevention, self care, care closer to home, near patient testing, rewards for prevention and outcomes....



health co-benefits - win-wins

1. For people
 - Physical activity, diet, mental health, trauma, air pollution...
2. For the health care system
 - Congruent with policy direction for many health care systems: more prevention, **better models of care**, care closer to home, empowered / self care, better use of drugs, better use of IT....
3. For global fairness
 - Cost effective, leap frogging from pre-industrial, pre-carbon to post carbon, missing out high carbon phase
 - Fairness: Contraction and convergence





Sustainability as a core dimension of quality

1. safe
2. effective
3. patient centred
4. timely
5. efficient
6. equitable
7. sustainable

“Any quality aims that cannot be maintained with the resources available to us are set up to fail. It is important to realise that working to improve sustainability will seldom be in conflict with the other dimensions of quality; in particular, low carbon healthcare is likely to improve cost efficiency and patient empowerment”

Dr Donal O'Donoghue. National Clinical Director for Renal Services



Better models of care: Bromley by bow

- The Bromley by Bow Centre Health Centre is a healthy living centre, with a holistic approach to helping people towards a healthier lifestyle. When it opened in 1997, it demonstrated a new way of providing healthcare in the community.
- Quarter of all consultations done by phone

www.sdu.nhs.uk





Access to care **NOT** travel to care:

“Every unplanned admission to a hospital is a sign of system failure until proved otherwise”

Default place for health care is the home / local community

An infrastructure for a nationwide sustainable transport system

Parking free (except for high carbon vehicles)



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Using £20bn commissioning / purchasing power

“Criteria relating to sustainability and low carbon operations will increasingly be used in the commissioning of services and the procuring of goods”

“This GP Commissioning Consortium does business with organisations that can demonstrate a genuine, practical and measurable approach to sustainability and climate change.”

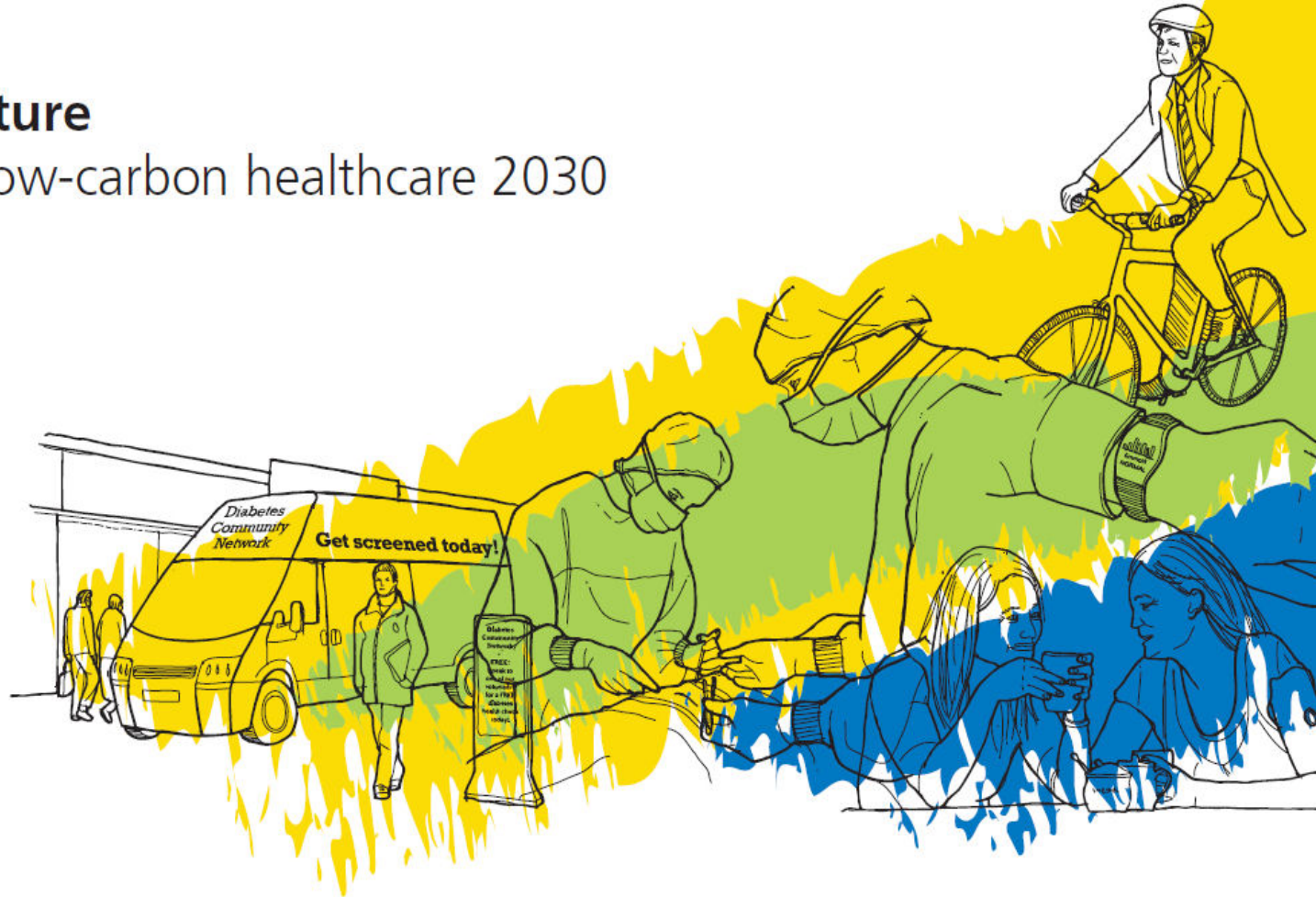
“Systematic plans to monitor and reduce your carbon impact and improve sustainability will be a highly significant criterion on which your tender will be judged”



Fit for the Future

Scenarios for low-carbon healthcare 2030

September 2009





Research issue 1

What are the systematic methods (and metrics) for assessing the environmental impact of different, whole system, models of care for...e.g. diabetes, care of the dying..?

Patient experience and outcome

Effectiveness and financial impact

Environmental impact



Research issue 2

How do we assess the long term financial and environmental costs of single use vs. decontamination for instruments / medical equipment?



Research issue 3

What are the financial models that will provide incentives to keep people living well, out of hospital, and not over-medicalised?

(“My job is to protect my patients...from the excesses of...the health system.” GP)



Why we don't do more....

1. We are very busy - focussed on the day job
2. We are focussed on reacting to demand, problems and crises, not being proactive to need, planning, policy, preparation or prevention
3. We claim to be doing a lot for health already (“moral offset”)
4. Climate change / sustainability is not our primary objective
5. We work in systems that are rewarded for activity, and treatment, not prevention or outcome



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Summary

- Small steps, early wins...larger steps, transformational change to better models of care
- Use the size and exemplary potential of health services to lever wider change
- Research in order to understand the scale of the problems / opportunities, communicated positively
- Reframe the evidence and the messages depending on the audience
 - public, patients
 - colleagues
 - politicians
 - policy makers
- Our watch, our legacy....



Films

- BMJ's video: Maisie and George:
<http://www.bmj.com/site/video/climate.xhtml>
- *Age of Stupid*. Spanner Films, Directed by Franny Armstrong. Free NHS Licence available.
- *Six Degrees: Our Future on a Hotter Planet* (from the book by Mark Lynas)
- *An Inconvenient Truth*, presented by Al Gore.



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2. NHS Carbon Trust Management Programme

- <http://www.carbontrust.co.uk/carbon/publicsector/nhs/>

3. Sustaining a Healthy Future

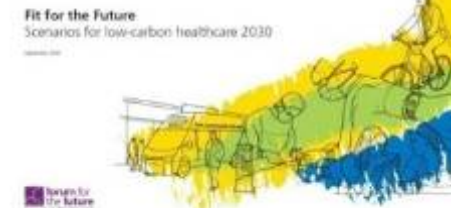
- www.fph.org.uk

4. NHS Confederation briefings

- <http://www.nhsconfed.org/Publications/briefings/Pages/Briefings.aspx>

5. NHS Carbon Reduction Strategy and 2030 health care scenarios

- www.sdu.nhs.uk
- BMA Climate Change resource
- http://www.bma.org.uk/health_promotion_ethics/climate_change/index.jsp



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