Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton
President, Association of Schools of Public Health in the European Region
Public health is:

The science and art of promoting health, preventing disease and prolonging life through the organised efforts of society

Acheson 1988, after Winslow 1927, WHO 1948
it's not who your doctor is, it's who you vote for, that most affects your health
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

The UK's current health problems should be treated with urgency

BMJ 2017, 359 doi: https://doi.org/10.1136/bmj.j4526

Michael Marmot

Author affiliations

m.marmot@ucl.ac.uk

Health inequalities, the slow-down in life expectancy, and the north-south divide all need tackling

Alarm about the nation’s health is a rational response to recent evidence. Current national health problems should be treated with as much urgency as a winter bed crisis in the NHS. The recent evidence has three components that are probably linked: improvement in life expectancy, going on for 100 years, has slowed since 2010; health inequalities, which probably reduced during the 2000s, have grown again since about 2012; and the persistent north-south divide in health—particularly marked among younger people.

Life expectancy

Between 1920 and 2010, life expectancy increased from 55 to 78 in men, and from 59 to 82 in women. We simply got much healthier as a society, remarkably quickly. Over this period, life expectancy increased by about one year every four years. To see how remarkable that is, think that if you rose at 6 in the morning, by noon you still have as long to live as you did when you woke—six hours every 24 hours. There was, however, a marked slowing of the rise after 2010. From 2011 to 2016 life expectancy increased by about one year for every 6.5 years in men and one year for 10 in women.

London children fainting in class because parents are too poor to feed them

The real cost-of-living-crisis: Five million British children 'sentenced to life of poverty thanks to welfare reforms'

The graph shows the infant mortality rate (per 1000 live births) over the years 2000 to 2016, comparing IMD quintiles (2015). The line for IMD quintile 1 (most deprived) shows a steady decline, while the line for IMD quintile 5 (least deprived) indicates a slightly less steep decline. The trend suggests an improvement in infant mortality rates over time for both quintiles, with the most deprived areas showing a smaller improvement compared to the least deprived areas.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Global burden of disease study, 2017

Globally, mortality rates have decreased across all age groups over the past five decades, with the largest improvements occurring among children younger than 5 years. However, at the national level, considerable heterogeneity remains in terms of both level and rate of changes in age-specific mortality; increases in mortality for certain age groups occurred in some locations.

Countries have saved more lives over the past decade, especially among children under age 5, but persistent health problems, such as obesity, conflict, and mental illness, comprise a “triad of troubles,” and prevent people from living long, healthy lives, according to a new scientific study.

Total deaths in children younger than 5 years decreased from 1970 to 2016, and slower decreases occurred at ages 5–24 years. By contrast, numbers of adult deaths increased in each 5-year age bracket above the age of 25 years.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

These 10 Corporations Control Almost Everything We Eat
"Climate change is the biggest global health threat of the 21st century."

The Lancet
CLIMATE CHAOS

WWF is calling on the power sector to cut carbon dioxide emissions. Drastically. It's both essential and achievable, says Kirsty Clough.

Climate change is happening now, and we're living with its effects every day. When summer floods struck the picturesque village of Boscastle, cars and trees were washed away and buildings devastated. Over 150 people had to be airlifted to safety. Is this a glimpse into a future where extreme and devastating weather events will be even more common, and our climate plunged into chaos? Yes, if we continue to pump CO2 into our atmosphere at present rates.

Tony Blair's recent acknowledgement of the urgency of climate change and his declarations about taking on the challenge are encouraging. But policies on paper and words delivered amid media frenzy aren't enough. Last year the UK's carbon dioxide emissions were actually on the rise. If we are to achieve our national goals to cut carbon dioxide by 20% by 2010, and 60% by 2050, we need to take urgent action.

Cars and industry are often assumed to be the principal sources of CO2 emissions. But the power sector is the biggest - with a third more CO2 per energy unit than natural gas. Power - by wind, biomass, combined heat and power and so on. All that's required is an extension of existing policies and their effective implementation. We need to remove the barriers that prevent the take-up of cost-effective energy efficiency measures and set stronger targets for managing energy demand, emissions trading and, most of all, renewable energy. Only then can we ensure that our energy supply is truly sustainable - and not critically dependent on supplies from as far away as Russia or from politically unstable countries in the Middle East.

As winter sets in and the UK turns up the heating, the government must take a tough stand and stop bowing to pressure from the power sector. Quite simply, climate change must be stopped dead in its tracks - because if it isn't, floods like those that traumatised Boscastle will no longer be the exception, but the rule.

Kirsty Clough is WWF's PowerSwitch climate campaign officer. WWF, 01483 426444, www.wwf.org.uk
Sweltering cities

Heat: the next big inequality issue

The deadly global heatwave has made it impossible to ignore: in cities worldwide, we are now divided into the cool haves and the hot have-nots.

by Amy Fleming with Ruth Michaelson and Adham Youssif in Cairo, Oliver Holmes in Jerusalem, Carmela Fonbuena in Manila and Holly Robertson in Phnom Penh.
Interconnectness: Loss of agricultural land through global warming, crop failure, food riots, Arab Spring, Syrian war

Climate Change Helped Spark Syrian War, Study Says

Research provides first deep look at how global warming may already influence armed conflict.

By Craig Welch, for National Geographic
PUBLISHED MON MAR 02 10:03:00 EST 2015

A sand tornado passes through as thousands of Kurds stream into Dikmetas, Turkey, from Syria in September 2014. Years after rural residents fleeing drought poured into Syria’s cities, helping to spark a civil war, the region remains in turmoil.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

MEDICAL EFFECTS OF A ONE-MEGATON NUCLEAR AIRBURST OVER WEST BROMWICH
(equivalent to one million tons of TNT)

- **Blast Injuries**
  - 4.5 miles
  - Pressure of 6 lbs per square inch (ordinary brick buildings destroyed over 80 square miles). Many survivors will have crush injuries, fractured limbs, internal injuries and/or wounds.

- **11.5 miles**
  - Pressure of 1 lb per square inch – wounds from flying glass

- **Radiation**
  - 1.7 miles
  - Initial radiation lethal to about 50% of people exposed in this area

- **Burns**
  - 4.5 miles
  - Fires ignited causing secondary burns (and possibly firestorms).
  - 5 miles
  - Flash burns right through the skin
  - 7 miles
  - Flash burns over approximately 150 square miles

---

![Map Illustration](image)
Nuclear War
No Cure Only Prevention
Physicians For Social Responsibility
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton
An acceptable level of health for all the people of the world by the year 2000 can be attained through a fuller and better use of the world’s resources, a considerable part of which is now spend on armaments and military conflicts. A genuine policy of independence, peace, détente, and disarmament could and should release additional resources that could well be devoted to peaceful aims and in particular to the acceleration of social and economic development of which primary health care, as an essential part, should be allotted its proper share’.

Global Health for all by the year 2000
World Health Organisation, 1980
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Figure 1. Defence spending and defence jobs created in the United Kingdom, 1975–1983. Source: TGWU, with permission.
Fiscal Multipliers

Source: Reeves et al 2013
‘The Peace dividend’

Yevgeny Vuchetich ‘Let us beat swords into ploughshares’ United Nations Art Collection, 1959
PRODUCT AREAS

1. Medical equipment
2. Alternative energy sources
3. Oceanic equipment
4. Remote handling devices
5. Transport equipment
6. Braking systems
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

Coventry Alternative Employment Research ‘CARE’ project, first report 1987
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

<table>
<thead>
<tr>
<th>Employer</th>
<th>Local Employment</th>
<th>Parent Company (^b)</th>
<th>Value of MoD Contracts 1986/87 (£ M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEC Telecommunications</td>
<td>8878</td>
<td>The General Electric Co. Plc</td>
<td>over 250</td>
</tr>
<tr>
<td>Rolls Royce</td>
<td>4266</td>
<td>Rolls Royce Ltd</td>
<td>over 250</td>
</tr>
<tr>
<td>British Telecom</td>
<td>1272</td>
<td>British Telecom Plc</td>
<td>50 – 100</td>
</tr>
<tr>
<td>Lucas Industries</td>
<td>594</td>
<td>Lucas Industries Plc</td>
<td>50 – 100</td>
</tr>
<tr>
<td>Dunlop</td>
<td>2805</td>
<td>BTR Plc</td>
<td>25 – 50</td>
</tr>
<tr>
<td>Austin Rover</td>
<td>2525</td>
<td>Austin Rover Group Ltd</td>
<td>25 – 50</td>
</tr>
<tr>
<td>Alvis</td>
<td>890</td>
<td>United Scientific Hldgs. Plc</td>
<td>25 – 50</td>
</tr>
<tr>
<td>Courtaulds</td>
<td>3069</td>
<td>Courtaulds Plc</td>
<td>5 – 10</td>
</tr>
<tr>
<td>Massey Ferguson</td>
<td>2239</td>
<td>Massey Ferguson Hldgs. Ltd</td>
<td>5 – 10</td>
</tr>
</tbody>
</table>
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

Lucas Aerospace Hillfields

Rolls Royce Parkside

Former Coventry defence industry sites

Alvis, Holyhead Road
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Alvis Cars
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Health and care related products from Lucas Shop stewards supported projects 1978-1990
Farewell to arms

“We’re treated like shit that’s been left on the doorstep. No one wants to take you.”
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

**Figure 2.** The share of world military expenditure of the 15 states with the highest spending in 2016
What could the reallocation of global military spending achieve?

The annual cost of the UN’s Sustainable Development Goals (SDGs) as a share of total global military expenditure in 2015.

Military spending 2015
$1676 billion

No poverty and hunger
SDGs 1 & 2
13%

Agriculture & food security
SDG 2
4%

Health
SDG 3
5%

Education
SDG 4
12%

Water & sanitation
SDG 6
3%

Modern energy
SDG 7
11%

Telecommunications
SDGs 9 & 11
12%

Transport
SDGs 9 & 11
5%

Ecosystems & biodiversity
SDGs 14 & 15
2%

Emergency work
Necessary for many SDGs
1%

Sources: SIPRI, Sustainable Development Solutions Network and UN Food and Agriculture Organization

The cost of different SDGs as a share of global military expenditure in 2015.
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

A Safer World: Treating Britain’s harmful dependence on nuclear weapons
The conversion of military industries for peaceful purposes is therefore a major local, national and international public health issue, and one which requires urgent attention. It is the most obvious example of my overall theme: that economic diversification can be a powerful force for the public health; whether it is in the tobacco, alcohol, food, armaments, or other anti-health industries (Middleton, 1992). Paul Field and I call this the "health dividend"—in the same way that there logically a social dividend to be gained from redirecting the resources for warfare into welfare, so there is a health dividend to be gained from converting industry for disease into industry for health.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Sandwell Express and Star, 1st December 1989
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Sandwell food coops
“Sandwell as the garden of England is a bit far fetched, but it is not impossible for Sandwell to increase the food we can supply to ourselves.”

Access to Fresh Food in Sandwell

KEY

- Sandwell Boundary
- Supermarkets
- Public Transport isochrones around Supermarkets (10mins)

Walking Distance around Eatwell Stores:
- 200 Metres
- 400 Metres
- 600 Metres
Sandwell study and strategy for jobs and health in the food industry, including retail:

Now adopted by the Black Country Local Economic Partnership (LEP)
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

Now pork SCRATCHINGS are a super food as top athletes endorse a new low-fat version of the old favourite bar snack

- New scratchings have 47 per cent less fat than the original pub snack
- Recipe is backed by model David Gandy and Paralympian star David Weir
- They are made from prime pork rind and have 70% pure protein in a bag
- Pork scratchings thought to come from West Midlands in Victorian times

By JACK CRONE FOR MAILONLINE
Curing the Tobacco Economy, Sandwell Health Authority, 1989
Counter arguments
Action on Smoking and Health 2016,
Good Health?
A Study of the Drinks Retailing Industry
In Sandwell

by
Paul Field
with the special assistance of
Sue Day

The Research Partnership
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton

Inclusive design:

‘The inclusion dividend’
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

ACADEMICS AND INDUSTRY SOLVE REAL-LIFE CLINICAL PROBLEMS

A rare event took place in the West Midlands recently which brought together professionals in the medical manufacturing market with research leaders from Aston University and the University of Birmingham. The goal: to explore commercial solutions for two real-life clinical problems.

Motivated by the dislocation between university and industry, Medilink West Midlands partnered with Aston and Birmingham Universities to bring together an initial group of participants around a common goal.

Thirty industry representatives listened to presentations from each University on research being carried out in the field of surface coating technologies. Peter Marzouk, Professor of Biomaterials at the School of Dentistry, University of Birmingham, raised the question about coatings moving more toward dynamic facilitators as opposed to just barriers. And Dr Kevin Cooke of Beer Coatings presented a new technology for coating medical devices.

A lively discussion took place around the idea of engineering surfaces to manipulate donor cells in the context of stem cell transplantation, presented by Clinician Mark Goodall from the CRLK Centre for Cancer Studies.

Professors John Sullivan, Head of Surface Science Research Group at Aston University said: “The workshop was excellent. That sort of forum, with people from industry and medicine, was ideal. And as a result of it, I have met and arranged to see a surgeon who was there.”

“This was a great opportunity for companies to learn of the expertise regionally which could help them,” noted Dr Mike Shaw, Business Development Manager at the University of Birmingham. “And the clinicians were very positive about working through their problems with academics and industry – and we’ve identified several partnerships established at the workshop.”

Medilink West Midlands has received such a positive response from the event it is starting a series of Technology Transfer Workshops on a range of topics.

FIRST STEPS TO ACCESSING THE NHS MARKETPLACE – 6 FEBRUARY 2004

If you’ve been trying to sell to the NHS but don’t know where to begin, or if you know who your target but are having trouble getting through – this is the book you need for 6 February to meet with the key decision makers and learn your route in.

In partnership with Locate in Birmingham, the event will begin with an overview of the market opportunities within the medical and healthcare sector – perfect for companies doing less than 15% business in the medical field or anyone interested in the bigger picture.

It will continue with introductions to the decision makers at PASH, NHS Logistics, and the Community Trusts, and an overview of exactly what they are looking for in a supplier and how you can get your products in front of them.

A series of follow-up sessions are planned to bring actual problems faced in the NHS to industry, but in order to understand how you can present the commercial solutions for these problems you need to attend the 6 February event.

For a complete agenda and booking form, contact Medilink West Midlands on 01384 426 007.

PICTURES OF YOUR PRODUCTS

Do you need professional pictures of your products but don’t want to spend a fortune?

Medilink West Midlands is hiring a professional advertising photographer for a day at our office – so for less than £130 you can have publication-quality photos taken of your products.

Contact us immediately to reserve your place, we’re scheduling for late January and spaces are limited.
INCLUSIVE Design

Five principles on which inclusive design for disabled people is founded:

- Technology should serve people, not people serving technology.
- Disabled people are made disabled by services that have been designed to exclude them and to make them dependent.
- Disabled people should be involved in design to bring their insights to make better products.
- Better design for disabled people is better design for all.
- Manufacturing systems must be adapted through better design so that goods are not custom made for disabled people, but are adaptable through modular construction for different consumer needs.

Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Design Standard – AHeAD and MWM

Smart Inclusive Housing Manifesto

Many homes were built without the benefit of present-day knowledge and technology. They often create difficulties for disabled and elderly people. They are well past their ‘use-by-dates’.

A good home is one of the key ingredients in a healthy life. It should give us shelter, warmth, security and a base for much of our daily family and work life.

However, these qualities can be lost. For older people and individuals with disabilities, this can make life difficult day by day. For example, stairs and steps can become significant barriers limiting a person’s ability to get around the house and garden, facilities in homes and work places and endanger their safety, particularly if they are disabled or elderly. They can be pervasive and hard to spot in the environment.

Most people are totally unaware of the barriers in their homes until they experience them for themselves. Many people are not aware of the barriers in their without their homes, seeking to understand and control them. This is why we begin to compare the barriers when we consider all the features that make up today’s homes. These barriers are the independence and choices and they can rule the quality of our lives and the lives of millions of disabled and elderly people.

The Typical Home the Typical Problems

www.id-advantage.org.uk
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Design Standard – AHeAD and MWM
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

NHS Innovation Projects
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Driving economic success

‘Bespoke services covering the entire innovation life cycle from conception of an idea through to its eventual realisation of commercial success’
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Mike Cooley: Author of
Architect or Bee?
One of the leaders of the Lucas Shop Stewards Combine and mastermind of Human Centred Technology

"A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality."
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Institute of Making, University College London

Liz Corbin, Director

Library of materials

3D printers
Secure, healthy, inclusive and green – four dividends of a healthier future.

Professor John Middleton

The future of homes by everyone, for everyone.

Simple, sustainable, open building technologies.

View the github library.

Library / Technologies / Structure

**Wren**
The language and rules for the WalkHouse structural system for 1-3 storey buildings, initially developed in the UK for European contexts.

**Microhouse**
A high-performance, one-bed house design.
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

‘FAB labs’ Iceland above

Left Website pages machines and world distribution
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

‘Hackerspaces’/ makerspaces

Maker Spaces Siiicon Valley, California

RaumZeitlabor, Mannheim, Germany

Free Software hackerspace Canada

Chinese Maker Naomi Wu (aka Sexycyborg) configures a Raspberry Pi 2.
The Green dividend:
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Green schemes will aid Midlands construction industry

A scheme to help property owners ‘green up’ their houses and businesses could mean a £40 million bonanza for the struggling Midlands construction industry, the planners behind the project have said.

The ‘green new deal’ launched by Birmingham City Council was set up to help homeowners and businesses upgrade properties with energy-efficient fittings.

It will see up to 25,000 homeowners and 1,000 businesses offered the chance to have significant energy improvements made to their properties both through insulation and small scale generation, which in the long term will leave them in profit.

And consultant Matthew Rhodes said the scheme would not just benefit...
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton

Oceans of Work
Arms Conversion Revisited

Dr Steven Schofield
January 2007

This report puts the case for arms conversion as integral to a 'national needs' programme of civil R&D and manufacture, including a major investment in offshore renewable energy, for both security of supply and to help tackle the growing international threat from climate change. Although a radical programme, this is an entirely feasible one and is intended to demonstrate how the UK can take a leading role in a new international security agenda based on disarmament and sustainable economic development.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

BAE Systems, Britain’s biggest defence company, is switching some of its attention from weapons to renewable energy, or at least windmills. Its Project Deepwater consortium, which includes EDF Energy, has won government funding for the world’s first floating, commercial-scale offshore wind turbine

The green recovery?
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton
Greek goddess will rule the waves at marine energy farm off Cornwall

Ben Webster, Environment Editor
November 7 2016, 12:01am, The Times

The Ceto uses the motion of waves to generate electricity. One can supply enough annually for 400 homes.
Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

ADM2Renewables

Exploring opportunities in Scotland’s Offshore Renewable Energy Sector

Scottish Enterprise

IET Teacher Building
Glasgow

October 6, 2011
Rosyth – like Devonport a naval base for nuclear submarine decommissioning – currently supplying offshore structures to two UK wind farms, sustaining 100 jobs.

Campbeltown, an ex RAF base now home to a wind turbine tower factory, employing 130-200 people.

The isle of Wight, manufacturing offshore wind turbine blades for Vestas with a workforce of around 800. The port of Hull, producing its first blades for Siemens later this year with an anticipated workforce of 1000.

Nigg, Burntisland and Methil on the Scottish east coast, making subsea structures for offshore wind farms and be-spoke marine energy devices.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Solar panels surpass coal-fired electricity in previously ‘unthinkable’ feat

For six months until September, more electricity came from sunlight than coal-fired power stations.

Ian Johnston Environment Correspondent | Tuesday 6 October 2016 | 74 comments

Click to follow
The Independent Online

We operate the largest council-owned solar farm in the country

9 September 2016 / By Peter Dougal, Rachel Mann

Solar generated nearly 7,000 gigawatt hours of electricity between April and September, researchers found.
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

Zero Carbon Britain is the flagship research project from the Centre for Alternative Technology, showing that a modern, zero-emissions society is possible using technology available today.

Zero Carbon Britain’s new report *Making it Happen* is a toolbox of good ideas for how to create change.

Download now

zerocarbonbritain.org #ZCB
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton

The Health dividend:

The NHS as corporate citizen

‘Anchor employer’
The 2017 Milroy Lecture: Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

The NHS is the largest single organisation in the United Kingdom. Its potential impact on our lives is huge, as an employer, purchaser, cause of travel, producer of waste, consumer of energy, and commissioner of building works. This publication shows how the NHS could use its resources more wisely to sustain health in the long term. It argues that the NHS can, and must, make better use of its resources to reduce inequalities, build stronger local economies and safeguard the environment for the benefit of whole communities. To do this, it will need to tackle the challenge of raising service standards and changing attitudes and patterns of behaviour in all of its corporate activities.
John Middleton: The “Hospital of the Future” comes to the West Midlands
October 1, 2014

On 14 July this year, the chancellor of the exchequer announced the go ahead for the new Midland Metropolitan Hospital (MMH) in Smethwick, serving the people of West Birmingham and Sandwell in the West Midlands of England. As the chancellor returns to Birmingham for his party conference, the Royal College of Physicians has launched its manifesto, promoting its Future Hospital programme, around the party conference circuit. If any hospital could claim to hold the essence of the RCP aspirations for the “Future Hospital,” it is surely MMH.

Carillion’ Midland Metropolitan hospital to be years late and £250m over budget

David Brown,
Chief News Correspondent

January 9 2019, 12:01am,
The Times

The hospital as it should have been. It has instead been left open to the rain

The biggest emergencies-only hospital in Europe will take three years longer than expected to build and cost nearly twice its original budget.
‘Saving lives with Solar’ Royal North Midlands Hospitals, Stoke.
Thinking globally, acting locally: Coventry and Warwickshire University Hospitals Jubilee Nature Reserve – managing water run off from hospital car parks - promoting biodiversity, saving money
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton
In conclusion
Inequalities in health cost £65bn (£74bn; $83bn) in lost productivity and taxes and increased benefits payments plus £5.5bn for direct NHS treatment in 2010.5

Election 2017

Time to put health at the heart of all policy making
National government must become a public health government

John Middleton president
Faculty of Public Health, London, UK

Improving the health of people in the UK will improve the productivity of our nation, and enhancing our health and care industries will provide a platform for creating health related jobs: the “health dividend.” The next UK government therefore needs to make health central to all its policies. And it must not surrender our rights to health in the post-Brexit era.1

Local authorities have recognised the opportunity of getting health into all policies, including education, environment, economy, licensing, leisure, and town planning, as they seek to become “public health councils.”2 National government must now become a public health government. The new government must think beyond its term of office and implement policies through which the UK grows the wellbeing of future generations.

Unequal and divided
We live in a divided UK, where gross inequalities in health and life chances persist or have increased.3 4 Decades of science on inequalities in health require policies to reduce inequalities in income, improve early childhood development, and reduce other social, educational, and environmental disadvantages.5 6 Inequalities in health cost £65bn (£74bn; $83bn) in lost productivity and taxes and increased benefits payments plus £5.5bn for direct NHS treatment in 2010.5 7 The next government must deliver real improvements in incomes, opportunity, and health for the poorest sections of our society.

Economic and industrial policy
We need health, education, and social usefulness to be the main drivers of a new industrial strategy.10 Higher education is a major economic generator, and international students must be regarded as a resource for knowledge and international cooperation, not as a negative figure in net migration.8 The NHS provides a platform for innovation, and the UK needs to retain and develop its global pre-eminence in biomedical science, health, and care technology. It is vital for jobs and trade,8 but it also benefits international health, as we see with the drive on antimicrobial resistance.11

The next government must be a world leader for green technology, green energy systems, energy conservation, and a green economy.12 Even if climate chaos wasn’t happening, a fossil-free fuel policy would make sense now because of air pollution, escalating costs of fossil fuels, and fuel insecurity.12

New approach to housing
The next government also needs to ensure that the supply of affordable living spaces meets the level of need, and that the existing housing stock is restored, developed, and retrofitted to improve health. There are around 25 million housing units in the UK, and 27.1 million households (including 18.9 million family units). The price of housing greatly outstrips any rise in incomes. More needs to be done to reduce the ill health caused by cold homes and to improve home safety.13 A carrot and stick approach is needed to make land and properties available for people at affordable prices, including encouraging holders of underused living space to relocate to more manageable homes.

New food act
In 2015, UK consumers spent £203bn on food, and the agri-food chain contributed £108bn gross to the national economy. Of this, only 8% went to farmers, while manufacturing took 25%, catering 27%, and retailing 30%. Even wholesalers made more (11%) than the people who grow the food.14 15 UK horticulture is perishable and dependent on migrant labour. The UK balance of food payments is £28bn in deficit. Payments under the EU common agricultural policy support sugar beet growing in East Anglia, and now we have the sugar tax to control sugar consumption. Multinational sugar companies benefit most from the EU policy.16 We waste 20% of ourreprocessed food and grow food banks for the hungry. We could pay our farmers more, build more jobs in food production and processing, and have slimmer children and a less poisoned environment. In the EU, or outside it, we need a new food act to secure these objectives.16

http://www.bmj.com/content/357/bmj.j2676

The BMJ© @bmj_latest - 3h
Why we must put health at the heart of all policy making by @doctorbiooz, president of @FPH bmj.com/content/357/bmj...
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton
Secure, healthy, inclusive and green – four dividends of a healthier future
Professor John Middleton
Thank you

Professor John Middleton

President@fph.org.uk
Secure, healthy, inclusive and green – four dividends of a healthier future Professor John Middleton

• Appendix 1 References
• Middleton J, ISIS, crop failure and no anti-biotics: what training will we need for future public health? European J Public Health 2016; https://eurpub.oxfordjournals.org/content/26/5/735


Secure, healthy, inclusive and green – four dividends of a healthier future

Professor John Middleton

Lucas shop stewards alternative plan video resources

https://www.youtube.com/watch?v=0pgQqfpub-c#t=352
https://www.youtube.com/watch?v=9c6BS6HB_GE
Diversification in Coventry's military industry: Implications for a decentralised conversion strategy

Author: P.M. Quigley
Affiliations: a Honorary Research Associate, Coventry Polytechnic,
           b Research Associate for Coventry Alternative Employment Research,
DOI: 10.1080/02690949108726104
Publication Frequency: 8 issues per year
Published in: Local Economy, Volume 6, Issue 3 November 1991, pages 211 - 223
Subjects: Economic Geography; Local Government; Planning - Human Geography; Regional Geography - Human Geography; Sociology & Social Policy; Urban Economics; Urban Policy;
Formats available: PDF (English)
Article Requests: Order Reprints; Request Permissions
Single Article Purchase: £16.00 plus VAT - buy now [ add to cart ] [ show other buying options ]
Sign In ⇒ Online Sample
View Article: View Article (PDF)
• Appendix 2 The peace dividend
• Top 15 countries military expenditures
Military expenditure

<table>
<thead>
<tr>
<th>Importer</th>
<th>Share of international arms imports (%)</th>
<th>Main suppliers (share of importer’s total imports %), 2011–15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011–15</td>
<td>2006–10</td>
</tr>
<tr>
<td>India</td>
<td>14</td>
<td>8.5</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>7.0</td>
<td>2.1</td>
</tr>
<tr>
<td>China</td>
<td>4.7</td>
<td>7.1</td>
</tr>
<tr>
<td>UAE</td>
<td>4.6</td>
<td>3.9</td>
</tr>
<tr>
<td>Australia</td>
<td>3.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Turkey</td>
<td>3.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Pakistan</td>
<td>3.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>2.9</td>
<td>0.4</td>
</tr>
<tr>
<td>USA</td>
<td>2.9</td>
<td>3.6</td>
</tr>
<tr>
<td>South Korea</td>
<td>2.6</td>
<td>5.7</td>
</tr>
</tbody>
</table>

*Table 2. The 10 largest importers of major weapons and their main suppliers, 2011–15*

*Note: Percentage of total is rounded to 1 decimal (except for percentages over 10 which are rounded to whole numbers).*
Military expenditure

<table>
<thead>
<tr>
<th>Exporter</th>
<th>Share of international arms exports (%)</th>
<th>Main clients (share of exporter’s total exports %), 2011–15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011–15</td>
<td>2006–10</td>
</tr>
<tr>
<td>USA</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td>Russia</td>
<td>25</td>
<td>22</td>
</tr>
<tr>
<td>China</td>
<td>5.9</td>
<td>3.6</td>
</tr>
<tr>
<td>France</td>
<td>5.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Germany</td>
<td>4.7</td>
<td>11</td>
</tr>
<tr>
<td>UK</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Spain</td>
<td>3.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Italy</td>
<td>2.7</td>
<td>2.1</td>
</tr>
<tr>
<td>Ukraine</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>
Military expenditure

Countries with a ‘military burden’ of 4% or greater

Oman, South Sudan, Saudi Arabia, Iraq, Libya, Algeria, UAE, Israel, Russia, Azerbaijan, Bahrain, Yemen, Armenia, Namibia, Jordan, Lebanon

Military expenditure (% of GDP)
• Appendix 3  Sandwell AHEAD, West Midlands Medilnk and NHS Innovation Centre designs and health care products
MouleTec Wheelchair Cushion - AHeAD

The issues
• Standard foam wheelchair cushions are routinely issued by social care as part of standard postural and seating care
• Higher grade pneumatic cushions offer the highest level of comfort and minimise pressure sore injury. However these seating systems cost upwards of £400.

Solution
• The MouleTec cushion takes technology from aerospace and military seating design used to occupant improve comfort
• AHeAD and MedilinkWM supported the company to commercialise a medical grade wheelchair cushion based on the IP developed by the company
• This involved a clinical study with wheelchair users from Sandwell Independent Living Centre. The study found that the prototype cushions were at least equal in comfort to higher cost versions. The data also showed promising results in pressure distribution suggesting the technology was also minimising the risk of pressure sore injury.
• The MouleTec wheelchair cushion has been on the market since 2006 – now sold by Vital Seating Systems [http://vitalseatingsystems.com/mouletec-chair](http://vitalseatingsystems.com/mouletec-chair)
Chair4Life – National Innovation Centre

The issues
• Paediatric wheelchairs are essentially smaller versions of adult models
• They often fail to meet the changing physical and developmental needs of a growing child and promote full independence
• There is significant waste and inefficiency in the provision of paediatric wheelchairs. It can take up to 6 months to provide a suitable chair. A CQUIN was put in place in 2012/13 to address this called Child in a Chair in a Day.

Solution
• A wheelchair system which grows with the child was developed with designers and users. Key features:-
  • Quick to reconfigure using unique seat mounting system (making the chair easier to maintain and faster to alter / commission)
  • Peer height seating (A key feature demanded by younger users)
  • Configurable to different environments with indoor and outdoor modes
  • Customisable with a range of options to suit the physical and emotional needs of the user

• A fully working prototype was developed.
Intelligent Ultrasound - National Innovation Centre

The issues

• Ultrasound is one of the most commonly used diagnostic tools in the NHS. In the UK over two million scans are performed each year on pregnant women. These scans are routinely done to assess foetal development, detect anomalies and screen for genetic conditions.

• In cardiology, more than a quarter of a million ultrasound scans are performed annually.

• Whist the technology is reliable image quality can be poor and diagnosis relies heavily on the skills of the Sonographer. Poor image quality can have an impact on correct diagnosis and in many patients are routinely referred to CT or MRI if the ultrasound images are inconclusive.

Solution

• Intelligent Ultrasound was set up as a spinout company to exploit the new 3DF imaging software based on IP developed by Oxford University. The company has developed a 3DF software platform which improves the diagnostic image quality of standard ultrasounds thus reducing the need to refer patients to CT and MRI.

• IU was bought by an AIM listed company in September 2017.
AliveCor – NHS England

The issues
• Atrial fibrillation (AF) affects 2 million people in the UK and is responsible for a third of all strokes
• Many cases of AF go undetected (300-500k). In 2015 7,000 strokes and 2,000 premature deaths were attributed to AF.

Solution
• Mobile technologies have revolutionised the design of the electrocardiogram (ECG) allowing diagnostics to be done at a lower cost
• Mobile ECG devices such as the AliveCor Heart Monitor provide an effective way of detecting AF quickly and in the community
• AliveCor is part of an AHSN led initiative to evaluate the use of mobile ECG technologies in the community.
MyCOPD - NHS England

The issues

- Improving self-management for patients with COPD is a key priority; COPD costs the NHS more than £1bn each year
- Treatment is complex, with different numerous types of inhalers making training difficult
- Compliance with treatment is often extremely low, leading to poor outcomes and potentially wasted prescribing
- Good symptom management is essential to stabilise disease and prevent recurrent flare-ups or exacerbations.

Solution

- Online pulmonary rehab has been shown to be as clinically effective as face to face therapy and can be delivered at a fraction of the cost
- NHS England is incentivising the uptake of online COPD support through the Innovation and Technology Tariff (ITT). This has provided access to over 25,000 patients allowing them to self-manage their severe or very severe COPD symptoms
NIC – NHS England

The issues
• The accidental injection of IV medication into arterial lines which can lead to necrosis and major amputations.
• Bacteria can also contaminate arterial lines when blood is drawn for sampling

Solution
• A needle free connector for arterial cannulation using a one way valve which allows aspiration only
• The NIC prevents the accidental injection of IV medication into arterial lines through the design of a one way valve. It also prevents blood spillage and bacteria from contaminating sampling lines therefore improving the safety and care of all patients with arterial lines.
• Over 3000 NIC devices now in use in the NHS through the Innovation and Technology Tarff (ITT)
**PneuX – NHS England**

**The issues**
- Ventilator associated Pneumonia (VAP) is a common condition found in patients ventilated for more than 24 hours
- VAP is caused by pulmonary aspiration of bacteria from the patients' throat and stomach
- Standard endotracheal tubes don’t seal the airway fully allowing bacteria to pass into the lungs and cause VAP.

**Solution**
- The PneuX endotracheal tube provides a monitored pressure seal which prevents bacteria from entering the lungs.
- 1000+ PneuX endotracheal tubes now in use in the NHS incentivised through the Innovation and Technology Tariff (ITT).
2000 / 2001 Ahead project supports the formation of Medilink WM the first Medical Technologies Industry Support organisation for the region.

2002 / 2003 MedilinkWM Secures RDA funding to co-ordinate the WM Medical Technology Cluster.

2006- 2013 MedilinkWM CEO becomes National Chair and develops a cross concordat with other National Industry Associations and Medilink WM launches MedilinkUK and MedilinkUK Website.

2011/12 MedilinkWM works with other associations and NHS on innovation health and wealth and the designation of Academic Health Science Networks.

www.fph.org.uk
West Midlands Academic Science Network formed and the MedilinkWM Managing Director agrees to become the interim development director of the AHSN

Medilink WM Managing Director agrees to become Commercial Director of the WMAHSN

Medilink WM contracted as the Industry Gateway organisation for the AHSN