

North of England Intensive Care Society

25th March 2014

Delivering Critical Care: challenges for the future

Dr Peter Nightingale FRCA, FRCP, FFICM, FRCP Edin

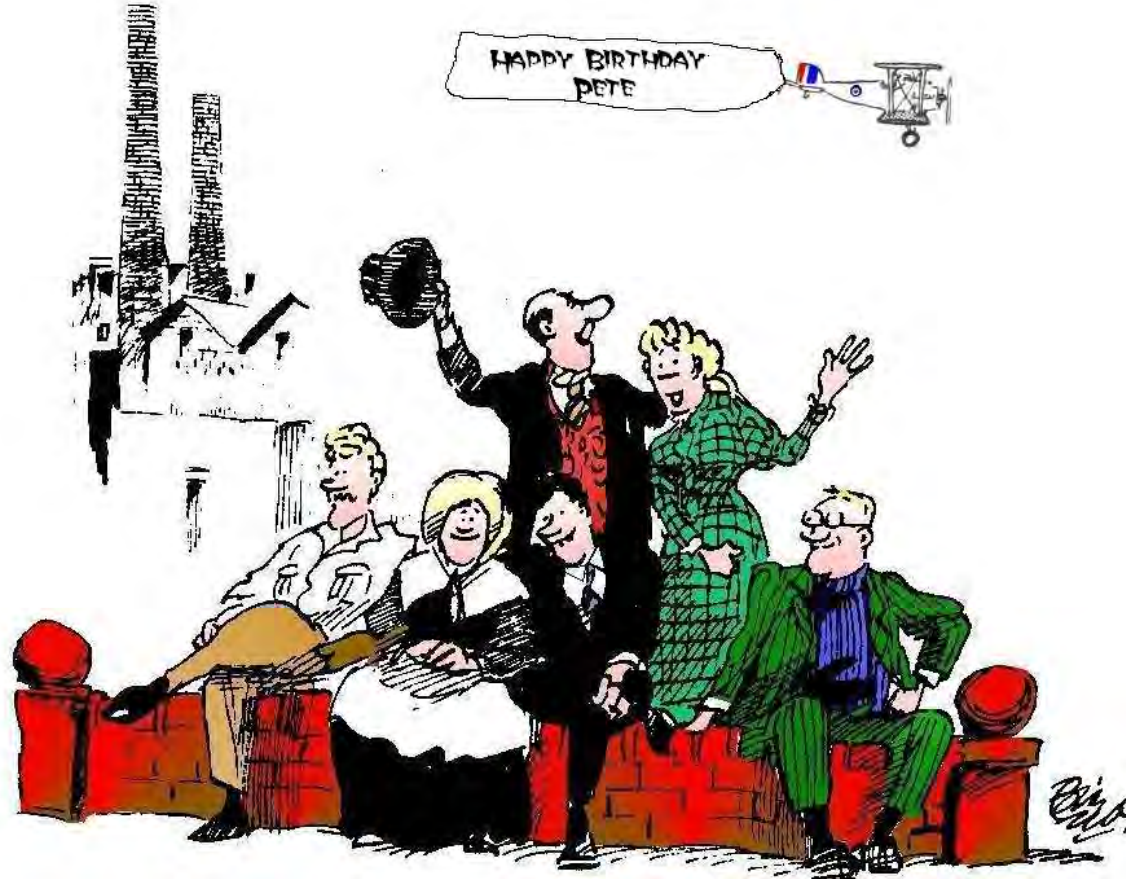
University Hospital of South Manchester

Scope

1. Some history
2. Current position of the specialty
3. What might the future hold
4. Summary and discussion



1952 was a good year for some



Polio

Bjørn Ibsen (1915 – 2007)

Copenhagen polio epidemic

- 2722 cases July – Dec 1952
 - (70 – 100 cases per day)
- By 3 weeks all the respirators were in use
 - 100 patients were being ventilated by bag and mask
- In the last 10 years 98/110 patients had died



Mortality fell from 90 to 45%
The era of long-term IPPV had begun



The Intensive Care Society

- Letter to the Lancet in 1970
- Bring together those whose main interest is caring for critically ill patients
- Improvement in education
- High quality research
- Multidisciplinary teamwork



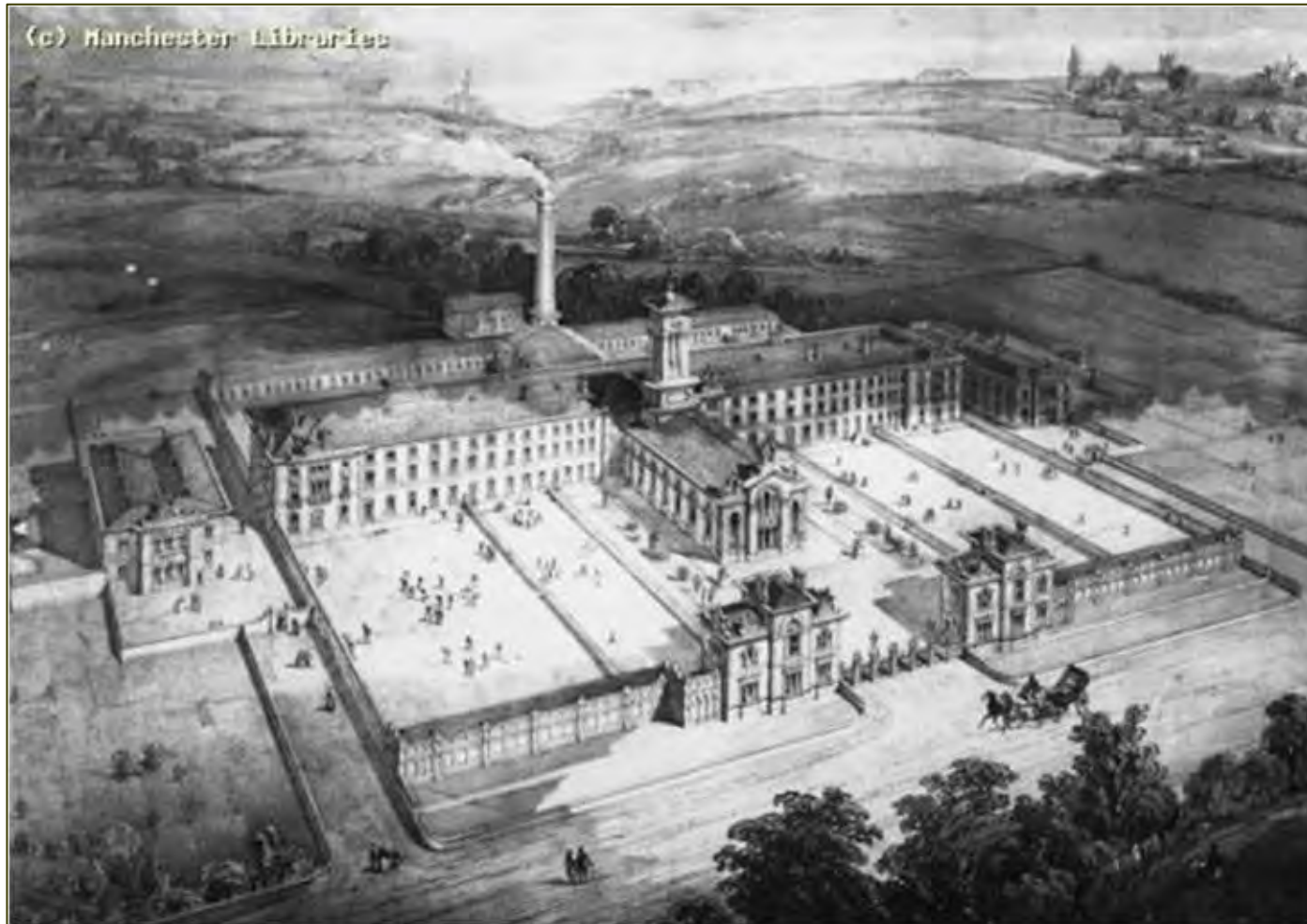
Alan Gilston (1928-2005)

‘Captain of the ship’

“I am convinced that the modern ventilator connected to a perfectly normal man will render him unconscious and eventually kill him as certain as a bullet to the head.”

Donald N Ross. The Lettsomian Lectures 1977

Withington Hospital



Political milestones

1970	Founding of the Society
1974	First World Congress held
1989	APACHE II study published
1993	ICNARC established
1996	IBTICM established
1998	Diploma in ICM
1999	Specialty status awarded
2001	Training programme (Joint CCST)

FICM Board

22 November 2010



Single specialty CCT now available

Where are we now?



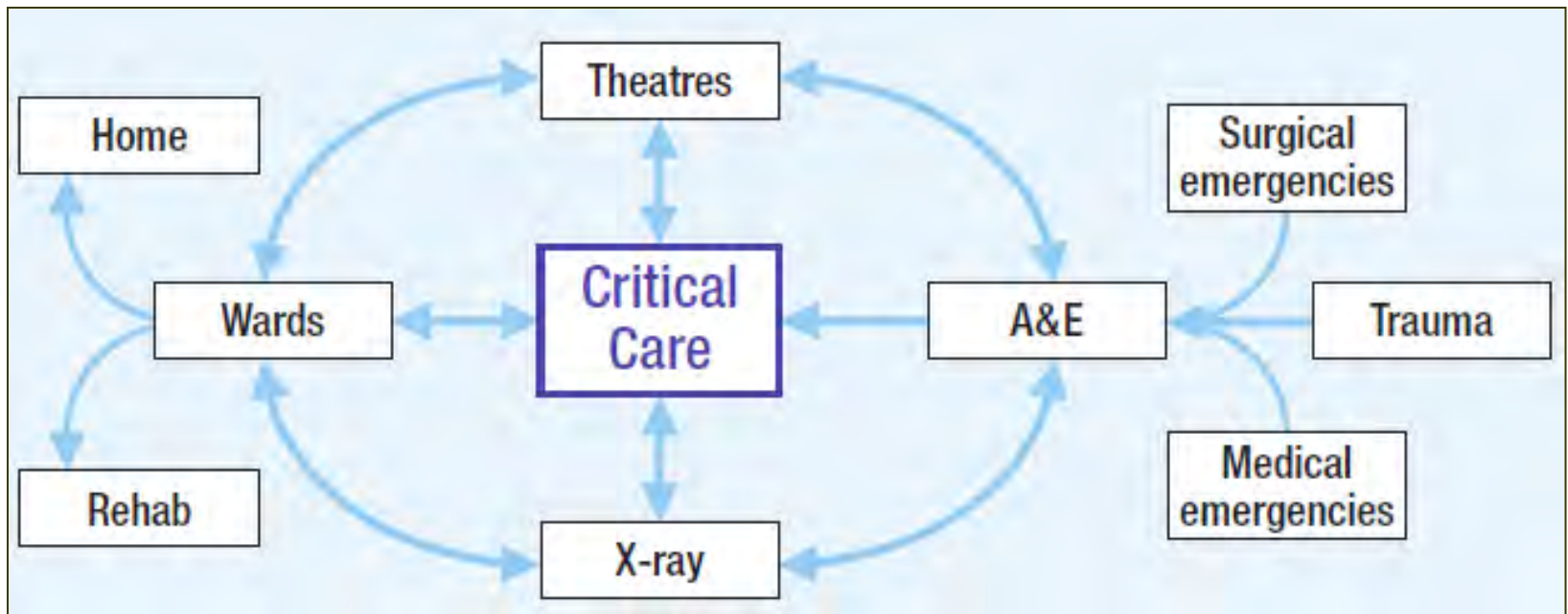
- Better environment
- Better equipment
- Better staffing

- Training programme
- Faculty examination
- Sustainable career



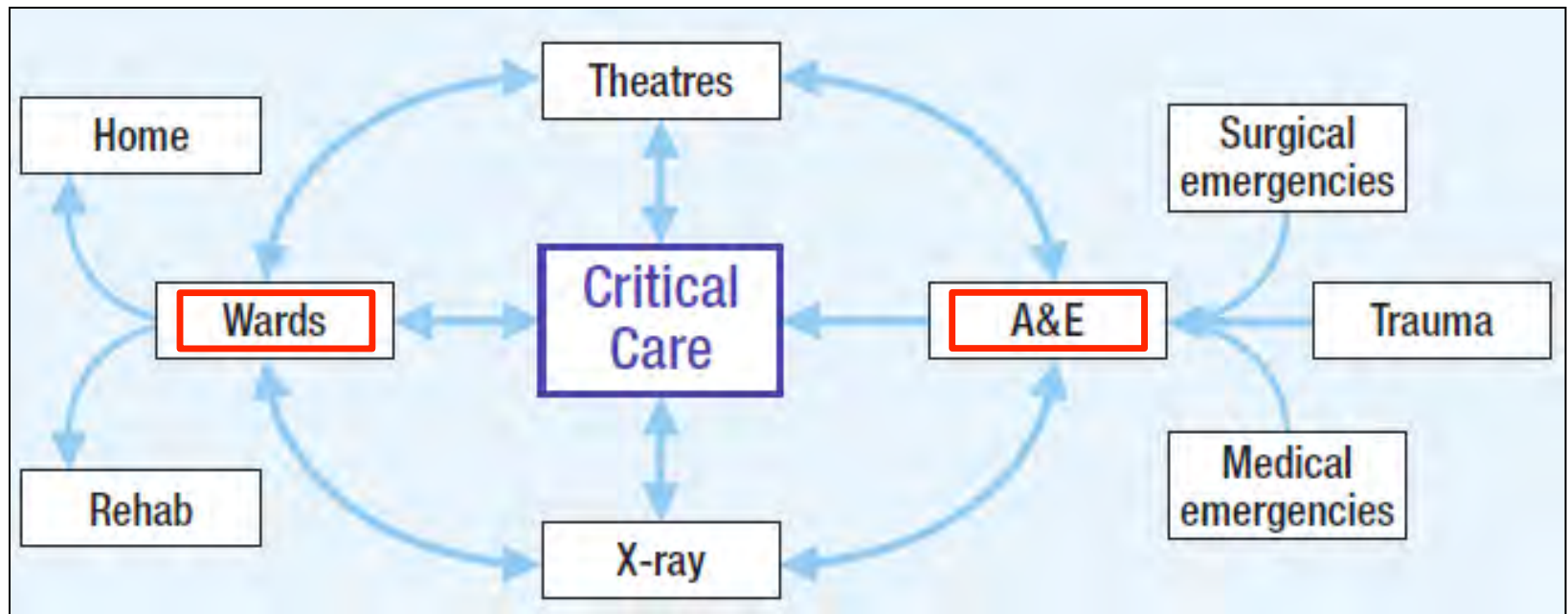
The central role of critical care

Critical Care = ICU, HDU and Outreach Services



The central role of critical care

Critical Care = ICU, HDU and Outreach Services



Bed numbers, especially in the HDU, continue to increase.

So what of the future?

Prediction is very difficult, especially about the future.

Niels Bohr (1885-1962)



1. Drivers for change

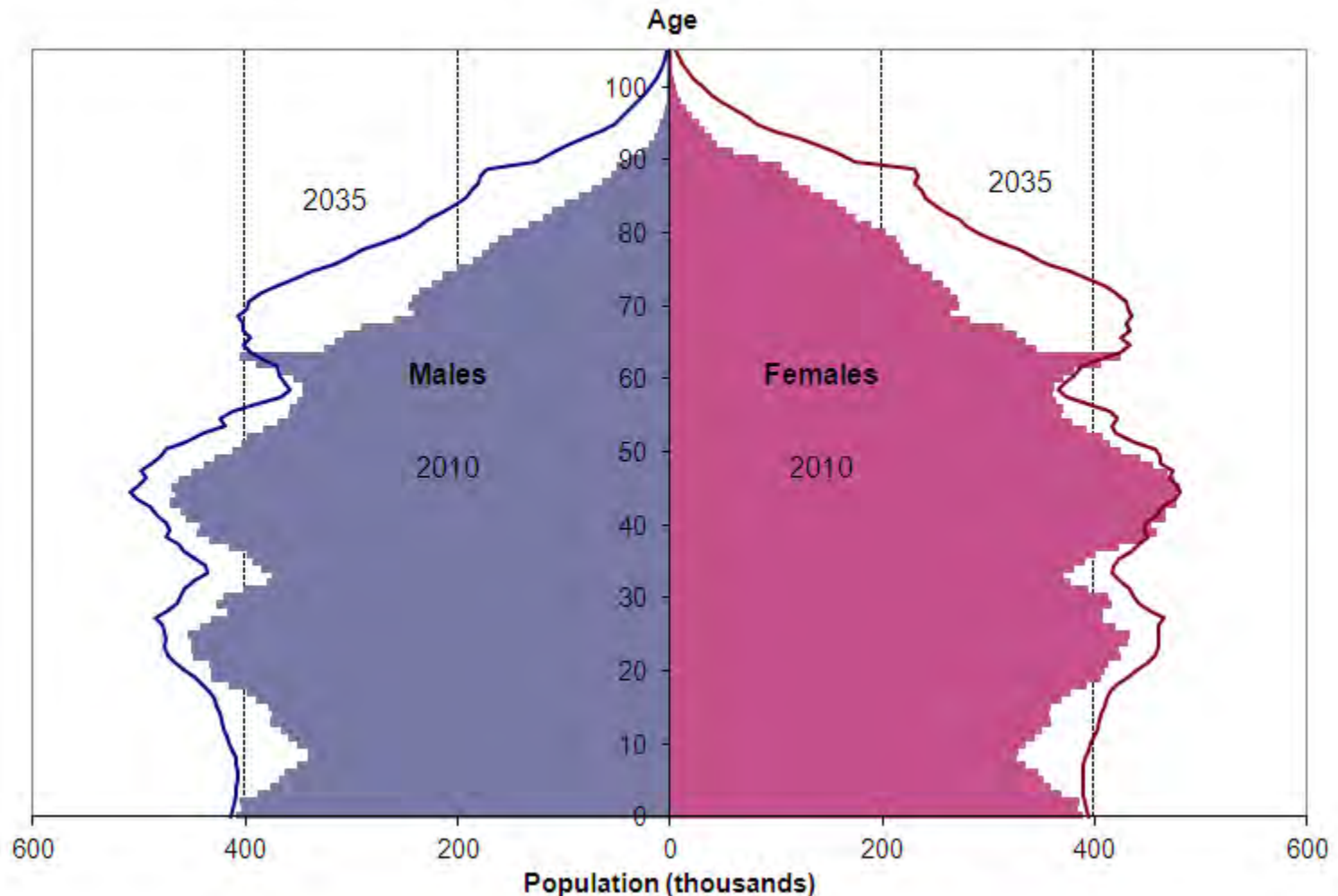
- Patients, society and ethics
- Financial
- Workforce and training

2. Technology and treatments

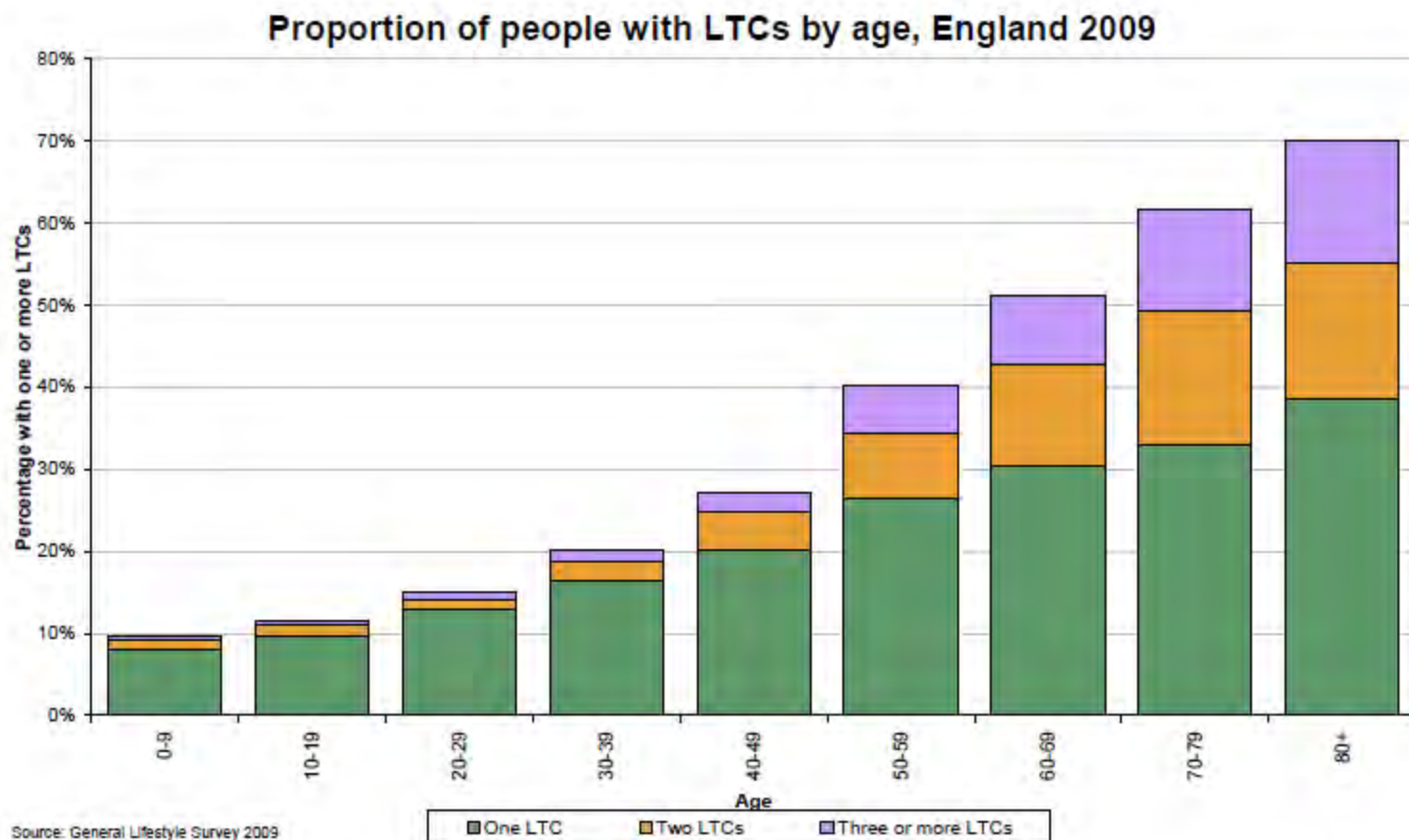
3. Organisation

Population is growing and getting older

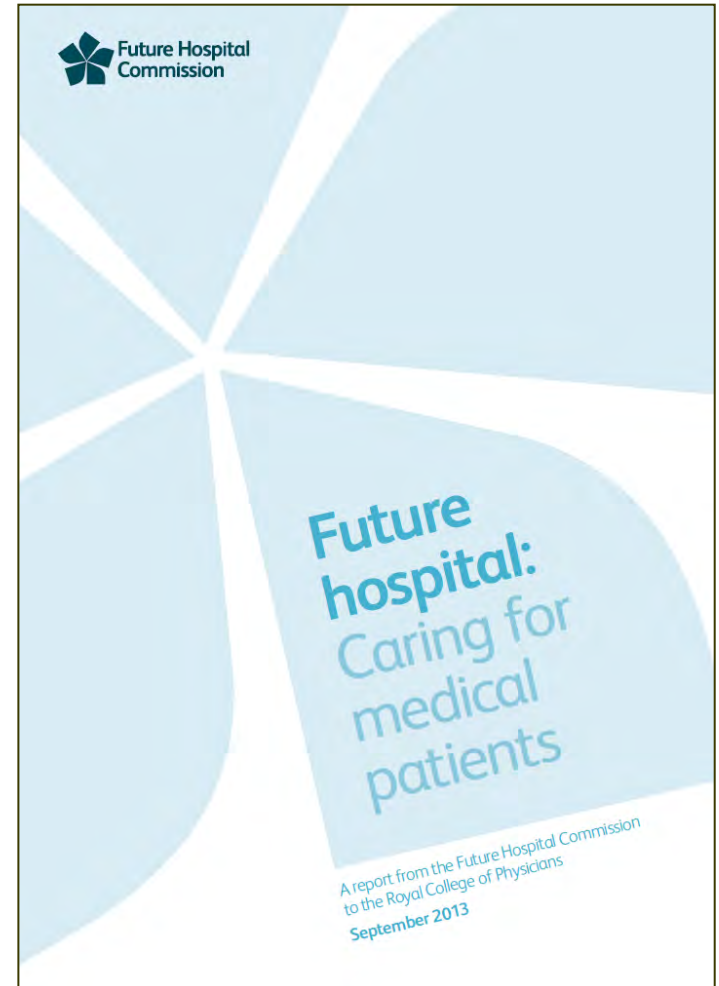
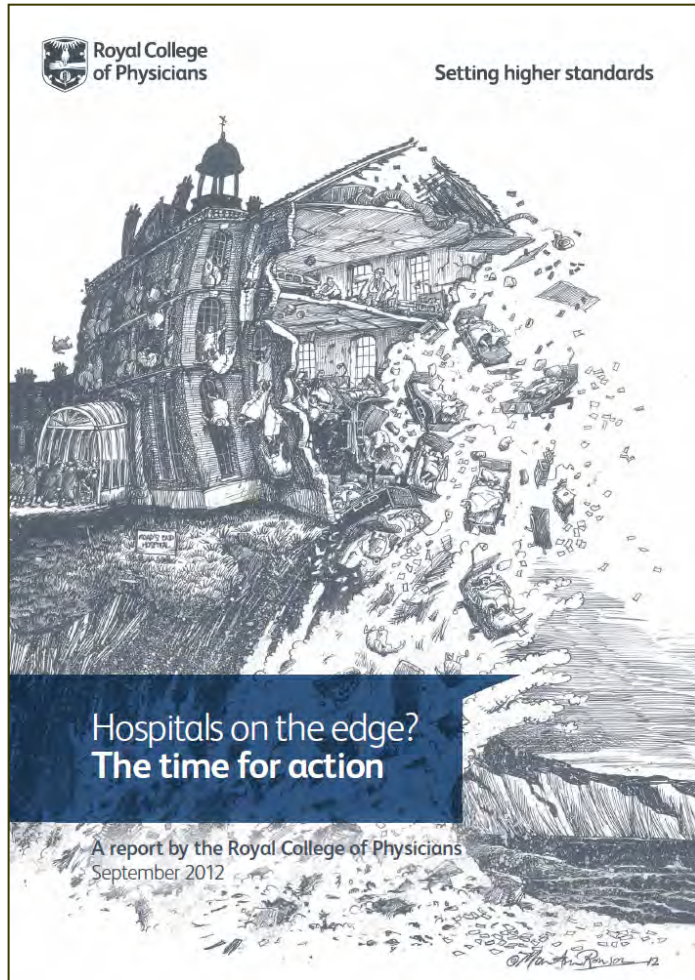
Estimated and projected age structure of the United Kingdom population, mid-2010 and mid-2035



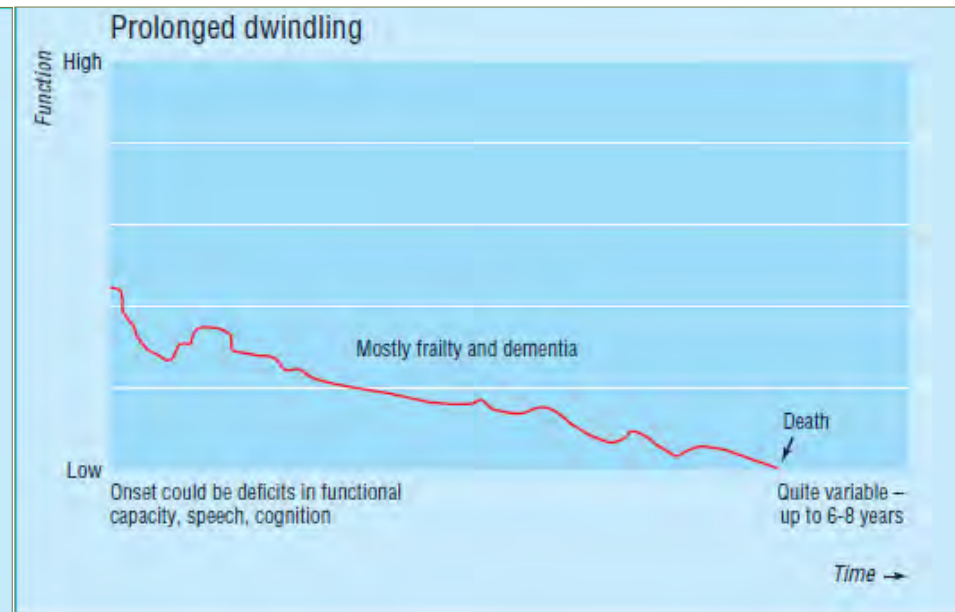
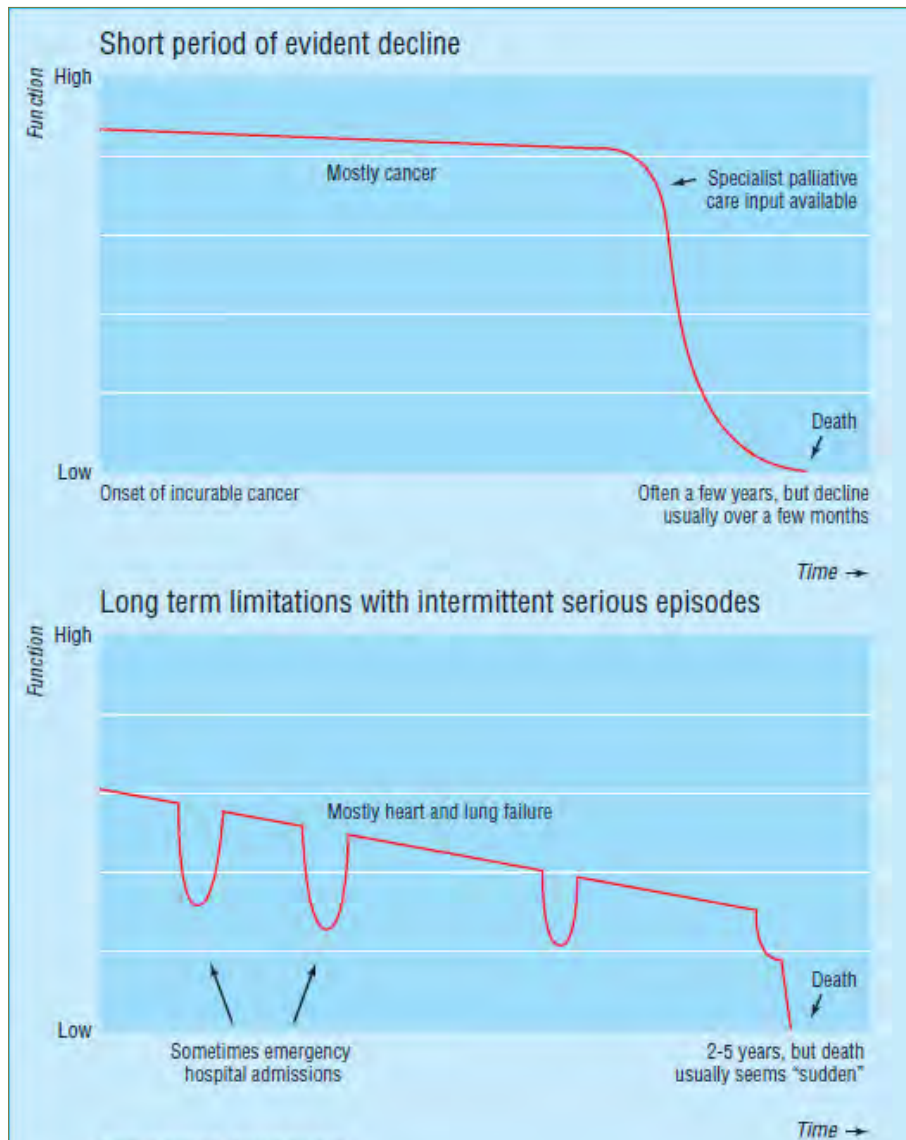
Prevalence of LTCs (England 2009)



Whither the acute hospital?



Can we manage patient and family expectations?



Illness trajectories for people with progressive chronic illness

Murray SA et al.
BMJ 2005;330:1007-11

Engage the public

- Suitability for ICU?
 - Enhanced preoperative assessment
 - Anaesthetists and Intensivists involved in MDT
 - Agree limitations of surgical, and also medical, care
- Expectations and ethical considerations
 - Patient must truly understand risks and outcomes
 - Treatment limitations clear – concept of futility
 - DNR and organ donation status clear

Concept of distributive justice

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- Patients, society and ethics
- **Financial**
- Workforce and training

2. Technology and treatments

3. Organisation

The NHS financial outlook for 2013/14

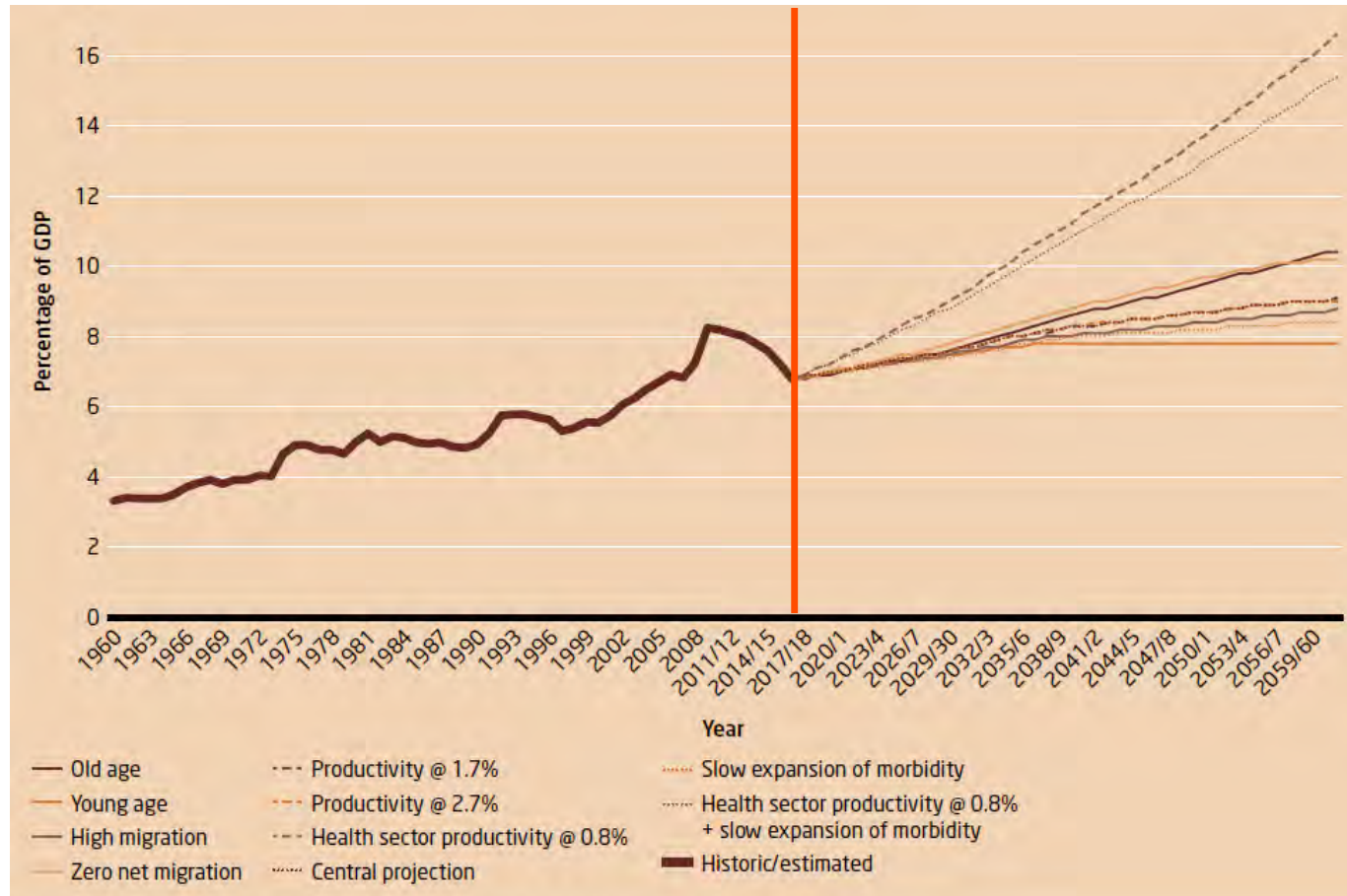
“Tightest since 2006” - DH



9% less per person from 2010/11 – 2018/19

Institute for Fiscal Studies 2013

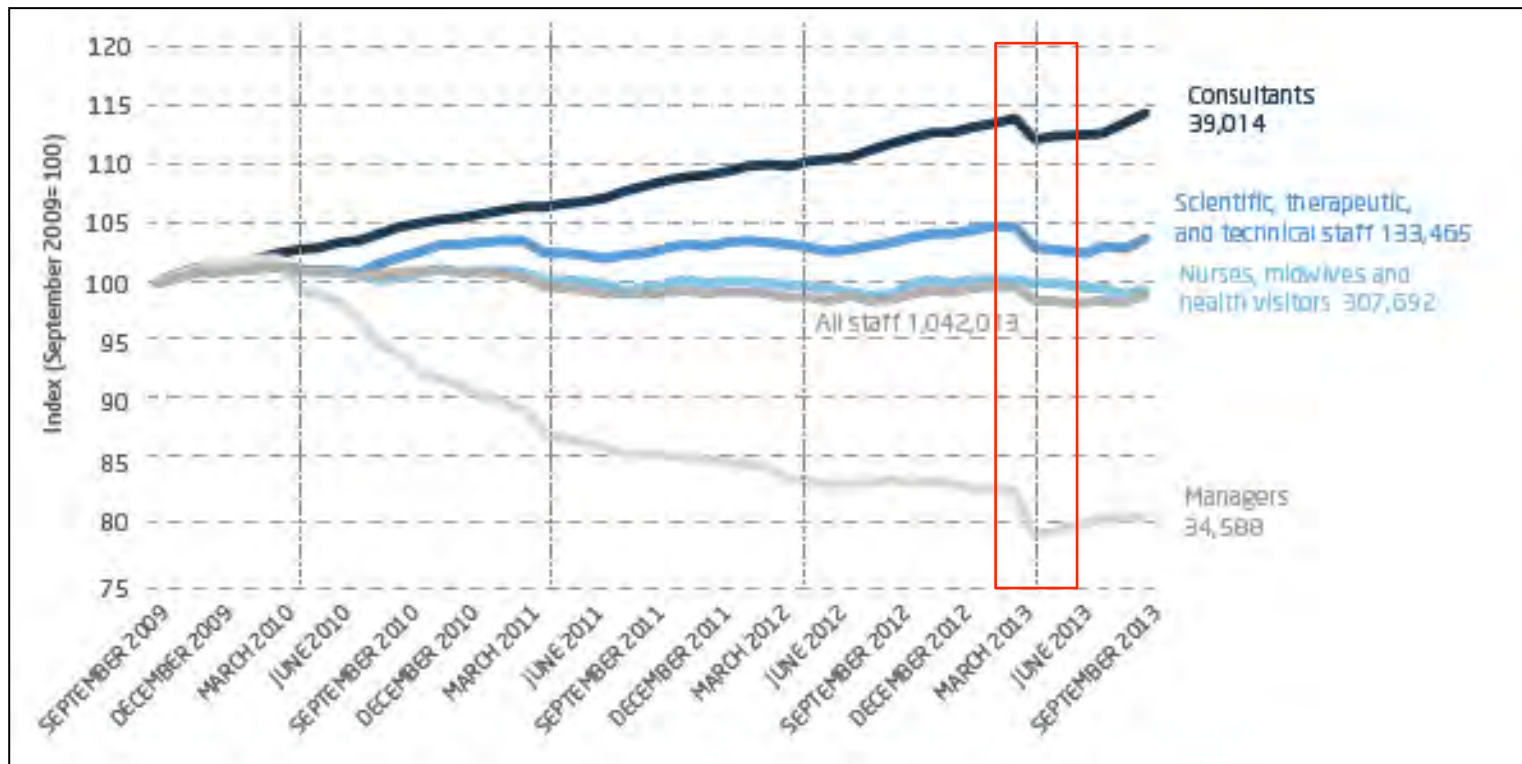
Projections for UK health spending



Spending on health and social care over the next 50 years
King's Fund 2013

NHS staff changes

(September 2009 – September 2013)



How is the health and social care system performing?
King's Fund January 2014

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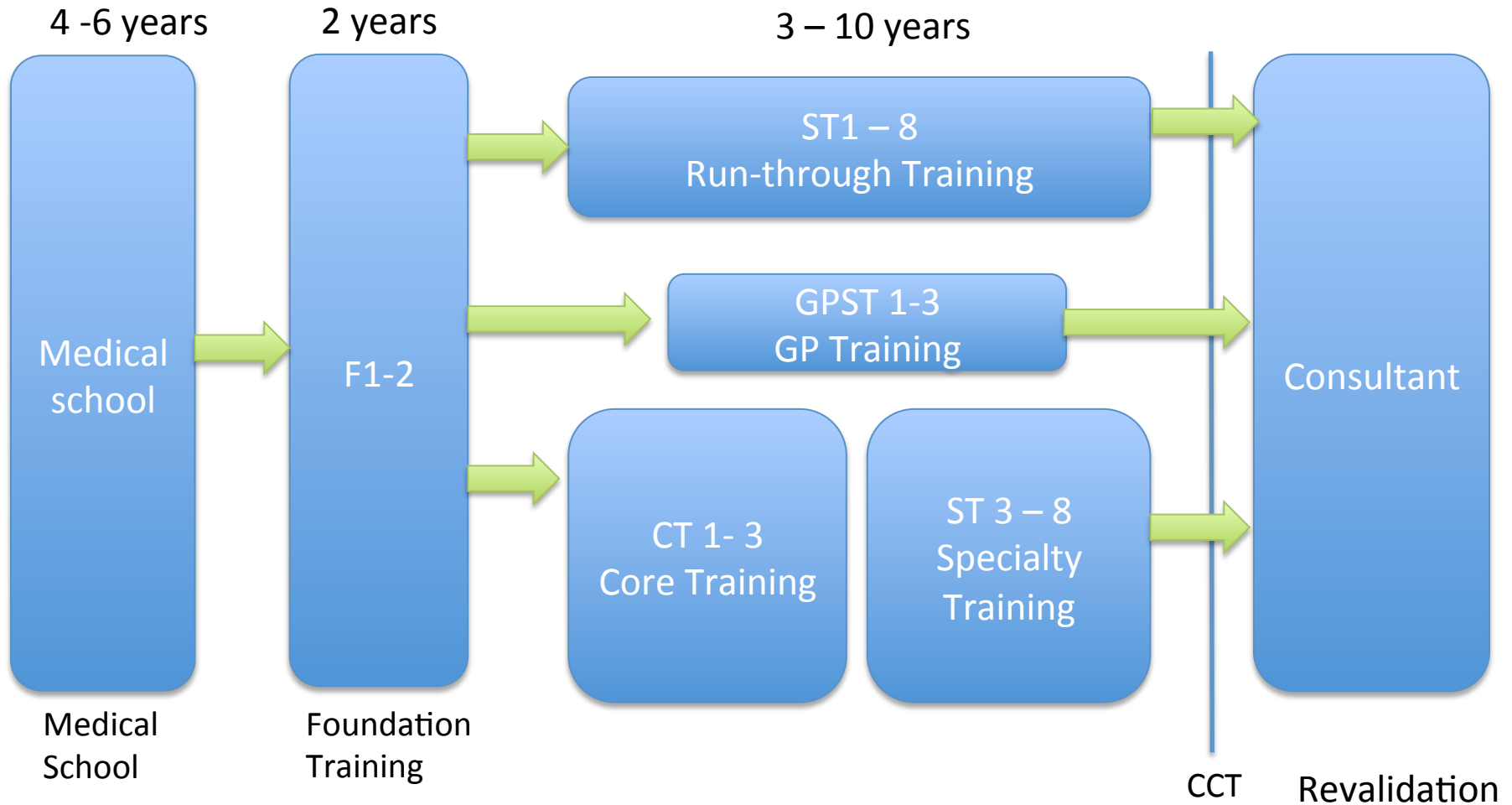
2. Technology and treatments

3. Organisation

What workforce should we have?

- Consultant expansion
 - Patient expectations
 - Quality of service delivery
 - Reduction in service by trainees
- Employers' view
 - Financial crisis
 - Secure and affordable solutions
 - ❖ Trained workforce
 - ❖ Demand-led
 - ❖ Flexibility

Current Structure of PGME



How to train the doctors of tomorrow?



SHAPE OF TRAINING

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Welcome to the site

The Shape of Training Review looked at potential reforms to the structure of postgraduate medical education and training across the UK.



Information about

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Quick links

[Final report](#)[Evidence](#)[Background to the review](#)[Key themes of the review](#)[How you can contribute](#)

News



Final report published

Professor Greenaway and his team launch 'Securing the future of excellent patient care'



Interview with Professor Greenaway

Listen to the chair of the review discuss the final report with doctor in training Laura Daunt.

[More news](#)

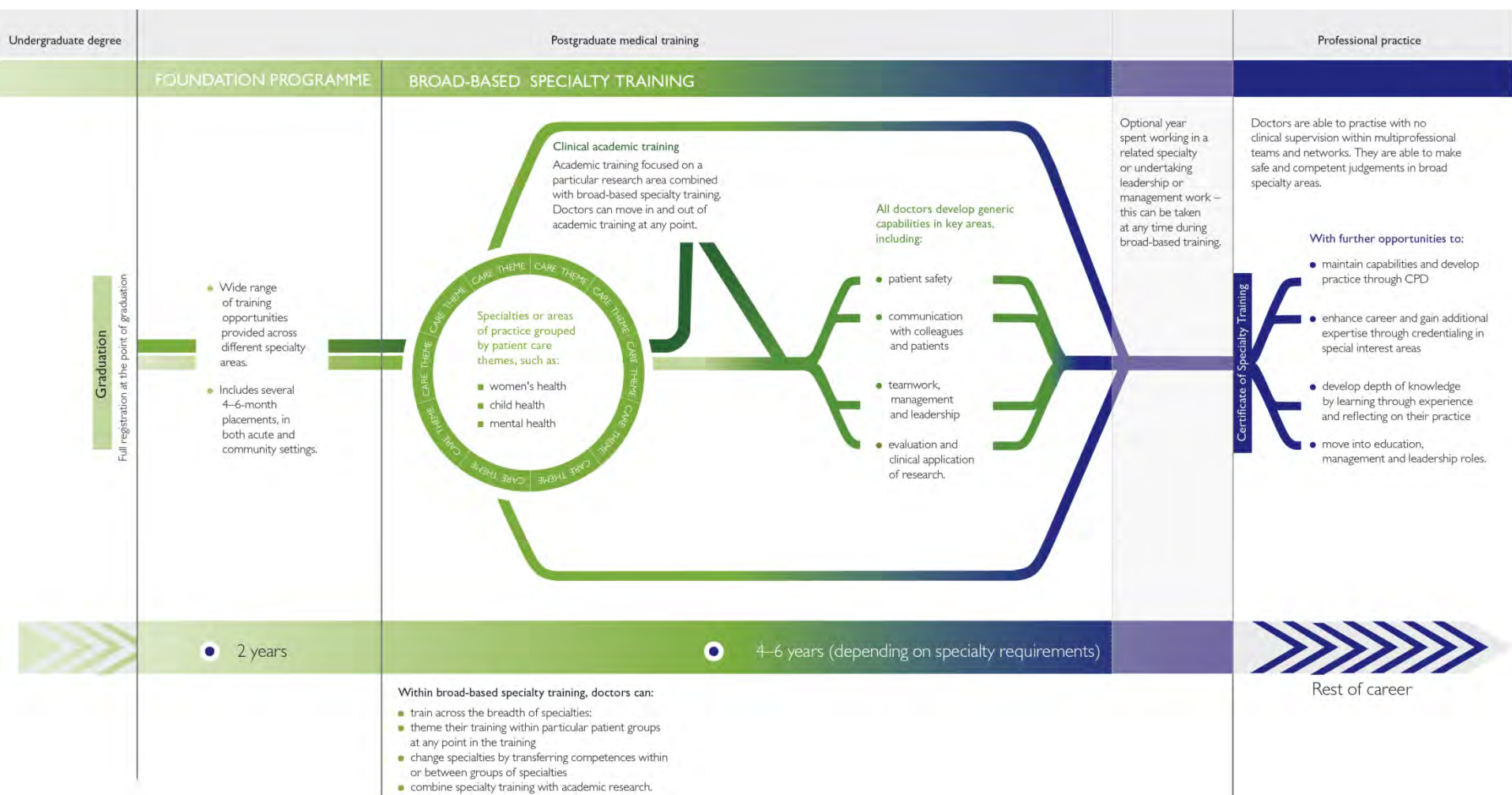
Securing the future of excellent patient care

Final report of the independent review
Led by Professor David Greenaway

[View final report and supporting materials](#)

www.shapeoftraining.co.uk

Proposed Model



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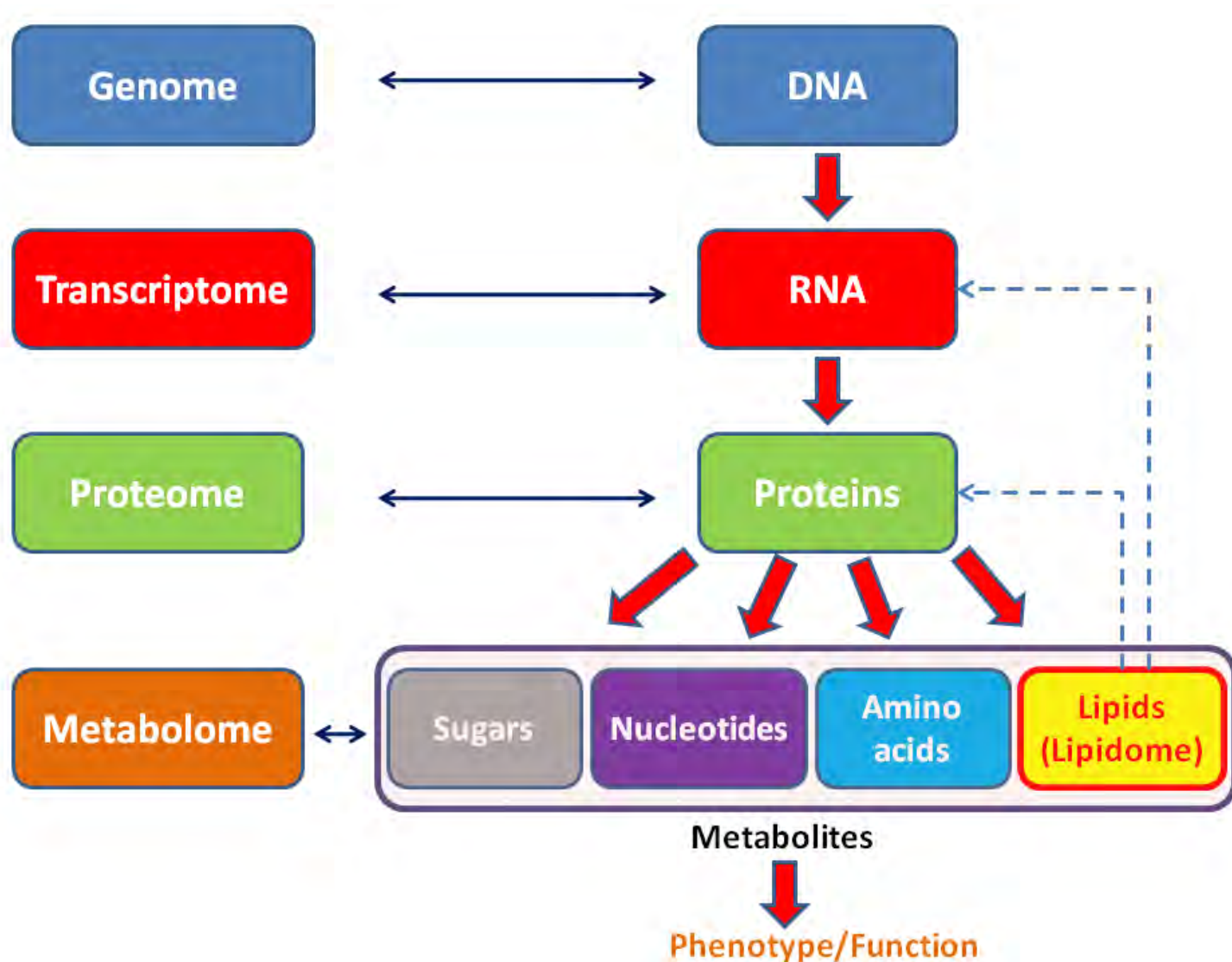
3. Organisation

Who can predict!

- Bed-side information
 - EPR / PDMS / Expert systems
- Intelligent data display
 - Screens / Google Glass™
- Intelligent drug delivery
 - Artificial pancreas
- Non-invasive monitoring
 - Organ specific / Bed side imaging
- Rapid diagnostics
 - Exhaled breath analysis / Metabolomics



Personalized diagnostics and therapy



Possibly less is more beneficial?

Singer *Critical Care* 2013, 17(Suppl 1):S3
<http://ccforum.com/content/17/S1/S3>



REVIEW

Advancing critical care: time to kiss the right frog

Mervyn Singer*

Apocalypse in your lifetime?

New Scientist 2013

THE BACTERIAL APOCALYPSE

Why are new antibiotics locked away when superbugs are on the loose, asks **Debora MacKenzie**

ANTIBIOTIC resistance poses an "apocalyptic" threat to human health. We are facing "nightmare bacteria" and are losing a "war" against them. Such language, in statements made over the past week by the top UK and US medical authorities – normally a very

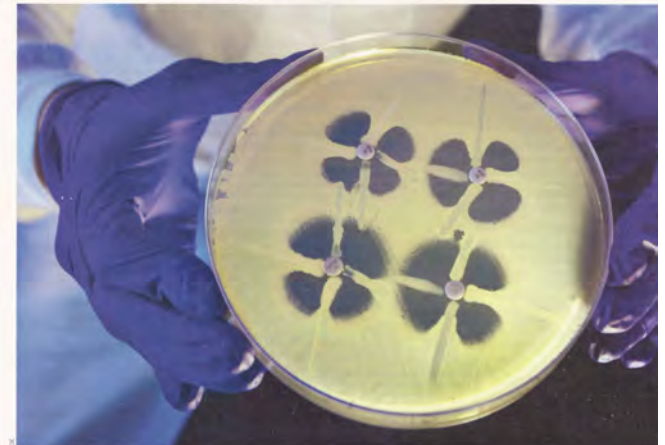
cautious breed – reflects the enormity of the situation they feel we must now confront.

In fact, our predicament is even worse than these words suggest, with antibiotic-resistant bacteria out of control in some areas. What's more,

New Scientist can reveal that effective new drugs may already exist – but are stuck in the final stages of development because they cannot overcome economic and regulatory hurdles.

Antibiotic resistance has been emerging for some time in the bacteria that cause tuberculosis and in "superbugs" such as methicillin-resistant *Staphylococcus aureus* (MRSA). Less well known are the Enterobacteriaceae, tough gut bacteria that include the common *Escherichia coli*, which can cause severe infections. Increasingly, they carry genes that disarm most antibiotics – little else but antibiotics called carbapenems will now kill them.

However, carbapenem-resistant Enterobacteriaceae (CRE) are on the rise. The US Centers for Disease Control and Prevention (CDC) reported



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Pressure on the service

- Reducing number of acute hospital beds
 - Configuration not optimal
- Increasing emergency admissions
 - Higher acuity of in-patients
 - Frailty and dementia common
- Higher public expectations
 - Critical care for all?
- Seven-day working
 - UK still relatively under-doctored
 - Trainee delivered service still with us

Centralisation in 5 years' time?

- Public fully engaged in service design and change
- Wider primary care, provided at scale
- A modern model of integrated care
- Access to high quality urgent and emergency care
 - At home and in 40-70 centres
- Specialised centres of excellence
 - 15 – 30 centres

“Models of Care”

NHS England Board, 17 December 2013



A different workforce?

- Intensivists
- Advanced Critical Care Practitioners
- Perioperative physicians (EI and Em)
- Hospitalists

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SOUNDING BOARD

The Emerging Role of “Hospitalists” in the American Health Care System

Robert M. Wachter, M.D., and Lee Goldman, M.D.
N Engl J Med 1996; 335:514-517 | August 15, 1996

Article **References** Citing Articles (108) Letters

The explosive growth of managed care has led to an increased role for general internists and other primary care physicians in the American health care system. This change is welcome in many respects, since generalists have perennially been undervalued by health care institutions, payers, and even patients.¹⁻³ The greater prominence of generalism has led to an increase in the number of medical students who choose careers in primary care,⁴ expanded job opportunities for generalists,⁵ and a modest increase in the incomes of primary care physicians.⁶

TOOLS

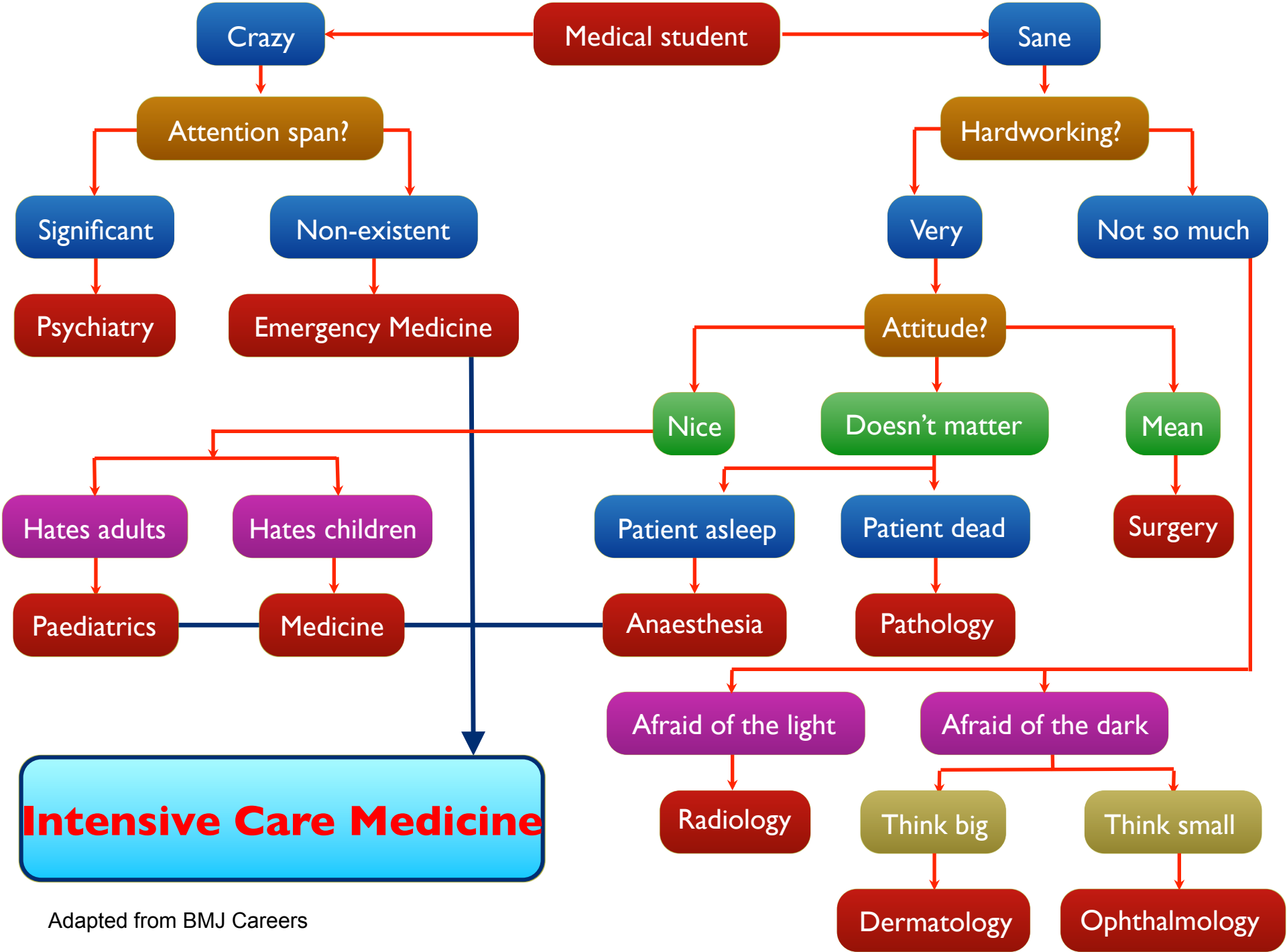
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The Role of “Hospitalists” in the Health Care System
February 6, 1997

The intensivist of the future?

- Will lead the multi-professional team
 - ❖ Hub and spoke / Telehealth?
- Will often deliver care directly
- Will be a skilled generalist
 - Elderly, multiple co-morbidities, EoL care
- Will integrate mental and physical health
 - Delirium / Cognitive dysfunction
- Will link to post discharge services
 - Outreach / Rehabilitation



Summary

- Intensivists pivotal to hospital activity
- Specialty is increasingly well organised
- Will need to embrace and lead change
 - Ethics of patient care
 - Financial pressures
 - Technology and treatments
 - Organisational impact
 - Workforce and training likely to be different
 - ❖ Details to be debated!

Thank you

