

The Consultant Clinical Scientist: your Role in the future NHS.



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President, AHCS

Consultant Clinical Scientist, QEHB

Hon. Professor of Respiratory & Sleep Physiology

University of Birmingham

Aneurin “Nye” Bevan



“The collective principle asserts that... no society can legitimately call itself civilised if a sick person is denied medical aid because of lack of means.” — *Aneurin Bevan, In Place of Fear.*

Aug 1945	Minister of Health
6 Nov 1946	National Health Service Act
5 July 1948	Establishment of the NHS
Jan 1951	Introduction of prescription charges for dental care and spectacles. (Resigned)



Scientists on the Map.....1960

CH. 66

*Professions Supplementary to
Medicine Act, 1960*

8 & 9 ELIZ. 2

1ST SCH.

TABLE

(1) Board	(2) Total number of members	(3) Representative members	(4) Medical practitioners nominated by:—				(5) Experts in professional education	(6) Other members
			(a) The English Colleges jointly	(b) The Scottish Corporations jointly	(c) The British Medical Association	(d) The Society of Medical Officers of Health		
Chiropodists ...	11	6	1	1	1	1	1	—
Dietitians	15	8	1	1	—	—	1	4
Medical Laboratory Technicians	13	7	4	1	—	—	1	—
Occupational Therapists	17	9	3	1	—	1	1	2
Physiotherapists	17	9	4	1	1	—	1	1
Radiographers...	13	7	3	1	—	—	1	1
Remedial Gymnasts	11	6	2	1	—	—	1	1

Central Advisory Council for Science
and Technology, 1967-1970

Traditional NHS



Doctors



Nurses



The Rest.....

We've all experienced this in the past...



.....those days are over!

Healthcare Scientists

Life Sciences

Physiological Sciences

Physical Sciences & Engineering

Bioinformatics Sciences

The Breadth of Healthcare Science Delivery

Life Sciences

- Analytical Toxicology
- Anatomical pathology
- Blood transfusion science/ transplantation
- Clinical biochemistry including paediatric metabolic biochemistry
- Clinical genetics/Genetic Science
- Clinical embryology & Reproductive Science
- Clinical immunology
- Cytopathology including cervical cytology
- Electron microscopy
- External quality assurance
- Haematology
- Haemostasis and thrombosis
- Clinical Immunology
- Histocompatibility & immunogenetics
- Histopathology
- Microbiology
- Molecular pathology of acquired disease
- Phlebotomy
- Tissue banking

Physiological Sciences

- Audiology
- Autonomic neurovascular function
- Cardiac physiology
- Clinical perfusion science
- Critical care science
- Gastrointestinal physiology
- Neurophysiology
- Ophthalmic and vision science
- Respiratory physiology
- Urodynamic science
- Vascular science

Bioinformatics including

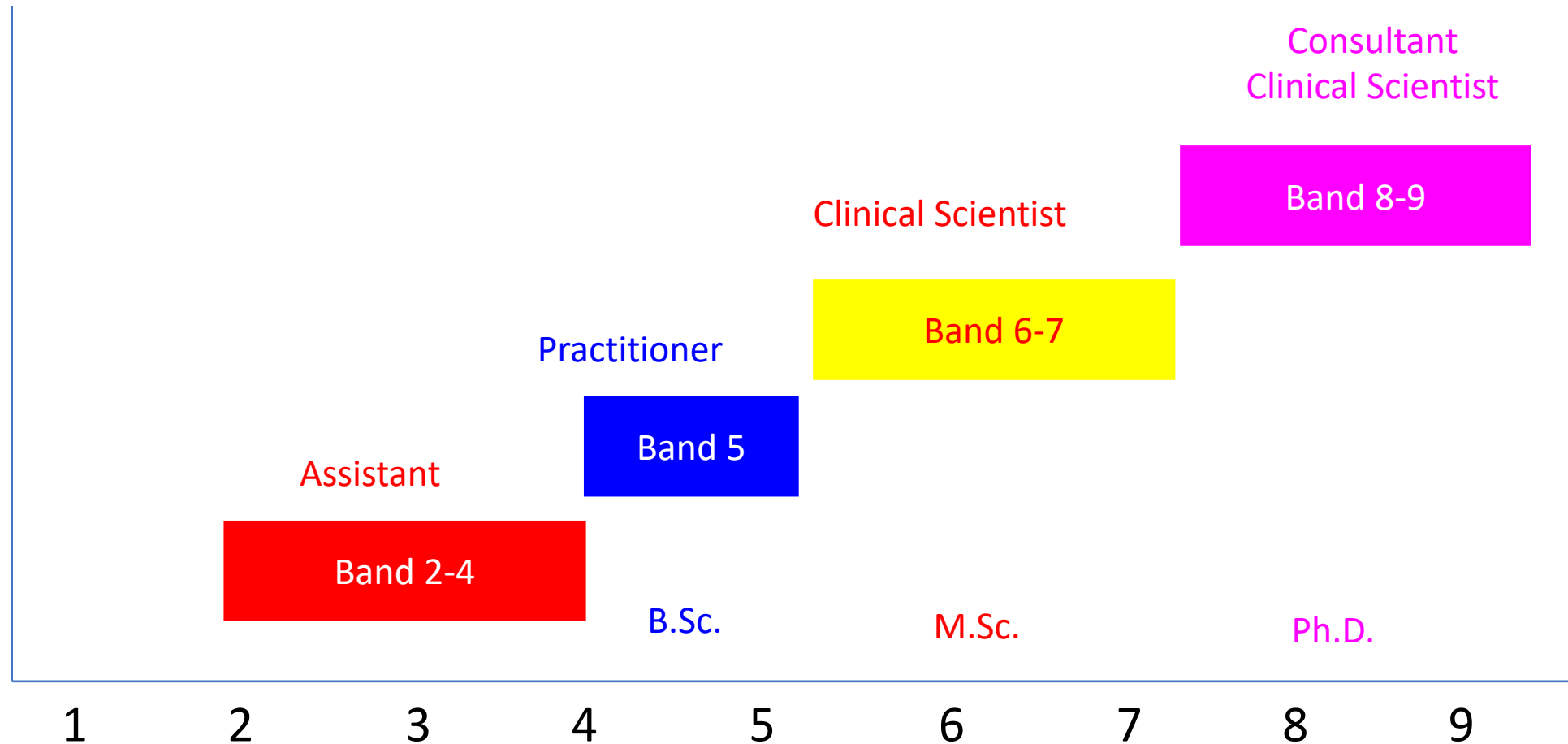
- Clinical Bioinformatics and Genomics
- Computer science and modelling
- Health Informatics

Physical Sciences and Biomedical Engineering

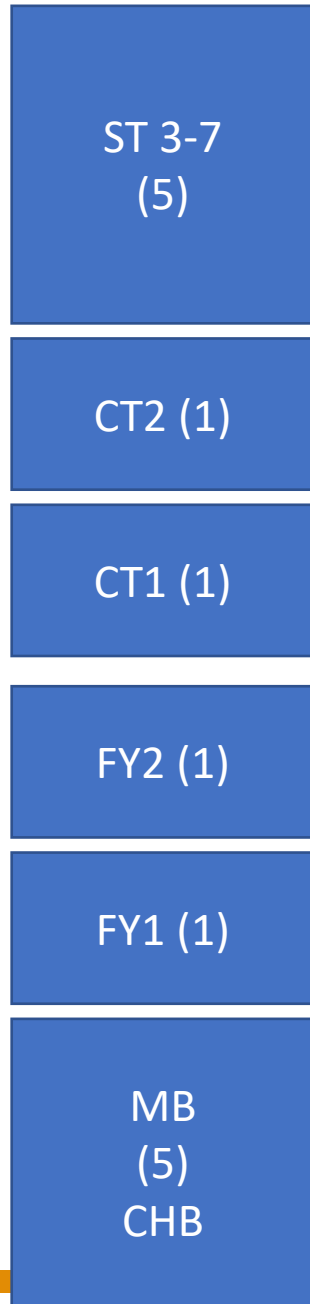
- Biomechanical engineering
- Clinical measurement & Development
- Clinical Pharmaceutical Science
- Diagnostic radiology & MRphysics
- Equipment management & clinical engineering
- Medical electronics & instrumentation
- Medical engineering design
- Clinical photography
- Nuclear medicine
- Radiation protection & monitoring
- Radiotherapy physics
- Reconstructive Science
- Rehabilitation engineering
- Renal dialysis technology
- Ultrasound & non-ionising radiation

- Health and social care system in the UK inclusive of the NHS,
- Public Health England,
- NHS Blood & Transport Service
- The Private and Third sector delivering NHS services for patients

Healthcare Science Careers



Medical vs Scientific



Specialist Training

Core Training

MRCP

“HO” & “SHO”

Medical School

Specialist Training

University Ph.D.

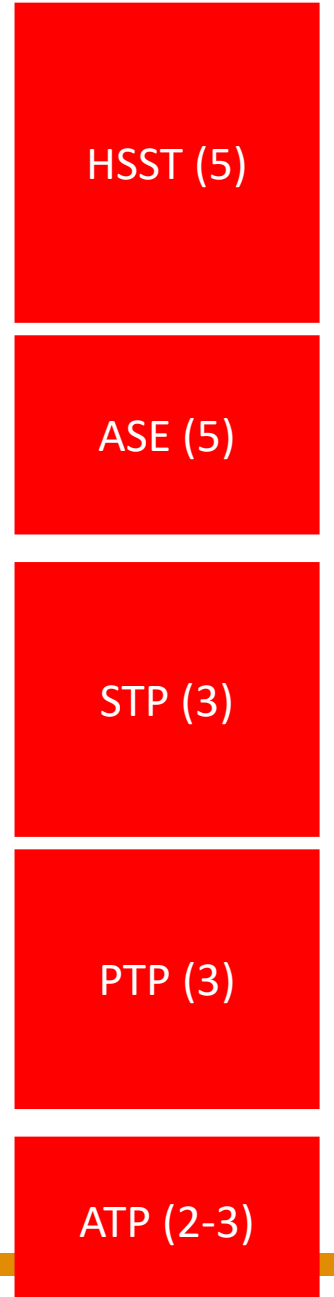
“Clinical Experience”

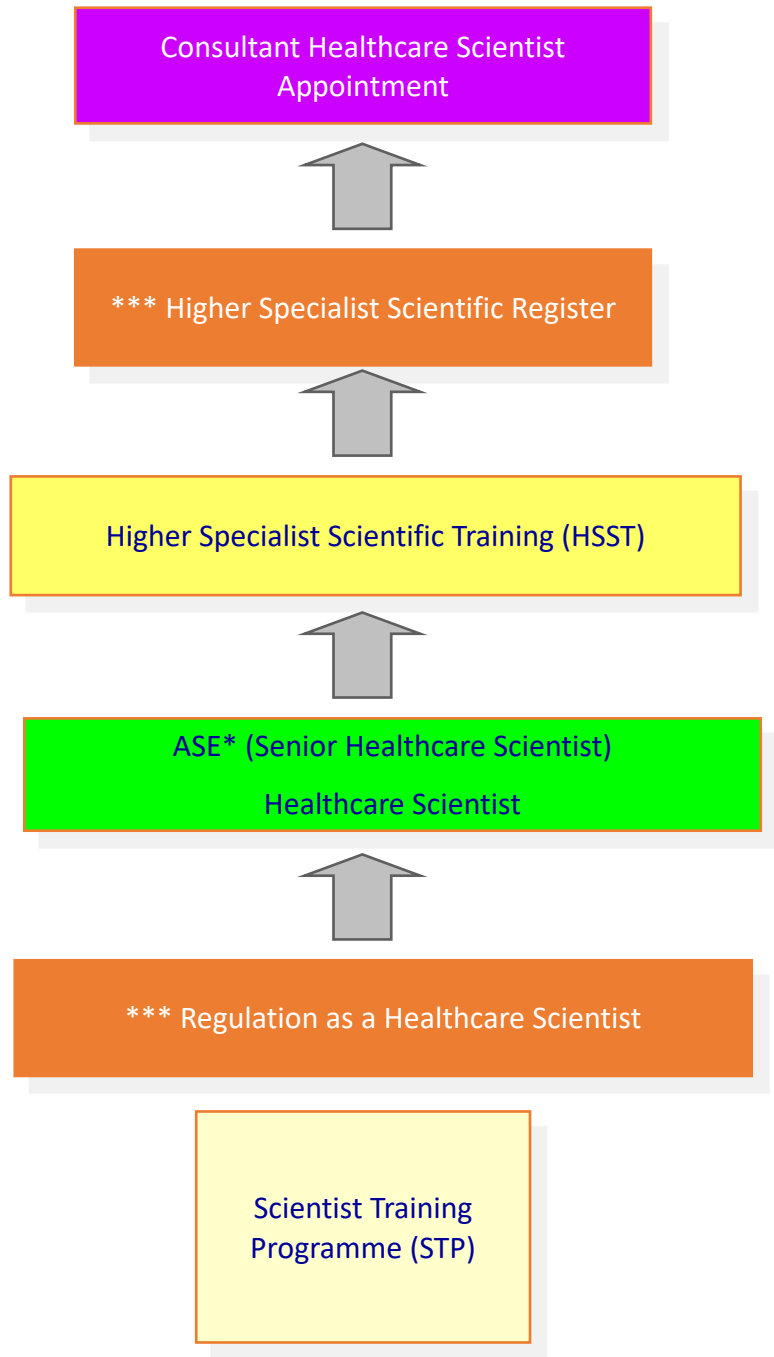
ARTP 2

University M.Sc.

ARTP 1

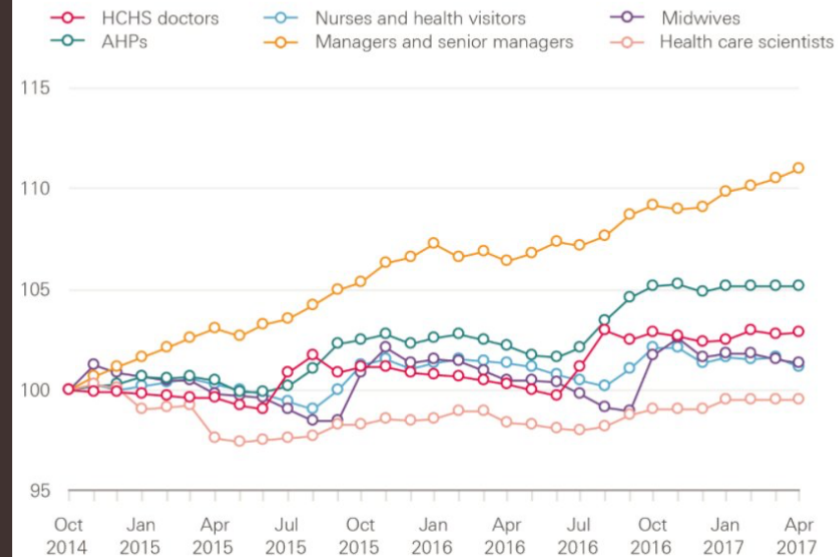
University B.Sc.



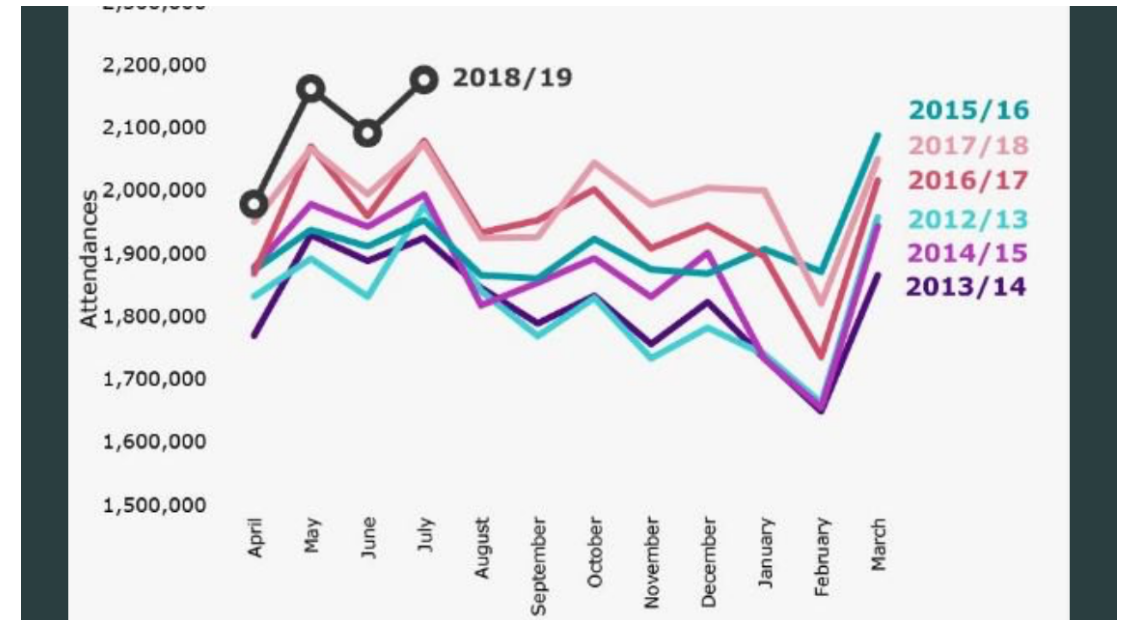


It can't just be about doctors & nurses!

Figure 1: Change in numbers of full-time equivalent selected staff groups in the NHS in England (index 100=October 2014), October 2014–April 2017



The ratio of HCS/Doctors is decreasing



The hospital workload is increasing

Leadership: what are the issues?

- **Opportunities:** The pace of advance and the complexity of technologies for scientific leadership - who in the NHS has both [clinical expertise](#) and [scientific training](#) to contextualise to Trust boards and cross- system, how advances in genomics, AI and bioinformatics will impact patient care?
- **Chief Technology Officer** The Darzi Review recommends these on Boards! **Mandatory?**
- **HCS Leadership on Trust Boards:** There is a lack of HCS leadership roles; historically, clinical leadership in the NHS has been characterised by [medical and nursing](#) directors. Less than 2% of executive level positions in provider trusts are held by healthcare scientists
- **Scientific Director:** Only one region in England has a scientific director, creating a **regional leadership gap** for HCS
- **What's in a name?:** Diagnostic and scientific services are often [under different names](#) and split differently in different hospitals, making the workforce less visible as a collective to management.
- **HCS Integration:** Healthcare science is [not fully utilised](#) by [integrated care systems and sustainable transformation](#) partnerships.
- **“Basement menbrain”?:** Strongly held perception that scientists are all male need to ‘get out of the basement’
- **Changing roles:** Changes to professional regulation are under way to provide HCPC regulated healthcare scientists with the powers to [administer medication](#), changing their role within the MDT.

What are the healthcare issues in England?

24% increase in ED attendances

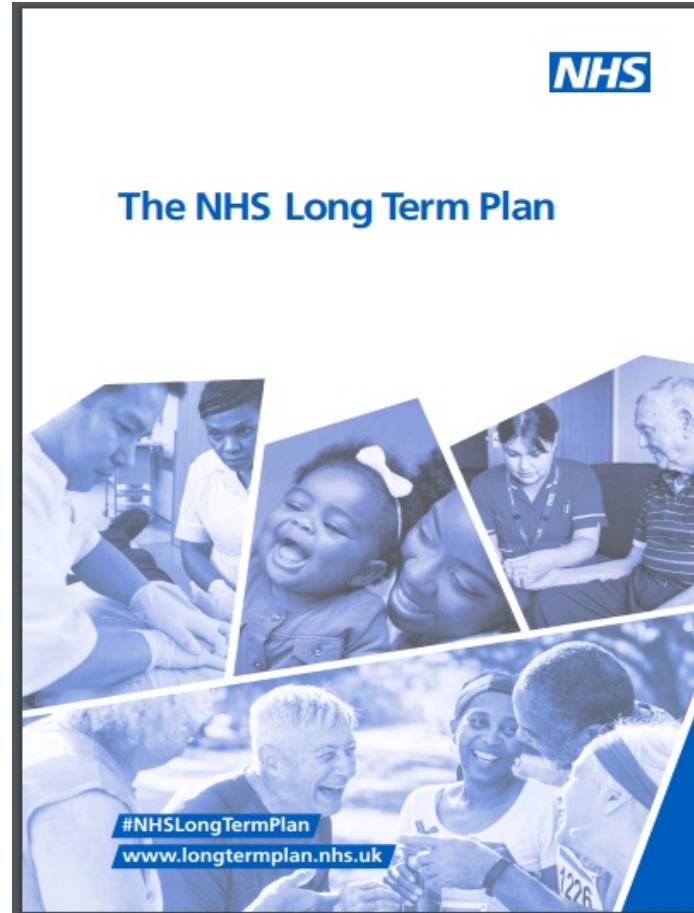
Mainly frail elderly (>75 yrs)

Long waits for assessment

Assist people in avoiding hospital

Need better technology

....similar in all 4 Nations!



OPPORTUNITIES FOR HCS!

NHS People Plan 2019



Improvement



Interim People Plan

- NHS Best place to work
- Improving our leadership culture
- Addressing urgent workforce shortages
- Delivering 21st century care
- A new operating model for workforce
- Immediate next steps

Consultant Clinical Scientists Roles

Within your Trust

- Head of Diagnostic/Therapeutic Services
- HCS Leadership
- Lead Clinician for Specialist Services / Clinical Service lead
- Spearhead Research Programmes (PI/ Co-applicant)

Regionally/Nationally

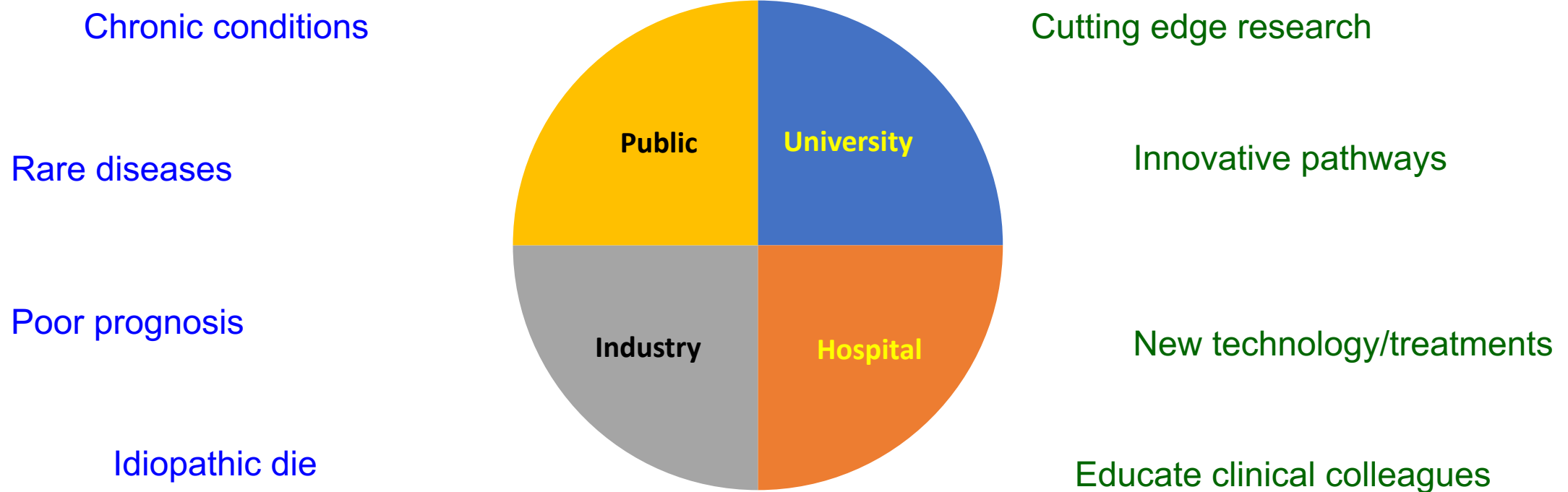
- Professional Body Leadership (Chair, President, Officer...)
- Lead HCS (Region)
- Link between academia, healthcare and the public

Research

- New innovation & technology
- Procurement of new techniques
- Translational research of new ideas
- Assessing “disruptive technology”
- Grant applications
- Leading research programmes



Healthcare Alliances





Translational Research



Institute for Translational Medicine, Birmingham Health Partners

It all has to link up.....



The Crick



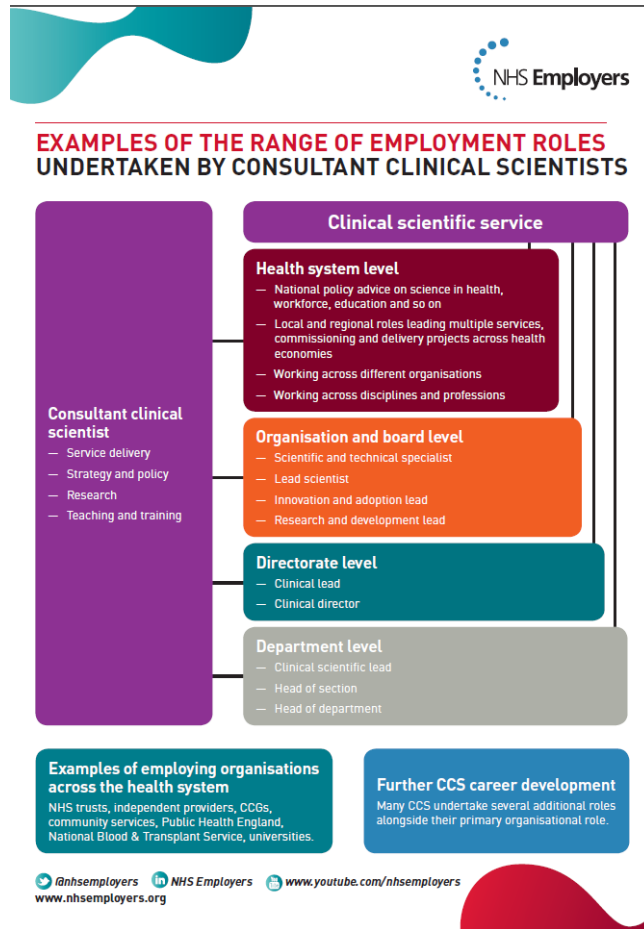
Translational
Medicine
Partnerships



Universities



Range of CCS Roles



Clinical Scientific Service

Health System Level

Organisation & Board Level

Directorate / Divisional Level

Department Level

CCS Role: Overview

Role overview

The CCS has ultimate responsibility for the integrity of the scientific and technical knowledge base applicable to their specialty and its integration into practice, at a level of accountability comparable to that of consultant doctors. The CCS also provides an exemplar of good scientific practice standards and leads on their local implementation.

In addition to making a personal contribution to patient care, often practising and advising at the complex end of the care spectrum, the CCS takes a system wide view of healthcare to ensure effective patient outcomes and that safe and effective care is designed, delivered and improved. The CCS provides highly developed and advanced clinical scientific expertise, advice and interpretation

Consultant Clinical Scientists: Life Sciences

- **Consultant clinical scientists in chemical pathology** study changes in the body's chemistry and oversee outpatient testing to help patients manage illnesses like diabetes
- **Consultant clinical scientists in reproductive science** help couples dealing with infertility to improve their chances of conceiving
- **Consultant clinical scientists in histocompatibility and immunogenetics** study immunity and genes. They're at the forefront of implementing new and exciting technologies to make transplants safer.

Consultant Clinical Scientists: Medical Physics/Engineering

Prof Wendy Tindale, OBE

Scientific Director, Sheffield Teaching Hospitals NHS Foundation Trust
Honorary Professor at The University of Sheffield
Clinical Director, NIHR Devices for Dignity HTC



Prof Stuart Green

Director of Medical Physics/Eng

Laser induced particle beams and LIBRA
Boron Neutron Capture Therapy
Cyberknife



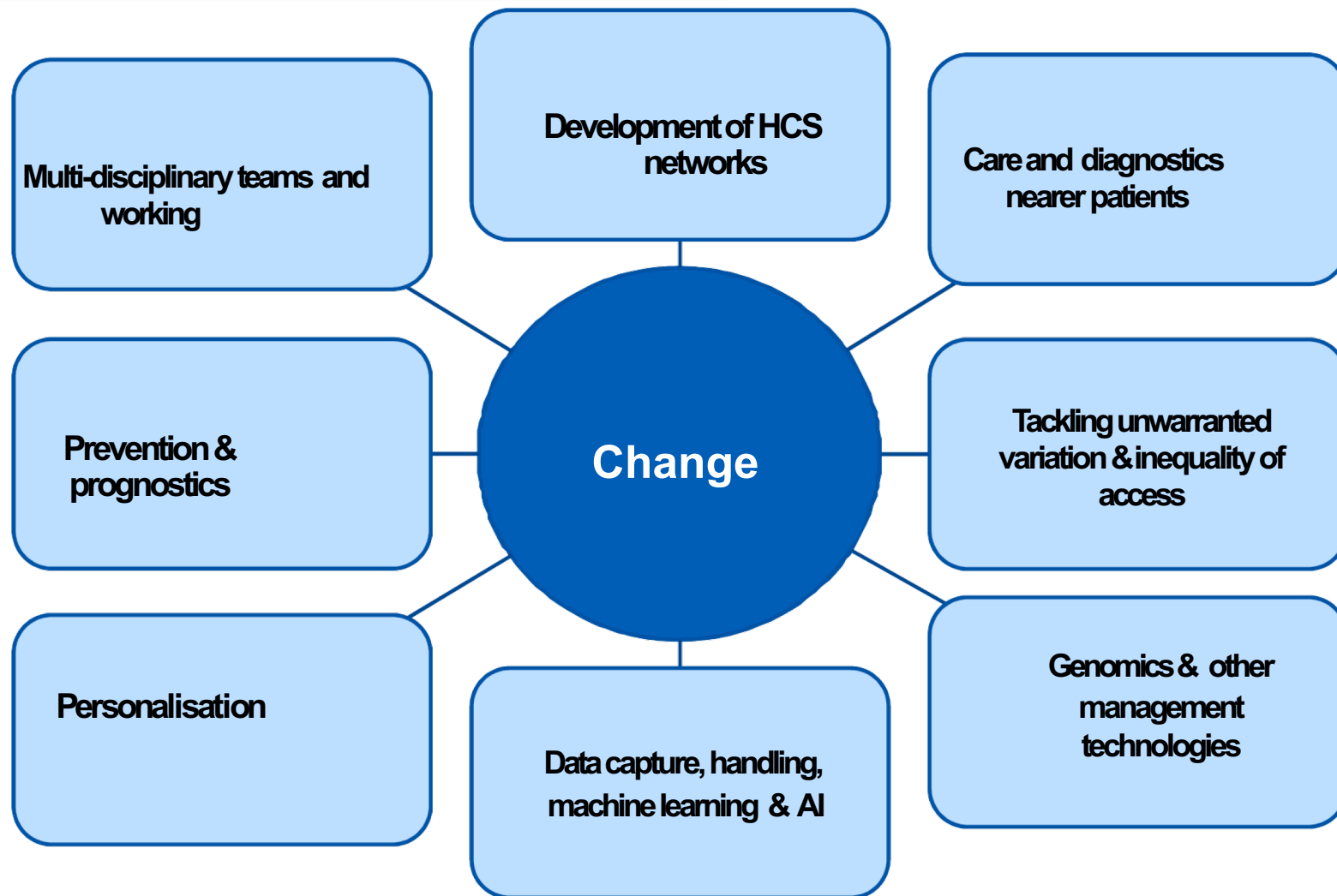
Consultant Clinical Scientists: Physiological Sciences

- Consultant clinical scientists in respiratory physiology.
- Consultant clinical scientists in neurophysiological science
- Consultant clinical scientists in audiology.....

Consultant Clinical Scientists: The Future

- Working to design/ deliver services with / in primary care?
- Leading an aspect of hospital service: Sleep Apnoea Service
- Clinical Service Lead
- Directly working with patients on their specific health journey
- Advising local healthcare groups on area(s) of expertise

What does the future hold for healthcare science?



So what's the Academy ever done for us.....?



Routes to Higher Specialist Scientist Registration

HSS Training Programme

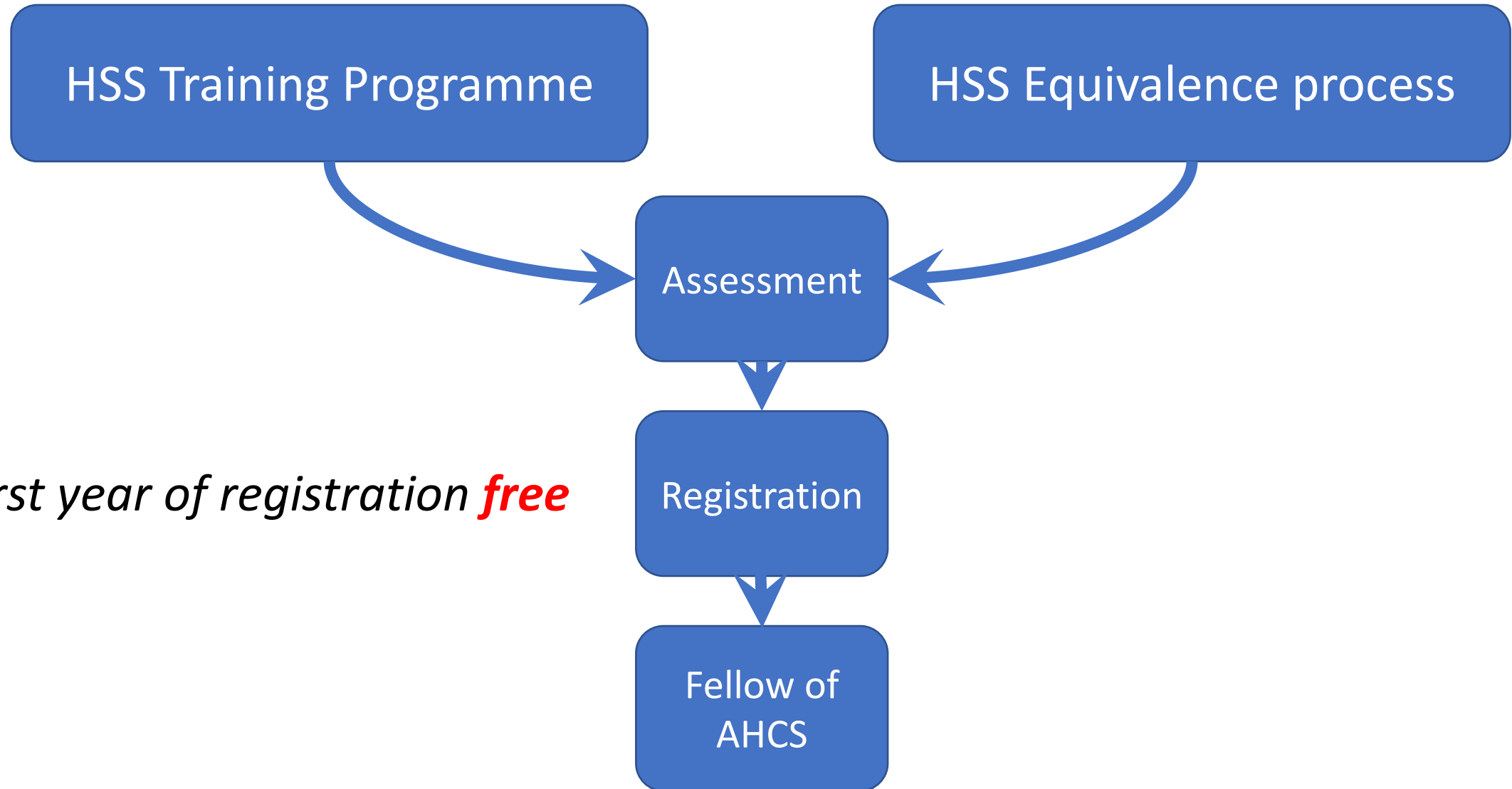
HSS Equivalence process

Assessment

Registration

Fellow of
AHCS

*First year of registration **free***



Fellow of the Academy for Healthcare Science



All HSS Registrants can now use the title:

‘Fellow of the Academy for Healthcare Science’

for the duration they are on the Register

Qualities for becoming a Healthcare Scientist?

Caring for people

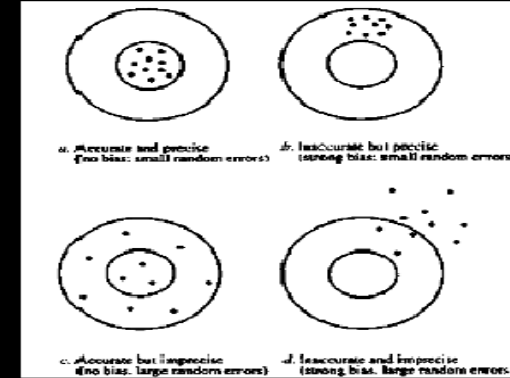


Attention to Detail



Accuracy & Precision

Monitoring analytical performance



Inquisitive mind

Contact details



www.ahcs.ac.uk



#AHCSUK



@AHCSUK



Equivalence - equivalence@ahcs.ac.uk

Registration - registration@ahcs.ac.uk

What will your role be as a Consultant Clinical Scientist?