

Healthcare Science Education and Training Collaborative

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Chief Scientific Officer for NHS England

Monday 27 March

Healthcare science is at the core of NHS delivery

Healthcare science is the scientific backbone of the NHS, **underpinning 80% of all diagnoses**. We must continue to meet the **education and training needs of healthcare scientists** to ensure our workforce can provide science-based intelligence and frontline scientific leadership.

Over 55,000 NHS healthcare science staff, working across 50+ specialisms falling into four main divisions – physiological sciences, life sciences, physical sciences and bioinformatics.

Supporting the design and delivery of new health technology to help **prevent, diagnose and treat diseases**.

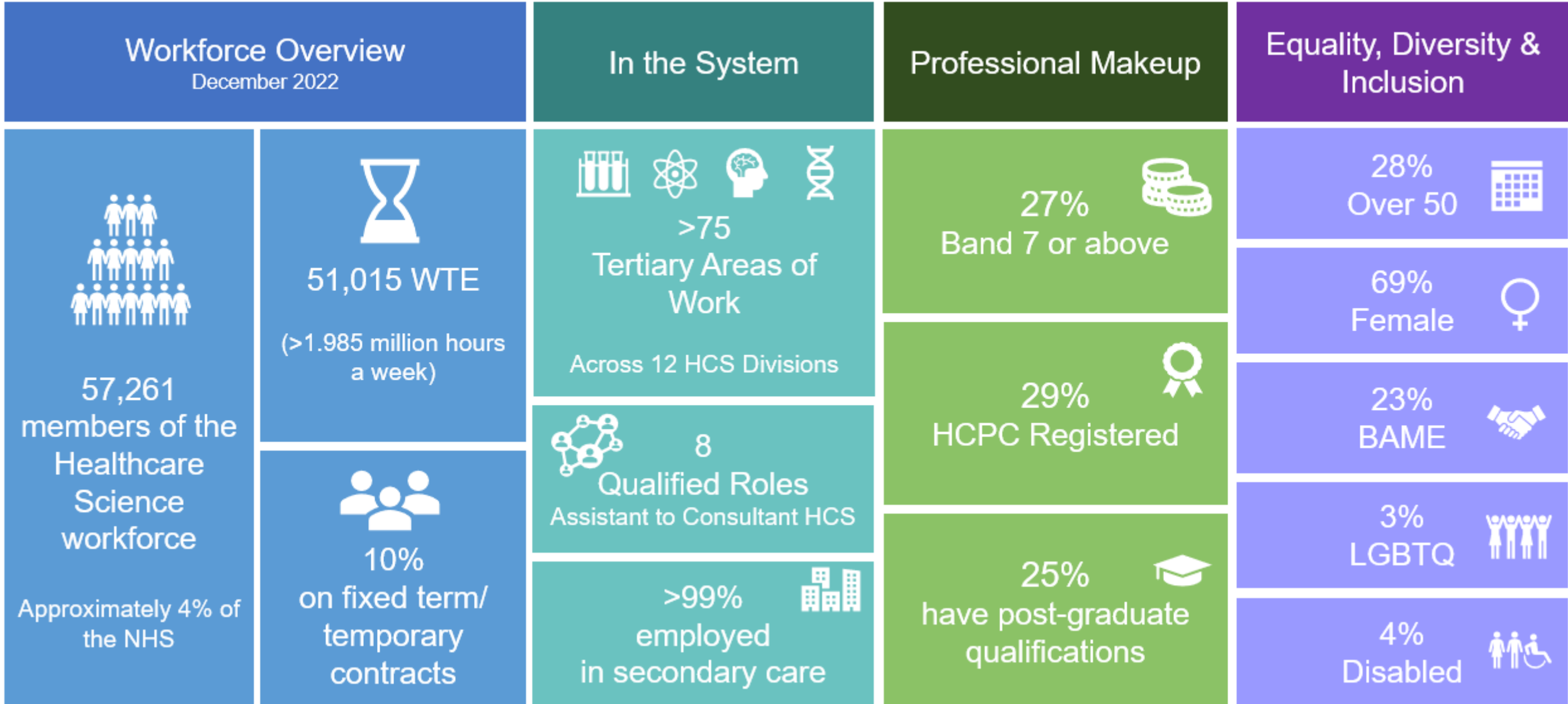
Ensuring the NHS operates at the limits of science can help **address our greatest health challenges** and shape technological advances.

Healthcare science works across research, innovation and operational delivery.

Working as part of an integrated health system **supports people to live happier and healthier lives**.

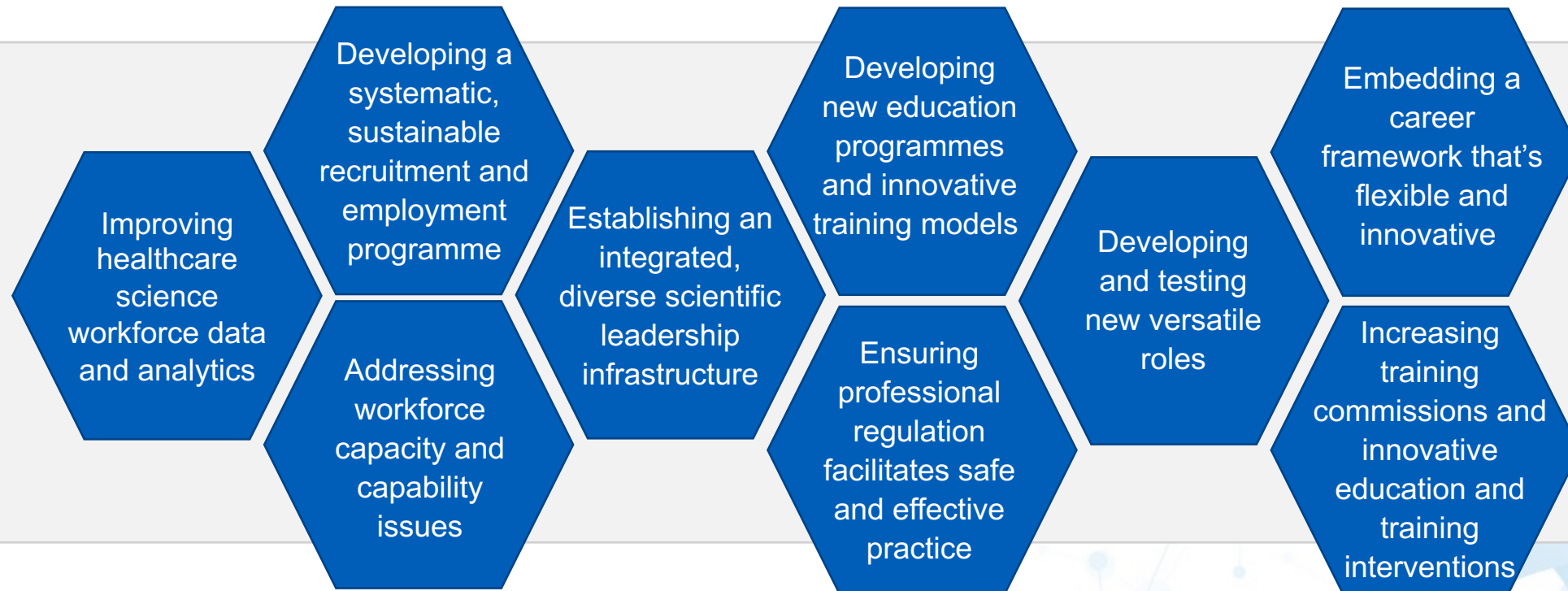


Healthcare science workforce ariel view



Interim NHS People Plan: the future healthcare science workforce

Key areas of focus to support the healthcare science workforce:



Supporting the healthcare science workforce



RECRUITMENT AND RETENTION (INC EDUCATION AND TRAINING)

Development of national initiatives to support recruitment of the next generation of HCS and retain those already in the profession.

Working with the National School of Healthcare Science to ensure the right **education and training programmes and funding** are in place to support the needs of our current and future healthcare science workforce

WORKFORCE INTELLIGENCE

Building a clear picture of our workforce through updates to the **Electronic Staff Record (ESR)**, ensuring we have the **right workforce codes to supports delivery of national HCS workforce policy and strategy**



REGULATION AND REGISTRATION

Working with system partners to identify and address complexities of **professional regulation and registration** across the 50+ complex professions of healthcare science. This includes the development of proposed solutions and recommendations to support simplifying and streamlining a consistent approach, where possible, across the profession

Supporting the healthcare science workforce



EQUALITY, DIVERSITY and INCLUSION (EDI)

Launch of an **EDI Clinical Fellowship** to support the HCS profession develop a national strategy and EDI toolkit that can be embedded at all levels to help support, guide and create a truly inclusive workforce across HCS where everyone has the opportunity to thrive.

HEALTHCARE SCIENCE PROFESSION HANDBOOK

Development of a **Healthcare Science Profession Handbook** which acts as a practical guide for the current and future healthcare science workforce including, but not limited to, training and development opportunities, professional standards and accountability, professional regulation and registration, and opportunities within the field of research and innovation.



EXECUTIVE LEADERSHIP

Establishment of a **CSO led executive leadership and quality improvement programme**, where senior leaders across healthcare science are offered the opportunity to accelerate their skills at executive level through a combination of high-impact learning, residential experiences and coaching opportunities.

80% of the healthcare science workforce support diagnostics

Healthcare science is **critical to the diagnostic ambitions** within the 2023/24 NHS operational planning guidance:

Increase the percentage of patients that receive a **diagnostic test within six weeks** in line with the March 2025 ambition of 95%

Deliver diagnostic activity levels that **support plans to address elective and cancer backlogs** and the diagnostic waiting time ambition

To accelerate the ambition of the community diagnostics centres and achieve the national ambitions, we need to **focus on initiatives that will support the diagnostic workforce.**

But we know there are challenges that mirror other areas of the NHS.

Diagnostics programme priorities for 2022-23

CDCs



- Run & upgrade the 21-22 CDCs to full core test list – delivers 3m+ tests (FYE)
- Deliver new CDCs and upgrade existing ones
- Explore options with IS to supplement CDC capacity delivered via NHS investment
- Highest priority diagnostic pathways re-designed, guidance implemented by ICSSs
- GP Direct Access roll out: phase 1 - support for faster cancer diagnosis
- CDC procurement framework refreshed (by Oct 22)
- Start planning Year 3 CDCs as part of ICSSs' strategic diagnostic plans

Workforce



- Complete SR20 investment delivery: open all endoscopy & imaging academies
- Deliver SR21 investments: workforce growth, training & optimisation
- ICSSs agree workforce plans for CDCs, which are monitored monthly
- Deliver tailored support plan for each ICS to manage local workforce risks

Networks



- Build further pathology network maturity, outlining plans for future consolidation
- Fully establish all imaging networks, and begin journey to full maturity
- Scope endoscopy & physiological science networks

Digital



- Deliver Year 2 of networks' digital road maps (incl. LIMS, digital pathology & imaging, home reporting & i-Refer), each ICS having a single plan with Frontline Digitisation
- Agree strategy for national data sharing architecture and storage, and start delivery
- Design and start pilots for use of AI in system level diagnostic services

Equipment

(non-CDC)



- Deliver year 1 of levelling up improvements for endoscopy capacity
- Deliver year 1 of levelling up improvements for acute imaging capacity
- Deliver year 1 of Total Lung Health Check CTs via Cancer Alliances
- Deliver year 1 of mammography equipment uplift
- Diagnostics@Home programme established to support testing at home
- Support ICSSs to reduce replacement backlog using operational capital

Performance



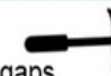
- Analysis of barriers to each ISC meeting 120% activity by Mar 23 & 6WW target by Mar 25
- Deliver national Performance Improvement Plan incl. bespoke action plan for each ISC with improvement support tailored to their specific needs
- Major focus on supporting improvement in cancer performance: roll out of direct GP access to all ICS, CDC pathways linked to equipment & test innovations

Productivity



- Each ICS delivers the most impactful local opportunities with national/regional support
- Every network to demonstrate c.10% productivity gains via digital diagnostics (by March 25)
- Each ICS will be able to demonstrate productivity benefit from at least one diagnostic pathway in 22-23
- Support all providers below optimal utilisation rate supported to meet optimal rate (by March 23)

Enablers



- Deliver data strategy: close all major data gaps
- Complete evolution of governance/operating model and set up industry/patient advisory groups
- Start work to redesign pricing & commissioning approach for diagnostic services
- Establish horizon scanning function
- Scope Diagnostics@home workstream
- Complete approval of programme business case

Key current areas of focus:

- Accelerating CDC roll out
- Focusing diagnostic resources on reducing cancer and elective waiting lists
- Levelling up direct GP access to diagnostics
- Supporting systems with critical workforce gaps
- Leveraging new technology
- Continuing to improve diagnostic performance and productivity

Diagnosics staff in post March 17 – March 2027

Pillar	Profession	Observed Staff In Post (WTE)						Projected Staff In Post (WTE)					Average Annual Growth 17-22 (%)	Projected Annual Growth 22-27 (%)	Growth Rate Change (%)
		Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25	Mar-26	Mar-27			
Endoscopy	Gastroenterology	1,150	1,235	1,302	1,372	1,456	1,511	1,578	1,645	1,728	1,793	1,850	5.6%	4.1%	-1.5%
Genomics	Clinical Genetics	141	145	146	150	151	147	153	158	164	167	169	0.9%	2.9%	2.0%
	Qualified HCS Bioinformatics	1		7	6	14	16	14	15	15	15	16	74.3%	-0.1%	-74.4%
	> Support to HCS - Bioinformatics	1	1	6	14	28	27	27	27	27	28	28	104.8%	0.6%	-104.1%
	Qualified HCS Genetics	985	1,044	1,084	1,119	1,192	1,289	1,333	1,390	1,454	1,524	1,601	5.5%	4.4%	-1.1%
	> Support to HCS - Genetics	343	351	326	351	402	499	501	504	507	509	515	7.8%	0.6%	-7.2%
Imaging	Clinical Radiology	2,932	3,050	3,155	3,295	3,462	3,590	3,763	3,941	4,108	4,270	4,484	4.1%	4.5%	0.4%
	Nuclear Medicine	51	53	57	60	62	62	62	61	60	60	60	3.9%	-0.6%	-4.5%
	Diagnostic Radiography	14,052	14,555	15,011	15,450	16,114	16,613	16,949	17,512	18,118	18,633	19,120	3.4%	2.9%	-0.6%
	> DR - Assistant Practitioner (S5F)	578	570	599	657	649	689	692	696	700	702	711	3.6%	0.6%	-2.9%
	> Assistant in DR (S9F)	2,891	2,958	3,024	3,201	3,462	3,649	3,666	3,686	3,710	3,720	3,765	4.8%	0.6%	-4.1%
	Qualified HCS Medical Physics	2,895	2,912	3,066	3,174	3,287	3,393	3,440	3,518	3,599	3,684	3,773	3.2%	2.1%	-1.1%
	> Support to HCS - Medical Physics	671	648	696	766	817	799	803	807	813	815	825	3.6%	0.6%	-2.9%
Pathology	Chemical Pathology	114	110	105	108	106	107	108	109	112	118	130	-1.3%	3.9%	5.2%
	Diagnostic Neuropathology	5	5	6	6	4	4	3	3	3	3	3	-3.1%	-7.2%	-4.1%
	Haematology	844	856	872	930	960	1,006	1,025	1,070	1,110	1,145	1,213	3.6%	3.8%	0.3%
	Histopathology	1,180	1,189	1,235	1,248	1,280	1,285	1,314	1,355	1,390	1,420	1,456	1.7%	2.5%	0.8%
	Immunology	75	83	87	80	84	88	89	93	95	98	102	3.2%	3.0%	-0.2%
	Medical Microbiology & Medical Virology	483	495	496	494	503	500	Projections not available					0.7%	N/A	N/A
	Paediatric and Perinatal Pathology	1	1	0	1	1	1	Projections not available					0.0%	N/A	N/A
	Qualified HCS Blood Sciences	7,540	7,583	7,746	7,814	8,039	8,041	8,089	8,129	8,176	8,227	8,284	1.3%	0.6%	-0.7%
	> Support to HCS - Blood Sciences	7,768	7,845	8,061	8,308	8,876	9,114	9,157	9,208	9,267	9,292	9,404	3.2%	0.6%	-2.6%
	Qualified HCS Cellular Sciences	3,119	2,898	2,952	2,845	2,947	2,963	2,914	2,890	2,876	2,870	2,871	-1.0%	-0.6%	0.4%
	> Support to HCS - Cellular Sciences	2,384	2,378	2,491	2,442	2,484	2,464	2,475	2,489	2,505	2,512	2,542	0.7%	0.6%	0.0%
	Qualified HCS Infection Sciences	2,917	3,873	3,775	3,799	4,110	4,240	4,237	4,247	4,262	4,281	4,305	7.8%	0.3%	-7.5%
	> Support to HCS - Infection Sciences	1,748	2,239	2,208	2,318	3,426	3,295	3,311	3,329	3,351	3,360	3,400	13.5%	0.6%	-12.9%
Phys Meas	Audio Vestibular Medicine	38	37	39	37	39	39	40	40	41	43	45	0.3%	3.1%	2.7%
	Clinical Neurophysiology	105	107	103	104	109	106	112	115	122	126	131	0.2%	4.4%	4.2%
	Qualified HCS CVRS Sciences	3,501	3,603	3,737	3,891	4,085	4,226	4,287	4,360	4,434	4,509	4,586	3.8%	1.6%	-2.2%
	> Support to HCS - CVRS Sciences	1,317	1,390	1,415	1,483	1,534	1,579	1,586	1,595	1,605	1,610	1,629	3.7%	0.6%	-3.1%
	Qualified HCS GU Sciences	93	97	90	79	82	86	84	84	84	85	86	-1.7%	0.1%	1.8%
	> Support to HCS - GU Sciences	71	72	65	66	77	66	66	67	67	67	68	-1.4%	0.6%	2.1%
	Qualified HCS Neurosensory Sciences	2,512	2,532	2,596	2,646	2,750	2,828	2,860	2,902	2,947	2,996	3,048	2.4%	1.5%	-0.9%
	> Support to HCS - Neurosensory Sciences	1,100	1,127	1,149	1,212	1,259	1,303	1,310	1,317	1,325	1,329	1,345	3.4%	0.6%	-2.8%
General	Clinical & Medical Oncology	1,098	1,153	1,196	1,246	1,301	1,354	1,429	1,507	1,589	1,658	1,724	4.3%	5.0%	0.7%
	Qualified HCS Clinical Engineering	2,184	2,185	2,224	2,255	2,222	2,271	2,297	2,327	2,360	2,394	2,432	0.8%	1.4%	0.6%
	> Support to HCS - Clinical Engineering	950	915	927	966	1,013	990	994	1,000	1,006	1,009	1,021	0.8%	0.6%	-0.2%
	Nursing (from N&M)*	5,682	5,735	6,061	6,496	6,927	7,286	7,426	7,680	7,912	8,130	8,335	5.1%	2.7%	-2.4%
	Support to Nursing & Midwifery*	2,101	2,204	2,207	2,370	2,491	2,445	2,472	2,498	2,524	2,549	2,574	3.1%	1.0%	-2.0%
	Admin & Clerical*	8,330	8,402	8,716	9,249	10,053	10,392	10,642	10,899	11,162	11,433	11,711	4.5%	2.4%	-2.1%

Key:
Medical Consultants
Clinical
Admin & Clerical

*Tertiary Area of Work codes applied - not necessarily reflective of absolute numbers, useful for trend monitoring

Data sources:

- Observed SIP – ESR via HEE (HEFT & HERMES)
- SIP projections – HEE (Flow Tools)

System initiatives to support the diagnostics workforce in 2023/24 and beyond

More people . . .

Recruitment / supply

Improving our ability to attract and source staff, especially into the most critical roles/gaps

Retention

Addressing the levers and drivers of retention, including specifics for key staff cohorts (e.g., newly joining HCSWs, pensions for 50+)

Attendance

Addressing the drivers and root causes of sickness absence, including stress/anxiety and policy levers (e.g., Long Covid)

Reward / T&Cs

Aligning incentives to encourage staff to work more flexibly and in ways that meet changing patient demand

Outsourcing

Exploring all options to access workforce capacity beyond the NHS, such as Independent Sector and non-NHS employed people

. . . Working differently . . .

Training / skills

Investing in upskilling the existing workforce rapidly as well as the longer-term training pipeline managed by HEE

Standards / skills mix

Changing and matching skills mix to patient needs (e.g., theatre staffing, anaesthetic cover), including fully using existing skills

Pathways / practice

Redesigning end-to-end pathways to simplify things for patients and apply a competency-based model to workforce redesign

Digital / technology

Investing in and leveraging digital technology to enable changes in models of care and workforce redesign (e.g., Dx, virtual wards)

Deployment

Deploying our staff more flexibly in response to needs, including across organisational boundaries within ICSs

. . . in a compassionate, inclusive culture

Culture

Focusing on staff engagement and morale as a driver and enabler of frontline innovation and productive working

Leadership

Equipping leaders to bring about these changes, promoting a compassionate and inclusive culture and a hopeful narrative

What we've achieved

Community Diagnostic Centres

- Approved 143 CDCs and built 92 operational sites (at this time), delivering over 3m tests.
- Built 3 CDCs alongside university campuses for health innovation or training centres.
- Train and recruit staff. Ensure we value and understand the skills and expertise of who does what and why, to deliver timely diagnostics for the long term.

Case Study 1

- Increasing Capacity:** Expanding and developing our workforce with HCS apprenticeships, George Eliot Hospital
- Vacant B5 Respiratory Physiologist. Unable to fill after 3 attempts, lack of funding for additional recruitment and no PTP students.
 - Healthcare science apprenticeship funding available.
 - Changed the B5 position to recruit 1x sleep science apprentice and 1x cardiorespiratory apprentice.

Case Study 2

Workforce optimisation: Importance of the new Pathway Coordinator role, Queen Victoria Hospital CDC

- Main function is to coordinate the patients through their Breathlessness Pathway.
- Role allowed pathway functionality, flexibility & rapidity. Plus, diagnostic success.

Case Study 3

Training academies: Community diagnostic training academy, Clacton

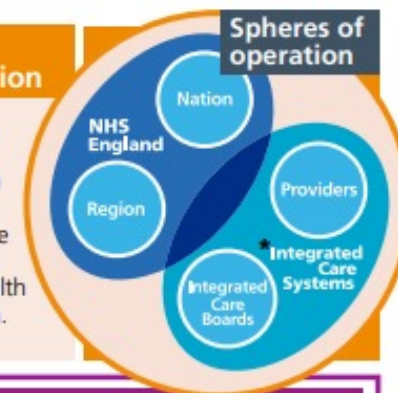
- 12 weeks, recruiting into entry level roles.
- Aimed at re-skilling, up-skilling and re-training job seekers, career changers and school leavers within Diagnostic departments - endoscopy, pathology, cardiorespiratory and medical imaging.
- 222 started / 73% retention rate.

The NHS England operating framework: the foundations

1 Why we are here To lead the NHS in England to deliver high-quality services for all

2 What we do to add value

Set direction	Allocate resources	Ensure accountability	Support and develop people	Mobilise expert networks	Enable improvement	Deliver services	Drive transformation
<ul style="list-style-type: none"> Policy and strategy Relationship with government Agree mandate Set annual planning guidance and priorities Provide leadership. 	<ul style="list-style-type: none"> Plan workforce strategy with partners Workforce innovation Financial structures and incentives Financial stewardship of NHS Financial allocation. 	<ul style="list-style-type: none"> Accountability Standards Goals and expectations Monitoring and assurance Regulation Health protection. 	<ul style="list-style-type: none"> Leadership culture and development Culture and behaviours Inclusion and diversity Training and education. 	<ul style="list-style-type: none"> Expert knowledge and consensus Outcomes Benchmarks Best practices New products and services National stakeholders System development. 	<ul style="list-style-type: none"> Support improvement Deploy improvement support Intensive support Regulatory intervention. 	<ul style="list-style-type: none"> Digital Data and analytics Commercial & procurement support Direct commissioning. 	<ul style="list-style-type: none"> Medium-term priorities Transformation enablers Partner with life sciences Population health and prevention.



3 How we do it

Leadership behaviours	Working to improve lives	We are inclusive - everyone counts	Working as one team	Getting things done	Learning and improving	Compassion and respect
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Accountabilities and responsibilities

Providers	ICBs	NHS England
<ul style="list-style-type: none"> Statutory responsibilities for safe, effective, efficient, high-quality services Effective system working and delivery of their contribution to ICS strategies and plans Financial performance and requirements set out in NHS planning guidance, including quality and access Compliance with provider licence, Care Quality Commission standards Reducing unwarranted variation, especially through Provider Collaboratives. 	<ul style="list-style-type: none"> Effective system leadership which balances immediate and longer term priorities Overseeing NHS delivery of strategies and plans, ensuring progress toward and achievement of objectives for annual planning and Long Term Plan priorities. Overseeing the budget for NHS services in their system Ensuring delivery of the ICB core statutory function of arranging health services for its population and compliance with other statutory duties Work with local authorities to act as the stewards of local population health outcomes and equity. 	<ul style="list-style-type: none"> Use input from ICBs, providers and their partners to agree the mandate for the NHS with government and secure required resources National NHS performance and transformation as set out in NHS mandate and constitution Contribution to effective system working and delivery, including statutory intervention if required Foster relationship and alignment with government Stewards of the NHS Set strategy for the future Foster productive relationships with partners and major stakeholders.

4 What we need to achieve

Medium term objectives	STOP avoidable illness and intervene early	SHIFT to digital and community	SHARE the best	STRENGTHEN the hands of the people we serve	SUPPORT our local partners
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- Outcomes**
- Longer healthy life expectancy
 - Excellent quality, safety and outcomes
 - Excellent access and experience
 - Equity of healthy life expectancy, quality, safety, outcomes, access and experience
 - Value for taxpayers' money
 - Support to society, economy and environment

* Partnerships between ICBs, NHS providers, local authorities and other partner agencies are now a core component of the NHS's operating framework and ways of working. NHS England will support NHS leaders to embed partnership working locally, and we will work with partners to support wider ICS development.



Thank you



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