

Volunteer Forum - IPEM Science Leadership Strategy

26 May 2022

Welcome

Introduction

Identifying the big challenges that will affect workforce, directly and indirectly

IPEM 2025:

- **Leadership** – championing professional knowledge and innovation; identifying key challenges ahead
- **Professional development** – ensuring IPEM activities support members in the workplace and enable them to engage at the forefront of their specialisms
- **Community** – utilizing networks; collaborating; engaging across boundaries



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GRAND CHALLENGES

Climate change

Workforce

Safety and security

EMERGING TRENDS

Alignment and collaboration

- Different disciplines and departments providing a seamless patient-centred pathway
- Working with outside specialisms and organisations to upskill, reskill and fill gaps
- Promoting understanding and discussion between academia, industry and NHS to ensure clear routes to adoption and successful clinical translation

Smart digitisation

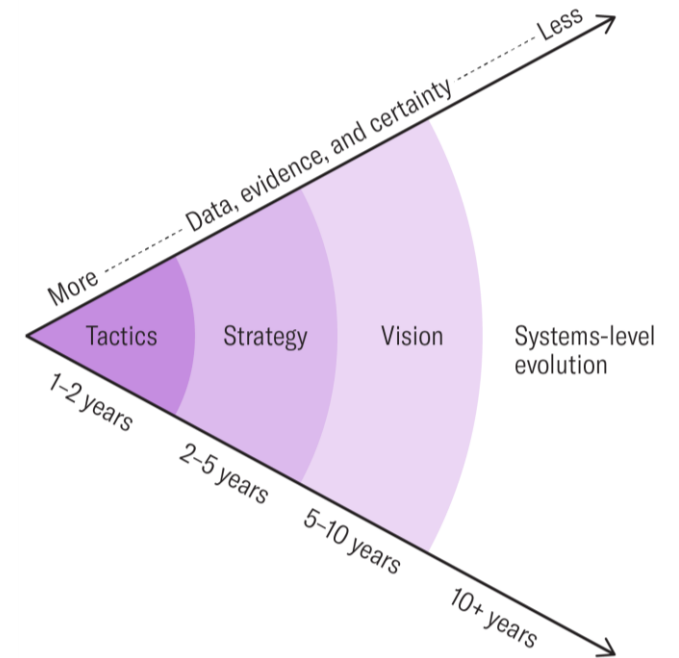
- Increased data prevalence, richness and capability from home and health settings
- The rise of AI as an enabler of workflow productivity and innovative technologies, and as a step into the regulatory unknown
- Modular capabilities offering flexibility for expansion and development to keep up to date.

Personalised health

- Empowering patients with their own health, while maintaining quality and equality of care
- Increased individual and population-scale data from wearables, sensing, biomarkers and -omics
- Combining individual data with population data and powerful computing drive towards preventative care

Introduction

- Methods and goals
 - Horizon scanning and forecasting
 - Identifying threats and opportunities
 - Developing into actions with office colleagues and members
 - Focusing activity, creating a strong unified voice and sense of purpose
- Review
 - Triannual SRIC meetings
 - Annual AGM
 - Regular touchpoints through SIGs and IPEM events (e.g. MPEC or special workshops)



Source: Amy Webb, Future Today Institute

Via Harvard Business Review (2019) bit.ly/3A9isgr



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Grand Challenges

Wide-reaching external factors affecting workforce, workplace and society

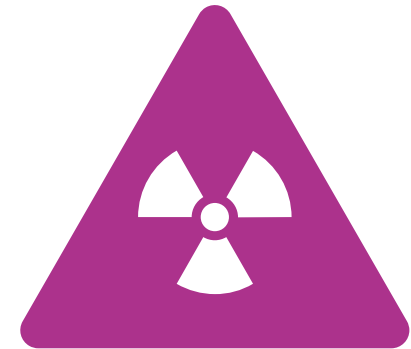
Climate change



Workforce & staffing



Safety and security



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Grand Challenges **Climate & the Environment**

- Greener NHS
 - Repair or replace?
 - Offset, reduce or remove?
- Decarbonization of healthcare sciences and research
- Shifts in diseases and disease patterns
- Planning and preparing for outage or disaster



Grand Challenges **Workforce & Staffing**

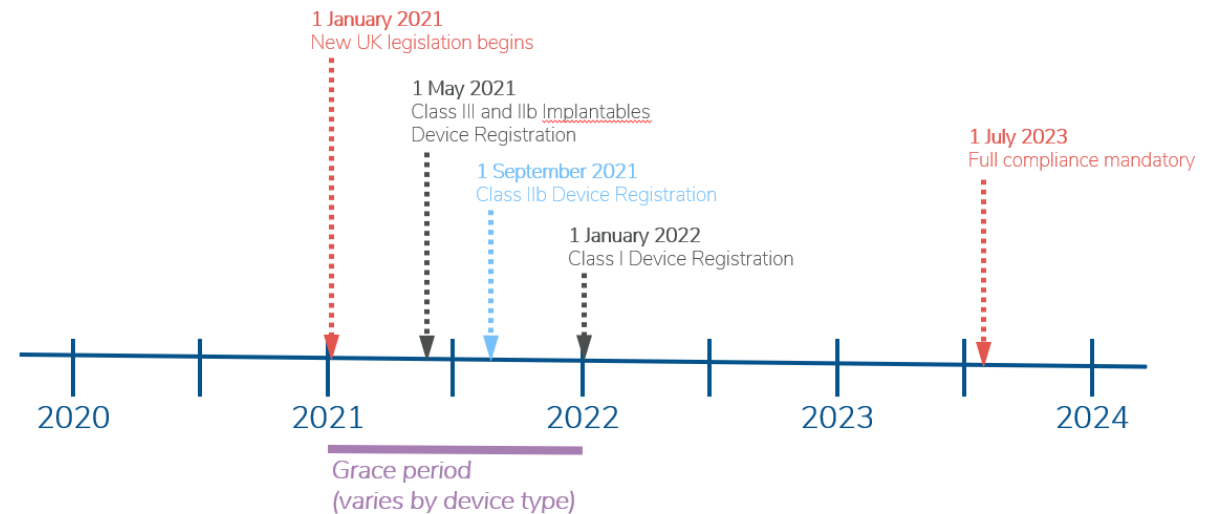
- Capitalize on current govt and public interest in healthcare science
- Professional development vs CPD
- Upskilling and reskilling
 - Digital and AI literacy – digital skills gap
 - Managerial and business skills
 - ‘Microlearning’
- Addressing chronic and acute shortages
- New roles, shifts in roles, new working patterns and partnerships

Grand Challenges **Safety & Security**

- Cybersecurity
- Regulating medical devices, software, medicines & practices
- Regulation and ethics of AI
- Resource scarcity
- *Climate resilience*
- Emerging longitudinal data

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UK Medical Device Transition Timeline



Emerging Trends

Technologies and practices that may be harnessed to address challenges

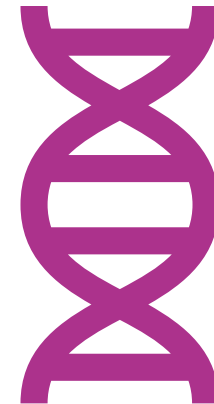
**Alignment &
collaboration**



Smart digitization



Personalized health



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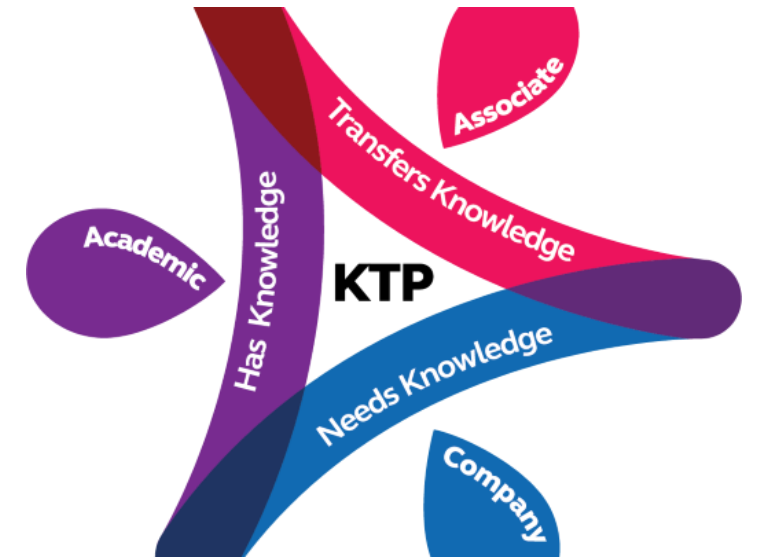


Emerging Trends **Alignment & Collaboration**

- Possibility for joint appointments
- KTPs and incubators
- Flexibility to pursue specific research questions

Within IPEM:

- Utilising existing networks actively and effectively
- Proactively & responsively forming new networks
- Sharing best practice
- Being a trusted, reputable and leading voice within IPEM (member networks) and externally (publications and outputs)
- Identifying emerging topics – starting conversations and initiating research
- Offering points of access between industry, academia and NHS



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Emerging Trends **Smart Digitization**

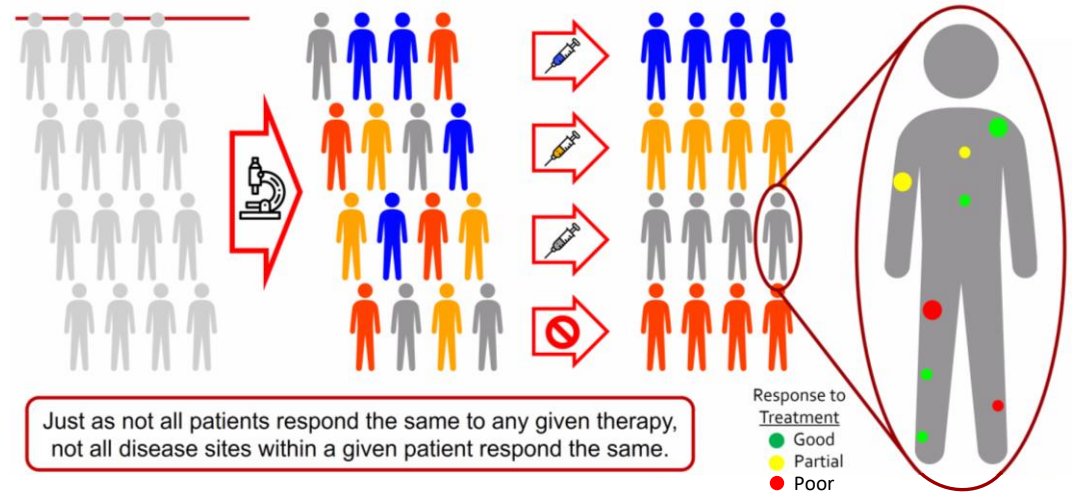
- True digital transformation needs interoperability from the start
- Collaboration and teamwork – silos and limited nodes create bottlenecks
- Utilizing IoT devices, consumer health devices and apps, remote sensors
- AI, machine learning and quantum computing
 - (1) Automation, streamlining Not yet close to anticipated capability or economy
 - (2) Accelerating monotonous work Potential step-change in compute power
 - (3) Early identification
 - (4) Alongside people – ultimately exceeding capability?
- VR/AR/XR – experience, enrichment, training, explanation

Emerging Trends **Personalized Health**

- Allows patients to take control of their own health
 - *(central tenet of government/NHS rhetoric and of consumer health industry)*
- Inter- and intra-patient variability
- Unprecedented levels of data gathering, by individuals and at population levels
- -omics and biomarkers
 - Predict disease well in advance
 - Radiation genomics (variability of response)
 - Imaging genomics (correlating cellular genomics and tissue-scale imaging)

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But there is a BIG problem...



Activities

- Reactive → proactive
- Identifying:
 - High-impact areas
 - Skills and training gaps
 - Opportunities for innovation
- Introducing futures and strategic thinking

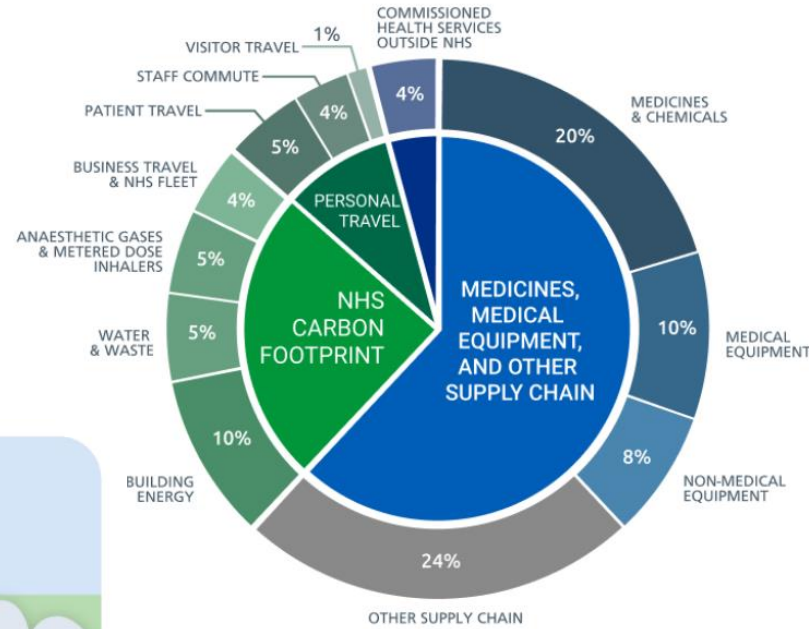
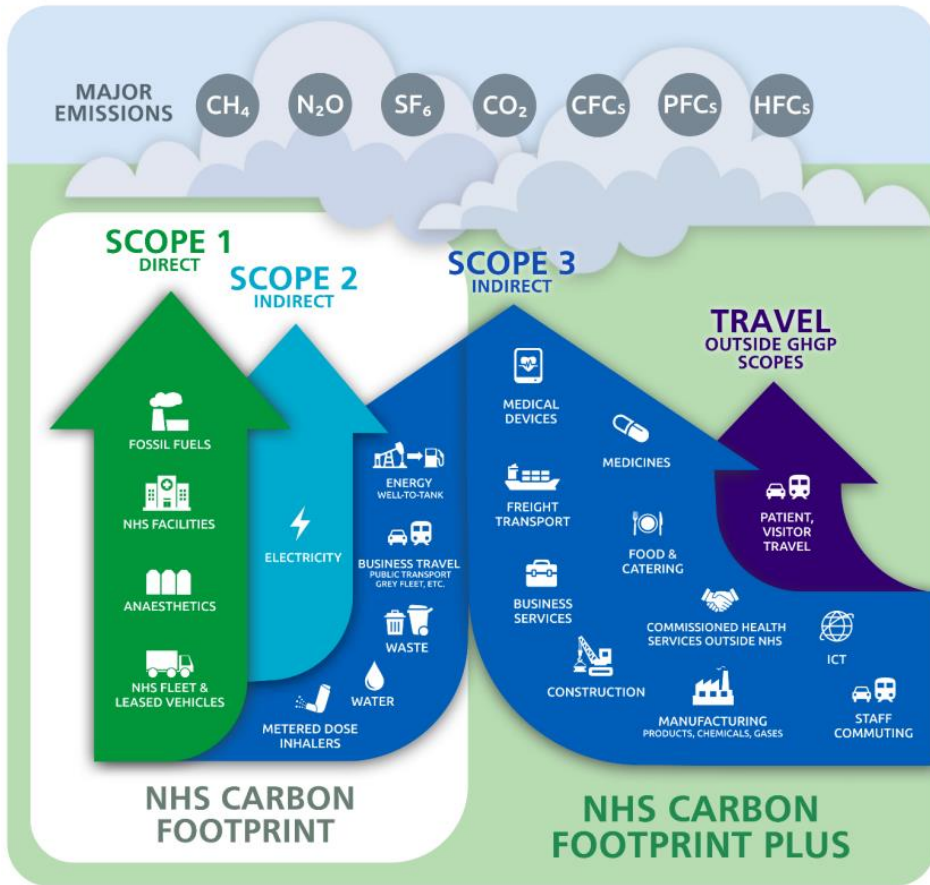
Questions



- Subject and discipline-specific response
- Link with action plans and activities

- Review document and plan
- Ongoing horizon scan review
- Identifying trends, players and opportunities

- Before publication
- After publication (focusing action plan)



NHS ACTIVITY TYPE

	Ambulance	Community	Mental Health	Acute	Primary Care	Non-clinical support activities
NHS CARBON FOOTPRINT	Building Energy	•	•	•	•	•
	Waste	•	•	•	•	•
	Water	•	•	•	•	•
	Anaesthetic gases	•	•	•	•	•
	Metered Dose Inhalers	•	•	•	•	•
	Business Travel & NHS Fleet	•	•	•	•	•
MEDICINES, MEDICAL EQUIPMENT AND OTHER SUPPLY CHAIN	Medicines & Chemicals	•	•	•	•	•
	Medical Equipment	•	•	•	•	•
	Non-Medical Equipment	•	•	•	•	•
	Business Services	•	•	•	•	•
	Construction & Freight	•	•	•	•	•
PERSONAL TRAVEL	Food & Catering	•	•	•	•	•
	Patient & Visitor Travel	•	•	•	•	•
Commissioned Health Services Outside NHS	Staff Commuting	•	•	•	•	•
	Commissioned Health Services Outside NHS	•	•	•	•	•

**UNITING THE UK'S HEALTH DATA
TO ENABLE DISCOVERIES THAT
IMPROVE PEOPLE'S LIVES**



Public, Patients & Practitioners

