



UK Health
Security
Agency

UKHSA Presents

Radiation protection: Research, response and real life

Thursday 23 October 2025

[#UKHSAPresents](#)

Session co-chairs:

Simon Bouffler, Deputy Director of Radiation Protection Sciences, UKHSA
Liz Ainsbury, Head of Radiation Effects and Radiation Dosimetry
Departments, UKHSA

Agenda:

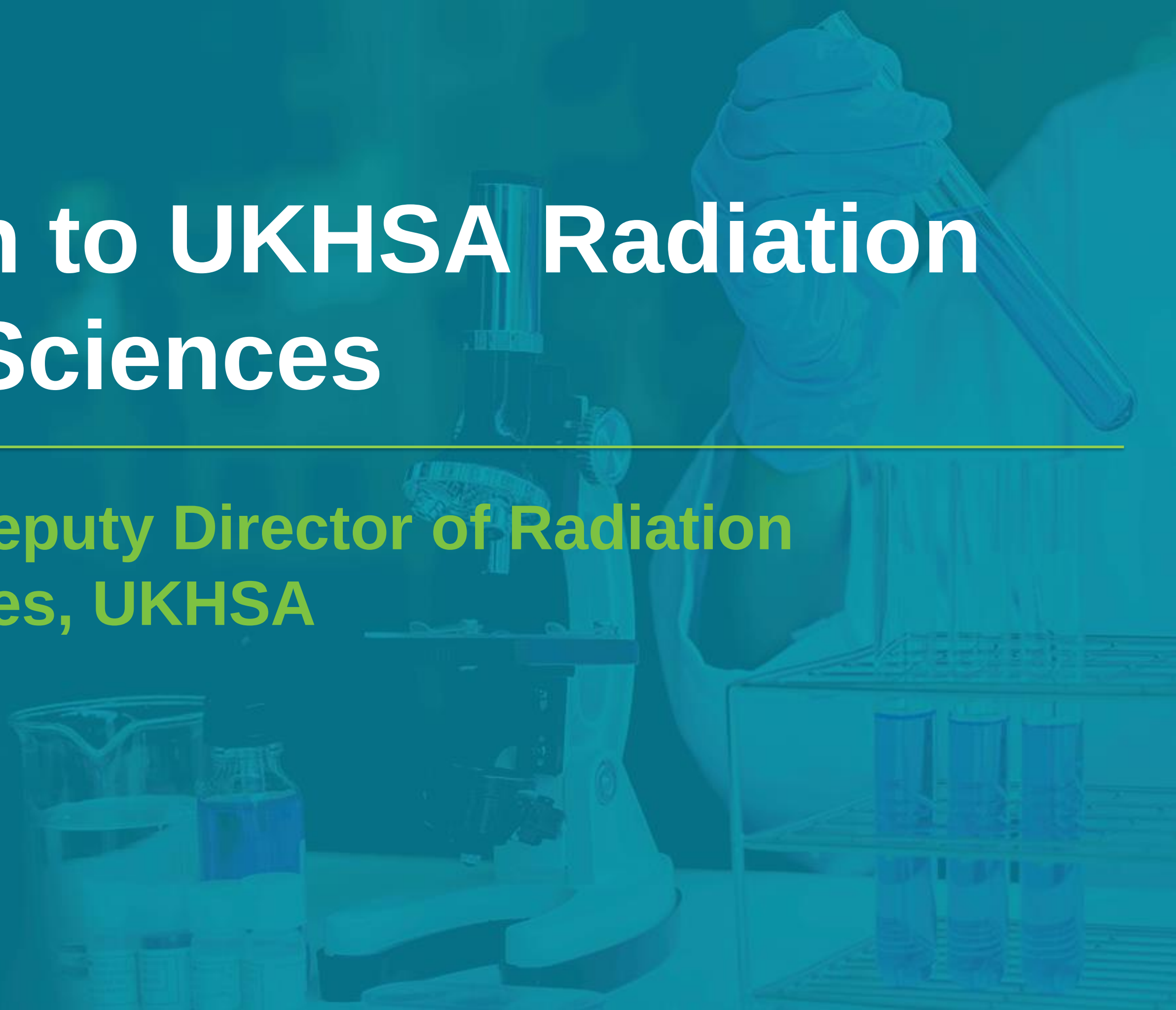
- **Introduction to UKHSA Radiation Protection Sciences**
Simon Bouffler, UKHSA
- **'Living with radiation' and European Radiation Protection Week 2025**
Simon Bouffler, UKHSA
- **NIHR Health Protection Research Unit (HPRU) on Radiation Threats and Hazards**
Liz Ainsbury; UKHSA, Matt Simpson; UKHSA, Lauren Ashworth-Donn; UKHSA, Oluwaseyi (Seyi) Arowosegbe; Imperial College London, Sean Gettings; UKHSA
- **Q&A and discussion**

UKHSA Presents: Radiation protection: Research, response and real life

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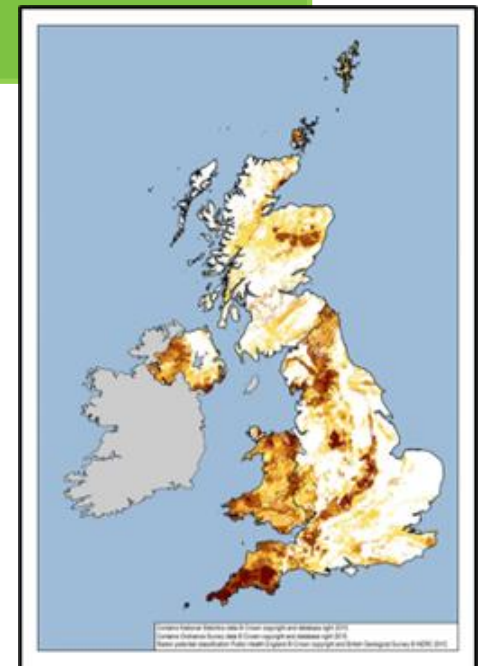
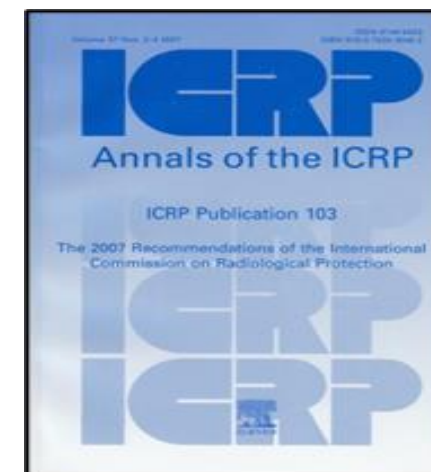
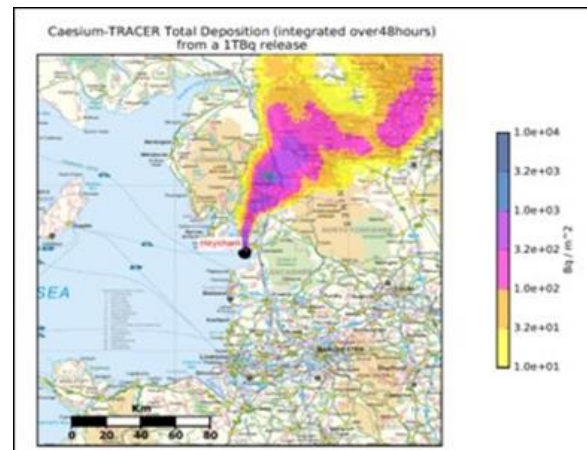
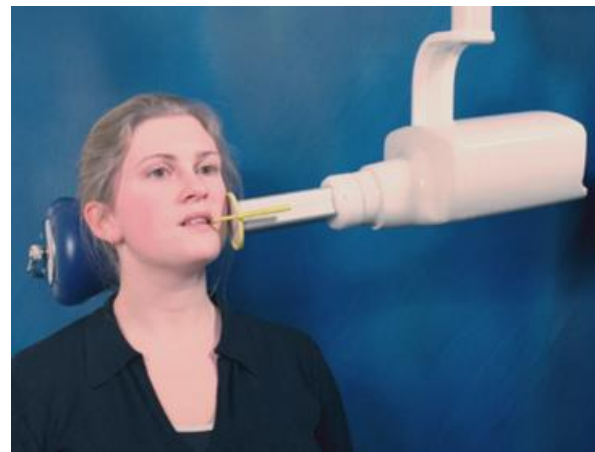
Introduction to UKHSA Radiation Protection Sciences

Simon Bouffler, Deputy Director of Radiation Protection Sciences, UKHSA



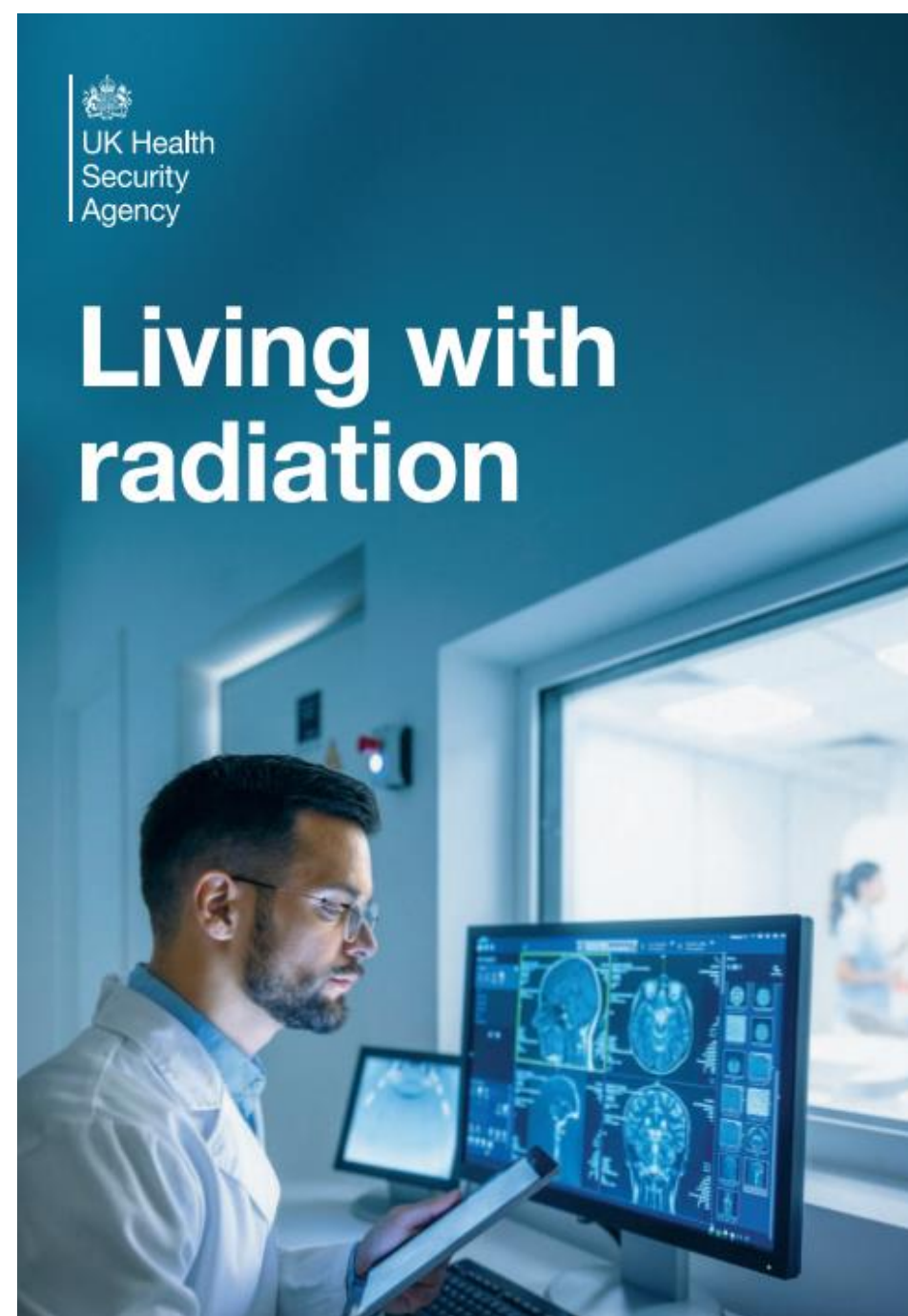
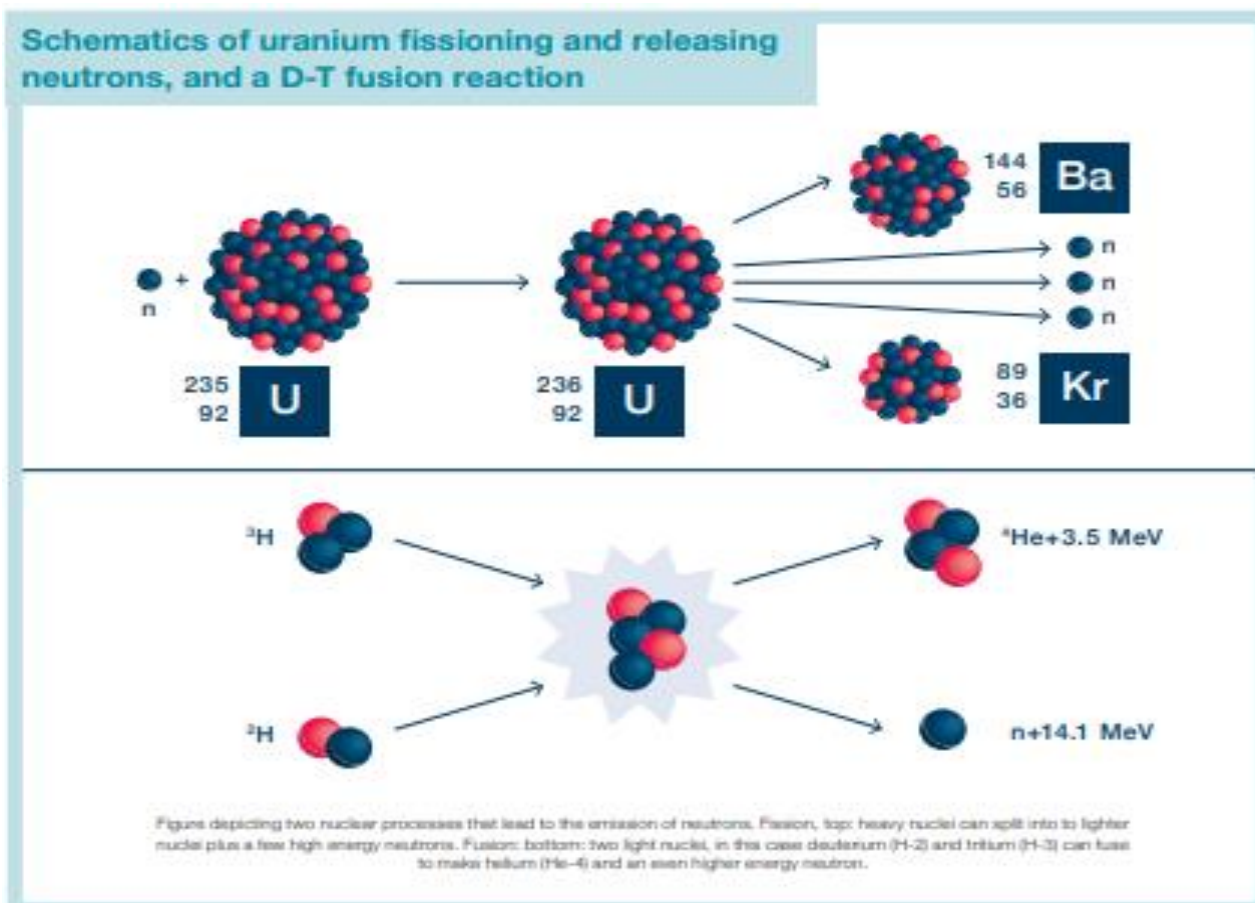
Radiation Protection Sciences at UKHSA

- RPS is a Division of the wider Radiation, Chemical, Climate and Environmental Hazards (RCCE) Directorate of UKHSA's Science Group
- The Division has a key Category 1 responder role in providing specialist support to radiological and nuclear emergency incidents, these are thankfully rare
- Most of the time we carry out research, provide advice (national and international) and services to keep the public, patients and workers safe from radiation health risks (covering ionising and non-ionising radiations)



Living with radiation

[Learn more here](#)



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Living with radiation

Shielding of alpha, beta, gamma/X-ray and neutron radiation schematically

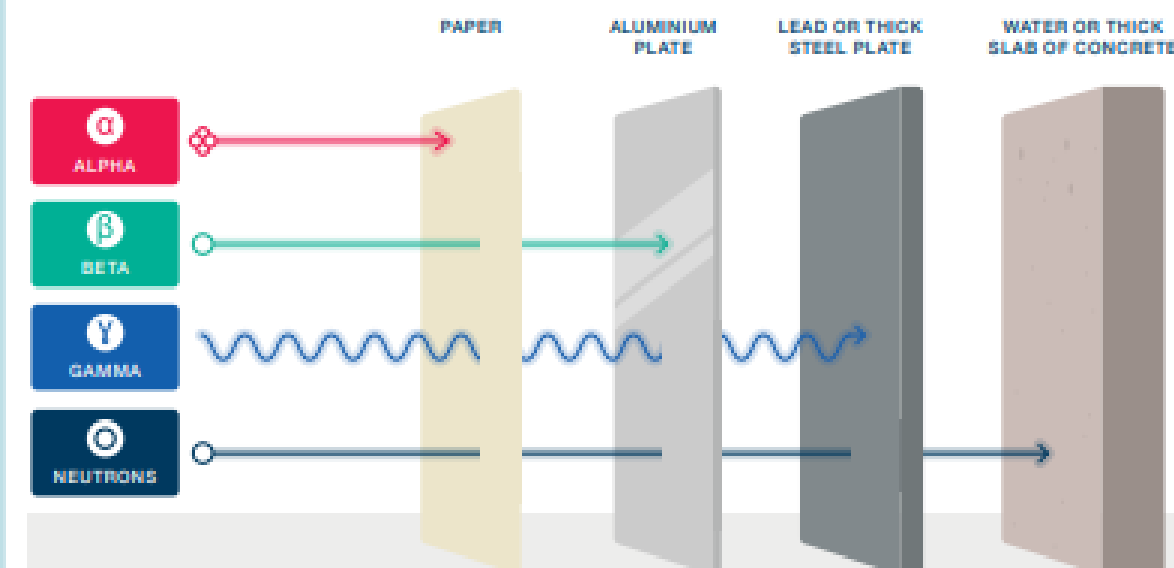


Diagram showing shielding of alpha, beta, gamma/X-ray and neutron radiation schematically.

European Radiation Protection Week 2025



- An annual scientific event, this year hosted by UKHSA in London
- 250 attendees from 40 countries
- Diverse and engaging scientific programme



NIHR Health Protection Research Unit (HPRU) on Radiation Threats and Hazards

Liz Ainsbury, Head of Radiation Effects Department, and
Radiation Dosimetry Departments UKHSA



IMPERIAL

NIHR | Health Protection Research Unit in
Chemical and Radiation Threats and
Hazards at Imperial College London



NIHR HPRU in Radiation Threats and Hazards

Major impacts include:

- Led on new European guidelines on radiation protection in **endovascular surgery**
- Updated analyses of childhood **leukaemia/lymphoma** risk near nuclear installations
- Development of **new guidance** on human decontamination for highly toxic agents, with the Home Office
- Start-up of **Cambiotics** - a novel treatment for PFAS 'forever chemicals'
- **NIHR Impact Prize Submission** - *Teen Minds and Mobile Phones: A Research Partnership with London secondary school students*



Clinical Practice Guidelines

Eur J Vasc Endovasc Surg (2023) 65, 171–222



CLINICAL PRACTICE GUIDELINE DOCUMENT

Editor's Choice – European Society for Vascular Surgery (ESVS) 2023 Clinical Practice Guidelines on Radiation Safety[☆]

Bijan Modarai [✉], Stéphan Haulon [✉], Elizabeth Ainsbury [✉], Dittmar Böckler [✉], Eliseo Vano-Carruana [✉], Joseph Dawson [✉], Mark Farber [✉], Isabelle Van Herzele [✉], Adrien Hertault [✉], Joost van Herwaarden [✉], Ashish Patel [✉], Anders Wanhainen [✉], Salome Weiss [✉]

ESVS Guidelines Committee [✉], Frederico Bastos Gonçalves, Martin Björck, Nabil Chakfé, Gert J. de Borst, Raphaël Coscas, Nuno V. Dias, Florian Dick, Robert J. Hinchliffe, Stavros K. Kakkos, Igor B. Koncar, Philippe Kolh, Jes S. Lindholt, Santi Trimarchi, Riikka Tulamo, Christopher P. Twine, Frank Vermassen

Document Reviewers [✉], Klaus Bacher, Elias Brountzos, Fabrizio Fanelli, Liliana A. Fidalgo Domingos, Mauro Gargiulo, Kevin Mani, Tara M. Mastracci, Blandine Maurel, Robert A. Morgan, Peter Schneider



Cambiotics

Precision probiotics

Biotechnology Research · Copenhagen, Capital Region of Denmark ·

Priorities

Risks associated with use of ionising radiation

Response to radiation incidents

Effects of electromagnetic fields

Light exposure and health

Ionising radiation

Non-ionising radiation

Themes

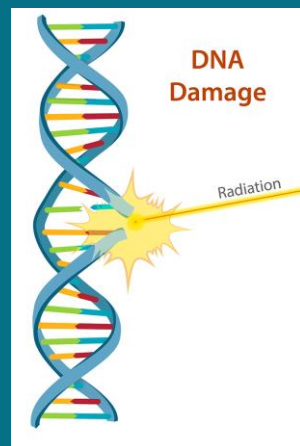
Theme I: Long-term risks associated with ionising radiation

Theme II: Mechanisms and biomarkers linking ionising radiation to health effects

Theme III: Radiation Releases: Accidents and incidents

Theme IV: Effects of non-ionising radiation exposure and health

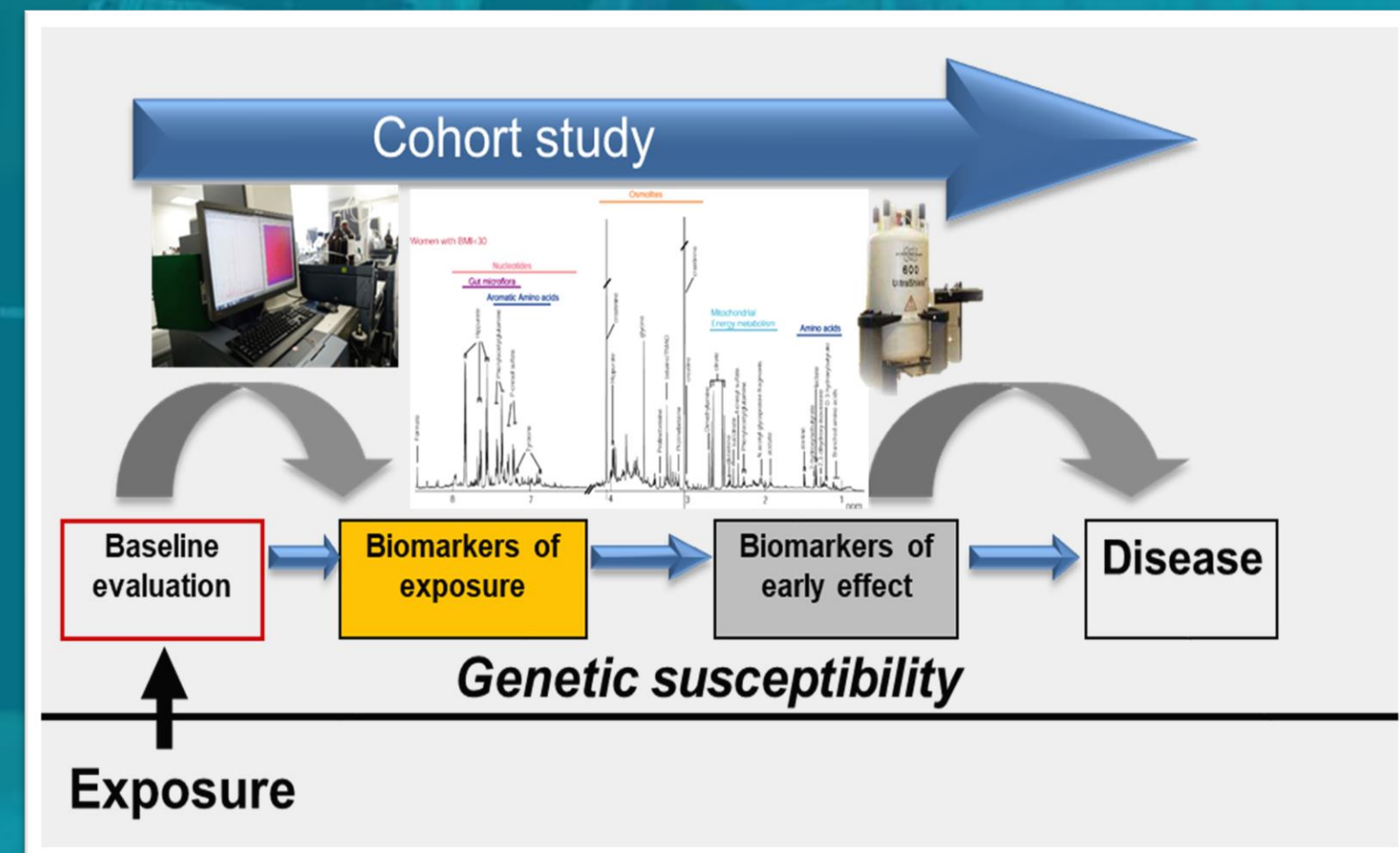
Ionising Radiation



Non-ionising Radiation

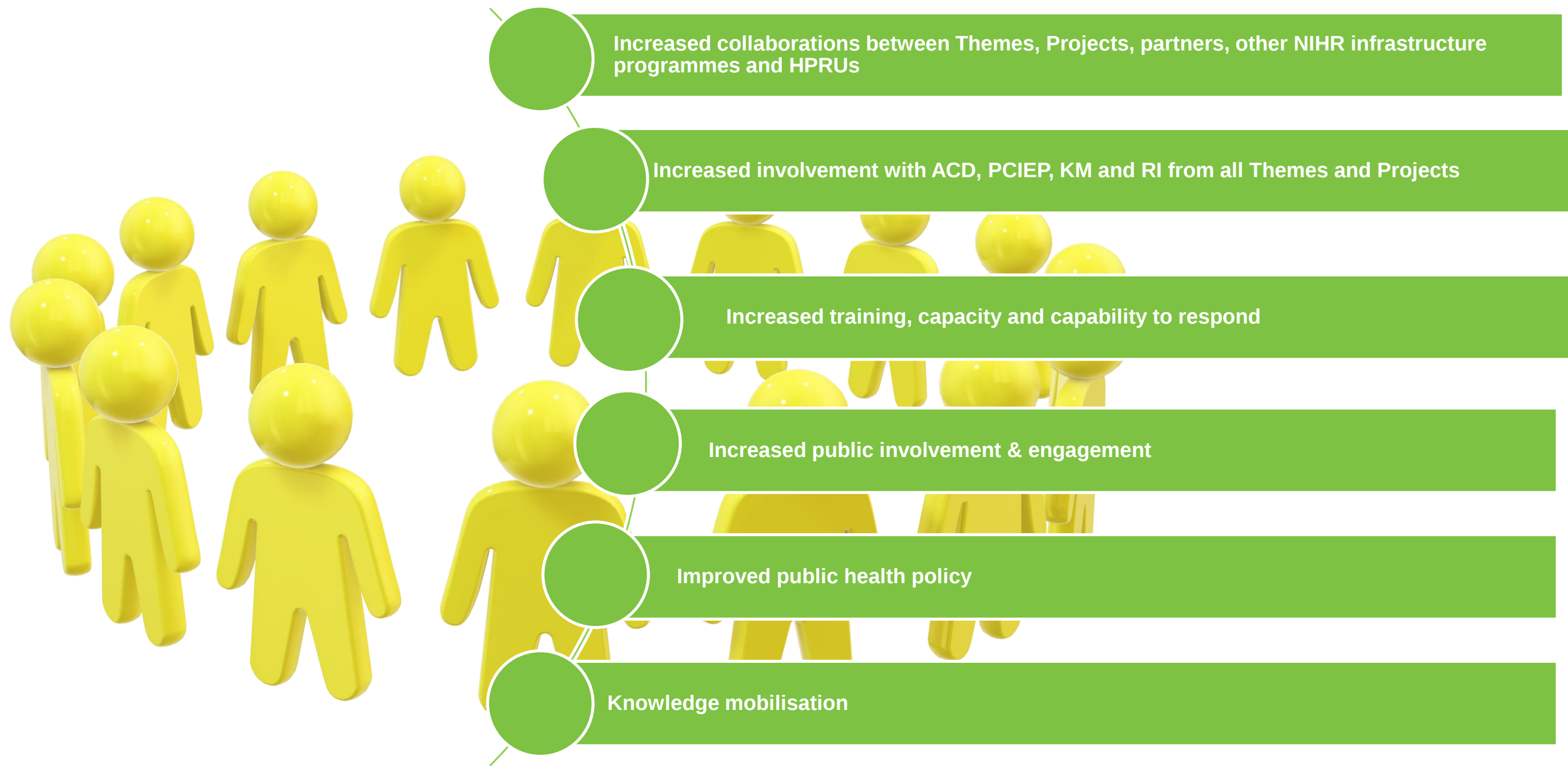


Cohorts, Biomarkers, Mechanisms, Policy

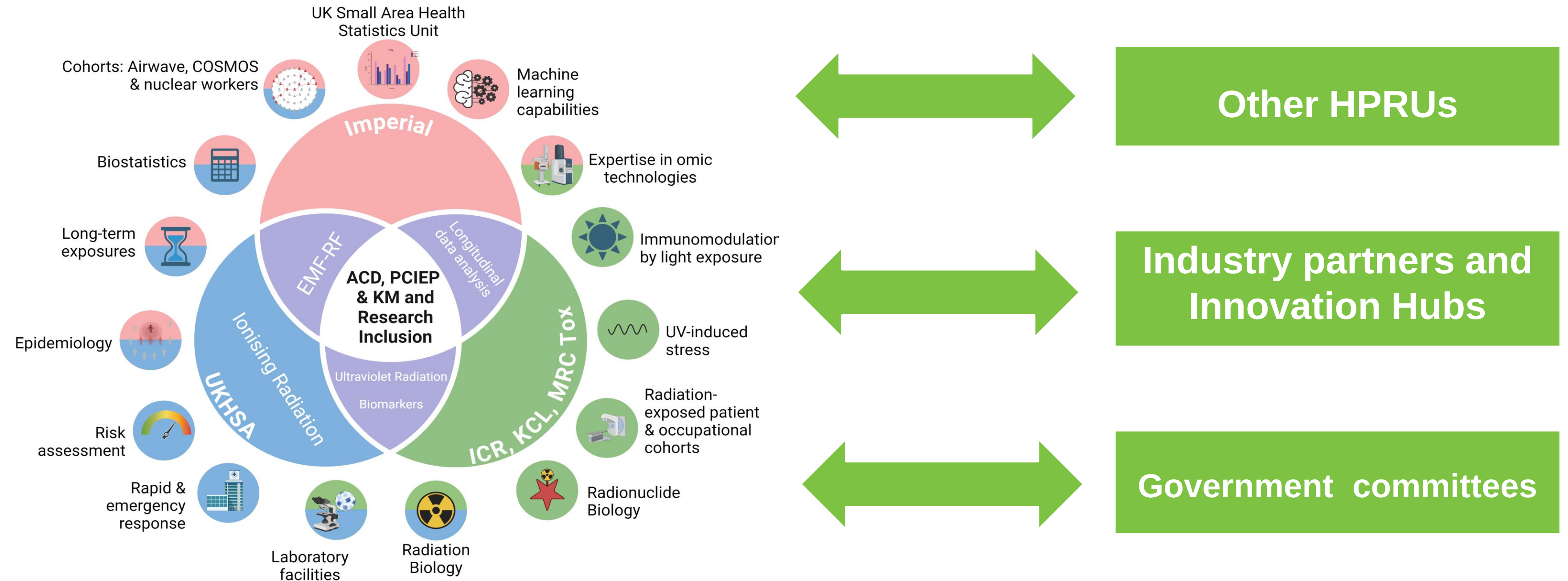


NIHR HPRU in radiation threats and hazards

Expectations: Outputs & outcomes



Our unique capabilities



Radiation Monitoring Unit (RMU)

**Matt Simpson, Group Leader, Internal Dosimetry,
UKHSA**



Monitoring the public after a radiation release



Working with other responders, UKHSA will lead on the technical process of monitoring members of the public



We will work with the local authority and other responders to reduce the short- and long-term risks from the radiological hazard



Triage monitoring, decontamination, reassurance



Methods follow International best practice



Stages

Stage 1: walking through a portal



Stage 2: checking with handheld

Decontamination if needed



Stage 3: Internal contamination checks



Stage 4: Urine sample



Stages

- Data assessed by UKHSA experts and then a dose provided to the NHS
- Urine sample assessed as confirmation
- Further long-term monitoring agreed between UKHSA and NHS
- The overall aim is to reduce the harm to the public from the potential contamination, or reduce the anxiety of being contaminated



World Health
Organization

ICRP

INTERNATIONAL COMMISSION ON
RADIOLOGICAL PROTECTION

NHS



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Radiation incident emergency response:

Long-term follow-up - Population Health Monitoring post-radiation incident

Lauren Ashworth-Donn, Junior Biodosimetrist, Cytogenetics group, UKHSA



Post- Radiation Accident or Incident

What will we do?

Prepare

Be ready for, and prevent, future health security hazards

Respond

Save lives and reduce harm through effective health security response

Build

Build the UK's health security capacity

- ✓ Improve communication strategies post-incident
- ✓ Health and wellbeing follow-up for exposed and non-exposed populations
- ✓ Bridge the gap in public knowledge of radiation
- ✓ Strengthen UK Emergency Response plans and preparedness

Radiation Emergency Preparedness Services

UK Health Security Agency plays a major role in assisting the UK response to any radiation or nuclear emergency. In the event of such an emergency there would be many demands on UKHSA for information, advice and monitoring. Preparations are made by developing, maintaining and exercising arrangements for responding. Our Radiation Emergency Preparedness Service provides a range of radiation emergency related consultancy, training and research and development services to government, industry and others.

UKHSA Radiation Emergency Preparedness Service:

- Contributes to national plans for radiation and nuclear emergencies.
- Maintains and develops UKHSA's assistance to government departments and others in relation to planning for, and responding to, radiation and nuclear emergencies.
- Provides support to government departments and other national and local agencies in preparing, conducting, participating in, and learning lessons from, emergency exercises.
- Maintains and develop UKHSA's own emergency plan and associated facilities for responding to radiation and nuclear emergencies.
- Participates in research and development related to facilities, techniques and studies to support radiation emergency planning and response.
- Maintains the National Arrangements for Incidents involving Radioactivity (NAIR).
- Provides and participate in a range of training courses for staff of organisations with a role to play in radiation and nuclear emergencies.
- Participates in nuclear emergency exercises and contribute to government reviews of emergency arrangements following terrorist attacks.

Post- radiation Accident or Incident

How will we do it?

- ✓ High level systematic review of current UK Radiation Emergency Response Plans
- ✓ Generate evidence to guide future policy, preparedness and response
- ✓ Develop **new protocols and communication strategies**
- ✓ Public, patient and stakeholder **workshop(s)**





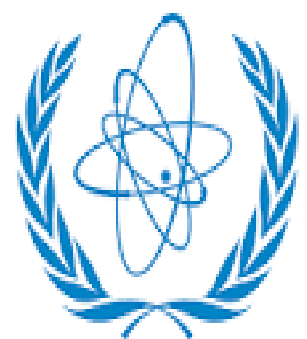
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Stakeholder Engagement

lauren.ashworth-donn@ukhsa.gov.uk



World Health
Organization



IAEA

International Atomic Energy Agency



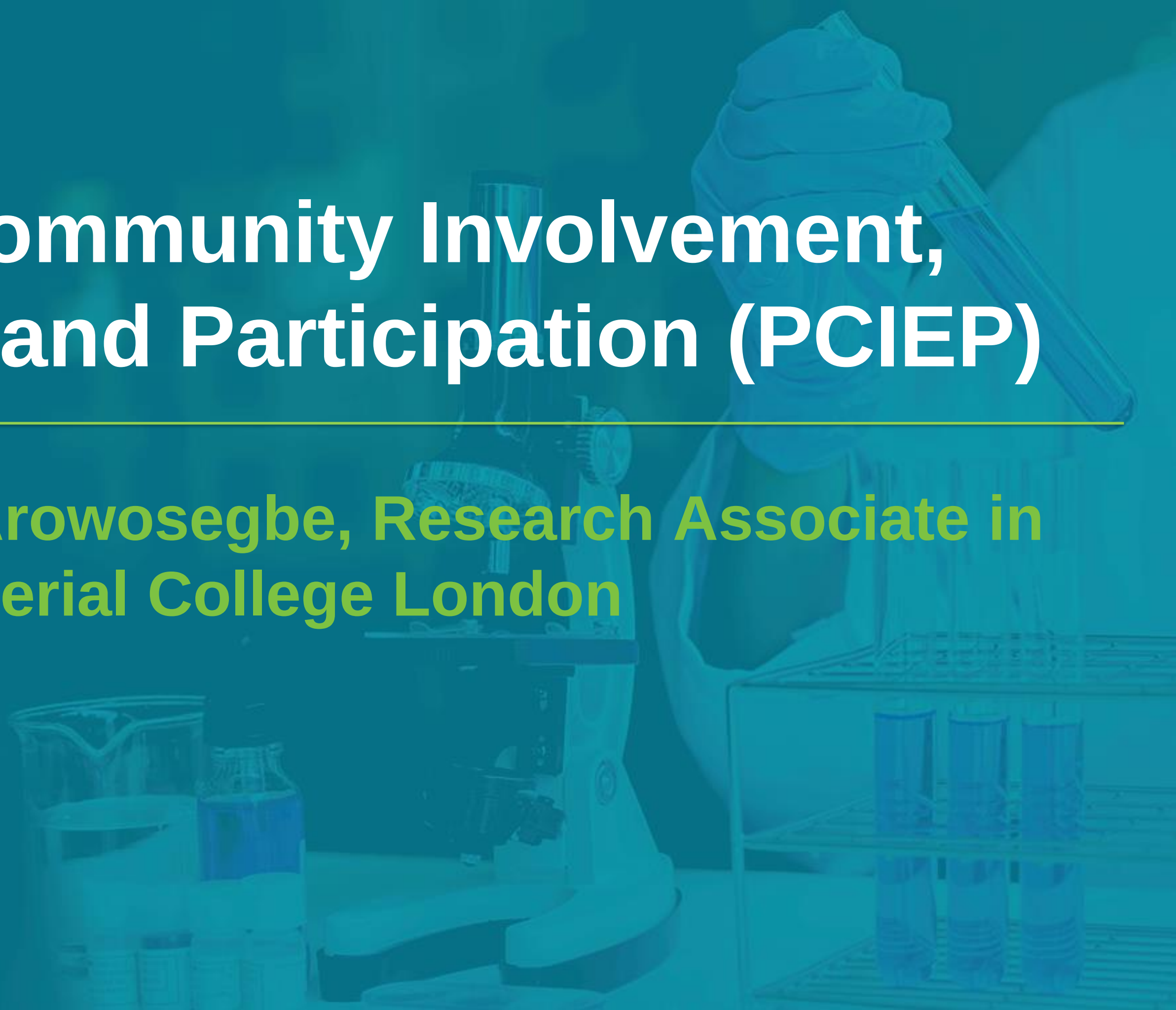
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- ✓ **Compare** international guidance on long-term health monitoring
- ✓ **Identify** gaps, weaknesses, strengths and improvements in current UK system
- ✓ **Monitor** and fulfil requirements of all individuals – both exposed and non-exposed and the ‘worried well’
- ✓ **Improve** strategic protocols for long-term health surveillance with stakeholder input and collaboration with EPR and EBS HPRUs

Public and Community Involvement, Engagement and Participation (PCIEP)

Oluwaseyi (Seyi) Arowosegbe, Research Associate in
Epidemiology, Imperial College London



Safeguarding Public Health from Radiation Threats: Radiation Threats and Hazard HPRU Public and Community Involvement, Engagement, and Participation Program

Oluwaseyi Arowosegbe

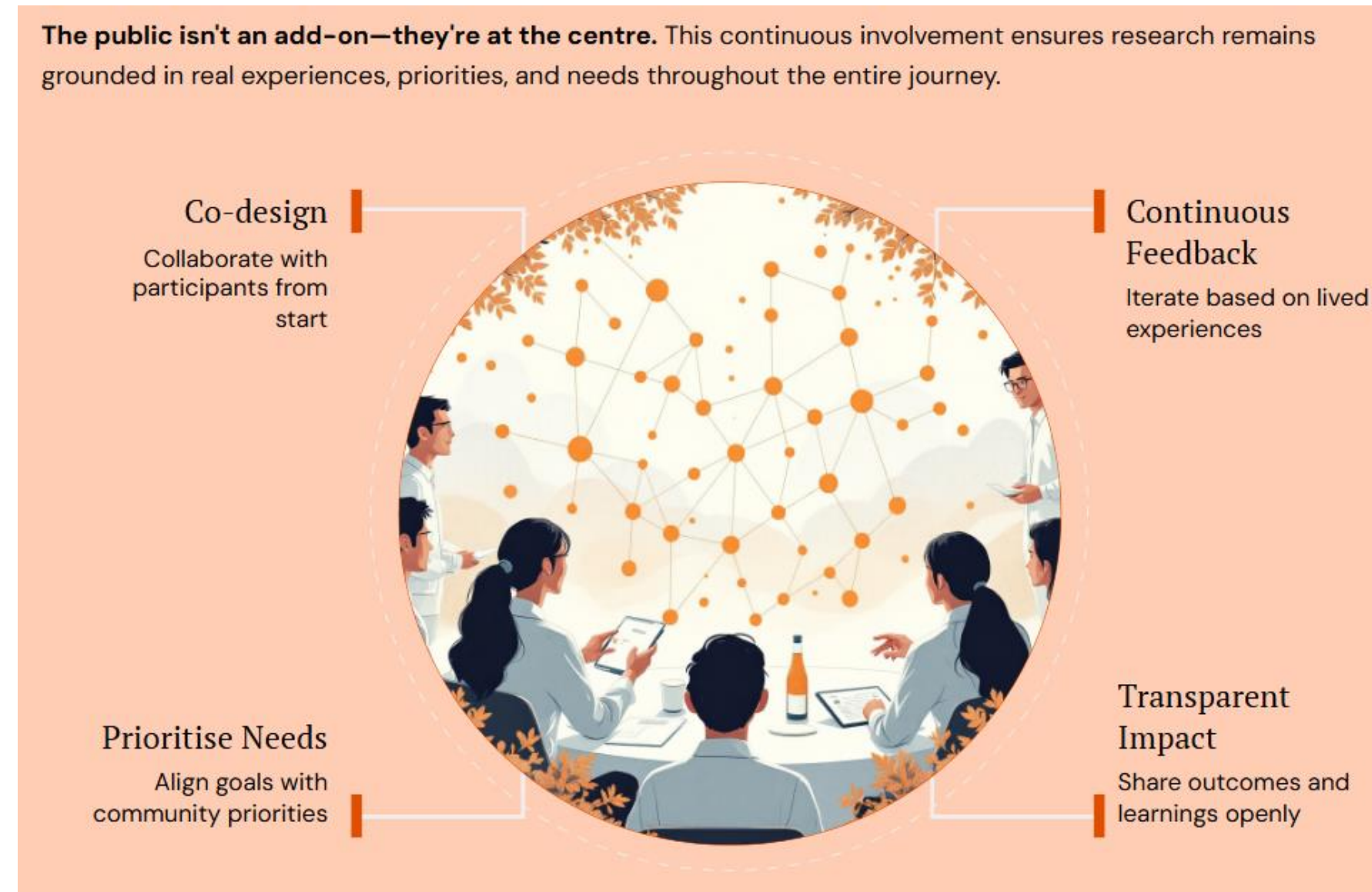
[UKHSA present – 23rd October 2025]

IMPERIAL



Public and Community Involvement, Engagement, and Participation (PCIEP)

- The National Institute for Health and Care Research (NIHR) champions a transformative approach to research that fundamentally shifts how we think about public involvement.
- Research carried out **'with' or 'by'** members of the public, not **'to', 'about' or 'for'** them.
- This isn't simply consultation or feedback—it's an active, authentic partnership. Patients, carers, and members of the public work alongside researchers as equal partners, actively shaping and influencing every stage of the research process. Their lived experiences, priorities, and perspectives become integral to creating research that truly matters and makes a real-world difference.



RTH PCIEP Plan

Aim 1: Training NIHR HPRU Scientist to do PCIEP

Aim 2: Raising awareness of our HPRU research and science communication

Aim 3: Engage members of the public

Aim 4: Inspire people

Aim 5: Feedback and activity evaluation



Public Community Oversight Group

Support the
governance of PCIEP
approaches and
activities within the
HPRU

Advise on research
plans, protocols and
materials.

Disseminate research
results in lay
summaries

Thank you

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Nora Bourbia: nora.bourbia@ukhsa.gov.uk

Research Inclusion

Sean Gettings, Deputy Research Inclusion Lead,
UKHSA

Daniela Fecht, Research Inclusion Lead, Imperial
College London

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What is research inclusion?

- Research should include participants from all regions and communities, meeting the needs of the whole population
- Research does not always take place where it is most needed
- We need to include under-served communities in research to ensure that research findings apply to everyone

Under-served communities

“A group that is less well represented in research than would be desirable from population prevalence and healthcare burden.”

Disease specific

Socioeconomic

Factors

Demographic

Health status



Why research inclusion matters

EQUITY



INCLUSIVE DESIGN

Inclusion ensures research benefits all groups, not just the most represented.
Studies built with inclusion in mind better reflect real-world diversity.

VALIDITY



COMPREHENSIVE DATA

Broader participation improves the reliability and generalisability of findings.
Wider representation yields richer, more accurate data.

INNOVATION



BETTER OUTCOMES

Diversity in research fosters creativity and novel approaches.
Interventions become more effective and equitable.

TRUST



SUSTAINED ENGAGEMENT

Inclusion strengthens public confidence and engagement with research.
Inclusive research fosters lasting collaboration and trust.

Co-created research inclusion strategy

“No research about me, without me”

Pillar 1: Maximising inclusivity for participants

- Broad definition of participants, valuing **diverse contributions** in all research stages
- **Commitment** to inclusivity through NIHR standards and accessible formats
- **Adjustments** for mobility, language, cultural, and accessibility needs

Pillar 2: Training and resources for researchers

- **Publish** RI Action Plan and guidance on cultural competence, bias, and inclusivity
- **Provide resources** to support researchers and participants
- **Collaborate** with ACD Leads and Inclusion Network on training opportunities

Pillar 3: Routes to and evaluation of RI impact

- **Integrate** RI metrics into evaluations, promoting accountability and transparency
- **Share** learning through networks and Communities of Practice
- **Assess** impact via quantitative representation and qualitative participant feedback
- **Review** EDI in governance and recruitment

The strategy will adjust to the needs of participants and researchers – through continued outreach and feedback



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