

Developments in nuclear medicine: new radioisotopes and associated challenges



Round table discussion on policy implications and research needs

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Nuclear medicine: policy implications and research needs (I)

A public health perspective for setting the scene

Sustainable Development Goals

Goal #3: Ensure **healthy lives** and promote **well-being** for all at all ages. One of its targets by 2030 is reduce by one third premature mortality from **non-communicable diseases**

NUCLEAR MEDICINE ROLE IN NCD MANAGEMENT (cancer, cardiovascular diseases)

Universal Health Coverage (UHC)

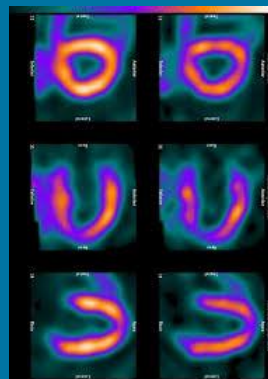
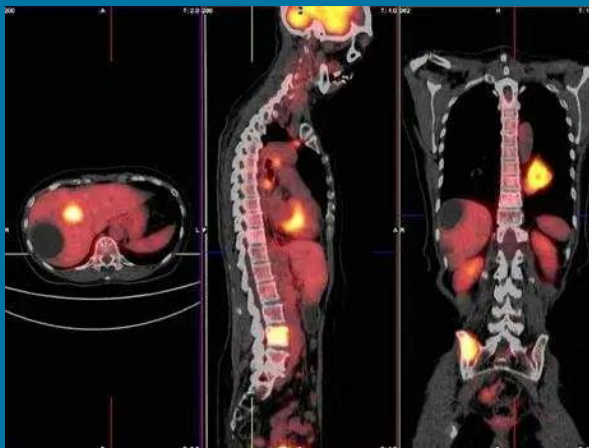
UHC means that all people can use the promotive, preventative, curative, rehabilitative and palliative **health services that they need**, of sufficient **quality** and without financial hardship.

This requires access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines, vaccines and medical products.

Quality of care

Building **quality** into the foundations of health systems is an imperative for **UHC**:

1. **Health care workers** that are motivated & supported to provide quality care;
2. Accessible & well equipped **health care facilities**;
3. **Medicines, devices & technologies** that are safe in design & use;
4. **Information systems** that continuously monitor and drive better care;
5. **Financing mechanisms** that enable & encourage quality care.



Nuclear medicine: policy implications and research needs (II)

Some areas relevant in terms of radiation protection



- Development, production, supply and use of *diagnostic, therapeutic, and theranostic radioisotopes & radiopharmaceuticals*;
- Design, manufacturing, commercialization/procurement and operation of nuclear medicine **equipment & instrumentation**
- Facility design & infrastructure (e.g. radiopharmacy -industrial, centralized, local)
- **Health workforce** –education, training, certification, accreditation, licensing;
- **Dose and risk assessment** (patients, comforters, workers, public)
- Development/ update & implementation of **standards, norms and regulations**;
- Identification of **research gaps**, implementation of a **strategic research agenda**

Nuclear medicine: policy implications and research needs (III)

New health workforce paradigm, research challenges, existing instruments



Skilled health workforce

Nuclear medicine physicians

Nuclear medicine technologists

Radiologists (hybrid imaging)

Radiographers (hybrid imaging)

Medical physics experts

Biomedical engineers

Radiopharmacists, radiochemists

Nurses, assistants

IT support, AI engineers, ...

Research challenges

Long-term **risks from low-dose** internal exposure (adults and children)

Internal dosimetry- methodology, tools and protocols (e.g. injection, inhalation, ingestion; \neq radionuclides)

Evidence generation (e.g. pre-clinical evaluation, clinical trials, research partnerships)

Quality assurance, breast-feeding interruption criteria

Ethical issues (e.g. net benefit, equity, access, health financing)

Existing instruments

International BSS and supporting safety guides (8 int. organizations)

EC Directive Euratom BSS and related guidance

Regulations/ guidance from the European Medicines Agency (EMA) & local agencies

International Pharmacopoeia, Good Manufacturing Practices (WHO, IAEA, EC)

WHO Lists of Priority Medical Devices (for NCDs – cancer, CVD, COPD, ..

