



WHO's Global Initiative on Radiation Safety in Health Care Settings: role in medical exposure surveys

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X Congreso Regional Latinoamericano IRPA
de Protección y Seguridad Radiológica

"Radioprotección: Nuevos Desafíos para un Mundo en Evolución"

Content

- About WHO: objective, function, structure, governance
- Universal health coverage
- WHO and health data collection
- Radiation-related work at WHO, the Global Initiative on radiation safety in health care settings
- WHO's cooperation with UNSCEAR on data collection on medical exposures

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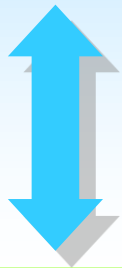
The World Health Organization

- **Objective:** attainment by all peoples of the *highest possible level of health*
- **Function:** act as the UN directing and coordinating authority on *international health work*



The WHO 3-level structure

**194 Member States
Ministries of Health**



**Headquarters
Geneva**

6 Regional Offices

147 Country Offices

IARC, Lyon



WHO Governing Bodies

The **World Health Assembly (WHA)** is the supreme decision-making body. Representatives of the **Ministries of Health** of the **194 WHO's Member States** meet once a year in Geneva.

*The **WHO Executive Board (EB)** meets twice a year to give effect to WHA decisions and facilitate its work. It is composed of **34** representatives designated by Member States elected by the WHA.*



WHO's core functions

1. **Articulate ethical and evidence-based policy positions**
2. **Setting norms and standards, and promoting and monitoring their implementation**
3. **Shaping the research agenda, and stimulating the generation, translation and dissemination of valuable knowledge**
4. **Providing technical support, catalysing change and developing sustainable institutional capacity**
5. **Monitoring the health situation and assessing health trends**
6. **Providing leadership on matters critical to health and engaging in partnerships where joint action is needed**



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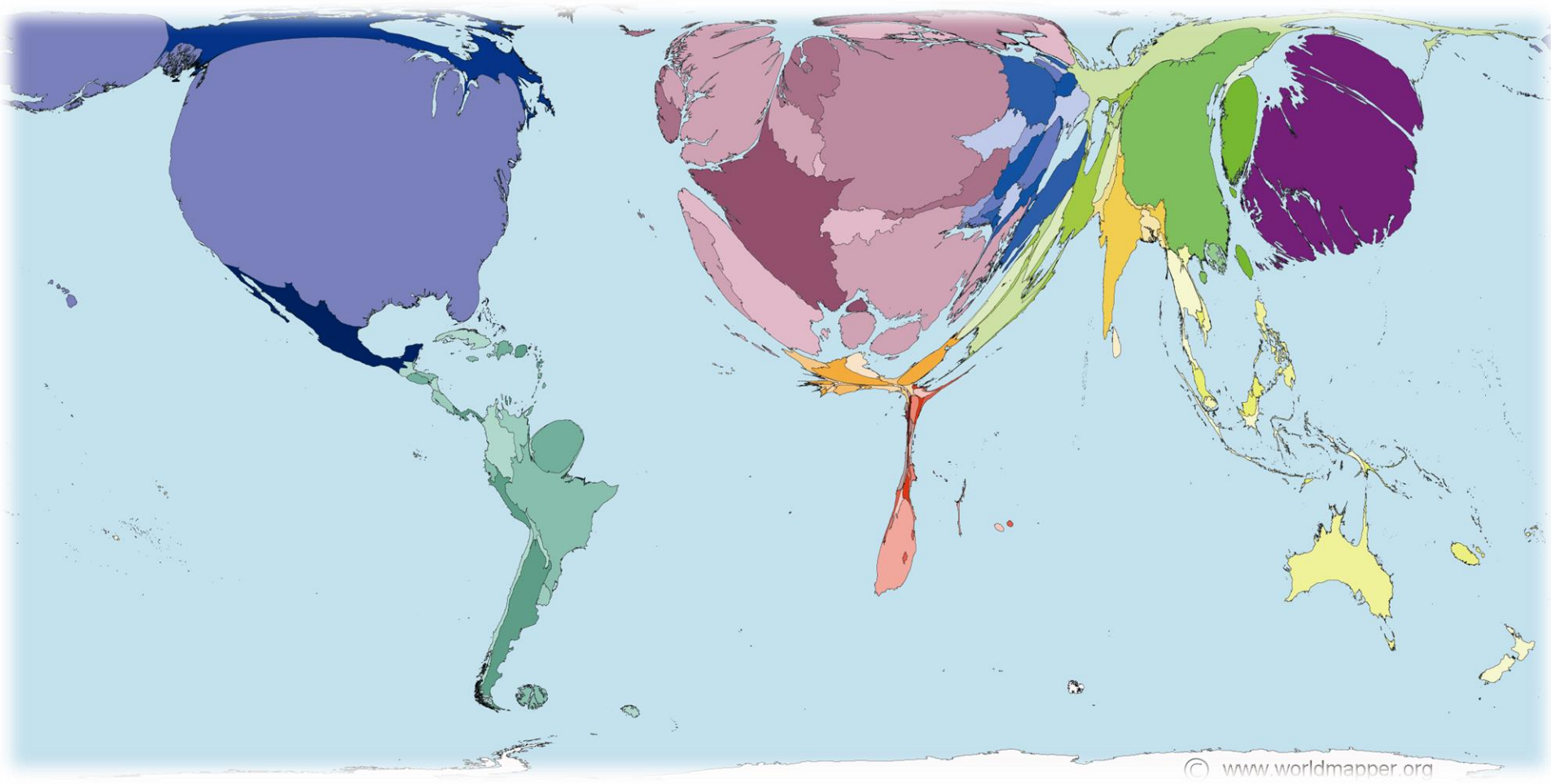
WHO's definition of health

- **Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity
(*WHO Constitution, 1948*)
- Promoting and protecting **health** is essential to human welfare and sustained economic and social development.
- "**Health for All**" would contribute both to a better quality of life and also to global peace and security
(*Alma-Ata Declaration, International Conference on Primary Health Care, 1978*).
- **Health** is a **human right** that people rate as one of their highest priorities in most countries

Health promotion

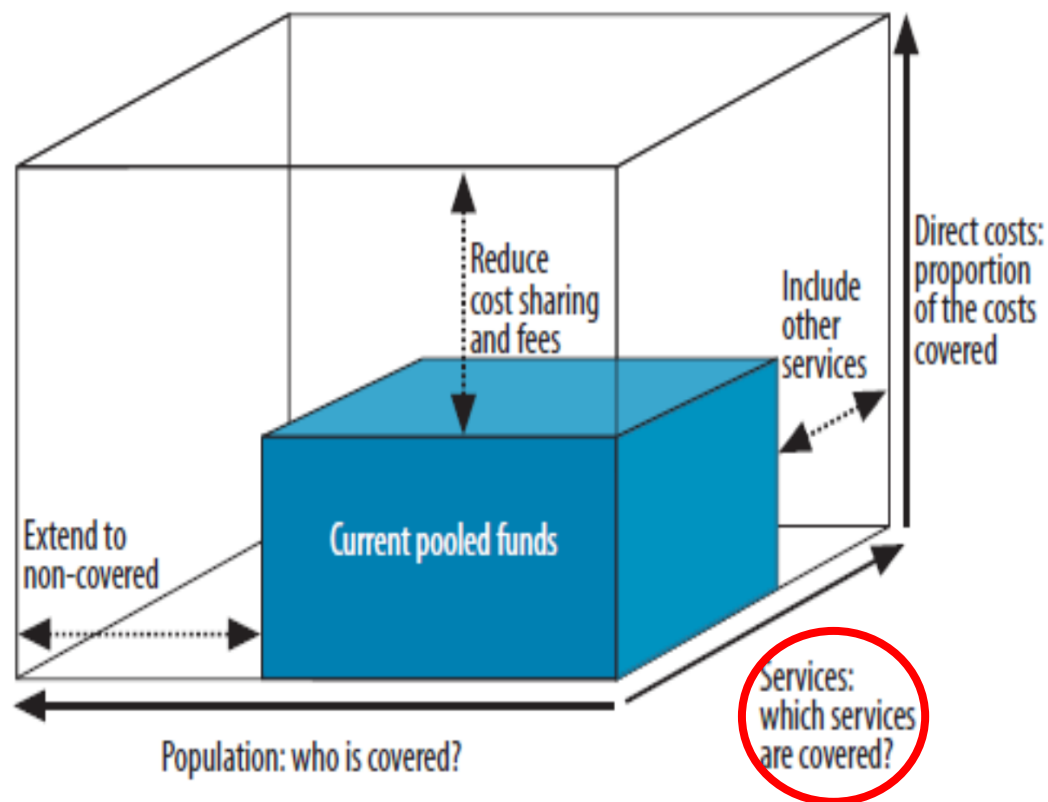
- **Health promotion** is the process of enabling people to increase control over, and to improve, their health.
- It includes **individual behavior**, but it moves beyond this focus towards a wide range of **social and environmental interventions** to promote and sustain health (education, housing, energy, food, employment, air quality, water quality & sanitation, chemical safety, **radiation safety**, ...)
- Timely access to **health services** is critical for:
 - *promotion, prevention, treatment and rehabilitation*

Huge disparities in health expenditure between countries are paralleled by disparities in access to health services



Universal health coverage

- WHO Member States adopted in 2005 a goal:
 - *develop their health financing systems so that all people have access to services without suffering financial hardship paying for them.*
 - *this goal was defined as **universal health coverage**.*

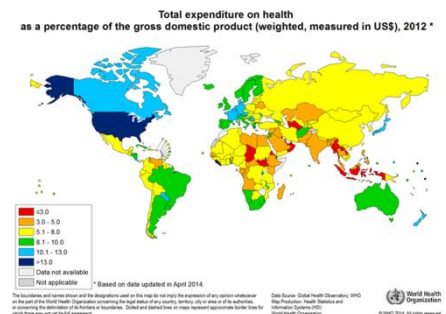


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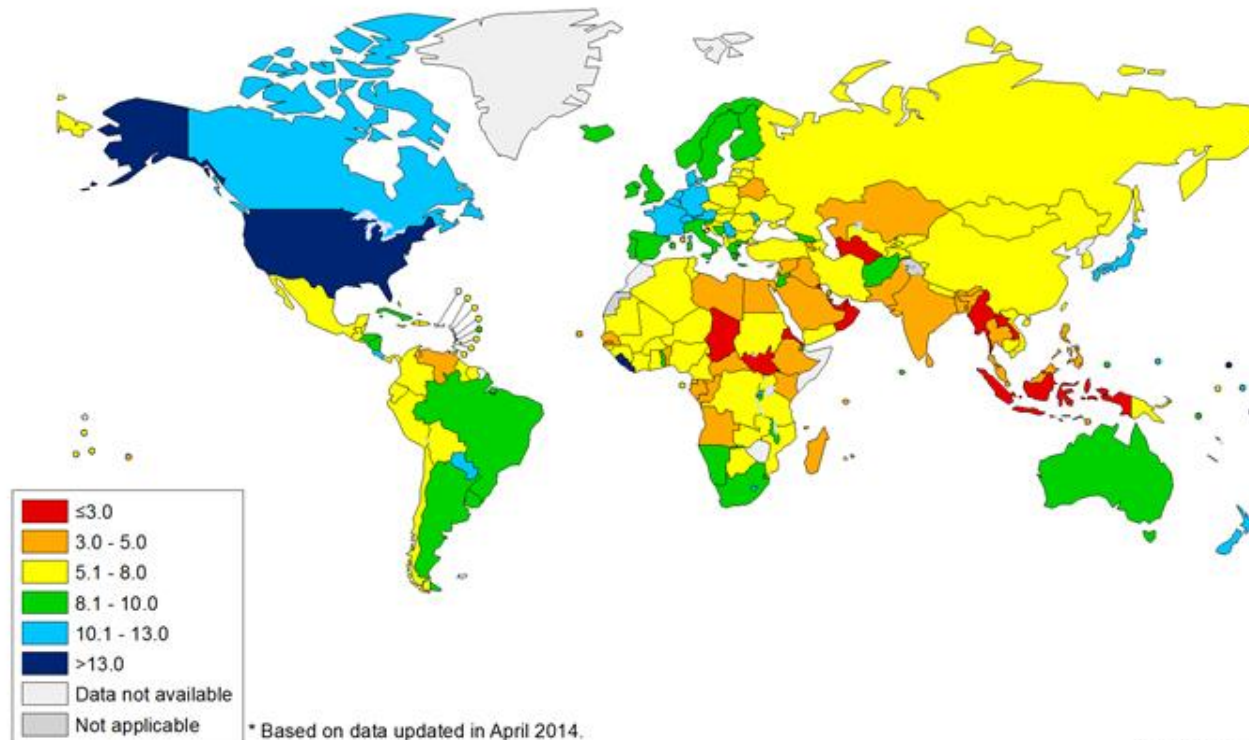
WHO Global Health Observatory

- The **Global Health Observatory (GHO)** provides data and analyses on global health situation and trends, including core indicators, database views, major publications and links to relevant web pages.
- The **GHO** data repository provides access to over 50 datasets on priority health topics, including an extensive list of indicators.



Global Health Observatory: map gallery

**Total expenditure on health
as a percentage of the gross domestic product (weighted, measured in US\$), 2012 ***



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: Global Health Observatory, WHO
Map Production: Health Statistics and
Information Systems (HSI)
World Health Organization



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Global Health Observatory Data Repository

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 - Governance and aid effectiveness
 - Essential health technologies

Health systems

In this section:

- Health workforce
- Health financing
- Essential medicines
- Governance and aid effectiveness
- Essential health technologies
- Service delivery



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World Health Statistics

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Need to improve data collection on the use of radiation in health care (diagnosis, treatment)

Infrastructures and technologies			Essential medicines	
Computed tomography units ^f (per million population)	Radiotherapy units ^f (per million population)	Mammography units ^f (per million females aged 50 to 69 years)	MDG 8	
			Median availability of selected generic medicines ^h (%)	
			Public	Private
2013	2013	2013	2001–2010	
0.2	0.0	0.0
5.4	0.3	54.4
...	0.4 ^l
...
0.4	<0.05 ^k	6.3 ^k
22.2	...	272.1



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Medical Radiation Exposures

- The largest contributor to the exposure of the population from artificial sources (**95%**) only exceeded world-wide by natural background as a source of exposure.
- Almost equal to natural background as a source of exposure to the population in US (NCRP Report 160), similar trend in other countries...

Annually worldwide



*3,600 million X-ray exams
(> 300 million in children)*



*37 million nuclear
medicine procedures*



*7.5 million radiation
oncology treatments*

Radiation in medicine in the World Health Assembly



The World Health Assembly (WHA) requested WHO to "study the optimum use of ionizing radiation in medicine and the risks to health of excessive or improper use".

(WHA, 1971)

Resolutions of the World Health Assembly

- WHA resolution (12.40) requests "... **IAEA-WHO** to act in close cooperation with each other and consult each other regularly in regard to matters of common interest..." (Basic Document, 1959)
- WHA resolution (25.57) urge WHO "...to cooperate with **IAEA, UNSCEAR** and other international organizations in evaluating the world situation as regards the medical use of ionizing radiation and the effects of radiation on populations" (WHA, 1972)
- WHA resolution (60.29) urge WHO **MS** "to draw up guidelines to ensure the quality, safety and efficacy of medical devices" (WHA, 2007)

WHO Global Initiative on Radiation Safety in Health Care Settings



Diagnostic radiology



Interventional radiology

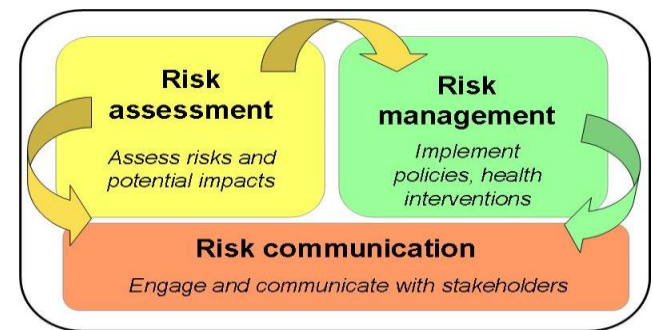


Radiotherapy



Nuclear Medicine

*To support implementation of radiation safety standards (**BSS**) in medical settings, focusing on **Public Health** aspects related to the use of radiation in health care*



The Global Initiative: areas of work

Risk assessment	<ul style="list-style-type: none">● <i>Assessing population dose distribution due to the use of radiation in health care (collaboration with UNSCEAR)</i>● <i>Shaping a global research agenda on health effects of medical radiation exposure (focusing on children)</i>
Risk management	<ul style="list-style-type: none">● <i>Reducing unnecessary radiation exposures (justification of medical examinations and optimization of protection)</i>● <i>Promoting occupational health in health care settings</i>● <i>Addressing health workforce needs</i>● <i>Preventing accidental and unintended exposures, promoting reporting and learning systems</i>● <i>Fostering cooperation between health authorities and regulatory bodies</i>
Risk communication	<ul style="list-style-type: none">● <i>Implementing a communication strategy (information to patients and health workers)</i>



International partners of the Global Initiative



- **The patient's voice**
 - PFPS network
- **International Organizations**
 - IAEA, UNSCEAR, ILO, ICRP, IRPA, EC, FORO, HERCA
- **Professional Societies**
 - International (ISR, IRQN, ISRRT, IOMP, ISDE, WONCA, WDF/FDI, WFPR, WFUMB (WFNMB));
 - Regional (ESR, ESTRO, EFRS, ESPR, IACR/CIR, ASR, PASR, EFOMP, ASTRO, ALATRO, JATRO, other regional societies)
- **National authorities** (e.g. ASN, FDA, FANC, FOPH, NRPA, STUK, ..., others)
- **WHO Collaborating Centres** (e.g. Research Center for Radiation Medicine (Ukraine), Medical Radiological Research Center (Russia), BfS (Germany), IRSN (France), NIRS (Japan), PHE (UK), BARC (India), ARPANSA (Australia), ..., others)

International Conference on
RADIATION PROTECTION IN MEDICINE
Setting the Scene for the Next Decade

3–7 December 2012
Bonn, Germany



Organized by the
 **IAEA**
International Atomic Energy Agency

Co-sponsored by the
 **World Health Organization**

Hosted by the
Government of Germany

through the
 **Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety**

www.iaea.org/meetings/CN-192

International Conference on RP in Medicine

- Organized by the IAEA, cosponsored by WHO, hosted by the Government of Germany.
- > 500 participants from 77 countries and 16 organizations reviewed advances, challenges and opportunities.
- Main outcome: **Bonn Call for Action** to improve RP in health care in the next decade.

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Ionizing radiation

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Medical radiation exposure

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Joint IAEA and WHO Position Statement on the Bonn Call-for-Action

The *"International Conference on Radiation Protection in Medicine: Setting the Scene for the Next Decade"* was held 3-7 December 2012 in Bonn, Germany. It was organized by the International Atomic Energy Agency (IAEA), co-sponsored by the World Health Organization (WHO), and hosted by the Government of Germany through the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The Conference had the specific purpose of identifying and addressing

Participants from 77 countries and 16 international organizations attended the Conference, and an important outcome was the identification of responsibilities and a proposal for priorities for stakeholders regarding radiation protection in medicine for the next decade. This specific outcome is the **Bonn Call for Action**. It is a statement that identifies the main actions considered to be essential for the strengthening of radiation protection in medicine. Participants and organizations who attended the Conference expressed the need for a joint statement to be issued by the IAEA and the WHO.



Bonn Call for Action



1. Enhancing implementation of justification of procedures
2. Enhancing implementation of optimization of protection and safety
3. Strengthening manufacturers' contribution to radiation safety
4. Strengthening RP education and training of health professionals
5. Shaping & promoting a strategic research agenda for RP in medicine
6. Improving data collection on radiation exposures of patients and workers
7. Improving primary prevention of incidents and adverse events
8. Strengthening radiation safety culture in health care
9. Fostering an improved radiation benefit-risk-dialogue
10. Strengthening the implementation of safety requirements (BSS) globally

http://www.who.int/ionizing_radiation/about/med_exposure/en/index3.html

<https://rpop.iaea.org/RPOP/RPoP/Content/News/bonn-call-for-action-joint-position-statement.htm>



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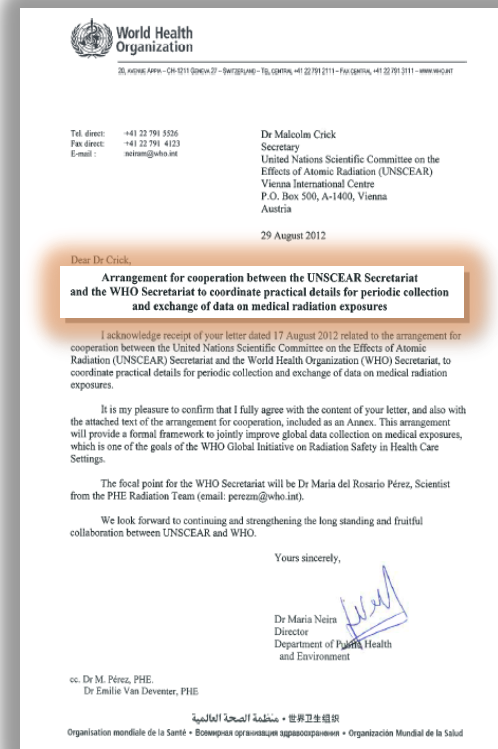
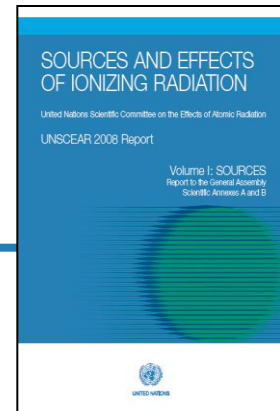
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Action 6: Increase availability of global information on medical and occupational exposures in medicine

- Improve collection of dose data and trends on **medical exposures** globally, and especially in low- and middle-income countries, by fostering international co-operation;
- Improve data collection on **occupational exposures in medicine** globally, also focusing on corresponding radiation protection measures taken in practice;
- Make the data available as a tool for quality management and for trend analysis, decision making and resource allocation.

Data collection on medical exposures

- Arrangement for Cooperation between UNSCEAR and WHO (entry into force on 29 August 2012).
- "UNSCEAR and WHO recognize the desirability of maximum co-operation in the statistical field and (....) avoiding duplication in the collection of statistical information whenever it is practicable...".
- "The purpose ...is to establish and coordinate the practical details of the periodic collection and exchange of **relevant data on global and regional uses of ionizing radiation in medicine** and on corresponding effects of radiation exposures on populations for the benefit of all Member States of the UN and WHO".





Frequencies and mean dose values from radiological examinations

Modality category	Examination category	Number of examinations	Representation [%]	Mean dose per exam [Gy cm ²]	Other dosimetric units	Mean effective dose [mSv]	Sample size
Projectional radiography (without contrast media)	Head						
	Neck						
	Cervical spine						
	Chest/Thorax (PA and LAT)						
	Thoracic spine						
	Abdomen						
	Lumbar spine (inc. LSJ)						
	Mammography						
	Pelvis and hip						
	Limbs and joints						
	Dental intraoral						
	Dental panoramic						
	Other (please specify)						
	Other (please specify)						
Radiography and fluoroscopy (mostly with contrast media)	GI (barium study)						
	Biliary tracts						
	Intravenous urography (IVU)						
	Uro-genital tract (except IVU)						
	Arthrography						
	Myelography						
	Cardiac angiography						
	Angiography (except Cardio.)						
	Other (please specify)						
	Other (please specify)						
Modality category	Examination category	Number of examinations	Representation [%]	Mean dose per exam		Mean effective dose [mSv]	Sample size
Computed tomography (CT)	CT-head			CTDIvol [mGy]	DLP [Gy cm ²]		
	CT-neck						
	CT-chest						
	CT-spine						
	CT-abdomen						
	CT-pelvis						
	CT-trunk						
	CT-dental						
	Other (please specify)						
	Other (please specify)						





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UNSCEAR Survey

Global Survey of Medical Radiation Usage and Exposures from 2005 onwards

The United Nations Scientific Committee on the Effects of Atomic Radiation (**UNSCEAR**), established by the United Nations General Assembly in 1955 to assess and report levels and effects of all sources of ionizing radiation conducts regular Global Surveys of Medical Radiation Usage and Exposure.

This platform is to support governments and international organizations to provide national and regional data on the use of radiation in medical diagnosis and treatment for the next UNSCEAR Global Survey of Medical Radiation Usage and Exposures from 2005 onwards.

National focal persons (NFP) are invited to **register here** to be able to access the protected area before they can download the questionnaires for official data submission. Additional national experts can be registered to support the NFPs. All contributions will be acknowledged by UNSCEAR in the relevant report to the General Assembly.

UNSCEAR is grateful to the (**World Health Organization**) for the arrangement for cooperation established which resulted in developing a common medical questionnaire for this survey and the (**European Commission**) for permitting the use of the outcomes of the (**DoseDataMed II project**).

Please read further explanations and the background material under [background](#) and [help](#).

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Data collection on medical exposures: a priority task of the WHO Global Initiative on RSHCS

Working Group	Tasks/Activities	Partners
Risk assessment	a) Improve global data collection on medical exposures: <ul style="list-style-type: none"> - to finalize questionnaires; - to conduct pilot testing - to assist MS to conduct the surveys 	UNSCEAR, IAEA, IRPA Professional societies (international, regional and national levels), health authorities, regulators, ...
	b) Setting and promoting a research agenda <ul style="list-style-type: none"> - Survey of priorities - Stakeholder workshop - Report on status of radiation science 	UNSCEAR EC IARC WHO CC (e.g. IRSN, NIRS) Research centers





Thank you very much!

