



Federal Office for  
Radiation Protection

## **HERCA and UNSCEAR activities**

Dr. Uwe Oeh

IAEA Workshop

20–24 March 2023, Bangkok



Federal Office for  
Radiation Protection

## HERCA Network ODCRR

# Occupational Dose Collection, Registration and Reporting




## **Working plan** of HERCA Network ODCRR

- Challenges in operation of the national dose register resulting from the implementation of the council directive 2013/59 EURATOM
- Impact of privacy legislation on the operation of the national dose register
- Collection and interpretation of dose received by radiation workers across EU member states
- Challenges in European exchange of dose information e.g. for cross-border workers
- Other relevant topics could be discussed (eye lens, radon, ...)
- How to continue with the ESOREX platform (<https://esorex-platform.org>)

# Survey conducted by HERCA Network ODCRR

- A questionnaire was developed and sent to HERCA member states to cover all topics on occupational exposure and dose registration

1. National competent authorities
2. National legislative framework
3. National dose register
4. National report
5. Radiation passbook
6. Recognised dosimetry services
7. External exposure - whole body dosimetry
8. External exposure - extremities/skin dosimetry
9. External exposure - eye lens dosimetry
10. Aircrew exposure
11. Internal exposure (not including radon)
12. Radon exposure

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- Willing/able to share aggregated (dose) information from national report with “EU data collection platform”?

- Status of BSS implementation?
- Challenges in each country?
- Potential as HERCA network topic?

## Next steps of HERCA Network ODCRR

- Next HERCA Network meeting will be organized on 20-21 April 2023
- Final discussion of the report and further focus to work on
- The report will be published within the year 2023
- Setting up a plan how to continue with the ESOREX platform

<https://esorex-platform.org>



**UNSCEAR**

United Nations Scientific Committee  
on the Effects of Atomic Radiation



# Occupational exposure to ionizing radiation: UNSCEAR 2020/2021 Report, annex D

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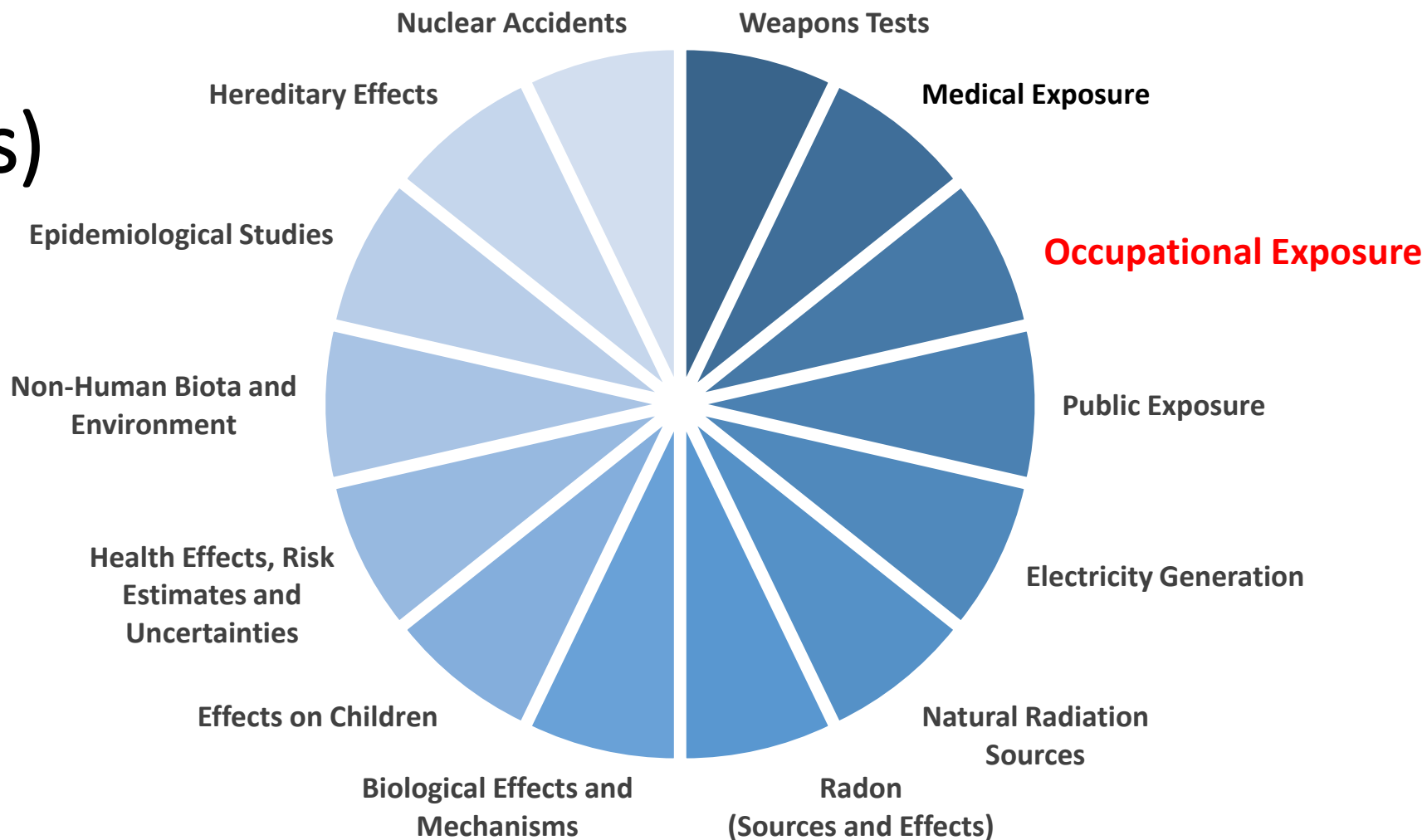
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# UNSCEAR (key work areas)







# UNSCLEAR

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## UNSCLEAR Occupational Exposure Evaluations

- UNSCEAR evaluated levels of occupational exposure since 1962
  - UNSCEAR 2000 (1990-1994)
  - UNSCEAR 2008 (1995-2002)
  - UNSCEAR 2020/2021 (2003-2014)

- Timelines

- 2014
- 2016–2019
- 2020-2021
- 2021
- 2022

Committee endorsed the project plan  
Data collection and assessment  
Exposure evaluation and report writing  
Committee adopted the report  
Publication





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## Scope and Objective of the Evaluation

- To assess average annual effective doses and collective doses to workers for work sectors and subsectors
- To estimate the worldwide level of occupational exposure for different sectors involving exposure to natural and human-made sources of radiation
- To identify and analyse trends in occupational exposure
- To identify possible new groups of workers receiving higher doses
- To identify research needs, and implications for future analysis
- To address the level of exposure to the lens of the eye

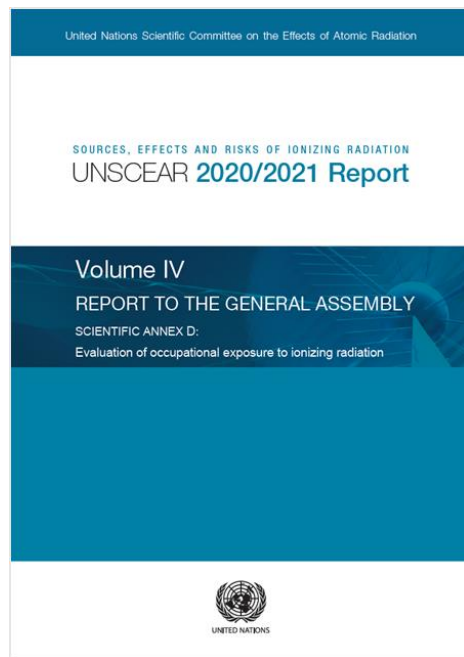


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# UNSCEAR Occupational Exposure Evaluations



- United Nations General Assembly invited all Member States to provide data
- UNSCEAR secretariat established a network of national contact persons to collect information from Member States through an online platform / questionnaires
- Carried out UNSCEAR survey (2016-2019) with 57 countries responses and IAEA supplementary survey in 2020 with 31 responses
- Data from the literature after a review process
  - Reviewed 692 articles, About 50% met the UNSCEAR quality criteria
- Supporting data directly from other sources such as IAEA, OECD/NEA, ICAO, ISOE, WNA and national reports



## Summary and Conclusions

- Overall improvement of estimates, specifically for some sectors (medical, civil aviation, NFC, etc.)
- First time uncertainties estimated (precision and accuracy)
- Likely underestimation of the number of workers and estimated collective effective doses, owing to the incomplete data submission for some occupational sectors for the reporting periods
- The Committee noted that reported data on the equivalent doses for the lens of the eye and for the hands (skin dose) were limited
- While the Committee did not identify worker groups with high annual effective dose due to new techniques, the Committee observed that the significant decrease in average annual effective dose was attributed to improved ventilation in mines and the closing of small, inefficient mines (in China).