

# Medical Preparedness and Response for Nuclear or Radiological Emergencies

24<sup>th</sup> February, 2017

## WHO Role and Activities in Strengthening Preparedness to Nuclear or Radiological Emergencies in Member States

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Country Health Emergency Preparedness & IHR (CPI)  
WHO's Health Emergencies Program (WHE)



World Health  
Organization

# 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

# The new WEP: Key Features



**One  
workforce**



**One work plan  
and  
\$494 m budget**



**One line of  
accountability**



**One set of  
processes**



**One admin.  
system**

*2 x staff; highly mobile; high-  
vulnerability countries &  
Regions*

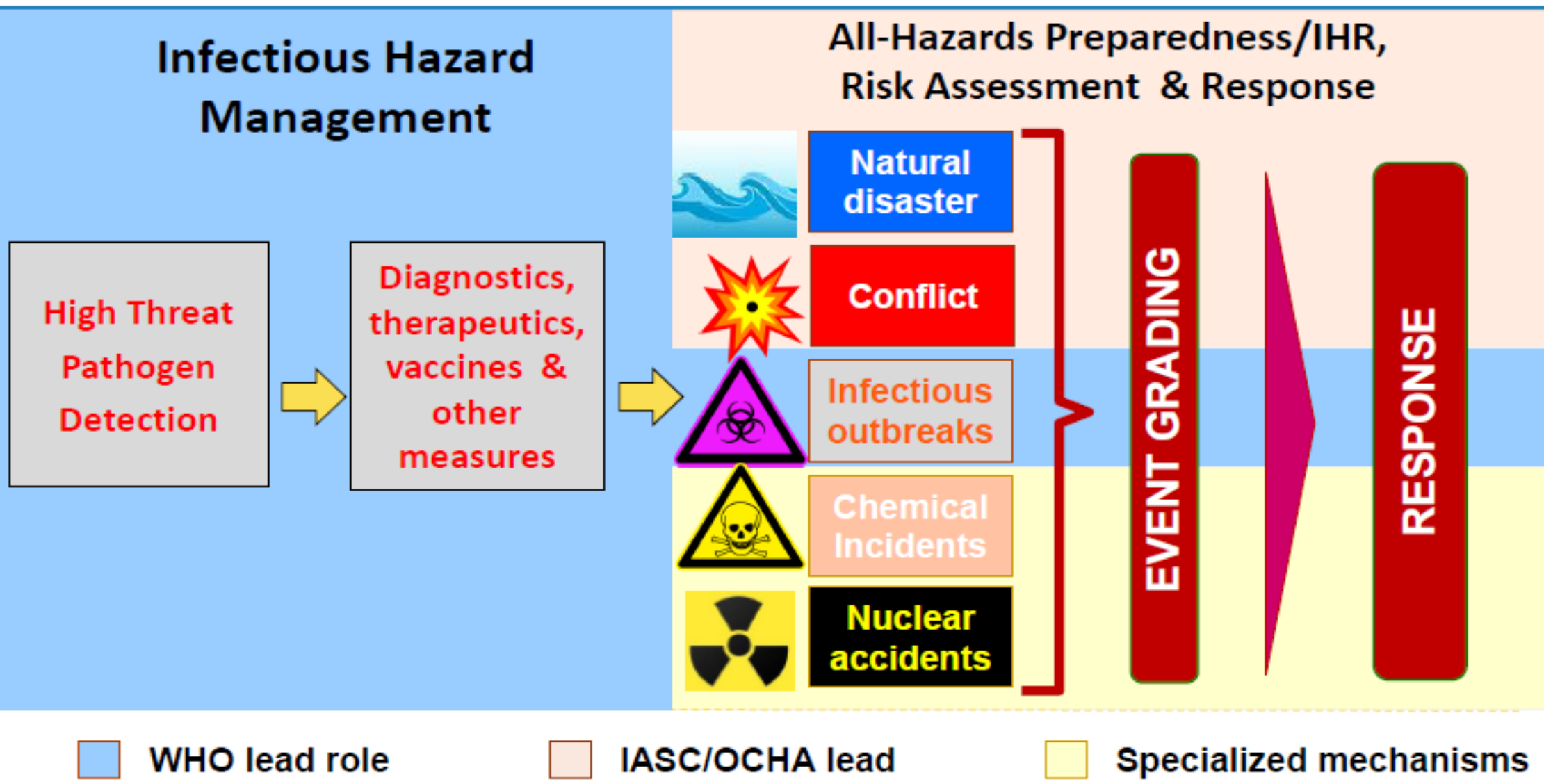
*Single integrated plan  
across all 7 major offices*

*Director-General to ExD  
& Regional Directors*

*Risk Assessment, Grading,  
Incident Management*

*Contingency Emergency Fund,  
Rapid Deployment Processes*

# All hazards approach to response within the Int'l Emergency Architecture



# Legal Framework pertaining to Radiation Emergences

- The WHO Constitution, 1948
- Relevant World Health Assembly Resolutions
- Two Conventions on Early Notification and Assistance (1987)
- The International Health Regulations (IHR, 2005)
- Sendai Framework for disaster risk reduction in 2015-2030 with the central focus on health





# International Health Regulations (2005)

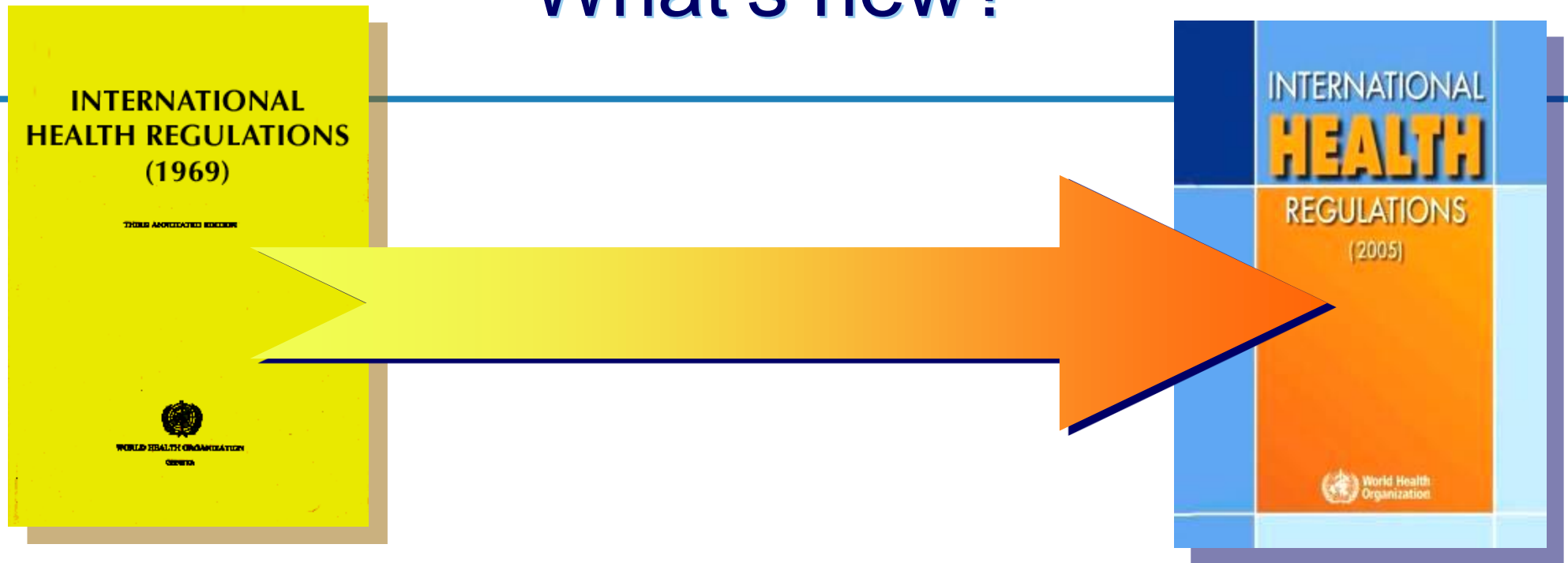
- **Legally binding treaty**
- 196 States Parties
- In force 15 June 2007



States must prepare, report and cooperate

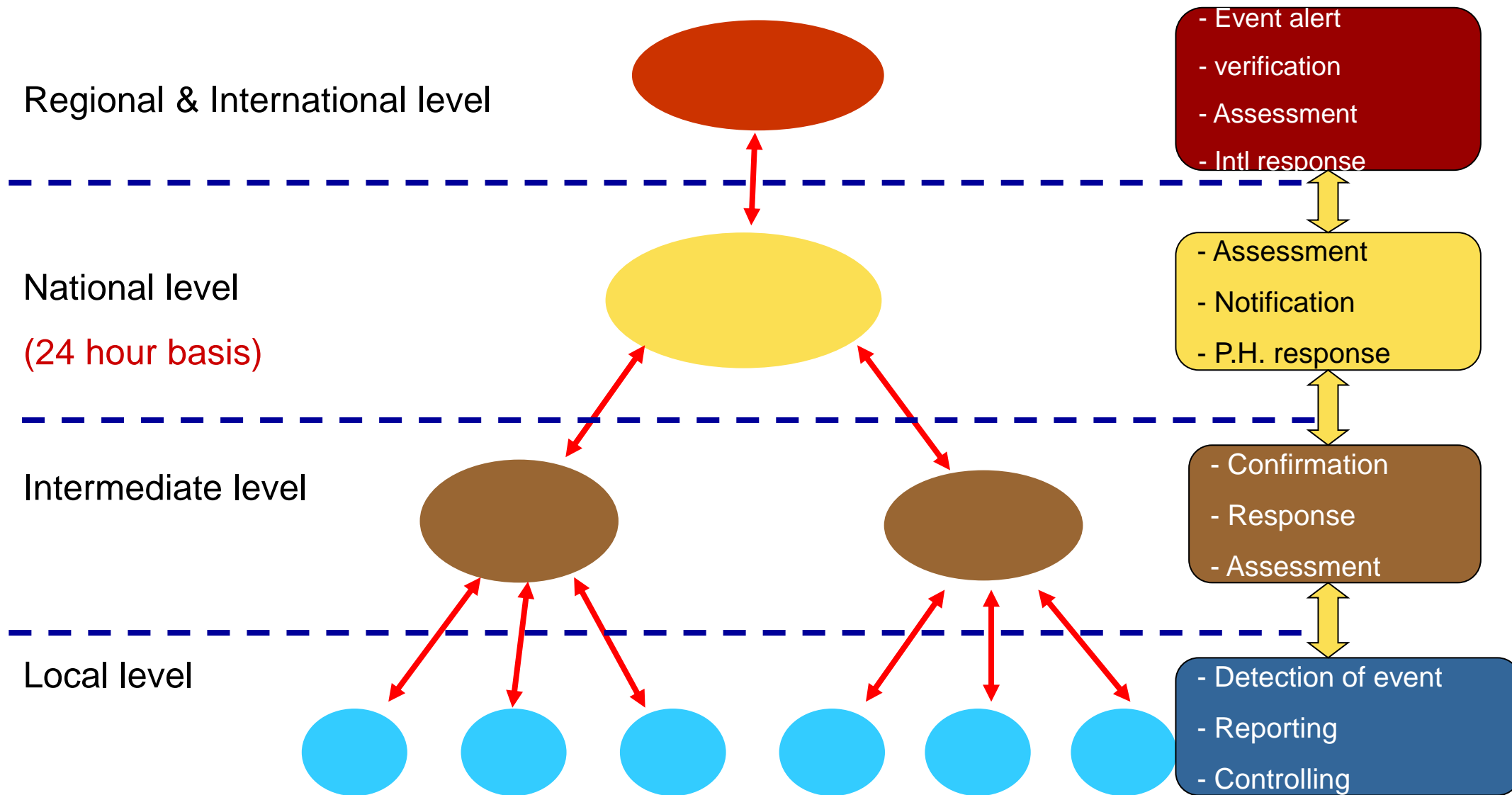
WHO must coordinate

# What's new?



- From **three diseases** to **all public health threats**
- From **preset measures** to **adapted response**
- From **control of borders** to, also, **containment at source**

# Core capacities requirement level





# Core Capacity Requirements

- **8 Core capacities**

- Legislation and Policy
- Coordination
- Surveillance
- Response
- Preparedness
- Risk Communications
- Human Resources
- Laboratory

- Potential Hazards

- Infectious
- Zoonosis
- Food safety
- Chemical
- Radio nuclear

- Events at Points of Entry

## 3 levels

- National
- Intermediate
- Peripheral/Community

# Monitoring and evaluation

- Reporting to EB/WHA
- 195 Countries reported (2010-2015)
- Review committee(s)



# IHR (2005): a multi-hazards framework to assess core national capacities

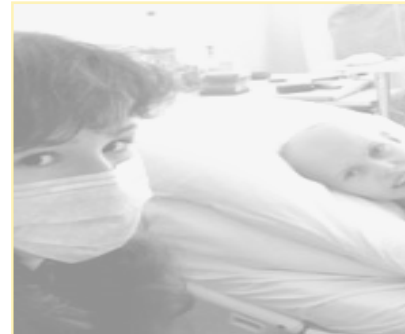
**IHR (2005): Capacity to detect, assess, report and respond to all Public Health Events of International Concern**



**Human  
infectious  
pathogens**



**Zoonotic  
pathogens /  
Food safety**



**Radio nuclear  
hazards**



**Chemical  
hazards**

**Legislation  
and Policy**

**Coordination**

**Surveillance**

**Response**

**Preparedness**

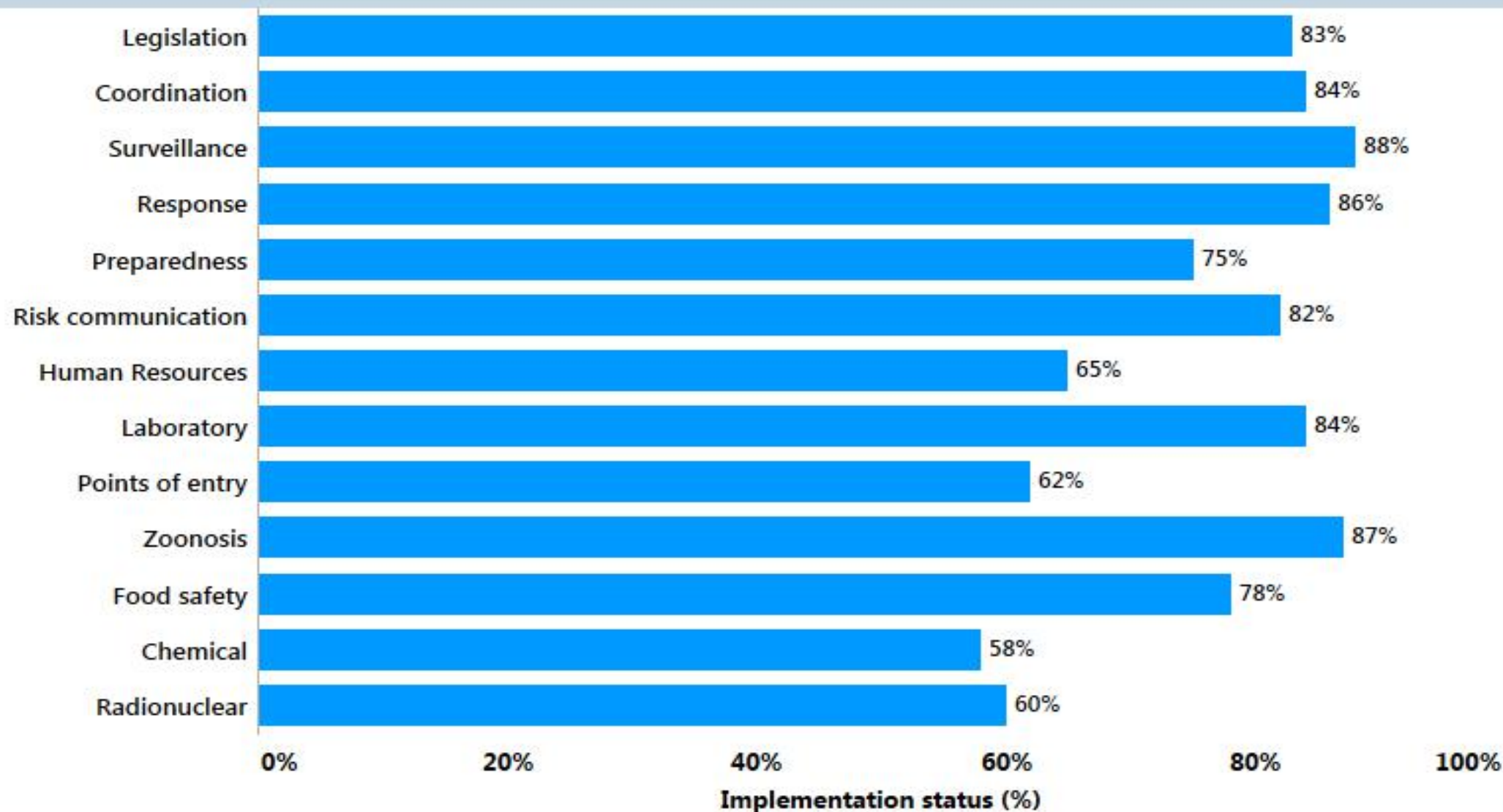
**Risk Comm.**

**Human**

**Resources**

**Laboratory**

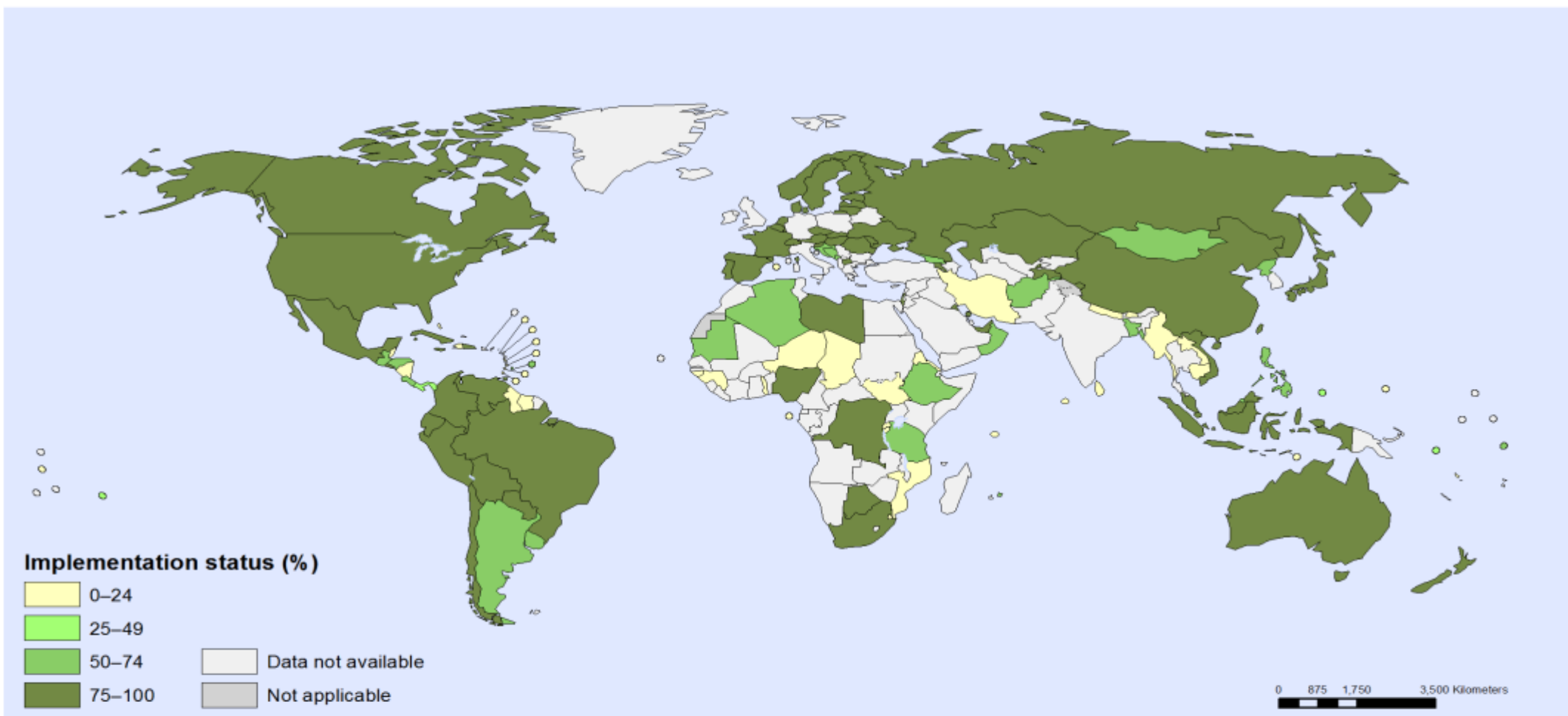
## IHR core capacities implementation status, 2015 (127 reporting countries)



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## International Health Regulations (IHR) monitoring framework Implementation status – IHR radionuclear core capacity, 2015



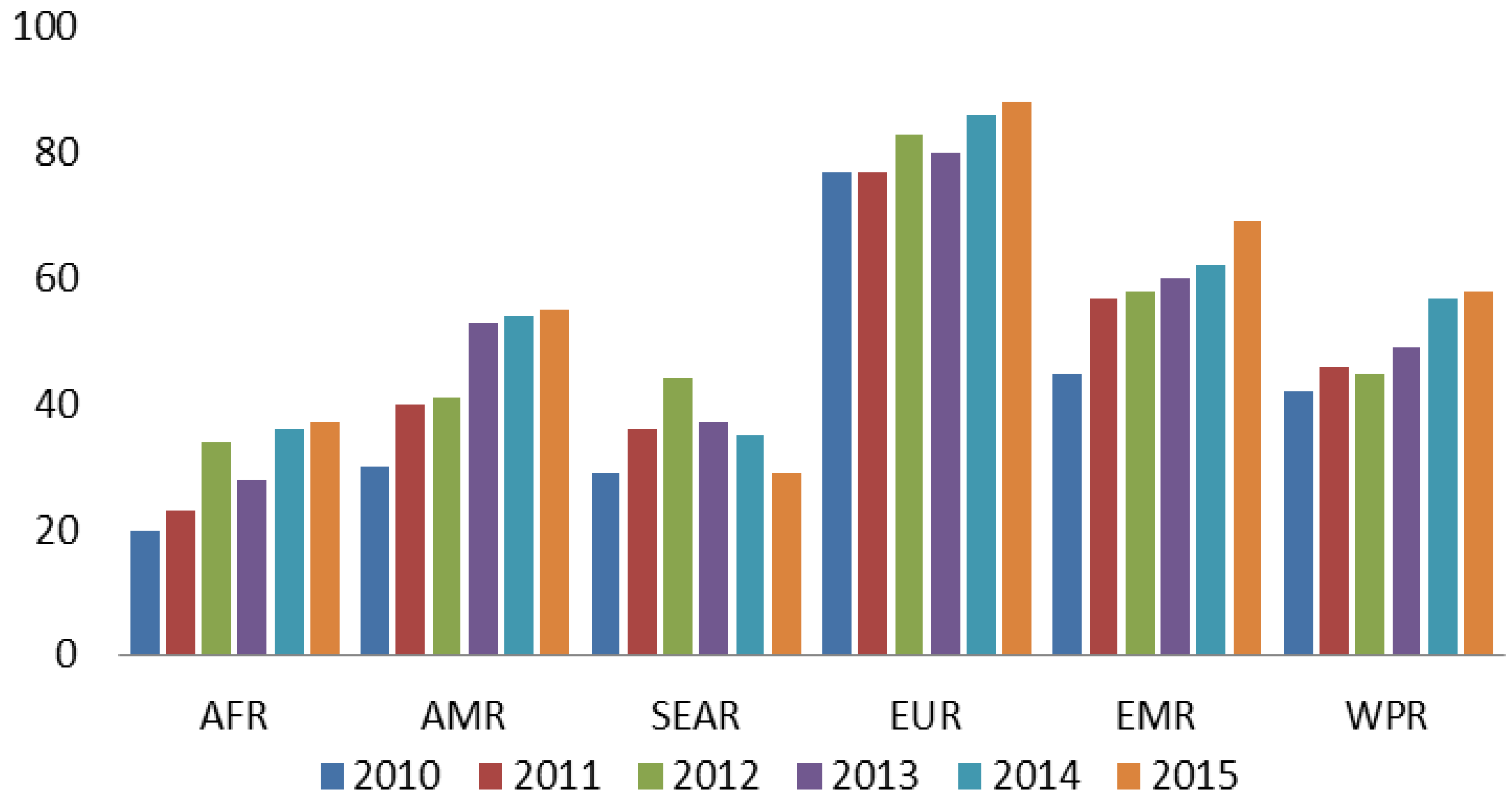
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers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

Data Source: World Health Organization  
Map Production: Information Evidence and Research (IER)  
World Health Organization



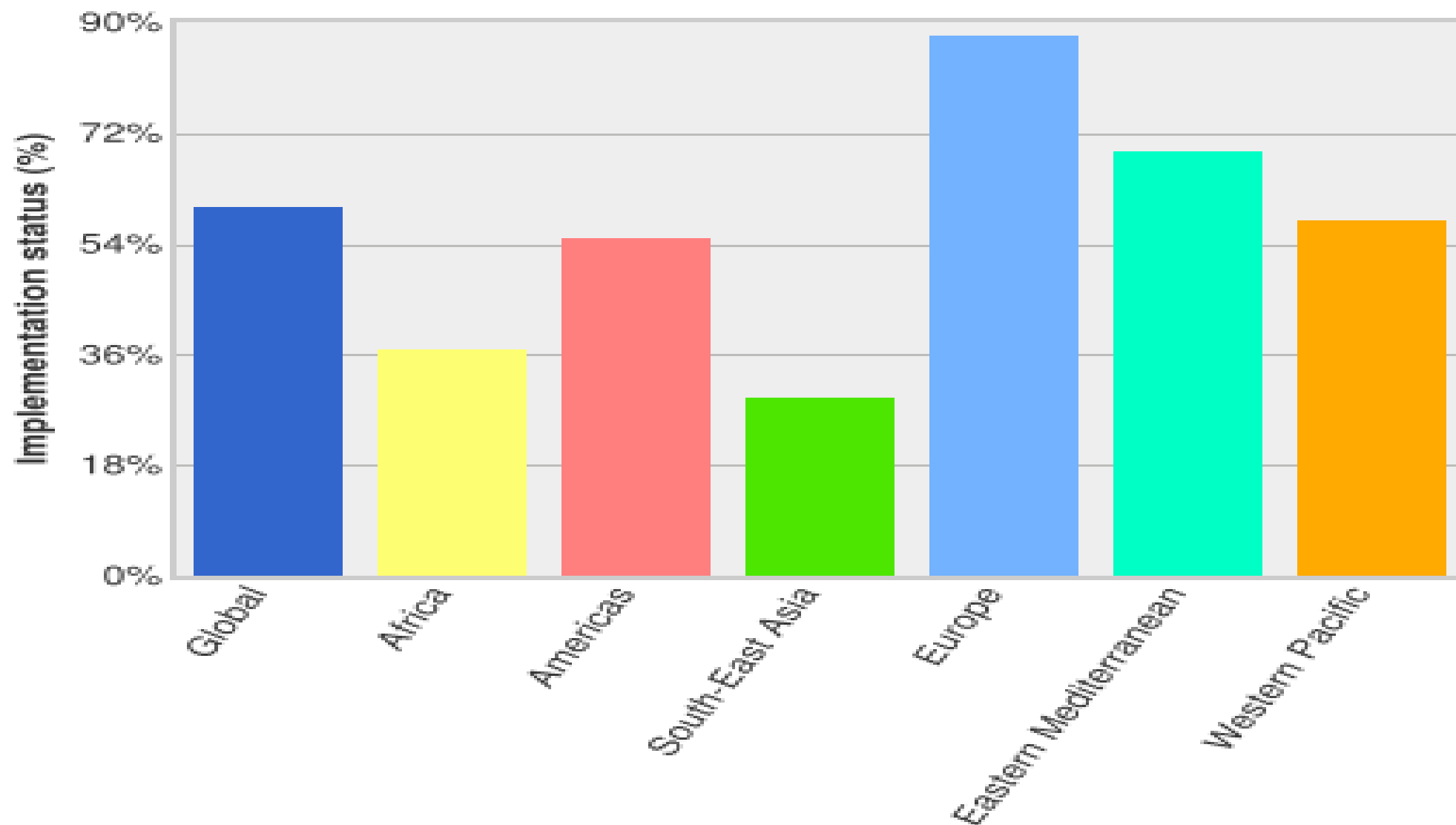
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# IHR Implementation Status of Radionuclear core capacity 2010-2015

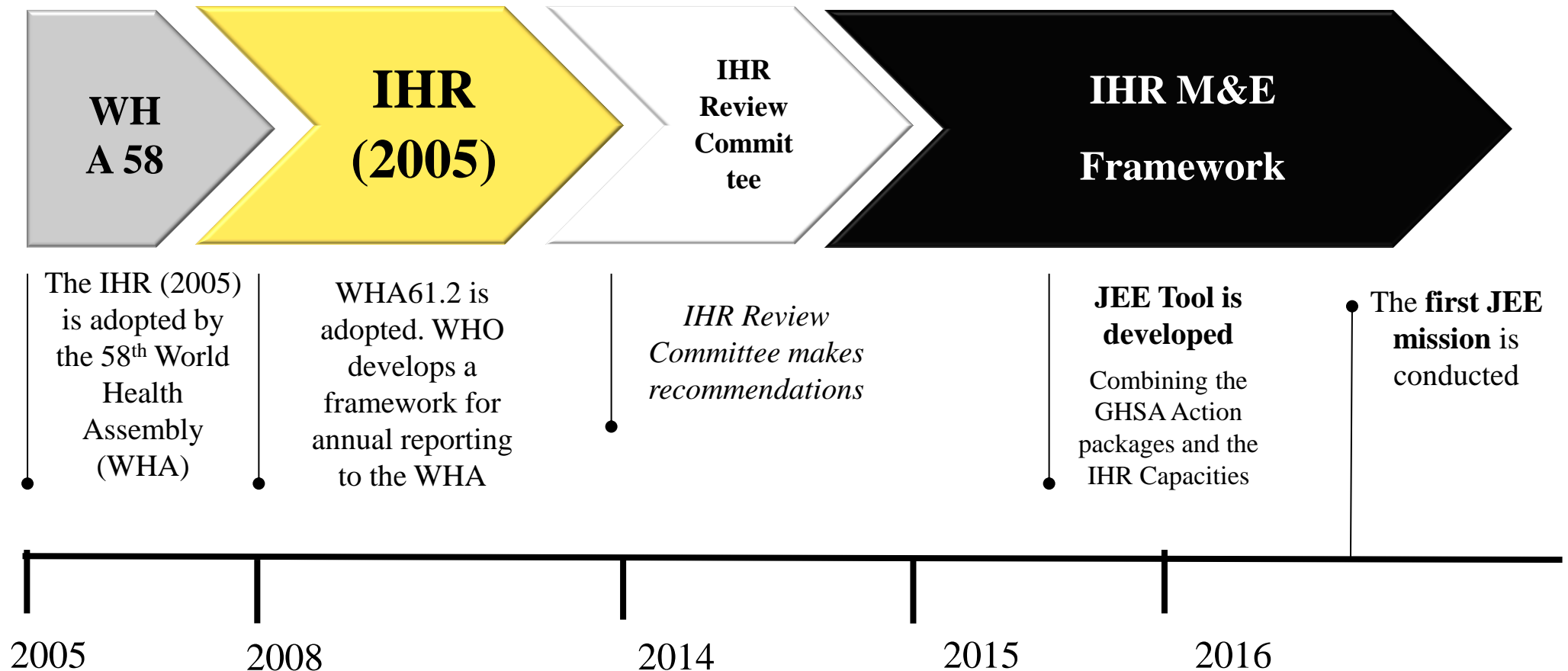




**IHR radionuclear core capacity:  
implementation status, 2015**  
Globally and by WHO region (%)



# IHR Monitoring and Evaluation Framework (IHR – MEF)



# IHR Monitoring and Evaluation Framework (IHR – MEF)



# Joint External Evaluation Tool

The joint external evaluation (JEE) is a **voluntary, collaborative, multisectoral** process to assess country capacity in order to prevent, detect and rapidly respond to public health threats.



## PREVENT

1. National legislation, Policy and Financing
2. IHR Coordination, Communication and Advocacy
3. Anti-microbial Resistances (AMR)
4. Zoonotic Disease
5. Food Safety
6. Biosafety and Biosecurity
7. Immunization

## DETECT

1. National Laboratory System
2. Real Time Surveillance
3. Reporting
4. Workforce Development

## RESPOND

1. Preparedness
2. Emergency Response Operations
3. Linking Public Health and Security Authorities
4. Medical Countermeasures and Personal Deployment
5. Risk Communication

## Other IHR related HAZARDS and PoEs

1. Point of Entries (PoEs)
2. Chemical Events
3. Radiation Emergencies

Score**	Indicators - Zoonotic Disease*		
	A.1 Surveillance systems in place for priority zoonotic diseases/pathogens	P.4.2 Veterinary or Animal Health Workforce	P.4.3 Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional
No Capacity -1	No zoonotic surveillance systems exist.	Country has no animal health workforce capacity capable of conducting one health activities.	No mechanism in place.
Limited Capacity -2	Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place.	Country has animal health workforce capacity within the national public health system.	National policy, strategy or plan for the response to zoonotic events is in place.
Developed Capacity -3	Zoonotic surveillance systems in place for 1-4 zoonotic diseases/ pathogens of greatest public health concern.	Animal health workforce capacity within the national public health system and less than half of sub-national levels.	A mechanism for coordinated response to outbreaks of zoonotic diseases by human, animal and wildlife sectors is established.
Demonstrated Capacity -4	Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern.	Animal health workforce capacity within the national public health system and more than half of sub-national levels.	Timely* and systematic information exchange between animal/wildlife surveillance units, human health surveillance units and other relevant sectors in response to potential zoonotic risks and urgent zoonotic events.
Sustainable Capacity -5	Zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern with system in place for continuous improvement.	Animal health workforce capacity within the national public health system and at all sub-national levels. This includes a plan for animal health workforce continuing education.	Timely* (as defined by national standards) response to more than 80% of zoonotic events of potential national and international concern.

\* Refers to zoonotic infections shared by animals and humans.

\*\* For full scores, capabilities should be separately evaluated both in the human and animal (livestock, companion animal and wildlife) sectors and mechanisms for regular comparison and joint policy-development in a One-Health fashion should be in place. For final scores, the average should be taken.

Indicators and Attributes

Technical Questions

### P.4.2 Animal Health and Veterinarian Workforce

1. Describe public health training offered to animal health veterinary staff within the country.
  - a. Describe what training in controlling zoonotic disease in animal populations is offered to public health staff within the country?
2. Are animal health experts and veterinarians included in country FETP or other equivalent training program?
3. What is the current animal population for the country, including farm and agricultural animals?

### P.4.3 Mechanisms for responding to infectious zoonoses are established and functional

1. Describe the policy, strategy or plan for the response to zoonotic events in the country.
  - a. Is there a joint planning or strategy which exists between animal health, human health and wildlife sectors?
  - b. Is there any memorandum of understanding between sectors for the management of zoonotic events?
2. Describe how the latest zoonotic events were managed, for example:
  - a. How the information is shared between sectors?
  - b. How often do the sectors meet at the technical level?
  - c. Do you have outbreak investigation and response report on the latest zoonotic events?
3. Describe the roles and responsibilities of animal health, human health and wildlife sectors on these recent zoonotic events.
4. Do you consider that country has capacity to respond to more than 80% of zoonotic events on time? What is the timeliness at present?

# JEE Indicators for Radiation EPR

**Target:** States Parties should have surveillance and response capacity for radio-nuclear hazards/events/emergencies. This requires effective communication and collaboration among the sectors responsible for radio-nuclear management.

**Desired Impact:** Timely detection and effective response of potential radio-nuclear hazards/events/emergencies in collaboration with other sectors responsible for radio-nuclear management.

Score	Indicators – Radiation Emergencies	
	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies.	RE.2 Enabling environment is in place for management of Radiation Emergencies
<b>No Capacity – 1</b>	National policies, strategies or plans for the detection, assessment, and response to radiation emergencies are not established	No coordination and communication mechanism between national authorities responsible for radiological and nuclear events with ministry of health and/or IHR NFP
<b>Limited Capacity – 2</b>	National policies, strategies or plans for the detection, assessment, and response to radiation emergencies are established and radiation monitoring mechanism exists for radiation emergencies that may constitute a public health event of international concern	National authorities responsible for radiological and nuclear events have a designated focal point for coordination and communication with the ministry of health and/or IHR NFP
<b>Developed Capacity – 3</b>	Technical guidelines or SOPs developed, evaluated and updated for the management of radiation emergencies (including risk assessment, reporting, event confirmation and notification, and investigation)	A radiation emergency response plan exists (could be part of national emergency response plan) and national policies, strategies or plans for national and international transport of radioactive material, samples and waste management including those from hospitals and medical services are established
<b>Demonstrated Capacity – 4</b>	Systematic information exchange between radiological competent authorities and human health surveillance units about urgent radiological events and potential risks that may constitute a public health emergency of international concern	Functional coordination <sup>13</sup> and communication mechanism <sup>14</sup> between relevant national competent authorities responsible for nuclear regulatory control/safety, and relevant sectors <sup>15</sup> .

<sup>13</sup> Note that these cross-references with legislation, policy and financing (core capacities 1 and 2) and these attributes for this component should be also fully addressed under those core capacities. They are under this hazard for coherence, flow, and triangulation where this is administered to the hazard expert.

<sup>14</sup> Information-sharing, meetings, SOPs developed for collaborative response etc.

<sup>15</sup> Coordination for risk assessments, risk communications, planning, exercising, monitoring and including coordination during urgent radiological events and potential risks that may constitute a public health emergency of international concern.

28

COMPLETED



32

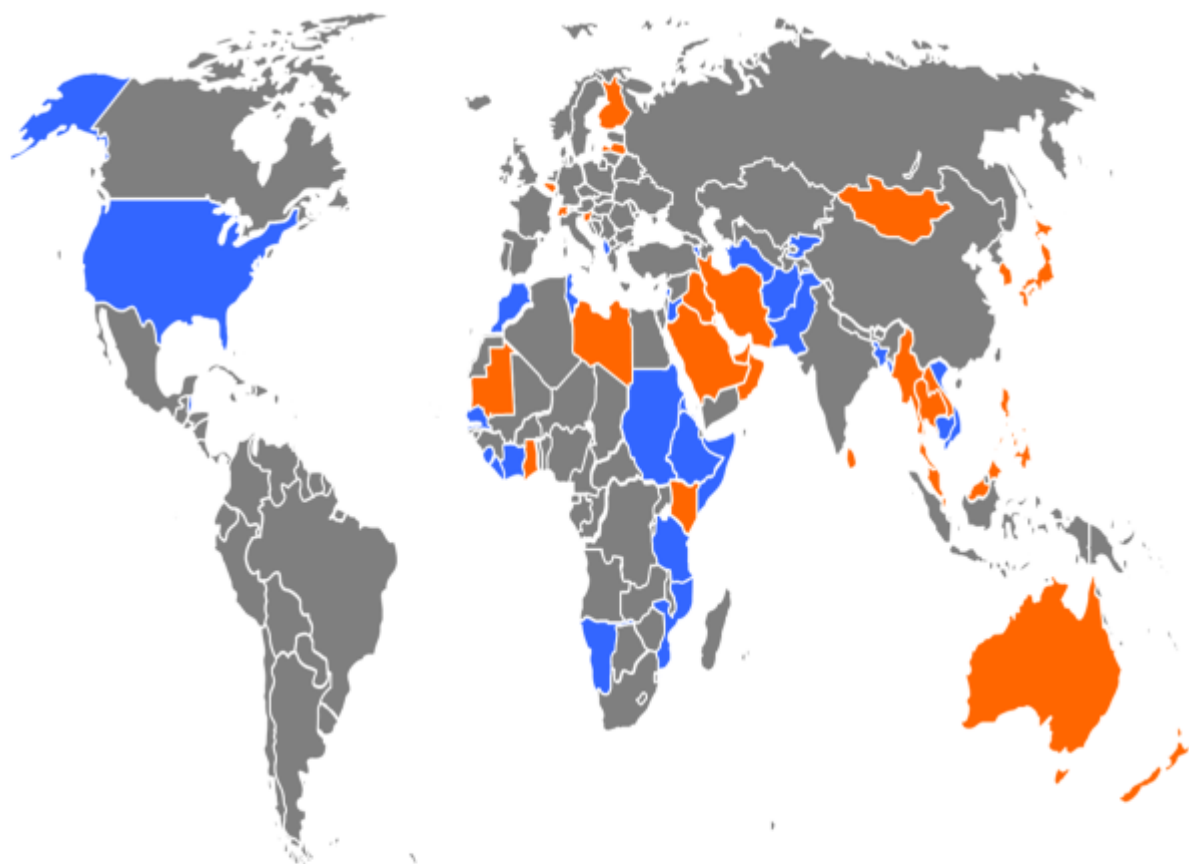
IN PIPELINE  
2017

## COMPLETED

Afghanistan, Albania, Armenia, Bahrain, Bangladesh, Belize, Cote d'Ivoire, Cambodia, Eritrea, Ethiopia, Jordan, Kyrgyzstan, Lebanon, Liberia, Morocco, Mozambique, Namibia, Pakistan, Qatar, Senegal, Sierra Leone, Somalia, Sudan, Tunisia, Turkmenistan, United Republic of Tanzania, United States of America, Vietnam

## IN PIPELINE

Australia, Belgium, Canada, Comoros, Djibouti, Finland, Ghana, Indonesia, Iraq, Japan, Kenya, Kuwait, Lao People's Democratic Republic, Latvia, Libya, Malaysia, Maldives, Mauritania, Mongolia, Myanmar, New Zealand, Oman, FSM/Cook Islands/Fiji, Republic of Korea, Saudi Arabia, Singapore, Slovenia, Sri Lanka, Switzerland, Liechtenstein, Thailand, United Arab Emirates, Tanzania (Zanzibar)





# WHO's Relevant Emergency Networks

- **Radiation Emergency Medical Preparedness and Assistance Network** – WHO's technical expertise arm since 1987, more than 40 member institutions
  - [http://www.who.int/ionizing\\_radiation/a\\_e/rempan/en/](http://www.who.int/ionizing_radiation/a_e/rempan/en/)
- **WHO BioDoseNet** (since 2007) - global network of some 90 cytogenetic laboratories specialized in biodosimetry for informal network for an information exchange and research cooperation
  - [http://www.who.int/ionizing\\_radiation/a\\_e/biodosenet/en/](http://www.who.int/ionizing_radiation/a_e/biodosenet/en/)
- **Public health emergency operations centres network (EOC-NET)** 38 member states
  - [http://www.who.int/ihr/publications/WHO\\_HSE\\_GCR\\_2013.4/en/](http://www.who.int/ihr/publications/WHO_HSE_GCR_2013.4/en/)
- **INFOSAN** – The International Food Safety Authorities Network of 186 member states national food safety authorities, managed jointly by FAO and WHO
  - [http://www.who.int/foodsafety/areas\\_work/infosan/en/](http://www.who.int/foodsafety/areas_work/infosan/en/)

# WHO REMPAN

A WHO technical expertise arm for providing to MS assistance on health interventions in radiation emergencies and on strengthening national capacities

- established in 1987, originally with 4 members
- today is comprised of 16 CCs, 38 LIs, and dozens of individual experts in 50 countries
- meets every three years, proceedings published in peer-review journals
- directory is available on the web:

[http://www.who.int/ionizing\\_radiation/a\\_e/rempan/en/](http://www.who.int/ionizing_radiation/a_e/rempan/en/)



# REMPAN e-Newsletters



<http://www.rempan.ukw.de/aktuelles/who-rempan-e-newsletter.html>



# REMPAN-15 meeting

## 3 to 5 July 2017 – Geneva, Switzerland



# Acknowledgements

- WHO member states
- International agencies, donor and Partners
- International Atomic Energy Agency (IAEA)
- WHO regional offices, WHO country offices

# Thank You



Accessible at :

<http://www.who.int/ihr/procedures/implementation/en/>