Report to the 2\textsuperscript{nd} meeting of the IAEA's EPR\textsubscript{E}SC Committee

Zhanat Carr, MD, PhD
Radiation Programme
Department of Public Health, Environmental and Social Determinants of Health

Vienna, Austria – 29 June 2016
More than 7000 people work for the WHO in its 157 country offices, six regional offices and at the Headquarters in Geneva, Switzerland.

The World Health Assembly (WHA): the WHO's supreme decision-making body. Meets once a year, gathering representatives of WHO's 194 Member States. Produces WHA Resolutions.
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
May 2016: WHA adopts new WHO Health Emergencies Programme (WEP)

“…..to deliver rapid, predictable, and comprehensive support to countries and communities as they prepare for, face or recover from emergencies caused by any type of hazard…”
DG Margaret Chan just announced:

"... the appointment of Dr Peter Salama as Executive Director of the new WHO Health Emergencies Programme, at the level of Deputy Director-General, with effect from 27 July.

Dr Salama is from Australia and he is currently UNICEF Regional Director for Middle East and North Africa and Global Emergency Coordinator for the Crises in Syria, Iraq and Yemen. "
Key milestones following the WHA

07 Jun: Inter Agency Standing Committee (IASC) & OCHA

21 Jun: UN General Assembly on health security/new Programme

22 Jun: Financing dialogue for new Emergency Programme

27 Jun: Peter Salama appointed Executive Director to lead WEP

30 Jun: WHO Regional Committee papers (new Programme)

1 Jul: operating target for new Programme:

- Senior Management Team appointed (HQ & Regional Offices)
- new emergency processes (risk assess, grading, IMS) published pending 2nd ed. of WHO Emergency Response Framework (ERF)
- key staff/units realigned to new ‘functional reporting lines’
- new Results Framework, structure & positions in HQ and ROs established

4-5 Jul: Independent Oversight & Advisory Committee
## Major Principles of the WHO Health Emergencies Programme

<table>
<thead>
<tr>
<th>Single approach for all emergencies (outbreaks, disasters, etc)</th>
<th>Standardized across all 3 levels and all 7 major offices</th>
<th>Leverage &amp; facilitate UN, partners and disaster mgmt systems</th>
<th>Optimize political access and technical expertise</th>
<th>Operate across the emergency management cycle</th>
</tr>
</thead>
</table>

**SOURCE:** Advisory Group report, Executive Board paper, independent assessment reports
The new WEP: Key Features

1. One workforce
2. One work plan and $494 m budget
3. One line of accountability
4. One set of processes
5. 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

Infectious Hazard Management

High Threat Pathogen Detection ➔ Diagnostics, therapeutics, vaccines & other measures

All-Hazards Preparedness/IHR, Risk Assessment & Response

- Natural disaster
- Conflict
- Infectious outbreaks
- Chemical Incidents
- Nuclear accidents

EVENT GRADING
RESPONSE

WHO lead role
IASC/OCHA lead
Specialized mechanisms

The 2nd EPreSC meeting, Vienna, 29 June 2016

World Health Organization
Priority, critical gaps to address in 2016-2017

Geographic priorities
- Regional Offices, particularly AFRO and EMRO
- Global Health Cluster Countries
- Countries with acute emergencies

75% of budget increase

Functional priorities
- Joint External Evaluation for National core capacities for preparedness and response
- Risk Assessment Capacity
- Emergency Operations capacity

65% of budget increase
International Health Regulations (IHR, 2005)

• Legally binding treaty
• 196 States Parties
• In force 15 June 2007

States must prepare, report and cooperate
WHO must coordinate

http://www.who.int/topics/international_health_regulations/en/
Joint External Evaluation of IHR implementation

- Developed in collaboration with partners and initiatives such as the Global Health Security Agenda (GHSA), the JEE tool and process is a part of the IHR (2005) Monitoring and Evaluation framework (http://www.who.int/ihr/publications/WHO_HSE_GCR_2016_2/en/)

- Since March 2016, the JEE reviews were done in 11 countries, including Pakistan, Turkmenistan, Qatar, Morocco, USA, etc.

- Focuses on health security and cross-sector coordination and includes 19 areas of evaluation, radiation emergencies being one of them.

- Somewhat similar to EPRev but not as through and detailed at the technical level as EPRev, however – we need to find the way to coordinate these two mechanisms
Emergency Preparedness and Response
Relevant Emergency Networks

- **REMPAN**: Radiation Emergency Medical Preparedness and Assistance Network (since 1987): > 40 member institutions
  http://www.who.int/ionizing_radiation/a_e/rempan/en/
  - Proceedings of the 14th meeting to be published in Aug 2016 at RPD
  - NB! The 15th REMPAN meeting – 3-5 July 2017 in Geneva

- **BioDoseNet**: a global network of 90 biodosimetry laboratories (since 2007) http://www.who.int/ionizing_radiation/a_e/biodosenet/en/
  - 4th BDN meeting (October 2015, Hannover, USA)
  - New training tool (digital image repository) developed
  - Results of the 2015 global capacity survey were accepted at the RPD
Guides, requirements and recommendations addressing public health interventions

- ICRP publications provide scientific basis for emergency interventions
  - ICRP-103, 107, 111

- IAEA publications provide basis for planning and criteria for protection strategy in emergency, e.g.
  - GSR Part 3 / BSS
  - GSR Part 7
  - GSG-2 & 2.1
  - EPR series
  - DS 474, 475

- Other relevant publications, scientific papers, etc.
Development of WHO Guidelines

Any document containing recommendations for clinical practice or public health policy is considered a guideline, therefore, subject to WHO policy on guideline development.

Guidelines currently under development:

- Public health response to radiation emergencies
- Revision of 1999 guidelines on KI thyroid blocking
- Guide for communications in public health emergency
- Risk communication tool on radioactively contaminated food

http://www.who.int/kms/guidelines_review_committee/en/
The 2nd EPReSC meeting, Vienna, 29 June 2016

**Systematic review**

**PICO**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Critical</td>
</tr>
<tr>
<td>Outcome</td>
<td>Important</td>
</tr>
<tr>
<td>Outcome</td>
<td>Not important</td>
</tr>
</tbody>
</table>

Systematic reviews based on PICO

Create evidence profile with GRADEpro

Rate quality of evidence for each outcome

High
Moderate
Low
Very low

Grade overall quality of evidence across outcomes based on lowest quality of critical outcomes

**Grade recommendations**

- For or against (direction) ↓↑
- Strong or conditional/weak (strength)

By considering balance of:
- Quality of evidence
- Balance benefits/harms
- Values and preferences

Revise if necessary by considering:
- Resource use (cost)

**Formulate Recommendations**

- “We recommend using…”
- “We suggest using…”
- “We suggest not using…”
- “We recommend not using…”
Development of Guidelines on Public Health Response to Radiation Emergencies

- Requested by MS in the aftermath of Fukushima accident in 2011
- Global 2012 survey of member states demonstrated the urgent need for guidelines on response in both early and late stages, as well as a longer-term recovery.
- Funding for this project was provided by the governments of Japan and Switzerland

- 1st meeting – Geneva, June 2012
  - Identified the scope, methods of work, developed work plan
- 2nd meeting – Amman, Jordan was held in June 2013
  - SRs completed in 2014
Questions formulated for the systematic reviews

Three research topics/areas included:

1. Early response interventions
   i. Mass evacuation of the general public
   ii. Mass evacuation versus sheltering in combination with KI
   iii. Monitoring and decontamination of general public
   iv. Monitoring of food and drinking water safety

2. Late response interventions
   i. Cessation of emergency interventions and transition to pre-existing exposure situation
   ii. Identification of people who should be included in long-term health surveillance
   iii. Methods for long-term health surveillance

3. Psychological impact and risk communication
Iodine Thyroid Blocking (ITB) 1999 guidelines revision

- WHO Guidelines on KI thyroid prophylaxis were published by the WHO-EURO in 1989 and updated in 1999
  - 10 mSv of effective thyroid dose was used as a recommended intervention level for KI use at the time

- Generic criteria for ITB as an urgent protective action were revised in 2003 (IAEA's GSR-2, co-sponsored by WHO and PAHO)
  - To prevent stochastic effects: 50 mSv of effective thyroid dose during the 1st week since exposure

- This criterion remains unchanged in GSR Part 7 (also co-sponsored by WHO and PAHO) and is not addressed but cross-referenced by the new WHO guidelines
TABLE II.2. GENERIC CRITERIA FOR PROTECTIVE ACTIONS AND OTHER RESPONSE ACTIONS IN AN EMERGENCY TO REDUCE THE RISK OF STOCHASTIC EFFECTS

<table>
<thead>
<tr>
<th>Generic criteria</th>
<th>Examples of protective actions and other response actions&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected dose that exceeds the following generic criteria: Take urgent protective actions and other response actions</td>
<td></td>
</tr>
<tr>
<td>$H_{\text{thyroid}}$ 50 mSv&lt;sup&gt;b&lt;/sup&gt; in the first 7 days</td>
<td>Iodine thyroid blocking&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>$E^d$ 100 mSv in the first 7 days</td>
<td>Sheltering&lt;sup&gt;e&lt;/sup&gt;; evacuation; prevention of inadvertent ingestion; restrictions on food, milk and drinking water&lt;sup&gt;g&lt;/sup&gt; and restrictions on the food chain and water supply; restrictions on commodities other than food; contamination control; decontamination; registration; reassurance of the public</td>
</tr>
<tr>
<td>$H_{\text{fetus}}$ 100 mSv in the first 7 days</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> These examples are neither exhaustive nor grouped in a mutually exclusive way.

<sup>b</sup> The equivalent dose to the thyroid ($H_{\text{thyroid}}$) only due to exposure to radiiodine.
In actual emergencies...

- KI was not timely administered during response to Chernobyl accident in 1986 in the former Soviet Union
- KI was available but not administered by Fukushima population
- KI was over-used by TEPCO workers who are reported to have used up to 80 pills
- IAEA report on Fukushima (2015): "The arrangements prior to the accident included criteria for sheltering, evacuation and iodine thyroid blocking in terms of projected dose, but not in terms of measurable quantities.... Administration of stable iodine for iodine thyroid blocking was not implemented uniformly, primarily due to the lack of detailed arrangements"
WHO KI Thyroid Blocking 1999 guidelines revision

- Project started in 2014 with a kick off meeting held in Wuerzburg, Germany in May 2014 (meeting report is accepted in RPD), where GDG defined the scope of the guidelines and developed PICO questions.

- PICO: In a population exposed to radioiodine release (P), does the administration of KI (I) against no administration (C) affect the risk of developing thyroid cancer, hypothyroidism, benign nodules (by age groups).

- Secondary PICO questions:
  - On the timing of KI administration
  - On the repeated KI administration (in case of continuous releases)

- In 2015, systematic review was conducted
  - Funding was provided by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and ARPANSA.
KI Thyroid Blocking guidelines revision

- In Jan 2016, the 2nd GDG meeting took place in Pisa Italy
  - to review the results of the systematic reviews and the evidence base assessment
  - to develop recommendations and assess their strength

- KITB guidelines will be added to the Response Guidelines as a stand-alone chapter

- The draft being developed and will be undergoing external reviews and finalized in the 2nd half of 2016

- Monitoring and implementation for the new guidelines
Establishing ITB guidelines use baseline

- In order to monitor the implementation rate and efficiency, we need to be able to compare the effect against the baseline.

- To establish the baseline, WHO will run on-line survey of the member states on national ITB policies (where applicable)

- On-line survey is based on the recent European survey RiskAudit

WHO Survey on National ITB policies (2)

- Who should fill out? National level response planners, decision makers at the NCAs or at the national health authorities, who are familiar with the national ITB policy and has access to accurate up to date information.

- When? Time frame for filling out the survey is **July 05 – August 31 2016**

- How many questions? There are about 80 questions, mostly multiple choice type.

- How long it takes? Maximum 90 min of your time.
WHO Survey on National ITB policies (3)

URL to access the survey: 
https://extranet.who.int/dataform/717972?lang=en
Emergency Preparedness and Response

Current challenges

- **Cross-sector coordination** between NCAs and health sector
- **Linking with the disaster risk reduction** community and building on their experience, use of Sendai post 2015 framework
- **Social mobilization** and community involvement in decision-making, public communication strategies, psychological support
  - NERIS meeting - April 2015 Milan, Italy
  - OPERRA WS - Oct 2014 and Oct 2015, Barcelona, Spain
- **Long-term medical follow-up** of over-exposed populations
  - NEA/OECD's Science and Values WS in Moscow – June 2015
  - Intl. Symposium for the 5th anniversary – March 2016, Fukushima, Japan
  - WHO IARC leads a work package of the SHAMISEN project
WHO is working with the BSS co-sponsors toward supporting countries implementation of the international standards

As a member of the Inter-Agency Committee on Radiation Safety (IACRS) Task Group on BSS Implementation, WHO collaborated with IAEA on BSS workshops, e.g.
- Regional BSS WS in Accra, Ghana (2015),
- Intl. WS in Riad, Saudi Arabia (2016) – on medical exposure,
- Regional WS in Cape Town, S. Africa (2016) – on public exposure

Similar approach can be used by the cosponsors of the GSR Part 7 for implementation activities
International Basic Safety Standards
Supporting the implementation

- Specific interest currently on food and water issues
- TEC-DOC on reference levels for food and drinking water in post-accident situations developed jointly by IAEA, FAO and WHO
- This collaboration continues now to support MS in the interpretation and use of the standards
Thank you!

CarrZ@who.int

The 2nd EPReSC meeting, Vienna, 29 June 2016