

Global monitoring of human exposure to mercury and its compounds: are we ready?

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Mercury HBM at global level

- **WHO:** HBM is a reliable method
 - to assess exposure,
 - to identify populations at risk
 - to plan targeted risk reduction measures
 - to evaluate effectiveness
 - to assess spatial and temporal trend
- **Minamata Convention:**
 - (art 19)
 - b) Modelling and geographically representative monitoring of levels of mercury and mercury compounds in vulnerable populations
 - d) Harmonized methodologies for the activities undertaken under subparagraphs (a), (b) and (c)
 - (art 22)
 - 2. ... trends in levels of mercury and mercury compounds observed in biotic media and vulnerable populations

Harmonized approach

Benefits

- Comparable and reliable data
- Knowledge about population at risk at global and national level
- Effective use of human, technical and financial resources
- Evaluation of risk reduction measures geographically and temporally

Challenges

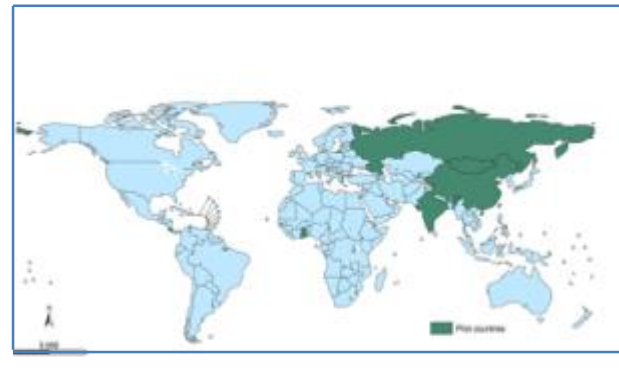
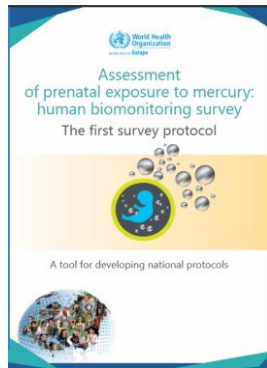
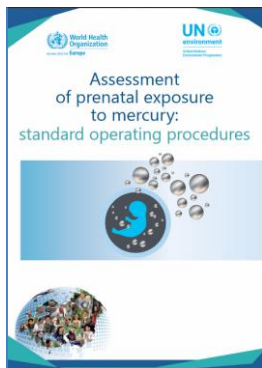
- Cultural difference
- Ethical considerations
- Readiness (laboratory capacity and competence)
- Possibility to incorporate in existing national programmes

Development of harmonized approach



**Scientific
component**

**Practical
implementation**



The pilot surveys

Protocol



250 women
Last trimester
of pregnancy

Training and
document
adaptation



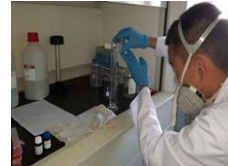
At global and
national level,
Comparative
study

Recruitment
and field work,
Q survey



Two week before
delivery
Sampling (hair,
cord blood, urine

Transportation
and analysis



In national and
reference laboratory
Mirror analysis

Database and
statistics



SOPS

Feasibility of the methodology implementation

	Hair	Cord blood	Urine
China	250	250	250
Ghana	240	59	215
India	250	250	250
Kyrgyzstan	107	107	107
Mongolia	265	265	265
Russian Federation	252	252	252



Surveys were implemented in 6 from 7 pilot countries

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At global level

YES

It is feasible to conduct mercury monitoring globally

In each region and country

- Capacity building is needed: epidemiologists and laboratories

HBM: filling data gaps, matrices

- Existing inter/national, longitudinal studies continue to be used
- Fill critical data gaps in SIDS, Africa, Asia with targeted studies
- Focus on most vulnerable population – foetal exposure to MeHg
- WHO protocol for maternal hair and as an alternative cord blood
- Most efficient way to fill gaps, method has been demonstrated in developing countries