

Framing public policies to reduce health risks from lead & mercury: a regional perspective

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Environment & Health Sciences

Lead and Mercury Impact on Environment and Human Health



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The public health impact of chemicals

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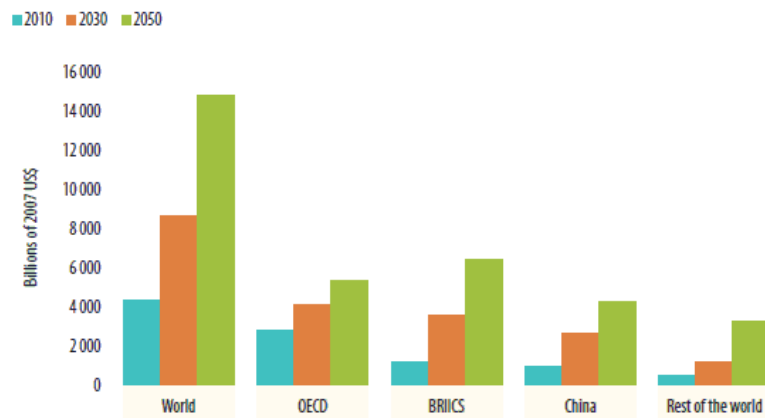


THE PUBLIC HEALTH IMPACT OF CHEMICALS: KNOWN AND UNKNOWN

International Programme on Chemical Safety



Figure 1. Projected chemicals production (sales) by region, "Baseline" scenario, 2010–2050



Source: OECD Environmental Outlook to 2050: The Consequences of Inaction, (Chapter 6: Health and Environment) (OECD, 2012, doi: <http://dx.doi.org/10.1787/9789264122246-en>).

1.3 million deaths attributable to chemical exposures in 2012

14-19 million workers are employed as ASG miners. Between 25% and 33% of these miners-3.3-6.5 million miners globally-suffer from moderate chronic metallic mercury vapor intoxication (Steckling et al., 2017)

•(WHO, 2016) Available at:

•: <http://www.who.int/ipcs/publications/chemicals-public-health-impact/en/>

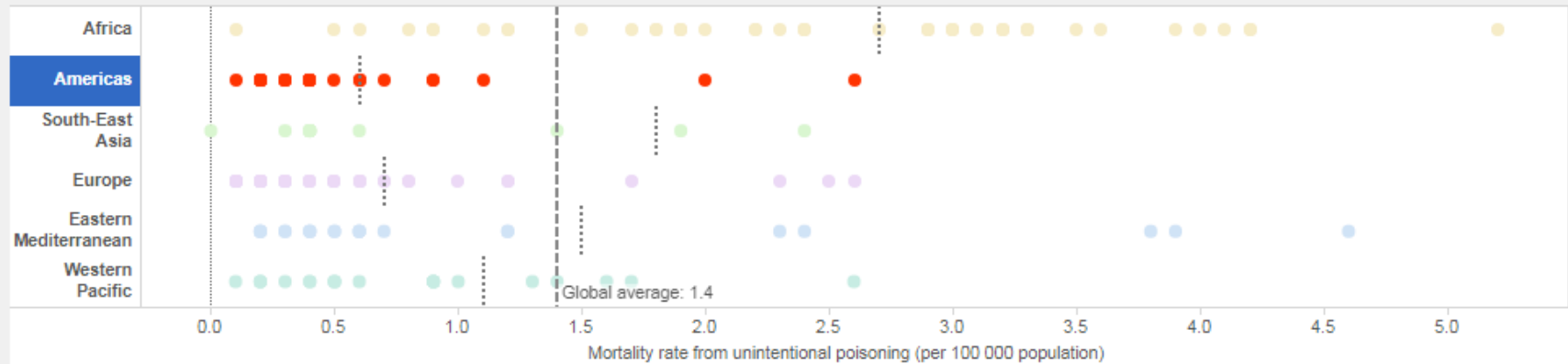
Mortality from unintentional poisoning

Over 100 000 deaths were caused by unintentional poisonings in 2016

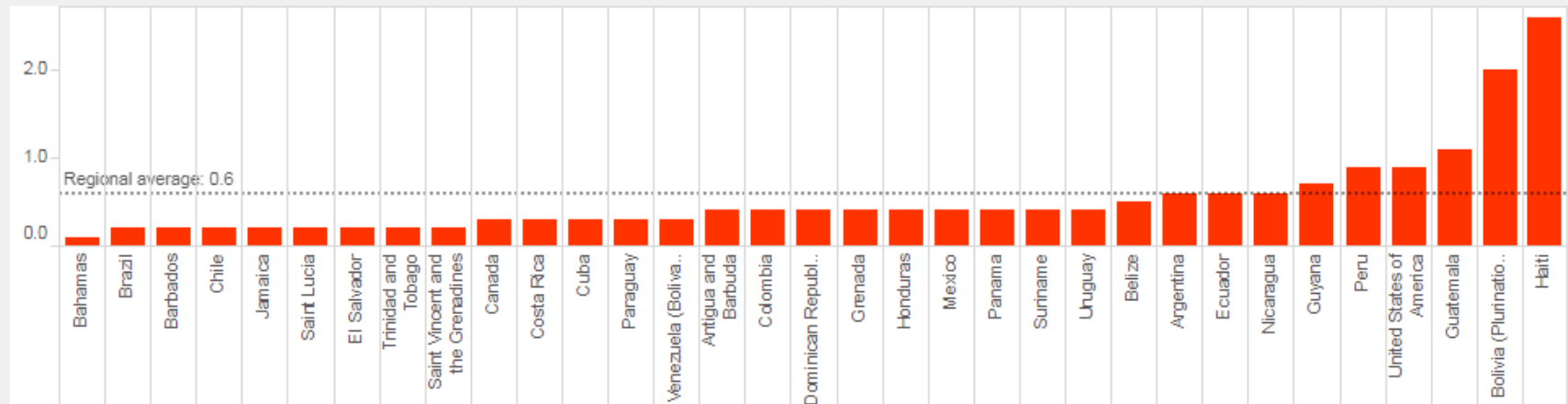
Last updated: 2018-05-16

Each circle/bar represents a country. The dotted grey line indicates the regional average, and the dashed grey line indicates the global average. Click on a region name to display the distribution by country (within that region) as a bar graph.

Mortality rate from unintentional poisoning (per 100 000 population), by WHO region, 2016

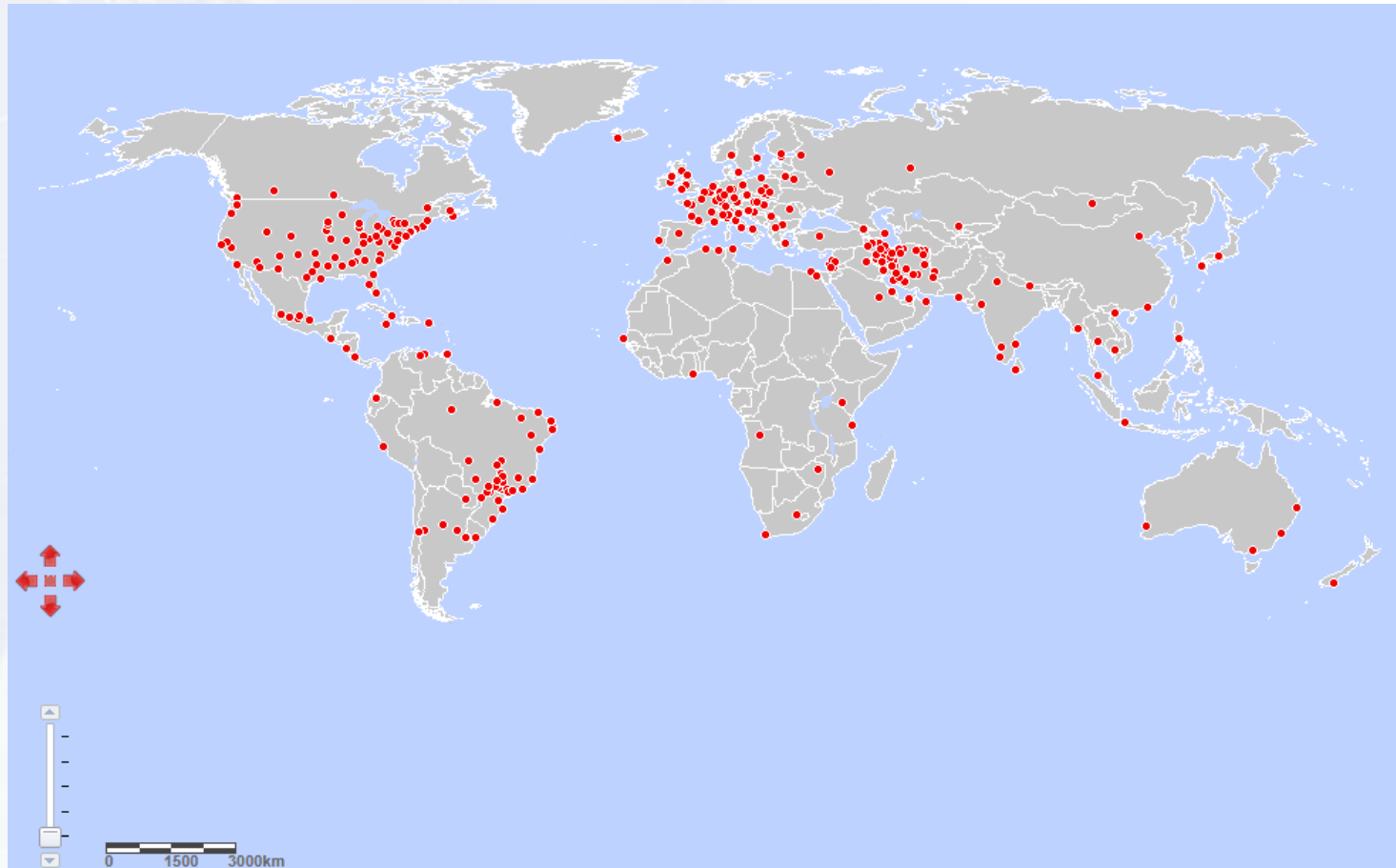


Distribution by country (in selected WHO region) mouse-over the y-axis to sort



© World Health Organization 2018

World directory of poison centres, as of 30 September 2017



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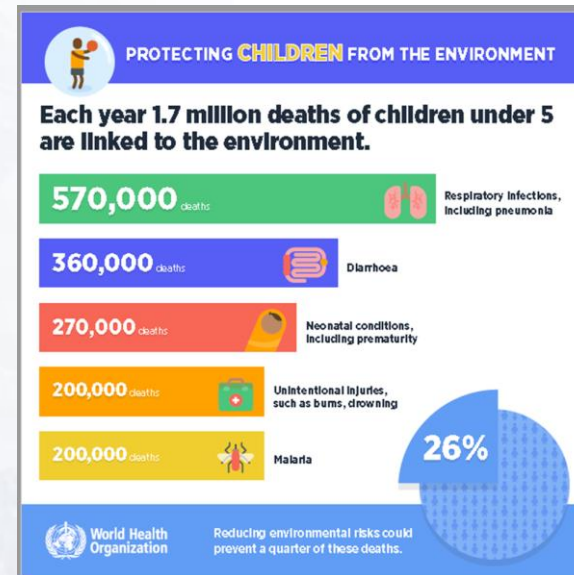
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Don't pollute my future!

THE IMPACT OF THE ENVIRONMENT
ON CHILDREN'S HEALTH



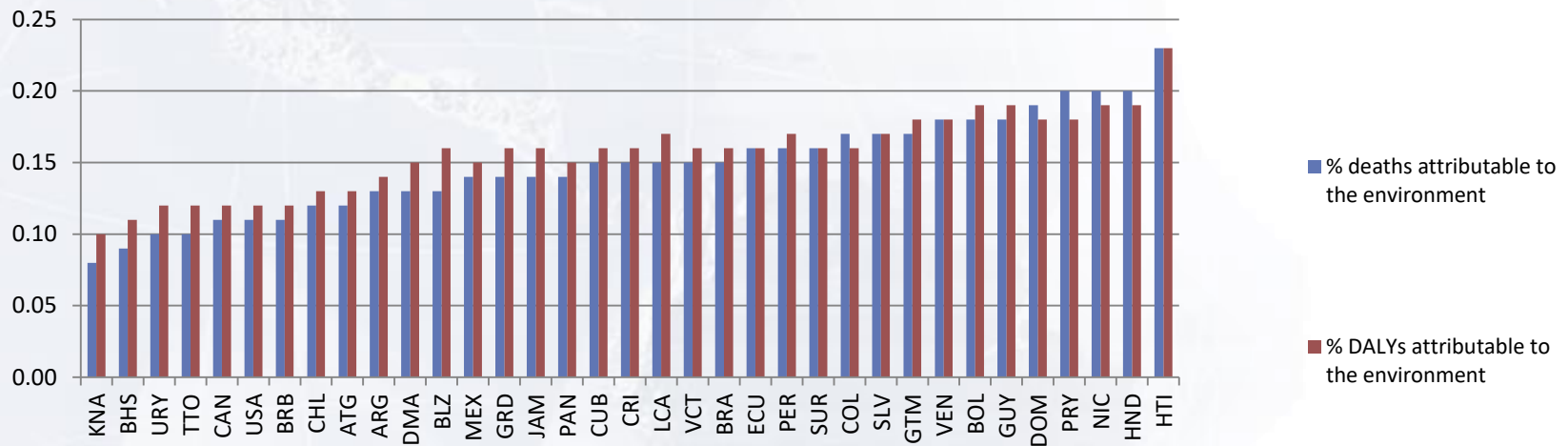
Childhood exposure to **lead** is estimated to contribute to approximately 600,000 new cases of children developing intellectual disabilities every year (WHO, 2016)

Fish consumption among communities in ecosystems affected by ASGM has been considered one of the most critical exposures to **methyl mercury** (Sheehan et al, 2014).

Available at:

<http://apps.who.int/iris/bitstream/10665/254678/1/WHO-FWC-IHE-17.01-eng.pdf?ua=1>

The burden of disease from environmental risks in the Americas



Differences among countries ~ 3 times for mortality and ~2 times for DALYs:

- 8 to 23% of the deaths attributable to environmental risks
- 10 to 23% of DALYs attributable to environmental risks

For NCDs:

- age-standardized mortality varies from 35 (Canada) to 163 and 176/ 100,000 per capita for Guyana and Haiti respectively;
- age-standardized DALYs / 100,000 per capita differs up to three times among countries.

Protecting the vulnerable: we cannot be gradient blind!

TABLE 3. Stunting prevalence among children (%) by country, place of residence, ethnicity, region, and socio-economic status (SES), four Andean countries

	Country			
	Colombia	Ecuador	Peru	Bolivia
Place of residence ^a				
Large cities	12.7	20.7	13.2	18.5
Small cities	10.9	22.4	20.1	20.3
Towns	14.0	28.2	27.2	22.4
Countryside	19.3	35.2	40.8	37.2
Ethnicity				
Nonindigenous	... ^b	24.2	22.5	23.7
Indigenous	...	58.2	47.0	50.5
Region				
Highland or altiplano	...	33.3	38.5	31.2
Other regions	...	22.2	18.2	23.9
Deciles of SES ^c				
1 (lowest)	26.8	38.5	49.6	42.2
2	24.1	51.8	46.8	39.9
3	17.1	30.6	39.6	38.7
4	14.9	27.6	32.5	32.8
5	16.3	27.9	23.4	31.8
6	15.2	24.4	19.9	25.0
7	11.0	19.0	18.3	22.7
8	11.7	19.1	12.8	18.2
9	6.3	15.8	12.6	13.5
10 (highest)	5.4	11.9	5.2	9.7
Concentration index ^d	-0.221	-0.223	-0.311	-0.223
Overall country prevalence	14.9	26.5	26.1	26.9

Data sources: References 7–10.

^a In DHS surveys (Colombia, Peru, and Bolivia), large cities include national capitals and cities over 1 million inhabitants, and small cities have a population range from 50 000 to 1 million. In LSMS surveys (Ecuador), small cities range from 5 000 to 1 million.

^b The ellipsis symbol (...) indicates that data were not available.

^c Deciles of SES are taken for children, and they do not correspond to population deciles, due to socioeconomic differences in fertility.

^d The concentration index measures the social inequality in the stunting. The concentration index is a generalization of the Gini coefficient, and it ranges between -1 and 0. Values closer to -1 indicate greater social inequality (1).

Public health commitments and mandates of the health sector



The role of the health sector in the Minamata Convention

The WHO Chemicals Roadmap

The Global Alliance to eliminate lead in paint



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WHO – World Health Assembly

SIXTY-SEVENTH WORLD HEALTH ASSEMBLY

WHA67.11

Agenda item 14.5

24 May 2014

Public health impacts of exposure to mercury and mercury compounds: the role of WHO and ministries of public health in the implementation of the Minamata Convention

The Sixty-seventh World Health Assembly,

Having considered the report on public health impacts of exposure to mercury and mercury compounds: the role of WHO and ministries of public health in the implementation of the Minamata Convention;¹

Recalling World Health Assembly resolutions WHA60.17 on oral health: action plan for promotion and integrated disease prevention, WHA63.25 on the improvement of health through safe and environmentally sound waste management, and WHA59.15 on the Strategic Approach to International Chemicals Management, as well as the strategy for strengthening the engagement of the health sector in the implementation of the strategic approach adopted by the International Conference on Chemicals Management at its third session;

Recognizing the importance of dealing effectively with the health aspects of the challenges that chemicals and wastes, including mercury, may pose, particularly to vulnerable populations, especially women, children, and, through them, future generations;

Recalling the renewed commitments on sustainable development set out in the United Nations Conference on Sustainable Development Rio+20 outcome document "The future we want", of June 2012, as well as the Adelaide Statement on Health in All Policies of 2010, and the 8th Global Conference on Health Promotion, held in Helsinki in 2013, which promoted intersectoral collaboration across all sectors to achieve healthy populations;

Taking note that negotiations on the text of a new multilateral environmental agreement on mercury were concluded in October 2013 with the adoption of the Minamata Convention on Mercury, being the first time that a multilateral environmental agreement includes a specific article on health, as well as other relevant provisions, and that the Convention places certain obligations on Parties that will require action, as applicable, by the health sector, together with other competent sectors, including the progressive phase-out, resulting from banning the manufacture, import or export by 2020 of mercury thermometers and sphygmomanometers, of mercury-containing cosmetics, including skin-lightening soaps and creams, and mercury-containing topical antiseptics, measures to be taken to

¹ Document A67/24.

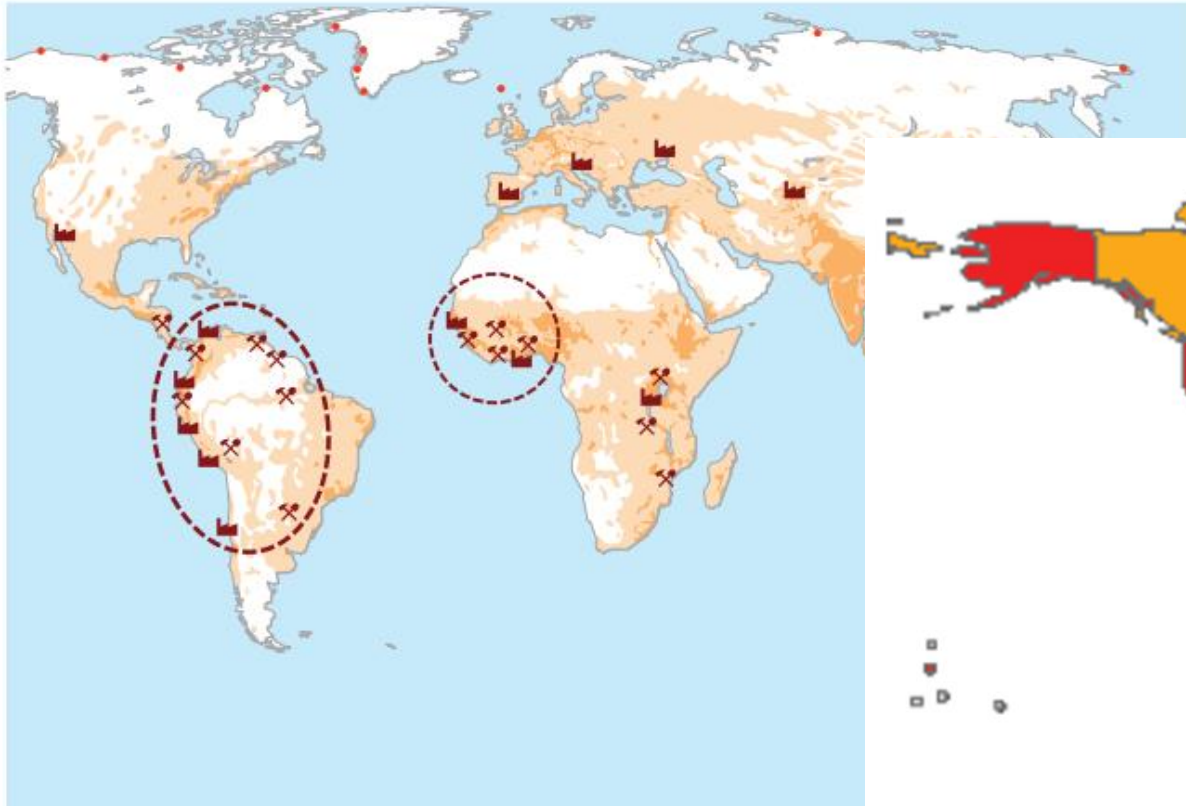


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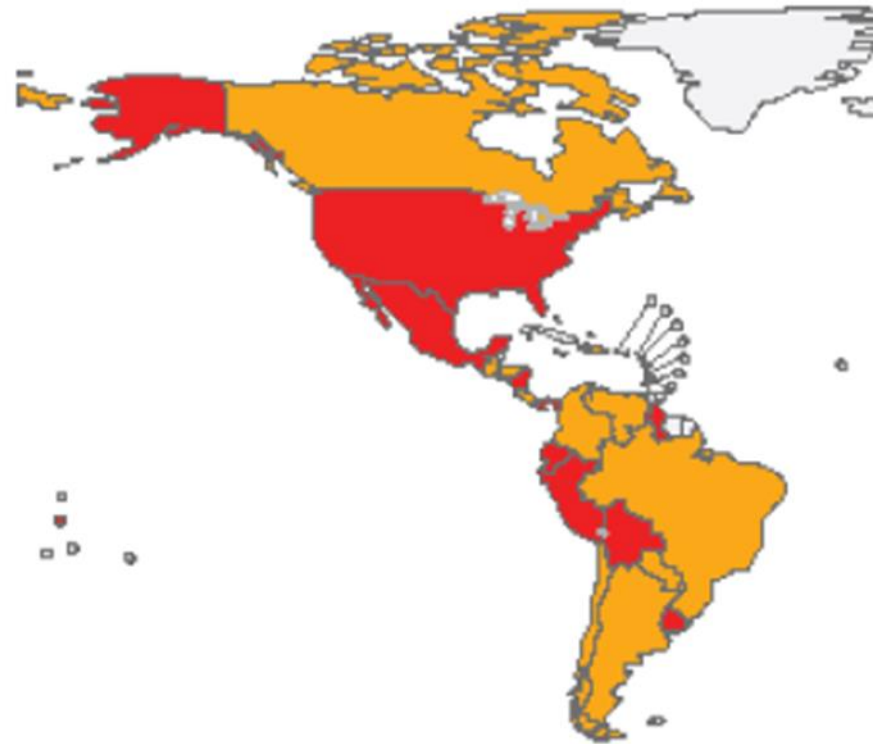
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Population at risk from mercury contamination

- Mercury pollution from mining and ore processing
- Mercury contamination from artisanal and small-scale gold mining
- Key regions of affected people by mercury pollution
- Health risk by consumption of contaminated marine mammals in arctic communities
- Densely populated area
- Populated area
- Sparsely populated area

Source: Adapted from Blacksmith Institute (> www.worstpolluted.org); Arctic Monitoring and Assessment Programme (AMAP) (> www.amap.no)
 Designed by Zvi Environment Network / ERD-Arendal, December 2012



- Party in the Minamata Convention
- Signatory in the Minamata Convention
- Non-Party
- Not applicable



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WHAT IS THE MINAMATA CONVENTION?

It is an international agreement that aims to protect people and the environment from mercury.

The health sector is working to:



1. Phase out thermometers and blood pressure devices that contain mercury
2. Promote oral health and reduce dental amalgam use
3. Implement strategies to protect small-scale gold miners and other vulnerable groups
4. Monitor mercury exposure and provide health advice

Everyone can contribute:



Dispose of mercury-containing products safely.

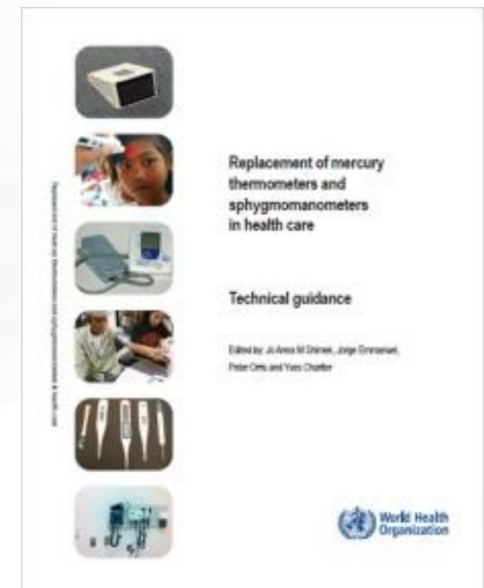


Choose mercury-free products when possible.



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WHO Guides and documents



http://www.who.int/ipcs/assessment/public_health/mercury/en/



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The role of the health sector in the Minamata Convention implementation / Virtual Course

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Special Program on Sustainable Development and Health Equity, PAHO/WHO, Washington D.C., USA

Background

The Virtual Course on the roles of the health sector in the Minamata convention has been organized in support to the World Health Assembly Resolution 67.11 of 2014 on the "Role of WHO and ministries of public health in the implementation of the Minamata Convention". The course aims to enhance capabilities and to facilitate health sector professionals work on mercury related issues.

The course targeting Spanish speaking countries in the Latin America and Caribbean region is currently under implementation, during three months for a total of 150 hours, with contributions from regional experts on its first edition. Major highlights of the course include the clarification of the different forms of mercury and its compounds with their respective sources and exposure routes, environmental distributions, toxicological aspects, presenting prevention and mitigation options. Compatible with the convention, guidelines are presented for the development and implementation of public health strategies addressing the replacement of mercury added products in use in health services, and the public health strategy for artisanal and small-scale gold mining communities. Healthy fish consumption and other topics, such as communication are also discussed in the course.

Course structure

- Module 1:** Mercury as global contaminant of public health concern
- Module 2:** Toxicology of mercury and its compounds
- Module 3:** Mercury in products use in health services
- Module 4:** Artisanal and small-scale gold mining
- Module 5:** Healthy fish consumption
- Module 6:** Risk communication & inter sectorial approaches

Introduction / Module 1 / Module 2 / Module 3 / Module 4 / Module 5 / Module 6 / Evaluation & closing / Key documents / Glossary



El rol del sector salud en el convenio de Minamata sobre el mercurio

Toxicology of mercury and its compounds

Objective: To understand the human toxicology of mercury in its various forms and compounds in order to enable capabilities to deliver health services, with emphasis on the prevention of exposures; human biomonitoring; and identification of health effects for appropriate clinical management and risk mitigation.

Contents: Sources and routes of mercury exposure; toxic kinetics of mercury and its compounds; biomarkers; dose-response relationship; reference values; health effects; measures to prevent chronic and acute exposure; and case study of mercury spill decontamination.

WebEx with regional experts

- Presentations**
- Mercury in general and metallic
 - Methylmercury
 - Mercury salts
 - Mercury spill decontamination



By: W. Eugene Smith. *Tomoko Uemura in Her Bath*
Japan, 1971 - Minamata vs the Chisso Corporation

- Readings**
- WHO 2017 Mercury and health factsheet
 - WHO 2016 ASGM and health
 - ATSDR 2013 Organic mercury compounds
 - WHO 2011 Mercury in skin lightening products
 - WHO 2010 Children's exposure to mercury compounds
 - WHO 2003 Elemental and inorganic mercury compounds health aspects
 - WHO 1990 Environmental Health Criteria 101: Methylmercury
 - ATSDR 2009 Children's exposure to metallic mercury

Learning activities

Discussion forum topics

- Development of intervention and surveillance program on environmental health focusing on exposures to mercury and its compounds;
- Inorganic mercury in skin lightening products
- Risk communication and media articles

Individual exercise

- Case studies questions – Amazon ecosystems, combined exposures (metallic and methyl mercury)

Complementary learning resources

- Additional readings, annotated bibliography, mercury speciation and health effects, videos, websites, others

Learning Tools

PAHO Virtual Campus <https://www.campusvirtualsp.org/en>

Moodle platform: <https://moodle.org/>

- Individual work: presentations with recorded audio storyteller: <https://articulate.com/ip/storyline-3>
- Readings, annotated bibliography, individual exercises
- Team work (non-synchronous): topics for discussion in the forums
- Team work (synchronous): WebEx sessions with regional experts

Target professionals

- Health sector, including those involved in planning and delivering of services, in the public and private sectors
- Interest in chemical safety
- University degree in areas related to environmental health sciences
- Working skills in English

Expected results

Outputs

- Collective understanding of sources and routes of exposures to mercury and its compounds, aimed at prevention; and of health effects aimed at clinical mitigation and support
- English version of the course

Outcomes

- Development and implementation of intervention projects and programs aimed at target exposures reduction, led or facilitated by course participants in their respective countries, and sub regions

Impact

- Health sector proactive participation on the convention implementation with attention to surveillance activities for mercury exposure prevention and health effects mitigation and support

Recommendations

- Training of trainers format to enable cohort of participants to further develop similar and adjusted on line training.
- On going monitoring and evaluation of course to benefit current and future cohort of participants.

Acknowledgments

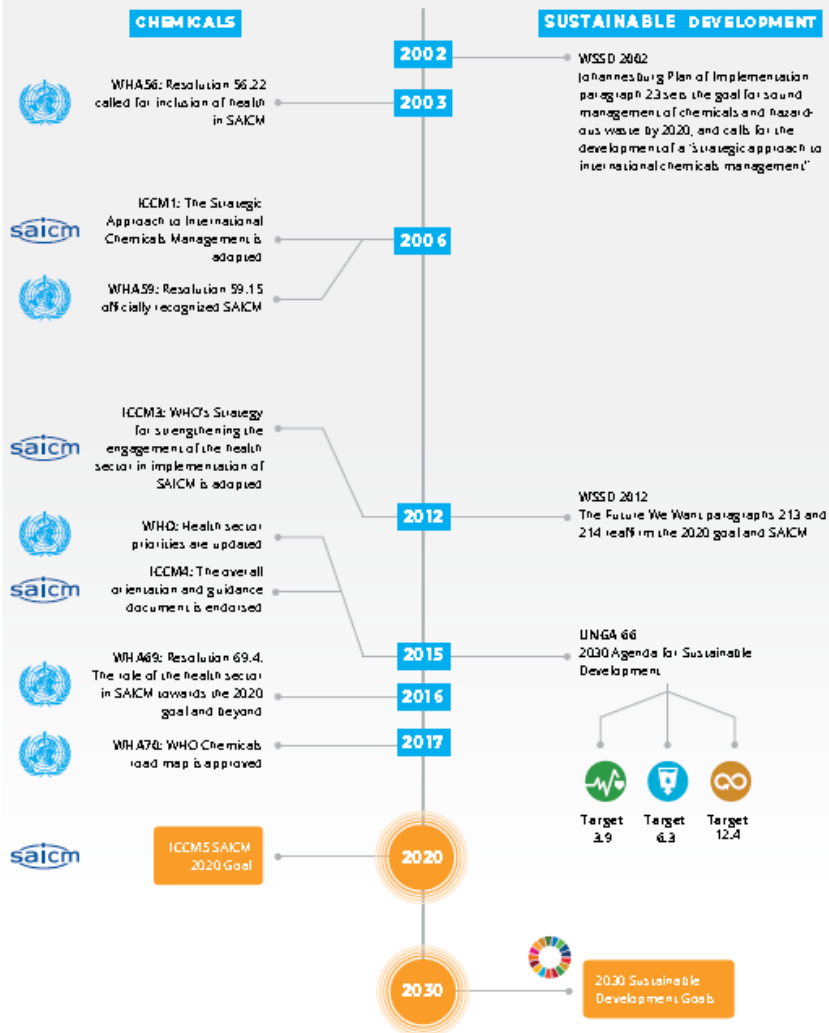
We thank the WHO Chemical Safety and PAHO SDE contributions, with special thanks for the PAHO Virtual Campus for Public Health team in Panama.



The screenshot shows the PAHO Virtual Campus website. At the top, there are logos for the Organización Panamericana de la Salud, Organización Mundial de la Salud, and CAMPAÑA VIRTUAL DE SALUD PÚBLICA. Below the logos, there are navigation links for Inicio, ¿Qué es el Campus?, Aula Virtual, Recursos Abiertos, Experiencias Virtuales, Clínica Virtual, OPS, and OMS. A main heading reads "Cursos en convocatoria" (Courses in call). Below this, there is a section for "Las implicaciones del mercurio en la salud y en el ambiente en el Marco del Convenio de Minamata (edición 2018) - convocatoria limitada para países de Centroamérica". It includes a date range of 7 Mayo, 2018 - 24 Mayo, 2018 and the location España. At the bottom of the screenshot, there are logos for the Canadian International Agency for Development Agency, Canada, and infomed.

<https://www.campusvirtualsp.org/?q=es/cursos/en-convocatoria>

Global policy context for the road map



The SAICM 2020 Goal (2002-2020) to the 2030 Sustainable Development Goals

ICCM: International Conference on Chemicals Management
 SAICM: Strategic Approach to International Chemicals Management
 UNGA: United Nations General Assembly

WHA: World Health Assembly
 WSSD: World Summit on Sustainable Development



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The WHO Chemicals Road Map



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Leadership and Coordination

Knowledge and Evidence

Risk Reduction

Institutional Capacity

Chemicals Road Map

Road map to enhance health sector engagement in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond

The graphic features a central title 'Chemicals Road Map' surrounded by four hexagonal icons: a stack of books for 'Knowledge and Evidence', a person at a podium for 'Leadership and Coordination', a line graph for 'Risk Reduction', and two boxes for 'Institutional Capacity'. The WHO logo is in the top right corner.



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Leadership and Coordination

Knowledge and Evidence

Risk Reduction

Institutional Capacity

Chemicals Road Map

Road map to enhance health sector engagement in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond

WORKBOOK

The graphic is similar to the first one but includes a dark grey bar at the bottom with the word 'WORKBOOK' in white capital letters. The WHO logo is in the top right corner.

<http://www.who.int/ipcs/saicm/roadmap/en/>

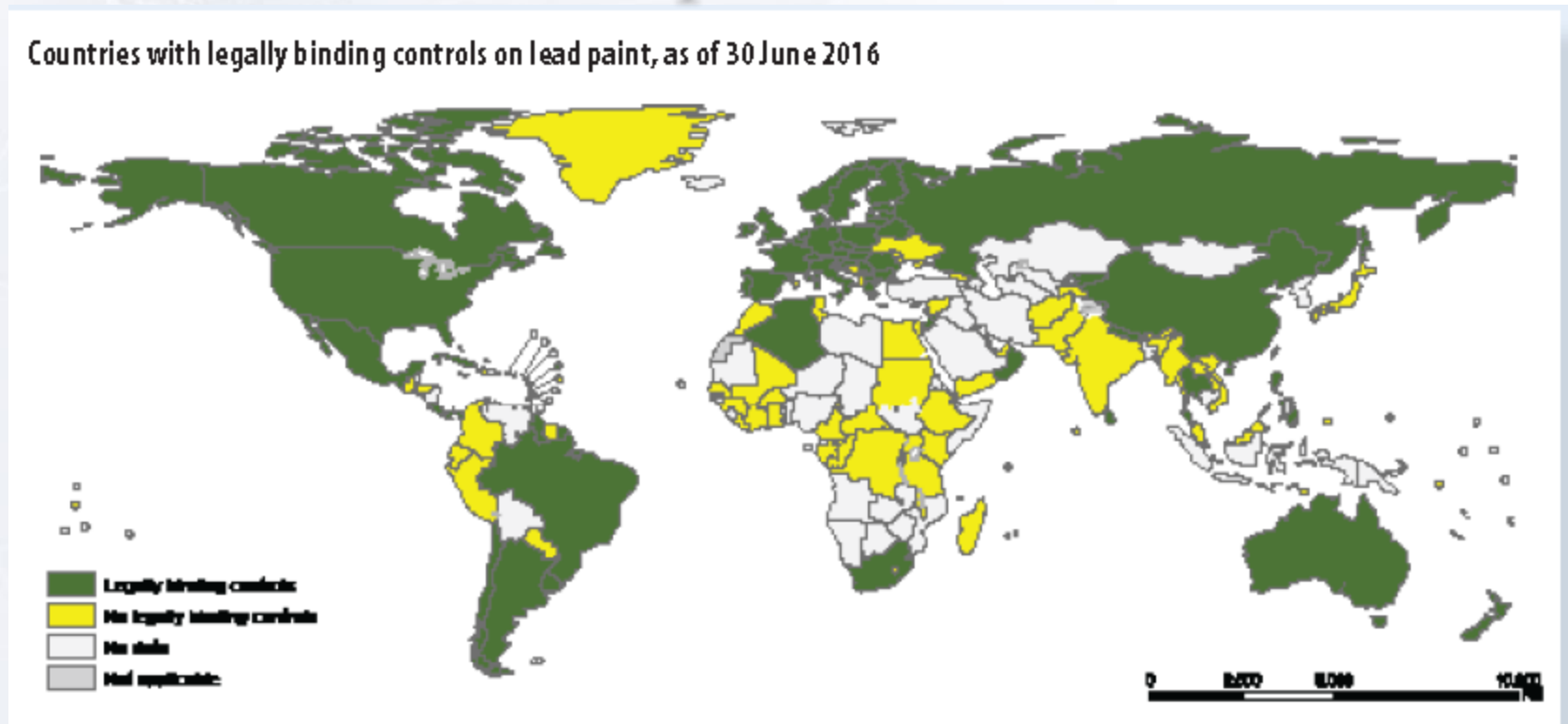


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Legally binding control: lead in paint



Regulations on lead in paint in LAC: Argentina, Brazil, Chile, Costa Rica, Cuba, Dominica, Guyana, Mexico, Panama, and Uruguay (10/33)
[600 mg/Kg in Argentina, Brazil, Chile, Costa Rica, Dominica, Guyana, Mexico, Panama, and Uruguay, to 20 000 mg/Kg in Cuba]

(Olympio et al., 2017)

Evidence of interventions to reduce exposure: lead

- ▶ Lead-safe window replacements in all pre-1980 homes in the USA would yield considerable monetary benefits from increased lifetime earnings through prevented IQ loss in children. Additional benefits include, for example, avoided attention deficit hyperactivity disorders and reduced crime and delinquency (178).

(Nevin et al., 2008)

- ▶ Lead paint hazard control in homes to prevent children's exposure would yield a net saving of US\$ 181–269 billion in the United States of America if considering costs of health care, lifetime earnings, tax revenue, special education, attention deficit disorder and direct costs of crime associated with elevated lead exposure (179).

(Gould, 2009)

- Household educational or dust control interventions are ineffective in reducing blood lead levels in children. Insufficient evidence to draw conclusions about the effectiveness of soil abatement or combination interventions
(James et al., 1999; Haynes et al., 2002; Yeoh et al., 2012)
- Strict enforcement prevented additional cases of elevated blood lead concentration ($\geq 10 \mu\text{g}/\text{dL}$), resulting in US\$ 45 360 savings from decreased medical and education costs and increased productivity for protected children.

(Brown, 2002)



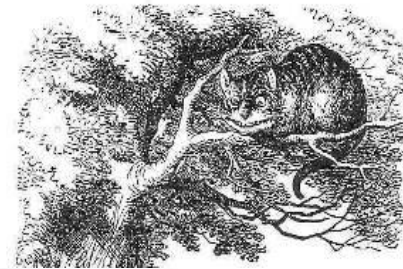
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Way forward



'That depends a good deal on where you want to get to,' said the Cat.

'Would you tell me, please, which way I ought to go from here?'



Alice in Wonderland, [Lewis Carroll](#) (1865)



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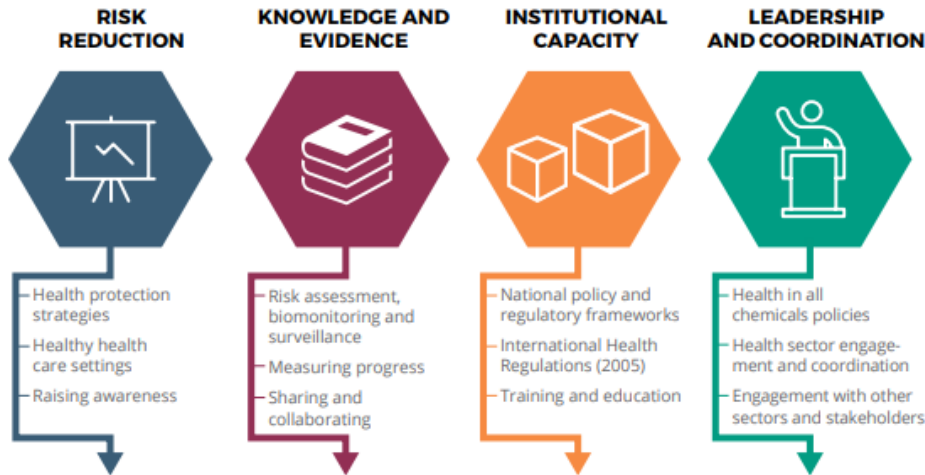


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Road map to enhance health sector engagement in the strategic approach to international chemicals management towards the 2020 goal and beyond

ACTION AREAS



Overall objective of the Strategic Approach

To achieve the sound management of chemicals throughout their life cycle so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment.

2030 Agenda for Sustainable Development

Achieving the sound management of chemicals throughout their life cycle is a cross-cutting issue that will contribute to achieving many, if not all, 17 Sustainable Development Goals. The targets below are only those that specifically mention chemicals.



Goal 3
Target 3.9

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination



Goal 6
Target 6.3

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safely reuse globally



Goal 12
Target 12.4

By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Main stakeholders for each action areas

2020 overall objectives &

2030 Agenda for Sustainable Development



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STEP 1

Determining potential activities

During this step you **will** select the road map actions that are the **highest priority** for your organization or country, and **briefly** describe potential activities you would **like** to undertake for each action selected. This step is key and **will likely** take the most time. In some cases it may be useful to consult with external partners.

STEP 2

Prioritization

If you have **identified** more activities than you can manage, this step can help you to further **prioritize** by considering additional criteria. It may be helpful to consult external partners to confirm their support where necessary.

STEP 3

Implementation planning

This step involves the creation of a **high-level implementation plan** for your **prioritized activities**. You **will** need to **identify** outcomes/**deliverables**, **roles** and **responsibilities** of partners, **required resources** and **time frames**.

STEP 4

Communication and sharing

Guidance is provided about how you can communicate your **implementation plan** with a **variety of audiences** and for a **variety of purposes**; for example, to **colleagues**, **potential partners** and **decision-makers**, both **internal** and **external**, to **inform them** and/or **gain their support**.



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Example: step 1

ROAD MAP ACTION	CURRENT SITUATION	POTENTIAL ACTIVITIES	CONSIDERATIONS
<p>MS Develop and implement health promotion and protection strategies and programmes for the life cycle of high-priority chemicals, particularly for vulnerable populations.</p> <p>PRIORITY: LOW/MED/HIGH</p>	<ul style="list-style-type: none"> ● Lead poisoning in children is a known priority. ● Various NGOs are assisting but coverage is uneven and uncoordinated. ● Health worker knowledge and ability to diagnose and treat is uneven. ● Do not yet have legal limits on lead in paint. 	<ul style="list-style-type: none"> ● Develop and implement a strategy to prevent childhood lead exposure from known sources (paint, domestic battery recycling, contaminated soil and water). 	<ul style="list-style-type: none"> ● Multifaceted e.g. regulations; education and training, monitoring, awareness campaigns; can be modified to fit available resources. ● 2 years to develop and implement plan; but work will be ongoing. ● Consult WHO guidelines on prevention of lead poisoning (links to road map action on lead). ● Some domestic resources available; external sources possible since child health is a global priority; include in National Development Plan - contact Foreign Affairs Ministry. ● May need industry engagement (paint, batteries); engaged NGOs; many opportunities to learn from others; WHO has tools/guides/expertise.





Inheriting a sustainable world?

Atlas on children's health and the environment



Goal 3: Ensure healthy lives and promote well-being for all at all ages.

Over one quarter of the global disease burden in children under five years can be attributed to the environment. The greatest potential for health gains through healthy environments can be achieved in this age group.

Target 9 – “By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

Target d – “Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks,”



Goal 12: Ensure sustainable consumption and production patterns.

Sustainable consumption and production, including the management of hazardous waste, are closely linked to key environmental risks such as ambient air pollution, exposure to chemicals, and water and sanitation which can be detrimental for children's health. These are crucial to maintaining a healthy environment and planet that will meet the needs of future generations.

Target 4 “By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.”

Available at:

<http://www.who.int/ceh/publications/inheriting-a-sustainable-world/en/>



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Child health and the environment in Bolivia

Incorporating environmental health in the Primary Health Care Strategy

Pilot project

Agnes Soares, SDE PAHO/WHO
Betzabé Butron, Child Health PAHO/WHO
Amalia Laborde, WHO CC Uruguay
Period: April-Nov 2017
Funding: Canada



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El Alto, Oruro and Desaguadero



El Alto, La Paz (peri-urbana) - 848 840 habitantes , 5 redes de salud



Oruro, situada entre La Paz y Sucre, 264 683 habitantes; 59% etnia quechua y aimara



Desaguadero, ubicado en la provincia de Ingavi del Departamento de La Paz, ciudad binacional fronteriza del Perú, población de 4.981 habitantes

Oruro

Barbieri FL, Gardon J, Ruiz-Castell M, et al. Toxic trace elements in maternal and cord blood and social determinants in a Bolivian mining city. *International Journal of Environmental Health Research*. 2016;26(2):158-174. doi:10.1080/09603123.2015.1061114.

467 mujeres embarazadas

- Alta correlación entre el nivel de plomo en sangre de las madres y del cordón umbilical – media comparable con non expuestos
 - **5% de presentaban niveles de plomo >5ug/dL sangre**
- 1/5 de las madres y 1/3 de sus bebés (sangre de cordón) presentaron niveles de arsénico > 3 veces que el recomendado por la ATSDR (EUA)
- **La concentración media de antimonio en la sangre de las madres y del cordón estaban en niveles semejantes a los encontrados en exposición ocupacional**
- **factores de riesgo:** tabaquismo materno, un nivel educativo materno más bajo y un familiar cercano involucrado en actividades mineras.

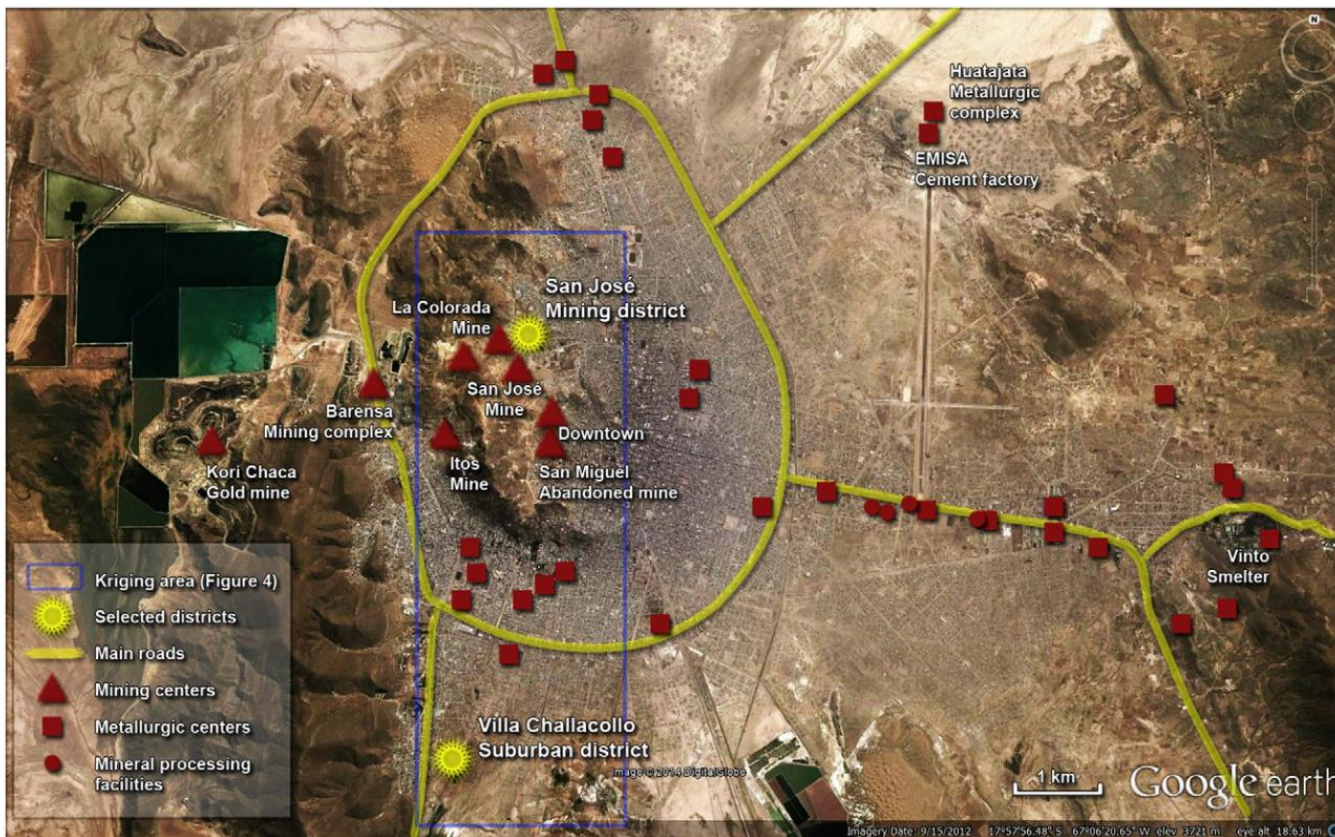


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Estudio de niveles de metales en pelos de niños 7 – 12 años en dos areas: una minera y otra suburbana de Oruro

Barbieri et al., 2014. Science of the Total Environment 487 (2014) 13–19

- Las actividades mineras son una importante fuente de contaminación ambiental.
- Hay contaminación de las casas (polvo), creando un riesgo para la población.
- Las concentraciones de polvo en interiores y de pelo en As, Cd, Pb, Sb y Sn se correlacionaron.
- No se encontró correlación para elementos esenciales como Cu o Zn.
- El comportamiento de los niños modifica la exposición a ciertos elementos (mano-boca; juegos y vivir en area de mineración)

Otros ejemplos

- Los biomarcadores medios combinados sugieren una ingesta de MeHg varias veces sobre la referencia de la FAO/OMS en los ribereños que consumen peces y viven cerca de la minería de oro en pequeña escala. (Bolivia incluida en el estudio)

(**Sheehan** et al.(2014) Global methylmercury exposure from seafood consumption and risk of developmental neurotoxicity: a systematic review. Bull World Health Organ; 92: 254-269F)

- Concentraciones de Cd, Pb y Zn exceden los valores recomendados para uso agrícola en aguas arruba en Mondragón., sur de Bolivia
- El Pb ultrapasa los valores recomendados en zanahorias, lechugas y remolachas de Sotomayor (35%) y Tuero Chico (55%).

(Miller et al. (2004) Heavy metal contamination of water, soil and produce within riverine communities of the Rio Pilcomayo basin, Bolivia. Sci Total Environm; 320 (2-3): 189-209)



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Main Activities

1. Visits with Bolivian Ministry of Health and PAHO country office in Bolivia: **3 municipalities (Oruro, Desaguadero, El Alto) and 4 instruments.**
2. Workshop on environmental health and child health. Participants: Health services, municipalities, community organizations, NGOs, 5 WHO Collaborating centers and national and local units, EH and Child Health.
3. Development of instruments and testing in the field.
4. Training on the use of the tools and more information on EH and Child Health – Health services and local actors.
8. One month experience using the tools.
9. Meeting to analyze the experience.



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Individual & Family forms:

- Reported better knowledge on EH
- Increased interest in learning more details
- Created an opportunity to start a conversation with families
- Made visible those families with greater vulnerability
- They requested involvement of all health service staff
- Some families were suspicious (fear to penalties, fines)
- There is need for better guidance on recommendations for the families

- Major problems: use of Chemicals, mining waste and solid waste surrounding areas, recycling of electronic/metallic materials, unsafe water & sanitation (Oruro)



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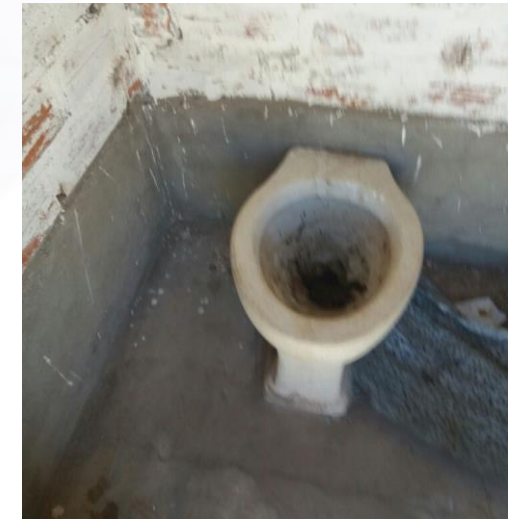


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Territorial and Institutional forms:

- Trigger coordination with municipality and joint assessment.
- Institutions identified solutions to easy problems.
- Uncover urgent need for action in schools.
- Requires time to coordinate & complete (Observation)
- They requested training/information to all health managers & staff, municipalities, education.
- Major issues: solid waste, **mercury** in health facilities, bad conditions of bathrooms & infrastructure in schools.



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Child at the center: Integrating the information from all forms

HOJA DE ATENCIÓN SISTEMATIZADA
RIESGOS AMBIENTALES Y LA SALUD DEL NIÑO Y NIÑA DE 2 MESES A MENOR DE 5 AÑOS

DOMINICANA DE LA SALUD Y ATENCIÓN SISTEMATIZADA ATENCIÓN AL NIÑO/A DE 2 MESES A MENOR DE 5 AÑOS DE EDAD/NIÑO, NIÑA
Nombre y apellidos: Zaidy I. Pichardo Cruz Fecha: 20-10-19
Fecha de nacimiento: 22-02-19 Edad: 3 años Sexo: M (M) / F (F)

PREGUNTAR	EVALUAR	CLASIFICAR	TRATAR/ORIENTAR
1. De dónde obtiene el agua de consumo?	REVISAR LA GUÍA PARA LA CLASIFICACIÓN DE FACTORES DE RIESGO AMBIENTAL	ALTO RIESGO AMBIENTAL	
2. ¿Cómo se abastecen las heces, heces en su hogar?	MARCAR Y ANOTAR LOS RIESGOS IDENTIFICADOS, QUE JUSTIFICAN LA CLASIFICACIÓN DEL RIESGO AMBIENTAL	MODERADO RIESGO AMBIENTAL	Orinar e ir a la noche a que conecte agua al agua fría del tanque de agua con la galleta que se usa en un día
3. ¿Qué utilizan para calentar su agua (cocción)?			
4. ¿Cómo destino de las habitaciones?			
5. ¿Qué tipo de piso de su casa?			
6. ¿Existen grandes pláticas o materiales plásticos en su hogar?			
7. ¿Existen en su casa materiales, baterías de autos, o otros residuos materiales en su hogar?	<input type="checkbox"/> Ninguno <input type="checkbox"/> Pocos <input type="checkbox"/> Muchos <input type="checkbox"/> Abundante <input type="checkbox"/> Demasiado		
8. ¿Existen en su casa animales o plantas con riesgo de zoonosis, o que se alimentan de ellos?			
9. ¿Tiene refrigerador, o congelador con agua que está desechando en su hogar?			
10. ¿Por qué de los productos químicos de uso doméstico en su zona o comunidad?	<input type="checkbox"/> Ninguno <input type="checkbox"/> Pocos <input type="checkbox"/> Muchos <input type="checkbox"/> Abundante	BAJO RIESGO AMBIENTAL	

Individual

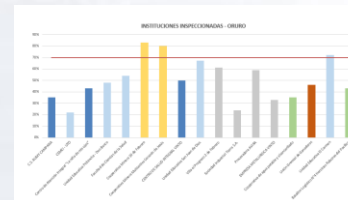
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Household

Community



Institution: day care center



Child less 1 yr old, mother concerned because they live close to a slaughterhouse, plus **Household with sanitation problems and close to contaminated area in the neighborhood, plus** Day care close to slaughterhouse and close to industrial area.



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Lessons learned

- Instruments helped to make visible a wide range of environmental risks.
- Interest is high in these areas.
- EH requires actions from multiple sectors. To engage those who identify the risks (healthcare workers; environmental health workers; public health monitoring and surveillance) and those involved in the response and mobilization of resources from the very beginning.
- Involvement of population is key – reality check
- Health services: involve all healthcare workers (not only doctors) Nurses, nurse aids, students, staff responsible for clinical records, etc.
- Community “hungry” for more information.
- When community is concerned about pollution, they want the involvement of the health sector for support and validation.
- EH creates the need for more involvement of the health sector in efforts to improve conditions in the community, schools or other institutions.



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Thank you
Merci
Gracias
Obrigada

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