



WHO Chemical Safety - Activity Report 2011

This document presents a summary of WHO Chemical Safety activities undertaken in 2011.

It covers the following areas:

- (1) Health Impacts of Chemicals (including Concise International Chemical Assessment Documents (CICADs), International Chemical Safety Cards (ICSCs), Advocacy on Chemicals of Public Health Concern and the WHO Classification of Pesticides by Hazard.
- (2) Tools for Assessing Chemical Risks (including the IPCS Harmonization Project; Environmental Health Criteria Documents) and Strengthening Global Collaboration in Chemical Risk Assessment.
- (3) Poisons Prevention, Information and Management, including the development of WHO guidelines on Lead.
- (4) Chemical Incidents and Emergencies.
- (5) International Conventions and Agreements, including SAICM.

A list of WHO/IPCS publications is given in [Annex 1](#) and a list of WHO/IPCS Events in 2011 is given in [Annex 2](#).

1. HEALTH IMPACTS OF CHEMICALS

1.1 Concise International Chemical Assessment Documents (CICADs) and other Risk Assessment Documents

In 2011 the compendium of CICADs on ethylene series glycol ethers (under the title of "2-alkoxyethanols") was published. The assessments of the individual substances (2-methoxyethanol, 2-ethoxyethanol, 2-propoxyethanol and 2-butoxyethanol) had previously been available on the website. This compendium now makes the assessments available in printed form, along with an overall summary and the results of a Quantitative Structure-Activity Relationship (QSAR) analysis used as a predictive tool to fill data gaps within this series of chemicals (as a screening and prioritization exercise).

The updated draft CICAD on Hexavalent Chromium (CICAD No.78), with revised carcinogenicity assessments, was released for public and peer review during 2011. It is intended to finalize this CICAD during 2012.

The human health risk assessment of the use of the insecticide DDT in indoor residual spraying for disease vector control was finalized during 2011 and published on the website to inform discussion of the use of DDT at the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants in April 2011. As of the end of 2011 the print version of this assessment is in press, to be published in the Environmental Health Criteria series.

New publications continue to be disseminated through the IPCS web site, direct mailing through to institutions worldwide, and the INCHEM web site, free-of-charge (<http://www.inchem.org>).

A progress report covering risk assessment publication activities is maintained on the IPCS website at <http://www.who.int/ipcs/publications/cicad/progress/en/index.html>



CICAD (No 67) Selected 2-Alkoxyethanols
<http://www.who.int/ipcs/publications/cicad/cicad67.pdf>



EHC (No 241) DDT in Indoor Residual Spraying: Human Health Aspects
<http://www.who.int/ipcs/publications/ehc/ehc241.pdf>

1.2 International Chemical Safety Cards (ICSCs)

WHO work on the International Chemical Safety Cards (ICSCs) continues to be a major point of collaboration with the International Labour Organization (ILO). ICSCs have been translated into 24 languages and are available on the Internet in 17 languages via the websites of ILO and participating institutions.

GHS classifications continue to be made for new and updated International Chemical Safety Cards (ICSCs). The corresponding hazard statements, signal words and symbols are included on the ICSCs. To date, GHS classifications have been included on 317 ICSCs.

Development of the new internet-based database for ICSCs continued during 2011, with the database being made available to the public (for ICSCs in English) via a new web interface at <http://www.ilo.org/dyn/icsc/>.

The automated process for providing translated ICSCs from the new database has commenced during 2011 with two languages being piloted. The translation process will continue to be developed during 2012, along with new methods for disseminating ICSCs and broadening the range of country institutions providing translated ICSCs.

A total of 30 ICSCs were created or revised at a peer review meeting, 6-9 June 2011. Also during 2011 a substantial updating and data-cleaning exercise was undertaken prior to the public release of the new database. The ICSC Compiler's Guide which sets out the list of standard sentences on identity, hazardous effects and precautionary statements was substantially updated via two working group meetings to start to harmonize with the new standard sentences now being used.

ICSCs continue to be available through the INCHEM Databank (www.inchem.org) and the web sites of participating institutions such as US NIOSH (www.cdc.gov/niosh/ipcs/icstart.html).

1.3 IPCS INCHEM web site (<http://www.inchem.org>)

This web site enables IPCS to disseminate its collections of risk assessment documents to a wider audience. There were more than 1.5 million unique visitors to the web site in 2011.

1.4 Chemicals of Public Health Concern and Burden of Disease

The WHO Project on Chemicals of Public Health Concern aims to raise awareness, advocate for action, and facilitate access to tools for action on selected chemicals or groups of chemicals of major public health concern. These are: (a) arsenic; (b) asbestos; (c) benzene; (d) cadmium; (e) highly hazardous pesticides; (f) inadequate or excess fluoride intake; (g) lead; (h) mercury; (h) major air pollutants; and (i) polychlorinated dibenzodioxins and dioxin-like compounds. The primary target group is decision-makers from WHO Member States.

In 2011 a web entry point was established to provide easy access to the range of WHO resources on each of the 10 chemicals. The resources include: short documents for decision makers; tools for action; norms and guidance values; educational material; and further information (such as WHO assessments, burden of disease information, fact sheets and other information).

http://www.who.int/entity/ipcs/assessment/public_health/chemicals_phc/en/index.html

The 2010 a study to estimate the global burden of disease attributable to chemicals was published in January 2011. This study systematically reviewed all available information on global burden of disease involving chemicals through various media, including air, water, occupational exposures and direct ingestion. Globally, the burden of disease involving selected chemicals or their mixtures amounts to 5.7% of the total burden of disease (in DALYs), and 8.3% of deaths. 70% of this burden is caused by air pollution mixtures. These assessments relate to a limited number of chemicals or their mixtures for which data were available, including for example chemicals involved in acute poisonings, occupational lung carcinogens and particulates, outdoor and indoor air pollution mixtures, lead, asbestos and arsenic. The burden of disease from chemicals which could not yet be assessed at global level remains unknown and is likely to be significant.



Prüss-Ustün A, Vickers C, Haefliger P and Bertollini R (2011) Knowns and unknowns on burden of disease due to chemicals: a systematic review. *Environmental Health* 2011, 10:9 doi:10.1186/1476-069X-10-9

1.5 Classification of Pesticides by Hazard

The WHO Recommended Classification of Pesticides by Hazard was first published in 1975, and has been revised and reissued with new and updated information every few years. This WHO publication has gained wide international acceptance, in particular among developing countries. The 2010 update of this document (which incorporated an updated classification scheme based on the Globally Harmonized System for Classification and Labelling (GHS) as the starting point for allocating pesticides to a Hazard Class) has been used during 2011 in the updating of the FAO/WHO International Code of Conduct on the Distribution and Use of Pesticides "*Guidelines on good labelling practice*" document which supports the Code. This Guideline is due to be finalized during 2012 and WHO will be participating in the Working Group taking this forward.

1.6 Food Safety-related assessments

The JECFA and JMPR programmes are undertaken by the Department of Food Safety and Zoonoses (FOS), and are therefore not reported in detail here.

Evaluations of the FAO/WHO Joint Expert Committee on Food Additives are available free-of-charge on the IPCS web site <http://www.who.int/ipcs/publications/jecfa/en/>; toxicological monographs are also available on the INCHEM web site (<http://www.inchem.org>).

Evaluations of the FAO/WHO Joint Meeting on Pesticide Residues are available free-of-charge on the IPCS web site <http://www.who.int/ipcs/publications/jmpr/en/> and also the INCHEM web site.

2. TOOLS FOR ASSESSING CHEMICAL RISKS AND STRENGTHENING GLOBAL COLLABORATION IN CHEMICAL RISK ASSESSMENT

2.1 The WHO/IPCS Harmonization Project

The WHO/IPCS “*Project on the Harmonization of Approaches to the Assessment of Risk from Exposure to Chemicals*” (commonly referred to as the “Harmonization Project”) aims to harmonize global approaches to risk assessment through both increased understanding and agreement on basic principles, and to develop international guidance documents on specific issues.

The 2010-2011 Project Workplan is provided in the brochure available at: <http://www.who.int/entity/ipcs/methods/harmonization/brochure2010.pdf>

A summary report on Harmonization Project activities in 2011 follows. The resulting publications are provided at the end of Section 2.1.

- **Risk Assessment of Combined Exposures to Multiple Chemicals.** This activity developed a high level tiered framework for assessing the combined risk from exposure to one or more agents via all relevant routes and pathways and to review approaches employed to date in different sectors (e.g., pesticides, industrial chemicals, therapeutics) and disciplines (e.g., consumer exposure, occupational exposure, environmental exposure). The Framework was published in early 2011. and presented at a number of international conferences and workshops. It was drawn upon for the EU expert committees' draft opinion on mixtures (final version in development) and is being used to support work on toxic interactions under the Rotterdam Convention. The framework was supported by an WHO OECD ISLI/HESI International Workshop on Combined Exposures, 15-16 February 2011, hosted by OECD in Paris; the OECD Joint Meeting subsequently agreed to include a number of these activities in its plan of work and WHO plans to further coordinate global activities. An international Workshop on Combined Exposure to Chemicals convened by ECETOC, 11-12 July 2011, Berlin, also generally agreed that the WHO/IPCS framework provides a useful tool for risk assessment of combined exposures to multiple chemicals from multiple sources (ECETOC Workshop Report No. 22).
- **Guidance for Immunotoxicity Risk Assessment.** Draft guidance on immunotoxicity risk assessment for chemicals, along with a series of illustrative case studies, was released for public and peer review comment due by 31 January 2011. In 2011, public comment was reviewed and the draft guidance and case studies revised for discussion at an International Workshop on Immunotoxicity Risk Assessment of Chemicals, convened at RIVM, The Netherlands from , 3-4 October 2011. The workshop tested the draft guidance through discussion of a number of illustrative case studies and provided peer review feedback to assist in finalizing the draft guidance, contributed to plans to facilitate uptake and use of the guidance in risk assessment practice worldwide and identified areas for further international work. The workshop was followed by a drafting group expert meeting to decide on the final amendments to be made to the document, which will be

published in 2012. The public review version of the guidance is available at:
<http://www.who.int/ipcs/methods/harmonization/areas/immunotoxicity/en/index.html>

- **Mode of Action.** The Mode of Action Steering Committee met regularly by teleconference to provide a platform for institutions to implement a plan of work relating to A. Update of the Mode of Action Framework Guidance; B. Development of Case Studies; C. Implementation of MOA in category approaches; D. Education; and E. Development of an MOA Database. WHO convened a series of teleconference meetings of a Writing Group which is preparing an update of the WHO Mode of Action Framework. Preparations were made for a face-to-face meeting of the Writing Group to take place at JRC, Ispra, 14-16 February 2012.
- **Principles of Characterizing and Applying PBPK Models in risk assessment.** The WHO 2010 guidance on "Principles of Characterizing and Applying PBPK Models" (along with illustrative case studies) was presented and discussed at a WHO-sponsored Continuing Education Course at EUROTOX2011, Paris. 28 August 2011.
- **Characterizing and Communicating Uncertainty in Hazard Assessment.** A second expert meeting was convened at WHO/PAHO, Washington, D.C., 29-30 November 2011 to further develop draft guidance on this subject. A plan of work was agreed to prepare a version for peer review, to be undertaken in 2012.
- **Identifying Early Life Stages for Characterizing Chemical Exposures.** This activity is developing practical tools for countries to explicitly consider early life stages in chemical risk assessment. Draft materials were released December 2011, for comment by 31 January 2012. Following the web consultation, the materials will be revised. Resources permitting, an international workshop will be convened to discuss and test the materials. <http://www.who.int/ipcs/methods/harmonization/areas/lifestages/en/index.html>
- **Interpreting Effects that may be modest or adaptive.** An initial draft document has been developed addressing the interpretation of effects in toxicity studies that may be modest or adaptive. Further work is pending availability of resources.
- **WHO Human Health Risk Assessment Toolkit (HHRA Toolkit).** A web version of the Toolkit has been developed and posted. The web version allows the user to directly link to the tools listed in the Toolkit.
<http://www.who.int/ipcs/publications/methods/harmonization/toolkit.pdf>

New publications issued in 2011:



Risk Assessment of Combined Exposures to Multiple Chemicals: A WHO/IPCS Framework (2011), published in M.E. (Bette) Meek, Alan R. Boobis, Kevin M. Crofton, Gerhard Heinemeyer, Marcel Van Raaij, Carolyn Vickers. Regulatory Toxicology and Pharmacology, Vol 60, Issue 2, Supplement, S1-S14.
<http://dx.doi.org/10.1016/j.yrtph.2011.03.010>



WHO OECD ILSI/HESI International Workshop on Risk Assessment of Combined Exposures to Multiple Chemicals. Workshop Report Series on Testing & Assessment No. 140, 15-16 February 2011, Paris, France. ENV/JM/MONO(2011)10.
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO\(2011\)10&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2011)10&docLanguage=En)



Draft (for public comment) WHO/IPCS document identifying important Life Stages for monitoring and assessing risks from exposures to environmental contaminants.

<http://www.who.int/ipcs/methods/harmonization/areas/lifestages/en/index.html>

2.2. Environmental Health Criteria (EHC) and Other Methodology Documents

In 2011, work continued to prepare the EHC on Dermal Exposure which is a complementary document to the EHC 235 on Dermal Absorption. Following peer and public review, a revised draft was prepared by the Fraunhofer Institute, Hanover. An expert review meeting was held at the Fraunhofer Institute, Hannover, 10-12 May 2011. Finalization of the EHC is planned for 2012.

During 2011 WHOPES/IPCS updated and published (via the WHOPES website) revised versions of the generic risk assessment models for the use of insecticides in indoor and outdoor space spraying, indoor residual spraying and larviciding. The generic risk assessment model for insecticide-treated nets was also revised and will be published during 2012.



Generic risk assessment model for indoor and outdoor space spraying of insecticides

http://whqlibdoc.who.int/publications/2011/9789241501682_eng.pdf



Generic risk assessment model for indoor residual spraying of insecticides

http://whqlibdoc.who.int/publications/2011/9789241502177_eng.pdf



Generic risk assessment model for insecticides used for larviciding

http://whqlibdoc.who.int/publications/2011/9789241502184_eng.pdf

A WHOPES/IPCS risk assessment model for use of insecticides in aircraft disinsection is under development. This aims to assist Member States to implement the International Health Regulations (2005), Annex 5 Specific Measures for Vector-Borne Diseases, which states that where there are methods and materials advised by WHO for disinsection, these should be employed. During 2011 the draft risk assessment model was revised following public and peer review. The draft risk assessment model was released to Stakeholders in September 2011 and submissions based on products currently marketed or proposed for use in aircraft were received for evaluation. The risk assessment model and the product evaluations will be finalized by an Expert Meeting during early 2012, and will subsequently be published.

2.3 Strengthening Global Collaboration in Chemical Risk Assessment, including networking and capacity building.

One of the key recommendations of March 2010 WHO Meeting on Strengthening Global Collaboration in Chemical Risk Assessment was the establishment of a WHO International Chemical Risk Assessment Network. The Second WHO Meeting on Global Collaboration in Chemical Risk Assessment - Strengthening Capacity Building and Networking, which will take place at the WHO EURO offices in Bonn, Germany on 29-30 March, 2012, is being convened to, in part, further explore interest in participating in a WHO Risk Assessment

Network, to discuss the Network design in terms of vision, goals and objectives, structure and function, as well as to propose options for its implementation. To organize this meeting, WHO established a Planning Group of invited experts, which has met by teleconference on several occasions to discuss key aspects related to the meeting and input initial thoughts regarding the proposed Network. The meeting announcement was posted on the WHO website, and interested institutions were invited to submit expressions of interest as well as complete a questionnaire soliciting input related to capacity building needs and views on the proposed Network. Respondents indicated a high degree of enthusiasm for and interest in participating in the proposed WHO Risk Assessment Network.

A number of activities have been conducted to strengthen risk assessment capacities in countries and to introduce and promote the use of the WHO Human Health Risk Assessment Toolkit, including:

- The SAICM QSP Training Workshop on Risk Assessment of Chemicals at National Level in a Global Context, 24-25 February 2011, Ministry of Environment, Yerevan, Armenia.
- The Joint Rotterdam Convention Secretariat/WHO Initial Awareness-raising and Needs Assessment Workshop on the Sound Management of Industrial Chemicals, 11-15 April 2011, Gaborone, Botswana
- The Regional Training Workshop on Tools and Methods of Environmental Health and Chemical Risk Assessment, Management and Communication, 18-21 September 2011, Amman, Jordan.
- The SAICM QSP Training Workshop on Strengthening Capacities for the Management of Chemicals and Hazardous Waste, 3-10 October 2011, Abidjan, Côte d'Ivoire.
- Post-Graduate Education in Environmental Toxicology, Technology and Management on Health/Environment Risk and Impact Assessment, Chulabhorn Research Institute, Bangkok, Thailand, 19-20 December 2011,
- Work continued in 2011 on the SAICM QSP Project to develop course materials and a distance learning tool (DLT) for the assessment of risk from the use of chemicals, which aim to support SAICM's capacity building efforts in developing countries. The WHO Human Health Risk Assessment Toolkit will be an integral part.

3. POISONS PREVENTION, INFORMATION AND MANAGEMENT

3.1 Poisons Information and Management

WHO provided membership of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) to individuals working at 17 poisons centres in developing countries. While membership must be individual, it comes with a subscription to the journal *Clinical Toxicology* and a monthly current awareness bulletin, which are resources for the poisons centre as a whole. The journal, which is provided in hard copy and electronically, publishes review articles, research and case reports on poisoning. Access to this journal is very much appreciated by poisons centre staff, who otherwise have limited, or no, access to toxicology journals for reasons of cost. The individuals provided with membership also benefit from reduced registration fees to the scientific congresses of the EAPCCT and also to the annual

North American Congress of Clinical Toxicology. This opportunity was taken up by one recipient in 2011.

In 2010, WHO commissioned the submission of a proposal for Succimer to be added to the WHO Essential Medicines List. This proposal was accepted by the 18th Expert Committee on the Selection and Use of Essential Medicines that met in Accra, Ghana in March 2011. Succimer is a chelating agent mainly used for lead poisoning. It has several advantages over other chelating agents, in particular that it is given orally, enabling out-patient treatment, in addition it has a relatively low incidence of adverse effects.

WHO has completed work on the poisoning chapter of the "IMAI District Clinical Manual: Hospital Care for Adolescents and Adults", a manual for use in low-resource settings. This chapter underwent extensive review of the evidence to support interventions in 2010, and further revision in 2011. The manual is now in press.



IMAI District Clinician Manual: Hospital Care for Adolescents and Adults.

<http://apps.who.int/bookorders/WHP/detart1.jsp?sesslan=1&codlan=1&codcol=15&codech=830>

3.2. Network of poisons centres and INTOX

A SAICM Quick Start Programme (QSP) project is being implemented by the WHO Country Office in Fiji to set up a network of poisons information helpdesks in the Cook Islands, Kiribati, Samoa, Solomon Islands and Tonga. These centres will use the WHO/IPCS INTOX Data Management System (<http://www.who.int/ipcs/poisons/package/en/index.html>). WHO/IPCS provided an introduction to, and training in, this system at a workshop hosted by the New Zealand National Poisons Centre in Dunedin, New Zealand, 28-30 March 2011. During the meeting an adapted data collection form was developed for use on the islands. Work was also started on developing a common list of agent names appropriate to the pattern of poisoning in the islands, for use in the database.

Nine subscriptions to the INTOX Data Management System were provided to poisons centres in developing countries and countries with economies in transition. At present, 18 poisons centres are using this system. A meeting of INTOX users was held in Cardiff, UK on 28 November to 1 December 2011. The participants were 13 INTOX users from 12 countries. The project coordinator for the QSP project for the South Pacific Islands also participated. The meeting provided an opportunity for users to share information on projects using the system and to receive training on search and reporting functions.

A project proposal on assessing the feasibility of a subregional poisons centre in Africa was successfully submitted under the SAICM Quick Start Programme in February 2011. This project will start in 2012.

The global directory of poisons centres was updated and reformatted as an interactive map on the WHO Global Health Observatory.

World Directory of Poisons Centres


http://www.who.int/gho/phe/chemical_safety/poisons_centres/en/index.html


3.3 WHO Guidelines for the Prevention and Management of Lead Poisoning

Work commenced on the development of WHO guidelines for the prevention and management of lead poisoning. A Guideline Development Group was convened comprising 19 members and representing all WHO regions. A sub-group of 12 members met in Geneva on 11-13 July 2011 to discuss the scope of the guidelines with respect to the interventions that the guidelines should recommend. An initial list of over 30 interventions was compiled, covering policy, environmental and educational interventions for prevention of lead exposure, as well as treatment interventions for lead poisoning. Since each recommendation for an intervention must be supported by a systematic evidence review, which is a highly time- and resource-demanding activity, the list is being reduced through a process of prioritization, in consultation with the Guideline Development Group. The introductory chapter for the guidelines has been drafted and evidence reviews have been commissioned on the high priority interventions. It is anticipated that this work will continue throughout most of 2012.

At the July meeting the participants also started drafting a statement to be included in the guidelines about a target mean blood lead concentration that Member States should aim to achieve for their populations. The actual numerical value of this target will be further considered at the next review meeting, probably towards the end of 2012.

Booklets on the analysis of lead in blood and on the analysis of lead in paint, were published. These documents provide a brief overview of the most commonly used analytical methods. They aim to inform environmental and public health personnel and policy makers, who are not laboratory specialists but who may need to develop plans for lead screening and abatement programmes, including decisions about analyses.

 Brief Guide to Analytical Methods for the Measurement of Lead in Blood
http://www.who.int/ipcs/assessment/public_health/lead_blood.pdf

 Brief Guide to Analytical Methods for the Measurement of Lead in Blood
http://www.who.int/ipcs/assessment/public_health/lead_paint.pdf

4. CHEMICAL INCIDENTS AND EMERGENCIES

In 2011 over 170 events were evaluated for their public health significance and the need for technical support by WHO/IPCS. Significant support was provided in 19 events, as follows:

- Two disease outbreaks of unknown cause, where WHO/IPCS provided technical input to the assessment of etiology by communicable disease colleagues.
- Two disease outbreaks of unknown cause for which WHO/IPCS provided extensive technical input during the investigation, as well as identifying laboratory support and, for one event, identifying a toxicology consultant for deployment to the country concerned.
- One environmental and two complex emergencies, where input on potential chemical issues was provided for the public health risk assessment, as well as advice on management.
- Five chemical releases, where WHO/IPCS supported Regional Office assessment and response, including facilitating links with other relevant organizations.
- Four mass poisoning outbreaks, where WHO/IPCS provided technical input on assessment and management, including links to sources of external expertise.
- Two events involving contaminated products where WHO /IPCS contributed to the risk assessment.
- Assessment of one product giving rise to severe illness as a result of a particular circumstance of use and communication of this risk to other Member States.

WHO/IPCS has continued to provide support to Nigeria in dealing with a mass lead poisoning (http://www.who.int/csr/don/2011_11_11/en/index.html).

The development of a training course on the public health management of chemical incidents has been finalized. This project has been conducted in close collaboration with the WHO Collaborating Centre, Cardiff. Review and testing of the training course took place at the WHO International Workshop to Strengthen Capabilities for Sound Chemicals Management in South-East Asia Region, 24-27 May 2011, Bangkok, Thailand. Special attention was given to the International Health Regulations (IHR) (2005) and the situation in developing countries. The training course is based on the WHO Manual of the same title, published in 2009. http://www.who.int/environmental_health_emergencies/publications/Manual_Chemical_Incidents/en/index.html.

Activities were undertaken to raise awareness about the public health impact of chemical incidents and to promote the above-mentioned WHO Manual, including presentations at the following meetings (see also section 2.3):

- The Joint Rotterdam Convention Secretariat/WHO Initial Awareness-raising and Needs Assessment Workshop on the Sound Management of Industrial Chemicals, 11-15 April 2011, Gaborone, Botswana.
- OPCW Conference on International Cooperation and Chemical Safety and Security, The Hague, The Netherlands, 12-13 September 2011
- The Regional Training Workshop on Tools and Methods of Environmental Health and Chemical Risk Assessment, Management and Communication, 18-21 September 2011, Amman, Jordan.
- The SAICM QSP Training Workshop on Strengthening Capacities for the Management of Chemicals and Hazardous Waste, 3-10 October 2011, Abidjan, Côte d'Ivoire.
- Post-Graduate Education in Environmental Toxicology, Technology and Management on Health/Environment Risk and Impact Assessment, Chulabhorn Research Institute, Bangkok, Thailand, 19-20 December 2011.

Continued contributions were made to the WHO Training Course on Securing Global Health: International Health Regulations (IHR) implementation course to raise awareness and train about chemical events and the IHR, Annecy, France, 31 January to 11 February 2011. (<http://www.who.int/ihr/training/ihrcourse/en/index.html>)

Regular coordination meetings were attended with partners involved in the prevention and management of chemical incidents and emergencies, including the Global Health Security Initiative (GHSI) and its Working Group on Chemical Events, UNEP, and relevant NGOs.

5. IMPLEMENTATION OF INTERNATIONAL CONVENTIONS AND AGREEMENTS, INCLUDING SAICM

Activities in 2011 focused on implementation of the Strategic Approach to International Chemicals Management (SAICM), the Global Alliance to Eliminate Lead Paints, the International Health Regulations, negotiations for a mercury treaty, the IOMC, the GHS and the Rotterdam and Stockholm Conventions, as outlined below.

5.1 Strengthening the support, awareness and the need for engagement of the health-sector in the Strategic Approach to International Chemicals Management (SAICM).

Work in 2011 included:

- Consideration of comments received on the draft strategy for strengthening the engagement of the health sector in SAICM implementation prepared pursuant to resolution II/8 of the second session of the International Conference on Chemicals Management.
- Providing an additional opportunity for consideration of the draft strategy at SAICM regional meetings held in Africa (5, 7 and 8 April 2011, Nairobi), Latin America and the Caribbean (30 May - 3 June 2011); Central and Eastern Europe (Lodz, 27-29 June 2011) and Asia-Pacific (5-9 September 2011, Beijing). Specific resolutions on the health strategy were adopted by the regional meeting in Latin America and the Caribbean in 2011. The strategy was brought to the attention of health ministries through a progress report on SAICM implementation considered by the 126th session of the World Health Assembly (17-21 May 2011).
- Preparation of a revised strategy on strengthening the engagement of the health sector in SAICM implementation.
- Consideration of the revised draft strategy on strengthening the engagement of the health sector in SAICM implementation by the first meeting of the Open-ended Working Group of the International Conference on Chemicals Management (15-18 November 2011, Belgrade). The revised draft strategy was recommended by the Working Group for adoption of the health sector strategy as a supplement to the Overarching Policy Strategy of the Strategic Approach at the third session of the Conference. This matter is expected to be adopted in 2012 by the third session of the International Conference on Chemicals Management (17-21 September 2012).
- Participation as a member of the SAICM Quick Start Programme Trust Fund Implementation Committee (meetings 11-12 April 2011, Geneva and 22-23 November 2011, Paris) and SAICM Executive Board 13-14 April 2011, Geneva. WHO is an Executing Agency for eight Quick Start Programme projects and is involved in coordinating these projects through Headquarters, Regional and county offices, as appropriate.
- Direct contribution to the work of the SAICM secretariat through the provision of a WHO staff member. In 2011 a particular focus of the work was preparing for the third session of the International Conference on Chemicals Management and the holding of the first meeting of the Open-ended Working Group and with responsibility for coordination of the work on reporting on implementation of SAICM. In 2011, data was collected using an electronic reporting tool from over 100 SAICM stakeholders with information collected on the 20 indicators adopted by the second session of the Conference. A preliminary report and analysis of this information was made for the first meeting of the Open-ended Working Group.
- Technical assistance and advice on the development of a number of successful project proposals for consideration under the SAICM Quick-Start Programme, particularly to address health-sector priorities such as the project awarded to Zambia for a feasibility study for a sub-regional poisons centre in the East Africa subregion responding to the

regional priority assigned by the SAICM Africa Core Group.

- WHO is contributing technical expertise to three SAICM QSP projects, including:
 - (i) a project on the development of course materials and a distance learning tool (DLT) for the assessment of risk from the use of chemicals to support SAICM's capacity building efforts in developing countries. Project lead is with the Chulabhorn Research Institute, Bangkok, Thailand;
 - (ii) a project on training on risk assessment of chemicals at national level in a global context a training courses in Ghana. Project lead is with the International Panel on pollution Control (IPCP), Zurich, Switzerland; and
 - (iii) a project to enhance the capacity of African Countries to monitor and control transboundary movements of hazardous wastes and chemicals and fight illegal traffic in Cote D'Ivoire. Project lead is with the Secretariat of the Basel Convention.

5.2 Global Alliance to Eliminate Lead Paint

Work has continued on the implementation of resolution II/4B of the International Conference on Chemicals Management on eliminating lead from paint and a progress report was prepared for the first meeting of the Open-ended Working Group of the Conference (15-18 November 2011, Belgrade).

The global partnership takes the form of the Global Alliance to Eliminate Lead Paint which is a joint initiative of the World Health Organization (WHO) and the United Nations Environment Programme (UNEP). The overall goal of the Global Alliance to Eliminate Paint is to prevent children's exposure to lead through paints containing lead and to minimize occupational exposures to lead in paint. The broad objective is to phase out the manufacture and sale of paints containing lead and eventually to eliminate the risks that such paints pose. An interim Advisory Group for the work of the Global Alliance met by teleconference on three occasions in 2011 and held a face-to-face meeting in Washington, US, at the offices of the Pan-American Health Organization on 9-10 March 2011. An operational framework for the work of the Alliance was completed, the definition of "lead paint" resolved and workplans developed for the five focal areas - health aspects, environmental aspects, workers' health, legislation and regulation and outreach to industry. Outreach and advocacy work over 2011 has included holding side events at SAICM regional meetings, at the second African Interministerial Conference on Health and Environment, the nineteenth session of the Commission on Sustainable Development and the first meeting of the Open-ended Working Group of the International Conference on Chemicals Management as well as direct contact with those known to be working on lead issues. Contributors that are willing to publicly commit to assisting achieve the overall goal and objectives of the Global Alliance continue to be actively sought.

A draft resolution for adoption at the third session of the International Conference on Chemicals Management was prepared by the Open-ended Working Group in response to the progress report prepared on the work to eliminate lead paint. The progress report drew attention to a number of factors critical to attaining the Global Alliance's overall goal and specific objectives specifically the need for further engagement by Governments, commitment by the private sector and the need for financial support. The resolution welcomes the establishment of the Global Alliance, the support expressed by a number of SAICM regional meetings and the Global Environment Facility, further encourages contributions to the work of the Global Alliance and expresses support for the Global

Alliance's proposal to establish an international lead poisoning prevention day of action with an initial focus on eliminating lead in paint.

A business plan for the work of the Global Alliance was being completed in 2011 and this will accompany a further report on lead in paint for the third session of the International Conference on Chemicals Management.

5.3 International Health Regulations (2005) (IHR)

The IHR (2005) cover all events of potential international public health concern, including disease outbreaks of known, or suspected, chemical etiology. Countries are required to build core capacities for the detection and surveillance of such outbreaks, and can call upon the support of the WHO and the international community to manage the outbreaks. In 2011, chemical safety continued its contribution to strengthen core capacities in countries related to IHR (see also section 4).

WHO was a collaborating partner in a European project called ASHT II, which completed its work in October 2011. This project was funded under the European Union (EU) Public Health Programme and was managed by the UK Health Protection Agency (HPA). It further developed work initiated under ASHT I, in which WHO was an associate partner, to implement an EU-wide alerting system for chemical release. The alert system, called RAS-CHEM, uses poisons centres as sentinels. Under ASHT II a common terminology was developed for reporting events. This included parts of the terminology used within the WHO/IPCS INTOX Data Management System, thus increasing the international comparability of the data collected. RAS-CHEM will provide EU Member States with the tools for early detection and reporting of chemical events with international implications, as required under the IHR.

5.4 Mercury Treaty Negotiations

UNEP-convened negotiations for a legally binding international treaty on mercury commenced in June 2010. WHO participated in INC3, 30 October - 4 November 2011 through the provision of information for an official meeting document on health aspects, a presentation in the Technical Briefing and a submission listing the number of signification new WHO publications relating to mercury. In addition, a short information document was published on Mercury in Skin Lightening Products, specifically aimed at INC3.



Mercury in Skin Lightening Products, WHO Information Document, 2011.
http://www.who.int/ipcs/assessment/public_health/mercury_flyer.pdf



WHO Submission for Mercury INC3: New WHO Information Materials on Mercury. UNEP(DTIE)/Hg/INC.3/INF/4.
<http://www.unep.org/hazardoussubstances/Mercury/Negotiations/INC3/INC3MeetingDocuments/tabid/3487/language/en-US/Default.aspx>

5.5 Inter-organization Programme for the Sound Management of Chemicals (IOMC).

The IOMC coordinates the chemicals policies and programmes of its Participating Organizations (FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WB, WHO and OECD). WHO

is the administering agency for the IOMC and provides its Secretariat, as well as participating as a member of the IOMC. In 2011 two regular meetings of the IOMC were held, on 12-13 April 2010, hosted by UNITAR in Geneva, and 21-22 November, hosted by OECD in Paris. Refer to: <http://www.iomc.info> for information about IOMC activities.

5.6 Globally Harmonized System for Classification and Labelling (GHS)

Updates on the work being undertaken by WHO to implement the GHS were provided to the UN Sub-Committee of Experts on the GHS (UNSCEGHS) at meetings during 2011. This included the classification scheme used for the WHO Recommended Classification of Pesticides, and the continuing addition of GHS classifications to ICSCs (317 chemicals). WHO staff continue to participate in the work of UNSCEGHS correspondence groups on precautionary information and on development of a global list of GHS classified chemicals.

5.7 Stockholm Convention on Persistent Organic Pollutants

WHO presented its evaluation "DDT in Indoor Residual Spraying: Human Health Aspects" to the 5th Conference of the Parties, 25-29 April 2011, in conjunction with further consideration by the Conference of the exemption currently afforded under the Convention to DDT for disease vector control. Further, WHO established a programme of follow-up work to review new scientific information in advance of COP6 (2013), which will again consider this matter. WHO provided its Framework for assessment of combined exposures to the POPs Review Committee for its use in work on toxic interactions, and participated in the POPs Review Committee held 10-14 October 2011 in order to provide information relating to combined exposures and DDT alternatives.

5.8 Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous Chemicals and Pesticides in international trade.

WHO participated in the 5th Conference of the Parties, providing WHO information on chrysotile asbestos, in conjunction with the Conference's consideration of this matter.

LIST OF PUBLICATIONS DURING 2011

Concise International Chemical Assessment Documents

CICAD (No 67) **Selected 2-Alkoxyethanols**
<http://www.who.int/ipcs/publications/cicad/cicad67.pdf>

Harmonization Project Document Series

Risk Assessment of Combined Exposures to Multiple Chemicals: A WHO/IPCS Framework (2011), published in M.E. (Bette) Meek, Alan R. Boobis, Kevin M. Crofton, Gerhard Heinemeyer, Marcel Van Raaij, Carolyn Vickers. *Regulatory Toxicology and Pharmacology*, Vol 60, Issue 2, Supplement, S1-S14. <http://dx.doi.org/10.1016/j.yrtph.2011.03.010>

WHO OECD ILSI/HESI International Workshop on Risk Assessment of Combined Exposures to Multiple Chemicals. Workshop Report Series on Testing & Assessment No. 140, 15-16 February 2011, Paris, France. ENV/JM/MONO(2011)10.
[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO\(2011\)10&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/JM/MONO(2011)10&docLanguage=En)

Draft (for public comment) WHO/IPCS document identifying important Life Stages for monitoring and assessing risks from exposures to environmental contaminants.
<http://www.who.int/ipcs/methods/harmonization/areas/lifestages/en/index.html>

Environmental Health Criteria (EHC)

EHC (No 241) DDT in Indoor Residual Spraying: Human Health Aspects
<http://www.who.int/ipcs/publications/ehc/ehc241.pdf>

WHOPES/IPCS

Generic risk assessment model for indoor and outdoor space spraying of insecticides
http://whqlibdoc.who.int/publications/2011/9789241501682_eng.pdf

Generic risk assessment model for indoor residual spraying of insecticides
http://whqlibdoc.who.int/publications/2011/9789241502177_eng.pdf

Generic risk assessment model for insecticides used for larviciding
http://whqlibdoc.who.int/publications/2011/9789241502184_eng.pdf

International Chemical Safety Cards (ICSCs)

30 new and updated cards have been published in 2011. These are listed in [Appendix 1](#).

Other

Brief Guide to Analytical Methods for the Measurement of Lead in Blood
http://www.who.int/ipcs/assessment/public_health/lead_blood.pdf

Brief Guide to Analytical Methods for the Measurement of Lead in Blood
http://www.who.int/ipcs/assessment/public_health/lead_paint.pdf

Prüss-Ustün A, Vickers C, Haefliger P and Bertollini R (2011). Knowns and unknowns on burden of disease due to chemicals: a systematic review. *Environmental Health* 2011, 10:9
doi:10.1186/1476-069X-10-9

Thomas E, Tempowski J, Martín-Couce L (2011). The Global Lead Challenge. *Chemical Hazards and Poisons Report*, 20: 34-36
<http://www.hpa.org.uk/Publications/ChemicalsPoisons/ChemicalHazardsAndPoisonsReports/Issue20ChemicalHazardsandPoisonsReport/>

WHO/IPCS Web Portal on 10 Chemicals of Major Public Health Concern.
http://www.who.int/entity/ipcs/assessment/public_health/chemicals_phc/en/index.html

Mercury in Skin Lightening Products, WHO Information Document, 2011.
http://www.who.int/ipcs/assessment/public_health/mercury_flyer.pdf

WHO Submission for Mercury INC3: New WHO Information Materials on Mercury.
UNEP(DTIE)/Hg/INC.3/INF/4.
<http://www.unep.org/hazardoussubstances/Mercury/Negotiations/INC3/INC3MeetingDocuments/tabid/3487/language/en-US/Default.aspx>

Brown R. (2011) The role of the International Chemical Safety Cards in occupational health and safety. *African Newsletter on Occupational Health and Safety*, Vol. 20, No. 2, p30

List of International Chemical Safety Cards published in 2011

<u>ICSC No.</u>	<u>new/upd</u>	<u>Substance</u>	<u>CAS</u>
13	update	Arsenic	7440-38-2
38	update	Dichlorprop	120-36-5
88	update	Acetonitrile	75-05-8
149	update	Dinoseb	88-85-7
220	update	Antimony pentafluoride	7783-70-2
242	update	Cyclohexane	110-82-7
289	update	Magnesium (powder)	7439-95-4
320	update	Propionitrile	107-12-0
353	update	Cyclopentane	287-92-3
557	update	Sodium propionate	137-40-6
631	update	Amitrole	61-82-5
634	update	Bisphenol A	80-5-7
701	update	Magnesium (pellets)	7439-95-4
765	update	Calcium arsenate	7778-44-1
882	update	Dinoseb acetate	2813-95-8
1040	update	Fluoroboric acid	16872-11-0
1173	update	Fumaric acid	110-17-8
1207	update	Diammonium hydrogen arsenate	7784-44-3
1208	update	Sodium arsenate dibasic	7778-43-0
1209	update	Magnesium arsenate	10103-50-1
1210	update	Potassium arsenate	7784-41-0
1211	update	Copper(II) arsenite	10290-12-7
1212	update	Lead(II) arsenite	10031-13-7
1242	update	Potassium hexafluorosilicate	16871-90-2
1243	update	Sodium hexafluorosilicate	16893-85-9
1244	update	Germane	7782-65-2
1245	update	Nonane	111-84-2
1250	update	Uranium hexafluoride	7783-81-5
1271	update	Propaquizafop	111479-05-1
1758	new	Blasticidin-S	2079-00-7

MEETINGS HELD IN 2011

15-16 February 2011
WHO OECD ILSI/HESI Workshop on Risk Assessment of Combined Exposures to Multiple Chemicals
Paris, France

10-12 May 2011
Review of Environmental Health Criteria (EHC) on Dermal Exposure
Hanover, Germany

24-27 May 2011
WHO International Workshop to Strengthen Capabilities for Sound Chemicals Management in South-East Asia Region
Bangkok, Thailand

6-9 June 2011
Peer-review meeting for International Chemical Safety Cards
Geneva, Switzerland

11-13 July 2011
Scoping meeting for WHO Guidelines on the Prevention and Management of Lead poisoning
Geneva, Switzerland

3-5 October 2011
Immunotoxicity Risk Assessment for Chemicals: WHO/IPCS Technical workshop (3-4 October) and Drafting Group meeting (5 October)
Bilthoven, Netherlands

17-19 October 2011
International Chemical Safety Cards project: Compiler's Guide Committee meeting
Geneva, Switzerland

29-30 November 2011
Characterizing and Communicating Uncertainty and Variability in Hazard Assessment: Drafting Group meeting
Washington D.C., USA

29 November -1 December 2011
International Chemical Safety Cards project: Compiler's Guide Committee meeting
Geneva, Switzerland