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Health aspects of chemical safety: Strategic directions for action of the WHO Regional Office for Europe

Report of the meeting in Bonn, Germany,
17-19 October 2012

ABSTRACT

A meeting was held in Bonn, Germany, from 17 to 19 October 2012 with the aim of assessing the capacities of WHO European Member States to address the health-related aspects of chemical safety, to identify gaps and set priorities for action at the regional level and to identify the need for assistance from the WHO Regional Office for Europe to facilitate the implementation of the Parma Declaration commitments, the Strategic Approach to International Chemicals Management, the International Health Regulations, relevant World Health Assembly resolutions and other international agreements regarding chemical safety, as well as to discuss the establishment of a network of experts to maximize cooperation and efficiency in the Region.

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Abbreviations

ICCM 3	Third session of the International Conference on Chemicals Management
IHR	International Health Regulations
REACH	Registration, Evaluation, Authorisation and Restriction of Chemical substances
SAICM	Strategic Approach to International Chemicals Management

Introduction

A meeting was held in Bonn, Germany, from 17 to 19 October 2012, with the aim of assessing the capacities of WHO European Member States to address health-related aspects of chemical safety, to identify gaps and set priorities for action at the regional level and to identify the need for assistance from the WHO Regional Office for Europe to facilitate the implementation of the Parma Declaration commitments, the International Health Regulations (IHR), the Strategic Approach to International Chemicals Management (SAICM), and relevant World Health Assembly resolutions and other international agreements regarding chemical safety, as well as discussing the establishment of a network of experts to maximize cooperation and efficiency in the WHO European Region.

The meeting was attended by 44 experts from 25 countries, including country representatives, representatives of international and nongovernmental organizations and WHO temporary advisers (Annex 1). Country representatives were nominated by national focal points for the European Environment and Health Process.

Professor Gary Coleman (United Kingdom) was elected Chairperson and Dr Kateřina Šebková (Czech Republic) was elected Rapporteur. The programme is in Annex 2.

The German Ministry of Environment, Natural Conservation and Nuclear Safety generously provided funds for the meeting.

Background

The Parma Declaration with its Commitment to Act calls for the prevention of diseases arising from exposure to chemical risks. It aims to protect each child from the risks posed by exposure to harmful substances and preparations, and to act to prevent exposure to carcinogens, mutagens and reproductive toxicants as well as endocrine-disrupting and bio-accumulating chemicals. Signatories are also committed to contribute to the SAICM, including SAICM resolutions on globally identified emerging issues such as chemicals in products, lead in paints and endocrine-disrupting chemicals.

Furthermore, the health sector is required to respond to any health threat arising from chemicals and chemical emergencies by the IHR and by World Health Assembly resolutions WHA55.16 on the global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radio nuclear material that affect health, WHA58.3 on the revision of the International Health Regulations, WHA58.22 Cancer prevention and control, WHA59.15 on the Strategic Approach to International Chemicals Management, WHA59.2 on the application of the IHR, WHA63.25 on the improvement of health through safe and environmentally sound waste management, and WHA63.26 on the improvement of health through sound management of obsolete pesticides and other obsolete chemicals.

The broad scope of existing commitments and the relationship between different activities require the development of a common strategy for action to maximize the effective implementation and positive impact of chemical safety measures in the Region.

Scope and purpose

The key objectives of the meeting were, on the basis of an assessment of existing capacities, to identify Member States' needs and to set priorities in addressing the health-related aspects of

chemical safety, so as to provide proposals for ways in which the Regional Office could assist countries in their efforts to implement the sound management of chemicals. An important element in such management is to develop a WHO regional network of experts.

Sound chemicals management related to health protection

The first session was devoted to Member States' needs in sound chemical management related to health protection and specific needs in the management of carcinogens, mutagens and endocrine-disrupting toxicants.

A good starting point for discussion of these needs was the follow-up to a questionnaire survey, organized by the WHO European Centre for Environment and Health (ECEH), of the capacities of Member States to implement sound chemicals management. Thirty-three countries had responded. An analysis of their responses identified the following main gaps in all areas of chemicals management addressed in the questionnaire:

- an absence of legislation, strategies and action plans to address the specific needs of the most vulnerable population groups (such as pregnant women and children) in more than half of the countries;
- the paucity of information available in electronic form for countries with economies in transition;
- an urgent need to strengthen the human, laboratory and financial resources for risk assessment in south-eastern European and newly independent Member States;
- the need to take rapid action in implementing educational programmes for the most vulnerable population groups;
- the small involvement of medical professionals in policy development at national level;
- the insufficient number of poison centres as well as the need for long-term exposure and health impact assessment of chemical emergencies;
- the need to use biomonitoring as the instrument for exposure assessment and effects evaluation;
- the need to strengthen management of the health aspects of contaminated sites.

There followed a presentation on the role of the health sector in chemicals management in Albania, which aimed to describe the situation not only in Albania but in most south-eastern European countries. The health sector needs to be more strongly involved in formulating policy and setting standards for service delivery, and in developing and implementing risk assessment methodologies. The sector had a crucial role to play in disseminating knowledge and raising awareness, especially targeting women so as to protect family members from the impact of chemicals. There is a need for research, epidemiological studies, health surveillance, and monitoring and biomonitoring of chemicals. Special attention should be paid to capacity-building for chemical emergency prevention, preparedness and response as an integral part of applying the IHR. Moreover, the health sector is itself an important user of chemicals. The following general issues are of greatest concern: chemicals in products, occupational safety, obsolete pesticides stockpiles, and exposure assessment of vulnerable population groups. In Albania the main points are the need to: update and implement the methodology for health risk assessment; strengthen capacities for toxicological assessment; create a poison information centre; establish a surveillance system for chemicals risks management; develop training

curricula in basic toxicology, basic risk assessment and communication; develop legislation in relation to control of pesticides and biocides; build capacity in emergency preparedness and response; implement the globally harmonized system of classification and labelling; and include the precautionary principle in legislation.

In Belarus, Kazakhstan and the Russian Federation, the harmonization of parts of legislation relating to chemicals through the three countries' customs union had yielded some positive experience. The Agreement of the Customs Union on Sanitary Measures was adopted in 2010, based on the relevant national regulations, the IHR and the Agreement on Coordinated Policy in the Field of Technical Regulations, Sanitary and Phytosanitary Measures. This Agreement included common requirements relating to the integrated inventory of goods subject to sanitary and epidemiological surveillance, and requirements for the safety of goods subject to sanitary and epidemiological supervision (control) with a uniform format for documents confirming the safety of products (goods). The benefits for human health protection in the customs union legislation include the requirements for registration of a wide range of chemicals and consumer products by the competent authorities, and for the exercise of mandatory controls both before products are offered for sale and during their life-cycles. There are, however, no restrictions or regulations regarding the use of substances of very high concern and goods containing those substances. The current needs in capacity-building for chemical safety in these countries include, in particular, the training of experts, information exchange among professionals, dissemination of best practices in chemicals management and models to share/implement.

In the Republic of Korea, rapid industrialization, growing energy consumption, urbanization, and the continuous increase in production and use of chemicals have been recognized as determinants of the increasing prevalence of atopic dermatitis and asthma among Korean children since the 1980s. The main characteristics of the Toxic Chemicals Act are similar to the European Union (EU) regulation on Registration, Evaluation, Authorisation and Restriction of Chemical Substances (REACH). The Korean Toxic Release Inventory system mandates companies to report every year the amount of chemicals released into the air and water and on land as well as wastes transported for recycling or disposal. The reporting thresholds are either 1000 kg or 10 000 kg per year, depending on the priorities. The business sectors handling chemicals in excess of 100 kg per year (for single substances) or 1000 kg per year (for mixtures) are surveyed every four years. Following a number of chemical incidents in the country during the last 20 years, a top priority since 2008 has been to address the health effects related to the environment. A new Environmental Health Act, which has been introduced to manage the impact of environmental contamination on human health and the ecosystem, emphasizes the paradigm shift of chemical management from a source- to receptor-oriented approach. Current challenges to chemical safety management include harmonization among government bodies, an increase in the public's right to information and the chemical safety of products.

An important factor is the communication to vulnerable groups of scientific facts regarding the health impacts of hazardous chemicals so as to improve their protection. A variety of tools are used (briefings, events, web sites, newsletters and social media) for communicating risks to different audiences such as policy-makers, the general public or vulnerable groups. Examples include national campaigns to improve implementation of the pesticide laws, policy updates, provision of information on alternatives, joint projects in countries and development of specific web sites. Current activities include advocating a ban on the use of mercury and addressing the health risks of endocrine-disrupting chemicals. Other activities are focused on helping stakeholders to understand REACH. The right format for communication with different target audiences is key to getting support for measures aimed at reducing exposure to hazardous chemicals.

The medical and biological aspects of endocrine-disrupting chemicals are important. All hormone-sensitive physiological systems are vulnerable to endocrine disruptors and they could express effects through a wide range of receptors – nuclear hormone receptors, non-nuclear steroid hormone receptors, non-steroid receptors, orphan receptors, and enzymatic pathways involved in steroid biosynthesis and/or metabolism. Substances with endocrine-disrupting properties are present in different types of product such as industrial solvents, lubricants and their by-products, plastics, plasticizers, pesticides, fungicides, pharmaceutical agents, personal care products and food. There is scientific evidence for negative trends in reproductive abnormalities, such as the earlier onset of puberty (normal for girls: 9-14 years; normal for boys: 10-17 years; extreme cases: <8 years) and decreasing sperm counts (from 110 million to 60 million) as well as obesity. Some endocrine-disrupting chemicals show transgenic effects and increased risk of cell adenocarcinoma of the vagina and cervix, genital malformations, infertility, adverse pregnancy outcomes and possible increased risk of cervical dysplasia. It is strongly recommended that knowledge of the possible long-term consequences of the effects of endocrine-disrupting chemicals should be more widely disseminated, supported by evidence/data of incidence, so as to educate primary health care physicians and gynaecologists to take into account histories of reproductive disorders and occupational and environmental exposures when they diagnose hormonal system disorders.

The results of several studies show that some pregnant women may be exposed, due to their behaviour and consumption, to levels of mixtures of endocrine-disrupting substances of such health concern that action is warranted to reduce this exposure. The studies conclude that some consumer products in everyday use that contain endocrine-disrupting chemicals could pose unacceptable risks for pregnant women due to such women's exposure, consumption patterns and behaviour. The availability of information and training for consumers is important in reducing exposure to potential endocrine disruptors.

Biomonitoring should be developed as an essential tool for risk assessment of exposure to complex chemicals from different environmental media (air, water, dust, food, beverages, personal care products, etc.) and all routes of entry (inhalation, ingestion and dermal penetration). Integrated analyses of intake, dose and body burden can be monitored from blood, urine and tissue samples (placenta, hair, etc.). There are, however, limitations to the advantage of performing and using biomonitoring as the most direct measure for human risk assessment and integrating the impacts since it is not applicable to all chemicals of interest. Examples of best human biomonitoring practice are found in Belgium, France, Germany and the United States. The technical and political benefits of implementing a human biomonitoring programme include early warnings for emerging risks, identification of vulnerable groups, guidance for policy targeting and development, and assessments for policy effectiveness and accountability. Human biomonitoring requires technical capacities, but attention also has to be paid to privacy protection, the right to know and so on. The participants were given information about the new initiative for development of an EU programme aimed at the collection of harmonized and standardized large-scale exposure data from European populations.

The rapid increase in cases of cancer (approximately 12.5 million new cases/year) will lead to the duplication of the cancer rate by 2050, which makes the importance of global cancer prevention and control activities a priority. Monographs of the International Agency for Research on Cancer play a role as the first step in cancer prevention as well as in estimation of dose–response relationships within the range of the available epidemiological data, or in comparing the dose–response information from experimental and epidemiological studies. An analysis of available data for 9000 environmental factors has identified 108 as carcinogenic to humans (Group 1), 64 as

probably carcinogenic to humans (Group 2A) and 270 as possibly carcinogenic to humans (Group 2B). The most recently identified agent with carcinogenic effects is diesel engine exhaust. Brief information was provided about the International Information System on Occupational Exposure to Carcinogens and its operation. Forthcoming monographs such as vol. 107 on polychlorinated biphenyls and polybrominated biphenyls (12-19 February 2013) and vol. 108 on some drugs and herbal medicines (4-11 June 2013) were addressed in the presentation and discussion. Two primary research projects: SYNERGY - on the joint effects of occupational carcinogens on lung cancer risk, with 20 000 cases, and AGRICOH – a consortium of agricultural cohort studies to study pesticides and cancer with wide participation from institutions in 11 countries, will promote and sustain collaboration and pooling of data to study the association between a wide range of agricultural and occupational exposures and health outcomes.

The Ramazzini Institute in Italy has been working on 500 long-term studies of more than 200 agents in the industrial and general environment. These activities have contributed to the development of animal models that could be used to assess the risk of cancer developing in an ageing population. Current toxicity testing methods rely heavily on animal studies, and animal models can forecast human response. Nevertheless, the current approach fails to capture the impacts of early exposures and misses the late effects of such exposures. As an example, studies of prenatal and postnatal exposure of children to some chemicals (vinyl chloride, benzene) show a 10-40 times' higher risk of cancer at prenatal exposure. Recommendations from the Organisation for Economic Co-operation and Development should be used for a more realistic risk assessment, with a longer period of observation of experimental animals lasting up to 130 weeks. The latest scientific findings indicate that very low doses of chemicals in mixtures reflecting the real-life exposures of billions of people pose a substantial health risk. The association with other agents, although at low dose exposure, can enhance the carcinogenic effects of a carcinogen at a dose demonstrated to be safe in previous studies. Different compounds used individually at concentrations previously demonstrated to be safe can act synergistically and together represent a cancer risk.

Greater cooperation should be established between researchers addressing the health effects caused by exposure to endocrine-disrupting chemicals and those studying cancer, including the dissemination of findings to all Member States. The role of prevention is important in policy-making, including use of the cumulative exposure index, inclusion of ecosystems with strong indicators on human health and the change of the paradigm to receptor-oriented. Challenges include the engagement of stakeholders, development of national plans and differences in priorities between countries in the Region.

Summary of discussion in working groups

Questions facilitating discussion in the working groups had been developed by the ECEH in consultation with the WHO collaborating centre in Cardiff, the United Kingdom.

The characteristics of vulnerable population groups include high susceptibility, high exposure, age, gender, common underlying health conditions, rights across policies and socioeconomic conditions. All these factors should be taken into account in the policy development process on the basis of two dimensions of vulnerability: high levels of exposure/high body burden and sensitivity to exposure at the same level. The greatest attention should be paid to children and pregnant women to prevent prenatal exposure to chemicals.

Prevention is the key approach to protect vulnerable population groups. Specific scientific information on such groups is needed, including the critical windows of exposure, short- and long-term effects, reliable limits, exposure assessment based on biological monitoring and multiple sensitivity effects. Indicators are highly relevant due to the importance of the burden of disease in policy development. Biomonitoring could provide data before the development of disease, and environmental health indicators (such as the prevalence of asthma) should be used together with characteristics of environmental quality in developing policy.

A number of measures should be taken at national level, including the strengthening and implementation of legislation, a focus on alternatives, training of the trainers, education of health professionals, information-sharing and best practice and awareness-raising campaigns. The most cost-effective ways for disseminating information (such as classroom campaigns, use of social media, the internet) should be used for educational purposes. Awareness-raising campaigns and non-regulatory measures could be as effective as legislative measures. There is a need for discussions with partners in due regulation such as industry, the nongovernmental sector, communities, professional societies, academe and others. The implementation of the SAICM Global Plan of Action is one approach to addressing the prevention of exposure of children at national level.

The principal gaps in addressing the health aspects of chemicals safety of, in particular, vulnerable groups included the development of laboratory capacities for monitoring and data collection for implementation of legislation; effective control at the pre-marketing and marketing stages; capacity-building in the use of existing data to find linkages between environmental pollution and health impact; training of medical care professionals; research for evidence and health-economic impact assessment and on exposure and risk assessment; development of a communication and information system; and establishment of a financing mechanism to support environmental health activities. One of the main gaps is the lack of interministerial and inter-stakeholder communication and cooperation.

Areas in which the greatest impact could be obtained included the education of medical professionals, the public and children in schools; awareness-raising among decision-makers and vulnerable groups; implementation of legislation; and development of practical recommendations using existing data to manage risks.

The Regional Office could be of support at regional level in the areas of:

- disseminating and sharing information on best practice(s) and collecting evidence from and within Member States provided via web-portal;
- developing a network of experts;
- organizing meetings of environment and health sector specialists;
- developing guidance and tools for risk assessment for using local data;
- building human capacity and organizing training in south-eastern European and newly independent Member States;
- developing laboratory inventories and supporting the sharing of methodology and standardization of national laboratories;
- initiating research to fill gaps in scientific knowledge.

Health-related aspects of contaminated sites

The second session consisted of a discussion of the health-related aspects of contaminated site management in two countries as a pilot experience as well as action supported by international donors.

In 2007, the European Environment Information and Observation Network register estimated that there were more than 250 000 contaminated sites in European Environment Agency countries, most of them the result of industrial activities such as industrial production processes and products, as well as the consequences of treatment and disposal of wastes. Health risk assessment and public health assessment are the main approaches applied to estimate the health risk of industrially contaminated sites. Health risk assessments can be based on traditional toxicological approaches or on environmental burden of disease methodologies. Public health assessments are based on both health risk assessment and health profiling of populations affected by contamination. An example of health profiling was the SENTIERI project, which was developed in Italy to describe the health profile of populations living in contaminated sites using routinely collected data on mortality and morbidity at area level. The forthcoming WHO publication *Human health in areas with industrial contamination* will be a relevant reference of the methods used to study health risks in industrially contaminated areas.¹ It would be helpful if work undertaken by WHO in relation to industrially contaminated sites were to include the development of guidelines and the development of new approaches and training modules based on existing experiences.

A representative of the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH described activities in developing countries supported by her organization in the framework of the Convention Project on Chemicals Safety (1997-2013). Examples of good cooperation included: the disposal of obsolete pesticides and polychlorinated biphenyl inventory; the development of private-public partnerships; the recycling and reprocessing of used oils; and the strengthening of cooperation with the International Council of Chemical Associations and the United Nations Industrial Development Organization in building national inventories of legacy sites and demonstrating how to structure and approach a remediation project, including a model methodology later applied in other regions. The representative also described nine years of experience in practical chemical management in small and medium enterprises and training in national languages, the development of White Books for Chemicals Management, and inclusion of model methodologies in university curricula.

In the former Yugoslav Republic of Macedonia, a study of 16 identified contaminated industrial sites has resulted in the classification of contaminated sites, based on various environmental criteria, according to their risks. Human health risk assessment focused on exposure routes, both direct and indirect, and investigation of the number and type of people that may be affected to a significant extent help to develop specific matrices to assess population risks. The main challenges are the lack of proper organization, evidence of health effects, technical capacities and proper funding. WHO was requested to assist countries by providing methodologies and technical assistance for risk assessment, the minimization and elimination of negative impacts on human health, and capacity-building through the organization of training related to health aspects of the management of contaminated sites.

¹ Mudu P, Terraeni B, Martuzzi M. *Human health in areas with industrial contamination*. Copenhagen, WHO Regional Office for Europe (in publication).

Summary of working group discussion

The working group on aspects of the management of contaminated sites focused on the role of the health sector in the management of such sites, the main problems in addressing the public health aspects of such sites, current best practice at national level, and the specific needs or gaps (methodological, educational, scientific information, etc.) in the health sector and action that should be taken to address those needs or gaps.

National legislation should clearly indicate the responsibility of different stakeholders in the identification and remediation of contaminated sites as well as the role of the health sector. Representatives of the health sector should be included early on in the teams working at contaminated sites at country level, ideally from the point when such sites are identified. Most important approaches for successful management of contaminated sites include interministerial and intersectoral cooperation between the environment and health sectors, in particular in data collection and the planning and implementation of measures. An official register of contaminated sites should be established in each country and at subregional and regional levels.

The role of the health sector in management of identified contaminated sites should include:

- the identification of direct and indirect hazards and risks, based on investigation of the dose-response relationship in animal and epidemiological studies and the collection of knowledge on possible effects on human health and the environment;
- an assessment of population impact by development of exposure scenarios, including worst-case scenarios, for different population groups such as workers, residents, children, elderly people and others;
- use of best available practices and techniques as the basis for developing proposals for reducing risk and exposure (restriction, remediation, rehabilitation, etc.);
- establishment of standards for “healthy” soil, water and air, including standards for new chemicals, taking into account new scientific data on the impact of existing chemicals;
- awareness-raising and education of different groups in the population, including through guidelines and provision of reliable information;
- provision of health surveillance and monitoring of individuals (health status);
- initiation of and participation in epidemiological studies, using biomonitoring as the potential preferential tool for exposure assessment.

Challenges at the regional level include: establishing routine systems for data collection and use and comparable collection of information at regional level; identifying analytical laboratories with adequate capacity and expertise; finding evidence linking environmental contamination with health effects; ensuring the adequacy of monitoring system of the quality of the environment; and involving the public in data collection.

Best available practice includes: comprehensive legislation defining the roles and responsibilities of all stakeholders; surveillance systems (including inspection) that cover industrial pollution and involve professionals with proper education in and knowledge of environmental health; the development of specific data collection systems that include the analysis, interpretation, sharing and communication of data to the public and decision-makers; and the creation of specific funds for all these activities. Such experience could serve as a good basis for the development of recommendations on the management of contaminated sites.

The Regional Office could give support in the organization of training, provision of technical assistance in performing exposure assessment, and the development of guidelines or other methodological documents outlining the management of contaminated sites taking into account the precautionary principle and the harmonization of a definition of a contaminated site.

Health aspects of international chemicals agreements: needs for capacity-building

The third session discussed the implementation of several international agreements, such as SAICM, the Stockholm Convention on Persistent Organic Pollutants and the IHR.

Sound management of chemicals is important in the context of sustainable development and linkages between environment and health. The main outcomes of the third session of the International Conference on Chemicals Management (ICCM 3) included resolutions on chemicals in products and endocrine-disrupting chemicals and the next steps in the implementation of SAICM. The SAICM is not a legally binding instrument and it does not replace existing institutions and mechanisms. It does, however, provide a global policy framework to support efforts to achieve the safe production and use of chemicals.

A representative of the SAICM secretariat described the tools available under the SAICM, including the Quick Start Programme, the Global Plan of Action and the newly adopted health sector strategy. She also provided detailed information on the United Nations Environment Programme Chemicals in Products project and action that should be taken to reduce the impact of endocrine-disrupting chemicals listed in the ICCM 3 resolution.

A representative of the ECEH secretariat described the SAICM health sector strategy and other SAICM activities, mentioning the inadequate engagement of the health sector in all of them, and gave a short description of the strategy's principal objectives, the recommended measures for its implementation and the involvement of the health sector in ongoing activities such as the Global Alliance for Elimination of Lead from Paints and the Global Initiative to Substitute Mercury in Health Care. It is particularly necessary to identify health sector contact points in Member States for participation in the SAICM process, as well as to build and strengthen expert networks, so as to mobilize the health sector as a partner in implementing the SAICM.

Participants heard about the health-related activities of the Stockholm Convention Regional Centre for Central and Eastern European Countries. The management of chemicals is not limited to the use of only one instrument in one region, but is interdisciplinary and crosscutting.

The main mandate of regional centres is to provide capacity-building and technology transfer, but health links and cooperation, including an interdisciplinary approach and international participation and stakeholder involvement, are important. An overview of activities included building analytical, monitoring and risk assessment capacities globally, establishing monitoring networks in central and eastern Europe, Africa, the Arab countries and the Pacific Islands, and offering support in preparing national inventories and developing legal frameworks for the management of chemicals. The regional centre is developing a data repository and visualization tool for the Global Monitoring Plan of the Stockholm Convention, and offers support in capacity-building activities such as targeted training in practical experience and the interdisciplinary approach and the Summer School of Environmental Chemistry and Toxicology.

Data-sharing and exchange of knowledge are important. The centre offered assistance to Member States in support of their chemical safety activities.

The main characteristics of the IHR are as a legally binding instrument that defines the responsibilities of the health sector at national and international level in the area of chemicals safety. The core capacities needed for implementation of the IHR include: the development and adoption of legislation and policies, intersectoral coordination, surveillance, response and preparedness, risk communication, human and laboratory resource capacity, multisectoral and environmental hazards (zoonotic, chemical, radiological, food safety) and detection at the point of entry. Challenges for implementation of the IHR include: a new way of reporting day-to-day operations, the all-hazard approach, the whole-health approach, the multidisciplinary and multisectoral approach, cooperation and links between all levels (such as points of entry) and benefits, efficient coordination and communication at national and regional level, standardized risk assessment, identification of appropriate response mechanisms and the long-term economic benefit of implementing the IHR.

The emergence of endocrine-disrupting chemicals as an issue and the role of SAICM in cooperation/coordination with other chemicals instruments are important, as is the specific and complementary role of the IHR (country preparedness). Several participants suggested cooperation with regional centres in the Region in order to enhance capacity-building and the transfer of knowledge and technology in the management of chemicals. There was a brief discussion of asbestos and of the implementation of commitments under particular instruments, including the involvement of WHO and the creation of partnerships.

Summary of working group discussion

Discussion in the working group focused on linkages between different international agreements; identification of specific needs for implementation of the Parma commitments, the SAICM health strategy and other resolutions on emerging issues (such as chemicals in products, endocrine-disrupting chemicals and toxic chemicals in wastes); the role of the health sector; and assistance from the Regional Office.

The implementation of international agreements will contribute to implementation of the Parma Declaration. The Declaration expresses important commitments aiming to protect the health of children and pregnant women. WHO and Member States should be encouraged to focus on information-gathering on the quality and status of the environment of children and pregnant women, that is, whether children are playing in contaminated soil, the content of toys, child-specific risk assessments, and exposure assessments of pregnant women so as to identify prenatal exposure of children. In addition, more scientific research should be carried out to assess endocrine-disrupting chemicals and to develop risk assessment standards for evaluating the effects of chemical mixtures/combinations. A new approach is needed to the dissemination of information, including sharing scientific information, involving regional centres² established to support the implementation of the provisions of global chemicals agreements and regional initiatives, and facilitating the public spread of information about chemicals in products, especially in products for children and pregnant women.

² There are a number of regional centres for environment and health issues in central and eastern Europe, such as the Regional Environmental Centre for Central and Eastern Europe and the Stockholm Convention Regional Centre for Central and Eastern European Countries. Here and below in the text the term “regional centres” is used in a general sense.

Action to implement the SAICM health strategy should initially be taken at national level, starting with training of health care professionals and capacity-building in the health sector. National focal points for the European environment and health process could serve as contacts for promoting the health sector strategy. In addition, specific contact points in the health sector could be identified for effective information-sharing. The creation of links with national priorities in environment and health protection included in national strategies and action plans will contribute to the implementation of the Parma Commitments.

There is a need to build additional capacities in the health sector, as well as to strengthen research capacities and infrastructure so as to address health-related aspects of chemical safety. Experience from the regional centres has shown that a data-sharing system for the more effective collection and use of information should be created. Awareness-raising campaigns and training of medical care professionals are recommended as initial steps in capacity-building in the health care sector.

The Regional Office could assist Member States by:

- encouraging them to participate in cross-cutting meetings and disseminating reports of such meetings to all stakeholders/key actors;
- investigating existing tools that increase the possibility of sharing information produced in the Region;
- developing recommendations for child-specific risk assessments as well as guidance for uniform/comparable data collection;
- producing reviews of information collected in completed or current research projects;
- promoting biomonitoring and registers that can be used in the development of risk assessment for children;
- developing a Quick Start Programme project for Europe (in eligible central and eastern European countries) that would address the needs for training/capacity-building and information dissemination to and within the health sector.

The IHR, emergency preparedness and response

The fourth session discussed the scope of relevant current public health capacities and resilience in the Region, the principal types of chemical hazard, policies for mitigating chemical risks in public health, the public health implications of chemical incidents, and emergency planning, preparedness and response.

Participants heard a presentation of the main findings of the project on Cross-border Exposure Characterisation for Risk Assessment in Chemical Incidents on the characterization of exposures for public health risk assessments of large chemical incidents. The project's recommendations include the adoption of a holistic approach to emergency preparedness for chemical incidents, coordination and driving of chemical incident emergency preparedness through a multidisciplinary, multisectoral forum of exposure and risk assessors, and facilitation of emergency preparedness and mutual aid in border areas. Among the project's outputs are guidelines for the organization and practice of exposure assessment, including a self-assessment methodology to identify gaps in capability.

Examples of a public health response to major acute chemical incidents include those in Bhopal (India), Côte d'Ivoire and Tokyo (Japan). Participants discussed the environmental monitoring

and modelling, biological monitoring, hazard analysis and risk assessment, analysis of remediation techniques and collection of surveillance information that should be in place in order to assess the short-, medium- and long-term effects on human health of an event. The health sector is a major player in influencing emergency response to, and acting as a leader or partner during, chemical incidents, but approaches to analysis and evaluation of chemical incidents differ significantly between the stakeholders involved in their management. WHO had, therefore, produced the *Manual for the public health management of chemical incidents*,³ introducing the principles and functions of the public health sector in the prevention and mitigation of chemical incidents on the basis of scientific information and analysis of best experience.

Poison centres have an important role in emergency preparedness and response and the collection and dissemination of information. Experience in the United States provides an example of best practice in the organization and functioning of poison centres. The National Poison Data System database provides valuable information for prevention and management of poisonings. It contains standardized data fields and allows near “real-time” data transmission and analysis, including determination of any public health significance, thereby playing a crucial role in provision of situational awareness, communication of uniform messages, improvement of case management, metrics and the development of guidelines. The meeting was given some recent examples of the database’s efficiency in the prevention of poisonings.

Participants heard about experience with the development and implementation of an on-line training course for capacity-building in the management of chemicals emergencies. The programme for the course includes key subject areas such as hazard and risk, risk prioritization, risk mitigation, planning and preparedness, and response and recovery in chemicals incidents. They also heard about some examples of training courses around the world as well as the new training centre in Cardiff Metropolitan University.

The meeting was given an overview of projects funded by the European Commission aimed at addressing the capabilities of member states in responding to chemical incidents and meeting IHR requirements. An analysis of responses to chemicals incidents has revealed an urgent need for support in the public health management of such incidents (including the deliberate use of chemicals), notably with regard to incident preparedness and response, including incident and disease surveillance and follow-up of the health consequences of chemical incidents. The European Commission has, therefore, launched various research and development projects resulting in the development of a rapid risk assessment methodology, development of a database for the diagnosis and treatment of acute poisonings, and strengthening of the capacities of poison centres and analytical laboratories. These projects include Alerting System for Chemical Health Threats, Chemicals and Radiation Risk Assessment Network, Chemicals and Radiation Inventory of Medical Countermeasures, and Standardisation of Laboratory Analytical Methods.

Summary of working group discussion

Discussion in the working group focused on challenges in implementing the IHR, identification of countries’ needs in complying with the IHR and protecting populations in chemical emergencies, and on needs for action and formulation of priorities at national and regional levels for preparedness and response in chemical emergencies.

³ *Manual for the public health management of chemical incidents*. Geneva, World Health Organization, 2009 (http://www.who.int/environmental_health_emergencies/publications/FINAL-PHM-Chemical-Incidents_web.pdf, accessed 17 January 2013).

Two elements are necessary for successful implementation of the IHR: (i) the relevant infrastructure, and (ii) guidelines in place for communication and exchange of information. Measures that ensure compliance at national level should include the development of a national strategy for the implementation of the IHR with an action plan, organization of a department for chemical management in ministries of health, and improvement of communication between focal points at national and international levels and with WHO.

Implementation of the IHR and protection of the population in chemical emergencies require: awareness-raising among policy-makers, training of professionals who will develop strategies for IHR implementation, the creation of adequate communications systems with other relevant stakeholders and partners, and the engagement of the public in emergency prevention, preparedness and response. Priorities include: improvement of the work of poison centres and creation of more such centres to comply with WHO standards, the taking of measures to ensure health services' preparedness for emergencies and response in cases of accidents, capacity-building for laboratories to meet the needs for early detection and exposure assessment, and provision of adequate means of communication for internal and external communication.

A discussion of the role of WHO resulted in the identification of action that could be taken at regional level, including:

- the promotion of exchanges of information and dissemination of knowledge at international, subregional and national levels, on-line where possible;
- creation of an inventory of documents (methodologies, guidelines, exercises) and preparation of an information document for all Member States;
- assistance in training for professionals, especially in media communication during events of public health significance;
- the creation of a network of experts on public health aspects of chemical safety;
- the development of on-line learning courses and communications systems in areas of chemicals management.

Priorities and next steps

The Secretariat presented a summary of the discussions. The key principles for addressing health-related aspects of chemical safety include: interdisciplinary and multisectoral approaches, working in partnerships, coordination of a wide range of activities carried out under different international agreements, and the leading role of WHO in mobilizing the health sector and in providing guidance and support by developing a strong network of experts. Such a network would work on the dissemination of knowledge, capacity-building, sharing of data and knowledge between stakeholders and addressing chemical emergencies. Participants were also given a short description of Member States' priorities and needs together with action that should be taken at national and regional levels that had been identified during the presentations, plenary discussions and discussions in working groups.

The Secretariat presented a draft document outlining action that could be taken by the Regional Office, with an explanation of the main objectives, rationale and structure. Participants broadly welcomed the document, especially since it included most of the priorities that had been mentioned during the meeting. Further topics for inclusion could be: some outputs of projects that had already been successfully implemented, so as to increase experience-based information; some activities to translate information collected in scientific research into knowledge for a

wider audience; and inclusion of chemical safety activities in bilateral country agreements as a way of ensuring intercountry cooperation and sharing of experience. The document could correspond with SAICM implementation activities and include a long-term funding mechanism. Member States' differing needs should be taken into account. Twinning projects could also function as a means of intercountry cooperation, with WHO playing a technical support role. Various financial mechanisms had been highlighted, and links with SAICM activities could offer an opportunity to use Quick Start Programme funds to enable activities to be implemented in the health sector as well. There is a particular need to address chemicals in product risk assessments, for example, lead in paint. The draft document could also include activities set as targets in regional priority goal four from the Commitment to Act, which call for stakeholders to promote scientific research to identify risks posed by hazardous chemicals. Information on alternatives and substitution that will be provided by the Regional Office could be disseminated. The role of WHO in the implementation of the SAICM health strategy is crucial, and it was suggested that WHO should be represented in the SAICM secretariat.

Several Member States expressed support for the creation of an expert network. Draft terms of reference for such a network were presented. The network's tasks should be limited to collection and dissemination of information during the initial stage, although experts in training and information dissemination could be involved as well as specialists with experience in implementation of "chemical" conventions, and support sought from different nongovernmental organizations and institutions. The secretariat could draw up a form for nomination of experts, to include information about areas of expertise, for dissemination to national focal points for the European Environment and Health Process, together with the terms of reference and the request for nomination of experts.

Participants agreed that the draft proposals for action by the Regional Office and terms of reference for a network of experts should be further discussed by the participants and nominated national focal points for health-related aspects of chemical safety. Final versions of these two documents, incorporating all comments, would be attached to the report of the meeting (Annexes 3 and 4). Requests for nomination of national experts would be sent to national focal points together with terms of reference for a network of experts.

In closing the meeting, Dr Srdan Matic, Coordinator of the European Environment and Health Process, thanked the participants for their contributions. He particularly emphasized the synergies and need to avoid duplication of work, while expressing WHO's full commitment to follow the proposals for further activities through the secretariat of the Environment and Health Process. Last but not least, he thanked the German Ministry of Environment, Nature Conservation and Nuclear Safety for financial support for the meeting.

Conclusions and recommendations

The priorities for different areas of action proposed for the Regional Office are as follows:

- (a) management of carcinogens, mutagens, endocrine-disrupting toxicants and endocrine-disrupting chemicals:
 - extrapolating knowledge from science into policy and disseminating it to the general public, especially to vulnerable groups;
 - developing a cumulative exposure index and indicators of health effects;

- strengthening legislation;
 - developing guidance documents for chemical safety;
 - building capacity for performing exposure and health risk assessments, including risks from chemical mixtures;
 - developing training programmes and curricula for medical students and post-graduate education;
 - strengthening cooperation between public health and health care professionals;
 - implementing biomonitoring as an instrument of exposure and health effects assessment in addition to environmental monitoring;
 - promoting scientific research in relevant areas;
 - developing and implementing different projects related to chemical safety in Member States, paying particular attention to vulnerable population groups;
- (b) management of contaminated sites:
- addressing the methodological aspects of the management of contaminated sites based on risk assessment, taking into account ecological and demographic data;
 - addressing the special needs of vulnerable groups;
 - developing recommendations for the economic assessment of public health considerations in the selection of best management practice;
 - promoting the development of official registers of contaminated sites;
 - sharing experience of management in each specific case;
- (c) implementation of health-related activities of international chemicals agreements:
- developing SAICM health sector networks and tools for information-sharing;
 - implementing the SAICM health strategy as a pilot for further experience-sharing between Member States;
 - promoting the use of existing capacities (such as regional centres) to assist countries in filling gaps in knowledge and exchanging information;
 - developing, by using the Quick Start Programme, multicounty projects for capacity-building in the health sector for dealing with different aspects of chemical safety;
 - promoting the implementation of “green health services” principles in respect to the use of chemicals in the health care sector;
- (d) implementation of the IHR and emergency prevention, preparedness and response:
- promoting the exchange of information and dissemination of knowledge at international, subregional and national levels, on-line where possible;
 - creating an inventory of existing documents (methodologies, guidelines, exercises) and preparing an information document to be sent to all Member States;
 - providing assistance in training for professionals, especially in public communication during events of public health significance;
 - creating a network of experts on public health aspects of chemical safety;

- developing on-line learning courses and communication systems in areas of chemicals management;

(e) recommendations for the Secretariat:

- supporting the participation of Member States in cross-cutting meetings and disseminating the outcomes of those meetings;
- facilitating the implementation of tools and guidance for risk and exposure assessment, in particular concerning vulnerable population groups;
- creating an inventory of existing information and tools for the health-related aspects of chemical safety;
- promoting information and the exchange of knowledge;
- organizing training, including on-line;
- developing a platform for exchange of expert knowledge.

Annex 1

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Annex 2

PROVISIONAL PROGRAMME

Wednesday, 17 October 2012

- 09:30 – 12:30 ***Session 1. WHO European Member States' needs in sound chemicals management related to health protection. Specific needs in management of carcinogens, mutagens, reproductive and endocrine-disrupting toxicants.***
Analysis of capacities in the Member States for the implementation of sound chemicals management: survey results
Addressing health-related aspects of chemical safety in Albania
Approaches to legislative regulation of chemicals and chemicals in products in Belarus, Kazakhstan and the Russian Federation
Protection of the human population from chemicals exposure: Korean regulation system
Communicating the science on health impacts of hazardous chemicals for better protection of vulnerable groups
View on endocrine-disrupting chemicals from the perspective of a clinical endocrinologist
Exposure of pregnant consumers to suspected endocrine disruptors
Why does chemical safety need a human biomonitoring programme, and how should we do it?
The identification of environmental carcinogens as the first step in cancer prevention: major research strategies, current activities and future perspectives of the International Agency for Research on Cancer monographs programme.
Risk assessment tools: investigation of long-term effects
- 16:30 – 17:50 ***Session 2. Health-related aspects of contaminated sites***
Industrially contaminated sites and health
Chemicals and hazardous waste management in developing countries and countries with emerging economies
Management of contaminated sites and challenges in health risks evaluation: a case study

Thursday, 18 October 2012

- 9:00 – 10:30 ***Session 3. Health aspects in international "chemicals" agreements: needs for capacity-building***
Presentation of the Strategic Approach to International Chemicals Management Secretariat
Strategic Approach to International Chemicals Management. Health Sector Strategy. Global Alliance to Eliminate Lead Paint
Research Centre for Toxic Compounds in the Environment: Stockholm Convention Regional Centre. Health-related aspects of the Centre's activities.
Chemical safety in the framework of the IHR

- 10:50 – 12:30 ***Session 4: The IHR, emergency preparedness and response***
Preparing for cross-border chemical incidents in Europe
The public health response to major acute chemical incidents
Poison centres and hazardous chemical events: the US experience
Capacity-building for the public health management of chemical incident management: developing distance learning teaching materials
Overview of EC-funded projects aimed at addressing the capabilities of member states in responding to chemical incidents and meeting the IHR requirements

Friday, 19 October 2012

- 9:00 – 13:00 ***Session 5: WHO European Member States' priorities and the next steps***
Member States' priorities in health-related aspects of chemicals management
- 11:00 – 12:00 Proposals for action by the Regional Office to address health-related aspects of chemical safety
- 12:00 – 13:00 Network of experts (terms of reference, coordination of work, communication, expected outcomes, etc.)
- 13:00 – 13:30 Conclusions and recommendations

Annex 3

PROPOSALS FOR ACTION BY THE WHO REGIONAL OFFICE FOR EUROPE TO ADDRESS HEALTH-RELATED ASPECTS OF CHEMICAL SAFETY

One of the Regional Office's priorities is to support Member States in achieving the goals set out in the Parma Declaration and its Commitment to Act "*to contribute to the Strategic Approach to International Chemicals Management (SAICM), ... to protect each child from the risks posed by exposure to harmful substances and preparations ... , and to act on the identified risks of exposure to carcinogens, mutagens and reproductive toxicants, including ... endocrine-disruptors*".¹ This requires action based on existing international agreements and programmes; strengthening of capacities; support for networking and the exchange of expertise, and strengthening of the role of the health sector in international initiatives and partnerships related to health aspects of chemical safety.

Objective

The main objective of this document is to outline proposals for action that could be taken by the Regional Office to support: (i) Member States in achieving the Parma commitments and goals (Regional Priority Goal 4) related to chemical safety; (ii) the implementation of SAICM; and (iii) Member States in capacity-building for the implementation of World Health Assembly resolutions WHA59.2 on the application of the IHR, WHA63.25 on the improvement of health through safe and environmentally sound waste management, and WHA63.26 on the improvement of health through sound management of obsolete pesticides and other obsolete chemicals, including facilitating the implementation of relevant international agreements.

Introduction

In 2011, it was estimated that globally, 4.9 million deaths (8.3% of the total) and 86 million disability-adjusted life years (5.7% of the total) were attributable to environmental and occupational exposure to selected chemicals.²

It is predicted that the chemicals market will grow by 3% per year until 2050 and that most production of chemicals will be moved to developing countries.³ All in all, the increasing volumes and numbers of chemicals produced and traded are expected to result in an increase in exposures and possible effects on health.

¹ Parma Declaration on Environment and Health [web site]. Copenhagen, WHO Regional Office for Europe, 2013 (<http://www.euro.who.int/en/what-we-do/event/fifth-ministerial-conference-on-environment-and-health/document-ation/parma-declaration-on-environment-and-health>, accessed 19 January 2013).

² Prüss-Ustün A et al. 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 (<http://www.ehjournal.net/content/10/1/9>, accessed 19 January 2013).

³ Third session of the International Conference on Chemicals Management (ICCM3), Nairobi 17–21 September 2012 [web site]. Geneva, Strategic Approach to International Chemicals Management, United Nations Environment Programme, 2013 (Global Chemicals outlook: towards sound management of chemicals, SAICM/ICCM.3/INF/15) (http://www.saicm.org/index.php?option=com_content&view=article&id=89:iccm-3-meeting-documents&catid=90:iccm-3&Itemid=600, accessed 19 January 2013).

Taking into account:

- the many ways in which humans are exposed (breathing air, drinking water, consuming food, using different products, living in places with contaminated soil, working in a contaminated working environment, etc.);
- the broad range of effects on health;
- the existence of thousands of chemicals in human surroundings, some of them persistent and bioaccumulative, that have carcinogenic and mutagenic properties and are toxic for reproductive and endocrine systems; and
- that real-life exposure is rarely limited to a single chemical but at the same time there is little information on the health and environmental effects of chemical mixtures,

it is reasonable to anticipate an increase in the burden of disease related to chemicals, if adequate protection measures are not taken.

To avoid an increase in negative effects on health and the environment from growing exposures to chemicals, preventive capacities should be built to address this complex challenge and promote sound chemical management. In addition, there is a need to invest in strengthening the political, legal and institutional bases, research capacities, availability of technical, human and financial resources, information collection and exchange, and the transfer and implementation of technologies for sound chemical management. In return for this investment, sound chemical management could provide a positive input to economic development, poverty reduction, human welfare, and the quality of health and the environment.

Current situation

The current national capacities have been assessed on the basis of responses by Member States to a questionnaire developed by the WHO European Centre for Environment and Health. The questionnaire was sent to all 53 WHO European Member States; the response rate was 62%. This assessment took into account the fact that a variety of activities have been taken at national and international levels during the past 20 years in order to strengthen management of chemicals. Many Member States have created legal structures and established competent authorities for the safe management of chemicals. The majority of Member States are parties to the Basel, Rotterdam and Stockholm Conventions and participate in the SAICM. All of them are committed to the provisions of the Parma Declaration and are following the IHR.

In addition, EU member states are subject to the provisions laid down in the relevant EU legislation, in particular REACH. The aim of REACH is to improve the protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances. At the same time, REACH aims to enhance innovation and competitiveness in the EU chemicals industry.

According to the data derived from the questionnaire, different types of chemical risk reduction policy are being developed and implemented in more than half of the Member States, based on a multilateral approach.⁴ Recent research, including in the framework of EU-funded projects, provides new scientific information on the harmful effects of chemicals, such as endocrine disruption, and on tools for chemicals management, including those for management of

⁴ UNITAR National Profile Homepage [web site]. Geneva, United Nations Institute for Training and Research, 2007 (http://www2.unitar.org/cwm/nphomepage/np3_region.aspx, accessed 19 January 2013).

emergency situations. Considerable attention has been paid to improving laboratory capabilities and developing the scientific background for exposure assessment, especially in assessing the exposure of vulnerable and highly exposed groups.

Nevertheless, the analysis of the capacity assessment survey revealed many gaps. The main ones, especially in the south-eastern European and newly independent states, relate to: legislative requirements to protect the most vulnerable groups, specific education and training needs, risk assessment and risk reduction policies, response to chemical emergencies, assessment of long-term health effects, the use of epidemiological tools, exposure assessment (including transboundary exposure) and existing capacities for the protection of populations living in contaminated areas.

In addition, governments and regional organizations throughout the Region are facing new challenges, such as assessment of exposure to chemical mixtures, harmful chemicals in products, and chemicals with endocrine-disrupting properties.⁵

The survey will provide a basis for planning activities to address these challenges and for defining the guiding principles within which such action could be framed.

Main principles for planning the activities

Focus on addressing the priorities recognized at regional and international levels

A number of policy documents approved at regional and international levels address chemical management in general and health-related aspects of chemical safety. In particular, the Parma Declaration and the Commitment to Act, the IHR, SAICM, Rotterdam and Stockholm Conventions, and WHO World Health Assembly resolutions WHA 59.2 on the application of the IHR, WHA 63.25 on the improvement of health through safe and environmentally sound waste management, and WHA 63.26 on the improvement of health through sound management of obsolete pesticides and other obsolete chemicals. The implementation of action outlined in these documents will greatly contribute to improving chemical safety and reducing the risks posed by chemicals.

Address the main gaps identified by the capacity assessment survey

Activities could be formulated to take into account the differences between the 53 Member States and respond to their specific needs as revealed in the survey, starting with their geographical location, level of economic development and development of the chemical industry, trade in and use of chemicals, level of sound chemical management, and historical aspects of chemical pollution as well as cultural and social characteristics and structure of their health systems.

In some Member States, WHO could participate in and contribute to research activities addressing the complex methodological issues of integrated assessment, and evaluating multiple environmental exposures and their influences on the development of diseases. In other Member States, WHO could focus on capacity-building and technical support for developing technical/

⁵ Third session of the International Conference on Chemicals Management (ICCM3), Nairobi 17–21 September 2012 [web site]. Geneva, Strategic Approach to International Chemicals Management, United Nations Environment Programme, 2013 (http://www.saicm.org/index.php?option=com_content&view=article&id=89:iccm-3-meeting-documents&catid=90:iccm-3&Itemid=600, accessed 17 January 2013).

methodological capacities and addressing the particular problems of high environmental exposures to chemicals and ad hoc situations (for example, in industrially contaminated sites).

Enhance the role and involvement of the health sector in chemical management at national level by taking into account the multisectoral nature of chemical management

Sound chemical management is by its nature a multisectoral activity. The “involvement of all relevant sectors and stakeholders ... as key to achieving the objectives of the Strategic Approach” is indicated in the SAICM Overarching Policy Strategy.⁶ The need to strengthen health sector involvement in implementation of the SAICM was recognized as a priority during the Second Session of the International Conference of Chemicals Management (held in Geneva, Switzerland, in 2009), notably Resolution II/8, and the round-table discussion on public health with the participation of high-level representatives. A resolution on a “Strategy for strengthening the engagement of the health sector in the implementation of the strategic approach” was adopted at ICCM 3 (Nairobi, 17-21 September, 2012).

Implementation – proposed action by the Regional Office

The proposals for action by the Regional Office set out below are based on the results of the survey, taking into account the scope and opportunities for synergy offered by existing multilateral instruments and programmes, and building on the extensive range of expertise that can be mobilized through the leading institutions in the area of environment and health as well as the WHO collaborating centres.

The Regional Office could:

- (a) assist Member States in capacity-building activities for emergency preparedness and response and implementation of the IHR in the chemical safety area by:
 - promoting the creation of poison centres and strengthening the capacities of existing centres according to WHO recommendations;
 - supporting the development and implementation of training activities on the IHR and emergency preparedness and response;
 - facilitating the implementation of methodologies to assess the long-term effects of chemical emergencies; and
 - providing support for risk profile map development;
- (b) strengthen the exchange of information and best practice in the management of chemical risks at national and subregional level by:
 - supporting awareness-raising, advocacy and information-sharing events (such as the Pan-European Conference of Medical Professional Societies);
 - developing a web-based information platform to share information on scientific research outcomes with Member States, the general public and other stakeholders, and to provide easy access to existing policy instruments, methods and tools, training material, case studies and other resources; such a platform should provide links to

⁶ SAICM publications [web site]. Geneva, Strategic Approach to International Chemicals Management, United Nations Environment Programme, 2013 (http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475, accessed 17 January 2013).

web sites with safety data sheets, alternatives and substitutions information, and a database of existing laboratories with the capacity to assist in “mirror” analysis and in supporting standardization of national laboratories for human biomonitoring and monitoring of chemicals in products;

- establishing a network of experts who could be mobilized to support different types of activity, including the response to chemical emergencies;
 - promoting scientific research on the evaluation of the burden of disease, risk and exposure assessment, development of relevant tools and methodologies, socioeconomic impact assessment and other relevant issues;
- (c) facilitate the participation of the health sector at international and national levels in the implementation of SAICM and other relevant international agreements, by:
- developing and supporting the network of SAICM national information focal points in the health sector in the Region;
 - supporting Member States in the implementation of all ICCM 3 resolutions related to emerging issues (for example, on endocrine-disrupting substances, chemicals in products, lead in paint and toxic chemicals in electronic waste);
 - facilitating the implementation of and participation in pilot projects by using different financing mechanisms such as the Quick Start Programme used in the SAICM process to support all the necessary activities in integrated chemicals management at country level, the Global Environment Facility and other long-term financial mechanisms for the implementation of sound chemicals management;
 - sharing information on best practice in implementing SAICM documents by Member States;
- (d) supporting the implementation of exposure and risk assessment techniques and tools in Member States, including exposure assessment of contaminated sites and waste management, by:
- providing expertise (at the request of a Member State) to address specific situations, such as assessment of health effects and techniques for the minimization and elimination of risk in contaminated areas;
 - developing recommendations on biological and environmental monitoring;
 - supporting epidemiological studies at national and regional levels to reveal the effects of endocrine-disrupting chemicals and carcinogenic, mutagenic and reproductive toxins;
 - organizing training related to the health aspects of chemical safety for capacity-building for medical and other specialists;
 - facilitating the engagement of regional experts and institutions in the proposed WHO chemical risk assessment network;
 - supporting Member States in developing and implementing sound national policies on safe handling and disposal of obsolete pesticides and other obsolete chemicals;
 - facilitating and improving cooperation between national authorities in the waste, chemicals and health sectors and, in collaboration with other relevant stakeholders, supporting the development and implementation of effective and sound waste management systems;

- continuing to support the prevention of health risks associated with exposure to health care waste by promoting the environmentally sound management of health care waste;
- (e) facilitating the planning and implementation of activities for the protection of vulnerable populations in Member States, based on the analysis of best practice, by:
- developing proposals for inclusion of activities to address the Parma Declaration's Regional Priority Goal 4 in children's environment and health action plans and other relevant strategic documents (including legislation, monitoring and education and training);
 - providing information on the Regional Office's web site about best practice in the management of carcinogens, mutagens and reproductive toxins, endocrine disruptors and persistent and bioaccumulating substances;
- (f) promoting WHO policy by:
- strengthening cooperation with high-level national institutes with a view to establishing WHO collaborating centres for chemical safety, especially in south-eastern Europe and the newly independent states;
 - promoting the inclusion of chemical safety activities as an integral part of activities carried out under bilateral collaborative agreements.

Partnerships

The implementation of the proposed activities would be in line with WHO headquarters' activities under the International Programme on Chemical Safety. It is proposed that they should be developed in cooperation with all relevant stakeholders, including: international organizations such as the United Nations Environment Programme, the United Nations Institute for Training and Research, the United Nations Economic Council for Europe and the Organisation for Economic Co-operation and Development; the secretariats of relevant international conventions such as the Rotterdam and Stockholm Conventions or initiatives such as the SAICM; the general public through cooperation with nongovernmental organizations; WHO collaborating centres; the European Chemicals Agency; the European Commission Joint Research Centre and the Directorates-General of Research, Health and Consumers, and the Environment; and partner institutions and organizations in the Region. WHO would support intercountry cooperation and networking in sharing experience (for example, in chemical emergencies) as an interface for transferring some mechanisms already established in EU countries to other WHO Member States. As some countries have developed greater capacities for dealing with chemical safety, WHO would assist Member States to develop country-to-country partnerships (such as twinning projects).

Challenges

There are several main areas where challenges to the implementation of this strategic approach may lie.

- There is insufficient scientific knowledge for the development of policy, in relation to, for example: (i) endocrine disruptors which are raising concerns about possible health effects; and (ii) integrated exposure measurements and the need to address the whole cycle from exposure to disease, with the development of early markers of the effects expressing lifelong multiple exposures.

- Limited data on the weight of evidence due to a multiplicity of sources of exposure and chemicals' "cocktail" influence as well as the expression of long-term effects create uncertainties in the prioritization of preventive measures and increase the importance of implementing the precautionary principle. In order to overcome these challenges, WHO is requested to initiate scientific research in relevant areas, support the sharing of experiences and lessons learnt and, to some extent, provide expertise and participate in some research projects.
- Funding is a key factor for all the planned activities. To overcome financial challenges, WHO is asked to: promote the mainstreaming of health issues related to chemical safety in national development planning; pool resources whenever possible with ongoing initiatives; develop contacts with new donors; and pursue international processes which can provide significant financial support for countries (for example, the mercury treaty, waste management, obsolete pesticides).

Opportunities

- Growing public awareness as the result of risk communication activities, and the political commitment of decision-makers expressed through different international legal instruments create a solid basis for effective action.
- Several ongoing international processes can be used as the momentum for financial support for some of the planned activities.
- Several activities fit into ongoing international processes and commitments already taken by the Member States with the resources provided.

It is envisaged that the priority activities will be implemented during the next four years and will be reported on to the Sixth European Ministerial Conference on Environment and Health in 2016.

Annex 4

DRAFT TERMS OF REFERENCE FOR THE PROPOSED NETWORK OF EXPERTS ON THE PUBLIC HEALTH ASPECTS OF CHEMICAL SAFETY

The growing production and use of chemicals, the rapid expansion of knowledge about their public health impact and the needs of WHO Member States to use that knowledge for policy development in this area require prompt access to relevant information and expertise.

A number of legally binding and voluntary international agreements have been adopted during the last 10 years with the aim of supporting global and national action to address chemical exposures.

The European Environment and Health Process provides a framework for preventing diseases caused by chemicals, including the implementation of measures to protect particularly vulnerable populations, such as children and pregnant women, from carcinogens, mutagens, reproductive toxins, bio-accumulating and persistent toxic substances, endocrine disruptors, nanoparticles, nanomaterial and other products.

It is important to scale up collaboration among experts, institutions and the WHO European Centre for Environment and Health so as to provide knowledge, information and expertise to support capacity-building, develop tools, and design and implement policies tailored to the needs of Member States.

To this end, the WHO Regional Office for Europe would like to establish a network of experts on the public health aspects of chemical safety. The network would provide the community of knowledge and best practice to enable and facilitate the implementation of the relevant Parma commitments and other binding and non-binding commitments by WHO European Member States.

The *purpose* of the network would be to assist the Regional Office and Member States in the development and implementation of policies and activities related to the public health aspects of chemical safety and, in particular, the implementation of the Parma Declaration.

The specific *objectives* of the network would be to:

- provide expertise, as necessary, especially in emergency situations of public health importance;
- provide a platform for the collection and exchange of information on diseases, disabilities and the burden on health caused by chemicals, and best practices in addressing the public health aspects of chemical safety;
- assist and participate in identifying priorities and emerging issues in the Region;
- develop and provide scientific advice on guidance documents, reports, information notes, minutes, recommendations and other documents prepared by the Regional Office.

The network would cover the following areas: (i) risk assessment; (ii) chemical emergency preparedness and response; (iii) prevention and treatment of acute poisonings; and (iv) biological monitoring.

Participation in the network would be open to experts from the Region with experience and knowledge of public health aspects of chemical safety.

The focal points of the European Environment and Health Process would be invited to propose experts on behalf of the Member States and of the key stakeholders in the Process (as determined by the Parma Declaration and the related documents). Representatives of relevant WHO collaborating centres would be invited to join the network.

Members of the network would be nominated for a period of three years.

The preferred *format for meetings* of network participants would be through electronic (e-mail and internet-based) communication and teleconferences. Face-to-face expert meetings would be organized by the Regional Office, as appropriate.