Improving drug regulation as part of health systems strengthening

Major trends relating to regulatory support for medical products present medicines agencies and WHO with numerous challenges. The increasing complexity of regulatory work — whether as a result of new technologies, globalization of commercial activities or internationalization of product development — is particularly onerous.

Increasing autonomy of management and decision-making in governmental regulatory systems, together with greater interaction between regulators and the private sector in the development of standards and regulations has led to the need for greater efforts to improve interaction between regulatory agencies and civil society, scientific institutions, governmentally-managed health insurance systems and reimbursement schemes.

Given the current fast-paced and exacting climate, it is difficult for regulators to draw a fair balance between the potential risks of a new medicine and public expectations of availability and safety. Additionally, the introduction of high performance information systems and instant access together with demand for relevant, quality information puts greater pressure on regulators to react professionally and with transparency in a minimum of time.

In spite of many positive developments in the Global regulatory arena it is worrying that the gaps among regulatory systems
are rather increasing than decreasing. This is partly caused by the human and financial resource gap existing between well-resourced and resource-constrained settings.

A medical products regulatory system, supported by relevant legislation, is an essential component of a functioning health system. A medicines regulatory system includes, at the very least, the necessary legislation and regulation, a regulatory authority which subjects all pharmaceutical products to premarketing evaluation, marketing authorization and postmarketing surveillance. The regulatory system should also include an inspectorate, access to a medicines quality control laboratory, enforcement mechanisms and safety monitoring.

**Moderators**

John Lim, Singapore and Thomas Lönngren, European Union

**Presentations**

Challenges of biomedical advancement – evolving role of the regulator. John Lim, Singapore

Drug regulation and public health in the EU. Thomas Lönngren, EU

Strengthening regulatory capacity around the Globe: our common and vital interest. Margaret Hamburg, USA

**Recommendations**

**WHO should:**

- Commit to and collaborate in prioritizing, developing and teaching regulatory science to strengthen scientific robustness in advancing regulatory innovation and thought leadership, exploring new regulatory tools and frameworks, and conducting environmental scanning.

- Keep abreast of developments in health technology assessment to minimize duplication of activities and explore ways to better interface with parties involved in health technology assessment.

- Take account of the wider health and non-health environment in which they operate nationally and internationally, proactively strengthen networks, engage stakeholders, and clarify policies and positions in order to enhance their regulatory mission and effectiveness, especially in crisis preparedness and risk management.

- Work with their governments to reiterate to the WHO governing bodies (World Health Assembly and Executive Board) the importance of strengthening regulatory capacity and cooperation as an essential part of overall health systems strengthening.

**Collaboration and cooperation among regulatory agencies**

The rapid advancement in biomedical sciences and the invention of novel therapeutic products have made it more critical than ever for medicines regulatory agencies to work together to achieve the goal of protecting and advancing public health.

The 14th ICDRA re-affirmed the importance of regional harmonization efforts which are already on-going in different parts of the world in various forms and models. It was also recognized that WHO
could further support these collaborative initiatives by providing technical assistance where capacity building is needed. Furthermore, WHO is in a unique position to facilitate networking and information exchange among regulators.

**Moderators**

*Supriya Sharma, Canada and Christina Lim, Singapore*

**Presentations**

*Recent developments in cooperation of regulatory authorities among ASEAN countries. Yuppadee Javrongrit, Thailand*

*Collaboration among regulatory authorities in the European Union: a micro-agency perspective. Alar Irs, Estonia*

*First joint product assessment experience from EAC partner states. Hiiti Sillo, Tanzania*

*Reporting back from the pre-ICDRA meeting. Stewart Jessamine, New Zealand*

**Recommendations**

*Regional working groups should:*

- Strengthen efforts to build capacity to develop/adopt common technical standards and requirements.

*WHO should:*

- Provide a protected electronic platform for regulators to share information and experience on specific regulatory topics of common interests, similar to that for the Paediatric Medicines Regulators Network (PmRN).

- Facilitate twinning of less developed agencies with well-established agencies for capacity building and training.

---

**Report from the pre-ICDRA meeting: Effective collaboration: the future for medicines regulation**

**Promotion of increased regulatory effectiveness**

*WHO should:*

- Actively promote cooperation and collaboration programmes and use information generated by other MRAs as a tool to improve regulatory capacity and effectiveness.

- Collect best practices of collaboration and cooperation between medicines regulatory authorities including information exchange, joint assessments and inspections and activities aimed at reducing duplication.

- Work with national MRAs to define recommended elements of model product assessment reports, including benefit risk considerations. WHO should facilitate the sharing of model assessment reports and promote the optimal use of public information on marketing authorization assessments and product information.

- Encourage MRAs to implement quality management systems and undertake benchmarking of their regulatory systems and processes to enhance regulatory performance.
 Improved Inspection processes

**WHO should:**
- Encourage Member States to make more information about GMP and GCP inspections public and/or accessible to other regulators.
- Actively promote the use of the WHO collaborative procedure for inspections to regulatory authorities with limited resources.
- Coordinate a review of the current risk management approach to regulation of the API supply chain.

Clinical trial initiatives

**WHO should:**
- Encourage improved regulation of clinical trials through better cooperation e.g., by expanding the African Vaccine Regulatory Forum (AVAREF) to all medicines and involving additional Member States. Applying AVAREF experience in other WHO regions should be explored.
- Consider establishing an advisory network for clinical trial and GCP related issues.

**Well-resourced medicines regulatory authorities should:**
- Publish information related to marketing authorizations and their variations in clearly identifiable sections of their websites in a form that is readily accessible to other regulatory authorities.
- Continue to provide technical assistance concerning clinical trial oversight systems and assist through joint assessment of complex cases (e.g., childhood vaccination, biological products) of clinical trial applications.

Medicines regulatory authorities should:
- Take account of one another’s work with a view to improving the efficiency of the global regulatory system.
- Commit resources to form cooperative networks based on uniformity of standards and inspection systems.
- Engage with regional and international initiatives promoting harmonization, information sharing and use of data generated by other regulators as a tool for improving timely access to medicines and medical products.
- Actively support the establishment of robust harmonized clinical trial oversight mechanisms in all Member States.

Inspection initiatives

**WHO should:**
- Encourage regulators operating schemes that openly and transparently utilize data from other countries (e.g., Canada, New Zealand, Singapore and Switzerland) to:
  - Document their processes and experiences to provide a resource for use by other countries;
  - Engage with consortia such as APEC to develop a framework for good review practices and a common approach to using other regulators’ information;
  - Undertake research to validate the safety of their approach to regulation;
Work with highly evolved agencies, such as the US FDA and European Medicines Agency (EMA), in devising initiatives to improve regulatory science and the risk management approach required by new approaches to regulation.

Biosimilars

Biosimilars should be regulated as biologicals. Therefore, a generic medicines (“biogeneric”) regulatory approach is not appropriate and should not be used. For copy products already licensed as “biogenerics”, Member States are encouraged to develop/update risk management strategies.

Member States are encouraged to implement WHO Guidelines on evaluation of similar biotherapeutic products as a whole. This means that only products licensed on the basis of the full comparability study, should be considered and named as similar biotherapeutics.

Clinical and statistical expertise in Member States should be strengthened to improve evaluation of the data submitted by the manufacturers for licensing.

Additional efforts are needed to address specific issues related to pharmacovigilance of biosimilars.

Moderators
Elwyn Griffiths, Canada and Arpah Abas, Malaysia

Presentations
Diversity of regulatory requirements and way forward Arpah Abas, Malaysia
Clinical evaluation of similar biotherapeutic products Sookyung Suh, Republic of Korea

Round table discussion
Yanet Hechavarria Nunez, Cuba, Prapassorn Thanaphollert, Thailand, Kai Tong Tam and Wang Woon Poh, Singapore, Laura Castanheira, Brazil

Recommendations

WHO should:

- Consider developing guidelines on risk management strategies for copy products already licensed as “biogenerics”.

- Develop a template for Member States to share information on the scientific basis for licensing biosimilars.

- Supplement its guidance on evaluation of similar biotherapeutic products by providing guidelines for evaluation of biotherapeutic products in general.

- Conduct a review of existing international reference preparations for assay of biotherapeutics, identify gaps and take action to fill those gaps.

Blood and blood products

This session reported on WHO follow-up action in response to Recommendations made at the 13th ICDRA. Building technical capacity of national regulatory systems and national regulatory authorities will be the next fundamental steps for effective control of blood products. The session aimed to identify main priorities and mechanisms to move forward and the type of assistance expected from WHO by Member States.

Moderators
Jay Epstein, USA and Lucky Slamet, Indonesia

Presentations
World Health Assembly Resolution on availability, quality and safety of blood products. Ana Padilla, WHO
Impact of WHO Guidelines on GMP for Blood Establishments. Christian Schaerer, Switzerland
Regulation of advanced blood cell therapies. Klaus Chichutek, Germany
Assessment criteria for national blood regulatory systems. Peter Ganz, Canada
Panel Discussion
Ways forward to strengthening blood products regulation. João Batista da Silva, Brazil, Isabelle Sainte-Marie, France, Eric Karkari-Boateng, Ghana, Diana Teo, Singapore

Recommendations

**WHO should:**

- Focus on capacity building for implementation of quality assurance systems for blood and blood products through development of independent regulatory authorities.

- Primary attention should be placed on strengthening regional regulatory networks.


**Member States should:**

- Give primary attention to establishment of appropriate national legal frameworks for blood product regulation and empowerment and support of an effective regulatory authority in implementing WHA Resolution 63.12.

- Consider adoption of the WHO Guidelines on GMP for Blood Establishments and the BRN Assessment Criteria for National Blood Regulatory Systems as strategies to strengthen blood regulation in their jurisdictions.

**WHO and Member States should:**

- Take advantage of existing systems such as economical and regulatory regional and sub-regional networks to advance blood products regulations.

**Herbal medicines: current regulatory challenges and cooperation**

Through continuous effort at country level and collaboration with WHO, regulation of herbal medicines has been strengthened and data on regulatory experiences collected in more than 60% of WHO Member States.

The workshop was organized to present examples of current major regulatory challenges concerning herbal medicines: both national experiences and topics identifying high priorities. It also reported on progress in global regulatory cooperation by the International Regulatory Cooperation for Herbal Medicines (IRCH). Discussion focused on how collaboration among regulatory authorities could address and overcome challenges and identify collaborative initiatives for improving regulation of herbal medicines.

**Moderators**

Kustantinah Soerjosoebandora, Indonesia and Akua Amartey, Ghana

**Presentations**

**Current regulatory challenges relating to herbal medicines: Adulteration of herbal medicines.** Muhammad Lukmani Ibrahim, Malaysia

**Current regulatory challenges relating to herbal medicines: Evidence for Health Claim.** Jenny Bennet, Australia

**Experience of regulatory cooperation - International Regulatory Cooperation for Herbal Medicines (IRCH).** Shen Kuan Yee, Singapore

**Challenges in regulation of herbal medicines in Ghana.** Akua Amartey, Ghana

**Challenges and opportunities in regulation of herbal medicines in Indonesia.** Kustantinah Soerjosoebandora, Indonesia
Recommendations

*Member States should:*

- Strengthen national capability in the implementation of regulation on herbal medicines.
- Include traditional medicine/complementary and alternative medicine (TM/CAM) in the national health plan as appropriate.
- Be a member of a regulatory cooperation group, such as the International Regulatory Cooperation for Herbal Medicines (IRCH) and its working groups, for mutual benefit and achieving substantial progress.

*WHO should:*

- Further support Member States in the integration of TM/CAM into national health systems, where appropriate, and to develop tools supporting Member States to establish relevant policies and regulations in TM/CAM towards integration.
- Continue coordinating the network of IRCH in general and specifically by: providing technical support to the work of IRCH and its working groups, improving the WHO Mednet-based information exchange tool for IRCH and developing other tools to support Member States in sharing technical information on the top priority issues identified by IRCH.

Paediatric medicines

As a follow up to recommendations made at the 13th ICDRA and the pre-ICDRA meeting concerning medicines for children, a workshop was organized to consider two important issues: clinical trials in children and experience of registration/licensing essential medicines for children.

The presentations included an overview of some of the issues to do with clinical trials in children from the European perspective; experience to date of clinical trials in children in Malaysia and experiences from South Africa and Ghana of licensing essential medicines for children.

Moderators

*Murray Lumpkin, USA and Vasyl Blikhar, Ukraine*

Presentations

*Optimizing clinical trial design for paediatric populations. Agnes Saint Raymond, EU*

*Experience with authorizing paediatric clinical trials. Selvaraja Seerangam, Malaysia*

*Availability of Essential Medicines for Children in South Africa: situation analysis and what regulators can do to improve it. Khadija Jamaloodien, South Africa*

*Availability of Essential Medicines for Children: registered medicines in Ghana. Delese Darko, Ghana.***

Recommendations

*WHO should:*

- Enhance and foster collaboration and communication between MRAs (through the Paediatric Medicines Regulators Network (PmRN) and other mechanisms), especially on:
  - common standards for clinical trials in children.
  - capacity to assess clinical trials in children.
  - development of innovative pharmacovigilance methods to enhance reporting of adverse reactions related to use of medicines in children.
- Support countries to evaluate and adopt appropriate incentives and legislative structures to encourage development of optimal medicines for children.
• Work with countries to foster effective interaction between regulators and paediatricians to promote development and licensing of better medicines for children.

• Work with countries and regulators as well as industry to define efficient regulatory pathways for medicines for children.

Vaccines and biologicals

Moderators
Jianhua Ding, China and Karen Midthun, USA

Presentations
The paradigm has changed — meningococcal A conjugate, a vaccine designed for Africa. Mahamadou Compaore, Burkina Faso

Linking regulatory decisions and public health decisions for vaccines. Lucky Slamet, Indonesia

On the problem of finding an adventitious agent in an approved biological. Karen Midthun, USA

Recommendations

Member States should:

• Strengthen interactions between regulatory agencies and immunization programmes.

• Improve capacity to evaluate causality for adverse events following immunization.

• Strengthen crisis communication skills to manage vaccine safety events.

WHO should:

• Assist countries to leverage regulatory evaluations conducted elsewhere to expedite national approval of vaccines of public health importance.

• Enhance the ability of countries to assess and respond to adverse events following immunization.

• Facilitate the interactions between NRAs and national immunization advisory committees, to enable continuous assessment of the benefits and risks of vaccines.

• Assist countries to develop risk management strategies to respond to scientific advances for detection of adventitious agents in biological medicines.

• Enhance communications to countries on regulatory decisions by reference NRAs on prequalified vaccines.

Pandemic H1N1: lessons learned

Moderator
Klaus Cichutek, Germany

Presentations
Regulators response to a Pandemic: lessons learnt. Pia Caduff, Switzerland

Views from a country receiving donated products. Delese Darko, Ghana

The international dimension of the regulatory response to the H1N1 pandemic. Cathy Parker, Canada

Recommendations

Member States should:

• Make regulatory preparedness for pandemic influenza essential in all countries.

National regulatory authorities (NRAs) should:

• Review lessons learned from the H1N1 pandemic to be better prepared in the future.

• Improve crisis communications skills and capacity, especially for product safety in a pandemic scenario.
• Ensure scope for flexibility to adapt to evolving circumstances in an emergency.

• Utilize existing networks, infrastructures and tools for information sharing, wherever possible.

**WHO should:**

• Strengthen international collaboration on pandemic safety surveillance and communications.

• Provide technical assistance to regulators in recipient countries on the quality, safety and efficacy of products donated to respond to public health emergencies.

• Promote international regulatory research to enable access to pandemic influenza vaccines and drugs in a more timely way.

• Strengthen regulatory capacity to catalyse and support efforts to increase influenza vaccine production worldwide.

• Utilize the model of global networking of regulators used in the H1N1 pandemic in any future public health emergency of international concern.

• Consolidate and share safety information between countries to support national regulatory decisions.

### Interchangeability

**Moderators**

Ian Hudson, United Kingdom and Ashraf Bayoumi, Egypt

**Presentations**

Implementing new EU bioequivalence guidelines with emphasis on biowaiver option. Ian Hudson, United Kingdom

Assessment of bioequivalence studies: experience from WHO Prequalification Programme. Jan Welink, The Netherlands

**Experience of implementing bioequivalence requirement in Ethiopia.** Mengistab W. Areagy, Ethiopia

**How to prove interchangeability of generic medicines with originators: Korean experience.** Sangaeh Park, Republic of Korea

**Recommendations**

**Medicines regulatory authorities should:**

• Encourage comparability of products and promote exchange of information and reliance upon evaluation efforts of “reference” regulatory authorities.

• Request manufacturers to provide information proving that the product submitted has the same safety, efficacy and quality profile as the product originally approved by the “reference” regulatory authority. If alternative manufacturing sites, processes or formulation not covered by the original approval by the “reference” authority are used, it is important to link modifications to support the conclusion that the “reference” regulatory authority evaluation will in fact still be informative and can be relied on.

### Pharmacovigilance

Although pharmacovigilance (PV) is now firmly established in industrialized countries, it is still a new concept in many others. Current interest from global health initiatives, particularly in public health programmes, are providing opportunities to introduce the basic principles of PV in resource-limited settings. However, these must be appropriately aligned to country needs and capacity if they are to have a long-term impact. The workshop was planned to underscore the place of PV in a regulatory framework, to highlight the importance of PV in informing policies in priority disease programmes, to discuss issues in communication and information...
sharing between countries and to delineate the minimum PV capacity that is needed to address these concerns.

Moderators
Cheng Leng Chan, Singapore and Luisa Helena Valdivieso, Venezuela

Presentations
Minimal capacity for vaccine vigilance. Murilo Freitas Dias, Brazil

Working with public health programmes: addressing minimum requirements for Pharmacovigilance. Helen Byomire, Uganda

Recent developments in monitoring of adverse drug reactions in China. Min Yan, China

Pharmacovigilance in the national HIV/AIDS treatment programme. Olena Matveyeva, Ukraine

Recommendations
WHO should:

• Integrate PV into proposals to the Global Fund to fight AIDs, Tuberculosis and Malaria and other donors.

• Ensure funds are not diverted to non-PV activities within the healthcare system.

• Implement at least minimum core requirements for pharmacovigilance as integral components of drug regulation and paramount in safeguarding public health.

• Ensure good collaboration between pharmacovigilance centres and public health programmes.

Good regulatory practices: developing business processes

Moderators
Nazarita Tan Tacandong, Philippines and Patrick Deboyser, European Union

Presentations
Innovative Review Practices for better efficiencies. Daniel Tan, Singapore

Establishing quality management systems. Petra Doer, Switzerland

New work procedures and IT systems for licensing. Flavia Morais, Brazil

Recommendations
WHO should:

• Collect best practices in respect of implementation of quality management systems (QMS) by national regulatory authorities and explore the possibility of creating a model QMS for medicines regulatory authorities with guidance for its implementation.

• Establish a scheme for the exchange of complete medicines assessment reports (complementary to public assessment
reports) between medicines regulatory authorities, for the purpose of abridged authorization procedures based on the authorization granted by another medicines regulatory authority.

Stability

This workshop presented experience gathered during implementation of recently published new and revised WHO guidelines regarding stability requirements for both medicines and vaccines.

The discussion on stability-related regulatory requirements for medicines have been on the agenda of previous ICDRAs and have triggered numerous recommendations. This is the first time that vaccines were also discussed in a full session.

Presentations described harmonization efforts undertaken within various national and regional settings and the prequalification programmes operated by WHO. The presentation on vaccine stability described new trends in implementation.

Moderators
Lucky Slamet, Indonesia and Elwyn Griffiths, Canada

Presentations
Implementation of medicines stability testing requirements worldwide and in different regional contexts. Justina Molzon, USA

Experience of assessing stability data provided by applicants to the WHO Prequalification Programme. Gabriel Kaddu, Uganda

Stability evaluation of vaccines: lessons learnt. Teeranart Jivapaisarnpong, Thailand

Recommendations
National regulatory authorities should:

• Communicate requirements for stability studies needed to update the current list annexed to the WHO Stability Guidelines for Medicines.

• Implement WHO Guidelines on Stability Evaluation of Vaccines, as a whole.

• Ensure that vaccine stability evaluation should focus on the assessment of real time-real condition studies and a life cycle of stability evaluation.

• Strengthen statistical expertise to improve evaluation of the data submitted by manufacturers.

Manufacturers, particularly those interested in participating in the WHO Prequalification Programme for Medicines, should consider the new requirements set at 30 ºC 75% RH as of September 2011.

WHO should:

• Update the above-mentioned WHO Stability Guidelines for Medicines list.

• Publicize information on the new requirements.

• Continue organizing workshops on implementation of vaccine stability evaluation.

• Assist NRAs in evaluating stability data by providing additional tools for review of thermal stability studies.

Clinical trials and globalization

Noting that clinical trials have now become a global enterprise with trials being conducted in many countries around the world, the workshop was organized to discuss the impact of globalization on clinical trials — both on the conduct of clinical trials and on the use of data from these trials for national regulatory decision making when data come from clinical trials conducted internationally and often in different ethnic populations and under different medical care conditions.
During the workshop, participants heard from Brazil about the efforts being made there to build capacity to inspect clinical trials with respect to their compliance with GCP. Japan reported on efforts to prospectively design clinical trial development plans such that potential ethnic (intrinsic and extrinsic) differences in study populations can be investigated in parallel rather than sequentially as has most often been the case, so that information on the benefit-to-risk profile of a product can more efficiently be obtained and any “drug lag” minimized. From Tanzania, the presentation covered efforts there to work regionally and nationally to establish procedures to help prevent “ethics committee shopping” and to strengthen clinical trial regulatory oversight by pooling scientific and other resources among neighbouring countries.

**Moderators**

*Margaret Hamburg, USA and Lucia Turcan, Moldova*

**Presentations**

*Impact of trial design on GCP inspections*

Laura Castanheira, Brazil

*Experiences and Challenges to promote Multi Regional Clinical Trials*

Shinobu Uzu, Japan

*Establishing a mechanism to avoid “shopping around” for ethical approval*

Adam Fimbo, Tanzania

**Recommendations**

*WHO should:*

- Reconfirm its commitment to and support of public registries of clinical trials prior to their start to help assure public knowledge of regulatory and ethics committee decisions regarding these trials.

- Improve public awareness and encourage participation in multiregional and international clinical trials for the improvement of medical care and public health.

- Continue to assist national regulatory authorities in their regulatory decision-making efforts to extrapolate data from Phase I to Phase IV clinical trials conducted outside their nation to the situation, both ethnically and with respect to medical care, within their country.

**Education and training for regulatory officials**

**Moderators**

*Emer Cooke, European Union and Mandisa Hela, South Africa*

**Presentations**

*CDER’s education and training programs to promote professional competencies.***

Justina Molzon, USA

*General capacity building for regulators and specific capacity building for the inspectorate: ANMAT’s experience.***

Roberto Lede and Rodolpho Mocchetto, Argentina

*Parallel review experience of vaccines by two authorities: benefits for providers and recipients and lessons learned.***

Prapassorn Thanaphollert, Thailand and Dr Surinder Singh, India

*EU experience in training regulatory officials.***

Emer Cooke, EU
Recommendations

Medicines regulatory authorities should:

- Define training objectives and develop training plans to meet these objectives.

WHO should:

- Identify and promote sharing of training programmes and materials among regulators in order to facilitate common approaches and worksharing. The use of e-learning approaches should be encouraged.
- Maintain a network of training contact points.

Medicines promotion and rational use

Rational use is the final step in achieving the full potential of a medicine. What role do regulators have in ensuring this once it has passed through the regulatory process? The speakers and audience felt that regulators clearly had a role in rational use although this could vary from country to country depending on the many and various stakeholders involved.

In keeping with the overall theme of coordination and collaboration, there were many examples presented of existing legislation concerning promotion of medicines including activities in Member States that could be modified and used in other countries, especially those with an institutionalized basis for promotion. There were schemes where a tax on industry activities meant sustainable financial support for such activities.

Moderators

Alar Irs, Estonia and Sonam Dorji, Bhutan

Presentations

Medicines promotion and rational use according to the Spanish Law. José Luis Dopico, Spain

Generic entries of new chemical entities: challenges for controlling promotion and ensuring safety. Rohini Fernandopulle, Sri Lanka

Rational use: up from down under. John Dowden, Australia

Recommendations

Member States should:

- Support initiatives in the rational use of drugs by providing, in a readily available format (e.g., on the Internet), an objective summary of product characteristics upon authorization and ensure it is updated in a timely manner as new information becomes available.

- Encourage routine analysis of the post approval use of medicines and make these data public.

- Where pharmaceutical advertising and promotion is permitted, clearly define in the legislation the acceptable extent of promotional activities and the mechanisms for effective oversight and mobilize resources for enforcement.

WHO should:

- Publish best practices on rational use of medicines for Member States to adapt and adopt.

- Facilitate information exchange between Member States to encourage effective practices of medicines promotion control (e.g., by compiling and maintaining a list of relevant national contact points) as well as by organizing, on a regional basis, workshops for regulators to address practices in promotion and effective regulation. A possibility to generalize the results of these meetings into a guide of promotion control for the regulatory agencies should be explored.

- Evaluate the need to revise and further promote the 1988 WHO Ethical Criteria.
for Medicinal Drug Promotion in view of recent developments in regulatory and industry practice.

• Compile an explanatory guide for the lay press on objective reporting of risks and benefits of medicinal products.

**Counterfeit medicines**

The topic of counterfeit medicines has been on the agenda from the Ninth ICDRA onwards and numerous recommendations have been issued. During the session, it was decided to re-emphasize selected recommendations.

**Moderators**
Paul B. Orhii, Nigeria and Susanne Keitel, France

**Presentations**
*Introduction to Medical Products Anti-counterfeiting Situation in China.* Lei Sun, China

*Experience of working together from a European network of enforcement officer.* Naeem Ahmed, UK

*Basel Medicrime Conference 2010: further development of Council of Europe Medicrime Convention.* Andreas Balsiger, Switzerland

*Overview of fighting counterfeit medicines in Russia.* Sergey Glagolev, Russia

**Recommendations**

The 14th ICDRA reiterates and draws attention to the recommendations of the 12th and 13th ICDRAs, congratulating WHO for its continued work in the anti-counterfeiting area.

**Medicines regulatory authorities should:**

• Develop and adopt multipronged anti-counterfeiting strategies addressing at least:
  
  Proper regulatory oversight; securing the supply chain; increasing and applying penalties; increasing public and health professional vigilance and awareness; developing and applying effective authentication and detection technologies; and improving coordination with all concerned stakeholders at the national and international level.

**WHO should:**

• Assist MRAs to strengthen their capacity to detect and combat counterfeit medicinal products and to exchange information at the international level.

• Promote a harmonized definition of a counterfeit medicinal product that focuses on the protection of public health and takes into account the need to safeguard legitimate generic medicines.

**WHO and medicines regulatory authorities should:**

• Promote the development of collaborative networks based on the principle of single points of contact.

**Snake antivenom immunoglobulins (antisera)**

The main purpose for this workshop was to discuss ways forward to support implementation of regulatory systems for snake antivenom immunoglobulins and ways of collaboration among regulators and to discuss proposals to evaluate the quality of snake antivenoms and the need for venom reference preparations.

Snake envenomings are neglected diseases with high morbidity and mortality so that availability of adequate and appropriate antivenoms for medically significant poisonous snakes is a critical unmet need, especially in Africa and parts of Asia. In particular, support is needed at the regional level to address current barriers to the availability of suitable, safe and effective products.
WHO has worked to raise global awareness of this problem and has developed two critical tools:

- A worldwide database on medically important snakes and the available antivenoms.
- Guidelines for the Production, Control and Regulation of Snake Antivenom Immunoglobulins.

Essential steps to address the critical shortage of snake antivenoms include:

- Improved reporting of snake bites to define the local needs (epidemiology and pharmacovigilance).
- Regulatory oversight of antivenom production and distribution (GMP, specificity of antivenoms).
- Availability of high quality reference venoms to permit testing of the neutralization potency and species specificity of antivenoms by control laboratories.
- Regional cooperation to address the problem of limited resources in the face of a very large number of poisonous snakes.

**Moderators**
*Jay Epstein, USA and Eric Karikari-Boateng, Ghana*

**Presentations**
*Experience of regulating antisera: possibilities for international cooperation to ensure quality and availability. Laura Castanheira, Brazil*

*Quality of venoms: a critical step in the production of snake antivenoms. Fred Siyoi, Kenya*

*Impact of the WHO website on the regulatory control of snake antivenoms. Wichuda Jariyapan, Thailand*

**Discussion Panel:**
*Capacity building for regulatory systems of snake antivenoms. Graham Dickson, Australia, Mandisa Hela, South Africa, Bhupendra Thapa, Nepal.*

**Recommendations**

**Member States should:**

- Take advantage of local expertise and existing networks to link promotion and oversight of antivenoms to other public health efforts.
- Establish mandatory reporting of snake bites and their therapies, including use of standardized report forms to define the local epidemiology.
- Establish regulatory systems capable of assuring GMP manufacturing and appropriate specificity of distributed antivenoms, including lot release.
- Cooperate in development of regional control laboratories and regionally relevant reference venoms.

**WHO should:**

- Continue efforts to raise awareness of snake bites as a neglected public health issue.
- Provide training on use of the worldwide database and the WHO Guidelines for the Production, Control and Regulation of Snake Antivenom Immunoglobulins.
- Support regional efforts to establish regulatory systems, including development of regionally significant high quality reference venoms.
- Promote an international scientific dialogue on preclinical and clinical standards for establishing the efficacy of antivenoms.

**Current topics**

**Transparency in medicines regulation**
WHO should continue supporting initiatives aimed at increasing medicines regulation transparency and monitoring.
Electronic nicotine delivery devices (ENDS)
National regulatory authorities should regulate ENDS as a combination of drugs and medical devices addressing as a first priority safety concerns.

Regulatory actions to contain artemisinin resistance
National regulatory authorities should take appropriate action to enforce the implementation of WHA Resolution 60.18 concerning the suspension of marketing and use of oral artemisinin-based monotherapies. WHO should continue to provide the required assistance to Member States.

Securing uninterrupted pharmaceutical supply
Member States should make efforts to improve the regulatory environment in order to facilitate securing the uninterrupted supply of medicines. This would involve sharing information, learning from best practices and developing measures to prevent and manage risks related to global medicines shortages.

WHO should explore establishing mechanisms for exchange of information on medicines shortages due to quality failures and lack of incentives for production. The potential for establishing an informal international network to share information and ideas on prevention and risk minimization of medicines shortages should be explored.

Combating antimicrobial resistance
WHO should facilitate clarifying the roles and responsibilities of regulators in combating antimicrobial resistance. A model action plan for countries should be created. WHO should continue to emphasize the vital importance of rational use of medicines as a tool to prevent drug resistance.