

Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the DI & ADR Centre in Vietnam

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About SPS

The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

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ACRONYMS

ACT	artemisinin-based combination therapy
ADE	adverse drug event
ADR	adverse drug reaction
AMR	antimicrobial resistance
ARV	Antiretroviral
CDC	US Centers for Disease Control and Prevention
DAV	Drug Administration of Vietnam
DI & ADR	Drug Information and Adverse Drug Reaction Monitoring Centre (Vietnam)
DTC	Drug and Therapeutics Committee
DUE	drug use evaluation
FDC	fixed dose combination
GCP	good clinical practice
GLP	good laboratory practice
GMP	good manufacturing practice
GPP	good pharmacy practice
GSP	good storage practice
HUP	Hanoi University of Pharmacy
IEC	information, education, and communication
INGO	international non-governmental organization
IV	Intravenous
MOH	Ministry of Health
MSA	Medical Services Administration
MSH	Management Sciences for Health
NGO	non-governmental organization
NMP	National Medicine Policy
OTC	over-the-counter
PEPFAR	President's Emergency Plan for AIDS Relief
PV	pharmacovigilance
RPM Plus	Rational Pharmaceutical Management Plus
SCMS	Supply Chain Management Systems
SOP	standard operating procedure
SPS	Strengthening Pharmaceutical Systems
SWOT	strengths, weaknesses, opportunities and threats
TOT	training of trainers
USAID	United States Agency for International Development
VAAC	Vietnam Administration for AIDS Control
WHO	World Health Organization

BACKGROUND

Pharmacovigilance is defined as the science and activities related to the detection, assessment, understanding and prevention of medicine-related problems. Adverse drug events (ADE) are common but many of them are also preventable. Pharmacovigilance (PV) should thus be a key component of rational pharmaceutical management, but systems to implement PV are often weak or non-existent in resource-constrained countries.

Significant recent increases in the availability and use of relatively new essential medicines such as antiretrovirals for HIV/AIDS, artemisinin-based combination therapies (ACTs) for malaria, and reserve medicines for multi-drug resistant TB have brought added urgency for the need to establish or strengthen PV systems in developing countries. The growing problem of poor quality or counterfeit medicines is another reason why PV requires renewed and vigorous attention. Because of these reasons, public health programs and other stakeholders of resource-constrained countries as well as donors and development partners are increasingly laying strong emphasis on the need to conduct pharmacovigilance activities in a systematic and organized manner to enhance safe use of medicines.

The scope of pharmacovigilance has now broadened from its traditional approach of focusing mainly on adverse drug reactions to one that includes additional critical issues such as medication errors, product quality, and treatment failure. A broad issue such as PV thus requires a cross-cutting and system-wide approach to be successful. It relates with multiple stakeholders including the regulatory body, health facilities, academia, health care providers, professional associations, public health programs, donors/development partners, patients and the public. Good communication and coordination among all these stakeholders is essential for initiating and maintaining a strong PV system.

Under the Rational Pharmaceutical Management Plus (RPM Plus) Program, MSH initiated work on supporting PV activities in several countries. RPM Plus' successor, the Strengthening Pharmaceutical Systems (SPS) Program has further consolidated and expanded these activities by designing and implementing a more systematic approach to strengthening PV systems in resource-constrained settings. To support the process, SPS has developed two key documents: (1) an SPS concept paper which describes the framework and operational approach for strengthening PV systems in resource-constrained settings, and (2) an indicator-based assessment tool for the conduct of diagnostic assessment of PV systems to identify system strengths and weaknesses, and design, plan, and monitor interventions based on local realities and existing regulatory capacity and priorities.

At country level, the technical assistance activities carried out so far include the following:

- *Ethiopia*: Collaborated with the Drug Administration and Control Authority of Ethiopia to conduct training of trainers (TOT) courses on Adverse Drug Reaction (ADR) monitoring and reporting; integrate pharmacovigilance-related roles of Drug and Therapeutics Committees (DTCs) into the process of DTC establishment and trainings; develop IEC materials for patients on adverse effects of ARVs; and assess pharmacy curriculum to determine the existing course contents on pharmacovigilance. [SPS]

- *Kenya:* Provided technical assistance to the Pharmacy and Poisons Board of the Government of Kenya to develop a standardized training curriculum and tools on pharmacovigilance. [SPS]
- *Namibia:* Provided technical assistance to establish and operationalize a joint Therapeutic Information and Pharmacovigilance Center, conduct pharmacovigilance trainings, draft a national pharmacovigilance guideline, train community health workers on their roles in spontaneous reporting of adverse effects related to ARVs and anti-TB medicines, and develop an active surveillance proposal to confirm initial findings that zidovudine is responsible for severe anemia in Namibian patients requiring treatment switches. [RPM Plus and SPS]
- *Rwanda:* Conducted an indicator-based assessment of pharmacovigilance and medicine safety systems and provided recommendations on further actions followed by a training of trainers on pharmacovigilance in September 2009. [SPS]
- *South Africa:* Helped the KwaZulu Natal Province to develop a framework to implement ADR monitoring of ARVs, conducted nationwide trainings on pharmacovigilance in public health programs, and assisted the KZN Province to establish active ARV surveillance based on sentinel sites and cohort event monitoring. [RPM Plus and SPS]
- *Tanzania:* Provided technical assistance to the Tanzanian Food and Drug Administration to improve monitoring of ADRs with ACT use in pregnant women, and train drug dispensers and other health care providers on ACT-related pharmacovigilance. [RPM Plus]
- *Vietnam:* Conducted a TOT in March 2009 on pharmacovigilance and medicines safety for 42 participants from 17 institutions, and assisted in-country stakeholders to adopt a framework for pharmacovigilance in Vietnam. [RPM Plus]

The Government of Vietnam has launched its National Drug Information and Adverse Drug Reaction Monitoring Centre (DI & ADR Centre) for collecting and monitoring adverse drug reactions and for providing drug information. The Center which will serve as a hub for the pharmacovigilance system will eventually set up other proposed regional centers in Northern, Central and Southern Vietnam. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) Vietnam Program views this as an opportunity to build on its ongoing support to HIV/AIDS care, treatment, and prevention programs, which include training for practitioners, clinic support, procurement of medicines and supplies, and development of a supply chain. Strengthening the pharmacovigilance system will demonstrate PEPFAR's commitment to a broader health systems approach to promote safe and effective use of HIV/AIDS medicines, but also medicines for malaria, TB, child health and methadone-substitution programs. In July 2009, the SPS Program provided a technical support visit by its Senior Program Associate Ms. Helena Walkowiak to work with the Centre staff to draft a one-year work plan, and to develop a strategy for including pharmacovigilance activities in a proposal to the Global Fund to Fight AIDS, Tuberculosis and Malaria. The key immediate areas of need identified during Ms. Walkowiak's

visit were technical assistance to revitalize the Clinical Pharmacy Information Bulletin and strengthening the newly established Centre's staff capacity to carry out drug information and pharmacovigilance activities. Dr. Mohan P. Joshi, Senior Technical Manager for Antimicrobial Resistance and SPS Country Program Manager for Vietnam, thus traveled to Vietnam from September 25 to October 9, 2009 to provide technical assistance to national stakeholders in this area. This report describes the activities carried out and the products developed during that visit.

Purpose of Trip

The purpose of Dr. Joshi's visit was to assist the Hanoi University of Pharmacy to build capacity and operational efficiency to run the newly established DI & ADR Centre.

Scope of Work

Dr. Joshi's scope of work was to:

- Provide a briefing and debriefing for USAID and CDC/Vietnam, as requested
- Conduct two half-day trainings for Hanoi University of Pharmacy's DI-ADR Centre staff on medicine and ADR information services and pharmacovigilance systems focusing on key topics
- After this initial training, work closely with the DI & ADR Center staff to
 - Identify the appropriate resources for the Center to help carry out its information and pharmacovigilance activities in an on-going basis and finalize the strategy for acquiring and updating drug and pharmacovigilance information reference resources
 - Review and discuss the current ADR reporting form, identify the appropriate next steps for its revision, and draft initial suggestions for modifications to share with stakeholders for their inputs
 - Discuss and draft action plans to strengthen the existing Clinical Pharmacy Information Bulletin in terms of standard operational procedures, layout, design, technical content, writing and reviewing processes, dissemination, feedback, and monitoring and evaluation.
 - Carry out a stakeholder analysis to identify key players and groups from various sectors and disciplines who could support the DI & ADR Center on technical, advocacy and sustainability issues
- Discuss with VAAC the mapping of care and treatment process in the ART program in order to help inform the start-up of active surveillance
- Submit a report after the completion of the trip

Annex 1 includes the request for country clearance (RFCC) and *Annex 2* the agenda for Dr. Joshi's visit.

ACTIVITIES

Meeting with CDC and WHO representatives

On September 25, Dr. Joshi, along with Ms. Juanita Folmsbee, MSH/SCMS Vietnam Program Director, and Mimi Gerard, MSH/SCMS Senior Program Associate, met with CDC's Dr. Nick Medland, Senior Treatment Advisor, Vietnam and WHO's Dr. Socorro Z. Escalante, Technical Officer for Pharmaceuticals, Vietnam. During the meeting, Dr. Joshi and Ms. Folmsbee provided a brief overview of the technical assistance MSH has so far provided to Vietnam in the area of PV through RPM Plus, SPS, and SCMS. Dr. Joshi then shared a copy of his scope of work for the visit. Dr. Medland suggested that the technical support should ultimately aim at a strong local capacity building. Regarding the support for initiation of active surveillance planned under COP09, Dr. Medland pointed out the need to emphasize not only the initial design of the program, but also subsequent technical support to various stakeholders, including those at the point of care. Dr. Escalante expressed that MSH and WHO activities would be complementary. She informed that WHO plans to help conduct a national capacity assessment for PV in the near future. She noted the need for development partners to help the national stakeholders make their PV program as systematic and sustainable as possible.

Two half-day trainings for the DI-ADR Centre staff

On September 28, Dr. Joshi and Ms. Gerard visited the DI-ADR Centre at the Hanoi University of Pharmacy (HUP) and met with Trần Đăng Hòa, Director of the Centre and Vice-Rector of the Hanoi University of Pharmacy, and briefed him on the plans for Dr. Joshi's work with the Centre's staff. Dr. Joshi then spent four hours that day with the staff of the Centre discussing the topic "*Medicine Information and Medicine Safety Bulletins.*" Annex 3 gives the presentation made during this training session. Dr. Joshi spent around the same amount of time the next day to discussing about "*A System-oriented Approach to Implementing Pharmacovigilance.*" Annex 4 gives the presentation made during this second day's training session. The DI-ADR Centre's staff present during both these training sessions were:

- Vice Director Võ Thị Thu Thủy
- Doctor Nguyễn Thế Hùng
- Doctor Nguyễn Hoàng Anh
- Đặng Bích Việt
- Nguyễn Thị Vân Anh
- Vũ Lan Hương
- Trần Thu Thủy
- Nguyễn Phương Thúy

Development of new tools and SOPs, and revision of existing ones to facilitate DI & ADR Centre's activities

From the 1st to the 8th of October, Dr. Joshi worked jointly with the DI-ADR Centre staff to:

- Complete suggested revisions in Vietnam's existing ADR reporting form (Annex 5).

- Develop a standard operating procedure (*Annex 6A*) and query recording/answering form (*Annex 6B*) for the Centre's planned question-answer service.
- Develop a matrix of key stakeholder groups relating to drug information and pharmacovigilance activities in Vietnam (*Annex 7*).
- Complete suggested changes in the content and format of HUP's Clinical Pharmacy Information Bulletin (DUOC LAM SANG). (*Annex 8*).
- Develop a template of SOP for the "process" in commissioning and completing articles for the Bulletin (*Annex 9*).
- Develop a list of locally relevant and useful topics for the Bulletin (*Annex 10*).
- Review the strategy for acquiring and updating drug and pharmacovigilance information reference that was drafted during the July 2009 visit by Ms. Walkowiak.

While working with the DI & ADR Centre staff to help revise Vietnam's ADR reporting form, Dr. Joshi used a comparative chart to show the similarity and differences between such forms from various countries. This comparative chart appears as *Annex 11*.

Discussion with VAAC with regard to initiation of active surveillance within the ART Program

On September 30, 2009, Dr. Joshi and Dr. Gerard met with Dr. Do Thi Nhan, Chief of Care and Treatment in the ART Program in Vietnam, to discuss planning for initiation of active surveillance within the Program. Ms. Vo Thi Thu Thuy and Dr. Nguyen Hoang Anh from the DI-ADR Centre, and Ms. Doan Thi Nga (MSH/SCMS & VAAC) were also present in the meeting. Dr. Joshi suggested that an initial mapping of the ART care and treatment process would help inform the design and start-up of such an active surveillance effort. Dr. Nhan expressed that VAAC is interested to initiate active surveillance and would be happy to facilitate the mapping process. Dr. Nhan, however, clearly emphasized that, in the beginning, the effort should start as a "small pilot" in one or two hospitals and that it can later be rolled out if successful. Dr. Joshi informed her that technical staff from SPS and its partner organization—University of Washington—plan to visit Vietnam in early 2010 to help with the preparatory work for active surveillance.

Meeting with HUP officials

On October 5, Drs. Joshi and Gerard met with Professor Le Viet Hung, Rector and Ms. Dinh Thi Hien Van, Head of the International Relations Office, Hanoi University of Pharmacy (HUP). Dr. Joshi shared the agenda for his visit and briefed them on the activities already completed and those planned for the rest of his visit. Dr. Joshi also informed that SPS Namibia and South Africa country offices were actively pursuing with the relevant ministries in both the countries to facilitate approval for the proposed 2-week pharmacovigilance-related study tour of the DI/ADR Centre staff to Namibia and South Africa with funding support through MSH/SCMS. Drs. Joshi

and Gerard also shared the strategy drafted during Ms. Walkowiak's visit earlier in July for developing a proposed pharmacovigilance component to be included in the Global Fund Round 10 proposal.

Both Prof. Hung and Ms. Van appreciated support from MSH's SPS and SCMS Programs to strengthen pharmacovigilance in Vietnam. Prof. Hung made the following two specific suggestions for potential future support from SPS:

- Vietnam's Ministry of Health has required the related in-country stakeholders to establish regional DI & ADR centres in the Central and South regions, in addition to the existing national centre in the North. He expressed that ideas were needed on how this could be done, and how these different centres would collaborate. He suggested that perhaps a "workshop" might be needed in future to foster collaboration and strengthen systems.
- Strategically, it would be very a useful and sustainable idea to include a sound component on pharmacovigilance at the level of pre-service education in Vietnam. He expressed that it would therefore be very helpful if HUP received technical assistance in future to include appropriate pharmacovigilance topics into their pharmacy curriculum, and give training-of-trainers to faculty members so that they could then effectively teach these topics to their students.

Debriefing with USAID/Vietnam and CDC

On October 9, 2009, Dr. Joshi, Ms. Folmsbee, and Dr. Gerard visited USAID/Vietnam office to provide an out-briefing. The following USAID and CDC staff were present:

- Xerses Maneck Sidhwa, Health Officer, USAID/Vietnam
- Nguyen Thi Minh Ngoc, HIV/AIDS Care and Treatment Specialist, USAID/Vietnam
- Jodi I. Charles, Project Management Officer, Global AIDS Program/Vietnam, DHHS/CDC – US Embassy

During the meeting Ms. Folmsbee provided an overview of MSH pharmacovigilance work in Vietnam. Dr. Joshi then briefed in detail the scope of his work and the tasks accomplished in the preceding two weeks of his visit. He also shared copies of his presentations used during the trainings given on September 28 and 29, 2009 to the DI-ADR Centre staff on drug information/drug bulletin, and on pharmacovigilance. He also shared hard copies of COP09 SPS workplan for Vietnam, which Ms. Folmsbee had already sent earlier to the mission electronically. Dr. Joshi took the opportunity to brief in detail the activities planned with this COP09 workplan.

NEXT STEPS

Immediate Follow-up Activities

- Make a visit to Vietnam in January 2010 to initiate preparatory work for active surveillance within the ART Program.
- Based on the strategy developed earlier, assist in-country counterparts to develop a pharmacovigilance component to insert in the Global Fund Round 10 proposal submission by Vietnam (if the country decides to apply for Round 10).
- Facilitate approval for the 2-week study tour visit by DI-ADR Centre staff to Namibia and South Africa proposed for March 2010 through SCMS funds, and provide coordination and technical assistance support through SPS country offices while the visitors are on the ground.

ANNEX 1. REQUEST FOR COUNTRY CLEARANCE

TO: Jonathan Ross, HANOI/HHA

FROM: Management Sciences for Health (MSH)/Strengthening Pharmaceutical Systems (SPS) Program, Cooperative Agreement # GHN-A-00-07-00002-00

SUBJECT: Request for country clearance for travel to Hanoi, Vietnam for Mohan Joshi MSH/SPS

COPY: Ngoc Nguyen Thi Minh, HANOI/HHA
John MacArthur, USAID/ANE/ID/RDM/A
Anthony Boni, GH/HIDN/HS, CTO SPS
Veerle Coignez, GH/HIDN
Juanita Folmsbee, SCMS Vietnam Country Director, MSH
Ned Heltzer, Vietnam Technical Coordinator, MSH
Douglas Keene, Director, MSH/SPS
Sameh Saleeb, Deputy Director, MSH/SPS
Francis Aboagye-Nyame, Deputy Director, MSH/SPS
David Lee, Director, Technical Strategy and Quality, MSH/CPM
Mohan Joshi, Senior Technical Manager for AMR, MSH/SPS

1. The Strengthening Pharmaceutical Systems (SPS) Program wishes to request country clearance for the proposed travel to Hanoi, Vietnam for Dr. Mohan Joshi, Senior Technical Manager for AMR and SPS Country Program Manager for Vietnam from September 25 to October 9th, 2009.
2. **Background:** The Government of Vietnam has launched its National Drug Information and Adverse Drug Reaction Monitoring Center (DI & ADR) for collecting and monitoring adverse drug reactions and for providing drug information. The Center which will serve as a hub for the pharmacovigilance system will eventually set up other proposed regional centers in Northern, Central and Southern Vietnam. The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) Vietnam Program views this as an opportunity to build on its ongoing support to HIV/AIDS care, treatment, and prevention programs, which include training for practitioners, clinic support, procurement of medicines and supplies, and development of a supply chain. Strengthening the pharmacovigilance system will demonstrate PEPFAR's commitment to a broader health systems approach to promote safe and effective use of HIV/AIDS medicines, but also medicines for malaria, TB, child health, methadone-substitution programs. In July 2009, the SPS Program provided a technical support visit by its Senior Program Associate Ms. Helena Walkowiak to work with the Center staff to draft a one-year work plan, and to develop a strategy for including pharmacovigilance activities in a proposal to the Global Fund to Fight AIDS, Tuberculosis and Malaria. Key immediate areas of need identified during Ms. Walkowiak's visit was technical assistance to revitalize the Clinical Pharmacy and Therapeutics bulletin and

strengthening the newly established Center's staff capacity to carry out drug information and pharmacovigilance activities.

3. **Purpose of Proposed Visit:** The primary purpose of Dr. Joshi's visit is to assist the Hanoi University of Pharmacy to build capacity and operational efficiency to run the newly established DI & ADR Center.
4. **Scope of Work for Dr. Joshi:**
 - Provide a briefing and debriefing for USAID and CDC/Vietnam, as requested
 - Conduct two half-day trainings for Hanoi University of Pharmacy's DI-ADR Centre staff on medicine and ADR information services and pharmacovigilance systems focusing on key topics
 - After this initial training, work closely with the DI & ADR Center staff to
 - Identify the appropriate resources for the Center to help carry out its information and pharmacovigilance activities in an on-going basis and finalize the strategy for acquiring and updating drug and pharmacovigilance information reference resources
 - Review and discuss the current ADR reporting form, identify the appropriate next steps for its revision, and draft initial suggestions for modifications to share with stakeholders for their inputs
 - Discuss and draft action plans to strengthen the existing Clinical Pharmacy and Therapeutics Bulletin in terms of standard operational procedures, layout, design, technical content, writing and reviewing processes, dissemination, feedback, and monitoring and evaluation.
 - Carry out a stakeholder analysis to identify key players and groups from various sectors and disciplines who could support the DI & ADR Center on technical, advocacy and sustainability issues
 - Discuss with VAAC the mapping of care and treatment process in the ART program in order to help inform the start-up of active surveillance
 - Submit a report after the completion of the trip
5. **Anticipated Contacts:** Representative of USAID
 - Jonathan Ross, Director, Office of Public Health
 - Representatives of CDC
 - Dr. Bruce Struminger, Director, CDC
 - Dr. Nick Medland, Chief, Care and Treatment, CDC
 - Representatives of the DI & ADR Center and the Hanoi School of Pharmacy
 - Prof. Nguyen Dang Hoa
 - Ms. Dinh Hien Van
 - Ms. Phan Quynh Lan
 - Ms. Vo Thi Thu Thuy
 - Staff of the Vietnam Administration for AIDS Control (VAAC) and PEPFAR implementing partners including Family Health International (FHI), Medicins de Monde (MDM), Harvard Medical School AIDS Initiative (HAIVN), and Life Gap/CDC, as appropriate.

- Representatives of other organizations, as appropriate
 - Dr. Soc Escalante, Pharmaceuticals Consultant, WHO
- 5. **Logistics:** Dr. Joshi will arrive in Hanoi on or about September 24, 2009 and depart on or about October 9, 2009.
- 6. **Funding:** The in-country work will be paid for with USAID/SPS funds.
- 7. **Action:** Please advise of country clearance for Dr. Joshi, as planned. Please confirm receipt and reply via e-mail to the attention of Anthony Boni, USAID/G/PHN/HN/HPSR, at aboni@usaid.gov, tel (202) 712-4789, fax (202) 216-3702. Please send carbon copies to Veerle Coignez at vcoignez@usaid.gov, Douglas Keene at dkeene@msh.org, Juanita Folmsbee at jfolmsbee@msh.org, Sameh Saleeb at ssaleeb@msh.org, Francis Aboagye-Nyame at fnyame@msh.org, David Lee at dlee@msh.org, Mohan Joshi at mjoshi@msh.org, and Nicolette Regis at nregis@msh.org.

Thank you for Mission cooperation.

ANNEX 2. AGENDA FOR DR. JOSHI'S VISIT

Mohan's agenda for Sept25 - Oct.09, 2009		
<i>Day/Time</i>	<i>Meetings/Activites</i>	<i>Location</i>
Sept.25 Friday 14:00 -16:00 PM	<u>Technical Meeting group with CDC/HAIVN/FHI/WHO:</u> 1. Dr. Nick Medland (CDC) 2. Dr. Marcelo (HAIVN) 3. Dr. Rachel Burdon (FHI) 4. Dr. Soc Escalante (WHO) 5. Dr. Mohan Joshi (MSH/SPS) 6. Ms. Juanita Folmsbee (MSH/SCMS Country Director) 7. Dr. Mimi Gerard (MSH/SCMS)	SCMS office 25 Bui Thi Xuan, Hai Ba Trung District, Hanoi
Sept.26-27	WEEKEND	
Sept.28 Monday 13:00 - 17:00 PM	Training for DI-ADR Centre staff on <i>Drug Information with a focus on Medicine Information and Medicine Safety Bulletins</i>	HUP 13-15 Le Thanh Ton, Hoan Kiem, Hanoi
Sept.29 Tuesday 13:00 - 17:00 PM	Training for DI-ADR Centre staff on <i>System-oriented Approach to Implementing Pharmacovigilance</i>	
Sept.30 Wednesday 16:00 – 17:30 PM	<u>Meeting with VAAC:</u> (consideration for the mapping of ART care and treatment process in order to help inform the start-up of active surveillance system)	VAAC office 135/3 Nui Truc, Ba Dinh District, Hanoi

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	<ol style="list-style-type: none"> 1. Dr. Nhan – Chief ò C�ae & treatment in VAAC 2. Dr. Mohan Joshi - MSH/SPS 3. Dr. Mimi Gerard -MSH/SCMS 4. Phar. Doan Thi Nga - MSH/SCMS & VAAC 	
Oct.01 Thursday 13:30 – 17:30 PM	Working with DI & ADR Centre staff on <ul style="list-style-type: none"> • DI-ADR activities/ Review of Vietnam ADR report form along with comparative view of forms from multiple countries 	HUP 13-15 le Thanh Ton, Hoan Kiem, Hanoi
Oct.02 Friday 9:00 – 12:00 AM And 15:00 – 17:30 PM	Working with DI-ADR Centre staff: <ul style="list-style-type: none"> • Revision of Vietnam ADR report form 	
Oct.03-04	WEEKEND	
Oct.05 Monday 10:00 -12:00 AM 13:30 – 17:30 PM	<ul style="list-style-type: none"> ✓ Meeting with International Relation Department on GF’s proposal ✓ Working with DI-ADR Centre staff: <ul style="list-style-type: none"> • Stakeholder Analysis for Pharmacovigilance 	HUP 13-15 le Thanh Ton, Hoan Kiem, Hanoi
Oct.06 Tuesday 13:30 – 17:30 PM	Working with DI-ADR Centre staff: <ul style="list-style-type: none"> • Stakeholder Analysis for Bulletin (Drug Information and Drug Safety) 	
Oct.07 Wednesday 13:30 – 17:30 PM	Working with DI-ADR Centre staff: <ul style="list-style-type: none"> • Review of the content and format of the Bulletin (Drug Information and Drug Safety) • Inventory of locally interesting and useful drug info and safety topics for the Bulletin 	
Oct.08 Thursday 13:30 – 17:30 PM	Working with DI-ADR Centre staff: <ul style="list-style-type: none"> • DI activities with focus on question/answer service 	

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	<ul style="list-style-type: none">• Finalization of the information resources acquisition strategy	
Oct.09 Friday 10:00 – 12:00 AM 13:30 – 17:30 PM	Debriefing with Juanita Debriefing with USAID	SCMS office USAID office

ANNEX 3. MEDICINE INFORMATION AND MEDICINE SAFETY BULLETINS



USAID
FROM THE AMERICAN PEOPLE



MSH



SPS
Strengthening
Pharmaceutical
Systems

Medicine Information and Medicine Safety Bulletins

Mohan P. Joshi, MBBS, MSc, MD
Senior Technical Manager for Antimicrobial Resistance, and SPS Country Program Manager for Vietnam, MSH/SPS

Hanoi, Vietnam, September 28, 2009

For better health worldwide

Do We Have Information Deficiency in the Age of Information Overload?

- Great explosion of biomedical information
- Similar information overload in the area of drugs and therapeutics
- However, most resource-constrained settings lack organized provision of up-to-date, reliable, and locally relevant information



Is Drug Information Key to Achieving Rational Medicines Use?

- Right medicine, right dose, right route, right length of time, appropriate price

+

appropriate information
- Medicines → active substances **plus** information
- Medicines **minus** information → just a chemical or a substance
- Information is thus a **fundamental prerequisite** for rational use



Why Have an Organized Drug Information Service?

- About **100,000** available pharmaceutical products have a huge body of facts
- **Cost, logistics, time, and effort** required make it difficult for individuals to use different sources of information
- New information is constantly emerging; existing information is rapidly outdated
- **Self-medication** is common, but consumer-orientated information is lacking
- **Increasing privatization** of health care means both public and private sectors need objective drug information services
- Governments and other pharmaceutical systems need professional information to get **cost savings and** determine **cost-effective** therapies
- Providing independent and organized drug information service is critical to counter biased information sources



What are the Scope of Activities for a Drug Information and Adverse Drug Reaction (DI-ADR) Center?

Service

- Answer questions
- Initiate follow-up calls
- Publish and distribute drug and safety bulletins/newsletters
- Publish posters/booklets
- Support activities of drug and therapeutics, formulary, or standard treatment guidelines committees
- Monitor and report ADRs
- Promote and facilitate drug safety
- Scan, evaluate, and disseminate current literature
- Edit written materials for publication
- Participate in regulatory affairs
- Help formulate drug policy
- Act as drug documentation center

Education

- Pre-service training (undergraduate and postgraduate)
- In-service training (continuing education)
- Seminars, lectures, and presentations
- Public education through workshops, TV, radio talks, newspaper stories

Research

- Drug and therapeutics related research
- Drug utilization and drug safety review and feedback
- Consultancy on drug information, safety issues, drug research projects
- New product evaluation
- Quality control activities



What Information can a DI-ADR Center Provide?

- Drug indications
- Drug(s) of choice (when applicable and possible)
- Dose, route, and duration of treatment
- Pharmacodynamics
- Pharmacokinetics
- ADRs
- Drug poisonings
- Drug interactions
- Compatibility information
- Contraindications
- Serum drug levels and interpretations
- Special precautions
- Drug use in childhood, pregnancy, old age, and diseased conditions
- Availability/cost
- Medication errors
- Drug quality
- Treatment failure
- Stability and storage
- Drug identification
- Comparisons between drugs



What are Key Information Resources?

- Basic textbooks and formularies
 - Martindale, British National Formulary, Meyler's Side Effects of Drugs, WHO Model Formulary
- Systematic reviews
 - Cochrane Library, Clinical Evidence, Database of Abstracts of Reviews of Effects (DARE)
- Guidelines issued by medico-economic evaluation bodies
 - National Institute for Clinical Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), Canadian Centre of Health Technology Assessment (CCOHTA), National Guidelines Clearinghouse (NGC)
- Articles in scientific and medical journals found in databases such as Medline, Embase, Popline
- Databases on drug side effects (reactions, current problems, etc.)
- Unpublished reports
- Drug regulatory agency reports
 - U.S. Food and Drug Administration
 - European Medicines Agency
- National drug utilization data and other local publications
- Drug prices



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

Searching for Dependable Information: Key URLs (1)

- Clinical Evidence—
<http://clinicalevidence.bmj.com/cweb/index.jsp>
- Database of Abstracts of Reviews of Effects (DARE)—
<http://www.crd.york.ac.uk/crdweb/Home.aspx?DB=DARE>
- Cochrane Library—
<http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME>
- Medline—<http://medlineplus.gov/>
- Free Medical Journals—
<http://www.freemedicaljournals.com/>
- U.S. Centers for Disease Control and Prevention—www.cdc.gov
- HIF Net—
<http://dgroups.org/Community.aspx?c=a4287629-aff1-40b6-a560-4e91e6f568bb>
- Pub Med Central—
<http://www.ncbi.nlm.nih.gov/pmc/>
- Guidelines International Network—
<http://www.g-i-n.net/>
- National Institute for Clinical Excellence—
<http://www.nice.org.uk/>
- Scottish Intercollegiate Guidelines Network— <http://www.sign.ac.uk/>
- New Zealand Guidelines Group—
<http://www.nzgg.org.nz/>
- NHS Clinical Knowledge Summaries—
<http://www.cks.nhs.uk/home>
- E-Drug—<http://www.essentialdrugs.org/index.php>
- INASP Health Links—<http://www.inasp.info/>
- Indices—
<http://www.essentialdrugs.org/indices/about.php>



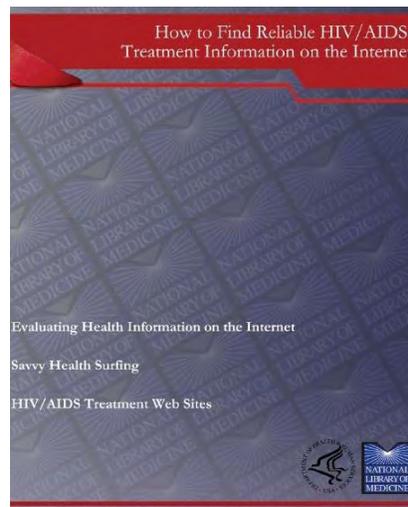
Searching for Dependable Information: Key URLs (2)

- British National Formulary— www.bnf.org
- WHO Medicines Library—
<http://apps.who.int/emlib/>
- WHO Model Formulary—
<http://apps.who.int/emlib/ModelList.aspx?Language=EN&MdType=FORMULARY>
- WHO Model List of Essential Medicines—
<http://www.who.int/medicines/publications/essentialmedicines/en/>
- European Medicines Agency—
<http://www.emea.europa.eu/>
- U.K. Health Protection Agency—
<http://www.hpa.org.uk/>
- HINARI— www.healthinternetwork.org
- European Portal of all European National Agencies—
<http://www.hma.eu/>
- U.S. Food and Drug Administration—
www.fda.gov
- Japanese Pharmaceutical and Medical Device Agency—
<http://www.pmda.go.jp/english/index.html>
- Health Talk Online (formerly DIPEX)—
<http://www.healthtalkonline.org/>
- HealthInsite, Australia—
<http://www.healthinsite.gov.au/>
- International Society of Drug Bulletins (ISDB)—
<http://www.isdbweb.org/pag/summary.php>
- Popline—
<http://db.jhuccp.org/ics-wpd/popweb/>



Internet – a Great Free Source if Surfed Safely

- The vast majority of health information, including medicine and safety information, can be obtained free from the Internet if we use trustworthy and up-to-date sites
- Otherwise, we may end up getting unreliable, biased, and outdated information



URL: <http://orise.orau.gov/healthcomm/files/hiv-aids/hiv-aids-treatment.pdf>



Bulletins – A Key Source of Proactive Information

- Medicine information and medicine safety bulletins are a key source of providing *proactive* information
- The subsequent slides will focus on the *process* of developing and implementing such bulletins

Starting or Strengthening a Drug Bulletin

A Practical Manual

2005



<http://apps.who.int/medicinedocs/en/d/Js8111e/3.html>



The Process: *Planning Resources*

- Set strict priorities when resources are limited
- Be realistic about what you want and what options are possible
- Identify what human, financial, and material resources are already available with you and with others locally
- Check what additional resources are needed to make a start
- Collaborate with others doing similar work locally – helps bring synergy in action and avoid resource duplication
- Start small, and gradually expand—take a phased approach



The Process: *Financing the Bulletin*

- No magic formula about how to finance a bulletin. Possibilities include—
 - Government funding within the framework of National Medicines Policy
 - Funding from additional sources of support (e.g., donors, development partners)
 - Bulk subscriptions from government health agencies, hospitals, professional associations, consumer groups, nongovernmental organizations
 - Individual subscriptions once the bulletin is firmly established
- For sustainability, make sure funders and subscribers continue to see bulletin's value
- Ensure, however, that funding does not compromise the bulletin's independence



Adapted from: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Editorial and Advisory Board Roles*

- Editorial Board
 - Set and follow editorial policy
 - Avoid conflict of interest
 - Develop critical analysis capability (get short trainings or train yourself)
 - Ensure the board is multidisciplinary
 - Give direction, select possible topics, define outline, organize work of authors and reviewers, ensure quality control, analyze feedback from readers, and manage relations
- Advisory Board
 - Provide guidance and quality oversight
 - Help discover new information sources and collaborations
 - Promote the bulletin



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Standard Operating Procedures*

- *Standard Operating Procedure* (SOP) is a written procedure that documents, in a step-by-step manner, how a specific task is to be performed
- It brings consistency, uniformity, and quality in the task performed
- An example is the “editorial planning grid” on the next slide



The Process: *Editorial Planning Grid*

Make an Excel checklist with an expected completion date for each component

- Serial # (or some identifier #)
- Initial work
 - Identified topic
 - Responsible editorial staff
 - Objectives and outline of the topic with completion date
- Draft development
 - Author name
 - Author e-mail, phone
 - Sent date
 - Expected date of return
- Review
 - Reviewer(s) name
 - Reviewer(s) e-mail, phone
 - Sent date/expected return date
- Author re-write as needed
 - Date sent with reviewer comments
 - Expected return date
- Final editorial review
 - Responsible editorial staff
 - Expected completion date
- Final work
 - Final typo check and acceptance date
 - Planned for publication in issue #
- Any additional notes



The Process: *Editing for Quality*

Edit the article to be—

Accurate:	Provide objective, up-to-date, and correct information
Comparative:	Help the reader chose and make decisions
Transparent:	Show the “level of available evidence” and how conclusions were drawn
Locally relevant:	Contextualize and adapt to the needs of local readers
Easily readable:	Present in a short, simple, and consistent style



Adapted from: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Avoiding a Confusing Mixture*

Separate—

Facts	from	Hypothesis or extrapolation
Area of knowledge	from	Area of belief
Scientific evidence	from	Opinions
Clinically relevant endpoints	from	Surrogate endpoints
Therapeutics	from	Clinical pharmacology
Results of controlled experimental trails	from	Descriptive, nonexperimental data



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Simplify the Articles*

- Less important facts in *footnotes*
- *Boxes* for practical tips
- *Subtitles* to help scan the key contents
- Keeping the content *brief*
- *Separating* facts from editorial comments
- Clearly *distinguishing* what is already known from something that is yet to be tested
- *Avoiding* words that are too technical
- *Avoiding* unnecessary abbreviations
- Putting simple labels and headings in graphs and tables



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Examples of Topics that Deserve Rapid Publication*

- Drug withdrawals for safety reasons
- Important regulatory decisions that change everyday practice or patients' daily lives
- Newly identified side effects
- Serious adverse drug reactions
- Local epidemics
- Implementation of new government policies on medicine
- Direct-to-consumer ad of a drug not yet familiar to health professionals
- Misleading promotional campaigns on a specific drug
- Interpretation of important new studies
- Letters to the editors, controversies



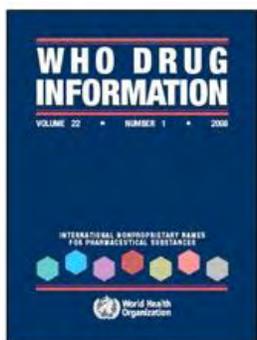
Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: What are Topics of Local Interest and Value?

- Editors should use all opportunities to identify topics of local interest and need (e.g. surveys; ideas from local conferences; current local and media issues; local hospital ADR, drug quality, medication error or treatment failure experiences)
- What topics have already been published in the *Clinical Pharmacy Information Bulletin*?
- Which topics relating to drug and therapeutics information will be valuable to publish in future issues?
- Which topics relating to drug safety and pharmacovigilance will be valuable to publish in the future issues?
- The following several slides give examples of what some bulletins have tried to cover



WHO Drug Information, 2009; 23(1):8-11



URL:
<http://www.who.int/medicines/publications/druginformation/issues/DrugInfo09vol23-1.pdf>



WHO Drug Information Vol 23, No. 1, 2009

Herbal and Traditional Medicines

WHO Congress on Traditional Medicine and the Beijing Declaration

Representatives of over 70 Member States attended the first WHO Congress on Traditional Medicine held on 7–9 November 2008 in Beijing, China. Satellite symposia were held to discuss related technical topics. Presentations were given by representatives of organizations such as the World Self-Medication Industry (WSMI), the World Federation of Acupuncture-Moxibustion Societies (WFAS), the International Pharmaceutical Federation (FIP), and the World Federation of Chiropractic (WFC). Almost 1500 people were present at the events.

Highlights of the Congress included adoption of the Beijing Declaration promoting the safe and effective use of traditional medicine and calling on WHO Member States and other stakeholders to take steps to integrate traditional medicine, complementary and alternative medicines (TM/CAM) into national health systems.

Sharing of national experience and information by Member States in five areas aimed at leveraging future action.

- National policy on TM/CAM.
- National regulation of traditional and herbal medicines.
- TM use in Primary Health Care.
- National regulation of TM/CAM practice.
- Research on TM/CAM.

Participants visited community health centres, clinics and hospitals for traditional medicine. These models showed how traditional and Western medicine can work together and be successfully integrated into China's health system.

**Drug and
Therapeutics
Letter, July-
Aug 1996**



DRUG & THERAPEUTICS LETTER (JULY-AUGUST 1996)

DRUGS BANNED IN NEPAL*

- A. Banned Drugs (1984) (2040).**
Khanda 33, No. 11, Nepal Rajpatra Part 3, Date: 2040/3/13.
Notice issued by His Majesty's Government, Ministry of Forest & Soil Conservation.
- Medicine banned for production, sale, distribution, and import (oral and parenteral use):
- List 1 (Effective from 2040/3/13)
1. Amidopyrine and its combinations.
 2. Phenacetin and its combinations.
 3. Cloquinol and its combinations.
- List 2 (Effective from 2040/5/1)
1. Combination of vitamins with tranquilisers and/or anti-inflammatory agents.
 2. Combination of antispasmodic atropine with analgesics and antipyretics.
 3. Combinations of yohimbine and/or strychnine with testosterone and/or vitamins.
 4. Combinations of iron with strychnine and/or yohimbine and/or arsenic.
 5. Combinations of sodium bromide or chloral hydrate with other drugs.
 6. Combinations of antihistamines with antiarrhoeals or with antiamoebic.
 7. Combinations of vitamin with analgesics.
 8. Combinations of penicillins with sulfonamide.
 9. Combinations of vitamin C with tetracycline.
 10. Combinations of steroids with other drugs except with ephedrine and xanthenes.
 11. Combinations of chloramphenicol
- except in combinations with streptomycin.
12. Combination of vitamins with antitubercular drugs except with combinations of antitubercular drug isoniazid with vitamin B₆.
 13. Combinations of ergot except with caffeine.
 14. Combinations of strychnine and/or caffeine in tonics.
- B. Banned Drugs (1987) (2043)**
Khanda 36, No. 8, Nepal Rajpatra Part 3, 2043/2/19
Notice Issued by His Majesty's Government, Ministry of Health.
- Oral rehydration salts which are not composed according to World Health Organisation's formula are banned.
Composition: (g/litre) as recommended by WHO -
- | | | |
|-------------------------------|----------|------|
| Sodium chloride | 3.5gm | 3.5g |
| Potassium chloride | 1.5gm | 1.5g |
| Sodium bicarbonate | 2.5gm or | - |
| Trisodium citrate (dihydrate) | - | 2.9g |
| Glucose | 20gm | 20g |
- C. Banned Drugs (1991) (2047)**
Khanda 40, No. 31, Nepal Rajpatra Part 3, Date: 2047/8/3.
Notice Issued by His Majesty's Government, Ministry of Health.
- Medicines banned for import and export effective from 2047/8/3 and banned for production, sale, distribution, storage and transportation effective from 2048/2/3.
- a) Harmful Drugs:**
1. Oxyphenbutazone and its combinations.
 2. Phenylbutazone in combination with other drug.
 3. Sulphaguanidine and its combinations.

* Reproduced with written permission from June 1992 (Vol. 2, No. 1 & 2), June 1993 (Vol. 3, No. 1 & 2), and January 1994 (Vol. 4, No. 1) issues of *Drug Bulletin of Nepal*, published by the Department of Drug Administration, Ministry of Health, HMG, Nepal.

**The Sri Lanka
Prescriber,
September 2007**



URL: <http://www.spc.lk/september.pdf>



Cover picture

Bibile the visionary
(Real reform never waits for
rational justification)

The late Professor Senaka Bibile was a visionary. In 1971 he introduced major pharmaceutical reforms in Sri Lanka. He was criticised by a section of the Sri Lankan medical establishment supported by the multinational drug industry. However, the United Nations agencies took immediate notice. The Technology Division of the United Nations Conference on Trade and Development (UNCTAD) saw the importance of Bibile's reforms and commissioned him to write down his experiences. In June 1977 UNCTAD published "Case Studies in the Transfer of Technology: Pharmaceutical Policies in Sri Lanka". The original written in English by Professor Bibile was translated into Arabic, Chinese, French and Spanish and widely distributed to developing countries in Africa, Asia and Latin America and the Middle East. Professor Bibile was invited to join UNCTAD and set-up a pharmaceuticals unit in the Technology Division, UNCTAD, Geneva. He took up the position in July 1977.

Professor Bibile's reforms were also taken up by the World Health Organization (WHO). In May 1981 during the debate on pharmaceuticals at the World Health Assembly Sessions

Therapeutics Letter (various issues)

**Increasing Drug Costs
Are we getting good value?**

**Clinical implications of
recent key therapeutic trials**

**THERAPEUTICS
INITIATIVE** Evidence Based
Drug Therapy
**Sources of Drug
Therapy Information**

Busy clinicians need distilled, concise, reliable, and readily available information about all types of therapy, especially drugs. 1) Distilled and concise, because most practitioners have little time to read original evidence or to perform their own detailed analysis of large volumes of information. 2) Reliable, because

therapeutics letter
May/June 2000



**Clinical Pearls from the
most popular Cochrane
reviews in 2007**

**Herbal Medicines
An Evidence Based Look**



DRUG & THERAPEUTICS LETTER

A bimonthly bulletin from
Drug Information Unit, Department of Clinical Pharmacology, TU Teaching Hospital,
Institute of Medicine, PO Box 3578, Maharajgunj, Kathmandu, Nepal.
Tel: 412303, 412404, 412805, 412707 Ext: 1093.

VOLUME 2 NUMBER 3 MAY-JUNE 1995

QUESTION-ANSWERING SERVICE OF THE DRUG INFORMATION UNIT

The Drug Information Unit (DIU) provides answer to any drug-related question asked by doctors, nurses, pharmacists and other paramedical staff of the TU Teaching Hospital as well as teachers and students of the Institute of Medicine. The questions can be put to the DIU staff either by telephone or in person on all working days between 9 am and 2 pm. The DIU office is at room number 1-85 in the Doctor's Room Block of the TU Teaching Hospital. The internal telephone number is 1093.

In the first eight months of its service (Oct 1994 - May 1995) the DIU answered 223 questions. As examples, two questions with their answers are presented below. One question was asked by a consultant physician and the other by a student.

DIU encounter no. 178:

A 27-year old lady has been taking carbimazole 10 mg and propranolol 10 mg twice daily for the last one year for thyrotoxicosis. She wants to become pregnant without undergoing thyroid surgery. The questions are: (i) Can the lady be on carbimazole during pregnancy? (ii) Is there any teratogenic risk of carbimazole? (iii) Can the lady continue carbimazole for another year (making a

total of 2-year therapy)?

The answer provided:

The antithyroid drugs (including carbimazole) do have a definite risk of producing congenital disorders in addition to the risk of causing fetal hypothyroidism and goitre (FDA Pregnancy Category D).

Several infants born of mothers exposed to methimazole have developed scalp defects (aplasia cutis) as well as other congenital defects such as: upper respiratory tract defects associated with absence of nipples and mental retardation; earlobe malformation; and imperforate anus. (Carbimazole is converted in the body to methimazole and the reports on methimazole are applicable to carbimazole, too.)

However, the actual risk of fetal death, goitre, hypothyroidism and congenital abnormalities with the administration of antithyroid drugs seems to be low (especially if the doses are kept low) and these drugs have been successfully used in pregnancy to control maternal and fetal hyperthyroidism.

Taken together, the existing facts suggest that it is probably best to avoid being pregnant while taking antithyroid drugs because of a small but definite risk. However, if a patient is very keen to become pregnant without undergoing

DRUG & THERAPEUTICS LETTER (MAY-JUN 1995)

thyroid surgery, it may be possible to take the risk but she as well as her husband have to fully appreciate that risk.

If it is decided to be pregnant while on antithyroid medication, it is highly recommended that the drug be given at the lowest effective dose to maintain maternal thyroid function within the upper-normal range for normal pregnant women, especially during the last trimester, to reduce the risk of fetal and maternal hypothyroidism and goitre. With the progression of pregnancy the thyroid hyperfunction may diminish, thus allowing a reduction in antithyroid dosage and, in some patients, even withdrawal of antithyroid therapy 2 to 3 months before delivery. However, thyroid function may vary and frequent and careful monitoring should be done to work out the dosing schedules.

Some clinicians consider propylthiouracil as the drug of choice for women who require antithyroid agents during pregnancy. This drug crosses the placenta less easily than methimazole (and carbimazole, which gets converted to methimazole *in vivo*). However, propylthiouracil is not available in Nepal.

The present patient, Mrs ABC, is taking carbimazole (Neomercazole) 10 mg twice daily. If she decides to become pregnant it would be better (if possible) to try to reduce the dose of the drug to 5 to 15 mg per day, which is its typical maintenance dose.

Antithyroid drugs are generally given for one to two years. Mrs ABC has been taking carbimazole for one year and it is, therefore, possible to continue

the drug for another year.

Mrs ABC is also taking propranolol 10 mg twice daily as an adjunct to carbimazole. In view of the fact that propranolol is liable to cause fetal growth retardation and neonatal respiratory depression, it is probably better to try to avoid this drug if she becomes pregnant.

Sources:

1. AshRx Plus, Drug Information Program. USA: Canadac Corporation, 1990.
2. Briggs GG et al. eds. Drugs in pregnancy and lactation Baltimore: Williams & Wilkins, 1990.
3. Gilman AG et al. eds. Goodman and Gilman's the pharmacological basis of therapeutics. New York: Pergamon Press, 1990.
4. Isselbacher KJ et al. eds. Harrison's principles of internal medicine. New York: McGraw-Hill, Inc., 1994.
5. Reynolds JEF, ed. Martindale the extra pharmacopoeia. London: The Pharmaceutical Press, 1993.

DIU encounter no. 180:

Is it true that new drugs are being developed for leprosy that might shorten the treatment duration of this disease?

The answer provided:

Earlier leprosy used to be treated with dapsone monotherapy but in 1982 WHO recommended the use of multi-drug therapy (MDT) consisting of dapsone plus clofazimine plus rifampicin for multibacillary disease and dapsone plus rifampicin for paucibacillary disease. The MDT has been generally accepted and widely used. But the main problem with this regimen is that it needs to be given for 2 to 10 years in lepromatous leprosy. Moreover, the clofazimine component of MDT discolours the skin and many light-skinned people find this very disturbing because they fear others might discover that they are taking leprosy treatment.



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Tel: 412303, 412404, 412505, 412707 Ext: 1093.

VOLUME 3 NUMBER 2 MARCH-APRIL 1998

SALE OF 'CELPHOS' AND OTHER PESTICIDES AND INSECTICIDES: NEED FOR REGULATION

Contributed by Sudhanshu Sharma, MBBS, MD, Head, Department of Forensic Medicine, Institute of Medicine, Kathmandu.

Among the 70-75 autopsies done every month at the Bir Hospital Mortuary in Kathmandu, 2-3 cases are of aluminium phosphide ('Celphos') poisoning, mostly suicidal. 'Celphos', a commonly used grain preservative, consists of fumigant aluminium phosphide 68% w/w in the form of a tablet. It can be purchased freely at any of the hundreds of Kathmandu shops that cater to the agricultural and veterinary needs. More than two dozens of pesticides/herbicides/insecticides are sold in such establishments and anyone can buy anyone of them with great ease.

Other countries do have stiff regulations on the stocking and selling of these poisonous chemicals. The time has come to introduce proper regulations in Nepal, too. If the Government does not act the time will surely go away but not without increasing deaths due to 'Celphos' and other poisonous chemicals manifold.

ALUMINIUM PHOSPHIDE POISONING

Common brands: Celphos, Quickphos, Alphos, Phosphotek, Phostoxin.

Poisoning due to aluminium phosphide, which carries a very high risk of mortality, has reached epidemic proportions in North India and is increasing in Nepal, too.

Aluminium phosphide is a solid fumigant that is commonly used as a grain preservative. On contact with moisture, it liberates phosphine gas, which is the active poison. Phosphine is a very toxic gas producing widespread organ damage. It binds with cytochrome oxidase and causes cellular hypoxia. Death usually occurs within a few hours to 4 days of exposure, although it may sometimes be delayed for one or two weeks.

A 3-gram pellet of aluminium phosphide gives out 1 g of phosphine. Less than half a gram of aluminium phosphide can be lethal for an adult if the tablet has not been exposed to air. However, the tablets quickly lose potency upon exposure to air.

The common mode of poisoning is the ingestion of aluminium phosphide pellets. In the stomach

DRUG & THERAPEUTICS LETTER (NOVEMBER-DECEMBER 1996)

MDR BACTERIA ISOLATED FROM TUTH IN-PATIENTS

Contributed by Mr Nhushe R. Tachdar and Prof. B. R. Prasad, Dept. of Microbiology, TU Teaching Hospital, Institute of Medicine, Kathmandu.

Multiple drug resistant (MDR) bacterial infections are being increasingly reported from all parts of the world. A 6-month retrospective survey of the culture and sensitivity reports registered at the Microbiology Diagnostic Laboratory of the TU Teaching Hospital (TUTH) from 1 July to 31 December 1995 was done to know about the MDR bacteria isolated from the samples of the TUTH in-patients. It was found that 72 (4%) of the 1790 culture-positive samples (urine, pus, sputum, catheter tip sample, bronchial washing, tracheal aspirate, high vaginal swab, conjunctival swab, and bile sample) were completely resistant to commonly used antibacterials such as ampicillin, cephalixin, cotrimoxazole, ciprofloxacin, gentamicin, and tetracycline. Three (4.2%) of the

MDR isolates were staphylococci and they were found to be totally resistant to erythromycin and cloxacillin as well. Forty-two (58.3%) of the 72 MDR isolates were bacteria of the enterobacteriaceae family, of which the predominant isolates were *E. coli* (47.2%). *Pseudomonas spp.* were the most common isolates among the TSI non-fermentative groups of bacilli and constituted more than one-third (25/72) of all the MDR bacteria isolated. Gram-negative rods were further tested for sensitivity to two third-generation cephalosporins, ceftaxime and ceftazidime. Two-thirds of them were found resistant to ceftaxime and every one in eight of them was found resistant to ceftazidime.

MDR bacteria, particularly *E. coli* and *Pseudomonas spp.*, were isolated from samples obtained from patients admitted to most of the wards of TUTH (Table 1). The majority of MDR isolates were from samples of urine (47.2%), pus (23.6%), and sputum (18.1%).

Table 1: MDR bacteria isolated from patients admitted to the different wards of TUTH during a period of 6 months (n=72).

MDR Strains	MSW	FSW	MDW	Ortho	Annex	ICU	Annex II	Post-op	Neuro	TOTAL
<i>E. coli</i>	6	9	4	3	5	2	2	3	-	34 (47.2%)
<i>Pseudomonas sp.</i>	6	2	3	6	2	2	2	1	1	25 (34.7%)
<i>Klebsiella sp.</i>	1	2	2	-	1	1	-	-	-	07 (9.7%)
<i>Staphylococcus sp.</i>	1	-	1	-	-	1	-	-	-	03 (4.2%)
<i>Acinetobacter</i>	1	-	1	-	-	-	-	-	-	02 (2.8%)
<i>Citrobacter</i>	-	-	-	-	-	-	-	-	-	01 (1.4%)

Note: MSW = Male Surgical Ward; FSW = Female Surgical Ward; MDW = Male Medical Ward; Ortho = Orthopaedic Ward; ICU = Intensive Care Unit; Post-op = Post-operative Ward; Neuro = Neuro Ward.



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Institute of Medicine, Tribhuvan University
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Tel: 977-1-412303, 412505, 412707 Ext: 1093.

VOLUME 5 NUMBER 2 MARCH-APRIL 1998

WRONG DRUG GIVEN BY AN UNAUTHORISED DISPENSER

Contributed by Bal Krishna Khakrel, MPharm, MSc, National Operations Officer, HMG/WHO Collaborative Essential Drugs Programme, Department of Drug Administration, Bhanu Bazar, Kathmandu.

On 23 December 1997, Ms RR was prescribed tablet **Corce-K** (a combination product containing rutin, vitamin C and vitamin K) by a private practitioner in Thapathali area of Kathmandu. The prescription was presented to Rajdhani Medical Hall in the same locality by the patient party. But unfortunately, tablet **Ultra-K** was dispensed. This is an altogether different product containing diclofenac potassium. Some degree of resemblance in the names of these two drugs might have contributed to this mishap.

As per the notice published by the Department of Drug Administration (DDA) in the daily newspaper *Gorkhapatra* on 12 January 1998, the case was reported to the Department by the patient party. Since the case was reported with supporting documents such as the doctor's pres-

cription and the receipt of purchase of the drug from the Pharmacy, it was quickly confirmed that the mistake had been made in dispensing the drug. The wrong drug was dispensed from the shop by someone who was not a DDA-recognised 'Vyabasayi' for sale-distribution of prescription drugs. Mr A, the actual DDA-recognised 'Vyabasayi' for that Pharmacy, was found negligent, because he allowed an unauthorised and incompetent person to dispense prescription items in his absence. As per the regulatory decision which was published in the said newspaper, the Vyabasayi Recognition Certificate of Mr A was suspended for six months.

This case highlights three important points:

- occurrences of errors due to similarity in product names,
- the problem of dispensing drugs by unauthorised persons in Nepal, and
- the importance of obtaining bill or receipt by the patients or their caregivers while purchasing medicines.



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Institute of Medicine, PO Box 3578, Maharajgunj, Kathmandu, Nepal.
Tel: 977-1-412303, 412505, 412707 Ext: 1093.

VOLUME 4 NUMBER 3 MAY-JUNE 1997

ISDB MEMBERSHIP

This Bulletin has become a full member of the International Society of Drug Bulletins (ISDB), which is a global network of independent bulletins on drugs and therapeutics. The Society is represented by bulletins from over 40 countries of the world.

YET ANOTHER MEDICATION ERROR

Contributed by Dr Shekara Acharya, Dept. of Medicine, TU Teaching Hospital, Institute of Medicine, Kathmandu.

Mr KMT, a 72-year old man from Gongabu, was brought in an unconscious state to the Emergency Room of TU Teaching Hospital at 7.45 pm on 15 April 1997. The history was of only a few hours. He started becoming drowsy after around 4 pm on that day and became totally unconscious about 15 minutes before being brought to the Hospital. No other contributory history was obtained. Detail clinical examination was not rewarding either.

Blood and urine samples were sent to the laboratory for different

tests and chest X-ray and ECG were done. The patient was also planned for CT scan.

After a while the investigation reports became available. The blood sugar level was found to be dreadfully low (0.6 mmol/L or 10.8 mg%). The patient was given four ampoules of 50% dextrose i.v. and was then put on 10% dextrose i.v. drip. He improved dramatically and was subsequently admitted to the Annex II Medical Ward (in-patient no. 200156, bed no. 609 B) with a diagnosis of severe hypoglycaemia (cause?). Even such possibilities as insulinoma and hepatoma were entertained. Financial and psychological strains to the patient's family were unavoidable during the course of further investigations. But they did not help in the diagnosis.

Reviewing the history from the patient himself after he came to a much better shape was the road to the real diagnosis. The patient reported that he had been constipated for the last two weeks, for which a local practitioner prescribed him **Duocolax** (bisacodyl). He purchased 10 tablets, took two the previous night and

DRUG & THERAPEUTICS LETTER

A bimonthly bulletin from
Drug Information Unit, Department of Clinical Pharmacology, TU Teaching Hospital, Institute of Medicine, PO Box 3578, Maharajgunj, Kathmandu, Nepal.
Tel: 412303, 412404, 412505, 412707; Fax: 1093.

VOLUME 9 NUMBER 4 JULY-AUGUST 1996

BRAND NAMES THAT SOUND OR SPELL CONFUSINGLY SIMILAR

There is mention in the literature that similar drug names can be confusing and that they can cause, and have actually caused, errors. The problem may not be much if the two similar brand names are of the same drug but it can be significant if the confusion is between the names of two different drugs. Such a confusion has a special potential to cause serious consequences if the drugs confused are of narrow therapeutic margin. Prescribers, dispensers, nurses, consumers and other drug handlers should be alert to the possibility of errors arising from this "look-alike and sound-alike" problem. Table 1 gives some examples of brand drug products whose names are so closely similar to each other that confusion can easily occur.

Table 1: Proprietary products available in Nepal whose names are confusingly similar.

S. No.	Brand 1 (Ingredient(s))	Brand 2 (Ingredient(s))
1.	Prinox (nortriptyline)	Prinox 500 (amoxicillin)
2.	Secni Forte (secnidazole)	Segnil DS (co-trimoxazole)
3.	Doaxor (doxycycline)	Doaxic (doxycycline)

Table continued.....

4.	Merep - 2 (pamidate)	Mazep (carbamazepir)
5.	Eruasa (enalapril)	Inusa (lisinopril)
6.	Puloran (paracetamol + phenylpropanolamine + chlorpheniramine maleate)	Pularamine (dextchlorpheniramine maleate)
7.	Flaxhol (methocarbamol + paracetamol)	Flaxdol (oxycodone/lylne)
8.	Fortum (cefazolin)	Fortuin (gentamicin)
9.	Flaxon (erythromycin)	Flroxin (fluvastatin sodium)
10.	Dizec (pancreatin)	Dizep (diazepam)

Note: All the drugs mentioned in this Table is marketed as tablets except for Doaxor/Doaxic (in capsule form) and Fortum/ Fortuin (injection form).

Source: Joshi MP, Shrestha PK. J Inst Med 1996; 18: 97-100

PNEUMONIA: THE BIG KILL! DISEASE IN NEPALESE CHILDRI

Contributed by Dr. Pushpa R. Sharma associate professor in paediatrics Institute of Medicine, Kathmandu

In developing countries most the cases of pneumonia are bacter in origin, and mortality due to it condition is 7-18% in children und the age of 5 years. The me:

DRUG & THERAPEUTICS LETTER 2001, Volume 8, Number 4

Table III: Price differences amongst different brands of some drugs.

Drug	Prices (NRs) of different brands (Manufacturers)					
	4.06 Zoban (P&G)	6.70 Seras (Dabur)	10.19 Ceprosid (Cadila)	11.79 Cilbin (Sintec)	13.80 Ciras (Santec)	15.80 Ciras (Santec)
Ciprofloxacin 500 mg	8.90 Pantox (D.P.P.)	9.00 Cureson (Lanusa)	10.17 Loren (Wyer)	10.48 Dermoxy (Wyer)	10.71 Wymox (Wyer)	11.20 Cefurox (Sintec)
Amoxicillin 500 mg	13.80 Droid (Drona)	17.50 Ciderol (NPL)	17.75 Kefocin (Ranbaxy)	17.90 Cefurox (Sintec)	18.20 Otolol (Lupin)	18.20 Otolol (Lupin)
Cephadroxi 500 mg	5.00 Prinox (CPL)	5.75 Pylosac (Cures)	6.25 Giose (Econost)	6.34 Ocid (Cadila)	8.43 Oman (Dr. Reddy)	8.43 Oman (Dr. Reddy)

6. New drugs often cost more than older drugs. Some of the new drugs can be quite expensive. For example, clarithromycin (250 mg twice daily x 5 days) costs approximately four times more than the older agent, erythromycin (250 mg x 4 times x 5 days).

Not all the new products that become marketed are real 'breakthroughs'; some of them are just 'me-too' drugs. Even if a newly marketed drug proves to be really 'good', it does not mean that older, well-tried and often cheaper drugs become less valuable. There is a tendency amongst some health workers to use expensive new drugs even when older and cheaper alternatives could do the work equally well. We should always be able to convince ourselves of the 'real' need for

prescribing expensive new agents to justify the extra cost involved; we should not prescribe them just because it is fashionable.

7. Combination products usually cost more than single-ingredient preparations. Avoiding unnecessary use of combination products also helps in reducing prescribing costs.

In conclusion, it is desirable to aim at reducing expenditure on drugs so long as the quality of patient care is not compromised. Cost-conscious prescribing is one of the means that can help achieve substantial reduction in drug expenditure.

Source: Reproduced with editor's permission, in abridged and modified form, from the following source:
Joshi MP, Shrestha PK. Cost-conscious prescribing. Journal of the Nepal Medical Association 1991; 25: 223-226.

Editor: Mahan P Joshi, MBBS, MSc, MD, professor and head of the Department of Clinical Pharmacology and doctor in charge of Drug Information Unit.

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Medication errors: a threat to safety of patients (part One)

Joseph Rushubiza

The goal of medication use is to achieve specific therapeutic outcomes that improve patient's quality of life while minimising risks to the patient. The inherent risks associated with use of medicines include adverse drug reactions and medication errors. Adverse drug reactions have been defined as noxious and unintended responses to medicines that occur at doses normally used in man while medication errors have been defined as any preventable events that occur during medicine use process that lead to inappropriate medication use or to potential or actual patient harm. The focus of this article is on medication errors.

From the WHO Pharmaceutical Newsletter

ACE inhibitors and angiotensin II receptor antagonists
Not for use in pregnancy

UK. The MHRA advises that angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor antagonists that are licensed for various indications including hypertension, should not be used at any stage of pregnancy. In addition, use in women who are planning pregnancy should be avoided

Fluconazole
Fixed drug eruption The Lareb has received five reports of fixed drug eruption associated with capsules between 1995 reaction onset ranged from two years. Reports in the WHO (CSI) reports of fixed drug eruptions with fluconazole use. Reference: Reactions weekly 1186; 2008.



Drug and Therapeutics Bulletin 2008;46:49-52; doi:10.1136/dtb.2008.06.0014
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Three new drugs for type 2 diabetes

Relevant BNF section: 6.1.2.3

For many patients with type 2 diabetes mellitus, metformin plus appropriate treatment for cardiovascular risk factors form the cornerstone of drug therapy.¹ However, the progressive impairment of both the secretion and action of insulin in the condition mean that high blood glucose concentrations usually worsen over time, so necessitating escalation of hypoglycaemic therapy.¹ Three drugs in two new classes that act on the hormonal regulation of insulin secretion have been launched recently for use as add-in therapies in patients with type 2 diabetes: ∇ exenatide (Byetta – Eli Lilly), ∇ sitagliptin (Januvia – MSD), and ∇ ildagliptin (Galvus – Novartis). Here we consider whether they have a role in the management of such individuals.

Drug and Therapeutics Bulletin

Prescribe in English

PRESCRIBE AWARDS

1981-2008 : 28 years of Prescribe Drug Awards

Translated from *Rev Prescrire*
February 2009; 29 (24): 95-98



(1)	Plaque d'Or/Golden Pill	Honours list
2001-2008	• MACROBIDAG® (Septizol 3 mg/ml) (R)	• Actavis® (ciprofloxacin) (R) + Amphiphil® (fluoxetine) (L) (R) (R) • Conoran® (sildenafil) (R) + Leptoprim® (loxoprofen sodium) (R) (R) • Fluorid® (fluorouracil) (R) + Fluorid® (lidocaine) (R)
2002-2003	(nd awarded)	• Albion® (allicin) (R) (R) + Albion® (silymarin) (R) (R) • Metadol® (paracetamol) (R) (R) + Metadol® (codeine) (R) (R)
2003-2004	• LIPON® (cough) (R)	• Epanor® (paracetamol) (R) (R)
2004-2005	(nd awarded)	• Alcor® (alcorone) (R) + Orimex® (orlistat) (R) (R) (R) • Ulcin® (sucralfate) (R)
2005-2006	(nd awarded)	• Agrester® (acetaminophen) (R) (R) (R)
2006-2007	• ZORNOX® (Z-sulfide) (R) (R) (R)	• GENE De Maly® (acetaminophen) (R) + Fluorocin® (clobetasol) (R)
2007-2008	• LIVELIP® (gemfibrozil) (R) • DECAPHYTIC® (gabapentin) (R)	• Alcor® (sucralfate) (R) + Alcor® (sucralfate) (R) (R) • Alcor® (sucralfate) (R) + Alcor® (sucralfate) (R) (R) • Alcor® (sucralfate) (R) + Alcor® (sucralfate) (R) (R)
2008-2009	• LIVELIP® (gemfibrozil) (R) • RELIOR® (gabapentin) (R)	• Alcor® (sucralfate) (R) + Alcor® (sucralfate) (R) (R) • Alcor® (sucralfate) (R) + Alcor® (sucralfate) (R) (R)



Australian Prescriber (various issues)

Prescribing good oral hygiene for adults

Christopher G Daly, Discipline of Periodontics, Faculty of Dentistry, University of Sydney

Summary

Good oral hygiene is necessary to maintain a healthy mouth. This involves effective, mechanical removal of bacterial plaque from the teeth and from between the teeth every day. Patients need information and instruction about tooth brushing, flossing and interdental brushing for optimal self-care of the teeth and gums. Teeth should be brushed twice a day, with once-daily cleaning of the interdental spaces with floss or an interdental brush.

Key words: dental plaque, periodontal disease, toothbrushing.
(Aust Prescr 2008;32:73-6)

Plaque formation

Following thorough cleaning of the tooth surface, bacteria from saliva begin re-attaching within minutes. It takes approximately 24-48 hours for sufficient plaque to form and be visible as microscopic, milky-white, soft deposits on the tooth surface (Fig. 1). Plaque is a soft deposit so it can be easily removed with toothbrushes and interdental cleaning aids. However, when plaque becomes mineralised (tartar), it requires scaling for removal.

What is the best type of toothbrush?

Toothbrushes with soft bristles are recommended for effective plaque removal. They are able to splay beneath the edge of the gingival margin to remove plaque from the tooth surface in

Pharmaceutical marketing and the internet

Melissa Sweet, Health Journalist, with honorary appointments at School of Public Health, University of Sydney, and School of Medicine, Notre Dame University (Sydney campus)

Summary

Pharmaceutical companies are capitalising on the advent of the internet and the development of new media forms to promote their products. Electronic detailing, interactive websites, email prompts and viral marketing campaigns using social networking sites such as YouTube, MySpace and Facebook are among the tools being used. Such campaigns are targeting both health professionals and the general public. The internet is helping to globalise and to change the nature of pharmaceutical marketing, and thus raises some new challenges for regulators.

Key words: advertising, drug industry, drug promotion.
(Aust Prescr 2008;32:3-4)

Electronic detailing

In the context of drug promotion, detailing has traditionally involved face-to-face contact between a visiting sales representative and a health professional. However, drug companies, especially in North America and Europe, are increasingly turning to electronic detailing or e-detailing for help in marketing their products. E-detailing includes diverse strategies, such as videoconferencing, the provision of electronic education modules, and the use of email and related technologies as prompts and to promote incoming communications. It has been used for disease-awareness campaigns, and for customer relationship management. Presentations to a pharmaceutical marketing conference in Europe suggest that e-detailing is not popular with all doctors.² However, it is cheaper than traditional sales representative and can result in a significant return on investment through increased sales. Some companies are providing financial

The role of drugs in road safety

Olaf H Drummer, Adjunct Professor and Head, Forensic and Scientific Services, Victorian Institute of Forensic Medicine, Monash University, Melbourne

Summary

Drug use is increasingly associated with road accidents. While alcohol and illicit substances dominate, a number of prescription drugs contribute to injury and death. Most drugs do not significantly increase the risks of accidents if they are taken as prescribed, however a number of commonly used drugs can impair the ability to drive safely. Awareness that some drugs affect driving will help to reduce their potential impact on road safety.

Key words: barbiturates, drug abuse, road trauma.
(Aust Prescr 2008;32:33-6)

Alcohol and illicit drugs

Alcohol continues to be the most prevalent drug causing road trauma. In Australia, its prevalence in road fatalities is 25-30% depending on the jurisdiction. The average blood alcohol concentration in fatal accidents is over 0.15%. Cannabis (marijuana) is the second most common drug (found in about 10% of fatalities in Victoria), followed by the amphetamine-type stimulants (ATS) and opioids (OAT). Blood drugs are present in almost 20% of drivers killed in Victoria. A survey of almost 600 injured drivers admitted to a major road trauma hospital found that cannabis products were present in 40%, opioid analgesics in 11% and amphetamines in 4%.¹ During the acute phase of injury, central nervous system stimulants such as the amphetamines and cocaine tend to reduce performance on divided attention tasks, cause tunnel

To mix or not to mix – compatibilities of parenteral drug solutions

Peter Murney, Deputy Director, Pharmacy Department, Concord Repatriation General Hospital, Sydney

Summary

Many injectable drugs cannot be mixed together in syringes or infusions. Some cannot be safely diluted in infusion bags. Incompatibility can involve precipitation, ionic reactions, evolution of gas and denaturation of biological molecules. Knowledge of drug compatibility is needed before mixing drugs. Reference texts can provide information, but data are often unavailable for new drugs. If drugs are mixed together, the mixture should be inspected for precipitates, turbidity or changes in colour, however not all incompatibilities are visible.

Key words: desamp, injections, pharynx, precipitation.
(Aust Prescr 2008;32:98-10)

Mechanisms of incompatibility

Incompatibility problems are more likely to arise when small concentrated volumes are mixed in a syringe rather than in the larger volume of an infusion bag. This is because of higher mutual drug concentrations and potentially greater pH changes in the more concentrated solution. The absence of any visible change to a solution upon mixing does not automatically exclude degradation of either or both components.

Drugs that precipitate upon dilution

Precipitation of a drug from its concentrated injection solution when it is diluted with water or saline is common. However, a small number of injection solutions are formulated in non-aqueous solvents to allow dissolution of a poorly water soluble substance in a small volume. In these formulations, dilution of the non-aqueous injection vehicle with water or saline may precipitate the drug.



WHO Safety-related Alerts

WORLD HEALTH ORGANIZATION  ORGANISATION MONDIALE DE LA SANTE

QSM/MC/EA.108

29 April 2003

Information Exchange System

Alert No. 108

Suspension of Manufacturing Licence held by
Pan Pharmaceuticals Limited, Sydney

The Therapeutic Goods Administration (TGA) in Australia has suspended the licence to manufacture medicines held by Pan Pharmaceuticals Limited, Sydney, for a period of six months starting 28 April 2003. This suspension order was issued after TGA inspectors found a series of safety and quality violations by the company, including substitution of ingredients, manipulation of test results and substandard manufacturing processes.

219 products manufactured and supplied by Pan Pharmaceuticals Limited in Australia are being recalled with immediate effect. More products are likely to be recalled in the days ahead. A complete list of all recalled products and other related information are posted on the TGA website (<http://www.health.gov.au/tga/recalls/panprod.htm>). The list can be made available upon request to Dr Lembit Rigo's office, Essential Drugs and Medicines Policy, WHO, Geneva.

This Information Exchange Alert is also posted on the WHO (Essential Drugs and Medicines Policy) website (<http://www.who.int/medicines/edmtopics.shtml>), under Drug Alerts.



Isotretinoin

Risk of teratogenicity

New Zealand. Medsafe has reminded prescribers of indications and the risk of teratogenic effects of isotretinoin. Isotretinoin is an oral retinoid indicated for the treatment of severe forms of nodulo-cystic acne, in particular cystic acne and acne conglobata.

Medsafe is aware that isotretinoin exposure has been responsible for a number of pregnancy terminations in recent years. If exposure to isotretinoin occurs during pregnancy, there is a high risk of a deformed infant or fetal death, even if the exposure is only for a short period. As a result of its teratogenicity, isotretinoin is contraindicated in women of childbearing potential unless an extensive list of conditions for prescribing are met. Medsafe is currently assessing the risk mitigation strategies used by the manufacturers of isotretinoin products in New Zealand.

(See WHO Pharmaceuticals Newsletter No.2, 2007 for a risk management programme in the USA).

Pharmaceuticals Newsletter No. 3, 2009 • 9

ISMP Canada Safety Bulletin

Risk of Tragic Error Continues in Operating Rooms

ISMP Canada Safety Bulletin
Root Cause Analysis of Medication Incidents

Volume 9, Number 2

ISMP Canada Safety Bulletin

March 5, 2009

ALERT: Fatal Outcome after Inadvertent Injection of Epinephrine Intended for Topical Use

Volume 8, Issue 1

ISMP Canada Safety Bulletin

February 24, 2008

Top 10 Drugs Reported as Causing Harm through Medication Error



URL: <http://www.ismp-canada.org/download/safetyBulletins/>

The screenshot shows the ISMP website interface. At the top, the ISMP logo and name are displayed, along with the tagline: "A Nonprofit Organization Educating the Healthcare Community and Consumers About Safe Medication Practices". A navigation menu includes links for Home, Support ISMP, Newsletters, Teleconferences, Forums, Report Errors, Educational, and Online. Below the navigation, the "Medication Safety Alert!" logo is prominent, with a red "Acute Care" icon. A text box states: "The full version of the newsletter is available by [subscription](#). Back issues of the newsletter to January 1996 are available on [CD-ROM](#)." The date "SEPTEMBER 10, 2009" is shown. A bullet point asks: "• [How has the current economy affected patient safety?](#)". To the right, a red banner for the "Medication Incidents Reporting Programme Bulletin" is visible, dated "BULLETIN 23 JULY 2009". Below this, a section titled "The Seven Drug Safety Enhancement" is shown, with a link to a PDF document. Logos for USAID, MSH, and SPS are at the bottom left.

INSTITUTE FOR SAFE MEDICATION PRACTICES
A Nonprofit Organization Educating the Healthcare Community and Consumers About Safe Medication Practices

Home Support ISMP Newsletters Teleconferences Forums Report Errors Educational Online

ISMP Medication Safety Alert! Acute Care

The full version of the newsletter is available by [subscription](#).
Back issues of the newsletter to January 1996 are available on [CD-ROM](#).

SEPTEMBER 10, 2009

- [How has the current economy affected patient safety?](#)

Medication Incidents Reporting Programme Bulletin
BULLETIN 23 JULY 2009

The Seven Drug Safety Enhancement

In a response to the series of drug quality incidents and medication incidents, HA had announced 7 key initiatives (KLI) to enhance the pharmaceutical products procurement system on 26 March 2009.
Link to: <http://ha.honolulu.gov/HospitalExpress/69322Eng.pdf>

USAID FROM THE AMERICAN PEOPLE MSH SPS Strengthening Pharmaceutical Systems

AUSTRALIAN ADVERSE DRUG REACTIONS BULLETIN

Volume 27, Number 4, August 2008

- ☆ New "Blue card" reporting form for ADRs
- ☆ High-dose vitamin B6 may cause peripheral neuropathy
- ☆ Desmopressin and hyponatraemia

The Process: *Design and Production*

- Give the bulletin a distinct identity or personality—
 - Keep appearance consistent issue after issue
 - Carefully decide on font style and size
- Determine number of pages based on the type of information, publication frequency, and staff availability
- Remember: most bulletins only 2–4 pages long
- Use local cultural context to set style and tone of the bulletin
- Color printing will make the product attractive, but increase cost
- Use a single color to highlight boxes and headings at small cost
- Don't change the color in different issues
- With a little training, you can do desk-top publishing yourself
- Before sending to the printer, check for typos or other silly errors

Sources:

- (1) Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005
- (2) Albert T. *BMJ* 1992;305 631-635



The Process: *Distribution and Dissemination*

- Don't neglect distribution and dissemination strategy: it is integral
- Establish relations with other organizations that can distribute bulletin with their materials (e.g., journals of professional associations)
- Send electronically to audiences that have e-mail access (inexpensive)
- Develop and maintain up-to-date database of bulletin recipients
- Periodically follow-up to see if subscribers get their bulletins on time
- Think of ideas to increase readership; for example, leave copies at public places, such as reception counters and lounges; include in a conference package
- Create bulletin webpage and let subscribers know when you update it
- Consider producing CD-ROMs with all issues from previous year(s)



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Follow-up*

- Often a highly neglected component
- Try to make use of every follow-up opportunity that may arise after publication
- Publish errata, corrections, or clarifications in the next issue (e.g., see *Drug and Therapeutics Bulletin* as an example)
- Encourage readers to provide feedback and point out errors
- If the bulletin is also posted on the web, create a good quality, easy-to-use index and update it (e.g., *Australian Prescriber*)
- If possible, track website hits (e.g., *Therapeutics Letter from Canada*)
- See if local journals will publish some key bulletin articles (e.g., Nepal's *Drug & Therapeutics Letter* articles reproduced later in the *Journal of the Institute of Medicine*)



The Process: *Monitoring Quality and Usefulness*

- Internal audit
 - Check for typos/errors, review process, timeliness of information, timeliness of publication, coverage of significant issues, adherence to SOPs, responsiveness to readers' questions/comments, upkeep of mailing list (up-to-date?)
- External audit
 - Conduct readership survey; focus group discussions; in-depth interviews (in person or by telephone)
 - Try to keep survey sample representative; best if an independent external person/group conducts, but can be costly
 - Maximize response through follow-up telephone call/letter to non-responders



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

The Process: *Designing a User Survey*

Develop the exact questions based on the local context. General ideas include—

- How much/how often bulletin is read?
- How easy is bulletin to read?
- Who are preferred authors?
- Appropriate level of detail in articles?
- How useful are various articles or sections?
- Any needs unmet? Any changing requirements? What information is difficult to find?
- Does bulletin influence prescribing practices, advice given to patients, etc.?
- Format acceptable? Suggestions for improving design?
- Publication frequency appropriate?
- Suggestions for future articles?



Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005

Table. Percentage of respondents strongly or somewhat agreeing with the following statements

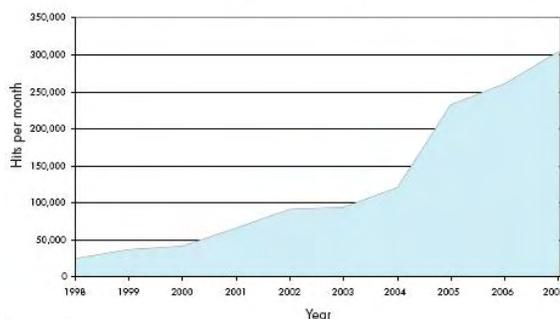
Statements about Therapeutics Letters	% General Practitioners	% Specialist Physicians	% Pharmacists
Serve my educational needs	95	87	96
Have led to changes in my prescribing or recommending	95	71	92
Provide information that I use in my practice	95	82	98
Provide useful information about the cost of drugs	96	90	80
Statements about the Therapeutics Initiative			
Functions independently from industry	99	93	94
Functions independently from the government	65	65	88

Your Opinions of the
Therapeutics Letter: The
2006 Survey, *Therapeutics
Letter*, May-June 2007

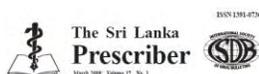
URL: <http://www.ti.ubc.ca/PDF/64.pdf>



Figure 4. TI website monthly hits 1998-2007



Results of the Sri Lanka
Prescriber Readers' Survey,
The Sri Lanka Prescriber,
Mar 2009 (Vol. 17, No. 1)



CONTENTS	
Results of the Sri Lanka Prescriber readers' survey	1
Management of trichloro leucine syndrome	2
Management of blood cancer	4
To ask or not to ask - responsibility of generalist drug selection	7
Current information about drug registration	11

The Sri Lanka Prescriber is sponsored by
the State Pharmaceutical Corporation of Sri Lanka
as a service to the medical profession.

URL: <http://www.spc.lk/march2009.pdf>



Table 4. Mean scores of satisfaction on various characteristics of SLP (scale 0-5)

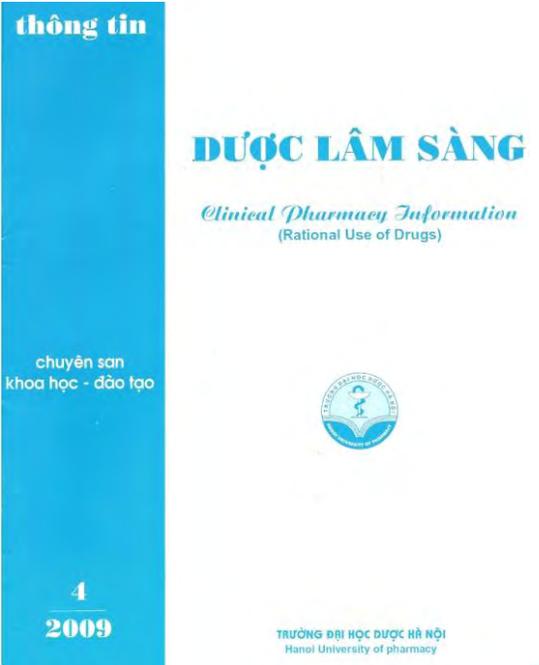
Characteristic	Mean score
Usefulness of information in articles	4.1
Length of articles is convenient	4.0
Depth to which the topic is dealt with	3.7
Level of language appropriate	4.4
Size of each issue (number of pages)	2.8
Format (A4 paper size)	4.2
Number of issues for year	2.7
Reliability/accuracy of information	4.3
Style of articles	3.9

Table 6. Mean scores of satisfaction on areas covered (scale 0-5)

Section	Mean score
Articles on therapeutic management	3.7
Articles on new drugs	3.2
Information on newly registered drugs	3.2
MCQs	3.5
Cover page	3.8
Patient information sheets	3.1

**Surveying the
DI-ADR
Center's
Bulletin**

Discuss and draft the questions you would like to include for doing a users' survey of the *Clinical Pharmacy Information Bulletin*



thông tin

chuyên san
khoa học - đào tạo

4
2009

DUỐC LÂM SÀNG
Clinical Pharmacy Information
(Rational Use of Drugs)

TRƯỜNG ĐẠI HỌC DƯỢC HÀ NỘI
Hanoi University of pharmacy



The Process: *Maintaining Contributors' Motivation*

- Acknowledgement
- Small remuneration if possible
- Sending reference books, etc.
- Providing feedback, respect

“A neglected technique is the simple “thank you,” which costs nothing.”

- Albert T. BMJ 1992;305:631-635

Source: Starting or strengthening a drug bulletin: a practical manual, ISDB/WHO/European Community, 2005



Stakeholder Analysis for DI-ADR Center's *Clinical Pharmacy Information Bulletin*

- Who are current primary audiences (main target group)?
- Who are secondary audiences?
- Who else could benefit from the bulletin?
- What information does each stakeholder potentially need?
- What is currently being covered regarding medicine information, therapeutics information, and medicine safety information?
- What are likely unmet needs?
- How can each stakeholder potentially contribute to the bulletin (in writing, distributing, advocating, fund-raising, etc)?



Examples of Drug & Therapeutics Information Bulletins in English

- *WHO Drug Information* <http://www.who.int/medicines/publications/druginformation/en/>
- *Therapeutics Letter* <http://www.ti.ubc.ca/TherapeuticsLetter>
- *Australian Prescriber* http://www.australianprescriber.com/resource/back_issues
- *Prescriber Update* <http://www.medsafe.govt.nz/profs/PUarticles.asp>
- *Sri Lanka Prescriber* <http://www.spc.lk/index.html>
- *Drug and Therapeutics Bulletin* <http://dtb.bmj.com/archive/> (some articles free)
- *Prescrire International* <http://english.prescrire.org/spip.php?rubrique5> (some articles free)
- *The Medical Letter* <http://www.medletter.com/> (some articles free)



Examples of Drug Safety Bulletins and Alerts in English

- *WHO Drug Alerts*
<http://www.who.int/medicines/publications/drugalerts/drugalertindex/en/index.html>
- *WHO Pharmaceuticals Newsletter*
<http://www.who.int/medicines/publications/newsletter/en/>
- *Australian Adverse Drug Reactions Bulletin*
<http://www.tga.gov.au/adr/aadrb.htm>
- *Medicines and Healthcare Products Regulatory Agency Drug Safety Update*
<http://www.mhra.gov.uk/Publications/Safetyguidance/DrugSafetyUpdate/>
- *Institute for Safe Medication Practices (ISMP) Canada Safety Bulletin*
<http://www.ismp-canada.org/download/safetyBulletins/>
- *ISMP Medication Safety Alert*
<http://www.ismp.org/newsletters/acutecare/archives.asp>
- *MedSafe*
<http://www.medsafe.govt.nz/hot/alerts.asp>



Recipes for Success

Improving the standards, feeling of ownership, acceptance, and credibility of the bulletin through—

- Continuing commitment
- Maintaining clear vision and mission
- Following standard operative procedures
- Keeping need-based, user-centered, and user-friendly
- Having a realistic, feasible, and phased approach
- Offering something different; filling a gap
- Forging partnerships and coalitions and networking
- Keeping advisory membership diverse
- Adequately acknowledging authors' and stakeholders' contributions
- Linking with other services aimed at improving medicine use
- Keeping scope modest, but publishing regularly
- Keeping the bulletin independent, reliable, and transparent



ANNEX 4. A SYSTEM-ORIENTED APPROACH TO IMPLEMENTING PHARMACOVIGILANCE



USAID
FROM THE AMERICAN PEOPLE

MSH

SPS
Strengthening
Pharmaceutical
Systems

A System-oriented Approach to Implementing Pharmacovigilance

Mohan P. Joshi, MBBS, MSc, MD
Senior Technical Manager for Antimicrobial Resistance, and SPS Country Program Manager for Vietnam, MSH/SPS

Hanoi, Vietnam, September 29, 2009

For better health worldwide

“There are some patients that
we cannot help; there are none
whom we cannot harm.”

—Attributed to Arthur L. Bloomfield in BMJ 2004; 329:1-2

Determining Drug Safety

- Premarketing clinical trials have limitations—
 - Relatively small number of patients (usually <3000); difficult to identify uncommon adverse drug reactions (ADRs)
 - No inclusion of special groups (e.g., pregnant women, elderly, children)
 - Often short duration, so difficult to detect delayed ADRs
 - Detected but unproven ADRs listed for legal protection
- Continued post-marketing surveillance critical to ensure a “life-cycle approach” to medicine safety management



3

The Scope of Pharmacovigilance is Expanding

Today medicines safety concerns include—

- ADRs
- Poor quality and counterfeit products
- Medication errors
- Therapeutic ineffectiveness (due to non-adherence, drug interactions, drug resistance, etc)

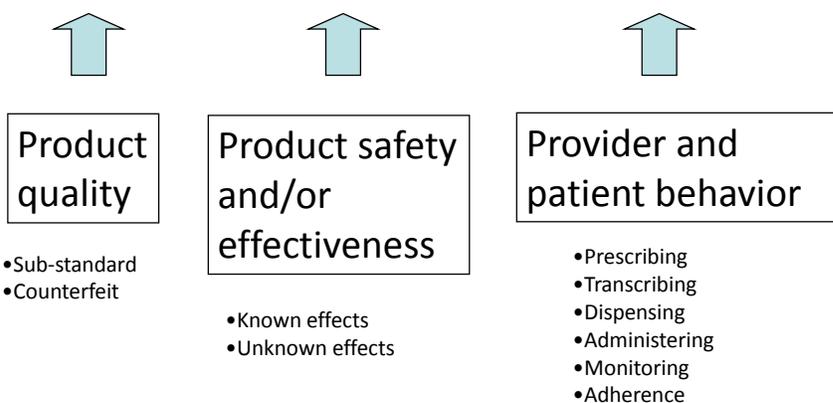


Why are Pharmacovigilance Investments Urgent in Resource-constrained Settings?

- Large increases in the availability and use of relatively new medicines (for HIV/AIDS, malaria, TB)
- Systems to implement pharmacovigilance (PhV) are often weak or non-existent
- Lack of resources and expertise lead to a lack of systematic approach to addressing medicines safety
- Recent global mishaps on quality and safety of medicines
- Lack of evidence-based information to guide treatment and safety-related regulatory decisions
- Traditional and herbal medicines can interact with modern medicines
- Drug quality problems, which are serious in some countries



Medicines-related adverse event



Are ADRs Common?

- A recent large study* of adverse drug reactions (ADRs) in a U.K. hospital confirmed that ADRs are common
- At least 1 in 7 (14.7%) of in-patients experienced an ADR
- Most frequently implicated drugs: opioid analgesics, diuretics, systemic corticosteroids, anticoagulants, and antibiotics
- Over half of ADRs were definitely or possibly avoidable

* Davies EC et al. PLoS ONE 2009; 4(2): e4439
[www.plosone.org]



OPEN ACCESS freely available online

PLoS ONE

Adverse Drug Reactions in Hospital In-Patients: A Prospective Analysis of 3695 Patient-Episodes

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Abstract

Adverse drug reactions (ADRs) are a major cause of hospital admissions, but recent data on the incidence and clinical characteristics of ADRs which occur following hospital admission, are lacking. Patients admitted to intensive care over a six-month period (2005) were assessed for ADRs throughout their admission. Suspected ADRs were recorded and analysed for causality, severity and avoidability and whether they increased the length of stay. Multivariable analysis was undertaken to identify the risk factors for ADRs. The 7% significant event was used as a starting point for multivariate analysis. In the multivariate model, 64% of the 3695 patient episodes assessed for ADRs, 545 (14.7%, 95% CI 13.6–15.9%) experienced one or more ADRs. Half of ADRs were definitely or possibly avoidable. The patients experiencing ADRs were more likely to be older, female, taking a larger number of medicines, and had a longer length of stay than those without ADRs. However, the only significant predictor of ADRs from the multivariate analysis of a representative sample of patients, was the number of medicines taken by the patient with each additional medication multiplying the hazard of an ADR episode by 1.14 (95% CI 1.08–1.22). ADRs directly increased length of stay in 147 (22.9%) patients. The drug most frequently associated with ADRs were diuretics, opioid analgesics, and anticoagulants. In conclusion, approximately one in seven hospital in-patients experienced an ADR, which is a significant cause of morbidity. Increasing the length of stay of patients by an average of 0.25 days/patient admission episode. The overall burden of ADRs on hospitals is high, and effective intervention strategies are urgently needed to reduce this burden.

* Davies EC, Green CF, Taylor S, Williamson PR, Mottram DR, et al. (2009) Adverse Drug Reactions in Hospital In-Patients: A Prospective Analysis of 3695 Patient-Episodes. PLoS ONE 4(2): e4439. doi:10.1371/journal.pone.004439

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Competing Interests: MPM is a member of the Commission on Human Medicines, and a Chair of a Pharmacovigilance Report Advisory Group. All the other authors have nothing to disclose.

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Introduction

Adverse drug reactions (ADRs) in hospitalised patients can be divided into two broad categories: those that occur inpatients prior to hospital admission, and those that occur in inpatients after hospital admission. In a meta-analysis, using a random-effects model to reduce heterogeneity, Eastaugh et al. [1] showed that the total incidence of both categories of serious ADRs was 6.7%, of which 4.7% were responsible for admissions and 2.1% occurred after admission, with an overall fatality rate of 0.83%. A recent Swedish study has also implicated ADRs as 7th most common cause of death [2]. In a study of almost 3000 admissions, we were able to show that 8.5% of patient admissions to two National Health Service (NHS) hospitals in the UK were related to an ADR [3]. This incidence figure is broadly compatible with pooled data from other studies [1,4], and with more recent studies [5,6].

By contrast, data on ADRs occurring after hospital admission are poor. Older studies have suggested that between 10–20% of patients suffer ADRs in hospital [7–10], while Eastaugh et al. [1] suggested that 10.3% of patients suffer ADRs of all severities as in-patients [1]. A recent review by Wilson et al. estimated that in the NHS in England, 1.6 million bed days, equivalent to 13.6 (95% CI 10.6–16.6) hospital inpatient episodes annually are due to inpatient ADRs [1]. It is important to note that most of these data relate to studies that are decades old. With the changing demographics, the well-known predisposition of the elderly to ADRs, and the changes in medical practice that have occurred over the last few decades, there is a need for more data on the ADR burden in hospital inpatients.

As part of our overall strategy to determine the burden of ADRs in hospitals, after the completion of our ADR hospital admission study [3], we undertook a pilot study to establish the methodology for determining the burden of ADRs in inpatients. This pilot study of 123 inpatients showed that 19% of patients suffered ADRs, with patients experiencing an ADR spending 6.3 days longer in hospital than those without ADRs [11]. In this paper, we report the results of our large-scale prospective study, which further explores the impact of ADRs on NHS hospital inpatients as terms of incidence, length of stay, costs involved, and factors that predispose patients to ADRs.

PLoS ONE | www.plosone.org | February 2009 | Volume 4 | Issue 2 | e4439

Are Drug Quality Problems Common?

- Problems with substandard and fake drugs are vast and underreported¹
- Up to 15% of all drugs sold are estimated to be fake; for some parts of Africa and Asia, this estimate goes up to 50%¹
- Drug quality problems in resource-constrained countries are often due to poor infrastructure, weak drug regulation, nonregulated drug outlets, and black market operations²
- A recent study in major cities of six African countries showed 35% of antimalarial samples to be substandard³
- Fake artesunate is very common in Southeast Asia, where 38–52% of artesunate blister packs sampled contained no active ingredient⁴

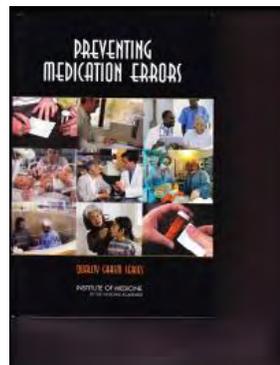
Sources:

1. Cockburn R et al. *PLoS Medicine*, 2005;2(4):e100.
2. Newton PN et al. *PLoS Medicine*, 2009;6(3):e1000052.
3. Bate R et al. *PLoS One*, 2008;3(5):e2132.
4. Newton PN et al. *PLoS Medicine*, 2006;3(6):e197.



Are Medication Errors Common?

- Medication errors are a common cause of adverse events, occurring in 2–15% of hospital admissions¹
- In the U.S. alone, at least 1.5 million adverse drug events occur each year² and over \$3 billion are spent annually to treat the consequences of medication errors³



Sources:

1. Maidment ID and Thorn A. A medication error reporting scheme: analysis of the first 12 months. *Psychiatric Bulletin* 2005;29:298-301.
2. Institute of Medicine. Preventing Medication Errors: Report Brief, July 2006. (Downloaded from <http://www.iom.edu/Object.File/Master/35/943/medication%20errors%20new.pdf>)
3. http://www.ihsph.edu/publichealthnews/articles/2006/wu_medication_errors.html



Causes of Adverse Drug Events

- Record review of 4,031 inpatients*
- 247 (6.1%) adverse drug events; 70 (28%) preventable
- 194 (4.8%) additional errors without patient harm detected
- 264 errors were due to—
 - Physician ordering (39%)
 - Transcription (12%)
 - Nurse administration (38%)
 - Pharmacy dispensing (11%)
- Reasons for error included—
 - Lack of prescriber knowledge (37%)
 - Inadequate check of medicine identity or dose (15%)
 - Incomplete patient information (14%)
 - Inaccurate transcription (11%)
 - Failure to note medicine allergy information (9%)



*Bates, D.W., D.J. Cullen, N. Laird, et al. 1995. Incidence of Adverse Drug Events and Potential Adverse Drug Events. Implications for Prevention. ADE Prevention Study Group. *JAMA* 274(1):29–34.

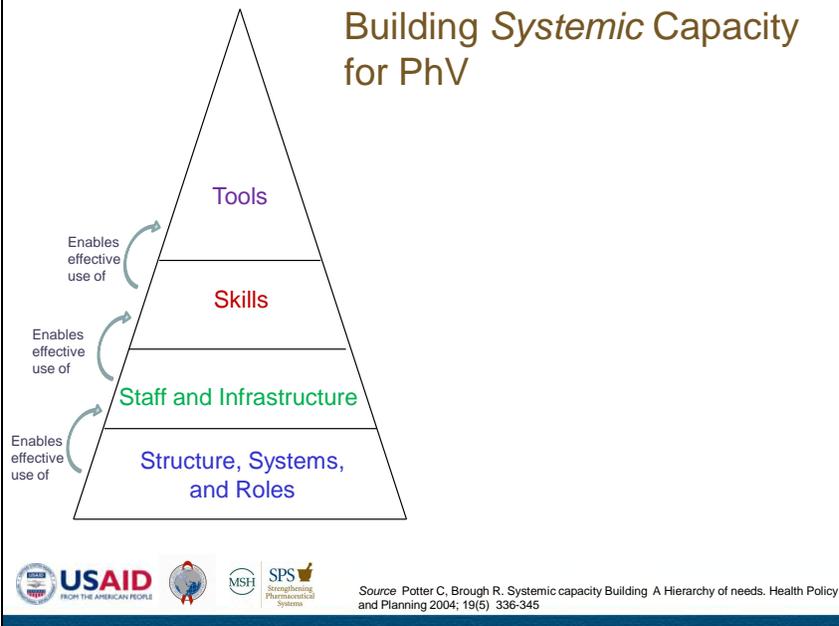
What is a Medicines Safety System?

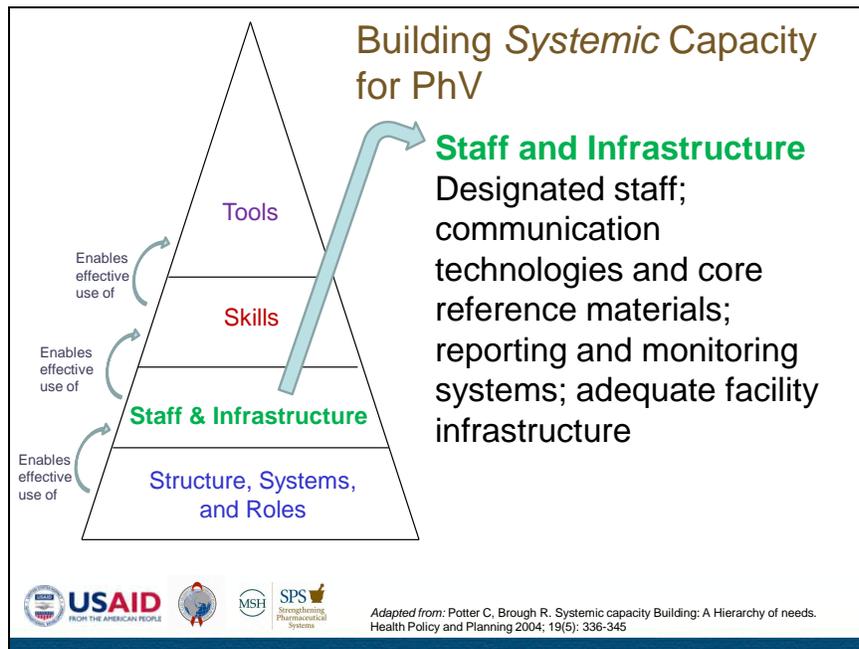
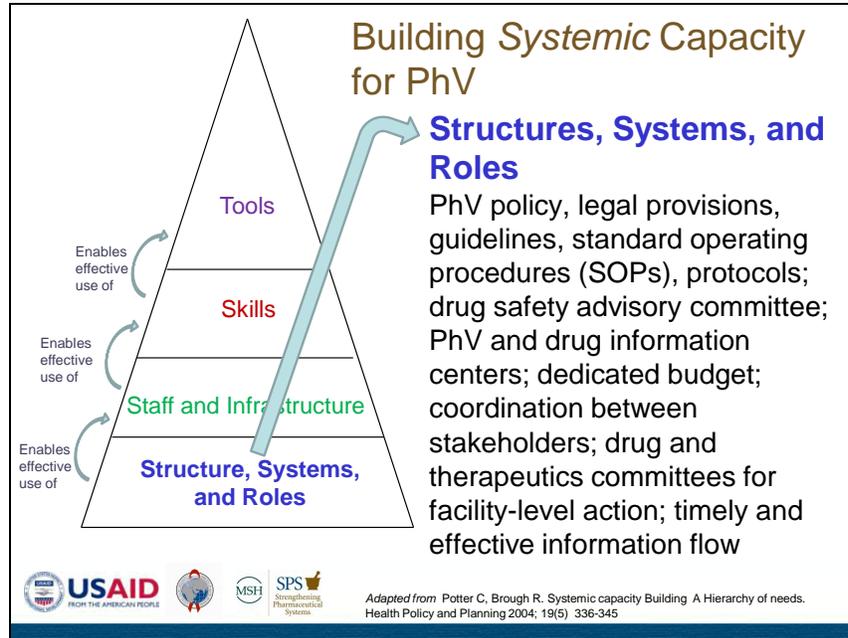
... all organizations, institutions and resources that contribute to ensuring medicines safety. Ensuring medicines safety includes any effort, whether in personal health care, public health services or through intersectoral initiatives, whose primary purpose is to protect the public from harm related to the use of medicines.

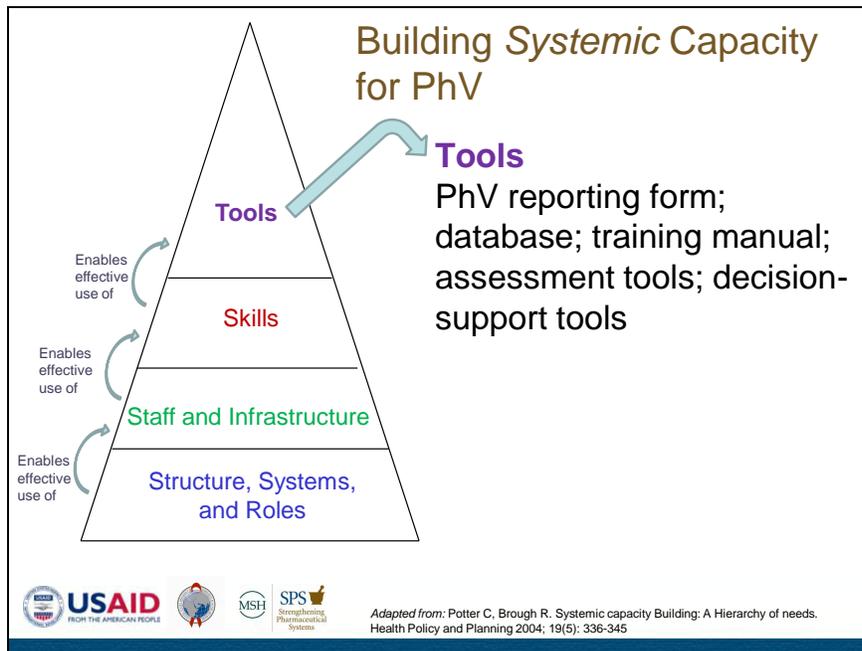
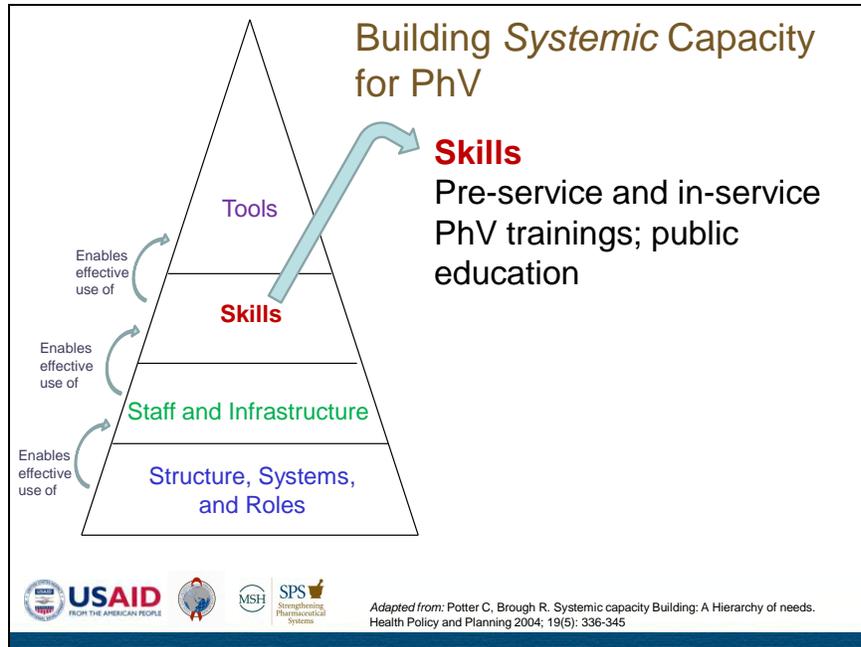
Adapted from health system definition in World Health Organization.
The World Health Report 2000: Health Systems: Improving Performance.
Geneva, Switzerland: World Health Organization, 2000

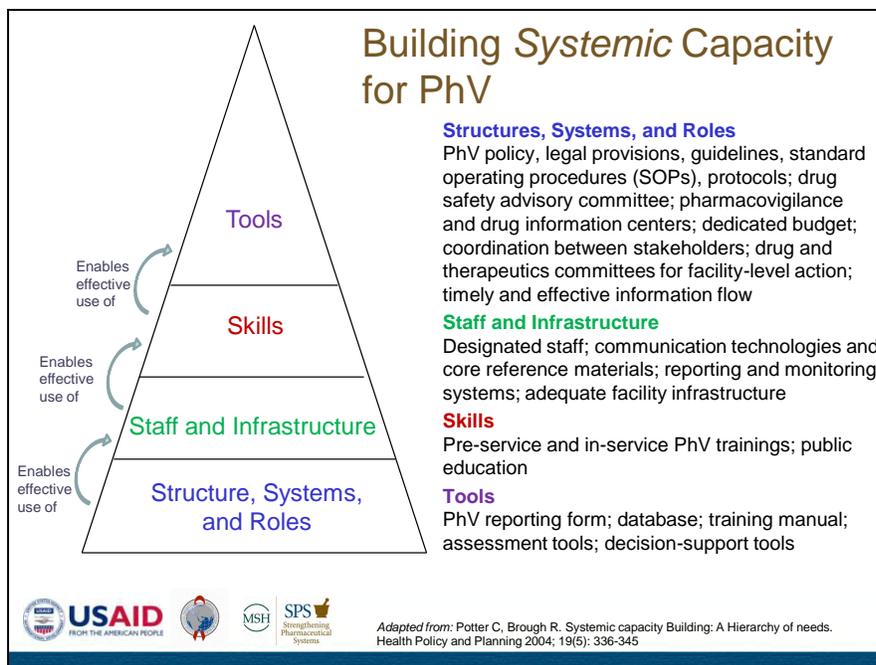


Building Systemic Capacity for PhV









Assessing the Status of PhV Systems (1)

- Is there an approved national PhV policy?
- Does PhV legislation/regulations exist? Does a national medicines safety advisory committee exist? How many times has it met in the last year?
- Does a national PhV guideline exist?
- Are there PhV-related SOPs?
- Does a national PhV center or unit exist? Does it or any other center provide PhV and medicines information?
- Are the PhV center's mandates, structure, roles, and responsibilities defined?
- Are there staff members specifically responsible for PhV?
- How many medicine safety requests did the center receive and address in the past year?
- Does the center have basic communication technologies available?
- Is an annual budget allocated for PhV activities or the PhV center?
- Is the national PhV center a full or associate member of WHO-UMC?



Source: Indicator-based Pharmacovigilance Assessment Tool: Manual for conducting assessments in developing countries. 2009. [DRAFT] Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

Assessing the Status of PhV Systems (2)

- Does an ADR bulletin (or drug bulletin with regular ADR feature) exist? Is it published regularly?
- Are basic reference materials available?
- Is PhV included in pre- and in-service curricula? What topics are covered?
- How many health care providers were trained on PhV in the last two years?
- Does a forum exist for coordinating PhV activities across all stakeholders? Is there a system for coordinating and collating PhV data from all sources in the country?
- Does a form for spontaneous ADR reporting exist?
- How many ADRs were reported in the last year? Were they committed to databases?
- Does the form also include reporting of drug quality problems, medication errors, and treatment failure?
- Have medicine utilization reviews, drug quality surveys, medication error studies, and active surveillance activities been done in the last "X" number of years?



Source: Indicator-based Pharmacovigilance Assessment Tool: Manual for conducting assessments in developing countries. 2009. [DRAFT] Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

Assessing the Status of PhV Systems (3)

- Do specific public health programs document patients who had ADRs or treatment failure?
- Are risk mitigation plans in place that target at high-risk medicines?
- Are prequalification schemes used in medicine procurement decisions?
- How many locally relevant medicine safety issues were identified from outside sources and acted on locally in the past two years?
- How many "Dear Doctor" or other safety alerts were developed and distributed in the past two years?
- What is the average time lag between identification of a significant medicines safety issue and communication to health care workers and the public?
- What is the % of DTCs that carried out PhV-related activities in the past two years?
- How many public and community education activities on PhV were carried out in the past two years?



Source: Indicator-based Pharmacovigilance Assessment Tool: Manual for conducting assessments in developing countries. 2009. [DRAFT] Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

What to Do After Assessing System Status?

- Analyze the findings to diagnose the system strengths, weaknesses, opportunities, and threats
- Design and plan interventions based on local realities, existing regulatory capacity and priorities, identified system gaps, and available resources
- Monitor and evaluate PhV and medicine safety activities using a core set of indicators longitudinally
- Compare PhV activities across regions and programs, and with those of other countries



Measuring Progress through a Set of Core Indicators

Examples:

- Existence of national pharmacovigilance guidelines updated within the last 10 years (*structural*)
- Existence of a national medicine safety advisory committee or a subcommittee with similar functions that has met at least once in the past 1 year (*structural*)
- National Pharmacovigilance center is a full or associate member of the WHO Collaborating Centre for International Drug Monitoring (*structural*)
- Number of health care providers trained on pharmacovigilance and medicines safety in the past 2 years (*process*)
- Percentage of patients undergoing treatment within a public health program whose treatment was modified due to treatment failure or adverse events in the past 1 year (disaggregated by treatment failure and adverse events) (*process*)
- Risk mitigation plans currently in place that are targeted at high risk medicines (*outcome*)
- Percentage of planned issues of the medicine safety bulletin (or any other health-related newsletter that routinely features ADR or medicine safety issues) published in the past 2 years (*outcome*)
- Percentage of medicines sampled in the past 2 years that passed product quality tests (*outcome*)



Source: Nwokike J. and Joshi M. 2009. *Assessment of Pharmacovigilance and Medicine Safety System in Rwanda*. Submitted to the U.S. Agency for International Development by the Strengthening Pharmaceutical Systems (SPS) Program. Arlington, VA: Management Sciences for Health.

National PhV Guideline: a Key Guidance Document

- A *Guideline* is a roadmap that describes the course of action and the desired processes to meet certain goals or standards
- Developing and implementing a national PhV guideline early in the process will streamline actions and strengthen a system-oriented approach
- Examples of PhV guidelines:
 - Saudi Pharmacovigilance Guideline
<http://www.sfda.gov.sa/NR/rdonlyres/3E660AA8-78FB-4CB7-8EAC-20BD279D0052/0/SaudiPVGuidelinesforHumanMedicine.pdf>
 - Guidelines for the National Pharmacovigilance System in Kenya
http://www.pharmacyboardkenya.org/assets/files/national_pv_guidelines.pdf



WHO Aide Memoire on PhV

Checklist for PhV Service

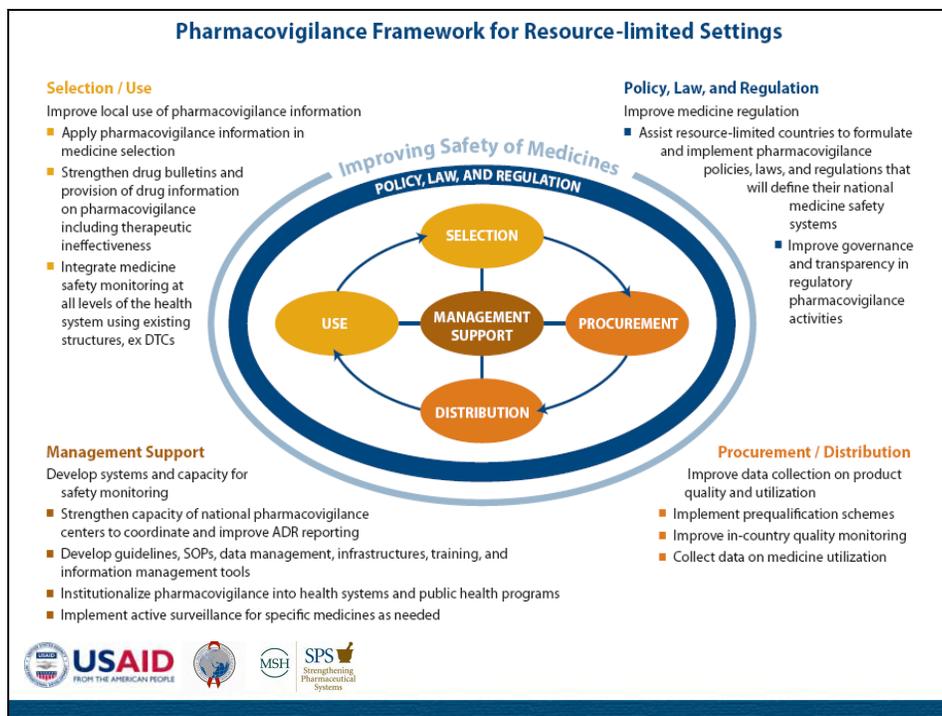
- Government commitment/support
- Legislation/regulation
- National PhV policy/plan
- National PhV center with responsibility and authority
- Adequate resources for PhV activities
- National system of drug registration and quality control
- National system of postmarketing surveillance including drug company requirement to continuously assess benefit/risk and submit PSUR

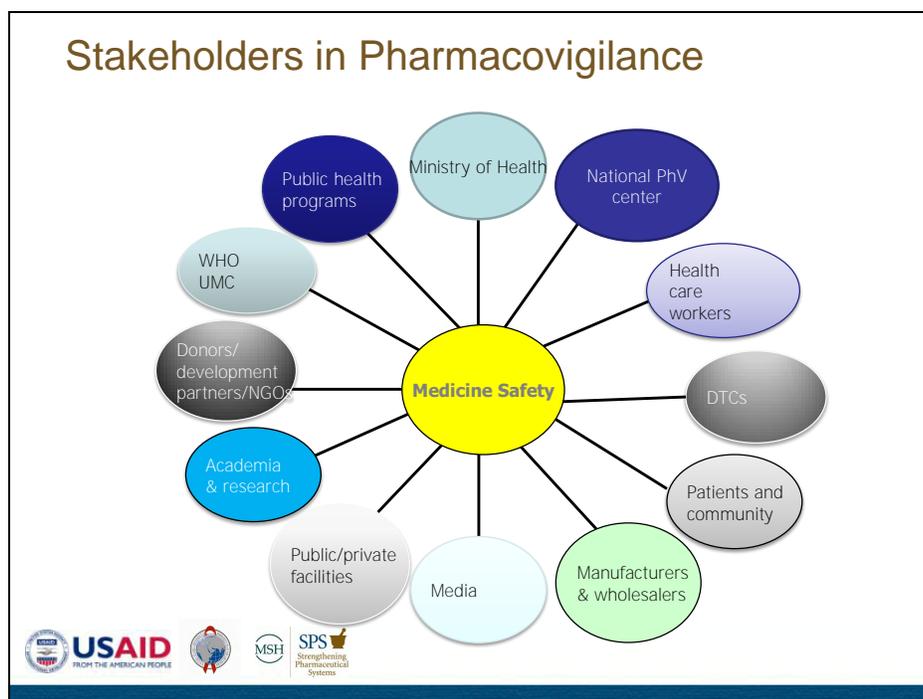
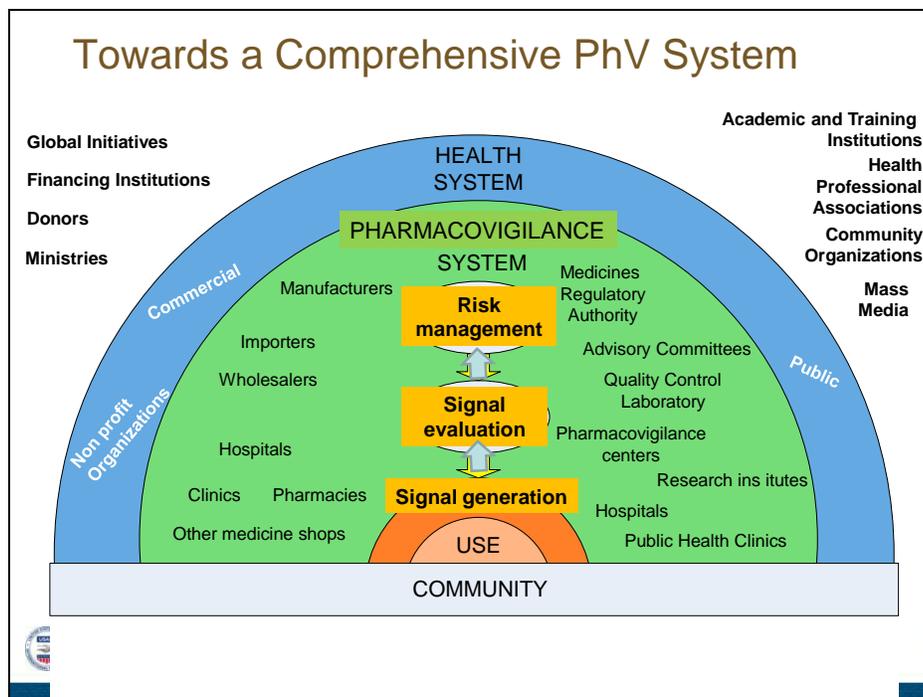
Key PhV Activities

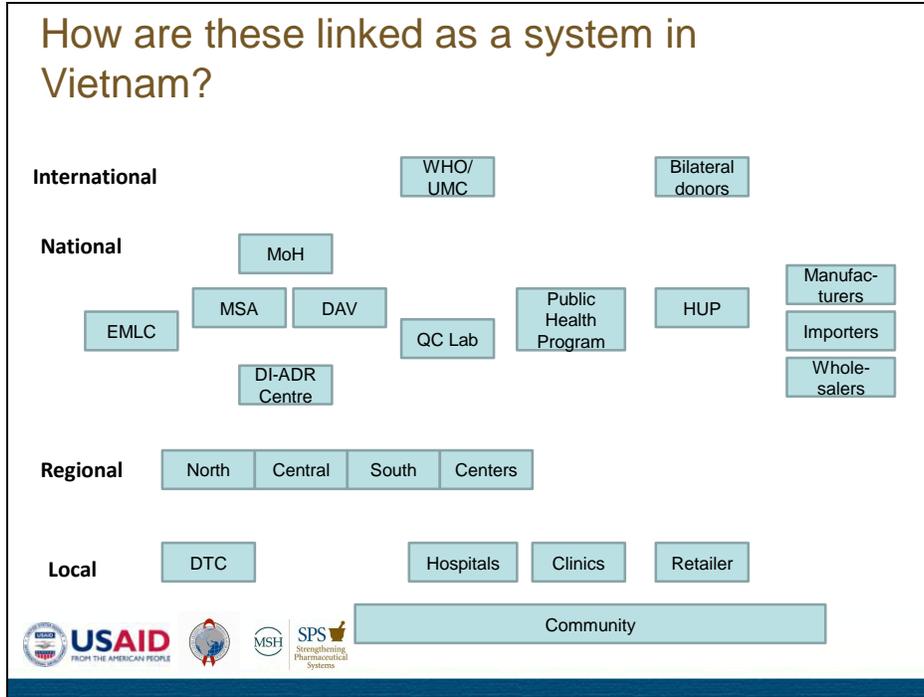
- Establish national PhV systems, including national and (if appropriate) regional centers
- Develop necessary legislation/regulation for drug monitoring
- Develop national policy/plans of action
- Provide undergraduate and continuing education on PhV to healthcare providers
- Continuously provide information on ADRs to professionals and consumers
- Monitor the impact through process indicators and outcomes



World Health Organization (WHO). Drug Safety. Aide Memoire. Downloadable from <http://www.who-umc.org/graphics/4791.pdf>







Essential Step for Effective PhV Implementation: Stakeholder Analysis

Matrix for PhV Stakeholder Analysis

Stakeholder	What are the pharmacovigilance-related needs of this person/group?	How can this person/group contribute to pharmacovigilance?
Public health program		
Hospital		
Patients & community		
Media		
etc		

Logos: USAID, MSH, SPS

Essential Step for Effective PhV Implementation: SWOT/BEEM Analysis

Matrix for PhV “SWOT/BEEM Analysis”

SWOT	BEEM
Strengths	Building on them
Weaknesses	Eliminating them
Opportunities	Exploiting them
Threat	Minimizing them



Some National Pharmacovigilance Center Websites

- New Zealand Pharmacovigilance Center
<http://carm.otago.ac.nz/index.asp?link=carm>
- National Pharmacovigilance Center, Kingdom of Saudi Arabia
<http://www.sfda.gov.sa/En/Drug/Topics/National+Pharmacovigilance+Center/>
- Center for Pharmacovigilance, University of Ghana Medical School
<http://www.pharmacovigilanceafrica.org/>
- National Adverse Drug Reactions Reporting System, Taiwan
<http://adr.doh.gov.tw/ADR-eng/index.htm>
- Therapeutic Information and Pharmacovigilance Center
<http://www.nmrc.com.na/TIPC/tabid/1339/language/en-US/Default.aspx>



Some Pharmacovigilance and Medicine Safety-related Websites

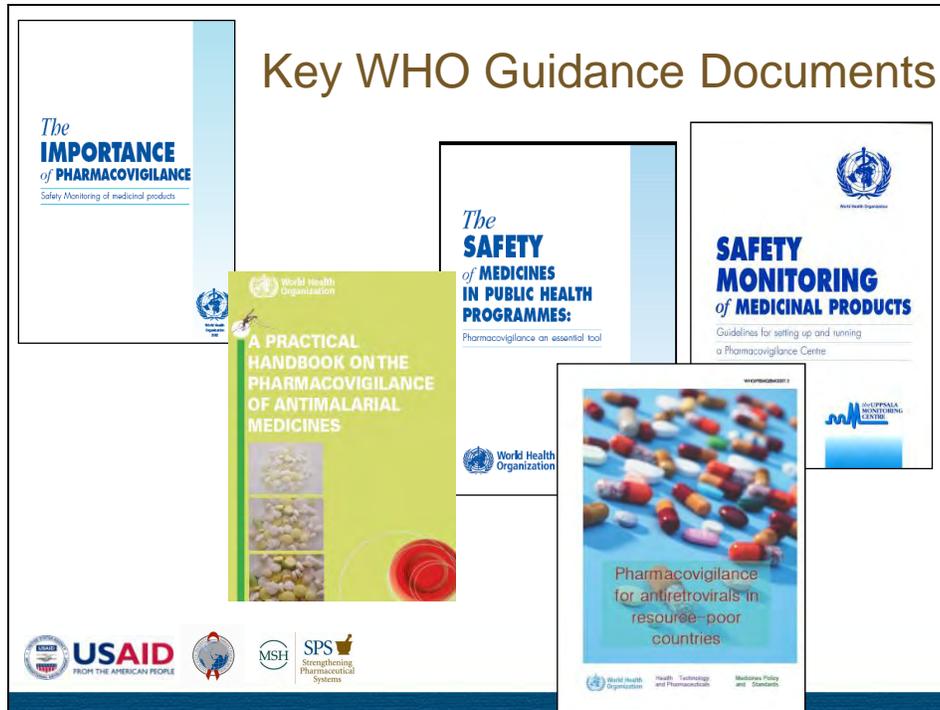
- International Society of Pharmacovigilance <http://www.isoonline.org/>
- International Society of Pharmacoepidemiology <https://www.pharmacoepi.org/index.cfm>
- Eudravigilance <http://eudravigilance.emea.europa.eu/highres.htm>
- Institute for Safe Medication Practices <http://www.ismp.org/>
- Drug Information Association <http://www.diahome.org/DIAHome/>
- MedSafe <http://www.medsafe.govt.nz/>



Some Drug Regulatory Authorities Websites

- Therapeutic Goods Administration, Australia <http://www.tga.gov.au/>
- National Health Surveillance Agency, U.K. www.anvisa.gov.br
- Central Drugs Standard Control Organization, India <http://cdsco.nic.in/>
- Pharmacy & Poisons Board, Kenya www.pharmacyboardkenya.org
- National Pharmaceutical Control Bureau, Malaysia <http://portal.bpfk.gov.my/bpfk>
- Health Sciences Authority, Singapore www.hsa.gov.sg
- Medicines Control Council, New Zealand www.mccza.com
- Advertising Standards Authority of South Africa http://www.asasa.org.za/Default.aspx?mnu_id=95
- Ministry of Health, Turkey www.saglik.gov.tr
- Ministry of Health, Ukraine www.moz.gov.ua
- State Pharmaceutical Expert Center www.pharma-center.org





Passive Surveillance or Spontaneous Reporting

- Health professionals and others encouraged to report adverse events, but no other active measures used
- Spontaneous reporting dependent on the initiative and motivation of potential reporters
- In spite of limitations, spontaneous reporting is a key method of adverse events surveillance



Source: WHO. A practical handbook on the pharmacovigilance of antimalarial medicines, 2007.

Determining Causality of an ADR

Factors determining causality—

- Strength of the association
- Consistency of the observed evidence
- Temporality of the relationship
- Dose-response relationship
- Confounding factors



37

Classifying Causality of an ADR

- **Certain causality.** A clinical event (including laboratory test abnormality) occurs in a plausible time relationship to drug administration and cannot be explained by concurrent disease or other drugs or chemicals; re-administration of the drugs causes a similar reaction
- **Probable or likely causality.** A clinical event occurs with a reasonable time sequence to drug administration and is unlikely due to concurrent disease or other drug administration
- **Possible causality.** A clinical event occurs with a reasonable time sequence to drug administration, but could be explained by concurrent disease or other drug administration



Naranjo ADR Probability Scale

Naranjo CA. *Clin Pharmacol Ther*
1981;30:239-45

To assess the adverse drug reaction please answer the following questionnaire and give the pertinent score.

	Yes	No	Do Not Know	Score
1 Are there previous <i>conclusive</i> reports on this reaction?	+1	0	0	___
2 Did the adverse event appear after the suspected drug was administered?	+2	-1	0	___
3 Did the adverse reaction improve when the drug was discontinued or a <i>specific</i> antagonist was administered?	+1	0	0	___
4 Did the adverse reactions appear when the drug was readministered?	+2	-1	0	___
5 Are there alternative causes (other than the drug) that could on their own have caused the reaction?	-1	+2	0	___
6 Did the reaction reappear when a placebo was given?	-1	+1	0	___
7 Was the drug detected in the blood (or other fluids) in concentrations known to be toxic?	+1	0	0	___
8 Was the reaction more severe when the dose was increased, or less severe when the dose was decreased?	+1	0	0	___
9 Did the patient have a similar reaction to the same or similar drugs in <i>any</i> previous exposure?	+1	0	0	___
10 Was the adverse event confirmed by any objective evidence?	+1	0	0	___
Total Score				___

<i>Total Score</i>	<i>ADR Probability Classification</i>
≥ 9	Definite
5-8	Probable
1-4	Possible
≤ 0	Doubtful





Case Study

- 52-year old Mr. Hung, a known case of chronic gout, was put on allopurinol 200mg per day by his doctor, Dr. Hoa, a consultant rheumatologist at hospital “ABC” in Hanoi on Sep 18, 2009. To his much alarm, Mr. Hung noticed rashes all over the body on Sep 23, 2009. Worried, he consulted Dr. Hoa the same day, who suspected an ADR with allopurinol and advised the patient to stop the medication immediately. Mr. Hung’s rashes slowly disappeared over the course of the next few days of stopping the drug.
- Fill out the Vietnam ADR form using this information and try to determine causality for this case using the Naranjo Algorithm given on the previous slide.





Minimum ADR Reporting Requirements

According to WHO, these information are required for ADR reporting—

- Identifiable source of information or reporter
- Identifiable patient
- Name (s) of suspected product (s)
- Description of the suspected reaction(s)/event
- Reporter must be literate



U.S. MedWatch ADR Form (1)

U.S. Department of Health and Human Services
MEDWATCH
The FDA Safety Information and Adverse Event Reporting Program

For VOLUNTARY reporting of adverse events, product problems and product use errors
Page ____ of ____

Form Approved OMB No. 0930-0041 Expires 10/31/06 See OMB internet site for details

FDA USE ONLY
Page and Sequence #

A. PATIENT INFORMATION
1. Patient Identifier: Age at Time of Event, or Date of Birth Sex Race Weight
 In Confidence Female Male lb kg

B. ADVERSE EVENT, PRODUCT PROBLEM OR ERROR
Check all that apply:
 Adverse Event Product Problem (e.g., defect/mislabeling)
 Product Use Error Problem with Different Manufacturer of Same Medicine
2. Outcomes Attributed to Adverse Event (Check all that apply):
 Death Disability or Permanent Damage
 Life-Threatening Congenital Anomaly/Birth Defect
 Hospitalization - Initial or prolonged Other Serious (Important Medical Events)
 Required Intervention to Prevent Permanent Impairment/Damage (See Instructions)

3. Date of Event (mm/dd/yyyy) 4. Date of this Report (mm/dd/yyyy)

5. Describe Event, Problem or Product Use Error

D. SUSPECT PRODUCT(S)
1. Name, Strength, Manufacturer (from product label)
a1 a2
2. Dose or Amount Frequency Route
a1 a2 a3
3. Date of Day if unknown, give arbitrary month (or day and month)
a1 a2 a3 a4 a5 a6
4. Response or Reason for Use (optional)
a1 a2
5. Event Reported After (Discontinued?)
a1 Yes No Cannot Apply
a2 Yes No Cannot Apply
6. Lot # 7. Expiration Date (mm/dd/yyyy)
a1 a2 a3 a4
8. NDC # or Unique ID

E. SUSPECT MEDICAL DEVICE
1. Brand Name
2. Common Device Name
3. Manufacturer Name, City and State
4. Model # Lot # 5. Operator of Device
Catalog # Expiration Date (mm/dd/yyyy)
Serial # Other #
 Health Professional User/Patient
 Other

6. If Implanted, Give Date (mm/dd/yyyy) 7. If Expired, Give Date (mm/dd/yyyy)

8. Is this a Single-use Device that was Reprocessed and Reused on a Patient?
 Yes No

9. If Yes to Item 8, Enter Name and Address of Reprocessor:

F. OTHER (CONCOMITANT) MEDICAL PRODUCTS
Provide Names and Strengths (omit device lot numbers, if any):

G. REPORTER (See confidentiality section on back)
1. Name and Address

Phone # E-mail

2. Health Professional? Yes No 3. Occupation
4. Also Reported to: Health Professional Manufacturer User/Patient Consumer/Reporter

5. I type this report with my identity disclosed to the manufacturer, per an FDA written notice

FORM FDA 3500 (10/06) Submission of a report does not constitute an admission that medical personnel on the product caused or contributed to the event.



U.S. MedWatch ADR Form (2)

ADVICE ABOUT VOLUNTARY REPORTING
Detailed instructions available at: <http://www.fda.gov/medwatch/report/consumerinstruct.htm>

Report adverse events, product problems or product use errors with:

- Medications (drug or biologics)
- Medical devices (including in-vitro diagnostic)
- Combination products (medication & medical device)
- Human cells, tissues, and cellular and tissue-based products
- Special nutritional products (dietary supplements, medical foods, infant formula)
- Cosmetics

Report product problems - quality, performance or safety concerns such as:

- Suspected counterfeit product
- Suspected contamination
- Questionable stability
- Defective components
- Poor packaging or labeling
- Therapeutic failure (product didn't work)

Report SERIOUS adverse events. An event is serious when the patient outcome is:

- Death
- Life-threatening
- Hospitalization - initial or prolonged
- Disability or permanent damage
- Congenital anomaly/birth defect
- Required intervention to prevent permanent impairment or damage
- Other serious (important medical events)

Report even if:

- You're not certain the product caused the event
- You don't have all the details

How to report:

- Just fill in the sections that apply to your report
- Use section D for all products except medical devices
- Attach additional pages if needed
- Use a separate form for each patient
- Report either to FDA or the manufacturer (or both)

Other methods of reporting:

- 1-800-FDA-0178 - To FAX report
- 1-800-FDA-1088 - To report by phone
- www.fda.gov/medwatch/report.htm - To report online

If your report involves a serious adverse event with a device and it occurred in a facility outside a doctor's office, that facility may be legally required to report to FDA and/or the manufacturer. Please notify the person in that facility who would handle such reporting.

If your report involves a serious adverse event with a vaccine call 1-800-852-7967 to report.

Confidentiality: The patient's identity is held in strict confidence by FDA and protected to the fullest extent of the law. FDA will not disclose the reporter's identity in response to a request from the public, pursuant to the Freedom of Information Act. The reporter's identity, including the identity of a self-reporter, may be shared with the manufacturer unless requested otherwise.

The public reporting burden for this collection of information has been estimated to average 16 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Department of Health and Human Services, Food and Drug Administration, MedWatch, 3901 New Hampshire Avenue, Building 2, MD 0891, Silver Spring, MD 20910-0002. Please DO NOT send this form to this address. GAO comment: Our agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

FORM FDA 3500 (10/05) (Back) Please Use Address Provided Below - Fold in Thirds, Tape and Mail

DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Food and Drug Administration
Rockville, MD 20857

Official Business
Penalty for Private Use \$300

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 940 ROCKVILLE MD

MEDWATCH
The FDA Safety Information and Adverse Event Reporting Program
Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20852-9718

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES
56140070



U.K. Yellow Card (1)

Yellowcard
COMMISSION ON
HUMAN MEDICINES

In Confidence

MHRA

SUSPECTED ADVERSE DRUG REACTIONS

If you suspect that an adverse reaction may be related to a drug, or a combination of drugs, you should complete this Yellow Card or complete a report on the website at www.yellowcard.gov.uk. For *intensively monitored medicines* (identified by ▼) report all suspected reactions (including any considered not to be serious). For *established drugs* and *herbal remedies* report all **serious** adverse reactions in adults; report all **serious and minor** adverse reactions in **children** (under 18 years). You do not have to be certain about causality: if in doubt, please report. Do not be put off reporting just because some details are not known. See BNF (page 10) or the MHRA website (www.yellowcard.gov.uk) for additional advice.

PATIENT DETAILS		Patient Initials: _____	Sex: M / F	Weight if known (kg): _____		
Age (at time of reaction): _____		Identification (Your Practice / Hospital Ref.):* _____				
SUSPECTED DRUG(S)						
Give brand name of drug and batch number if known		Route	Dosage	Date started	Date stopped	Prescribed for
_____		_____	_____	_____	_____	_____
SUSPECTED REACTION(S)						
Please describe the reaction(s) and any treatment given:						
Date reaction(s) started: _____ Date reaction(s) stopped: _____						
Do you consider the reaction to be serious? Yes / No						
If yes, please indicate why the reaction is considered to be serious (please tick all that apply):						
Patient died due to reaction	<input type="checkbox"/>	Involved or prolonged inpatient hospitalisation	<input type="checkbox"/>			
Life threatening	<input type="checkbox"/>	Involved persistent or significant disability or incapacity	<input type="checkbox"/>			
Congenital abnormality	<input type="checkbox"/>	Medically significant; please give details:	<input type="checkbox"/>			

* This is to enable you to identify the patient in any future correspondence concerning this report



U.K. Yellow Card (2)

Please attach additional pages if necessary

Please list other drugs taken in the last 3 months prior to the reaction (including self-medication & herbal remedies)
Was the patient on any other medication? Yes / No If yes, please give the following information if known:

Drug (Brand, if known)	Route	Dosage	Date started	Date stopped	Prescribed for

Additional relevant information e.g. medical history, test results, known allergies, rechallenge (if performed), suspected drug interactions. For congenital abnormalities please state all other drugs taken during pregnancy and the date of the last menstrual period.

REPORTER DETAILS Name and Professional Address: _____ _____ _____ Post code: _____ Tel No: _____ Speciality: _____ Signature: _____ Date: _____	CLINICIAN (if not the reporter) Name and Professional Address: _____ _____ _____ Post code: _____ Tel No: _____ Speciality: _____ If you would like information about other adverse reactions associated with the suspected drug, please tick this box <input type="checkbox"/> If you report from an area served by a Yellow Card Centre (YCC), MHRA may ask the Centre to communicate with you, on its behalf, about your report. See BNF (page 10) for further details on YCCs. If you want only MHRA to contact you, please tick this box. <input type="checkbox"/>
--	---

Send to Medicines and Healthcare products Regulatory Agency, CHM FREEPOST, LONDON SW8 5BR



45

Australian ADR Form (1)

Australian Government
Department of Health and Ageing
Therapeutic Goods Administration

Office use only

Report of suspected adverse reaction to medicines or vaccines
(See statement about the collection and use of personal information overleaf)
Please attach any additional data to this form

Patient initials or medical record number: _____ Sex: M F Date of birth or age: _____
Weight (kg): _____

Suspected medicine(s)/vaccine(s)
(Please use trade names, include AUSTRALIAN or AUSTRALIAN number for non-prescription medicines, and batch number (if known))

Medicine/vaccine	Dosage <small>(Give strength for variants of 1 DDP)</small>	Date begun	Date stopped	Reason for use

Other medicine(s)/vaccine(s) taken at the time of the reaction

Medicine/vaccine	Dosage	Date begun	Date stopped	Reason for use

Reaction(s): Date of onset of reaction (or for vaccines time after administration): _____
Describe: (please provide as much detail as possible and include any results of relevant supportive laboratory data and other investigations)

Seriousness: Life threatening Hospitalised Required a visit to doctor

Treatment of reaction: _____

Outcome: Recovered, date: _____ Not yet recovered Fatal, date: _____ Unknown

Sequelae? No Yes Describe: _____

Comments (eg relevant history, therapies, previous exposure to this medicine): _____

Reporting doctor, pharmacist, other: _____ Contact details (email or phone): _____
Name: _____
Address: _____
Postcode: _____ Signature: _____ Date: _____

Thank you for taking the time to complete this form



**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

India ADR Form



SUSPECTED ADVERSE DRUG

CDSCO
Central Drugs Standard Control Organization
Directorate General of Health Services,
Ministry of Health & Family Welfare, Government of India,
Nirman Bhawan, New Delhi - 110211
www.cdscoc.in

REACTION REPORTING FORM

For VOLUNTARY reporting of Adverse Drug Reactions by health care professionals

Report # _____

To be filled in by Pharmacovigilance centres receiving the form.

A. Patient Information

1. Patient identifier initials: _____ 2. Age at time of event: _____ 3. Sex: M F

4. Weight: _____ kgs

In confidence

B. Suspected Adverse Reaction

5. Date of reaction started (admission): _____

6. Date of recovery (discharge): _____

7. Describe reaction or problem: _____

C. Suspected Medication(s)

Sl. No.	Name (brand and/or generic name)	Manufacturer (if known)	Lot No. (if known)	Exp. Date (if known)	Dose used	Route used	Frequency	Therapy dates (if unknown, give duration)	Reason for Use or prescribed for

8. Reaction abated after drug stopped or dose reduced: Yes No Unknown NA

9. Reaction reappeared after reintroduction: Yes No Unknown NA If reintroduced, dose: _____

10. Concomitant medical products and therapy doses including self-medication and herbal remedies (specify those used to treat reaction): _____

D. Reporter (see confidentiality section in first page)

16. Name and Professional Address: _____

17. Occupation: _____

18. Date of this report (admission): _____

Kenya ADR Form



MINISTRY OF HEALTH
THE PHARMACY AND POISONS BOARD
P. O. Box 27653-00206 NAIROBI
Tel: (00254) 254 2600 / 254 2601 Fax: (00254) 254 462733409
Email: pa&pb@pharmacyboard.org

IN CONFIDENCE

Individual Report
 Follow-up Report

SUSPECTED ADVERSE DRUG REACTION REPORTING FORM

NAME OF INSTITUTION: _____ INSTITUTION CODE: _____

ADDRESS: _____ CONTACT: _____

PATIENT'S NAME (INITIALS): _____ PROP. NO.: _____ D.O.B.: _____

PATIENT'S ADDRESS: _____ WARD/CLINIC: _____ GENDER: Male Female

ANY KNOWN ALLERGIES: No Yes (specify) _____ PREGNANCY STATUS: No Pregnant In Treatment Not Pregnant Not Known

WEIGHT (kg): _____ WEIGHT (lb): _____

REASONS: (Other than primary reaction): _____

BRIEF DESCRIPTION OF REACTION: _____

LIST OF ALL DRUGS USED IN THE LAST 3 MONTHS PRIOR TO REACTION (Include OTC and injections use only, do not use the abbreviation)	DOSE	ROUTE AND FREQUENCY	DATE STARTED	DATE STOPPED	INDICATION	REACT

SEVERITY OF THE REACTION: (Mark as appropriate)

Mild Moderate Severe Fatal Unknown

ACTION TAKEN: Drug withdrawn Dose increased Dose reduced Dose not changed Unknown

OUTCOME: Recovering / resolving Recovered / resolved Requires emergency hospitalization Causes a congenital anomaly Requires intervention to prevent permanent damage Unknown

CAUSALITY OF REACTION: (Mark as appropriate)

Certain Probable / Likely Possible / Unlikely Conditional / Unconfirmed Unassessable / Unassessable

ANY OTHER COMMENT: _____

NAME OF PERSON REPORTING: _____ DATE: _____

E-MAIL ADDRESS: _____ PHONE NO: _____

DESIGNATION: _____ SIGNATURE: _____

You need not be certain ... just be suspicious!

Substitution of a complete dose and combination of substances with similar properties or ingredients of the product used or controlled in the event. Patients' identity is treated as confidential and will not be disclosed or disseminated to the public. Health care professionals are encouraged to report suspected adverse drug reactions to the Department of Drug Safety and Adverse Drug Reactions, Kenya. Confidentiality of patient information is guaranteed by you will contribute to the improvement of drug safety and Adverse Drug Reactions. Confidentiality of patient information is guaranteed by you will contribute to the improvement of drug safety and Adverse Drug Reactions. Confidentiality of patient information is guaranteed by you will contribute to the improvement of drug safety and Adverse Drug Reactions. Confidentiality of patient information is guaranteed by you will contribute to the improvement of drug safety and Adverse Drug Reactions.



**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

Namibia ADR Form



Republic of Namibia
Ministry of Health and Social Services
Safety Reporting Form
For reporting Adverse Drug Reactions (ADRs) and medicine use product problems

Reporters are not culpable for the adverse events and their reports are confidential.

A. PATIENT INFORMATION

Patient outside / Hospital Use (tick) Yes No Date of birth / Age: _____ Sex: Male Female
Pharmacy: Yes No Name: _____ Weight (kg): _____ Height (cm): _____

B. ADVERSE EVENT INFORMATION

Type of Event: Adverse event Product problem Medication error
Description of Reaction: _____
Relevant tests / Laboratory results: _____
Date the event started: _____ Date of reporting: _____ Date the event stopped: _____
Treatment of adverse event? Yes No If yes, please specify: _____
Reaction subsided after stopping / reducing the dose of the suspected product? Yes No Not applicable Reaction reappeared after reinitiating / increasing the suspected product? Yes No Not applicable
Causation of the adverse event: Unrelated Probable Possible
 Hospitalization Congenital anomaly / birth defect Suspected to be a consequence / sequelae
 Deceased Death Suspected to be a consequence / sequelae
 Disability or permanent change Life threatening Recurring
 Other serious medical condition Primary related medical event Not recorded Fatal / Therapeutic death

Other relevant history, including pre-existing medical conditions, allergies, pregnancy, smoking, alcohol use, liver, kidney problems, etc.: _____

C. PRODUCT INFORMATION

Suspected Product: Brand name: _____ Indicate the product size and form: _____
 Trade name: _____ Daily dose, route or administration: _____
Manufacturer: _____
From whom did the patient obtain the product? _____ Expiry date: _____ Lot/ Batch No.: _____
Date product started: _____ Date product stopped: _____

D. Other products used in the last three months

Product 1	Product 2	Product 3	Product 4
Brand Name of Product			
Indication			
Expiry date			
Lot/ Batch No.			
Date of administration			
Date product was started			
Date product was stopped			

E. REPORTER INFORMATION

Name last, first: _____ Telephone No.: _____
Institution: _____ Postal address: _____
Health facility: _____ District: _____
Region: _____ City: _____

Send Fax to the Therapeutics Information and Pharmacovigilance Centre: Room 21, Basement Area, Windhoek Central Hospital:
Tel: 061 263 2317 Fax: 061 22 66 23

Nepal ADR Form



Government of Nepal
Ministry of Health and Population
Department of Drug Administration
Adverse Drug Reactions Reporting Form

Hospital record No. or chart No. or patient ID No. _____

Patient's Name: _____ Sex: F / M Age: _____

Description of the adverse reaction/s: _____ Onset date of reaction: _____

Information on Suspected Medicine

Medicine (Brand & Generic Names, Manufacturer, Batch No., Dosage Form)	Daily dosage	Date started	Date stopped	Reason for use

Additional relevant information (eg. medical history, test result, known allergies, drug interactions)

Reported by: Name: _____ Hospital / Department: _____
Date: _____ Signature: _____

Please return this form to your local Drug Information Unit or Hospital Pharmacy. Thank you for taking the time to fill in this report!

Saudi ADR Form



المهنة العامة للغذاء والدواء
المركز الوطني للتحقق الدوائي

**Saudi Food & Drug Authority
National Pharmacovigilance Center**

Date received: _____
By: _____

**Adverse Drug Reaction (ADR) Reporting Form
For Health Care Professionals**
Form NO. ADR-1

A. Patient Details:

Patient Name or initial (Optional): _____ Date of birth: _____ Age: _____ Weight: _____
Medical Record No: _____ Health Institution: _____ Sex: M F

B. Suspected Drug(s) / Vaccines and all other drugs used:

Drug Name (Generic & Brand)	Manufacturer and Batch No.	Dose / Route / Frequency	Start Date	End Date	Purpose of use
1					
2					
3					
Other					

C. Adverse Drug Reaction Characteristics:

Adverse event including relevant test/lab data and dates _____
Other relevant history, including preexisting medical conditions (diabetes, allergies, pregnancy, renal, renal etc) _____

Date of event started: _____ Date of event occurred, if applicable: _____

D. Outcomes of ADR (Time of assessment):

The patient Recovered, date: _____ Recovering No improvement Unknown
Event subsided after stopping (dechallenge) _____ No Yes Unknown
Event reappear after reintroducing (rechallenge) _____ No Yes Not applicable
Specific antagonist used _____ No Yes, specify: _____

E. Severity of ADR (Tick all applicable):

Patient Died, date: _____ Life-threatening Permanent Disability
Hospitalization _____ Prolonged Hospitalization more than 24 hr Congenital Anomaly
Required intervention to prevent permanent impairment/ Damage _____ Other: _____

F. Reporter Details:

Reporter Name: _____ Profession (Specialty): _____
Address: _____ E-mail: _____
Phone: _____ Fax: _____ Date: _____ Signature: _____





Saudi Pharmaceutical Products Quality Form



المهنة العامة للغذاء والدواء
المركز الوطني للتحقق الدوائي

**Saudi Food & Drug Authority
National Pharmacovigilance Center**

Date received: _____
By: _____

**Pharmaceutical Products Quality Reporting Form
(Form NO. PQ-1)**

Note: this form is NOT for reporting adverse drug reactions (ADR) For ADR reporting use form NO. ADR-1

A. Patient Details:

Patient Name or initial (Optional): _____ Date of birth: _____ Age: _____ Weight: _____
Medical Record No: _____ Health Institution: _____ Sex: M F

B. Product Details:

Type of product: Drug Vaccine Herbal Other, specify _____
Product name (Generic & Brand): _____
Package size: _____ Strength: _____ Dosage form: _____
Registration number (if available): _____ Batch number: _____
Manufacturer: _____ Distributor / Vendor: _____
Manufacturing date: _____ Expiry date: _____
Has the manufacturer been informed? No Yes, date: _____

C. Type of Quality Problem:

Therapeutic Failure Packaging Physical, chemical or microbial changes Other _____

Description: _____

D. Reporter Details:

Name: _____
Profession: _____ Organization: _____
Address: _____ E-mail: _____
Phone: _____ Fax: _____
Signature: _____ Date: _____





**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

South Africa ADR Form and Drug Quality Problem Report Form



ARF 1



**ADVERSE DRUG REACTION
AND PRODUCT QUALITY PROBLEM REPORT FORM**
(Department of Health and Welfare, Republic of South Africa)
 National Adverse Drug Event Monitoring Centre
 National Centre for Drugs
 The Registrar of Medicines
 Department of Health
 In collaboration with the WHO International Drug Monitoring Programme

PATIENT INFORMATION

Name (or initials): _____ Age: _____ Weight (kg): _____
 Sex: M F DOB: _____ Height (cm): _____

ADVERSE REACTION/PRODUCT QUALITY PROBLEM

Adverse reaction? and/or Product Quality problem? Date of onset of reaction: _____
(Time of onset of reaction: _____)

Description of reaction or problem (include relevant test/lab data, including doses): _____

I. MEDICINES/VACCINES/DEVICES (include all concomitant medicines)

Trade Name & Batch No. <small>(As used/Dispensed Product)</small>	Daily Dose	Route	Dose Interval	How Stopped	Reason for use

ADVERSE REACTION OUTCOME (Check all that apply)

Death Life-threatening Event progressed to withdrawal Recovered Y N
 Disability Hospitalization Fatal Fatal/Inpatient date Sequelae Y N
 Hospital admission Repeated hospitalization Date of reaction: _____ Decided by: _____
 Inpatient/outpatient Inpatient/outpatient date

COMMENTS: (e.g. laboratory assays, Allergies, Previous exposure, Reaction not consistent data)

II. PRODUCT QUALITY PROBLEM:

Trade Name	Batch No.	Expiration Date	Change from receipt	Expiry Date	Use Type of container

Product available for evaluation? Y N

REPORTING DOCTOR/PHARMACEUT: _____

NAME: _____ QUALIFICATION: _____
 ADDRESS: _____
 TEL: (____) _____ Signature: _____ Date: _____

This report does not constitute an admission that medical personnel or the product caused or contributed to the event.

Version: MCC008/1

Tanzania ADR Form (1)



**REPORT OF SUSPECTED ADVERSE DRUG REACTION
INCLUDING BIRTH DEFECTS**

TANZANIA FOOD AND DRUGS AUTHORITY

Note: Identities of reporter, patient and institutions will remain confidential

PARTICULARS OF PATIENT

Patient initials or Record No.: _____ Sex: _____
 Date of Birth (DD-MM-YYYY) or age: _____ Weight in kg: _____

DETAIL OF ADVERSE DRUG REACTION

<input type="checkbox"/> Headache	<input type="checkbox"/> Shock / anaphylaxis	<input type="checkbox"/> Skin rash	Date Reaction: _____
<input type="checkbox"/> Diarrhoea	<input type="checkbox"/> Nausea or vomiting	<input type="checkbox"/> Others	Started → _____
Description of reaction (if possible): _____			Stopped (if known) → _____

Other relevant information: e.g. medical history, allergies, pregnancy, smoking, alcohol use, etc. Please enclose any relevant laboratory results including dates (if done)

III. DETAILS OF SUSPECTED DRUG (S) AND ALL OTHER DRUGS USED

Name of suspected drug(s) <small>(Please specify brand name if known)</small>	Dosage	Frequency	Route	Therapy Date		Batch No. & Expiry date <small>(if known)</small>	Reason for use
				Start	Stop		
1. _____							
2. _____							

IV. MANAGEMENT OF ADVERSE REACTION

Reaction subsided after stopping the suspected drug/reducing the dose Yes No Unknown

Reaction reappeared after reintroducing drug Yes No Not applicable

Do you consider the reaction to be serious? Yes No

If yes, please indicate why the reaction is considered to be serious (please tick all that apply):

Patient Died due to reaction Required or prolonged hospitalization
 Is life threatening Causes irreversible disability or incapacity
 Causes a congenital anomaly Others, please give details: _____

Treatment of adverse reaction: Yes No (if yes please specify): _____

Outcome of the reaction: Not yet recovered Recovered Fatal (Date of death): _____

V. PARTICULARS OF REPORTER (HEALTH CARE PROVIDER)

Name: _____ Profession: _____ Name and Address of the health facility: _____
 Contact phone No: _____ E-mail: _____
 Signature: _____ Date of this report: _____

Please tick if you wish to receive information about other local reports associated with the suspected drug(s)

**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

Zambia ADR Form

Zambia Pharmacovigilance Centre (ZPVC) in Lusaka.
ADR Case Report Form
For adverse drug event and product quality problem reporting

In collaboration with the WHO International Drug Monitoring Programme

All information provided here will be treated as strictly confidential

Product available for evaluation: Y N

REPORTING DOCTOR/PHARMACIST:

Name: _____

Qualifications: _____

Address: _____

Signature: _____ Date: _____

Telephone no. _____

This report does not constitute an admission that medical personnel or the product caused or contributed to the event.

CLIENT INFORMATION

Name (or initials): _____ Age: _____ Weight (kg): _____

Sex: M F LMNP... (if female) DOB: ____/____/____ Height (cm): _____

ADVERSE EVENT/PRODUCT QUALITY PROBLEM

Adverse event? and/or product quality problem? Date of onset of reaction: ____/____/____

Description of reaction or problem (include relevant test/lab data, including dates): _____

1. MEDICINES/VACCINES/DEVICES (include all medicines taken concomitantly)

Trade Name & Batch No. (Asterisk Suspected Product)	Dosage	Route	Date Started	Stopped	Reasons for Use

ADVERSE REACTION OUTCOME (Check all that apply)

Death	<input type="checkbox"/>	Healthcare event	<input type="checkbox"/>	Event reappeared on rechallenge	<input type="checkbox"/> Y <input type="checkbox"/> N	Recovered	<input type="checkbox"/> Y <input type="checkbox"/> N	
Disability	<input type="checkbox"/>	Hospitalisation	<input type="checkbox"/> Y <input type="checkbox"/> N	Rechallenge not done	<input type="checkbox"/> Y <input type="checkbox"/> N	Sequelae	<input type="checkbox"/> Y <input type="checkbox"/> N	
Organic anomaly	<input type="checkbox"/>	Other	Treatment (of reaction): _____		Describe sequelae: _____			
Repeated exposure to prevent permanent impairment/damage	<input type="checkbox"/>							

COMMENTS: (e.g., relevant history, allergies, previous exposure, baseline test results, lab data)

2. PRODUCT QUALITY PROBLEM:

Trade Name	Batch No.	Dosage Form & Strength	Expiry Date	Site/Type of Container

Vietnam ADR Form (1)

Report Form No. 1

(SUSPECTED ADVERSE DRUG REACTION REPORT)

Name of site: _____

Site's report code: _____

Center's report code: _____
(managed by Center's recording department)

I. Information about ADR

Patient's Information

Name	Ethnicity	Age	Height	Weight	Sex	Date of onset	Site of onset
					<input type="checkbox"/> Male <input type="checkbox"/> Female		

Description of ADR manifestation and comments (including test results): _____

II. Information about drugs suspectedly causing ADR

Name of suspected drug (generic name and brand name)	Strength, concentration	Dosing rate	Using time (per day, per week, per month)	Route of administration		Treatment period (date, month, year)		Reasons for using drug
				Start	End	Start	End	

Manufacturer's information (or importers, distributors) of ADR suspected drug (Name, address, batch, expiry date): _____

Re-use the drugs occurrence of old symptoms no occurrence of old symptoms

III. Simultaneous drugs and history of diseases

Simultaneous drugs and dates of using (excluding allergic treatment drugs): _____

Other relevant disease (clinical diagnosis, allergic, pregnant etc.): _____

Vietnam ADR Form (2)

IV. ADR treatment		
Stop using the drug	<input type="checkbox"/> Good improvement <input type="checkbox"/> No improvement	<input type="checkbox"/> Continue treatment <input type="checkbox"/> No answer
Using other drugs	<input type="checkbox"/> Good improvement <input type="checkbox"/> No improvement	<input type="checkbox"/> Continue treatment <input type="checkbox"/> No answer
V. Results after ADR treatment (comments of treatment doctor/reporter)		
<input type="checkbox"/> Rehabilitation without sequel <input type="checkbox"/> Rehabilitation with sequel <input type="checkbox"/> No rehabilitation	<input type="checkbox"/> Died due to ADR <input type="checkbox"/> Died not due to drugs <input type="checkbox"/> No answer	
VI. Comments of treatment doctor/reporter		
VII. ADR check		
Assess the relation between drugs and ADR:	Health site's opinion	Expert's opinion
1. Certain	<input type="checkbox"/>	<input type="checkbox"/>
2. Probable	<input type="checkbox"/>	<input type="checkbox"/>
3. Possible	<input type="checkbox"/>	<input type="checkbox"/>
4. Unlikely	<input type="checkbox"/>	<input type="checkbox"/>
5. Unclassified	<input type="checkbox"/>	<input type="checkbox"/>
6. Unclassifiable	<input type="checkbox"/>	<input type="checkbox"/>
Opinion of review expert (for ADR review committee only)		
VIII. Information of reporter:		
Name:	Title:	
Tel:	Fax:	
E-mail address:	Report type: <input type="checkbox"/> First / <input type="checkbox"/> Additional	
Date of report:	Signature:	
ADR Report should be sent to one of these addresses:		
ADVERSE DRUG REACTION REPORTING CENTER VIETNAM DRUG ADMINISTRATION 128 A Quang Thi - Sa Haih - Hanoi ☎ : 04. 62335811 - Fax: 04. 6.234758	DRUG INFORMATION AND ADVERSE DRUG REACTION REPORTING CENTER- SOUTHERN AREA 200 Co Bui Thi 1, HCMC - Vietnam ☎ : 08.8.273333 - Fax: 08.8.3467900	



NOTE:
1. This report should be sent simultaneously to ADR Center, manufacturer and recorded at the health site.
2. Reports after being categorized and checked by ADR experts will be responded annually to the health sites.

Revisiting the Vietnam ADR Form

- What are commonalities and differences among different ADR form examples?
- What key fields are essential for the Vietnam ADR form?
- Are there any specific ideas in the example forms to adapt and incorporate into a revised Vietnam form?



Reasons for Underreporting ADRs

- Lack of awareness of ADRs by health care professionals
- Lack of reporting by pharmaceutical industry (often not mandatory)
- Lack of priority-setting within national drug regulatory authority and public health programs
- Lack of technical and financial resources
- Weak organizational structure, leading to uneven distribution to and collection of ADR forms



How to Stimulate ADR Reporting

- Incorporate PhV into health care teaching curricula (physicians, pharmacists, nurses, etc.)
- Institute mandatory ADR reporting by pharmaceutical industry
- Increase collaboration with MoH public health programs
- Increase ADR awareness among health professionals and the public
- Make ADR forms available to each health facility nationwide
- Establish regional networks and facilitate communication among them



Spontaneous Reporting in Mozambique (1)

- Spontaneous ADR reporting using “yellow cards” introduced in two rural districts of Mozambique after training for 35 health professionals
- Ongoing challenges included remote location, poor telecommunication services, and a low level of health professional education
- Trained professionals included 3 doctors, 2 technicians, 24 nurses, 4 basic healthcare agents, and 2 pharmacy agents
- Professionals trained to diagnose, treat, and report ADRs to all medicines using the yellow card



Source: Esperanca S et al. *Drug safety* 2008 31(10) 867-876

Spontaneous Reporting in Mozambique (2)

- *Routine site visits* identified and clarified problems with filling and sending the forms
- One *focal person* in each district facilitated communication between health professionals and the National Pharmacovigilance Unit
- 14 months after the training, professionals had submitted 67 ADR reports
- Authors' conclusion: “training, quality-assurance visits, and the ongoing presence of focal persons can promote reporting and improve the quality of the reports submitted”



Source: Esperanca S et al. *Drug safety* 2008:31(10) 867-876

Active Surveillance (1)

- Active (proactive) measures to detect adverse events involves a system of managing active follow-up after treatment
- Information on events captured by asking patients directly or checking patient records
- Best done prospectively



Source: WHO. A practical handbook on the pharmacovigilance of antimalarial medicines, 2007

Active Surveillance (2)

- Cohort event monitoring is the most comprehensive method
 - Intensive Medicines Monitoring Program in New Zealand
 - Prescription Event Monitoring in England
- Other methods
 - Registers
 - Record linkage
 - Screening of laboratory results



Source: WHO. A practical handbook on the pharmacovigilance of antimalarial medicines, 2007

Hospital-based Active Surveillance to Monitor Safety of New Drugs (1)

- 6-month descriptive study to compare adverse drug events (ADEs) detected by *spontaneous reporting* (SR) and by *active surveillance* (AS) among 176 in-patients taking 3 newly marketed drugs – torsemide, cilostazol, rosuvastatin – at Christian Medical College Hospital, Vellore, India
- All patients taking any one of the 3 drugs enrolled for AS based on in-patient prescriptions dispensed by hospital pharmacy
- A pharmacology resident doctor (associated with the hospital ADE monitoring centre) followed up the in-patients until discharge

Source: Subbanna PK, Chandy SJ. Role of active surveillance in improving hospital adverse drug event monitoring. *Indian J Pharmacol* 2006;38(5) 363-364.



Hospital-based Active Surveillance to Monitor Safety of New Drugs (2)

- Physicians' notes, nurses' notes and investigational reports attached to the patients' charts reviewed
- Direct patient interviews using a questionnaire also conducted
- Naranjo algorithm score used to assess causality of each suspected ADE
- Only definite (>9), and probable (5-8) events taken into consideration
- 7 ADEs were detected in 7 patients through the SR system, while 52 ADEs were detected in 37 patients through AS
- Authors' *recommendation* – "supplement spontaneous reporting-based hospital ADE monitoring systems with an active surveillance system to monitor the safety profile of newly marketed drugs"

Source: Subbanna PK, Chandy SJ. Role of active surveillance in improving hospital adverse drug event monitoring. *Indian J Pharmacol* 2006;38(5) 363-364.



Introducing Active Surveillance into Public Health Programs

- Public health programs need to systematically integrate pharmacovigilance systems into programs because—
 - Rapid scale-up of treatment occurring in major public health programs such as HIV/AIDS, TB, and malaria
 - New essential medicines (e.g., antiretrovirals, artemisinin-based combination therapies) used widely
 - High level and long term adherence required (e.g., HIV/AIDS and TB); lack of local ADR data, co-medications required
- Collaboration between public health programs, national pharmacovigilance centers, drug regulatory authorities, and other partners central to success

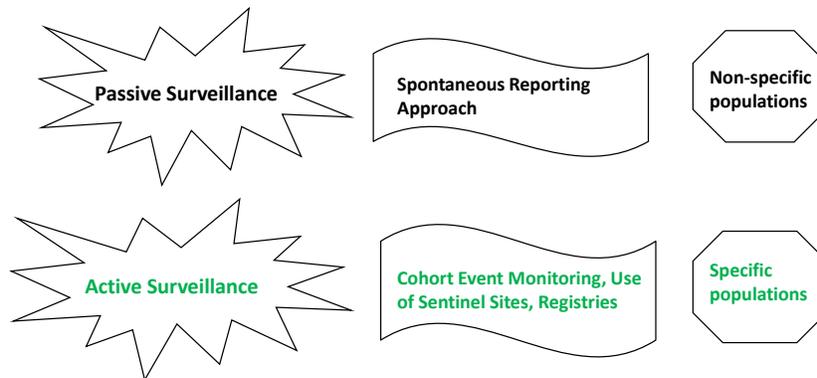


Benefits of PhV in Public Health Programs

- Create awareness of safety issues
- Identify new ADRs specific to antiretroviral therapy (ART), artemisinin-based combination therapy, and reserve TB medicines
- Monitor known ADRs
- Provide evidence for updating standard treatment guidelines to enhance therapeutic success
- Track and report toxicity-related changes in drug regimens
- Counteract myths



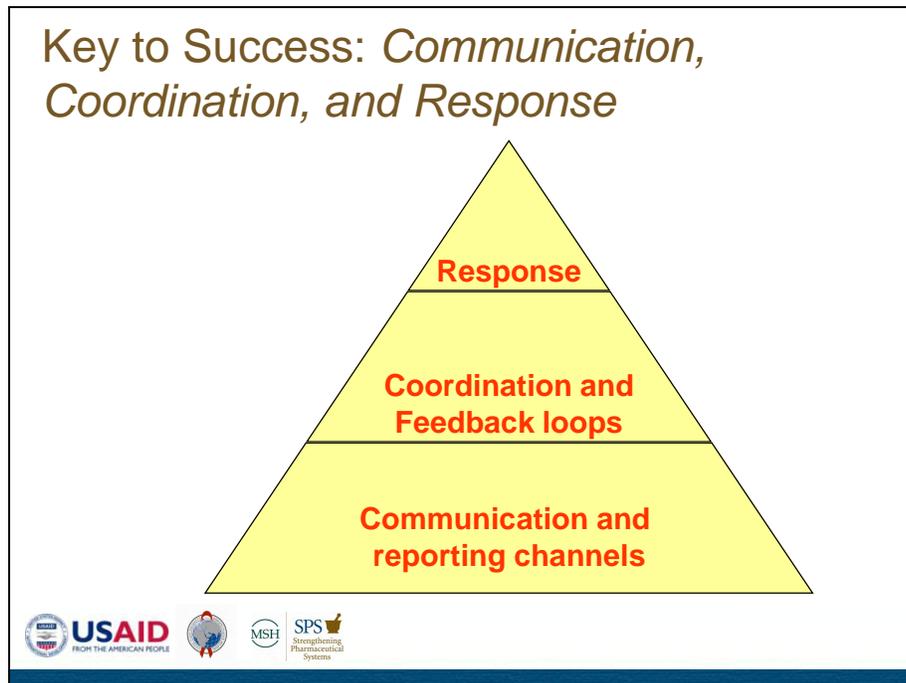
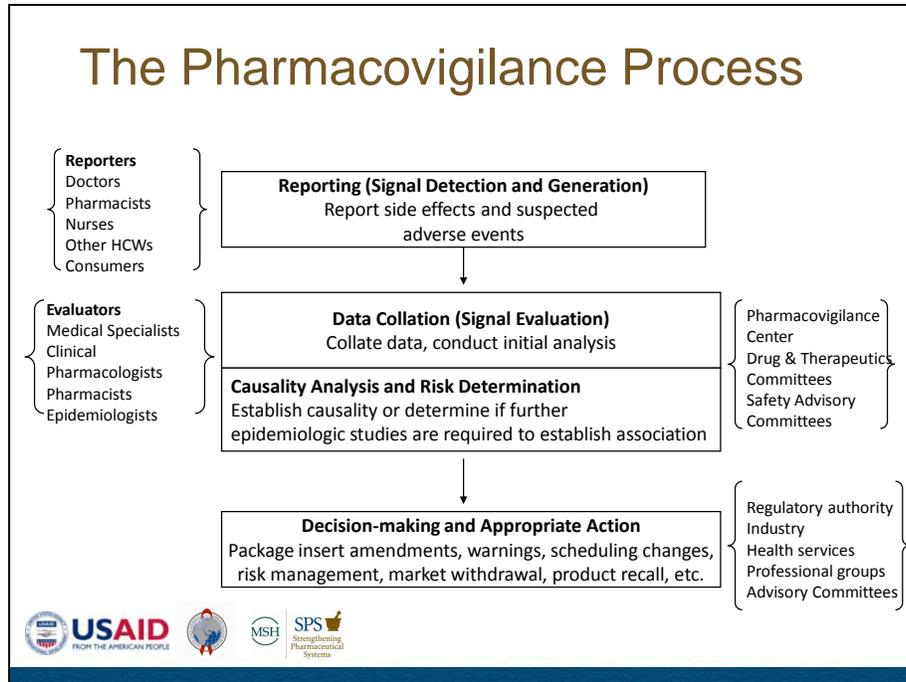
Comprehensive Monitoring Approach Using Passive and Active Surveillance



Pharmacovigilance in Vietnam's ART Program

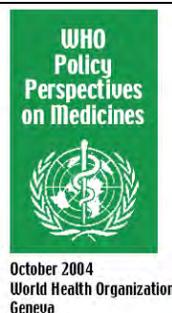
- Emphasize and use spontaneous monitoring
 - Link spontaneous reporting in the ART program to the national system
 - Generate signals for antiretroviral and opportunistic infection medicines
- Use active surveillance to enhance system
 - Monitor sentinel sites
 - Monitor cohort events
 - Maintain registries





**Table 2 Communicating messages about
medicine safety**

Vehicle	Issued by
'Dear Doctor' letters	Pharmaceutical manufacturers
Medicine alerts	National health authorities
Media statements	National health authorities/ pharmacovigilance centres
Patient information leaflets	Pharmaceutical manufacturers/ national health authorities/ pharmacovigilance centres
Newsletters	National pharmacovigilance centres and WHO
Personal feedback to reporters	National pharmacovigilance centres



The Erice Declaration 1997 (1)

- Drug safety information must serve the health of the public
- Information to be ethically and effectively communicated in terms of content and method
- Facts, hypotheses and conclusions distinguished
- Uncertainty acknowledged
- Information provided in ways that meet both general and individual needs
- Education in the appropriate use of medicines is essential for the public, patients and health care providers

THE ERICE DECLARATION
on Communicating Drug Safety Information



Source: <http://www.who-umc.org/DynPage.aspx?id=22690>

The Erice Declaration 1997 (2)

- Education requires special commitment and resources
- Information on medicines directed to the public should be balanced with respect to risks and benefits
- All evidence needed to assess and understand risks and benefits must be openly available
- Constraints which hinder communications should be recognised and overcome

THE ERICE DECLARATION on Communicating Drug Safety Information



Source: <http://www.who-umc.org/DynPage.aspx?id=22690>

Risk Management (1)

- “Set of pharmacovigilance activities and interventions designed to identify, characterize, prevent or minimize risks relating to medicinal products, including the assessment of the effectiveness of those interventions”

- “Guideline on Risk Management Systems for Medicinal Products for Human Use”, CHMP, EMEA, 2005

- FDA and EMA are giving heavier emphasis on “risk management” covering the entire life-span of a drug to minimize safety problems*

FDA = Food and Drug Administration, USA
EMA = European Medicines Agency



* Cobert BL. Manual of drug safety and pharmacovigilance. Boston: Jones & Bartlett Publishers, Inc., 2007.

Risk Management (2)

- Risk management represents a fundamental *paradigm shift* from a passive information-oriented approach to one of *action and accountability for the safe use of drugs* within the marketplace*
- Emphasis is increasing toward:
 - promoting safety and preventing risks
 - taking a “proactive” rather than a “reactive” approach
 - planning and implementing “risk management” strategies



*Perfetto EM et al. *Drug Information Journal* 2003;37:127-134.

FDA Risk Management Framework

Risk Management Activities

Risk Assessment: estimation and evaluation of risk

Risk Confrontation: determining acceptable level of risk in a larger context

Risk Intervention: risk control action

Risk Communication: interactive process of exchanging risk information

Risk Management Evaluation: measure and ensure effectiveness of risk management efforts



URL: <http://www.fda.gov/Safety/SafetyofSpecificProducts/ucm180582.htm>

US FDA Structures for Risk Management and Risk Communication

- DrugWatch <http://www.fda.gov/safety/medwatch/default.htm>
- Risk Minimization Action Plans (RiskMAPs)
http://www.fda.gov/ohrms/dockets/ac/05/briefing/2005-4136b1_03_Risk%20Minimization%20Action%20Plans.pdf
- Risk Evaluation and Mitigation Strategies (REMS)
<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm111350.htm>
- Medication guides and patient labeling
<http://www.fda.gov/Drugs/DrugSafety/ucm085729.htm>



Examples of RiskMAP – Goals and Objectives

Drug	Goal	Objective
Clozapine	No agranulocytosis	WBC monitoring
Lindane	Minimize CNS toxicity and death	No misuse (overdose or extended use)
Thalidomide	No fetal exposure	Pregnancy prevention and monitoring for pregnancy



Source: Karwoski CB. Presentation on "Practical Experience with Risk Management Plans in the US", *DIA 42nd Annual Meeting*, Philadelphia, 2006.

Examples of Approved Risk Evaluation and Mitigation Strategies (REMS)

Name	Application	Date REMS Approved	REMS Components (All REMS include timetable for assessment)
Actoplus Met XR (pioglitazone and metformin) Extended-Release Tablets [PDF]	NDA 22-024	5/12/2009	medication guide
Advair Diskus (fluticasone propionate and salmeterol xinafoate inhalation powder) [PDF]	NDA 21-077/S-029	4/30/2008	medication guide



USAID
FROM THE AMERICAN PEOPLE



MSH



SPS

Strengthening
Pharmaceutical
Systems

URL:

<http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm111350.htm>

Minimizing Risk Through *Proactive* and *Preventive* Measures

 Institute for Safe Medication Practices
ISMP's List of *High-Alert Medications*

November 27, 2003

ISMP List of Error-Prone Abbreviations, Symbols, and Dose Designations

Volume 8 Issue 24



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Strengthening
Pharmaceutical
Systems

Implementing a Comprehensive PhV System: Steps for Success (1)

- Recognize and build on foundations that already exist
- Introduce PhV as value added to ongoing initiatives, rather than a “new” and “competing” initiative
- Prioritize identified interventions and adopt a realistic and phased approach in implementing them
- Pay attention to developing policies, guidelines, and SOPs, but also enforcing them
- Capitalize on opportunities to support *system strengthening* to bring lasting results
- Use public health programs to catalyze PhV and link with national system



Implementing a Comprehensive PhV System: Steps for Success (2)

- Improve coordination among key stakeholders
- Exploit opportunities for integrating PhV functions in existing tools and software
- Ensure private sector participation from the beginning
- Ensure ongoing supervision and monitoring for better results
- Mobilize and coordinate with donors and diversity funding sources
- Strengthen governance, transparency, and accountability on PhV matters



ANNEX 5. SUGGESTED REVISIONS IN VIETNAM'S ADR REPORTING FORM

Ministry of Health, Vietnam
The National Centre of DI&ADR

Logo

Form for Reporting Suspected Adverse Drug / Vaccine Reaction, Product Quality Problem and Medication Error

Name of the site
Office use only

Identities of the reporter, patient and institution will remain strictly confidential.
Please report even if you're not certain the product caused the event or you don't have all the details.

I. Patient Details						
Patient Identifier:						
Date of birth (DD/MM/YYYY) or Age:.....				Sex: Male <input type="checkbox"/> Female <input type="checkbox"/>	Weight:.....kg	
II. Adverse Drug Event Description						
Type of event	Adverse Reaction <input type="checkbox"/>		Quality Problem <input type="checkbox"/>		Medication error <input type="checkbox"/>	
Description of Event			Start date of Event : / /			
			End date of Event (If applicable) : / /			
			Relevant Tests/Lab Data:			
			Other relevant histories, including pre-existing medical conditions (eg:allergies, pregnancy, smoking and alcohol use, hepatic, renal etc)			
Event subsided after stopping / reducing the dose of suspected product Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable <input type="checkbox"/>						
Event reappeared after reintroducing the suspected product Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable <input type="checkbox"/>						
Adverse Event Outcome						
Death <input type="checkbox"/>	Life-threatening <input type="checkbox"/>		Recovered without consequences <input type="checkbox"/>			
Disability <input type="checkbox"/>	Hospitalisation <input type="checkbox"/>		Recovered with consequences <input type="checkbox"/>			
Congenital anomaly <input type="checkbox"/>	Other:..... <input type="checkbox"/>		Recovering <input type="checkbox"/>			
Required intervention to prevent permanent impairment/damage <input type="checkbox"/>					Not yet recovered <input type="checkbox"/>	
III. Suspected Drug(s)/Vaccine(s)						
Medicine / vaccine (Generic and/or Brand name)	Dosage	Route	Start date	End date	Reason for use	
Other Drug(s) / Vaccine(s) taken at the time of the event						
IV. Product Quality Problem						
Trade Name	Manufacturer	Batch No	Registration No	Dosage form & Strength	Expiry Date	Size/Type of container
Product available for evaluation? Yes <input type="checkbox"/> No <input type="checkbox"/>						
V. Reporter Details						
Name:			Profession			
Contact Phone Number:			Doctor <input type="checkbox"/>	Pharmacist <input type="checkbox"/>		
Email:			Nurse <input type="checkbox"/>	Other:		
Signature:			Date:			

**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

<p>This form can be used by:</p> <ul style="list-style-type: none"> • Physician • Pharmacist • Dentist • Nurses • Other healthcare providers 	<p>Please report all suspected adverse events, especially:</p> <ul style="list-style-type: none"> • Suspected adverse events to new drugs (on the market for less five years) • Unknown or unexpected adverse events • Serious adverse events • Drug interactions • Treatment failure
<p>Use this form to report adverse events from:</p> <ul style="list-style-type: none"> • Medications (drugs or biologicals) • Vaccines • Herbal and traditional remedies 	<p>Report product problems – Quality, performance or safety concerns such as:</p> <ul style="list-style-type: none"> • Suspect counterfeit product • Suspect contamination • Questionable stability • Defective components • Poor packaging or labeling • Therapeutic failures (product didn't work)
<p>How to report:</p> <ul style="list-style-type: none"> • Just fill in the section apply to your report • Attach additional pages if needed • Report to the National Centre of DI&ADR in one of the following ways <p>By mail to: The National Centre of DI&ADR 13-15 Le Thanh Tong Street Hoan Kiem District, Hanoi</p> <p>Or by fax at: 043 933 5642</p> <p>Or by email at: di.pvcenter@vnn.vn</p>	<p>Please report medication errors such as:</p> <ul style="list-style-type: none"> • Incorrect medication • Incorrect dose or frequency • Incorrect route • Gave an expired medication • (Any other errors)
<p>If you have any questions please contact the National Centre of DI&ADR by phone at 043 9335618 or by email at di.pvcenter@vnn.vn</p>	

Thank You

ANNEX 6A. STANDARD OPERATING PROCEDURE FOR THE PLANNED QUESTION-ANSWER SERVICE



**Vietnam Ministry of Health
National DI&ADR Centre**

Standard Operating Procedure (SOP) for Question-Answer Service

1. While in the office keep a pen and the question-answer (QA) form close to you or stay close to the computer that has the soft version of the form.
2. When a phone comes answer the call by 5 rings. During office hours, if you are not available when the phone comes, listen to the voice message recorded on the answering machine as soon as you come back and plan to reply within half an hour of receiving the call. If the phone comes outside office hours then check the answering machine first thing next morning and give a call back immediately.
3. While answering the phone, greet courteously and identify who you are.
4. Ask the caller to hold on saying that you want to pull out the QA form. While saying this, pull out either the electronic or hard copy of the form.
5. If an inquirer comes to the DI& ADR Centre in person, greet courteously and pull out the QA form
6. Ask the inquirer's name, profession, addresses, phone, email and other contact details as indicated in the form and fill the appropriate fields on the form
7. While having this conversation, indicate in the form the date of inquiry and the mode of enquiry (phone, fax, letter, email, etc).
8. Then ask and record the inquirer's question carefully.
9. Ask and record any patient-related data (as specified in the form) if the question is related to a patient.
10. Ask how urgent the question is. After determining the speed with which the response would be needed, agree on the date and time by which response will be provided.
11. End the conversation and say goodbye (keep on the conversation if necessary).
12. Then indicate on the form which category the question belongs to (e.g., therapy, dose, contraindication, ADR, use in pregnancy, cost, etc)

13. If you have used a paper version, transcribe the information immediately into the electronic version of the form.
14. If you have received the question via email, fax or letter, transcribe the question and details of the inquirer into electronic form. If there is any confusion or missing information, contact the enquirer to clarify or fill the missing information.
15. Assessing from the category of the question, determine which resource would be appropriate to check first and begin your search with the sources you already have in the Centre. Depending on the need do an additional Internet search, and if necessary, contact a specialist who is in your Centre's Expert Consultancy or Advisory Panel (for a specialized question).
16. After you have gathered the necessary facts, formulate the response in a clear and concise manner. Make sure that you can back up your writing with dependable references. Cite them in full at the end of the response.
17. Review your response one last time before sending it to the inquirer, especially doses, route of administration and other sensitive pieces of information in which errors are likely to occur.
18. Send the response through the channel that was predetermined with the inquirer (email, fax etc).
19. If you provide a phone or other verbal response, make also a written copy and send it later through an appropriate channel (except in cases where the question was of a very minor type).
20. In case you are unable to deliver the response by the agreed time, give a polite call to the inquirer, explain the cause for the delay, and mutually agree on the new date and time of delivery
21. As soon as you send the response, register/log the question and answer in the database.
22. Make sure all patient-related questions and information are kept strictly confidential.
23. Print a hard copy of the completed response and put it systematically in the "Archives Folder".
24. Use all available opportunities to follow up on the response provided.
25. Make sure to keep an updated back up of all the electronic files related to the QA service.

ANNEX 6B. QUERY RECORDING/ANSWERING FORM FOR THE PLANNED QUESTION-ANSWER SERVICE



**THE NATIONAL CENTER
OF DRUG INFORMATION AND ADVERSE DRUG REACTIONS MONITORING**
13 – 15 Le Thanh Tong – Hoan Kiem – Ha Noi
Email: di.pvcenter@vnn.vn , Fax: 844 39335624, Tel: 844 39335618

DRUG INFORMATION REQUEST & ANSWER FORM

Please FAX completed request form to: +84.4.39335624

Time / Date:

Enquirer's name: Address: Phone: Fax: Email: Profession: <input type="checkbox"/> Pharmacist <input type="checkbox"/> Physician <input type="checkbox"/> Nurse <input type="checkbox"/> Dentist <input type="checkbox"/> Pharmaceutical <input type="checkbox"/> Medical representative <input type="checkbox"/> Druggist <input type="checkbox"/> Patient / Consumer Other (Please specify)..... Affiliation:	Agreed date & time of response Preferred method of response <input type="checkbox"/> Phone <input type="checkbox"/> Email <input type="checkbox"/> Letter <input type="checkbox"/> Fax Question receiver's name: Initial: _____
Question asked:	Mode of inquiry: Phone: Email: Fax: Letter: In person:
Patient information (if necessary): Age.....; Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female; Weight.....kg Diagnosis: History: Laboratory data (if relevant): Current medication:	Type of Question: <input type="checkbox"/> Product identification <input type="checkbox"/> Dosage/ Administration <input type="checkbox"/> General information <input type="checkbox"/> Drug availability <input type="checkbox"/> Adverse drug reaction <input type="checkbox"/> Drug interaction <input type="checkbox"/> Therapeutic use <input type="checkbox"/> Literature Retrieval <input type="checkbox"/> Pregnancy/ Lactation <input type="checkbox"/> Abuse/ Addiction <input type="checkbox"/> Toxicology <input type="checkbox"/> Cost <input type="checkbox"/> Kinetics <input type="checkbox"/> Investigational drug <input type="checkbox"/> Stability/ Compatibility <input type="checkbox"/> Other:
Answer (including references):	Date and time the response actually delivered: Response provider's name: Initial: _____

...Continue on the next page if necessary

ANNEX 7. MATRIX OF KEY STAKEHOLDER GROUPS RELATING TO DRUG INFORMATION AND PHARMACOVIGILANCE ACTIVITIES IN VIETNAM

Vietnam Stakeholder Analysis (Drug Information, Drug Safety, and Pharmacovigilance)

Stakeholder (SH)	What are the drug information, drug safety, and pharmacovigilance related needs of this person/group?	How can this person/group contribute to drug information, drug safety, and pharmacovigilance activities of the National DI&ADR Centre?	Name of relevant persons in this SH group for drug info, drug bulletin, and pharmacovigilance
Physicians	<ul style="list-style-type: none"> - Comparative information on efficacy, safety and cost - Drugs of choice - Drug-drug, drug-food, drug-lab interactions - Prescribing for patients with specific conditions (hepatic disease, renal failure, pregnancy, lactation, neonates and children, elderly) - Compatibility of IV drugs with different IV infusions - Standard treatment guidelines(including those in public health programs) - Treatment failure and drug resistance information - Adherence (compliance) to treatment - Prescribing and cost information on newly marketed drugs in Vietnam - Drugs withdrawn in Vietnam due to safety/quality reasons - New indications of existing drugs - Contraindications - Product quality - Availability of items - Generic substitution/therapeutic interchange - Drug promotion - Global safety warnings relating to medicinal products and vaccines (from WHO and other competent authorities) - Recent issues related to safety/prescribing in neighboring countries - Medication errors (focusing on prescribing errors) - Results of recent clinical trials and summaries of meta-analysis by bodies such as Cochrane - Information on drug use evaluations and trends in prescribing in Vietnam - Monitoring of patients on high-risk medicines - Sources of prescribing and safety information - In-country information on adverse events relating to drugs and vaccines 	<ul style="list-style-type: none"> - Sharing experiences of local safety/ADR and treatment failure issues - Reporting of medication errors - New treatment approaches - Drug resistance (microbiologist, prescribing clinicians. etc) - Toxicology and forensic issues related to medicines; - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Writer for the bulletin on treatment, medicine safety, treatment failure issues 	Fill names of relevant persons here
Pharmacists	<ul style="list-style-type: none"> - Formulary and other activities of Drug and Therapeutics Committees (DTCs) 	<ul style="list-style-type: none"> - Sharing database of DUE in hospitals - Facts from routine practice related to safety, self- 	

**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam**

Stakeholder (SH)	What are the drug information, drug safety, and pharmacovigilance related needs of this person/group?	How can this person/group contribute to drug information, drug safety, and pharmacovigilance activities of the National DI&ADR Centre?	Name of relevant persons in this SH group for drug info, drug bulletin, and pharmacovigilance
	<ul style="list-style-type: none"> - Comparative information on efficacy, safety and cost - Drug-drug, drug-food, drug-lab interactions - Prescribing for patients with specific conditions (hepatic problems, renal failure, pregnancy, lactation, neonates and children, elderly) - Compatibility of IV drugs with IV infusions - Standard treatment guidelines (including those in public health programs) - Drug resistance information - Adherence (compliance) to treatment - Newly marketed drugs in Vietnam - Drugs withdrawn in Vietnam due to safety/quality reasons - New indications of existing drugs - Contraindications - Monitoring of patients on high-risk medicines - Product quality - Availability of items - Techniques of administration of special dosage forms of medicines - Generic substitution/therapeutic interchange - Global safety warnings relating to medicines (from WHO and other competent authorities) - Recent issues relating to safety/prescribing in neighbouring countries - Medication errors (focusing on dispensing errors) - ABC/VEN analysis - Patient counseling, language barriers - Over-the-counter (OTC) drugs - Controlled substancesMedicines requiring special storage, devices for administration in Vietnam - Storage problems in Vietnam - Drug promotion - Sources of drug and safety information - In-country information on adverse events relating to drugs and vaccines - Vietnam pharmaceutical rules and regulations 	<p>medications, drug information requested of them, drug interactions</p> <ul style="list-style-type: none"> - Medication errors - OTC drugs, fake/counterfeit drugs - New drugs manufactured in Vietnam - Prescribing/dispensing analysis and feedback - Controlled substances - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre Promotion and distribution of ADR form - Information on prescribing adherence to local standard guidelines - Drug use indicator studies (prescribing indicators, patient care indicators, facility indicators) - Information on rug availability, price, dose, interactions, etc - Medicine safety issues and warnings - Writer for the bulletin on treatment, medicine safety, treatment failure issues 	
Nurses	<ul style="list-style-type: none"> - Drug information about dosage, indication, and contradiction - Techniques of administration of special dosage forms of medicines - Compatibility of IV drugs with IV infusions - Information on drug efficacy, safety and cost - Drug-drug, drug-food, drug-lab interactions 	<ul style="list-style-type: none"> - Reporting adverse drug events - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Writer for the bulletin on treatment, medicine safety, 	

*Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam*

Stakeholder (SH)	What are the drug information, drug safety, and pharmacovigilance related needs of this person/group?	How can this person/group contribute to drug information, drug safety, and pharmacovigilance activities of the National DI&ADR Centre?	Name of relevant persons in this SH group for drug info, drug bulletin, and pharmacovigilance
	<ul style="list-style-type: none"> - New indications/contraindications of existing drugs. - Medication errors (prescribing, dispensing, and administration errors) - Newly marketed drugs in Vietnam - Drugs withdrawn in Vietnam due to safety/quality issues - Patient counseling, and treatment adherence - Monitoring of patients on high-risk medicines - Sources of drug information, particularly those on techniques of drug administration and compatibility - In-country information on adverse events relating to drugs and vaccines 	treatment failure issues	
Public health professionals	<ul style="list-style-type: none"> - National and program-specific recommended treatment regimes - Availability and use of essential medicines lists and standard treatment guidelines in public health facilities - Newly marketed drugs in Vietnam - Drugs withdrawn in Vietnam due to safety/quality issues - Global safety warnings relating to medicines and vaccines (from WHO and other competent authorities) - Treatment switches in public health programs due to adverse drug reactions, and treatment failures - Mass treatment program success stories - In-country information on adverse events relating to drugs and vaccines used in public health programs - Local epidemics - Drug donation 	<ul style="list-style-type: none"> - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Sharing pharmaceuticals related experiences in public health programs and the community - Epidemic issues, medicine safety scare issues in the communities etc - Writer for the bulletin 	
Drug traders (wholesalers, retailers)	<ul style="list-style-type: none"> - Information on efficacy, safety and cost - Vietnam pharmaceutical rules and regulations - Information about new drugs - Information relating to availability, procurement, transport, distribution, storage, and prices of medicines and vaccines - Information on manufacturers and distributors - Information on adverse events and treatment failures with products that are being dealt with by the concerned drug traders - Package inserts/patient information leaflets from different countries 	<ul style="list-style-type: none"> - Facts and figures about drug availability, sale etc - Confusing names of medicines - Medication errors 	

*Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
DI & ADR Centre in Vietnam*

Stakeholder (SH)	What are the drug information, drug safety, and pharmacovigilance related needs of this person/group?	How can this person/group contribute to drug information, drug safety, and pharmacovigilance activities of the National DI&ADR Centre?	Name of relevant persons in this SH group for drug info, drug bulletin, and pharmacovigilance
Drug manufacturers	<ul style="list-style-type: none"> - Information about ingredients, excipients, formularies - Information about clinical trials - Good manufacturing, laboratory, and storage practices - Prequalification schemes - Drug quality and counterfeit issues - Information on adverse events and treatment failures with products supplied by the concerned manufacturer - Drugs withdrawn in Vietnam due to safety/quality issues - Global safety warnings relating to medicines and vaccines (from WHO and other competent authorities) - Package inserts/patient information leaflets from different countries - Vietnam pharmaceutical rules and regulations - Drugs/vaccines withdrawn due to safety/quality reasons. 	<ul style="list-style-type: none"> - Information about new drugs - Reporting ADR 	
Patients and the community	<ul style="list-style-type: none"> - Adequate counseling on the prescribed drugs - Provision of adequate information in local languages on OTC drugs - Responsible and informed self-medication - Appropriate health seeking behavior - Call centers that answer questions from patients/consumers - Public- and patient-oriented drug bulletins and information leaflets - Information on dependable sources of information on medicines 	<ul style="list-style-type: none"> - Advocacy for the Centre - Reporting ADR 	
Media/journalists	<ul style="list-style-type: none"> - Facts, figures, and stories related to medicine-related policies, availability, use, controversies etc - Information on dependable sources of information on medicines and medicine safety - Resource persons and call centers that the media personnel can contact for preparing reports or write-up on medicines and medicine safety 	<ul style="list-style-type: none"> - Contributing articles - Help in dissemination/ public sensitization of topics related to rational use and safety of medicines 	
Public and private health facilities	<ul style="list-style-type: none"> - Standard treatment guidelines and recommendations (including those from the public health programs) - National medicine policy - DUE in Vietnam - Global safety warnings (from WHO and other competent authorities) - Information relating to availability, procurement, transport, distribution, storage, and prices of medicines and vaccines 	<ul style="list-style-type: none"> - Supporting ADR reporting in Vietnam - Collaboration for bulletin production - Advocacy for the Centre 	

**Report on Technical Assistance for Drug Information and Pharmacovigilance Activities of the
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Stakeholder (SH)	What are the drug information, drug safety, and pharmacovigilance related needs of this person/group?	How can this person/group contribute to drug information, drug safety, and pharmacovigilance activities of the National DI&ADR Centre?	Name of relevant persons in this SH group for drug info, drug bulletin, and pharmacovigilance
University/ training institutes (medical, nursing, pharmacy, public health, others)	<ul style="list-style-type: none"> - Training about drug information and pharmacovigilance - Recent issues relating to drug information and pharmacovigilance - Drug information and pharmacovigilance related pre-service and in-service curricula for various categories of health professionals from different countries - Treatment regimens of public health programs 	<ul style="list-style-type: none"> - Advisory role for the Centre - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Writer for the bulletin on treatment, medicine safety, treatment failure issues - Orienting students about the functions and benefits of the Centre 	
Drug and Therapeutics Committees (DTCs)	<ul style="list-style-type: none"> - Standard treatment guidelines and recommendations (including those public health programs) - Newly marketed drugs in Vietnam - Drug withdrawal due to safety/quality reasons in Vietnam - New indications/contraindications of existing drugs - Drug information including quality, availability and price of locally available products - Global safety warnings (from WHO and other competent authorities) - Recent issues related to prescribing in neighboring countries - Medication errors - Recent meta-analysis review (e.g. from Cochrane) - DUE, trends in prescribing, and other pharmaceuticals related reports in Vietnam 	<ul style="list-style-type: none"> - Advisory role for the drug bulletin - Technical support for question/answer (QA) services - Advocacy for the Centre - Collaboration with the Centre in technical issues relating to drug information, treatment regimens, STGs, drug formularies, DUEs, ADR monitoring, drug safety promotion, etc 	
Public health programs (HIV/AIDS, TB, malaria, others)	<ul style="list-style-type: none"> - Treatment regimens, treatment switches, treatment failures etc from public health programs of neighbouring countries - Recommendations from WHO and other global bodies that have a bearing on the individual public health programs - Issues related to adherence, interactions etc from the recommended regimens - Success stories and strategies from other countries and regions 	<ul style="list-style-type: none"> - Supporting Pharmacovigilance - Sending relevant treatment regimen, treatment failure, treatment switches, and ADR information to the Centre - Sharing experiences from their fields - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Writer for the bulletin on treatment, medicine safety, treatment failure issues - 	
Drug Administration of Vietnam (DAV)	<ul style="list-style-type: none"> - New approvals, withdrawals, newer indications, restrictions, etc related to those medicines in the US, Europe and other countries that are of relevance to Vietnam; New regulations; - National medicine policy - Access to medicines 	<ul style="list-style-type: none"> - Information about new drug approval, drug withdrawals, banned items, indication/restriction related to medications in Vietnam, etc - Information about recent progress, changes, and revisions relating to regulatory and National Medicine 	

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	<ul style="list-style-type: none"> - Drug quality; stories regarding successful implementation of essential drugs policy - Traditional/herbal medicines – efficacy and safety issues - GMP/GSP/GPP/GLP/GCP issues - Drug prices (in neighbouring, and other resource limited countries) - Issues related to drug regulation/promotion/donation etc - Illegal pharmaceutical marketing through the Internet - Prequalification schemes 	<ul style="list-style-type: none"> - Policy (NMP) issues; - Information relating to herbal/traditional medicines - Information on drug import, export, local manufacture etc - Pharmaceutical product quality issues in the country and the region - Information sharing on regulatory actions against traders, manufacturers or healthcare professionals that have larger public health significance - Changes in drug law, registrations etc - Sharing of information on medication error incidents 	
Medical service Administration (MSA)	<ul style="list-style-type: none"> - Standard treatment guidelines and recommendations (including public health programs) - New indications/contraindications of existing drugs - Global safety warnings (from WHO and other competent authorities) - Recent issues related to prescribing in neighbouring countries 	<ul style="list-style-type: none"> - Advisory role for the drug bulletin - Expert panelist for question/answer (QA) services - Advocacy for the Centre - Writer for the bulletin on treatment, medicine safety, treatment failure issues 	
National DI&ADR Centre	<ul style="list-style-type: none"> - Drug information and pharmacovigilance resources (local publications, local facts/figures, local research findings, - Local changes in treatment - Access to international bulletins - Capacity on critical analysis 	<ul style="list-style-type: none"> - Developing SOPs, quality assurance oversight etc in its drug information and pharmacovigilance activities - Effectively coordinating with all relevant stakeholders inside the country, in the region, and globally 	
Development partners, WHO, donors, INGOs, NGOs	<ul style="list-style-type: none"> - Facts and Figure about reality of health in Vietnam - Statistics regarding prescribing, dispensing, ADRs, and other aspects relating to pharmaceuticals in Vietnam - Treatment regimens and plans within public health programs - SWOT analysis of the pharmaceutical sector in Vietnam, and clear articulation of the highest areas of need, specifically relating to drug information and pharmacovigilance 	<ul style="list-style-type: none"> - Technical assistance - Training - Support with resources - Linkages with other relevant bodies in other countries and regions 	
Health professional associations (Medical, Pharmacy, Nursing...)	<ul style="list-style-type: none"> - Standard treatment guidelines and recommendations (including public health programs) - Newly marketed drugs in Vietnam; drugs withdrawal due to safety/quality reasons in Vietnam - New indications/contraindications of existing drugs - Quality, availability and other aspects of marketed items - Global safety warnings (from WHO and other competent authorities) - Recent issues related to prescribing in neighbouring countries 	<ul style="list-style-type: none"> - Help with dissemination and distribution of DI&PV bulletin through their regular mailing - Give mini-talks during their professional meetings - Help with fund-raising and donations for the Centre - Coordinating public debates on specific pharmaceuticals and treatment related issues that are locally relevant - Sharing documents/guidelines - Contributing articles under the professional association 	

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	<ul style="list-style-type: none"> - Medication errors - Recent meta-analysis reviews (e.g., from Cochrane) - Issues related to prescribing, dispensing, and administration of medicines in the local context - SOPs, good practices, evidence-based medicine - Topics and information relating to trainings, including training of trainers, on medicine prescribing, dispensing, and administration - Local information on medication errors and medical negligence 	<ul style="list-style-type: none"> banners - Advisory role for the drug bulletin - Advocacy for the Centre - Collaborating with the Centre for trainings, including TOTs 	

ANNEX 8. SUGGESTED CHANGES IN THE CONTENT AND FORMAT OF HUP'S CLINICAL PHARMACY INFORMATION BULLETIN (DUOC LAM SANG)

Design, Format, Content of the Vietnam DI & ADR Centre's Bulletin

Element	Current	Recommended for future
Name	Clinical Pharmacy Information (Rational use of drugs)	Drug Information and Drug Safety Bulletin
Size	A4	A4
# of pages	32	4 (ideal) up to 8 pages (maximum)
Columns per page	01	02 - 03
Color	B & W	Color
Content	Drug Information (80%), ADR (20%)	Drug Information & Therapeutics (60%) Drug Safety (40%) 50%-50% after 1 – 2 years
Text size	Vn. Arial, Vn. Times 11-13	Text size big enough to read comfortably
Graphics	No graphic, no picture (or rarely)	At least 1 graphic (or picture) per issue
Editorial group	Representative	Selection to be done to ensure that all the members of the group are “action people”
Editorial advisory group	Widely represented	Large enough to make the group multidisciplinary (physicians, pharmacists, nurses, policy staff, etc) and multisectoral (academic, hospital, MOH, DAV, public health programs, professional associations, private sector, etc)
Editorial process	No SOP	Follow SOP
Frequency of publication	10 issues a year	Monthly (12 issues/year) At least 1 supplement on a special theme highly relevant to Vietnam (e.g., coverage on rational medicine use or pharmacovigilance topic in health professionals curricula in Vietnam; MDR tuberculosis in Vietnam)
Client groups	Pharmacists(mainly) , physicians, public, Pharmacy students	<i>Primary audience:</i> pharmacists, physicians, nurses, public health program staff, policy makers from the MOH, drug regulators from DAV, academic staff and students,

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		private sector healthcare providers (including drug traders), <i>Secondary audience:</i> researchers, consumer groups, media staff, the public.
Distribution	2500 per issue	5000 per issue
Method of distribution	Send by post directly to each recipient	In addition to sending by post directly to each recipient, try the following options as well: PDF version as email attachment to those who have email access; PDF version on the DI&ADR website when it gets created; sending to professional associations and public health programs etc to distribute among their constituencies
Survey/feedback	Not yet	At least once/year in the first few years; then once every 3 years

ANNEX 9. SOP FOR THE “PROCESS” IN COMMISSIONING AND COMPLETING ARTICLES FOR THE BULLETIN

DRUG BULLETIN EDITORIAL WORK TRACKING MATRIX

S No (or some identifier #)	Initial work			Draft development				Review				Author re-work as needed		Final editorial review		Final work		Remarks
	Identified topic	Responsible editorial staff	Objective and outline of the topic (completion date)	Author name	Email, phone	Sent date	Expected date of return	Reviewer(s) name	Email, phone	Sent date	Expected date of return	Date sent with reviewer comments	Expected date of return	Responsible editorial staff	Expected completion date	Final typo check and acceptance date	Planned for publication in issue #	

ANNEX 10. LIST OF LOCALLY RELEVANT AND USEFUL TOPICS FOR THE BULLETIN

Inventory of Locally Interesting and Useful Topics for the Vietnam MOH's National DI & ADR Centre Bulletin

1. Comparative presentation of different drugs used in treating a particular disease (efficacy, safety, cost, convenience).
2. Confusingly similar brand names in Vietnam (The “look-alike and sound-alike” products available in Vietnam).
3. Traditional or herbal practitioners prescribing modern medicines and sometimes secretly putting them in powder form in their traditional preparations in Vietnam.
4. Medication errors or real stories in Vietnam (prescribing, dispensing, administration errors).
5. Problems with fixed-dose combination (FDC) products in Vietnam (e.g., drugs for tuberculosis).
6. Price differences between different brands of the same medicine in Vietnam.
7. New drugs marketed in Vietnam.
8. Real case stories of drug Interactions, serious adverse drug reactions (ADRs), and treatment failures.
9. Antimicrobial resistance (AMR)/ drug resistance in Vietnam.
10. Summaries and implications of interesting/ useful drug use studies and other pharmaceuticals related studies in Vietnam, including master/PhD dissertations (thesis) in pharmacy, nursing, medicine, and other health professionals’ courses.
11. Drug banned or recently withdrawn in Vietnam.
12. Recent regulatory decisions, or safety warnings/ issues in Vietnam, and also “global” warnings/issues that have relevance to Vietnam.
13. “Reproduction” (with permission and acknowledgement) of very useful drug information, medication error, or safety/pharmacovigilance related articles from other countries’ bulletins along with some locally relevant editorial comments at the end.

14. Stories, issues around over-the-counter (OTC) products and self-medication/ irrational drug use by the public in Vietnam. Problems of non-adherence (non-compliance) to medications and ways to improve adherence in Vietnam.
15. National treatment recommendations by public health programs in Vietnam. Treatment regimen changes in public health programs (HIV/AIDS, TB, malaria, etc). National vaccination program.
16. Summaries of recent meta-analysis results (e.g., Cochrane reviews) relevant for Vietnam.
17. Important sources of drug therapy information that are freely available on the internet relating to specific topics e.g., HIV/AIDS, drug use during pregnancy.
18. Comparative analysis of national medicines policies (NMPs) in Mekong countries.
19. How to stimulate ADR reporting in Vietnam. Publicity of the spontaneous ADR reporting form.
20. Interesting/ useful question-answer encounters received by the DI & ADR Centre.
21. Sensitization on the differences between items that appear similar, e.g., MgCl₂ and MgSO₄.
22. Possible ways to minimize adverse events due to high risk medicines in Vietnam (e.g., heparin, warfarin, anticancer drugs, lithium, antidepressants)
23. Awareness and management of local epidemics in Vietnam
24. Interview with key experts in the pharmaceuticals field (DAV, MOH, doctors, pharmacist, researchers, specialists, super-specialists, etc).

ANNEX 11. COMPARISON OF DIFFERENT COUNTRIES' ADR FORMS

Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
Patient Details											
Report No.				✓	✓			✓			
Name of Site										✓	
Site's Report Code										✓	
Center's Report Code										✓	
Patient Identifier	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Medical Record No.					✓	✓					
Health Institution					✓	✓					
Date of Birth		✓	✓	✓	✓	✓	✓	✓	✓		✓
Age	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weight	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Height	✓		✓				✓		✓	✓	✓
Sex	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethnicity										✓	
Pregnancy	✓		✓					✓			
LMNP (Females)											
Suspected Drug(s)/Vaccine(s) and All Other Drugs Used											
Drug Name (Generic and Brand)	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Manufacturer	✓	✓	✓	✓	✓				✓	✓	
Manufacturer's Address										✓	
Batch No.	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Unique ID									✓		
Expiration	✓	✓	✓					✓	✓	✓	
Dose	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Route	✓	✓	✓		✓		✓	✓	✓		✓

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Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
Frequency	✓	✓			✓			✓	✓	✓	
Start Date	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
End Date	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Reason for Use	✓	✓		✓	✓		✓	✓	✓	✓	✓
Concomitant Medical Products and Therapy Dates	✓	✓							✓		
Strength	✓		✓						✓	✓	
Indication the Product was Used for			✓								
Where did the Patient Obtain the Product?			✓								
Reuse the Drugs										✓	
Other Products Used			✓					✓		✓	
Adverse Drug Reaction Description											
Adverse Event		✓	✓		✓		✓		✓		✓
Quality Problem							✓		✓		✓
Description of Event	✓		✓	✓			✓	✓	✓	✓	✓
Detail of ADR								✓			
Relevant Tests/Lab Data	✓	✓	✓				✓	✓	✓		✓
Relevant History	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Start Date of Event	✓	✓	✓	✓	✓		✓	✓	✓		✓
Start Time of Reaction							✓		✓	✓	✓
End Date to Event		✓	✓		✓					✓	
Date of Reporting	✓		✓						✓		
Treatment of Adverse Event	✓		✓				✓		✓		
Outcome of ADR											

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Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
Patient Name					✓						
Date Recovered					✓						
Fatal		✓						✓		✓	
Fatal (not because of drugs)										✓	
Continuing		✓									
Recovering		✓	✓					✓			
Recovered		✓					✓	✓	✓		
Recovered without Consequence			✓							✓	✓
Recovered with Consequence			✓							✓	✓
Sequelae							✓		✓		✓
Describe Sequelae							✓		✓		✓
Toxicity-Related Treatment Switch			✓								
No Rehabilitation										✓	
Unknown		✓								✓	
Other		✓	✓								
Is Reaction Serious?								✓			
Why is Reaction Serious?								✓			
Event subsided after stopping	✓	✓	✓		✓			✓	✓	✓	
Event reappeared after reintroducing	✓	✓	✓		✓		✓	✓	✓	✓	✓
Treatment of Reaction								✓			✓
Specific antagonist used					✓						

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Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
Date of Death			✓					✓			
Seriousness of ADR											
Patient Died	✓	✓	✓		✓		✓		✓		✓
Hospitalization	✓	✓	✓		✓		✓		✓		✓
Required Intervention to Prevent Permanent Impairment/Damage	✓	✓			✓		✓		✓		✓
Life Threatening	✓	✓	✓		✓		✓		✓		✓
Prolonged Hospitalization (more than 24 hrs)	✓		✓		✓						
Permanent Disability	✓	✓	✓		✓		✓		✓		✓
Other	✓	✓							✓		✓
Congenital Anomaly	✓	✓	✓		✓		✓		✓		✓
ADR Treatment											
Result of Stopping Using the Drug										✓	
Result of Using Other Drugs										✓	
Comments from Treatment Doctor/Reporter										✓	
ADR Check											
Assess Relationship between Drugs and ADR										✓	
Opinion of Review Expert										✓	
Product Quality Problem											
Type of Product						✓					
Trade Name						✓	✓		✓		✓

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Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
Batch No.						✓	✓		✓		✓
Registration No.						✓	✓		✓		
Dosage Form and Strength						✓	✓		✓		✓
Expiry Date						✓	✓		✓		✓
Size/Type of Container						✓	✓		✓		✓
Is Product Available for Evaluation?							✓		✓		✓
Manufacturer						✓					
Manufacturing Date						✓					
Distributor/Vendor						✓					
Has the Manufacturer been Informed						✓					
Type of Quality Problem						✓					
Suspect Medical Device											
Brand Name									✓		
Common Device Name									✓		
Manufacturer Name, City, and State									✓		
Model No.									✓		
Lot No									✓		
Catalog No.									✓		
Serial No.									✓		
Expiration Date									✓		
Other No.									✓		
Operator of Device									✓		
If Implant, Give Date									✓		

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Adverse Drug Reporting Forms											
	Canada	India	Namibia	Nepal	Saudi Arabia (ADR)	Saudi Arabia (Product Quality)	South Africa	Tanzania	US Med Watch	Vietnam	Zambia
If Explanted, Give Date									✓		
Single-Use Device Reused									✓		
Name and Address of Reprocessor									✓		
Reporter											
Reporter Name	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reporter Address	✓	✓	✓		✓	✓	✓		✓		✓
Phone	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Cell Phone		✓									
E-mail		✓	✓		✓	✓		✓	✓	✓	
Fax			✓		✓	✓				✓	✓
Date		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Report Time										✓	
Specialty		✓									
Profession	✓	✓	✓		✓	✓		✓	✓	✓	
Organization						✓					
Signature		✓		✓	✓	✓	✓	✓	✓	✓	✓
Health Professional?	✓										
Health Facility			✓	✓				✓			
Health Facility Address								✓			
Region			✓								
Qualifications							✓		✓		✓
Also Reported to Manufacturer?	✓								✓		
Withhold identity									✓		