Iraqi Ministry of Health
Directorate of Technical Affairs
Pharmacy Department
Pharmacovigilance Section

Pharmacovigilance Guidelines

For healthcare professionals

Iraqi Ministry of Health
Directorate of Technical Affairs
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Iraqi Pharmacovigilance Center

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for Healthcare Professionals

Version 2.0

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1- Preface:

As a part of the global collective efforts to achieve good pharmacovigilance practices in drug safety surveillance, this guidelines document was developed to serve as guidance support and an informative tool directed to all **healthcare personnel** throughout the country.

Its purpose is to emphasize the importance of pharmacovigilance as medical science and to provide detailed descriptions and instructions to all healthcare professionals in the Iraqi health system regarding the related activities during their daily clinical practice, which consist of ADR detection, classification, and reporting to the Iraqi Pharmacovigilance Center in the form of **Individual Case Safety Report (ICSR).**

This document can serve as source material for any kind of pharmacovigilance training activities conducted targeting all healthcare professionals in the Iraqi health system.

This is the second version of the guidelines; the first version was issued in 2012. Since then, major structural and procedural changes have taken place within the Iraqi pharmacovigilance system with the establishment of new entities, roles, and responsibilities which prompted the need to update the guidelines to further orient pharmacovigilance practitioners and ensure efficiency.

The reporting concepts in this document are primarily based on the guidelines of the International Council for Harmonization (ICH), CIOMS, the European Medicine Agency (EMA) the United States Food and Drug Administration (FDA), and the first Iraqi ADR reporting guidelines for healthcare professionals and the Iraqi pharmacovigilance guidelines for marketing authorization holders.

2- Acknowledgements:

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3- Glossary:

Term	Definition
Abuse	Persistent or sporadic, intentional excessive use of medicinal products, which is accompanied by harmful physical or psychological effects.
Active surveillance	A system for the collection of case safety information as a continuous pre-organized process. Active surveillance can be: 1. Drug based: identifying adverse events in patients taking certain products; 2. identifying adverse events in certain healthcare settings where they are likely to present for treatment 3. Event-based: identifying adverse events that are likely to be associated with medicinal products, e.g., liver failure
Additional monitoring drugs	Medicines are being monitored even more intensively than other medicines. Additional monitoring aims to enhance reporting of suspected adverse drug reactions for medicines for which the clinical evidence base is less well developed. The main goals are to collect information as early as possible to further inform the safe and effective use of these medicines and their benefit-risk profile when used in everyday medical practice.
Adverse Drug Reaction (ADR)	Response to a medicinal product that is noxious and unintended. Response in this context means that a causal relationship between a medicinal product and an adverse event is at least a reasonable possibility. Adverse reactions may arise from the use of the product within or outside the terms of the marketing authorization or from occupational exposure. Conditions of use outside the marketing authorization include off-label use, overdose, misuse, abuse, and medication error.
Adverse Event (AE)	Any untoward medical occurrence in a patient or clinical trial subject administered a medicinal product that does not necessarily have a causal relationship with this treatment. An adverse event can therefore be any unfavorable and unintended sign (e.g., an abnormal laboratory finding), symptom, or disease temporally associated with the use of a medicinal product, whether or not considered related to the medicinal product.
Biologic or biological product	Is a medicinal product that contains an active substance that is produced by or extracted from a biological source and needs for its characterization and the determination of its quality a combination of physio-chemical-biological testing, together with the production process and its control. The Biological product includes medicinal substances derived from blood and plasma, biotechnology-derived medicines (e.g., using recombinant DNA technology), all types of prophylactic vaccines, and advanced therapy medicinal products (ATMPs).
Biosimilar	Is a biological product that is highly similar to and has no clinically meaningful differences from an existing FDA-approved reference product.
Causality Assessment	The evaluation of the likelihood that a medicine was the causative agent of an observed adverse event in a specific individual. Causality assessment is usually made according to established algorithms.
Consumer	In the context of ADR reporting, it refers to a person who is not a healthcare professional.
Dechallenge	Dechallenge means withdrawal of medicine from the patient's therapeutic regimen.

	• Negative dechallenge means continued presence of an adverse experience after withdrawal of the medicine. • Positive dechallenge means partial or complete disappearance of an adverse event after withdrawal of the medicine.
European Medicine Agency (EMA)	The European Medicines Agency is an agency of the European Union in charge of the evaluation and supervision of medicinal products.
Expected ADR	An expected ADR is one for which its nature or severity is consistent with that included in the appropriate reference safety information (e.g., Investigator's Brochure for an unapproved investigational product or package insert/summary of product characteristics for an approved product).
Falsified medicines	Medical products that deliberately/fraudulently misrepresent their identity, composition, or source
Healthcare professional	A person who is qualified and trained to provide healthcare to humans. This includes doctors, physician assistants in some jurisdictions, nurses, dentists, pharmacists, and midwives. For the purposes of reporting suspected adverse reactions, the definition of healthcare professional additionally includes coroners and medically qualified persons otherwise specified by local regulations.
Individual Case Safety Report (ICSR)	Individual Case Safety Report (ICSR) captures information necessary to support reporting of suspected adverse reaction(s) due to the use of a medicinal product by a patient at a specific point in time. ICSR is considered to be valid for reporting to a regulatory authority if it has at least: (1) one single identifiable patient, (2) one identifiable reporter, (3) one or more suspect adverse drug reactions, and (4) one or more suspect identifiable product
Medication error	A medication error is an unintended failure in the drug treatment process that leads to or has the potential to lead to, harm to the patient. Mistakes in the prescribing, dispensing, storing, preparation, and administration of medicine are the most common preventable cause of undesired adverse events in medication practice and present a major public health burden.
Medicinal product	A substance or combination of substances that is intended to treat, prevent, or diagnose a disease, or to restore, correct, or modify physiological functions by exerting a pharmacological, immunological, or metabolic action.
Misuse	The situation where the medicinal product is intentionally and inappropriately used is not in accordance with the terms of the marketing authorization.
Non-serious adverse reaction	Adverse reaction that does not meet the definition of a serious adverse reaction.
Off-label use	Situations where a medicinal product is intentionally used for a medical purpose, not in accordance with the terms of the marketing authorization.
Package leaflet	A leaflet containing information for the user accompanies the medicinal product.
Passive Surveillance	A surveillance method that relies on healthcare providers (and consumers in some countries) to take the initiative in communicating suspicions of adverse drug reactions that may have occurred in individual patients to a spontaneous reporting system.

Pharmacovigilance	The science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other possible drug-related problems.
Pharmacovigilance system	In general, a pharmacovigilance system is a system used by an organization to fulfill its legal tasks and responsibilities regarding pharmacovigilance and is designed to monitor the safety of authorized medicinal products and detect any change to their risk-benefit balance.
Post-authorization	The stage in the life cycle of a medicinal product follows the granting of the marketing authorization, after which the product may be placed on the market.
Post-authorization safety study (PASS)	Any study relating to an authorized medicinal product conducted to identify, characterize, or quantify a safety hazard, confirm the safety profile of the medicinal product, or measure the effectiveness of risk management measures.
Post-marketing	The stage when a drug is approved and generally available on the market
Potential risk	An untoward occurrence for which there is some basis for suspicion of an association with the medicinal product of interest but where this association has not been confirmed. Examples include: • toxicological findings seen in non-clinical safety studies that have not been observed or resolved in clinical studies; • adverse events observed in clinical trials or epidemiological studies for which the magnitude of the difference, compared with the comparator group (placebo or active substance, or unexposed group), on a parameter of interest raises suspicion of, but is not large enough to suggest a causal relationship; • a signal arising from a spontaneous adverse reaction reporting system; • an event known to be associated with other active substances within the same class or which could be expected to occur based on the properties of the medicinal product.
Rechallenge	Rechallenge means the reintroduction of a product suspected of having caused an adverse event following a positive dechallenge. • Negative rechallenge means failure of the medicine when reintroduced, to produce signs or symptoms similar to those observed when the medicine was previously introduced. • Positive rechallenge means reoccurrence of similar signs and symptoms upon reintroduction of a medicine.
Risk-benefit balance	An evaluation of the positive therapeutic effects of the medicinal product concerning the risks, i.e., any risk relating to the quality, safety, or efficacy of the medicinal product as regards patients' health or public health.
Risk factor	Characteristics associated with an increased probability of occurrence of an event or disease.
Risk minimization	In a broader sense, the term risk minimization is used as an umbrella term for the prevention or reduction of the frequency of occurrence of an undesirable outcome (see risk prevention) and the reduction of its severity should it occur (see risk mitigation).
Serious Adverse Event (SAE)	An adverse event that either results in death is life-threatening, requires in-patient hospitalization or prolongation of existing hospitalization, results in persistent or significant disability or incapacity, or is a congenital anomaly/birth defect.
Side effect	Unintended (not necessarily harmful) effect occurring at normal dose related to the pharmacological properties.

Signal	Information arising from one or multiple sources, including observations and experiments, suggests a new potentially causal association, or a new aspect of a known association between an intervention and an event or set of related events, either adverse or beneficial.
Spontaneous report	is an unsolicited communication by a healthcare professional or consumer to a company, regulatory authority, or other organization that describes one or more adverse drug reactions in a patient who was given one or more medicinal products and that does not derive from a study or any organized data collection scheme.
Substandard	These are authorized medical products that fail to meet either their quality standards or specifications, or both
Summary of Product Characteristics (SmPC)	The SmPC is a legal document approved as part of the marketing authorization of each medicine. It is the basis of information for healthcare professionals on how to use the medicine. Its information is updated throughout the life-cycle of the product as new data emerge. It is usually found on competent health authorities websites (e.g. EMA, MHRA,etc)
Unexpected adverse reaction	An adverse reaction, the nature or severity of which is not consistent with the applicable product information (e.g., Investigator's Brochure for an unapproved investigational product or package insert/summary of product characteristics for an approved product). Note: The concept of "expectedness" refers to events that may or may not have been previously observed and documented. It does not refer to what might have been anticipated (expected in a different sense) from the known pharmacological properties of the medicine. Depending on the context, expected and unexpected can refer to labeled vs unlabeled (for official data sheets/package inserts for marketed products) or listed vs unlisted (for the Investigator's Brochure, Development Core Safety Information (DCSI), or Company Core Safety Information (CCSI)).
Vigibase®	VigiBase® is the WHO global database of individual case safety reports (ICSRs). It is developed and maintained by the Uppsala Monitoring Centre (UMC) on behalf of WHO and its member countries. It consists of reports of adverse drug reactions to medicines and vaccines received from member countries since 1968. It is updated with incoming case reports continuously. The purpose is to ensure that early signs of previously unknown medicines-related safety problems are identified as rapidly as possible. Contrary to VigiAccess®, consumers and healthcare professionals do not have access to the VigiBase®.
Vigiflow®	VigiFlow® is a web-based ICSR management system that is available for use by national pharmacovigilance centers e.g. SAHPRA, of the WHO Programme for International Drug Monitoring. VigiFlow® supports the collection, processing, and sharing of data of ICSRs to facilitate effective data analysis.

4- Abbreviations:

ADR	Adverse Drug Reactions
AE	Adverse event
DHCPLs	dear healthcare professional letters
EMA	European medicine agency
HCPs	Healthcare professional
ICSR	Individual case safety report
IPvC	Iraqi pharmacovigilance center
MAH	Marketing authorization holder
MOH	Ministry of Health
OTC	Over the counter
PASS	Post-authorization safety study
PIDM	The WHO international program for drug monitoring
PV	pharmacovigilance
SmPC	Summary of product characteristics
UMC	Uppsala monitoring center
WHO	World Health Organization

5- Part One: Introduction

a- What is Pharmacovigilance?

i. Pharmacovigilance or simply "the continuous monitoring of medicines safety", has been defined by the World Health Organization (WHO) as the science and activities relating to the detection, assessment, understanding, and prevention of adverse effects or any other medicine-related problem.

ii. Pharmacovigilance involves the following activities:
   a. Collection of suspected adverse drug reaction reports of medicinal products.
   b. Data analysis and signals detection regarding both previously known and unidentified adverse effects or patterns of adverse effects.
   c. Assessment of the reaction risk versus the benefit of the medicinal product
   d. Communicating safety information to health professionals and end-users
   e. Monitoring and measuring the action impact.

b- Scope of Pharmacovigilance

The scope of the products has been expanded to include:

i. Drugs (both prescription and OTC)
ii. Herbals, traditional and complementary medicines
iii. Blood products,
iv. Biological,
v. Vaccines

Iraqi pharmacovigilance center monitors and collects the following reports:

i. Drug adverse event reports
ii. Vaccines AEFIs and immunization errors which will be shared with the public health directorate.
iii. Medication errors and irrational use of medicines
iv. Drug-drug/food interactions
v. Substandard and falsified medicine
vi. Lack of therapeutic efficacy

c- The Emergence of Pharmacovigilance

i. The story of the thalidomide tragedy, which occurred in multiple countries around the world in the late 1950s and early 1960s, brought the potential risks of medications into public light. The mothers had taken the medication for morning sickness, and the babies were born with phocomelia (shortening of the limbs), among other severe birth defects.

ii. Since this tragedy, all the governments have made an effort to create laws and regulations that guarantee the safety, effectiveness, and quality of medications utilized in their countries.

d- **The Importance of Pharmacovigilance:**

i. Even with a thoughtful and thorough prescription, there are still hazards associated with taking medication, as a significant contributor to morbidity and mortality as well as a significant public health concern, adverse drug reactions and the management of these responses continue to be a threat to patients and a financial burden on healthcare systems worldwide, though they vary in severity and frequency.

ii. The clinical decision regarding the use of medicines is generally based on the careful assessment of their benefits versus risks profile. This is majorly defined during the pre-marketing clinical trials phases which can have several shortcomings (Table 1), which lead to incomplete information regarding the rare but often serious adverse reactions that may significantly impact the safety profile of the product.

Table 1: Limitations of Clinical Trials Safety Data

- Limited Numbers (<5000)
- Short Period
- Narrow population (specific age and sex)
- Narrow indications
- Limited data on other comorbidities, drug interactions, genetic and environmental factors
- Limited data of special populations (pregnacy, children, ..etc)

iii. Building a system of reports on adverse drug events related to the use of medicines can help to detect and understand other problems that can be a result of circumstances around drug use, this can involve medication errors, healthcare system-related errors, quality defects, substandard and falsified drugs, to develop plans and regulatory actions to prevent them.

iv. The higher the number of reports and the more complete they were, the more robust and reliable the database would be to conclude drug safety information.

Dying from a disease may be inevitable, dying from a medicine is unacceptable (WHO,2005)

e- The WHO Program for International Drug Monitoring:

1) The WHO Programme for International Drug Monitoring (PIDM) was founded in 1968, and now (as of July 2022) has more than 170 full members and associate members, covering about 99% of the world's population.

2) The program offers a platform for WHO Member States to collaborate in the monitoring of drug safety, particularly in the identification and analysis of new adverse reaction signals from data that member countries have submitted to the WHO Global Individual Case Safety Report (ICSR) database, now known as **VigiBase**®.

3) The WHO Collaborating Centre (Uppsala Monitoring Center (UMC)) in Sweden, manages the database, and analyzes the reports to:
   i. Identify early warning signals of serious adverse reactions to medicines;
   ii. Evaluate the hazard;
   iii. Undertake research into the mechanisms of action to aid the development of safer and more effective medicines.

f- **The Iraqi Pharmacovigilance System**

1) **Iraqi Pharmacovigilance Center:**

i. Since 2010, when the Iraqi Pharmacovigilance Center was established as part of the Directorate of Technical Affairs, Iraq has been a full member of the WHO drug monitoring program.

ii. **Vision:** IPvC works with the vision of creating a safe medicinal environment in Iraq.

iii. **Mission:** Iraq bears upon itself the mission of contributing to ensuring patient safety through monitoring, evaluation, and prevention of adverse events and medication errors.

iv. **The IPvC at the MOH level is responsible for:**
   1. Managing the national pharmacovigilance system, developing and updating guidelines and regulations.
   2. Administrating the WHO national drug safety database (VigiFlow), which is the main tool to which all the reports including the spontaneous reports end up and through which further PV activities are carried out including processing,

validation, causality assessment, analysis, and information sharing with the other official bodies and with the world.
3. Oblige marketing authorization holders (MAH) to systematically collect information on risks related to their medical products and to transmit them to IPvC and take the required measures regarding them.
4. Signal detection and validation
5. Communicate and provide information to all stakeholders (figure 2), including HCPs through adverse drug reaction drug alerts, seminars, educational campaigns, and other means.
6. Design, and implement risk minimization measures and pharmacovigilance studies following the approval and recommendations of the advisory committees.
7. Contribute to the WHO global substandard and falsified medicine reporting system.
8. Coordinate with the Ministry of Higher Education
9. Training and capacity building regarding pharmacovigilance activities.

v. The IPvC is subdivided nationwide into **Regional Pharmacovigilance Centers** at each Directorate of Health, which are in turn connected with the health institutions (mainly hospitals).

vi. The regional centers hence are responsible for:
    1. Collecting ICSRs from the safety-responsible persons at the hospitals and entering them into the database.
    2. Encouraging HCPs to detect adverse drug reactions and report them.
    3. Organize training and workshops.
    4. Overseeing the work of the safety responsible persons at the affiliated hospitals and providing them with the required resources and resolve their issues.

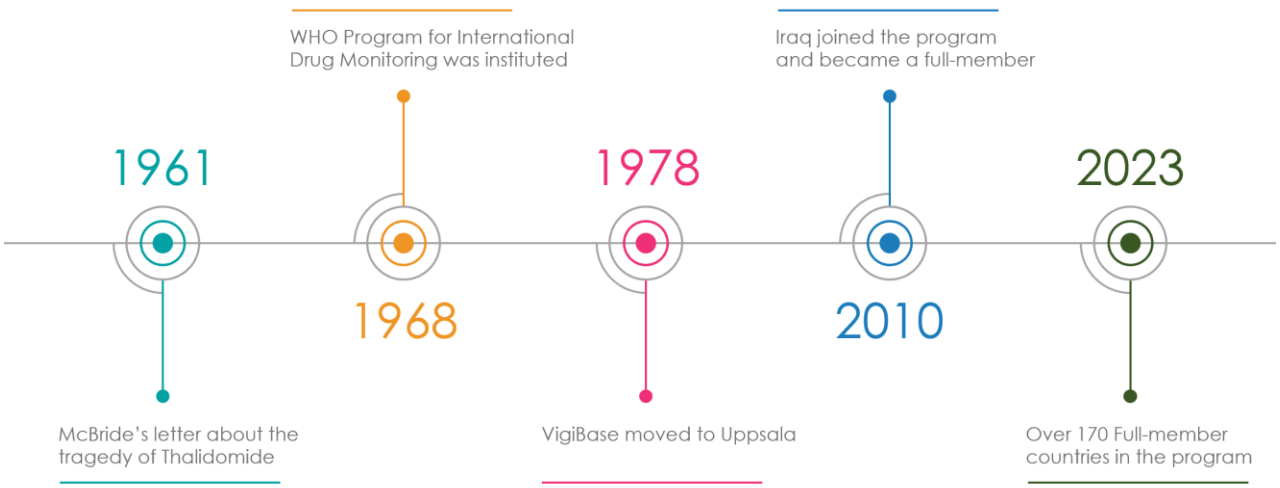


Figure 1: Important milestones of pharmacovigilance

2) **The Surveillance Systems:**

i. **Spontaneous reporting** is the cornerstone of Pharmacovigilance in Iraq. The system in Iraq relies almost entirely on voluntary, passive, and motivational individuals and healthcare professionals to report the suspected ADR to:
   1. Regulatory authority in Iraq (national pharmacovigilance center directly or through any sub-level such as the regional (governorate) center or the hospital's safety responsible),
   2. The marketing authorization holders: The MAH in Iraq, has the authority to collect AEs and ADRs to be submitted to the national PV center.

ii. In addition to the spontaneous reporting, **stimulated surveillance** is also implemented within Iraqi pharmacovigilance by targeting certain medications for additional monitoring (See part two/ section e)

iii. Only recently, Iraq has started implementing **active surveillance** activities that involve systematic and proactive monitoring and data collection. These are expected to increase in the future.

3) **Advisory Committees:**
The forty-six advisory committees, which are part of the Directorate of Technical Affairs, and in all the medical specialties support the IPvC by giving advice and recommendations on all scientific questions and investigations arising at IPvC.

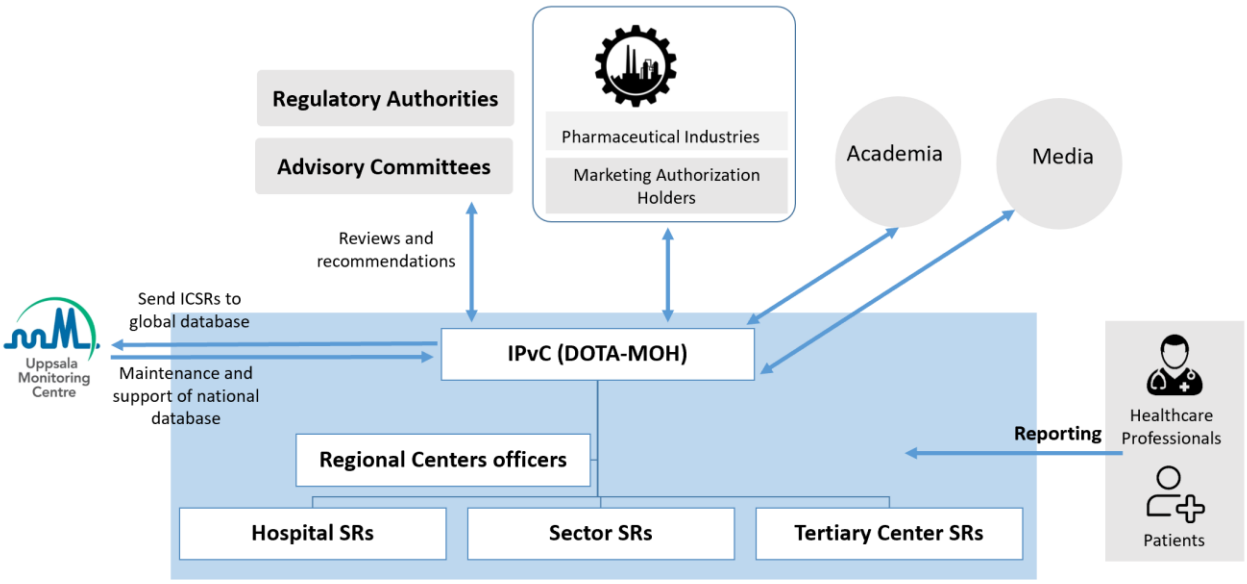


Figure 2: Pharmacovigilance stakeholders in the Iraqi Pharmacovigilance System
IPvC: Iraqi Pharmacovigilance Center, DOTA: directorate of Technical Affairs, MOH: Ministry of Health, SRs: safety responsible, ICSRs: individual case safety reports

Part Two: Reporting Adverse Drug Events

a) Adverse Drug Event vs. Adverse Drug Reactions

1- **Adverse Drug Event** refers to any untoward medical occurrence associated with the use of a drug in humans, whether or not considered drug-related.

ADEs encompass a broad spectrum of events, including side effects, allergic reactions, medication errors, overdoses, and adverse drug withdrawals, among others.

They can occur during drug treatment but may not necessarily have a causal relationship with the drug itself.

2- **Adverse Drug Reaction** is a subset of adverse drug events where a causal relationship between the drug and the event is suspected, reasonably possible, or confirmed.

Adverse reactions are responses to a drug that is noxious and unintended and that occur at doses normally used in humans for prophylaxis, diagnosis, or therapy of disease or the modification of physiological function.

Adverse reactions are typically more specific and directly attributable to the pharmacological action of the drug.

3- Healthcare professionals should **document all observed ADEs and adverse reactions**, including details about the patient, the drug(s) involved, the nature of the event, its severity, and any actions taken in response.

b) Why Should We Report?

i. To improve patient care and safety concerning the use of medicines and all medical and paramedical interventions.
ii. To improve public health and safety with the use of medicines.
iii. To contribute to the assessment of benefits, harm, effectiveness, and risk of medicines, encouraging their safe, rational, and more effective (including the cost–effective) use.
iv. To promote understanding, education, and clinical training in pharmacovigilance and its effective communication to the public.

v. Reduction of medicine-related problems leading to better treatment outcomes.
vi. Improved patient confidence in professional practice.
vii. Access to feedback information on medicine-related problems reported within the country and internationally.
viii. Satisfaction for the fulfillment of a moral and professional obligation.

c) Who can report?

i. All healthcare professionals/workers, including clinicians, pharmacists, dentists, nurses, and traditional medicine practitioners are encouraged to report. This includes both governmental and private health institutions.
ii. Pharmaceutical Companies/ Marketing Authorization Holders (MAHs).
iii. Consumers should be encouraged to report to their healthcare provider and provided with instructions to use the consumers' reporting forms.

Become an alert health professional and connect undesirable medical events with drug exposure and REPORT IT

d) How to identify ADEs?

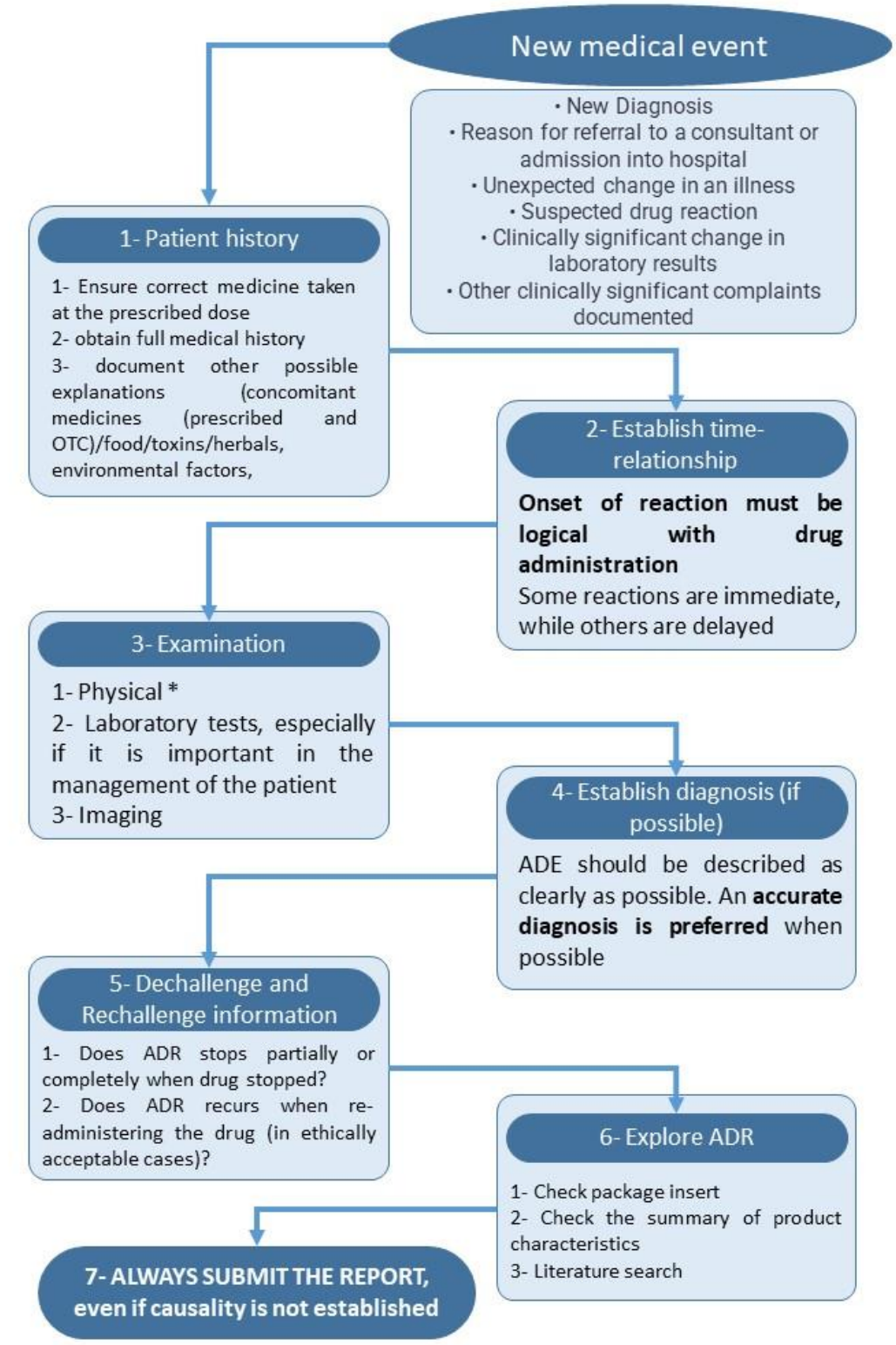


Figure 3: How to identify Adverse Drug Reactions

e) What should be reported?

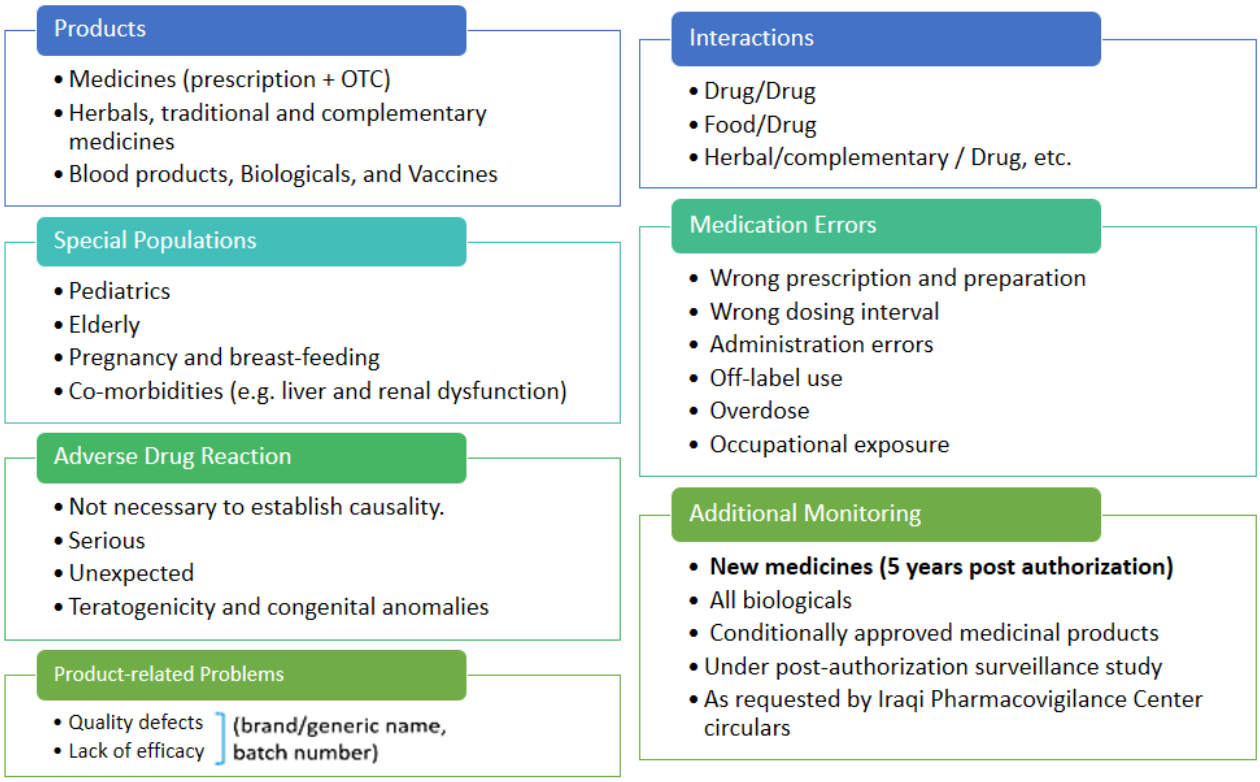


Figure 4: Summary of what to report | OTC: over-the-counter

- **All suspected serious adverse events** should be reported regardless of their expectedness or causality likelihood, whether it was previously documented or not. These include:
  a. **Results in death;**
  b. **Life-threatening;**
  c. **Requires inpatient hospitalization or prolongation of existing hospitalization;**
  d. **Causes significant disability/incapacity;**
  e. **Causes congenital anomaly/birth defects;**
  f. **Is a medically important event or reaction**

  Note: this is when the event does not fit the other outcomes, but the event may jeopardize the patient and may require medical or surgical intervention (treatment) to prevent one of the other outcomes. Examples include allergic bronchospasm (a serious problem with breathing) requiring treatment in an emergency room or at home, serious blood dyscrasias (blood disorders) or seizures/convulsions that do not result in hospitalization. The development of drug dependence or drug abuse would also be examples of important medical events.

- **Unexpected Adverse Drug Events** (even if non-serious) should be reported, regardless of their severity, and depending on the approved product package insert and summary of product characteristics (SmPC), an ADR is unexpected if:
  a. Not mentioned in the package insert and SmPC.
  b. Included and known ADR but shows changes in frequency or severity or unusual presentation.

- A healthcare professional can report a reaction only due to suspicion that it is caused by the product in question is enough, **confirming causality relationship is not necessary**. Any relevant clinical data that is currently accessible must be presented in this case.

  Approximately 60-70% of serious ADRs are preventable, but often go unrecognized. If there is any doubt about whether an ADR has occurred and should be reported, it is always best practice to submit a report as causality does not need to have been established.

- **Additional Monitoring Medicines:** Report all suspected adverse reactions including minor ones for medicines requiring additional monitoring, these include:
  a. All products published in the EMA list for additional monitoring and registered in Iraq:
  https://www.ema.europa.eu/en/human-regulatory/post-authorisation/pharmacovigilance/medicines-under-additional-monitoring
  Note: according to EMA, medicines are still considered "new" generally up to **five years** after marketing authorization.
  b. Biologicals and biosimilars registered in the Iraqi Ministry of Health that require additional monitoring (Appendix 3).
  c. Products undergoing post-authorization safety study (PASS) studies.
  d. Products with conditional approval.
  e. Any other product as requested from the IPvC (e.g., circulars).

- Cases regarding **Special populations,** various criteria may affect a person's susceptibility to ADRs. These include age, pregnancy, gender, disease states, ethnicity, and polypharmacy as below:
  a. **Children**: All ADRs occurring in children should be reported regardless of whether the medicine is licensed for use in children. Children and neonates are at high risk for medication errors and AEs mainly because of the need to tailor doses

to age, weight, or body mass index. Younger children are also not usually able to identify potential errors themselves compared with older patients.

b. **Elderly**: Older adult patients are vulnerable to medication errors and ADEs due to their multiple comorbidities, diminished physiologic reserve, and more frequent use of multiple drugs. ADRs can present in a vague, non-specific manner in older people, for example, confusion, constipation, low blood pressure, and falls may suggest illness, but they can also suggest an ADR.
c. **Pregnancy and Breastfeeding:** report all suspected ADRs related to pregnancy or breastfeeding regardless of whether the medicine is contra-indicated in pregnancy and/or lactation.

- Adverse events in specific disease states, such as reduced renal functioning and liver impairment, which can predispose individuals to ADRs.

- **Interactions:** Report all suspected ADRs associated with drug-drug, drug-food, or drug-food supplements (including herbal and complementary products) interactions.

- **Complementary and traditional medicine:** It is important that any suspected AE that occurs from a complementary medicine is reported and that as much information about the ingredients and the source of the remedy is included.

- **Medication errors:** Regardless of whether they caused ADR or not. For example:
  a. wrong prescription and preparation
  b. wrong dosing interval
  c. administration errors
  d. off-label use
  e. Overdose
  f. Occupational exposure

- **Product-related problems:** The brand/generic name and batch number are particularly important to mention here
  a. **Quality defects:** even if they didn't lead to ADR.
  b. **Lack of efficacy:** especially in life-threatening conditions where it could lead to serious consequences

f) How to fill in the ADR reporting form?

i. The **"four elements" of a valid ICSR** should be available. They comprise the **minimum requirements** of a valid ADR case report to subsequently be entered into the national ADR database and become available for signal generation to facilitate the evaluation of cases. These are (identifiable patient, identifiable reporter, suspected medicine(s), and suspected ADR (Table #)

Mandatory information*	Essential information
• Patient initials • Age at onset of reaction (or birthdate) • The reaction terms • Date of onset of reaction • Name of suspected medicine(s) • Reporter qualification	• Patient initials, Age at onset of reaction (or birthdate), Gender • The reaction term, Date of onset of reaction, Seriousness, Outcome • Name of suspected medicine(s), Dose, Date of therapy start, Indication of use, Dechallenge and rechallenge information • Reporter details and contact information • Date of report

*For a case report to be valid these are the minimum requirements

ii. Healthcare professionals should submit ALL the relevant information available at the time of initial identification of an ADR, not only the minimum information required for a report.

iii. The report contains four main elements; these are:

a) An identifiable patient

- Identified by the initials (e.g., Ahmed Saed is written as AS
- Date of birth, age, age group
- Gender

b) Suspected medicine(s)

- Name (preferably the accurate trade name)
- Strength (concentration)
- Dose, Frequency
- Dosage form
- Route of administration
- Indication for use
- Duration of use, date started, date stopped
- Batch number (especially for vaccines and biological products)

Note: Ensure that the medicine ordered is the medicine received and taken by the patient at the dose advised.

c) Suspected adverse drug reaction

- Description of the reaction (e.g., nature, localization)
- Expectedness of the reaction (in accordance with the approved product information)
- Seriousness of the reaction
- Date the reaction started, stopped
- Outcomes attributed to adverse reaction (Fatal, Recovered, Recovering, Not recovered, or Unknown)
- Relevant tests/laboratory data (if available)

For the ADR identification and classification process, see Appendix 2

d) An identifiable reporter

- Name, initials
- Health facility
- Contact details (email, phone number)
- Qualification (if healthcare professional)

iv. Additional information that is important for the report to be clinically meaningful include:

- **Concomitant medicines** including self-medications, OTCs, herbals, etc. (i.e., Name, concentration, dose, dosage form, route of administration, indication for use, duration of use, and batch number), including over-the-counter medications, dietary supplements, and recently discontinued medications
- **Medical history**, such as baseline medical condition before product therapy, medical conditions (e.g., allergy, pregnancy, smoking, alcohol use, hepatic and renal dysfunction), co-morbid conditions, relevant family history of the disease, and presence of other risk factors;
- **Diagnosis** and the methods used to make it.
- Relevant **therapeutic measures**, how was the event managed
- **Laboratory data** at baseline, during therapy, and after therapy, including blood levels, as appropriate.
- **Dechallenge** status when available, whether the condition improved after discontinuing the drug
- **Rechallenge** if justified, whether the condition recurred after re-administration.
- Copies of reports such as case summaries, laboratory investigations, other relevant clinical reports, and post-mortem reports should be **attached** to the ADR form.

v. In case of **teratogenicity and congenital anomalies** reports the following should be mentioned:

- List of all used medicines during pregnancy and preconception: Names, doses, and indications.

- Date and duration of exposure to the substances during pregnancy and preconception
- Age and sex of the infant
- Duration of pregnancy
- Type of the congenital anomaly and its seriousness

vi. **Preliminary Assessment:** It is very useful that when reporting, the HCP provides their valuable insight and assessment regarding the suspected cause and contributing factors to the occurrence of the adverse event given that they possess firsthand knowledge with the case and have all the information available at their hands. It is highly recommended that HCPs categorize the adverse event and state it as one of the following:

a) **Known Adverse Drug Reaction (ADR)** occurring within the intended therapeutic use, representing a recognized manifestation of the drug's pharmacological profile.
b) Adverse event is a **suspected new** ADR that is not listed in the available drug information
c) The Adverse Event is the result of a **medication error** or negligence on any level (prescription, dispensing, preparation, administration, and monitoring).
d) The Adverse Event is suspected to be related to the **quality of the medication**
e) Suspected **lack of effectiveness** of the medication
f) Suspected **interactions** (drug/drug, food/drug, …etc)
g) Other

Remember: if the reaction is not documented in the package insert, it does not mean that the reaction cannot occur with that particular suspected medicine.

g) When to report?

i. Healthcare professionals are encouraged to report suspected ADRs as soon as they occur even when they do not have all the facts or are uncertain that the medicine is responsible for causing the reaction. However, the minimum information required for a valid case should always be included in the report.
ii. If possible, decide to report whilst the patient is still with you so that he/she can easily be questioned about the event and the details filled in at once on the report form.
iii. In case of **serious ADRs**, call the IPvC as fast as possible while you report the ADR form
iv. Serious reports should be submitted in an expedited manner i.e., as soon as possible & no later than 15 calendar days

v. Non-serious reports are encouraged to be reported within 3 months of its occurrence.
vi. If additional information, is not available at the time of the initial report, it should be provided when available, as a follow-up report.

h) Where to find reporting forms?

Currently, there are numerous reporting options available, the HCP can access a reporting form anywhere.

1. The ADR paper form:

i. Iraqi Pharmacovigilance Center developed a paper-based ADR reporting form (Appendix 1). Its format and content are based on the European Medicines Agency (EMA) international pharmacovigilance guidelines while considering multiple other formats and resulting in a comprehensive, simple form.
ii. In each hospital, there is a designated pharmacovigilance responsible pharmacist. This person is responsible for continuously providing the paper form for all the health care professionals.
iii. For every single patient admitted, the ADR form is also incorporated within their admission file, which can be used whenever there is a suspected ADR.
iv. After filling the report, they can be submitted through:
    1. The hospital pharmacovigilance responsible pharmacist then sends it to the Directorate of Health, the latter will enter the report into the VigiFlow® system and forward the report to IPvC for subsequent actions.
    2. The report can also be sent directly to IPvC by email **at iqphvc@yahoo.com**
    3. or by hand.

2. The ADR eReporting form link to Vigiflow®:

A web-based dynamic reporting form is available at:

https://primaryreporting.who-umc.org/IQ

The corresponding QR code of the form can also be scanned using smartphones which will direct them to the reporting page for faster access:

The form is easy to use and reduces the workload of manual data entry from ADR paper forms into VigiFlow®, and can be filled by any person whether HCP or the consumers themselves. Following completing the report, it is directly sent to IPvC by clicking submit. It will be automatically stored within the Vigiflow® system where it can be viewed and assessed by the designated governorate directorate of health in addition to the IPvC.

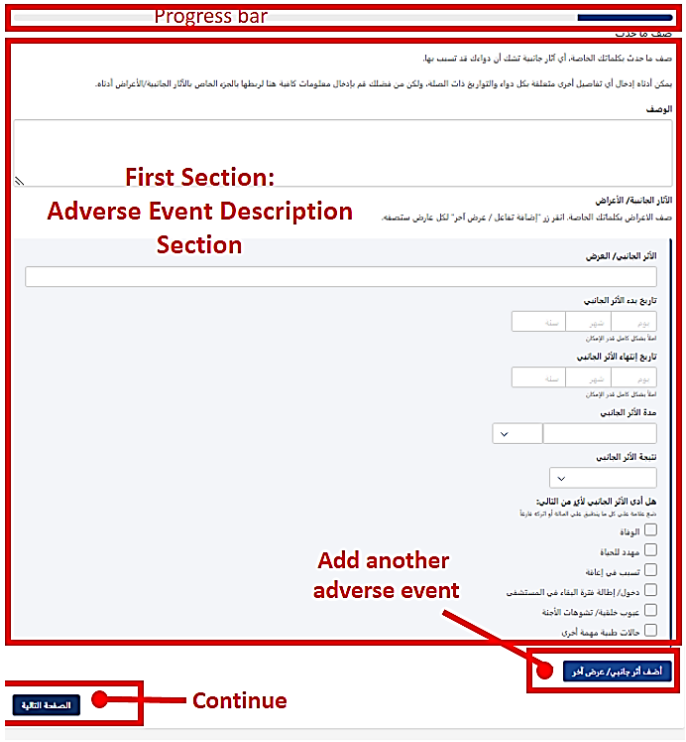
Since this is the most practical and feasible tool for both the reporter and the regulatory authority, the QR code is planned to be distributed throughout the whole healthcare system institutions both in the public and the private sector. Educational and instructional activities need to be conducted to familiarize the HCPs and the public with this tool and with the concept of ADR reporting in general.

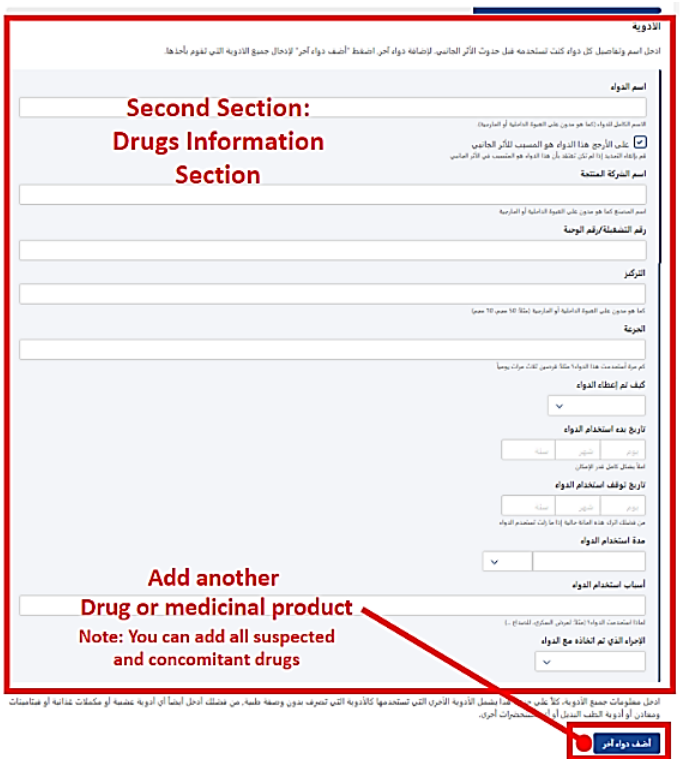
3. Through the Marketing Authorization Holders:

The ADR can be reported to the relevant pharmaceutical company (contact details can be found on the outer package of the health product).

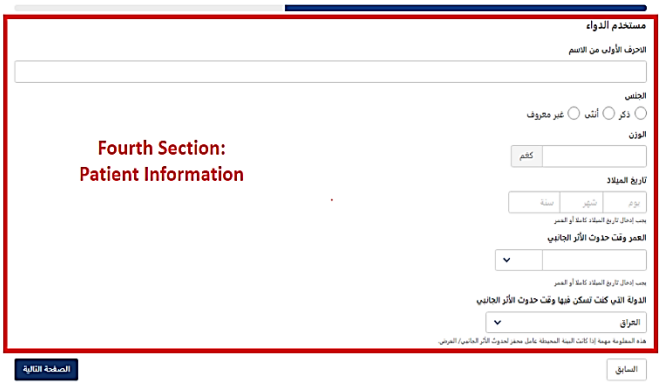
As part of the post-marketing safety surveillance, all registered MAHs inside Iraq are obliged to collaborate with IPvC by sending the collected ICSRs both globally and locally.

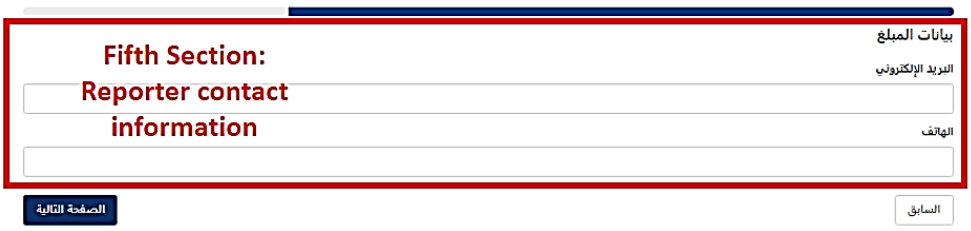

Iraqi Pharmacovigilance Center
المـــركز العـــراقي لليقظة الدوائية
إستمارة الابلاغ الالكترونية للاعراض الجانبية
Languages:
Arabic and English
اختار اللغة
عربي
هنا يمكنك الابلاغ عن الاعراض الجانبية المصاحبة للأدوية, أو اللقاحات أو الادوية العشبية, أو أي مستحضرات علاجية أخرى. يرجى قدر الإمكان
You can choose to report as a consumer or as a health-care provider
أنا ابلغ عن نفسي أو أحد أقاربي
أنا أبلغ بصفتي مقدم رعاية صحية (طبيب, صيدلي, ممرض, .. الخ)


Progress bar
First Section:
Adverse Event Description Section
Add another adverse event
Continue
الصفحة التالية


Second Section:
Drugs Information Section
Add another
Drug or medicinal product
Note: You can add all suspected and concomitant drugs


Third Section:
Additional Information
(Medical history, co-morbidities, other comments)
الصفحة التالية
السابق


Fourth Section:
Patient Information
الصفحة التالية
السابق


Fifth Section:
Reporter contact information
الصفحة التالية
السابق

Part Three: What Happens After Reporting?

a) Will reporting have any negative consequences on the healthcare professional or the patient?

i. The ADR report will not be attributed to the reporter and will not imply that the reporter or any other healthcare practitioner played a part in it in any manner.
ii. When uploaded to the global VigiBase® database, the reporter details will be kept **confidential**.
iii. Before any information on a specific adverse drug reaction is utilized or communicated, the identities of the patient, the reporter, and any other medical professionals listed on a report will be omitted.
iv. No commercial use will be made of the data collected from the report.
v. The data is only intended to strengthen the knowledge regarding the safety of medicines in Iraq.

b) Strong Suspicion and Follow-up

i. Additional information, not available at the time of the initial report, should be provided when available, as a follow-up report
ii. All follow-up / supplementary information should be documented and submitted, clearly stating **"FOLLOW_UP REPORT"** at the top right corner of the paper form and in the case described in the eReporting form.
iii. Make sure that the patient names and patient initials are the same in the 1st report & and the Follow-up report. Follow-up reports must be accurately identified and linked to the original report.
iv. Continue your strong suspicion of the medicine-induced illness in the same patient and other patients.
v. Keep vigilance for signs and symptoms that may enhance or exclude the possibility of a medicine induced reaction.

c) Processing of ADR Reports

1. Pharmacovigilance unit staff at the Directorate will capture the anonymized information onto the VigiFlow® system in a structured format.
2. The VigiFlow® system assigns a unique identification number.
3. An acknowledgment letter (which quotes the unique identification number assigned to the report and the local/reference number) is sent to the reporter (provided they submitted their email address).
4. The captured information for each report is checked for quality and completeness, before being sent to the global database VigiBase®, where it is confidentially stored.
5. At any point during this process the reporter may be asked by the pharmacovigilance unit to provide clarification or further information about the ADR report.
6. The reviewing process will examine:

a. Quality of documentation: completeness and integrity of data, diagnosis, and follow-up
b. Coding: Drug name (WHODrug) and reaction term (MedDRA)
c. Relevance: regarding the detection of new reactions, drug regulation, and scientific or educational value, special consideration will be given to the following:

i. New Drugs
ii. Undocumented ADR: not included in the SmPC or package leaflet
iii. Serious ADR
iv. Check for duplicates: certain data in the report can be used to search for duplicates such as age, date of drug exposure, sex, etc.)
v. Causality assessment: Verifying the possibility of a causal relationship between the drug and the suspected side effects. This is done by evaluating the period between starting to use the treatment until the symptom or medical event appears, the medical condition, the presence of other diseases, and other medicinal products accompanying the suspected drug, mechanism. The action of the drug within the body, its chemical properties, the method of using the drug, and other factors. This is done by studying the information in the report in addition to the information available in reliable scientific sources about the drug on the one hand and the symptom or medical event on the other hand, in addition to taking into account the opinion of the specialized advisory committees, if necessary.

d) Utilization of Data

i. Preliminary causality assessment will be conducted, and review reports will be prepared on ADR cases with emerging drug safety problems using referenced data from other sources (e.g., case reports in the literature; pre- and post-marketing clinical trials; epidemiological studies; data from other drug regulatory authorities). The report reviews are then used for:

   a) signal detection and strengthening;
   b) causality assessment between medicines and reported reactions and
   c) identification of possible risk factors contributing to the reaction.

ii. When safety concerns are identified, the overall ADR profile for the medicine is compared with the relevant therapeutic alternatives, and its benefits in terms of efficacy, therapeutic indication, and target patient population(s).

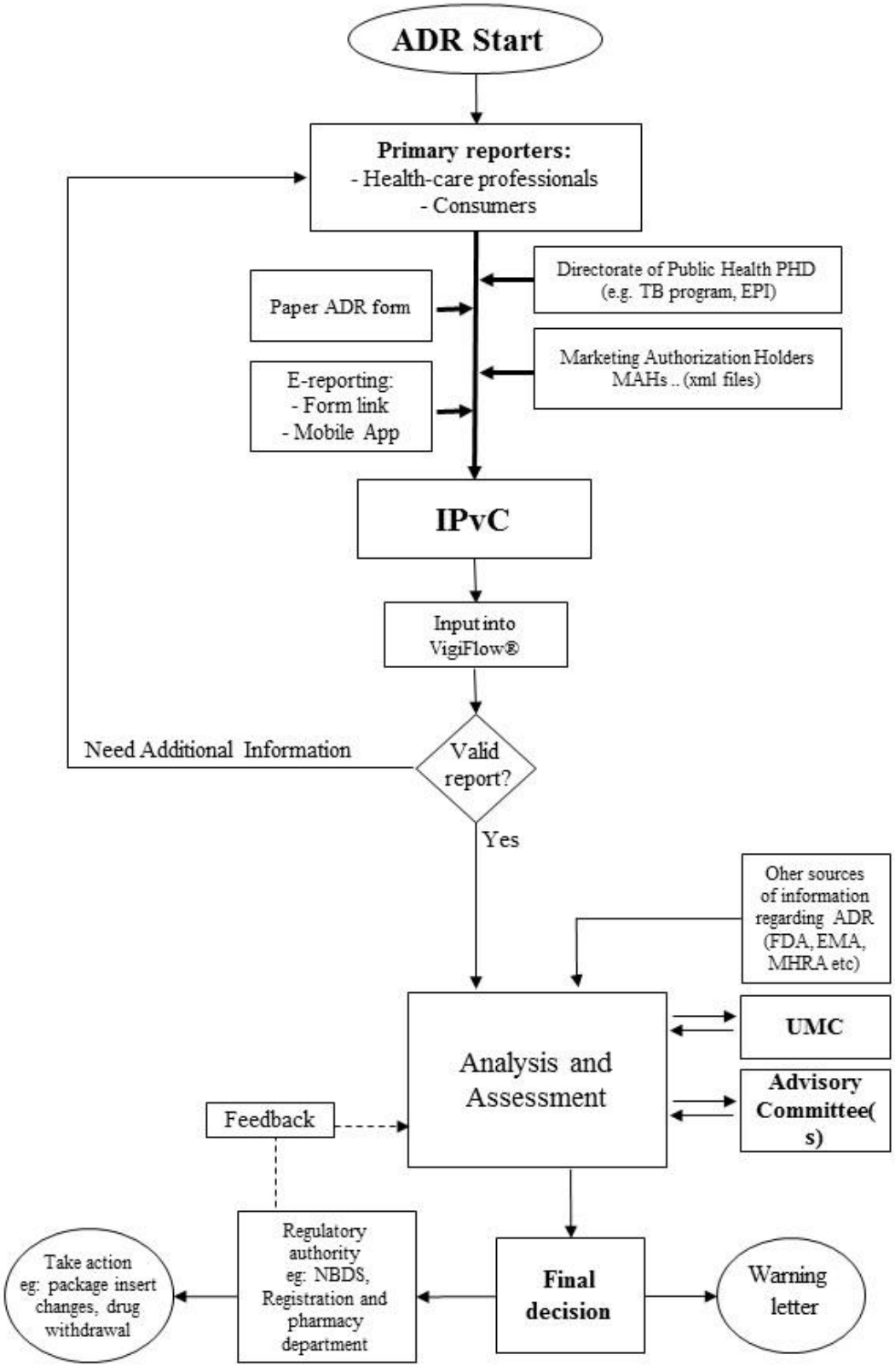
iii. Risk Management: The identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and impact of unfortunate events is known to risk management.

iv. All reports that pertain to subject matters involving other official parties shall be forwarded to the designated party (e.g. AEFI reports will be shared with the vaccination section in the public health directorate, some ICSRs related to medicinal products of public health programs)

v. Regulatory decisions can be made on whether changes in the use of a medicine are needed. Regulatory changes may include:

   a) product label change;
   b) product withdrawal/ suspension;
   c) dear healthcare professional letters (DHCPLs);
   d) press statements;
   e) medicines safety alerts;
   f) product restrictions (up-scheduling, limited packaging, limiting prescribers, administerers, patient groups, etc)
   g) educational programmes.

The following flowchart displays the processing of ADR reports after submission:



ADR: adverse drug reaction, EPI: extended program of immunization, TB program: Tuberculosis program, IPvC: Iraqi pharmacovigilance center, NCDCR: national center for drug control and research, DOH: directorate of health, KIMADIA: The State Company For Marketing of Drugs and Medical Appliances, UMC: Uppsala monitoring center, NBDS: national board for drugs selection, EMA: European medicinal agency, MHRA: Medicines and Healthcare products Regulatory Agency in United Kingdom, FDA: food and drugs administration

References:

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2. International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use topic E 2 D: Post Approval Safety Data Management
3. Uppsala Monitoring Centre. 2022. Global Pharmacovigilance. UMC. Accessed on 6 September 2022, https://www.who-umc.org
4. South African Health Products Regulatory Authority Guideline for Adverse Drug Reactions (ADRs) Reporting for Healthcare Professionals. 28 March 2020
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8. Guidelines for Detecting & Reporting Adverse Drug Reactions in Jordan: Individual Case Safety Reports. Version 1. 2014
9. National Pharmaceutical Regulatory Agency (NPRA). Ministry of Health Malaysia. Adverse Drug Reaction (ADR) /Adverse Event Following Immunization (AEFI) Reporting Manual for Healthcare Providers. 1st edition. August 2021
10. Drug Regulatory Authority of Pakistan. Adverse Events Reporting Guidelines for Healthcare Professionals. 26/4/2022

Appendix 1: ADR Reporting paper form

وزارة الصحة

دائرة الأمور الفنية / المركز العراقي للرصد الدوائي

REPORT OF SUSPECTED ADVERSE DRUG REACTIONS استمارة الاخبار عن الاعراض الجانبية المشتبه بها

I- PATIENT DETAILS

Patient initials: _____

Age: _____ ☐ Years Weight: _____ Kg Sex: ☐ Female ☐ Male

II- DETAILSE OF ADVERSE DRUG REACTION (ADR)

Onset Date: ☐☐☐☐☐☐ (d d / m m / y y)

End date ☐☐☐☐☐☐ (d d / m m / y y)

Outcome: ☐ Recovered *(Date)*: _____ ☐ not yet recovered

☐ Fatal *(Date of death)*:_____ ☐ unknown

Duration: ☐ min,hr,day,week,month,year

Description of ADR(S)

_____

_____

_____

Suspected drug(s) *(please specify brand name & batch No. if known)*	Dosage	Frequency	Route	Date started	Date stopped	Indication(s) for using drug
1.						
2.						
3.						
Concomitant drugs *(Including self medication taken at the same time and/or 3 months before)*						
1.						
2.						
3.						
4.						
5.						

Other relevant information: e.g. medical history, allergies, pregnancy, smoking, alcohol use, please enclose any relevant laboratory results.

_____

_____

_____

III. - MANAGEMENT OF ADVERSE REACTION

Drug(s) discontinued ☐ Yes ☐ No Improvement on discontinuation ☐ Yes ☐ No

Hospitalization *(following the ADR):* ☐ yes ☐ No ☐ Already hospitalized

Do you consider the reaction to be serious? ☐ Yes ☐ No

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

☐ Patient died due to reaction ☐ Involved or prolonged in – patient hospitalization

☐ Life threatening ☐ Involved persistent or significant disability or incapacity

☐ Congenital anomaly ☐ medically significant, please give details:_____

Treatment given: ☐ No ☐ Yes(please specify):_____

IV- REPORTER DETAILS

Name: _____ Profession: _____ Signature:_____

Contact no: _____ Email address: _____ Date: _____

THANK YOU FOR TAKING CARE OF YOUR PATIENT

ملاحظـــأت عامـــة :

1. الرجاء القيام بارسال تقرير عن اي آثار جانبية للأدوية (متوقعة او غير متوقعة) والتي تظهر على المريض حتى اذا لم تكن متأكداً (والأفضل أن تكون متأكدا)من أن هذه الآثار هي بسبب الدواء المشتبه به وحتى اذا لم تتوفر لديك كافة التفاصيل الخاصة بالمريض او بالدواء.
2. أذا قمت بإرسال تقرير متابعة لحالة سابقة تم رصدها من قبلكم، الرجاء الإشارة إلى أن هذه التقرير هو تابع للتقرير السابق(follow up).
3. الرجاء ارفاق اي مستمسكات ضرورية وذات علاقة بالأثر الجانبي للدواء.(تحاليل مختبريه-صور-وثائق الحالة-ECG-الخ...)

تعريف الآثار الجانبية للدواء (حسب تعريف منظمة الصحة العالمية)

هو تفاعل ضار وغير مقصود ويحدث عادة بجرع تستعمل لأغراض الوقاية او التشخيص او العلاج لتحوير وظيفة فيزيولوجية.

ماهي الأدوية التي يتم توثيقها:

الرجاء توثيق كافة الأدوية الموصوفة والأدوية التي تصرف بدون وصفة طبية (OTC) و الأدوية العشبية وأدوية المقويات (فيتامينات ومعادن).والتي ادت الى ظهور الاثار الجانبية.

ما هي أنواع الآثار الجانبية التي يتم توثيقها بالتقرير :

(أ) كل الآثار الجانبية للأدوية المسوقة داخل العراق حديثاً وللخمس سنوات السابقة، بغض النظر عن طبيعة وشدة الآثار الجانبية المرصودة
(ب)كل الآثار الجانبية الخطرة (SERIOUS) التالية:-

1. كل اثر جانبي نادر الحدوث.
2. = = = غير متوقع (أو غير مذكور في النشرة الداخلية للدواء).
3. = = = مهدد للحياة أو مميت .
4. = = = يسبب الإعاقة.
5. = = = يسبب تشوه ولادي.
6. = = = يؤدي إلى إطالة الرقود في المستشفى.

الفئات التي تستطيع الأخبار عن الأعراض الجانبية للأدوية ومحلات عملهم:

كافة الملاكات الطبية والصحية والتمريضية العاملة في المؤسسات الصحية في القطاعين العام والخاص

- يرجى ارسال كافة التقارير على العنوان التالي :

وزارة الصحة - دائرة الأمور الفنية - المركز العراقي للرصد الدوائي أو على البريد الإلكتروني iraqiphvc@yahoo.com

Appendix 2: ADR Identification and Classification

- Adverse drug reactions have important consequences for the individual and have a major impact on public health. They are estimated to be between the fourth and sixth most common cause of death worldwide, taking their place among other prevalent causes of mortality such as heart disease, cancer, and stroke.
- ADR-related healthcare costs are significant and preventable. In the United States and Europe, the financial burden is estimated at $30.1 billion US dollars and 79 billion euros, respectively. Despite improved access to medicines, the data on the impact of ADRs in low-middle-income countries is scarce and very likely underestimated.
- **Any adverse drug event is considered a suspected adverse drug reaction** (see Glossary for definitions) until causality association is assessed.
- Prevalence of adverse drug reactions increases significantly when drugs are prescribed for the first time and following hospital discharge.
- The following table lists the most commonly reported drugs:

	Top 10 medicinal products reported in Iraqi VigiFlow database	Top 10 Suspected/interacting medicinal products in serious ICSRs in Iraqi VigiFlow database	Worldwide Top 10 of suspected/interacting drugs causing serious ADR reports in global VigiBase since 2010
1.	Covid-19 vaccines	Ceftriaxone	Covid-19 vaccines
2.	Ceftriaxone	Sagwa	Ranitidine
3.	Paracetamol	Vancomycin	Adalimumab
4.	Azithromycin	Azithromycin	Lenalidomide
5.	Hexavalent vaccine	Covid-19 vaccines	Oxycodone
6.	Vancomycin	Cefotaxime	Etanercept
7.	Herbal products	Amoxicillin	Rivaroxaban
8.	Acetylsalicylic acid	Ciprofloxacin	Infliximab
9.	Amoxicillin	Enoxaparin	Acetylsalicylic acid
10.	Pentavalent vaccine	Acetyl Salicylic Acid	Clozapine

Note: The data in VigiBase are subject to reporting biases, duplication, confounding issues and heterogeneity, over time and across regions. Hence, clinical relevance should not be inferred without medical expertise

Adverse Drug Reaction Classification:

Different ADR classification systems were put in place, most notably:

1- **ABCD Typing system:** the traditional classification method

Type	Characteristics	Examples
Type A (Augmented)	**-Dose-related** -predictable -readily reversible by reducing the drug dose or withdrawing the drug -result from the primary pharmacology of the drug. -In narrow therapeutic index drugs - factors such as inter-individual variability metabolism, underlying disease (e.g. renal, hepatic), pregnancy, and interactions with food or other drugs.	• Expected extensions of the therapeutic effect of the drug, e.g. bleeding in heparin • Toxic effects e.g. serotonin syndrome • Side effects are included, e.g. anticholinergic effects of tricyclics
Type B (Bizarre)	**-Non-dose-related** Not pharmacologically predictable Idiosyncratic reactions often serious and associated with high mortality caused by immunological and pharmacogenetic mechanisms unrelated Susceptible individuals (e.g. penicillin-allergic)	• Allergic reactions • Anaphylaxis • Steven Johnson Syndrome and toxic epidermal necrolysis • purpura or drug induced lupus • Serum sickness-like reaction • Drug-induced hepatitis • Agranulocytosis • Drug-induced hemolytic anemia • Aspirin-induced asthma • Pneumonitis and amiodarone • Malignant hypertension after anesthetics
Type C (Chemical/ Chronic)	**Dose and time-related** Related to chemical structure and its metabolism dose accumulation, or with prolonged use	• Adrenal suppression with corticosteroids • osteonecrosis of the jaw with the use of bisphosphonates
Type D (Delayed)	**Time-related** Prolonged use in a drug which doesn't tend to accumulate. May become manifest months or years after exposure	• tardive dyskinesia after decades of using typical antipsychotics • bladder carcinoma after cyclophosphamide
Type E (End of Treatment)	**Withdrawal reactions**	• opiate withdrawal • Rebound hypertension after stopping clonidine.

		• MI and B-blockers • Benzodiazepine withdrawal (insomnia, anxiety, perceptual disturbances)
Type F (Failure)	**Unexpected failure of therapy** undesirable reduction in the drug's efficacy (or the undesirable increase thereof)	• Increased clearance by dialysis and plasmapheresis • Drug interactions altering metabolism • The effects of critical illness on protein binding and elimination.
Type G (genetic)	**Irreversible genetic damage**	• Stilboestrol (cervical cancer in offspring) • Thalidomide (phocomelia in offspring)

2- DoTS (Dose-relatedness, time-relatedness, and susceptibility) system of ADR classification:

An alternative and perhaps more comprehensive classification scheme. As well as classifying reactions, DoTS has the advantage of being helpful in considering the diagnosis and prevention of ADRs in practice.

Dose relatedness	Time relatedness	Susceptibility
1. ***Toxic effects*:** ADRs that occur at doses higher than the usual therapeutic dose 2. ***Collateral effects*:** ADRs that occur at standard therapeutic doses 3. ***Hypersusceptability reactions*:** ADRs that occur at sub-therapeutic doses in susceptible patients	1. ***Time-independent reactions*:** ADRs that occur at any time during treatment. 2. ***Time-dependent reactions*:** *Rapid reactions* occur when a drug is administered too rapidly. 3. ***Early reactions*** occur early in treatment and then abate with continuing treatment (tolerance). 4. ***Intermediate reactions*** occur after some delay, but if a reaction does not occur after a certain time, little or no risk exists. 5. ***Late reaction*** risk of ADR increases with continued-to-repeated exposure, including withdrawal reactions. 6. ***Delayed reactions*** occur sometime after exposure, even if the drug is withdrawn before the ADR occurs.	Raised susceptibility may be present in some individuals, but not others. Alternatively, susceptibility may follow a continuous distribution – increasing susceptibility with impaired renal function. *Factors include*: **genetic variation, age, sex, altered physiology, exogenous factors (interactions) and disease.**

Appendix 3:

((List of Biologicals and Biosimilars for Monitoring))

((in Iraqi Health Institutes))

The Pharmacovigilance section in the Iraqi Ministry of Health developed and continuously updates a list of biological and biosimilar medicines to be specifically targeted for additional monitoring as a form of stimulated reporting.

The medications are included based on regulatory decisions and other special conditions.

These medications require reporting any adverse event related to their use regardless of causality assessment, regardless of their type and severity. Proper assessment should also be made regarding the suspected causes and related factors.

The latest list can always be readily accessed through the link HERE and by the following QR code:

Appendix 4: Publications

- **Pharmacovigilance Bulletin:**
  The Iraqi Pharmacovigilance Center releases a biannual bulletin covering the PV activities, and relevant topics that are of significance for the covered period. These include reporting statistics, case studies, assessed signals, and featured activities. The first one was released on August 2023 covering the period from January to June of that year, and can be accessed Here and by scanning the following QR code:

- **Research and Scientific Publications:** The IPvC has published multiple studies and articles regarding PV and medical products' safety-related topics in Iraq, in addition to collaborations with the Ministry of Higher Education. These include:

Articles:

- The whole experience of public hospital physicians from several specialties with biopharmaceutical effectiveness, safety, adverse drug reactions and interchangeability: A qualitative study. Hiba Leith Fahmi, Ali Azeez Al-Jumaili, Manal Mohammed Younus. 2022
- Evaluation of short-term COVID-19 vaccines adverse events following immunization severity as reported by Iraqi consumers. Ban Al-Shimran, Manal M. Younus, Balqees Salih. Journal of Pharmacovigilance and Drug Research JPADR. 2023; 4(1): 5-14. DOI: 10.53411/jpadr.2023.4.1.2
- Pharmaceutical regulations in Iraq: from medicine approval to post-marketing. Ali Azeez Al-Jumaili, Manal Mohammed Younus, et. al. 2021
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