

# PESTICIDE EXPOSURE RECORD

## *Instructions and Definitions - V. 1*

This document was developed during the course of a WHO regional meeting to establish a pesticide poisoning database in south east asian countries, held in New Delhi on 22-24 January 2001.

**Pesticide** means any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances intended for use as plant growth regulator, defoliant, desiccant, or agent for thinning fruit or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport (*Ref.FAO – International Code of Conduct on the Distribution and Use of Pesticides*).

**Exposure:** human contact with the agent (pesticide) at the boundary between the individual and the environment (*Ref.Modified from ILO Encyclopaedia of Occupational Health and Safety*)

### 1. EXPOSURE TIME AND PLACE

**Type of data collection:** state in brackets if data collection is prospective (**P**) or retrospective (**R**). Although it is agreed that data will be collected in a prospective manner (starting on a given date, with participants informed on the project and instructed on the use of the PER), retrospective data collection could also be possible under some circumstances (*e.g. to assess quality of existing medical records on poisoning cases*).

**Record number:** number assigned by the co-ordinator and/or responsible officer for the identification of PER records. It consists of an eleven-digit number:

- *Three-digit* international telephone dialling code (which is unique) for the country. For the Western Pacific region country codes are 061 (Australia), 086 (China), 081 (Japan), 082 (Republic of Korea), 060 (Malaysia), 064 (New Zealand), 063 (Philippines), 065 (Singapore) and 084 (Viet Nam).
- *Two-digit* province number, allocated by the co-ordinator.
- *Two-digit* site number (District Hospital code), allocated by the co-ordinator .
- *Four-digit* sequential number (i.e. 0001, 0002, 0003,...), assigned to each case sequentially by the Responsible Officer.

*For example: 084.03.02.0002 corresponds to the second case registered in Viet Nam, in province 03 at the district hospital 02.*

Note: other reference and control numbering may be added inside or outside this field, if necessary. The hospital or social security registration number of the patient will be entered under "*Identity N°*" (section 2).

**Date of consultation:** day/month/year on which the patient comes for consultation at the health care facility (numeric, two-digit number for dd/mm/yy).

**Date of exposure:** (*if applicable only*): day/month/year on which the actual exposure to pesticide(s) took place (numeric, two-digit number for dd/mm/yy).

Note: in some cases this date is unknown as exposure may have been repetitive or chronic, in this case just write N/A (not applicable).

**Time elapsed since exposure:** state the number of hours (hs), days (dy) or months (ms) elapsed between exposure to the pesticide and consultation at the health facility. Circle the relevant units: hs, dy or ms. Write U/K, if unknown.

**Duration of exposure:** if applicable, state the number of hours (hs), days (dy) or months (ms) during which exposure to pesticide occurred. Circle the relevant units hs, dy or ms.

Note: This is known mainly in single or repeated short-term pesticide exposures (acute) which motivate most of the consultations to the health centre. If the patient has been chronically exposed during years, please state it under "*Comments*" (Section 13).

**City:** name of the city where the health centre is situated and data collection takes place.

**Province:** name of the state or province where data collection takes place.

## 2. COMMUNICATION

**Name:** name of the medical or paramedical professional supplying the information for filling-in the PER, e.g. professional treating or dealing with the cases (who has been informed about the study and has offered to collaborate supplying the information), or professional responsible for the medical record of the patient (*e.g. treating physician in the emergency room*).

**Institution:** name of the health care facility where the information on human exposure cases is being collected. State within brackets if the institution it is private (**P**) or governmental (**G**). Private institutions include privately or semi-privately owned clinics, and charitable health care facilities.

**Phone:** complete telephone number of the health care facility, including country and city code. It is preferable to list the telephone number of the professional providing the information, as this will enable to contact directly the professional who may complete or confirm data, or provide any supplementary information needed.

**Category of person supplying the information:** refers to the professional who provides the information that is recorded in the PER (see: "*Name*" above). It may be the treating physician, another health professional, or the professional responsible for filling in the medical record from where the information is extracted. It does not refer to the "*Responsible officer*" nor to the *Project Co-ordinator*, unless they happen to be those supplying the information (this may occur in some countries).

**Medical professional:** person legally qualified to practice medicine (physician).

**Paramedical:** person who complements or supplements the work of doctors

(e.g. nurses, medical and nursing students, health technicians).

**Data collection date:** day/month/year on which the PER was filled-in or initiated (numeric, two-digit number for dd/mm/yy). If the completion of the PER requires several days, state the first day of data collection.

**Officer's initials:** initials of the Responsible Officer, who is in charge of the completion of the PER. He/she will be the professional especially designated and trained for the task. If the professional providing the information, or the project Co-ordinator are filling-in the PERs, they become responsible for those PERs and should state their initials.

### 3. PATIENT DETAILS

**Name (*initials only*):** initials of the patient exposed to pesticide(s). Although the complete name could be entered, it is recommended that only initials be used in order to preserve confidentiality. A separate confidential file with the corresponding full name and address could be created to facilitate locating the patient, in case it becomes necessary.

**Identity No.:** official identity card number or registration number at the health care facility. This will only serve for identifying the patient if it becomes necessary to contact him/her again (e.g. for medical follow-up, request for specific information through the treating physician,...)

**Sex:** check the appropriate box for male or female.

**Age:** state one- or two-digit number and circle the relevant units: days (dy), months (ms) or years (ys). Leave blank if the age is not known.

**If Unknown:** check in this box, plus the corresponding box if the patient is considered:

**Child** - under 14 years

**Adolescent** - 15 to 19 years

**Adult** - 20 years and above

### 4. CIRCUMSTANCES OF EXPOSURE (check the relevant response with [x] plus "uncertain", if relevant).

**Intentional:** exposure resulting from an intention to cause harm. It includes self-harm (e.g. suicide, abortion and other malicious exposures). Includes parasuicide, which is an intentional self-exposure where the purpose is only to induce disease or call the attention (and not to produce death).

**Accidental:** unintentional exposure, unexpected, or not foreseen (excludes those related to work practice). It includes, for example, human and veterinary therapy overuse or misuse, and also exposures due to environmental contamination.

Note: If the case is due to environmental contamination (e.g. contaminated water, drift from a nearby field, air application over an inhabited area, leak from an industrial process) state **(E)** at the extreme right of the field and provide further information under comments (Section 13).

**Occupational:** exposure occurring during work, where the pesticide was being used in the context of the work process, or the exposure resulted from the work process, including application, transportation, storage, disposal and other work circumstances

**Uncertain:** refers to those circumstances mentioned above when doubt exists about the validity of the information. It will be completed in addition to *"intentional"*, *"accidental"* or *"occupational"*, whenever relevant (e.g. *suspected suicide attempt denied by the patient...*)

**Unknown:** if there are no details concerning the circumstances of exposure, and information on this cannot be found.

<b>5. MAIN ACTIVITY AT TIME OF EXPOSURE</b> (check the appropriate box(es) with [x])
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Refers to the main activity undertaken by the patient when the exposure occurred. This field is relevant in case of accidental (adult) and occupational exposures only (including those affecting working children). It is not applicable in cases of intentional exposures and/or children's accidental exposures, where the option is *"Not relevant"*. In some instances, several activities are undertaken at the same time or in immediate succession (e.g. *application in field and field re-entry, or mixing/loading and equipment care*). If so, check *"Multiple"* plus the relevant activities and state under *"Specify"* any activity which is not listed as an option. State *"Other"* activities as needed, and under *"Specify"* those activities which are not listed as options.

**Manufacturing/Formulation:** preparation of the active ingredient (of technical quality) and/or preparation of the pesticide formulation for distribution and sale. Includes exposure occurring through the care and/or maintenance of the installations and machinery used for manufacturing and formulating pesticides.

**Application in field:** application of a pesticide prepared for use (e.g. *diluted*) on plant or soil, or its release into air, water or other media by different means with the purpose of pest control. It includes *"extermination"* but excludes application on or administration to animals, which should be stated under *"Veterinary Therapy"* (see below).

**Public health campaign:** application of a pesticide prepared for use in vector control, for the protection of human health, in the context of a public health campaign.

**Household application:** application or releasing of a pesticide inside the home or human dwelling, by individuals, and not in the context of public health campaigns. Includes application in the garden of houses.

**Field re-entry:** entrance of a worker into crop fields or areas where pesticides were applied recently.

**By-standing:** observing or accompanying pesticide users during their work. It implies coming into contact with pesticides used in operations or processes carried out by pesticide applicators.

**Transportation:** movement of pesticides to and from different sites, by various means of transport.

**Mixing/Loading:** includes both the preparation of solutions and mixtures using the concentrated products and the transfer of the prepared (diluted) pesticides into containers, spraying equipment (includes aircraft for spraying pesticides).

**Equipment care:** cleaning, maintenance, storage and transportation of equipment used for the application and storage of pesticides. It excludes the care of machinery used in manufacturing and formulation (see above "*Manufacturing/Formulation*").

**Human Therapy:** use of pesticides for treatment of human parasitism. It includes both the appropriate and inappropriate use (*e.g. when pesticides of agronomic or veterinary use are applied to humans, for treating lice infestations...*).

**Veterinary Therapy:** use of pesticides for treatment of parasitism in animals. It includes both the appropriate and inappropriate use.

**Multiple:** check this box only if several activities were undertaken at the same time or successively. In this case, several activity boxes may be checked. If eventual activities are not listed as options, state them after "*Specify*"

**Not relevant:** activity not relevant at the time of exposure (*e.g. intentional exposure, children's accidental exposure*).

**Other:** check this box if the activity is not listed above (*e.g. pesticide disposal, flagging*), and state the specific activity under "*Specify*".

**Unknown:** if activity is not known, and information on it cannot be obtained.

<b>6. LOCATION OF EXPOSURE</b> ( <i>check one with [x]</i> )
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Refers to the place where the exposure to the pesticide has occurred.

**Home (urban/periurban):** human dwelling in a city or town, used as a domestic abode. It need not be the patient's home. It includes a house, flat, caravan, or permanent and voluntary institutions such as homes for the elderly and student halls.

**Garden (urban/periurban):** includes the garden, yard, driveway, path, steps and boundaries in an urban or periurban area.

**Home (rural):** same as "*Home*" above, but situated in the countryside, bush or forest, outside of towns and cities.

**Garden (rural):** same as "*Garden*" above, but situated in a rural area.

**Farm/Field:** land areas, and small or large-scale agricultural, horticultural or silvicultural establishments.

**Public Area:** uncovered or enclosed area open for public circulation, entertainment, relaxation or socialising (*e.g. shop, hotel, sports facility, parking lot, park...*).

**Greenhouse:** building with glass or plastic walls and/or roof for the cultivation of plants under controlled conditions. Includes both the commercial large-scale structures and the domestic greenhouses.

**Storage site:** place or area reserved for storing pesticides, chemicals, agronomic products or other.

**Unknown:** if place is not known, and information on it cannot be found.

**Other:** check this box if the location is not listed above and state the specific location under “Specify”. These locations include:

- Formulation/packaging plant
- Store
- Industrial setting
- Ship
- Fire
- Prison
- ...[other, to be added]

## 7. ROUTE OF EXPOSURE *(One or more routes to be checked [x] as appropriate)*

Refers to the main route (s) of entry of the pesticide into the body, which may be one or several

**Oral:** intake by mouth (or nose) and subsequent swallowing of a liquid, solid or dust.

**Dermal:** exposure of the skin.

**Respiratory:** intake of vapours, sprays or dust through the mouth or nose and breathing them in.

**Ocular:** exposure of the eyes.

**Unknown:** if exposure route is not known, and the information cannot be obtained.

**Other:** check this box if the route of exposure is not listed above (*e.g. parental, injection*), and state route under “Specify”.

## 8. PRODUCT IDENTITY

Refers to the identification of the pesticide involved in the exposure case. It is foreseen that the study co-ordinator will prepare and/or provide a list of the pesticides currently used in the area and, eventually, those banned or severely restricted.

Note: If more than one pesticide formulation was involved in the case, attach another PER paper format where only the record number and sections 8 and 9 are completed (attach the PERs).

**Product Names(s):** brand name, commercial and/or common or generic name of the pesticide. Any name(s), especially that of the active ingredient provided will facilitate the identification of the pesticide formulation involved (to be done and/or confirmed by the Co-ordinator).

**Unknown:** if name of the pesticide is not stated in the medical record or known by the person reporting or collecting the data. Note: every effort should be taken to identify the product involved (*e.g. contacting the exposed person or agronomists in the area*).

**Concentration:** if available, state the concentration of the main active ingredient (note that in some cases it may be part of the commercial name of the product).

**Active Ingredient:** means the biologically active part of the pesticide present in a formulation.

**Physical form:** select the relevant, according to the physical state of the pesticide at the time of exposure.

**Gas:** volatilized, vaporized in gaseous form (*e.g. fumigants*).

**Liquid:** in fluid form, includes emulsion, suspension, solution, gels and "pour-on".

**Solid:** in solid form, includes dust, granules, baits, pellets, pills, briquettes, tablets (includes waxes and pastes).

**Unknown:** if physical state is not known, and information on this cannot be obtained.

**Actual use:** refers to the purpose for which the pesticide was being used. In some cases it may differ from the normal, current use indicated by the manufacturer (this information will be completed by the Co-ordinator in the shaded section 8).

Note: This field should also be completed in cases of intentional exposure, as all pesticides have a certain use, independently from the fact that they are utilised for suicide, malicious or other purposes.

**Insecticide:** control of insects (*e.g. flies, mosquitoes, midges, ants, wasps, cockroaches, beetles, moths, bed bugs,...*).

**Rodenticide:** control of rodents (*e.g. rats, mice, moles*).

**Herbicide:** control of weeds or unwanted plants.

**Fungicide:** control of fungi (mildew, moulds). It may include many seed treatment products.

**Tick control:** control of ixodes acarids (ticks).

**Unknown:** if use of the pesticide is not known, and information cannot be found at the time of data collection.

**Other:** check this box if the use of the pesticide is not listed above and state under "Specify" either the use (*e.g. repellent, larvicide, molluscicide, nematocide,...*), or the pest intended to kill or control (*e.g. rabbits, bats, birds, fish, others*).

**Use intended** (*shaded area, to be filled-in by Co-ordinator only*): refers to the use the pesticide is designed for, according to the pest to be killed, controlled or repelled. The intended use of the product is the one recommended by the distributor and/or approved by authorities, which may not necessarily be the same given by the workers or applicators (*e.g. popular use of carbamates as rodenticides*).

**Registered** (use): pesticide officially registered in the country, either by the agriculture, health or other official sector (meaning that the use is formally approved)

**Not approved** (use): pesticide is not officially registered, or is withdrawn or banned in the state or country (e.g. *pesticides smuggled into the country*).

#### 9. CHEMICAL TYPE (check one or more, if relevant)

Refers to the identification of the chemical class of the active ingredient involved. Check more than one option if the pesticide consists of a mixture of active ingredients. Consult the list of pesticides (commercial name, composition, concentration, use) provided by the Co-ordinator. If the appropriate class is not listed, check "Other" and state under "Specify" the chemical class. If the specific chemical is known, check "Specific chemical" and write the name of the chemical. *For example: if exposure is due to an organophosphorus product, and the product is known to be "Diazinon" check both "Organophosphorous" and under "Specific chemical", state "Diazinon"*

#### 10. MANAGEMENT (check [x] against the relevant responses)

Refers to the medical actions taken for the treatment or surveillance of the patient exposed to pesticides.

**Treatment given:** any type of treatment, either specific and/or symptomatic given to the patient. Check "Yes", "No" or "Unknown", as required. All types of treatment are included. Brief clinical observation and reassurance only are not considered as treatment.

**Referred to other hospital:** check if the patient is transferred to a different health care facility after being seen and/or treated at the health centre where the study is undertaken.

**Hospitalisation:** state if patient was admitted to hospital for more than 24 hours. Check "Yes", "No" or "Unknown", as required.

**If yes, days in hospital:** state the total number of days the patient remained hospitalised, either for treatment or clinical surveillance, including intensive or specialised care. Note: provide under "Comments" the estimated average cost (in US dollars) of a day in hospital.

**Days in ICU:** specify only the number of days the patient remained hospitalised in an Intensive Care Unit. Note: provide under "Comments" the estimated average cost (in US dollars) of a day in the ICU. Refers to the type of effects and severity of the clinical effects observed in the patient, according to the Poisoning Severity Score (PSS) chart attached (*Annex III*).

#### 11. SEVERITY GRADING

**Effects:** refers to the clinical features the patient presented upon admission or during the evolution of the case. NB: Leave blank if there are no clinical effects.

**Local:** clinical effects limited to the body part exposed (e.g. *skin, eyes*).

**Systemic:** clinical effects resulting from the systemic absorption of the pesticide and affecting several body organs and functions (poisoning).



**Both:** when the patient suffers localised and systemic effects (*e.g. skin lesions and systemic poisoning*).

**PSS** (Poisoning Severity Score) (*see Annex III*).

**None:** neither symptoms nor signs related to pesticide exposure.

**Minor:** mild, transient and spontaneously resolving symptoms.

**Moderate:** pronounced or prolonged symptoms.

**Severe:** life-threatening symptoms.

## 12. OUTCOME

Refers to the clinical evolution and health consequences of the patient's pesticide exposure.

**Recovery:** return to previous health status.

**Recovery with sequelae:** return to an acceptable health status with recovery of vital and other functions, but with sequelae (*e.g. polyneuritis, altered respiratory function, neuropsychological impairment, altered respiratory functionality, skin lesion,...*).

**Death related:** death resulting from the toxic effect of the pesticide. It includes directly related deaths, and those resulting from clinical complications of poisoning (*e.g. respiratory infection, CNS depression*).

**Death unrelated:** death not connected in any way with the exposure to the pesticide (*e.g. accident*).

**Unknown:** if outcome of the case is not stated in the medical record or known by the person reporting or collecting the data. Note: every effort should be taken to learn about the evolution of the case (*e.g. contacting the exposed patient or relatives, if possible*).

## 13. COMMENTS

Provide any relevant comments or observations, stating the section they refer to in the PER. For example,

- estimated costs (in US dollars) of hospitalization (per day) and, more specifically, the daily cost of ICU admission
- description of circumstances in case of environmental exposure
- chronic long-term exposure
- type of pesticide being treated
- if there was laboratory confirmation of exposure
- further comments or observations, if necessary use the back of the page.

*Questions, observations and suggestions for improving, clarifying or amending the "PER Instruction and Definitions" should be faxed to the IPCS (Fax: +41 22 791 4848) or submitted to the E-mail Group (mail to: ...pest@ccohts.ca) Thank you!*