

Classification for Drug related problems

V9.00

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This classification can freely be used in Pharmaceutical Care Research and practice, as long as the PCNE association is informed of its use and results of validations. The classification is available both as a Word document and a PDF document.

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This classification should be referred to as 'The PCNE Classification V 9.0'
With some adaptations, this version is backwards compatible with version 8.

Introduction

During the working conference of the Pharmaceutical Care Network Europe in January 1999, a classification scheme was constructed for drug related problems (DRPs). The classification is part of a total set of instruments. The set consists of the classification scheme, reporting forms and cases for training or validation. The classification system is validated and adapted regularly. The current version is V9.0, which has been developed during an expert workshop in February 2019. It is backwards compatible with V8 (with some adaptations), but not with versions before V8 because a number of major sections have been revised.

The classification is for use in research into the nature, prevalence, and incidence of DRPs and also as a process indicator in experimental studies of Pharmaceutical Care outcomes. It is also meant to help health care professionals to document DRP-information in the pharmaceutical care process. Throughout the classification the word 'drug' is used, where others might use the term 'medicine'. The hierarchical classification is based upon similar work in the field, but it differs from existing systems because it separates the problems from the causes. Quality experts will recognise that most of the causes are often named 'Medication Errors' by others.

The following official PCNE-DRP definition is the basis for the classification:

A Drug-Related Problem is an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes.

The basic classification now has 3 primary domains for problems, 9 primary domains for causes and 5 primary domains for Interventions.

However, on a more detailed level there are 7 grouped sub domains for problems, 43 grouped sub domains for causes and 17 grouped sub domains for interventions, and 10 subdomains for intervention acceptance. Those sub-domains can be seen as explanatory for the principal domains.

In 2003 a scale has been added to indicate if or to what extend the problem has been solved, containing 4 primary domains and 7 sub domains.

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The basic classification

| | Code V9.0 | Primary domains |
|--|----------------------|--|
| Problems (also potential) | P1 | Treatment effectiveness There is a (potential) problem with the (lack of) effect of the pharmacotherapy |
| | P2 | Treatment safety Patient suffers, or could suffer, from an adverse drug event |
| | P3 | Other |
| Causes (including possible causes for potential problems) | C1 | Drug selection The cause of the DRP can be related to the selection of the drug |
| | C2 | Drug form The cause of the DRP is related to the selection of the drug form |
| | C3 | Dose selection The cause of the DRP can be related to the selection of the dosage schedule |
| | C4 | Treatment duration The cause of the DRP is related to the duration of treatment |
| | C5 | Dispensing The cause of the DRP can be related to the logistics of the prescribing and dispensing process |
| | C6 | Drug use process The cause of the DRP is related to the way the patient gets the drug administered by a health professional or carer, in spite of proper instructions (on the label) |
| | C7 | Patient related The cause of the DRP can be related to the patient and his behaviour (intentional or non-intentional) |
| | C8 | Patient transfer related The cause of the DRP can be related to the transfer of patients between primary, secondary and tertiary care, or transfer within one care institution. |
| Planned Interventions | I0 | No intervention |
| | I1 | At prescriber level |
| | I2 | At patient level |
| | I3 | At drug level |
| | I4 | Other |
| Intervention Acceptance | A1 | Intervention accepted |
| | A2 | Intervention not accepted |
| | A3 | Other |
| Status of the DRP | O0 | Problem status unknown |
| | O1 | Problem solved |
| | O2 | Problem partially solved |
| | O3 | Problem not solved |

The Problems

| Primary Domain | Code V9.0 | Problem |
|---|------------------|---|
| 1. Treatment effectiveness There is a (potential) problem with the (lack of) effect of the pharmacotherapy | P1.1 | No effect of drug treatment |
| | P1.2 | Effect of drug treatment not optimal |
| | P1.3 | Untreated symptoms or indication |
| 2. Treatment safety Patient suffers, or could suffer, from an adverse drug event. <i>N.B. If there is no specific cause, skip Causes coding.</i> | P2.1 | Adverse drug event (possibly) occurring |
| 3. Other | P3.1 | Problem with cost-effectiveness of the treatment |
| | P3.2 | Unnecessary drug-treatment |
| | P3.3 | <i>Unclear problem/complaint. Further clarification necessary (please use as escape only)</i> |



Potential Problem



Manifest Problem

The Causes (including possible causes for potential problems)

[N.B. One problem can have more causes]

| | Primary Domain | Code V9.0 | Cause |
|---|---|---|--|
| Prescribing & drug selection | 1. Drug selection The cause of the (potential) DRP is related to the selection of the drug (by patient or health professional) | C1.1 C1.2 C1.3 C1.4 C1.5 C1.6 C1.7 | Inappropriate drug according to guidelines/formulary Inappropriate drug (within guidelines but otherwise contra-indicated) No indication for drug Inappropriate combination of drugs, or drugs and herbal medications, or drugs and dietary supplements Inappropriate duplication of therapeutic group or active ingredient No or incomplete drug treatment in spite of existing indication Too many drugs prescribed for indication |
| | 2. Drug form The cause of the DRP is related to the selection of the drug form | C2.1 | Inappropriate drug form (for this patient) |
| | 3. Dose selection The cause of the DRP is related to the selection of the dose or dosage | C3.1 C3.2 C3.3 C3.4 C3.5 | Drug dose too low Drug dose too high Dosage regimen not frequent enough Dosage regimen too frequent Dose timing instructions wrong, unclear or missing |
| | 4. Treatment duration The cause of the DRP is related to the duration of treatment | C4.1 C4.2 | Duration of treatment too short Duration of treatment too long |
| Disp | 5. Dispensing The cause of the DRP is related to the logistics of the prescribing and dispensing process | C5.1 C5.2 C5.3 C5.4 | Prescribed drug not available Necessary information not provided Wrong drug, strength or dosage advised (OTC) Wrong drug or strength dispensed |
| Use | 6. Drug use process The cause of the DRP is related to the way the patient gets the drug administered by a health professional or other carer, despite proper dosage instructions (on label/list) | C6.1 C6.2 C6.3 C6.4 C6.5 C6.6 | Inappropriate timing of administration or dosing intervals Drug under-administered Drug over-administered Drug not administered at all Wrong drug administered Drug administered via wrong route |
| | 7. Patient related The cause of the DRP is related to the patient and his behaviour (intentional or non-intentional) | C7.1 C7.2 C7.3 C7.4 C7.5 C7.6 C7.7 C7.8 C7.9 C7.10 | Patient uses/takes less drug than prescribed or does not take the drug at all Patient uses/takes more drug than prescribed Patient abuses drug (unregulated overuse) Patient uses unnecessary drug Patient takes food that interacts Patient stores drug inappropriately Inappropriate timing or dosing intervals Patient administers/uses the drug in a wrong way Patient unable to use drug/form as directed Patient unable to understand instructions properly |

| | | |
|----------------|--|--|
| Seamles | 8. Patient transfer related The cause of the DRP can be related to the transfer of patients between primary, secondary and tertiary care, or transfer within one care institution. | C8.1 No medication reconciliation at patient transfer. C8.2 No updated medication list available. C8.3 Discharge/transfer information about medication incomplete or missing C8.4 Insufficient clinical information about the patient. C8.5 Patient has not received necessary medication at discharge from hospital or clinic. |
| | 9. Other | C9.1 No or inappropriate outcome monitoring (incl. TDM) C9.2 Other cause; specify C9.3 No obvious cause |

The Planned Interventions

N.B. One problem can lead to more interventions

| Primary Domain | Code V9.0 | Intervention |
|--|------------------|--|
| No intervention | I0.1 | No Intervention |
| 1. At prescriber level | I1.1 | Prescriber informed only |
| | I1.2 | Prescriber asked for information |
| | I1.3 | Intervention proposed to prescriber |
| | I1.4 | Intervention discussed with prescriber |
| 2. At patient level | I2.1 | Patient (drug) counselling |
| | I2.2 | Written information provided (only) |
| | I2.3 | Patient referred to prescriber |
| | I2.4 | Spoken to family member/caregiver |
| 3. At drug level | I3.1 | Drug changed to ... |
| | I3.2 | Dosage changed to ... |
| | I3.3 | Formulation changed to ... |
| | I3.4 | Instructions for use changed to ... |
| | I3.5 | Drug paused or stopped |
| | I3.6 | Drug started |
| 4. Other intervention or activity | I4.1 | Other intervention (specify) |
| | I4.2 | Side effect reported to authorities |

Acceptance of the Intervention proposals

N.B. One status of acceptance per intervention proposal

| Primary domain | Code 9.0 | Implementation |
|---|---------------------|---|
| 1. Intervention accepted (by prescriber or patient) | A1.1 | Intervention accepted and fully implemented |
| | A1.2 | Intervention accepted, partially implemented |
| | A1.3 | Intervention accepted but not implemented |
| | A1.4 | Intervention accepted, implementation unknown |
| 2. Intervention not accepted (by prescriber or patient) | A2.1 | Intervention not accepted: not feasible |
| | A2.2 | Intervention not accepted: no agreement |
| | A2.3 | Intervention not accepted: other reason (specify) |
| | A2.4 | Intervention not accepted: unknown reason |
| 3. Other (no information on acceptance) | A3.1 | Intervention proposed, acceptance unknown |
| | A3.2 | Intervention not proposed |

Status of the DRP

N.B. This domain depicts the outcome of the intervention. One problem (or the combination of interventions) can only lead to one level of solving the problem

| Primary Domain | Code V9.0 | Outcome of intervention |
|----------------------------|----------------------|---|
| 0. Not known | O0.1 | Problem status unknown |
| 1. Solved | O1.1 | Problem totally solved |
| 2. Partially solved | O2.1 | Problem partially solved |
| 3. Not solved | O3.1 | Problem not solved, lack of cooperation of patient |
| | O3.2 | Problem not solved, lack of cooperation of prescriber |
| | O3.3 | Problem not solved, intervention not effective |
| | O3.4 | No need or possibility to solve problem |

PCNE Classification for Drug related problems Help

V9.0

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This help document is related to as 'Help to the PCNE Classification V9.0

Finding or selecting codes in the PCNE classification

A Drug-Related Problem is an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes.

For the use of the PCNE classification it is important to separate the real (or potential) problem (that affects or is going to affect the outcome) from its cause(s). Often drug-related problems (DRPs) are caused by a certain type of error e.g. prescribing errors or drug-use or administration errors. But there might be no error at all involved. Also, a medication error does not necessarily have to lead to a drug-related problem, there can be no problem or the problem is potential. The cause is usually the behaviour that has caused (or will cause) the problem, and most often that is a medication error. A cause or a combination of causes and a problem together, will usually lead to one or more interventions.

The classification can be used in two ways, depending on the level of information needed.

If only the main domains are used, there is in general enough information for research purposes. If the system is used for documenting pharmaceutical care activities in practice, the sub domains can be useful.

N.B. The word 'drug' is equivalent to 'medicine' in the context of this classification.

Problem section

Basically, the problem is defined as 'the expected or unexpected event or circumstance that is, or might be wrong, in therapy with drugs'. (the P-codes)

There are 3 major domains in the problem section. The following descriptions could help to find the right problem domain:

| | |
|--|---------------|
| The clinical effect of the drug treatment is not as expected or there is no treatment | See P1 |
| The patient suffers from an ADR at normal dose or from a toxic reaction | See P2 |
| Nothing seems wrong in the treatment, but there is another problem related to the medicines in use | See P3 |

Causes section

Each (potential) problem has a cause. The cause is the action (or lack of action) that leads up to the occurrence of a potential or real problem. There may be more (potential) causes for a problem. (The C-code)

| | |
|---|---------------|
| The cause of the DRP is related to the selection of the drug | See C1 |
| The cause of the DRP is related to the selection of the drug form | See C2 |
| The cause of the DRP is related to the selection of a dose or dosage schedule | See C3 |
| The cause of the DRP is related to the duration of the therapy | See C4 |
| The cause of the DRP is related to the logistics of the prescribing or dispensing process | See C5 |

| | |
|--|---------------|
| The cause of the DRP is related to the way the patient gets the drug administered by a health professional or carer, despite proper dosage instructions (on the label). (principally used for hospital or home-care by caregivers) | See C6 |
| The cause of the DRP is related to the personality or the behaviour of the patient | See C7 |
| Other | See C8 |

Planned Intervention section

The problem will usually lead to one or more in interventions to correct the cause of the problem. (The I-code)

| | |
|---|---------------|
| There is or can be no intervention | See I0 |
| Intervention through the prescriber | See I1 |
| Intervention through the patient, his carers or relatives | See I2 |
| Intervention directly by changing drug or indicating change in drug use | See I3 |
| Other intervention | See I4 |

Level of acceptance of intervention proposals

In this section you can indicate if the suggestion for the intervention to patient or prescriber has been accepted.

| | |
|---|---------------|
| Intervention accepted (by prescriber or patient) | See A1 |
| Intervention not accepted (by prescriber or patient) | See A2 |
| No intervention proposed or acceptance unknown (no information) | See A3 |

Status of the DRP

Previously called Outcome', this section can be used to document if a problem has been solved. For evaluation purposes it is desirable to indicate if the problem has been solved by a specific intervention (the I-code), that has been not, partially or fully accepted by the prescriber and patient (the A code).

| | |
|--------------------------|---------------|
| Problem totally solved | See O1 |
| Problem partially solved | See O2 |
| Problem not solved | See O3 |