

Classification for Drug related problems

V9.1

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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 9.1'
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 V9.1, which has been developed after a validation round and an expert workshop in February 2020. 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 Planned Interventions, 3 primary domains for level of acceptance (of interventions) and 4 primary domains for the Status of the problem.

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 V9.1	Primary domains
Problems (also potential)	P1 P2 P3	Treatment effectiveness There is a (potential) problem with the (lack of) effect of the pharmacotherapy Treatment safety Patient suffers, or could suffer, from an adverse drug event Other
Causes (including possible causes for potential problems)	C1 C2 C3 C4 C5 C6 C7 C8 C9	Drug selection The cause of the DRP can be related to the selection of the drug Drug form The cause of the DRP is related to the selection of the drug form Dose selection The cause of the DRP can be related to the selection of the dosage schedule Treatment duration The cause of the DRP is related to the duration of treatment Dispensing The cause of the DRP can be related to the logistics of the prescribing and dispensing process 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) Patient related The cause of the DRP can be related to the patient and his behaviour (intentional or non-intentional) 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. Other
Planned Interventions	I0 I1 I2 I3 I4	No intervention At prescriber level At patient level At drug level Other
Intervention Acceptance	A1 A2 A3	Intervention accepted Intervention not accepted Other
Status of the DRP	O0 O1 O2 O3	Problem status unknown Problem solved Problem partially solved Problem not solved

The Problems

Primary Domain	Code V9.1	Problem
1. Treatment effectiveness There is a (potential) problem with the (lack of) effect of the pharmacotherapy.	P1.1	No effect of drug treatment despite correct use
	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	Unnecessary drug-treatment
	P3.2	<i>Unclear problem/complaint. Further clarification necessary (please use as escape only)</i>

<input type="checkbox"/>	Potential Problem
<input type="checkbox"/>	Manifest Problem

The Causes (including possible causes for potential problems)

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

	Primary Domain	Code V9.1	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	Inappropriate drug according to guidelines/formulary
		C1.2	No indication for drug
		C1.3	Inappropriate combination of drugs, or drugs and herbal medications, or drugs and dietary supplements
		C1.4	Inappropriate duplication of therapeutic group or active ingredient
		C1.5	No or incomplete drug treatment in spite of existing indication
C1.6		Too many different drugs/active ingredients 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/formulation (for this patient)
	3. Dose selection The cause of the DRP is related to the selection of the dose or dosage	C3.1	Drug dose too low
		C3.2	Drug dose of a single active ingredient too high
		C3.3	Dosage regimen not frequent enough
		C3.4	Dosage regimen too frequent
		C3.5	Dose timing instructions wrong, unclear or missing
	4. Treatment duration The cause of the DRP is related to the duration of treatment	C4.1	Duration of treatment too short
		C4.2	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	Prescribed drug not available
		C5.2	Necessary information not provided or incorrect advice provided
		C5.3	Wrong drug, strength or dosage advised (OTC)
		C5.4	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 <i>by a health professional or other carer</i> , despite proper dosage instructions (on label/list)	C6.1	Inappropriate timing of administration or dosing intervals by a health professional
		C6.2	Drug under-administered by a health professional
		C6.3	Drug over-administered by a health professional
		C6.4	Drug not administered at all by a health professional
		C6.5	Wrong drug administered by a health professional
		C6.6	Drug administered via wrong route by a health professional
	7. Patient related The cause of the DRP is related to the patient and his behaviour (intentional or non-intentional)	C7.1	Patient intentionally uses/takes less drug than prescribed or does not take the drug at all for whatever reason
		C7.2	Patient uses/takes more drug than prescribed
	C7.3	Patient abuses drug (unregulated overuse)	
	C7.4	Patient decides to use unnecessary drug	
	C7.5	Patient takes food that interacts	
	C7.6	Patient stores drug inappropriately	
	C7.7	Inappropriate timing or dosing intervals	
	C7.8	Patient unintentionally administers/uses the drug in a wrong way	

		C7.9	Patient physically unable to use drug/form as directed
		C7.10	Patient unable to understand instructions properly
Seamless	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	Medication reconciliation problem
	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 V9.1	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 9.1	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 V9.1	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

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This help document is related to as 'Help to the PCNE Classification V9.1'

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
The cause of the DRP is related to the transfer of a patient between settings or departments (seamless care issues)	See C8
There is another cause for the problems, not mentioned before.	See C9

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 by pharmacist (dispenser) 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