DEFINING DRP AND MEDICATION ERRORS AND THEIR RELATIONSHIP

PCNE WORKING SYMPOSIUM ON DRP 2009
WORKSHOP 1

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Definitions and terminology
Aim of the workshop

- What are valid definitions for medication errors (ME)?
  - PCNE definition for ME?
- What is the difference between DRP and ME, what are overlaps?
- Future: scientific article
The processes in drug use
• Prescribing
• Dispensing
• Use

No error but not the desired outcome

• Something wrong in the process
  Medication Error

(Potential) impact on outcome
• Drug-related problem

Error but no (potential) impact on outcome
Drug-related problem

Medication error (= human cause)
- Prescribing error
- Dispensing error
- Administration/drug use error

Adverse drug event (= drug cause)
- Drug-drug interaction
- Drug-food interaction
- Dose too low
- Dose too high
- Wrong drug selected etc.

Problems
- Potential
- Manifest

- Adverse drug reaction
- Ineffectiveness
- Toxic reaction

No problem

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Error

- Unintended act or an act that does not achieve its intended effect.
  (Leape LL. Am J Health Syst Pharm 52, 1995, 379-382)

- Failure of planned actions to achieve their desired ends – without the intervention of some unforeseeable events.
  (Reason 1997: see Glossary of terms, Council of Europe)
Medication error 1

- Any preventable event that may cause or lead to inappropriate medication use or patient harm while medication is in the control of a health care professional, patient, or consumer.

(National Coordinating Council for Medication Error Reporting and Prevention, NCC MERP, USA)

- More process oriented – patients included
A medication error is any error in the process of prescribing, dispensing, or administering a drug, whether there are any adverse consequences or not.

(Leape LL. Am J Health Syst Pharm 52, 1995, 379-382)

More process oriented – patients not mentioned
Medication error 3

- Medication Errors
- Links Errors in prescribing, dispensing, or administering medication with the result that the patient fails to receive the correct drug or the indicated proper drug dosage.

- Pubmed - MeSH
- Year introduced: 1967(1966)
Relationship between ME, ADE, ADR

Expert Group on Safe Medication Practices: Creation of a better medication safety culture in Europe: Building up safe medication practices, 2007:
Adverse drug reaction (ADR)

- A response to a medical product which is noxious and unintended and which occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of diseases etc. (Council of Europe)

- Non-preventable ADE due to side effects or allergic reactions (e.g. cough due to an ACE-inhibitor) (Morimoto et al, Qual Saf Health Care 2004)
Adverse drug event (ADE)

- An injury occurring during the patient’s drug therapy and resulting either from appropriate care, or from unsuitable or suboptimal care. ADE include: the ADR during normal use of the medicine, and any harm secondary to a medication error, both errors of omission or commission. (Council of Europe)

- An injury that is the result of an error at any stage in the medication use or an injury of which the severity or duration could have been reduced if different actions had been taken (ameliorable). (Morimoto et al, Qual Saf Health Care 2004)
According to Morimoto et al, Qual Saf Health Care 2004

Relationship between ME, ADE, ADR

- Medication errors
- Potential ADEs
- Preventable ADE
- Adverse drug reaction ADR
- Non-preventable

Preventable

Preventable
DRP can be illustrated by the intersections of three circles representing ME, ADE and ADR. MR include every mistake in the medication process (prescribing, dispensing, administering of drugs). Only a minority of the MR result in an ADR or an ADE. ADE represent any injury related to the use of a drug, even if this relationship has not been proven to be causal?? (AE). ADR are noxious responses to a drug which are unintended and which occur at normally used doses of this drug. ADR are either predictable (and therefore mostly avoidable??; type A reactions), or unpredictable (idiosyncratic or type B reactions).
Points of discussions

- What are differences between both figures?
- Are all errors preventable?
- Is an error an error, whether there are any adverse consequences or not?
- Are there other causes for ADE than ME and the inherent risk of drugs?
- Are all ADR non-preventable?
- Are drug use errors medication errors? (Medication errors: patients included?)
The scenery of Drug Related Problems

Drug Related Problems

3 - Patient
   - Behaviour problem
   - Self-medication problem

1 - Physician
   - Prescribing problem

2 - Pharmacy
   - Dispensing problem

Real DRP
   - Manifest and influencing outcomes

Potential DRP
   - Not manifest but possibly influencing outcomes

- non-preventable Problem
- preventable Problem

AND THE DRUG?

Foppe van Mil, PCNE working symposium

PCNE DRP Symposium 02-11-2009
Lack of adherence / knowledge

Patient

Outcome

Drug

Health Professional

Adverse drug reaction (ADR)

Errors

Adopted from N. Barber, ACCP/ESCP-conference 2009
According to Morimoto et al., Qual Saf Health Care 2004

Relationship between ME, ADE, ADR and DRP?
Medical Error

"Errors or mistakes committed by health professionals which result in harm to the patient."

Preventable drug related morbidity (PDRM)

Drug Therapy Problem

Medication Error

Errors in prescribing, dispensing, or administering medication with the result that the patient fails to receive the correct drug or the indicated proper drug dosage.

Adverse Drug Event (ADE)

Drug-Related Problem

event or a circumstance involving drug therapy that actually or potentially interferes with desired health outcomes
Points of discussions

- Are DRP always caused by errors?
- Do all problems have a cause that is related to the prescribing-dispensing process or the patient behaviour? Or Are non-preventable side effects or ADR DRPs?
- Are ADE and / or potential ADE DRPs?
- Do all errors cause drug-related problems? (Or: Are trivial medication errors DRPs?)
- Is unintended non-compliance a DRP and a ME?
Results of the working group

- Definition DRP
- Decision for definition ADE
- Definition ME
- Relationship between ME, ADR, ADE, DRP
Drug Related Problem

- A drug related problem is an individual patient-related issue (event or circumstance) involving drug therapy that actually or potentially interferes with desired health outcomes (PCNE 1999)
DRP and ADE

- **DRP**: A drug related problem is an individual patient-related issue (event or circumstance) involving drug therapy that actually or potentially interferes with desired health outcomes.

- **ADE**: An injury occurring during the patient’s drug therapy and resulting either from appropriate care, or from unsuitable or suboptimal care. ADE include: the ADR during normal use of the medicine, and any harm secondary to a medication error, both errors of omission or commission.
A medication error is any error occurring in the medication use process (e.g. prescribing, dispensing, administering or monitoring). (Assumptions: patient included in administering/monitoring and therapy choices included, process of diagnosis not included)
A medication error is any error occurring in the medication use process (e.g. prescribing, dispensing, administering or monitoring) (assumptions patient included in administering/monitoring and therapy choices included, process of diagnosis not included).
Expert Group on Safe Medication Practices: Creation of a better medication safety culture in Europe: Building up safe medication practices, 2007: 
DRP actually interferes with desired health outcomes

DRP: potentially interferes with desired health outcomes

Adverse drug events

Injury

No injury

Preventable adverse drug events

Potential adverse drug events

Not preventable

Preventable

Inherent risk of drugs

Medication errors

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Relationship between ME, ADE, ADR and DRP
Further discussion

- Definition of ADR
- Are all ADR non-preventable?
- Do all errors cause drug-related problems? (Or: Are trivial medication errors DRPs?)
- Is unintended non-compliance a DRP and a ME?
- What are ADE not caused by ME or ADR?
Check the definitions and terminology by means of the PCNE DRP classification system e.g.:

- Side effect suffered (allergic) or (non-allergic)
- Inappropriate drug
- Drug dose too low
- Drug not taken
- Potential interaction