Medication review

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PCNE Working Group
Medication review

- Pharamceutical Care Network Europe
- WG started in Vimeiro March 2009
- Open to PCNE members
- You/your department may apply as member of PCNE at info@pcne.org

Introduction pathway

- Aim of medication review: usually to optimize outcomes from drug therapy
- Different models & phases for medication management or review (MR)
- Different methods: Beers, MAI and retrospective, ad hoc or prospective
- Practice and research

Terminology

- Many different terms in the literature for the process of medication review
  - Drug/medication regimen review (DRR/MRR)
  - Drug use review (DUR) or Medication use review (MUR)
  - Patient medication management service (MM service)
  - Comprehensive medication review (CMR)
  - Home medication review (HMR)
  - Clinical medication review (CMR)
  - Cognitive pharmacy service (used mainly for counseling)
- Different terms in literature for what you want to detect
  - Medication error
  - Drug related problem (DRP)/ Medication related problem(MRP)
  - Drug Therapy Problem
  - PIPs (Potentially Inappropriate Pharmacotherapy

PCNE Working Definition

- **Medication review is an evaluation of patient's medicines with the aim of optimizing the outcome of medicine therapy by detecting, solving and preventing drug-related problems**

Types of medication review based on methodology

- Ad hoc
- Implicit
- Explicit
- Indicator-led

Types of medication review based on timing

- Retrospective – what has been prescribed and can (or could we have) done better?
  - Often used in research
  - Use of indicators feasible
- Ad hoc – There is a problem now, how can we avoid that problem from now on?
- Prospective – Does the new proposed medicine fit in with the existing therapy?
  - When adding or stopping medication to an existing regimen
  - Often computerised

Types of medication review based on availability of information

- PCNE Simple medication review
  - Only drug dispensing data available
- PCNE Intermediate medication review
  - Drug dispensing & patient data available
- PCNE Advanced medication review
  - Drug dispensing & patient & clinical data available

Phase 1 – Data collection

- Identification of data sources such as pharmacy, GP and/or hospital databases, or patients medication charts in institutional settings
- Face-to-face interview with the patient in the health care institute or at home

Phase 2 – The Evaluation

- Charting actual medication (use)
- Evaluating medication using your own existing specialist knowledge (ad hoc)
- OR evaluating medication using defined tools (MAI, Beers)
- OR evaluate using computerised evaluation tool based on indicators
- Formulate a Medication Action Plan

Phase 3 – The conclusions

- Discuss evaluation and action plan with patient
- Advising prescribers and other health care providers based on conclusions in plan: interventions
- Documenting findings and recommendations
- Planning evaluation of impact of recommendations and interventions

Methods (1)

- **Ad hoc, using professional knowledge, no structure**
- **Using implicit criteria**
  - Medication apporopriateness Index (Hanlon)
  - Cipolle-Strand
  - Dadér
- **Using explicit criteria**
  - Beers Criteria
- **Using implicit and explicit criteria**
  - McLeod PIPs (Canada)
- **Indicator led – (usually computer driven)**

Implicit - MAI

- Hanlons' medication appropriateness Index
- Mostly used in hospitals and nursing homes, but developed for outpatient clinics for the elderly (>65 years)
- Uses clinical knowledge and judgment
- Measures ten criteria for prescribing quality (appropriateness per drug)
- 3-point scale to rank as "appropriate", "marginally appropriate" or "inappropriate"
- Some explicit criteria combined with implicit judgments

Implicit - Cipolle-Strand

- Pharmacist focused. The pharmacist assumes responsibility for drug therapy outcomes
- Attempts to identify medication therapy problems and common causes
- Protected system, best used with consent of authors and University of Minnesota
- Results are being pooled
- Remuneration negotiated
- Also used in elsewhere (eg Australia)

Categories:

- Unnecessary drug
- Needs additional drug therapy
- Ineffective drug
- Dosage too low
- Adverse drug reaction
- Dosage too high
- Drug interactions

Implicit - Dadér method/ Dadér Program

- Based on the Granada Consensus about pharmaceutical care in Spain
- Pharmacist focused
- Similar to Strand-Cipolle system, but for especially Spanish-language settings. Now 3rd revision
- Protected by the University of Granada, used often in South Americas too.
- Part of the concept of 'Drug-Therapy follow up' (called Pharmaceutical care elsewhere)

Dader negative outcomes:

- Untreated health problem
- Effects of unnecessary drug
- Non-quantitative ineffectiveness (wrong drug)
- Quantitative ineffectiveness (dosage)
- Non qualitative unsafe (allergy)
- Quantitative unsafe (side effect)

Explicit - Beers criteria

- Explicit criteria for appropriateness, compiled with an expert panel
- List of medications that are generally considered inappropriate *when given to elderly people*
- Frequently adapted to country and time (2003, last time in USA)
- Frequently used for research purposes on larger databases
- Some judgments depend on diagnosis or conditions

About 80 drugs or drug-groups including:

- Long acting Benzodiazepines
- Pentazocine
- Amitriptylline
- All barbiturates (except for epilepsy)
- Ticlopedine
- Cimetidine
- Estrogens

Mixed model - McLeod list

- Mixed explicit and implicit system
- Canadian method for detecting PIPs (Potentially Inappropriate Pharmacotherapy)
  - drugs generally contraindicated for elderly people because of an unacceptable risk–benefit ratio
  - prescription of drugs that can cause drug–drug interactions
  - prescription of drugs that can cause drug–disease interactions
- Requires information about diagnosis
- Based on expert consensus developed through
  - Extensive literature review
  - Questionnaire evaluation using Delphi technique
- Ranking of clinical importance of risks and suggestion of alternative therapies

Indicator led - Computer driven

- Computer driven
  - criteria and quality depends on
    - Software (indicators and signals)
    - Drug database quality
    - Patient database quality
    - Developed indicators
  - Suitable for retrospective, but especially prospective MR

SFK

WINAp

Opioïden zonder laxans Demo-apotheek

Let op: Bij het voorleggen van patiëntgegevens aan voorschrijvers wordt u geacht de privacy van de patiënt te waarborgen.

Opioïdegebruikers en laxantia

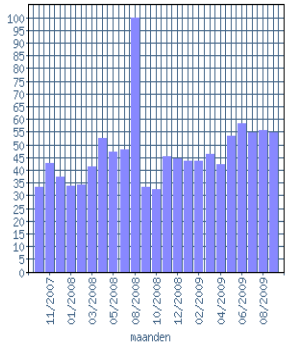
Een bekende bijwerking van opioiden is obstipatie. Landelijke apotheekkengetallen van het vierde kwartaal in 2003 tonen dat gemiddeld maar 39% van de opioïdegebruikers een laxans meekrijgt ter voorkoming van de obstipatie (SFK rubriek in Pharm. Weekbl.).

Met deze search kunt u opvragen welk percentage opioïdegebruikers van uw apotheek tevens een laxans ter beschikking had bij een opioïdeaflevering. Om een reëel richtpunt te bieden welk percentage laxansgebruik haalbaar is, wordt maandelijks naast de indicator van de individuele apotheek het 90% percentiel vermeld: 90 % van alle apotheken haalt minder dan deze score. Indien u een hogere score heeft behaald, behoort u tot de 10% van de apotheken die een hoger aandeel van opioïdepatiënten met een laxans voorzien.

Extra aandacht van het apotheekteam aan de opioïdegebruikers kan het gebruik van laxantia tijdens een opioïdebehandeling duidelijk verbeteren (Bouvy et al 2002, 107-8). Onder de grafiek staan hiervoor mogelijke acties beschreven.

Alle gemaakte keuzes met betrekking tot de selecties staan beschreven in de achtergrondtekst onder selectiecriteria.

Indicator:
Percentage opioïde-gebruikers met laxans per maand

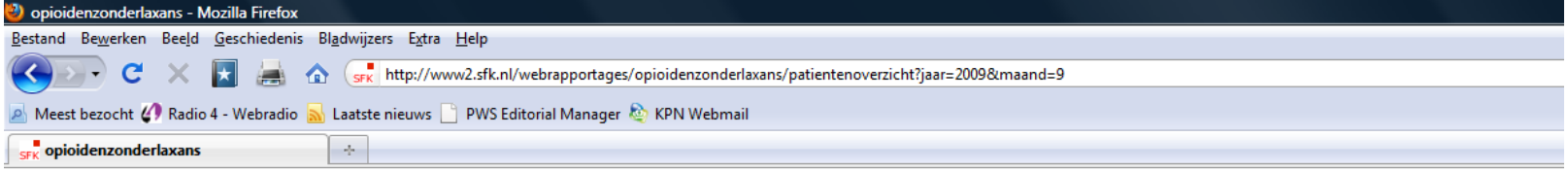


Jaar	Maand	Aantal opioïde patiënten met laxans in uw apotheek	Percentage opioïde patiënten met laxans in uw apotheek	50. percentiel landelijk	90. percentiel landelijk
2007	10	14,0	33,2	44,4 %	60,0 %
2007	11	19,2	42,6	45,6 %	60,0 %
2007	12	17,6	37,3	46,0 %	60,9 %
2008	1	15,6	33,8	45,0 %	62,4 %
2008	2	16,8	34,2	45,0 %	61,7 %
2008	3	20,2	41,2	45,2 %	60,4 %
2008	4	22,5	52,3	46,3 %	61,5 %
2008	5	19,3	47,2	44,8 %	60,0 %
2008	6	22,2	48,2	45,5 %	61,1 %
2008	7	0,0	0,0	41,7 %	58,3 %
2008	8	1,0	100,0	43,3 %	60,0 %
2008	9	15,7	33,3	43,3 %	59,8 %
2008	10	12,0	32,4	44,0 %	60,0 %
2008	11	19,0	45,2	44,9 %	59,6 %
2008	12	17,8	44,4	45,7 %	60,1 %
2009	1	16,5	43,4	44,7 %	59,8 %
2009	2	17,0	43,6	45,7 %	60,1 %
2009	3	19,3	46,0	45,4 %	60,0 %
2009	4	16,4	42,2	46,0 %	60,5 %
2009	5	20,3	53,5	45,3 %	59,4 %
2009	6	19,8	58,2	45,2 %	59,7 %
2009	7	21,8	54,6	45,6 %	60,0 %
2009	8	15,0	55,6	44,7 %	59,4 %
2009	9	14,3	54,9	43,8 %	58,3 %

NB: deze search wordt continu geactualiseerd zodat u op de volgende dag na aanlevering van uw nieuwe gegevens aan de SFK de meest recente indicator kunt zien.

Van de volgende maanden kunt u patiëntenoverzichten oproepen:

- maand 7 van 2009



SFK

Opioïden zonder laxans Demo-apotheek

Alle SFK Webrapportages>Opioidegebruikers en laxantia

Let op: Bij het voorleggen van patiëntgegevens aan voorschrijvers wordt u geacht de privacy van de patiënt te waarborgen.

Patiëntenoverzicht van opioïdegebruikers uit maand 9 van 2009

Voor toelichting op het overzicht zie achtergrondinformatie patiëntenoverzicht.

Kies de huisarts (versleutelde AGB-code): Alle patiënten Go

Nr	Naam patiënt	Patiëntnr	Gbjr	Sexe	Huisarts	Aantal opioïde-recepten in deze maand	Aantal opioïde-recepten in deze maand waarbij laxans beschikbaar	Voorschrijvers opioïden in deze maand	Type laxans bij opioïde-recepten van deze maand
1	.....	0001004389	1954	V	7	2	0	Huisarts	
2	.....	0579723	1922	V	2	1	0	Huisarts	
3	.....	0070554	1910	M	5	1	0	Huisarts	
4	.....	0149708	1953	M	3	2	0	Huisarts	
5	.....	0756871	1956	M	10	2	0	Anesthesiologie	
6	.....	0072750	1961	V	3	1	0	Huisarts	
7	.....	0017251	1941	M	2	2	0	Huisarts	
8	.....	0043112	1961	M	6	2	0	Huisarts	
9	.....	0010013610	1937	V	1	1	0	Huisarts	
10	.....	0124334	1921	M	5	4	0	Huisarts	
11	.....	0001003377	1908	V	1	1	0	Huisarts	
12	.....	5041243	1932	V	1	1	1	Huisarts	Osmotisch laxans
13	.....	0354649	1925	V	1	1	1	Huisarts	Volumevergroter
14	.....	0038257	1918	V	10	1	1	Huisarts	Osmotisch laxans
15	.....	0123572	1922	M	10	1	1	Huisarts	Osmotisch laxans
16	.....	0385256	1914	V	10	1	1	Huisarts	Osmotisch laxans
17	.....	0040007913	1925	V	3	1	1	Huisarts	Osmotisch laxans
18	.....	0247708	1911	V	1	1	1	Huisarts	Osmotisch laxans
19	.....	0040012968	1931	V	5	1	1	Huisarts	Osmotisch laxans
20	.....	0006960	1914	M	10	2	2	Huisarts	Osmotisch laxans
21	.....	0395458	1946	M	1	7	2	Huisarts, Inwendige geneeskunde	Osmotisch laxans
22	.....	0110689	1922	V	10	3	3	Huisarts	Osmotisch laxans
23	.....	0163143	1911	V	10	3	3	Huisarts	Osmotisch laxans
24	.....	0010001841	1915	V	5	4	4	Huisarts	Osmotisch laxans
25	.....	0060782	1917	M	3	4	4	Huisarts	Osmotisch laxans
26	.....	0071082	1913	M	1	5	5	Huisarts	Contactlaxans, Klysma

Practice and research challenges
Practice settings

- GP clinics, hospital outpatient clinics, residential aged care facilities, pharmacy or at home
- Most literature about the institutional/hospital setting: nursing homes and veteran clinics
- Many principles can be applied in the community setting (retrospective, ad hoc, prospective)
- Specific for community setting:
  - Limited or no access to clinical data
  - Medical care and prescriptions from multiple prescribers
  - Patient not always available

Challenges
Literature: Conflicting answers (2)

- Randomized controlled trial virtually impossible
  - Not only every patient is different, but also his health care providers, drug-set etc..
  - Uncontrollable things happen in the control group too!
  - High drug-users are also frequently in hospital and/or dying: lost to follow up
  - Conducting MR is labour-intensive and cannot be done on a large scale by only one practitioner
  - What is randomization level? Should be on practitioners level, not patient level or institutional level
  - Practitioners are bad documenters…
  - Huge differences between prescribing quality per country, per institution, and per prescriber

Challenges
Literature: Conflicting answers

- Different outcomes due to differences in used methods
  - what is done (method)
  - who does it (researchers)
  - on whom is it done (setting)
- So: some sort of standardisation of process and settings is necessary

Program chaired by Prof. Kurt Hersberger

- K. Hersberger: Polymedikations Check – a new reimbursed service for Swiss community pharmacists
- S. Leikola – Comprehensive medication review involving collaboration between pharmacist and physician practice in Finland
- V. Foulon: Medication review in Belgium, a research project
- T. Deischulte: Explicit standards to evaluate quality and safety of medication use in primary care
- T. Dreischulte: A generic algorithm to operationalise 'adherence to standards' as intermediate outcome measure
- ? M. Krueger; Home visits and medication review in diabetes in Germany?
- Workshops

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03-11-2009