Workshop 1:
Medication review - Tools and guidelines

A workshop for people who are new in the field (learning how to use existing tools) as well as for experienced people (willing to optimize the tools and to develop guidelines).

Facilitators: Kurt Hersberger (Switzerland), Nejc Horvat(Slovenia)

Guiding Idea & Approach

- Preferably pharmaceutical care leads to improved effectiveness, safety and humanistic outcomes.
- However, evidence is still weak
- Medication review is an essential activity within the pharmaceutical care cycle
- Different initiatives, approaches, projects are launched across Europe, up to now very independently and dominantly adapted to local regulations and conditions
- Among PCNE members substantial expertise is available
- To bundle resources, competences and “lone warriors”, PCNE could boost impact of single initiatives and speed up development of cognitive services.

The objectives of the workshop

- To get to know the characteristics of the different types of medication review (MR) and to exchange experiences among participants
- To become aware of a number of unresolved issues with respect to practice and research methodology
- To be able to develop criteria for selection of explicit and implicit checklists and possible tools supporting the execution of a medication review in the ambulatory or clinical setting
- To outline specifications for evaluation of guidelines for medication reviews

WS 1: Overview

Objectives

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- To become aware of a number of unresolved issues with respect to practice and research methodology
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- To outline specifications for evaluation of guidelines for medication reviews

Phase 1 *Wednesday*

- What can be achieved with MR (performance characteristics)

Phase 2 *Thursday*

- Screening strategies for DRP (key elements)
- Input Implicit/explicit criteria
- Possible interventions
- Basic elements of a specific guideline

Phase 3 *Friday*

- Structure of the guideline with comments on its use

Phase 4

- Research questions and measurable outcome measures

WS 1 Program Wednesday

Time	Topic	Content	Output
30’	**Plenary 1** Welcome & Introduction of workshop leaders Introduction to the workshop (Objectives, program) Intro on Medication Review (MR) with PCNE levels of MR	Hand-out 1 PCNE definition of MR (types) Overview of results from prior WS	
15’	Presentation of the participants Short description of own experiences with MR on Post-it (A5), oral explanation	Name/Institution Experiences from practice and/or research	Mapping of listed experiences, 3 cohorts according experiences (‘Novice’) (some) (extended)
20’	Introduction to Bitrix24.com – a working tool		
10’	Organisation of 4 groups		4 groups with broad spectrum of experiences
20’	Short break (16.30-17.00: Scala)		
10’ 20’	**Work in Subgroups Phase I:** Exchange of experiences within groups Exercise: information resources linked to MR types	Designate Moderator / rapporteur Interviews by novices with experienced P.	Worksheet filled out
20’	DRPs / PhC-Issues to be solved through MR	Brainstorming	Four portfolio from 4 groups on desired performance
10’	Discussion on further focus: Type of MR (1, 2a and or 3?)	According to interest/experiences of the group-members thy choose a focus for their further work during the WS	Each group with a suggestion for specific focus
30’	**Plenary 2** Short report from subgroups with discussion	Discussion desired performance characteristics / foci of groups	Map performance characteristics 4 groups with specific focus
Poster discussion & drinks 18.30-19.30h: Scala			

Introduction

- Definitions
- Results from prior conferences / working groups
- MR – evidence for impact ? (summary)
- Current situation / challenges

PCNE definition of Pharmaceutical Care[1]

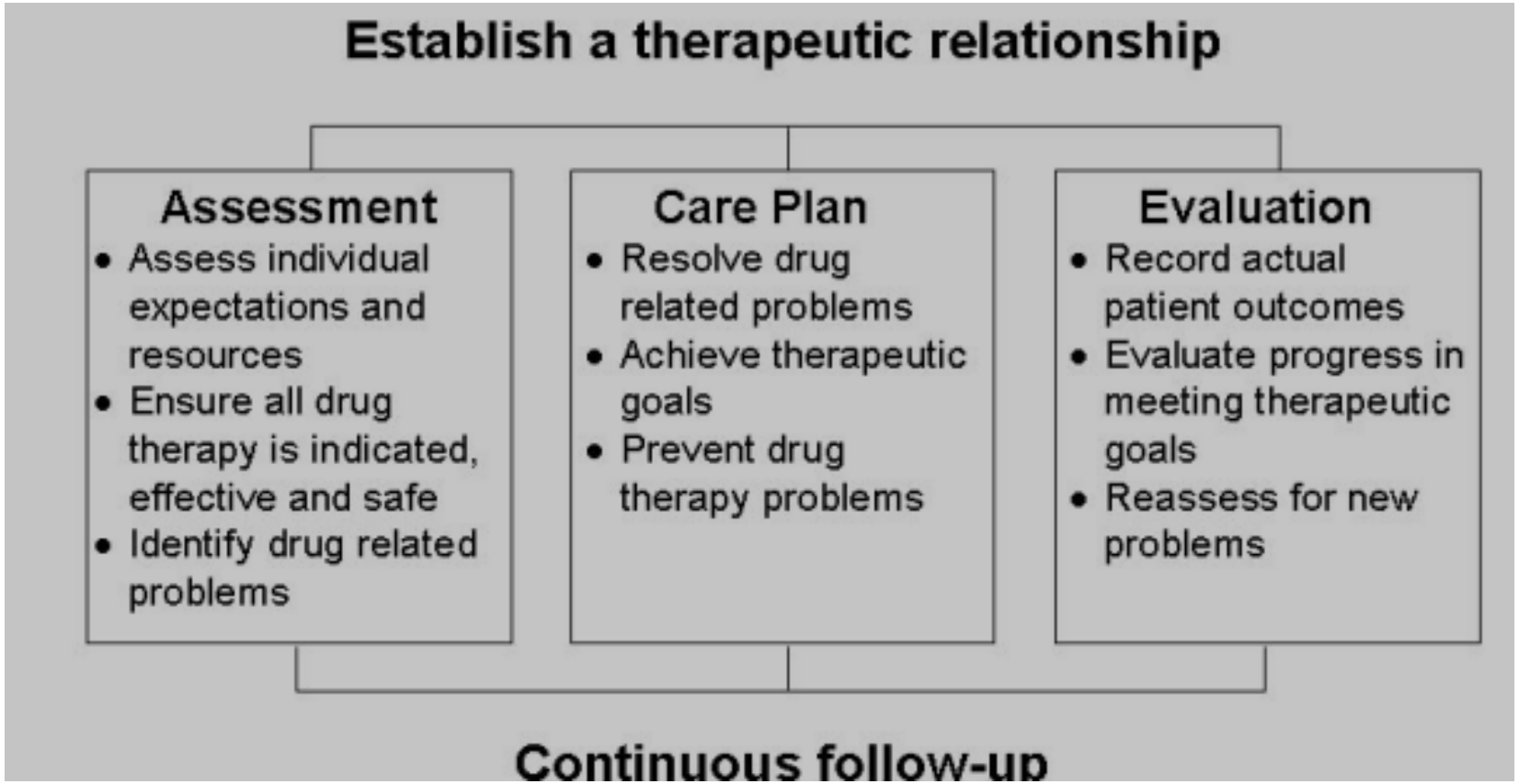
Invitational Conference 5th February 2013, Berlin

www.pcne.org

«The pharmacist's contribution to the care of individuals in order to optimize medicines use and improve health outcomes.»

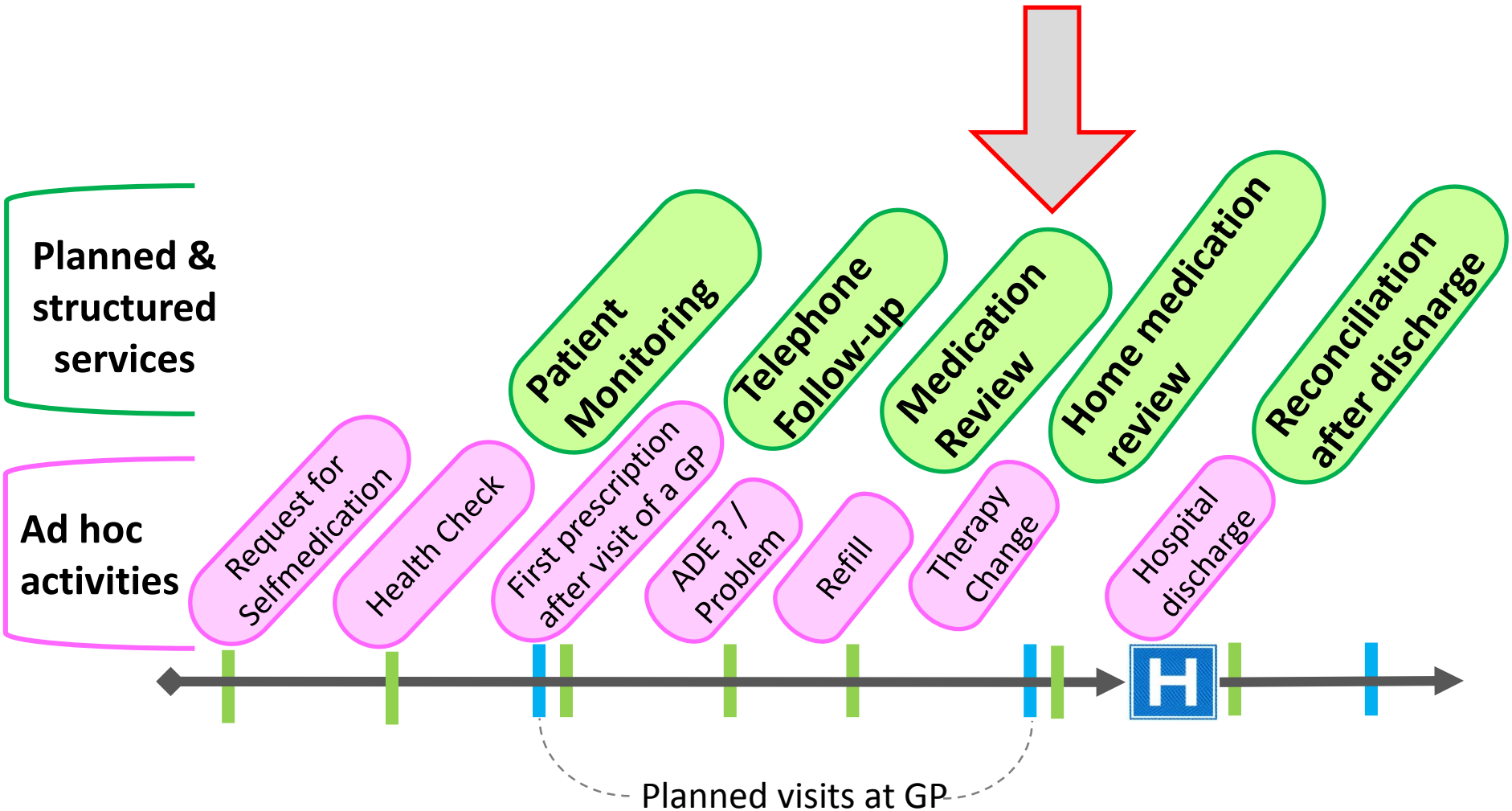
1) Allemann S, Mil JWF, Botermann L, Berger K, Griese N, Hersberger K. Pharmaceutical Care: the PCNE definition 2013. Int J Clin Pharm 2014:1-12

The patient care process



1) RJ Cipolle, LM Strand, PC Morley. Pharmaceutical Care Practice, 2e Mc Graw Hill, 2004

The journey of a patient:
From a healthy situation to polymorbidity

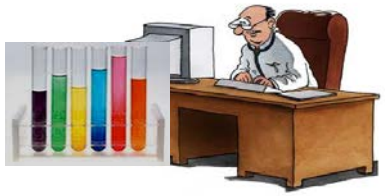
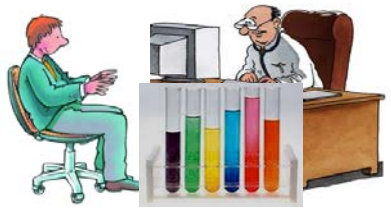


PCNE Definition Medication Review (Malta 2014)

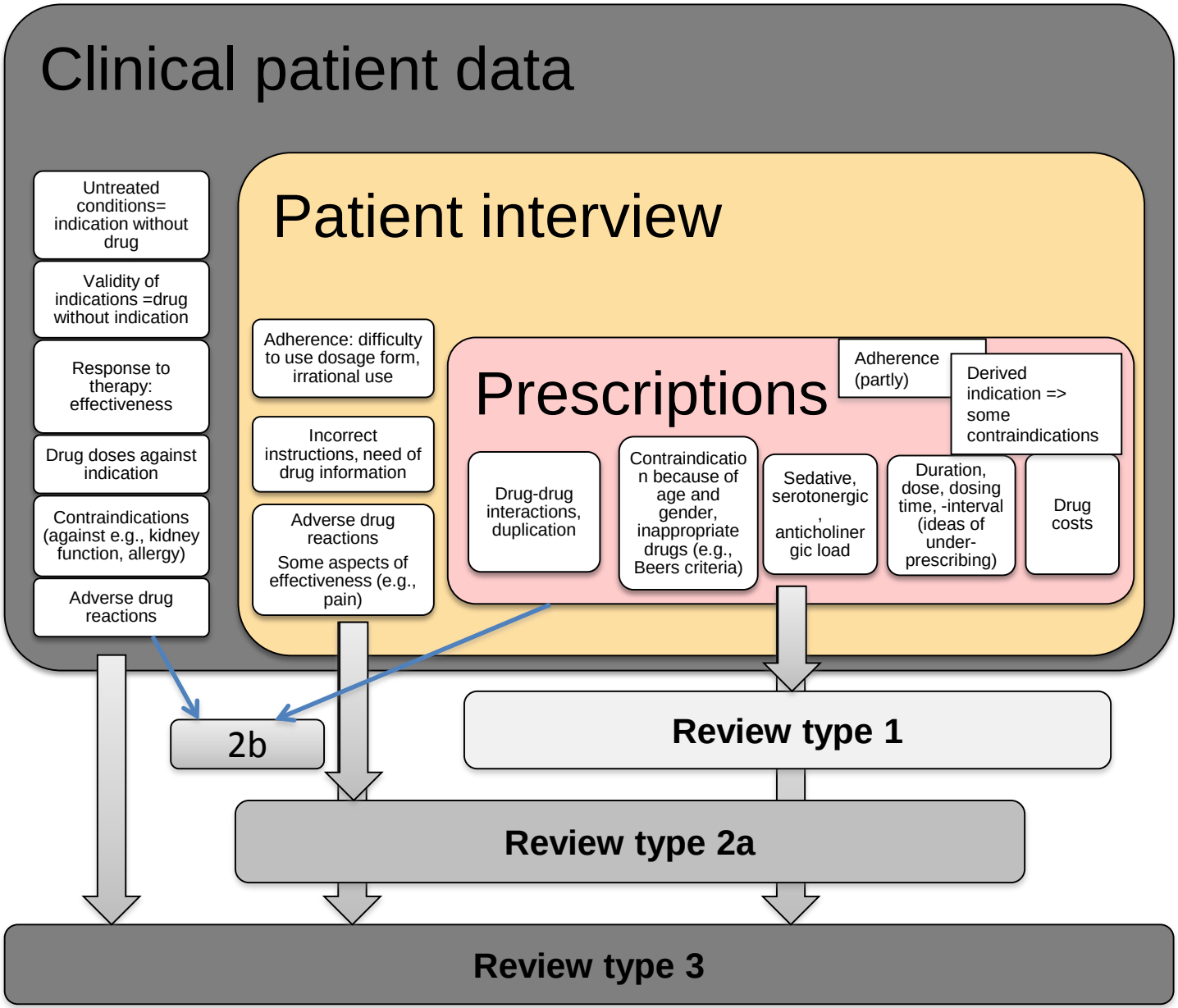
Medication review is an evaluation of all the patient‘s medicines with the aim of optimizing medicines use and improving health outcomes. This entails detecting drug-related problems and recommending interventions.

«Medicines Use», according to the PCNE definition of PhC 2013, covers effectiveness, quality of life, efficiency and safety

Types of Medication Review (PCNE)

Information:	Medi-cation history	Patient	Clinical Data	
„Simple“ MR **Type 1** Based on the medication history in the pharmacy	+			
„Intermediate“ MR **Type 2** **Typ 2a)** Medication history +patient interview • MUR, Polymedication-Check • „Brown Bag“-Method	+	+		
Typ 2b) Medication history + clinical data • In hospital pharmacies • In Dutch communty pharmacies	+		+	
„Advanced“ MR **Type 3** medication history +patient interview +clinical data (Clinical medication review)	+	+	+	

Types of MR and drug related problems



(PCNE WS 1 - Report Berlin 2013)

	Type 1	Type 2A	Type 2B	Type 3
Establish relations & inform				
Patient	N.A.	Inform	N.A. ???	Inform
GP	Inform	Inform + agreement	Inform + contract	Inform + contract
Other health care professionals, carers	?	?	Inform + agree	Inform+ agree
Authorities/Society	X	X	X	X
Patient selection & invitation				
Selection	Pharmacist/institution	Patient/pharmacist	Physician/pharmacist	Physician and pharmacist
Invitation	N.A.	Letter-Telephone (verbal/written)	N.A.	Letter-Telephone (verbal/written)
Data collection				
Pharmacy record	X	X	X	X
Medical records + lab data			X	X
Patient		X		X
The review				
DDI, duplication	X	X	X	X
Explicit criteria	X	X	X	X
Implicit criteria, therapeutic guidelines and standards (START, Amsterdam tool etc.)		Partly	X	X
Dose check	Incomplete	Incomplete	X	X
Match indication with drug	(Derived indication partly)	Incomplete	X	X
Contraindication	Age, gender		X	X
Adherence	(Repeats)	X	(Repeats)	X
Seek additional info				
Patient		X		X
Physician, other professionals			X	X
Complete & format results				
	List, prioritization, score warnings	Structured table with issues + solutions	Prioritization, working sheet for pharmacists	Structured letter with list of medications, doses and indications + findings, evidence and recommendations
Discussing results				
Discuss with prescriber	Inform only	If needed/wanted by GP	Report, way based on urgency/other preferences: Team meeting/face-to-face, e-mail, phone, patient record	
Discuss with patient	N.A.	Phone call, referral to GP if needed, counselling if changes Written medication plan	Inform: Face-to-face/ phone call/e-mail, can be done by nurse/caregiver/prescriber	Explain report, appointment if possible/needed
Discuss with nurse, care givers etc.		N.A.	Inform: Face-to-face, phone call, e-mail	
Etc.				
				Follow-up review after XXX days

(PCNE WS 1 - Report Berlin 2013)

Flow medication review

Establish relations

Patient selection & invitation

Collect data

Do analysis

Get additional information

Complete results

Format results

Discuss with prescriber

Inform patient

Implementation & monitoring

- Priorisation of DRPs
- Interventions

(PCNE WS 1 - Report Berlin 2013)

Target groups for MR

Risky **patient**

- Age > ?
- Non-adherent
- Multimorbidity (chronic / acute), risky co-morbidities, etc)
- PIMs
- Self-medication
-

Risky **drug**

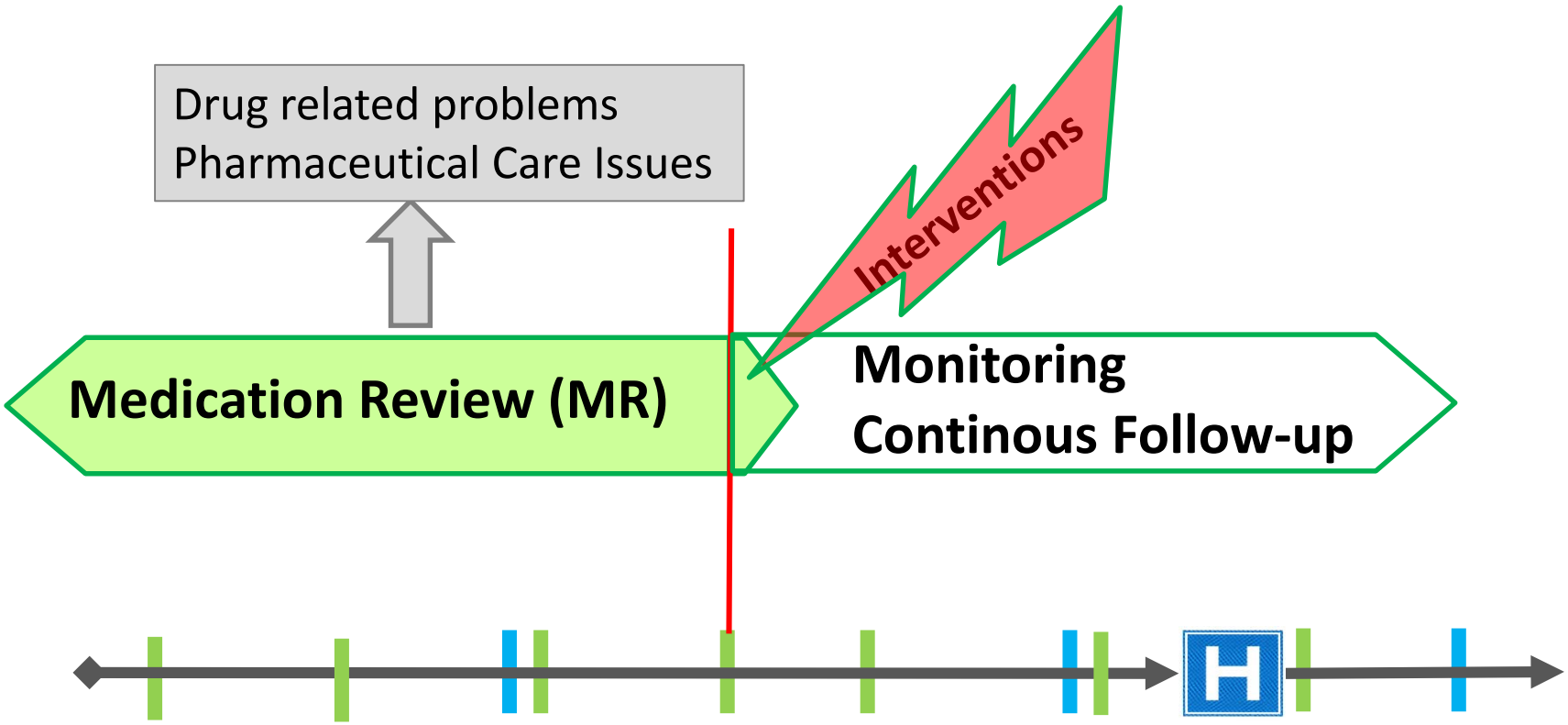
- Polypharmacy (> 4 medicines/d; >6 unit doses/d)
- Specific drugs (NSAIDs, anticoagulants, short halftime, devices, side effects, etc)
-

Risky **situation**

- New drug / change of regimen
- Transfer (discharge home to primary care, at admission to hospital, etc.)
- Complex care situation (multiple doctors, specialists, nurses etc.)

Incomplete list!

Retrospective review & prospective care plan



The journey of a patient

MR – evidence for impact ?

- Focus on pharmacist led medication reviews

Hatah 2014

A systematic review and meta-analysis of pharmacist-led fee-for-services medication review

Ernieda Hatah[1,2,*], Rhiannon Braund[1], June Tordoff[1] and Stephen B. Duffull[1]

Issue

Article first published online: 20 DEC 2013

DOI: 10.1111/bcp.12140

British Journal of Clinical Pharmacology

Volume 77, Issue 1, pages 102–115, January 2014

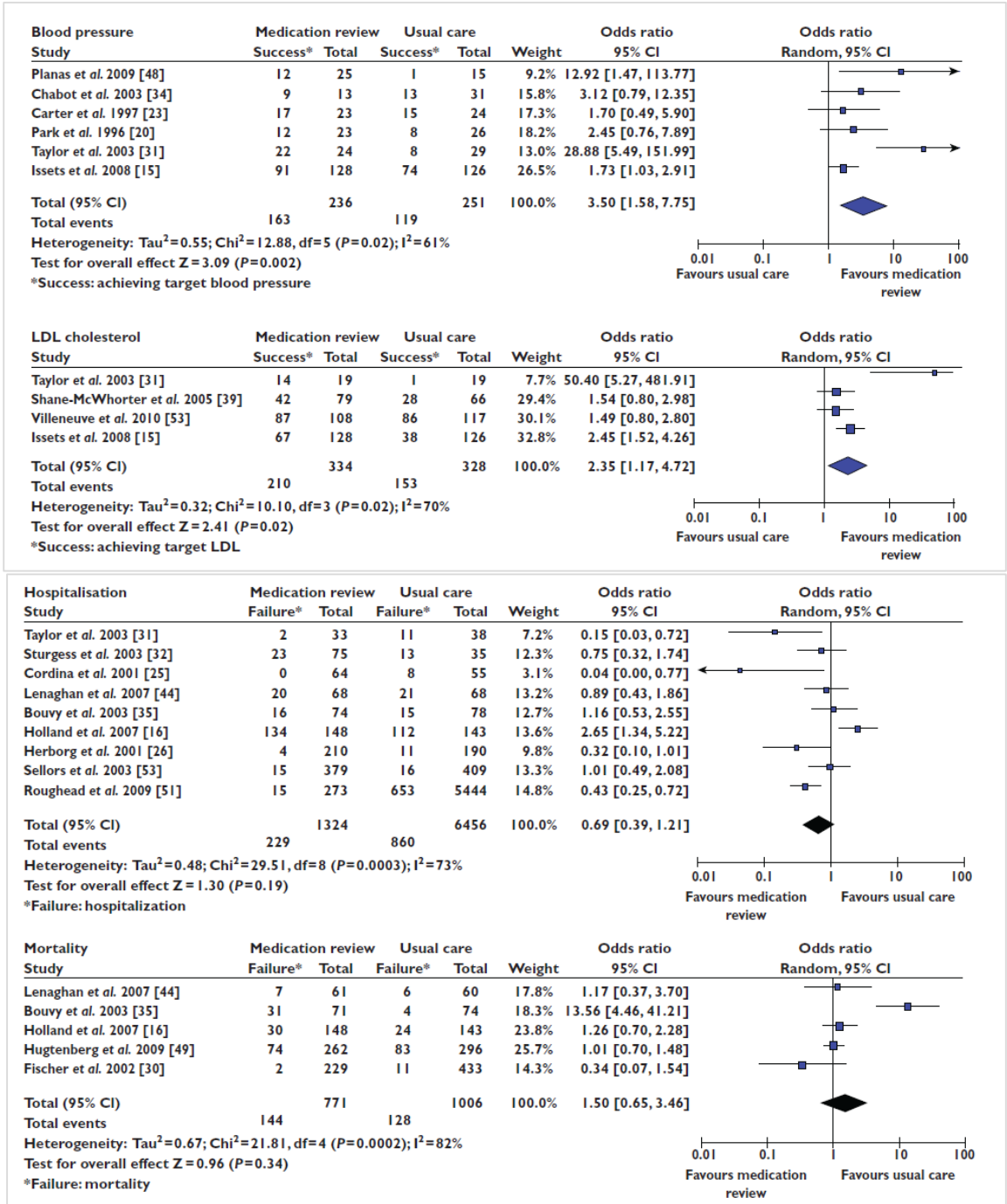
Type		Name of service	Possible intervention provided
For all types of medication review, the pharmacist should consider drug interactions, side effects, adherence to medications, lifestyle, non-medication interventions and unmet need.			
2	Adherence review e.g. Medicines Use Review (MUR)	Addresses issues relating to a patients' medication taking behaviour, advice on medications use e.g. adverse effects, checking patients' technique and use of medication dosage forms e.g. inhalers, identify need for a change in dosage form.	
3	Clinical medication review	Addresses issues relating to a patients' use of medication in the context of their clinical condition such as the appropriateness, effectiveness, cost-effectiveness and monitoring required to meet the patient's needs.	
		The intervention must be face to face with the patient and it could be with or without full patients' clinical notes.	
4	Clinical medication review and prescribing	As in type 3 but pharmacist had the ability to prescribe or adjust the medication dose (either in a supplementary or fully independent role)	

Hatah 2014

Br J Clin Pharmacol 2014;77:102-15

'Significant results favouring pharmacists' intervention were found for **blood pressure** (OR 3.50, 95% CI 1.58-7.75, P = 0.002) and **low density lipoprotein** (OR 2.35, 95% CI 1.17-4.72, P = 0.02).

Outcomes on **hospitalization** (OR 0.69, 95% CI 0.39- 1.21, *P* = 0.19) and **mortality** (OR 1.50, 95% CI 0.65-3.46, *P* = 0.34) **indicated no differences between the groups.**



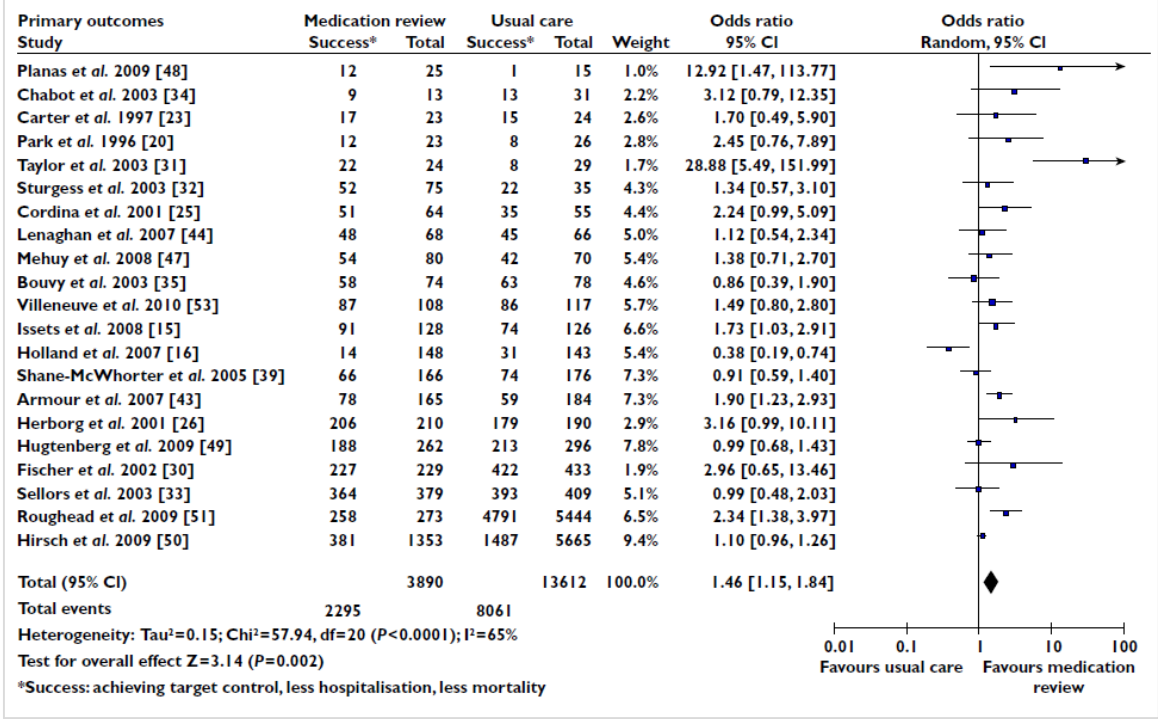
Hatah 2014

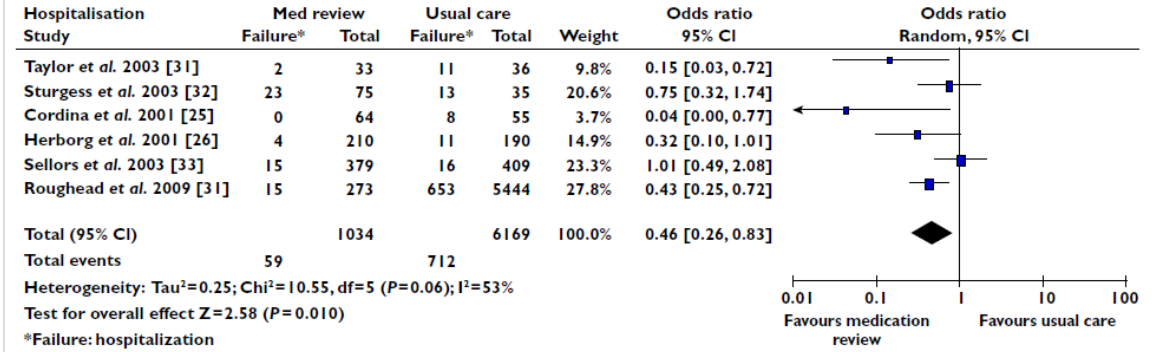
Br J Clin Pharmacol 2014;77:102-15

Combined primary outcomes: only one outcome per study (The primary outcome from the study was selected, or if there were multiple primary outcomes, then the outcome that had the largest number of participating patients).

OR is >1 when medication review decreased hospitalization or increased attainment of target control.

Hospitalization outcome for studies with **clinical medication review**. OR is <1 when medication review reduced hospitalization





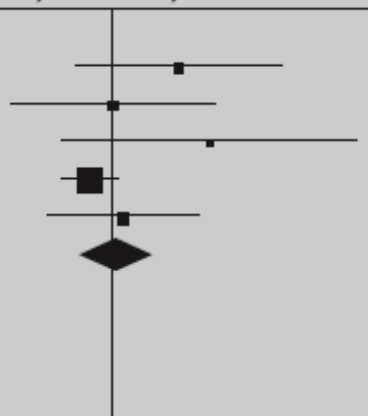
CONCLUSIONS

The majority of the studies (57.9%) showed improvement in medication adherence. Fee-for-service pharmacist-led medication reviews showed positive benefits on patient outcomes. Interventions that include a clinical review had a significant impact on patient outcomes by attainment of target clinical biomarkers and reduced hospitalization.

Wallerstedt 2014

Medication reviews for nursing home residents

Study or Subgroup	Medication review Events	Total	Standard care Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
1.1.1 RCT						
Crotty 2004	18	50	27	104	11.7%	1.39 [0.85, 2.27]
Furniss 2000	26	158	28	172	11.8%	1.01 [0.62, 1.65]
Pope 2011	17	110	11	115	6.1%	1.62 [0.79, 3.29]
Roberts 2001	216	905	617	2325	51.5%	0.90 [0.79, 1.03]
Zermansky 2006	51	331	48	330	18.8%	1.06 [0.74, 1.52]
Subtotal (95% CI)		1554		3046	100.0%	1.03 [0.85, 1.23]
Total events	328		731			
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 5.43$, df = 4 ($P = 0.25$; $I^2 = 26\%$)						
Test for overall effect: Z = 0.27 ($P = 0.79$)						



CONCLUSIONS[1]

Our findings indicate that medication reviews for nursing home residents do not reduce mortality or hospitalization.

More research in the setting of controlled trials remains to be done in order to clarify how drug treatment can be optimized for these patients.

1) Wallerstedt SM, et al. Medication reviews for nursing home residents to reduce mortality and hospitalization: systematic review and meta-analysis. British Journal of Clinical Pharmacology 2014;78:488-97.

[Intervention Review]

Medication review in hospitalised patients to reduce morbidity and mortality

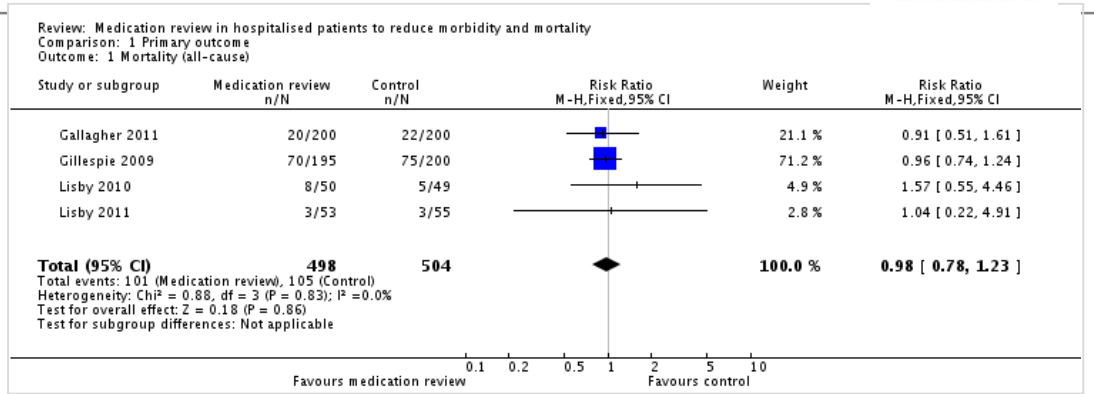
THE COCHRANE COLLABORATION®

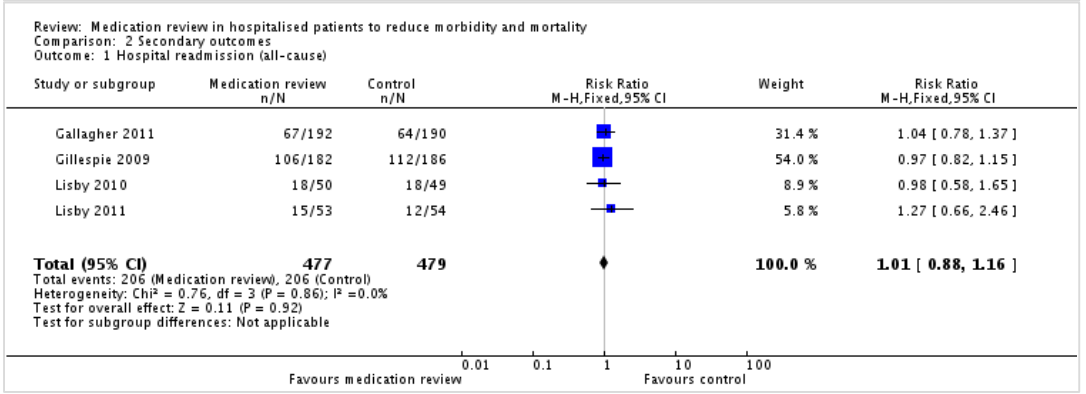
Christensen 2013

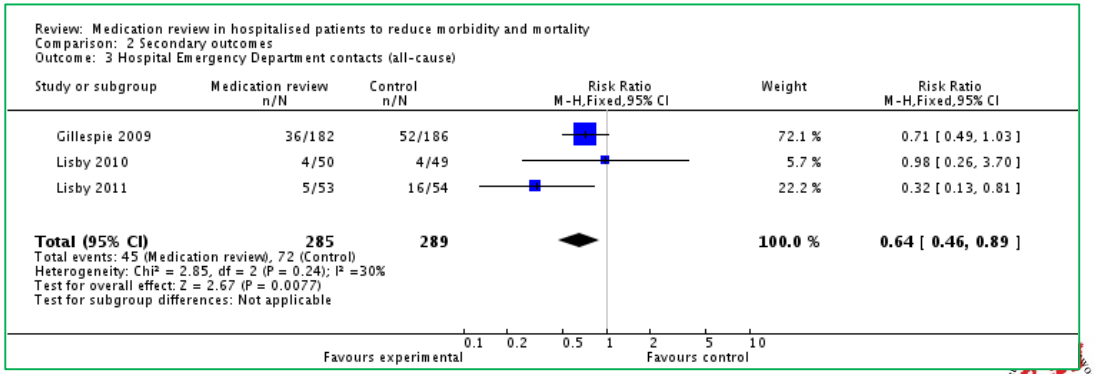
No evidence of effect on all-cause mortality and hospital readmission.

But a 36% relative reduction in emergency department contacts

Equal to a number needed to treat of 9 for the high risk population and 28 for the low risk population







MR – evidence for impact ?

- Pharmacists led medication reviews have an impact by detecting drug related problems (DRP) in both, the community and clinical setting.
- But, there is great heterogeneity in the types of outcomes measured across all studies.
- Therefore a standardized approach to measure and report clinical, humanistic, and process outcomes for future randomized controlled studies evaluating the impact of outpatient pharmacists is needed. Heterogeneity in study comparison groups, outcomes, and measures makes it challenging to make generalised statements regarding the impact of pharmacists in specific settings, disease states, and patient populations.

Conclusion: Where are we / what should be done next?

- ✓ Definition of MR (ongoing…)
- ✓ Typology
- ✓ Flowchart of activities
  - ✓ Screening
  - Interventions
  - Monitoring / Follow-up

- Guideline(s)
  - Generic guideline for each type
  - Specific guidelines for risky patients, drugs, situations
- Research

Introduction of the participants

- Name
- Institute
- Experience in Medication Review Research Yes/no
- Experience in Medication Review Practice Yes/no
    i. Some first experiences /training
    ii. Performed as a fee-for service MR

Use the coloured paper:

- No experiences: white paper
- Some experience: xx paper with annotation if research or practice
- Good experiences: annotation if research or practice (level i or level ii)

«bitrix24.com» (our management tool)

Bitrix24

- project management tool
- we will use it to:
  - store and exchange files (presentations, background literature, templates, worksheets, photos, …)
  - post comments, thoughts, opinions on files, lectures, workshops (also available after the workshops have closed)
  - publish potential questions online (e.g. too shy to ask, don't want to interrupt lectures, …).
  - chat
  - …
- disadvantage: only 10 free users => 2 will have to share the same login
  - verification of e-mails
  - organization in pairs: who shall I invite to Bitrix
- demonstration follows …

Workshop documentation – useful documents/papers

- 2013_NHS_MUR-Guidance-Oct
- Canada MR guideline and templates
- Canada Template Best medication historry
- Canada Template Drug therapy plan
- Canada Templatte Best medication hiistoorry patient perspectiive
- Canada_Medication management Issue-template
- MUR_Feedback_Form_example
- MUR_Template-GP-notification
- MUR-service-spec-Aug-2013-changes_FINAL

- 2012_Bindoff_ICPhTh_Potential for decision support systems in medication reviews
- 2012_Marcum_JOG__Prevalence Unplanned Hospitalizations Caused by TF and ADWE
- 2013 KingsFund_Polypharmacy-and-medicines-optimisation
- 2013_Christensen_Cochrane_Medication review in hospitalised patients to reduce morbidity and moratliy
- 2013_Hatah_JPHCOSP_GPs' views of pharmacists' contributions to MR in New Zealand
- 2013_Hill_JCPTh_Application of the STOPP START criteria - systematic review
- 2013_NHS_MUR-Guidance-Oct
- 2014_Gheewala_Drugs Aging_Impact of Pharmacist MR Services on DRPs and PIM
- 2014_Hatah_BJCP_Systematic review of pharmacist-led fee-for-services MR
- 2014_Hoffmann_BMJ_Better reporting of Interventions
- 2014_NICE Guideline_Medicines Optimisation
- 2014_Patterson_Cochrane Reviews_Interventions to improve the appropriate use of polypharmacy to older adults
- 2014_Reeve_BJCP_Review of deprescribing process

Additional input

Result WS2: PCNE definition of Medication Review (Malta 2014)

Medication review is an evaluation of all the patient‘s medicines with the aim *of optimizing medicines use and improving health outcomes*. This entails detecting drug-related problems and recommending interventions.

Comments:

- «all» medicines includes prescribed and OTC and, if accessible the history
- «Medicines Use», according to the PCNE definition of PhC 2013, which refers to the WHO definition of «responsible use of medicines». This covers effectiveness, quality of life, efficiency and safety. (1)
- Medication review is part of the patient`s medication management.
- PCNE should define the term medication management.

(1) www.who.int/medicines/publications/responsible_use/en/index.html

Further Comments (Malta 2014)

Comments expressed during the workshop as explanation for the final version

- Patients instead of individuals: Because drugs are involved
- «medicines» covers all including devices, packaging etc.
- «identifying the risks» excluded from definition because already covered by the PCNE definition of DRP
- «drug related problems» instead of medication related problems according to the PCNE definition of DRP
- «medicines use» includes prescribing
- «Suggesting» replaced by «recommending» reflects more engagement and responsibility

The plenary additionally commented and discussed on:

- Omission of the term risk
- Effectiveness and Patient safety not mentioned?

[Intervention Review]

Interventions to improve the appropriate use of polypharmacy for older people

Susan M Patterson[1], Cathal A Cadogan[2], Ngaire Kerse[3], Chris R Cardwell[4], Marie C Bradley[2], Cristin Ryan[2], Carmel Hughes[2]

[1]No affiliation, Belfast, UK. [2]School of Pharmacy, Queen's University Belfast, Belfast, UK. [3]Department of General Practice and Primary Health Care, University of Auckland, Auckland, New Zealand. [4]Centre for Public Health, Queen's University Belfast, Belfast, UK

Contact address: Carmel Hughes, School of Pharmacy, Queen's University Belfast, 97 Lisburn Road, Belfast, Northern Ireland, BT9 7BL, UK. c.hughes@qub.ac.uk.

Editorial group: Cochrane Effective Practice and Organisation of Care Group.
Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 10, 2014.
Review content assessed as up-to-date: 21 August 2014.

Patterson SM et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database Syst Rev 2014;10:CD008165

Patient or population: older people receiving polypharmacy
Settings: community, nursing home, hospital

Intervention: pharmaceutical care
Comparison: usual care

Patterson SM et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database Syst Rev 2014;10:CD008165

Outcomes	Effect estimate		No. of participants (studies)	Quality of the evidence (GRADE)
	Usual care	Pharmaceutical care		
Summated MAI score Summated MAI score post intervention Follow-up: 0 to 12 months	Mean summated MAI score ranged across control groups from **6.5 to 19.3**	Mean summated MAI score in the intervention groups was **3.88 lower** (5.4 to 2.35 lower)	965 (5 studies)	⊕⊕◯◯ **low**[a,b]
Change in MAI score Change in MAI score from baseline to follow-up Follow-up: 0 to 3 months	Mean change in MAI score ranged across control groups from **0.41 to 2.86**	Mean change in MAI score in the intervention groups was **6.78 lower** (12.34 to 1.22 lower)	424 (4 studies)	⊕◯◯◯ **very low**[a,b,c,d]
Number of Beers drugs per participant The number of Beers drugs per participant post intervention Follow-up: 0 to 12 months	Mean number of Beers drugs per participant ranged across control groups from **0.04 to 0.4**	Mean number of Beers drugs per participant in the intervention groups was **0.1 lower** (0.28 lower to 0.09 higher)	586 (2 studies)	⊕◯◯◯ **very low**[a,c,d]

GRADE Working Group grades of evidence.
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate
Very low quality: We are very uncertain about the estimate..

Implications for practice

From the results of this review, we can recommend that pharmaceutical care appears to improve prescribing for older patients receiving polypharmacy, especially when a multi-disciplinary element is included in the provision of care (Bucci 2003; Crotty 2004a; Crotty 2004b; Gallagher 2011; Hanlon 1996; Schmader 2004; Spinewine 2007; Taylor 2003). In addition, although only one study was included in this

Based on the findings of our updated review, we are still uncertain about which elements of the intervention processes constitute success in improving appropriate polypharmacy, and a number of questions remain unanswered. For example, is it sufficient to provide the intervention during a single episode of care, or should patients be exposed to the intervention on a daily/weekly or monthly basis? What is the optimal duration of an intervention, and should interventions ideally be multi-faceted or unifaceted? It is clear that control of processes to support fidelity and control of the chosen interventions is critical. Staff training is important to ensure consistency; the receptiveness of prescribers, patients and staff in various settings will have an impact on the uptake and effectiveness of interventions in older people.

Patterson SM et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database Syst Rev 2014;10:CD008165

Implications for research

Overall, the quality of the studies in this review was poor, and further research should attend to rigour in study design. More research is needed to test whether existing tools for comprehensive medication review (e.g. the hyperpharmacotherapy assessment tool (HAT tool) (Bushardt 2008) and other similar interventions) can improve appropriate polypharmacy. A two-stage process of simple screening at drug level only (this could be automatically generated by computer, e.g. Christensen 2004) followed by application of a more comprehensive tool such as the MAI by clinically trained personnel, allowing detection of clinical problems through clinical knowledge and access to patients and/or medical records, may be beneficial.

Patterson SM et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database Syst Rev 2014;10:CD008165

«Appropriate vs. Problematic Polypharmacy»

Appropriate polypharmacy

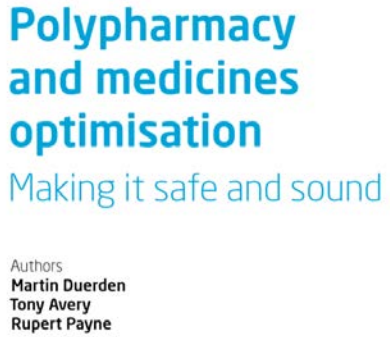
'Prescribing for an individual for complex conditions or for multiple conditions in circumstances where medicines use has been optimised and where the medicines are prescribed according to best evidence.'

Problematic polypharmacy

'the prescribing of multiple [medicines] inappropriately, or where the intended benefit of the [medicines are] not realised.'

The King's Fund Ideas that change health care

http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/polypharmacy-and-medicines-optimisation-kingsfund-nov13.pdf



Research: Reporting on «MR» as the intervention

BMJ 2014;348:g1687 doi: 10.1136/bmj.g1687 (Published 7 March 2014)

RESEARCH METHODS & REPORTING

Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide

Hoffmann TC et al. Bmj 2014;348:g1687.

Items included in the Template for Intervention Description and Replication (TIDieR) checklist: information to include when describing an intervention.

Hoffmann TC et al. Bmj 2014;348:g1687.

1	**Brief name**	Provide the name or a phrase that describes the intervention
2	**Why**	Describe any rationale, theory, or goal of the elements essential to the intervention
3	**What**	Materials: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (such as online appendix, URL)
4		Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities
5	**Who provided**	For each category of intervention provider (such as psychologist, nursing assistant), describe their expertise, background, and any specific training given
6	**How**	Describe the modes of delivery (such as face to face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group
7	**Where**	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features
8	**When and How Much**	Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity, or dose
9	**Tailoring**	If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when, and how
10*	**Modifications**	If the intervention was modified during the course of the study, describe the changes (what, why, when, and how)
11	**How well**	Planned: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them
12*		Actual: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned

SKILLS (PCNE WS 1 - Report Berlin 2013)

Pharmacotherapeutic skills	**==>** *(increasingly necessary for higher type review)*
Clinical skills	**==>**
Marketing skills	
Organisational skills	Structural working Planning Analysing
Cognitive skills	
Personal skills	Responsibility Patience Decision making Pragmatism
Social competencies skills	Empathic skills Communication skills Teamwork **==>**
Learning skills	Retrieving + digesting information
Counselling skills	

General practitioners' views of pharmacists' current and potential contributions to medication review and prescribing in New Zealand

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Hatah E et al. Journal of primary health care 2013;5:223-33.

METHODS: Semi-structured interviews were carried out in two localities with GPs whose patients had and had not undergone a pharmacist-led adherence support Medication Use Review (MUR). GPs were asked their opinions of pharmacists' provision of MUR, clinical medication review and prescribing. Data were analysed thematically using NVivo 8 and grouped by strengths, weaknesses, opportunities and threats (SWOT) category.

FINDINGS: Eighteen GPs were interviewed. GPs mentioned their own skills, training and knowledge of clinical conditions. These were considered GPs' major strengths. GPs' perceived weaknesses were their time constraints and heavy workloads. **GPs thought pharmacists' strengths were their knowledge of pharmacology and having more time for in-depth medication review than GPs. Nevertheless, GPs felt pharmacist-led medication reviews might confuse patients, and increase GP workloads.** GPs were concerned that pharmacist prescribing might include pharmacists making a diagnosis. This is not the proposed model for New Zealand. In general, GPs were more accepting of pharmacists providing medication reviews than of pharmacist prescribing, unless appropriate controls, close collaboration and co-location of services took place.

CONCLUSION: GPs perceived their own skills were well suited to reviewing medication and prescribing, but thought pharmacists might also have strengths and skills in these areas. In future, GPs thought that working together with pharmacists in these services might be possible in a collaborative setting.

Medicines Management or Medicines Optimisation

Medicines optimisation encompasses many aspects of improving medication use, and is fundamental to addressing the challenges posed by polypharmacy. These aspects had previously come under the banner of medicines management but there is an increasing trend towards using the term medicines optimisation. The former National Prescribing Centre (now incorporated into the National Institute for Health and Care Excellence (NICE) as the Medicines and Prescribing Centre) defines medicines management as '*…a system of processes and behaviours that determines how medicines are used by patients and healthcare services*' (NPC 2002).

A wider definition might encompass the entire way medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to enabling informed patient choice and delivering desired outcomes for patients. This includes clinical assessment, monitoring and review in individual patients, medicines delivery services, review of repeat prescribing systems, clinical audit, health education, risk management, disease prevention and the development and use of formularies and guidelines.

To encompass this wider definition, alongside the drive to more patient-centred care, the focus has changed in the United Kingdom towards the concept of medicines optimisation. A definition of medicines optimisation is that it, '…requires evidence-informed decision making about medicines, involving effective patient engagement and professional collaboration to provide an individualised, person-centred approach to medicines use, within the available resources' (NICE 2013). NICE are in the process of developing a guideline based on these principles.

2013 KingsFund_Polypharmacy-and-medicines-optimisation

NICE Medicines and prescribing centre

Draft for consultation

Medicines optimisation

Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes

Clinical Guideline

Methods, evidence and recommendations

October 2014

http://www.nice.org.uk/guidance/gid-cgwave0676/documents/medicines-optimisation-draft-guideline2

Prevalence of Potentially Preventable Unplanned Hospitalizations Caused by Therapeutic Failures and Adverse Drug Withdrawal Events Among Older Veterans

Zachary A. Marcum,[1,2,3] Mary Jo V. Pugh,[4,5,6] Megan E. Amuan,[7] Sherrie L. Aspinall,[3,8,9] Steven M. Handler,[1,2,10] Christine M. Ruby,[1,8] and Joseph T. Hanlon[1,2,3,8]

Therapeutic Failure (TF) = "failure to accomplish the goals of treatment resulting from inadequate or inappropriate drug therapy and not related to the natural progression of disease"

Adverse Drug Withdrawal Event (ADWE) = "clinical set of symptoms or signs that are related to the removal of a drug" (eg, reaction to the abrupt discontinuation of a b-blocker)

- 678 randomly selected unplanned hospitalizations of older (≥ 65 years) Veterans
- 34 TFs + 8 ADWEs involving 54 drugs associated with 40 (5.9%) hospitalizations
- of these admissions, 90.0% (36/40) were rated as potentially preventable mostly due to medication non-adherence and suboptimal prescribing.

- TF-related unplanned hospitalizations occur more frequently than ADWE-related admissions.
- Almost all TFs and/or ADWEs are potentially preventable.

The benefits and harms of deprescribing

Potential Benefits

- Reducing Polypharmacy → effects on clinical outcomes are inconsistent (*Clin Geriatr Med* 2012; 28: 237-253); positive effects on adherence
- Ceasing inappropriate medications (PIM) using "implicit criteria" → in daily life not yet proved to improve clinical and humanistic outcomes *(JClPhTh 2013;38:360-72 / Cochrane Database Syst Rev **5**(5) 2012)*
- Withdrawal of specific medications → evidence for NSAIDs *(J Rheumatol 2011; 38: 2150-2152)*, benzodiazepines *(Drugs Aging 2008; 25: 1021-1031),etc.*

Potential Harm

- Withdrawal symptoms (26%!) or even increased health service use (9%) *(Arch Intern Med 1997; 157: 2205-2210.*
- Effects on DDI when stopping interacting medications ??
- Relapse of medical condition (eg. Alzheimer disease)
- Risk with preventive medication (loss of long-term benefits)

Reeve E et al. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. British Journal of Clinical Pharmacology 2014;78:738-47.

The benefits and harms of deprescribing

- Evidence to date indicates that ceasing use of medication is at least as complicated as initiating treatment
- The term “deprescribing” was coined to describe the complex process that is required.

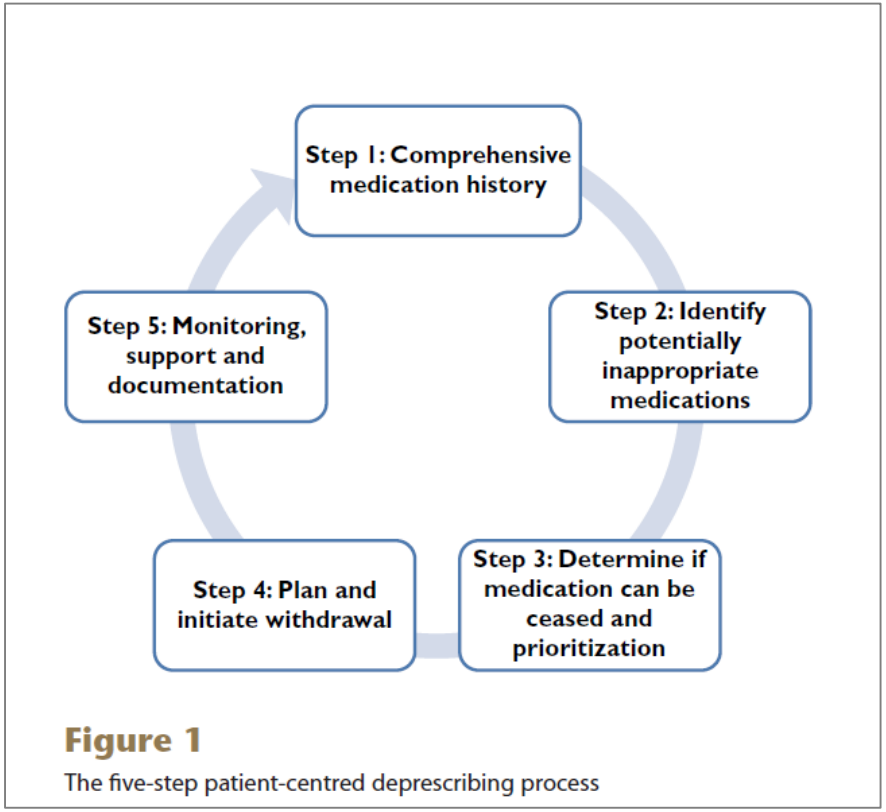

Figure 1
The five-step patient-centred deprescribing process

Reeve E et al. Review of deprescribing processes and development of an evidence-based, patient-centred deprescribing process. British Journal of Clinical Pharmacology 2014;78:738-47.