

Developing and implementing interventions: from idea to daily practice

Jacqueline Hugtenburg

PCNE keynote lecture 12-2-2022





Questions addressed today:

- Context of pharmaceutical care in the Netherlands
- Developing and implementing first and second prescription counselling
- Building on previous research
- Frameworks for developing and implementing healthcare interventions





Context of pharmaceutical care in the Netherlands

1. Community pharmacists were included in the Medical Treatment Agreement Act in 2007 => co-responsibility for outcome of treatment with medication
2. Community pharmacy has been acknowledged a registered specialism since 2016
3. Guidelines and quality indicators
4. Vision on pharmaceutical care 2025





1. The Medical Treatment Agreement Act on community pharmacists:

- Pharmaceutical treatment starts with a request for help of a patient or a prescription
- Informed consent and privacy
- Obligation to create and keep a patient file (incl. medication history) up to date
- Obligation to fully inform the patient on medication and its use
- Minors and (older) patients with (mental) disabilities

**MEEST GESTELDE VRAGEN OVER DE
TOEPASSING VAN DE WGBO-BEPALINGEN
IN DE OPENBARE APOTHEEK**

KNMP, AUGUSTUS 2018



2. Community pharmacy has been acknowledged a registered specialism since 2016

- Community pharmacist follow education for 2 years after graduation
- Community pharmacists act at the level of specialists (similar to GPs)





3. Guidelines

- Dutch Pharmacy Standard
- Professional Standard for (delivering) Pharmaceutical Care
- Guidelines for Practice
- Guideline Pharmaceutical Care
 - Asthma, diabetes, CVMR, medication surveillance, CMR, consultations
- Multidisciplinary guidelines
 - Polypharmacy, deprescribing, tapering antidepressants

4. Innovation

- Vision 2025
 - Mission
 - Aims
- Research Agenda

TOEKOMSTVISIE OPENBARE FARMACIE

GOEDE FARMACEUTISCHE ZORG IN DE BUURT

NOVEMBER 2020





Our pharmacy in Amstelveen 2022





Back to 2000

- How the idea for first prescription counselling came about?
- Handwritten prescriptions containing wrong drug names



- Label: allergy treatment
- Label: antibiotic
- Patient came back with the medicine: I do'nt have an allergy
- We should have explained the medicine was for allergy!



Next day:



- Developing First Prescription Counselling for the top 10 medicines together with the pharmacy team
 - Metoprolol
 - Marvelon
 - Amoxicilline
- Content
 - Effects of the medicine
 - Side effects of the medicine
 - How to use the medicine





Two weeks later the awareness

- We left patients to their own devices and we did not know how they were doing.
- We started with 2nd prescription inquiry after the experience of the patient with the chronic medicine
- Experiences were collected on sheets
- Data were quantitatively analysed by a student

Communicating with patients the second time they present their prescription at the pharmacy

Discovering patients' drug-related problems

- J.G. Hugtenburg, A.Th.G. Blom, C.T.W. Gopie and J.J. Beckeringh

Pharm World Sci 2004; 26: 328–332.

© 2004 Kluwer Academic Publishers. Printed in the Netherlands.

J.G. Hugtenburg (correspondence, e-mail: J.G.Hugtenburg@pharm.uu.nl), **A.Th.G. Blom**, **C.T.W. Gopie**: Department of Pharmacoepidemiology & Pharmacotherapy, Faculty of Pharmaceutical Sciences, University of Utrecht, Box 80082, 3508 TB Utrecht, The Netherlands
J.J. Beckeringh: Westwijk Pharmacy, Amstelveen, The Netherlands

Key words

Community pharmacy
Drug-related problem
Ineffectiveness
Patient counselling
Repeat prescription
Second prescription

nity pharmacists to make a variety of clinical interventions, thus substantially improving the efficacy and safety of drug therapy^{7–9}.

Patient counselling is an integral part of the pharmaceutical-care concept¹⁰. Educational activities support patients in their drug therapy and decisions on drug use, which may considerably improve patient compliance with drug therapy¹¹. The community pharmacist is often the last professional a patient meets before he or she starts or continues drug therapy. Community pharmacists are therefore challenged to answer any remaining drug questions and resolve drug-related problems.

In the Netherlands the majority of community pha

Table 1 *Reported drug-related problems during SP contacts (n = 700)*

	<i>N</i>	<i>Percentage (%) of SP forms</i>
Side effects	76	10.9
Ineffectiveness	77	11.0
Problems with instruction	3	0.4
Total	156	22.3

How to implement this service?

- Papers in professional journals

OORSPRONKELIJK ARTIKEL

Begeleiding tweede uitgifte nuttig voor de patiënt

A.T.G. Blom, J.G. Hugtenburg en C.P. Post

Kernpunten

- Tweede-uitgiftegesprekken maken geneesmiddelproblemen en -vragen bespreekbaar.
- De door patiënten ingebrachte geneesmiddelproblemen zijn vooral de bijwerkingen.
- Assistenten kunnen tweede-uitgiftegesprekken grotendeels zelfstandig afhandelen.

Abstract

Second drug delivery contact can benefit patients

Objective

To describe the objective, contents and outcomes of the so-called second drug delivery strategy in community pharmacies; to find out how pharmacists have implemented this strategy in their pharmacy; to collect pharmacists' and phar-

Eerste en tweede uitgifte van geneesmiddelen: Zinvolle actie aan de balie

Translated title of the contribution: Patient information in the pharmacy, repeat prescriptions and patient compliance

J. G. Hugtenburg, A. Th G Blom, C. T W Gopie

Clinical pharmacology and pharmacy, APH - Health Behaviors & Chronic Diseases, APH - Quality of Care, CCA - Treatment and quality of life

Research output: Contribution to journal > Article > Academic > peer-review

> Tweede uitgifte begeleiding : Nuttig voor patiënt? Een onderzoek in Nederland (2006)

Auteurs: Blom, A. T G; Hugtenburg, J. G.; Post, C. P.

In: *Farmaceutisch Tijdschrift voor België*, 83(1), 13 - 17. APB Algemene Pharmaceutische Bond. ISSN 0771-2367.

Samenvatting:

In community pharmacies, second drug delivery contacts are a challenge to provide pharmaceutical care. Patients who receive a prescribed drug for the second time, have already experienced any drug effects and side-effects. These patients may have additional informational needs, compared to first

Others followed – how to deal with side effects

[1022] PRAKTIJK

19 augustus 2005 • Pharmaceutisch Weekblad nr. 33

Meerderheid apothekers meldt nooit bijwerkingen

2005

Omgaan met bijwerkingen

Anneke Passier

J.W. Pesser

Kees van Grootheest

Voor een veilig geneesmiddelengebruik is het belangden gemeld bij Lareb. Het melden is een verplichting Nederlandse Apotheeknorm. Toch blijkt de meerdert nooit bijwerkingen te melden. Tijdgebrek en het ontprocedure spelen hierbij een belangrijke rol.

Procedure in de apotheek

In het kader van farmaceutische patiëntenzorg wordt in veel apotheken aandacht gegeven aan de begeleiding bij eerste en tweede uitgifte van geneesmidelen (EU/TU-begeleiding). Bij tweede uitgifte dient stelselmatig gevraagd te worden naar eventuele bijwerkingen – dit is een goed moment om een melding te overwegen.



Others followed

[1022] PRAKTIJK

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*Anneke Passier
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Procedure in the pharmacy

In the context of pharmaceutical patient care many pharmacies pay attention to the counselling of patients at first and second prescription. At second prescription side effects should be systematically inventoried – this is a good time point to report side effects.



How to implement this service?

- Information letters created by the electronic pharmacy information system

The screenshot displays the 'Nieuws en updates' (News and updates) page on the Health Base website. The page features a dark blue sidebar on the left with the Health Base logo (an owl) and navigation links: 'Producten', 'Voor klanten', 'Nieuws en updates', 'Over Health Base', and 'Contact'. A tooltip over the 'Producten' link reads 'Ga naar de pagina Producten'. The main content area has a breadcrumb 'Home → Nieuws en updates' and a large heading 'Nieuws en updates'. Below this is a 'Filter op interessegebied' (Filter by area of interest) section with buttons for: 'MEDICATIEBEWAKING', 'FORMULARIUM', 'ZORGPROTOCOLLEN', 'LOGISTIEKE GENEESMIDDELINFORMATIE', 'HEALTH BASE', 'MELDING VAN DE MAAND', 'PHARMACOM', 'MEDICOM', 'GIP', 'MEDICOM MAATWERK', 'CONTENT VOOR ZORG-ICT', and 'UI-ONLINE'. The 'GIP' and 'UI-ONLINE' buttons are highlighted in dark blue. Two news items are visible: '01 DECEMBER 2021 Herziening GIP en uitgiftebegeleiding sterkwerkende' and '04 OKTOBER 2021 BTW aanpassing Corona-zelftests en mondkapies'. A video player for 'Seresta tablet 10 mg' is partially visible in the bottom right corner.

How to implement this service?

- Curriculum of the University of Utrecht: **pharmacy game**



Training of pharmacy technicians

Case-based training sessions for pharmacy staff

The screenshot shows the top portion of a website. At the top right, there is a green bar with the text 'E-learning' and a small icon, followed by the text 'Vandaag Vooruit'. Below this, the logo 'sba' is displayed in green, followed by the text 'Vandaag Vooruit' in a dark font. To the right of the logo, the text 'Leidinggevende' is visible. Below the logo and text, there is a light green horizontal bar containing the navigation links: 'Home - Nascholing - Cursussen - Uitgiftegesprekken'. At the bottom of this bar, the text 'Uitgiftegesprekken' is displayed in a large, bold, dark font.

Remuneration



- Healthcare insurances now pay for
 - First prescription counselling (since 2011)
 - Instruction on the use of inhalers and auto-injectors
 - Second prescription counselling under certain conditions
 - Clinical medication review (elderly/polypharmacy) since 2014
 - Consultation by the pharmacist since 2021

Barriers for implementation of innovation

- Complexity
- Lack of knowledge and competence
- Lack of time
- Lack of remuneration

Enablers of innovation

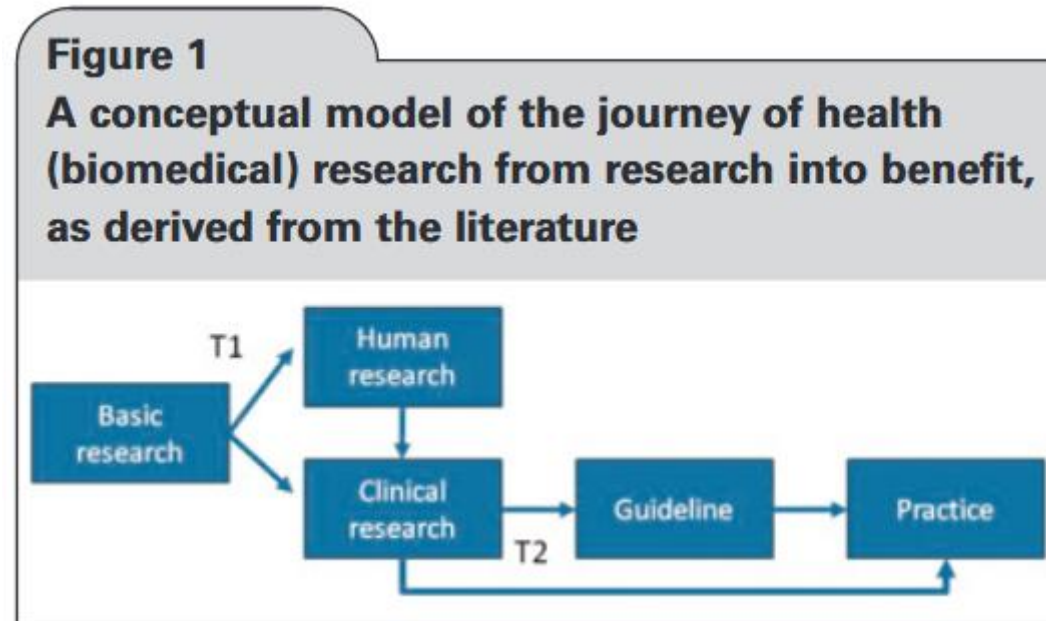
- End user engagement
- Make it fit in daily practice
- Training of HCP
- Support by ICT
- Scientific journals
- Remuneration

START WITH A SET

KEEP IT SIMPLE !

Time lag in research translation process

- Review including 23 studies



- 17 years

Enabler: Obliging care by authorities



Action of the Health Inspectorate

- 2012: Multidisciplinary guideline on polypharmacy
- 2013: Report; one million of patients > 65 years have a risk on inappropriate medication
- 2015: Letter of the Health Inspectorate
- 2016
 - pharmacists should perform 100 medication reviews yearly
 - list of criteria
 - growth model





CrossMark

Effects of Telephone Counseling Intervention by Pharmacists (TelCIP) on Medication Adherence; Results of a Cluster Randomized Trial

Marcel J. Kooij^{1,2*}, Eibert R. Heerdink¹, Liset van Dijk³, Erica C. G. van Geffen⁴, Svetlana V. Belitser¹ and Marcel L. Bouvy¹

¹ Department of Pharmacoepidemiology and Clinical Pharmacology, Utrecht University, Utrecht, Netherlands, ² Service Apotheek Koning, Amsterdam, Netherlands, ³ NIVEL (Netherlands Institute for Health Services Research), Utrecht, Netherlands, ⁴ Kidney Foundation (Nierstichting), Bussum, Netherlands

OPEN ACCESS

Edited by:

Objectives: To assess the effect of a pharmacist telephone counseling intervention on patients' medication adherence.


Design: Pragmatic cluster randomized controlled trial.

Findings and conclusions

- No effect on adherence
- Intervention not intensive enough?
- Adherent patients were also included
- Level of usual (obligatory) care is already high
- Patient satisfaction high !
- Telephone counselling is feasible !

RESEARCH ARTICLE

Self-management research of asthma and good drug use (SMARAGD study): a pilot trial

Esther Kuipers^{1,2}  · Michel Wensing^{1,3} · Peter de Smet^{1,4} · Martina Teichert^{1,5}

Received: 23 February 2017 / Accepted: 27 May 2017 / Published online: 9 June 2017
© The Author(s) 2017. This article is an open access publication

Abstract *Background* Community pharmacists play an important role in supporting patients for optimal drug use. *Objective* To assess the effectiveness of monitoring in asthma patients with inhaled corticosteroids (ICS) on disease control. *Setting* Asthma patients using ICS were invited from two intervention (IG) and two control pharmacies (CG). *Method* Participating patients completed questionnaires at the study start and at 6-month follow-up, including the Control of Allergic Rhinitis and Asthma Test

regression. *Results* From March to July 2015, we enrolled 39 IG and 41 CG patients. At follow-up, CARAT scores did not differ between IG and CG (−0.19; 95% confidence interval [CI], −2.57 to 2.20), neither did patient numbers with ICS adherence >80% (0.82; 95% CI, 0.28–2.37). Among EMI users, CARAT scores did not differ, but ICS adherence >80% showed a 4.52-fold increase (95% CI, 1.56–13.1) compared with EMI nonusers. *Conclusion* Among community-dwelling asthma patients, pharmacist

Intervention and findings

- Interventions
 - electronic monitoring
- Measurements
 - disease control
 - adherence
 - inhalation techniques

ELECTRONIC MONITORING IMPROVES REFILL ADHERENCE

Intervention trials investigated transitional care

- Hugtenburg et al. Int J Clin Pharm 2009
- Ahmad et al. Arch Int Med 2012
- Ensing et al. Res Soc Adm Pharm 2019*
- Daliri et al. Plos One 2019
- Uitvlugt et al. 2021*

Reduction of drug related problems

* Included proces evaluation

We learnt: 1. to collaborate with

- General practitioners
- Medical specialists
- Nurses
- Patients
- Pharmacists in the hospital

We learnt: 2. need of evidence in own country

- To get all pharmacists on your side
- To get payment for services



We learnt: 3. Connecting research and practice is of eminent importance

Why?

- To get insight in needs and wishes of pharmacists re regarding pharmaceutical care
- To involved pharmacists in pharmaceutical care research

How?

- Networks of community pharmacists



Back to 2000

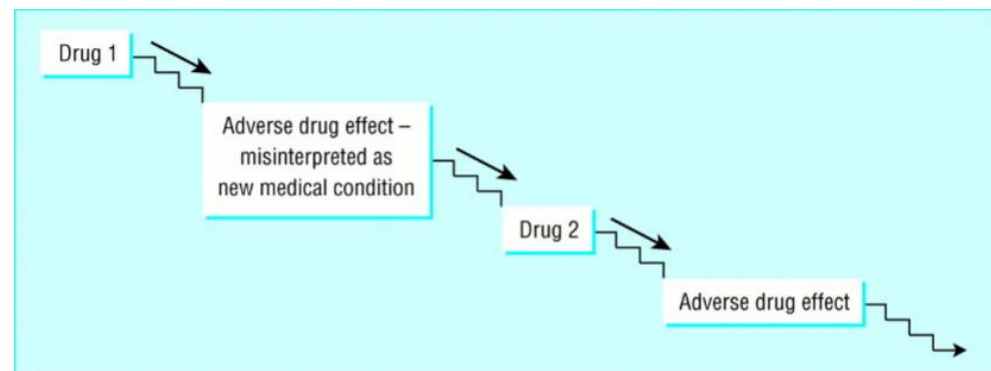
- What to do when side effect are identified at second prescription (first refill)?
- Listen to the patient and look for clues and underlying causes
- Propose interventions: dose reduction, switch, provide counselling on medication use and side effect
- Not all side effects become manifest within two weeks

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Not all side effects become manifest within two weeks

- Not recognized as side effect by patient, prescriber and likely also by the pharmacist (=> extended monitoring if possible!)
- Side effect may be dealt with by prescribing another drug
- This phenomenon may lead to a **prescribing cascade**
- Definition: misinterpretation of an adverse drug event as a medical condition, which is subsequently treated with further medication



Prescribing cascades

- Increase the number of drug-drug interactions
- Increase harm and the number of side effects
- Increase costs

Scoping review on prescribing cascades

56 articles and **300** prescribing cascades were found

Research in Social and Administrative Pharmacy xxx (xxxx) xxx



Contents lists available at [ScienceDirect](#)

Research in Social and Administrative Pharmacy

journal homepage: www.elsevier.com/locate/rsap



Evaluating the use of prescription sequence symmetry analysis as a pharmacovigilance tool **A scoping review**

Earl J. Morris^a, Josef Hollmann^a, Ann-Katrin Hofer^a, Hemita Bhagwandass^a, Razanne Oueini^a, Lauren E. Adkins^b, Jesper Hallas^{c,d}, Scott M. Vouri^{a,e,*}

Some examples

Drug 1	Side Effect	Drug 2
ACE inhibitor	-> cough	-> Codeine
Amiodarone	-> hypothyreoidy	-> Levothyroxine
Betablokker	-> depression	-> Antidepressants
Lithium	-> parkinsonism	-> Dopaminergic drugs
Antipsychotics	-> hyperglycaemia	-> Antidiabetics
Calcium antagonists	-> edema	-> Diuretics

In 2020 a project was initiated

Fatma Karapinar in the lead

Atiya Mohamed as PhD

Jacqueline Hugtenburg

Petra Denig

Patricia van den Bemt

Project aims are to

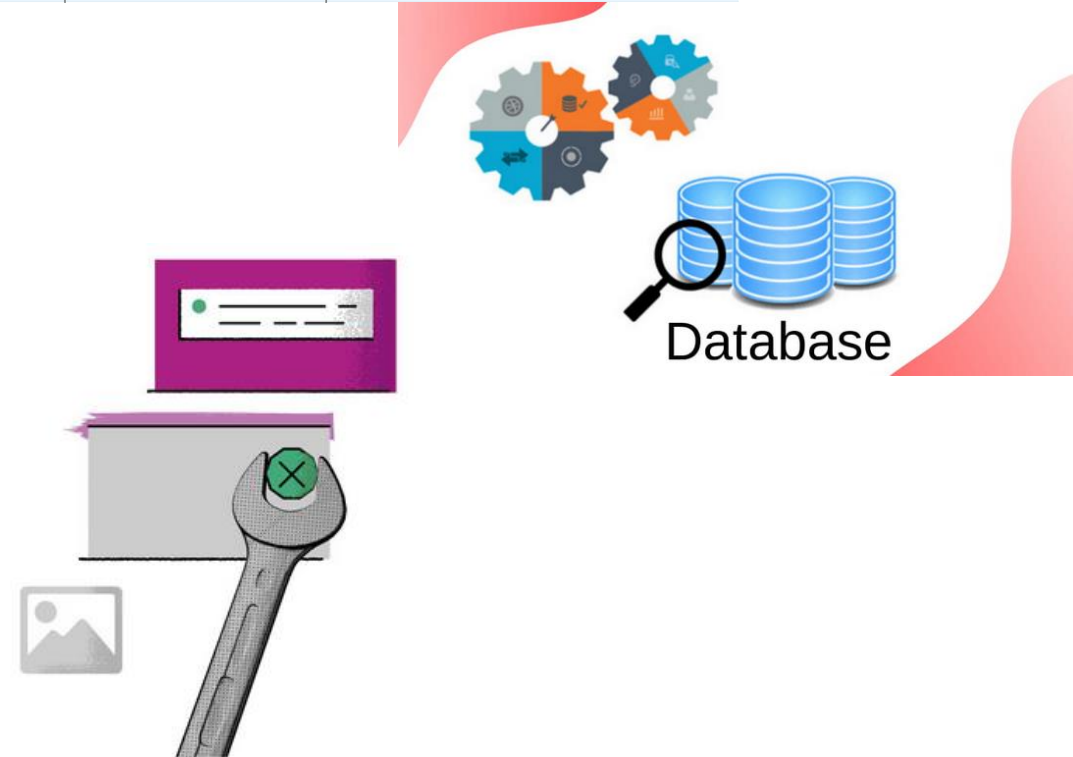
1. develop a list

First medication	Side effect	New medication to treat side effect
Tramadol (Ultram®)	Constipation	Laxative
Donepezil (Aricept®)	Urinary incontinence	Anti-incontinence medication
Ibuprofen (Advil®)	Nausea	Medication for nausea
Ramipril (Altace®)	Cough	Cough syrup
Alendronate (Fosamax®)	Stomach ache or reflux	Antacid medication

2. test in a database

3. develop and evaluate interventions

- Resolve existing prescribing cascades
- To prevent prescribing cascades
- <https://www.deprescribingnetwork.ca/blog/prescribing-cascade>

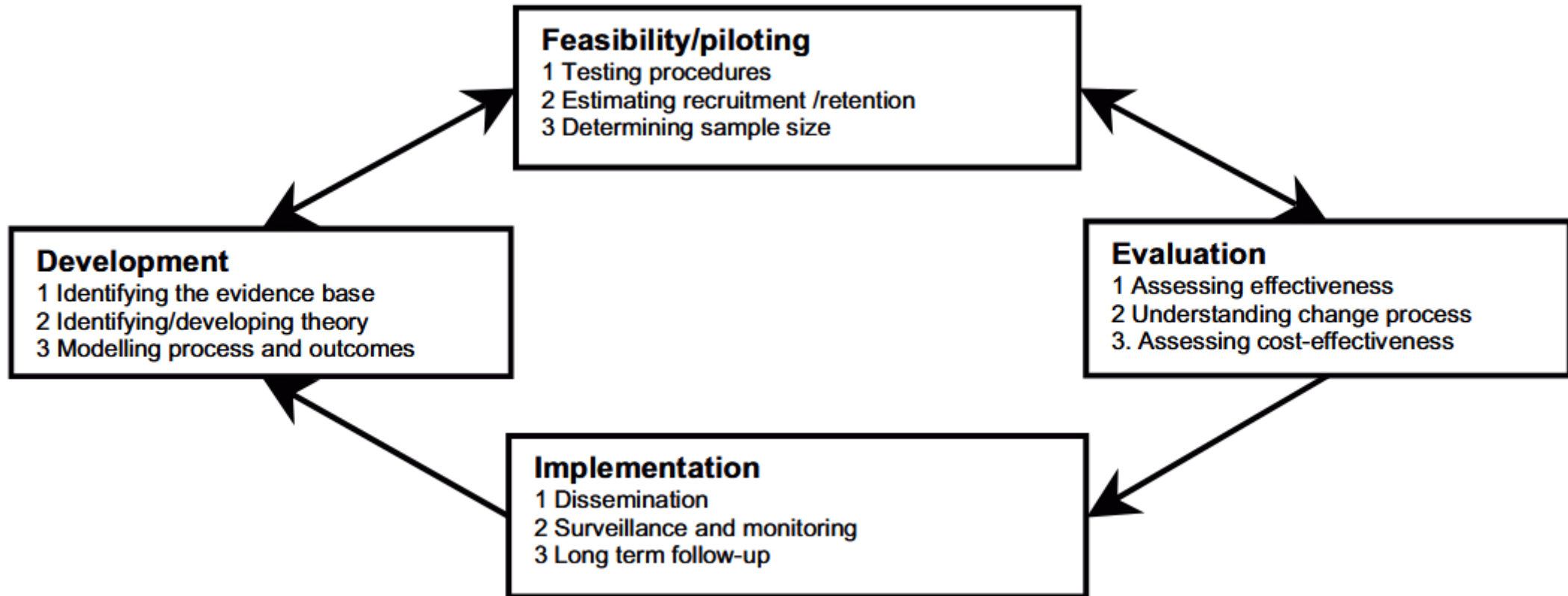


Frameworks for development and implementation

- MRC
- CIFER
- Behavioural Chain Wheel
- Intervention Mapping
-
-

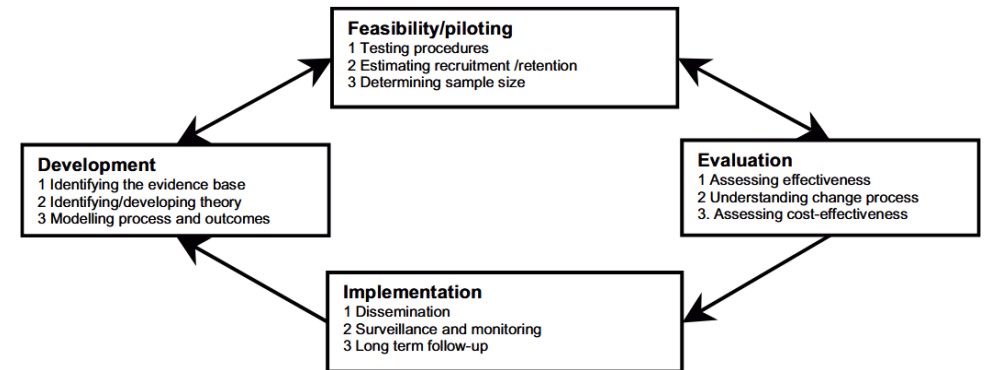
<https://dissemination-implementation.org>

MRC framework: Key elements of the development and evaluation process



MRC framework

- Developing an intervention
 - systematic review
 - context and stakeholders analysis
- Piloting and feasibility
- Evaluating
- Implementing



Recommendations

- Make use of a theoretical framework
- Context and stakeholders involvement in your country
- Explore the barriers
- Take advantage of enablers
 - Targeted and tailored training
 - Automation/computerisation of intervention
 - Routinize – embed intervention in existing work flow
 - (Enhanced) multidisciplinary collaboration
 - Align research with daily practice