

DROP IT



**Schweizerischer
Nationalfonds**



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**UNIVERSITÄT
BERN**

Deprescribing potentially inappropriate Proton Pump Inhibitors (PPIs)

Developing an intervention and planning a trial

Kristie Weir BSci, MPH, PhD

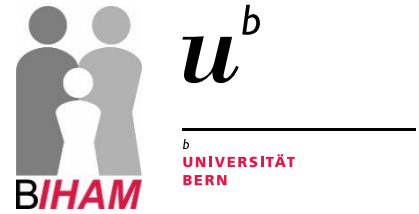
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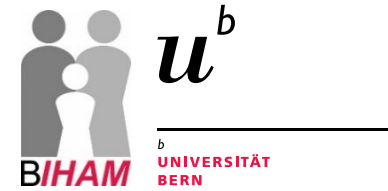


Overview



1. Introduction
2. Previous work in this area
3. **DRÖP IT** Trial – Deprescribing inappropriate PPIs + intervention development

Team at the University of Bern



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MD MSc PhD



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Prof. Jennifer Inauen, PhD
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Dr. Kristie Weir
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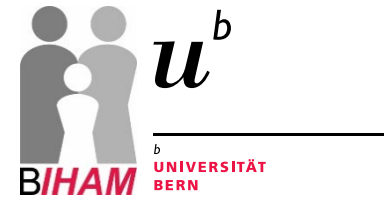
Dr. Angela Schulthess
PhD



PD Dr. Pascal Juillerat
Specialist in Gastroenterology
MD

Institute of Primary Health Care (BIHAM)

Introduction to PPIs



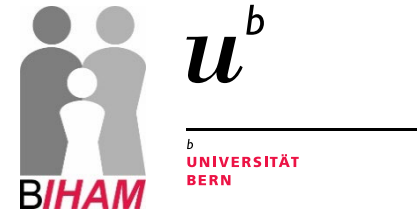
PPI use:

- PPIs are prescribed for treating gastric acid-related disease
- PPI use is increasing in Switzerland and elsewhere
- Long-term PPI use targeted for Switzerland's 'Smarter Medicine' movement as an unnecessary treatment

Potential harms of PPIs:

- Vitamin B12 and iron deficiency
- Hypocalcemia, Hypomagnesemia
- Fractures
- Infections
- Higher risk of liver and kidney damage
- Dementia

Previous work » Quantitative study



Aim: To identify potentially inappropriate PPI prescribing (too high dose or no indication) & to see how GPs manage PPIs over 1 year

Design: Consecutive sample of GPs (n=11)

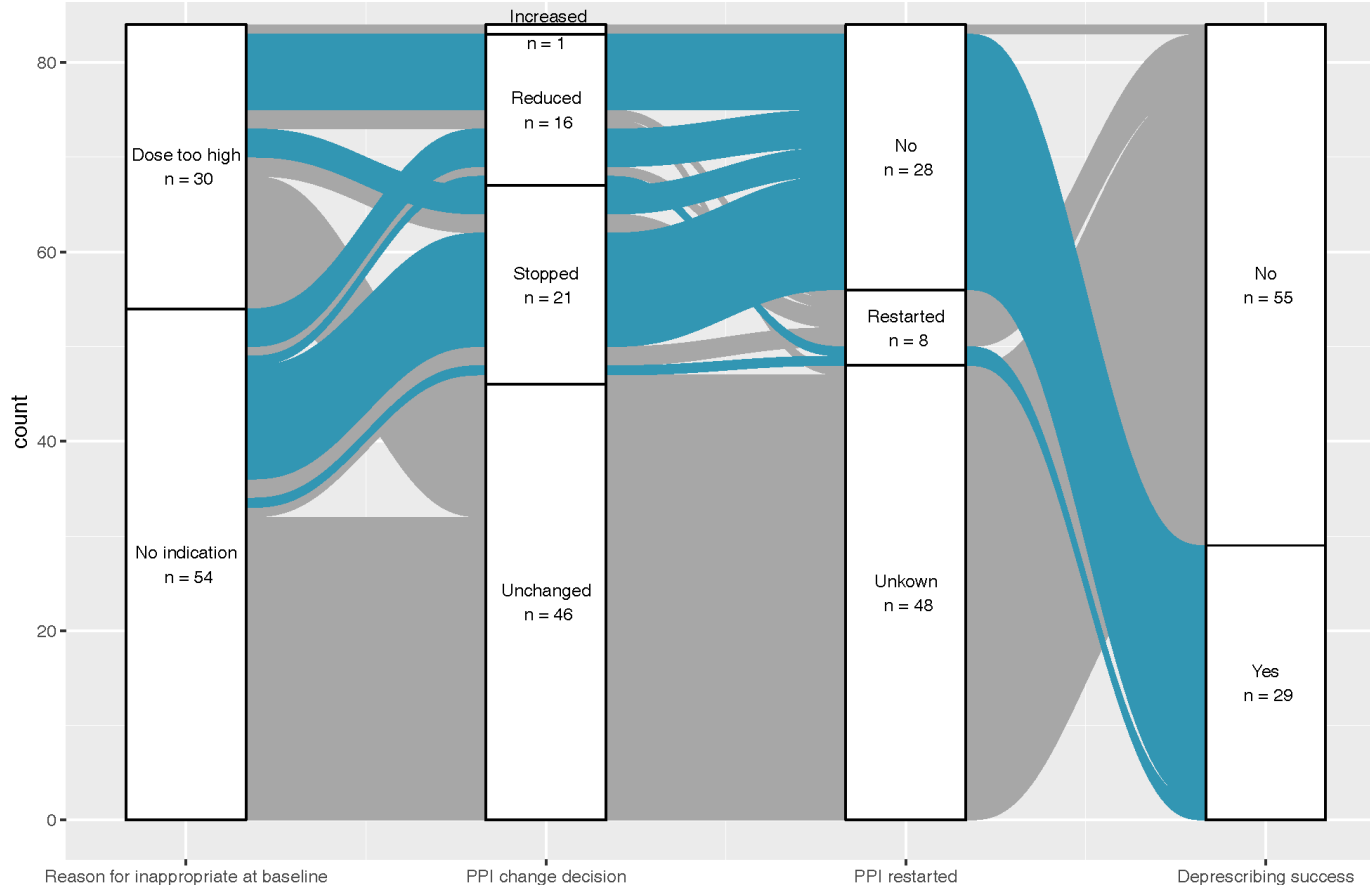
Setting: Swiss primary care, quality circle

206 patients (15%) with ≥ 8 weeks PPI → 85 (41%) potentially inappropriate PPI



1 year later...

... could potentially inappropriate PPIs be reduced/stopped?



Start with 85 people with potentially inappropriate PPIs

Successful deprescribing in 29 (35%) individuals

Previous work » Quantitative study

After 1 year → only 29 (35%) were reduced or stopped

Why?

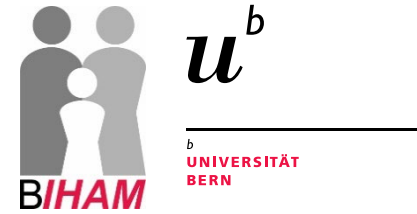
Lack of discussion
with the patient

Presence of symptoms

PPI indication changed
to appropriate

Patient unwilling to
deprescribe

Previous work » Qualitative interviews



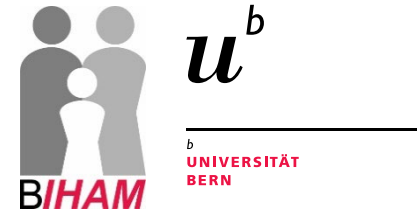
GPs (n=6)

- Trouble determining if a PPI is really necessary
- PPI deprescribing is not a priority (so much else to do)
- Effort on how to address/motivate/convince patients

Patients (n=7)

- Lack of knowledge about why they take PPIs
- Quality of life/no reflux symptoms are important to them
- Fear of symptoms returning after deprescribing
- Support for deprescribing (communication, plan, alternatives)

Rationale for the study & intervention



Awareness is not enough

Support is needed to successfully deprescribe PPIs

For GPs: Clear definition of suitable/unsuitable PPIs

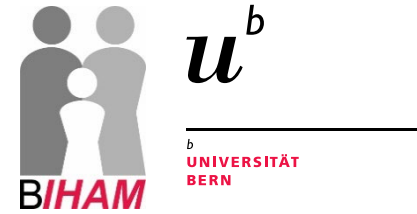
For discussions: Addressing rebound/non-PPI measures

For patients: Better information about reason/duration/alternatives

**DROPIT Trial –
stop/reduce potentially
inappropriate PPIs**

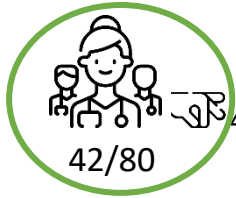
DROPIT Trial 2023-2027

CI: Prof Sven Streit



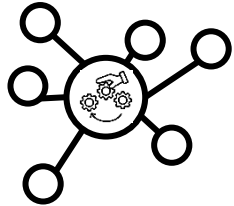
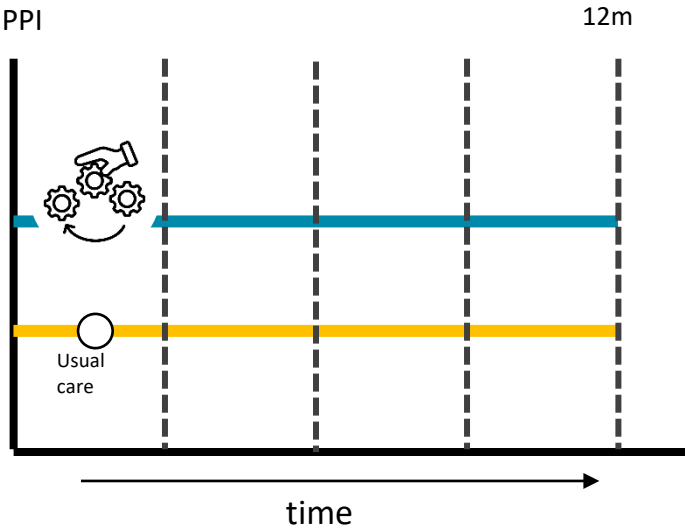
- **Aim:** To investigate the effectiveness of an intervention for patients and GPs to deprescribe inappropriate PPIs in adults
- **Design:** Randomized controlled trial with **80 GPs** and **5 patients** each with potentially inappropriate PPIs (= 400 patients)
- **Randomisation:** Individual GP level
- **Intervention:** Counselling material developed by general practitioners, patients, psychologists, gastroenterologists
- **Control:** *usual care*
- **Duration:** 1 year, Follow-up of patients via telephone every 3 months
- **Co-primary outcomes:** ↓ PPI dose, reflux symptoms at 12-month follow-up

DROPIT - Interventional Cluster-randomized Controlled Trial



42/80

400 patients with
inappropriate
PPI



Ethics submission
Intervention development

Co-primary:

- ↓ PPI dose change over 12-months (cumulative)
- Δ Reflux Disease Questionnaire (dyspepsia and GERD) change at 12-months (non-inferiority)

Secondary:

- Individual components of the co-primary endpoints.
 - PPI discontinuation
 - Regurgitation, heartburn, dyspepsia.
- Number of medications.
- Quality of life by EQ-5D-5L questionnaire.
- Atypical gastrointestinal symptoms, Reflux Symptom Index (RSI).
- Recurrent ulcers and gastrointestinal bleeding.
- Potential side effects of PPI overuse, including vit B12, Fe, Mg, & Na deficiencies, osteoporosis, small intestinal bacterial overgrowth (SIBO), anaemia, femoral fractures, interstitial nephritis, and intestinal infections (C. diff., enteritis-salmonella, campylobacter).
- Prescription of PPI (re-start or dose increase) and/or alternative anti-reflux treatments (i.e., alginate-based compounds, anti-acids, H2-blockers).

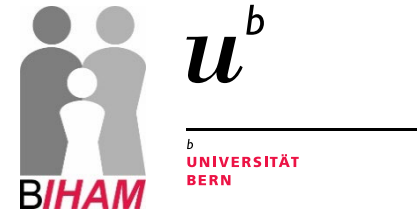
Process evaluation of the intervention:

- Adherence to deprescribing decisions, patient typology, GPs' and patients' perspectives...

Cost-effectiveness evaluation:

- Direct medical costs, Quality-adjusted life-years (QALYs), incremental cost effectiveness ratio...

For consideration



- **Deprescribing:**

1. **Stop:** Stop vs sustained stop / prescription (info from GPs) vs use (from patients)

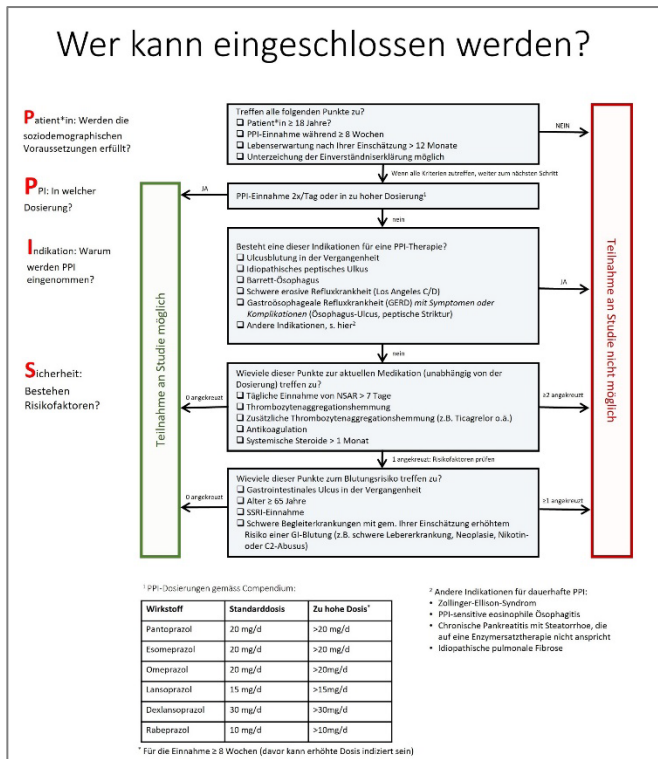
2. **Reduce:** cumulative dose over 1-year captures fluctuations e.g. reduce, increase, restart

3. **Switch to on-demand use:** information from patients is crucial for this

- **Blinding:** Recruiting GPs through Quality Circles in the German-speaking part of Switzerland.

DROPIT Intervention components

Flowchart for screening patients

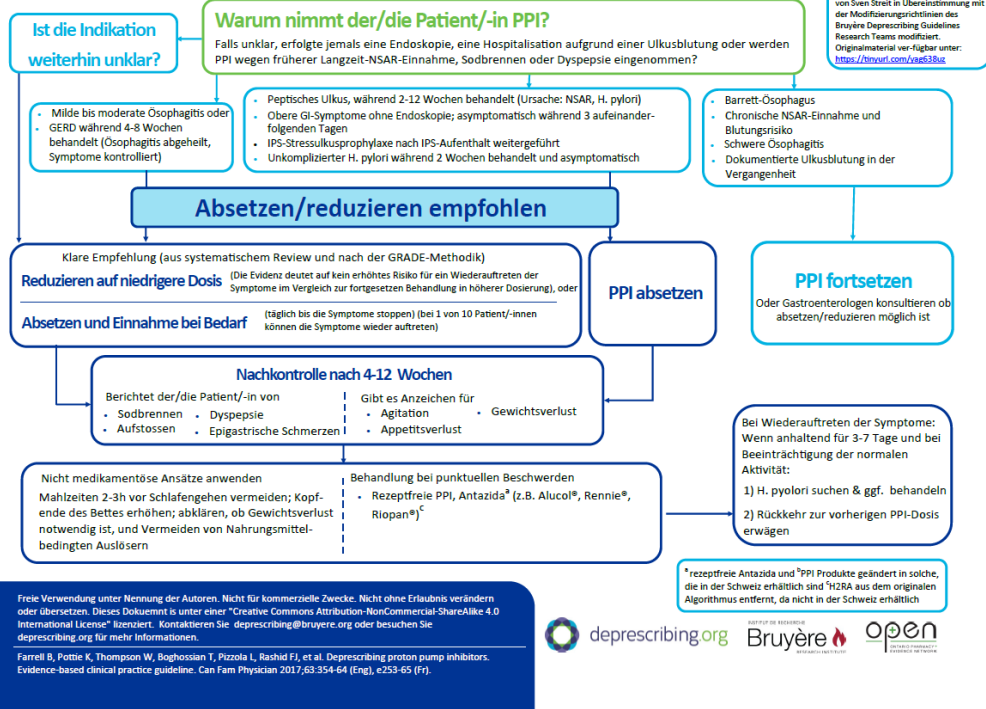


Martina Zangger, Pascal Juillerat, Sven Streit



deprescribing.org

Algorithmus zum Absetzen/Reduzieren von Protonenpumpeninhibitoren (PPI)



Deprescribing algorithm (translated)

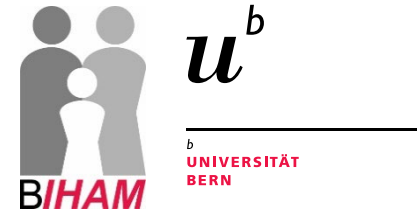
Proton Pump Inhibitor Deprescribing Algorithm, developed by Prof. Barbara Farrell and colleagues.



deprescribing.org



Behaviour change theory and deprescribing



Behaviour change theory will be used to:

- Design the intervention and for implementation
- Identify feasible implementation strategies that are context specific
- Understand theoretical mechanisms of change and the intervention functions
- Create a matrix of barriers and enablers of deprescribing PPIs for GPs and patients

Developing the Intervention

Review PPI deprescribing literature

List barriers and enablers to deprescribing for GPs and patients

For every barrier and enabler for GPs and patients:

Use Theoretical Domains Framework to identify behavioural determinants

Use Behaviour Change Wheel to identify the intervention function

Identify the Behaviour Change Techniques to change the behavioural determinant

Implementation and mode of delivery of the Behaviour Change Technique

Next steps: process of selecting the Behaviour Change Techniques →→→
Think Aloud study with patients + GPs

How to bring together theoretical knowledge with practical, contextual data...?

DROPIT
Stakeholder group (n=4+)
Advisory group (n=14)

Data we already have:



QUAL Study (unpublished thesis)

- Interviews with Swiss adults taking potentially inappropriate PPIs (n=7)
- Interviews with Swiss GPs about PPIs (n=6)



SWICA Health Symposium

- Round table discussions with Swiss GPs and pharmacists (n=56)
- Strategies for deprescribing PPIs




Online experimental survey study

- Older adults from Aus, UK, US, Netherlands (n=5,311)
- Hypothetical deprescribing decision about a PPI, participants with experience with PPIs (past or current)

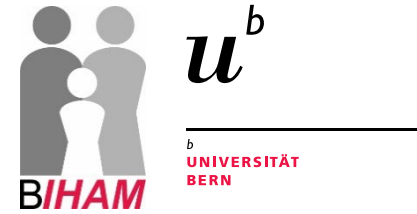
Original Research | [Published: 14 November 2022](#)

Harm and Medication-Type Impact Agreement with Hypothetical Deprescribing Recommendations: a Vignette-Based Experiment with Older Adults Across Four Countries

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[Journal of General Internal Medicine \(2022\)](#) | [Cite this article](#)

For consideration - reminder



- **Deprescribing:**

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3. **Switch to on-demand use:** information from patients is crucial for this

- **Blinding:** Recruiting GPs through Quality Circles in the German-speaking part of Switzerland.
- **Intervention development:** Selection of Behaviour Change Techniques, previous data

Thank you!

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