

## Enhancing rational and safe prescribing in primary care

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# Overview

- Background
  - Potentially inappropriate prescribing (PIP)
- OPTI-SCRIPT
  - Development of intervention
  - Results
- Summary

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# Background

- Prescribing is a challenging and complex process
- Appropriate prescribing
- Potentially inappropriate prescribing (PIP)
  - Overprescribing, underprescribing and misprescribing
  - Factors that contribute to PIP

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# An overview of prescribing indicators



Eur J Clin Pharmacol  
DOI 10.1007/s00228-013-1575-8

REVIEW ARTICLE

## Inappropriate prescribing: a systematic overview of published assessment tools

Carole P. Kaufmann • Regina Tremp •  
Kurt E. Hersberger • Markus L. Lampert

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## Overview *cont'd*

- Following a 'systematic literature search', identified 46 different tools
  - English and German publications only
- 36 named older people as target patients
  - 10 did not specify target age group
  - Various settings
- Consensus methods used in development of 19 tools
- Over-, under- and mis-prescribing

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# No perfect set of indicators

- The **ideal set** of indicators-
  - Cover all aspects of appropriateness
  - Be developed using evidence-based methods
  - Show significant correlation between degree of appropriateness and clinical outcomes
  - Be applicable not only in research but in daily health care practice

Kaufmann *et al*, 2013

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# What contributes to PIP?

- Multimorbidity
  - “Presence of two or more long-term conditions”
    - 64.9% of people aged 65-84years <sup>[1]</sup>
    - 30.4% of people aged 45-64 years <sup>[1]</sup>
- Polypharmacy
  - “the ingestion of four or more medications”

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# Prevalence of PIP

- PIP is prevalent in the older population (> 70 years)
  - Republic of Ireland 36%
  - Northern Ireland 34%
  - United Kingdom 29%

BJCP British Journal of Clinical Pharmacology

## Potentially inappropriate prescribing and cost outcomes for older people: a national population study

Caitriona Cahir,<sup>1</sup> Tom Fahey,<sup>1</sup> Mary Teeling,<sup>2</sup> Conor Teljeur,<sup>3</sup> John Feely<sup>2</sup> & Kathleen Bennett<sup>2</sup>

<sup>1</sup>HRB Centre for Primary Care Research, RCSI Medical School, Division of Population Health Science, 123 St Stephens Green, Dublin 2, <sup>2</sup>Department of Pharmacology & Therapeutics, Trinity Centre for Health Sciences, St James Hospital, Dublin 8 and <sup>3</sup>Department of Public Health & Primary Care, Trinity College Dublin, Dublin 24, Ireland

Br J Clin Pharmacol (2012) 69:1425–1433  
DOI 10.1097/00002702-012-1249-y

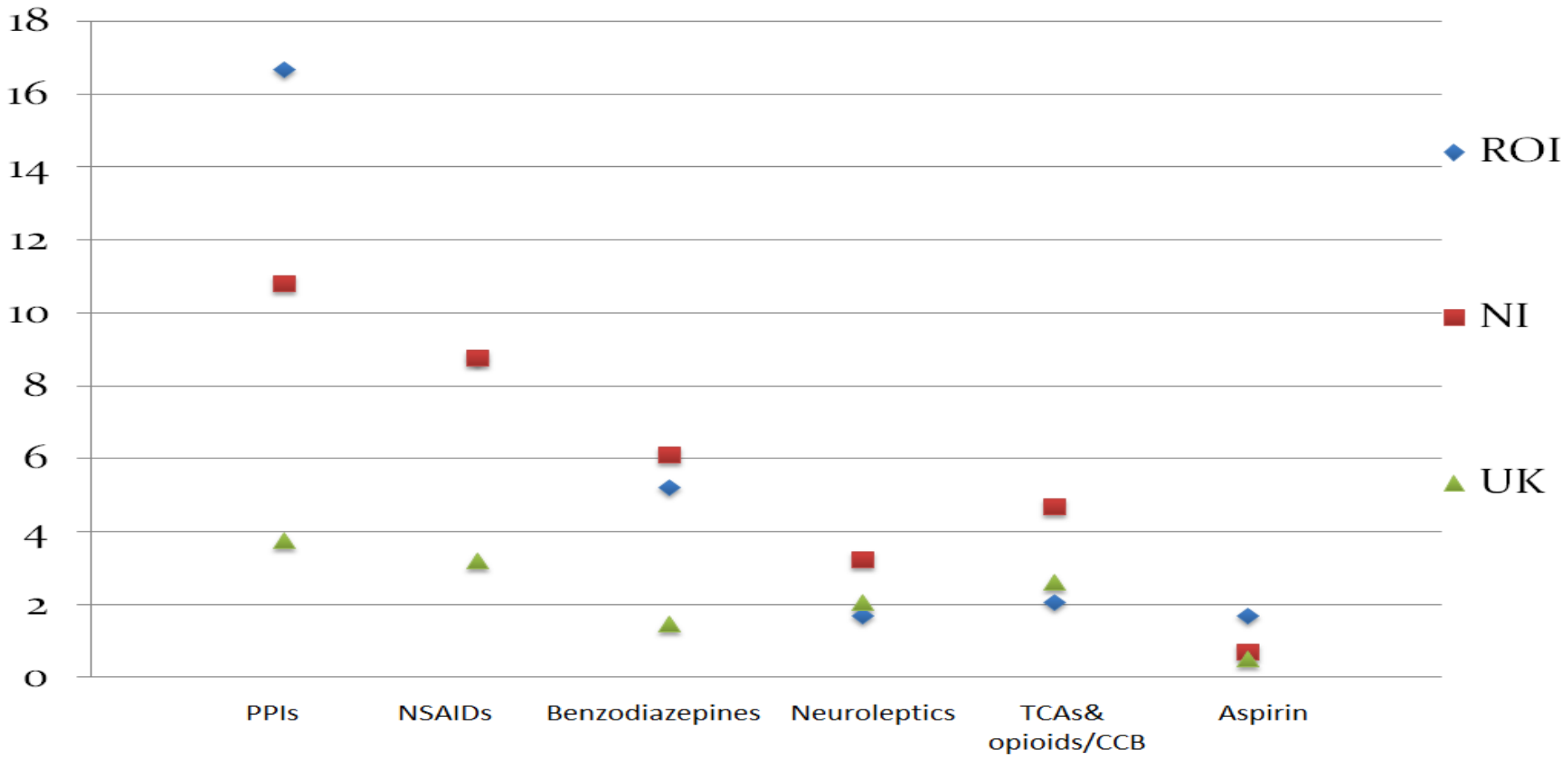
PHARMACOEPIDEMIOLOGY AND PRESCRIPTION

## Potentially inappropriate prescribing and cost outcomes for older people: a cross-sectional study using the Northern Ireland Enhanced Prescribing Database

Marie C. Bradley • Tom Fahey • Caitriona Cahir • Kathleen Bennett • Dermot O'Reilly • Carole Parsons • Carmel M. Hughes

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# The prevalence of the most common STOPP/START PIP indicators across three regions



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# OPTI-SCRIPT study development

Clyne *et al.* *BMC Health Services Research* 2013, **13**:307  
<http://www.biomedcentral.com/1472-6963/13/307>



RESEARCH ARTICLE

Open Access

## Addressing potentially inappropriate prescribing in older patients: development and pilot study of an intervention in primary care (the OPTI-SCRIPT study)

Barbara Clyne<sup>1\*</sup>, Marie C Bradley<sup>2</sup>, Carmel M Hughes<sup>2</sup>, Daniel Clear<sup>1</sup>, Ronan McDonnell<sup>1</sup>, David Williams<sup>3</sup>, Tom Fahey<sup>1</sup>, Susan M Smith<sup>1</sup> and on behalf of the OPTI-SCRIPT study team

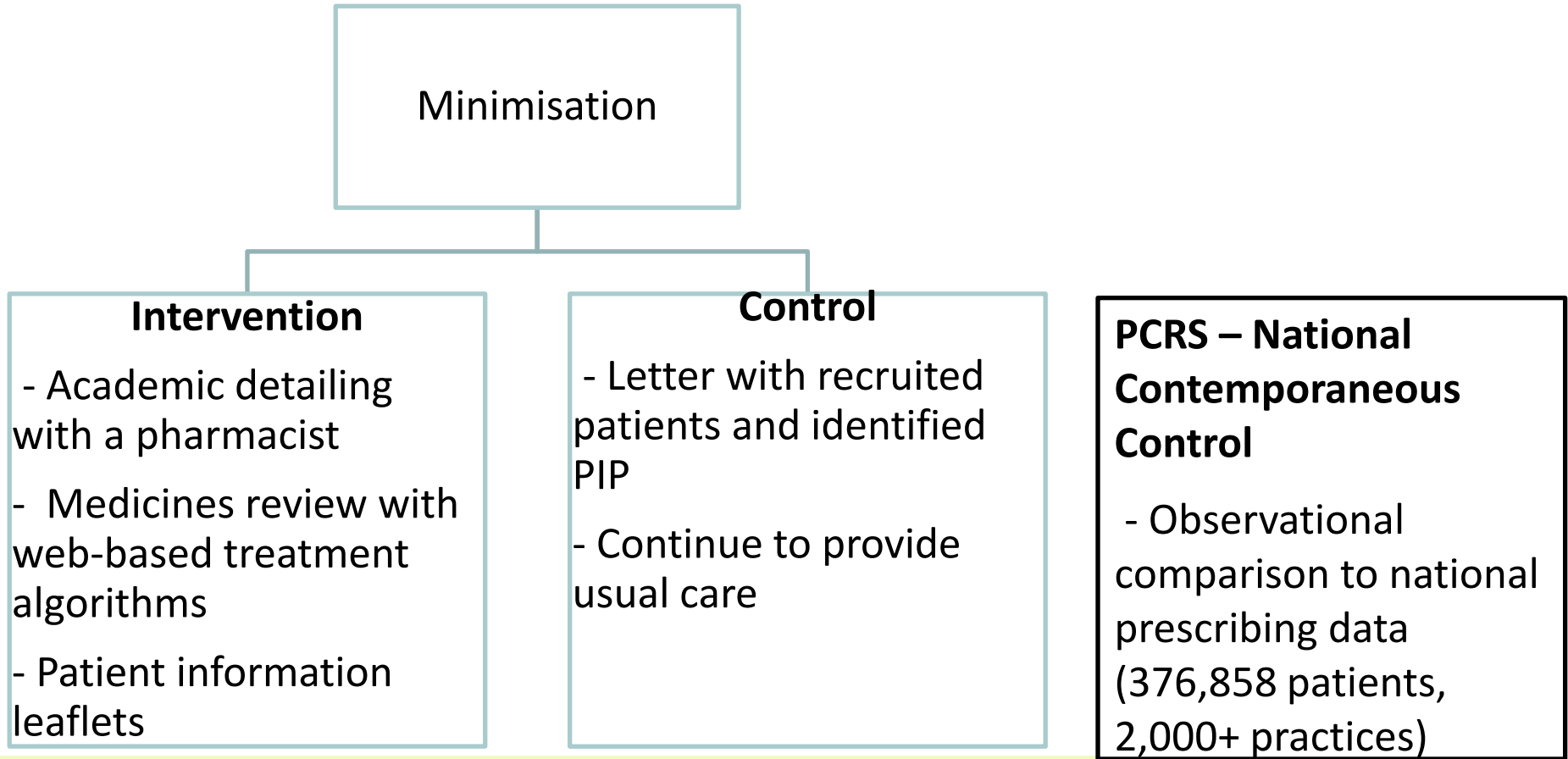
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# Study design & methodology – cluster RCT

- GPs inclusion criteria:
  - Based in greater Dublin area
  - 80+ patients aged over 70
- Patients inclusion criteria:
  - Aged 70+
  - Had PIP as per study list
- Recruited and baseline data collection prior to minimisation

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# Study overview



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# OPTI-SCRIPT website

## OPTISCRIP

Online Resource



<b>Patient ID: 15</b> <b>Proton Pump Inhibitors (PPIs)</b> <span style="background-color: red; color: white; padding: 2px;">To Do</span> Full Therapeutic Dose > 8 weeks	<b>Patient ID: 18</b> <b>Long Acting Benzodiazepines</b> <span style="background-color: green; color: white; padding: 2px;">Done</span> long acting, long term (>1 month)	<b>Patient ID: 23</b> <b>Long Acting Benzodiazepines</b> <span style="background-color: green; color: white; padding: 2px;">Done</span> long acting, long term (>1 month)
<b>PIP Outcome Form</b> <span style="background-color: red; color: white; padding: 2px;">To Do</span> Please fill this in for each PIP!	<b>PIP Outcome Form</b> <span style="background-color: green; color: white; padding: 2px;">Done</span> Please fill this in for each PIP!	<b>PIP Outcome Form</b> <span style="background-color: green; color: white; padding: 2px;">Done</span> Please fill this in for each PIP!
<b>Non-steroidal anti-inflammatory drugs (NSAIDs)</b> <span style="background-color: red; color: white; padding: 2px;">To Do</span> Warfarin, SSRI, ACE inhibitor, Diuretic, Congestive Heart Failure, Peptic Ulcer Disease, Long-term use for mild osteoarthritis		<b>Non-steroidal anti-inflammatory drugs (NSAIDs)</b> <span style="background-color: red; color: white; padding: 2px;">To Do</span> Warfarin, SSRI, ACE inhibitor, Diuretic, Congestive Heart Failure, Peptic Ulcer Disease, Long-term use for mild osteoarthritis
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# Long Acting Benzodiazepines

Back to  
Patients

Complete  
Outcome  
Form

## Long-acting Benzodiazepines

### Section A Potentially Inappropriate Prescription:

Any long-term (>1 month), long-acting benzodiazepine, i.e. chlordiazepoxide, flurazepam, nitrazepam or chlorazepate

OR

Any benzodiazepine with long-acting metabolites, i.e. Diazepam (except for use in benzodiazepine detoxification)

Due to an increased Risk of prolonged sedation, confusion, impaired balance and falls

### Section B Alternatives:

Consider the following condition specific alternatives for:

1. [Insomnia](#)
2. [Generalised Anxiety Disorder \(GAD\)](#)
3. [Panic Disorder](#)

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# OPTI-SCRIPT RCT results

- Participants
  - 21 GP practices (32% cluster response rate)
  - 196 patients (37% response rate)
- Minimisation

## Intervention

11 practices  
99 patients

## Control

10 practices  
97 patients

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# Study design & methodology – cluster RCT

- Primary outcome measure:
  - Proportion of patients with no PIP
  - Mean PIP per group
- Data collection baseline & immediate post intervention
- Between group differences:
  - Random effects logistic regression
  - Cluster mean
  - Random effects poisson regression
- Process evaluation

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# Outcome – Proportion with no PIP

Group	N	Number of patients with no PIP	% of patients with no PIP
Intervention			
Control			

Adjusted odds ratio = results will be in public domain shortly

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# Future work

- National trial of OPTI-SCRIPT
- Lessons learned?
  - Computerise PIP identification
  - Focus on top 10 PIP
  - Embedded in practice software
  - Practice incentives – reimbursement
  - Economic evaluation

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- Prevalence of PIP high in Ireland & UK
- Developed web-based intervention to target PIP in primary care
- Process evaluation gave insight into intervention delivery and barriers
- Further implementation of decision support to improve quality & safety are planned

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# Acknowledgements

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