The COME-ON study: a Collaborative approach to Optimize MEdition Use For Older People In Nursing Homes

Veerle Foulon, Pauline Anrys, Goedele Strauven, Anne Spinewine

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UCL
Université catholique de Louvain

KU LEUVEN
Conflicts of interest

None
Introduction

The facts...

Median number of chronic medication per Belgian Nursing Home Residents (NHRs) per day: 8
Range: 0 - 22

Inappropriate prescribing
- Overprescribing
- Misprescribing
- Underprescribing

Methods to improve appropriateness:
- Multifaceted interventions
- At least training of HCPs

Verrue et al., 2012
Spinewine et al., 2007
Loganathan et al., 2011
Forsetlund et al., 2011
Kaur et al., 2009
Objectives NIHDI project

OBJECTIVES

Efficient and rational use of medicines in NHs

Rational prescribing

Efficient medication management

Aim = validated recommendations
CONSORTIUM UCL – KU Leuven

Anne Spinewine, Veerle Foulon, Pauline Anrys, Goedele Strauven

Benoit Boland, Jan De Lepeleire, Jean-Marie Degryse, Valérie Lacour, Steven Simoens, Severine Henrard, Anja Declercq, Kris Vanhaecht, Olivia Dalleur, Jean Macq, Niko Speybroeck, Thérèse Van Durme
Research questions NIHDI project

How can medication use in nursing homes be optimized?

What is the impact of interdisciplinary case conferences?

How can the use of a formulary be optimized?

How can medication management be optimized?

PART 1

PART 2

PART 3
Part 1: interdisciplinary case conferences

How can medication use in nursing homes be optimized?

What is the impact of interdisciplinary case conferences?

How can the use of a formulary be optimized?

How can medication management be optimized?

PART 1

PART 2

PART 3
Research questions

What is the impact of interdisciplinary case conferences

- On the appropriateness of prescribing?
- On medication use?
- On clinical outcomes?
- On cost?
Intervention

Interdisciplinary case conferences

Facilitated by web application

Training & education

Local concertation
Intervention

Training & education

Interdisciplinary case conferences

Local concertation
Complex, multifaceted intervention
Study design

63 Selected NHs

Randomization of NHs

- 1 NH/province in intervention group
- Stratified randomization: province; experience with interdisciplinary concertation; type of pharmacy

Intervention group
(30 NH * 35 pts)

Control group
(33 NH * 35 pts)

Baseline measurement (M1)

Training (e-learning + on-site)

Local concertation (2 x)

Case conferences (3-5/pt)

Follow-up measurements: middle / end of study (M2 and M3)

Usual care

Training (e-learning)
Inclusion criteria for residents

INCLUSION

- Aged 65 or older
- Under the care of a participating GP
- Signed informed consent

EXCLUSION

- Palliative care
- Short stay / revalidation
Incentives for participants?

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**Intervention group**
(30 NH * 35 pts)

- Baseline measurement (M1)
- Training (e-learning + on-site)
- Local concertation (2 x)
- Case conferences (3-5/pt)

---

**Control group**
(33 NH * 35 pts)

- Usual care
- Training (e-learning)

---

Follow-up measurements: middle / end of study (M2 and M3)
## Data collection

### Shared responsibility

<table>
<thead>
<tr>
<th>Data collection</th>
<th>Who?</th>
<th>Baseline</th>
<th>Middle of study</th>
<th>End of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative &amp; demographic (resident) data</td>
<td>![Home Icon]</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clinical data</td>
<td>![Doctor Icon]</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Indications, scoring comorbidities and lab values</td>
<td>![Doctor Icon]</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Medication profile</td>
<td>![Doctor Icon]</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Economic parameters (hospitalization,...)</td>
<td>![Doctor Icon]</td>
<td>✓</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Data nursing home</td>
<td>![Home Icon]</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Data health care professionals</td>
<td>![Doctor Icon]</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Questionnaire “nursing home medication team-work”</td>
<td>![Survey Icon]</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

**LEGEND**

✓ = Data collection at fixed data collection moments or after each concertation (requested by researchers)

✗ = No data collection at these moments
Data collection

Facilitated through web application

- eID: user
- Role validation: registered HCP
- Role-based access
- Therapeutic relationship
**The come-On study: 15 months**

- First data collection
- Access to e-learning platform
- On site training
- First local concertation
- Multidisciplinary case conferences
- Second local concertation
- Second data collection
- Last data collection

**Planning**

- April 2015
- May 2015
- June 2015
- July 2015
- Sept 2015
- Nov 2015
- June 2016

**Progress**

- Currently...
Results

Participants: Nursing Homes (NHs)

72 nursing homes (NHs) submitted a complete application file
Flanders = 50; Wallonia = 21; Bxl = 1

Duplicates excluded (N=9 NHs)

63 nursing homes
Flanders = 41; Wallonia =21; Bxl = 1

Intervention group
(N = 30 NHs)
Flanders = 18; Wallonia =11; Bxl = 1

- No coordinating physician (n=1)
- No GPs willing to participate (n=2)
- No willingness to continue (n=2)
- No willingness of new pharmacist (n=1)

Intervention group
(N = 24 NHs)
Flanders = 16; Wallonia = 8; Bxl = 0

Control group
(N = 33 NHs)
Flanders = 23; Wallonia = 10; Bxl = 0

- No GPs willing to participate (n=1)
- No willingness to continue (n=2)

Control group
(N = 30 NHs)
Flanders = 21; Wallonia = 9; Bxl = 0
Results

Participants: Health Care Professionals (HCPs) and Nursing Home Residents (NHRs)

<table>
<thead>
<tr>
<th>GROUP</th>
<th>REGION</th>
<th>HCPs</th>
<th>NHRs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Flanders</td>
<td>133</td>
<td>27</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Wallonia</td>
<td>66</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>199</td>
<td>45</td>
<td>121</td>
</tr>
<tr>
<td>Control group</td>
<td>Flanders</td>
<td>129</td>
<td>26</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Wallonia</td>
<td>66</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>195</td>
<td>37</td>
<td>80</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>394</td>
<td>82</td>
<td>201</td>
</tr>
</tbody>
</table>
Results

Development and implementation of a blended learning program

E-learning

Educational material

- Fiches
- Algorithm
- Shortlist STOPP/START-criteria
Results

Development and implementation of a blended learning program

E-learning

Educational material

- Fiches
- Algorithm
- Shortlist STOPP/START-criteria

‘On site’ training

Specific training for pharmacists and for nurses
Participation rate blended learning: per profession

- 84% (21/25)
- 39% (77/199)
- 78% (35/45)
- 64% (78/121)
- 88% (22/25)
- 36% (71/199)
- 71% (32/45)
- 90% (109/121)
## Results

### Participation rate blended learning: per nursing home

<table>
<thead>
<tr>
<th></th>
<th>Wallonia</th>
<th>Flanders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MCC/CRA</strong></td>
<td><img src="image" alt="1 1 1 1 1 1 1 1 1" /></td>
<td><img src="image" alt="1 1 1 1 1 1 1 1 1" /></td>
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<td><strong>GPs</strong></td>
<td><img src="image" alt="4 9 1 3 4 4 1 9" /></td>
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<tr>
<td><strong>Pharm.</strong></td>
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<td><img src="image" alt="2 1 1 1 1 2 4 2 1" /></td>
</tr>
<tr>
<td><strong>Nurses</strong></td>
<td><img src="image" alt="5 7 1 1 3 8 3 2" /></td>
<td><img src="image" alt="5 4 2 3 3 4 8 2 2 8 7 5 5 2 7 23" /></td>
</tr>
</tbody>
</table>
Satisfaction blended learning

«After going through this e-learning platform, my knowledge has improved about how to perform a interdisciplinary medication review»

3/115 «Disagree» or «fully disagree»

112/115 «Agree» or «fully agree»
Results

Satisfaction blended learning

« I will use what I learned through this e-learning platform outside the Come On study »

« Agree » or « fully agree »
113/115

« Disagree » or « fully disagree »
2/115
Results

Satisfaction blended learning

« Generally spoken, I appreciated to attend this particular face-to-face session »

- « Agree » or « fully agree »: 114/119
- « Disagree » or « fully disagree »: 5/119
Results

Development of material for local concertation

Purpose of local concertation

- Initiate teamwork and communication between HCPs in the same NH
- Reach consensus on the appropriate use of one class of medication within each NH
- Evaluate implementation of consensus and adapt where needed

Local concertation within Come On

- Material developed
- Minimum 2 local concertations
Development of algorithm to detect PIMs and PPOs

Primary outcome: Difference of PIMs/PPOs between baseline and end of study between intervention and control group

Identification of potentially inappropriate medication (PIMs/PPOs) using:
- STOPP criteria (version 2)
- START criteria (version 2)
- Beers criteria (2015)

Development of an algorithm for the automatic detection of PIMs/PPOs within the database

Validation by experts (geriatricians, general practitioners, pharmacists)
Results

Development of a DRP classification tool

<table>
<thead>
<tr>
<th>RESIDENT-LEVEL (secondary outcomes)</th>
<th>Outcomes of case conferences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type of identified DRPs and planned interventions</td>
</tr>
<tr>
<td></td>
<td>Mean/median number of DRPs per NHR and per case conference</td>
</tr>
<tr>
<td></td>
<td>Proportion of interventions implemented at the next case conference</td>
</tr>
</tbody>
</table>

Identification of drug-related problems (DRPs) and implementation of interventions based on:
- GSASA tool
- PCNE classification
- Recent review
- Tool for classification of DRPs in clinical pharmacy

Development of a specific DRP-classification tool
Validation by experts (intrarater reliability, content validity,...)
Integration of DRP tool in software to support case conferences
### Perspectives

#### Results on...

<table>
<thead>
<tr>
<th>BASELINE</th>
<th>IMPACT OF INTERVENTION</th>
<th>PROCESS EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Medication use</td>
<td>- Appropriateness of prescribing</td>
<td>- Case conferences</td>
</tr>
<tr>
<td>- Appropriateness of prescribing</td>
<td>- Medication use</td>
<td>- Local concertation</td>
</tr>
<tr>
<td>- Influencing factors</td>
<td>- Clinical outcomes (hospitalisation, death)</td>
<td>- Training</td>
</tr>
</tbody>
</table>

Aim = validated recommendations
Thank you for your attention

Q&A

Veerle Foulon
Clinical Pharmacology and Pharmacotherapy, KU Leuven
veerle.foulon@pharm.kuleuven.be

Anne Spinewine
Louvain Drug Research Institute Clinical Pharmacy Research Group UCL
anne.spinewine@uclouvain.be
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- COME-ON consortium:
- NIHDI
- Pilot study: participants
- E-learning: actors, experts,...
- HCPs and NHRs of participating NHs
- ...
- ...
COME • ON

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