

# COPD ZORGPADEN: RESULTATEN VAN EEN EUROPESE STUDIE

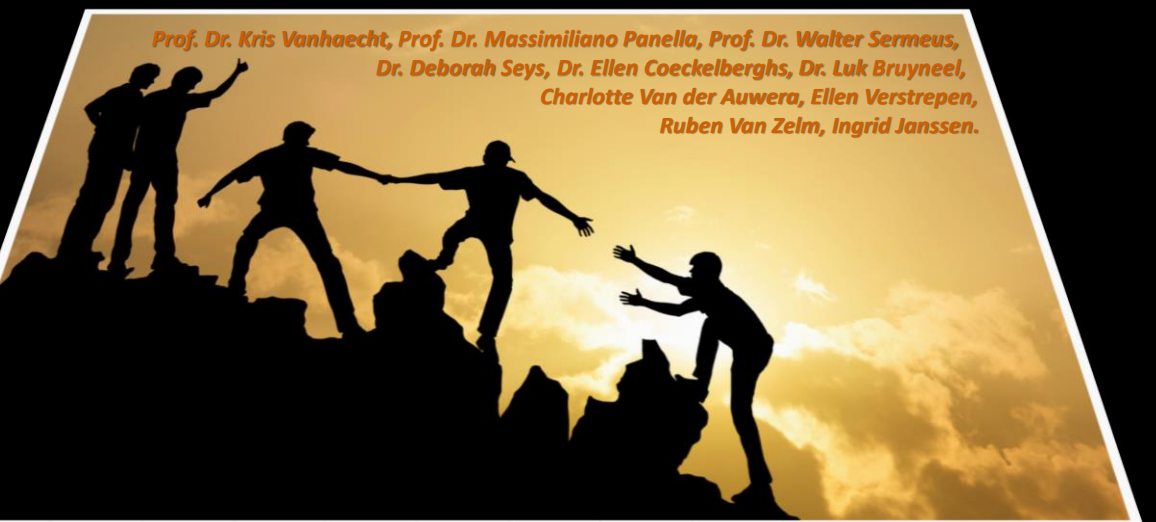


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KU Leuven



## E-P-A & NKP team

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Dr. Deborah Seys, Dr. Ellen Coeckelberghs, Dr. Luk Bruyneel,  
Charlotte Van der Auwera, Ellen Verstrepen,  
Ruben Van Zelm, Ingrid Janssen.*



## OVERALL EFFECT OF CP ?

- **Positive** effects of Cochrane review (Rotter et al. 2010):

- Lower length of stay
- Lower costs
- Documentation of care ↑
- In-hospital complications ↓

- **Inconclusive** effects:

- Adherence to guidelines (Panella et al. 2010, Dykes et al. 2005, Garin et al. 2012)
- Quality of life (Kwan 2007)
- Mortality (Panella et al. 2012)
- Readmission (Markar et al. 2015)

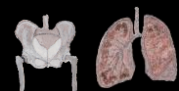
**Current limitations:**

- Variation in key interventions
- Variation in indicators
- Unclear change strategy
- Weakly study designs

European Quality of Care Pathways study

## EUROPEAN QUALITY OF CARE PATHWAYS (EQCP) STUDY

- Launched with an unrestricted grant from Pfizer S.A. to E-P-A
- Aim: to study impact of CP on:
  - Variation in care
  - Adherence to guidelines, Patient outcomes & Teamwork
  - Mechanisms behind impact
- Belgium, Italy and Portugal (+Ireland)
- In-hospital management of 2 conditions
  - Acute exacerbation of **Chronic Obstructive Pulmonary Disease** (COPD)
  - **Proximal Femur Fracture** (PFF)
- Study on variation / adherence / outcomes = Disease Specific
- Study on teamwork = COPD & PFF



# THE BASICS: 8 STEP & 7 PHASE METHOD

Lodewijckx et al. *Trials* 2012, **13**:229  
http://www.trialsjournal.com/content/13/1/229

**TRIALS**

**METHODOLOGY** Open Access

## Eight-step method to build the clinical content of an evidence-based care pathway: the case for COPD exacerbation

Cathy Lodewijckx<sup>1,2,3\*</sup>, Marc Decamer<sup>1,4</sup>, Walter Sermeus<sup>1,3</sup>, Massimiliano Panella<sup>5,3</sup>, Svin Deneckere<sup>3,3</sup> and Kris Vanhaecht<sup>1,5\*</sup>

1. Specification of the care population & composition of an expert panel	<ul style="list-style-type: none"> <li>Population: patients hospitalised with COPD exacerbation</li> <li>Panel: Respiratory physician, physiotherapist, clinical nurse specialist, epidemiologist, two experts in patient care management</li> </ul>
2. Literature review & identification of clinical activities and outcomes	<ul style="list-style-type: none"> <li>Selected literature: guidelines (n=3); care maps (n=2); reviews (n=2)</li> <li>Identified clinical activities: n=58</li> <li>Identified outcomes: n=34</li> </ul>
3. International Delphi study: Rating of content validity	<ul style="list-style-type: none"> <li>Process indicators with content validity &gt; 75%: n=1722 (96.1%)</li> <li>Outcome indicators with content validity &gt; 75%: n=1021 (47.6%)</li> </ul>
4. Final selection of clinical activities & grading of evidence	<ul style="list-style-type: none"> <li>Additional clinical activities suggested by experts: n=19</li> <li>Final selected clinical activities: n=77</li> <li>Grading: A: 39.0%; B: 50.6%; C: 1.2%; D: 6.0% †</li> </ul>
5. Process flow chart: Categorisation of clinical activities into key interventions & subcomponents	<ul style="list-style-type: none"> <li>77 clinical activities =&gt; 38 key interventions = subcomponents</li> <li>Process flow chart: 3 core processes</li> </ul>
6. Detailed description of each key intervention: rationale, description, references and grading	<ul style="list-style-type: none"> <li>Manual with process flow chart and 38 detailed key interventions</li> </ul>
7. Translation into a set of process and outcome indicators	<ul style="list-style-type: none"> <li>Set of indicators: n=24 process and 15 outcome indicators</li> <li>Baseline measures: n=23 baseline variables</li> </ul>
8. Piloting by multidisciplinary teams in different organisations	<ul style="list-style-type: none"> <li>Piloting by nine in-hospital multidisciplinary COPD teams</li> </ul>

Figure 1 Eight-step method for development of the clinical content of an evidence based care pathway: the case for COPD exacerbation.

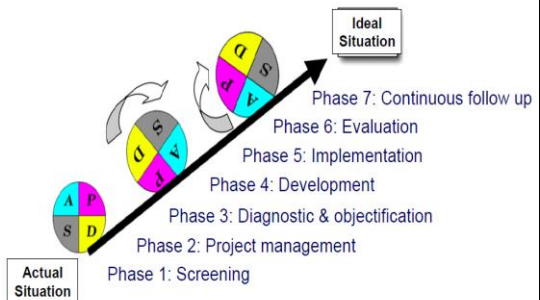
The International Journal of Person Centered Medicine Vol 2 Issue 3 pp 341-351

ARTICLE

## The 7-phase method to design, implement and evaluate care pathways

Kris Vanhaecht RN MSc PhD<sup>a</sup>, Eva Van Gerven MSc<sup>b</sup>, Svin Deneckere RN MSc<sup>c</sup>, Cathy Lodewijckx RN MSc<sup>d</sup>, Ingrid Janssen MSc<sup>e</sup>, Ruben van Zelm RN MSc<sup>f</sup>, Paulo Boto MSc PhD<sup>g</sup>, Rita Mendes MSc<sup>h</sup>, Massimiliano Panella MD MPH PhD<sup>i</sup>, Eva Biringer MD PhD<sup>j</sup> and Walter Sermeus RN MSc PhD<sup>k</sup>

Figure 1 The 7-Phase method

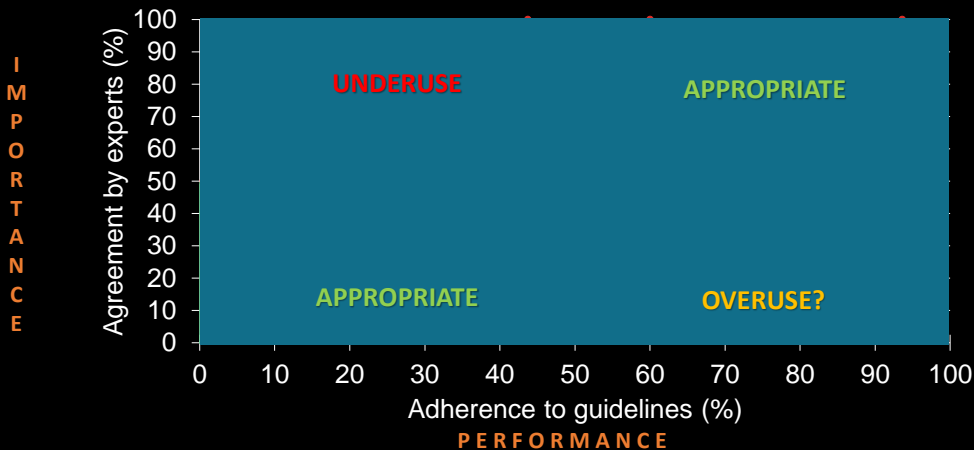


## AIMS OF EQCP STUDY

1. Understand **variation** within & between hospitals
2. What is the **impact** of CP on:
  - adherence to guidelines
  - patient outcomes
  - multidisciplinary teamwork
3. What are **mechanisms** behind the effect ?

## IMPORTANCE & PERFORMANCE

Agreement by experts & Adherence to guidelines



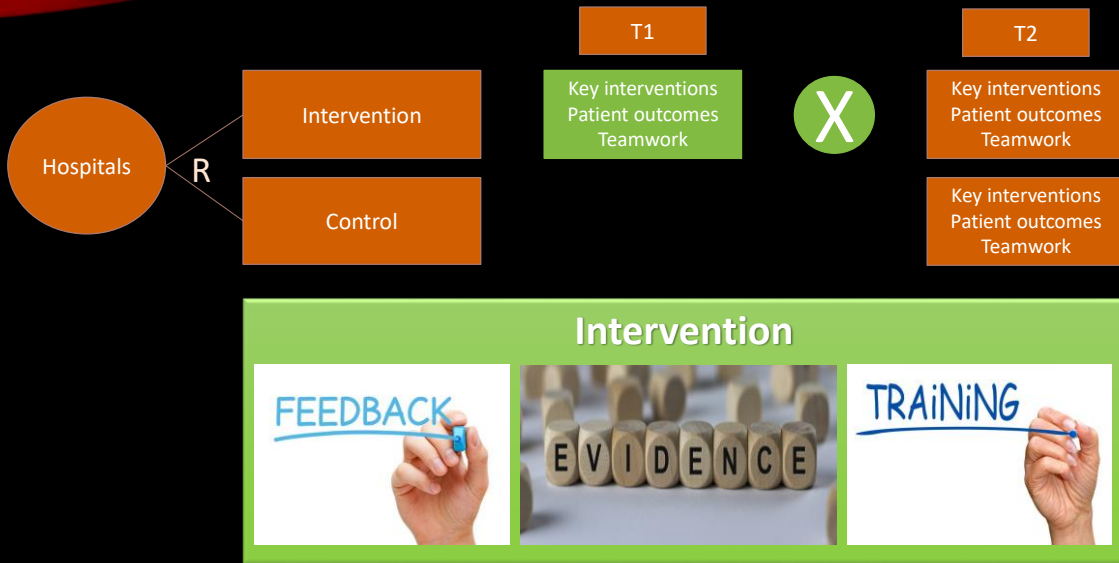
Seys, D., Bruyneel, L., Decramer, M., Lodewijckx, C., Panella, M., Sermeus, W., Boto, P., Vanhaecht, K. (2017).  
An International Study of Adherence to Guidelines for Patients Hospitalised with a COPD Exacerbation.  
*COPD*, 14 (2), art.nr. 10.1080/15412555.2016.1257599, 156-163



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## DESIGN EQCP STUDY: CLUSTER RCT (cRCT)



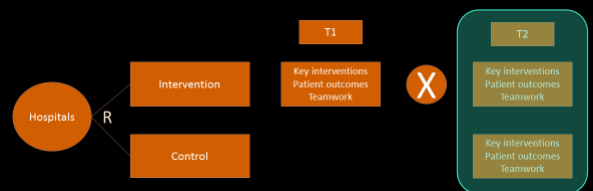
## IMPACT ON ADHERENCE & PATIENT OUTCOMES?

### Methods:

- Intervention group: 168 patients (11 hospitals)
- Control group: 174 patients (11 hospitals)

### Collected data:

- Patient record analysis
- Adherence to guidelines: 24 key interventions
  - Diagnostic management (n=5)
  - Pharmacological management (n=4)
  - Non-pharmacological management (n=15)
- Patient outcomes
  - Mortality
  - Readmission
  - Length of stay



## IMPACT ON TEAMWORK?

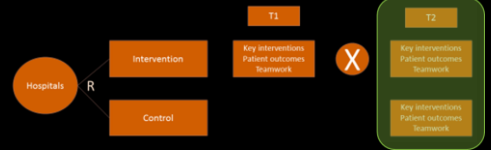
### No difference between COPD and PFF

Methods: COPD and PFF teams

- Intervention group: 567 team members (31 hospitals)
- Control group: 417 team members (25 hospitals)

Main collected team data:

- *Team processes*:
  - *Team climate for innovation* (Anderson et al., 1998):  
Team vision, participative safety, task orientation and support for innovation
  - *Relational coordination* (Gittell et al., 2000):  
Quality and strength of team communication and team relationships within teams
- *Team outcomes*
  - *Level of organized care* (Vanhaecht et al., 2007):  
Care Process Self-Evaluation Tool
  - *Risk of burnout* (Schaufeli et al., 2000):  
Emotional exhaustion, mental detachment and level of competence



## AIMS OF EQCP STUDY

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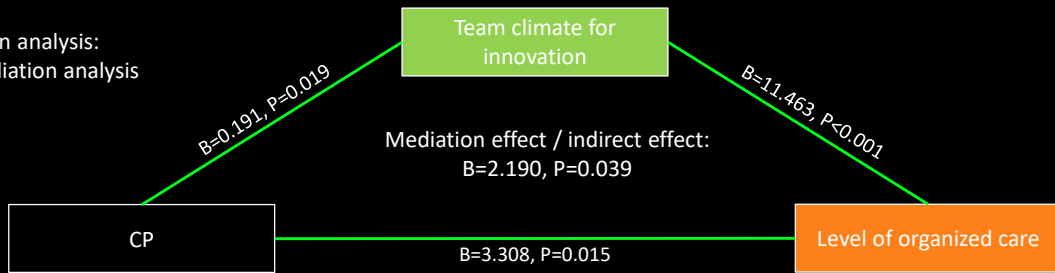
# MECHANISMS BEHIND EFFECT? ON TEAMWORK

## Methods: COPD and PFF teams

Intervention group: 567 team members (31 hospitals)  
Control group: 417 team members (25 hospitals)

**Indirect effect:** team climate for innovation on the association between CP and level of organized care

Mediation analysis:  
final mediation analysis



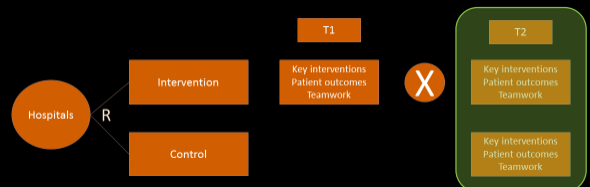
**Direct effect:** association between CP and level of organized care

# MECHANISMS BEHIND EFFECT? ON PATIENT OUTCOMES

## ONLY for patients with COPD (PFF NO impact CP on patient outcomes)

### Methods:

- 19 hospitals
  - 257 patient data:
    - Intervention group: 145 patients in 10 hospitals
    - Control group: 112 patients in 9 hospitals
  - 284 team data:
    - Intervention group: 152 team members
    - Control group: 132 team members

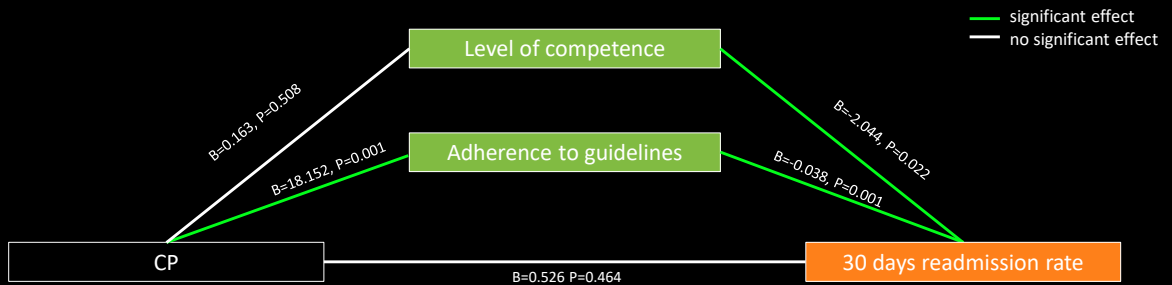


## MECHANISMS BEHIND EFFECT? ON PATIENT OUTCOMES

### Two-level mediation analysis:

Full mediation as:

- 1) Indirect effect: adherence to guidelines significant impact on the association between CP and 30 days readmission
- 2) Direct effect of CP on 30 days readmission no longer significant



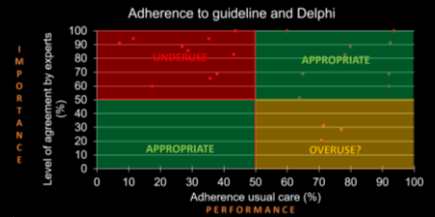


# THINGS 2 REMEMBER (1)

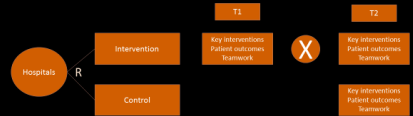
- Care Pathways = STANDARDIZATION



- Importance Performance Analysis = Room 4 Improvement



- cRCT on COPD & TEAM = Process Indicators
- Outcome Indicators
- Team Indicators



# THINGS 2 REMEMBER (2)

## Care Pathway

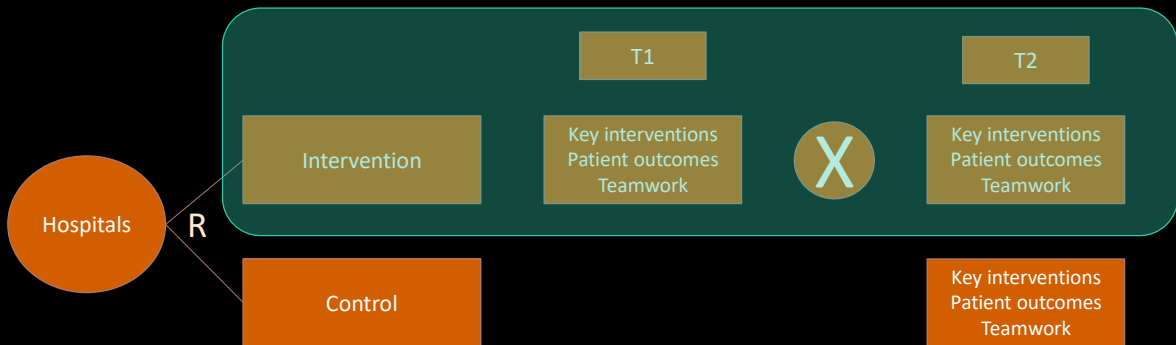


## POSITIVE RESULTS

### Care Pathway Development & Implementation

COMPONENTS	MUSIC SCORE	ORCHESTRA	STANDING OVATION
KEY-INTERVENTIONS	CARE PATHWAY DOCUMENT	MULTIDISCIPLINARY TEAMWORK	OPTIMAL OUTCOMES SATISFIED PATIENT

## DESIGN EQCP STUDY: WHAT IF ...



**KU LEUVEN**

LEUVENS INSTITUUT  
VOOR GEZONDHEIDSZORGBELEID

## Netwerk Klinische Paden

Het **Netwerk Klinische Paden (NKP)** is een initiatief van het Leuven Instituut voor GezondheidszorgBeleid, **KU Leuven**. Het NKP werd in maart 2000 gestart met als doel de **ontwikkeling, implementatie en evaluatie van zorgpaden** binnen zorgorganisaties te ondersteunen. Aanvankelijk waren 8 acute Vlaamse ziekenhuizen lid van het Netwerk, in 2017 telt het Netwerk **57 zorgorganisaties uit België en Nederland**.

Algemene, psychiatrische en gespecialiseerde ziekenhuizen, alsook eerstelijnsorganisaties kunnen aansluiten bij het Netwerk. U vormt een coördinatieteam en bepaalt welke zorgpaden u uitwerkt. Wij leveren, samen met andere leden van NKP, de nodige wetenschappelijke expertise & ervaring.

**Meer info: [www.nkp.be](http://www.nkp.be)**

## KENNIS VERMENIGVULDIG JE DOOR TE DELEN

### TRAINING:

Een breed opleidingsaanbod, gaande van in-company lezingen tot een Masterclass voor staffunctionarissen waarbij altijd het "all teach, all learn" principe wordt toegepast. Kennis vermenigvuldigt je door te delen.

### WETENSCHAP:

Academisch master- en promotieonderzoek zorgt voor innovatie binnen het Netwerk. We ontwikkelen samen tools en methoden voor de organisatie en opvolging van zorgprocessen.



### INTERVISIE:

Meermaals per jaar vinden bijeenkomsten plaats te Leuven of Utrecht waarbij de contactpersonen kennis ontwikkelen, verspreiden en borgen tijdens meetings, workshops en werkgroepen.

### INTERNATIONAAL:

Het Netwerk is mede-oprichter van de European Pathway Association, wat ons in het middelpunt zet van een internationaal netwerk van experts en onderzoekscentra. Samen blijven we up-to-date over de nieuwste evidentie en trends.

## MORE INFORMATION

	COPD	Team
1) Protocol	Vanhaecht et al. 2010	Deneckere et al. 2013
2) Systematic review	Lodewijckx et al. 2011	Deneckere et al. 2012
3) International Delphi	Lodewijckx et al. 2013	Deneckere et al. 2011
4) Implementation	Lodewijckx et al. 2012	Seys et al. 2013, Seys et al. 2017a
5) National feedback report	EPA report 2012 and 2014	EPA report 2012 and 2014
6) Adherence to guidelines	Seys et al. 2017b	NA
7) Impact of CP	Vanhaecht et al. 2016	Seys et al. under review 2018a
8) Understanding CP	Seys et al. under review 2018b	Seys et al. under review 2018a Seys et al. under review 2018b

**Prof. Dr. Kris Vanhaecht**

[www.ligb.be](http://www.ligb.be) [www.nkp.be](http://www.nkp.be) [www.E-P-A.org](http://www.E-P-A.org) [www.krisvanhaecht.be](http://www.krisvanhaecht.be)

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