



**Work package 6, task 2:**  
**Review existing care (pathway)**  
**approaches for multi-morbidity patients**

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## Two activities:

1. provide an **overview of integrated care programs** targeting patients with multimorbidity in European countries
2. provide a **review of the evidence on the effectiveness** of integrated care programs targeting patients with multimorbidity

## Part 1: overview of integrated care programs

Relevant programs in European countries identified in two ways:

- by a survey among country-experts of 31 European countries participating in the **ICARE4EU project**;
- by asking **WP6 partners** to send information about integrated care programs they knew to us

## ICARE4EU: criteria to include programs

- Focus on providing care for adult people with multimorbidity\* (or contain specific elements for this target group)
- Involve medical service(s)
- Involve a formal cooperation between at least two services
- Should be evaluable in some way
- Operational in 2012, 2013, 2014 or 2015

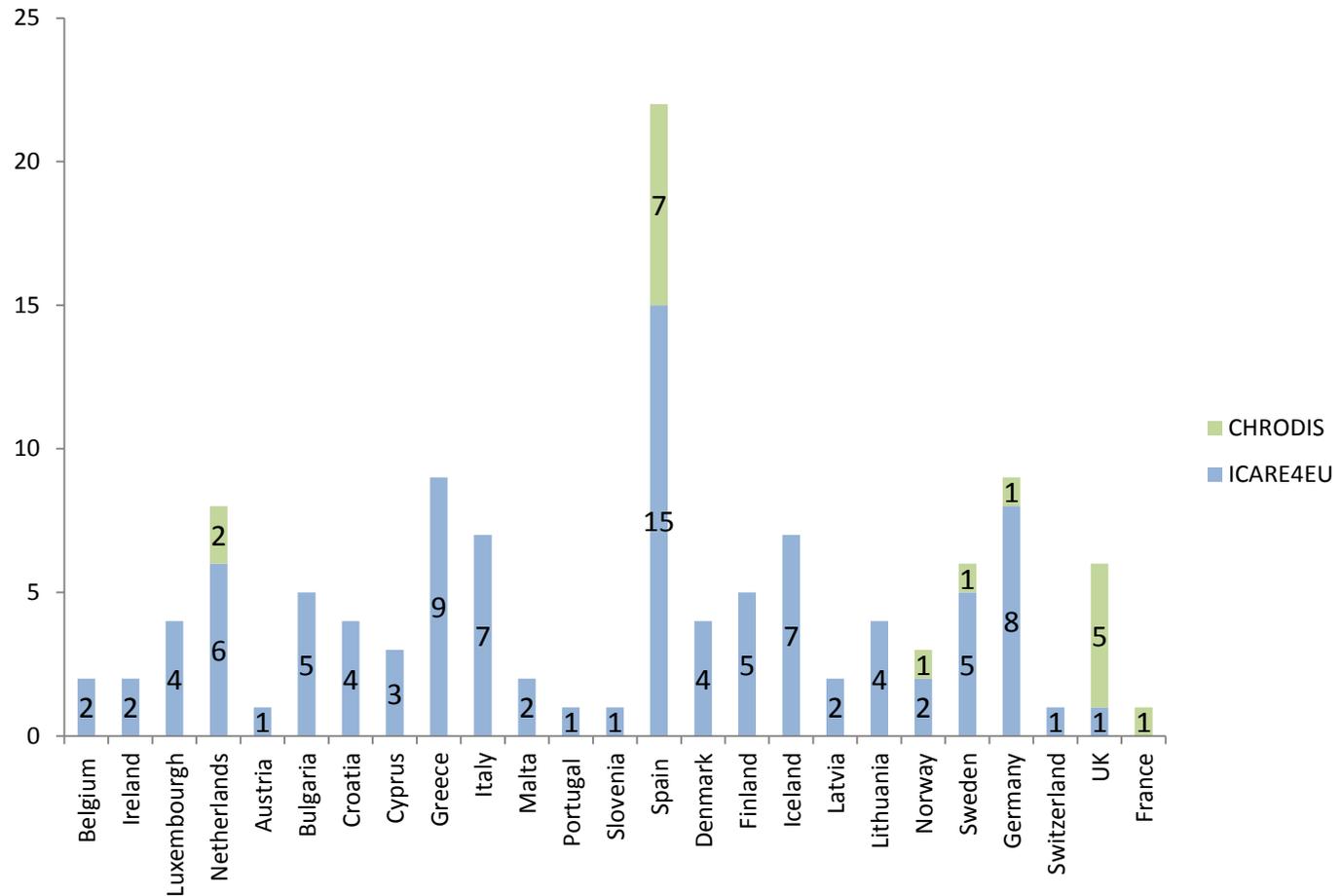
\* Multimorbidity defined as: at least two medically (i.e. somatic, psychiatric) diagnosed chronic (not fully curable) or long-lasting (> 6 months) diseases, of which at least one with a primarily somatic/physical nature.

## WP6 CHRODIS: criteria to include (additional) programs

- Focus on providing care for adult people with multimorbidity or/and frail elderly\*
- Program within healthcare
- Integrated care program, i.e. involve a (formal) cooperation between at least two services
- Operational in 2014 or finished in 2009 or later

\* Also included were programs providing care for so-called 'complex chronic patients', patients with 'co-morbidity' or 'pluripathology'. Excluded were programs focusing on patients with 'multiple medications', in which it was not clear whether this concerned multimorbidity patients or patients with one chronic disease.

Number of integrated care programs with a multimorbidity focus via ICARE4EU (N=101) and CHRODIS (N=18, not already identified via ICARE4EU)



Source: Noordman et al., 2015



## **Innovative health care approaches for patients with multi-morbidity in Europe**

*The availability of integrated care programmes including care pathways, and/or addressing poly-pharmacy and patient adherence, for patients with multiple chronic conditions in 31 European countries*

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## Example of program description in report:

<b>Programme 1</b>	
<b>Name</b>	MACVIA-LR (Multimorbid clinic for chronic diseases)
<b>Country</b>	France
<b>European/national/regional or local</b>	Regional (Languedoc Roussillon: Montpellier, Nîmes)
<b>Date</b>	2013-2015
<b>Initiated by</b>	Combattre les Maladies Chronique pour un Vieillissement Actif en Languedoc Roussillon.
<b>Aim(s) of the programme</b>	To reduce avoidable hospitalizations for chronic diseases in the elderly by 20% in 2020 and increase in Health Life Years (HLY) and Quality of Life (QOL) (full MACVIA-LR project). Specific objectives are the number of patients included in primary care (including remote areas).
<b>Population</b>	Patients with multi/comorbid chronic diseases and/or falls. Aimed at adults and the elderly.
<b>Care pathways</b>	Integrated pathways for chronic diseases have been initiated in hospitals (secondary care) and remote rural areas (primary care, end 2013). They include multi-sectorial care.
<b>(Perceived) outcomes</b>	Evaluations will be carried out every 2 years. Reduce avoidable hospitalisations, increase in Health Life Years (HLY) and Quality of Life (QOL).

Source: Noordman et al., 2015

## Data collection ICARE4EU:

Program-level (online) survey with additional questions for CHRODIS-JA about integrated care programmes addressing or including:

- Care pathways\* for multimorbid patients
- Polypharmacy
- Patient adherence to (medical) treatment

\*A care pathway is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help patients with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes.

## Integrated care programs for multimorbid patients

Implementation level (N=101)	n/%
Local	29
Regional	30
National	14
Local / regional as part of a national program	18
National as part of an international program	7
Inter-/supra-national	3

Source: van der Heide et al. (available at [www.icare4eu.org](http://www.icare4eu.org) in July 2015) in Noordman et al., 2015

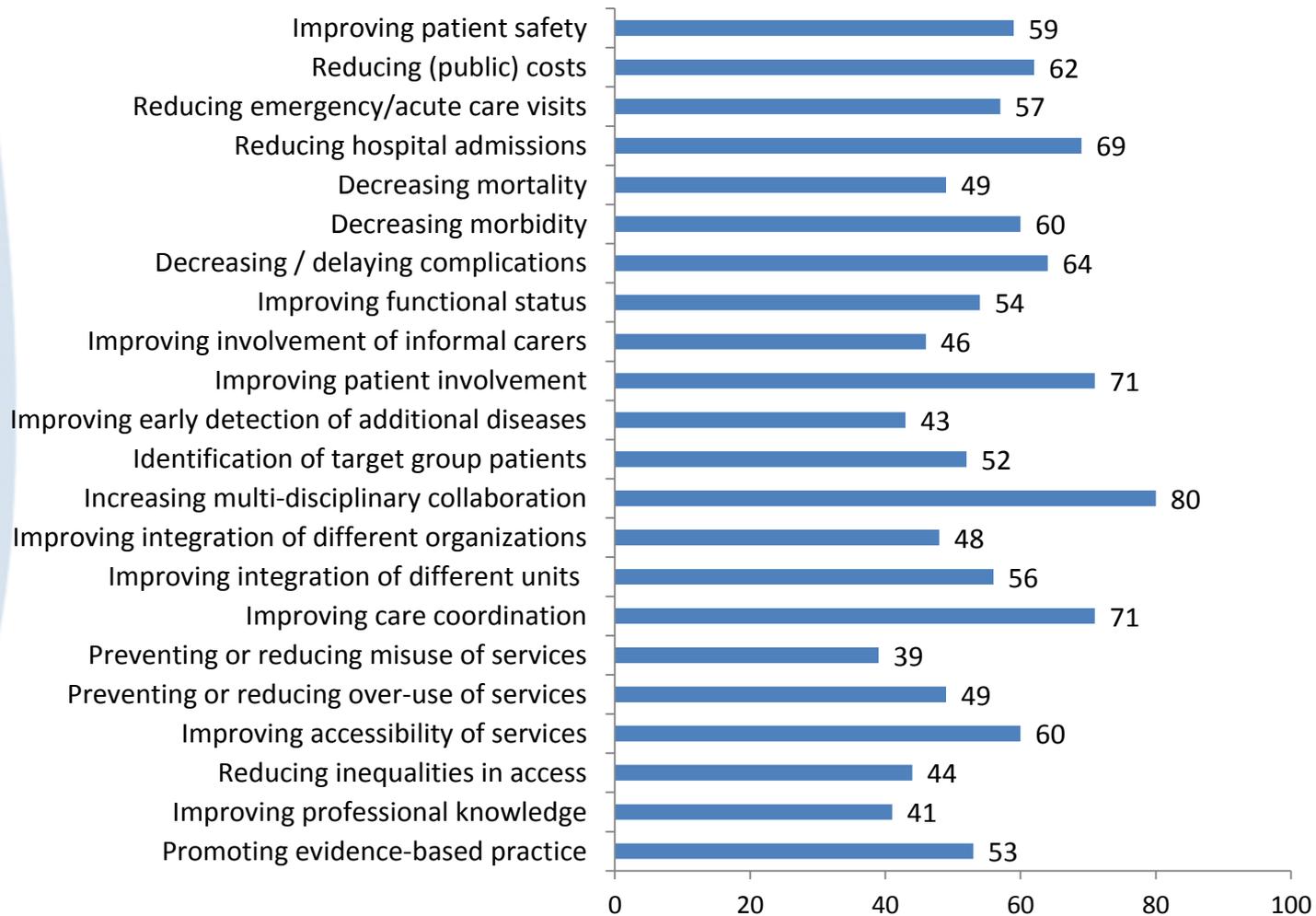
## Integrated care programs for multimorbid patients

Patient group (N=101)	n/%
Multimorbidity in general	58
Specific diagnosis (index disease)* with a variety of co-morbidities	28
A combination of specific diagnoses**	14

\* mainly diabetes, ischemic heart disease, heart failure, renal disease, hypertension, asthma, COPD, depression

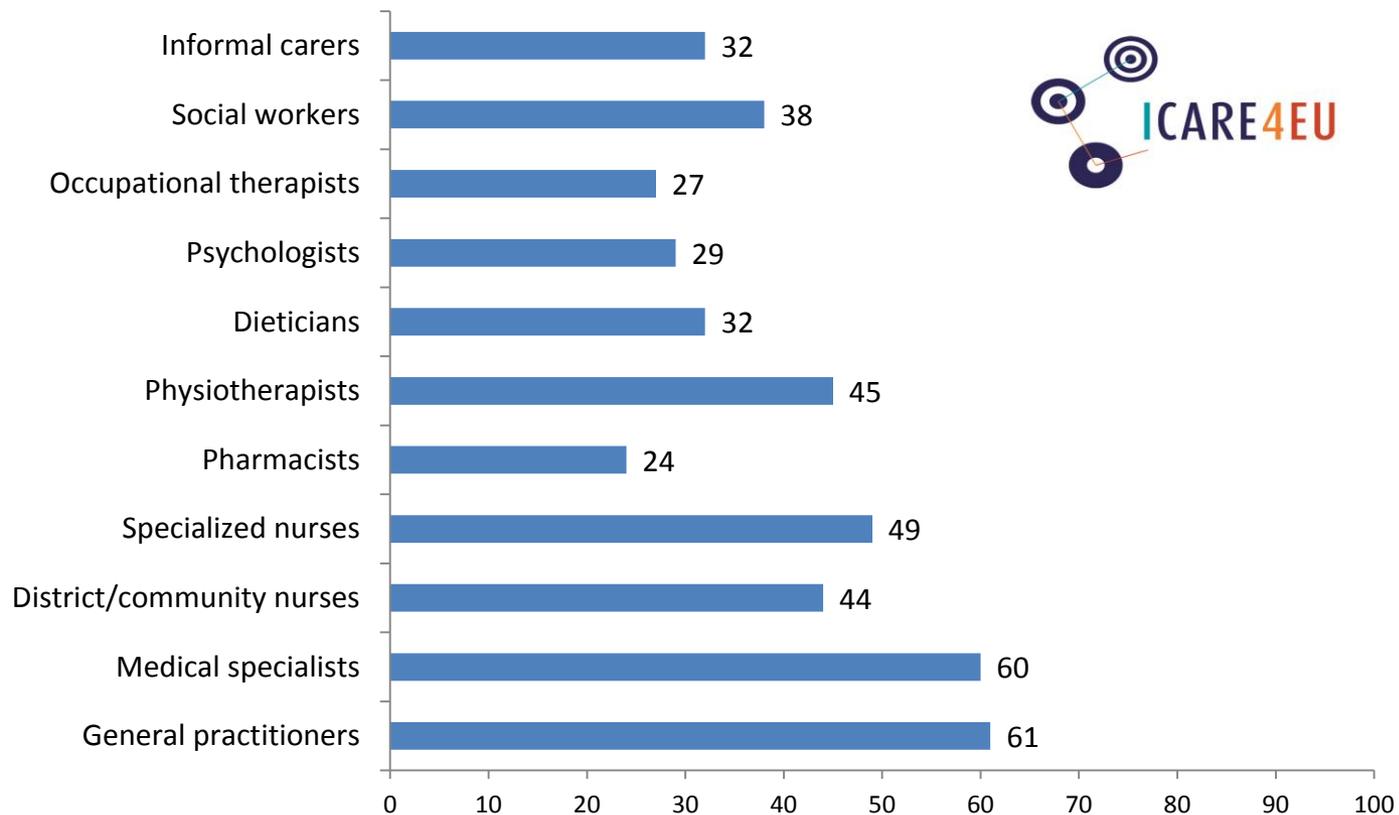
\*\* as above, but also cancer, HIV, dementia, arthritis

# Integrated care programs for multimorbid patients



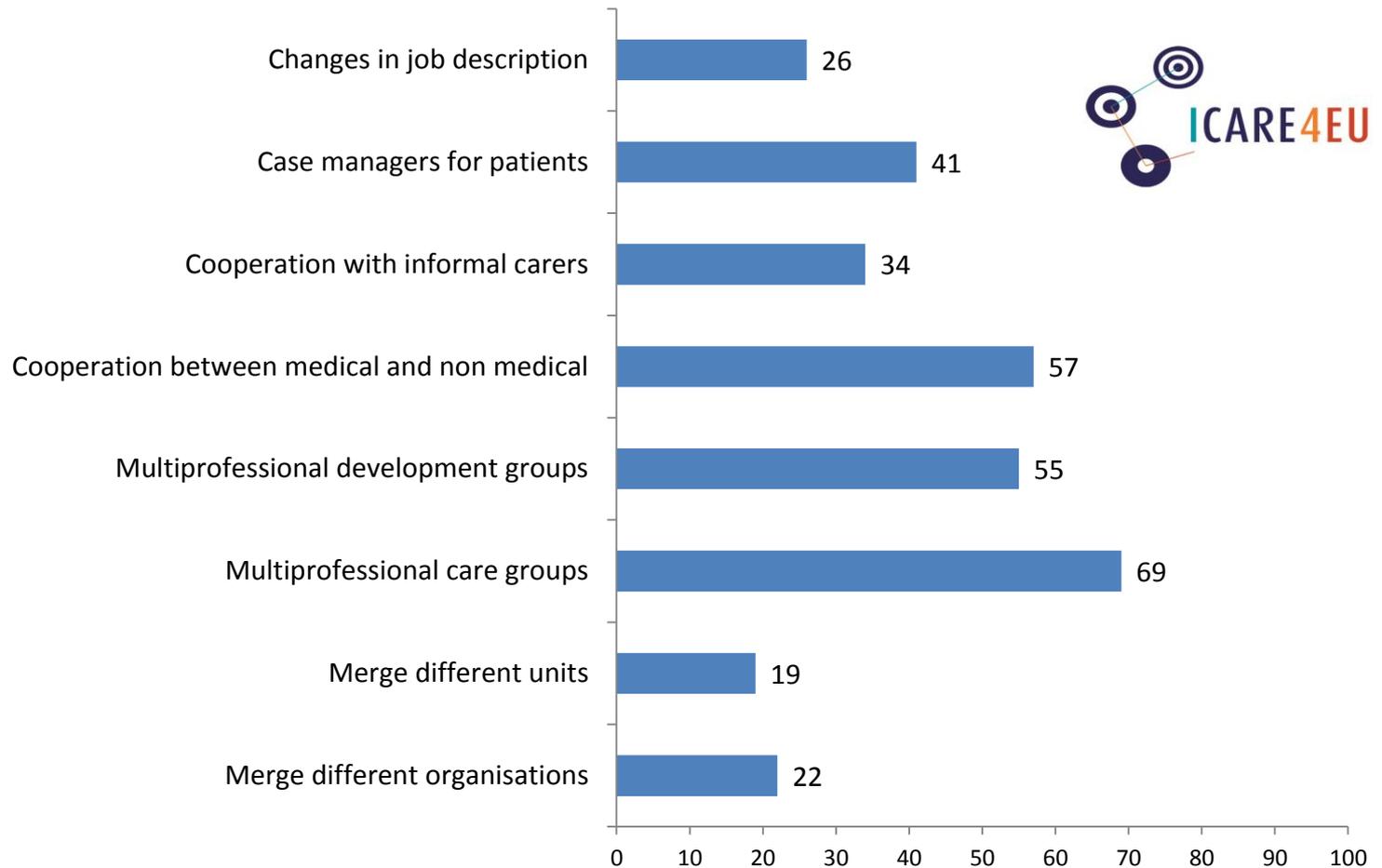
Source: van der Heide et al. (available at [www.icare4eu.org](http://www.icare4eu.org) in July 2015) in Noordman et al., 2015

## Care providers involved (N=101)



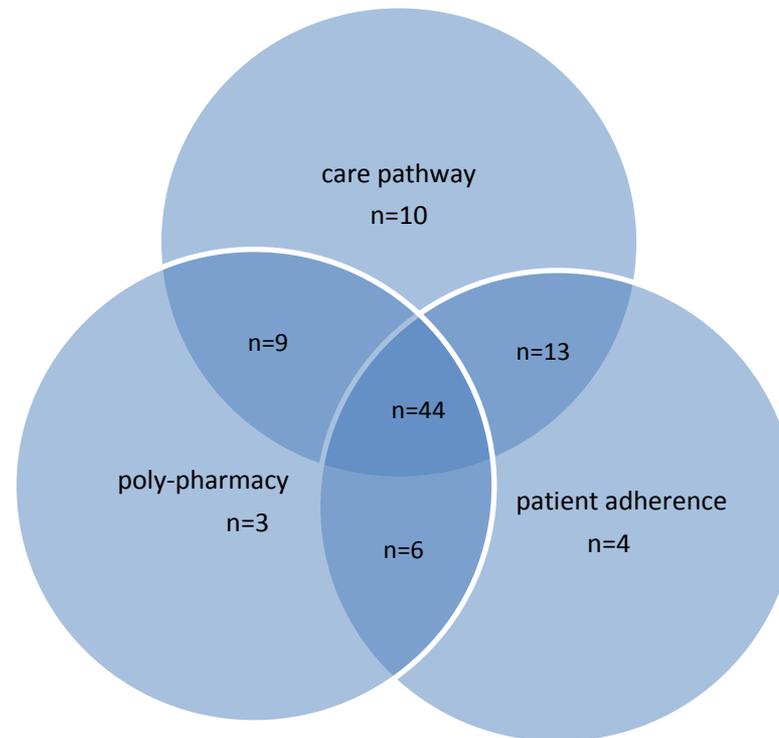
Source: van der Heide et al. (available at [www.icare4eu.org](http://www.icare4eu.org) in July 2015)  
in Noordman et al., 2015

# Organizational structures / activities established (N=101)



Source: van der Heide et al. (available at [www.icare4eu.org](http://www.icare4eu.org) in July 2015) in Noordman et al., 2015

# Pathways, polypharmacy and adherence(N=101)



Source: van der Heide et al. (available at [www.icare4eu.org](http://www.icare4eu.org) in July 2015) in Noordman et al., 2015

## Overview | *Some conclusions*

- 119 integrated care programs in 25 European countries that target patients with multimorbidity or frailty, or have a specific care approach developed for these patients.
- Common elements: patient-centredness, emphasis on coordination of care, improvement of collaboration and a focus on outcomes.
- Most programs not thoroughly evaluated yet. Six (non-controlled) studies show positive outcomes: patients' QoL, patient satisfaction with care, better care planning/referral, more appropriate prescribing.

Part 2:  
review of evidence on the effectiveness of  
integrated care programs for people with  
multimorbidity

## Systematic literature review paper

### Team:

- NIVEL, The Netherlands: Petra Hopman, Mieke Rijken
- Catholic University of the Sacred Heart, Italy: Giuseppe Tonnara, Graziano, Onder
- Carlos III University of Madrid, Spain: João Forjaz, Carmen Rodriguez Blazquez
  
- with
  
- National Institute for Public Health and the Environment, The Netherlands: Simone de Bruin, Lidwien Lemmens, Caroline Baan

## Review paper: *Previous review (2012)*



- January 1995 - January 2011
- 33 studies (4 European) → 28 CC programs
- Great heterogeneity of CC programs
- Therefore too early to draw firm conclusions regarding effectiveness

## Review paper: *Methods*

- Systematic literature search in multiple electronic databases for English language papers
- Published between January 2011 and March 2014
- Papers were eligible if:
  1. The program described in the paper met our operational definition of a **comprehensive care program** (Chronic Care Model; CCM, Wagner)
  2. The aim of the program was to treat patients with **multiple chronic conditions** and/or **frailty**
  3. The study described in the paper was an **intervention study** evaluating the effectiveness of a comprehensive care program.

## Review paper: *Results*

### *Study retrieval*

→ 2611 potentially relevant publications

↳ 80 full text articles retrieved

↳ 19 eligible papers

→ 1 paper through manual search

↳ total: 20 included papers /  
19 studies (CC programs)

## Review paper: *Results*

### *Study characteristics*

- Designs: RCT, pre-post test, cRCT, post test only, qRCT
- Sample sizes:  $n=47$  through  $n=1682$
- Length of follow-up: 11× maximally 12 months, 5 more than 12 months

### *Methodological quality of the studies*

- Two studies fulfilled all quality criteria (6)
- Four studies: minimum sum-score (0)

### *Usual care conditions*

- In two thirds of the studies ( $n=13$ ) the effects of CC programs were compared with those of care as usual (i.e. no CC)

## Review paper: *Results*

### *Program characteristics*

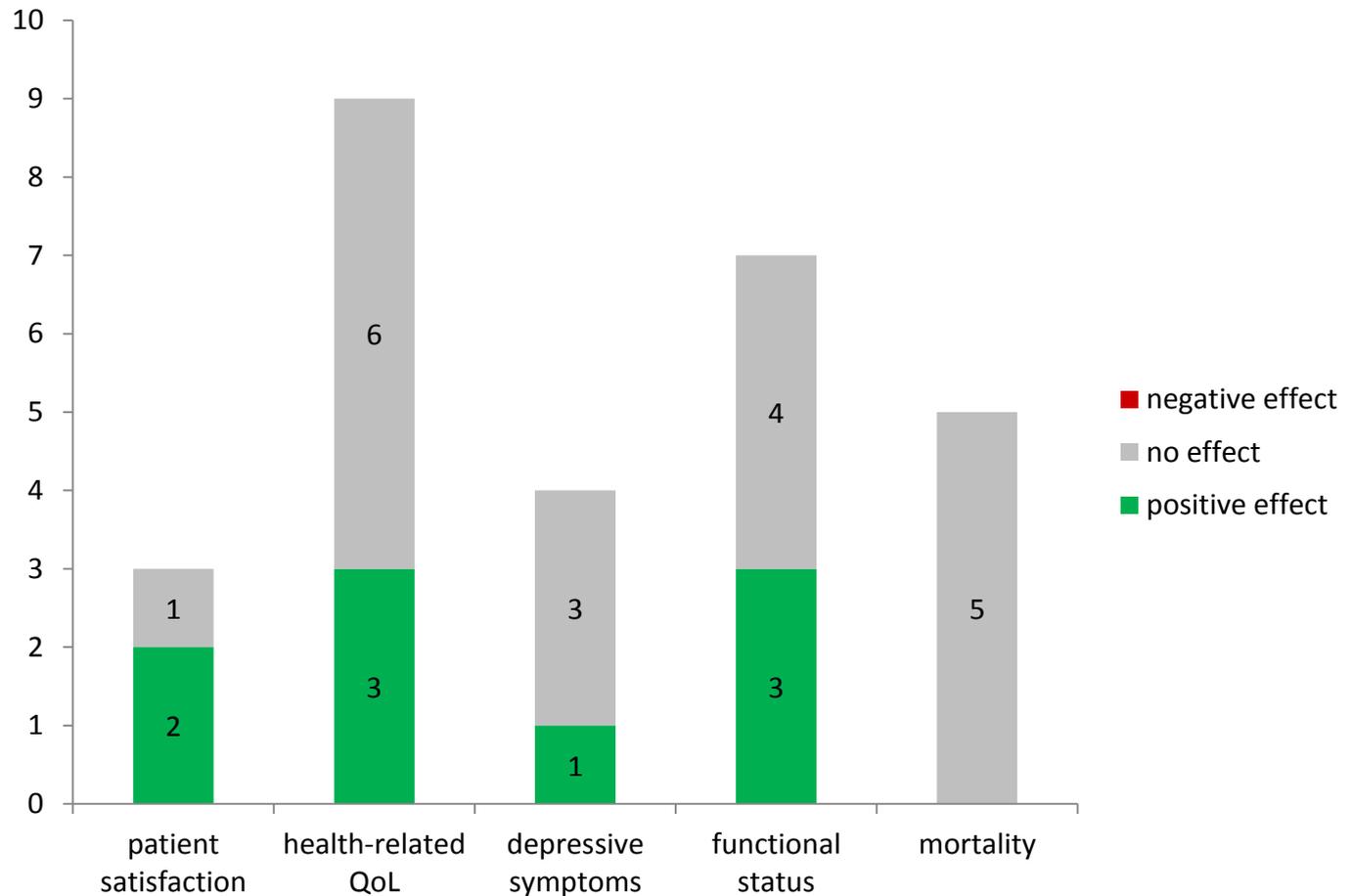
- 12× USA; 6× non-USA/non-European; 1× European
- 17× frailty; 2× multimorbidity
- Great variety of settings, different types of care
- Great diversity in the CC programs (i.e. number of related CCM components)

## Review paper: *Results*

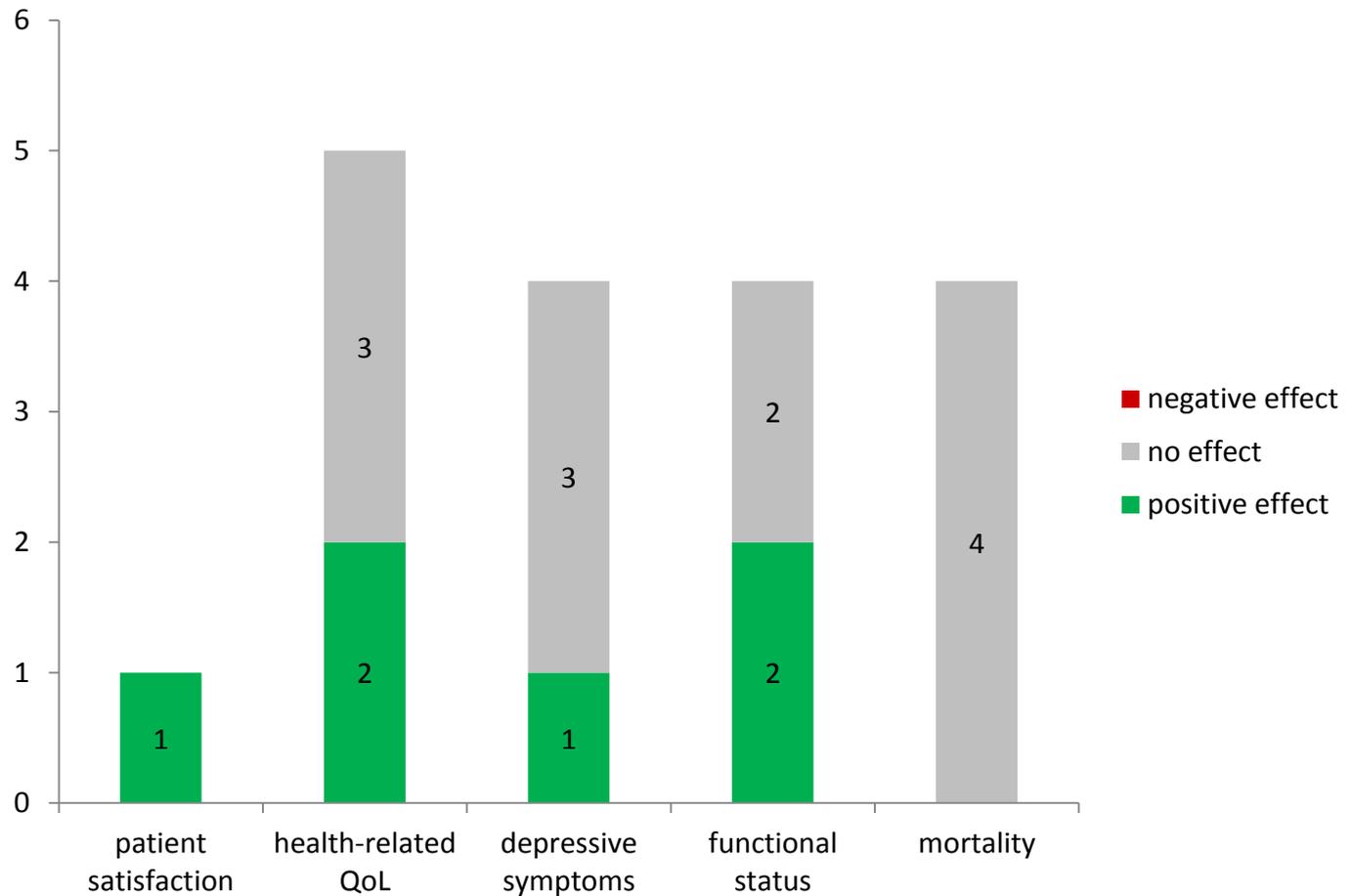
### *Impact of comprehensive care programs on ...*

1. Patient-related outcomes:
  - Patient satisfaction with care
  - Health-related quality of life
  - Depressive symptoms
  - Functional status
2. Mortality
3. Healthcare utilization
  - Primary care / GP visits
  - Other outpatient care
  - Inpatient care / hospital admissions
4. Costs

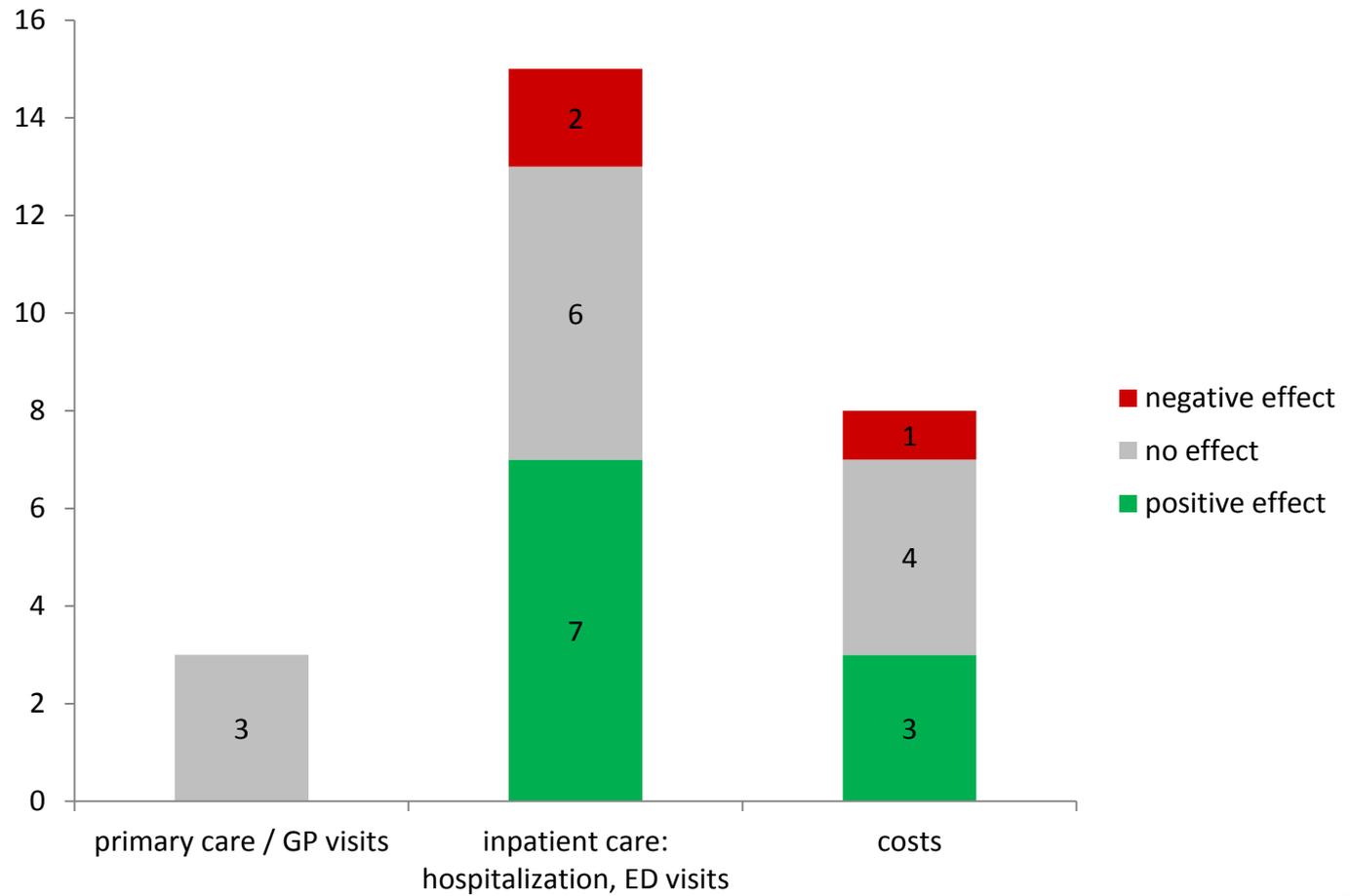
## Review paper: *Results of all studies included*



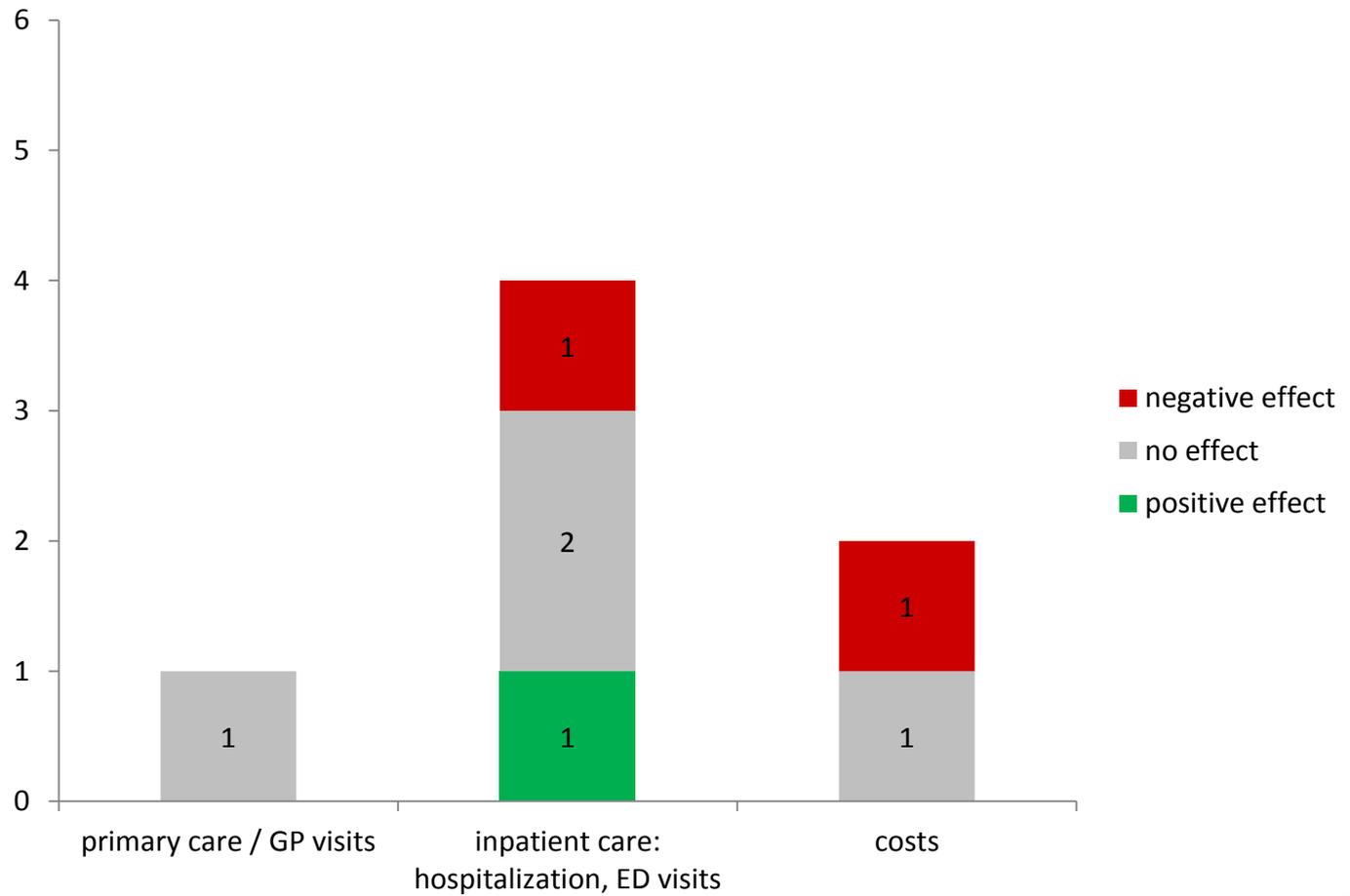
## Review paper: *Results of good/high quality studies*



# Review paper: *Results of all studies included*



## Review paper: *Results of good/high quality studies*



## Effectiveness | *Conclusions*

Providing integrated or comprehensive care to patients with multimorbidity or frailty ...

1. might result in better patient outcomes, but evidence is inconsistent,
  2. does not impact on mortality nor on the number of primary care/ GP visits,
  3. impact on the use of inpatient care or costs still very unclear.
- hardly any evidence about European programs
  - many more studies of good quality needed
  - heterogeneity in outcome measures → role for CHRODIS?!

# Thank you!

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THE JOINT ACTION ON CHRONIC DISEASES AND PROMOTING HEALTHY AGEING ACROSS THE LIFE CYCLE (JA-CHRODIS) HAS RECEIVED FUNDING FROM THE EUROPEAN UNION, IN THE FRAMEWORK OF THE HEALTH PROGRAMME (2008-2013).

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