SEVENTH FRAMEWORK PROGRAMME

# Integrated Care for people with COPD in Barcelona

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**Hospital Clínic**

# Moving towards Integrate Care

## Reasons / influences behind the choice

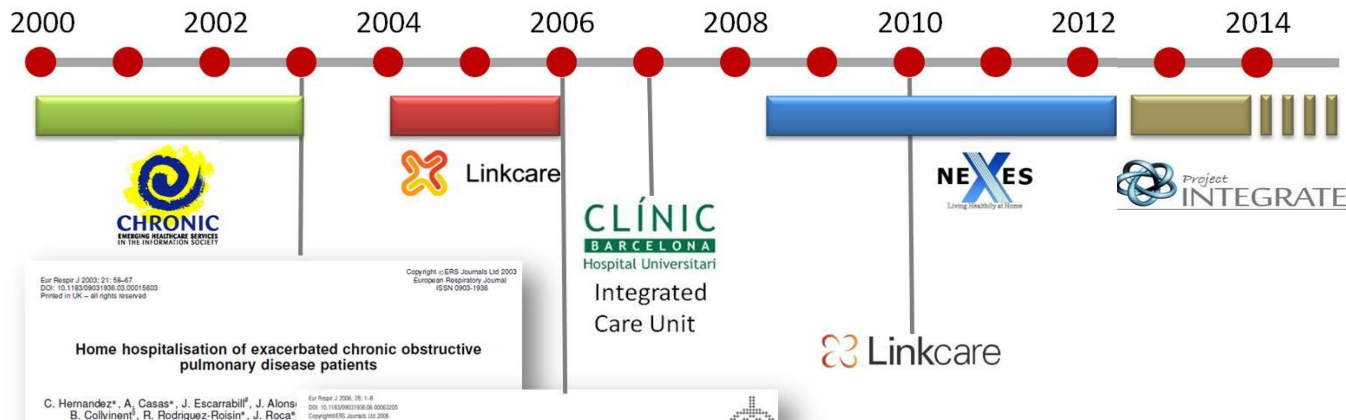
- A problem in allocation of resources: Seasonal exacerbations of COPD patients altering the surgical procedures planning in a tertiary university hospital.
- Poor management of exacerbated COPD patients: Up to 30% of patients discharged were readmitted in the following 8 weeks.

## Why and how this approach was adopted

- To reduce number of readmissions / need for emergency room care (decrease in direct costs)
- Diffusion of the work of Wagner and colleagues.
- Better management of COPD patients, holistic approach (co-morbidities, social issues, other…)

# Implementation overview

## Aspects of redesign and implementation

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**Home hospitalisation of exacerbated chronic obstructive pulmonary disease patients**

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Integrated care prevents hospitalisations for exacerbations in COPD patients

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ABSTRACT: Hospital admissions due to chronic obstructive pulmonary disease (COPD) exacerbations have a major impact on the disease evolution and costs. The current authors postulated that a simple and well-standardised, low-intensity integrated care intervention can be effective to prevent such hospitalisations.

Therefore, 155 exacerbated COPD patients (17% females) were recruited after hospital discharge from centres in Barcelona (Spain) and Leuven (Belgium). They were randomly assigned to either integrated care (IC; n=65; age mean±SD 70±9 yrs; forced expiratory volume in one second ($FEV_1$) 1.1±0.5 L, 43% predicted) or usual care (UC; n=90; age 72±9 yrs; $FEV_1$ 1.1±0.05 L, 41% pred). The IC intervention consisted of an individually tailored care plan upon discharge shared with the primary care team, as well as accessibility to a specialised nurse case manager through a web-based call centre.

After 12 months' follow-up, IC showed a lower hospitalisation rate (1.5±2.6 *versus* 2.1±3.1) and a higher percentage of patients without re-admissions (49 *versus* 31%) than UC without differences in mortality (19 *versus* 16%, respectively).

Milestones

2003 – Clinical pilot Home Hospitalisation in COPD patients

2006 – Clinical pilot prevention of exacerbations in COPD

2007 – Creation of the integrated care unit

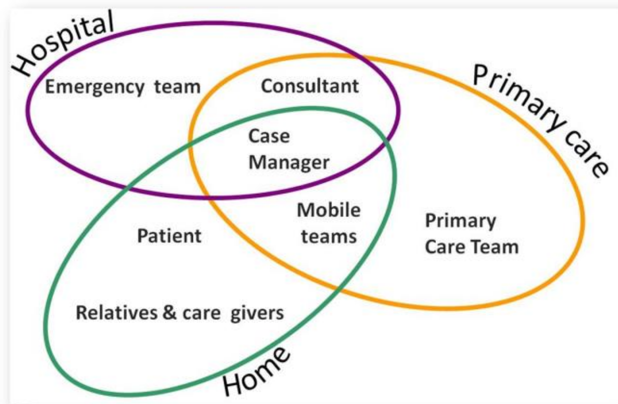
2010 – Creation of a spin-off Linkcare for the ICT solution

2013 – Comprehensive ICS (extended conditions), Introduction of rehabilitation

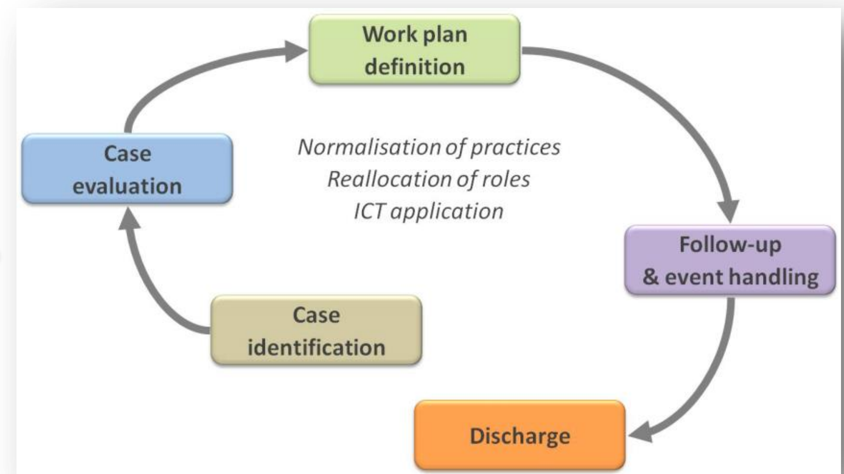
# Implementation overview

## Aspects of redesign and implementation

Creation of case managers (2000)



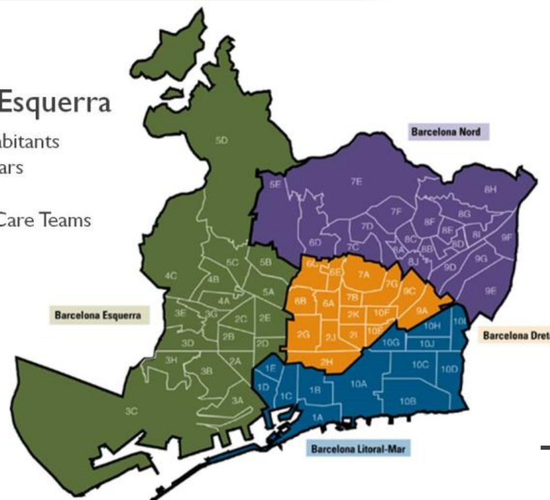

Concept of programmes / ICS (2007)




Barcelona Esquerra

534.955 inhabitants
21% > 65 years

19 Primary Care Teams
4 Hospitals




Territorial (2013)

# Integrated Care for COPD at present

- The term most often used is Integrated Care Service (ICS).
- It is defined as a set of well standardised patient-centered actions to be applied to each patient on the basis of his/her predefined health condition and social circumstances, referred as inclusion and exclusion criteria.
- Each ICS targets specific service objectives; and any given patient can be associated to one or more integrated care service.
- Target group: COPD
  - Home Hospitalisation / Early discharge
  - Prevention of exacerbations (aka frail patients' programme)
  - Wellness-Rehab (pilot experience)

# Home hospitalisation /Early discharged

Goal:

- Provide acute, home-based, short-term intervention aiming at fully (hospital avoidance) or partially (early discharge) substituting conventional hospitalisation.

Aims at:

- Reduced number of readmissions / need for emergency room care
- Shorter length of overall stay (hospital stay + home-based stay)

Includes:

- Comprehensive assessment of patient at ER/discharge (Severity, comorbid conditions, social support) translated into an individually tailored care plan.
- Educational programme on self-management
- Home visits by hospital nurses/specialist.
- Accessibility to the control centre (case manager nurse) by phone / ICT equipment –monitoring vital signs-.

Coordination with Primary Care at discharge of the programme
Reimbursement as flat rate (aprox 1/3 of in-hospital admission)

# Prevention of frail patientsl

Goal

- Low intensity programme aiming at reducing number of exacerbations and decrease the use of health care resources (Admissions, Emergency room, outpatient clinics, primary care)

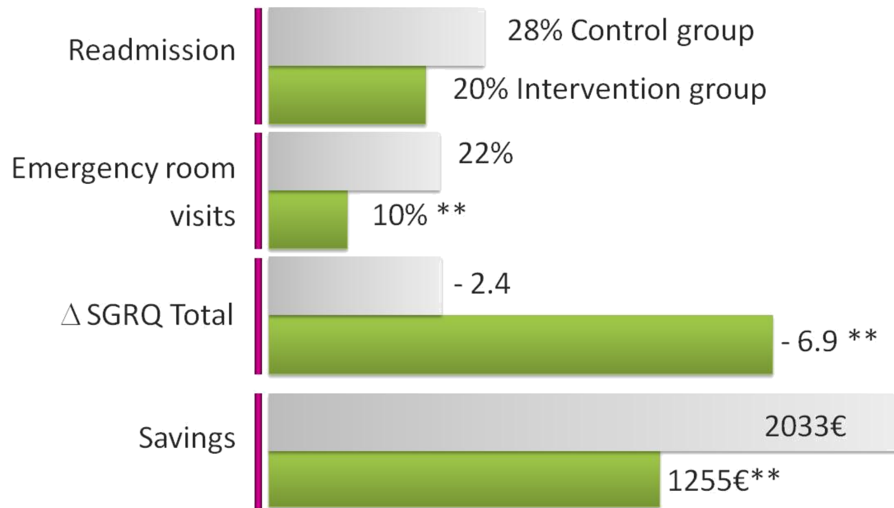
Includes:

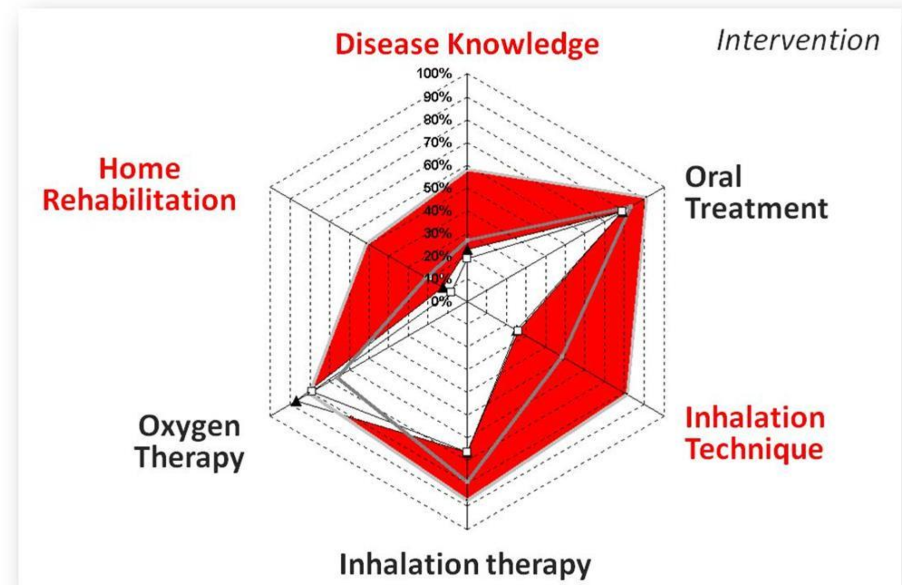
- Comprehensive assessment of patient at discharge (Severity, comorbid conditions, social support)
- Educational programme on self-management
- Agreement on individually tailored care plan, shared across the system via interaction between the specialised nurse case manager and the primary care team
- Accessibility of the specialised nurse to patients/carers and primary care professionals during follow up period (Facilitated through ICT platform)
- Accessibility to the control centre (case manager nurse) by phone / ICT equipment –monitoring vital signs-.

Payment: Patient – provider encounters

# Impact

## Home hospitalisation COPD (2003)

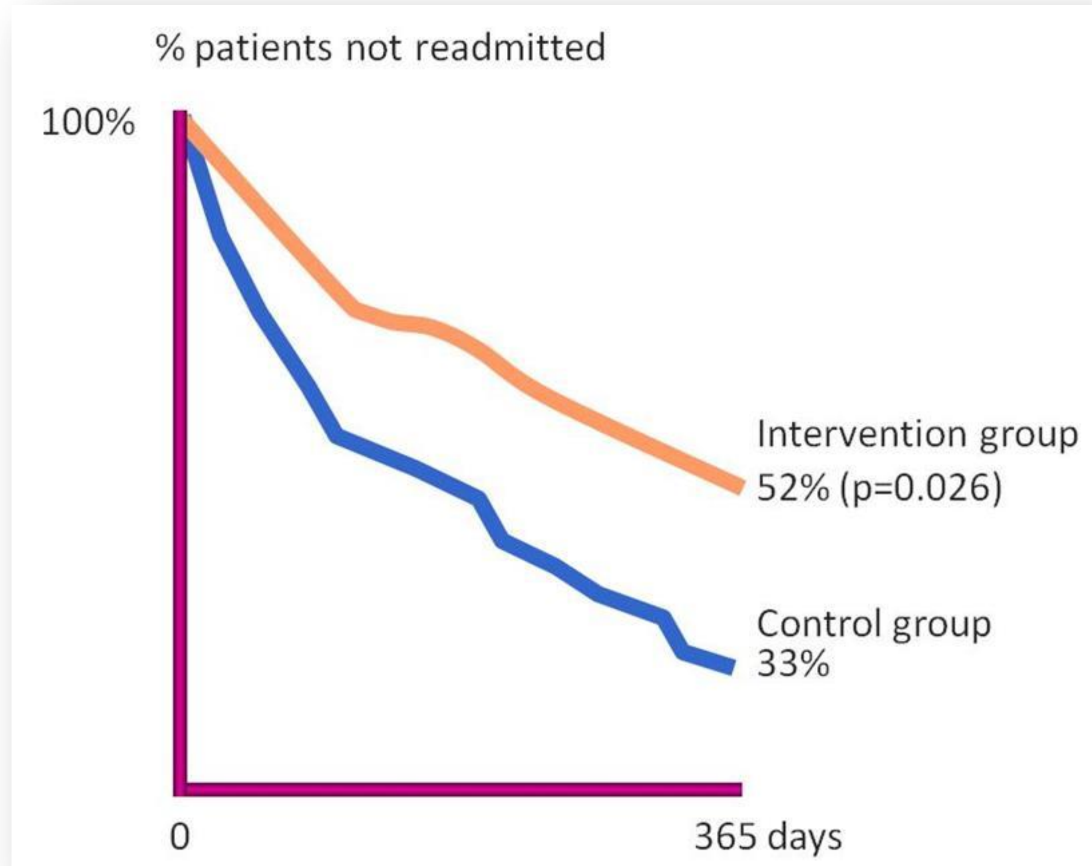



*Hernandez C, Casas A, Escarrabill J, Alonso J, Puig-Junoy J, Farrero E, et al. Home hospitalisation of exacerbated chronic obstructive pulmonary disease patients. Eur Respir J 2003 Jan;21(1):58-67.*

# Impact

Prevention of exacerbations COPD (2006)




*Casas A, Troosters T, Garcia-Aymerich J, Roca J, Hernandez C, Alonso A, et al. Integrated care prevents hospitalisations for exacerbations in COPD patients. Eur Respir J 2006 Jul;28(1):123-30.*

# Impact

Cost study COPD (2007)

**Table 4** Expected cost per patient for different levels of disease

| Patient type | Variables values according to severity levels | | | Predicted cost by intervention group | | Savings[a] |
|---|---|---|---|---|---|---|
| | $FEV_1$ | Total SGRQ score | Admissions previous year (number) | HH | CH | |
| Slight | 70 | 35 | 1 | 842.4 | 1,300.3 | 457.8 (143.6–685.7) |
| Moderate | 50 | 55 | 2 | 1,364.7 | 2,139.3 | 774.5 (265.7–1,143.6) |
| Severe | 30 | 85 | 3 | 2,348.3 | 3,767.4 | 1,419.1 (543.5–2,054.2) |
| Average | 41.40 | 49.5 | 0.71 | 1,153.7 | 1,800.9 | 647.1 (216.9–959.1) |

Costs are expressed in euros at year 2000 prices. The smearing estimator has been applied

*FEV1* forced expiratory volume during the first second at 8 weeks of follow-up, *Total SGRQ score* total Saint George Respiratory Questionnaire score, *HH* home hospitalization, *CH* conventional hospitalization

[a] 95% confidence interval

*Puig-Junoy J, Casas A, Font-Planells J, Escarrabill J, Hernandez C, Alonso J, et al. The impact of home hospitalization on healthcare costs of exacerbations in COPD patients. Eur J Health Econ 2007 Dec;8(4):325-32.*

# Impact

Patient / Carers

- Since first pilot experiences, patients' and carers' satisfaction has always been very high:
  - 99 % of the subjects treated in the HH/ED programme reported that the treatment received was very good;
  - 90% of patients and 94% of carers stated that they would repeat the experience if needed.

Professionals

- Initial resistances to implementation from both Hospital and Primary Care staff markedly decreased over time.
- Professionals of the Integrated Care Unit showed high degree of satisfaction throughout the deployment period.

Management

- Dedicated hospital resource created in (end of) 2006 (staff: Case manager, 4 nurses, 1 internist, 1 admin)
- Director of Chronic Care since 2013 (link Hospital – Primary care)

# Use of ICT

Linkcare

Acciones Opcionales

Cuestionario 1

Espirometría

Glucosa

Peso corporal

Presión sanguínea

Pulsioximetría

Pulsioximetría

Volver Siguiente

# Conclusions

- ICS are a safe option to be considered for COPD patients admitted in a hospital.
- Both efficacy and cost-containment have been demonstrated.
- Organisational changes aiming at implementing territorial care, as a model of interactions between hospital and community, are needed.
- Health professionals with adequate skills to support the program are needed.
- Specific logistics to support the tasks involved in the program must be in place.
- An open ICT platform supporting organizational interoperability and collaborative tools across healthcare tiers is needed as a key enabler of the program implementation.
- Sustainability is linked to the formulation of a business case including novel reimbursement policies

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