



RENEWING HeALTH

Regions of Europe Working
together for HEALTH

Renewing Health Catalonia Pilot

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- *Patient Personal Health Folder*
- *Real time video-tele-consultation*
- *Daily remote monitoring with biological sensors*
- *Access to call centre*

Integration with Regional Health IT services

- *Integrated with the Regional Electronic Health*

Record

- Questionnaires
- Discrete/continuous measures
- Online / off line
- Programmed / non prog. actions
- Alerts
- Metronome

- *Working to incorporate an application into the*
Regional Personal Health Folder

Getting vital signs from sensors (Bluetooth)

- Spirometer
- Glucometer
- Pulsioximeter
- Scale
- Blood pressure

Server application

- Mobile device control
- Program control
- Storing data
- Presenting data to professional



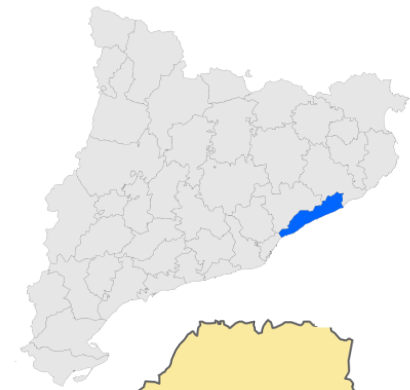
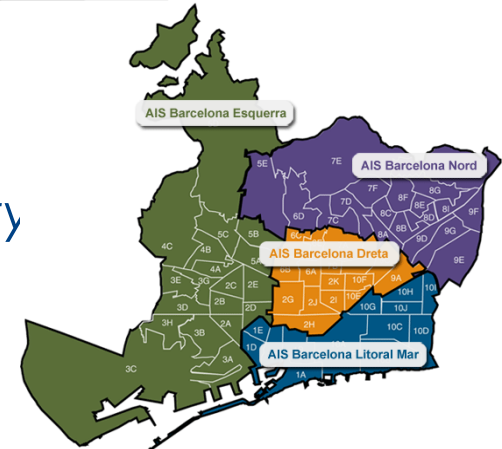
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Activa't 	Agenda 	Seguiment
Informació d'interès 	Compartir documents 	



- *Hospital Clínic – Barcelona Esquerra*
 - Largest integrated healthcare area in the city of Barcelona (551.000 inhabitants)
 - 16 primary care centres, three hospitals, and several other health centres are located in this area
 - Hospital Clínic is the reference hospital for acute COPD patients
- *Hospital de Mataró – Maresme*
 - 226.171 inhabitants with 12 primary care centres, 13 local consultancy centres
 - Mataró Hospital is the reference centre for specialised care



- **Reduce** the incidence and duration of **hospitalisation** episodes and emergency room visits
- **Reduce mortality** and the deterioration of health status associated to chronic disease in COPD patients
- Contribute to **patient empowerment** and better control of the chronic disease, better **quality of life** and higher patient/caregiver satisfaction with care
- Contribute to **better organisation** and **coordination between levels of care**

Prospective recruitment

- *Patients will be identified along the duration of the pilot*
- *Included in the pilot during hospital discharge*
- *Recruitment period: 18 months*

Carried out by specialised team at each study site

Eligible population:

- *COPD patients hospitalised due to acute exacerbation*
- *Admitted in:*
 - *Respiratory and Internal medicine Unit (Hospital Clinic de Barcelona)*
 - *Respiratory Unit and Day care Hospital (Hospital de Mataró)*

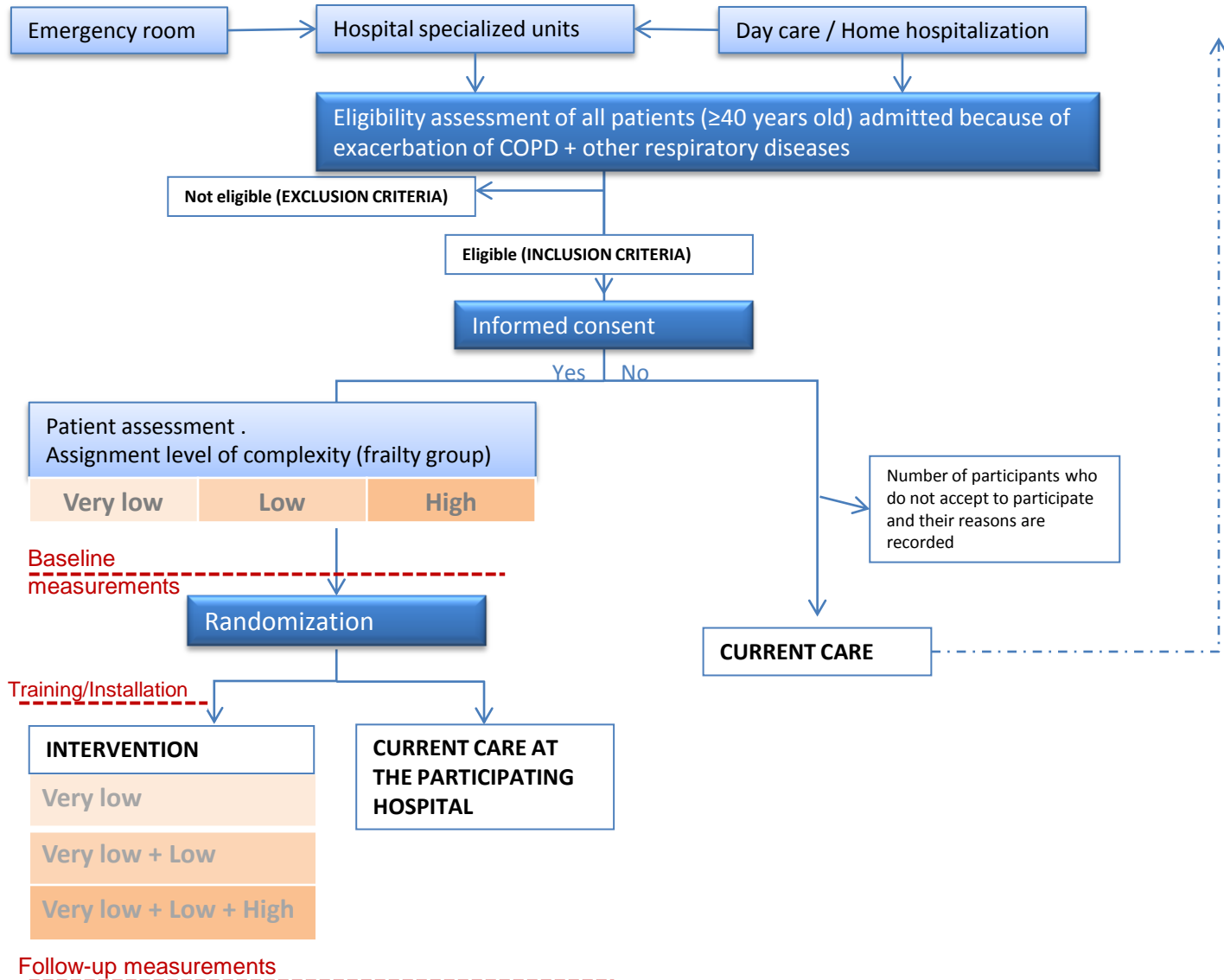
190 patients for intervention and 190 for control

Inclusion Criteria

- Severe acute exacerbation of COPD that need hospital admissions
Considered a broad spectrum of diagnostic terms that include chronic obstructive inflammatory diseases
- ≥ 40 years old
- Living in the area of the participating hospitals
- Understand Catalan or Spanish

Exclusion criteria

- Not willing to participate in the trial
- Unable to communicate
- Major terminal diseases with life expectancy < 6 months
- Have been previously included in either group of the study
- Living without access to mobile broadband



Patient assessment

VERY LOW COMPLEXITY	LOW COMPLEXITY	HIGH COMPLEXITY in addition, they show some of the following factors
<p>Patients with none of these factors</p>	<ol style="list-style-type: none"> 1. More than two co-morbid conditions and Charlson index > 2 2. High score of anxiety/depression (HAD > 6) 3. Home bound being alone at home for more than 50% of the day 4. Home bound with a caregiver of similar age 5. Treatment adherence assessed by Morinsky-Greens (> 4 different pills/day) 6. Oxygen therapy 7. Need of social support 8. Need of low complexity home care services (wound cures) 	<ol style="list-style-type: none"> 1. High hospitalization rate in the previous year (> 2 admissions including emergency room visits) 2. Tertiary level therapy at home (non-invasive mechanical ventilation, etc...) 3. End-stage complex disease

Tailored intervention by level of complexity (frailty)

<ol style="list-style-type: none"> 1. Education of self-management including co-morbidities (pharmacological/non-pharmacological therapies) and elaboration of personalized action plan 2. Access to the call centre 3. Access to personal health folder 	<p>VERY LOW</p>	<p>LOW COMPLEXITY</p>	<p>HIGH COMPLEXITY</p>
<ol style="list-style-type: none"> 4. Visit at home within 72 h including primary care team and social support team 5. Video-conference during 1 week 6. Remote sensors monitoring (defined on individual basis by the specialists) 7. Remote questionnaire monitoring 8. Home-based rehabilitation (physiotherapists and/or occupational therapists) 9. Connection with convalescence centre (if needed) 			
<ol style="list-style-type: none"> 10. Video-conference up to 1 month (defined on individual basis by the specialists) 11. Additional remote sensors (defined on individual basis by the specialists) 12. Remote support of the specialists including home or day hospital visit when needed 			

Primary outcome

Reduction in the readmissions rate and emergency room admissions and mortality at 3 months after discharge

Secondary outcomes

- a) Use of health care resources*
- b) Self-management and treatment compliance (Morinski-Greens)*
- c) Quality of life (General QoL SF-36 v2; Specific CAT)*
- d) Satisfaction by patients/caregivers and professionals*
- e) Usability and satisfaction of ICT*
- f) Cost*
- g) Lung condition (FEV1)*

Cost-utility (quality-adjusted life years (QALY))

Cost-effectiveness analysis (unplanned readmissions avoided)

Direct costs

- *Investment in teleconsultation and telemonitoring applications*
- *Running costs*
- *Use of health care services*

Direct non-medical costs

Indirect costs

Actual

- *Funded by Regional Health System*
- *Economic assessment to tailored intervention to define which services are specifically needed according to patients needs*

Future

- *The pilot trial has to provide the information required to fine tune the service*
- *Mixed model: Regional Health System could cover the specific intervention needed, but additional services may be charged*

- *Patient training*
 - *Takes longer*
- *Videoconference*
 - *Quality problems (Mobile broadband)*
- *Data collection*
 - *Clinical data collection process adjusted*
- *Technological and organisational issues*
 - *Coordination problems in set up and integration of sensors, mobile devices and platforms*

Thank you!

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Fundació TicSalut

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www.renewinghealth.eu