Integrated Care Matters Series 2:
Carewell Project

14th of March 2018
6 Regions deploying healthcare services:
- Basque Country (Osakidetza)
- Wales (Powys Health Board)
- Puglia Region
- Lower Silesian Marshal’s Office
- Veneto Region
- Croatia Zagreb-Ericsson

Scientific organisations:
- Kronikgune
- HiM, S.A
- Empirica
- RSD
- Faculty of Electrical Engineering Zagreb
- IFIC (new partner)
- HDFEZ Farmakoekonomika
- IRH (only in Y1)
CareWell vision

Objective
Provision of integrated care for frail elderly patients through
• ICT enabled healthcare services coordination,
• patient monitoring,
• patients self-management and
• informal care givers involvement.

Target population
Elderly people
• with multiple chronic diseases
• who have complex health care needs,
• are at high risk of hospital or care home admission and
• require a range of high-level interventions
Carewell approach

1. Integrated care coordination pathway
   Social and health care coordination/communication and information sharing

2. Patient empowerment & home support pathways
   Follow-up, monitoring
   Patient and informal caregivers empowerment
13.900 users involved in CareWell which 860 will be evaluated

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Intervention</th>
<th>Control</th>
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<tbody>
<tr>
<td>Total data</td>
<td>859</td>
<td>477</td>
<td>382</td>
</tr>
<tr>
<td>1. Basque Country</td>
<td>201</td>
<td>101</td>
<td>100</td>
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<tr>
<td>2. Croatia</td>
<td>104</td>
<td>52</td>
<td>52</td>
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<td>3. Lower Silesia</td>
<td>100</td>
<td>50</td>
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<tr>
<td>4. Puglia</td>
<td>200</td>
<td>100</td>
<td>100</td>
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<tr>
<td>5. Veneto</td>
<td>161</td>
<td>81</td>
<td>80</td>
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<tr>
<td>6. Powys</td>
<td>93</td>
<td>93</td>
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</table>
Patients characteristics

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total</th>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
<td>Age, mean (sd)</td>
<td>77.6 (7.7)</td>
<td>78.4 (7.9)</td>
<td>76.9 (7.3)</td>
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</table>

- **Gender Distribution**
  - **Intervention**: 52% Female, 48% Male
  - **Control**: 53.7% Female, 46.3% Male

- **Education Level by Gender**
  - Less than primary
  - Primary
  - Secondary
  - High
  - University
  - Post graduate
**Organisational models**

**WHO** is involved in caring for and supporting patients, **WHAT** functions these actors perform, and **HOW** different ICT tools facilitate the delivery of these activities.

**STABLE PATIENT OUT OF HOSPITAL CARE**
- **GP**
  - Therapeutic plan
  - Pharmacologic follow-up
  - Tests
  - Follow-up visits
  - Clinical assessment

- **Specialist**
  - Clinical consultation
  - Therapeutic plan
  - Pharmacologic follow-up
  - Tests
  - Adherence to recommended shared clinical pathways

- **Patient**
  - Increased, progressive improvement in self-managing his/her chronic condition, involvement in decision-making process, pro-active attitude

- **Nurse**
  - Support specialist in delivering and managing activities

**UNSTABLE PATIENT OUT OF HOSPITAL CARE**
- **Care Manager**
  - Integrated frail assessment
  - Patient training/education, self-care empowerment, coaching
  - Organization, coordination
  - Coordination with social care
  - Referral community/home care nursing
  - Adherence to care pathways with care team

- **GP**
  - Follow stable patients
  - Activates a process of intense disease and care management
  - Promotes team work supported by ICTs
  - Referral to hospital
  - Telehealth/telecare

- **Specialist**
  - Follows stable patients
  - Uses ICTs to support delivering healthcare and out patient clinics for chronicity
  - Adherence to care/clinical pathways shared with Care team

- **Patient**
  - Empowered as stable patient

**HOSPITAL DISCHARGE PREPARATION**
- **Social worker in healthcare**
  - Prepare hospital discharge report
  - Therapeutic plan
  - Post-hospital stay follow-up

**IN HOSPITAL CARE**
- **Specialist**
  - Clinical consultation
  - Therapeutic plan
  - Pharmacologic follow-up
  - Tests
  - Adherence to recommended shared clinical pathways

- **Patient**
  - Empowered as stable patient

- **Family/caregiver**
  - Follows patient in hospital pathways

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**Information and training of patients, caregivers and family on the specialist’s hospital discharge prescription.**
Self-assessment

- To define the degree of maturity of eight key factors of integrated care
- Detect weakest points & improvement areas
ICT tools

[Diagram showing integrated care coordination services and patient empowerment & home support services]
Differences with usual care

<table>
<thead>
<tr>
<th>Services</th>
<th>Basque</th>
<th>Wales</th>
<th>Puglia</th>
<th>Croatia</th>
<th>LSV</th>
<th>Veneto</th>
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<td>Electronic prescription</td>
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<td>Messaging clinician &lt;--&gt; Patients</td>
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<td>Electronic Health Record</td>
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<td>Interconsultation</td>
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<td>Call Center</td>
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<td>Virtual Conference</td>
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<td>Personal Health Folder</td>
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<td>Nurse Information System (record of nursing care)</td>
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<td>Educational Platform</td>
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<tr>
<td>Collaborative Platform</td>
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<tr>
<td>Telemonitoring</td>
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<td>Multichannel Centre (Management Telecare Programs)</td>
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What is now different?

• Integrated care pathway is enhanced:
  – Identification of frail elderly patients.
  – Baseline comprehensive multidimensional assessment.
  – Patients´ planned follow-up
  – Increased role of nurses and GPs as care managers
  – Coordinated hospital discharge: Improved transition
  – Better communication between professionals
  – Data stored and available
What is now different?

• Patient empowerment and home support:
  – Personal Health Folders
  – Personalised programme of integrated care
  – Mobile app to access EHR for the district and specialist nurses to use when they make visits to patients’ homes.
  – Telemonitoring services.
  – Single databases with information for community services.
  – Education for patients, formal and informal care givers
## Lessons learned

### Facilitators

#### Technical Facilitators
- Use of technologies already implemented
- Co-design with end users
- Appealing user experience
- Technical literacy
- Technology

#### Organizational Facilitators
- Synergies amongst professionals/organizations
- Alignment with existing programs or strategies
- Support of lead clinicians in design and planning
- Maturity of vertical integration

#### Administrative Facilitators
- Participation of top management in design of intervention
- Support of policy makers
- Compliance with existing policies, laws and plans

#### Economic Facilitators
- Co-funding by the European Commission
- Long term business viability analysis
- Service free of charge for patients
# BARRIERS

### TECHNICAL BARRIERS
- Adaptation to New Technology
- Maturity of the ICT Solutions
- Interoperability

### ORGANIZATIONAL BARRIERS
- Complexity of Health and Social Care Systems
- Resistance to Change
- Requirements for Tools Adoption

### ADMINISTRATIVE BARRIERS
- Public Procurement
- Management of Multiple Contractors
- Legal and Ethical Procedures
- Integration of Different Organizations

### ECONOMIC BARRIERS
- Economic Crisis and Trends
- Planned Budget vs Real Budget
- Financial Procedures in Public Organizations
- Telecare, eHealth and mHealth Funding Policies
Evaluation

Clinical effectiveness

BMI values in the two study groups

SBP values in the two study groups
Evaluation

Use of services

No hospitalization rate per month

No visits to A&E rate per month
Evaluation

Use of services

- GP visits rate per month
- Nurse visits rate per month

Mean and 95% Confidence Intervals

Global  Intervention  Control

Global  Intervention  Control
Discrete event simulation model
Budget impact analysis

Total cost

- Traditional healthcare
- Integrated healthcare

millions €

Budget impact analysis

Total cost

- Traditional healthcare
- Integrated healthcare
- RWD

Millions €

Years: 2013 to 2020
CONCLUSIONS

- All stakeholders needs accounted for when defining new organizational models.
- New care pathways have to be integrated into day to day practice: care as usual
- Professionals role changes; requires a reorganization of tasks and new skills
- Involvement of decision-makers to facilitate new organization and working procedures and encourage up taking new responsibilities.
- Learning curve: It takes time and resources, facilitate them!
- BIA and predictive modeling help evaluation and decision making.
Thank you!

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