Support Services for the Management and Utilization of Monitoring and Assessment of the EIP - MAFEIP Tool

Integrated care for frail elderly patients in the Basque Country-Carewell

Authors:
Myriam Soto-Gordoa, Ane Fullaondo, Esteban de Manuel, Javier Mar

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Executive summary

Description of the intervention

Complex and multi-morbid patients require, due to their multifactorial health condition, a personalised and coordinated care approach at all levels of care, with an "integral vision of the patient". CareWell has focused on the provision of care and support to older people who have complex health and social care needs. They are at high risk of hospital or care home admission, and require a range of high-level interventions due to their frailty and multiple chronic diseases. This has been achieved through ICT enabled healthcare services coordination and monitoring, patients' self-management, and informal care givers' involvement. The ICT platforms and communication channels have avoided duplication of effort when dealing with patients' diagnostic, therapeutic, rehabilitation, or monitoring and support needs. Additionally, ICT-based platforms improved treatment compliance, enhanced self-care and self-management, and increased patient and carer awareness of their health status. Altogether, they improved clinical outcomes and enabled people to lead fulfilled lives. In addition, technologies supported the patients' informal caregivers, highlighting when respite care or additional professional input was required.

This use case focuses on the results from the pilot in Osakidetza (Basque Country). Patients were above 65 years-old and had at least two chronic diseases among Diabetes Mellitus (DM), Heart Failure (HF) and Chronic Obstructive Pulmonary Disease (COPD). It included both males (63%) and females (37%). In this site, the intervention consisted on the one hand of new professional roles and the use of ICT to support communication among the different stakeholders and on the other one on patient empowerment. In order to identify final differences compared to baseline characteristics, in the case of numerical variables, pre-post differences will be calculated by Student´s t-test or Wilcoxon test for non-normal distributed variables.

Model input

Defining the health states and the transition probabilities

The health states are defined according to decompensations measured in terms of hospitalizations. The category of patients that did not have an admission to hospital represented the baseline health and having a hospitalization, the deteriorated state. At the start of the intervention all the patients both in the control (99 patients) and in the intervention (101 patients) group were at the baseline state of health. During the follow-up 69 (70%) decompensated in the control group and 58 (57%) in the control group (Table 1). Thus this is the value used as an input for the incidence. During the following up period, 10 individuals died in both, the control and the intervention groups (10%). In order to obtain the relative risk (RR) of multimorbid patients we took all the rest of patients in the Basque Country over 65 years-old and carried out a Cox regression. Results are shown in Table 1. Taking into account the recovery rate is complementary to the incidence and mortality and assuming that the incidence rate is the same in the baseline and deteriorated states, we calculated the recovery rates (Table 1).

Computing the costs

The overall of the costs was obtained by calculating the cost of caring for the control and intervention groups in the pilot study. We considered all the contacts with primary care services both with the General Practitioner (GP) and Primary Care Nurse (PC-Nurse) and in the three possible modalities (in the health centre, at patient's home or by telephone), Accident & Emergency (A&E) department and in-admissions. We multiplied these costs by their unit costs. Then we calculated the mean value for each group. These are shown in Table 1. We did not consider societal costs.

Utility

Utilities were measured based on the Spanish Health Survey, performed by the Spanish Ministry of Health, Social Services and Equity. The utilities were adjusted by age for the baseline state and whether had a hospitalization the previous year was also considered for the intervention group Table 1.

Table 1. Input data used to populate the MAFEIP model

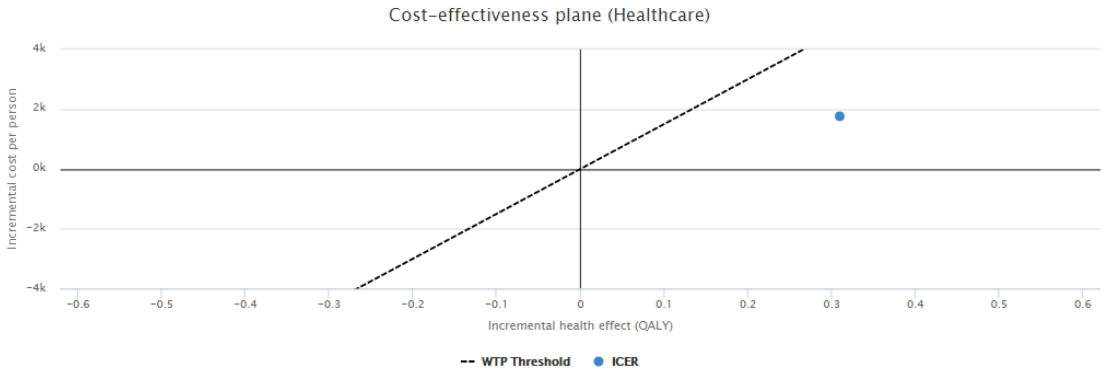
	Control Group	Intervention Group
Transition Probabilities		
Incidence	67.70	57.43
Recovery	20.30	32.57
Relative Risk		
Baseline State	2.06	2.06
Deteriorated State	3.77	3.59
Costs		
One-off cost per patient (Intervention)	-	-
Recurring cost per patient/year (intervention)	-	-
Healthcare cost – Baseline	679	1,054
Healthcare cost – Deteriorated	6,194	7,190
Societal cost – Baseline	-	-
Societal cost – Deteriorated	-	-
Utility		
Baseline State	0.792	0.792
Deteriorated State	0.638	0.638

Model output

Figure 1 shows the overall impact of the intervention on the costs and effects of the whole target population. The incremental cost-effectiveness ratio (ICER) is placed in the upper-right quadrant of the cost-effectiveness plane. This means that the intervention is more effective than current care, but it is also more expensive. Therefore, the cost-effectiveness of the service depends on the Willingness to Pay (WTP) threshold. Concretely, the intervention implemented in the Carewell model is effective if the willingness to pay is at least 5,667€ per QALY.

Figure 1. Cost-effectiveness

Incremental cost and HRQoL effects	
Incremental cost (Healthcare)	1759.96
Incremental effects	0.311
Incremental cost-effectiveness ratio (Healthcare)	5667.32



WTP Threshold: ◉ €15K/QALY ○ €20K/QALY ○ €30K/QALY ○ €50K/QALY ○ €80K/QALY