



Work Package 5

Comprehensive evaluations of most promising integrated care models using MCDA

Executive summary

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This report in the context of SELFIE

How WP5 links to the other WPs

SELFIE is a Horizon2020 EU project that will contribute to the current state of knowledge of integrated chronic care (ICC) for persons with multi-morbidity and provide applicable policy advice. We aim to generate evidence on the impact of promising ICC programmes and supporting financing/payment schemes on health and well-being outcomes, experience, and costs. Specific ICC programmes for multi-morbidity will be empirically evaluated using Multi-Criteria Decision Analyses (MCDA). The definitions of multi-morbidity and ICC in the SELFIE project can be found in Box 1.

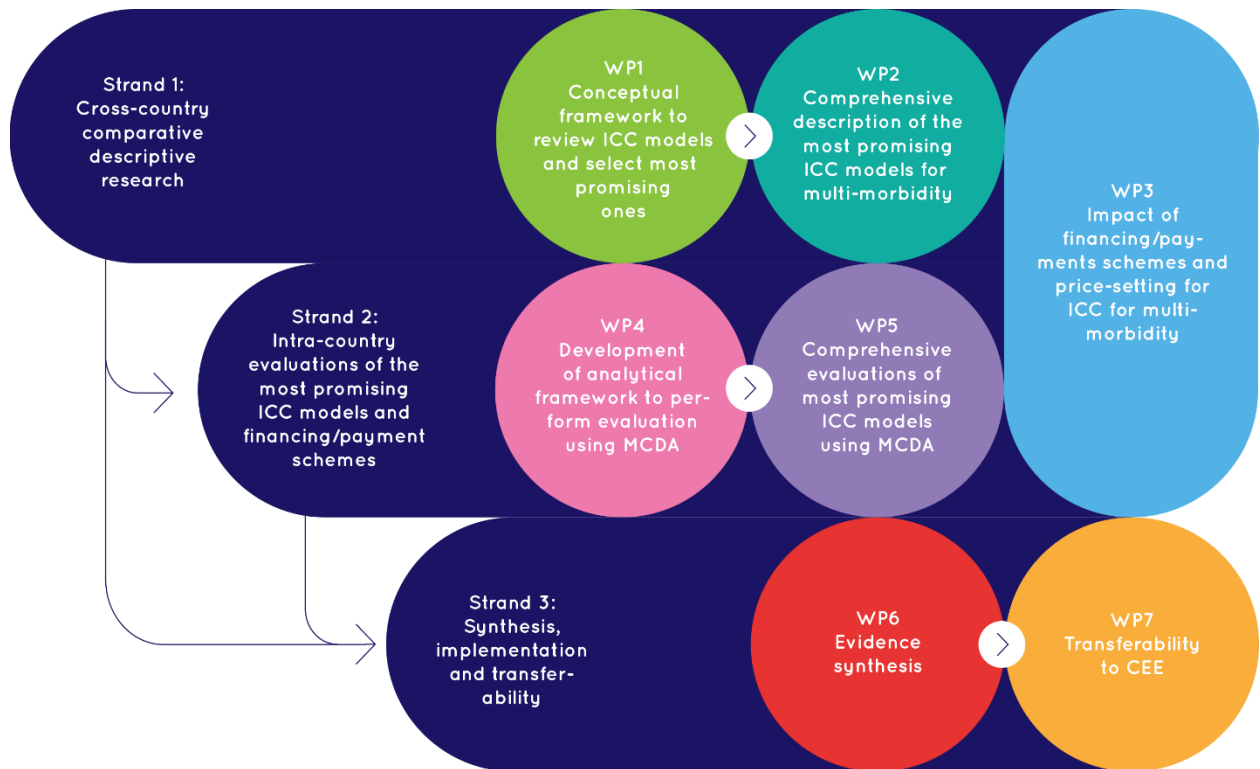
Box 1. *Definitions of multi-morbidity and integrated chronic care in SELFIE*

Multi-morbidity in the context of SELFIE refers to multiple (i.e. at least two) chronic conditions, physical or mental, occurring in one person at the same time, where one is not just a known complication of the other.

Integrated chronic care (ICC) in the context of SELFIE refers to structured efforts to provide coordinated, pro-active, person-centred, multidisciplinary care by two or more communicating and collaborating care providers that may work at the same organisation or different organisations, either within the healthcare or across the health care, social care, or community care sector (including informal care).

In SELFIE three research strands are distinguished, with 9 work packages, 7 of which are content based (the other two are WP8: Communication and dissemination and WP9: Management).

Figure 1. SELFIE strands of research and work package (WP) overview (Ctrl-click to see overview on the SELFIE website)



In WP1 a conceptual framework for integrated care for multi-morbidity was developed (see Figure 2). [1] It was based on a scoping review [2] and expert discussions. The framework structures relevant concepts in integrated care for multi-morbidity and can be applied by different stakeholders to guide the development or design, implementation, description, and evaluation of integrated care programmes. Furthermore, in WP1, promising integrated care programmes for multi-morbidity in each of the SELFIE partner countries were identified, and 17 were selected (2-3 per partner) (see Figure 3). These 17 programmes were grouped into four categories (see Figure 3).

Figure 2. Conceptual framework of integrated care for multi-morbidity

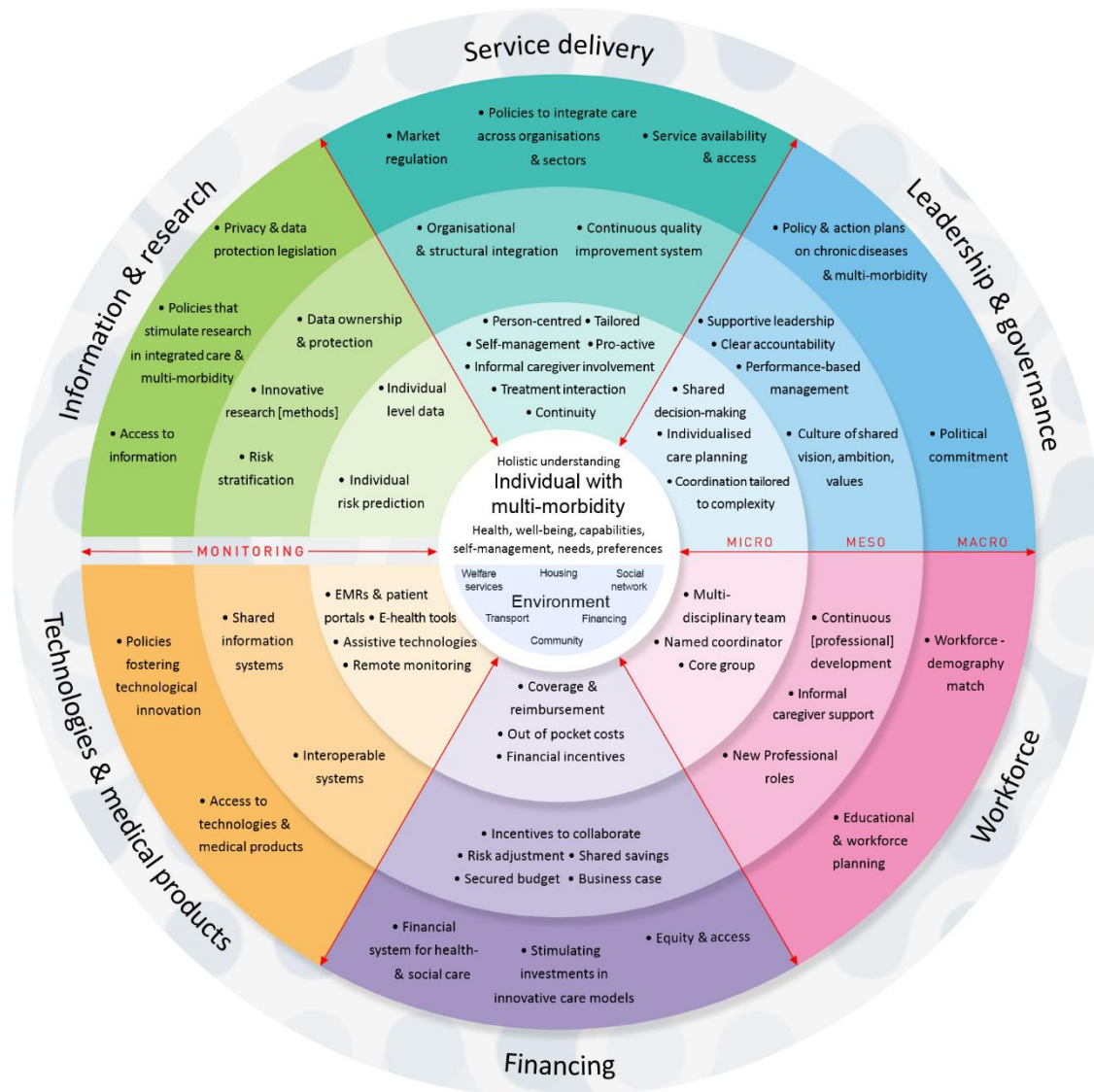
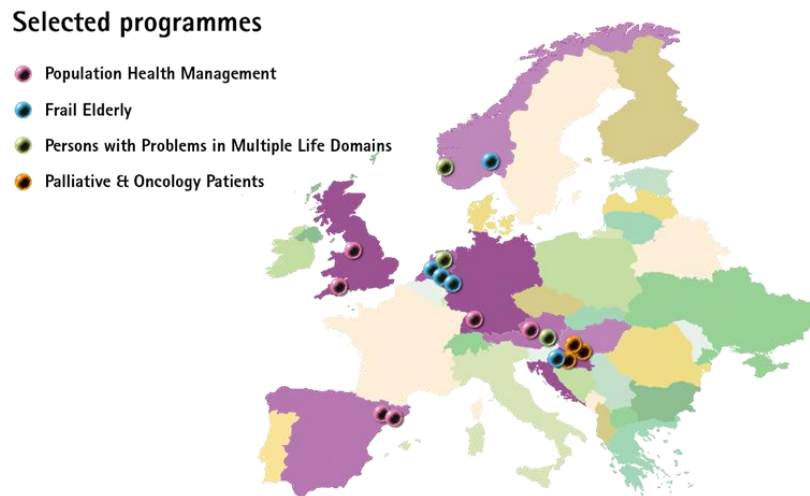


Figure 3. Overview of the 17 selected programmes by country



In WP2 these 17 programmes were described on the basis of the framework developed in WP1, using both document analyses and interviews. This resulted in 17 ‘thick descriptions’ that are published on the website of the SELFIE project www.selfie2020.eu/publications.

In WP3 a typology was developed to describe traditional and alternative payment mechanisms in terms of their expected impact on integration of care. [3] Furthermore, the impact of different financing and payment schemes was investigated. This WP made use of the descriptive research on this topic in WP2 and the empirical evaluations in WP5, but it also investigated the impact of different funding and payment schemes, independent of the 17 programmes. Hence, WP3 overlaps strand 1 (descriptive, cross-country) and 2 (evaluative, intra-country). The results of these studies were presented during a workshop on SELFIE at the EuHEA conference in July 2018 and publications are being prepared.

In WP4 an analytical framework to perform comprehensive evaluations of the 17 programmes using Multi-Criteria Decision Analysis (MCDA) was developed. WP4 formed the theoretical basis and preparation of the actual empirical evaluations in WP5 which are reported in this deliverable.

Because the analytical framework of WP4 guided the evaluations in WP5, a summary of the seven steps of MCDA is given in the next section. A more elaborate description can be found in the study

design paper. [4] The seven steps can be linked to the different WPs in SELFIE, as is shown in the next section.

In WP5 comprehensive evaluations of the 17 most promising integrated care models for persons with multi-morbidity were performed, 2-3 per country. WP5 was led by the Norwegian UiB team and WP4 was led by the Dutch EUR team – they are also one-another’s co-leaders in these WPs. The teams collaborate closely, as the work in WP4 fed directly into WP5. WP5 started on September 1st, 2016 and ends September 1st, 2018.

WP5 has two main deliverables:

- i. Empirical evidence of the most promising integrated care models – due month 35 (July 2018 – submit before August 1st 2018)
- ii. An MCDA based Performance monitoring tool – due month 36 (August 2018 – submit before September 1st 2017)

This report is the first deliverable, ‘Comprehensive evaluations of most promising integrated care models using MCDA’. It corresponds to task 1 to 4 set out in the grant agreement; task 5 will be addressed in the second deliverable:









1. **Writing study protocol for each ICC model evaluation**
2. **Data collection**
3. **Data management**
4. **Perform MCDA**
5. Development of user friendly performance monitoring tool based on MCDA

The seven steps of MCDA in SELFIE

In **step one** (WP2 and part of WP3), qualitative research was undertaken to better understand the decision-context of these programmes. The programmes faced decisions related to their sustainability in terms of reimbursement, continuation, extension, and/or wider implementation.

In **step two** (WP4), a core set of decision criteria was defined in terms of outcomes measured across the 17 programmes: physical functioning, psychological well-being, social relationships and participation, enjoyment of life, resilience, person-centeredness, continuity of care, and total health and social care costs (Table 1). These were supplemented by programme-type specific outcomes (Table 2). The choice of the outcome measures was largely guided by the eight focus groups with individuals with multi-morbidity that were held in the eight countries of the SELFIE consortium.[5]

Table 1. Core set of outcomes

Triple aim	Outcome measure	Recommended instruments
Health and well-being	 Physical functioning	SF-36 domain or Katz-15 for ADL
	 Psychological well-being	MHI-5
	 Social relationships and participation	IPA
	 Enjoyment of life	ICECAP-O or Q-LES-Q
	 Resilience	BRS
Experience	 Person-centeredness	P3CEQ
	 Continuity of care	NCQ + CPCQ
Cost	 Cost	iMTA-MCQ

SF-36: Short Form 36, ADL: Activities of Daily Living, MHI-5: Mental Health Inventory 5, ICECAP-O: Investigating Choice Experiments for the preferences of Older people CAPability measure (enjoyment and pleasure domain), Q-LES-Q: Quality of Life, Enjoyment and Satisfaction Questionnaire (satisfaction domain), IPA: Impact on Participation and Autonomy (social life and relationships domain), BRS: Brief Resilience Scale, P3CEQ: The Person-centered Coordinated Care Experience Questionnaire (experience of person-centered care domain), NCQ: Nijmegen Continuity Questionnaire (Team and cross boundary continuity domain), CPCQ: Client Perceptions of Coordination Questionnaire (waiting for appointment/treatment), iMTA-MCQ: Institute for Medical Technology Assessment Medical Consumption Questionnaire

Table 2. Programme-type specific outcomes

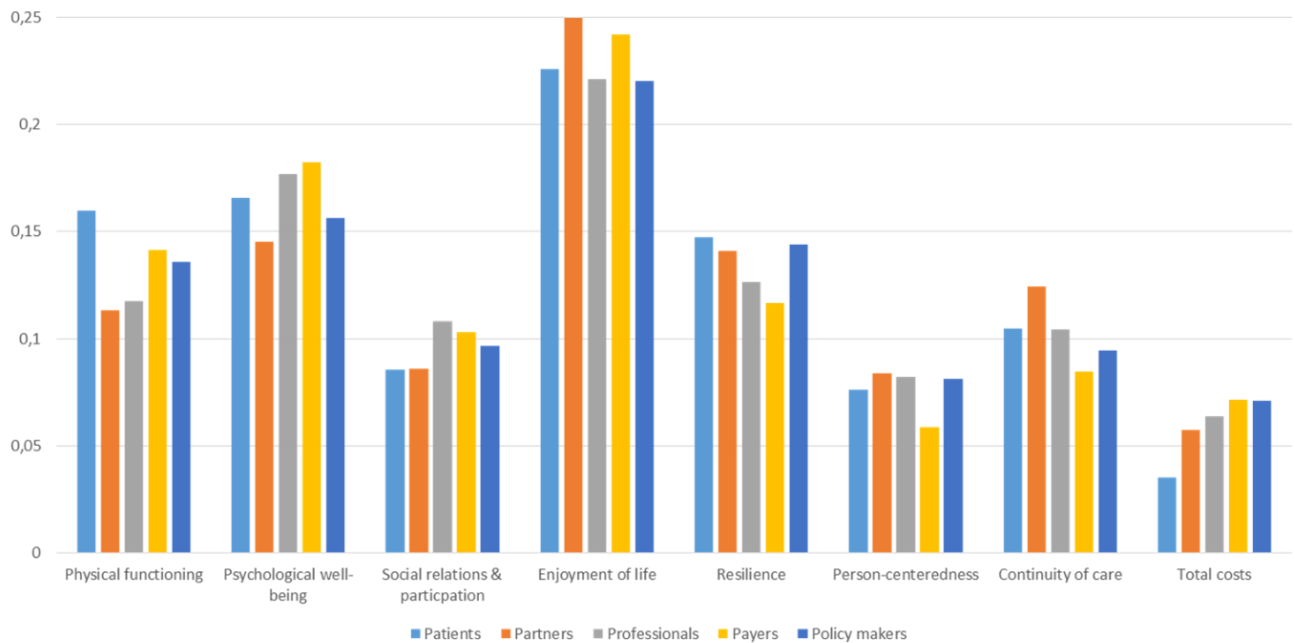
Triple Aim	Programme-type specific outcomes			
	Population health management	Frail elderly	Palliative and oncology patients	Persons with problems in multiple life domains
Health & well-being	Activation & engagement	Autonomy	Mortality	Financial independence
			Pain and other symptoms	
Experience		Burden of medication	Compassionate care	
		Burden of informal caregiving	Timely access to care	
			Preferred place of death	
			Burden of informal caregiving	
Costs	Ambulatory care sensitive hospital admissions	Long-term institution admissions		Contacts with the justice system
	Hospital re-admissions	Falls leading to hospital admissions		

In **step three** 17 quasi-experimental studies were designed (*WP4 and WP5*) and conducted (*WP5*) to measure the performance of the 17 programmes on the decision criteria. The study designs differed across the programmes but most of them were quasi-experimental designs or natural experiments. One of the main risks of non-randomised designs is confounding by indication, which precludes unbiased causal inference. To address this, studies made use of (propensity score) matching or applied a regression discontinuity design to increase the comparability of the comparator group to the intervention group. Furthermore, studies applied regression adjustment and inverse probability weighting to adjust for observed confounding, or difference-in-differences analysis to address unobserved confounding.

In **step four** (*WP4*) a Discrete Choice Experiment and Swing Weighting was conducted to determine the relative importance of the decision criteria among five stakeholder groups per country, the 5Ps: 1) Patients with multi-morbidity, 2) Partners and other informal caregivers, 3) Professionals, 4)

Payers, and 5) Policy makers. This step generated a set of relative weights for each country. The weights for the Netherlands are shown in Figure 4.

Figure 4. *Relative importance weights of the decision criteria in the Netherlands, by group of stakeholders*



In **step five** (WP5) a multi-attribute value-based method of MCDA is used by which the performance of the programmes on each decision criterion (step 3) is combined with the weight of the respective criterion (step 4) to derive an overall value score for both the integrated care programme and the comparator. The programme with the highest value score is the one that is preferred. This is repeated, using the weights of each of the five groups of stakeholders, so that the impact of the differences in weights on the final results of the MCDA is made explicit. This will stimulate debate about the reasons underlying the differences in perspectives.

Step six (WP5) deals with uncertainty and introduces the Conditional Multi-Attribute Acceptability Curve. [4] In this curve, the joint uncertainty in the performance scores and the weights is presented graphically. The vertical axis shows the probability of an integrated care programme to be accepted as the preferred alternative against the comparator and the horizontal axis shows different thresholds of maximum budget available to be allocated to either intervention or comparator, for the treatment of a given population-size. The curve shows, for a range of available budgets, the

likelihood that the integrated care programme is the preferred alternative (i.e., has the highest overall value score) while the budget-impact stays below a budget-threshold.

In **step seven** (WP5 and WP8), which is the last step of the MCDA, the findings and their robustness in the sensitivity analyses are interpreted and reflected upon by the researchers together with representatives from the 5Ps. This is done in national workshops in the SELFIE partner countries and in an international workshop.