SELFIE Steering Committee & Stakeholder Advisory Board Meeting Barcelona, March 23rd-24th, 2017

Work Package 5:

Comprehensive evaluations of most promising integrated care models using Multi-Criteria Decision analysis (MCDA):

Programme Study Designs

Population health management programmes:

- Health Network Tennengau (*Austria*)
- Gesundes Kinzigtal (GK) (*Germany*)
- Area Integral de Salut de Barcelona-Esquerra (AISBE) (*Spain*)
- South Somerset Symphony (*UK*)
- Salford Together (*UK*)

Programmes targeting frail elderly:

- GeroS (*Croatia*)
- Casaplus (*Germany*)
- Proactive Primary Care Approach (U-PROFIT) (*Netherlands*)
- Care Chain Frail Elderly (CCFE) (*Netherlands*)
- Learning networks (*Norway*)
- Badalona Serveis Assistenciais (BSA) (*Spain*)

Palliative and oncology programmes:

- Palliative Care Model (*Croatia*)
- OnkoNetwork (*Hungary*)
- Palliative Care Consult Service (*Hungary*)

Programmes targeting persons with problems in multiple life domains:

- Sociomedical Centre Liebenau (*Austria*)
- Better Together in Amsterdam North (BSiN) (*Netherlands*)
- MAR Bergen (opioid) (*Norway*)

Population health management programmes

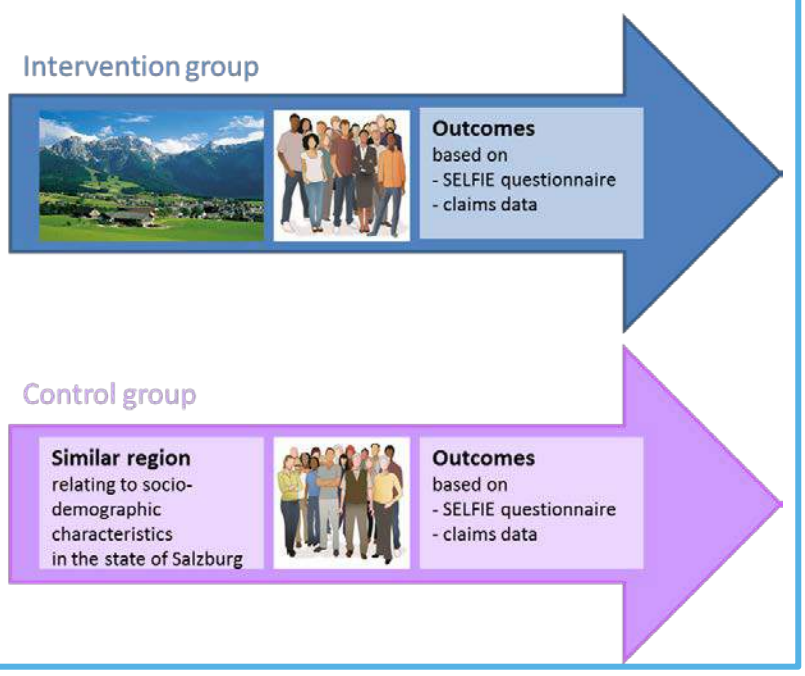
Austria: Heath Network Tennengau (HTN)

Thomas Czypionka, Markus Kraus, Miriam Reiss

Summary
The Health Network Tennengau (HNT) is a bottom-up network comprising a wide variety of social and health service providers and voluntary organisations. Its target population is the population of the Tennengau region, a rural area in the state of Salzburg with 54,000 inhabitants. However, the activities are especially geared towards senior citizens who require social care .

Research question:
Are the services provided by the HNT associated with improved health and well-being, improved care experience and reduced costs in comparison to usual care?

Study design



Sample size

- **Intervention group:**
  - Claims data: approx. 46,000 persons (= all inhabitants of the region Tennengau insured by the regional health insurance fund)
  - SELFIE questionnaire data: 155 persons (assumption: weak effect)
- **Control group:**
  - Claims data: similar number of persons as in intervention group
  - SELFIE questionnaire data: 155 persons (assumption: weak effect)

Time frame: data collection

- Only one period of time: July ’17-Dec ’17

Target population

- **Intervention group:** all persons who live in the Tennengau region and are insured by the regional health insurance fund of the state of Salzburg.
- **Control group:** a sample of persons who live in a similar region and are insured at the regional health insurance fund of the state of Salzburg.

Planned procedure to collect outcome data

- **Intervention group:** SELFIE questionnaires will be distributed to clients of the HNT with the help of HNT service providers, possibly together with on-site aid by members of IHS team
  Control group: SELFIE questionnaire is planned to be integrated in a routine survey (on adequate use of LTC allowances) done by the farmers’ social security institution for the Federal Ministry of Labour and Social Affairs.
- **In both cases:** SELFIE questionnaire will be used to ask patients’ consent to use their claims data from the administrative database of the regional health insurance fund of the state of Salzburg
  ➔ The linkage between questionnaire data and claims data allows investigating resource utilisation and healthcare costs of clients of intervention and control group; questionnaire data and claims data will be linked with help of regional health insurance fund of the state of Salzburg

Outcomes: population health management

- **Health/well-being:** physical functioning, psychological well-being, enjoyment of life, social relationships & participation, resilience, activation and engagement
- **Experience of care:** person-centeredness, continuity of care
- **Resource utilisation/costs:** total health and social care costs, ambulatory care sensitive hospital admissions, re-admissions

Potential risks

- That the generation of a control group is generally difficult in this context.
- That the cases in the control group will not sufficiently match the cases in the intervention group (SELFIE questionnaire data only).

Population health management

Germany: Gesundes Kinzigtal

Verena Vogt, Verena Struckmann, Ewout van Ginneken

Summary
The care programme *Gesundes Kinzigtal* (GK) pursues a population-based approach that organizes care across all health service sectors and indications. The programme is designed around the "Triple Aim" approach: (i) improving the health of the population in the Kinzigtal region, (ii) improving the individuals experience of care and at the same time (iii) reducing the per capita costs of care. The effectiveness of the program will be prospectively measured using two quasi-experimental designs.

Research question:
Is the GK more effective in terms of health and well-being, experiences of care, and costs compared to usual care, when using an MCDA approach and applying weights from different stakeholder perspectives?

Study design 1

- Quasi-experimental controlled study
- Changes in outcomes will be compared between residents of the Kinzigtal region and insured living in comparable regions in Baden Wuerttemberg
- Data source: routine claims data

Study design 2

- Quasi-experimental controlled study
- Self-reported outcomes of GK participants will be compared with outcomes of non-participants
- Data source: Survey using physician practices in the Kinzigtal region as contact point

Sample size

- **1:** all participating insured in the AOK and max. 500.000 non-participants
- **2:** ca. 300 multi-morbid patients per group

Target population
Intervention group 1: All participants
Control group 1: Non-participants living in comparable regions
Intervention group 2: Multi-morbid participants
Control group 2: Multi-morbid non-participants

Time frame: data collection

- Still needs to be discussed with the programme partners.

Outcomes: population health management

- *1: (Routine data)* Physical functioning, Psychological well-being, Health care costs, Ambulatory Care Sensitive Conditions, Re-admissions
- *2: (Survey)* Physical functioning, Continuity of Care, Person-centeredness, Activation & engagement, Physical functioning, Enjoyment of life, Social relationships & participation

Potential risks

- The effects of the GK on the outcomes are too low to get any significant results with a feasible sample size.

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Population Health Management

Spain (Catalonia): AISBE

Erik Baltaxe, Carmen Hernandez, Juan Carlos Contel, Isaac Cano, Josep Roca

Summary

AISBE is a population-based health initiative aiming at deployment of integrated care in one urban healthcare sector (Barcelona-Esquerra, 540.000 inhabitants) in the city of Barcelona (ES). Within this initiative, the Home Hospitalization and Early Discharge & Transitional Care (HH/ED&TC) program carried out by Hospital Clinic provides home-based hospitalization aiming at substituting hospital admissions. Moreover, the program aims to implement transitional care strategies for optimal discharge.

Research questions:

(1) Is AISBE generating cost-effective healthcare outcomes as compared to other healthcare sectors in the region ? How compares Hospital Clinic with other AISBE's providers ?

(2) Is HH/ED & TC cost-effective as compared with conventional hospitalization ?

Study design

- Quasi-experimental designs for both the population-based analysis and the assessment of the HH/ED&TC program: non-randomized intervention group (integrated care) is compared to a control group (usual care) using propensity score matching wherein age, gender and population-based health risk assessment are main matching variables. The Adjusted Morbidity Grouper (GMA) will be used for health risk scoring purposes.
- In the HH/ED&TC study, assessment will be based on questionnaire data collection and information from electronic medical records plus registry data. Measurements will be done at discharge and 3 month later. In the population-based analysis only longitudinal registry data (2011 – 2018) will be used.

Sample size

- Population-based analysis (540,000 citizens in the intervention group).
- HH/ED & TC study will target for a sample size of 300 patients in each study arm)

Target population

- (1) Population-based analysis: Intervention: AISBE sector (540K inhabitants); Control: Other healthcare sectors in Catalonia.
- (2) HH/ED&TC: Intervention: Hospital Clinic; Control: Hospital Sagrat Cor

Time frame: data collection

- HH/ED &TC: from 1st June 2017 to 31th May 2018.
- Population-based analysis: registry data from 2011 to 2018

Outcomes

- *Health*: mortality, multi-morbidities, ED and GP visits, readmissions, avoidable hospitalizations, multiple drug prescriptions, physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life, resilience, activation and engagement.
- *Experience:* person-centeredness, continuity of care, us of PHF, home-based IT support, access to integrated care, patient and caregiver satisfaction, healthy lifestyle, knowledge of current morbid conditions.
- *Costs*: total health- and social care costs, pharmacy, mental health, respiratory therapies dialysis, rehabilitation, non-urgent patient transport, primary care, hospital admissions, ED consultations, outpatient specialized care.

The above outcomes will be measured using the SELFIE questionnaires and registry data in the HH/ED&TC study and only registry data from the Catalan Health Surveillance System in the population-based analysis.

Population Health Management

The UK: South Somerset (2)

Jonathan Stokes, Søren Rud Kristensen, Matt Sutton

Summary

The South Somerset Symphony programme consists of two broad service delivery interventions (with a commonality of 'health coaching', + more recently there has also been an attempt towards organisational change with formation of a Ltd company of integrated practices [IP Ltd]):

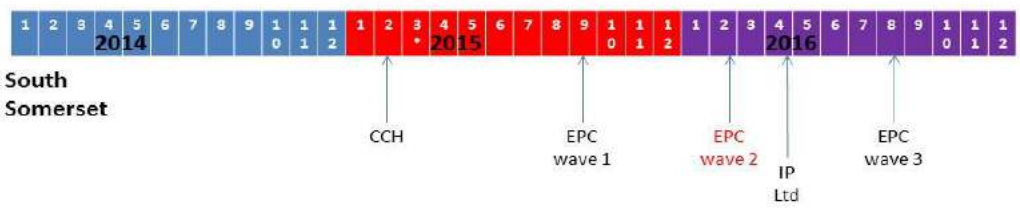
1. Complex care hubs (CCH) – an 'extensivist' GP model with GPs located in a hospital hub and managing, as part of a multidisciplinary hub team, the most complex patients.
2. Enhanced primary care (EPC) – co-location of health coaches in all GP practices in the area, to assist with disease self-management and prevention.

Research question:

1. What is the effectiveness (across the triple aim) of the integrated care programme as a whole on the population of South Somerset (and on the multimorbid subgroup(s))?
2. What is the effectiveness (across the triple aim) of the two individual interventions on those treated versus usual care, and weighted using MCDA?

Study design

- The complexity science literature suggests that complex adaptive systems like health systems exhibit certain properties that are important to consider when evaluating. Most importantly, these systems exhibit emergence, that "the whole is more than the sum of its parts", i.e. evaluating effectiveness of each component of the intervention individually will not teach us about overall effectiveness of the programme as a whole, as the effectiveness is not simply additive. Population analysis is therefore the primary method.



1) Mental-physical comorbidity versus others;

2) 3+ chronic conditions versus <3;

3) Discordant (i.e. co-occurring diseases that are not managed synergistically) versus concordant conditions (i.e. co-occurring diseases that are managed synergistically);

4) Cardiovascular/metabolic cluster conditions only versus others;

5) Mental health-associated cluster conditions only versus others;

6) Musculoskeletal disorder cluster conditions only versus others

7) Charlson index >5 versus others

- Quasi-experimental methods (difference-in-differences/RD), exploiting gradual roll-out and geographical limits. Comparing trends to other geographical regions in England.
- MCDA will focus on both service delivery interventions individually.
- Multiple ways of conceptualising multimorbidity, and we will explore a number of subgroup effects.

Data/ Outcomes

For the primary population-level analysis, we will use readily available individual-level Hospital Episodes Statistics + GP Patient Survey data.

For the intervention-level analysis, we will additionally attempt to use locally-collected questionnaire data.

- *Health*: physical functioning, psychological well-being, enjoyment of life, social relationships & participation, resilience, activation and engagement.
- *Experience:* person-centeredness, continuity of care.
- *Costs*: total health- and social care costs, ACSC admissions, re-admissions (90-days).

The UK: Salford (1)

Jonathan Stokes, Søren Rud Kristensen, Matt Sutton

Summary

The Salford Integrated Care Programme is designed to improve care for the broad population of people 65+ with long-term conditions, and consists of three broad service delivery interventions (+ a more recent organisational change [ICO]):

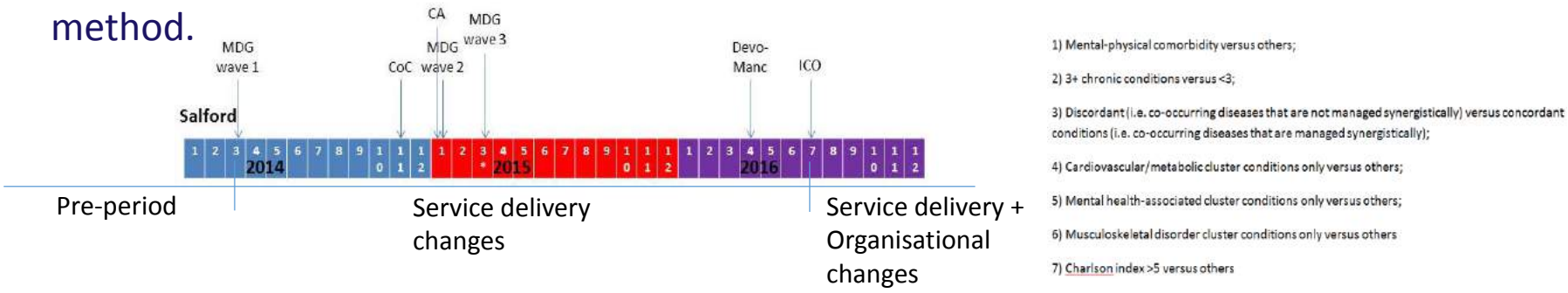
1. Multidisciplinary groups (MDGs) – case management of the highest-risk patients.
2. Community assets (CA) – investment in 'community assets' (e.g. community groups).
3. Centre of contact (CoC) – a centralised telephone hub to help with navigating services and self-management.

Research question:

1. What is the effectiveness (across the triple aim) of the integrated care programme as a whole on the population of Salford (and on the multimorbid subgroup(s))?
2. What is the effectiveness (across the triple aim) of the individual interventions relating to multimorbid patients on those treated versus usual care, and weighted using MCDA?

Study design

- The complexity science literature suggests that complex adaptive systems like health systems exhibit certain properties that are important to consider when evaluating. Most importantly, these systems exhibit emergence, that "the whole is more than the sum of its parts", i.e. evaluating effectiveness of each component of the intervention individually will not teach us about overall effectiveness of the programme as a whole, as the effectiveness is not simply additive. Population analysis is therefore the primary method.



- Quasi-experimental methods (difference-in-differences/RD), exploiting gradual roll-out and geographical limits. Comparing trends to other geographical regions in England.
- Particularly interested in modelling any additional impact of organisational changes.
- MCDA will focus on the MDG intervention (particularly relevant to multimorbid patients).
- Multiple ways of conceptualising multimorbidity, and we will explore a number of subgroup effects.

Data/ Outcomes

For the primary population-level analysis, we will use readily available individual-level Hospital Episodes Statistics + GP Patient Survey data.

For the intervention-level analysis, we will additionally use questionnaire data collected as part of the CLASSIC cohort study, longitudinal data from ~4000 patients aged 65+ with chronic conditions.

- *Health*: physical functioning, psychological well-being, enjoyment of life, social relationships & participation, resilience, activation and engagement.
- *Experience:* person-centeredness, continuity of care.
- *Costs*: total health- and social care costs, ACSC admissions, re-admissions (90-days).

Programmes targeting frail elderly

Frail elderly

Croatia: GeroS

Mirjana Huic, Romana Tandara Hacek, Darija Ercevic, Renata Grenkovic, Marta Civljak, Tina Poklepovic Pericic, Livia Puljak, Ana Utrobicic

Summary: GeroS is an integrated care model for geriatric patients with multi-morbidity, designed as a 15-Module system for monitoring and evaluation of health needs and functional ability of geriatric insured persons and geriatric patients older than 65. Currently, it is not fully implemented at the national level. The evalution is designed as a prospective cohort study.

RESEARCH QUESTION: How the „GeroS Model" (specifically Modules covered "Four degrees of geriatric health care", Nutritional Risk Screening 2002 - NRS 2002, Record Sheets 1 and 4 and Module for out-institutional care and activities) affects health and well-being, experience of care, resource utilization and costs in comparison to usual care?

STUDY DESIGN AND TARGET POPULATION

Prospective multicentre cohort study (12-month follow-up)

Exposed group
- Geriatric patients in two Homes for elderly **with** specific Modules of GeroS implemented

Control group
- Geriatric patients in two Homes for elderly **without** specific Modules of GeroS implemented

DATA COLLECTION:
- Standard SELFIE Questionnaire
  - T0 - baseline
  - T1 – after 6 months
  - T2 – after 12 months
- Registry data (from health insurer, GP, and social care information systems)

DATA ANALYSIS:
- MCDA
- Economic evaluation: CEA or CEU

SAMPLE SIZE: Each cohort (exposed and control): from 110 to 200 geriatric patients with multimorbidity (based on the literature data on three outcomes: quality of life, pain, nausea)

OUTCOMES: Frail elderly programme

	CORE SET OF OUTCOMES	PROGRAMME-TYPE SPECIFIC OUTCOMES
HEALTH/ WELL-BEING	Physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life	Autonomy
EXPERIENCE OF CARE	Person-centeredness, continuity of care	Burden of medication, burden of informal caregiving
RESOURCE UTILIZATION AND COSTS	Total health and social care costs	Falls leading to hospital admissions, living at home

TIME FRAME

- Start of data collection: Spring 2017
- Data analysis: Summer/fall 2018
- Article writing and dissemination of results: Fall/winter 2018

POTENTIAL RISKS

- Difficulties for geriatric patient to fill-in the questionnaire
- The loss to follow-up larger than expected after 6 months
- Homes for elderly in the Control group will be less motivated to recruit geriatric patient in the study

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Frail elderly

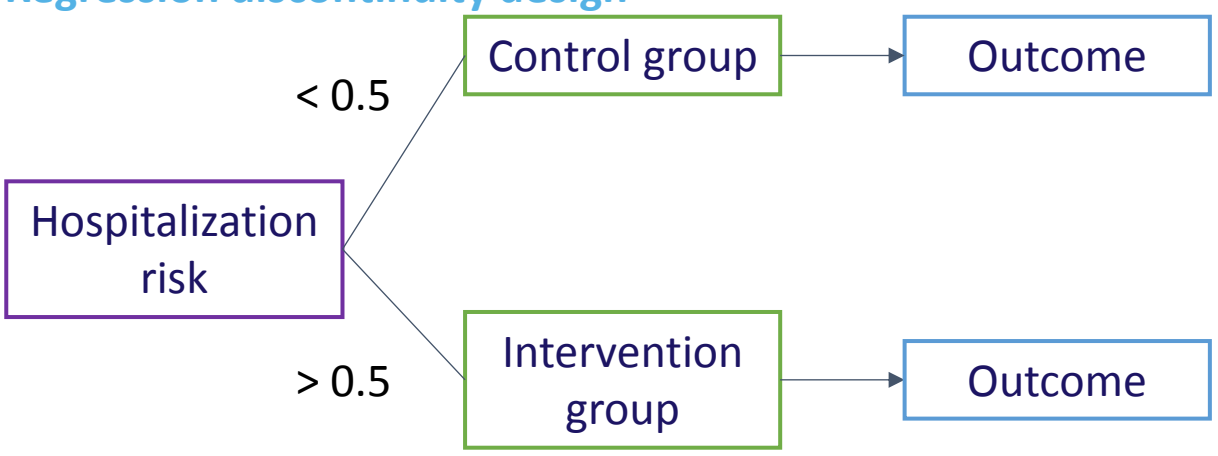
Germany: Casaplus

Verena Vogt, Verena Struckmann, Ewout van Ginneken

Summary
The care programme Casaplus addresses persons older than 55 years, with multiple chronic conditions, and being at high risk for hospital admissions. The overall aim of the programme is to provide comprehensive, easy accessible and high-quality case management. The effectiveness of the program will be prospectively measured using a quasi-experimental regression discontinuity design.

Research question:
Is the Casaplus programme more effective in terms of health outcomes, ambulatory care sensitive conditions and costs compared to usual elderly care for those who are multi-morbid, when using an MCDA approach and applying weights from different stakeholder perspectives?

Regression discontinuity design



Sample size
- All participants will be included that score just above the threshold of hospitalization risk of 0.5
- The same number of insured scoring just below the threshold

Target population
- Intervention group: frail elderly participating in Casaplus scoring just above the inclusion criterion (hospitalization risk)
- Control group: similar frail elderly, scoring just below the inclusion criterion

Time frame: data collection
- Still needs to be discussed with the programme partners.

Outcomes: frail elderly
- *Physical functioning*: Mortality rate / survival time
- *Psychological well-being:* Prevalence of psychological disorders, days of sick leave for psychological disorders
- *Costs*: total health- and social care costs, falls leading to hospital admissions
- Ambulatory-care sensitive conditions

These outcomes will be measured using the routine data from social health insurers (BKK).

Potential risks
- The identified control group differs systematically in terms of relevant characteristics from the intervention group → differences could be controlled for using Propensity score matching.
- The number of persons in the intervention group that score just above the hospitalization risk is too low to perform reasonable comparisons.

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Frail elderly

The Netherlands: U-PROFIT (1)

Fenna Leijten, Maaike Hoedemakers, Milad Karimi, Apostolos Tsiachristas, Antoinette de Bont, Roland Bal, Maureen Rutten-van Mölken

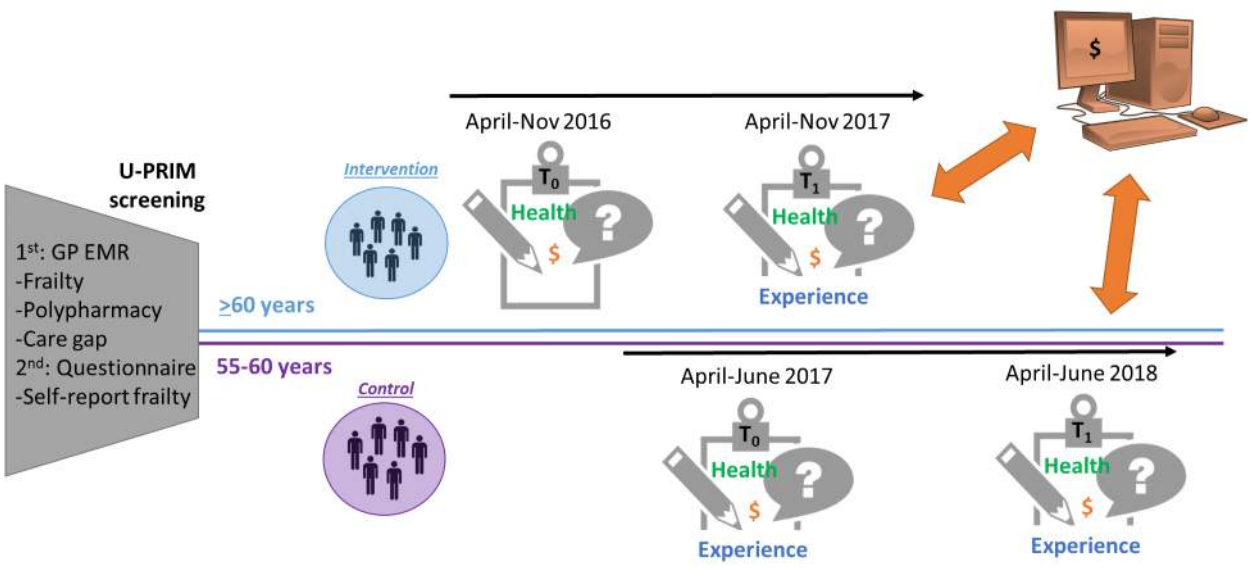
Summary

The Proactive Elderly Care Approach U-PROFIT consists of 2 steps: 1) screening for frailty in Electronic Medical Records followed by a self-report questionnaire (U-PRIM), and 2) an elderly care nurse-led tailored, integrated, and multi-disciplinary care approach (U-CARE). Two study designs will be used: **SD1** = prospective cohort study applying a regression discontinuity design and **SD2** = a re-analyses of questionnaire cluster-RCT data from 2010-2013 expanded upon with longer follow-up cost data (claims data).

Research question

Is the U-PROFIT approach, as it was implemented during the cluster-RCT and as it currently is being implemented more effective in terms of health and well-being, experiences with care, and costs compared to usual care for frail elderly?

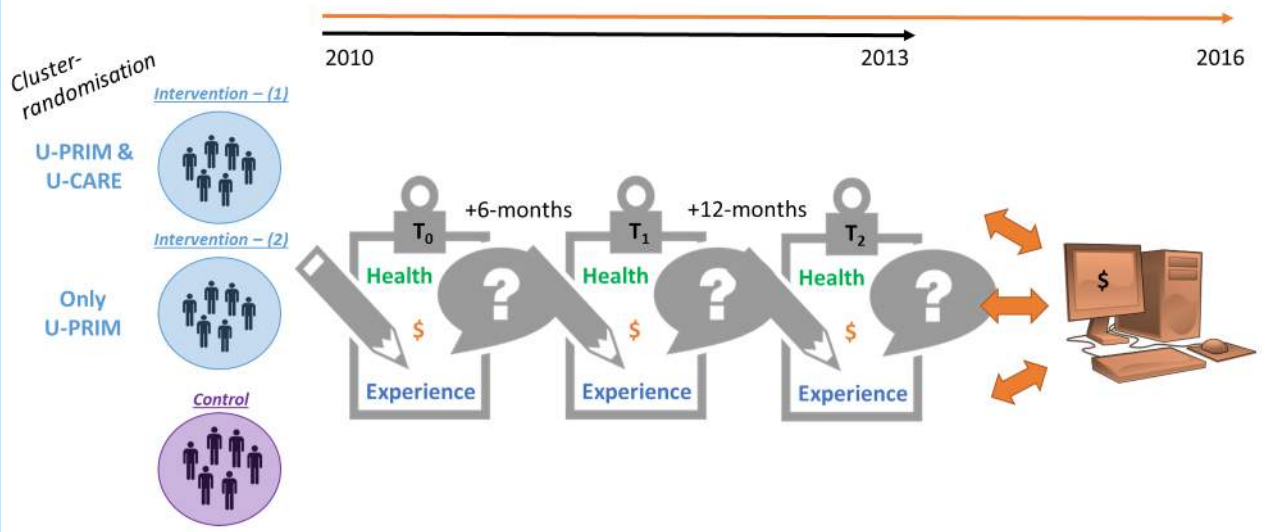
Study design 1: Prospective – regression discontinuity design



Target population (SD1)

- Frail elderly living at home
- Registered with GP practices Utrecht
- Identified by U-PRIM
- Intervention: *aged ≥ 60,* receiving U-CARE nurse-led care programme.
- Control: *aged 55-60*, receiving usual care.

Study design 2: Re-analysis cluster-RCT + claims data



Target population (SD2)

- Frail elderly living at home; registered with GP practices Utrecht
- Aged ≥ 60
- Int-1: ID'ed by U-PRIM, receiving U-CARE
- Int-2: ID'ed by U-PRIM not receiving U-CARE
- Control: usual care

Outcomes: frail elderly * = registry

SD1: *Health* (physical functioning, psychological well-being, enjoyment of life, social relationships & participation, resilience, autonomy), *Experience* (person-centeredness [int T1, control T0-T1], continuity of care [int T1, control T0-T1], burden of medication [int T1, control T0-T1]), *Costs* (total health- and social care costs*, ~~informal caregiving~~, living at home*, falls*)

SD2: *Health* (physical functioning, psychological well-being, enjoyment of life, resilience, ~~autonomy~~), *Experience* (person-centeredness, ~~continuity of care, burden of medication~~), *Costs* (total health- and social care costs*, informal caregiving*, living at home*, falls*)

Potential risks

SD1: Age comparability, willingness of practices to re-run U-PRIM, calendar time-effects

SD2: Older questionnaire data, informed consent

Frail elderly

The Netherlands: CCFE (2)

Maaike Hoedemakers, Fenna Leijten, Milad Karimi, Apostolos Tsiachristas, Antoinette de Bont, Roland Bal, Maureen Rutten-van Mölken

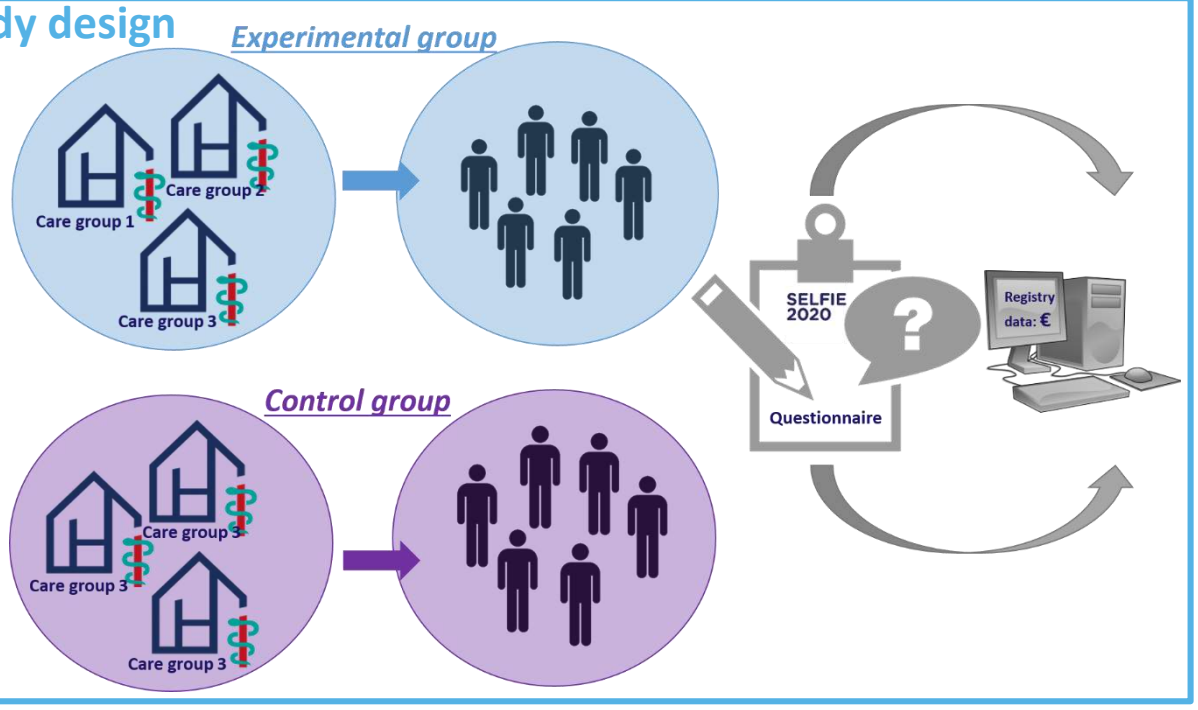
Summary

The care programme Care Chain Frail Elderly (CCFE) targets frail older persons living at home with complex care needs and loss of control over one's own life. A new way of financing care for frail elderly is being developed and implemented, in the form of a bundled payment. The evaluation is designed as a prospective cohort study.

Research question:

Is the CCFE more effective in terms of health and well-being, experiences with care, and costs compared to usual elderly care for those who are frail, when using an MCDA approach and applying weights from different stakeholder perspectives?

Study design



Sample size

- Power calculations based on ADL (n=427) and person-centeredness (n=69).
- We aim to include 400 frail elderly at baseline.
- Expected loss to follow-up: 35% in 12 months.

Target population

- Experimental group: frail elderly receiving care in the CCFE.
- Control group: similar frail elderly, living in the same region, receiving usual care via their GP.
- Informal caregivers: QoL measured in both groups.

Time frame: data collection

- T0: Mar '17 – Aug '17
- T1 after 6 months: Sep '17 – Feb '18
- T2 after 12 months: Mar '18 – Aug '18

Outcomes: frail elderly

- *Health*: physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life, autonomy
- *Experience:* person-centeredness, continuity of care, burden of medication, burden of informal caregiving
- *Costs*: total health- and social care costs, falls leading to hospital admissions, living at home

These outcomes will be measured using the SELFIE questionnaire and using registry data from health insurers, GP information systems, and national healthcare utilisation data from Vektis.

Potential risks

- That the case finding approach and the definition of frailty in the control group will not be exactly the same as in the experimental group.
- That the GP practices in the control group will be less motivated to recruit frail elderly.
- That the loss to follow-up will be larger than the expected 35%.

Frail elderly

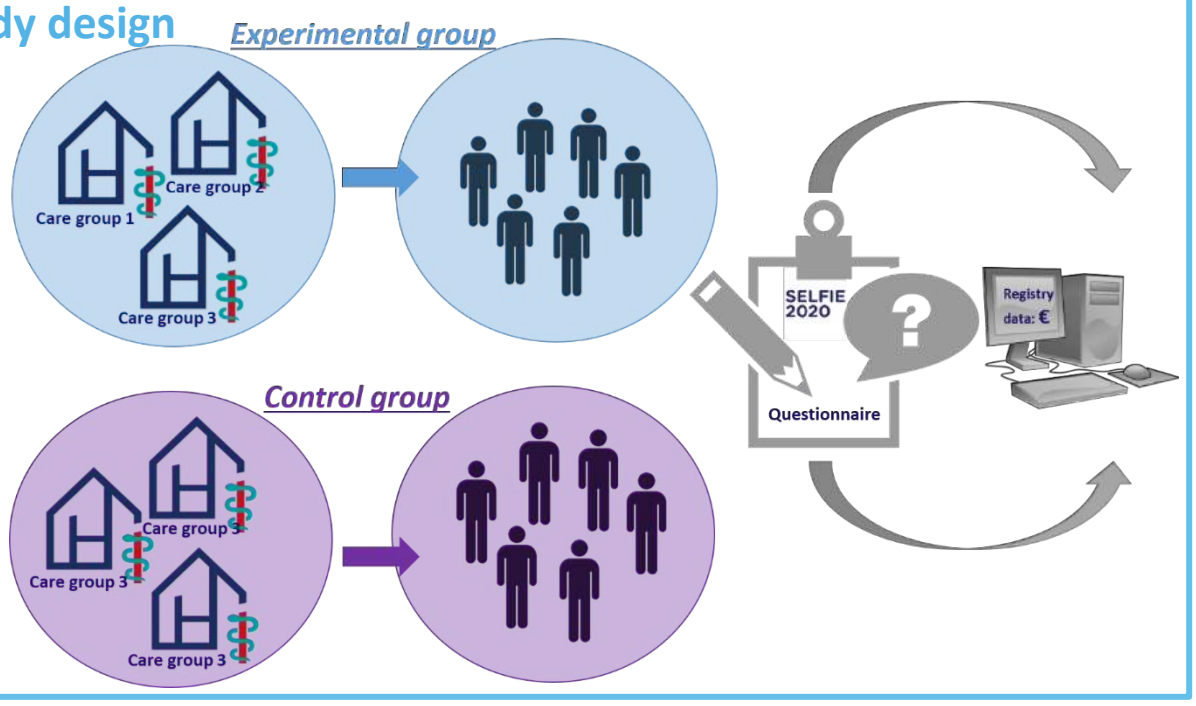
Norway: Learning networks (LNs)

Sabine Ruths, Jan Erik Askildsen, Muhammad Kamrul Islam

Summary
Learning network for whole, coordinated and safe pathways is a national care program targeting older persons newly enrolled in home care service or short term stay in nursing home, e.g. after hospital stay. We use two research designs in the evaluation; a retrospective cohort study (registry data) and prospective cohort study (survey data).

Research question:
Are Learning networks more effective in terms of health and well-being, experiences with care, and costs compared to usual elderly care for those who are frail? The program is evaluated though an MCDA approach with weights from different stakeholder perspectives.

Study design



Sample size

- We aim to include 500 frail elderly in experiment and control resp.

Target population

- Experimental group: all frail elderly receiving care in Learning network program from 10 municipalities.
- Control group: similar frail elderly, living in 10 similar municipalities that do not have LNs yet.

Time frame: data collection

- T0: Sept ‘17 – Feb ’18
- T1 after 6 months: March ‘18 – Sept ’18
- Register data incl. 2017

Outcomes: frail elderly

- *Health*: physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life, autonomy, mortality, prescription drugs
- *Experience:* person-centeredness, continuity of care, burden of medication, burden of informal caregiving
- *Costs*: total health- and social care costs, falls leading to hospital admissions, living at home

These outcomes will be measured using the SELFIE questionnaire and using national registry data from NPR, KUHR, NorPD/NIPH and KOSTRA/SBB.

Potential risks

- The case finding approach and the definition of frailty in the control group may possibly not be exactly the same as in the experimental group.
- Difficulties to recruit frail elderly in experiment and control municipalities.

Frail elderly

Spain (Catalonia): BSA

Jordi Piera, Erik Baltaxe, Juan Carlos Contel

Summary
Badalona Serveis Assistencials (BSA) provides integrated healthcare and social support services, with a patient-centered approach. Patients are frail, elderly citizens with several chronic disorders. They usually live at home showing unmet needs for care and support in order to prevent risk of exclusion due to illness or disability of any kind.

Research question:
Are BSA home-care services more cost-effective and generate better outcomes in terms of health and well-being, as well as patient experience, compared to usual elderly care?

Study design

- Quasi-experimental designs: non-randomized intervention group (BSA integrated care services) is compared to a control group (usual care) using propensity score matching wherein age, gender and population-based health risk assessment are main matching variables. The Adjusted Morbidity Grouper (GMA) will be used for health risk scoring purposes.
- Assessment will be carried out combining questionnaire data collection and information from electronic medical records and registry data in the study. In principle, two sets of measurements are planned: admission and three months follow-up.

Sample size

- 300 patients in each study arm

Target population

- BSA serves a population of 236 thousand citizens.
- Experimental group: frail elderly receiving care in the BAS home-care program.
- Control group: matched frail elderly group, living in the same region, receiving usual care via a different provider (Institut Catalan of Health, ICS).

Time frame: data collection

- The field study will be initiated by 1st June 2017 and concluded by the end-of May 2018.

Outcomes: frail elderly

- *Health*: mortality, multi-morbidities, ED and GP visits, readmissions, avoidable hospitalizations, multiple drug prescriptions, physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life, resilience, autonomy.
- *Experience:* person-centeredness, continuity of care, burden of medication, burden of informal caregiving, use of PHF, home-based IT support, access to integrated care, patient and caregiver satisfaction, healthy lifestyle, knowledge of current morbid conditions.
- *Costs*: total health- and social care costs, falls leading to hospital admissions, living at home, pharmacy, mental health, respiratory therapies dialysis, rehabilitation, non-urgent patient transport, primary care, hospital admissions, ED consultations, outpatient specialized care.

The above outcomes will be measured using the SELFIE questionnaires and registry data from the Catalan Health Surveillance System.

Palliative & Oncology programmes

Palliative care/Oncology

Croatia: Palliative care

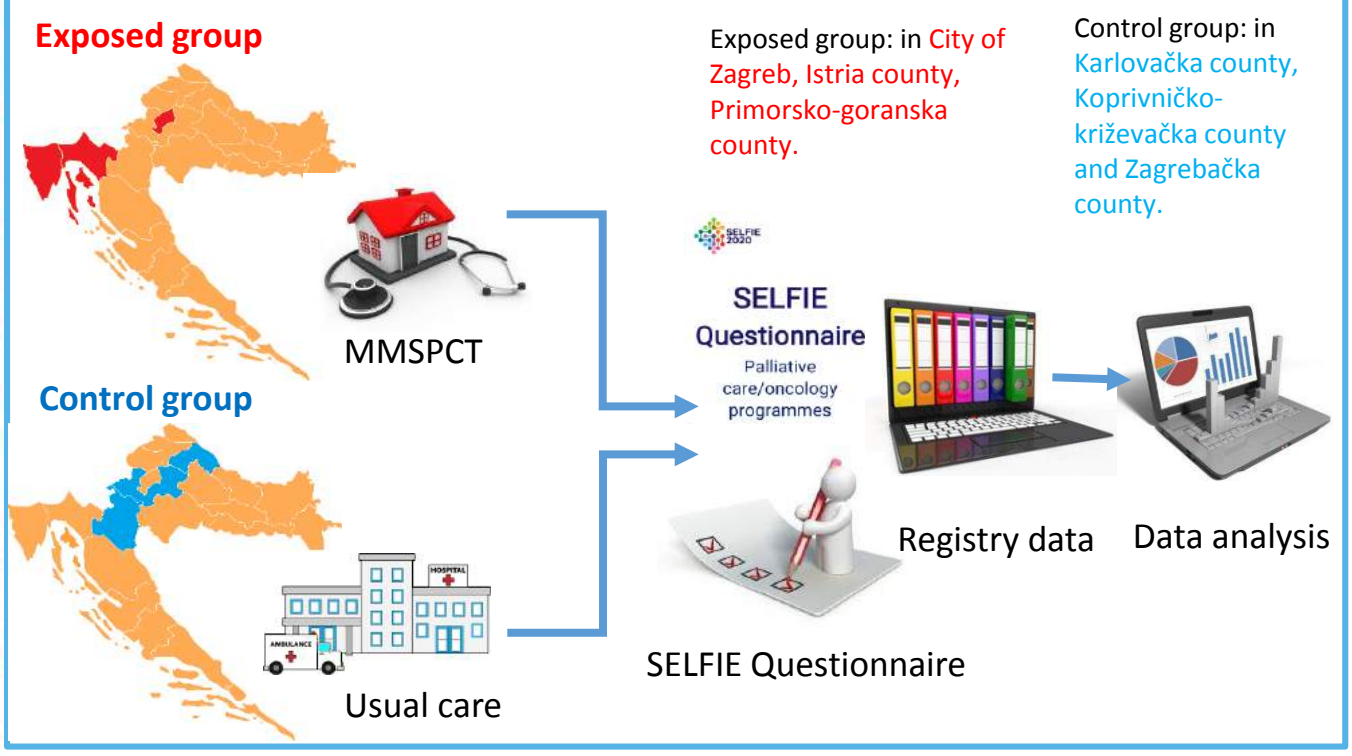
Mirjana Huic, Romana Tandara Hacek, Darija Ercevic, Renata Grenkovic, Marta Civljak, Tina Poklepovic Pericic, Livia Puljak, Ana Utrobicic

Summary: The Palliative care Model is an integrated care programme specifically designed for palliative care patients. Currently, it is not fully implemented at the national level. A Mobile multidisciplinary specialist palliative care team (MMSPCT), as a new innovative part of this Model, is established at the primary care level in some Croatian counties. The evalution is designed as a prospective cohort study.

Research question:

How the "Palliative care Model", specifically treatment by a MMSPCT, affects health and well-being, experience of care, resource utilization and costs in comparison to usual care?

Study design: Prospective multicentre cohort study (6-month follow-up)



Sample size

- Each cohort (exposed and control): from 150 to 200 patients
- Based on the literature data on three outcomes (place of death, quality of life, pain or nausea)

Target population

- **Exposed group**: Palliative care patients from three Croatian counties that already implemented treatment by a MMSPCT.
- **Control group**: Palliative care patients recieving usual care from three Croatian counties that have not yet implemented treatment by a MMSPCT.

Time frame: data collection

- Spring 2017 - start of data collection
- T0: 1st home visit of MMSCPT
- T1: after 1 month
- T2: after 3 months

Outcomes: Palliative care/oncology programmes

Heath/wellbeing	Experience of care	Resource utilization and Costs
Physical functioning	Patient-centeredness	Total health- and social care costs
Psychological well-being	Continuity of care	Informal caregiving
Life satisfaction	Compassionate care	
Social relationships and participation	Timely access to care	
Resilience	Preferred place of death	
Mortality		
Pain and other symptoms		

Outcomes will be measured using the SELFIE questionnaire and using registry data from health insurer, GP, MMSPCT and social care information systems.

Potential risks

- Difficulties for palliative patient to fill-in the questionnaire due to his/her health status
- The loss to follow-up larger than expected after 1 month
- The GP practices in the Control group will be less motivated to recruit palliative patient

palliative care / oncology programmes

Hungary: OnkoNetwork

János G. Pitter, Marcell Csanádi, Gábor Lukács, Antal Zemplényi, Mariann Moizs, Imre Repa, Zoltán Vokó, Zoltán Kaló

Summary

OnkoNetwork (ON) aims to improve clinical outcomes through patient path management. For patients with a suspected diagnosis of a new solid tumour, diagnostics must be completed in 30 days, and therapy must be initiated within further 2 weeks. The same time goals apply for target patients with multi-morbidity, with personalized diagnostics and stabilization of comorbidities in the 30-day window.

Research questions:

- ❑ Does OnkoNetwork improve clinical outcomes (e.g. stage distribution, survival) vs. usual care?
- ❑ Is OnkoNetwork cost-effective vs. usual care in Hungary?
- ❑ Is OnkoNetwork more effective than usual care by MCDA using the standardized set of outcomes that is used across the different programmes evaluated in SELFIE?

Study details: a retrospective and a prospective non-interventional sub-study

	retrospective	prospective
Target patients	Adult patients with new suspect of a solid tumour in the Somogy county hospital	Adult patients with new suspect of lung, pancreas, stomach, or colorectal cancer in a 6-month period (Mar 2017 – Sep 2017)
Experimental group	Target patients arriving in a 1-year period after ON initiation (Dec 2015 – Nov 2016)	Target patients arriving at the Somogy county hospital
Control group	Target patients arriving in a 1-year period before ON initiation (Sep 2014 – Aug 2015)	Target patients arriving at the Bács-Kiskun county hospital
Data source	Medical systems of the Hospital & University	Filled and returned SELFIE Questionnaire for palliative care/oncology programmes
Outcomes	Timely access to care (all patients); clinical outcomes and healthcare resource use (in lung, pancreas, stomach cancer patients)	PROs on health, experience, and costs (SELFIE Questionnaire items)
Patient characteristics controlled for	tumour type, stage, patient demographics, lifestyle and socioeconomic indicators	Tumour type, stage, patient demographics, lifestyle and socioeconomic indicators
Sample size	All cancer patients N ~ 5,760 Lung cancer N ~ 1,060 Pancreas cancer N ~ 214 Stomach cancer N ~ 224	Lung cancer N ~ 530 Colorectal cancer N ~ 444 Pancreas cancer N ~ 106 Stomach cancer N ~ 112
Timing of assessments	Continuous follow-up in the database for 2+ years	At first suspect of cancer, at the Tumour Board, and at 6 months after treatment initiation.
Statistical analysis	Multivariate regression models including measurable confounders; aggregation of included parameters into propensity score if needed; descriptive analyses.	

Current status

- Ethical approval of the study protocol has been granted
- Investigators' Meeting held at Somogy county hospital
- Prospective and retrospective data collection initiated at Somogy county hospital

Potential risks

- Delay in study initiation at the Bács-Kiskun county hospital (contract not signed yet)

Hungary: Palliative Care Consult Service

Antal Zemplényi, Marcell Csanádi, János Pitter, Ágnes Csikós, Zoltán Vokó, Zoltán Kaló

Background

Palliative Care Consult Service (PCCS) was initiated to provide palliative care within a tertiary care hospital. It is available on request by clinicians, which may relate to psychological support, pain and other symptom relief or planning and coordinating of care after hospital discharge. Majority of patients receiving care are diagnosed with malignant cancer.

Objectives

Prospective study: to estimate the impact of PCCS on patient reported health outcomes, experience with care process and costs of care as compared to usual care in acute hospital

Retrospective study: to estimate the effect of the PCCS on hospital costs from provider and third-party payer (National Healthcare Fund) perspective, as compared to usual care

Prospective study patient population

Inclusion criteria:

- Patient diagnosed with ICD C-code
- Karnofsky Scale score ≤ 50
- Patients admitted to selected departments of Internal Medicine Clinic or to the Oncology Department

Exclusion criteria:

- Admissions with short length of stay ≤ 3 days
- Hospital admission was for routine chemotherapy or hormone therapy
- Able to work

Retrospective study patient population

Inclusion criteria for retrospective study:

- Metastatic cancer (based on TNM status or ICD-C code)
- Patients admitted to selected departments of Internal Medicine Clinic or to the Oncology Department

Exclusion criteria for retrospective study:

- Patient admissions with short length of stay ≤ 3 days
- Hospital admission was for routine chemotherapy or hormone therapy
- Patient did not die within 180-days from enrolment

Prospective sample (estimated)

- Intervention: 80 - 100 patients
- Control: 200 – 250 patients

Retrospective sample

- Intervention: 500-600 patients
- Control: 1500-2000 patients

Intervention/control group

- Intervention: patients for whom palliative care consultation was requested by attending physician
- Control: patients requiring complex care without having any interaction with the PCCS team

Study design

Site: Medical Centre of the University of Pécs

Prospective comparative longitudinal cohort study

- Data collection at **T0** (hospital admission) and **T1** (discharge) facilitated by a professional in person. Data collection at **T2** (1 month after discharge) on the phone
- Further data retrieved from hospital and claims database

Retrospective comparative, cohort study

- Data from hospital and claims database

Time frame:

- **Prospective study:** May 2017 to April 2018
- **Retrospective study:** January 2014 to December 2016

Outcomes:

- Prospective data will be collected on SELFIE core sets of outcomes on **health, experience** and **costs.** Further PCCS programme specific outcomes: **Pain and other symptoms; Timely access to home hospice care, Compassionate care; Preferred place of death** measured with the use of PROs
- Retrospective data will be collected **on healthcare costs** from healthcare payer and provider perspective

Statistical analysis

- Multivariate analysis/propensity score matching will be used to control for confounding factors

Potential risks

- Response rate will be lower than expected, attrition rate will be high due to death of patients

Programmes targeting persons with problems in multiple life domains

Multi-problem patients

Austria: Sociomedical Centre Liebenau (SMC)

Thomas Czypionka, Markus Kraus, Miriam Reiss

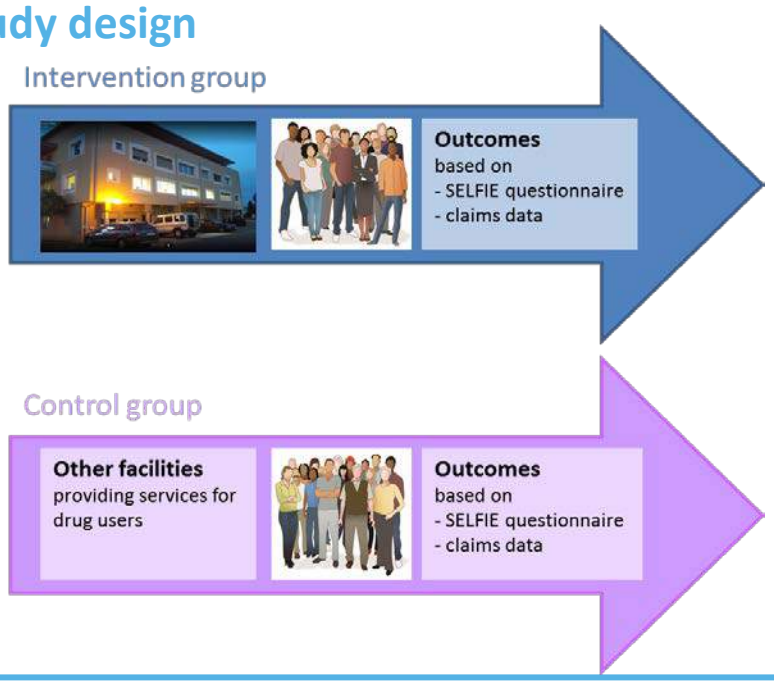
Summary

The Sociomedical Centre Liebenau (SMC) is a bottom-up pioneer model providing health and social care predominantly to vulnerable and disadvantaged groups in the socially-deprived Liebenau district in the Austrian city of Graz. The SMC's target clientele are persons with physical and mental disorders and/or social problems. A particular focus of the SMC's work is on the treatment of drug addiction and support for drug users.

Research question

Are the services provided by the SMC for drug users associated with improved health and well-being, improved care experience and reduced costs in comparison to usual care?

Study design



Sample size

- **Intervention group:** approx. 70 persons
- **Control group:** approx. 70 persons

Target population

- **Intervention group:** drug users who receive services provided by the SMC
- **Control group:** similar drug users who do not receive services provided by the SMC

Time frame for data collection

- Only one period of time: July '17-Dec '17

Planned procedure to collect outcome data

- **Intervention group:** SELFIE questionnaires will be distributed to the clients of the SMC by SMC staff; SMC staff will assist clients to fill in questionnaire
  Control group: SELFIE questionnaire will be distributed to clients in other facilities providing services for drug users either by the staff of these institutions or members of IHS team; staff or members of IHS team will assist clients to fill in questionnaire
- **In both cases:** SELFIE questionnaire will be used to ask patients' consent to use their claims data from the administrative database of the regional health insurance fund of the state of Styria
  ➔ The linkage between questionnaire data and claims data allows investigating resource utilisation and healthcare costs of clients of intervention and control group; questionnaire data and claims data will be linked with help of regional health insurance fund of the state of Styria

Outcomes

- **Health/well-being:** physical functioning, psychological well-being, enjoyment of life, social relationships & participation, resilience, self-sufficiency
- **Experience of care:** person-centeredness, continuity of care
- **Resource utilisation/costs:** total health and social care costs, total justice costs

Potential risks

- That the statistical power of intervention group is low due to small sample size.
- That GP practices/institutions of the control group will be less motivated to recruit drug users.

MULTIPLE PROBLEMS

The Netherlands: BSiN

Milad Karimi, Fenna Leijten, Maaike Hoedemakers, Apostolos Tsiachristas, Antoinette de Bont, Roland Bal, Maureen Rutten-van Mölken

Summary

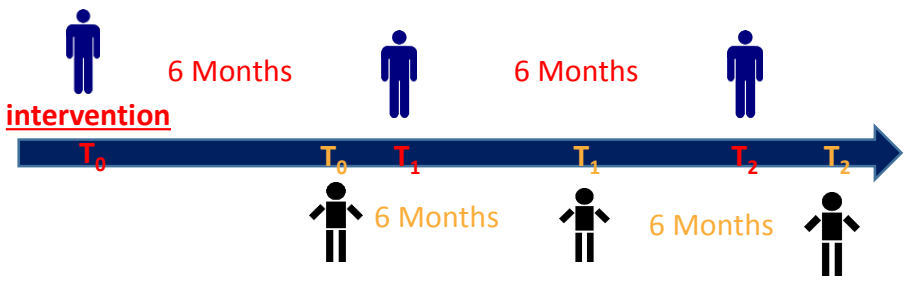
The care programme 'Better Together in Amsterdam North' (BSiN) targets individuals with "limited self-sufficiency" in multiple life domains. Participants receive integrated, coordinated, and individualised care. The programme is evaluated using a quasi-experimental study design using a prospective longitudinal study with a matched control group.

Target population

Limited self-sufficiency on at least 3 domains of The Self-Sufficiency Matrix

- Intervention group: individuals are identified by professionals from one of the KMA organisations or other organisations in Amsterdam North
- Usual-care group: individuals with comparable self-sufficiency limitations are identified in the 'Amsterdam Health Monitor' survey and visited at home to confirm the limited self-sufficiency

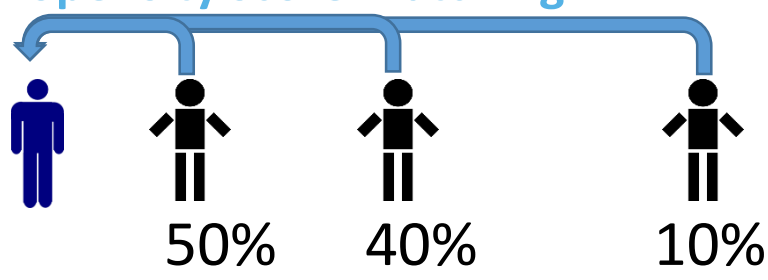
Study design



- Intervention period of ~ 6 months
- Non-randomised assignment

= Control = Intervention

Propensity score matching



= Weighted with kernel weighting based on similarity to cases

- Suitable method for small sample size

Sample size, time line, and outcomes

"Pre SELFIE" Period: 2013-2016

- Sample size
  - Intervention: $N_{T0} = 70$ $N_{T3} = 32$ and Control: $N_{T0} = 150$ $N_{T3} = 50$
- Measurement
  - Measurement of 7 SELFIE criteria using questionnaire (six criteria) and health insurance registry data (for costs)
  - Domains are 'mapped' to SELFIE domains because no SELFIE questions are used

"Post SELFIE" Period: 2017-2018

- Sample size
  - Both groups: Target $N_{T3} = 150$
- Expanded measurement of 9 SELFIE domains (SELFIE questions are used for: Person centeredness, Inclusion of Continuity of care, and Enjoyment of life measured)

Analysis

- Repeated measurement model: Outcome = f(X,β)
  - X = kernel weight, intervention, and measurement period
- Weigh outcomes in MCDA with SELFIE weights to obtain overall scores for BSiN and Usual Care

Potential risks and limitations

- Low enrolment and high drop out
- Missing data for two SELFIE domains of SELFIE because they are only measured starting in 2017

Population health management

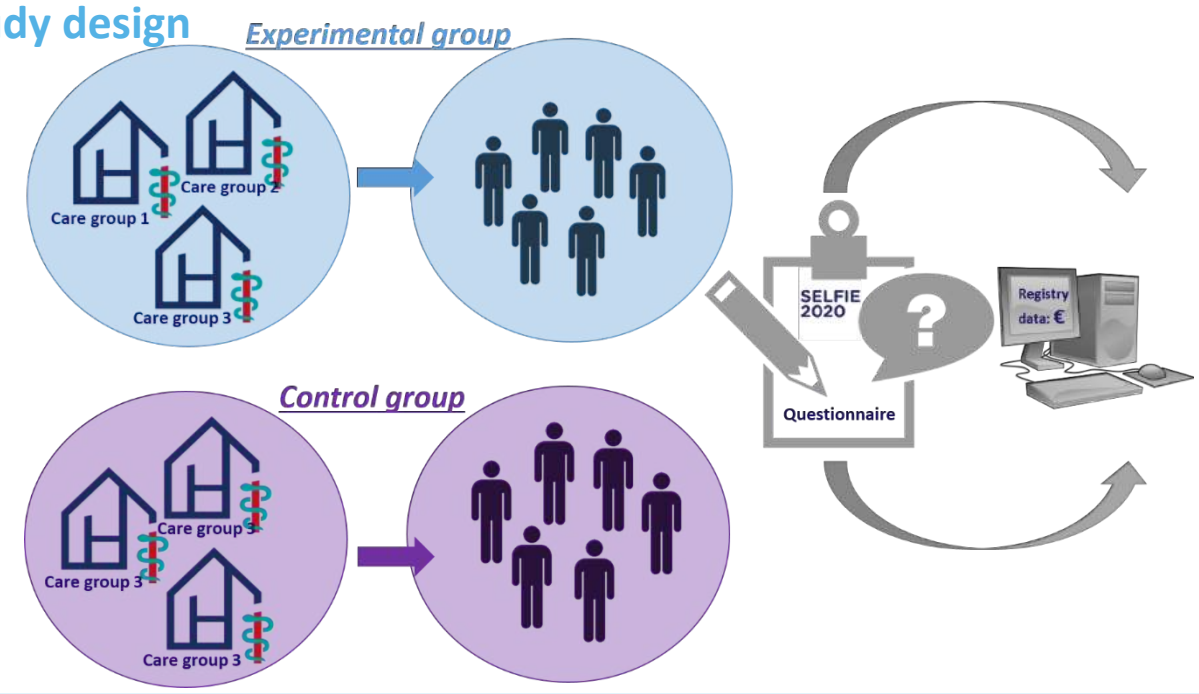
Norway: Medically Assisted Rehabilitation

Jan Erik Askildsen, Muhammad Kamrul Islam, Sabine Ruths

Summary
Medically Assisted Rehabilitation (MAR) Bergen is a treatment program for people with opioid addiction at Haukeland University Hospital, Health Enterprise Bergen. To evaluate MAR Bergen we will use two research design approaches; a retrospective cohort study using national registry data and a prospective cohort study using survey data.

Research question:
Is MAR Bergen more effective in terms of health and well-being, experiences with care, and costs compared to MAR Oslo? The program is evaluated using an MCDA approach and applying weights from different stakeholder perspectives.

Study design



Sample size

- We aim to include 1000 patients in MAR Bergen

Target population

- Experimental group: all patients enrolled in MAR Bergen
- Control group: patients enrolled in MAR Oslo (alternatively patients from all programs in Norway)

Time frame: data collection

- T0: Mar '17 – Aug '17
- T1 after 12 months: Mar '18 – Aug '18
- Register data 2017 incl.

Outcomes: opioid addicts

- *Health*: physical functioning, psychological well-being, social relationships & participation, resilience, enjoyment of life, autonomy, mortality, use of health care services prescription drugs
- *Experience:* person-centeredness and continuity of care
- *Costs*: total health- and social care costs, cost of rehabilitation, cost of home care services

These outcomes will be measured using the SELFIE questionnaire and using national registry data from NPR, KUHR, NorPD/NIPH and KOSTRA/SBB.

Potential risks

- Difficulties to find similar individuals in experimental and control group when attempting matching.
- Survey is coordinated with program owner and does not fully match Selfie questionnaire.