

Integrated Care Paper Award 2018 Abstracts

273. Longitudinal multiple case study on effectiveness of network-based dementia care towards more integration, quality of care, and collaboration in primary care

Introduction: The rising incidence and policies to keep dementia patients in their own homes are increasingly putting pressure on primary care systems and budgets. The DementiaNet program stimulates development of primary care networks of medical, nursing and welfare professionals for community-dwelling dementia patients through practice facilitation. This study aimed to provide insight into the merits and drawbacks of this program, mechanisms and which contextual factors influenced them.

Methods: In this longitudinal mixed methods multiple case study, primary care professionals with shared caseloads of dementia patients, were enrolled to form networks in the DementiaNet program. Data collection consisted of continuously kept logs, yearly structured interviews to rate the network maturity score (range 0-24), yearly quality of care assessment through a sum score of quality indicators (range 0-100), and in-depth interviews regarding experiences and perceived effects. Quantitative data were analyzed through mixed models; qualitative data with thematic analysis. Results were integrated by combined interpretation.

Results: Thirteen networks were successfully initiated in the program, consisting of a median of 9 professionals. Overall, the networks showed an average yearly increase of 2.03 (95% CI 1.20-2.96) on network maturity and 8.45 (95% CI 2.80-14.69) on quality indicator sum scores. Mixed methods interpretation revealed patterns regarding network and contextual factors enabling the transition towards more mature networks and better quality of care.

Discussion: Time trends in network maturity and quality of care indicators showed overall improvements. Several enabling factors for the transition to network-based care were identified including strong and adequate leadership (preferably with leaders from primary care practice), high involvement of motivated primary care physicians, high acquaintanceship with other network members, and network size with a compact network that operates in a relatively small geographical area.

Conclusions: Participation in the DementiaNet program was associated with increased network maturity and subsequent beneficial effects on quality of care. Adaptation towards a more mature network seemed to favour quality of care improvements.

Lesson learned: The multiple case study design demonstrated its value in the evaluation of DementiaNet as example of a complex health care innovation by incorporating interactions and contextual dependency.

Limitations: The main limitation of the study was the limited follow-up. The DementiaNet approach demands considerable changes in behaviour and practice from large numbers of actors; such adaptations require time and will be different per network. Indeed, networks work different in speed of change and improvement goals. Nonetheless, these initial results show improvements even over one and two year timeframes.

Suggestions for future research: A succeeding study will be initiated to ensure longer follow-up of existing networks, while simultaneously expanding the number of networks.

111. The critical importance of going beyond administrative data for health systems planning and integration

Introduction: Modern health care systems strive to be data driven, meaning they maximize the use of administrative data for evaluation and planning. However, the use of traditional administrative data has not had a major impact on health care costs nor clinical outcomes. Alberta, Canada is a province of 4.1 million persons with a single, public health care system. This system, where all clinical and utilization variables are captured within an entire population, afforded us the opportunity to assess whether the application of administrative data could lead to enhanced integration, reduced system costs and better care.

Methods: We used the databases of the provincial government and its healthcare delivery arm (Alberta Health Services), to determine whether administrative data would provide sufficient information to drive integration across the health care system, thereby reducing costs and improving care. Administrative data available included all encounters with the health care system such as physician visits, hospitalizations, emergency room visits, diagnostic testing, and all other clinical costs except for pharmaceuticals. Both parametric statistics and machine learning techniques were used to assess the data and to attempt predictive modelling from the same. Subsequently, mixed-methods techniques were used to determine the validity of statistical assessments and models.

Results: Administrative data identified the frail elderly and medically complex elderly as the major demographics driving healthcare costs. Further analysis suggested disease-related drivers of cost such as hypertension and diabetes on an outpatient basis, and heart failure and chronic obstructive pulmonary disease on an acute care basis. However, predictive modelling techniques were disappointing, even when machine learning was used. Moreover, groups identified as high cost or high system utilizers in any given time period turned out to have a 75% chance of being low cost/low users on a go-forward basis. When we explored root causes for health care utilization and costs, both by interviews and by adding in social data, we found that social factors were huge determinants and predictors of health care costs and utilization. For example, loneliness scores in a large sample of seniors correlated with future health care utilization and costs at an R2 value of 0.98. By contrast, the best machine learning models gave no more than a 0.6 correlation coefficient between administrative variables and subsequent costs/utilization. Finally, interviews with both patients and health care professionals confirmed that root causes of health care costs could be attributed to both an inadequacy of community social supports as well as to a lack of attachment and continuity with a primary care provider. Individual costs varied by five-fold in communities with strong social supports versus those without.

Conclusion: The exclusive use of administrative data would have lead our healthcare system down a misleading path of allocating resources to better management and integration of chronic diseases between primary, acute and specialty care. Instead, by adding social variables as well as patient/provider narratives to our planning, a completely different emphasis resulted: strengthening primary care and enhancing social supports in the community.

312. Implementation and effects of risk-dependent obstetric care in the Netherlands: a clinical impact study (Expect Study II)

Introduction: This study will compare former obstetric care as usual (Expect I) with risk-dependent care using a prediction tool (Expect II). The Expect I study externally validated prediction models using data of 2,614 women prospectively included from 2013 to 2015. Clinically useful models were embedded in a prediction tool. At the same time, risk-dependent care paths were developed by gynaecologists and midwives of Limburg (southern province of the Netherlands). In risk-dependent care antenatal care is tailored to the results of individual risk assessments. Furthermore, these care paths stimulate integrated obstetric care by intensifying the collaboration between midwives (outpatient clinics) and gynecologists (hospitals). Risk-dependent care is currently embedded in Limburg.

Methods: A multicenter prospective cohort study will be performed from April 1, 2017 to March 31, 2018, enrolling women who will receive risk-dependent obstetric care (Expect II). Obstetric risk profiles will be calculated using a web-based prediction tool comprising validated prediction models. The primary outcome is adherence of caregivers to key recommendations which were inadequate in former care as usual; e.g. recommendations regarding calcium intake to all women (Expect I: adequate calcium intake in 34% of women) and low dose aspirin treatment to women with an elevated preeclampsia risk (Expect I: actual use in high risk women: 1.5%). Secondary outcomes are compliance of women, patient satisfaction and healthcare costs. Health outcomes such as neonatal adverse events will be analyzed in the second part of the Expect II study using registry data of the region.

Preliminary results: Seven months after introduction we estimate that our prediction tool is used in ~40% of all pregnant women in participating regions. At the moment, 150 women are included in our cohort. Recommendations about calcium intake during pregnancy were given to 112 women (74%), 91 of these women (61%) report the intention to comply with the recommendations received. In case of an elevated preeclampsia risk (n=62) preventive aspirin treatment has been recommended to 41 women (66%), 18 of these women (29%) report the intention to comply.

Discussion: Implementing new guidelines takes time and asks an additional effort of caregivers. Especially if these guidelines reorganize the logistic structure of healthcare and include new strategies such as a prediction tool.

Conclusion: The preliminary results of this study indicate that risk-dependent care has already been implemented by a reasonable proportion of caregivers. Furthermore, risk-dependent care combined with a web-based prediction tool appears to increase usage of preventive interventions.

Lessons learned: Since this abstract reveals preliminary results it is too soon to draw conclusions about any lessons learned.

Limitations: These results are based on preliminary data, thus a relatively large proportion of participants are included by caregivers who immediately started using our tool. Therefore, the preliminary results may suffer from a selective response of caregivers in the early stages of our study.

Future research: Future research should focus on barriers that hamper the adoption of new strategies and adherence to recommendations by caregivers. Additionally, qualitative research is needed to understand the reasons for non-compliance of women.

294. Understanding the outcomes of specialist nursing: the continuing importance of relationships for carers of people with dementia

Introduction: Unpaid carers are the most valuable resource we have in dementia care, yet little is known about how best to support them.[1] Recent systematic reviews have highlighted a dearth of evidence on the impact of community based case-management services as a means of integrating support for carers of people with dementia^{1,2}. Admiral Nursing is the only specialist nursing dementia service in the UK with a specific focus on carers. In addition to providing emotional support and helping people to live positively with the condition, Admiral Nurses seek to join up different parts of the health and social care system so that needs can be addressed in a coordinated way.

Theory/Methods: We report here the qualitative findings of a study of support for carers of people with dementia which had Admiral Nursing as an exemplar. A limitation of some previous research on interventions for carers has been the choice of outcomes, which have been poorly aligned to the priorities of carers or the aims of the services evaluated.[2] We interviewed and conducted focus groups with 35 carers of people with dementia (half with and half without an Admiral Nurse) to ascertain from their perspectives which outcomes might be influenced by services like Admiral Nursing.

Results: Three key outcome areas were identified by carers that could be influenced by Admiral Nursing: confidence in caring; carer quality of life; and carer physical and mental health. We selected and tested measurement tools aligned to these outcomes.

Discussions: Our findings highlighted the value that carers place on continuity and ‘feeling supported’ as dementia progresses. Having an ongoing relationship with a specialist in dementia who knew them and their situation well gave them the confidence to continue caring in spite of the difficulties and uncertainties they faced. These findings resonate with the author’s previous research into support for people with complex needs and long-term neurological conditions.

Conclusions: Confidence (or self-efficacy) and how well-supported service users feel, are outcomes rarely measured in evaluations of dementia case-management. Yet successive qualitative research suggests that these outcomes, which are potentially influenced by having an ongoing relationship with a professional with condition specific expertise, are important to people with complex needs and may well be influenced by the quality and availability of support services.

Lessons learned:

- Carers of people with dementia place a high value on having an ongoing relationship with a specialist in dementia
- Such support could influence carer self-efficacy and quality of life

Limitations: This was small-scale qualitative research, focussed on the UK system

Suggestions for future research: There is a need for quasi-experimental research to measure the impact of different models of case-management (in different contexts) on these outcomes.

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[2] Thomas S, Dalton J, Harden M, Eastwood A, Parker G. Updated meta-review of evidence on support for carers. *Health Serv Deliv Res* 2017;5(12).

185. Pre- and within hospitalization risk factors for readmission of older adults

Introduction: Unplanned readmission is indicative of poor quality of care at the hospital-community interface. Yet, the unique contribution of in-hospital care processes to readmission risk is unknown. We aimed to test whether information on processes of hospitalization, such as mobility, functioning, and nutritional intake, contribute to the ability to accurately identify older adults at high-risk of readmission beyond their at-admission risk.

Methods: Prospective cohort study included 559 older adults (aged \geq 70) admitted to internal medicine wards for non-disabling conditions and discharged to their homes. Data on any urgent readmission up to 30 days after discharge were retrieved from an electronic health record (EHR) database. Information on pre-admission (e.g., chronic conditions and healthcare utilization in the prior year), at-admission (e.g., functional and nutritional status) risk factors was collected from EHRs and survey. Data on processes of hospitalization: mobility, incontinence care, nutritional intake and functional decline, were collected using validated questionnaires. A multiple logistic regression model for predicting readmission was developed.

Results: Readmission occurred in 15.2% of the cases. At-admission high and medium (vs. low) risk of malnutrition (Odds ratio (OR)=2.89, 95% Confidence interval (CI)=1.44-5.80; OR=2.35, 95% CI=1.13-4.91, respectively), higher serum albumin levels (OR for each mg/dL increase=0.45, 95% CI=0.28-0.74), prior hospitalizations (OR for each additional hospitalization=1.30, 95% CI=1.13-1.50), diagnoses of malignancy (OR=2.25, 95% CI=1.31-3.86), and/or chronic renal failure (OR=2.90, 95% CI=1.71-4.89), yielded good discrimination (c-statistic=0.79). Among the processes of hospitalization, only admission to discharge functional decline was significantly associated with readmission (OR for each 10-point decrease in the Barthel Index = 1.32, 95% CI = 1.02–1.72), but did not contribute to the overall discrimination of the model as compared with the at-admission data. Classification of patients into risk categories by at-admission combined with the in-hospital data shows that identifying patients in the top-tier category (10th highest percentile) according to the at-admission model misses 7/55 (12.7%) of patients who would have been categorized as highest-risk if risk identification were postponed to the discharge date.

Discussion: Information on processes of hospitalization does not contribute to the accuracy of a readmission risk prediction model that utilizes data on prior hospitalizations, baseline nutritional and functional status and chronic morbidity (CRF and malignancy).

Conclusion: Older adults can be identified as high-risk for readmission early during the index admission. Early evaluation of the readmission risk is likely to allow timely intervention to prevent readmission in the target population. Further at-discharge functional assessment can detect additional patients whose readmission risk changes during the index admission and who should be considered for inclusion in readmission-prevention interventions.

Lessons learned: At-admission clinical and functional status combined with at-discharge additional functional assessment can be used to target older adults at high-risk for readmission.

Limitations: A convenient sample of a relatively high functioning group of patients. These inclusion criteria may have affected the readmission rates.

Suggestions for future research: Future studies should examine the significance of in-hospital functioning in other older adult populations, such as greater mix of baseline functioning and morbidity.

359. The Financial Alignment Initiative for Low-Income Older People and Younger Adults with Disabilities: A Major Initiative to Integrate Medical Care and Long-Term Care

Introduction: Almost 12 million frail and disabled Americans depend on both Medicare and Medicaid programs for their care. Medicare is a near universal entitlement program for older people and some adults with disabilities, covering medical care, but not long-term care. In contrast, Medicaid is a means-tested welfare program largely designed by the states; Medicaid is the main source of funding for long-term care in the US. Individuals eligible for both Medicare and Medicaid must navigate two sets of rules and coverage requirements, resulting in fragmented care and poor health outcomes. This separation also leads to misaligned incentives for payers and providers, resulting in cost-shifting, unnecessary spending, and an inefficient system of care.

In July 2011, the Centers for Medicare & Medicaid Services (CMS), the agency that administers both programs, launched the Medicare-Medicaid Financial Alignment Initiative (FAI) in which states were invited to test capitated and managed fee-for-service integrated service delivery and financing models across these programs. In 2017, fourteen state demonstrations across 13 states are being implemented.

Methods: RTI International, the external independent evaluator for the FAI, designed and is currently conducting the multi-method evaluation of the state demonstrations. The evaluation research design has both qualitative and quantitative components and includes stakeholder interviews and focus groups, as well as claims data analysis. These analyses are performed to determine if each state demonstration was cost saving and to measure changes in utilization across settings, as well as to assess whether these demonstrations improved beneficiary experience, quality and access to care.

Key Results: This presentation will briefly describe the state demonstrations and will focus on enrollment, care coordination, and the acute care reduction outcomes for the states where preliminary results are already available. Currently, twelve demonstrations use a capitated design and two demonstrations use a managed fee-for service (MFFS) design. As of June 2017, 438,780 dually eligible Medicare-Medicaid beneficiaries were enrolled in these demonstrations. In capitated model demonstrations, managed care organizations are implementing new care coordination approaches designed to integrate care across medical, LTSS, and behavioral health systems. In Washington MFFS demonstration, the care coordinating function resides within Medicaid health homes which receive monthly payments to provide extra services to enrollees. There is some evidence in the earliest demonstration states (Washington, Ohio and Illinois) that the FAI is helping to reduce acute and post-acute utilization.

Discussion: The state demonstrations under the FAI represent largest effort in the US to integrate care, improve quality and reduce costs for dual eligibles to date. Multiple factors influenced the rate of enrollment of eligible beneficiaries in the demonstrations; in most demonstrations, passive enrollment was very important to building enrollments.

Conclusions and Lessons learned: The FAI presents an important opportunity for state and federal government to integrate and streamline two financing and service delivery systems.

Limitations: Significant data lags and limitations in data availability.

Suggestions for future research: The evaluation is ongoing; state evaluations are released when complete data are available with final evaluation results being made public upon completion of each state demonstration and requisite data being complete.

322. A cross-sectoral integrated care approach to addiction services, homeless services and prison services – the experience from Southern Ireland

An introduction (comprising context and problem statement): The 2010 Irish National Drug Rehabilitation Framework advocated an integrated and coordinated care approach to drug rehabilitation in Ireland, providing guidelines around standardised protocols (screening, assessments, care-planning, case-management) within the addiction services, then largely absent nationally.

Short description of practice change implemented: In the absence of consistent practice across the region where numerous screening tools, assessments and care-planning processes were being used in an ad-hoc manner, a standardised system of case-management and care-planning was implemented.

Aim and theory of change: This initiative aimed to: (i) provide a continuum of care for service users across all addiction and homeless services across Southern Ireland and (ii) enable co-operative interagency working.

Targeted population and stakeholders:

- Substance misusers
- Homeless
- Prisoners
- Irish Traveller Community

Key stakeholders included statutory, community and voluntary organisations.

Timeline: Since 2011, a 4-phased approach was taken: (i) exploration, planning and resourcing, (ii) implementing, (iii) operationalising, and (iv) business-as-usual (embedding), creating an integrated rehabilitation pathway. A regional case-management manual to support the process was adapted from the framework, and in 2014, a joint assessment developed which satisfied both addiction and homeless sectors. Training was delivered to 190 frontline staff and 40 managers (28 agencies representing 75 diverse services).

Highlights (innovation, Impact and outcomes): This is the only region in Ireland to have integrated both addiction and homeless services inclusive of an Irish Prison. Co-ordinated shared care between services has resulted in a better quality service and enhanced access to health services for a hard to reach cohort of the population.

Outcomes: reduced duplication of screening and assessment
reduced assessment waiting times
decentralisation of assessments from statutory clinics to the wider community

Comments on sustainability: We designed a comprehensive implementation plan, reviewed iteratively by a multi-d team which represents the sectors described herein. This ensures fidelity to the integrated care framework. This consultation process continually informs how best to respond to successes and challenges in order to ensure sustainability.

Comments on transferability: The continued work on this initiative provides a guiding framework that can be replicated in other regions and sectors. The pre- and post-implementation strategy employed to-date has proven to work with a heterogeneous population.

Conclusions (comprising key findings): This initiative provided a continuum of care for service users across addiction services and homeless services in Southern Ireland while providing a framework to allow services to work in a more integrated way.

Discussions: This initiative provided a continuum of care for service users across all addiction and homeless services in Southern Ireland while providing a framework to allow services to work in a more integrated way.

Lessons learned: This project necessitated a significant cultural shift for services to work together under the same framework. This initiative crosses professional, organisation and sectoral boundaries with a core focus on person-centred care.

353. The policy discourse(s) of patient autonomy in home care and the re-shaping of nurses' professional work and identities.

Introduction: Over the last decade, new health care policies are transforming healthcare practices towards independent living and self-care of older people and people with a chronic disease or disability within the community. For professional caregivers, such as nurses, this requires a shift from a caring attitude towards the promotion of patient autonomy. The aim was to explore how nurses in home care deal with the transformation to fostering patient autonomy. The research questions included: How do community nurses perceive the required changes in professional knowledge, skills and attitudes in promoting self-management of patients and their families? What challenges or dilemmas do they encounter and how do they cope with these? Answering these questions provides insight into the changes in professional work practices and professional identities and the ways practitioners cope with these changes, learn from and develop their own practices.

Methods: A qualitative case study was conducted in community care (Yin, 2013). The 'case' was a professional development project for community nurses, funded by ZonMW, aiming to increase nurses' professional knowledge, skills and attitude to support autonomy of clients and their social system. Data

were collected by the researcher as participant observer of the four meetings of one professional development group. Reflective notes of the observations were taken before, during and after learning circle meetings. A narrative analysis (Riessman, 2008) was conducted on these data and three main themes constructed.

Theory: The theoretical notion of ‘relational agency’ (Edwards, 2010) and the moral concept of ‘practices of responsibility’ (Walker, 2007) were used to conduct a narrative analysis on the nurses’ stories about patient autonomy.

Findings: Three main themes expressed the moral demands experienced and negotiated by the nurses: adapting to the person; activating patients’ strengths; and collaboration with patients and informal caregivers. The overarching challenge the nurses face, is creating an equal partnership with clients and family members.

Discussion: On a policy and organisational level, the moral discourse on patient autonomy gets intertwined with the instrumental discourse on health care budget savings. This is mirrored in the nurses’ ‘stories of ambiguity’: the turn towards autonomy in healthcare raises moral questions about responsibilities for care.

Conclusion: Each of these tasks has troublesome elements and presents challenges and ethical dilemmas for the nurses, resulting in shifts in professional identity and practice. Promoting patient autonomy should be a collaborative endeavour and deliberation of patients, professional and informal caregivers together.

Lessons learned: The ‘relational turn in expertise’ (Edwards, 2010) requires long-term coaching of individual practitioners as well as teams, and a culture change in healthcare practice. Co-education of nurses, patients and informal caregivers is needed to achieve this goal of promoting patient autonomy.

Limitations and suggestions for future research: additional in-depth interviews could have added to the insight into dilemmas and tensions in practice and in nurses’ coping strategies. More research is needed into the conversations and co-actions within patient-family-practitioner partnerships: the relational dynamics of making decisions, establishing connections (and breaking them), negotiating responsibility and creating trust or mistrust.

297. VEER: Volunteers Engaged to Enhance Reintegration. A Comparative Study on Intermediate Care

Introduction: Complex patients, particularly older adults, being discharged from the hospital are often vulnerable and in need of services that address both health and social issues. Volunteers can play an important role in supporting care transitions. However, there is limited understanding regarding their role, the kinds of services they deliver, and how volunteer capacity is built and maintained. This study aimed to explore these specific elements of volunteer supported patient care transition programs and how these programs support patients re-integrate in the community and live independently.

Methods: Using a comparative research design and qualitative descriptive analysis, five community re-integration and hospital to home transition programs across England and Canada were examined.

Programs in England included: Age UK Worcestershire & Herefordshire (Home from Hospital), Royal Voluntary Service Leicestershire Rutland (Home from Hospital), and GoodGym. Programs in Canada included: British Columbia Stroke Recovery Association Community Navigation Program, and March of Dimes Peers Fostering Hope. Interviews were conducted with a total of fifty-one participants, comprised of eleven focus groups with volunteers and program coordinators, and seventeen individual interviews with patients.

Results: The programs held similar missions and objectives, as well had formalized intake (recruitment, screening, interviewing) and training processes for volunteers. A small number of volunteers in each program supported a large number of patients in providing support for instrumental activities of daily living (e.g. shopping, light housework, transport, collecting prescriptions). . Volunteers also provided social and emotional support (e.g. befriending, peer support, community navigation, caregiver support) in order to reduce loneliness and increase confidence levels, particularly for patients still in the hospital or in rehabilitation, and those who live alone at home. Evaluations of programs showed patients had decreased admissions to emergency rooms post discharge, as well as reported increased quality of life and decreased social isolation.

Discussions: Voluntary sector programs can serve as a ‘safety net’ for patients and promote independent living. Volunteers provide unique contributions in improving health and social care integration, particularly in transitional care. Skilled volunteers that are adaptable, flexible, and have good interpersonal skills can have a positive impact on older adults’ experiences returning home.

Conclusions: This study highlights the role of the voluntary sector in intermediate care and the potential for the sector to bridge the transition between hospital and home/community, and to further integrate health and social care.

Lessons learned:

1. Programs should be developed collaboratively between the health, social and voluntary sectors.
2. Programs must be adaptable for client needs and community service gaps.
3. Support should start at the hospital (before discharge).
4. Volunteers must be vetted and provided with training and support.
5. Cited barriers (risk, privacy, liability, confidentiality) can be reduced with policies, education and training.

Limitations: Transferability of study results must consider the contextual arrangements of the wider health and social care system.

Future research: The utility of hospital to home programs and their impact on outcomes and experience of patients and their families must be evaluated rigorously, and further assessed for transferability and generalizability.

442. Barriers and facilitators for the implementation of Integrated Care Pathways (ICPs): a systemic perspective.

Introduction: Integrated Care Pathways are a proven effective intervention to improve care coordination and quality of care, however their implementation presents important challenges and barriers at the clinical, meso and macro level. The literature identifies actions and elements to be considered that contribute to their effective implementation. However, their implementation is context-dependent, needing a systemic perspective to understand the barriers and elements that can facilitate its deployment in the Spanish National Health System.

Theory: We understand ICPs as a pact between professionals and organizations from different healthcare areas that operate in the same territory and serve the same population affected by a specific health problem/s, to apply the criteria of good practice, optimize care circuits and plan responses to foreseeable scenarios.

A qualitative research session was conducted with a multidisciplinary group of key opinion leaders (19), including clinicians, healthcare managers and policy makers from 9 different Spanish regions. Design thinking methodology was used to identify and agree upon key barriers and enablers for the implementation of ICPs from a macro, meso and micro perspective. The session was underpinned, by the knowledge gathered through systematic review and lessons learned from a best practice of ICPs implementation in Spain.

Results: Structured list of key barriers and enablers at macro, meso and micro level for an effective implementation of ICPs. The identified barriers were: lack of systemic and integrative vision; clinical and social complexity of the patient, rigidity and work in silos, non-integrated information systems; individualist professional culture, absence of transformational leadership, patient not located in the center, and lack of training. Enablers were also identified.

Discussions: As the literature highlights, successful ICP implementation requires a deep understanding of the local contexts and alignment between bottom-up initiatives and top-down support

Conclusions: There are several issues preventing a larger deployment of ICPs in Spain: at macro level there is a general lack of strategic vision towards integrated care from a systems perspective, especially from a multisector approach. At meso level, the historical fragmentation of organizations poses a strong challenge towards care coordination. At the micro level a lack of clinical leadership and buy-in hinders the needed multidisciplinary and collaborative work. Strategic alignment, better information systems, improving data collection, continuous monitoring and evaluation, feedback looping to professionals, incentives and training healthcare professionals in communication and team-work skills were identified as facilitators.

Lessons: Although coming from different regions and professional backgrounds, all participants have experienced similar problems with the implementation of ICPs. ICPs implementation go beyond the development of a booklet with a set of guidelines, they imply local agreements, cultural change and doing things differently. They need a strong sustained buy-in from every level, a leading core team, sufficient resources, and a continuous support to manage cultural change and adaptation to local context.

Limitations: This research has been focused on a particular health system. Conclusions should be generalized with caution.

Suggestions: Further research is needed to demonstrate if the conclusions of this study are applicable to other settings, particularly in non NHS-like systems.

369. Moving beyond the fragmented and reductionist model of aged care: Evaluation of a process to create an aged care worker of the future

Introduction: Globally health care for older people is transitioning from a traditional reductionist biological and dependency focussed model to a consumer driven approach that maintains functional ability and promotes health while ageing (1,2). The Australian government's response to these challenges has been to introduce major reforms within the national aged care system where older people will be increasingly empowered to make choices and give direction to their individual needs to support their health (3).

The World Health Organisation (2) recognised the emergence of this new consumer-driven social-ecological approach to ageing acknowledging the need to move from traditional health disciplines, and develop a new worker with skills to navigate and support consumer decision-making within a seamless and integrated service model.

In 2016 the University of Newcastle in Australia worked with the aged care industry to develop an Associate Degree in Integrated Aged Care. The degree was designed to allow individuals who had gained workplace and vocational experience in aged care to gain higher level tertiary preparedness and skills to work within a social-ecological and integrated model of service delivery.

A 12 month evaluation of the program was undertaken in 2017 to examine the academic transition, preparedness, progression and satisfaction of vocational students with relevant work experience to undertake studies in new program.

Method: Mixed methods collected data from students and included surveys at orientation and at the completion of each teaching term, and 1:1 interviews after 6 months.

Results/Discussion:

Transition: 83% enrolled held certificate qualifications in aged care. The prevailing reason for enrolment was to upskill. At orientation the students were concerned about managing work/study commitments and using the computer. Many of the students described finding the transition to university difficult.

Preparedness: Most described themselves as being the first in their family to undertake university study. They had to obtain a computer and develop computer skills to undertake this program.

Progression: 22 students enrolled into the program and 86 % remained enrolled at mid-year and 72% at the end of the year. Students who withdrew did so because the program did not meet their expectations or was too difficult. Time management continued to be their biggest challenge. During this first year of the program 25% of the students have been promoted within their organisations to undertake a more skilled role in care coordination.

Satisfaction: Students stated that the program was meeting their expectations and the educators have been supportive. Survey course feedback from the students were all above the university mean.

Conclusions: Despite small enrolment into this new program, students with vocational qualifications now have an avenue to upskill in aged care. The aged care industry is already recruiting these students to work in more advanced roles where the consumer driven approach is required.

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537. Improving the Cancer Journey: A Collaborative Model of Integrated Care in a Community Setting

Macmillan Cancer Support has developed a collaborative model of integrated care which crosses secondary, primary, community care and utilises community assets to provide holistic support to people living with cancer.

Improving the Cancer Journey (ICJ) is an integrated multi-agency approach which includes Macmillan, Glasgow City Council and NHS Greater Glasgow and Clyde working in partnership to deliver person centred care and support outside of hospital. It is social model of care including addressing wider social determinants of health such as housing. Anyone across sectors can refer including self-referrals. ICJ contacts every newly diagnosed individual with cancer in Glasgow, offering them time with a link worker to discuss their support needs and to coproduce an individual care plan. This Holistic Needs Assessment (HNA) covers six areas of concern: physical, practical, family/relationship, emotional, spiritual/religious and lifestyle or information needs. Individuals' three main areas of concern were money and housing, fatigue and tiredness, and mobility.

An evaluation of the first two years of ICJ found that service users reported positive changes in their quality of life and a reduction in their concerns and feelings of isolation. The report also found that:

- 61% of those supported by ICJ came from the most deprived category of people living in Glasgow, with another 16% from the second most deprived category.
- ICJ has helped people claim almost £1.7m in financial support such as welfare payments, and write off more than £100,000 of debt.

The Scottish Government has pledged support to roll out similar services across the nation.

Key to the success of ICJ has been a joined-up approach between relevant organisations, the offer of support at the earliest opportunity, and the provision of a link worker giving help with holistic needs as a single point of contact. The service is delivered in community settings and supports people to access over 230 existing organisations.

Additionally, Macmillan Cancer Support's Recovery Package model has also been key in developing more personalised and integrated support for people living with cancer. The model has four main interventions. Holistic Needs Assessment and Care Planning, Treatment Summary, Cancer Care Review, and Health and Wellbeing Events. These elements form part of an overall support and self-management package.

Taking the evidence, learning and key principles from ICJ and the Recovery Package, a national programme has developed with sites in England and Scotland exploring how to spread the development of integrated models of non-clinical care and support for people living with cancer which are

personalised, coordinated and promote wellbeing and independence. The programme is developing collaborations across health, social care and communities.

Important work in the programme include:

1. understanding the needs of local population and current pathways
2. understanding what assets already exist in local areas to build sustainable solutions utilising these assets
3. taking a coproduction approach with citizens and professionals to developing solutions

This workshop/discussion provides an opportunity to understand the key barriers/enablers to developing integrated programmes, the learning and to explore the outcomes for systems, organisations and most importantly for citizens.

119. A comprehensive overview of barriers and facilitators in the design and implementation of bundled payment contracts.

Introduction: Most current healthcare payment methods financially punish providers that deliver high quality, preventive and appropriate care. A healthier population decreases volume, and therefore lowers their revenue. In addition, most current healthcare delivery systems are highly fragmented and providers are paid separately for their services. This forms a major obstacle to the integration of care. Therefore, many countries are now taking steps to transition their provider payment system from traditional volume-based to innovative value-based payment methods. One of these newer methods in particular has attracted prominence lately: bundled payments. Although its potential to facilitate the integration of care is considered high, there is a lack of studies addressing the complexity in the design and implementation of bundled payment contracts between payers and providers. Due to the complex interactions between a high number of factors on different stakeholder levels, implementation is complicated.

Methods and results: We performed a scoping review that aims to identify and categorize the hindering and facilitating factors in the design and implementation of a bundled payment contract. Together with a university librarian we developed a review protocol based on the PRISMA statement. The search was performed on nine scientific databases and, in addition, relevant grey literature (e.g. government and third-party evaluation reports) was included as well. The initial search resulted in 4.035 unique articles. After screening titles, abstracts and full text, 115 articles were included in the final study sample. Two reviewers examined the full text independently and identified and coded the barriers and facilitators described in the literature. Then, in an iterative process, they searched for consensus and collated them into comprehensively defined themes until a saturation point was reached. This saturation was then externally tested in consultation exercises with groups of experts. Eventually, the themes were collated into 54 key factors and considered relevant to the aim of the study. We then constructed a model with two axes in which all factors were plotted. On the vertical axis we used a system-wide perspective that illustrates the interactions between different healthcare stakeholders (government, payers, providers, professionals, patients). On the horizontal axis we used the six phases of a healthcare procurement design- and implementation process (specify, select, contract, identify, deliver and monitor, payment). Based on the high degree of interaction between factors in our model we defined ten dichotomous design considerations that are essential for the successful implementation of a bundled payment contract.

Discussion and conclusion: The model shows a comprehensive overview that provides valuable insights for all payers and providers aiming to facilitate the integration of care by designing and implementing a bundled payment contract. It illustrates which factors, on which stakeholder level and in which procurement phase, might influence the process and therefore need to be taken into account. This enables policymakers to change their mindset from thinking of bundled payments as too complex and unfeasible to a challenge that has, although still comprehensive, huge potential to improve healthcare quality and contain costs by facilitating the integration and coordination of care for patients.

160. Improving Hospital Discharge Arrangements for People who are Homeless: The Role of Specialist Integrated Care

Background: In England, 70% of people who were homeless on admission to hospital were discharged back to the street without having their care and support needs addressed (Department of Health, 2013). Furthermore they experienced high hospital readmission rates and often resorted to inappropriate use of the Emergency Department. Following these data, Government funding was provided to enable hospitals to work with local partners to develop specialist integrated homeless hospital discharge schemes, including intermediate or step-up/step-down care. In this paper we report preliminary findings from a realist evaluation which explored the effectiveness of the different schemes established. Schemes took many different formats, and tended to be either uniprofessional, comprising housing workers, or multi-professional, comprising: GPs; occupational therapists; nurses; social workers; housing workers; and peer navigators.

Methods: The study was carried out in England between September 2015 and February 2018. It was funded by the National Institute of Health Research (NIHR). It employs a realist evaluation methodology, comparing sites with specialist integrated care (n=4) to those with standard care (n=2). Realist evaluation is designed to explore the relationship between the local context, the mechanisms and resources deployed and the outcomes. The overall aim is to generate hypotheses about ‘what works for whom, in what circumstances and why’. Across the six study sites in-depth observational fieldwork was undertaken. This encompassed interviews with 60 practitioners and stakeholders, and 60 people who were homeless on admission to hospital. People who were homeless were interviewed shortly after discharge and again three months later. An economic evaluation and ‘data linkage’ (across a total of 20 sites) were also undertaken to interrogate the emerging realist hypotheses.

Preliminary Results: Our emerging hypothesis is that there is no ‘magic bullet’ or single most effective solution. Findings so far indicate that improving hospital discharge arrangements for people who are homeless requires action on many different fronts to weave together a range of potentially effective mechanisms and resources. To illustrate this, we will present examples of different local configurations evolving over time, in rural and urban contexts, mapping the advantages and disadvantages of each. We will pinpoint a number of key attributes of effective systems (e.g. clear protocols for the discharge of people who are homeless, discharge co-ordination and intermediate care) and the factors that may explain why these are necessary and workable in some but not all locations. Throughout, we will tease out the concept of ‘specialist integrated care’ and whether this is indicative of improved quality or further fragmentation.

Limitations and future research: The limitations of the research are that it is focused on England. We hope that during the conference we can engage with international colleagues with a view to scoping ideas for future comparative research in the field of integrated care transitions.

Reference:

Department of Health (2013) Homeless Hospital Discharge Fund. London: Department of Health.

365. We have a TIP for You! - Serving Complex Patients through Telemedicine IMPACT PLUS (TIP) Case Conferences

Context and Problem Statement: The number of Canadians with chronic conditions is growing. Often patients have serial visits with disconnected specialists and community providers, focused on single diseases not patient goals. Access to interprofessional resources and proactive coordinated care planning are needed to assist primary care providers address chronic disease burden and social determinants.

Description of Practice Change: Telemedicine IMPACT PLUS (TIP), an innovative secure videoconferencing model, connects patients and their family physicians with interprofessional teams, internal medicine and psychiatry, for goal-directed care planning. An advanced practice community nurse prepares the patient and family physician, identifying what is important and key care concerns, and facilitates post-TIP care plan implementation.

Aim and Theory of Change: TIP leverages existing academic and family health teams to support complex patients and their solo family physicians in patient-present real-time planning.

Targeted Population: Family physicians are invited to refer “patients who keep them up at night” for synergistic problem-solving to address risk issues. The case conference includes the patient and family caregiver: helping focus everyone on what matters to the patient; ensuring the patient fully understands and commits to their plan; equipping family physicians with local resources; and boosting confidence in managing complexity.

Timeline: This program was launched in 2013 in three city regions and now involves 12 teams in all regions.

Highlights (innovation, Impact and outcomes): Evaluations have shown exceptional levels of satisfaction:

- 97 % of team participants (N = 227) found it effective
- 98% of GPs (N = 65) would use this strategy again
- 100% of patients (N = 74) would use again; 97% felt hopeful.

TIP was selected as the Ontario patient-centered chronic disease model for a national randomized control trial measuring impact on health care usage, qualitative measures and economic benefit. Early RCT findings show patients reported improvement on 4 patient self-management dimensions: Health Directed Behavior, Emotional Well being, Skill and Technique acquisition, and Social Integration and Support. Family physicians felt supported and reassured in their care of vulnerable patients. The interdisciplinary team members felt able to care for highly vulnerable patients and address determinants of health.

Sustainability: Sustainability requires referrals to this novel program. Direct patient advertisements, recruitment from hospital wards, and outreach to community coordinators and family physicians continue.

Transferability: Institutional commitment is essential for specialists and teams to continue to provide real-time support for family physicians and patients.

Conclusions/ Key findings: A coalition of providers across health sectors is now helping complex patients achieve what matters to them. The benefits are one-stop person-centred care enhancing patient function, supporting family physicians in complex care, and eventually reducing reliance on more expensive specialist/acute care.

Discussion: Using telemedicine, our care innovation has connected interprofessional teams to patients and families who struggle with complex medical and social problems, and their family physicians. Challenges include wireless technology in some city areas, and promoting this program with solo family physicians.

Lessons learned: The TIP nurse role is crucial in preparing for case conferences in advance, troubleshooting the technology during the case conference, and providing follow-up.

457. Development of the GeriatricS, an ICF-based and person-centred assessment tool for evaluation of health-related problems in community-living older adults

Introduction: Ideally, older adults should receive person-centred care and support that meets their individual needs and wishes, taking all relevant health-related problems into account. The International Classification of Functioning, Disability and Health (ICF) might offer a basis for identification of these problems as it provides a unified language for evaluation of functioning and disability associated with someone's health status. ICF Core Sets have been developed to describe the spectrum of disabilities of specific patient populations. Therefore, aim of this study was to develop a valid Geriatric ICF Core Set (GeriatricS) reflecting all relevant health-related problems of community-living older adults without dementia.

Methods: This study consisted of two sub-studies: 1) a written Delphi study to select ICF categories, and 2) assessing content validity in a cross-sectional study. For the Delphi study, a representative panel of experts (older adults and (non-)medical experts on health-related problems due to ageing) was constituted. Panel members had to select second-level categories from the ICF-classification relevant to community-living, non-demented older adults (75+), and had to reach consensus on this selection. For the validation study, older adults (frail or with complex care needs) were visited by a case manager (district nurse or social worker) who used the initial GeriatricS as an assessment tool. Older adults had to rate all categories on a scale ranging from 0 (no problem) to 10 (complete problem). Content validity of a category was guaranteed if $\geq 10\%$ indicated a problem with that category.

Results: 41 Delphi panel members obtained consensus in two rounds on 30 ICF-categories. Next, 267 older adults participated in the validation study. All categories met the criterion for content validity

except for d530 Toileting. The final GeriatrICS consists of 29 categories: fourteen Body Functions categories, nine Activities and Participation categories and six Environmental Factors categories.

Discussions and conclusions: This study resulted in a valid ICF Core Set (GeriatrICS) including 29 ICF categories representing the most relevant health-related problems among community-living older adults without the diagnosis of dementia. The GeriatrICS included categories from all ICF components, showing that older people's health is a multidimensional construct. Compared to commonly used, profession-based tools, the GeriatrICS is unique as it is a population-based, cross-domain tool. Therefore, the GeriatrICS is a good starting point for the delivery of person-centred and integrated care.

Lessons learned: The GeriatrICS may be used in person-centred and integrated care practice as an assessment tool, in order to tailor care and support to the needs of older adults. Analysis and interpretation of an older adult's outcomes, and translation into an appropriate care plan, requires highly competent and experienced professionals.

Limitations: Older adults with dementia or cognitive impairments may have been included in the validation study since dementia was not an exclusion criterion. Impact on the results is expected to be trivial as case managers were experienced interviewers and a partner or family member participated in the assessment in case of cognitive problems.

Suggestions for future research: Future research should investigate the health-related problems of older adults with dementia and robust older adults.

130. Big Data Combined with Clinical Insight: Identification of Patients At-Risk for 30-Day Readmission to be Included in Prevention Interventions

INTRODUCTION: Increasingly, big-data electronic health record (EHR) warehouses are used for targeted readmission prevention programs (RPPs). However, the ability of EHR tools to accurately detect the "appropriate" patients for RPP according to personal and clinical characteristics (termed "care-sensitivity") is not known. We aimed to examine the ability of a previously validated EHR 30-day readmission prediction risk tool (the Preadmission Readmission Prediction Model [PREADM])(1) to detect care-sensitive patients for inclusion in RPPs.

METHODS: Physicians and nurses from internal medicine wards of 3 general hospitals in Israel's Clalit Health Services were asked to complete a questionnaire on the personal and clinical characteristics of discharged patients. We examined the degree of concordance between the PREADM (prediction score > 40, 60% of the sample) and the clinicians' classification of high-risk patients, and the likelihood for readmission according to each. Decision trees applying CART were used on PREADM high-risk patients, to classify the patients by whether they are likely to be readmitted, using the questionnaire responses.

RESULTS: A total of 817 questionnaires on 375 patients (discharged to their home) were completed by physicians and nurses. Ninety-one patients (24.3%) had a 30-day readmission. There was concordance between high-risk PREADM classification and the nurses' and physicians' assessments in about two-thirds of patients. Lack of concordance was found in: (a): 23% of patients with a high PREADM score and a low-risk assessment by the nurses, in which the actual readmission rate was 20% ; and (b) 12% of

patients with a low PREADM-score and a high-risk assessment by the nurses, which had a 33% readmission rate. Conversely, physicians' classification had poorer detection than the PREADM.

Decision tree models showed that the following questions were useful in identifying high-risk patients: does the patient receive a new drug that requires follow-up (risk for readmission 38% if yes vs 24% if no); and does the patient need special equipment at home (risk of readmission 61% if yes vs 23% if no).

DISCUSSIONS: Among about a third of patients, the nurses' assessment was more accurate than the PREADM model, when a high-risk score cutoff of >40 was used, while the physicians' assessment was worse than that of the model. The clinical data from nurses about new drugs and special equipment needed at home helped differentiate a higher-risk population from those at lower risk of readmissions.

CONCLUSIONS: Combining EHR data with insight from hospital nurses regarding patients' clinical and personal characteristics provides more "care-sensitive" information, which can allow better adaptability and synchronization across different healthcare providers and better selection of patients for inclusion in RPPs.

LESSONS LEARNED: While the EHR predictive algorithms can identify most patients at very high risk of readmissions, the nurses are able to target additional patients who are suitable for inclusion in RPPs with a few simple questions during the hospital stay.

LIMITATIONS: A convenience sample of patients.

SUGGESTIONS FOR FUTURE RESEARCH: Whether a combined "care-sensitive" model is able to better classify readmission risk remains to be tested to improve the predictive tools.

519. Bridge: a piloting project of social enterprise to enhance reablement and social inclusion for people with physical disabilities.

The paper presents a piloting project aimed to set up a new service delivery model for people with physical disabilities, either acquired or inherited, named "Bridge". The service can be defined as a personalised care plan (PCP) placed at intermediate care level, time-limited and home based, and based on a multi-disciplinary approach and care team. Bridge's objectives are to support these frail persons by assessing their multiple needs and provide a PCP, which is conceived as complementary to the health and social care services they should already receive, and enhance their reablement and social inclusion. The project has been developed by Spazio Vita, a social enterprise (aka a Community Interest Company) that derives from a hospital's patient association for people with Spinal Cord Injury.

The paper provides an in-depth analysis on tools developed and results achieved for organising the service delivery model, based on the data collection from the 50 patients enrolled in the first pilot (one year).

The multi-disciplinary team is made up of clinicians, psychologists, social workers, occupational therapists (OT), peer-counsellor and other therapists with different specialisations delivering creative laboratories (art or music therapies, informatics and computing, pet therapies, mindfulness etc.).

Eligible patients could be identified either from the Spinal Unit of the adjunct hospital either from other care units of the Metropolitan area of Milan or from community services or directly from the patients' communities surrounding Spazio Vita. Eligible patients are screened by an integrated need assessment through a newly scale that joins up clinical, psychological, social, functional and individual factors to assess the beginning condition against a score from 0 to 30. The latter evaluation allows to value the patients' enrolment and assign a care level based on the severity of the condition (low, mild or high) and the PCP for a limited period (from 6 months to 1 year).

The PCP plan is supported by a personalised case manager: based on the major needs in fact the case manager could be the psychologist or the social worker or the OT. PCP have been build up on a different mix of three care packages: clinical and OT, psychological and social, and social inclusion. Patients enrolled vary from 0 to almost 70 years, while families and carers have been involved based on individual needs.

Results show the relevance of this service and all objectives were achieved: from avoiding clinical exacerbations at home, reducing hospitalisation, enhance reablement and self-management up to improve socialisation and individual psychological and social inclusion. Patient Report Outcome measures (quality of life scale SF36) and PACIC questionnaire were completed for all cases, at the entrance and closure of any individual project. Finally, the piloting project allows to design the service delivery model in order to identify detailed tools (assessing scale, evaluating criteria and scores, outcome measures, care packages, the role and intervention of each professional, and an economic evaluation and estimation of the PCP based with bundle payments relying on the severity level assigned and the mix of care packages).

253. Primary care service innovation: The importance of measuring person-centred coordinated care

Introduction: Patient experiences of health care is becoming increasingly emphasised as a mechanism to measure, benchmark, and drive quality improvement within the UK National Health Service (1-3) and across Europe (4-6).

For person-centred care to be effective, care must be coordinated across services, particularly for patients with multiple long-term conditions (LTCs) who require integrated care from multiple agencies. Person centred coordinated care (P3C) is the conjunction of two closely related constructs; person centred care and care coordination (7).

Despite clear callings (4, 5, 8-11), no tool currently exists to measure P3C that is short enough for routine practice. This research aimed to develop a tool that can measure P3C and drive healthcare quality improvement - the P3C experience questionnaire (P3CEQ).

Methodology: An iterative patient-oriented design process was utilised to identify questions and ensure patient acceptability (12). The measure was subject to psychometric validation ensuring measure appropriateness. Testing of the P3CEQ took place across 72 general practice sites across the South-west of the UK.

The P3CEQ was subsequently used in a number of evaluations of new models of care, such as complex care hubs, to improve service integration and promote coordination between agencies.

Results: Data was collected from over 2500 patients with LTCs across the South-west, UK. Patterns of response emerged in relation to number of LTCS and services used, and poorer experiences of care. Lowest scores were often associated with poor levels of coordination and care-planning. The P3CEQ was used to identify trends in experiences in P3C and identify which areas require the most improvement. This information was fed back to the complex care hubs and subsequently followed-up with further measurement. Findings indicate improvements in care areas related to care coordination.

Discussion: Measurement and feedback is important component in the continued improvement of P3C in patients with LTCs. The P3CEQ was designed to measure and promote improvements in care quality for this group. The P3CEQ has been successfully used to measure and improve P3C in new models of care focused on improving service integration. The P3CEQ is able to detect differences between care models and over time. It is well received by both staff and patients and can be used to identify clear areas to drive service improvement a practice level. Having been translated into six languages it is currently being used to drive service innovation across two large-scale EU projects to improve care integration.

Conclusion: The P3CEQ is a valid measure of P3C that can be used to identify key areas of P3C requiring improvement. Evidence from this research indicates that the P3CEQ can be used to cross-agency coordination and drive care quality improvements. The P3CEQ highlights the pressing need for stronger service coordination and integration in adults with LTCs.

Limitations & Future research: Although the P3CEQ has a Flesch-kincaid grade level of 7.3, some users struggled to understand some of the items. Future research will focus on adapting P3CEQ to support this group, improve implementation and feedback mechanisms for wider use, and further developing the measure for international use.

385. Values and challenges in a care ecosystem design approach

Introduction: In order to tackle the challenges many care systems worldwide are faced with, care delivery needs to become a shared outcome of the deployment of several actors. The question raised is then how information, resources, activities and the skills of those different sovereign and unique organizations, independent care providers, informal care givers, and patients can be combined to achieve a result that none of the parties concerned can achieve independently. While much is known already about ways to improve care integration within single organizations, and a growing body of knowledge is being developed on care integration within organizational networks, far less is known on how to move the larger constellation of actors towards a more integrated care delivery, across organizational and network boundaries.

Research questions to tackle are then:

- How can we define care ecosystems?
- Is designing ecosystems different from designing organizations and networks?
- How do we understand ecosystem viability?

Theory/Methods: Our theoretical framework is Socio-Technical Systems (STS) Design, which is a comprehensive and effective framework for designing complex systems. STS Design is about joint optimization of organizational performance and quality in people's work lives. We conducted an analysis

of the literature on organizational (care) ecosystems, leading to a draft note on ecosystem definition and design. Next, we organized two sets of three online deliberation sessions with academics, consultants and practitioners, all of whom are engaged to write chapters on care ecosystem design cases and approaches from across the globe for a 2018 Springer book, entitled “Designing Integrated Care Ecosystems”. In total we had 30 individual participants. Additional discussions were held in a private LinkedIn group with 25 members.

Results: A care ecosystem is a collection of actors which each are involved in some aspect of delivering care for a certain target group, and in which the collected actors are co-producing a result that none of the actors can achieve independently. Ecosystem design is seen as more complex in comparison to organization or network design. Since all ecosystems already exist, the design will be about creating a sociotechnical infrastructure which enables actors to more easily create innovations in the collaborative delivery of integrated care. If we define designing as the intentional creation of a desired future, designing ecosystems would imply having actors co-create shared purpose across new constellations and new ways of working among ecosystem actors, thus enhancing the viability of the whole ecosystem.

Lessons learned: The ecosystem concept could help to better understand and improve care integration across networks, organizations and individual actors.

Limitations: The results are based on a first scan of the relevant literature, two rounds of deliberations, and LinkedIn discussions.

Next steps: The people involved in the deliberations are currently writing chapters on their respective experience with, and vision on designing care ecosystems. Simultaneously, we are performing an extensive literature review. We aim to gain a deeper understanding of the concept of care ecosystems and possibilities for their design. Evidently, further testing and validation of the proposed definition and design approach will be needed.

146. Multipronged management strategy for patients with complex needs using an integrated organizational model

Introduction: The Basque healthcare system is facing an overwhelming problem due to chronicity and an aging population. In our setting (San Sebastian, Gipuzkoa province, Basque Country) more than 25% of the population (400,000) will be over 65 years old in the next decade out of which 10,000 people will be multi-pathological. Traditionally, these patients have been managed without a coordinated strategy, leading to multiple hospital admissions, patient discomfort and a large economic impact.

Description of practice change implemented: A multipronged management strategy for patients with complex needs using an integrated organizational model that included liaison nurse, call center and new technologies (web/ app-based monitoring).

Aim

Improving quality of life and perceived quality of health assistance
Training patients and healthcare providers
Reducing length of stay and Emergency Department (ED) visits

Respecting patients' will on intensity of treatment and place of care provision

Target population

- Multi-pathological patients with high readmission rates
- Home-dependent patients
- Nursing home residents
- End of life patients

Timeline

2003: New Evidence-based practice unit started within Internal Medicine Dpt.

2005: Prediction rule development and validation for readmission risk

2006: Before and after study with a multipronged strategy (PAMI) targeting patients with high readmission rates.

2009: Creation of a management unit for chronic patients.

2010: Comparative study of telemedicine vs PAMI

2010: Cluster randomized clinical trial of PAMI in nursing homes

2012: Creation of a diabetes pathway

2012: Creation of an integrated health organization (OSI)

Highlights

- Development of a single electronic medical record
- Stratification of the population and tagging of chronic patients.
- Conciliation of treatment with an e-prescription tool.
- Conciliation of information (hospital/primary care meetings, communication tools)
- Case management of complex patients (PAMI programme) with process-specific questionnaires, liaison nurse, call center and web/app monitoring activating changes in prescription, GP appointments or direct hospital admission. With 4,200 patients followed within this programme, we have achieved 30-50% of direct admissions (avoiding ED visit). Days spent at the hospital were reduced by 25% for nursing home residents, 55% for home-dependents, 58% for heart failure patients, and 25% for patients with COPD. The number of ED visits made by each group was also reduced by 58%, 70%, 70% and 45% respectively. 80-100% found the level of training satisfactory, 90-100% rated the hospital accessibility "excellent" and 90-100% perceived significant improvements in the global management of the process.
- Integration of the primary care-internal medicine and nursing home-internal medicine pathway
- Improvement on the social care with a calculator of social support needs.

Sustainability: Cost-effectiveness of the management of these patients improved

Transferability: The technology and protocols are available to all in the Basque Country. Geographical differences exist in hospital accessibility.

Conclusions: This strategy improved perceived quality of life and length of stay while avoiding many ED visits. Integration of levels and IT tools are essential to make it possible.

Discussion: Integration specially benefits multi-pathological and complex patients, offering opportunities for case management strategies.

Lessons learned: The anticipation of problems, new technologies and integrated assistance focused on the user will be the keys of the future care.

235. The communicative constitution of population health systems

Introduction: Population health systems integrate services across multiple sectors. They are widely regarded as an effective approach for addressing challenges posed by an ageing population and the associated spread of chronic diseases. However, we still know little about how we can successfully implement such systems that typically span multiple levels and organizations. Thus, this study explores practices facilitating the implementation of population health systems.

Theory and methods: We conducted a qualitative longitudinal single case study in collaboration with the Healthcare Center Lower Engadin, which is considered the hub of a pioneering population health system in Switzerland. Data collection included 35 semi-structured interviews, 96 participant observations, and 46 archival records and data analysis followed an abductive approach. After a first round of inductive coding, we realized how important communication was for the emergence and change of the system. In a second round, we consulted additional literature to develop richer theoretical explanations. Recent work suggesting that complex organizations are constituted primarily in and through communication turned out to be a particularly helpful analytical device. Inspired by this lens, we went back to our empirical data, this time coding for communicative practices facilitating and impeding the implementation of the system, understanding communicative practices as structuring patterns of interaction.

Results: Drawing on the work of McPhee and Zaig, we found that the population health system in the Lower Engadin was implemented in and through four interrelated communicative practices. A first practice was membership negotiation, through which actors recruited and maintained a relationship with member organizations. A second practice was organizational self-structuring, through which actors created adequate decision and control (governance) structures. A third practice was activity coordination, through which actors coordinated health, social care, and administrative activities within and across the boundaries of member organizations. A final practice was institutional positioning, through which actors legitimized the formation and maintenance of the system among political decision-makers and the regional population. We describe how regional actors mobilized these four practices to re-organize the provision of health and social care in the Lower Engadin.

Discussion and conclusions: Population health systems are widely regarded as a promising approach for addressing an increasingly fragmented value creation in health and social care. Previous research has already emphasized the pivotal role of communication for implementing such systems. Goodwin underlines the need of effective communication strategies to deliver clear communication messages to relevant stakeholders. With this study, we confirm this need and draw attention to four communicative practices actors may want to consider when planning their communication activities. These practices are important not only for delivering ready-made information, but also for the social construction of new meaning regarding innovative ways of coordinating health and social care across sectoral and organizational boundaries.

Limitations and future research: This study is limited to one population health system in Switzerland. Further research is required to explore the four identified practices in more detail to understand their specifics and interrelationships and to explore to what extent other systems are constituted by similar or different communicative practices.

147. West London - My Care, My Way Learning Labs

My Care, My Way (MCMW) represents a radical shift from reactive, hospital-based service provision to a proactive model that delivers holistic care, centred around the needs of older people. West London CCG (WLCCG) made a significant investment in the programme, but found a mismatch between its vision and the level of ownership, staff motivation and relationships on the ground.

PPL, Innovation Unit and WLCCG facilitated a 3-month '**innovate & scale**' approach to:

1. Co-produce an improved operating model based on staff-led rapid design, testing and learning; and
2. Create an on-going culture of continuous improvement.

The programme was a catalyst for a step-change in implementation and set the foundation for scaling up MCMW. Specifically, we have:

- Tested and embedded **practical changes** to improve the working culture and ways of working across 9 GP practice teams and the 4,475 people they serve.
- Secured **engagement and buy-in** to the proposed changes with over 100 front line staff, managers and commissioners across 5 organisations.
- **Developed leadership** within practices and integrated care teams, and ensured this aligned with system leaders.
- Supported the teams to **reflect on and improve their working culture**, especially relationships within and between teams.
- Created a MCMW '**Quick Guide**', which outlines its roles, responsibilities and interfaces. This will form the basis for the expanded service of 44 practice teams by March 2018.
- Strengthened the investment case to further develop the model from older people to whole population of 267,000 people between 2018-2020.

Key to the success of our programme was **effective communication** of the changes and of what staff needed to do differently to deliver better care. We recorded findings and reflected on lessons learned throughout, which was used to improve the service model.

The most innovative element of our approach was the **Learning Labs** (LL), established within 9 GP practice groups. LL are informed by lean, agile and service design methodologies: they recreated powerful learning experiences, and tangible results for staff, partners, the service and the service users. Through fortnightly Plan-Do-Study-Act cycles of planning, action and reflection, the teams discussed and developed practical responses to complex challenges, building on local learning and evidence of what works elsewhere. For instance, they developed a patient facing anticipatory care plan – to reduce unnecessary hospital visits.

These service changes are so significant that WLCCG is using the outcomes of this work to inform its medium to long-term integration strategy. This will affect other CCGs in London, in addition to the population served by WLCCG. WLCCG is planning to:

- Scale up MCMW to all 44 GP practices in West London.
- Develop a single Integrated Community Team business case, to have a virtual Multispecialty Care Provider (MCP) next year, a partial MCP in 2019/20 and a full Accountable Care System in 2020/21.

As a MCMW Health and Social Care Assistant said: 'As the most junior member of the team, I now have the skills and confidence to create an equal space with doctors, nurses, social workers, patients and carers. *I'm looking forward to championing the service expansion.*'

364. Improving CARE Together – Building Partnerships with Family Caregivers

Background: An estimated 8 million people in Canada are family caregivers and save the health care system over \$31 billion annually (1). Yet, family caregivers are often referred to as “the silent partners” in care. Recognizing the importance of the family caregiving role and engaging families in decision-making and healthcare planning is an important aspect to improving care. St. Joseph’s Health Care London, a multi-site health care organization in Ontario, Canada aims to ensure patients and families are full partners in their care and in the design, measurement and improvement of care. Guided by St. Joseph’s Care Partnership Framework (2017), this project aims to improve family caregiver experiences and engagement through partnering with patients, families and health care providers in decision-making and health care planning.

Methods: This project follows best practices for experience-based co-design (2) which includes three major steps. Step 1: a discovery phase to learn about current health care experiences. Focus groups and individual interviews were conducted with patients (n=15), family caregivers (n=73) and health care providers (n=141). Ethnographic observations were also completed. Data were analyzed using line by line emergent coding techniques (3). Step 2: Experiences, represented in broad themes, were shared in co-design workshops involving health care providers, patients and family caregivers. Together, priorities were identified. Step 3: Working groups developed resources and strategies that were implemented to improve family experiences and engagement in decision-making. Qualitative (e.g. interviews) and quantitative measures (e.g. experience measure) were used to evaluate the work.

Results: Several themes emerged from the discovery phase, including: the issue of time, caregiver involvement in care planning, the need for better communication, and better involvement in care transitions. These themes were discussed at a co-design event with patients and families. Resources were co-created including: a) resources for better patient, family caregiver and provider communication following best practices for engagement; b) tools to recognize and assess family caregivers; and c) educational materials to provide community and self-management information to patients and families. Family caregiver and provider outcomes were positive following implementation.

Discussion & Conclusions: New resources and care processes were implemented to improve family caregiver engagement and experiences. Patients and family caregivers were involved in all stages of this work, including patient and family caregiver representatives who worked directly with the project team and patient and family caregiver advisors who guided this work through a steering committee.

Lessons Learned: Important insights about patient and family engagement emerged including: taking time to build a trusting relationship; involving families in every aspect of co-design and care planning; and engaging health care providers and leaders in education around the importance of family engagement.

Limitations: This work is limited to two areas of the health care organization, geriatrics and rehabilitation. Learnings will be applied to other areas of the organization over the next two years.

Future Research: Future work should focus on patient and health system outcomes as a result of improved family caregiver experiences.

1. The Change Foundation, 2016
2. Point of Care, 2016
3. Lofland et al., 2006

275. Social and economic impact of a case management approach for people with rare and complex conditions in Salaj, Romania

BACKGROUND: Over 36 million people in Europe (patients and families) are affected by a rare disease (RD). These people are often not sufficiently supported by mainstream social systems and struggle to make the most of their potential throughout their life course. Additionally, caregivers assisting their spouse, parent or offspring may find providing care over the long term challenging, and absence from work or reducing work hours may be necessary. A recent survey by EURORDIS-Rare Disease Europe showed that a significant percentage of caregivers (30%) spend more than six hours daily helping the patients. For 52% of the patients and families surveyed, the RD had a severe or very severe impact on their daily lives, and the time dedicated to coordination of care was substantial both for the patients themselves and their caregivers.

The INNOVCare project, co-funded by the European Union, suggests implementation of holistic, integrated and patient-centred care pathways, which respond to the complexity of RD challenges through an interdisciplinary approach. These pathways involve linking health services to social and support services that RD patients use on a daily basis, ensuring the transfer of information and expertise between service providers. Currently being tested in Salaj County, Romania, our study aims to analyse the social and economic impact, including both resource consumption and potential improvements in patients'/families' quality of life.

METHODS: 120 patients with RD were randomly assigned to case managers for nine months in two cohorts. The first cohort consists of one treatment group that will receive case management support for nine months whereas the control group receive treatment as usual. After nine months the groups will be rotated turning the treatment group to control group and vice versa. Data collection started in March 2017 through questionnaires to patients and their families distributed before, after nine months, and after 18 months using the same measurement tools. The questionnaires cover socio-economic status; patients' condition, level of disability, and estimation of need; use of health, social and local services, health-related quality of life; work situation; and caregiver burden.

RESULTS: Baseline data showed that patients' (n=77) mean EQ VAS Score was 53.3 (SD 24.3). Between 59%-70% of patients reported having some or a lot of problems in all dimensions with pain/discomfort and mobility being the most prominent.

Mean EQ VAS score for caregivers (n=106) was 74.2 (SD 22.8) with the highest prevalence of problems reported in the dimensions pain/discomfort (44.3%) and anxiety/depression (37.7%). Mean ZBI (Zarit Caregiver Burden Interview) was 13.2 (SD 7.6). Most prominent was that the caregivers felt that they should and could be doing more for the patient.

Results from the 9-months follow-up will be presented at the conference.

CONCLUSIONS: Our baseline data is in concordance with previous research studying the burden for RD patients and their families. By achieving coordinated and more person-centred care, the social inclusion will improve, not only for the patients themselves, but also for their caregivers which will hopefully lead to a reduced caregiver burden and less anxiety, stress, and financial pressure.

156. Shared Care Planning: A new model to integrate Advance Care Planning into community. The Basque Country experience.

Advance Care Planning (ACP) has been mainly based on advance directives and their registration, according to legal requirements. The main objectives have often been forgotten: promoting citizen participation in shared decision-making and improving the quality of health care. The main barriers are the lack of information for citizens, nurses' and doctors' workloads and poor training in subjects like ACP, bioethics and communication.

In the Basque Country, a new project has been implemented based on community education, the training of health and social workers and conversations with citizens. We have called it Shared Care Planning (SCP). It tries to elicit the individual's preferences and encourages them to take part in planning their care and decisions. Writing down advance directives is not the main aim of the program; the aim is less papers and more conversations.

The target population is chronic patients, elderly people and anyone at the end of life. The project also includes everyone who, after experiencing an illness or caring for relatives or friends, wants to think about the process of dying and needs to have a conversation related to this topic with their doctor, nurse or social worker.

The project started in 2014 in two health centers in Vitoria-Gasteiz as a bottom-up project and, according to initial results and evaluations, it has grown into what can now be considered a top-down project performed in the whole Basque Health Service.

Results.- Community education: More than one hundred conferences and debates have been taking place in neighborhood associations, cultural centers, libraries, city halls or educational centers. More than four thousand people have attended these activities. Training of health and social workers: One thousand workers have attended a basic training course, more than 500 workers have been trained as SCP facilitators and more than 700 doctors and nurses have participated in conversations with patients and families helped by an SCP facilitator. In 75% of cases, the citizens asked to be included after attending a conference; only 25% of participants were included because of a doctor or nurse's

invitation. Many support documents like interview guides, videos, posters and leaflets have been created in order to explain the project and to make it more accessible and easier to understand.

SCP promotes citizen participation in shared decision-making and the integration of social and health care because it is based on community education, the coordination of different levels of care and the training of health and social workers. The project is growing in our community and it can be implemented in other regions and countries in the same way.

Our experience shows that people want to participate in shared decision-making because, after a explanation of the main aims of SCP, they asked to be involved in this kind of communication process. The keystone is the training of health and social workers in order to answer citizens' requests and to integrate in the ordinary caring for chronic patients and elderly people conversations about values, preferences, quality of life and the process of dying.

448. Empowering communities: drawing on evidence to build successful community engagement initiatives

Background: Although community engagement is seen as key to achieving citizen-centred and collaborative healthcare systems, organisations and neighbourhood networks are still searching for effective ways to engage citizens in shaping the health and care landscape. Many Dutch regions are currently implementing and fostering community engagement initiatives; however, little is known about which engagement approaches are effective under which circumstances, and how to implement such initiatives successfully. This holds especially true for initiatives focusing on disadvantaged groups. The National Institute for Public Health and the Environment and the University of Tilburg, in co-design with stakeholders of six Dutch community engagement initiatives, are conducting a mixed-methods multiple case study evaluating six community engagement initiatives. The study is following the realist evaluation methodology to investigate which community engagement initiatives are effective in improving communities' health outcomes and the sustainability of healthcare systems. The University of Maastricht is investigating the dynamics between health and citizen participation on a neighbourhood level. As barriers and possibilities for participation are supported by material and spatial components of the environment and constructed in the (lack of) daily contacts between neighbours and professionals, the study conducts an in-depth ethnography of the life of inhabitants of three low-income neighbourhoods in Maastricht. Local experiences of (non-)participation are gathered and related to the social and material conditions of the neighbourhoods.

Aims and objectives: The workshop's main objectives are to present two distinctive investigations into community engagement and to provide professionals with the analytical tools and the evidence-base to build their own successful initiatives that can help improve communities' health and wellbeing.

Format: During the session, we will briefly present our investigations, focusing on our preliminary results. In an interactive group session, we will examine the common lessons learned, including the often divergent ideas and motivations that organisations and communities have regarding community engagement. Discussions about the key enablers and barriers for community engagement initiatives will inspire participants to reflect upon and implement their own initiatives.

Target audience: Our target audience includes participants involved or interested in developing and implementing community engagement initiatives, in co-design with communities themselves. Participants will share their own thoughts and experiences during the session.

Learnings/take away: Participants will learn that community engagement is expected to bring a wider range of services together that reflect citizens' more holistic views and needs. However, barriers including service fragmentation which hampers professionals' willingness to take on board citizens' more holistic views, will need to be addressed before this can be achieved. Participants will gain insight into the key enablers for overcoming these barriers, like addressing power imbalances between professionals and citizens and within communities. Participants will also learn of the supportive conditions for community engagement such as informal contacts and the availability of (public)meeting places. This will enable them to overcome barriers and build a vision for community engagement that is shared between professionals and citizens.

452. Evaluating an integrated health and social care programme for vulnerable people: The case of 'Better Together in Amsterdam North'

Introduction: 'Better Together in Amsterdam North' (Dutch acronym: BSiN) is a promising integrated care programme for multi-morbidity in the Netherlands. BSiN is made up of an alliance of more than ten health- and social care provider organisations. The population consists of people older than 18 with complex problems in multiple life domains (e.g. financial problems alongside social isolation) and with limited self-sufficiency. The core of the BSiN intervention is that each participant is assigned a case manager who provides holistic advice over a minimum of 6 months. BSiN was selected as one of the case studies for further evaluation using Multi-Criteria Decision Analysis in the Horizon2020 project SELFIE (www.selfie2020.eu). This study represent a first evaluation of the BSiN programme.

Methods: The study design is quasi-experimental. Care providers and welfare workers in Amsterdam North recruit participants for the intervention. Participant had to score three or lower on at least three of the 11 domains of the Self Sufficiency Matrix. The control group participants were identified from respondents of two waves of the Amsterdam Health Monitor survey, who, given their answers on the health survey, were deemed to have low self-sufficiency.

Three face-to-face interviews are held with participants in both groups (0, 6, and 12 months) to collect questionnaire data. The questionnaire evaluates the self-sufficiency, health, costs, and lifestyle of the participants. As of November 2017, the sample size at the first follow-up is 52 for the intervention group and 53 for the control group. Data collection is ongoing until the end of 2018. The outcomes are compared using mixed effects models.

Results: The control group scored better on all outcomes than the intervention group at baseline. For example, 50% of the intervention group had financial problems but this was only 19% of the control group. A total of 13 outcome measures were measured. The results show that BSiN had a positive and statistically significant effect on the outcomes of planning for the future (increased 4%, whereas the control group was reduced by 14%) and independence in planning the day (+6% vs. -2%). For all other outcomes, BSiN has a positive effect but these were not significantly different from the control group. For example, in the control group self-reported general health decreased but it increased for BSiN respondents. The same was the case for energy, independent problem solving, employment, volunteer-work, contact with neighbors, and loneliness.

Discussion: BSIN appears to have a positive effect but the small sample size makes statistical evaluation challenging. In the first instance, future analysis will focus on including a larger sample and on using propensity score matching to improve the comparability of the intervention and control groups.

376. Reversibility of nosocomial disability in hospitalized elderly patients through an individualized multicomponent exercise program: a randomized controlled trial

Introduction: Acute hospital admissions are sentinel events that play an important role in the disabling process of older adults, determining short and long term disability, nursing home placement or mortality. Despite the resolution of the reason that caused the hospital admission, the patient can be discharged with a major new disability that was not present before the onset of the acute illness, and older adults who are frail are particularly vulnerable to this nosocomial disability.

Methods: This study was a a randomized clinical trial conducted in the Department of Geriatric. Hospitalized patients who met the inclusion criteria were randomly assigned within the first 48 h of admission. Participants assigned to the usual care group received habitual hospital care, which included physical rehabilitation when needed. The intervention consisted of a multicomponent exercise training programme composed of supervised progressive resistance exercise training, balance-training, and walking for 5–7 consecutive days. During the training period, patients trained in 20 min sessions twice a day (morning and evening). The primary outcome measure was the change in functional and cognitive status during the study period. The secondary outcome measure were, the Spanish versión of the Quality of life (EuroQol Scale), Delirium, mortality, use of health resources and falls

Results: A total of 157 patients in the intervention group and 153 patients in the usual care group finally entered the study. The analysis of the primary end point in the intention-to-treat population showed that the intervention improved function (Barthel, SPPB, gait speed) and cognition (MMSE, Yesavage), as well as quality of life, with the same mean days of stay in the hospital. This results remained partially across the three months of follow up, but we didn't find differences in use of health resources or survival.

Discussion: This trial demonstrates that a multicomponent, individualized and progressive exercise programme provides effective therapy for improving function and cognition of older adults hospitalized for medical pathology, not only preventing usual nosocomial disability, but also reversing disability and frailty at least at shortterm. The study couldn't find differences in the use of health resources because of the limitations of the follow of a very complex population with high degrees of disability.

Conclusion: A multicomponent exercise programme can prevent hospital associated disability and cognitive decline, and at least partially reverse frailty in older adults admitted to a hospital

Lessons learned: A change of the current system of hospitalization of older adults with medical conditions may be justified. While the current system does not promote the execution of a scheduled exercise routine during the hospitalization period, if we can modify the current guidelines, it is likely that patients will present lower levels of functional and cognitive impairment after the hospitalization period, experience a better quality of life.

Limitations: Unicentric study

Suggestions for future research: It's necessary to replicate these results in multicentric studies and assess the ability of the program during longer periods of time.

254. Health and Social Care influences on Long Hospital Length of Stay (LOS): A Critical Realist Study in a large metropolitan hospital

Introduction: Theory-driven design of integrated care interventions requires that research first be undertaken of the pre-existing system performance and factors that might be amendable to improvement. One indicator of health and social care system performance is hospital length of stay (LOS). LOS is one of the single most important indicators of hospital performance and health care delivery. LOS is an important measure of resource utilization with strong associations between LOS and hospital costs. The cost of long LOS has a significant impact on individual hospital budgets as well as being an overall burden on health systems. Consequently studies of LOS are essential for management and financing of hospitals and health systems.

Patient pre-existing comorbidities, socioeconomic situation and base-line care-demands all have significant impacts on length of stay. Thus LOS not only evaluates bed management and the efficiency of hospital internal systems, but also the performance of pre-admission and post-discharge community-based health and social care systems. The study of long hospital LOS should therefore also examine the impact, and potential for modification, of complex health and social care, service, policy and system factors. The aim of this study is to determine the underlying internal and external health and social care factors that impact on the phenomenon of long length of stay in a major metropolitan hospital.

Theory/Methods: Critical realism will provide the methodological underpinning for this mixed method study. Critical realism seeks to understand the underlying mechanisms and structures that are generating the observed phenomenon. The study will use a concurrent triangulated design that will contribute to explanatory theory building and subsequent design of interventions. The quantitative study will use longitudinal administrative data from the study hospital and supporting health district electronic medical records. Study variables will include: LOS, diagnosis and procedures, patient demographics, and various referral and discharge parameters. Statistical analysis will use exploratory data analysis, regression and time-trend methods. The qualitative study will use critical realist interview methods, purposeful selection of key staff and patients, and realist grounded theory approaches to analysis and development of realist theoretical propositions.

Results: Quantitative data collection has commenced. Quantitative analysis will be used to concurrently inform the qualitative interview questions. Interviews are expected to commence in early February 2018. Preliminary findings will be presented. We will identify underlying structures and mechanisms contributing to long LOS and develop realist MCO theoretical propositions in the form mechanism (M), context (C), Outcome (O).

Discussions: We will demonstrate the use of critical realist research methods to study health and social care factors impacting on hospital LOS. The findings will be used to develop realist theoretical propositions that can be used to design service, policy and system-wide interventions.

Conclusions: We anticipate that we will demonstrate that system-wide health and social care factors impact on the phenomenon of long hospital LOS. We will be able to propose interventions that will include the development of integrated care approaches in both the health and social care sectors.

542. Integrated care: only possible with the support of technology?

Integrated care means doing justice to life in all its facets and supporting it where that is necessary for the client. This advocates the coordination of different forms of care and support and the integrated use of data that is available on these different facets of life. It can be challenging to provide the necessary care, in particular when different people are involved and decisions need to be based on care plans, reports, and other types of information originating from different individuals. However, there is a common understanding that technology is an important facilitator in tackling this challenge. Technology already supports care processes and complements the role of people in many ways. For instance, it takes over tasks and helps to save time, obtain new insights and simplify complexity. Most of the time, using technology comes down to creating, collecting, analyzing and applying (big) data, or combinations of these. In fact, all our actions - in healthcare, as in society in general - are directed by subjective and objective data, which is often hidden in the minds of people, but also increasingly collected digitally. Until now, the use of different technologies and data is (too) often not integrated in the organization and put away in separate silos as the use of a technical instrument in care processes is often initiated for specific reasons that do not affect the entire organization or client population. Meanwhile though, more and more opportunities are coming up to connect the different data flows that exist in healthcare, and to utilize the data both organization-transcending as for the individual client. Developments in intelligent software systems (AI), amongst others, offer the possibility to rapidly collect, integrate, exchange, edit and analyze large amounts of data. This allows people to respond more proactively to incidents, gain new insights about health, provide customized care and support and improve the cooperation between individuals and disciplines. However, many long-term care organizations in The Netherlands experience these opportunities as something elusive and find it hard to take advantage of them. Though many organizations in Dutch long-term care are interested in the exploration of data-driven healthcare, a common challenge is that enthusiastic innovators within care organizations often have limited time to invest in data-driven care, and do so alone or with the support of only few colleagues. Therefore, innovators from different organizations regularly come together within networks where they share experiences and experiment. At the same time, despite the promises of data-driven healthcare, there are many dilemmas around privacy, security, access to data, risk of stigmatization and medicalization and the increasing dependence on technology, for instance. When experimenting, the dilemmas should be taken seriously and in co-creation between multiple organizations, codes of conduct on these issues can be developed step-by-step. This paper will share some experiences and lessons learned, both by individual organizations and in workshops in which they collaborated. The approach is that by creating room for experimenting, starting small and sharing experiences with other parties, 'big data' can be made small.

217. Healthcare quality for people with Down Syndrome: the patient perspective

Introduction: Down Syndrome (DS) is the most prevalent chromosomal anomaly among people with intellectual disability. Because DS is associated with a large variety of chronic comorbidities, people with DS need lifelong healthcare with many different professionals involved. In the past decades, many DS-specialized healthcare initiatives have been introduced. However, little is known about their quality, which hampers monitoring and improvement, and reduces transparency for people with DS and their parents.

Quality indicators (QIs) can provide insight into healthcare quality, unhide opportunities for improvement, and increase transparency. Our study aims to identify starting points for QIs by exploring how qualitative good healthcare contributes to a good life quality of people with DS, thereby answering the question how healthcare quality for this group with special healthcare needs can be measured best. Healthcare quality is increasingly described in terms of outcomes adding value for patients. Our current study focuses on adding value for patients by exploring the patient perspective on healthcare quality for people with DS. This is done by involving people with DS and their parents/family members. Their professional carers (in case of residential care) will be involved later, because they also play an important role in the lives of people with DS.

Methods: The study has a qualitative design including semi-structured individual interviews with people with DS (n=18) and parents (n=15). Topics discussed during the interviews included experiences with received healthcare, influence on life quality and healthcare improvement.

Results: According to interviewed people with DS (^) and parents (*):

- Healthcare quality is:
 1. Patient-centered care: Optimal functioning of the person with DS is central*; Taking context and life stage of the person with DS into account^*; Respectful doctor-patient communication adapted to the abilities of the person with DS^*.
 2. Effective, efficient and accessible care: Care providers with DS-expertise nearby^*; Information about available care*.
 3. Multidisciplinary care including actors outside healthcare (e.g. school, work) and good coordination and integration*: Information sharing (between providers); Synchronized planning of consultations.
- Healthcare largely contributes to wellbeing^*.
- In the Netherlands, healthcare to people with DS is quite good, although transition from paediatric to adult care needs improvements^*. Parents experience more problems with finding appropriate developmental/social support*.

Discussion: To our knowledge, this is the first research project developing QIs for DS healthcare, and the first involving patients and their carers. By focusing on the patient perspective we expect to develop QIs which enable healthcare improvements that are truly relevant to people with DS, add value to their lives, and enhance efficiency within the healthcare system.

Conclusion: The issues mentioned by people with DS and parents (above) will be used as starting point for the development of QIs measuring healthcare quality for people with DS.

Lessons learned: Involving people with DS by interviewing them is challenging but worthwhile.

Limitations: Interviewing people with DS may influence the validity of our findings. However, we minimised this influence by adapting the interviews to the abilities of the interviewees.

Suggestions for future research: A next step should be to involve care providers.
