



Innovating care for people with multiple chronic conditions in Europe

The Gesundes Kinzigtal programme, Germany

Verena Struckmann, Wienke Boerma, Ewout van Ginneken

Currently, an estimated 50 million people in the European Union live with multiple chronic diseases (multimorbidity) and this number is expected to further increase in the near future. As multimorbidity deeply impacts on people's quality of life -physically, but also mentally and socially-, there is a growing demand for multidisciplinary care that is tailored to the specific health and social needs of these people. Integrated care programmes have the potential to adequately respond to the comprehensive needs of people with multimorbidity by taking a holistic approach while making efficient use of resources. Such programmes are characterized by providing patient centred, proactive and coordinated multidisciplinary care, using new technologies to support patients' self-management and improve collaboration between caregivers.

In order to inform policymakers, managers and professionals working in health and social care as well as patients' and informal carers' representatives throughout Europe about promising initiatives providing integrated care for people with multimorbidity, a series of case reports describing these initiatives was written as part of the ICARE4EU project (see Colophon). This case report describes an innovative approach to providing integrated care for people with multimorbidity in Germany.



Co-funded by
the Health Programme
of the European Union

This report arises from the project Innovating care for people with multiple chronic conditions in Europe (ICARE4EU) which has received funding from the European Union, in the framework of the Health Programme.

Summary of the 'Gesundes Kinzigtal' programme

- The 'Gesundes Kinzigtal' (GK) programme is situated in the State of Baden-Württemberg, in the rural Black Forest area of south-western Germany. It is a comprehensive population-based integrated care programme, run by the GK GmbH, which is a joint venture of a health sciences based management company and an interdisciplinary physician and psychotherapist network.
- The programme started in 2005 and is targeted at the entire Kinzigtal population, regardless of disease or age. GK's health care services direct care to the ones insured by one of the two sickness funds, which are almost half of the 69, 000 inhabitants of the Kinzigtal region.
- The guiding principle of the integrated care system GK is the triple aim concept: improving the health of the population in the Kinzigtal region, improving the individuals experience of care and at the same time reducing the per capita costs of care.
- GK's main elements are: self-management support, prevention, patient-centred care, electronic networking system. Specific care for people with multimorbidity is already offered with respect to polypharmacy, prevention and self- management training will be implemented in 2016.
- The programme is continuously internally and externally evaluated since the beginning with an overall positive trend. Thus the two participating sickness funds and Gesundes Kinzigtal intend to continue the contract for an unlimited period and transfer the Kinzigtal-approach to three other regions in Baden-Württemberg.

1. Care for people with multimorbidity in Germany

In 2012, 20.6 % of the German population (80.3 million in 2012) were aged 65 years and older, and 5.4 % were 80 years and older (1). Of the population aged 16 to 64 years, an estimated 30.3 % had at least one (self-reported) long-standing illness or health problem in 2013 (2). Based on the occurrence of 14 self-reported chronic conditions, it has been estimated that approximately 42% of the German population aged 50 years and older suffer from multimorbidity, i.e. have been diagnosed with at least two of these 14 conditions (3). Moreover, the ageing of its population and the changes in life style will lead to increasing numbers of patients with multiple chronic diseases. These patients require care that is better coordinated across different providers and sectors. Consequently past health care reforms in Germany have addressed the fragmentation of care, aimed at improving care for people with chronic diseases and strengthening integrated care.

Already in the 1990s, reforms aimed to reduce fragmentation in the care process by introducing integrated care models, which provided a legal basis for pilot projects. Another series of reforms in the 2000s introduced integrated care structures particularly between the ambulatory and the hospital sector. Sickness funds and individual providers or groups of providers from different sectors can formulate forms of cooperation laid down in contracts (4; 5). With regard to the care of people with chronic diseases, the introduction of structured care programmes (disease management programmes, (DMP's)) was very important. The pro-coordination reforms were supported with the

introduction of start-up funding for selective contracting with single providers or networks of providers. Participation in these integrated care contracts is voluntary for patients as well as providers (6).

2. Introduction to the programme ‘Gesundes Kinzigtal’ (Healthy Kinzigtal)

Founders

The programme was founded in 2005 by a local physicians network (Ärztetenz – MQNK), existing since 1993 with more than 40 physician members, and a health management company with a health sciences background (OptiMedis AG), established in 2003. After jointly establishing Gesundes Kinzigtal GmbH (GK), they convinced two sickness funds, the AOK Baden-Württemberg and the LKK, to participate in a cost-saving agreement. The overall financial aim of the GK GmbH is to improve the financial margin of the two participating sickness funds, the AOK and LKK (5). Soon this contract will be extended for an unlimited period, as a letter of intent is already signed and current negotiations are solving the remaining details. It is the intention to extend the Gesundes Kinzigtal approach together with the two sickness funds AOK and LKK Baden-Württemberg in another three regions in Baden – Württemberg under the same kind of contract.

Aim

The overall aim of the programme is to invest more in prevention today and to manage care processes smartly, in order to keep health on a high level, improve the quality of life of the patients and avoid unnecessary costs in the long term. The GK programme aims to foster patient self-management and enhance shared decision making with individual care plans and shared goal setting agreements between the physicians and the patients. The Gesundes Kinzigtal programme is pursuing the Triple Aim: improving the health of the population in the Kinzigtal region, improving the individuals experience of care and at the same time reducing the per capita costs of care (7). This includes:

- Networking among partners who are involved in care chain of patients
- Strengthening and improving preventive services, in particular for patients with common chronic conditions
- Comprehensive guidance by a ‘physician of trust’, chosen by the patient, and joint goal setting in the care process
- Safeguarding future care in the Kinzigtal area by a recruitment and educational programme for young physicians

- Taking responsibility for all medical care needed by patients insured with AOK and LKK.

Key features

The GK programme is one of the few programmes in Germany with a population based integrated care approach. The programme has a holistic public health approach, enabling health- and social care professionals and other partners involved to offer a comprehensive package of services to people across indications and health service sectors. Scientific evaluation was introduced already from the start of the programme and is ongoing.

Target group

The programme addresses the entire population of the Kinzigtal region who are insured by the AOK and LKK sickness funds, irrespective of their age and care needs. Usually persons insured by the AOK and LKK have a lower social status and level of education, but a higher morbidity rate compared to those insured by other sickness funds, affecting the Kinzigtal as well. Patients can voluntarily decide to opt for a free membership in Gesundes Kinzigtal GmbH. Being a ‘member’ reflects the participative character of the programme; each member is encouraged to be actively involved in decision making processes. The members are free to choose their health care providers as they would in the regular health care system.

Orientation on multimorbidity

The leading concept for the care of patients with multimorbidity in the programme is the Minimally Disruptive Medicine (MDM) care model, which is a patient-centred and context-sensitive approach designed to address all factors influencing the implementation of the care for patients with multimorbidity (8). Although patients with multimorbidity are no exclusive target group in the GK programme, specific modules are offered for these members, including:

- *Polypharmacy intervention*

6 times per year there is a ‘geronto-pharmaceutical consultation’ for physicians in order to optimize the medication of patients with multimorbidity and elderly people in the GK programme. In cooperation with a clinical pharmacologist who is also a geriatrist (from the University center in Mannheim), medication is regularly evaluated and the physicians receive feedback scores with respect to their prescription behaviour. Beforehand, the physicians submit a patient case report to the pharmacologist, who returns targeted feedback regarding improvement opportunities (e.g.: which medication should be reduced or changed).

- *Digital cockpit reports for physicians*

Physicians receive 'digital cockpit' reports, allowing them to compare their prescribing behaviour with the other participating physicians. During regular quality circles the physicians exchange information about how to improve their case management and prescription behaviour. This benchmark information is accessible for all providers participating in the GK programme.

– *Self-management training programme*

GK is currently organising the implementation of a self-management training programme in 2016, in which coaches and patients with multimorbidity will jointly develop individual coping strategies. The aim is to train patients with multimorbidity in improving their coping skills and the organisation of their daily activities and family lives, irrespective of their specific diseases. Within six sessions a patient with multimorbidity will be trained in the new health academy of the GK GmbH. The classes will be held jointly by a health professional and a multimorbid patient, who is opting to act as a coach. Their training is based on a specific guide developed by Lorig & Holman (9).

3. Patient-centredness

Elements

The patient-centred approach in the KG programme is realised by means of the following elements:

- Treatment plans with each individual member/patient,
- Shared goal setting agreements between physicians and members/patients,
- Enhancing patient self-management and shared decision-making,
- Adoption of the Chronic care model, patient coaching and follow-up care provided by the physician of trust,
- Involvement of patients in the development of the programme (Patients advisory board),
- A patient's Ombudsman to ensure that members' interests are carefully considered,
- Patient satisfaction survey every two years.

Enhancing patient-centred care by self-management support

Physicians, other health professionals and practice staff are trained in supporting patient self-management and shared decision-making. The patient and the physician jointly develop a treatment plan and set treatment goals, which are regularly revised. GK offers services for their members, such as patient education programmes and patient self-care programmes covering chronic illnesses. The GK programme aims to improve health care services through training of health care professionals, more integrated delivery of health care services and continued evaluation of their impact. This approach should result in a move away from the traditional acute care focus towards a goal oriented

alliance between the physician and the member/patient. Moreover, the GK includes the patient in decision making processes and presents their ideas for additional care programmes to their management board. Patient surveys in form of a written questionnaire are conducted on an annual basis to monitor patient satisfaction.

More patient-centred care processes

After a patient has been enrolled to the GK programme, a comprehensive check-up follows, usually from a GP. If a patient has initially been classified as being at a risk patient, an individual treatment plan is developed accordingly. Furthermore, based on the completion of a questionnaire regarding their general health situation, further treatment goals are jointly agreed upon. GK offers tailor-made care programmes for enrolled patients (see Table 1). The physician serves as a coach, who provides members with expert knowledge, in order to jointly develop a treatment plan that enables the patient to pursue his or her prioritized health goals. Contacts between patients and physicians are more frequent compared to regular care as physicians constantly monitor the achievement of treatment goals.

Interventions in the GK programme

The care services offered in the KG programme have been continuously developed since the beginning of the programme in 2006 (Table 1.)

2006	<ul style="list-style-type: none"> – Chronic heart failure management – Diabetes mellitus type II management (Disease Management Programme, DMP) – Breast cancer management (DMP) – Shared decision-making training
2007	<ul style="list-style-type: none"> – Lifestyle intervention for patients with metabolic syndrome – Quit smoking programme (smoke-free Kinzigtal) – Active health promotion for elderly – Intervention by psychotherapists/psychiatrists in case of acute personal crisis – Coronary heart disease management (DMP) – Start of electronic integration of all physicians (central patient record)
2008	<ul style="list-style-type: none"> – Prevention of osteoporosis/ osteoporotic features – Social case management for patients facing problems with finding appropriate information and management for their complex social situation – Asthma management – COPD management
2009	<ul style="list-style-type: none"> – Medical care for the elderly in nursing homes – ‘Gesundes Kinzigtal gets moving’ initiatives – Patient academy classes initiative
2010	<ul style="list-style-type: none"> – Start of planning health and fitness training centres – Better management of major depression – Start of central electronic patient records

2011	<ul style="list-style-type: none"> – Physical exercises and treatment for patient with back pain – Early detection of treatment of rheumatic disorders – Hypertension and prevention of renal diseases – Improving medication adherence of elderly patients by distributing unit dose blisters
2012	<ul style="list-style-type: none"> – Health promotion programmes for unemployed – Reduction of antibiotic medication for various indications – Music therapy for patients with chronic pain problems – Start of a new approach to the development of a central electronic patient record connecting all physicians
2013	<ul style="list-style-type: none"> – Educational campaign for incontinence and pelvic floor training – Health promotion/health management for small and medium-sized companies and their employees – Coaching high cost patients with complex psycho-social needs (enlargement of the social coaching programme) – Start “Selbstbestimmt&Sicher”, a programme supporting elderly and sick patients by using monitoring devices to detect falls and to ensure their safety in their own apartment or house (to reduce unnecessary nursing home stays and hospitalisation) – an EC funded project on “ambient assisted living” – Start of the new central electronic patient record connecting all physicians (CGM-net) – Start “Gesundheitsakademie Kinzigtal [health academy Kinzigtal]” – a training and education institute mainly for health care professionals
2014	<ul style="list-style-type: none"> – Reduction of delirium stages for patients in hospitals: to reduce the number of anxiety and complications after a surgery (GK in collaboration with the hospital staff) – Smoke free intervention before a surgery together with GP’s and hospitals – supporting patients to stay free of smoking 4 weeks prior to elective surgery and offering smoke free training – “Beyond Silos” – EC-funded project to connect the ICT-systems of the central electronic patient record of the physicians with the ICT-system of social care – Screening interventions for the population with a migration background and their specific health needs
2015	<ul style="list-style-type: none"> – Start of the construction of a training and education centre “Gesundheitswelt Kinzigtal [world of health]” – Start of “Gesunde Betriebe im Kinzigtal [Healthy companies in Kinzigtal]” – a network of small and medium sized companies dedicated to improve the health of their employees and families – Implementation of a version 2.0 of several programmes having already started in earlier years (after evaluation and redesigning the outlays of the programmes)

Acceptance of the patient-centred approach

Results of the patient surveys from 2014 have shown that members having agreed upon shared treatment goals were more successful compared to patients that had not set such goals. The former patients, for instance, had been able to realise a healthier lifestyle. Nevertheless, many patients continue to be very reluctant to take more responsibility in health matters and become more empowered; they are still not used to a more equal relationship with health care professionals. Such a cultural change will develop over time and the GK programme is actively facilitating that step by step.

4. Integration, management, competencies

Partners and their role in the programme

To realise its aim to maintain and improve the health status of the enrolled population and to achieve cost savings, the GK contracted over 100 providers and other facilities in the region. 52% of all health care providers in the Kinzigtal region participate in the GK programme. In addition to usual health care providers also community groups and associations are involved, such as sport clubs, gyms, education centres, self-help groups, and since 2013 the Health Academy Kinzigtal. The Health Academy is a training and education institute for health professionals as well as citizens who are interested in increasing their knowledge regarding health related topics. As health promotion is a key instrument in the GK philosophy, relevant activities and programmes are offered to schools, at workplaces and for unemployed people. An overview of the integrated provider network and affiliated facilities is presented in Table 2. A designated management organisation is responsible for the coordination of all the providers participating in the network. Participating physicians can become a 'doctor of trust' (chosen by the patient), who is responsible for health assessment, follow up care and care coordination. In contrast to the usual situation in Germany, shared decision making between the patient and health care provider is an essential element in the patient-centred approach of the GK programme. Furthermore, certain tasks, such as telephone coaching, e.g. for patients with heart failure and patients with depression, are delegated to specially trained practice staff.

Coordination of care

The fragmentation of service delivery, which is a key concern in the German health care system, is one of the main aims of the GK programme. Usually, the exchange of information between GPs, medical specialists and other health care professionals is limited. Since 2008, the GK programme is using a model to overcome these shortcomings by combining a redesign of services, IT-integration, public health and prevention measures (10). In this way the programme aims to integrate social services and health care services. Today, structured case management is an essential element of the GK programme. For instance, physicians can involve social workers to support members (patients) of the programme in their treatment, and thus improve the compliance among patients. Besides, partnerships with hospitals allow the programme to coordinate post-discharge care to reduce readmission rates. Jointly developed care pathways, agreed between hospitals and other care providers, are other facilitators of better coordinated follow-up care (11; 7; 5). Networking among participating providers and health care facilities is a priority in the GK programme. Eight times per year all participating physicians have meetings to exchange experiences and discuss potential improvements of the programme. Interdisciplinary networking is fostered by three-monthly quality

circles for all participating providers. The programme aims to facilitate and promote interdisciplinary cooperation by supportive electronic application (section 5 the use of e-health technology, see below).

Table 2. The network of providers in the GK programme¹	
<i>Providers with partnership contracts</i>	33 GPs and Paediatricians 27 Medical specialists and psychotherapists 8 Hospitals / clinics 11 Nursing homes 5 Ambulatory nursing agencies 2 Psycho-social care agencies 10 Physiotherapists 16 pharmacies
<i>Cooperating partners</i>	6 Fitness Centres 38 Voluntary associations, sports clubs, social clubs etc. 4 Other cooperating partners

Date: 01/2015

5. The use of e-Health technology

e-Health in Germany

A comprehensive, systematic and compatible IT system is currently not available in the German health care system. Electronic data and e-health applications are widely used, but the transfer of data is still mainly done in the analogue way (13). The use of telehealth is still limited in Germany (14). However, recently a bill has been drafted to introduce an e health law in Germany, entailing concrete deadlines for implementation of e-health technologies, networking among providers and electronic devices to be used (15).

The clinical information system in the GK programme

The implementation of the electronic networking system took more than five years. It includes a shared electronic patient record, which is now integrated into the IT system of all participating physicians. The development and implementation was financed by the *Gesundes Kinzigtal GmbH*. It supplies physician's offices and other providers, such as ambulant nursing care services and hospitals (currently in preparation), with services providing comprehensive electronic patient records. The e-health record comprises a standardized form of documentation, medication regime, information about allergies and intolerances, diagnosis and findings. The implementation of the electronic record system could only be achieved on the basis of profound mutual trust among providers and the

¹ 12

programme. The physicians agreed on which data to include in the electronic patient record and each patient gives consent to the physician to access the patient data. A standardized physician's letter is used that routinely includes information about the patient's diagnosis and therapy. Other web based tools offered for the members are online prescription and online appointments.

Furthermore, as mentioned above, physicians in the programme are provided with digital benchmark information (so-called 'cockpit reports') to compare their prescribing behaviour among each other within the programme.

In addition, ambient assistant living (AAL)² interventions are applied to elderly people, to keep them living independently and safe at home instead of having to move to e.g. a nursing home. Patients are monitored with a set of devices they choose at home to detect falls earlier (e.g. devices that monitor the opening of doors or e-metering that detects whether lights are switched on and whether electricity is used). Patients participating then receive a call in order to check their current health condition. In case they do not answer the phone, the neighbour or the relative or the nurse or the physician is alerted). It is a joint venture between GK GmbH and Caritas.

Acceptance

The acceptance of e-Health differs between health care providers and between health care providers and patients. In the communication between the doctor practices and patients, the telephone has almost a monopoly. This can be associated on the one hand with the lack of a comprehensive IT infrastructure in the Kinzigtal valley and on the other hand with the relatively high average age of the target population. In particular, patients were reluctant to adopt e-Health programmes, for instance, for controlling heart insufficiency by electronic transfer of data on blood pressure or weight. Scepticism and distrust of technology by patients was driven by a variety of issues, for example the lack of trust regarding data safety and a careful monitoring of the data from the physicians. In general, they prefer the face to face contact with health care providers.

Initially, such scepticism also existed among older physicians, but meanwhile the electronic patient record is used by all physicians. Physicians receive a financial incentive including a compensation for their investments for the implementation of the improved IT-capacities. The implementation of the electronic patient record is now considered as a precondition for improving the quality of pharmaceutical care; in particular reducing unnecessary medication and an overuse of services, particularly for multimorbid patients.

² Ambient Assisted Living (AAL) comprises interoperable concepts, products with the aim to improve the quality of life for people in all stages of the life cycle (16).

6. Financing of the programme

Sources of funding

The financial goal of the GK programme is to receive a share of the health benefit it provided (economically measured in the improvement of the margin of the contracted sickness funds). Therefore the Gesundes Kinzigtal GmbH invests in the health gain of its members, which is expected to result in savings. In the beginning of the programme it was financed by a start-up funding (Anschubfinanzierung) from the two participating sickness funds (Krankenkassen), based on §140 SGB V (integrated care). Since 2007 the programme's main source of financing is a shared savings contract ('Einsparcontract' or 'Einsparvergütung'); both funds pay part of the realised savings to the GK GmbH. These savings have to be realized in the Kinzigtal region as compared to German standardized costs and to a reference period before the intervention. Standardized costs are the average costs across all sickness funds (5). As a reduction of costs for all insured persons is crucial for achieving savings, the GK is interested in reducing inefficiencies inherent to the system, particularly where these are extremely high. The potential to increase savings is higher among patients using more health care services than average. In 2012 the relative cost reduction that can be allocated to the activities of the programme amounted around 7, 9% (17).

The contracts between GK and the two sickness funds are based on each fund's total allocation per insured from the central allocation pool versus the actual total costs of care. GK holds virtual accountability for the health care costs for the enrolled population group. Providers are directly reimbursed by the two sickness funds, as usual. As sickness funds in Germany receive their allocation per patient regardless of a patient's actual costs, a sickness fund earns a surplus in case of spending less on care for its insured GK member population compared to the normal costs of care. The surplus difference is shared between the fund and GK (17; 7; 5).

Incentives for providers and patients

On a yearly basis provider receive an additional refunding for their time invested to the participation in the programme and their additional time spent on patient care and follow up.

For the patients/ members of the GK programme, interventions and activities are available mostly free of charge (for some training programmes a minor co-payment is required, but often the patient gets refunded after having participated in at least 80% of the training sessions). Providers and patients are actively involved in the development of the programme.

Realised savings and sustainability

GK has achieved savings compared to usual care, particularly from lower pharmaceutical costs, hospital costs and rehabilitation/ home care costs (17). In 2010 the per-capita expenditures of an LKK

policy holder in the GK programme vs. those in the control group have decreased about 16, 9% compared with 2005 (7; 18). Results of an internal evaluation of the AOK and GK over the period of 2006-2013 show that the programme has led to a net annual saving for the sickness funds (AOK and LKK) of close to 3% (after having shared the 6,5% surplus difference with GK).

Incentives to promote integrated care

The evaluation of the programme has shown both cost savings and better outcomes for the members of GK compared to non-members (7). Promotion of coordination and integrated care is a major activity in the GK programme, because it is understood to be a major vehicle in achieving the ultimate aims. For instance, much effort is devoted the further development of coordination and cooperation among providers and facilities in a health care system which is very fragmented, particularly between the ambulatory and hospital sector.

7. Conclusions and observations

7.1 Innovative aspects

Paradigm shift

The GK programme is a positive exception, as it is distinct due to its comprehensive population based approach, its orientation on public health and its long- term horizon. Instead of producing care services, as usual in health care systems, the GK programme focusses on producing better health. Already seven years after the start of the project, it turned out that the mix of curative and preventive interventions resulted in better health outcomes among GK members. In addition an increase in life expectancy of 1,5 years compared to a propensity matched pair control group of not participating inhabitants in the region of Kinzigtal, has been achieved (17). Currently they are extending the scope of their health care interventions, aiming at the inclusion of occupational health management and the pension insurances.

Another innovative aspect is the programme's financing, as their shared savings arrangement is still an uncommon business model in Europe. It includes both incentives for sickness funds and providers and integrates actors which usually operate separately.

Shared decision making

The way shared decision making among patients/members and health care providers has been formalised and organised in the routines of the programme is another difference to usual health

care. Jointly developed treatment goals and plans are continuously evaluated and additional educational programmes are offered to patients/members.

Monitoring and evaluation

The continuing, comprehensive external and internal scientific evaluation of the project can serve as a good practice in the German health care system. Evaluation is essential for the continuation of the programme; not only does it generate feed-back on the effect of the programme, also its funding depends on it. So far, evaluation has shown that the interventions of the programme have resulted in better health outcomes compared to usual care (19; 5; 12; 7). Also on a smaller scale, among the participating physicians, the use of benchmark information on prescribing drugs by means of the electronic patient files is innovative for Germany. As the evaluation is a central feature of the programme since its beginning it enables other integrated care programmes and projects to learn from the GK's experiences.

'Doctor of trust'

Patients being registered with a physician of their choice, sometimes referred to as a gatekeeping system, is an important feature that distinguishes health care systems of countries. Germany is a country where such a system is not in place. By the introduction of the 'doctor of trust' the GK programme has been able to realise a sort of gatekeeping system, which is known to be beneficial for coordinating care and avoiding unnecessary interventions. In order to provide their members with the utmost freedom of choice, they can choose their doctor of trust among general practitioners, specialists and psychotherapists (but around 90% choose a GP).

7.2 Challenges

E-Health

The electronic patient files, which are shared among the participating physicians, represent an important achievement. However, the programme could benefit much more from available and possible e-Health and IT applications. Major obstacles in this respect are the relatively poor infrastructure in the remote areas of Kinzigtal and the attitude of the majority of the target population towards these applications. In the most rural areas the telephone continues to be the most-used device for the communication between patients and health care practices.

Potential obstacles

The German statutory long term care (LTC) insurance ('Pflegeversicherung') does not participate in the GK programme, although it would be ideal from a comprehensive and integrated services

perspective. Sickness funds in Germany benefit from cost savings, but LTC insurance so far has not shown interest in potential reduction of health care expenses. LTC is managed by the individual sickness funds in Germany in a non-competitive system, thus reduction of expenses and sharing savings is not of financial interest for them.

A general potential problem inherent to the programme's concept is that the healthier a person becomes, the less revenues the sickness funds receive from the risk-adjustment scheme.

Thus a potential conflict might arise, if, as already experienced, the programme would manage to treat diabetes in a way that a patient is no longer diagnosed as such. This could not only result in lower costs but also in lower risk compensation received. This would provide a disincentive for further innovations in the programme.

Transferability

Another question is, whether the programme could be transferred to other regions in Germany and to what extent it could serve as a good practice for other countries. It should be taken into account that the Kinzigtal region has been a favourable environment for the initiation of the programme. The physician network, that existed since 1993 served as a solid basis and physicians had a strong position in primary care due to the limited number of health care facilities in that area.

The transferability of the shared-savings model on a national level is limited as the delta of costs savings would decrease accordingly (long-term perspective), although an estimated 25% of all regions in Germany would have to implement a comparable model of integrated care to realise this potential threat. The perspective of extra funding from potential savings served as a powerful incentive for stakeholders to participate, which has contributed to the success of the programme. A national rollout of the GK model would require a new funding method. However, the shared savings model can play a role in transitioning towards a more integrated delivery system and contribute to a cultural change. The programme's transferability has not been evaluated yet, but a pre-existing physician network would be helpful for the implementation within another region. Nevertheless a similar programme is planned to be implemented in Billstedt-Horn, a part of the city of Hamburg having a population with a low social status. Further programme expansions are negotiated in the Saarland, Baden-Württemberg and Berlin; the implementation is foreseen in 2016.

Acknowledgements

The authors wish to express their deepest gratitude to Helmut Hildebrandt (Project management, Achim Siegel (Researcher at the university of Freiburg and coordinator of the external project evaluation), Martin Wetzel (Physician and member of the Ärztenetz – MQNK), Elisa Kern (project coordination) and Saskia Hynek (communication & information) for their support.

Colophon The ICARE4EU project and the selection of 'high potential' programmes

The ICARE4EU project aims to identify, describe, and analyse innovative integrated care practices for people with multimorbidity in European countries, and to disseminate knowledge and experiences from these practices to all European countries in order to support further implementation of effective and sustainable care approaches for European citizens with multimorbidity (www.icare4eu.org).

Multimorbidity is defined in this project as *the presence of two or more medically (somatic or psychiatric) diagnosed chronic (not fully curable) or long lasting (at least six months) diseases, of which at least one is of a primarily somatic nature.*

In 2014, country experts in 31 European countries identified programmes at a national, regional or local level that focus(ed) on providing care for adult (or older) people with multimorbidity, or contain(ed) specific elements for this target group. Programmes had to comprise a formalized cooperation between two or more services, of which at least one medical service; and they had to be evaluated - or had an evaluation planned - in some way. Detailed information about these programmes was collected via a survey to be completed by the programme coordinator. In this way, country experts identified 178 programmes, of which 101 (from 24 countries) were considered eligible for analysis by the project team.

As a next step in the project, these 101 programmes were evaluated by the project team based on quantitative and qualitative criteria. For each programme, five quantitative scores were computed, a general score (assessing general aspects such as its evaluation design, perceived sustainability and transferability) and four scores that provided an indication of its level of 1) patient-centredness, 2) integration of care, 3) use of eHealth technologies and 4) its innovativeness in financing integrated care services. Subsequently, members of the project team qualitatively assessed these four aspects again for a selection of programmes that had high quantitative scores. The qualitative evaluation was based on the available descriptive information gathered by the survey (e.g. description of the aims of the programme, the reported strengths and weaknesses) and already published evaluation reports. This resulted in a short list of so called 'high potential' programmes. To decide whether or not to select a programme of this list for further study, the project team checked with the country expert and/or verified information by contacting the programme coordinator. In this way, eight programmes were selected for a site visit; all programmes positively responded. The eight programmes that were visited were operational in Belgium, Bulgaria, Cyprus, Denmark, Germany, Finland, the Netherlands and Spain.

This case report is based on information about the 'Gesundes Kinzigtal'. For this case report, the previously collected survey data were verified and enriched by data from internal (e.g. presentations) or external (scientific publications) documents and qualitative interviews with the programme manager, a researcher, a physician and a project coordinator. The interviews were conducted by two members of the ICARE4EU project team, and were recorded. Interviewees received the draft text of the case report for validation, and approved the final report. All interviewees signed a written agreement to publish this case report.

Appendix 1 Some characteristics of the health care system in Germany

Health care

In Germany, the 16 states set the objectives for public health and the services are provided by roughly 350 public health offices across Germany, which vary widely in size, structure and tasks. The states are also setting the total budget for the public health funds which are allocated to the public health offices (20).

Based on characteristics of its structure and delivery of care services, the strength of the primary care sector in Germany was labelled as of medium strength in a European comparative health systems study (21).

As in most other European countries, the population of Germany has (almost) universal insurance coverage. However, the system is split into statutory and private health insurance. It provides coverage for a wide range of benefits. Independent of the status, the amount of contribution paid or the duration of insurance, members and their dependants are entitled to the same benefits within social health insurance.

As in most European countries, patient cost sharing is applied to limit public expenditures. In 2011, 76.5% of total health expenditures were paid from public sources, leaving 23.6% to be paid privately by patients or from external sources. Cost sharing is generally applied for primary care visits, specialist visits, inpatient care and outpatient prescription drugs (22).

Social care, long-term care and home care for the elderly

Social care is delivered by a broad variety of mainly private organizations that complement family and lay support for the elderly, beside other areas of responsibility. The states are responsible for planning (and guaranteeing the provision of) institutionalized care and schools for children with special needs (23).

In Germany the elderly constitute the largest group of health care clients. In 2010, Germany spent 1.4% of its GDP on long-term care, compared to 1.8% GDP across the total EU-27 (24). Long-term care is dominated by the statutory long-term care insurance since it was introduced in 1994, as Book XI of the Social Code Book. It represents a separate pillar of the care system. The statutory long-term care insurance is a special insurance and typically consists of the mandatory social long-term care and the mandatory private long-term care insurance. Starting in 1995, all members of statutory sickness funds (including pensioners and the unemployed) as well as all people with full-cover private health insurance were declared mandatory members. Altogether, 2.5 million (3.1% of the population) were entitled to benefits from social long-term care insurance in 2011 (25).

The home care sector in Germany is divided into home nursing and home care, which makes a difference regarding the insurance. The health care insurance is responsible for home nursing, whereas the long-term care insurance is in charge for home care (26). In Germany a total of 1.76 million people received home care and approximately 0.74 million stayed in nursing homes (27).

References

1. Eurostat, 2012. Population structure and ageing. http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing, last access: 18.05.2015
2. Eurostat, 2015. Population with a long-standing illness, by sex, age and employment status. http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_silc_04&lang=de, last access: 18.05.2015
3. SHARE, 2010/2011
4. Busse R; Riesberg A. (2004). Health care systems in transition: Germany. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
5. Busse R, Stahl J. (2014). Integrated care experiences and outcomes in Germany, the Netherlands and England. *Health Affairs*. No.9:1549-1558.
6. Busse R; Blümel M. (2014). Germany: health system review. *Health in Transition*, 16(2):1-296.
7. Hildebrandt H; Schulte T; Stunder B. (2012). Triple Aim in Kinzigtal, Germany. *Journal of Integrated Care*, 20(4), 205-222.
8. Leppin A; Montori V, Gionfriddo M. (2015). Minimally disruptive medicine: A pragmatically comprehensive model for delivering care to patients with multiple chronic conditions. *Healthcare*, 3, 50-63.
9. Lorig KR & Holman H, (2003). Self-management education: history, definition, outcomes, and mechanisms. *Ann Behav Med*. 26(1):1-7.
10. Reime B, Kardel U, Melle C, Roth M, Auel M, Hildebrandt H. (2014). Chapter 13. From agreement to realization: six years of investment in Integrated eCare in Kinzigtal. In: Meyer, I., Müller, S. & Kubitschke, L. (eds.). *Achieving Effective Integrated E-Care Beyond the Silos*, Hershey, PA: IGI Global.
11. Hildebrandt H, Hermann C, Knittel R, Richter-Reichhelm M, Siegel A, Witzenrath W. (2010). Gesundes Kinzigtal Integrated Care: improving population health by a shared health gain approach and a shared savings contract. *International Journal of Integrated Care*. Vol.10
12. Jahresbericht Gesundes Kinzigtal. (2013). 'Gesundheit zahlt sich aus'. Gesundes Kinzigtal GmbH
13. Gröhe, H. (2015). Mehr Tempo bei der Digitalisierung. Federal Ministry of Health. Frankfurter Allgemeine Zeitung, published:13.01.2015. <http://www.bmg.bund.de/themen/krankenversicherung/elektronische-gesundheitskarte/namensartikel-bundesgesundheitsminister-groehe.html>, last access:15.05.2015

14. Lluch M. (2013). Incentives for telehealthcare deployment that support integrated care: a comparative analysis across eight European countries. *Int J Integr Care* 2013; Oct-Dec.URN:NBN:NL:UI:10-1-114750
15. Ärzteblatt. (2015).<http://www.aerzteblatt.de/archiv/168346/E-Health-Gesetz-Viele-Detailfragen-noch-offen>, last access:20.05.2015
16. Pieper M, Antona M, Cortés U. (2011). Ambient Assistant Living. Introduction to the Special Theme. European Research Consortium for Informatics and mathematics (ERCIM).News 87.
17. Schulte T; Pimperl A, Fischer A, Dittmann B, Wendel P, Hildebrandt H. (2014). Ergebnisqualität Gesundes Kinzigtal – quantifiziert durch Mortalitätskennzahlen. Eine quasi – experimentelle Kohortenstudie: Propensity Score-Matching von Eingeschriebenen vs. Nicht-Eingeschriebenen der Integrierten Versorgung Gesundes Kinzigtal auf Basis von Sekundärdaten. Erstellt für: Gesundes Kinzigtal GmbH. Health Data Analytics.
18. Hildebrandt H. (2012). Money for value instead volume: The Kinzigtal-way to develop and measure value and health gain in a local area. Power point presentation at the zesde nationale werkcongress on Chronic diseases organized by the university of Utrecht at the 29th of June.
19. Alderwick H; Ham C; Buck D. (2015). Population health systems. Going beyond integrated care. Kings Fund. Ideas that change health care.
20. Paris, Devaux and Wei. (2010) (in: van Ginneken et al., pp.34-35)
21. Kringos, DS. (2012) The strength of primary care in Europe. Utrecht, NIVEL.
22. Van Ginneken et al., pp. 88-89
23. Busse R, Blümel M. (2014 Germany: health system review. *Health Systems in Transition*, 2014, 16(2):1–296.
24. Lipszyc B, Sail E, Xavier A. Long-term care: need, use and expenditure in the EU-27. *European Economy. Economic Papers* 469, November 2012.
25. Statistisches Bundesamt (2013e). Pflegestatistik 2011. Pflege im Rahmen der Pflegeversicherung. Deutschlandergebnisse. Wiesbaden, Statistisches Bundesamt.
26. Genet N, Boerma W, Kroneman M, Hutchinson A, Saltman RB. Home Care across Europe. Case studies. Brussels, Belgium / Utrecht, The Netherlands: European Observatory on Health Systems and Policies / NIVEL, 2013.
27. Statistisches Bundesamt (2013e). Pflegestatistik 2011. Pflege im Rahmen der Pflegeversicherung. Deutschlandergebnisse. Wiesbaden, Statistisches Bundesamt.