In this issue:

- Editorial
- Call for evaluation projects on Gesundes Kinzigtal Integrated Care
- Evaluation of Gesundes Kinzigtal Integrated Care: results of the providers’ surveys in 2008-10, part II
- Health services research of Optimedis AG on Gesundes Kinzigtal Integrated Care: remarks on the matched pair method in observational studies
- Current data on Gesundes Kinzigtal Integrated Care
- Recent publications on Gesundes Kinzigtal Integrated Care
Editorial

In the preceding edition of our newsletter we started to report selected results of the previous three surveys of Gesundes Kinzigtal’s partner providers. In today’s edition we continue this report: on pages 3-7 we analyse, among other topics, how the partner providers of Gesundes Kinzigtal Integrated Care (GKIC) assess those institutions and organisations which manage the integrated care system.

GKIC is evaluated not only by external evaluation studies, i.e. studies which are conducted by independent institutions. There is also an extensive internal evaluation, conducted by organisations which take part in GKIC’s operative management. Among these organisations are the two statutory health insurers AOK Baden-Württemberg and LKK Baden-Württemberg, the regional physicians’ network MQNK and Optimedis AG. The latter two organisations founded in 2005 the management company Gesundes Kinzigtal Ltd. which coordinates the activities of the GKIC system in the Kinzigtal region. The two health insurers and Optimedis AG are responsible for calculating the financial results of Gesundes Kinzigtal Ltd. and thus for the economic evaluation of the GKIC system. (Until now we have reported only once on the financial results of the system – cf. http://www.ekiv.org/pdf/EKIV-Newsletter_2-2009.pdf.) Besides these calculations, Optimedis is engaged in another branch of research on the GKIC system: Optimedis researchers attempt to evaluate the effectiveness and efficiency of individual health management programmes within the GKIC system. Today as well as in the coming editions of our newsletter we present some methods and results of Optimedis’ studies on individual GKIC health management programmes. In today’s edition, on pages 8 – 10, we present the methodological foundations on which most of Optimedis’ studies are based. In the coming editions of EKIV Newsletter we will present the results of Optimedis’ research on GKIC’s programme to prevent (the exacerbation of) osteoporosis.

On pages 11 and 12 we present current data on Gesundes Kinzigtal Integrated Care, and on page 13 we provide a list of recent publications on GKIC.

As always, your questions on any of our newsletter topics – as well as any kind of feedback – are welcome. We look forward to answering your email soon – please email to info@ekiv.org or ekiv@medsoz.uni-freiburg.de.

With best regards,

Achim Siegel & Ulrich Stoessel

Make Gesundes Kinzigtal Integrated Care your research topic!

Call for evaluation projects on Gesundes Kinzigtal Integrated Care

Since a couple of years Gesundes Kinzigtal Integrated Care (GKIC) is considered to be a ‘flagship project’ among Germany’s integrated care approaches. Therefore GKIC seems to be an excellent subject of research into health services reforms and new forms of health services. The management company Gesundes Kinzigtal Ltd. and its contracting partners would like health services researchers to make GKIC a field of their research. If you are interested to include GKIC into your research project, just send an email either to us (ekiv@medsoz.uni-freiburg.de) or to Helmut Hildebrandt, CEO of Gesundes Kinzigtal Ltd. (h.hildebrandt@optimedis.de).
Evaluation of Gesundes Kinzigtal Integrated Care (GKIC):

Process evaluation of Gesundes Kinzigtal Integrated Care from providers’ perspective: results of the providers’ surveys in 2008-10, part II

In the previous edition of our newsletter we reported first results of the third providers’ survey which took place in 2010. In this previous report we focused on providers’ response in the third survey and on providers’ attitudes towards the idea of shared decision-making in general as well as towards therapy goal agreements with patients in particular.

In today’s as well as the forthcoming edition we will report selected results of the three previous surveys and compare them in a longitudinal perspective. In today’s edition we focus on

- providers’ assessments of those institutions and organisations which manage the GKIC system,
- providers’ knowledge of GKIC health management programmes,
- the frequency with which providers promote patients into these programmes, and
- providers’ assessments of how attractive these programmes are to patients.

The three surveys were conducted by Dr. Matthias Nübling (GEBmbH – Gesellschaft für empirische Beratung, Denzlingen).

Assessment of institutions and organisations which manage the GKIC system

As in the first two surveys (2008 and 2009), the providers had to assess also in the third survey those institutions and organisations which managed the GKIC system: (1) the regional physicians’ network MQNK and the physicians’ council, with the latter consisting of three elected representatives having co-decision powers and a right of veto in all medical affairs, (2) the two statutory health insurers AOK and LKK Baden-Württemberg, and (3) the executive office of the management company Gesundes Kinzigtal Ltd.

As can be seen from fig. 1, none of the three institutions/organisations are assessed as „not so good” or „poor”. The two health insurers AOK and LKK Baden-Württemberg are rated in all three surveys between 50 and 60 points, in range from satisfactory to good. The assessments of the physicians’ network MQNK and the physicians’ council have increasingly improved from the first (55 points) and the second survey (57 points) to the third survey (62 points). Gesundes Kinzigtal Ltd.’s executive office ranges between “good” and “very good” in all three surveys (81 points in 2008, 76 points in 2010).

However, with respect to the results illustrated in fig. 1 one has to recognise that the assessment criteria of the three institutions (organisations) are not the same. Therefore the different point values are not strictly comparable across the three institutions but only for each individual institution over the course of time.

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In the third survey (2010) the respondents were asked an additional, newly designed question on the cooperation with the two statutory health insurers AOK and LKK. The question read: “How do you rate the cooperation with AOK/LKK, compared with other health insurers?” The respondents were supposed to give one of the following five answers:
- “considerably worse” (we attributed 0 points to this answer),
- “somewhat worse” (25 points),
- “as good as with other health insurers” (50 points),
- “somewhat better” (75 points), and
- “considerably better” (100 points).

On average, a point value of 74 resulted from all valid answers. This means that the prevailing tendency of the respondents in 2010 is that the cooperation with AOK and LKK is “somewhat better” than with other health insurers. Of the 51 providers which had been inquired, 41 gave a valid answer whereas 10 respondents refrained from a valid rating (“I cannot judge”).

Providers’ knowledge of GKIC’s specific health management programmes, providers’ promotion of patients into these programmes, and providers’ assessment of how attractive these programmes are to patients

In the following paragraph we report results on the following aspects:
(1) Do GKIC’s partner providers really know GKIC’s health management programmes?
(2) How often do partner providers promote patients to these programmes?
(3) How do partner providers rate the attractiveness of the programmes to patients?

The results are illustrated in fig. 2. The results on these three aspects are described by the mean values of three corresponding index scales. All mean values illustrated in fig. 2 refer to those health management programmes which had already been existent in 2008 and had been a subject matter in the first survey.
The mean value of the scale representing providers’ knowledge of GKIC’s specific health management programmes (fig. 2, left triple column) indicates at first a considerable increase of providers’ knowledge from 2008 to 2009 (from 69 to 87 points), then a slight decrease from 2009 to 2010 (from 87 to 77 points). This means that providers’ knowledge of GKIC’s specific health management programmes was the best in 2009. A similar pattern of results may be seen regarding providers’ promotion of patients into these programmes (fig. 2, middle triple column): Mean values rose from 2008 (29 points) to 2009 (46 points) but decreased a little from 2009 to 2010 (36 points). With respect to providers’ assessment of how attractive these programmes are to patients (fig. 2, right triple column) the increased level in 2009 (40 points, after 26 points in 2008) could be conserved in 2010 (41 points).

The slight decrease in providers’ knowledge and providers’ promotion rates in 2010 from the 2009 level might result from the fact that in the 2010 survey many new providers took part in the survey – i.e. providers who had joined Gesundes Kinzigtal just a few weeks or months before the T3 survey.\(^2\) The decrease in the above-mentioned mean values would then – if this assumption was true – not be tantamount to a generally decreased knowledge and patient promotion rate. Instead, this decrease could be interpreted as a result of the fact that many of the new providers in 2010 were not (yet) fully acquainted with the GKIC system and its specific health management programmes at the time of the T3 survey. To check whether this assumption was true, the above-mentioned mean values for the knowledge, promotion and attractiveness scales were calculated for a certain subgroup of respondents, namely those providers who had taken part in all three surveys (from 2008 to 2010). Among the 51 respondents of the T3 survey there were 20 respondents who had participated in all three surveys. Fig. 3 illustrates the results of the three scales (mean values in the 2010 survey) for those 20 providers who took part in all three surveys.

Fig. 3: Providers’ knowledge of GKIC’s health management programmes, promotion of patients into these programmes, and assessment of how attractive these programmes are to patients in those respondents (N=20) who took part in all three surveys (range: 0-100; 100 = optimum assessment)

As can be seen from fig. 3, the increase of mean values between 2008 and 2009 has been conserved (or even slightly increased) in 2010 in all three scales. Obviously, there is no decrease of mean values from 2009 to 2010 as in fig. 2. This means that the knowledge and promotion rate of those providers who had been cooperating with GKIC from 2008 has not shrunk in any of the above-mentioned time periods.

When interpreting the results in fig. 2 and fig. 3 we must consider, however, that not all providers are equally supposed to promote their patients into various health management programmes. For example, a physician working as a cardiologist will not promote his patients into a programme which is to prevent (the progression of) osteoporosis. Conversely, an orthopaedic specialist will not promote his patients to a programme which is to prevent (the progression of) coronary heart disease. Similar limitations hold for physiotherapists and many other GKIC partner providers. Therefore, the increase of the mean values of the scales “promotion of patients into programmes” and “assessment of how attractive programmes are to patients” is inherently limited. Only with respect to the scale „knowledge of GKIC’s programmes” mean values may reach or approach the maximum value of 100 points.

Summary and preliminary conclusion

In the third survey in 2010 the partner providers of Gesundes Kinzigtal were asked again how they assessed the three key institutions or key organisations which manage the GKIC system. Whereas the providers’ assessment of the two statutory health insurers AOK and LKK Baden-Württemberg remained rather constant (between “good” and “satisfactory”) over the course of the three surveys, the assessment of the physicians’ network MQNK and the physicians’ council improved steadily over the course of time, receiving a still “good” evaluation in 2010. Gesundes Kinzigtal Ltd.’s executive office – the third key institution – received an average assessment between “good” and “very good” in all three surveys. However, it should be considered that these ‘evaluation marks’ are not strictly comparable across the three institutions because the assessment criteria are not the same.
In the third survey in 2010 the providers were asked for the first time to assess the cooperation with AOK and LKK, compared with the cooperation with other health insurance companies. The responding providers rated the cooperation with these two health insurers on average as “somewhat better” than the cooperation with other health insurers. This result might be interpreted thus: The more intensive cooperation between providers and health insurers, observed in the context of a regional integrated care system, leads to a more cooperative atmosphere between providers and health insurers than in the context of usual care.

Finally we have reported the mean values of three scales which indicate providers’ knowledge of GKIC’s specific health management programmes, providers’ promotion of patients into these programmes, and providers’ assessments of how attractive these programmes are to patients. Having analysed the mean values of these three indicators, we got results that seemed surprising at a first glance: The mean values of the three indicators increased from 2008 to 2009 but then decreased (if only a little) from 2009 to 2010. This decrease might be attributed, as we have demonstrated above, to the fact that in 2010 many providers who had just joined the GKIC system participated in the T3 survey. Presumably, these new partner providers were not yet fully acquainted with the possibilities and details of the GKIC system. This might have led to the decrease in two (of three) indicators from 2009 to 2010. When calculating the mean values of the three indicators only for those respondents who had taken part in all three surveys – i.e. from 2008 to 2010 –, there is no decrease in mean values at all from 2009 to 2010. Instead, for this subgroup of respondents the mean values of all three indicators increased over the whole time period.

Achim Siegel, Ulrich Stößel
Health services research of Optimedis AG researchers on Gesundes Kinzigtal

Integrated Care

Remarks on the matched pair method in observational studies

Any evaluation of the effectiveness and efficiency of health management or prevention programmes faces a fundamental methodological challenge: One has to compare – in theory – the effects that have been measured in the patients who participated in the programme in question with the effects that would have been measured if the concerned patients had not taken part in these programmes. In reality such a comparison is impossible as there are no data for the latter condition because it is purely hypothetical. This situation is often called the fundamental problem of evaluation.

Nevertheless, to gain evidence on the causal effects of intervention programmes the scientific community has proposed the randomised controlled trial (RCT) as the ‘gold standard’, i.e. the most conclusive study design (cf. fig. 1). ‘Randomisation’ means that study participants (patients) are randomly assigned to either an intervention group (intervention A) or a control group (intervention B). If randomisation is conducted correctly, the intervention effect can be assessed without bias.3

Fig. 1: Procedure scheme of a two-arm randomised controlled trial (here with 200 test persons)

Under ‘real-life conditions’ – as e.g. a complex intervention within an integrated health care system such as Gesundes Kinzigtal – an RCT is sometimes not feasible because of ethic, economic or simply practical reasons. In such a case a controlled cohort study might be an alternative, even though its evidence level is in principle lower than that of an RCT. In a controlled cohort study, participants are not randomly assigned to intervention and control group respectively. Instead, study participants who are about to participate in certain treatments are recruited as study participants. This means that patients are assigned to the treatment conditions in question by a conscious decision of their own or of their doctor (or some other clinician). Most often this leads to a so-called ‘selection’ or ‘self-selection effect’ which is tantamount to an unequal distribution of prognostic variables across treatment groups (as study participants have not been assigned randomly to treatment groups – cf. fig. 2). To make a valid comparison between study participants from both groups and to reduce bias under these conditions, the method of ’matching’ or ‘matches pairs’ may be used: Every study participant from a given intervention group is compared with a ‘statistical twin’ from the control group, with i.e. a study participant who is similar to a given intervention group participant with respect to all relevant prognostic variables except the treatment condition. Thus, within the context of the matched pair method, only statistical twins are compared. This is to reduce the above-mentioned selection bias. Therefore, in observational (non-randomised) studies the method of matching may in principle compensate for

3 Cf. e.g. Weßling H (2011); Theorie der klinischen Evidenz Versuch einer Kritik der evidenzbasierten Medizin. Wien, Zürich, Berlin, Münster: Lit
the missing randomisation. In case of a perfect matching this may lead to an unbiased assessment of the intervention effect.⁴

Fig. 2: Procedure scheme of a two-arm controlled cohort study (here with 200 study participants)

When, in the context of observational studies, prognostic variables that are to be matched are numerous, it may be difficult to use the classic method of matching. Precisely speaking, it may be difficult to select, for each study participant, a statistical twin from the control group which is similar to its counterpart with respect to every variable from the long list of prognostic variables. For the sake of successful matching one may use a kind of hybrid matching: Several confounding variables such as age (of participants), gender or Charlson⁵ index value may be summarised in a single ‘co-morbidity sum score’. Such a hybrid co-morbidity index score summarises selected co-morbidities in a single sum score so that, in the course of the matching procedure, not every singly co-morbidity diagnosis has to be matched individually by the respective ‘statistical twin’ but only the individual sum score value has to be matched.⁶ This makes it much easier to find a statistical twin for a given intervention participant. Similarly, so-called ‘pre-index costs’ may be used as a (hybrid) matching variable. Pre-index costs are the average costs of a given participant within a given time period before a certain event (such as e.g. the beginning of the treatment in question).

In general one has to consider that the more confounding variables are used in the course of the matching process and the more restrictive (or specific) the matching criteria are, the more conclusive is the whole procedure with respect to reducing bias, but the lower is also the probability to find a statistical twin fulfilling all of the matching criteria.⁷ In our previous analyses the use of the four above-mentioned matching criteria – i.e. age, gender, co-morbidity (Charlson index value), and pre-index costs – has proven quite successful. According to our findings, it is a feasible and at the same time simple and comprehensible matching approach. Analyses regarding the distribution of confounders across intervention and control group have regularly proven a successful adjustment after the matching procedure.

Compared to randomised study designs, however, some limitations hold even for this kind of refined matching method: Only those confounders can be adjusted for which are known and which have been measured in the study. Unknown confounders or confounders that have not been measured can neither be adjusted for. In well done randomised studies it is the randomisation procedure which brings about a random – and thus equal – distribution of both known and unknown confounders across treatment groups, and this is what constitutes the methodological superiority of well done RCTs. Nevertheless, with respect to observational studies a rigorous and successful matching may reduce – and sometimes even eliminate – bias, thus leading to a more precise estimation of the intervention effect than without matching.

The use of matched pairs in the evaluation of the intervention programme ‘strong muscles, strong bones’ (prevention of osteoporosis and bone fractures)

In the next edition of EKIV Newsletter we will demonstrate the results of such a matching procedure: We will present results of our evaluation of the intervention programme ‘strong muscles, strong bones’. This is a specific Gesundes Kinzigtal intervention programme which is to prevent the progression of osteoporosis and reduce the prevalence of bone fractures in patients with osteoporosis.

Finally we would like to make some remarks on future projects. At the moment we consider employing an alternative hybrid matching using a ‘propensity score’. A propensity score is a function of several confounder variables. Similar to the Charlson co-morbidity index score but even more comprehensively, a propensity score summarises several variables and factors in a single sum score. Furthermore, with respect to future studies we check how to include the variable ‘level of care’ („Pflegestufe“) into our matching procedure, either as a further individual matching variable or as a further variable within a multi-variate propensity score.

Timo Schulte (OptiMedis AG), Alexander Pimperl (OptiMedis AG)

- translated into English by Achim Siegel -
Current data on Gesundes Kinzigtal Integrated Care
(as of November 4, 2011)

<table>
<thead>
<tr>
<th>Number of actively enrolled insurants *</th>
<th>8,300*</th>
</tr>
</thead>
<tbody>
<tr>
<td>- thereof AOK BW insurants / full members</td>
<td>7,529</td>
</tr>
<tr>
<td>- thereof AOK BW insurants / basic members**</td>
<td>323</td>
</tr>
<tr>
<td>- thereof LKK BW insurants / full membership</td>
<td>439</td>
</tr>
<tr>
<td>- thereof LKK BW insurants / basic membership**</td>
<td>9</td>
</tr>
</tbody>
</table>

* Enrolled members who have deceased, changed residence to outside the Kinzigtal region or resigned because of other reasons are not considered in this list.
** Basic members differ from full members in that their family doctor (“doctor of confidence”) does not have a cooperation contract with GKIC.

<table>
<thead>
<tr>
<th>Number of patients with higher morbidity risk</th>
<th>5,013</th>
</tr>
</thead>
<tbody>
<tr>
<td>- thereof AOK BW insurants</td>
<td>4,690</td>
</tr>
<tr>
<td>- thereof LKK BW insurants</td>
<td>323</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GKIC preventive programmes and extended national disease management programmes (DMPs)</th>
<th>no. of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation programme (“Rauchfreies Kinzigtal”)</td>
<td>172</td>
</tr>
<tr>
<td>Prevention/treatment of congestive heart failure (CHF)</td>
<td>73</td>
</tr>
<tr>
<td>Lifestyle intervention for patients with metabolic syndrome</td>
<td>162</td>
</tr>
<tr>
<td>Prevention of osteoporosis and osteoporotic fractures</td>
<td>659</td>
</tr>
<tr>
<td>Early intervention by psychotherapists in cases of acute personal crises</td>
<td>240</td>
</tr>
<tr>
<td>Electronic health card (“Gesundheitspass”)</td>
<td>989</td>
</tr>
<tr>
<td>Specific medical care for the elderly in nursing homes</td>
<td>92</td>
</tr>
<tr>
<td>„Strong backing“ (back pain prevention programme – since August 2011)</td>
<td>11</td>
</tr>
<tr>
<td>„Better tuned“ – a programme for people with depression</td>
<td>20</td>
</tr>
<tr>
<td>Gestation diabetes prevention</td>
<td>11</td>
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<tr>
<td>AGil (Active health promotion in the elderly) – in abeyance</td>
<td>511</td>
</tr>
<tr>
<td>Wound management – in abeyance</td>
<td>4</td>
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<tr>
<td>Individually blistered drug packages („Medifalter“) - closed</td>
<td>104</td>
</tr>
<tr>
<td>Ophthalmological check-up for children (amblyopia, U10 + U11)</td>
<td>466</td>
</tr>
<tr>
<td>DMP diabetes mellitus type II</td>
<td>897</td>
</tr>
<tr>
<td>DMP coronary heart disease</td>
<td>313</td>
</tr>
<tr>
<td>DMP breast cancer</td>
<td>12</td>
</tr>
<tr>
<td>DMP asthma</td>
<td>119</td>
</tr>
<tr>
<td>DMP COPD</td>
<td>173</td>
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(continued on the following page)
## Other health management offers provided in cooperation with AOK specialists or third parties

<table>
<thead>
<tr>
<th>Service</th>
<th>No. of Participants</th>
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<tbody>
<tr>
<td>Social service (case management by social workers according to physicians’ recommendation)</td>
<td>148</td>
</tr>
<tr>
<td>Diet counselling by AOK BW specialists</td>
<td>64</td>
</tr>
<tr>
<td>Specific fall prophylaxis for the elderly</td>
<td>144</td>
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<tr>
<td>Aqua fitness (since 2008)</td>
<td>420</td>
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<tr>
<td>Sponsored membership in sports clubs</td>
<td>157</td>
</tr>
<tr>
<td>Lecture series on health issues (no. of participants since 2009:)</td>
<td>2,051</td>
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## Physicians and other providers contracting with GKIC

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family physicians</td>
<td>22</td>
</tr>
<tr>
<td>Specialists</td>
<td>24</td>
</tr>
<tr>
<td>Pediatricians</td>
<td>5</td>
</tr>
<tr>
<td>Psychotherapists</td>
<td>4</td>
</tr>
<tr>
<td>Hospitals</td>
<td>6</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>7</td>
</tr>
<tr>
<td>Nursing homes</td>
<td>11</td>
</tr>
<tr>
<td>Outpatient nursing services</td>
<td>4</td>
</tr>
<tr>
<td>Social-therapeutic services</td>
<td>1</td>
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</tbody>
</table>

## Other partners cooperating with GKIC

<table>
<thead>
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<th>Group</th>
<th>No. of Participants</th>
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</thead>
<tbody>
<tr>
<td>Pharmacies</td>
<td>16</td>
</tr>
<tr>
<td>Sports clubs</td>
<td>25</td>
</tr>
<tr>
<td>Fitness centres</td>
<td>6</td>
</tr>
</tbody>
</table>
Recent publications on Gesundes Kinzigtal Integrated Care (published from June 2010 to October 2011)


