

# Preparatory Action on Smart Rural Areas in the 21st Century



Proposal for concretizing the  
initial idea of a telemedical  
network

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## 1 Introduction

As part of the Smart Rural 21 project, the idea of using telemedicine applications was developed in Sollstedt in order to be able to counteract a foreseeable lack of resident general practitioners and to make the joint municipality more attractive for young doctors. Basically, the problem of the shortage of doctors in rural areas has been discussed many times. In particular, general practitioners are finding it increasingly difficult to find a successor.<sup>1</sup> Against this background, the use of telemedicine solutions in rural areas is being discussed. In an article for the online magazine G+G, which is published by the AOK Bundesverband, the Federal Minister of Agriculture, Julia Klöckner, outlined some model projects that were or are being carried out as part of nationwide funding programs.<sup>2</sup> There have also been and will be a number of projects at the level of the federal states of model projects.<sup>3</sup> The German District Association has also identified different fields of action in which digital technologies can improve healthcare based on a district-related digitization analysis.

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All in all, the possible uses of digital technologies in the health and care sector are diverse, at least potentially. Despite a considerable number of funded projects and publications on the subject of digitization in rural areas, it can be said that the technical feasibility and possible opportunities are mainly discussed. So far, however, much less reliable information is available on the feasibility and effects of digital applications in standard care, ie beyond publicly funded pilot projects. The following chap. Against this background, 2 first briefly summarizes which digital solutions are currently being discussed in connection with the shortage of doctors in rural regions as part of standard care. Subsequently, in Chap. 3 shows how the previous idea of a telemedical network, which could be further specified in Sollstedt in order to define a specific implementation project

<sup>1</sup> Against the background of the development forecast up to the year 2030, the panel doctors Federal Association (KBV) and the Associations of Statutory Health Insurance Physicians (KVen), for example, have developed and implemented various concepts to counteract a shortage of doctors on site. In regions where there is a threat of a shortage of doctors, the health insurance companies can, for example, pay surcharges or guarantee sales for doctors willing to practice.  
See [https://www.kbv.de/html/themen\\_1076.php](https://www.kbv.de/html/themen_1076.php) [last access: 04/21/2021]

<sup>2</sup> <https://www.gg-digital.de/2019/09/einwurf/index.html> [last access: 04/21/2021].

<sup>3</sup> For example, the Association of Statutory Health Insurance Physicians of Thuringia (KVT) started the TeleArzt supply project in Thuringia in 2018 with AOKPLUS, the first health insurance company in the Free State. See [https://www.t-online.de/region/id\\_83622036/kassenaerztliche-vereinigung-startet-projekt-fuer-telemedizin.html](https://www.t-online.de/region/id_83622036/kassenaerztliche-vereinigung-startet-projekt-fuer-telemedizin.html) [last access: 04/21/2021]. A similar project called "Telemedicine Assistance" has started in Rhineland-Palatinate. See <https://www.kv-rlp.de/institution/engagement/telemedizin-assistenz/> [last access: 04/21/2021]

<sup>4</sup> Digitization and health - guidelines for digitization in healthcare. Writings of the German District Association, Volume 146. Cf. <https://landkreistag.de/images/stories/publikationen/bd-146.pdf> [last access: 05/03/2021]

be able. Finally, against the background of the information available so far and the conversations held so far, a number of key questions are listed that may be relevant for the further specification of the project (Chapter 4).

## 2 Overview of telemedicine applications in the regular care

In a recent publication, Bach et al. (2021)<sup>5</sup> under the Keyword "eHealth" brings together different digital applications with regard to their possible contribution to strengthening rural areas. There are three main areas of application, namely:

- a) the exchange of data (e.g. through electronic files, doctor's letters and prescriptions),
- b) personal communication (e.g. through video and voice telephony) and
- c) support for the direct provision of services (e.g. through remote diagnostics and telemedicine applications).

In this sense, the concept of a telemedical network for patient care is primarily to be assigned to the last category. It should be noted that the use of telemedicine solutions for healthcare usually involves a combination of technological and organizational innovations.

<sup>6</sup> Also play for the economic use of telemedical solutions in standard care, ie in addition to publicly funded pilot applications, the possibilities for reimbursement of telemedical services by the cost bearers, ie usually the health insurance companies, also play a role. For this purpose, the legislature has created the appropriate framework conditions since 2015.<sup>7</sup> Against this background, different solutions seem to emerge in regular operation within the framework of contract medical care, which are briefly outlined in the following sections.

<sup>5</sup> Bach, M.; Meyer, I.; Müller, S. (2021) 'EHealth as an integration engine in rural health care: requirements, challenges and opportunities', in: Weidmann, C.; Rhymes, B. (Ed.) 'Health promotion and health-related care in rural areas', Bern: Hogrefe, p. 262-276

<sup>6</sup> See, for example, L. Kubitschke, S. Müller and I. Meyer (2017): Can e-health contribute to greater integration of health services and improved cooperation between the actors involved? Experiences from European pilot projects. In A. Brandhorst, H. Hildebrandt and EWLuthe (eds.): Cooperation and integration - the unfinished project of the health system. Springer, 2017., pp. 515-532.

<sup>7</sup> The law for secure digital communication and applications in the healthcare sector of 2015, also known as the e-health law, is intended to promote, among other things, telemedical services (online video consultation hours, teleconsiliary assessment of x-ray findings). See <https://www.bundesgesundheitsministerium.de/service/bedingungen-von-az/e/e-health-gesetz.html> [last access: 04/21/2021]

## 2.1 Delegation of medical specialist tasks to non-medical ones assistants

The basic idea underlying the concept of delegation in general practitioner and specialist care assumes that tasks that were previously only performed by resident physicians can be transferred to non-physician assistants who are specially trained for this purpose. The cooperation of these specialists with the doctor in charge can be supported by digital aids, for example by digital measurement, storage and transmission of the patient's vital data or by the doctor being consulted on site on a case-by-case basis via a video connection. That

The delegation procedure is intended to relieve the burden on the treating doctor, so that a larger number of patients can be cared for by the respective doctor or the geographical range of medical care by assistants can be expanded over a wide area. At the same time, no compromises should be made in the quality of medical care. This basic concept has been tested for the first time in a nationwide model project<sup>8</sup> since 2005 and has since been varied several times, including in Thuringia.

<sup>9</sup> Depending on the model, trained assistants can either use a work with a single doctor or with several doctors who have joined together in a doctor network. There are also different approaches to the qualification or further training of assistants. Last but not least, different solutions can be used when it comes to digital support for the collaboration between assistants and doctors. For example, vitaphone GmbH offers a package solution consisting of hardware and software components to support delegation processes under the product name TELEARZT.

<sup>10</sup> On the company's website refers to participating health insurance companies in Bavaria, Hesse and Thuringia, which reimburse patients for the care of patients with the TELEARZT in the form of a fee offer per patient, whereby the patients cared for must meet certain enrollment conditions.<sup>11</sup> In general, the National Association of Statutory Health Insurance Physicians also provides information on the employment of non-medical practice assistants within the framework of delegation on its website.

<sup>12</sup> This applies, for example, to criteria that house and Medical specialists must meet the rules on remuneration and the requirements for the training of practice assistants.

## 2.2 The video consultation hour

The video consultation enables direct remote care of the patient by the doctor or psychotherapists, for example in order to save long journeys or in the case of fundamental

<sup>8</sup> See <https://cdn.aerzteblatt.de/pdf/106/1/m3.pdf?ts=25.08.2009+14%3A15%3A17> [last access: 04/21/2021]

<sup>9</sup> See <https://www.aerzteblatt.de/nachrichten/76198/KV-Thueringen-kuendigt-drei-Telemedizinprojekte-an> and <https://www.aerzteblatt.de/nachrichten/56295/Arztentlastung-Bitte-mehr-EVA-AGnES-VERAH-und-Co> [last access: 04/21/2021]

<sup>10</sup> <https://www.tele-arzt.com/#product> [last access: 04/21/2021]

<sup>11</sup> <https://www.tele-arzt.com/honorarArrangements/> [last access: 04/21/2021]

<sup>12</sup> <https://kby.de/html/12491.php> [last access: 04/21/2021]

Immobility (e.g. after an operation). In this way it is possible, for example, to explain the treatment on the screen, to assess the healing process of an operation wound or to have a psychotherapeutic conversation. According to the Association of Statutory Health Insurance Physicians, medical practices have apparently increasingly offered this form of remote care, especially during the corona pandemic.<sup>13</sup> Experience to date indicates that video consultations can be a useful addition to classic consultations in the practice.<sup>14</sup> Especially when it comes to diagnostics. However, it will probably not be able to completely replace a personal visit to the doctor in every case, since a comprehensive assessment of the patient via a screen cannot be guaranteed. In principle, physicians in certain specialist groups have been able to offer video consultations at the expense of the statutory health insurance since 2017 under precisely defined conditions.<sup>15</sup> For this purpose, the physician or psychotherapist selects a certified video service provider who ensures that the video consultation runs safely and technically. The providers must provide proof of IT security and data protection according to defined rules. The National Association of Statutory Health Insurance Physicians offers a list of certified video service providers who are allowed to offer the technical implementation of video consultations.<sup>16</sup> On the part of the practices and the patient, a screen with a camera, microphone and loudspeaker as well as an internet connection are essentially required. An additional software is not necessary.

### 2.3 Digital Health Applications (DiGA)

With the entry into force of the Digital Care Act (DVG) on December 19, 2019, digital health applications (DiGA) were introduced into health care (§§ 33a and 139e SGB V).<sup>17</sup> They are intended to be digital helpers in the hands of the patient the detection, monitoring, treatment, mitigation or compensation of support illness, injury or disability.<sup>18</sup> Such a DiGA must therefore have at least one medical indication. i.e. it must be clear for which disease/ diagnosis it is to be used. In this sense, the basic idea behind the reimbursable DiGA is to provide the patient with digital

<sup>13</sup> See <https://www.kbv.de/html/videosprechstunden.php> [last accessed: May 27, 2021] <https://www.kbv.de/html/52109.php> [last access: 05/27/2021]

<sup>14</sup> [www.kbv.de/html/52109.php](https://www.kbv.de/html/52109.php) [last access: 05/27/2021]

<sup>15</sup> The Association of Statutory Health Insurance Physicians in Thuringia, for example, offers a notice board and a corresponding application form. See [https://www.kvthueringen.de/fileadmin/media2/KAEV/3200/KI/3200\\_KI\\_Video\\_2019\\_00\\_0001.pdf](https://www.kvthueringen.de/fileadmin/media2/KAEV/3200/KI/3200_KI_Video_2019_00_0001.pdf) and [https://www.kvthueringen.de/fileadmin/media2/KAEV/3200/AF/3200\\_AF\\_Video\\_2019\\_01\\_0001.pdf](https://www.kvthueringen.de/fileadmin/media2/KAEV/3200/AF/3200_AF_Video_2019_01_0001.pdf)

[last access: 05/27/2021]

<sup>16</sup> [https://www.kbv.de/media/sp/Liste\\_zertisierte-Videodienstlieferer.pdf](https://www.kbv.de/media/sp/Liste_zertisierte-Videodienstlieferer.pdf) [last access: 05/03/2021]

<sup>17</sup> See [https://www.bfarm.de/DE/Medizinprodukte/DVG/\\_node.html](https://www.bfarm.de/DE/Medizinprodukte/DVG/_node.html) [https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger\\_BGBI&start=/\\*\[\\*\]@attr\\_id=%27bgbl119s2562.pdf%27#\\_bgbl\\_%2F%2F%5B%40attr\\_id%3D%27bgbl119s2562.pdf%27%5D1622219658194](https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBI&start=/*[*]@attr_id=%27bgbl119s2562.pdf%27#_bgbl_%2F%2F%5B%40attr_id%3D%27bgbl119s2562.pdf%27%5D1622219658194) [last access: 05/03/2021]

<sup>18</sup> The German Association of General Practitioners has created an explanatory handout on this. See [https://hausarzt-thueringen.de/wp-content/uploads/2020\\_11\\_16\\_FAQ\\_Liste\\_DiGA-1.pdf](https://hausarzt-thueringen.de/wp-content/uploads/2020_11_16_FAQ_Liste_DiGA-1.pdf) [last access: 05/03/2021]

To provide low-risk medical devices for personal use. In this context, the concept of the DiGA has also become known as the "app on prescription". Depending on the clinical picture and structure of a specific DiGA, it can be used by the patient alone, but also by doctor and patient together. In addition, it can also happen that a certain DiGA in combination with other devices such as e.g.

Heart rate monitors or software is used. However, it should be noted that the DiGA is not intended to replace a visit to the doctor or taking a drug. It is as one useful supplement and support of a "classic" treatment by the doctor. Basically, it should be noted that only those DiGA can be prescribed at the expense of the statutory health insurance that have successfully passed a test procedure that is based at the Federal Institute for Drugs and Medical Devices (BfArM).<sup>19</sup> Manufacturers could submit a test application from May 27, 2020. The BfArM maintains the so-called DiGA directory (§ 139e SGB V). The first entries of approved products were made from October 2020. The DiGA listed there can be prescribed by doctors and psychotherapists to support the detection and treatment of diseases or, for example, the individual implementation of treatment processes. The costs for the DiGA and any medical services required as part of its application are covered by statutory health insurance.

### 3. Suggested steps to concretise the desired telemedicine network

As outlined up to this point, fundamentally different telemedical solutions are available within the framework of standard care, ie in the sense of reimbursable ones telemedicine services. Against this background, it makes sense to gradually specify the previously formulated objective of a telemedical network.

The aim here is to develop a viable implementation concept together with relevant local actors. Based on the strategy document developed as part of Smart Rural 21, a three-step approach is proposed for this purpose:

- (1) Specification of the initial idea: In a first step, empirica becomes the team in Sollstedt to further specify the initial idea of the desired telemedical network as a reaction to the expected shortage of doctors. The aim of this first step is to concretise previous ideas about how telemedicine applications can be used to support on-site healthcare. For this purpose, empirica will create a working document that can be used independently by the team in Sollstedt as a supporting tool.

If desired, empirica will support its use in the context of video appointments or webinars to be agreed.

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<sup>19</sup> <https://diga.bfarm.de/de> [last access: 05/03/2021]

(2) In-depth examination of feasibility under the given framework conditions: The

In a further step, the concrete initial idea should be checked for its practical feasibility under the given framework conditions. Concrete implementation options as well as possible implementation obstacles or risks should be assessed. As a result, any need for adjustment of the originally intended concept or possible alternatives should be identified. For this purpose, empirica will create a working document that can be used independently by the team in Sollstedt as a supporting tool. The core of this tool will be based on a so-called SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to be carried out by the team in Sollst . The aim here is to use a pragmatic procedure to sound out the concrete initial idea for its strengths and weaknesses as well as for the opportunities and challenges, especially with regard to practical feasibility. In this way, factors that can be influenced but also general conditions that cannot be influenced can be identified, which could make the concrete implementation of the project more difficult or even impossible. Based on this, alternative procedures can then be formulated if necessary. This should ideally be done in collaboration with the stakeholders

happen that would ultimately be affected or would have to be included in the implementation of the desired telemedical network. If desired, empirica will accompany the application of the created working document in the context of video appointments or webinars to be agreed

support.

(3) Operational implementation planning: Based on the result of

After the feasibility assessment, the next step is planning the concrete implementation of the project under everyday conditions. For this purpose, empirica will develop a working document that the team in Sollstedt can use independently for implementation planning. This tool should help to define important implementation steps, tasks and responsibilities and to make their implementation verifiable over time. If desired, empirica will accompany the application of the created working document in the context of video appointments or webinars to be agreed

support.



The table below shows a preliminary effort estimate, which is intended as a suggestion for further coordination.

No.	What	who	people days
1	Development Working Document (1): Tool for Specification of the initial idea	empirical	2
2	Application of the working document (1): Specified implementation idea	local team	10
3	Application support by arrangement (1): video Meeting / Webinar	empirical	3
4	Development Working Document (2): Tool for feasibility assessment	empirical	2
5	Application of the working document (2): Consolidated Implementation idea and/or alternative ideas	local team	10
6	Application support by arrangement (2): video Meeting / Webinar	empirical	3
7	Development of working document (3): tool for operational implementation planning	empirical	2
8 <sup>th</sup>	Application of the working document (3): Operational implementation plan	local team	10
6	Application support by arrangement (2): Video Meeting / Webinar	empirical	3

## 4. Preliminary key questions to concretize the initial idea

The strategy document developed so far in Sollstedt as well as the first discussion lay a series of key questions that, based on the current state of knowledge, are relevant for the further specification of the desired telemedical network be able.

### A. Baseline assessment

#### A.1 Population group(s) to be served

According to the current state of knowledge, what information is available regarding the population requiring telemedical care? Can the targeted target group(s) be defined geographically or in terms of the number of people to be supplied? Is information available on the prevalence of certain diseases, such as chronic diseases, or other care needs?

## A.2 Current supply situation

According to the current state of knowledge, what information is available regarding the actors who currently guarantee the medical care of the targeted population group(s)? What healthcare services are provided by the individual actors, for example with regard to outpatient care by general practitioners and specialists and in terms of inpatient care by hospitals, nursing homes or other facilities? Which catchment area does the respective service provider cover? How many carers are cared for in each case?

## A.3 Previous cooperation between service providers

According to the current state of knowledge, what information is available regarding any existing cooperation relationships between individual service providers, such as resident doctors and inpatient facilities? For example, are individual actors already working together in some way?

## A.4 Previous use of telemedicine applications?

According to the current state of knowledge, what information is available regarding the current use of telemedicine applications? For example, is it known whether individual service providers already offer video consultations or have at least considered doing so, for example in the course of the Covid-19 pandemic?

## A.5 Available Telecommunications Infrastructure

According to the current state of knowledge, what information is available regarding the available telecommunications infrastructure? Is it known, for example, to what extent the local players in medical care are equipped with practice systems, internet connections and end devices (PC, laptop, tablet, etc.) that are currently used in everyday practice. Is information available on the extent to which the population or individual parts of the population are currently equipped with internet connections and/or digital devices?

## A.6 Available Third Party Expertise

Based on the current state of knowledge, is there information about the extent to which the expertise of other actors could be included in the further planning process of the envisaged telemedical network, at least potentially? For example, is it possible to assess the extent to which local medical service providers or relevant stakeholders are open or opposed to the topic? Is information available as to whether and, if so, to what extent the topic of digitization in general and/or digital healthcare has already been addressed at district level, for example as part of a district development strategy or in another form?

## B. Implementation options

### B.1 Technical implementation

Based on the current state of knowledge, which currently reimbursable telemedical applications could be used to care for the targeted target group(s), at least theoretically? Which medical actors could do this in which way? Are other telemedicine applications imaginable that could be used to care for the targeted population(s), at least in theory?

### B.2 Organizational implementation

Based on the current level of information, which organizational models would be conceivable, at least theoretically, in order to use telemedical applications to care for the targeted population group(s)? Would it be conceivable, for example, that individual doctors in private practice could expand their range of care by offering video consultation hours? Would it be conceivable to achieve this through telemedical delegation procedures, for example by employing the appropriate assistants through one or more resident doctors or a care center?

## C. Potential Effects

### C.1 Impact on Healthcare Providers

Based on the current state of knowledge, what effects on the medical service providers would be conceivable, at least theoretically, due to the technical and organizational implementation of the envisaged telemedical network? Would it be conceivable, for example, that doctors in private practice in the region could take care of a larger number of patients than before in their day-to-day operations, possibly also from outside the region? Would it be conceivable that the quality of care could be improved across the board? Would positive follow-up effects be conceivable, eg a reduction in the number of acute emergencies due to better-quality care in the area? Would it be conceivable that young doctors would perceive the location as sufficiently attractive through the use of digital solutions and/or cooperation models, possibly in combination with other possible incentives? Based on the current state of knowledge, would it be conceivable that the service providers could perceive disadvantages with regard to the project? Would it be conceivable, for example, that medical service providers could incur additional costs, for example for the purchase of technology and/or further training for employees?

### C.2 Effects on the population group(s) to be served

Based on the current state of knowledge, what effects on the population to be cared for would be conceivable, at least theoretically, due to the technical and organizational implementation of the envisaged telemedical network? If it were e.g

Is it conceivable that, from the point of view of the population to be cared for and/or individual groups, certain advantages could result from the project, for example for the chronically ill with a regular need for care? Would it be conceivable that there could be disadvantages from their point of view, for example for people who have not yet had any experience with digital technologies and applications in everyday life?

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