Providing the best care in rural areas: with the **medical practice on wheels**

The DB Medibus
A lack of physicians in rural areas: The numbers

In the last few years, the lack of physicians in rural areas has increasingly become the focus of attention in society as a whole. The gaps in care are the result of demographic changes: people in Germany are getting older and older and so increasingly need more medical care. In addition, if a practice closes down in the countryside, there is often no successor available who can take over. There are many reasons for this: Young doctors often prefer to work in towns and cities, they prefer working with inpatients in hospitals to self-employment in the outpatient sector, or they opt for part-time work so they can more easily combine a family with their career. This explains why the total number of newly qualified doctors in Germany has risen slightly by 2.1 percent, but rural regions are still suffering from a shortage of primary care physicians and specialists. “There is a general tendency – especially for new entrants to the profession – for people to move from the countryside to the towns and cities”, says Dr. med. Hans-Otto Wagner, Specialist in General Medicine and Senior Medical Coordinator of Health Care at the University Clinic of Hamburg-Eppendorf. “In addition, many doctors do not opt for general medicine in their advanced training, even though this is essential if we want to provide comprehensive outpatient care for the population.”

### Number of physicians registered with the regional medical councils 2016:

<table>
<thead>
<tr>
<th>Number of physicians</th>
<th>378,607</th>
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<tbody>
<tr>
<td>Increase of + 2.1 per cent compared to the previous year</td>
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<table>
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<tr>
<th>Number of physicians in authorities</th>
<th>32,217</th>
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<tbody>
<tr>
<td>Number of physicians in hospital</td>
<td>194,401</td>
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</table>

The highest ratio of physicians to the general population is in the federal states in Germany that are also cities, whereas this ratio is significantly lower in rural regions.

### Average life expectancy 2015:

<table>
<thead>
<tr>
<th>Women</th>
<th>83.4 years</th>
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<tbody>
<tr>
<td>Men</td>
<td>78.4 years</td>
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</table>

### Predicted life expectancy 2050:

<table>
<thead>
<tr>
<th>Women</th>
<th>87.7 years</th>
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<tbody>
<tr>
<td>Men</td>
<td>83.5 years</td>
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</table>

Source: Federal Medical Council, statistics about physicians 2016

The total number of physicians and psychotherapists working on a 50% contract rose by 1,141.9 per cent between 2009 and 2016.

Overall the total number of physicians and psychotherapists rose by 12.5 per cent.

The total number of physicians and psychotherapists working full-time decreased by 11.2 per cent over the same period.

Source: National Association of Statutory Health Insurance Physicians

### Presenting the Medibus

DB Regio has introduced the Medibus, an innovative infrastructure project, which aims to counteract the shortage of physicians and to respond to the changing demographic situation.

The medical practice on wheels is split up into three areas: a waiting room, a laboratory, and a treatment room. The furniture in the bus, which is being provided by DB Regio, is what you would expect in any other medical practice. If required, DB Regio can provide the drivers for the bus when it’s leased and also offers additional services for the vehicle. The use of state-of-the-art technologies, such as a video-conferencing system over the Internet, makes it possible to use telemedicine – diagnostic and therapeutic treatment – anywhere. This ensures that medical care can be provided by specialists, even in rural areas. This means that the DB Medibus is a valuable addition to the existing practices. The physician, specialist staff, and medical equipment such as ultrasound and ECG in the DB Medibus are provided by the partner(s) involved in the project.

The furniture in the bus is what you would expect in any other medical practice with a waiting room, a laboratory, and a treatment room.

Source: National Association of Statutory Health Insurance Physicians
The DB Medibus is suitable for use in a variety of areas – from acting as a medical practice to health events and company medical examinations:

1. Company medical examination
   - With the DB Medibus, the company physician comes directly to the business and carries out occupational medical examinations and health consultations, e.g. on ergonomics in the workplace.

2. Primary physician care
   - The DB Medibus is a fully-equipped, inpatient medical practice and so it supports medical care in rural areas, for example in places without primary care physicians.

3. Remote diagnosis & second opinions
   - The video-conferencing system with network connection installed on the DB Medibus allows the attending physician to connect another primary care physician or specialist to the consultation without any problems and so get a remote diagnosis or a second opinion for a more precise assessment.

4. Providing care for patients who speak foreign languages
   - With the help of SAVD’s video interpreting software, simple communication with foreign-language patients such as foreign workers or asylum seekers is possible, as there is no need to wait for an interpreter to arrive.

5. Local health programs
   - With the help of the DB Medibus, local authorities have a clean and fully equipped medical practice at their disposal instead of the local community center to fulfill their care mandate, such as carrying out flu vaccinations.

6. Private medical treatments
   - It is also possible for private physicians to book the DB Medibus so that supplementary medical services can be provided for private patients or those who are paying for their own treatment.

7. Health events
   - The DB Medibus is a specially equipped mobile preventative care vehicle that visits companies directly on site and can be used to carry out health events such as blood pressure measurement or diabetes counseling.

Potential uses

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3 questions to

Oliver Tuszik, Vice President and Chair of the Management Board at Cisco Germany, about digitizing DB, the technical future of the Medibus, and why Cisco has got involved in the DB Regio Medibus project.

What role does digitization play in improving and maintaining medical care in rural areas?
DB has recognized that digitization is more than “Wi-Fi on the intercity trains”. Digitization can help anywhere that needs location-independent scaling, i.e. multiplying what is being offered without corresponding additional expenditure. The Medibus is a great example: We can now provide medical services independently from medical practices, by taking the Medibus to lots of places. It’s an interim step. In the future, I see visits to physicians via video conferencing as a real option for rural areas, and medications could be delivered by drone.

What opportunities are there to expand the technical equipment on the DB Medibus in the future?
Integrating the video interpreter service was one of the first steps. As a logical further development, the Medibus with a cloud-based platform for cooperation could involve further specialists and consultants in a treatment. The intelligent storage and monitoring of vaccines and treatment resources is also a useful application of digital technology.

Why has Cisco decided to support DB Regio with this innovative project?
We want to use our “Digital Germany” investment program to accelerate digitization in Germany. Businesses and private citizens alike should benefit from this. DB Regio is a prime example of this: A company that is bravely seizing the opportunities digitization offers and is there for millions of people every day. We found this mix to be very impressive, because digitization is a success when it benefits everyone.
The DB Medibus sets off

The DB Medibus is starting a two-year test phase in northern Hessia. DB Regio and the Hessia Association of Statutory Health Insurance Physicians (KV) have worked together closely to get this innovative healthcare project started.

“We decided on North Hessia, because the increasing lack of physicians is already noticeable here.”

Dr. Eckhard Starke, Vice Chair of the Hessia KV Board

The Dutch bus manufacturer VDL Bus & Coach is equipping the new Medibus and is adapting it to the requirements of its job. The Hessia KV is providing the physician and the specialist medical staff on board the vehicle, the bus driver is being provided by DB Regio for the duration of the pilot project. The partners that are working together on this project are presenting the ready-for-use vehicle to the public at a press event shortly before the Medibus starts its test phase in North Hessia. After this the mobile medical practice is heading off on tour through the rural regions of North Hessia.

The DB Medibus project is being launched in North Hessia from the middle of 2018. DB Regio and the Hessia Association of Statutory Health Insurance Physicians (KV) are testing the use of the mobile medical practice in a two-year pilot phase. The Medibus is intended to support the medical infrastructure in rural areas and to guarantee healthcare in regions with a low population density. A version of the vehicle that has been specifically adapted to the requirements of the project is being used during the test phase. “We decided on North Hessia, because the increasing lack of physicians is already noticeable here,” explains Dr. Eckhard Starke, Vice chair of the Hessia KV Board. The plan is to use the Medibus in the three sparsely populated districts of Werra-Meißner, Hersfeld-Rotenburg, and Schwalm-Eder. The aim is for the mobile medical practice to plug any gaps in healthcare provision in these locations and relieve the pressure on local practices that can’t take on any more patients. The Medibus is not intended as a replacement for the local family practice, but as a supplement to it. The stops have therefore been agreed directly with the communities and doctors involved. In this way, the Hessia KV is ensuring that there is no competition with the established physicians. “The Medibus is not an alternative to the family physician. The established physicians are involved in the project. Their names will be clearly displayed to patients on the bus via a TV screen and a notice board in the bus window. Direct contact between the primary care physician and the medical practitioners on the Medibus is also possible if the treatment of the patient requires it,” says Dr. Starke.

Every day, the Medibus will travel to two locations and follow a timetable that the Hessia KV has agreed in advance with the participating municipalities. The opening hours, which are similar to those of a regular medical practice, can be found on a notice board in the community offices.

Once the two-year pilot phase has been completed, the Hessia KV wants to take a close look at the further use of the DB Medibus. “We will evaluate the Medibus pilot project and then decide in due course whether or how to proceed with the project. For this we need valid results and figures on the use of the Medibus,” according to Dr. Starke.
Technical variants of the Medibus

With the aid of video links, physicians can communicate with other specialists or patients who are not mobile – even at a distance.

High-tech on four wheels

Rural regions in particular often have a lack of specialists. Telemedicine provides a simple solution to this problem. The DB Medibus has the best possible technical equipment for this job.

Diagnostics and therapy with the help of telemedicine

As well as all the equipment you would expect at any other medical practice, the technology used on the DB Medibus meets the very latest standards: Thanks to the IT infrastructure installed on the bus by technology company Cisco, the mobile practice has all of the technology needed to make use of telemedicine. With the aid of video links, this enables diagnostics and therapy to be carried out from a distance. For this purpose, a video conferencing system is installed on the Medibus, which includes between two and four PCs with an all-in-one desktop on each vehicle.

The touchscreen and camera can be expanded. There are many possible applications: For example, the attending physician can easily connect to a specialist for remote diagnosis via video chat during a consultation. Exchanging information with other physicians to obtain a second opinion can also be carried out without any problems and without delay. For patients who are not mobile and cannot come to the Medibus, there is also the option of a face-to-face conference with the physician by video link.

High-speed Internet connection and Wi-Fi

The DB Medibus has a receiving transmitter that uses the powerful 4G and LTE Internet networks, so that an uninterrupted video connection is guaranteed even in rural regions. In addition, the transmitter is able to provide a stable connection continuously by bundling the signals on different networks. Cisco has also been integrated the latest W-Fi and router technology in the DB Medibus. These can be used, for example, to send patients sitting in the waiting area video clips about their forthcoming treatment on their smartphones. In addition, information films can be played back on the flat-screen monitors installed on the bus.

Video interpreting software from SAVD

For patients who speak foreign languages, such as foreign workers or asylum seekers, the DB Medibus is also equipped with the video interpreting software produced by the company SAVD based in Vienna. At the press of a button, 50 languages and around 750 trained interpreters are ready to help ensure smooth communications between the physician and the patient at all times. It takes a maximum of two minutes from when the language is selected until the interpreter can join the conversation in video and audio. This means that language barriers can be easily overcome.

Research and development

Together with its partners, DB Regio is working tirelessly on research and development for the Medibus with the aim of driving forward the technical opportunities for the mobile medical practice. An expansion of the IT infrastructure using the Watson computer program is already being considered. The software that has been developed by the American technology group IBM allows large amounts of data to be viewed within seconds using artificial intelligence. In medical diagnostics, the software helps to produce an accurate clinical assessment by checking all the relevant data and facts, such as the latest research results. This means that the physician gets support in finding the very best treatment option for the patient.
Using teamwork to succeed

With the aid of the video conferencing system integrated in the bus, the physician receives support for the diagnosis and treatment of the condition using telemedicine. He can easily connect to a specialist for a remote diagnosis or a colleague to obtain a second opinion using video chat.

The welfare of the patient is always the first priority. This is why DB Medibus offers comprehensive medical care locally, including the comfortable and trustworthy atmosphere of an inpatient medical practice with the physician as the personal contact.

Changes in the population – people are getting older and older and, as a result, both more in need of care and less mobile – mean that the link between medicine and transport is becoming increasingly important. The DB Medibus is playing a pioneering role in the further development of medical infrastructure, with an eye on the future.

Looking ahead, the DB Medibus could also be suitable as a supplement to DB’s own on-demand services or autonomous shuttle services. For example, elderly patients without a car can book a shuttle service at the desired time using a smartphone app. The shuttle automatically collects other passengers with similar routes during the journey. For example, patients could be picked up at home by the shuttle and then taken to the DB Medibus. With this combination, the DB Medibus will in future offer one way of providing the best possible all-round healthcare.

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5 reasons why the DB Medibus is needed

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