

**IEM<sup>®</sup>**

on life's side

2022



# DEAR VALUED CUSTOMER

After a four-year transition period, MDR Legislation (Medical Device Regulation) is mandatory in Europe for all stakeholders as of May 26, 2021. In addition, transition periods apply e.g. for placing medical devices on the market until May 26, 2024.

The new regulation initially generated a wide range of questions with some stakeholders. What does the new regulation require? Does it result in an increased documentation effort, in combination with increasing cost? Do the „notified bodies“ have sufficient capacities to ensure timely certifications for all stakeholders?

The MDR has a strong focus on the medical benefit and clinical relevance for patients. Specific questions are addressed, such as: Which added value do these products have? Is there proof of a clinical relevance? Do companies have an established QM system? How is the post-market surveillance process structured?

In retrospect, IEM considers MDR to deliver a significant added value for medical products and an even greater benefit for IEM as a company.

Triggered by the new regulation and combined with a binding deadline, literally no stone was left unturned at IEM over the past two years. All internal and external procedures were critically scrutinized across all departments and reviewed in regards to optimization. The analysis was based on the credo: are our procedures, products and services smart? Do they generate real added value for our customers? And can we meet the high quality standards we have set ourselves?

IEM has invested heavily in its staff members in order to be prepared for any future challenge in the medical device market associated with the MDR, such as the ongoing digitization of healthcare, the increasing importance and transmission of big data and the increased use of artificial intelligence and algorithms.

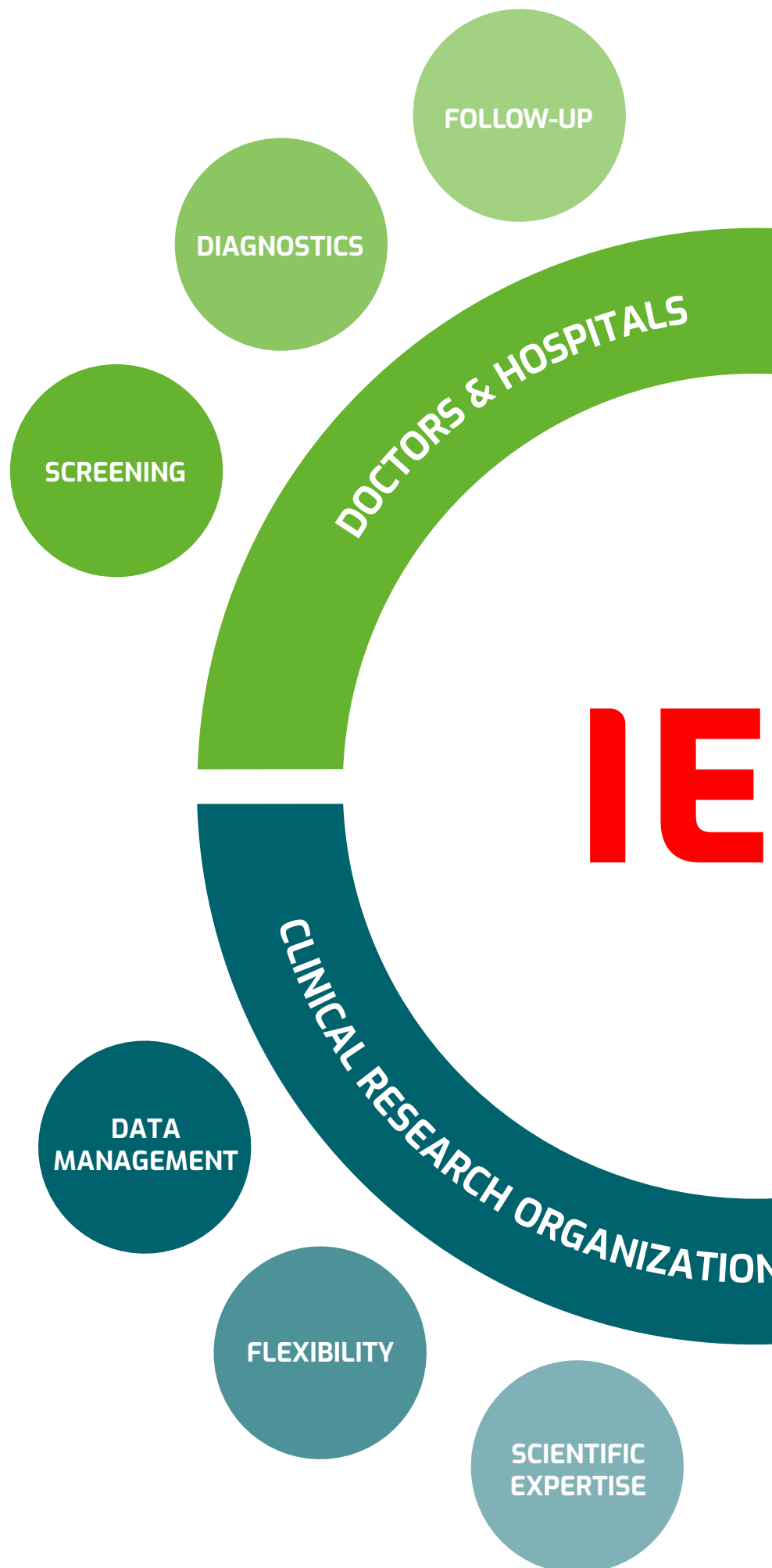
The entire team at IEM makes its contribution every day so that in 2022 the longed-for MDR certification can be issued by a „Notified Body“ and thus a long and rocky road towards a completely changed and „better“ company can be completed.

But even a successful MDR certification will ultimately be just another milestone on IEM's path to providing the best possible products, the best possible services and the best possible care to its customers, anytime, anywhere.

Our claim „on life's side“ now fits even better than ever before



**Thomas Korth**  
CEO







# CONTENT

<b>Company</b>	<b>8</b>
Structure	9
Compliance	10
Service	11
<b>Doctors &amp; Hospitals</b>	<b>12</b>
Technology Expert	15
Status Quo	14
Screening	15
Diagnostics	16
Follow-up	17
<b>Products</b>	<b>19</b>
1 System - 3 Level	20
HMS CS	22
Tel-O-Graph® BT	28
Mobil-O-Graph®	34
Tel-O-Graph® GSM	44
<b>Health Care Providers</b>	<b>50</b>
Modular Systems	51
Healthcare Competence	54
Cost Saving	55
<b>Clinical Research</b>	<b>56</b>
Data Management	57
Flexibility	57
Scientific Expertise	57

# COMPANY

Cardiovascular diseases are the No. 1 cause of death worldwide. Related symptoms reduce our quality of life and reduce life expectancy. Doctors, clinics, pharmacies, research institutes and healthcare providers around the world as stakeholders, are working to improve the quality of life of each individual with personalized methods and treatments. These stakeholders all need technologies that allow individual screening of the population, guarantee reliable diagnostics and provide secure telemonitoring systems.

Solutions that meet these requirements continue to be developed by IEM. The skills of our partners in combination with our technologies help people to live a healthier life because our health is our greatest treasure.

IEM - on life's side



# STRUCTURE



## Research

Intensive research, over many years, is a key foundation block of successful business. To this end, IEM intensively collaborates with universities, research institutions and Key Opinion Leader around the world. The results of these scientific projects are an essential element of the development of our products.



## Production

As an ISO-certified company, we care about offering only products of the highest quality, which is why we monitor every process step in accordance with defined standards at our production facility – consistent with the excellent reputation German engineering enjoys. In times of high capacity usage, we can meet your demand for short lead times due by scaling up production.



## Development

Based on the results of intensive research, we continue to develop innovative inhouse solutions in line with high standards regarding quality, longevity and usability. With careful usability engineering, documentation and continuous functional checks, we develop sophisticated products that offer maximum value. In addition to our IEM branded products we develop customized models on demand (e.g. OBL).



## Sales

Our aspirations also include ensuring the highest quality in the sales process. This means that we provide you with direct access to experts within IEM for each field and target group. Our products are sold domestically as well as internationally through certified medical device retail partners who receive training and regular audits for quality control. This allows us to guarantee that you receive the same standard of service and support around the world, from sales advice to product repair.



# COMPLIANCE



## Data security and Data management

Innovative medical solutions must be safe and reliable while also offering significant medical value. Not only that, but they also need to be adapted to customer and product-specific needs by enabling interoperability. These standards are especially important when it comes to transmitting health related data.

This is the corner stone of all IEM systems.

The collection and transmission of measured values is strictly anonymous, with security being provided by apps, modems and GSM modules, which are integrated in measurement devices and approved as medical devices.

Together, they constitute the core of the data management system alongside the IEM gateway server (medical product). The powerful and fail-safe gateway server processes data compliant to the highest security standards and transmits data in encrypted form anonymously to an IEM

system or, optionally to the customer's database in any standard format required. In addition to maximum data security, the gateway server in conjunction with the IEM transmission units enables the development of new, interoperable systems to allow optimized patient care.

### Gateway-Server

- Redundant server systems
- Server monitoring with status report
- 99,9% system availability
- Data received exclusively from registered senders
- Anonymous and encrypted data transmission
- Medical product
- ISO 27001-certified server provider



## Quality management

Our products and services are developed in accordance with international standards and undergo extensive testing in line with specific and relevant standards. Internally, our development and testing is scrutinized by independent testing institutions and under the critical eye of internationally recognized clinics and clinical research organisations. Our software and system development process includes the entire product development from documenting the medical product specifications to the clinical testing. Together with our customers, we efficiently develop innovative solutions and incorpo-

rate requirements in accordance with IEC 60601-1, IEC 60601-1-2 and IEC 80601-2-30.

Quality requirements (according to ISO 13485 and ISO 9001) are integrated into the development process from the outset as a matter of course. We apply these standards to systematically achieve the best customer and patient satisfaction possible with respect to our devices and services.

# SERVICE



## Communication

Our employees are available via a diverse range of communication routes. In addition to traditional methods such as e-mail, telephone and fax, our staff will also be glad to assist you personally via online chat, video conferencing or in face-to-face meetings. We also offer the option to monitor the status of orders and deliveries online and in real time.



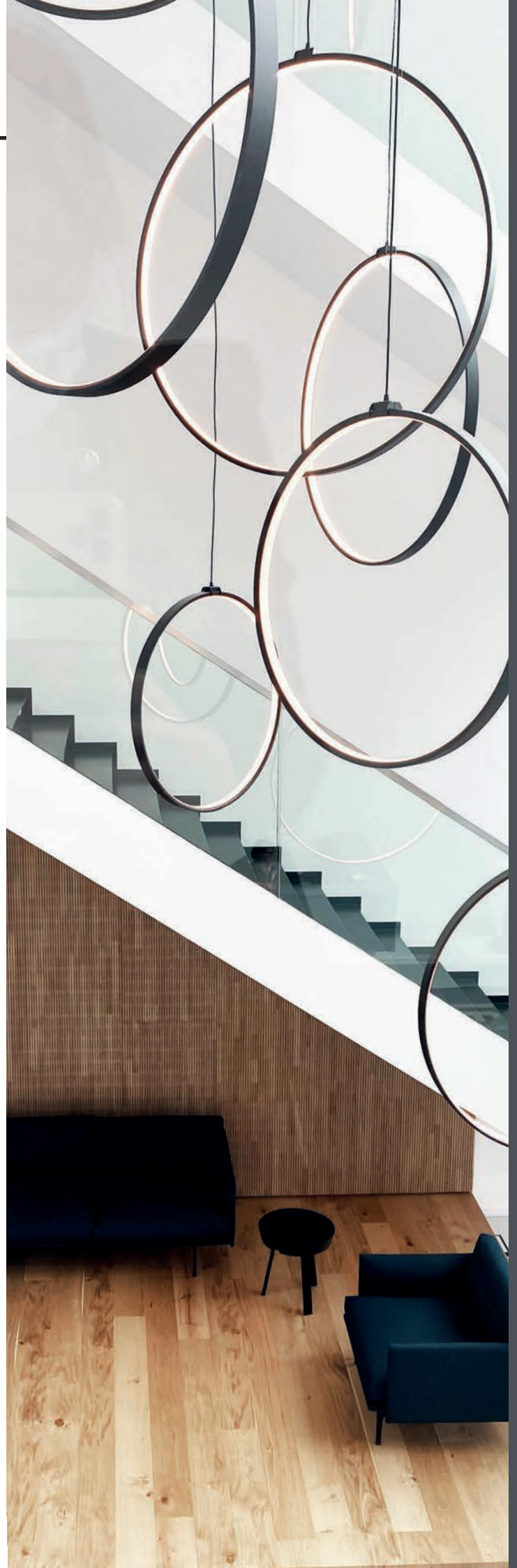
## Response time

Your needs have the highest priority for us. We usually answer queries and concerns on the same day, and always at least within 24 hours. When contacting our staff via online chat, they will also respond to your enquiries within an average of 10 seconds.



## Repair service

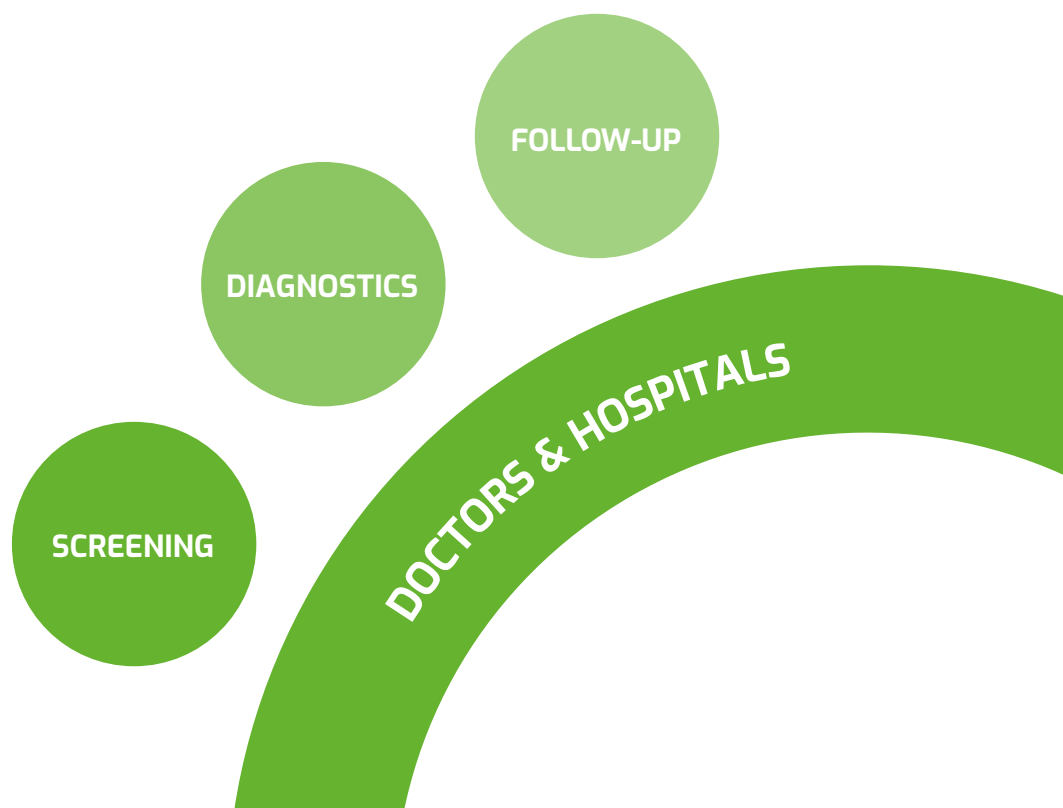
Your device will be maintained and repaired personally in-house in accordance with the highest quality standards. As your device is being inspected or repaired, we provide a loaner allowing you for uninterrupted operation. All repairs are performed within 24 hours. The status of the device inspection, repair and delivery tracking can be viewed online at any time.



# SOLUTIONS FOR DOCTORS & HOSPITALS

## Comprehensive care for hypertensives

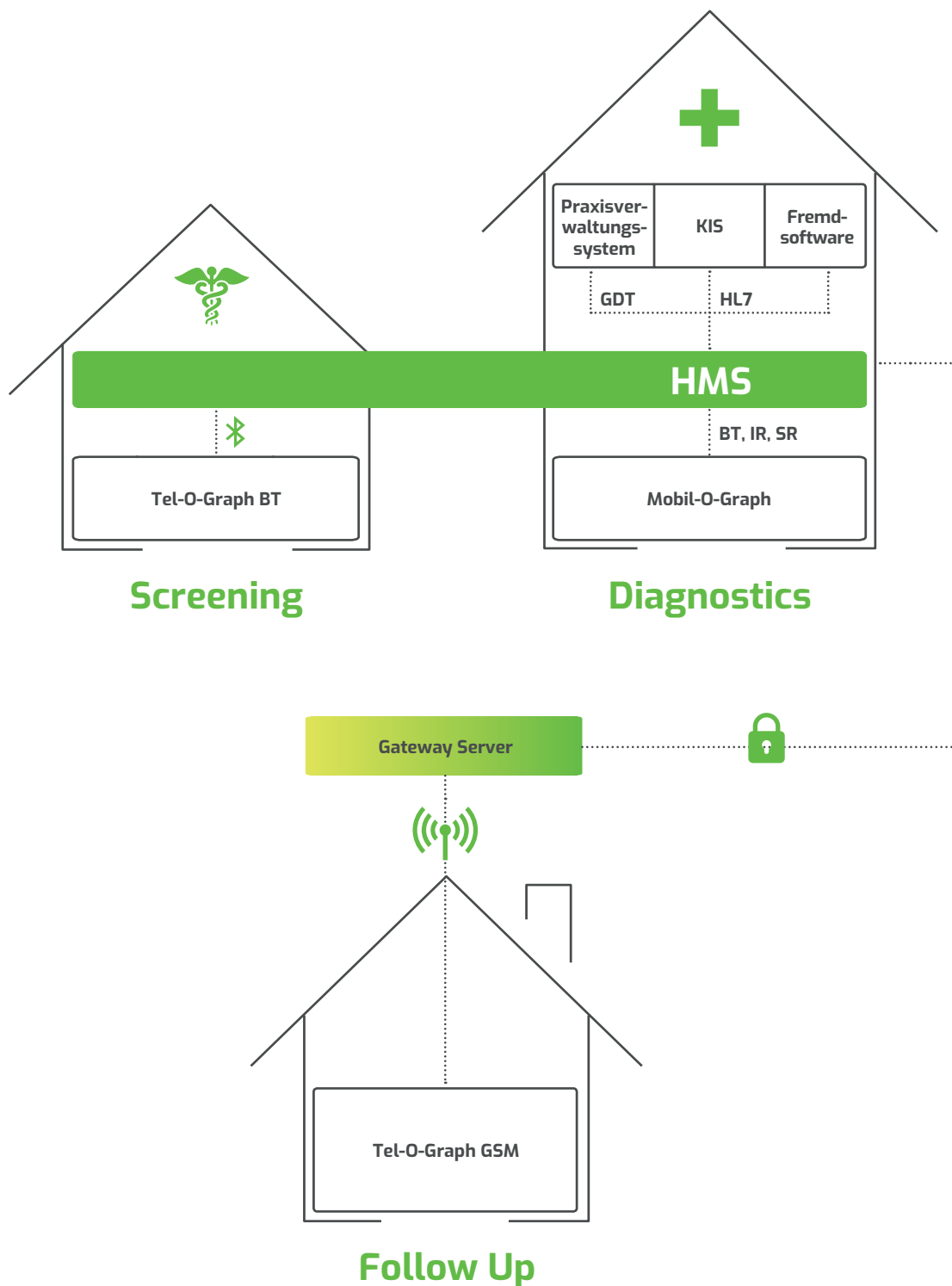
Hypertension and its secondary diseases (heart disease, kidney failure, strokes, etc.) are the number one causes of death worldwide according to the World Health Organisation (WHO), with an annual mortality rate of 41 million. There are more than approx. 2 billion identified hypertensives globally, though the true figures are probably higher. There is also a need for action in helping uncontrolled hypertensives, primarily due to a lack of compliance or prescription of the wrong medication.



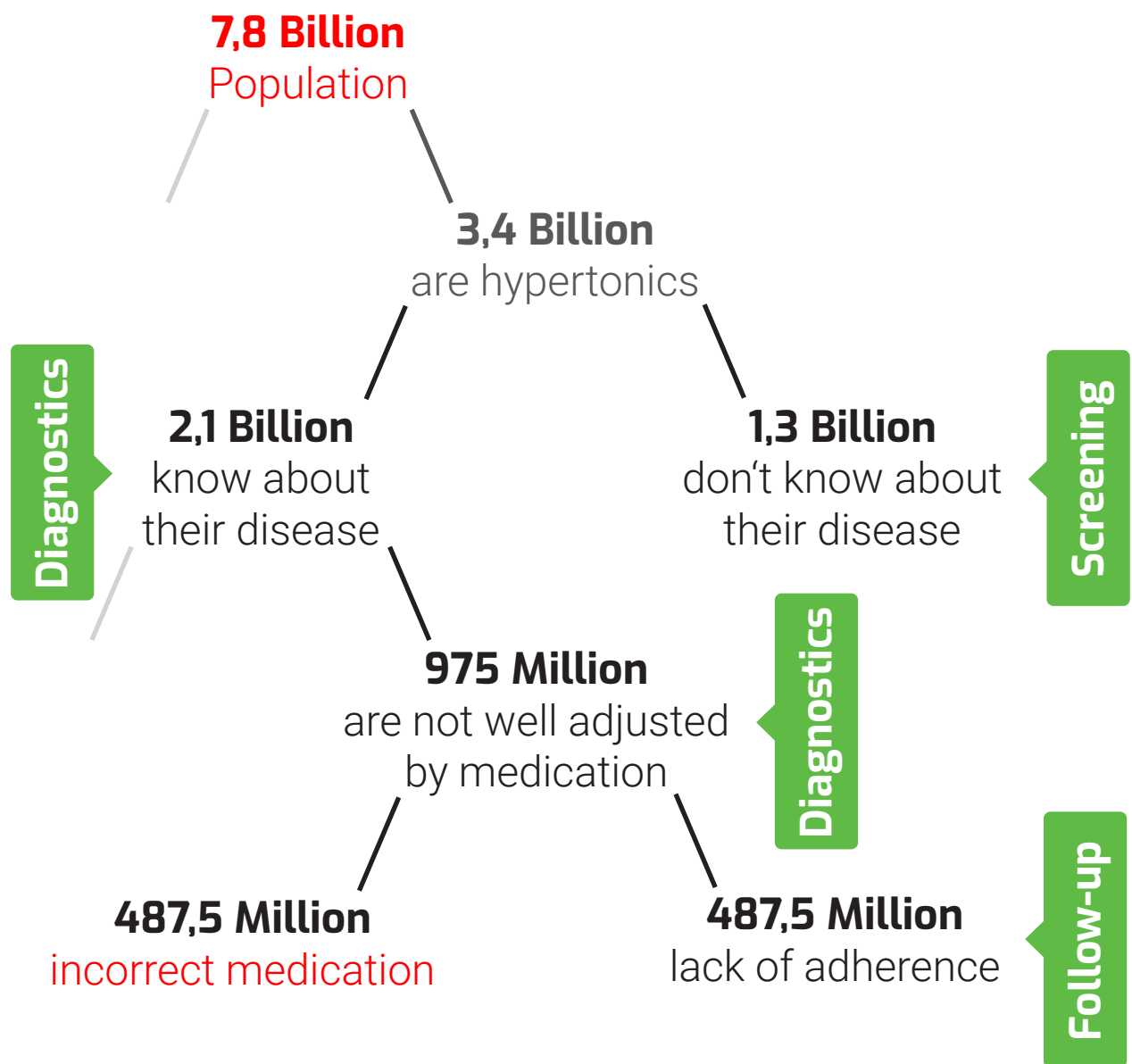
# TECHNOLOGY EXPERT

IEM is a leading technology expert in hypertension management and covers with its portfolio the areas of screening, diagnostics and follow-up management - centralized in our in-house patient management and evaluation software HMS CS.

Secure data management and easy connectivity create a trustworthy base for every medical professional and health care provider by reliable processing of all sensitive data and connecting the segments with one another.



# STATUS QUO



Source: „Blutdruck - Bluthochdruck und seine Folgen“ © Deutsche Hochdruckliga e.V.

Our technologies include: screening solutions for identification and risk classification of unknown hypertensives, to systems for making and confirming diagnoses and telemetry concepts for optimising treatment and monitoring:

IEM supports healthcare providers around the world to strengthen awareness of the risk of cardiovascular diseases and uses innovative hypertension management technologies to contribute to primary and secondary prevention for long-term health promotion.

# SCREENING



Non-invasive screening of hemodynamic parameters



Clear presentation of results in the form of a report



Information and recommendation for action

With the vascular age measurement, you can offer your customers an innovative prevention service that can significantly reduce the risk of heart attack or stroke during their lifetime by early detection of high-risk patients and unknown hypertensives.

The non-invasive measurement is quickly performed in just a few minutes and the report is available immediately. The clear and concise outcome report is visualised by traffic light colors. This result compares the apparent ageing of the vessels with the actual biological age of the patient, giving people identified as high-risk the chance to take preventive measures, and ultimately significantly reduce the personal risk of a cardiovascular event.

The areas of application of the IEM screening solutions are diverse: Doctors and hospitals, but also in corporate health management, customers worldwide use screening technologies from IEM.

## Solutions for Screening

- Reliable and accurate risk analysis without waiting time
- Affordable upgrade options to cBP and PWA
- Efficient workflow with automated data recording

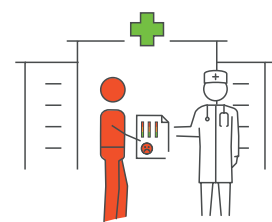


# DIAGNOSTICS

Using our validated ABPM system creates added clinical and commercial value, and enables the user to make a reliable diagnosis. A single blood pressure measurement is ideally supplemented by an ABPM in order to identify significant daily fluctuations in blood pressure. In this way different hypertension phenomena (e.g. white coat hypertension, masked hypertension, nighttime hypertension etc.) can be diagnosed.

IEM has been working on conventional methods of blood pressure measurement to incorporate pulse wave analysis (PWA), which includes key cardiovascular parameters and can be offered as an optional upgrade. Our long-term monitors can perform a pulse wave analysis alongside blood pressure measurement in the context of an automatic measurement cycle.

An analysis of individual PWA parameters provides a clearer picture of the cardiovascular risk than peripheral blood pressure alone. In addition, the ESH/ESC guidelines on classification and treatment of hypertension help to produce a significantly better indication when making a decision on medication. To ensure that the process of visiting the medical centre and treating patients is as efficient as possible, we integrate intelligent assistance into our products in the form of Smart Solutions\*, and these also encourage patients to accept our ABPM systems far more easily.



Status report analysis with the doctor



Prescription of 24-hour long-term measurement



Performance of 24-hour long-term measurement



Analysis of the measurement results and diagnosis by the doctor



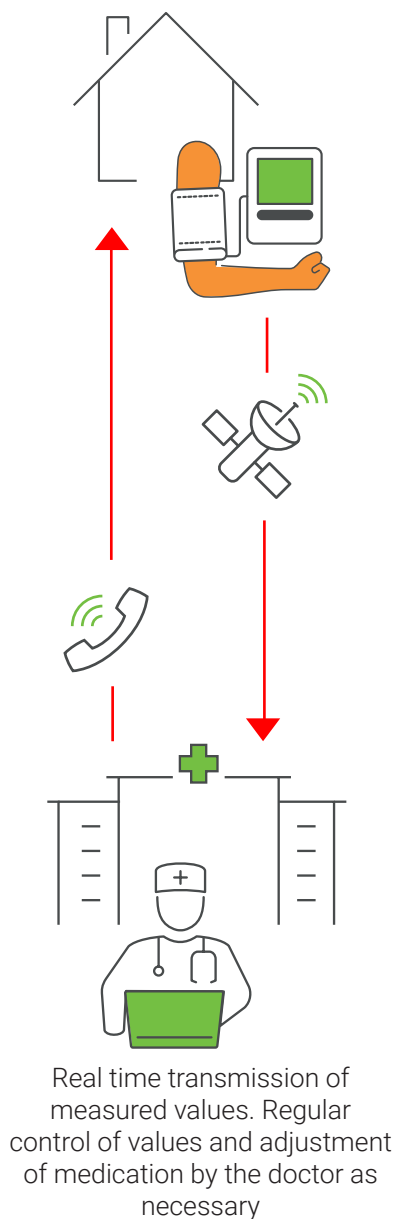
Drug therapy prescription and hand-out of a telemonitoring device

## Solutions for Diagnostics

- From blood pressure to hemodynamics with only one unit
- Modular upgrades via affordable licenses
- The best choice for a reliable diagnosis



# FOLLOW-UP



Using our validated ABPM system creates added clinical and commercial value, and enables the user to make a reliable diagnosis. A single blood pressure measurement is ideally supplemented by an ABPM in order to identify significant daily fluctuations in blood pressure. In this way different hypertension phenomena (e.g. white coat hypertension, masked hypertension, nighttime hypertension etc.) can be diagnosed.

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\* Source: Neumann CL, Menne J, Schettler V et al. Long-term effects of 3-month telemetric blood pressure intervention in patients with inadequately treated arterial hypertension. *Telemed J E Health*. 2015; 21(3):145-50

## Solutions for Follow-up

- Reliable blood pressure adjustment from any place in the world
- Significant time savings due to remote patient care without personal visits
- Improved and sustainable medical results

„WE SHOULDN'T ASK WHY,  
BUT RATHER WHAT FOR“

– DR. STEFAN FRÄDRICH

# PRODUCTS

Doctors & Hospitals



# Add new functions anytime!

1 system - 3 level. Increase your flexibility!

Even years after your purchase the unique upgrade function allows for adding more parameters by the click of a mouse.

## **BASIC**

### BLOOD PRESSURE

- Immediate peripheral Blood Pressure control
- Identification of White Coat and Masked Hypertension
- Detection of Overnight and Early Morning Hypertension

## **ADVANCED**

### CENTRAL BLOOD PRESSURE

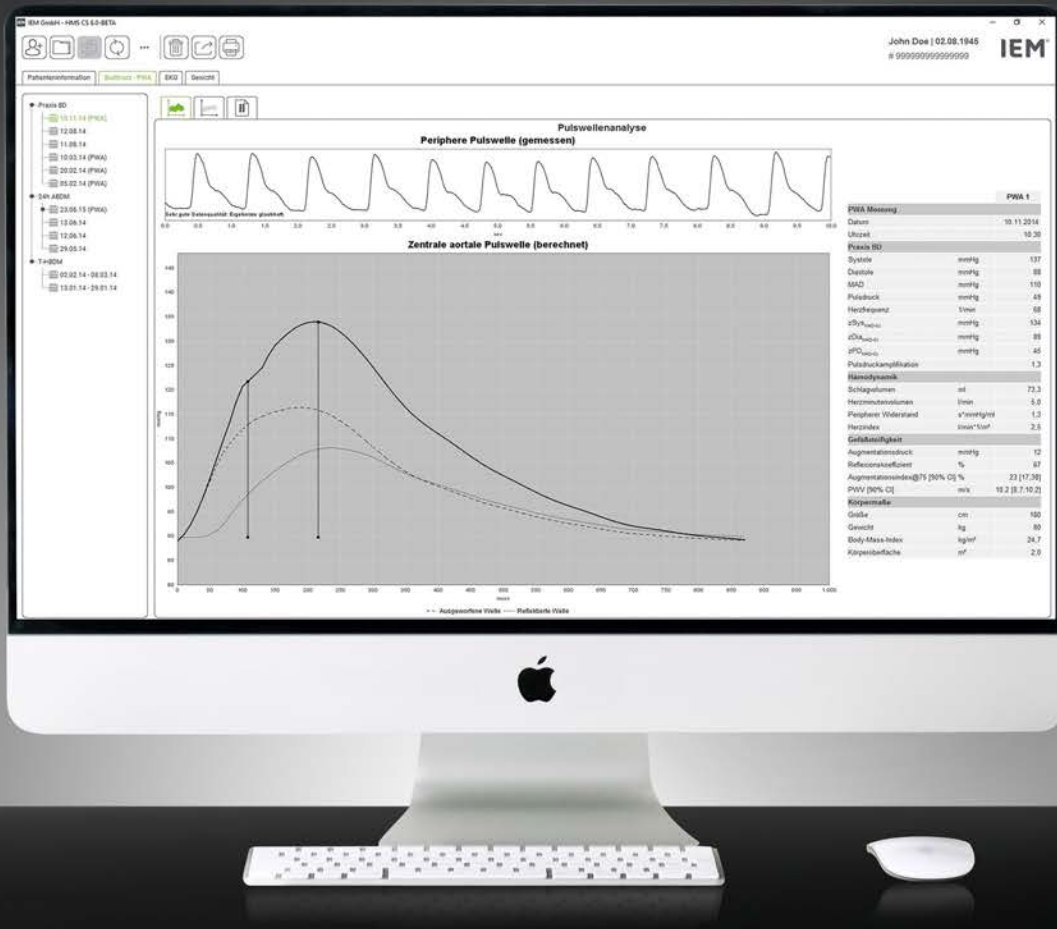
- Validated and most accurate Central Blood Pressure measurement
- Extended assessment of cardiovascular risk
- Significantly better, sustainable medical results

## **EXPERT**

### PULSE WAVE ANALYSIS

- Pulse Wave Velocity to identify arterial stiffness or even organ damage
- Hemodynamic data for personalized medical treatment and control
- Significantly better patient compliance and long-term medical improvement







## THE DEPENDABLE ASSISTANT

for your Data Management

- All Cardiovascular Parameters in one Software
- Digital Documentation in a Variety of Reports
- Regular Software Updates Free of Charge

Customized patient reports: Never has a successful Hypertension Management been so easy! Screening, Diagnostics and Follow-Up combined in a single software for an overall successful Hypertension Management. Use the versatile HMS with clear graphs for a sustainable and successful therapy!

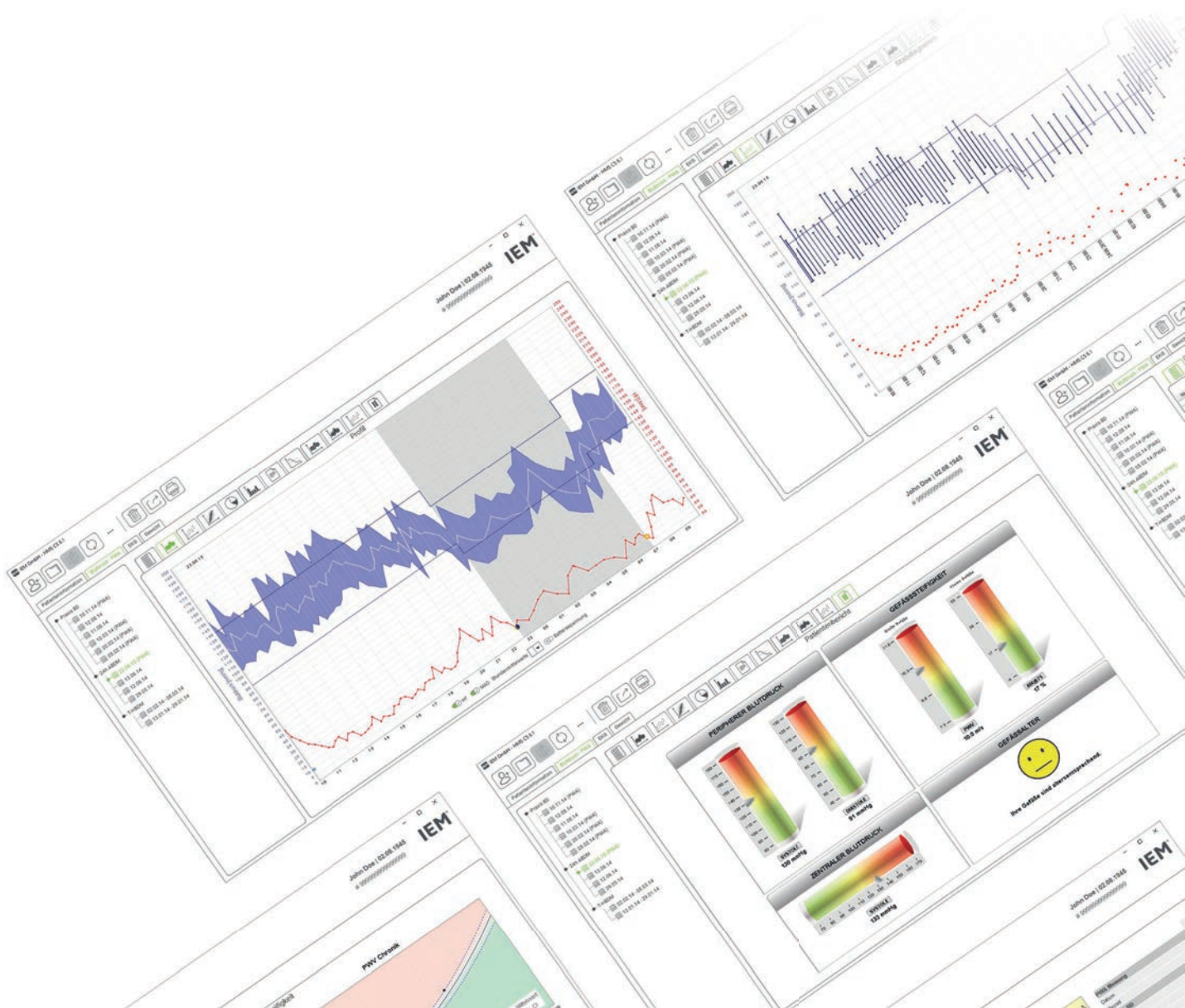


# PRODUCT



## Your advantages

- Fast & efficient medical decisions based on comprehensive summaries and graphs
- Best patient guidance and communication through detailed patient reports
- Software simplification and adaptation to the workflows of everyday clinical practice
- Compatibility with all common practice administration and hospital information systems (GDT)
- Usable on various hardware through touch optimization
- Free regular software updates in case of adjustments to operating systems

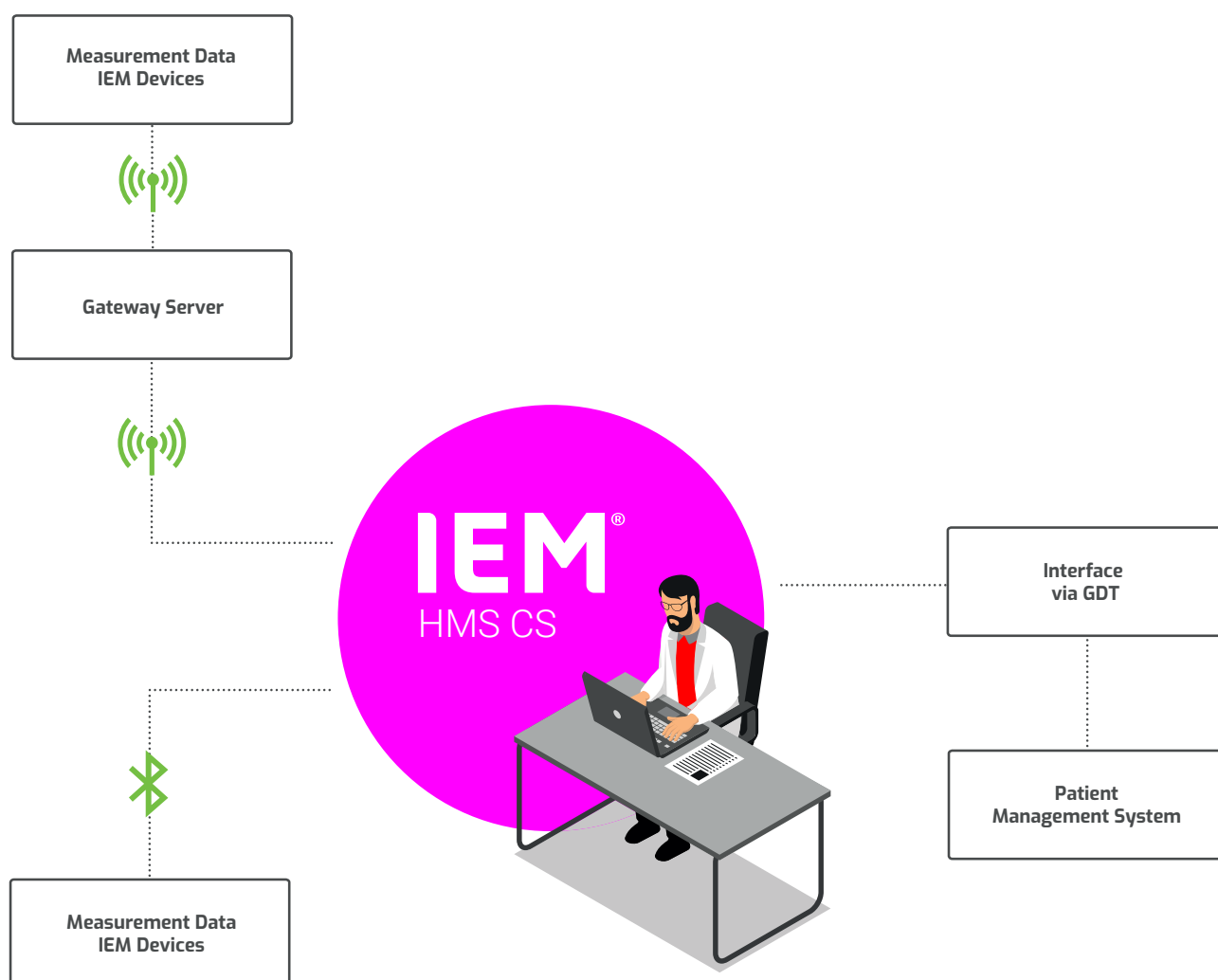




# Innovative IT infrastructure

Modular - Safe - Reliable!

The comprehensive IT infrastructure of the HMS CS ensures that patient data is directly integrated in your practice management software. This is done in anonymous and encrypted form, depending on the transmission method, via the IEM gateway server, an approved and certified medical device. The gateway server offers a high level of interoperability between devices, transmission modems and databases as well as the highest level of data security. This all-round carefree package is perfected by the HMS Connect for connecting the HMS CS software to all common patient management systems for the synchronization of all patient data.

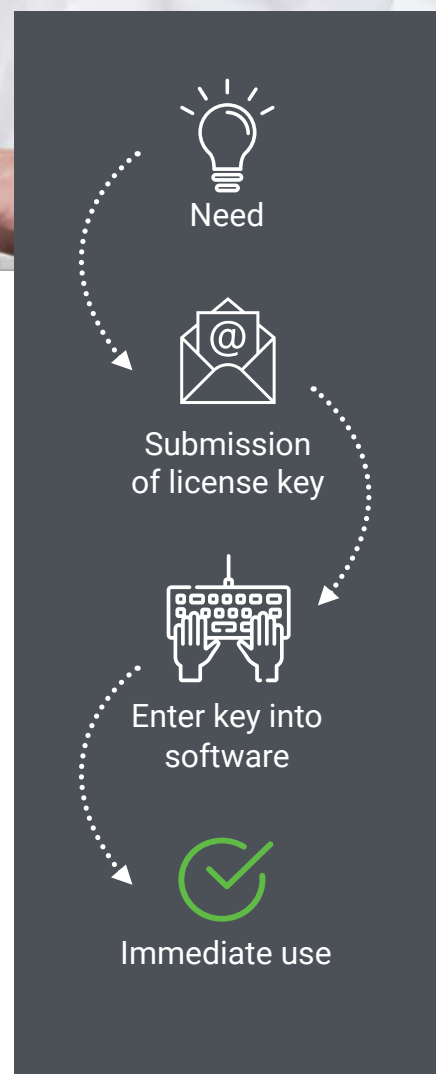


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## UPGRADE OPTION FOR OTHER IMPORTANT PARAMETERS

Upon request you can use the license management module with central blood pressure (cBP) or the complete pulse wave analysis (PWA) with hemodynamic & vascular stiffness parameters for an ideal cardiovascular treatment. Determine which values are displayed and make your adjustments individually.



# THRESHOLDS FOR CHILDREN AND ADOLESCENTS

Make medical decisions instantly with blood pressure thresholds for children and adolescents by choice - Enabled by integrating four internationally recognized blood pressure thresholds with adjustable confidence intervals (90%, 95%, 99%). You can choose from the following references:

**KiGGS study** by the Robert Koch Institute - approved by the German Hypertension League

**Flynn et al.** Published in the Journal of Hypertension - approved by the American Heart Association & American College of Cardiology"

**Wühl et al.** Published in the Journal of Hypertension - approved by the "German Working Group on Pediatric Hypertension"

**Lurbe et al.** Published in the Journal of Hypertension - approved by the "European Society of Hypertension"



**IEM**  
Tel-O-Graph



126

SYS  
mmHg

68

DIA  
mmHg

86



38

Pulse  
min



# IEM<sup>®</sup>

## Tel-O-Graph BT

### THE TRUE MULTI-TALENT

much more than just a Tabletop Unit

- Accurate Risk Analysis without Waiting Time
- Affordable Upgrade Options to CBP and PWA
- Efficient Workflow - Automated Data Recording

One unit - numerous options: In addition to utilizing the Tel-O-Graph<sup>®</sup> as a table top blood pressure monitor, you have the option to unlock the license upgrade adding Central Blood Pressure (cBP) or even full Pulse Wave Analysis (PWA) functionalities. This screening allows to identify patients with an increased cardiovascular risk and for reliable therapy decisions.

# PRODUCT



## Your advantages

- Reliable data due to high accuracy (BHS (A/A) grading) of the approved medical product
- User-friendly due to one-button operation, large display and fast blood pressure measurement without unpleasant effects (AFL: Auto-Feedback Logic)
- Option to add central aortal blood pressure and pulse wave analysis individually to blood pressure measurement



## Parameters

Parameters	Basic	License cBP	License PWA
Brachial systole	✓	✓	✓
Brachial diastole	✓	✓	✓
MAP	✓	✓	✓
Heart rate	✓	✓	✓
Pulse pressure	✓	✓	✓
cBP systole	x	✓	✓
cBP diastole	x	✓	✓
Alx @75	x	x	✓
Cardiac output	x	x	✓
Peripheral resistance	x	x	✓
Reflection coefficient	x	x	✓
PWV	x	x	✓



## Additional areas of application

### Telemedicine application

- Minimal coaching/support needed due to its ease of use and reliable data transmission
- Individual customizing according to projects or study-specific needs
- Implementation of completely unique care services and study designs thanks to optimized measurement of central blood pressure and pulse wave analysis



## Technical Data

<b>Dimensions</b>	L 151 mm x B 108 mm x H 57 mm
<b>Display</b>	70 mm x 72 mm, Character height 20 mm
<b>Weight</b>	334 g (without batteries)
<b>Technique</b>	oscillometric
<b>NIBP Accuracy</b>	validated according to ISO 81060-2 and BHS (A/A Grading)
<b>Systolic Range</b>	60-290 mmHg
<b>Diastolic Range</b>	30-195 mmHg
<b>Pulse Rate Range</b>	30-240 BPM (Beats per min)
<b>Blood Pressure Accuracy</b>	±2% or ±3 mmHg, whichever is greater
<b>Transducer Accuracy</b>	± 3 mmHg over full range in operating conditions
<b>Operating Modes</b>	manual
<b>Operating Temperature</b>	+5°C to 40°C
<b>Operating Humidity</b>	15% to 93% relative humidity, non-condensing
<b>Storage Temperature</b>	-25°C to +70°C
<b>Storage Humidity</b>	up to 93% relative humidity, non-condensing
<b>Operating Voltage</b>	4 - 6 VDC (4 x AA NiMH or LR6, AA)
<b>Power Consumption</b>	using 5 VDC Nominal Sleep 60 µW Idle 105 mW Measurement 540 mW Inflation 2.4 W
<b>Storage Capacity</b>	350 Measurements
<b>Communication</b>	Bluetooth + EDR or Infrared
<b>Transmission output power</b>	Class 1 (100 mW)



## Rental Program

Tel-O-Graph® BT rental set  
020100002

- Tel-O-Graph® BT plus
- Cuffs (Größe S, M, L)
- 4 batteries
- Set pouch
- USB bluetooth adapter
- HMS CS



## Accessories

Article no.	Description
010300001	License cBP (Triple measurement, central Blood Pressure)
010300002	License PWA (Triple measurement, central Blood Pressure, Pulse Wave Analysis)
020400001	Tel-O-Graph® cuff S (20-24 cm)
020400002	Tel-O-Graph® cuff M (24-32 cm)
020400003	Tel-O-Graph® cuff L (32-38 cm)
020400004	Tel-O-Graph® cuff XL (38-55 cm)
020400005	Tel-O-Graph® Cotton sleeves (50 pcs.)
020400006	Tel-O-Graph® Batteries, AA, alkaline (4 pcs)
020400007	Tel-O-Graph® USB bluetooth adapter
020400008	Tel-O-Graph® Set pouch, printed
050100001	HMS CS Installation CD



Are you interested in this product?  
Visit our website at [www.iem.de](http://www.iem.de)





**IEM**  
Mobil-O-Graph



# IEM<sup>®</sup>

## Mobil-O-Graph

### THE NEW STANDARD

for 24h Blood Pressure Readings

- From Blood Pressure to Hemodynamics
- Modular Upgrades via Affordable Licenses
- The Best Choice for a Reliable Diagnosis

Proven bestseller sets a new benchmark: Even years after your purchase the unit can be upgraded from standard ABPM to Central Blood Pressure (cBP) or even to complete Pulse Wave Analysis with eight additional hemodynamic parameters for vascular stiffness screening. These capabilities allow for an ideal cardiovascular management.

# PRODUCT

The Mobil-O-Graph® is worldwide one of the most popular and trusted ABPM devices for use in doctors' offices and hospitals.

You decide which parameters you prefer and adjust your choice according to your individual needs. All data is displayed in clearly arranged graphs which are provided as a part of the reports. In addition four internationally recognized pediatric blood pressure limits, included in the software as a standard allow for immediate medical decisions for children and adolescents. This unique combination of hard- and software (HMS CS) reduces your workload and increases your overall efficiency. The ease of use facilitates your daily operational work significantly.

## Your advantages

- Optional step-by-step expansion of ABPM measurement to include central blood pressure and pulse wave analysis
- Longevity due to high international protection class (IP42) and high quality product components
- Clinically validated results due to high measurement accuracy (BHS A/A grading and ESH)
- Gentle and fast blood pressure measurement using the Auto Feedback Logic (AFL) algorithm
- Easy to use and to integrate into everyday practice







## Additional areas of application

### Cardiology, hypertensiology, general and internal medicine

- Intuitive user-independent pulse wave analysis measurement
- Identification of hypertension-related phenomena for better decision-making regarding treatment
- Support of medical therapy decision based on central blood pressure and hemodynamic analysis (central blood pressure, cardiac output and peripheral resistance)
- Time saving due to improved personalized medical therapy
- Optimized patient management thanks to intuitive patient report

### Nephrology

- Patient-specific risk analysis for dialysis optimization
- Saves time by making specific preparations for the dialysis patient
- Personalized medical therapy adjustment improves the patient's quality of life



## Parameters

Parameters	Basic	License cBP	License PWA
Brachial systole	✓	✓	✓
Brachial diastole	✓	✓	✓
MAD	✓	✓	✓
Heart rate	✓	✓	✓
Pulse pressure	✓	✓	✓
cBP systole	x	✓	✓
cBP diastole	x	✓	✓
Alx @75	x	x	✓
Cardiac Output	x	x	✓
Peripheral resistance	x	x	✓
Reflection coefficient	x	x	✓
PWV	x	x	✓



## Technical Data

Dimensions	L 128mm x W 75mm x H 30mm
Weight	ca. 240 g incl. Batteries
Technique	oscillometric
Systolic Range	60-290 mmHg
Diastolic Range	30-195 mmHg
Pressure Range	0 - 300 mmHg
Pulse Rate Range	30-240 BPM (Beats per min)
Accuracy	± 3 mmHg (Static pressure)
Leakage	System: ≤ 6 mmHg / min , Cuff: ≤ 4 mmHg / min
Operating Temperature	+10°C to +40°C
Operating Humidity	15% to 90%
Storage Temperature	-20°C to +50°C
Storage Humidity	15% - 95%
Power supply	2x AA NiMH 1,2 V and min. 1700 mAh (HR6) 2x AA Alkaline 1,5V (LR6)
Battery capacity	>300 Measurements with M-Cuff and high-grade batteries
Storage Capacity	300 Measurements
Communication	Bluetooth + EDR, USB-connector, Infrared, Serial RS232
Transmission output power	Class 1





# PRODUCT



Sets

## Basis

## Premium

### ABDM



010100002

#### Mobil-O-Graph® Basis Set

- Mobil-O-Graph® monitor
- 1 cuff (size M)
- 2 batteries
- Pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS

010100003

#### Mobil-O-Graph® Premium Set

- Mobil-O-Graph® monitor
- 3 cuffs (size S, M, L)
- 2 batteries
- Leatherette pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS

### Professional



010100004

#### Mobil-O-Graph® Basis + CBP

- Mobil-O-Graph® monitor
- 1 cuff (size M)
- 2 batteries
- Pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS
- + **License cBP**

010100005

#### Mobil-O-Graph® Premium + CBP

- Mobil-O-Graph® monitor
- 3 cuffs (size S, M, L)
- 2 batteries
- Leatherette pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS
- + **License cBP**

### Expert



010100006

#### Mobil-O-Graph® Basis + PWA

- Mobil-O-Graph® monitor
- 1 cuff (size M)
- 2 batteries
- Pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS
- + **License PWA**

010100007

#### Mobil-O-Graph® Premium + PWA

- Mobil-O-Graph® monitor
- 3 cuffs (size S, M, L)
- 2 batteries
- Leatherette pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS
- + **License PWA**





## Rental program

### Mobil-O-Graph® rental set

- Mobil-O-Graph® monitor
- 3 cuffs (size S, M, L)
- 2 batteries
- Leatherette pouch incl. shoulder strap
- Set pouch
- USB bluetooth adapter
- USB cable
- HMS CS



Are you interested in this product?  
Visit our website at [www.iem.de](http://www.iem.de)



## Single product

Article no.	Description
010100001	Mobil-O-Graph® monitor



## Accessories

Article no.	Description
010300001	License cBP (24h) (Triple measurement, Central Blood Pressure)
010300002	License PWA (24h) (Triple measurement, Central Blood Pressure, Pulse Wave Analysis)
010200001	Mobil-O-Graph® cuff, XS (14-20 cm)
010200002	Mobil-O-Graph® cuff, S (20-24 cm)
010200003	Mobil-O-Graph® cuff, M (24-32 cm)
010200004	Mobil-O-Graph® cuff, L (32-38 cm)
010200005	Mobil-O-Graph® cuff, XL (38-55 cm)
010200011	Mobil-O-Graph® pouch incl. shoulder strap
010200012	Mobil-O-Graph® leatherette pouch incl. shoulder strap
010200013	Mobil-O-Graph® pouch, disposable (10 pcs)
010200014	Mobil-O-Graph® USB cable, 4-Pin
010200015	Mobil-O-Graph® cotton sleeves (50 pcs.)
010200019	Mobil-O-Graph® rechargeable battery, 1700mAh
010200016	Mobil-O-Graph® batteries, AA, alkaline (4 pcs)
010200017	Mobil-O-Graph® USB bluetooth adapter
010200018	Mobil-O-Graph® set pouch, printed
050100001	HMS CS Installation CD (latest version)



**IEM**  
Tel-O-Graph



126

SYS  
mmHg

68

DIA  
mmHg

86



38

Pulse  
min



# IEM<sup>®</sup>

## Tel-O-Graph GSM

### THE DIGITAL REVOLUTION

in Therapy Follow-Up

- Global Transmission of Measurements via GSM
- Considerable Time Savings for Doctors & Patients
- Significantly Better & Sustainable Medical Results

Reliable blood pressure adjustment from a distance:

The Tel-O-Graph<sup>®</sup> GSM is the most innovative and convenient device for blood pressure monitoring from anywhere in the world. Your patient's blood pressure measurements are transferred directly, automatically and encrypted into a software for further analysis. You benefit from higher patient compliance, authentic blood pressure values and simplified workflows.



# PRODUCT

The Tel-O-Graph® GSM is the most innovative and convenient solution for remote blood pressure adjustment from any place in the world. The measured values are encrypted and automatically sent from the Tel-O-Graph® GSM via mobile communication to the Hypertension Management Software (HMS CS). All data can be transferred via GDT or HL-7 to the practice administration software or hospital information system. The results are clearly graphically illustrated, can be managed easily and can be generated to automatic patient reports.



## Your advantages

- Reliable data thanks to maximum measurement precision (BHS (A/A) grading) of the approved medical product
- User-friendly due to one-button operation, large display and fast blood pressure measurement without unpleasant effects (AFL: Auto-Feedback Logic)
- Direct and encrypted transmission of measured values from home to the doctor using the integrated SIM card and GSM module
- Large measurement storage (350 measurements)



## Additional areas of application

### **Cardiology, hypertensiology, general and internal medicine**

- Significantly better treatment results
- Substantial time savings for doctor and patient
- Treatment adjustment at a glance thanks to automated status reports

### **Clinical Research Organizations & Health Care Provider**

- Minimal coaching/support needed thanks to absolute ease of use and reliable data transmission
- Compliance with strict data security standards
- Individual association with project or study-specific needs



## Parameters

### Basic

Brachial systole

Brachial diastole

Heart rate



## Technical Data

<b>Dimensions</b>	L 151 mm x B 108 mm x H 57 mm
<b>Display</b>	70 mm x 72 mm, Character height 20 mm
<b>Weight</b>	344 g
<b>Technique</b>	oscillometric
<b>NIBP Accuracy</b>	validated according to ISO 81060-2 and BHS (A/A Grading)
<b>Systolic Range</b>	60-290 mmHg
<b>Diastolic Range</b>	30-195 mmHg
<b>Pulse Rate Range</b>	30-240 BPM (Beats per min)
<b>Blood Pressure Accuracy</b>	±2% or ±3 mmHg, whichever is greater
<b>Transducer Accuracy</b>	± 3 mmHg over full range in operating conditions
<b>Operating Modes</b>	manual
<b>Operating Temperature</b>	+5°C to 40°C
<b>Operating Humidity</b>	15% to 93% relative humidity, non-condensing
<b>Storage Temperature</b>	-25°C to +70°C
<b>Storage Humidity</b>	up to 93% relative humidity, non-condensing
<b>Operating Voltage</b>	4 - 6 VDC (4 x AA NiMH or LR6, AA)
<b>Power Consumption</b>	using 5 VDC Nominal Sleep 60 µW Idle 105 mW Measurement 540 mW Inflation 2.4 W
<b>Storage Capacity</b>	350 Measurements
<b>Communication Capacity</b>	depends from the Quality of battery approx. 200 Measurements per set of batteries
<b>GSM Chip</b>	Cinterion EHS6
<b>Frequency bands</b>	GSM/GPRS/EDGE: Quad band 850/900/1800/1900MHz UMTS/HSPA+: Five band 800/850/900/1900/2100MHz
<b>Transmission output power</b>	Class 1, 3, 4 and E2 (2 W) for 800MHz and 2100MHz
<b>Sleep-down Mode</b>	Shutdown after each Measurement, Module power off
<b>Internet Access</b>	Default for APN, User, Password and DNS released by IEM



## Rental program

### Tel-O-Graph® GSM rental device

- Tel-O-Graph® GSM plus
- 4 batteries
- HMS CS

### Tel-O-Graph® GSM rental set

- Tel-O-Graph® GSM plus
- 3 cuffs (size S, M, L)
- 4 batteries
- Set pouch
- HMS CS



## Accessories

Article no.	Description
020400001	Tel-O-Graph® cuff S (20-24 cm)
020400002	Tel-O-Graph® cuff M (24-32 cm)
020400003	Tel-O-Graph® cuff L (32-38 cm)
020400004	Tel-O-Graph® cuff XL (38-55 cm)
020400005	Tel-O-Graph® cotton sleeves (50 pcs.)
020400006	Tel-O-Graph® batteries, AA, alkaline (4 pcs)
020400007	Tel-O-Graph® USB bluetooth adapter
020400008	Tel-O-Graph® set pouch, printed
050100001	HMS CS Installation CD



Are you interested in this product?  
Visit our website at [www.iem.de](http://www.iem.de)





HEALTH CARE PROVIDERS

MODULAR  
SYSTEMS

HEALTH  
CARE  
COMPETENCE

COST  
SAVING

# SOLUTIONS FOR HEALTH CARE PROVIDERS

The number of people suffering from cardiovascular diseases, high blood pressure, type 2 diabetes mellitus and COPD +worldwide is increasing year-on-year. These conditions result in reduced quality of life and a shorter life expectancy, and put a huge strain on the healthcare sector.

By using the latest telemedicine treatment methods, doctors, clinics, research institutes and healthcare providers are working on improving care and enhancing patients' quality of life. Reliable and compatible solutions which are easy to operate are crucial to the success of these telemedicine methods. These solutions should also be flexible enough to meet the requirements of the care concept and the treatment method.

The IEM telemedicine solutions have been developed on this basis, and enable the monitoring of all standard vital signs ranges. By combining our partners' innovative healthcare programmes with telemedicine services, we work together to improve people's health.

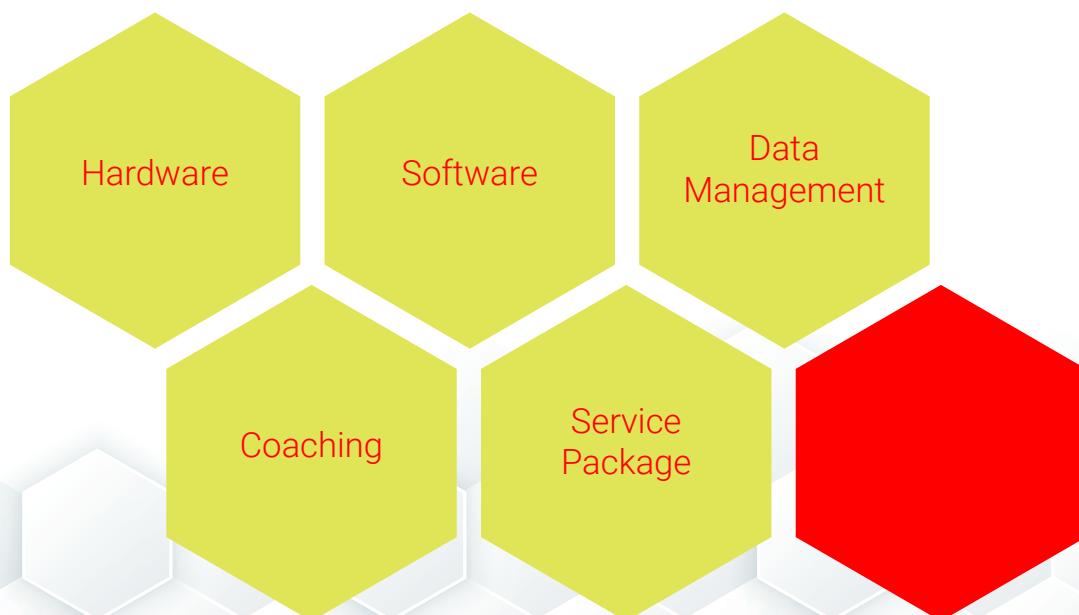


## Overview of telemedicine services

- Hardware and software for telemonitoring of all standard vital signs
- Very easy to use (plug-and-play concept)
- High data security
- Optimal network coverage through multi-network roaming SIM cards
- Comprehensive services (e.g. logistics, support)
- Development of customer-specific solutions
- Years of experience as an telemedicine service provider for doctors, clinics, health care providers and clinical research organisations

## MODULAR SYSTEMS

The relevant requirements for designing healthcare projects or implementing telemedicine products for everyday use in practices and hospitals vary widely. In light of this, IEM telemedicine solutions are modular in structure, with an offering that encompasses hardware, data management, software, coaching, and service packages. This modular approach means we can supply you with just the services you need for your projects. The excellent interoperability of our solutions also makes it possible to integrate them with the components you already use (e.g. existing patient software).



# MODULAR SYSTEMS

## Hardware - measurement of all standard vital signs

Different monitors can be used to record different vital signs depending on the underlying clinical picture. IEM gives you the tools to measure all standard vital signs with a single product, so you don't need an armoury of different standalone solutions. Future monitors can also be integrated at your request, to create a single, straightforward system that significantly lightens the workload.



**Blood pressure**



**Pulse wave analysis**



**Body weight**



**Blood coagulation**



**Activity tracking**



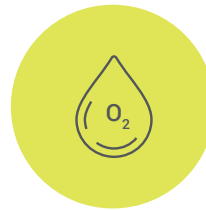
**Peak flow**



**ECG**



**Blood glucose**



**SpO<sup>2</sup>**



**other parameters  
on demand**

## Data management

For telemedicine solutions to be effective, it is crucial that the chosen technologies are secure, reliable, and user-friendly.

With this in mind, IEM has integrated all vital signs in one standard complete system. Your patients' measurement data is transmitted completely anonymously, secured by the eConnect transmission modem or by GSM network modules that are integrated into monitors which are certified as medical products.

Together the IEM gateway server medical products form the core of the complete solution. The powerful, fail-safe gateway server processes your patients' vital data while adhering to the strictest security standards, and transmits the data encrypted and anonymously to IEM software applications or to the existing database solution.

Stay on the safe side with our telemedicine solutions.



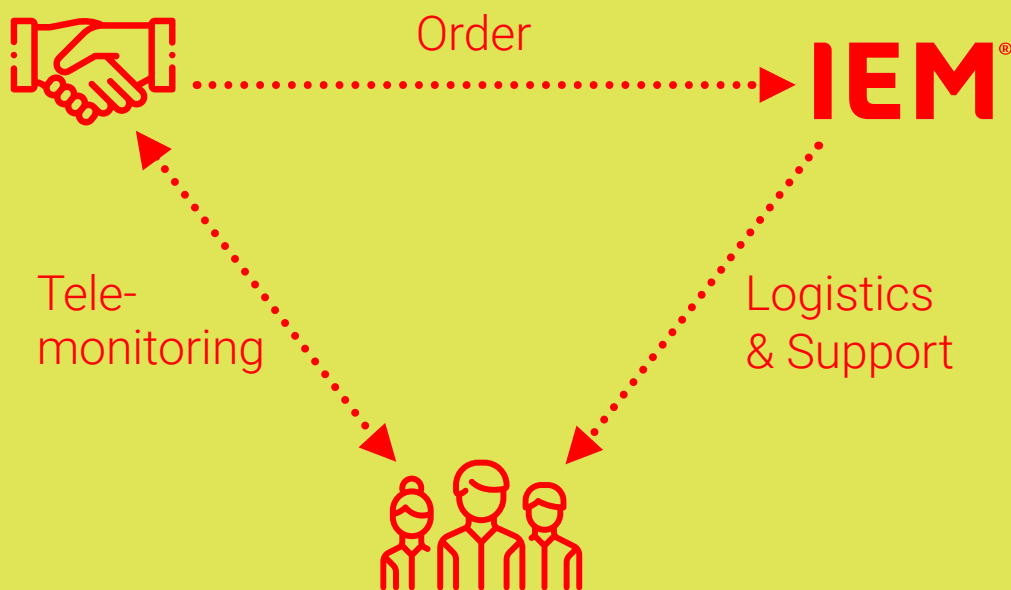
# MODULAR SYSTEMS

## Service package

The time needed to configure, prepare, and handle the logistics of introducing telemedicine devices often represents a considerable hurdle. IEM can help overcome this, and guarantee that your projects run smoothly by means of proven processes.

Overview of our services:

- Logistics (shipping and collection)
- Device configuration and final function tests
- SIM card management
- Refreshing and storing devices
- Tailored support services
- Free replacement of telemonitoring sets in the event of a service claim



# HEALTHCARE COMPETENCE

Looking for the perfect telemedicine solution to reduce your workload and to improve medical care? As an expert partner and telemedicine service provider, we provide you with comprehensive advice on how to integrate telemedicine solutions into your everyday practice, clinic, and project routines.



#### The benefits are:

- Expert telemedicine service provider
- Professional advice
- Coordination of tailored modifications to hardware, software, interfaces, processes, and other relevant documents
- Solution implementation
- Extensive training

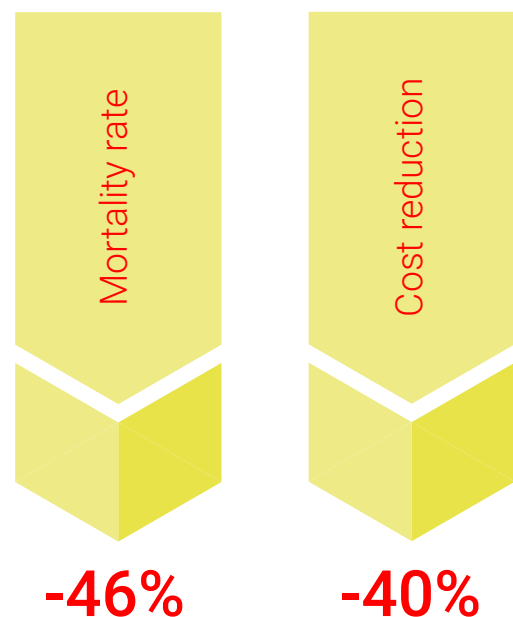
## COST SAVINGS

Alongside improvements in medical care, the use of solutions can offer significant cost savings for the health care professional and health insurance companies.

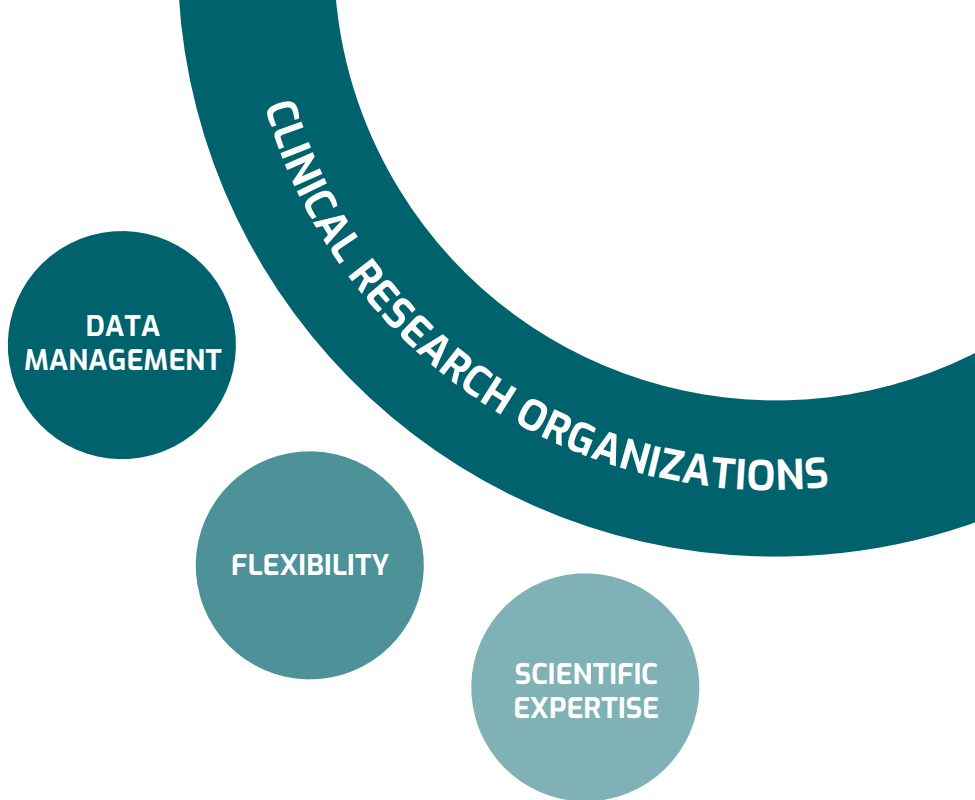
#### Heart disease healthcare project

Chronic heart disease is one of the most widespread internal diseases in the industrial world. It involves multiple visits to the doctor, and is also the most-frequently cited reason for hospital stays in Germany; the disease clearly exerts a heavy load on the patient and also entails considerable healthcare costs.

The care situation can generally be greatly improved through the use of telemedicine solutions for targeted weight monitoring. Along with a significant reduction in mortality rates, the hospitalisation rate can also be appreciably lowered, leading to improved quality of life for the patient and significantly reduced treatment costs.



Kielblock B, et al. Dtsch Med Wochenschr 2007; 132(9):417-422



# SOLUTIONS FOR CLINICAL RESEARCH

IEM focuses on exactly what is needed for successfully performing clinical studies. Among IEM's key strengths are the provision of professional assistance for the implementation of technical solutions, and ongoing support during clinical trials. Alongside effective project management, we offer hardware and software solutions individually tailored to the study requirements, to ensure that studies run smoothly.



## Your advantages

- Cardiovascular solutions specialist:
  - Long-term blood pressure measurement
  - Measurement of central blood pressure, pulse wave velocity, and haemodynamic parameters (for example heart minute volume, peripheral resistance) at home, in the office, and at any time of day.
  - Telemonitoring solutions for recording all standard vital signs
- Plug-and-play design
- Study-specific hardware and software development
- Implementation of data interfaces
- Stringent data security standards
- Effective project management
- Experienced partner with a global academic network and more than 1,300 academic publications



## DATA MANAGEMENT

We put extremely reliable data management and a very high level of data security at the heart of our solutions. We provide networked systems that are tailored to your needs and teamed with our complete solutions, while always keeping to these standards.

- Stringent data security standards
- Data transfer to customers' own solutions
- Optional global server locations for gateway server and database
- Protection against data loss thanks to redundant systems with extremely high system availability
- Data management based on global data protection and integrity standards
- Conformity with all relevant IEC and ISO standards
- All solutions components are certified as medicinal products

## FLEXIBILITY

When devising clinical studies, it is often essential that solutions can be provided quickly, and adapted to changing requirements at short notice if necessary. Our short decision-making chains and streamlined processes will help you to implement your studies successfully. We make any necessary changes to solutions during the course of studies, and offer a high degree of flexibility.

- Customized solutions
- Study-specific software developments
- Change of server location (e.g. to the country where the project is being conducted)
- Implementation of process steps adapted to the specific study
- Customized supporting documents  
(for example, letters to participants and brief instructions)

## SCIENTIFIC EXPERTISE

The requirements of clinical research are often highly varied and specific. With more than 20 years of experience, and a record of our solutions being used in more than 1,300 academic studies, IEM is a trusted and reliable partner in the clinical sector.

- Comprehensive advice
- Global academic network
- More than 1,300 academic publications from "Journal of Hypertension" to "The Lancet" medical journal.







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