Health 4.0 made in Germany

DMEA Connecting Digital Health

GTAI GERMANY TRADE & INVEST

Berlin, 9. April 2019

Global digital health market is booming, Europe one of the three regions to look at – Germany now to create connected infrastructure

Key hypotheses on the Digital Health market

1 The Digital Health market is expected to grow by c.24% p.a. and surpass USD 650 bn by 2025 – driven by growing patient numbers and technology

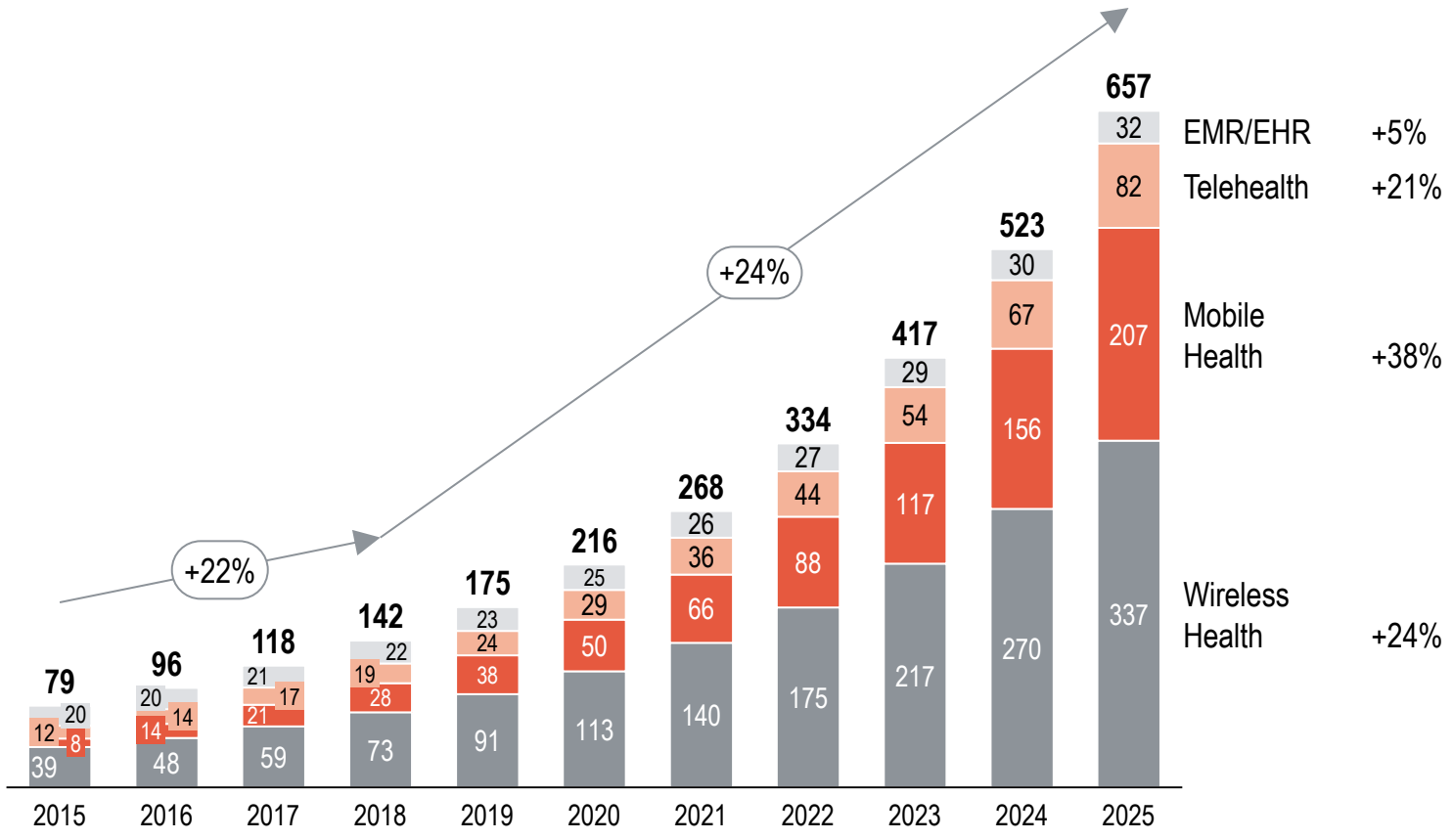
2 Europe is currently still #2 for Digital Health after the US – however, we expect China to drive the digital health market in the coming years

3 Germany needs to be quick to provide the connected infrastructure and clarify regulations to allow the digital health market to fully develop – different scenarios to be considered

Source: Roland Berger

Global Digital Health market continues to show double-digit growth and surpass USD 650 bn by 2027

Digital health market development 2015 – 2025 [USD bn]



EMR/EHR

> Continuous and stable growth due to increased adoption

> Integration of wearables to EHR will be next major growth step

Telehealth

> Steadily growing market due to growing demand for personal health care, increasing government expenditure and the unmet medical needs in rural places

Mobile Health

> Main value drivers will be the chronic disease management (46% of mobile health segment) and diagnostic services (15% of mobile health segment)

Wireless Health

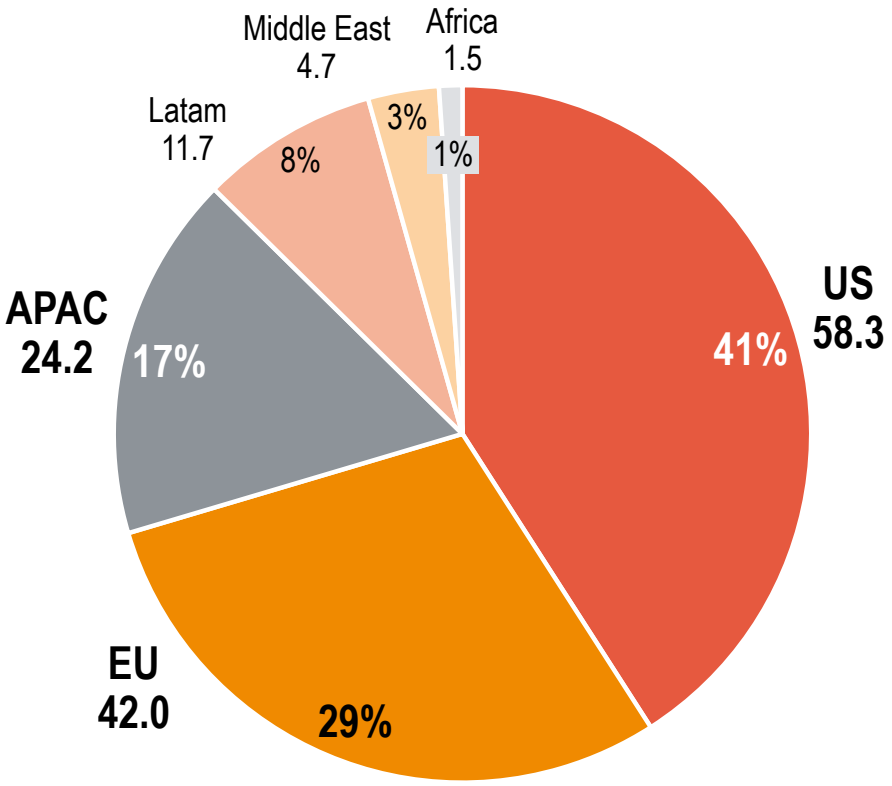
> IoT is driving changes through rapid reduction in costs (estimate lead to $63bn in global savings)

> Within 6 years >50bn devices will be connected to cloud systems, 30% of these within the Healthcare Sector

Source: Markets and Markets, Grand Market View,, Transparency Market Research, BCC Research, Roland Berger analysis

EU second after the US but APAC and especially China will drive the market in the future

Digital health market per region 2018 [bn USD]



US

> US represents the largest market for Digital Health, driven by the early adoption of innovative health services by patients and payers

> Overall high number of companies providing mobile health service and developing health apps

EU

> EU represents a major market for digital health, especially

- **UK**: Early adoption of telecare services as well as significant central government agenda for telecare
- **Germany**: Leading market of medical device companies strengthening telehealth and mobile health segment

APAC

> Besides strong uptake of solutions in **Japan**, **China** is expected to become a major market

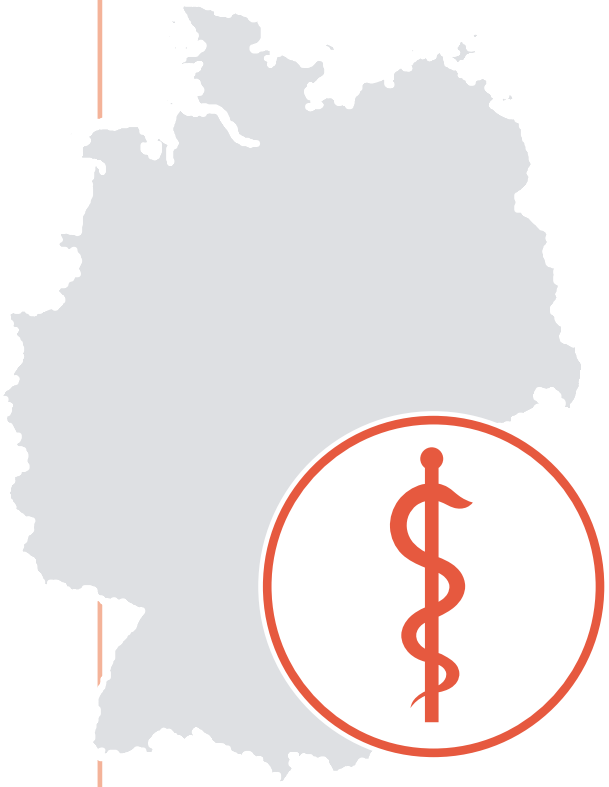
> Chinese government continues to support eHealth to address long-standing inefficiencies and unmet requirements for the health care system, esp. in rural areas

Source: Markets and Markets, Grand Market View,, Transparency Market Research, BCC Research, Roland Berger analysis

In a recent study with SPECTARIS we have analyzed the status quo and expectations of digital health in Germany

Core study results: Health 4.0

- Digitalization of the healthcare industry offers enormous **opportunities:**
  - Significantly **improved patient care**
  - **More efficient service provision**
  - New **high-tech** medical **products** and **new markets for** the German medical technology industry
- In the field of medical technology alone, **c. 10,000 additional jobs will** be created
- Study participants expect **sales of** around **EUR 15 billion** from digital products and services in 2028
- Equally, the study illustrates the enormous **pressure to act**:
  - **Not even 30 percent** of medical technology companies **invest** more than 2.5 percent of their sales in digitization projects
  - Two thirds of the participants rate the **healthcare industry** as **low-digitized**
  - **36 percent** of medical technology companies have a **clearly formulated digital strategy**
  - **98 percent** of respondents would like to get **more support from politicians**



Source: SPECTARIS- and Roland Berger

10 recommendations for action provide concrete starting points for accelerating digitization

Overview of recommendations for action

Recommendations

10 Recommendations for Action for the Digitization of the Health Care Industry

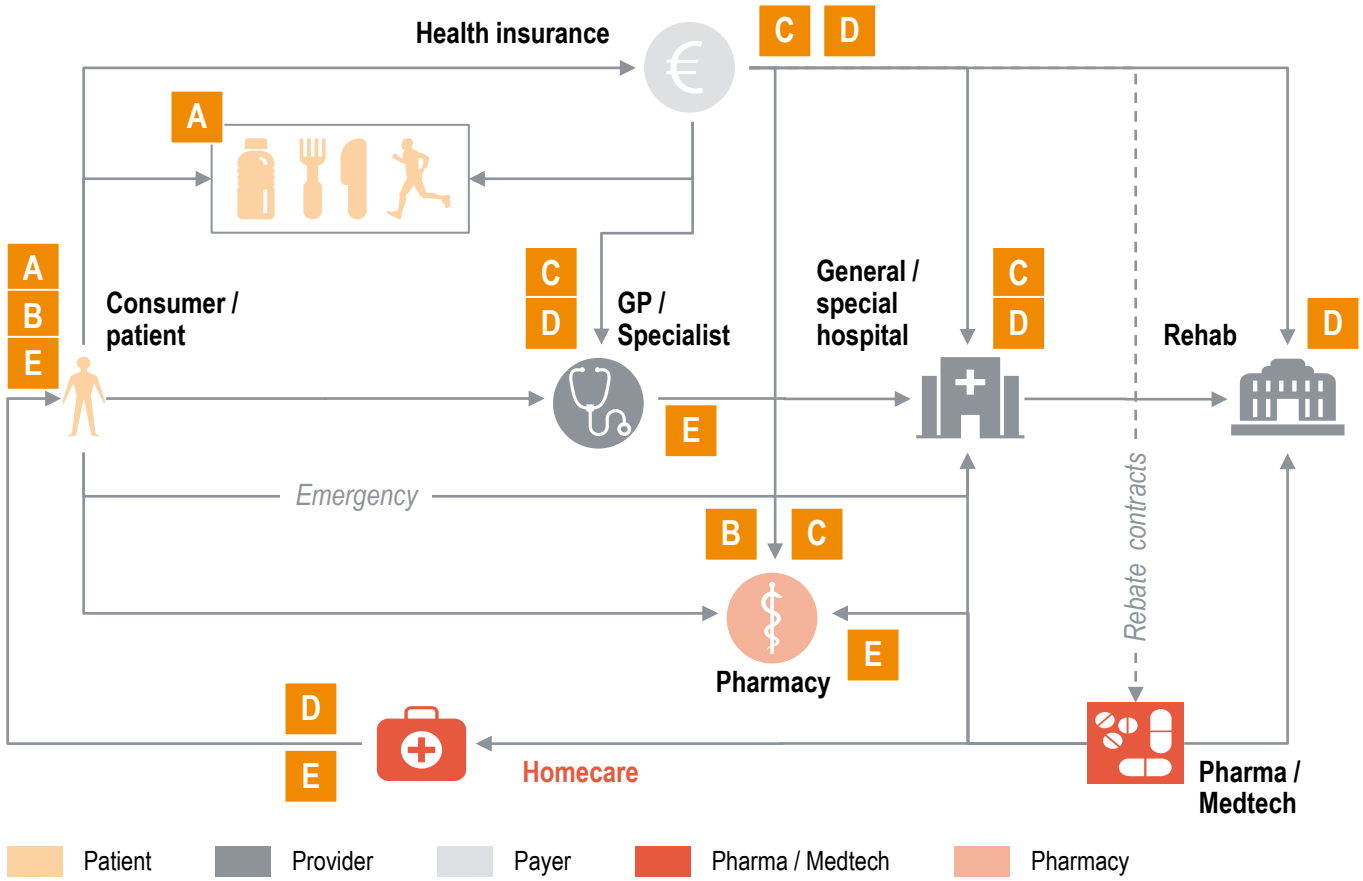
Companies	Healthcare stakeholders	Politics
1 Prioritizing digitization in enterprises	3 Establishing the electronic health record	7 Developing a national E-Health Strategy
2 Increasing investment in digitization in medical technology and hospitals	4 Simplifying approval processes for new, digital products	8 Developing an infrastructure program
	5 Developing fast and transparent processes for the reimbursement of digital products	9 Setting minimum technical requirements that promote interoperability
	6 Promoting digital model projects through a central information platform and transfer to the standard care system	10 Creating a uniform German data protection standard

- In order to accelerate the digitization of the health care industry and medical technology and to develop Germany into the leading market for the digitized health care industry, joint efforts of all parties are necessary
- All players in the healthcare system including companies and politicians have to be involved in and contribute their part
- The recommendations for action have been developed jointly by SPECTARIS and Roland Berger and show concrete starting points – the authors are happily available for a joint exchange

Source: SPECTARIS; Roland Berger

We will see the Healthcare infrastructure and decision making processes being digitized and disrupted

Healthcare system and areas of disruption



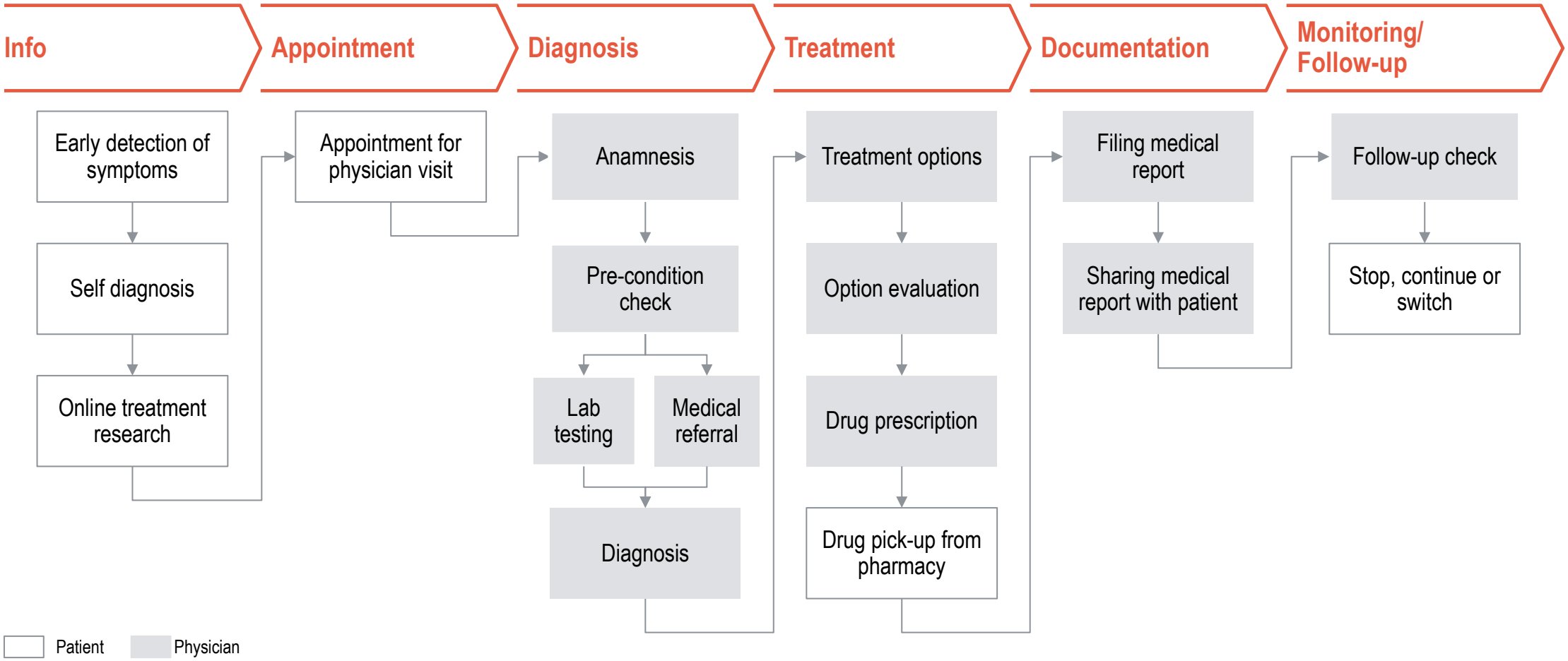
Patient pathway

A	**Prevention (Awareness/ Symptoms)**	Symptoms experiences, emotions and actions prior to seeking care
B	**Consideration/ Education**	Motivators to seeking care and to whom patients present
C	**Diagnosis/ Therapy decision**	Characteristics and external forces that influence physician treatment and brand selection
D	**Treatment**	Perception of improvement of symptoms experiences, emotions regarding therapy
E	**Switching & Persistency**	Drivers for switching, compliance issues and disease progression

Source: Roland Berger

The traditional patient-physician-journey mainly relies on face-to-face interaction

Current patient-physician-journey

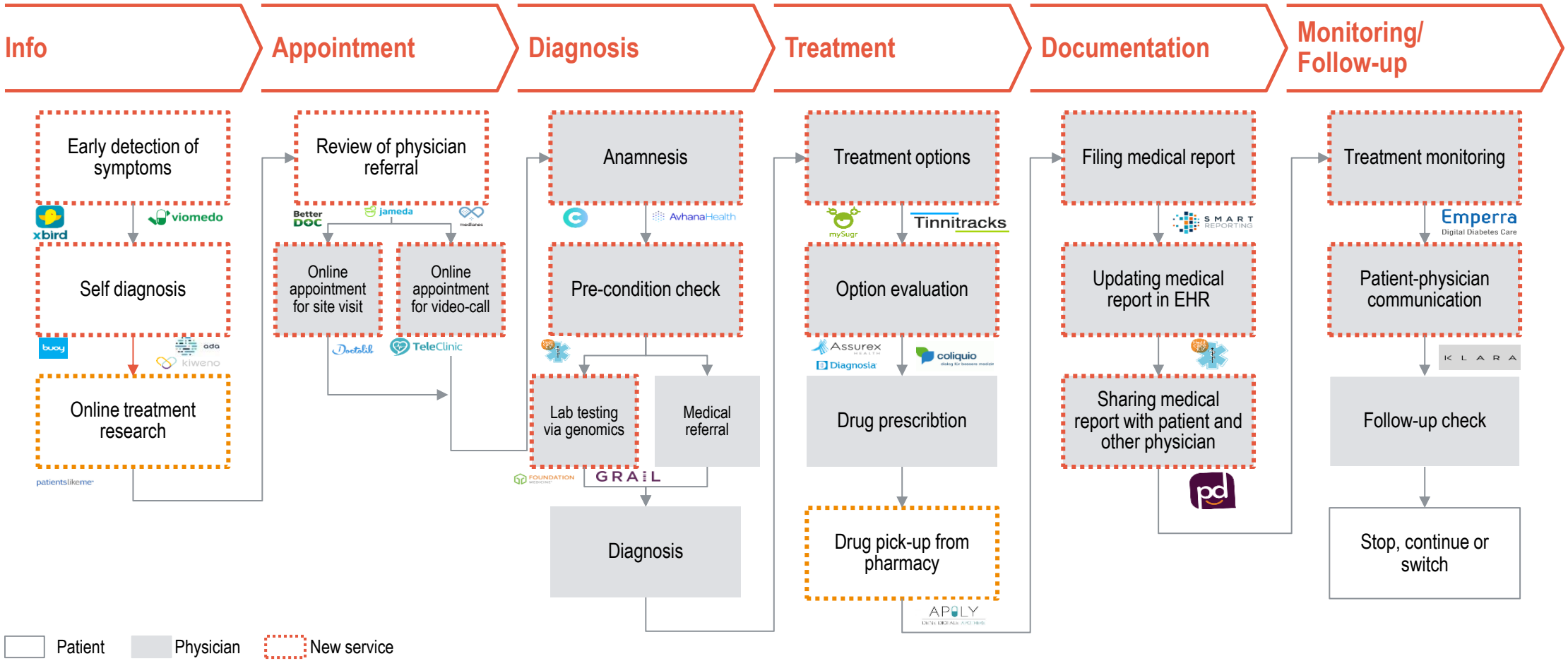


Source: Roland Berger

Many future touchpoints of the patient-physician journey are complemented by new services

Overview of new services along the patient-physician journey

Example



Source: Company websites, Roland Berger

Endgame: Patient care to be fully automated by data, apps and algorithms

Vision – Automated diagnosis and treatment, anywhere, anytime

Symptoms

> Automatic control of illnesses

> Exact diagnosis of specific conditions

PREVENTICUS

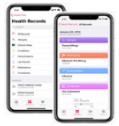
motognosis

> Subjective perception and decision to act

Data+AI

> Analysis with AI based on personal data and treatment recommendations

ada



Vivy

> EHR – Central collection of patient data linked with interfaces along the healthcare value chain

Teledoctor

> If necessary, complementation by doctor

medgate_

TeleClinic

minxli

Therapy

Doctolib

> Appointments

TREATO
The voice of the patient

> Therapy recommendation + e-prescription

Selfapy

mySugr

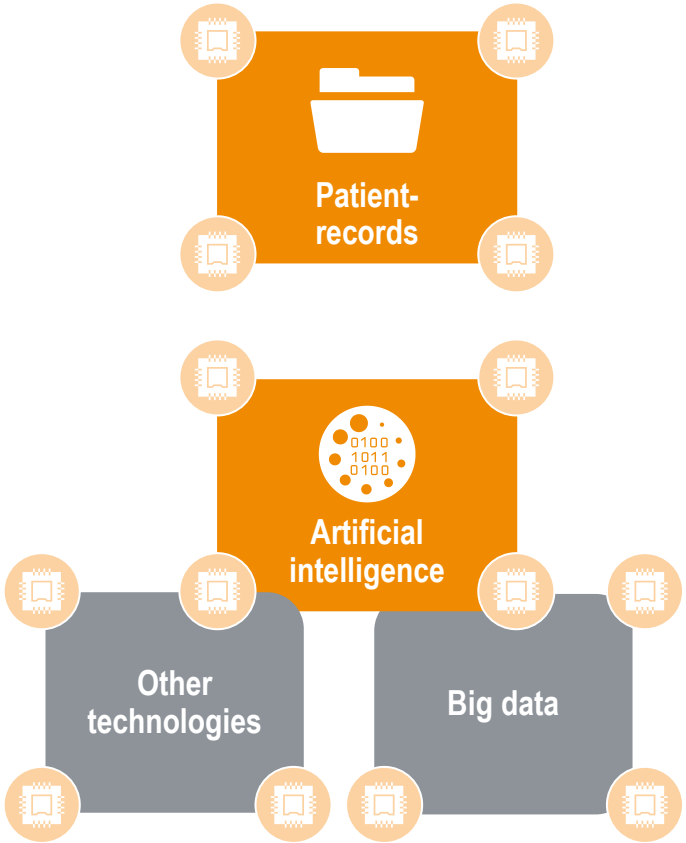
M-sense

> Selftreatment

Data and algorithm will monitor the whole process and link all steps

Source: Roland Berger

Algorithms and data will determine healthcare provision, but who will own them?



Scenario 1

Established players at the pole position:

Healthcare insurances expand their portfolio with existing data pool and AI based services

Scenario 2

Supremacy of new data players:

Amazon, Google and Co + independent data brokers get access to patient data – first for single illness, next step for everything

Scenario 3

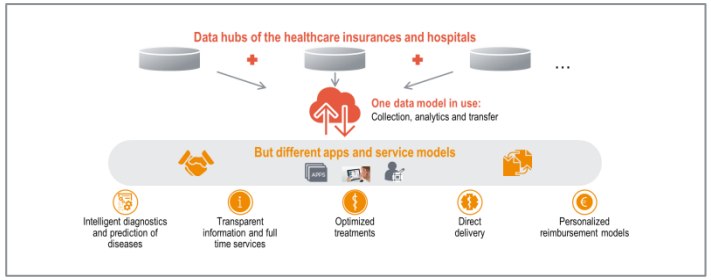
Independent offerings along the healthcare value chain:

Connected with patient records but without integration

Source: Roland Berger

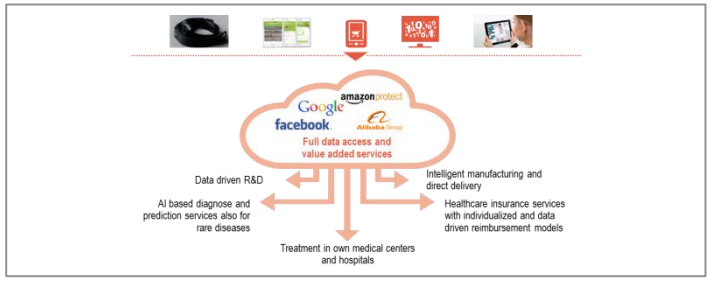
The scenarios depend on different parameters – But all provide value added patient services

Basic requirements for the three scenarios



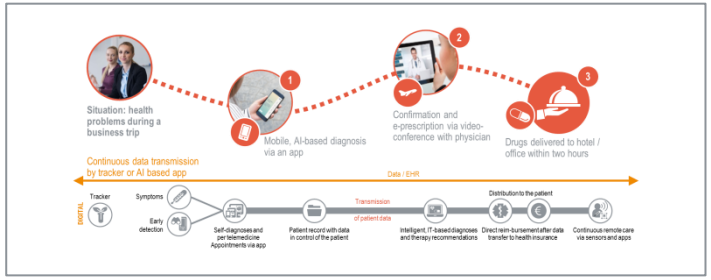
Scenario 1:

Established players at the pole position:
Expanded data portfolio of insurances and other players.
Open regulations allow usage of a common data model with a transfer into specific services



Scenario 2:

Supremacy of new data players:
Data sharing is caring – patients allow data access for personalized value added services



Scenario 3:

Independent offerings along the healthcare value chain:
Policy fosters EHR initiative, data are stored in a central patient record enabling a seamless patient journey

Source: Roland Berger

Established players at the pole position: Healthcare insurances expand their portfolio

Strong position of well known players due common data model

Scenario 1

Data hubs of the healthcare insurances and hospitals

One data model in use:
Collection, analytics and transfer

But different apps and service models

- Intelligent diagnostics and prediction of diseases
- Transparent information and full time services
- Optimized treatments
- Direct delivery
- Personalized reimbursement models

Source: Roland Berger

Supremacy of new data players: Amazon, Google and Co get access to patient data

Data sharing for caring – Patients allow data access for value added services

Scenario 2

Full data access and value added services

- Data driven R&D
- AI based diagnose and prediction services also for rare diseases
- Intelligent manufacturing and direct delivery
- Healthcare insurance services with individualized and data driven reimbursement models
- Treatment in own medical centers and hospitals

Multichannel patient data collection

↓

Analytics and prediction

↓

Numerous healthcare services with significant value added for the patients

Source: Roland Berger

Independent offerings along the healthcare value chain: patient records as central data pool

Patients benefit from additional services

Scenario 3

Situation: health problems during a business trip

Mobile, AI-based diagnosis via an app

Confirmation and e-prescription via video-conference with physician

Drugs delivered to hotel / office within two hours

Continuous data transmission by tracker or AI based app

Data / EHR

DIGITAL

Tracker

Symptoms

Early detection

Self-diagnoses and per telemedicine Appointments via app

Patient record with data in control of the patient

Transmission of patient data

Intelligent, IT-based diagnoses and therapy recommendations

Distribution to the patient

Direct reim-bursement after data transfer to health insurance

Continuous remote care via sensors and apps

Source: Roland Berger

Healthcare players have to react quickly

Strategic consequences for healthcare players

- **Decoupling and extinction** of **value creation** stages
- **New customer offerings,** e.g. fostering patient empowerment
- **New forms of corporations** e.g. with startups, competitors, platform providers
- **Implementation of AI and data based technologies, new interfaces**
- **New working** & **decision** making: agile and iterative

Source: Roland Berger

A bold vision and rapid implementation of initiatives are needed

How to scale digital – Aiming far and implementing fast

Project Example

Vision

"Be bold"

"We are the first fully digital health insurance company."

Discover
"Curate and assess ideas"
e.g. screening of technologies within market

Design
"Estimate success"
e.g. development of new products and services

Develop
"Develop strength"
e.g. derivation of processes and IT requirements

Deploy
"Scale fast"
e.g. internal implementation, partnerships

"Be bold"

A **transformative vision** is characterized by a **clear and bold declaration** aiming to **boost ambition** for supreme goals and **stimulate imagination** of all stakeholders

"Scale fast"

Speed and **scalability** of digitization are **decisive success factors** for **differentiation** from the **competition**

Source: Roland Berger

To explore these opportunities, pharma companies should design digital health offerings following a set of 10 winning principles

Principles of winning digital health offerings

Interaction
> Follow customer journeys – target specific interactions in the healthcare system
> Connect all stakeholders across the healthcare system

Value-added
> Overcome disconnect between healthcare provider and patient
> Use smart solutions, offer tangible value added: time, money, quality, outcomes

Platform/ connectivity
> Get the initial patient connection right – ubiquitous digital channels: Social media, website, apps as touch points (mobile network of connectivity)

Data
> Take advantage of comprehensive user data
> Ensure accessibility and security

Intelligence
> Gather meaningful insights
> Use Big Data to become predictive, not reactive

Device
> Use multiple interfaces to suit the patients' lifestyle
> Link with technology standards and decide on closed loop vs. open platform

Sensor
> Give precise measurements
> Consider patient convenience with e.g. wearable sensors

Pharma-ceutical
> Add new technology dimension to core product
> Enhance value proposition beyond the molecule

Regional
> Reflect regulatory & care environment
> Understand and accept local pain points – adjust technology and value added

Data security/ compliance
> Ensure compliance in stakeholder communication and data security for patients

Source: Roland Berger

Roland Berger supports – From analysis to vision to implementation

Typical projects in Digital Health

Research, studies, trends

Publication, **trend analyses** and **technology screening** within the fields of Healthcare, Digitization, Megatrends etc.

Strategy /Vision

Inspiration days and rise of awareness

Workshop series and inspiration days in order to **create awareness** towards new **market, business and technology trends**

Development Eco-system Healthcare

Idea generation, derivation of **customer needs**, analysis, identification of **focus space**, development of concrete **concept**

Cultural and organi-zational transformation

Boot camps, workshops, learning journeys, **reorganization** for creating an **open-minded** and **innovative** culture

Implementation

New products/ service development

Development and **prototyping** of new **services**, **products**, **business models,** from Design Thinking sprints to Proto-typing/Launch and venturing services

E2E process digitization

Process **analysis**, derivation of **optimization potential**, use of **suitable technologies**, **implementation**

Innovation Lab & Hub deployment

Develop an internal corporate **innovation hub**, **customized approach** (e.g. company and industry specific)

Source: Roland Berger

Roland Berger

THINK:ACT