



IM HIS

Impact Monitor for Health Information Systems

**Digital systems – real impact:
What hospital staff truly needs**

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IMHIS® at a glance

**What if the hospital of the future
was already a reality today?**

IMHIS® at a glance



What

Analysis tool for **health information systems**: from paper lists to modular systems up to complex digital solutions such as hospital information systems



Why

Assesses information systems from **the user perspective**: impact, usability, acceptance



How

Analysis across **6 clearly defined dimensions** – via **Questionnaires** and **Observation**: at the levels of people, system, organization



Where

Facility-independent applicability: from medical practices, to rehabilitation facilities up to hospitals



Value

Effective digitalization with real added value: identify weaknesses, build on strengths, secure digital impact

- ✓ makes **digital impact visible**
- ✓ creates evidence that powers **tomorrow's decisions**
- ✓ closes the gulf between **ambition and reality**



IMHIS® – making digitalization work.

The book on the method:



IMHIS
www.damitdigitalisierungwirkt.de

The promise of digitalization – and the reality



Information quality

Expectation: current, complete and reliable data **available anytime**

Reality: scattered, inconsistent and outdated data



System quality

Expectation: stable, fast and **mobile-usable systems**

Reality: time and data losses due to loading times, crashes and updates



User satisfaction

Expectation: intuitive, automated and **workload-reducing systems**

Reality: cluttered interfaces, poor usability, **frustration** in daily work



Communication & Collaboration

Expectation: transparent and **digital collaboration** in real time

Reality: digital **one-way** entries simulate collaboration without creating it



Workload

Expectation: **less bureaucracy** and more time for patients

Reality: duplicate entries, clickwork and missing intelligent workflows



Work processes

Expectation: **intelligent**, automated and efficient processes

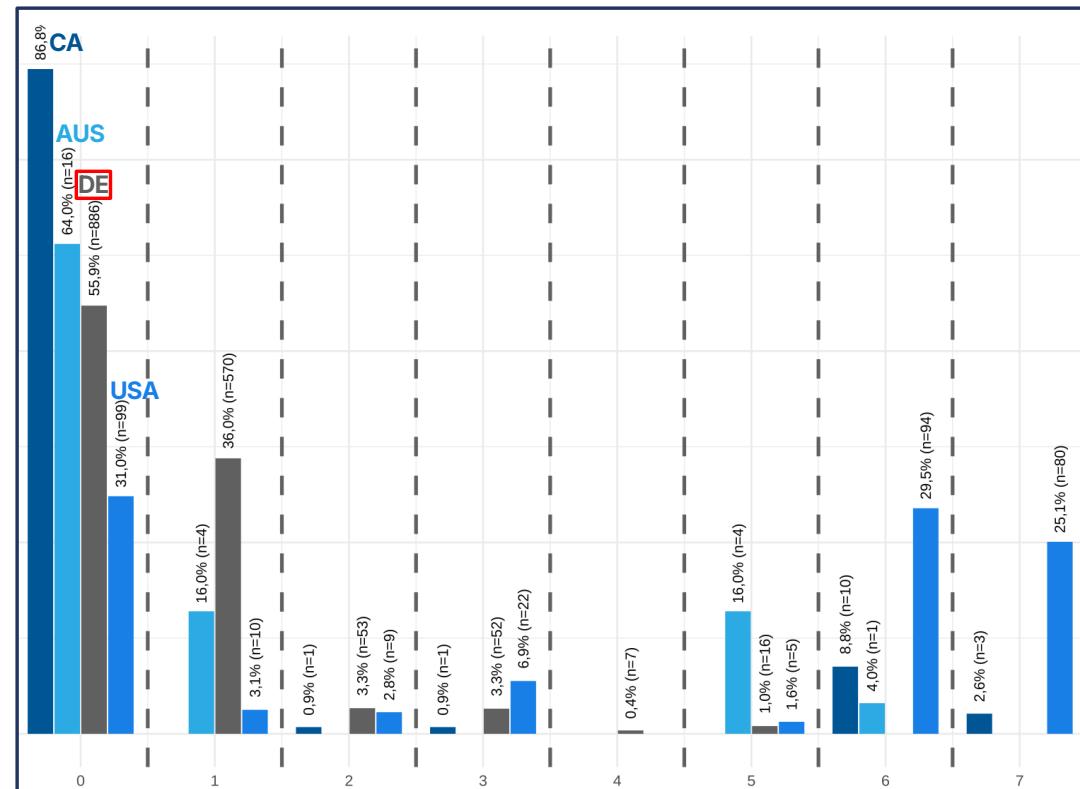
Reality: parallel worlds of paper lists and non-integrated systems

Germany's healthcare system is lagging behind digitally



58% unused digitalization potential

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EMRAM-Scores in 2024:¹

Stufe 0: no Labor/Radiologie/Apotheken HIS
Level 7: "paperless" hospital

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Germany's healthcare system is lagging behind digitally

Enough empty promises.
The time for **digital impact** is now.

The crucial question

Not:
“How digital are we?”

But:

“Does our digitalization deliver measurable impact?”



Reality



Expectation

Makes digital impact visible

– and closes the gap between expectation and reality.

The solution: IMHIS®

6 dimensions that truly matter for digital impact



Information quality

- ✓ Timeliness
- ✓ Completeness
- ✓ Relevance



System quality

- ✓ Stability
- ✓ Performance
- ✓ Functionality



User satisfaction

- ✓ Interface
- ✓ Usefulness
- ✓ Acceptance



Free | Evidence-based | Practical

- ✓ Teamwork
- ✓ Accessibility
- ✓ Value



Communication & Collaboration

- ✓ Mental
- ✓ Physical
- ✓ Time



Workload

- ✓ What, when, where and how
- ✓ Task duration
- ✓ Workflow changes



Work processes

IMHIS® combines 5 subjective questionnaires (99 items) with an objective observation (3 dimensions and 26 categories)

The solution: IMHIS®

**Every software promises digital impact.
IMHIS® proves it.**

The digital patient chart Meona in the IMHIS® test

The digital patient chart Meona is supposed to **reduce media breaks, speed up processes and relieve staff** – but does it work in practice?



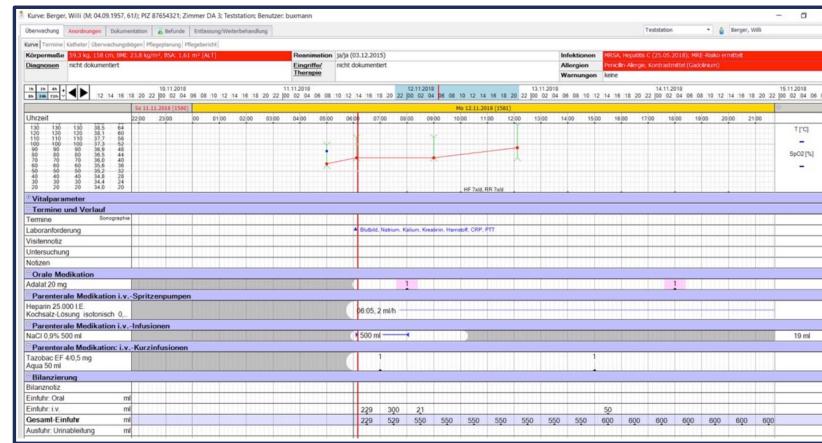
Reality²



- X **Scattered information:** multiple paper notes, limited readability and reliability
- X **No shared use** → Delayed orders & information flow
- X **No interfaces**, duplication of work and media breaks



Expectation³



- ✓ **Everything in one place:** e.g. vitals, fluid management, pain, ward round documentation
- ✓ **Electronic medication** and physician **orders**
- ✓ **HIS integration:** lab/imaging and prior findings

The digital patient chart Meona in the IMHIS® test

Digitalization of the patient chart

Pretest
before
implementation

 **22 participants**
(= 68% response rate)

 **120 hours**
(= 14 working days)

 **General surgery ward**
(University hospital)



Posttest
after
implementation

 **23 participants**
(= 78% response rate)

 **130 hours**
(= 15 working days)

 **General surgery ward**
(University hospital)

5 questionnaires with 99 items

- ✓ Information quality
- ✓ System quality
- ✓ User satisfaction
- ✓ Communication & collaboration
- ✓ Workload

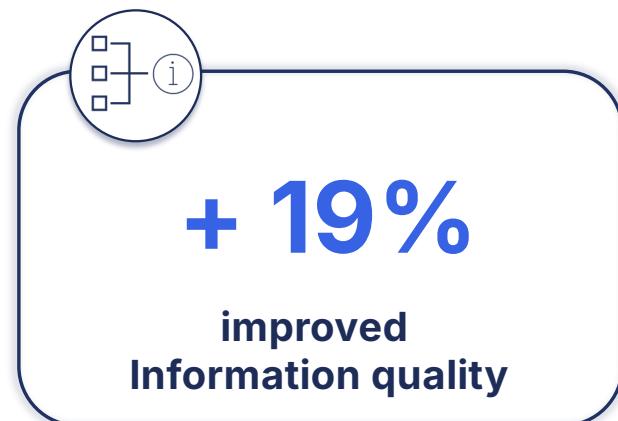
Observation with 26 categories

- ✓ What, when, where and how
- ✓ Task duration
- ✓ Workflow changes

The digital patient chart Meona in the IMHIS® test

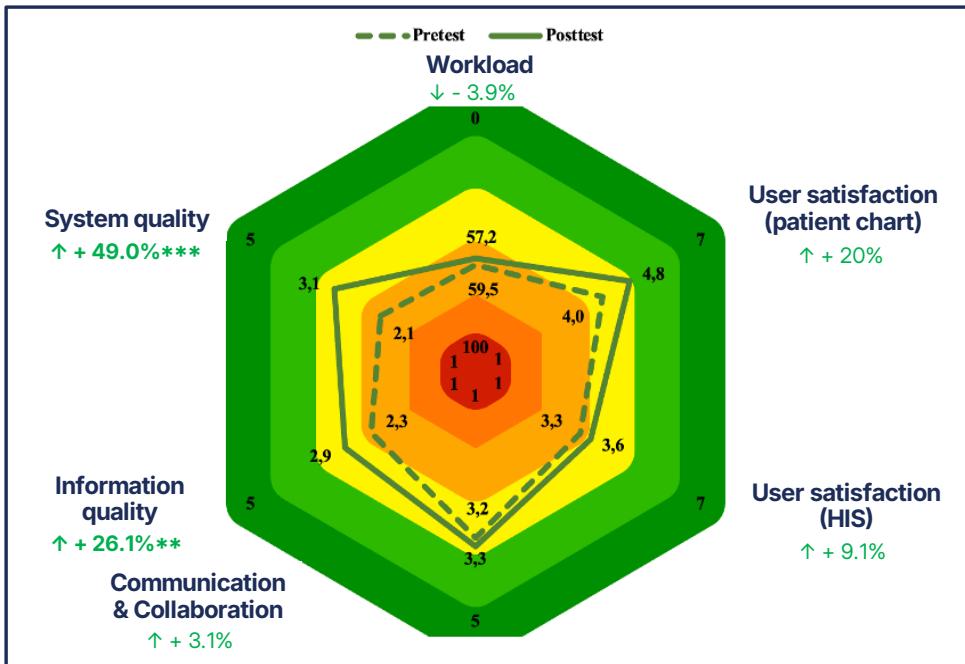
**What we need is a digitalization that
brings tangible relief and delivers measurable
impact.**

Impact of the digital patient chart Meona

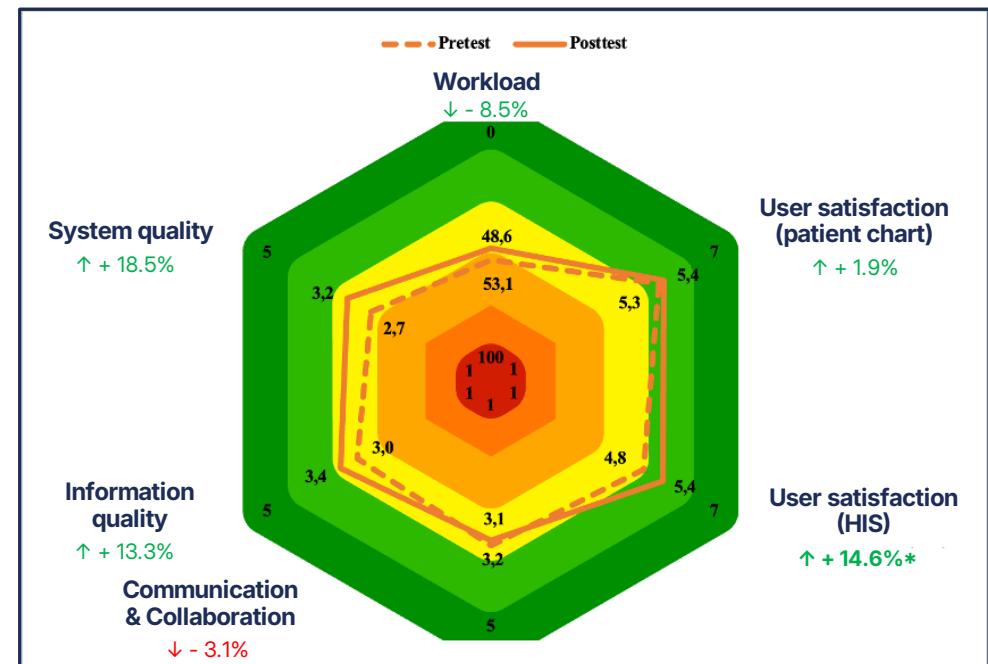


Impact of the digital patient chart Meona

Analog vs digital: Physicians⁴



Analog vs digital: Nursing⁴



Questionnaires with Likert scales from 1 ("poor") to 5 or 7 ("good") and, for Workload, an inverted interval scale from 0 ("low") to 100 ("high")



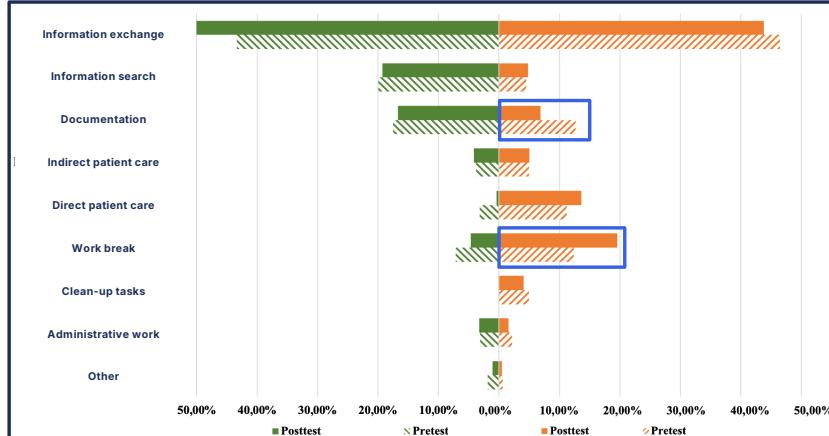
Based on the absolute changes: * $p<0.05$; ** $p<0.01$; *** $p\leq\alpha_{BH}$. α_{BH} denotes the Benjamini–Hochberg-corrected significance level (0.003).

Impact of the digital patient chart Meona

**It's not the systems that need our time
– patients do.**

Impact of the digital patient chart Meona

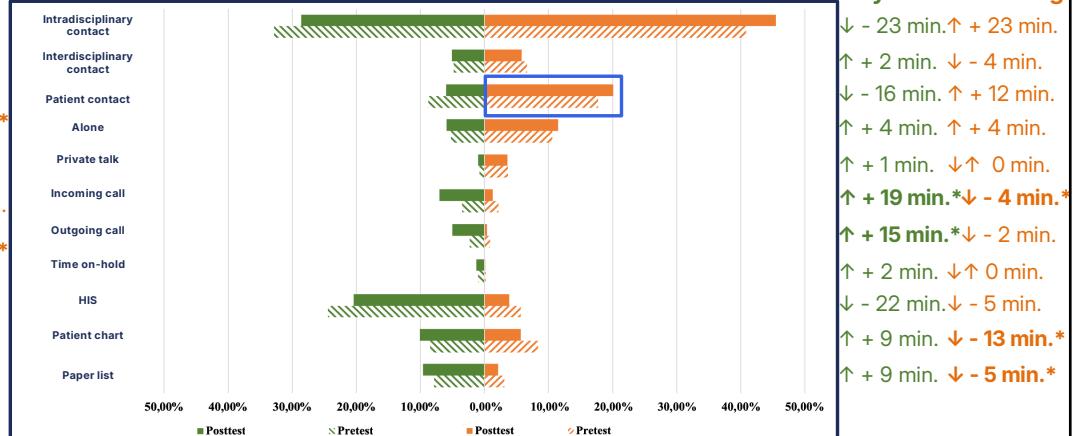
Analog vs digital: activities (what?)⁴



Physicians Nursing

↑ + 39 min. ↓ - 13 min.
 ↓ - 3 min. ↑ + 1 min.
 ↓ - 4 min. ↓ - 29 min. ***
 ↑ + 2 min. ↓ + 0 min.
 ↓ - 16 min. ** ↑ + 12 min.
 ↓ - 14 min. ↑ + 36 min. **
 ↓ - 1 min. ↓ - 4 min.
 ↑ + 1 min. ↓ - 3 min.
 ↓ - 5 min. ↓ + 0 min.

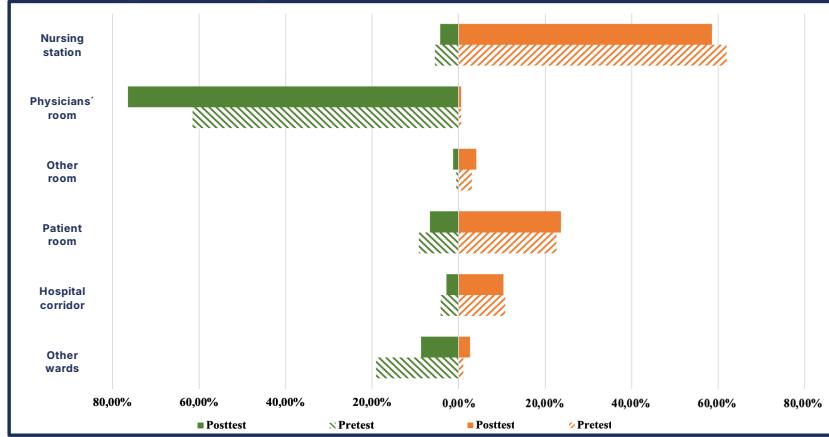
Analog vs digital: medium (how?)⁴



Physicians Nursing

↓ - 23 min. ↑ + 23 min.
 ↑ + 2 min. ↓ - 4 min.
 ↓ - 16 min. ↑ + 12 min.
 ↑ + 4 min. ↑ + 4 min.
 ↑ + 1 min. ↓ + 0 min.
 ↑ + 19 min. * ↓ - 4 min. *
 ↑ + 15 min. * ↓ - 2 min.
 ↑ + 2 min. ↓ + 0 min.
 ↓ - 22 min. ↓ - 5 min.
 ↑ + 9 min. ↓ - 13 min. *
 ↑ + 9 min. ↓ - 5 min. *

Analog vs digital: locations (where?)⁴



Physicians Nursing

↓ - 7 min. ↓ - 17 min.
 ↑ + 83 min. ** ↓ + 0 min.
 ↑ + 4 min. ↑ + 5 min.
 ↓ - 14 min. ↑ + 5 min.
 ↓ - 8 min. ↓ - 2 min.
 ↓ - 58 min. ** ↑ + 8 min.

Nursing workday: 8:15 h (10% = 49.5 min.)

Physician workday: 9:15 h (10% = 55.5 min.)

Based on the absolute changes: * $p<0.05$; ** $p<0.01$; *** $p\leq\alpha_{BH}$.
 α_{BH} denotes the Benjamini–Hochberg-corrected significance level (0.003).

Successes and potentials of the digital patient chart Meona

 Information quality	Impact: more relevant information (physicians), more readable/less error-prone content (nursing) Potential: paper list remains the preferred information tool in both professional groups
 System quality	Impact: physician rating rises clearly – mainly due to portability, user friendliness and effectiveness (eMAR) Potential: bulky ward round charts and poor Wi-Fi coverage as hardware barriers
 User satisfaction	Impact: Digital patient chart is accepted – no return to paper Potential: Usability hurdles prevent noticeable day-to-day relief
 Communication & Collaboration	Impact: more transparency through digital entries, instantaneous delegation Potential: „Illusion of Communication“ threatens SDM – digital entries do not replace real dialogue
 Workload	Impact: no additional workload from the new system Potential: Subjective high time pressure remains, especially in nursing
 Work processes	Impact: -30 minutes documentation time per shift → measurable relief for nursing through the digital chart Potential: Media breaks and parallel paper lists prevent real process integration

Successes and potentials of the digital patient chart Meona

**Good systems blend into
hospital workflows.
Bad ones stand in your way.**

IMHIS®: Evidence that pays off

Evidence for decisions: hard numbers instead of gut feeling

- What actually reaches clinical staff from vendor promises?
- Example: -29 minutes nursing documentation per shift
- Assumption: €20/h, 6 wards, 10 nurses per ward
- **Projected annual savings: 11,000 hours = 5 FTE = €220,000**
- IMHIS® converts digital promises into **real impact** – contractually measurable KPIs



Minimize risk and reveal process levers: open the **Black Box** of daily hospital work

- Where impact is lost and where it's created – **and how to use it**
- **Identify** weaknesses, **build** on strengths, and **secure** the product's digital impact
- Clearly prioritize media breaks, usability and infrastructure – a **checklist for measurable success**



Secure and communicate adoption: vendor-neutral, evidence-based effectiveness from the user perspective

- User satisfaction as an **early-warning system** for daily hospital work
- Periodic quality reports and Governance – a **new perspective** beyond go-live metrics
- Priorities and product-insights from the **user perspective** – not from the whiteboard



IMHIS®: Evidence that relieves



Evidence for daily hospital work: digital systems that relieve instead of burden staff

- More time for what truly matters: **our patients**
- Information, when, where and how we need it – **when seconds count**
- Powerful, smart systems that run – **instead of clicking, waiting and swearing**



Make digital impact visible: open the **Black Box** of daily hospital work

- Where impact is lost and where it's created – **and how it can be maximized**
- **Identify** weaknesses, **build** on strengths, and **secure** the product's digital impact
- Media breaks, usability and infrastructure – what really frustrates hospital staff and what we need



Check and communicate adoption: transparently show what works and what doesn't

- User satisfaction as an **early-warning system** for daily hospital work
- Periodic quality reports and Governance – a **new perspective** beyond go-live metrics
- Priorities and product-insights from the **user perspective** – not just from the conference table

IMHIS®: Evidence that creates trust

Marketing backed by real-world impact: vendor-neutral, evidence-backed **effectiveness from the user perspective**



Case study: digital patient chart:

- **-30 minutes nursing documentation** per shift
- **+49% perceived system quality** among physicians
- Co-marketing with Dr. med. Florian Eisold: LinkedIn, use cases and target-group proof



Product insights straight from users: The **Black Box** of daily hospital work

- 99 standardized items plus 26 observation categories show how your system is perceived and used in daily work.
- Identify weaknesses, Build on strengths, and secure your product's digital impact



Clear ROI case and story-telling for sales: what really lands with clinical staff?

- Digital impact measurable across six dimensions: from system and information quality to user satisfaction, processes and workload
- Sharpen and win **tenders and reference stories**



Priority roadmap: What truly relieves. What slows you down.

- Concrete levers for your **product development** as well as the specific **Use-Cases** of your customers



Trust asset: "Real Digital Impact": quality seal and benchmarking for your product



Draft

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IMHIS®: Make digital impact visible

**Excellence in care needs excellence in systems.
The digital future of care is proven
– not promised.**



INM HIS

**The digital future of healthcare starts
with the right analysis**

Let's measure together what truly works

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Sources

Sources

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³Schickfus, P. v. (2018). Pflege „4.0“ integriert im klinischen Arbeitsplatz. Aufgerufen am 28.09.2024 from https://www.entscheiderfabrik.com/sites/default/files/_fileserver/documents/2018/VKD_NS-HB/2018.11.22_VKD_NS-HB_Pflege_Meona.pdf

⁴Eisold, F. (2025). Digitale Systeme – Echte Wirkung: Was Klinikpersonal wirklich braucht: IMHIS – ein Analyseinstrument zur nutzerzentrierten Bewertung von Gesundheitsinformationssystemen. Springer Gabler Wiesbaden.