

IMHIS

Impact Monitor for Health Information Systems

Digital systems – real impact:
What hospital staff truly needs

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**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Reality: **scattered**, inconsistent and outdated data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

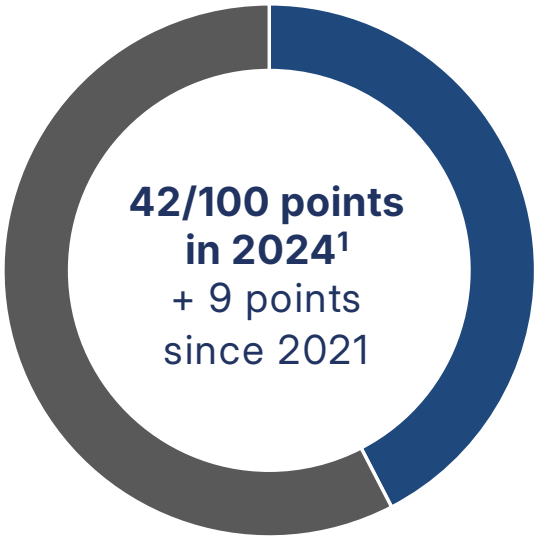


Work processes

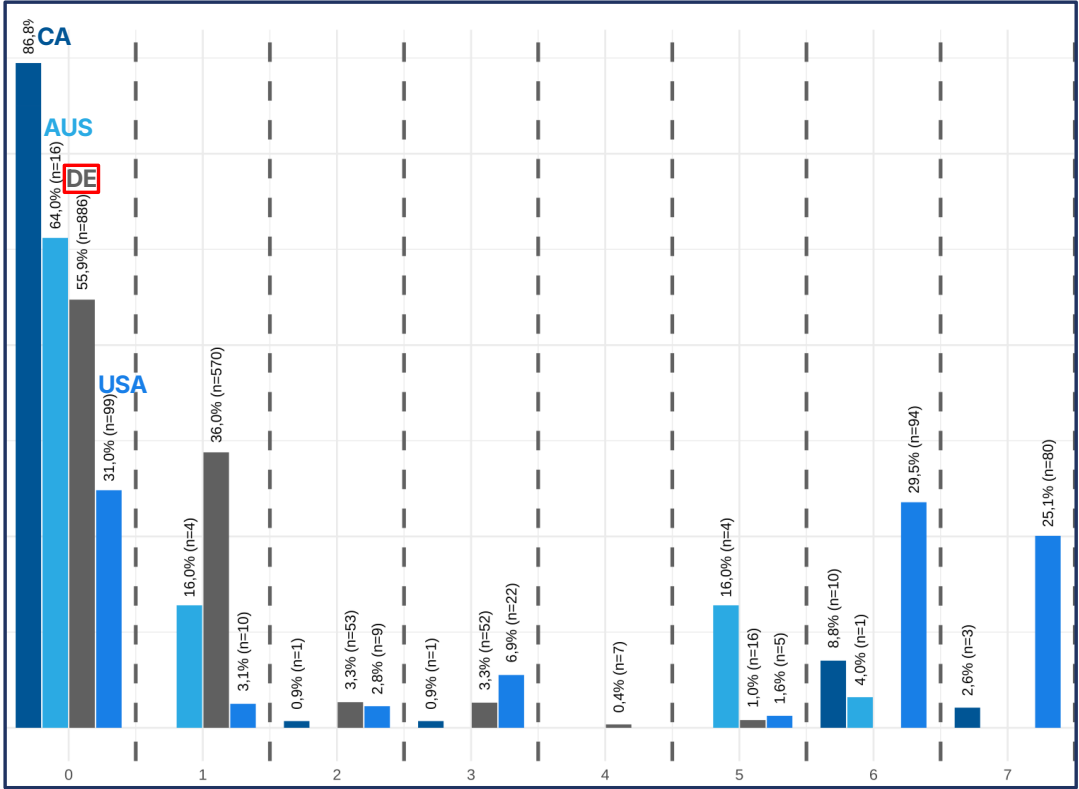
Expectation: **intelligent**, automated and efficient processes

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

Germany's healthcare system is lagging behind digitally



58% unused digitalization potential



EMRAM-Scores in 2024:¹
Stufe 0: no Labor/Radiologie/Apotheken HIS
Level 7: "paperless" hospital

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?"

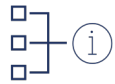
But:
"Does our digitalization deliver measurable impact?"



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

IMHIS
Damit Digitalisierung wirkt.
Free | Evidence-based | Practical

- Teamwork ✓
- Accessibility ✓
- Value ✓



Communication & Collaboration



Workload

- Mental ✓
- Physical ✓
- Time ✓



Work processes

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

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?



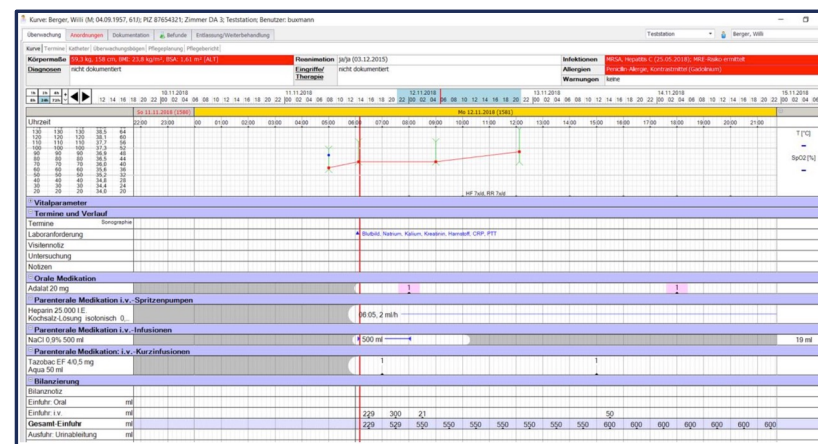
Reality²



- 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



22 participants
(= 68% response rate)



120 hours
(= 14 working days)



General surgery ward
(University hospital)



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



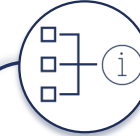
– 29min

**less Documentation
per shift**



+ 49%

**higher
System quality**



+ 19%

**improved
Information quality**



+ 3%

**better Communication
& Collaboration**



+ 20%

**higher
User Satisfaction**

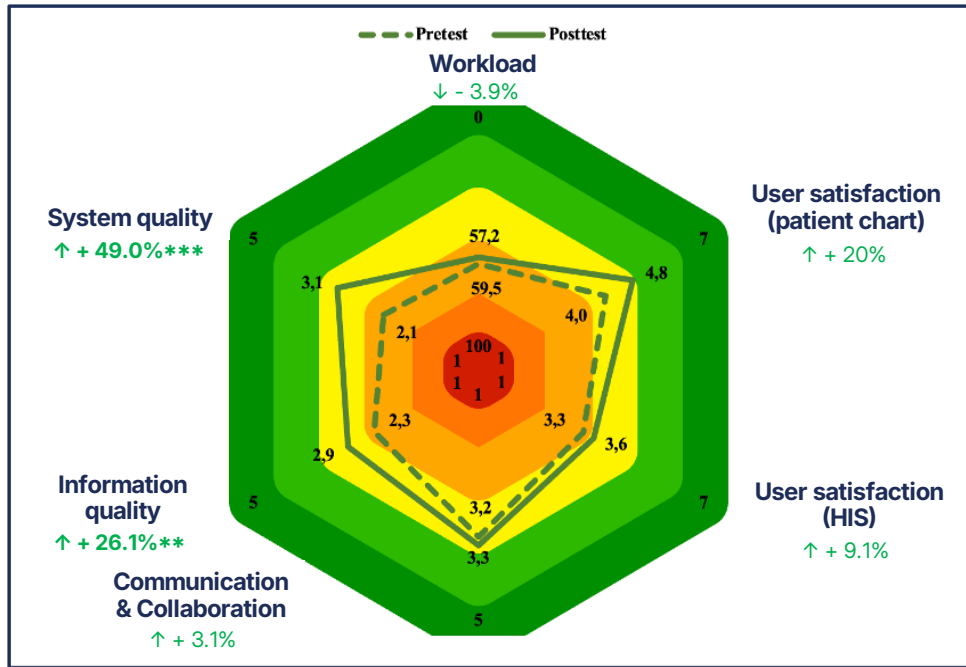


– 9%

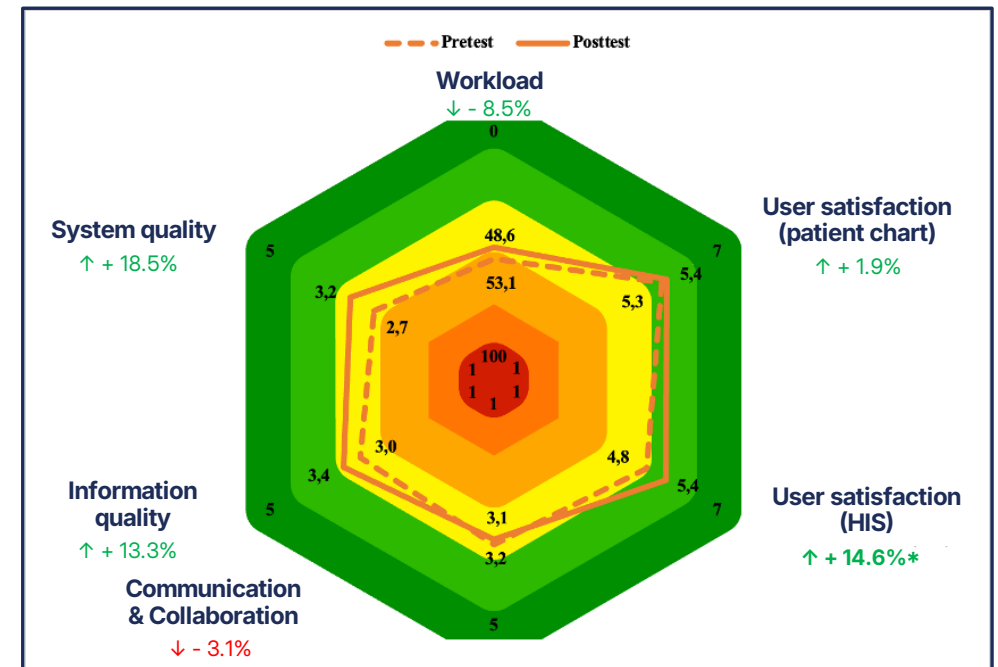
**decreased
Workload**

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“)



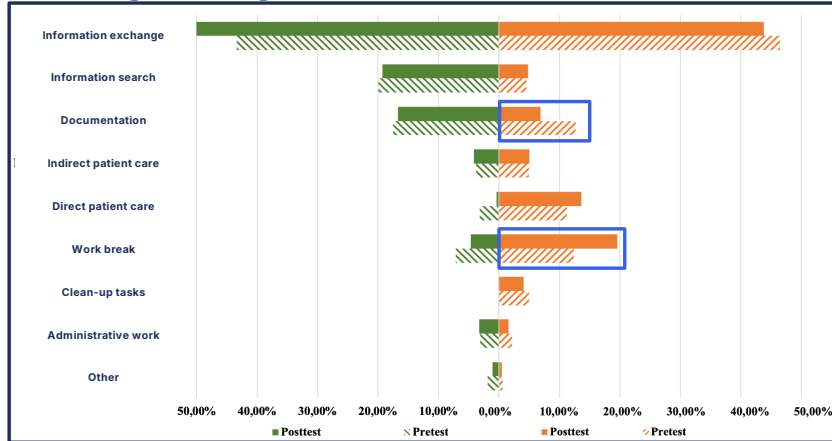
Based on the absolute changes: * $p < 0.05$; ** $p < 0.01$; *** $p \leq \alpha_{BH}$. α_{BH} denotes the Benjamini–Hochberg-corrected significance level (0.003).

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

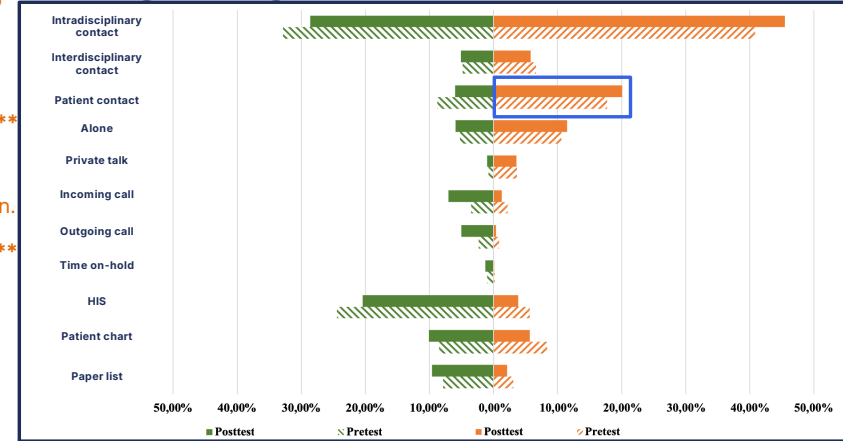
Analog vs digital: activities (what?)⁴



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.

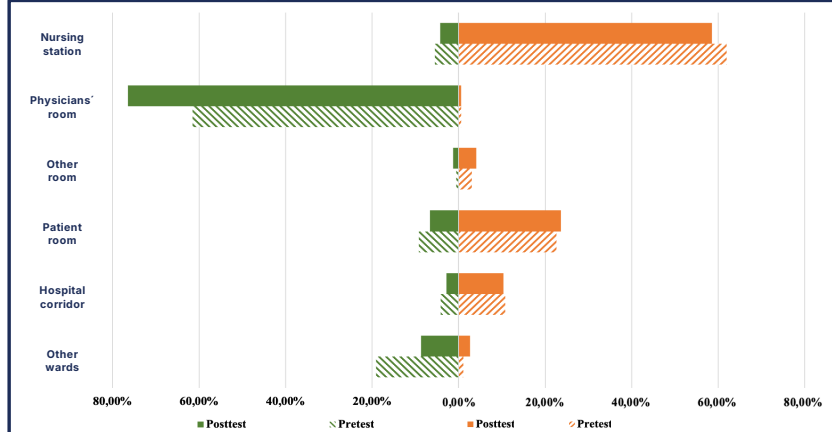
Analog vs digital: medium (how?)⁴



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



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



IMHIS

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

Let's measure together what truly works

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Sources

Sources

¹DigitalRadar – Zwischenbericht 2025: Ergebnisse der Zweiten Nationalen Reifegradmessung Deutscher Krankenhäuser. BMG. (n.d.). <https://www.bundesgesundheitsministerium.de/service/publikationen/details/digitalradar-zwischenbericht-2025.html>

²BOI-DOKUTECH. *Universalplanette*. . Aufgerufen am 03.06.2022 from https://www.boi-dokutech.de/components/com_jshopping/files/img_products/full_9108_00529_09j_BOI_universalplanette.jpg

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.