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

IMHIS

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**
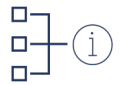- ✓ closes the gulf between **ambition and reality**

IMHIS® – making digitalization work.
The book on the method:

Gesundheitsmanagement und Gesundheitsökonomie

Florian Eisold

Digitale Systeme – echte Wirkung: Was Klinikpersonal wirklich braucht

IMHIS – Ein Analyseinstrument zur nutzerzentrierten Bewertung von Gesundheitsinformationssystemen

MOREMEDIA   Springer Gabler

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- *Reality:* **scattered**, inconsistent and outdated data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
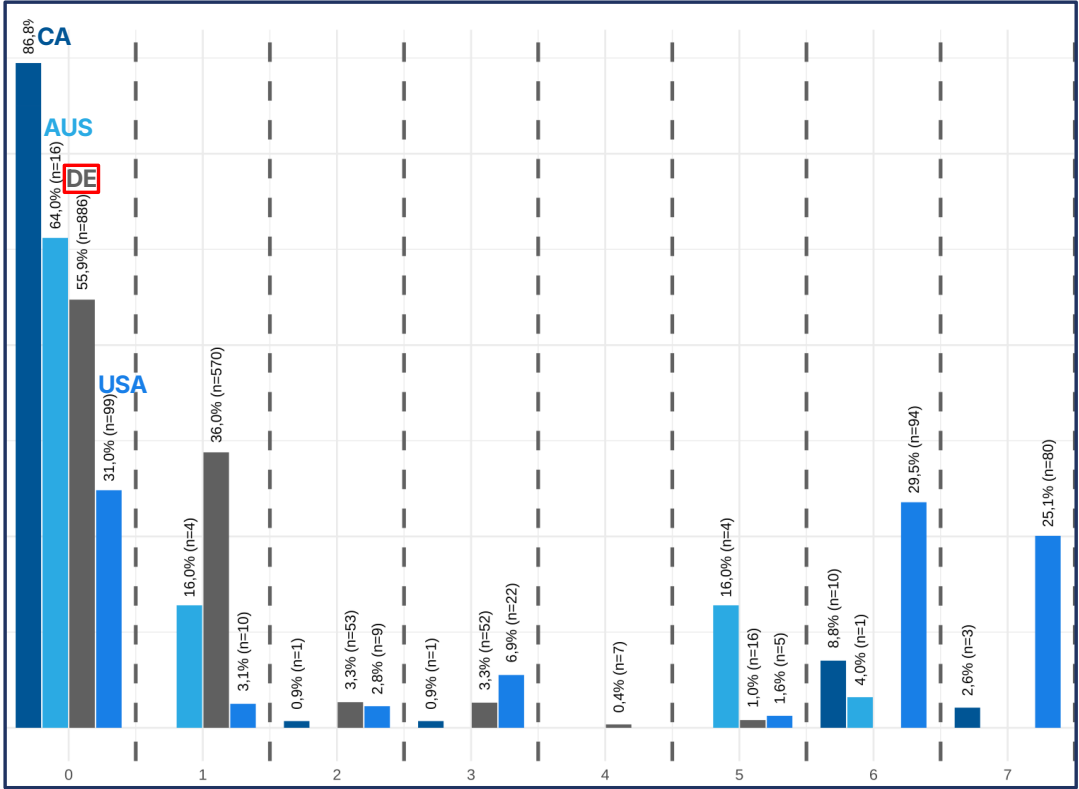- *Reality:* **duplicate entries,** clickwork and missing intelligent workflows

Work processes
- *Expectation:* **intelligent**, automated and efficient processes
- *Reality:* **parallel worlds** of paper lists and non-integrated systems

IMHIS
www.damitdigitalisierungwirkt.de

Germany's healthcare system is lagging behind digitally

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

IMHIS
www.damitdigitalisierungwirkt.de

The crucial question

Not:
"How digital are we?"

But:

"Does our digitalization deliver measurable impact?"

Reality

IMHIS

Expectation

Makes digital impact visible
– and closes the gap between expectation and reality.

IMHIS
www.damitdigitalisierungwirkt.de

The solution: IMHIS®

6 dimensions that truly matter for digital impact
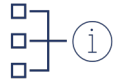
Information quality
- ✓ Timeliness
- ✓ Completeness
- ✓ Relevance

Teamwork ✓
Accessibility ✓
Value ✓
Communication & Collaboration

System quality
- ✓ Stability
- ✓ Performance
- ✓ Functionality

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

Mental ✓
Physical ✓
Time ✓
Workload

User satisfaction
- ✓ Interface
- ✓ Usefulness
- ✓ Acceptance

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)

IMHIS
www.damitdigitalisierungwirkt.de

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

IMHIS
www.damitdigitalisierungwirkt.de

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?

⚠ **Reality[2]**

🎯 **Expectation[3]**

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
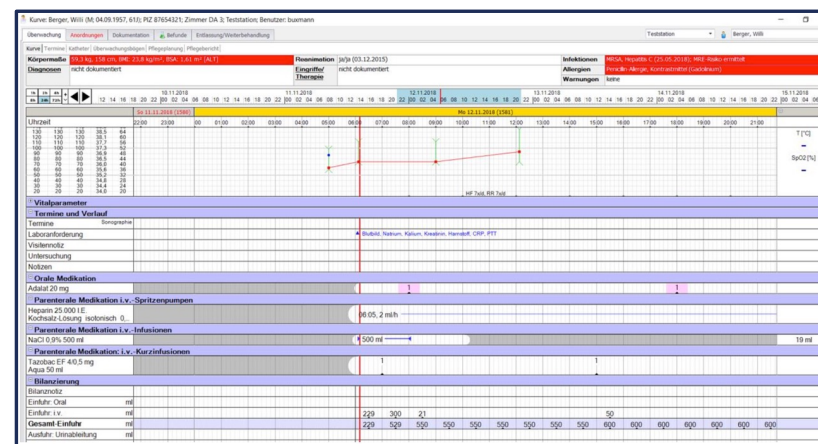
✓ **Everything in one place:** e.g. vitals, fluid management, pain, ward round documentation

✓ **Electronic medication** and physician **orders**

✓ **HIS integration:** lab/imaging and prior findings

IMHIS
www.damitdigitalisierungwirkt.de

The digital patient chart Meona in the IMHIS® test

**Digitalization
of the patient chart**

6 months apart

Pretest
before
implementation

Posttest
after
implementation

22 participants
(= 68% response rate)

120 hours
(= 14 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

23 participants
(= 78% response rate)

130 hours
(= 15 working days)

General surgery ward
(University hospital)

www.damitdigitalisierungwirkt.de

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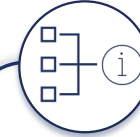
IMHIS

Impact of the digital patient chart Meona

− 29min
less Documentation per shift

+ 49%
higher System quality

+ 19%
improved Information quality

+ 3%
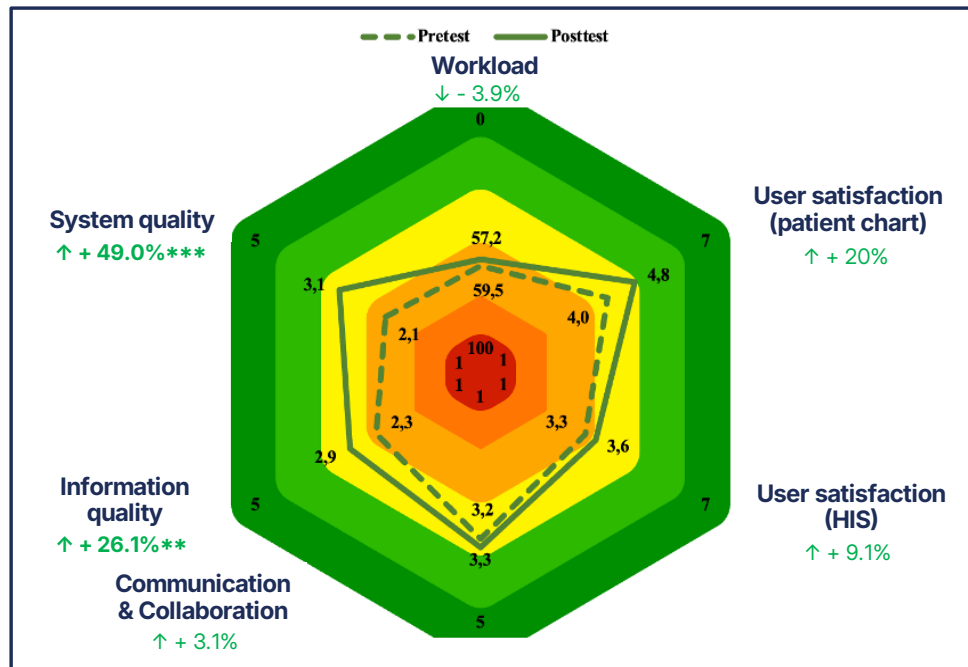better Communication & Collaboration

+ 20%
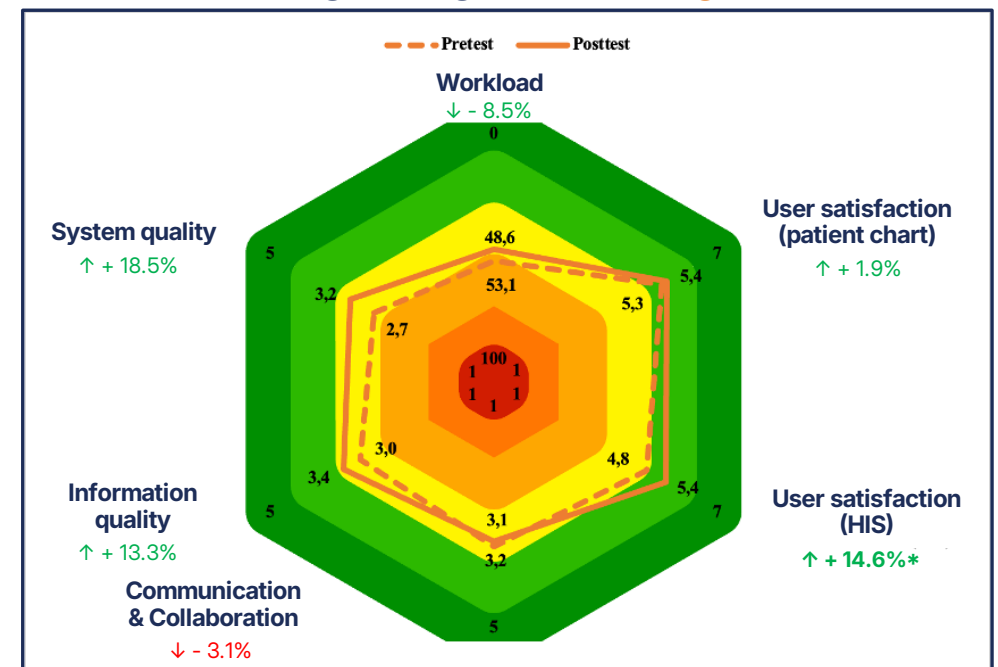higher User Satisfaction

- 9%
decreased Workload

IMHIS
www.damitdigitalisierungwirkt.de

Impact of the digital patient chart Meona

Analog vs digital: Physicians[4]

Workload
↓ - 3.9%

User satisfaction (patient chart)
↑ + 20%

User satisfaction (HIS)
↑ + 9.1%

Communication & Collaboration
↑ + 3.1%

Information quality
↑ + 26.1%**

System quality
↑ + 49.0%***

Values: 57,2 / 59,5 / 4,8 / 4,0 / 3,6 / 3,3 / 3,2 / 3,3 / 2,9 / 2,3 / 3,1 / 2,1 / 100 / 1 1 1 1 1

Pretest · Posttest

Analog vs digital: Nursing[4]

Workload
↓ - 8.5%

User satisfaction (patient chart)
↑ + 1.9%

User satisfaction (HIS)
↑ + 14.6%*

Communication & Collaboration
↓ - 3.1%

Information quality
↑ + 13.3%

System quality
↑ + 18.5%

Values: 48,6 / 53,1 / 5,4 / 5,3 / 5,4 / 4,8 / 3,2 / 3,1 / 3,4 / 3,0 / 3,2 / 2,7 / 100 / 1 1 1 1 1

Pretest · Posttest

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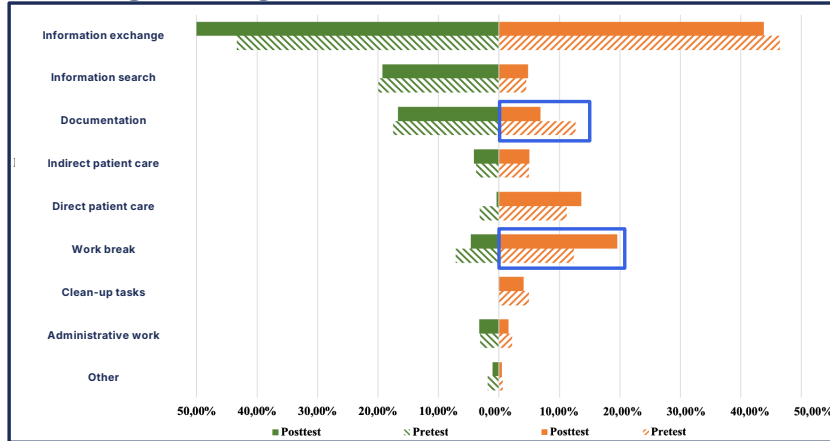
Based on the absolute changes: *p<0.05; **p<0.01; ***p≤α_{BH}. α_{BH} denotes the Benjamini–Hochberg-corrected significance level (0.003).

IMHIS
www.damitdigitalisierungwirkt.de

Impact of the digital patient chart Meona

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

IMHIS
www.damitdigitalisierungwirkt.de

Impact of the digital patient chart Meona

Analog vs digital: activities (what?)[4]

	Physicians	Nursing
Information exchange	↑ + 39 min.	↓ - 13 min.
Information search	↓ - 3 min.	↑ + 1 min.
Documentation	↓ - 4 min.	↓ - 29 min.***
Indirect patient care	↑ + 2 min.	↓↑ 0 min.
Direct patient care	↓ - 16 min.**	↑ + 12 min.
Work break	↓ - 14 min.	↑ + 36 min.**
Clean-up tasks	↓ - 1 min.	↓ - 4 min.
Administrative work	↑ + 1 min.	↓ - 3 min.
Other	↓ - 5 min.	↓↑ 0 min.

Analog vs digital: medium (how?)[4]
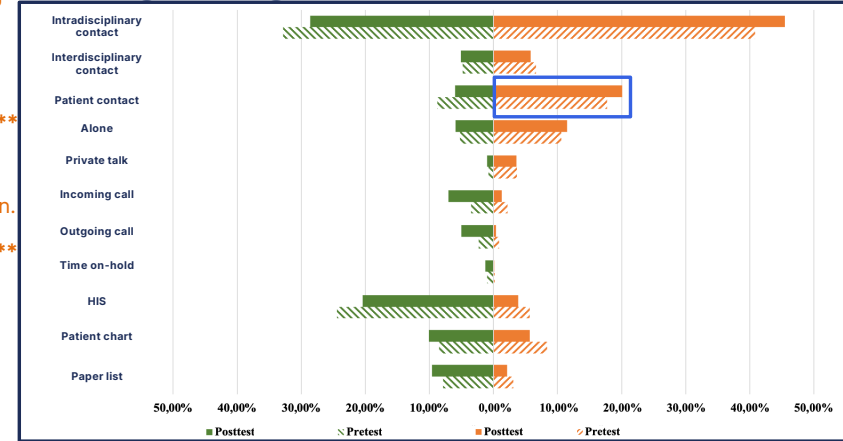
	Physicians	Nursing
Intradisciplinary contact	↓ - 23 min.	↑ + 23 min.
Interdisciplinary contact	↑ + 2 min.	↓ - 4 min.
Patient contact	↓ - 16 min.	↑ + 12 min.
Alone	↑ + 4 min.	↑ + 4 min.
Private talk	↑ + 1 min.	↓↑ 0 min.
Incoming call	↑ + 19 min.*	↓ - 4 min.*
Outgoing call	↑ + 15 min.*	↓ - 2 min.
Time on-hold	↑ + 2 min.	↓↑ 0 min.
HIS	↓ - 22 min.	↓ - 5 min.
Patient chart	↑ + 9 min.	↓ - 13 min.*
Paper list	↑ + 9 min.	↓ - 5 min.*

Analog vs digital: locations (where?)[4]
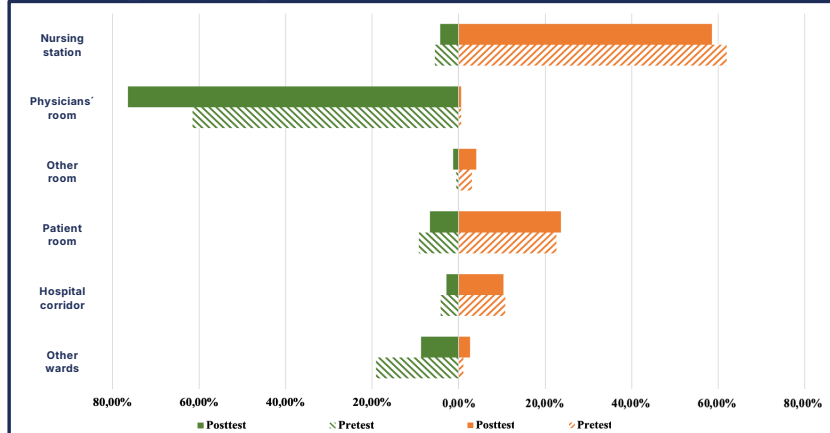
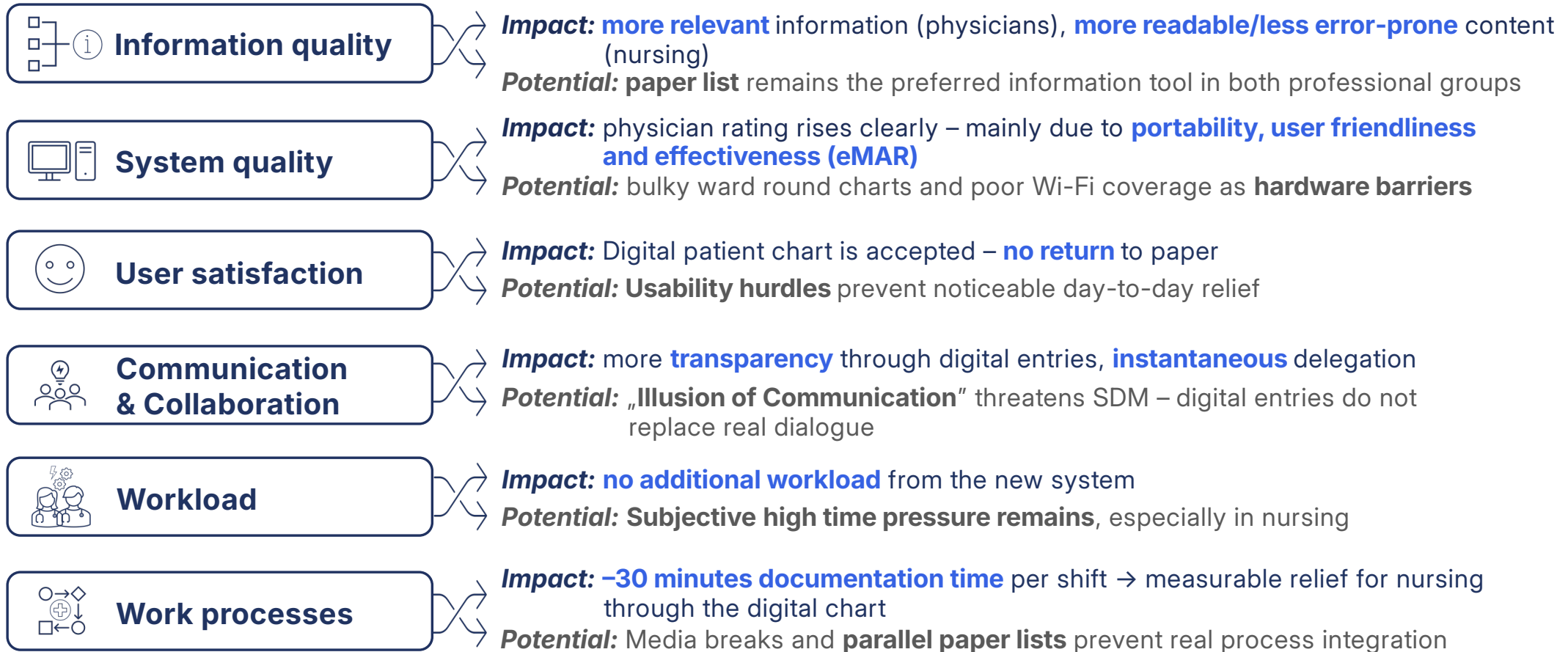|	Physicians	Nursing
Nursing station	↓ - 7 min.	↓ - 17 min.
Physicians´ room	↑ + 83 min.**	↓↑ 0 min.
Other room	↑ + 4 min.	↑ + 5 min.
Patient room	↓ - 14 min.	↑ + 5 min.
Hospital corridor	↓ - 8 min.	↓ - 2 min.
Other wards	↓ - 58 min.**	↑ + 8 min.

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≤α_{BH}.*

α_{BH} denotes the Benjamini–Hochberg-corrected significance level (0.003).

IMHIS
www.damitdigitalisierungwirkt.de

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

IMHIS
www.damitdigitalisierungwirkt.de

Successes and potentials of the digital patient chart Meona

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

IMHIS

www.damitdigitalisierungwirkt.de

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

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

www.damitdigitalisierungwirkt.de

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

IMHIS ZERTIFIZIERT
Echte Digitale Wirkung
Meona Digitale Kurve — Mesalvo GmbH
Zertifiziert 2025

Draft

IMHIS
www.damitdigitalisierungwirkt.de

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

IMHIS
www.damitdigitalisierungwirkt.de

ImHIS

The digital future of healthcare starts with the right analysis

Let's measure together what truly works

Dr. med. Florian Eisold, B.Sc., LL.M.
E-Mail: florian.eisold@icloud.com

Sources

Sources

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

[2]BOI-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

[3]Schickfus, 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

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

IMHIS
www.damitdigitalisierungwirkt.de