



Sensor-Based Fall Prevention LKH-Hall in Tirol × QUMEA

Pretest-Posttest Study · Andrea Eiter, BScN MScN · Tirol Kliniken · Project completion Dec. 2025

What happens when a ward that already takes fall prevention seriously switches to QUMEA?

LKH-Hall in Tirol examined this in a controlled pretest-posttest design, starting from an already excellent baseline.

Quantitative Results

Parameter	Sensor mat/bar	QUMEA	Change
Fall incidence (per 1,000 patient days)	5.53	4.96	-10.3 %
Falls with sensor active	60 %	41 %	-19 %
Alarm perceived as not disruptive ¹ (M)	9.0	2.0	-7.0 points
System perceived as reducing workload ¹ (M)	7.6	2.4	-5.2 points
High-frequency alarm tones (absolute number)	2,676	713	-73.4 %

¹ Rating on a 10-point scale (1 = strongly agree; 10 = strongly disagree) M = Mean

Staff Survey (n = 21, p < 0.001 in all dimensions)

QUMEA is perceived as significantly ...

- quieter · less disruptive · less error-prone
- less prone to malfunction · better at fall detection
- better suited for bed- and chair-monitoring
- better suited for early detection of restlessness
- more relieving in daily work
- more supportive of patient safety

compared to sensor mat/bar.



Data Protection: Radar Instead of Camera

**No images.
No identification.
At no point.**

QUMEA exclusively captures radar movement data. Individuals are not identified, neither by the device, nor by the software, nor by QUMEA as a company.

Privacy by Design

Data protection is a matter of system architecture, not an afterthought. Systems capable of identification must distinguish between people before they can protect them, a structural conflict with data protection law that QUMEA avoids by design from the outset.

Legal Opinion Austria

**Haslinger / Nagele
Rechtsanwälte GmbH
Vienna · Linz**

RA Dr. Thomas Riesz
RAA Dr. Gisela Ernst
22 June 2026

The opinion is available upon request and can be used as a basis for facility-specific review.

GDPR-compliant

The use of the QUMEA system can be based on suitable legal grounds under Art. 6 and Art. 9 GDPR and fits into existing data protection governance structures without extensive adjustments.

No Profiling (Art. 22 GDPR)

The AI recognizes only predefined events. No personality profiles are created, and no automated individual decisions are made. Decision-making authority always remains with the nursing staff.

HeimAufG / UbG

On its own, the QUMEA system does not constitute a measure restricting personal freedom. A restriction of freedom arises only if the facility independently attaches corresponding measures to an alarm.

Reference and Contact

Clinical Reference on Site

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For a conversation about a pilot deployment, or to request the complete documentation, please feel free to contact us directly.

Sources: Eiter A. (2025). Tirol Kliniken Hall in Tirol. Sawetzki et al. (2014). Lohrmann C. (2024). Haslinger/Nagele Rechtsanwälte GmbH (2026). Legal opinion on the QUMEA system, Austria, 22 June 2026.