

# GAMES FOR HEALTH EUROPE 2026



GAMES FOR HEALTH  
EUROPE

**ICU Diaries: Evidence Behind the Practice**

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**DISCLOSURE SLIDE**  
for presentations at the

**GAMES FOR HEALTH EUROPE 2026** CONFERENCE

I herewith confirm that there is not any conflict of interest with the conference organization or any of its sponsors.

## Position ICU diaries relative to other ICU interventions

### ABCDEF bundle

- + Delirium and ventilation duration ↓
- ~ No proven effect on quality of life

### Early rehabilitation

- + ICU-acquired weakness ↓
- ~ No proven effect on quality of life

### ICU diary

- + Only intervention with evidence for both PTSD and quality of life

### Post-ICU follow-up clinic

- ~ Insufficient evidence, more expensive (Cochrane 2018)

### Psychological therapy (CBT)

- + PTSD ↓
- ~ No proven effect on quality of life

### ICU guidelines (Dutch NVIC 2020):

- ~ No proven effect

## Evidence ICU Diary: Meta-analyses (2015–2026)

### ▶ PTSS incidence

RR 0.73 (95% CI 0.57–0.94)  
7 RCTs, n=854 · GRADE: Moderate

### ▶ Quality of Life (3 months)

SMD 0.79 (95% CI 0.24–1.34)  
7 studies, n=971 · GRADE: Moderate\*

### ▶ Depression

RR 0.70 — no significant effect (p=0.06)  
5 studies · GRADE: Low

### ▶ Fear

RR 0.64 — no significant effect, high heterogeneity (I<sup>2</sup>=67%)  
5 studies · GRADE: Low

\*Hoge heterogeniteit; primair Aziatische studies; 1 Danish

× JAMA-RCT 2019 (n=657): no significant effects

## When does the diary work?

- ✓ Guided debriefing when the diary is handed over
- ✓ Selection of high-risk patients (delirium, delusional memories)
- ✓ Written by both relatives and nursing staff
- ✓ Diary must be used to be effective: Diary 3-5 times being read associates with better outcome





Feature	Paper diary	Digital diary
<b>Evidence for clinical outcomes</b>	Multiple RCTs and 7+ meta-analyses	No RCTs; effect inferred from paper diary studies
<b>Accessibility</b>	Requires physical presence	Accessible anywhere via the internet
<b>Remote family involvement</b>	Limited	Easy to contribute from a distance
<b>Photos / video / audio</b>	Limited, mainly photos	Photos, video, and audio clips possible
<b>Shared writing</b>	One person at a time	Multiple contributors at the same time
<b>Structure</b>	No standard structure	Date- and time-based structure

## Shortage of healthcare workers

**Netherlands:** projected shortage of healthcare workers in the coming decades

**Telephone follow-up is the best** (75% response)  
→ **not feasible** without people

**All hands at the bedside:**  
passive automation is  
not a luxury — it is a necessity

## Essential missing outcome data

**QoL and PROMs** before & after ICU are **structurally lacking** in clinical practice

**No forecasts** are available for patients who are currently in the ICU

**Mortality ≠ outcome:**  
Patients may survive the ICU,  
but what is their life like afterwards?

## Appropriate Care under the Integrated Care Agreement (IZA).

Not only ICU patients, but also **other vulnerable groups** may benefit from a diary (perioperative patients, oncology treatments)

Without outcome data, there can be no informed shared decision making for vulnerable groups

**Advance care planning lacks** an objective reference for recovery

## Technology & Integration

SSO · LLM · EMR

- ▶ Single Sign-On: no login barrier for nurses
- ▶ LLM generates draft reports from EHR data → nurse approves (human-in-the-loop)
- ▶ Interoperability: HL7 FHIR, patient journey apps
- ▶ Secure, encrypted architecture (GDPR/MDR)

## Extended Diary & PROMs

Chatbot · PROM · QoL

- ▶ From memory reconstruction → active communication platform
- ▶ Chatbot-driven PROMs/PREMs: less SDR bias, higher representativeness vs. interviews
- ▶ Validated instruments (SF-36, HADS, PCL-5)
- ▶ Multilingual: international scalability

## Family & Care givers

Freq updates

- ▶ Automated night report to relatives
- ▶ Fewer ad hoc phone calls → lower ICU workload
- ▶ Higher information satisfaction among families (evidence-based)
- ▶ Structured communication: bundling questions (for all parties)
- ▶ Relatives contribute text → co-authors of recovery

## Target Patient Groups & Research

IC · Periop · Oncology

- ▶ ICU (core), perioperative, peri-chemo/radiotherapy, palliative trajectory — shared platform
- ▶ Peer benchmark: visualising recovery vs. comparable patients (n>x)
- ▶ Automated PICS-screening dashboard for the team
- ▶ Population data for forecasting and delivering appropriate care

# 05 | From Vision to Implementation

*“The diary is evolving from a memory document into an intelligent bridge in care: measurable, scalable and humane.”*

## What is needed?

### Science

- Equivalence study of chatbot-administered PROMs
- Stepped-wedge RCT of the digital diary
- Building population QoL data (short & long term)

### Organisation

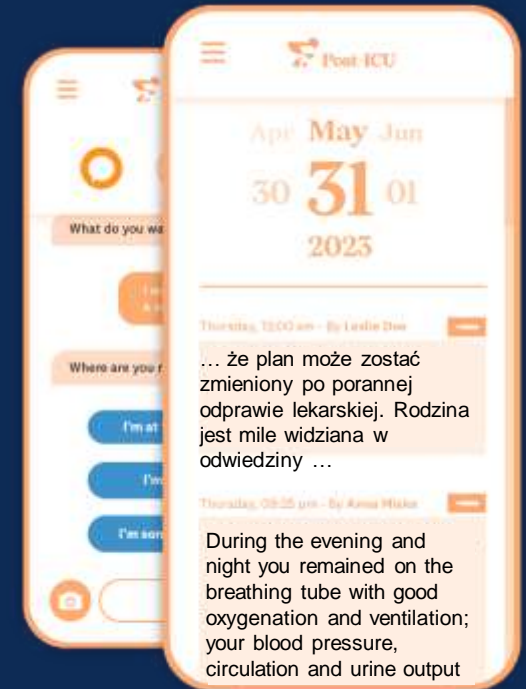
- Multidisciplinary project team
- IT architecture, data availability and MDR compliance
- Training and change management

### Motivation

- Dashboard showing QoL trends to the team
- Reporting beyond mortality alone
- Staff can see what they are actually saving

### Collaboration

- Cross-hospital data sharing
- Post-ICU platform: suppliers collab
- Patient organisations as co-designers



# Questions & Dialogue

