AI-enabled bedroom surveillance on psychiatric wards: Promise, harm, and the ethics we still lack

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Introduction

Artificial intelligence (AI)-enabled bedroom monitoring is increasingly being introduced into psychiatric inpatient care. In this commentary, the term refers to camera- or sensor-based systems that use algorithmic analysis to estimate physiological parameters, track movement or location, and generate clinical alerts. Such systems differ from conventional closed-circuit television and manually activated video recording, and their functions vary: some process data without retaining identifiable images, whereas others permit remote viewing or image storage.

The potential benefits deserve recognition. Contact-free monitoring may reduce sleep disruption caused by repeated night-time checks, provide additional physiological or behavioural information, and alert staff to falls, prolonged inactivity, respiratory abnormalities, or entry into high-risk areas. Conventional observation is not ethically neutral; it can also disturb sleep and compromise privacy. The relevant question is therefore whether a carefully governed hybrid model provides a demonstrable net benefit without reducing therapeutic contact. Recent psychiatric literature has similarly emphasised that clinical AI requires transparency, regulatory literacy, institutional support, and protection against bias and discrimination (Gilbert et al., 2024; Gruber et al., 2025).

Evidence, human factors, and the substitution trap

The available evidence does not yet justify routine blanket implementation. In the most comprehensive systematic review, 16 of 32 included studies were rated as low quality and nine declared conflicts of interest. Quantitative findings concerning self-harm, aggression, quality of care, and cost-effectiveness were inconsistent or weak (Griffiths et al., 2024). These systems may also create a substitution hazard if algorithmic reassurance displaces direct observation, clinical judgement, or relational care, particularly on understaffed wards.

The risks arise not only from algorithmic performance but also from how systems are implemented. An inquest heard that an alert had been muted before a patient's death. Although this does not establish technological causation, it illustrates the importance of alert escalation, staff training, and clinical accountability (Fox, 2025). Governance concerns have also arisen when a research ethics committee concluded that images obtained through a vision-based monitoring system were not anonymous in the manner originally understood and suspended its favourable opinion (Health Research Authority, 2024).

Psychological harm and the meaning of being watched

Bedroom monitoring is not a neutral technological addition but a potentially intrusive clinical intervention. Many psychiatric inpatients experience hypervigilance, trauma-related symptoms, persecutory ideation, or heightened sensitivity to control. Awareness of a camera, indicator light, remote viewing facility, or continuous movement analysis may intensify anxiety, distrust, or paranoia. Video surveillance therefore creates a genuine conflict between safety and the patient's autonomy, privacy, and dignity (Appenzeller et al., 2020). Surveillance-related distress, sleep quality, and therapeutic alliance must be treated as clinical outcomes, not incidental objections.

A pragmatic framework for ethical use

AI-enabled bedroom monitoring should remain additional to, rather than a replacement for, direct care. Its use should be individually justified, necessary, proportionate, time-limited, and regularly reviewed. Blanket ward-wide deployment should not become the default.

Patients should receive a comprehensible explanation of the system's purpose, capabilities, limitations, visibility, data storage, and access arrangements. Consent should be meaningful and revocable wherever possible. Where decision-making capacity is impaired, the lawful basis, least restrictive alternative, supported decision-making process, and schedule for renewed review should be documented. Declining monitoring should lead to an equivalent and adequately staffed in-person care plan.

Privacy safeguards should include data minimisation, the shortest necessary retention period, role-based access, access logs, secure deletion, restrictions on vendor access and secondary use, and explicit cybersecurity and downtime

procedures. Clinical governance must define responsibility for reviewing and responding to alerts, including false positives, false negatives, delayed responses, alarm fatigue, threshold changes, and system overrides.

Implementation should be accompanied by independent prospective evaluation and service-user co-design. Outcomes should include self-harm, restraint and seclusion, sleep, therapeutic alliance, surveillance-related distress, direct staff-patient contact, alert-response times, adverse events, and performance across relevant demographic and clinical groups. Vendor involvement and funding should be transparently declared, incorporated into risk-of-bias assessment, and followed by independent replication before findings are used to justify routine practice.

Conclusion

AI-enabled monitoring may augment inpatient safety, but technological capability is not evidence of clinical benefit. Routine continuous bedroom surveillance should not proceed without demonstrable additionality, proportionality, privacy protection, clinical accountability, and independent evidence of net benefit. AI should extend the reach of compassionate clinical care, not diminish human presence when patients are most vulnerable.

Acknowledgements: None.

Funding Sources: This work received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflicts of Interest: The authors declare no competing interests.

Data Availability: No datasets were generated or analysed during the current work.

Ethical Considerations: Not applicable.

Patient Consent: Not applicable.

Author Contributions: Satish Suhas conceived the manuscript, developed the ethical framework, and drafted the initial manuscript. Krishna Prasad Muliyala and Venkata Senthil Kumar Reddi critically revised the manuscript for important intellectual content. All authors approved the final version of the manuscript and accept responsibility for all aspects of the work.

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