

Brought to you by [INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA](#)

Scopus

[Back](#)

Informed consent and ethical considerations in AI for dentistry and medicine: a scoping review

[International Journal of Medical Informatics](#) • Review • 2026 •

DOI: 10.1016/j.ijmedinf.2026.106576

[Allende, Andrea Basualdo](#)^a ; [Ehsani, Sarah Sadat](#)^{a, b}; [Eber, Pascal](#)^{a, c}; [Ikram Ullah, Aminah](#)^a; [Kosan, Esra](#)^a; [+10 authors](#)^aTopic Group Oral Health, ITU/WHO/WIPO Global Initiative AI for Health, Geneva, Switzerland[Show all information](#)

0

Citations

[Full text](#) [Export](#) [Save to list](#) [Document](#)[Impact](#)[Cited by \(0\)](#)[References \(126\)](#)[Similar documents](#)

Abstract

Background: Informed consent (IC) is central to patient autonomy, yet its role in artificial intelligence (AI) for clinical deployment, model development, and secondary data use remains unclear in medicine and dentistry. **Objectives:** This review characterised how IC is justified and operationalised for AI; synthesised ethical, legal, governance, and practical requirements; identified gaps in consent models, stakeholders, and AI functionality; and developed author-derived communication thresholds for notification, routine clinical consent with explicit AI disclosure, or AI-specific IC. **Methods:** We conducted a PRISMA-ScR-guided scoping review with an OSF-registered protocol. MEDLINE, Scopus, IEEE Xplore, arXiv, Google Scholar, Web of Science, and HeinOnline were searched for English-language sources published 2015 to 25 May 2026. From 6,242 records, 116 reports were assessed; 69 were included, plus one manual source, yielding 70. Data were charted across 24 domains, synthesised, and appraised with JBI tools. **Results:** Publications peaked in 2024 (22/70, 31.4%). The evidence base was non-empirical: conceptual analyses (37/70, 52.9%) and narrative

reviews/book chapters (17/70, 24.3%). Medicine-only sources predominated (60/70, 85.7%); dentistry-only sources accounted for 8/70 (11.4%). Traditional IC appeared alone in 46/70 sources (65.7%) and overall in 52/70 (74.3%); dynamic consent was uncommon (6/70, 8.6%). IC was endorsed in 67/70 (95.7%) and qualified in 40/70 (57.1%). Explainability/transparency was addressed in 65/70 (92.9%), and proposed solutions in 57/70 (81.4%), but formal protocols remained uncommon (6/70, 8.6%). Thresholds consolidated rules by AI application, automation, risk, data use, and patient decision relevance. Conclusions: AI-related IC is widely endorsed but remains fragmented and largely conceptual. Findings support a risk-adaptive approach to AI-informed consent, calibrated to AI function, automation, risk, data use, explainability, and clinical decision impact. The author-derived thresholds offer a synthesis-informed basis for future governance guidance or framework development, pending empirical and stakeholder validation. © 2026

Author keywords

Artificial intelligence; Data governance; Informed consent; Machine learning; Patient safety; Transparency

Indexed keywords

Engineering controlled terms

Dentistry; Information use; Integrated circuits; Natural language processing systems; Reviews; Safety engineering

Engineering uncontrolled terms

Data governances; Deployment models; Ethical considerations; Informed consent; Legal requirements; Machine-learning; Model development; Patient safety; Scoping review; Synthesised

Engineering main heading

Artificial intelligence; Transparency

Funding details

Details about financial support for research, including funding sources and grant numbers as provided in academic publications.

Funding sponsor	Funding number	Acronym
Falk Schwendicke		

Funding sponsor	Funding number	Acronym
Antonin Tichy		

Funding text

The authors thank Rudi Schmidt for technical assistance with the data extraction spreadsheet. The authors also thank Rata Rokhshad and Sana Baghizadeh for assistance with critical appraisal data extraction. We acknowledge Sergio Uribe for methodological advice during development of the a priori protocol, Janet Brinz for administrative coordination of team meetings and communication channels, and Falk Schwendicke, Antonin Tichy, and Olga Tryfonos for comments on earlier manuscript materials and early-stage project discussions.

Corresponding authors

Corresponding author	A.B. Allende
----------------------	--------------

Affiliation	Topic Group Oral Health, ITU/WHO/WIPO Global Initiative on, AI for Health, International Telecommunication Union (ITU), Place des Nations, 1211 Geneva 20, Switzerland
-------------	--

Email address	andreasbasualdos@gmail.com
---------------	----------------------------

© Copyright 2026 Elsevier B.V., All rights reserved.

Abstract

Author keywords

Indexed keywords

Funding details

Corresponding authors

About Scopus

[What is Scopus](#)