

System Interoperability in Healthcare

2022

This document outlines the AMA position on interoperability of healthcare software and clinical information systems. Interoperability is defined as the ability of two or more systems or elements to exchange information (syntactic interoperability) and to use the information (semantic interoperability) that has been exchanged.¹ Loose interoperability standards result in a lack of meaningful data sharing between different systems, which has implications for clinical safety in healthcare.

1. Overarching Principles

- 1.1. Technology can enable healthcare that is safe, high quality and patient centred. Technology can improve and advance our healthcare system, and the health of all Australians.
- 1.2. Better healthcare provision can be achieved by establishing interoperable clinical information systems that enable seamless communication between different healthcare providers and different healthcare settings.
- 1.3. The AMA strongly supports interoperability across intersecting health and human services sectors, including acute care, primary care, allied health, community care, as well as aged and disability services.
- 1.4. Building interoperability into the design of all healthcare software and clinical information systems will:
 - a) reduce administrative burden for healthcare workers,
 - b) improve healthcare worker satisfaction,
 - c) create system efficiencies,
 - d) facilitate person centred care,
 - e) minimise avoidable health service use,
 - f) be a key element of creating value based healthcare,
 - g) promote patient independence,
 - h) improve clinical safety and
 - i) improve patient health outcomes.
- 1.5. Interoperability in healthcare must be embed principles of data safety, data quality and data privacy.

2. Key benefits of a well-designed interoperable healthcare system

- 2.1. The AMA supports a more connected and interoperable healthcare system that will enable equitable access to medical care. Efficient data exchange and collection will improve accessibility of patient data by both patients and healthcare providers, with simplified storage and analysis
- 2.2. The aim of increased interoperability of clinical systems is to create more efficient and effective methods of healthcare delivery, by enabling immediate exchange of essential information between clinical systems, making information accessible to clinicians. This drives whole of person care.

¹ IEEE Standard Computer Dictionary: A Compilation of IEEE Standard Computer Glossaries in IEEE Std 610 , vol., no., pp.1-217, 18 Jan. 1991, doi: 10.1109/IEEESTD.1991.106963.

- 2.3. Interoperable systems reduce the administrative burden on medical practitioners and others involved in clinical care, increasing productivity and reducing cost of care by
 - (a) Ensuring safe and secure sharing of information and seamless replication of data across healthcare settings
 - (b) eliminating the need to login to multiple different systems and perform manual searches, uploads and downloads from siloed systems
 - (c) providing real time access to essential clinical information, which supports optimal and timely clinical decision making.
- 2.4. The AMA supports stringent standards and national conformance arrangements for digital infrastructure to ensure unification of information across the healthcare sector. Standards and conformance arrangements create challenges for software vendors but are necessary to optimise efficiency and effectiveness of the Australian healthcare system.

3. Achieving an interoperable healthcare system

- 3.1. Ongoing investment in digital healthcare technologies is required to achieve the efficiencies expected of a modern Australian health system.
- 3.2. Funding is needed to ensure equity of access: that mainstream developments and technologies are accessible to all those needing health care, not just those who can afford them.
- 3.3. The AMA supports adoption of consistent national interoperability requirements in government ICT procurement processes.
- 3.4. The AMA supports the introduction of incentives and legislation, to encourage the implementation of standards and conformance arrangements, and the national cross-jurisdictional implementation of infrastructure to support discoverability and information exchange.
- 3.5. Successful implementation of interoperability of clinical information systems will require buy in from stakeholders at all levels of the Australian health system.
- 3.6. Coding of input clinical data should be automated. Appropriately coded data at data input points will enhance the value and meaningfulness of analytical outputs.
- 3.7. The AMA supports the development of clinical software and systems that are able to code patient data effectively, validly and in a meaningful way within medical practitioners' usual documentation processes and methods.
- 3.8. The AMA calls for establishment of standards for clinical software providers requiring software coding compliance.
- 3.9. There is currently rapid change within medical practice in educational requirements, training delivery, examination practices, workforce management and research. Training and development of medical workforce should support career pathways into digital health leadership roles.
- 3.10. Patients/consumers need support to build their digital health literacy, enabling them to access and control their own health data, and to know who is using their data and for what purposes. Patients who are empowered to access and control their health information are transformed from passive recipients of care to active participants in their healthcare.
- 3.11. The AMA supports co-design of technologies that enable system interoperability, developed in close consultation with medical practitioners and patients.
- 3.12. Impact evaluations of the application of interoperable healthcare systems will also be important to measure the benefits of interoperability for both patients and healthcare professionals. Medical practitioners should be included in impact evaluations, especially

when the evaluation process entails testing of usability of interoperable technologies in the clinical setting.

4. Innovation, data, compliance and conformance

- 4.1. With demand for healthcare increasing and front-line health workers under increasing pressure, innovation in digital technologies is increasingly important to our health system.
- 4.2. Innovation in health system interoperability should focus on interoperability with core clinical systems, assistive technologies, mobile health applications, and web-based innovations. Furthermore, greater focus is needed on the role of artificial intelligence in healthcare and use of big data for investment planning and health planning.
- 4.3. An interoperable health system will benefit health research, with flow-on benefits for improving evidence based clinical practice.
- 4.4. The AMA supports the usage of healthcare data obtained through interoperability for care planning, coordination and provision, quality improvement, identifying and improving community and population health outcomes, and improving health equity.
- 4.5. Interoperability requires clear data governance protocols to ensure the safety and privacy of patient data.
- 4.6. The AMA calls for improved and timely compliance and conformance by healthcare information technology software vendors, recognising the broad challenges and variability within this sector.

See also:

AMA Vision for Digital Health

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