AMIA Position Paper

AMIA's code of professional and ethical conduct 2022

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INTRODUCTION

AMIA has a longstanding interest and a professional obligation to promote a strong ethical framework for its members and the field of biomedical and health informatics. This white paper presents the latest AMIA Code of Professional and Ethical Conduct. The original code was approved in 2007[1] by the AMIA Board of Directors and revised in 2013.[2] Recognizing the need to regularly update the Code to ensure that it remains current and relevant, we present this document that constitutes a revision of and update to the third version, approved and published in the *Journal of the American Medical Informatics Association* in 2018.[3] The code presented here remains an evolving document, with modifications expected as information technology, informatics, policy, and health care environments change over time. AMIA publishes on its web site the most recent version of the Code of Ethics as part of a process that seeks ongoing response from and involvement by AMIA members.

Because the Code of Professional and Ethical Conduct (from now on "Code of Ethics") is meant to be practical, applicable in real life, and easily understood, it is compact and uses general language.

The AMIA Code of Ethics is not intended to be prescriptive or legislative; it is aspirational and extends beyond regulatory and legal obligations to provide the broad strokes of a set of important ethical principles pertinent to the field of biomedical and health informatics.

The Code is organized around the common roles of AMIA members and the constituents they serve including patients, caregivers, colleagues and collaborators, clinicians, researchers, students, agencies, hospitals and practices, medical organizations, vendors, insurance companies, and others with whom they interact. The AMIA Board of Directors and the AMIA Ethics Committee encourage members to offer suggestions for improvements and changes. In this way, the Code will continue to evolve to best serve AMIA and the larger informatics community.

AMIA members are professionally diverse,[4,5] and include those who are, or are in training to be nurses, physicians, pharmacists, dentists, informaticians, computer scientists, analysts, implementation scientists, and other professionals. In many cases, these professions have their own codes of ethics.[6–13] The International Medical

Informatics Association, an international federation for which AMIA serves as the US membership organization, also has a revised "Code of Ethics for Health Information Professionals".[14]

The AMIA Code of Ethics incorporates issues covered by other documents bearing on ethics and professional conduct:

- AMIA's support for and efforts to incorporate and execute upon diversity, equity, inclusion, and accessibility goals and objectives throughout the organization.[15]
- AMIA's revised "Conflict of Interest Policy", which governs the organization's employees and leaders with regard to some of their financial and other interactions with outside entities.[16]
- AMIA's principles for selecting venues for conferences and other events, which affirm AMIA's commitment to applying ethical principles and ensuring basic human rights when planning association events.[17]
- AMIA's "Meeting Anti-Harassment Policy", which describes AMIA's commitment to providing an atmosphere that is safe and welcoming to all members and supports learning and professional growth.[18]
- AMIA's principles for artificial intelligence (AI)[19] and position on the appropriate development, use, and maintenance of adaptive clinical decision support.[20]

Members of the Ethics Committee are unanimous in their view that those who work in informatics, much as in other health professions, are duty-bound to embrace a patient-centered approach to their work, even if that work does not involve direct patient care or research involving human participants. As elsewhere in the health professions, vulnerable populations, historically and intentionally excluded/disinvested groups, and people with disabilities may reasonably expect additional considerations and support.

The importance of professionalism and ethics has been recognized for millennia by health professionals and organizations,[21] now including informaticians and information technology professionals. This code of ethics emphasizes AMIA's commitment to adhere to and promote the highest standard of ethical and professional behavior.

PRINCIPLES OF PROFESSIONAL AND ETHICAL CONDUCT FOR AMIA MEMBERS

AMIA members acknowledge as their professional duty to uphold the following principles of and guidelines for ethical conduct. AMIA members are expected to know how to seek the advice of institutional ethics committees, AMIA's Ethics Committee, or appropriate institutional review boards, as necessary. The following details address patient care, interactions with colleagues, responsibilities to employers, and roles regarding society and research.

I. Key ethical guidelines regarding patients, guardians, and their authorized representatives (called here collectively "patients")
   AMIA members involved in patient care should:
A. Recognize that patients and their loved ones and caregivers have the right to know about the existence and use of electronic records containing their personal health and healthcare information, to access these records as written, and have the right to create and maintain their own personal health records and manage personal health information using a variety of platforms including mobile devices. In this context AMIA members should:

1. Not mislead patients about the collection, use, or communication of their health information.
2. Educate—when requested and within reason and the scope of their position—patients on the type, amount, and use of health information collected.
3. Enable and—as appropriate, within reason and the scope of their position and in accord with independent ethical and legal standards—facilitate patients' rights and ability to access, review, and correct their electronic health information, including clinicians' notes.
4. Recognize that patient-provided/generated health data, such as those collected on mobile devices and wearable devices, deserve the same diligence and protection as biomedical and health data gathered in the process of providing health care.
5. Ensure that patients and their care team members are made aware of the role and use of AI and other complex automated tools that are not clearly apparent when such systems are involved in medical decision-making or care planning.[19,20]

B. Advocate and work as appropriate to ensure that protected health information (PHI),[22] personally identifiable information (PII), and other biomedical data are acquired, recorded, stored, maintained, analyzed, transmitted, and communicated in an appropriately safe, reliable, secure, and confidential manner, and that such data management is consistent with applicable laws, local privacy and security policies, and accepted informatics standards.

C. Never knowingly disclose PHI, PII, or biomedical or health data in violation of legal requirements or accepted local confidentiality practices, or in ways that are inconsistent with the explanation of data disclosure and use to the patient.[23] AMIA members should understand that inappropriate disclosure of biomedical information can cause harm, and so should work to prevent such disclosures. AMIA members should avoid acquiring data through means that run the risk of, or fail to prevent, inappropriate disclosure. AMIA members should not accept, use, disseminate, or store data that they are aware were obtained in violation of applicable laws. Likewise, even if an action does not involve disclosure, one should not use or reuse—or through negligence permit the use of—patient information and data in ways inconsistent with the stated purposes, goals, or intentions of the patient or organization responsible for these data, except as appropriate for public health, previously approved and communicated research uses, quality improvement, or reporting as required under the law.

D. Engage with patients, guardians, and their authorized representatives so as to support inclusion, promote equity, advance accessibility, and avoid bias and discrimination.

II. Key ethical guidelines regarding colleagues
   AMIA members should:
A. Endeavor, as appropriate, to support and foster colleagues' and/or team members and their work, in a timely, respectful, and conscientious way to support their roles in healthcare and/or research and education.
B. Support and foster the efforts of patients to be actively involved in the collection, management, and curation of their health data.
C. Advise colleagues and others, as appropriate, about actual or potential information or systems issues (including system flaws, defects, usability or performance issues, etc.) that negatively affect patient safety, privacy, data security, or health

outcomes or could hinder colleagues' abilities to delegate responsibilities to patients, other colleagues, involved institutions, or other stakeholders.

D. Actively support the inclusion of all professional colleagues and promote a diverse and inclusive environment in which all individuals have equitable access to resources, educational opportunities, and opportunities for professional advancement.[15]

E. An AMIA member in any leadership position should:
   1. Be familiar with these guidelines and their applicability to their practice, unit, or organization.
   2. Communicate as appropriate about these ethical guidelines to those they lead.
   3. Strive to promote familiarity with, and use of, these ethical guidelines.
   4. Use AMIA position statements to guide organizational decision-making with regard to diversity, equity, inclusion, and accessibility initiatives,[15] including selection of event locations.[17]
   5. Promote transparent and equitable decision-making among AMIA professional staff, volunteer member leaders, and others with whom they engage.
   6. Never allow personal political views or ideological stances to interfere with or impede their ability to represent AMIA and advocate for it.
   7. AMIA leaders who may pose a reputational liability to the organization due to criminal convictions should declare this information and be prepared to stand down from leadership positions. Members who may pose a reputational liability should recuse themselves from leadership positions.

III. Key ethical guidelines regarding institutions, employers, business partners, and clients (called here collectively "employers")
   AMIA members should:

A. Understand their duties and obligations to current and former employers and fulfill them to the best of their abilities within the bounds of ethical and legal norms.

B. Understand and appreciate that employers have legal and ethical rights and obligations, including those related to intellectual property. Understand and respect the obligations of their employers and comply with local policies and procedures to the extent that they do not violate ethical and legal norms.

C. Consider the tradeoffs that occur with the configuration and use of technologies (eg, decision support systems) before implementation, and monitor, measure, and manage results when the optimal approach is unclear.

D. Inform the employer and act in accordance with ethical-legal mandates and patient rights when employer actions, policies, or procedures would violate actual or understood ethical or legal obligations, contracts, or other agreements made with patients. Maintain a safe and high-quality environment even while implementing innovation, recognizing that all changes in a complex adaptive environment generate unanticipated consequences and potential harm.

IV. Key ethical guidelines regarding society and regarding research
   AMIA members involved in research should:

A. Be aware of the Declaration of Helsinki (Ethical Principles for Medical Research Involving Human Subjects), the Nuremberg Report, and the Belmont Report, which should guide all human subjects research, including research that involves users of informatics tools and interventions as participants (eg, workflow analysis studies, evaluation of clinical decision support systems, patient care innovations, analysis, etc.).[24–27] Recognize that duty and care to individuals such as patients and colleagues exist regardless of whether such responsibilities are acknowledged by institutional review boards, vendors, and others involved in informatics activities.

B. Be mindful and respectful of the social or public health implications of their work, ensuring that the greatest good for society is balanced by ethical obligations to individual patients.

C. Uphold standards for publication and authorship, including the International Committee of Medical Journal Editors' "Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals."[28] These recommendations are paralleled by the editorial policies for the past[29] and current[30] publishers of the *Journal of the American Medical Informatics Association*, as well as the publisher of *Applied Clinical Informatics*[31] and their open access companion journals. Such efforts include, but are not limited to, avoiding any plagiarism or self-plagiarism or other misrepresentations of the truth in the publication of research and other work.

D. Disseminate new knowledge—both positive and negative findings—expeditiously, to allow the field to advance and to permit others to take advantage of novel discoveries and understanding to improve patient care.

E. Strive, as appropriate, in the context of one's position to foster the generation of knowledge and biomedical advances through appropriate support for ethical and institutionally approved research efforts facilitated through informed consent and robust data governance, including disclosure processes and procedures, particularly when third-party entities not meeting the definition of business associates are involved.

F. Know and abide by the applicable governmental regulations and institutional policies that define ethical research in their professional environment.

V. General professional and ethical guidelines
   AMIA members should:

A. Maintain competence as informatics professionals:
   1. Obtain applicable continuing education and be dedicated to a culture of lifelong learning and self-improvement.
   2. Recognize technical and ethical limitations and seek consultation when needed, particularly in ethically conflicting situations.
   3. Contribute to the education and mentoring of students, early-career members, and others, as appropriate.
   4. Promote a culture of diversity, equity, inclusion, and accessibility in their work and professional conduct.

B. Strive to encourage the adoption of informatics approaches supported by adequate evidence to improve health and healthcare; and to encourage and support efforts to improve the amount and quality of such evidence.

C. Treat all individuals with respect and not discriminate against anyone based on age, race, ethnicity, gender identity, disability (visible or invisible), national origin, sexual orientation, religion, or residency status.

D. Be mindful that their work and actions reflect on the profession and on AMIA.

The Code's authors are aware that all professionals will, from time to time, find themselves in situations shaped by what has been called "dual agency" or "multiple agency". In these circumstances, a professional encounters conflicting commitments, duties, or loyalties.

An informatics professional may have conflicting duties to patients, to colleagues, to society, and to an employer. No code of ethics can resolve contradictions, but a well-crafted code may enable priorities to be set down explicitly and so provide a guide to action. In addition to this Code of Ethics, the AMIA's Ethics Committee and its Conflict of Interest Panel are primary resources for members who find themselves in ethically unclear or challenging situations. For scholarship and education related to ethical issues in the broader field of medical information, the AMIA Ethical, Legal, and Social Issues (ELSI) Working Group serves as a community forum for members.

CONCLUSION

As a matter of personal and professional integrity, adherence to the principles laid out here is expected of all who have the privilege of serving in the field of biomedical and health informatics. Those whose skills allow them to contribute in one way or another to the health of individuals and populations carry important responsibilities. This code of ethics provides guidance about how informaticians may best do so.

AUTHOR CONTRIBUTIONS

All authors participated in the revision, review, and approval of this manuscript. Because this work is a revision of *AMIA's Code of Professional and Ethical Conduct 2018*, no author can be considered to be responsible for the conception or design of the work.

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CONFLICT OF INTEREST STATEMENT

None declared.

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