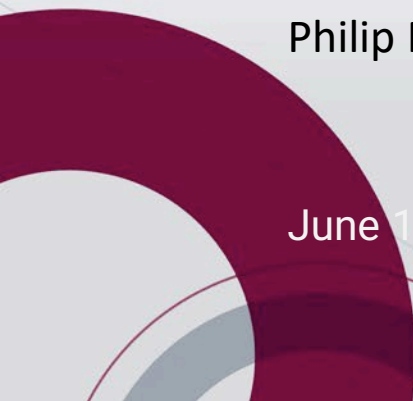# AI Code of Conduct for Health, Health Care, and Biomedical Science

Laura Adams

Kenneth Mandl

Kevin Johnson

Peter Embí

Philip Payne

June 12, 2024

Today's Presenters and COI

- **Laura Adams**, Senior Advisor, National Academy of Medicine

- **Kenneth Mandl**, Donald A.B. Lindberg Professor of Biomedical Informatics and Pediatrics, Harvard Medical School and Director, Computational Health Informatics Program, Boston Children's Hospital

- **Kevin Johnson**, David L. Cohen University Professor of Biomedical Informatics, Pediatrics, and Science Communication, University of Pennsylvania and Vice President of Applied Informatics, University of Pennsylvania Health System (COI: NIH funded)

Today's Presenters and COI

- **Peter Embí**, Professor and Chair, Department of Biomedical Informatics; Co-Director, ADVANCE Center of Excellence; Senior Vice-President for Research and Innovation. Vanderbilt University Medical Center (No relevant COI)

- **Philip Payne**, Janet and Bernard Becker Professor and Director of the Institute of Informatics, Data Science, and Biostatistics, Associate Dean and Chief Data Scientist, Washington University in St. Louis School of Medicine (Relevant COI: Board of Directors, Curimeta Inc; Investment Advisory Board, Cultivation Capital; KOL, Roche, Abbott, and Philips Healthcare)

NAM AI Code of Conduct (AICC) Initiative

Goals:

- Advance health care AI "governance interoperability" via a broadly supported **Code of Conduct comprised of a harmonized set of principles and commitments**

Describe the relationships and accountabilities of key stakeholders *to each other* that:

- **translates the Code of Conduct into clearly defined and observable behaviors,** and

- advances a national connected "interstitium" that promotes a systems—not siloed—approach

- **Describe a national systems view of the elements required** to support responsible AI in health care and biomedical science and assure that the benefits are equitably distributed


THE LEARNING HEALTH SYSTEM SERIES

Artificial Intelligence in Health Care

The Hope, the Hype, the Promise, the Peril

Michael Matheny,
Sonoo Thadaney Israni, Mahnoor Ahmed,
and Danielle Whicher, *Editors*

NAM AICC Sponsors

In order of receipt of funding:

1. Gordon and Betty Moore Foundation (GBMF)

2. Patrick J. McGovern Foundation (PJMF)

3. California Health Care Foundation (CHCF)

4. Epic Corporation (EPIC)

5. National Institutes of Health (NIH)

Digital Health Action Collaborative Co-chairs
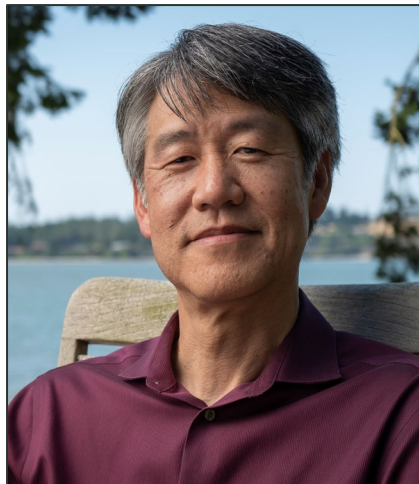
Peter Lee
Microsoft

Kenneth Mandl
Harvard

AI Code of Conduct (AICC) Steering Committee Co-Chairs

Gianrico Farrugia, CEO
Mayo Clinic

Bakul Patel, Global Lead Digital Health Strategy
Google

Roy Jakobs, CEO
Royal Phillips

NAM AI Code of Conduct National Steering Committee

AICC National Steering Committee

Gianrico Farrugia, President & CEO, *Mayo Clinic –* ***Co-Chair***

Bakul Patel, Global Lead, Digital Health Strategy, *Google –* ***Co-Chair***

Roy Jakobs, CEO, *Philips –* ***Co-Chair***

Andrew Bindman, Chief Medical Officer, *Kaiser Permanente*

Grace Cordovano, Enlightening Results

Jodi Daniel, Partner, *Crowell & Moring Health Group*

Wyatt Decker, EVP, and Chief Physician, UnitedHealth Group

Peter Embi, SVP for Research and Innovation, *Vanderbilt University Medical Center*

Kadija Ferryman, Core Faculty, *Johns Hopkins University*

Sanjay Gupta, Chief Medical Correspondent, *CNN*

Eric Horvitz, Chief Scientific Officer, *Microsoft*

Kevin Johnson, *Professor, University of Pennsylvania*

Peter Lee, *Microsoft Research*

Kenneth Mandl, *Harvard Medical School*

Kedar Mate, President & CEO, *Institute for Healthcare Improvement*

Deven McGraw, Co-Founder, Chief Regulatory Office, *Ciitizen*

Philip Payne, Director, Institute for Informatics, *Washington University at St. Louis*

Vardit Ravitsky, President, *The Hastings Center*

Suchi Saria, Founder and CEO, Bayesian Health,

Eric Topol, Founder & Dir., *Scripps Research Translational Institute*

Selwyn Vickers, CEO, *Memorial Sloan Kettering Cancer Center*

AICC Landscape Review

The AICC landscape review, analysis, and identification of convergence and gaps included 60 existing healthcare AI guidelines, frameworks, and principles documents drawn from:

- Review of the published literature since 2018
- Guidance developed by medical specialty societies
- Guidance issued by the U.S. federal government through May 2023
- Guidance issued by a select group of global multilateral organizations

DRAFT AICC Landscape Review Key Learnings

- **Areas of Convergence**
  - Fairness
  - Transparency

- **Inconsistencies**
  - Accountability
  - Data protection
  - Safety

- **Gaps**
  - Human-centricity
  - Inclusive collaboration
  - Ongoing assessment/monitoring
  - Environmental protection

Code of Conduct:
Harmonized Principles and Commitments

- **Overlay of Learning Health System Principles**

- **Application of Complex Adaptive Systems (CAS) Theory to Develop Commitments**

BOX 2 | Code Principles

Applying the Trust Framework of the Learning Health System Core Principles

Engaged: Understanding, expressing, and prioritizing the needs, preferences, goals of people, and the related implications throughout the AI life cycle.

Safe: Attendance to and continuous vigilance for potentially harmful consequences from the application of AI in health and medicine for individuals and population groups.

Effective: Application proven to achieve the intended improvement in personal health and the human condition, in the context of established ethical principles.

Equitable: Application accompanied by proof of appropriate steps to ensure fair and unbiased development and access to AI-associated benefits and risk mitigation measures.

Efficient: Development and use of AI associated with reduced costs for health gained, in addition to a reduction, or at least neutral state, of adverse impacts on the natural environment.

Accessible: Ensuring that seamless stakeholder access and engagement is a core feature of each phase of the AI life cycle and governance.

Transparent: Provision of open, accessible, and understandable information on component AI elements, performance, and their associated outcomes.

Accountable: Identifiable and measurable actions taken in the development and use of AI, with clear documentation of benefits, and clear accountability for potentially adverse consequences.

Secure: Validated procedures to ensure privacy and security, as health data sources are better positioned as a fully protected core utility for the common good, including use of AI for continuous learning and improvement.

Adaptive: Assurance that the accountability framework will deliver ongoing information on the results of AI application, for use as required for continuous learning and improvement in health, health care, biomedical science, and, ultimately, the human condition.

BOX 3 | Proposed Code Commitments

1. <u>Focus</u>: Protect and advance human health and human connection as the primary aims.
2. <u>Benefits</u>: Ensure equitable distribution of benefit and risk for all.
3. <u>Involvement</u>: Engage people as partners with agency in every stage of the life cycle.
4. <u>Workforce well-being</u>: Renew the moral well-being and sense of shared purpose to the health care workforce.
5. <u>Monitoring</u>: Monitor and openly and comprehensibly share methods and evidence of AI's performance and impact on health and safety.
6. <u>Innovation</u>: Innovate, adopt, collaboratively learn, continuously improve, and advance the standard of clinical practice.

The goal is that all decisions associated with, and actions taken, to develop and deploy AI in the health sector will be consistent with these Commitments to develop and foster trust.

Foundations, Principles, and the Code of Conduct
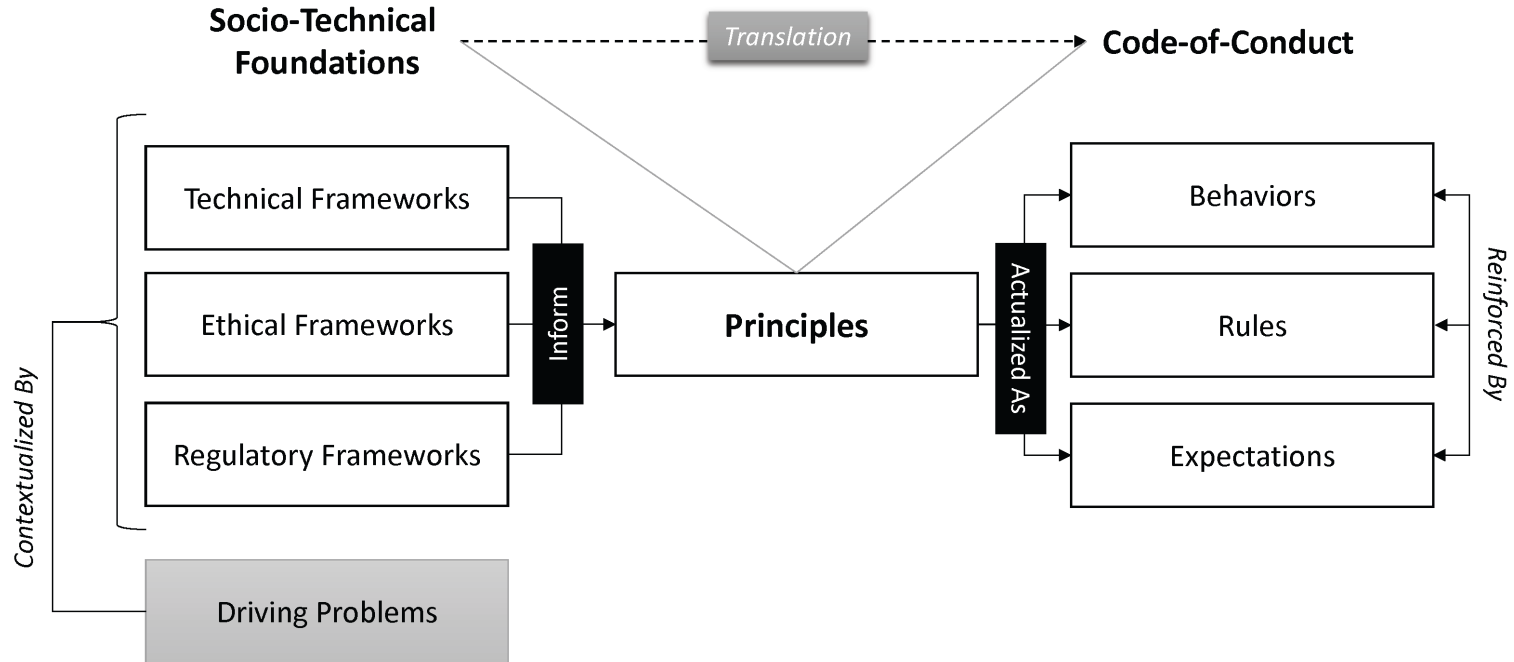
NAM AI Code of Conduct Next Steps

- **NAM AI Commentary Paper Call for public comment though June 30, 2024**

- **Advancement of national and global alignment, collaborations and partnerships**

- **Development of the capstone AICC NAM Special Publication containing:**
  - **A revised set of principles and commitments** based on feedback and public comment
  - **A translation of the commitments** into the next level of granularity to guide stakeholders' implementation guide development
  - **A national AI systems view** of the elements required to support responsible AI in health care and biomedical science and assure that the benefits are equitably distributed
  - **Key priorities** for action

A Call to Action for the AMIA Community

1. Connect with and meaningfully engage in relevant convening and feedback activities, including those associated with the NAM AICC, as well as domain-specific collaboratives and efforts related to professional associations and academic or research consortia working in relevant fields

2. Define and propagate a culture of operational safety and continuous learning surrounding health and healthcare-related AI based upon shared behaviors, rules, and outcomes (per the AICC definition)

3. Catalyze a community-wide dialogue concerning both successes and (equally importantly) failures of AI in the clinical domain and disseminate such findings and conclusions

4. Advance basic and applied BMI research agendas to achieve the promise of contemporary AI in health and healthcare settings

5. Establishing a unified framework for health and healthcare AI evaluation and implementation

6. Create, harmonize, and propagate standard reporting guidelines for health and healthcare-focused AI demonstration studies, such as CONSORT-AI, SPIRIT-AI, and DECIDE-AI

7. Advocate for the adoption and use of knowledge and outcomes resulting from the preceding efforts by regulatory bodies

Questions?

Laura Adams, Senior Advisor
National Academy of Medicine
ladams@nas.edu

Thank you!