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Submitter Information

Organization: Society of Cardiovascular Computed Tomography

General Comment

Please see uploaded comments submitted by the Society of Cardiovascular Computed Tomography

Attachments

SCCT NSF AI policy response May 2025



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Response to the National Science Foundation Request for Information on the Development of a 2025 National Artificial Intelligence (AI) Research and Development (R&D) Strategic Plan

Submitted by: Society of Cardiovascular Computed Tomography
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Part I: Introduction

SCCT is a recognized leader in cardiovascular computed tomography (CT) education, advocacy, and research, representing a diverse membership of physicians, scientists and healthcare professionals dedicated to advancing the use of CT in cardiovascular care.

Artificial intelligence presents transformative opportunities in healthcare, particularly in cardiovascular medicine. With its capacity to analyze complex data at scale, AI can assist in early disease detection, personalized treatment planning, administrative efficiency and equitable access to care. However, healthcare poses unique challenges — data privacy, regulatory oversight, high-stakes decision-making and ethical implications — that demand thoughtful research and investment.

The successful integration of AI in healthcare hinges not only on technical advancements but also on engagement with physicians and clinicians. Their insights ensure tools are trustworthy, clinically relevant and adopted in practice. It is imperative that any national AI R&D strategy acknowledges and actively involves healthcare providers as co-developers and evaluators.

Part II: Research & development goals and priorities

Ensuring effective and trustworthy use of AI

The primary goal of AI R&D in healthcare must be the development of tools that are effective, ethical and trustworthy. This encompasses the entire lifecycle of AI systems:

- **Development:** Support for interdisciplinary innovation that incorporates clinical expertise from the outset.
- **Implementation:** Guidance for clinical integration, including workflow alignment, training and trust-building among providers.
- **Post-Implementation:** Ongoing evaluation of safety, efficacy and equity, as well as monitoring for unintended consequences.

Evaluative frameworks and return on investment (ROI)

The plan should require rigorous impact assessments that consider both clinical and economic outcomes. Metrics must include cost-benefit analyses, patient health outcomes, access and equity implications, and system-wide efficiencies. AI solutions must not only work — they must justify their use in terms of improved public health.

Part III: Recommendations for updating the 2023 R&D plan

1. AI as a national priority (update and expand)

The 2023 Plan correctly identifies AI as a national priority. The 2025 update should elevate this priority with greater specificity regarding sectoral transformations, especially in healthcare. AI has already reshaped every aspect of clinical practice — clinical decision support, diagnostic interpretation, workflow optimization, claims processing and population health management.

For the patients SCCT members serve, AI is not an abstract promise — it is becoming an everyday reality. Investments in research must now be accompanied by strategic plans for ethical deployment, inclusive design and comprehensive training for clinicians.

2. Long-term investments in AI

We recommend clearer and more actionable language regarding long-term investments in AI infrastructure, especially as it pertains to:

- Cloud and edge computing infrastructure for real-time AI deployment in clinical settings.
- Data ecosystems that allow for secure, diverse, representative and longitudinal data collection.
- Federally supported AI testbeds and regulatory sandboxes to encourage innovation in a low-risk, controlled environment.

While regulation must be appropriately calibrated, the absence of clear federal frameworks inhibits both innovation and adoption. For example, current uncertainty regarding reimbursement for AI-enabled devices discourages investment. CMS must be empowered to recognize and fairly value AI-based tools. Analogous to the FDA's role in device approval, CMS must develop transparent processes for payment policy.

3. Data and Data Management

A successful AI R&D strategy must balance public and private sector needs while prioritizing trust, transparency and scientific integrity. Specifically:

- Establish standardized data formats, benchmarks and performance metrics applicable across use cases.
- Expand support for independent AI assurance labs to test, validate and certify AI systems using reproducible and transparent methods.
- Prioritize cybersecurity in healthcare AI systems. Medical AI must be robust not only to statistical noise but also to adversarial attacks. Guidelines should be grounded in real-world risks and be co-developed with clinical stakeholders.

Conclusion

We commend the National Science Foundation for initiating this crucial update to the National AI R&D Strategic Plan. We urge the inclusion of healthcare-specific considerations throughout the strategy and offer SCCT's partnership in advancing research and ensuring safe, effective deployment of AI tools in medicine.

AI's potential in healthcare is vast — but only if investments today are directed with foresight, scientific rigor and a deep commitment to patient-centered outcomes.

Sincerely,

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