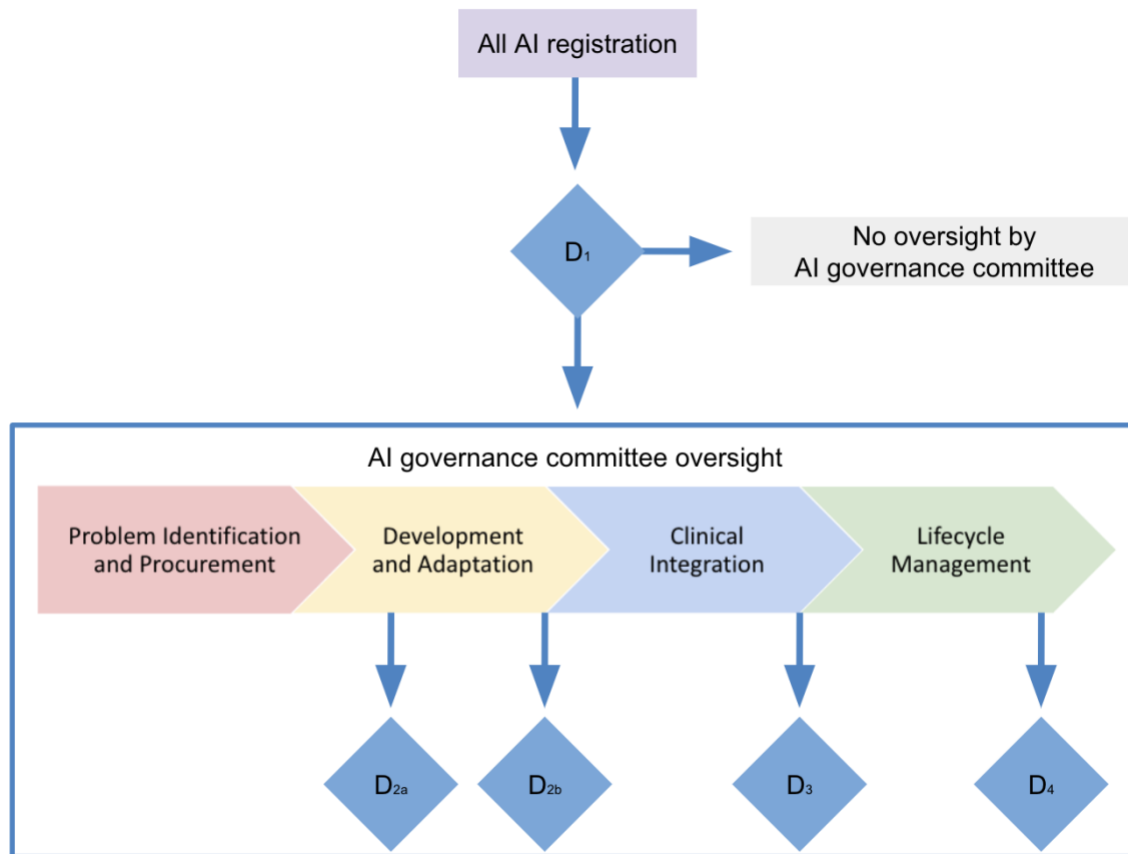


## Supplementary Information



**Supplementary Figure 1.** AI governance process across the AI lifecycle, highlighting key decisions (D<sub>1</sub> - D<sub>4</sub>) to be made by the AI governance committee at the end of each stage, guided by collected information.

**Supplementary Table 1.** Documentation and decisions required for governing AI solutions.

| AI lifecycle stage | Information to collect and document                                                                                                                                                                                                                                                                                     | Decision to make                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Registration       | <p>D1</p> <ul style="list-style-type: none"> <li>Names of the project leads who will own the AI solution</li> <li>Names and roles of project team members</li> <li>Description of the identified problem</li> <li>Descriptions of scope and intended use of the AI solution</li> <li>Funding commitments for</li> </ul> | <p>Decision 1: Decide which AI products to fully govern and provide recommendations to project teams for mandatory next steps.</p> |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
|                            | <p>procurement, development and clinical integration</p> <ul style="list-style-type: none"> <li>• Proof of approval from a departmental leadership</li> <li>• Input or buy-in from end users for the proposed AI solution</li> <li>• Documentation of equity consideration for procurement</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                               |
| Development and adaptation | <p>D2a</p> <ul style="list-style-type: none"> <li>• Model performance targets and measures of successful use <ul style="list-style-type: none"> <li>○ Plans for testing the solution impact</li> </ul> </li> <li>• Method and results of retrospective evaluation <ul style="list-style-type: none"> <li>○ Model fact sheet<sup>1</sup></li> <li>○ TRIPOD checklist<sup>2</sup></li> <li>○ Equity analysis<sup>3</sup></li> <li>○ Results of clinical adjudication of the model outputs (e.g., chart review)</li> </ul> </li> <li>• Plans for technical and clinical integration <ul style="list-style-type: none"> <li>○ Diagram of a new workflow</li> <li>○ Plans for testing UI/UX</li> <li>○ Plans for prospective evaluation</li> <li>○ Plans for communication, education, and change management</li> </ul> </li> </ul> | Decision 2a: Approve progressing to a prospective evaluation. |
|                            | <p>D2b</p> <ul style="list-style-type: none"> <li>• Results of prospective silent trial evaluation <ul style="list-style-type: none"> <li>○ Equity analysis</li> <li>○ Results of clinical adjudication of the model outputs (e.g.,</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Decision 2b: Approve progressing to clinical integration.     |

<sup>1</sup> Sendak, M. P. et al. Presenting machine learning model information to clinical end users with model facts labels. *NPJ Digit. Med.* 3, 41 (2020).

<sup>2</sup> Equator Network. *TRIPOD Statement* (2024). <https://www.equator-network.org/reporting-guidelines/tripod-statement/>.

<sup>3</sup> Kim, J. Y. et al. Development and preliminary testing of Health Equity Across the AI Lifecycle (HEAAL): A framework for healthcare delivery organizations to mitigate the risk of AI solutions worsening health inequities. *medRxiv* (2023).

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                               |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|                      | <ul style="list-style-type: none"> <li>○ chart review)</li> <li>○ Feedback on user experience collected via interviews and shadowing</li> <li>● Summary of any updates or changes made to the model after prospective evaluation</li> <li>● Model configuration <ul style="list-style-type: none"> <li>○ Threshold selection</li> <li>○ Snoozing window</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                 |                                                                               |
| Clinical integration | <p>D3</p> <ul style="list-style-type: none"> <li>● User feedback collected via interviews and shadowing</li> <li>● Solution impact <ul style="list-style-type: none"> <li>○ Measures of successful use</li> <li>○ Effectiveness</li> <li>○ Impact on equity</li> </ul> </li> <li>● Summary of any updates or changes made to the AI solution after clinical integration</li> <li>● Plans for post-integration monitoring and surveillance</li> <li>● Identification of potential harms and plans for risk mitigation</li> <li>● Plans to maintain and monitor the model</li> <li>● Plans for ongoing education and training for end users and affected stakeholders</li> </ul> | Decision 3: Approve sustaining the use of the AI solution.                    |
| Lifecycle management | <p>D4</p> <ul style="list-style-type: none"> <li>● Ownership of the model</li> <li>● Scope of continuous monitoring</li> <li>● Cadence of periodic audits</li> <li>● Feedback from end users and affected patients</li> <li>● Needs for update or decommission</li> <li>● Solution impact <ul style="list-style-type: none"> <li>○ Measures of successful use</li> <li>○ Effectiveness</li> <li>○ Impact on equity</li> </ul> </li> </ul>                                                                                                                                                                                                                                      | Decision 4: Approve sustaining or decommissioning the use of the AI solution. |

**Supplementary Table 2.** Division of responsibilities between the AI governance committee and individual departments leading AI implementation projects.

| AI governance committee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Department or program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Approve an use case specific solution and its workflow</li> <li>• Oversee the efficacy of the AI solution</li> <li>• Ensure the safety of the AI solution</li> <li>• Ensure equity in the AI solution</li> <li>• Oversee the security and privacy of the AI solution</li> <li>• Monitor regulatory compliance</li> <li>• Ensure alignment with the IT roadmap</li> <li>• Ensure interoperability with existing enterprise software</li> <li>• Establish monitoring and reporting requirements</li> <li>• Set monitoring thresholds</li> </ul> | <ul style="list-style-type: none"> <li>• Identify clinical needs</li> <li>• Identify patient needs</li> <li>• Identify business problems that the AI solution will address</li> <li>• Conduct a feasibility assessment for AI adoption</li> <li>• Secure budget for procuring the AI solution and ensure cost-effectiveness</li> <li>• Ensure interoperability with existing department-specific software</li> <li>• Define workforce and workflow</li> <li>• Address workflow burdens</li> <li>• Measure and ensure clinician satisfaction</li> <li>• Define accountability for the AI solution (i.e., clear product ownership and management)</li> </ul> |