TREGAI Checklist for generative AI research or generative AI-powered products\*

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| --- | --- | --- | --- |
| Ethicist involvement | | | |
| Ethical discussions disclosed below involved contributions from philosophers and/or ethicists. | | Ethical discussions disclosed below were peer-reviewed by philosophers and/or ethicists. | |
| Additional involvement of philosophers and/or ethicists from relevant ethics subfield: \_\_\_\_\_\_ | | Peer-reviewed by philosophers and/or ethicists from relevant ethics subfield: \_\_\_\_\_\_ | |
| Ethical discussions | | | |
| Ethical Principles† | **Discussions in text** (check all that apply) | | **Position in text** |
| Accountability | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Autonomy | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Benevolence | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Equity | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Integrity | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Morality | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Privacy | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Security | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Transparency | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Trust | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |
|  | Not applicable | |  |
| Others: \_\_\_\_\_\_ | Discussed relevant issues arising from generative AI | |  |
|  | Further discussed possible solutions | |  |
|  | Discussed use of generative AI to resolve relevant issues | |  |
|  | Further discussed limitations and inadequacies | |  |

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\*We strongly recommend reading this checklist in conjunction with the reference article for important clarifications on all the items.

**†**Definition of the 10 ethical principles in healthcare context:

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| --- | --- |
| **Ethical Principles** | **In-Context Definition(s)** |
| Accountability | * The explicit clarifications of whom and for the extent of which responsibility and/or legal liability fall to. * The mandated and moral duty to establish regulatory mechanisms to prevent potential adverse effects on patients from the use of generative AI. |
| Autonomy | * The preservation and fostering of patients’ dignities, rights for self-determination and capacity to make informed decisions. |
| Benevolence | * The prevention of harm, potential risks or avoidable harms to patients associated with generative AI use in healthcare. |
| Equity | * The use of generative AI to promote equity in some notions of fairness (e.g., opportunities, outcomes, etc.,) in health or health resources across diverse groups of patient populations, and to actively prevent and/or remedy systemic, unfavourable outcomes in specific patient population(s). * The equitable access to AI or generative AI technology. |
| Integrity (in medical education and quality of clinical research) | * The commitment to intellectual honesty, and personal responsibility to abide by responsible research conduct, including data integrity, to establish accountability and prevent harm. * The rightful acknowledgement of contributions to and ownership of intellectual work, when generative AI is used in clinical research. |
| Morality | * The use of generative AI aligned with stakeholders’ moral beliefs and values. |
| Privacy | * The protection of patient’s information from illegitimate access, and of confidentiality of personal sensitive information. |
| Security | * The protection of health data integrity and safety, through careful assessments of vulnerabilities in data systems and the prevention of data breaches, cyberattacks or other threats. |
| Transparency | * The full-disclosure and thorough documentations of information regarding generative AI development. * The ability to access and understand the processes underlying models’ outputs, especially pertaining to black-box models. |
| Trust | * The confidence of users in generative AI and/or its developers’, and expectations that the model is competent in performing its pre-specified tasks and behave in ways that serve the patients and medical community. * The willingness to accept and integrate generative AI tools to assist delivery of care or for research. * Trustworthy generative AI possesses and exhibits a range of ethically-sound properties, including performance robustness, fairness, security, etc. |