OHIO STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution No. 18 – 2024

Introduced by: Medical Student Section

Subject: Reducing Artificial Intelligence Bias in Healthcare

Referred to: Resolutions Committee No. 1

WHEREAS, artificial intelligence (AI) is a term that refers to computational technologies that imitate the mechanisms of human intelligence, including thought, deep learning, adaptability, and sensory understanding;[1] and

WHEREAS, AI has a wide variety of potential applications across many fields, including in medicine where it may be utilized to aid in clinical decision-making and diagnosis of diseases;[1] and

WHEREAS, AI has been utilized in medicine since the 1950s, when physicians first attempted to improve their diagnostic abilities through the aid of computerized programs;[1] and

WHEREAS, in recent years, the increased computing power of modern computers and an increasingly large amount of digital data have led to a surge in medical AI research and advancements;[1] and

WHEREAS, as of December 2023, the U.S. Food and Drug Administration (FDA) cleared over 692 healthcare AI algorithms and over half of these algorithms were cleared between 2019 to 2023;[2] and

WHEREAS, in 2021, the global market for AI in healthcare was estimated to be $11 billion, and is expected to grow to $188 billion by 2030;[8] and

WHEREAS, machine-learning algorithms, which is an application or subtype of AI, rely on training data in order to identify patterns and correlations, which are then applied to make predictions or assign scores on target variables of interest;[3] and

WHEREAS, thus, AI has the potential to compound existing inequalities in socioeconomic status, race, ethnicity, religion, gender, disability, and/or sexual orientation;[3] and

WHEREAS, AI can unintentionally lead to the perpetuation of harmful biases in the algorithm or its training data, and there are numerous real-life examples of this in medicine and beyond; and

WHEREAS, bias can be potentially introduced into machine learning algorithms during the process of assigning subjective labels to target variables, such as “good or bad”;[3] and

WHEREAS, bias can be potentially introduced into machine learning algorithms if there is preexisting bias in the chosen dataset used to train the algorithm, furthermore, selection bias may be introduced during the process of selecting a training dataset;[3] and

WHEREAS, for instance, Amazon covertly used a machine-learning algorithm to recruit employees, which led to the preferential recruitment and scoring of male over female candidates because Amazon trained its algorithm using a dataset in which women were significantly underrepresented;[3] and

WHEREAS, a 2020 study found that X-ray training datasets for several computer-aided diagnosis (CAD) systems that were not balanced in gender representation led to the CAD systems possessing decreased accuracy for the underrepresented group;[4] and

WHEREAS, a 2023 Stanford study found that the large language models ChatGPT and Google’s Bard, which are also forms of AI, answered medical questions using racist and disproven theories about Black patients, which have historically led to medical providers downplaying the pain of Black patients, offering them less pain relief, and misdiagnosing them;[5] and

WHEREAS, bias can also be potentially introduced into machine learning algorithms due to feature selection, meaning that AI algorithms may fail to fully capture the complexities of the real world and may miss key information leading to certain outcomes;[3] and

WHEREAS, finally, bias can be potentially introduced into machine learning algorithms since algorithms may identify proxies to approximate certain variables of interest, and these proxies may lead to the unintentional discrimination against groups of certain racial, sexual, or other protected identities;[3] and

WHEREAS, for example, a 2019 study published in Science revealed that a commercial software from Optum used to calculate health risk scores (a measure of overall sickness) for over 200 million Americans per year had inadvertently been discriminating against Black patients;[6] and

WHEREAS, less money is spent on Black patients who have the same level of healthcare need; however, this led to the Optum software underestimating the illness severity for Black patients as it utilized healthcare spending costs as a proxy to estimate healthcare needs;[6] and

WHEREAS, bias in AI systems can be further mitigated by several control methods including data monitoring to ensure appropriate training sets, quantitative analysis to account for feedback loops, a review process that validates input accuracy, maintenance of human verification, and quality checking to ensure that predictors in the model are sensible;[7] and

WHEREAS, current AMA guidelines about AI do not specifically emphasize the importance of limiting bias in healthcare AI; and

WHEREAS, Ohio recently introduced a comprehensive policy, titled "Use of Artificial Intelligence in State of Ohio Solutions", focused on the use of AI in state government, which established protective guardrails and protocols regarding AI training requirements, regulation of data procurement, accountability, a human verification process, and security and privacy concerns (7); and therefore

BE IT RESOLVED, that our OSMA will collaborate with relevant stakeholders, such as the Ohio Department of Health, to encourage health care organizations using AI to:

1. Properly verify bias minimization in artificial intelligence applications *prior* to official adoption in healthcare settings
2. Maintain human verification by physicians and other health care professional of AI programs; and be it further

RESOLVED, that the OSMA supports research on methods to reduce bias from the use of artificial intelligence in medicine; and be it further

RESOLVED, that the OSMA supports ongoing educational efforts for physicians and trainees regarding the use of artificial intelligence in clinical practice.

Fiscal Note: $ (Sponsor)
$ 100,000 (Staff)

References:

1. Secinaro S, Calandra D, Secinaro A, Muthurangu V, Biancone P. The role of artificial intelligence in healthcare: a structured literature review. BMC Medical Informatics and Decision Making. 2021;21(1). doi:https://doi.org/10.1186/s12911-021-01488-9
2. FDA has now cleared 700 AI healthcare algorithms, more than 76% in radiology. healthimaging.com. Accessed January 15, 2024. https://healthimaging.com/topics/artificial-intelligence/fda-has-now-cleared-700-ai-healthcare-algorithms-more-76-radiology
3. Bent J. *ARTICLES Is Algorithmic Affirmative Action Legal?* https://www.law.georgetown.edu/georgetown-law-journal/wp-content/uploads/sites/26/2020/04/Is-Algorithmic-Affirmative-Action-Legal.pdf
4. Larrazabal AJ, Nieto N, Peterson V, Milone DH, Ferrante E. Gender imbalance in medical imaging datasets produces biased classifiers for computer-aided

diagnosis. Proceedings of the National Academy of Sciences. 2020;117(23):12592-12594. doi:https://doi.org/10.1073/pnas.1919012117
5. Omiye JA, Lester JC, Spichak S, Rotemberg V, Daneshjou R. Large language models propagate race-based medicine. npj Digital Medicine. 2023;6(1):1-4. doi:https://doi.org/10.1038/s41746-023-00939-z
6. Obermeyer Z, Powers B, Vogeli C, Mullainathan S. Dissecting racial bias in an algorithm used to manage the health of populations. Science. 2019;366(6464):447-453. doi:https://doi.org/10.1126/science.aax2342
7. Roselli D, Matthews J, Talagala N. Managing Bias in AI. Companion Proceedings of The 2019 World Wide Web Conference. Published online May 13, 2019:539-544. doi:https://doi.org/10.1145/3308560.3317590
8. AI in healthcare market size worldwide 2030. Statista. https://www.statista.com/statistics/1334826/ai-in-healthcare-market-size-worldwide/#:~:text=In%202021%2C%20the%20artificial%20intelligence
9. AMA Policy: 11.2.1 Professionalism in Health Care Systems
10. AMA Policy: Assessing the Potentially Dangerous Intersection Between AI and Misinformation H-480.935
11. AMA Policy: Augmented Intelligence in Health Care H-480.940
12. AMA Policy: Augmented Intelligence in Medical Education H-295.857

OSMA Policy:

Policy 05 – 2019 – Advancing Gender Equity in Medicine

1. The OSMA adopts the following, which is adapted from American Medical Association policy/directives:
   1) That the OSMA supports gender and pay equity in medicine consistent with the American Medical Association Principles for Advancing Gender Equity in Medicine (see below AMA Policy H-65.961 as adopted at the 2019 AMA Annual Meeting);

   2) That the OSMA:
      (a) Promote institutional, departmental, and practice policies, consistent with federal and Ohio law, that offer transparent criteria for initial and subsequent physician compensation;
      (b) Continue to advocate for pay structures based on objective, gender-neutral criteria;
      (c) Encourages training to identify and mitigate implicit bias in compensation decision making for those in positions to determine physician salary and bonuses, with a focus on how subtle differences in the further evaluation of physicians of different genders may impede compensation and career advancement;

   3) That the OSMA recommends as immediate actions to reduce gender bias to:

(a) Inform physicians about their rights under the Lilly Ledbetter Fair Pay Act, which restores protection against pay discrimination;
(b) Promote educational programs to help empower physicians of all genders to negotiate equitable compensation; and
(c) Work with relevant stakeholders to advance women in medicine;

1) That the OSMA collaborate with the American Medical Association initiatives to advance gender and pay equity;

5) That the OSMA commit to the principles of pay equity across the organization and take steps aligned with this commitment.

Principles for Advancing Gender Equity in Medicine H-65.961:

Our AMA:

*1. declares it is opposed to any exploitation and discrimination in the workplace based on personal characteristics (i.e., **gender**);*

*2. affirms the concept of equal rights for all physicians and that the concept of equality of rights under the law shall not be denied or abridged by the U.S. Government or by any state on account of **gender**;*

3. endorses the principle of equal opportunity of employment and practice in the medical field;

4. affirms its commitment to the full involvement of women in leadership roles throughout the federation, and encourages all components of the federation to vigorously continue their efforts to recruit women members into organized medicine;

5. acknowledges that mentorship and sponsorship are integral components of one's career advancement, and encourages physicians to engage in such activities;

6. declares that compensation should be equitable and based on demonstrated competencies/expertise and not based on personal characteristics;

7. recognizes the importance of part-time work options, job sharing, flexible scheduling, re-entry, and contract negotiations as options for physicians to support work-life balance;

*8. affirms that transparency in pay scale and promotion criteria is necessary to promote **gender equity**, and as such academic medical centers, medical schools, hospitals, group practices and other physician employers should conduct periodic reviews of compensation and promotion rates by **gender** and evaluate protocols for advancement to determine whether the criteria are discriminatory; and*

*9. affirms that medical schools, institutions and professional associations should provide training on leadership development, contract and salary negotiations and career advancement strategies that include an analysis of the influence of **gender** in these skill areas.*

*Our AMA encourages: (1) state and specialty societies, academic medical centers, medical schools, hospitals, group practices and other physician employers to adopt the AMA Principles for Advancing **Gender Equity** in Medicine; and (2) academic medical centers, medical schools, hospitals, group practices and other physician employers to: (a) adopt policies that prohibit harassment, discrimination and*

retaliation; (b) provide anti-harassment training; and (c) prescribe disciplinary and/or corrective action should violation of such policies occur.

Policy Timeline

BOT Rep. 27, A-19

Policy 06 – 2019 – Increase Awareness of Disparities in Medical Access and Treatment in Ohio

1. The OSMA shall work with appropriate stakeholders to increase awareness of Ohio physicians, residents, and medical students of disparities in medical access and treatment in Ohio based on disability, race, ethnicity, geography, and other social and demographic factors through the utilization of existing resources.