Algorithmic Oppression

An Intersectional Anti-Racist Approach to Addressing Birth Inequities in Black Women

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Presentation Map

- **Background and Problem Statement**
- **Research Questions and Rationale**
- **Existing Public and Institutional Policies**
- **Current and Proposed Public and Institutional Policies**
- **Next Steps**

  - **Conceptual Note and Tool Development**

  - **Journal Article**

  - **Public Education**

Background and Problem Statement

- **Black Birthing Persons/People:**

  - **Three times more likely to die from complications of pregnancy**

  - **Two times more likely to experience severe maternal morbidity**

  - **Two to three times more likely to deliver preterm (CDC, 2019)**

  - **Almost twice as likely to deliver low-birth weight babies**

"The system wasn't designed to support US"

- Maya Jackson
Founder of MAAME, Inc.

Continued

- Driven by systemic, structural, interpersonal and internalized racism
- Exacerbated by the socio-political context (e.g., recent Scotus decision on Roe vs. Wade
- Caused and amplified by algorithmic bias turned oppression

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AI Bias in Healthcare

- **Black Birthing Persons/People are prone to suffer the impacts of:**

  - Dataset bias – Diversity of the client base is not well represented in data training machine learning algorithms

  - Association bias – Cultural bias is reinforced and amplified by data used to train a model.

  - Interaction bias – AI is tampered with by humans, leading to skewed results.

  - Automation bias – Social and cultural elements are ignored by computerized decisions.

  - Confirmation bias – Overly simplistic personalization makes prejudicial judgments about a person or a group.

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Antiracism in Health Care Framework

An Antiracism framework is needed to examine and develop action related to institutional and systemic oppression that people of color face because of both their race and identities while providing a guiding approach for working with and in communities and systems to create a more just and equitable society.
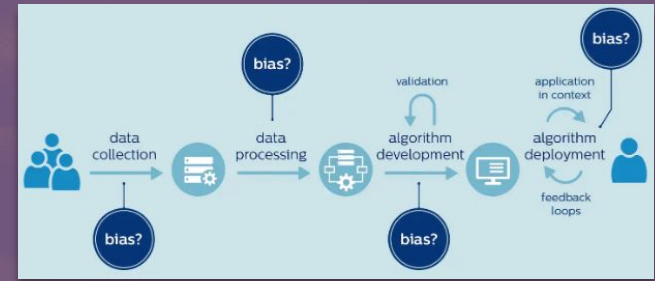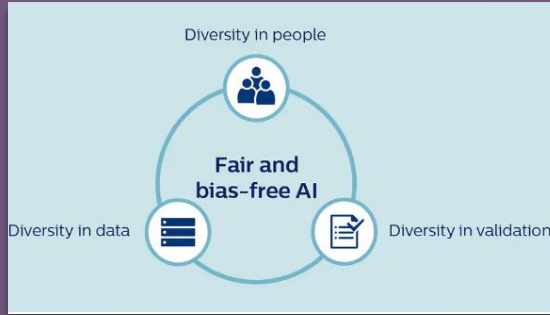
Research Questions & Rationale

- What is the impact of algorithmic oppression on birth inequity?

- What public and institutional policy/s have been proposed and implemented to mitigate algorithmic oppression?

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Advocacy and Action: Recognizing Algorithmic Bias

- Bias can occur at any phase of AI development and deployment, from using biased datasets to deploying algorithms in a different context than the one it was trained for.

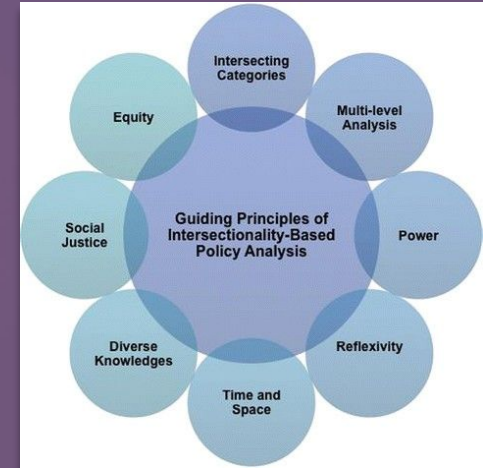- Diversity is critical for building fair AI algorithms.

What are the obstacles? Algorithmic Justice, the next Civil Rights frontier?

- "Dirty Data"- biased algorithms

- A " Black Box" algorithm

Advocacy to Raise Awareness Matters

- Using different outlets: Social media, Ted talks, conferences, forums, documentaries, news segments to give voice for black mothers.

- Organizations like; Black Maternal Health Caucus Stakeholders, Black Mamas Alliance, SisterSong, The National Birth Equity Collaborative, The Birth Equity and Justice Massachussets, Racial Inequities and Maternal Health Commission, and other Black-Led reproductive justice organizations have brought the Black Maternal Health crisis to national attention.

BLACK MATERNAL HEALTH ADVOCACY AND AWARENESS

Intersectionality-based Policy Analysis Framework

- **Provides an innovative structure for critical policy analysis**

- **Captures different policy context dimensions**

- **Generates unique transformative insights, knowledge, policy solutions**

Action and Policy

Policies are devoid of Black women's voices and experiences in current policy formulation

The Maternal Health Quality Improvement Act of 2020, passed by the House in September 2020, includes goals to address maternal mortality such as supporting provider implicit bias and health equity training, funding for state perinatal quality initiative, and expanded provider access to people living in rural communities.

Sparse public policy landscape to address AI and birth equities (Momnibus & Tech to Save MomsnAct)

BLACK MATERNAL HEALTH MOMNIBUS

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Existing Policies and Practices in the Public & Institutional Spaces

- In the U.S., the Algorithmic Accountability Act has been proposed, which would require companies to assess their AI systems for risks of unfair, biased, or discriminatory decisions.

- Public and regulatory bodies, as well as private industry players, have recognized the need for clear guiding principles and policies to prevent bias in AI.

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Equitable care for all

Risk for bleeding:

Low

High

Patient population to be used for model development
- Large data
- Diverse (all groups represented)
- Avoid racial/ethnic bias

Model development
- Up-to date knowledge/concepts
- Interpretable approaches

Model predictions
Optimize performance in all groups

Decision support for:

Triage high risk patients
Allocate resources
Early diagnosis and treatment
Personalized care

Lower risk of maternal morbidity and mortality

Improved health outcomes

Recommendations

- **AI algorithmic justice in general**

  - Traceability and transparency of AI systems (including Regulating knowledge apps) should be regulated by a government body

  - Making licensing and continual assessment/monitoring of all AI tools mandatory

  - Instituting accountability and liability through a tort system

  - Generating evidence for policies through research and advocacy for a safer us of AI tools

- **AI algorithmic justice in healthcare**

  - Supervising healthcare facilities to make sure that concerns like bias in training, security, and data protection are being addressed.

  - Training healthcare professionals, developing/adopting and enforcing institutional guidelines/rules/policies to bolster quality and safety of AI healthcare tools

Continued

- **AI algorithmic justice in maternal healthcare**

  - **Including all relevant voices by creating a diverse team. Having a collaboration of equity experts, clinical experts, data scientists (especially those with lived experience of systemic health inequalities), community leaders who represent communities disproportionately affected by systemic inequalities in maternal healthcare will reveal blind spots in promoting health equity through predictive analytics**

  - **Including outside source data of birthing persons who are often underrepresented in the datasets used for ML**

  - **Rebalancing and adjusting the dataset of underrepresented communities using weights to get more accurate maternal healthcare prediction models**

Antiracist Actions Related to AI

- **Anti-racism action should incorporate:**

    - Leadership buy-in and commitment with dedicated resources

    - Support and funding;

    - A multi-level approach beginning with policy and organizational interventions;

    - Transparent accountability mechanisms for sustainable change;

    - Long-term meaningful partnerships with Black, Indigenous, and people of color (i.e., racialized communities); and ongoing, mandatory, tailored staff education and training (Hassan, 2021)

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Deliverable: Concept Note

- Articulation of our framework
- Examination of existing maternal health equity tools
- Identification of existing gaps
- Methodology
- Proposed anti racist intersectional lensed tool to provide better data to be included in an algorithms to aid decision-making and ultimately better patient outcomes
- Peer reviewed article reflective of our work

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Limitations/Constraints

- **Engaging undocumented immigrant birthing people**

- **Exclusion of other minority birthing people**

- **Time constraints**

- **Funding constraints**

- **Lack of tools that address Black Maternal health issues comphresively**

Next Steps

- **Further research**
- **Knowledge dissemination workshops**
- **Knowledge sharing community engagement**
- **Meeting with policy makers at Beacon Hill**

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THANK YOU

Q&A
Feedback