

Artificial Intelligence and Health Inequity in Primary Care



A PhD project by

Alexander d'Elia

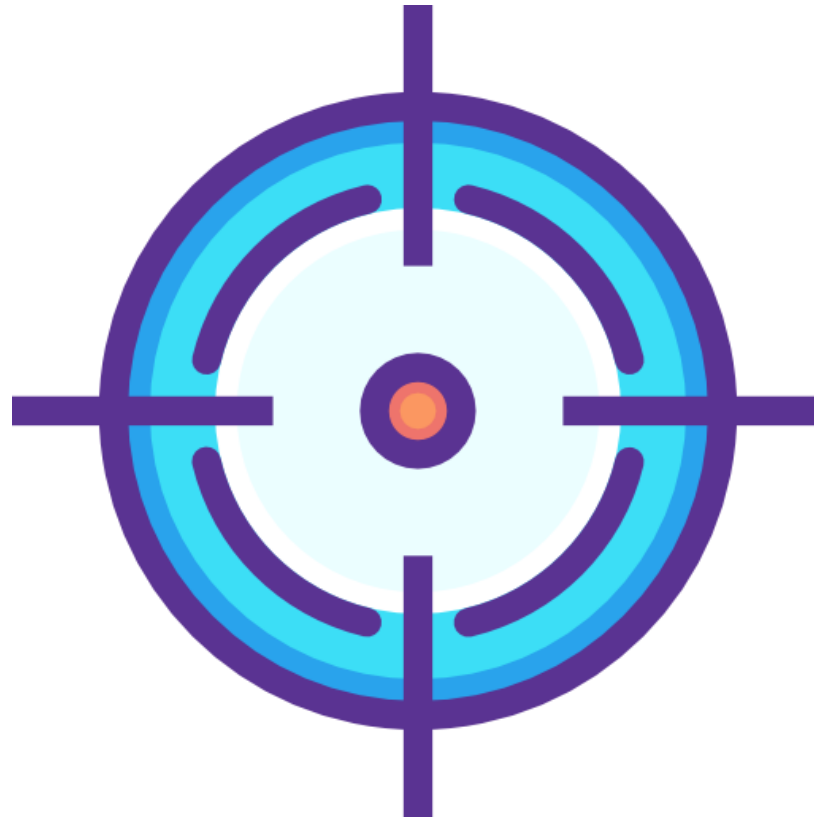
Institute of Population Health, Policy and Systems

University of Liverpool



Aim

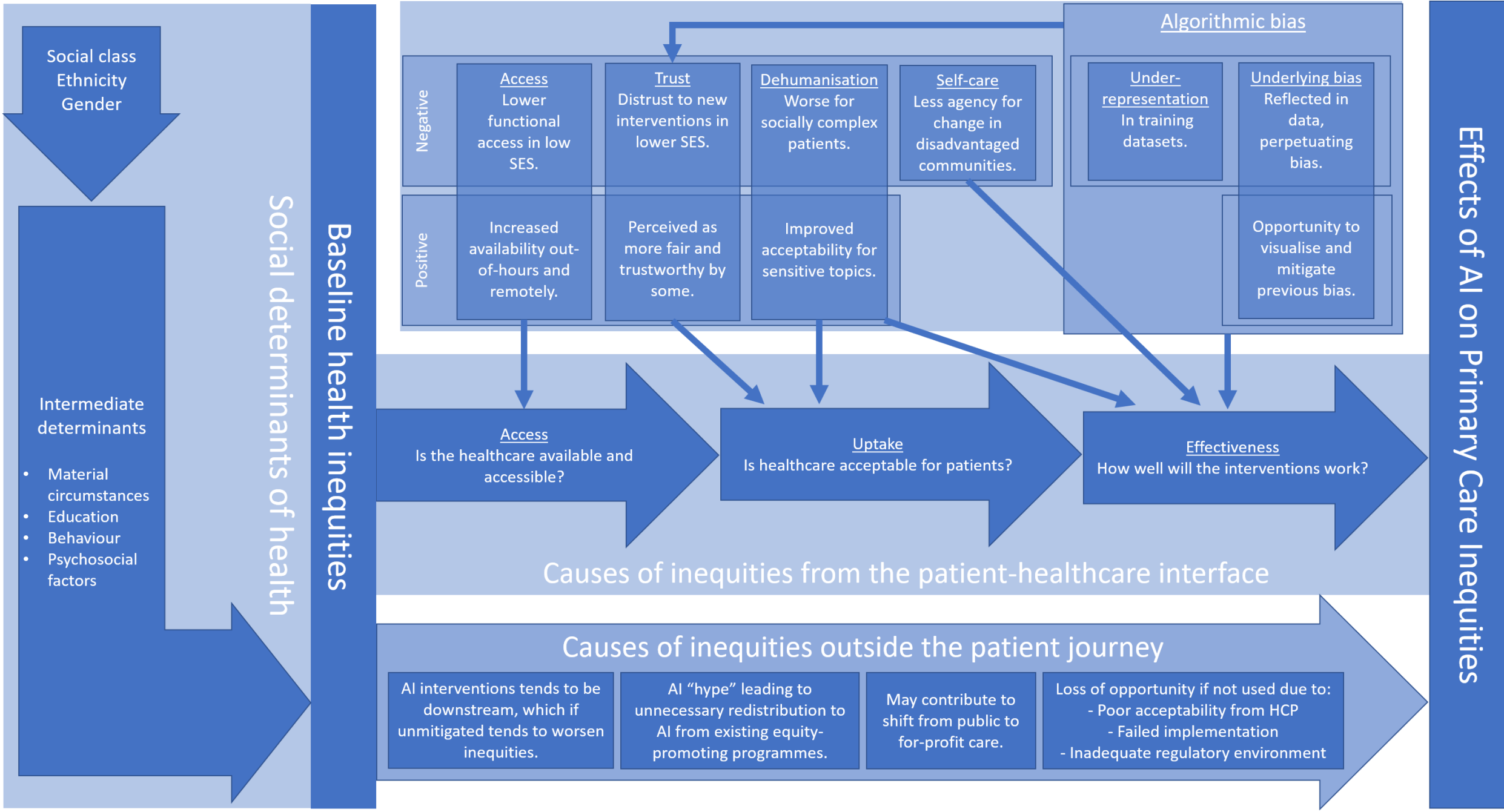
- To explore, understand and mitigate the complex health equity effects of AI on primary care.



Work Packages

1. Scoping review on mechanisms for **how** (clinical) **AI can affect health inequity in primary care.**
2. Explorative stakeholder interviews, outlining approaches for **how AI can be implemented in an equitable manner**
3. (Quantitative CPRD analysis: Demographic differences in reported symptoms preceding RA.) **Bonus.**





Social class
Ethnicity
Gender

Intermediate determinants

- Material circumstances
- Education
- Behaviour
- Psychosocial factors

Social determinants of health

Baseline health inequities

Negative

Access
Lower functional access in low SES.

Trust
Distrust to new interventions in lower SES.

Dehumanisation
Worse for socially complex patients.

Self-care
Less agency for change in disadvantaged communities.

Positive

Increased availability out-of-hours and remotely.

Perceived as more fair and trustworthy by some.

Improved acceptability for sensitive topics.

Algorithmic bias

Under-representation
In training datasets.

Underlying bias
Reflected in data, perpetuating bias.

Opportunity to visualise and mitigate previous bias.

Access
Is the healthcare available and accessible?

Uptake
Is healthcare acceptable for patients?

Effectiveness
How well will the interventions work?

Causes of inequities from the patient-healthcare interface

Causes of inequities outside the patient journey

AI interventions tends to be downstream, which if unmitigated tends to worsen inequities.

AI “hype” leading to unnecessary redistribution to AI from existing equity-promoting programmes.

May contribute to shift from public to for-profit care.

Loss of opportunity if not used due to:
- Poor acceptability from HCP
- Failed implementation
- Inadequate regulatory environment

Effects of AI on Primary Care Inequities

Capacity building and knowledge generation

Equity through influence

Shared understanding
What is equity
What do we want, for who?

Shared frameworks
Data sharing
Collaborative platforms for
legislation, regulation,
development

Policy and regulation
Enabling

All actors:
Exchanging
experiences,
concepts, data

Division of responsibility

AI production
Private companies, academia etc.

(Inter-)National level
Regulation/approval and policy;
Facilitating and setting minimum level

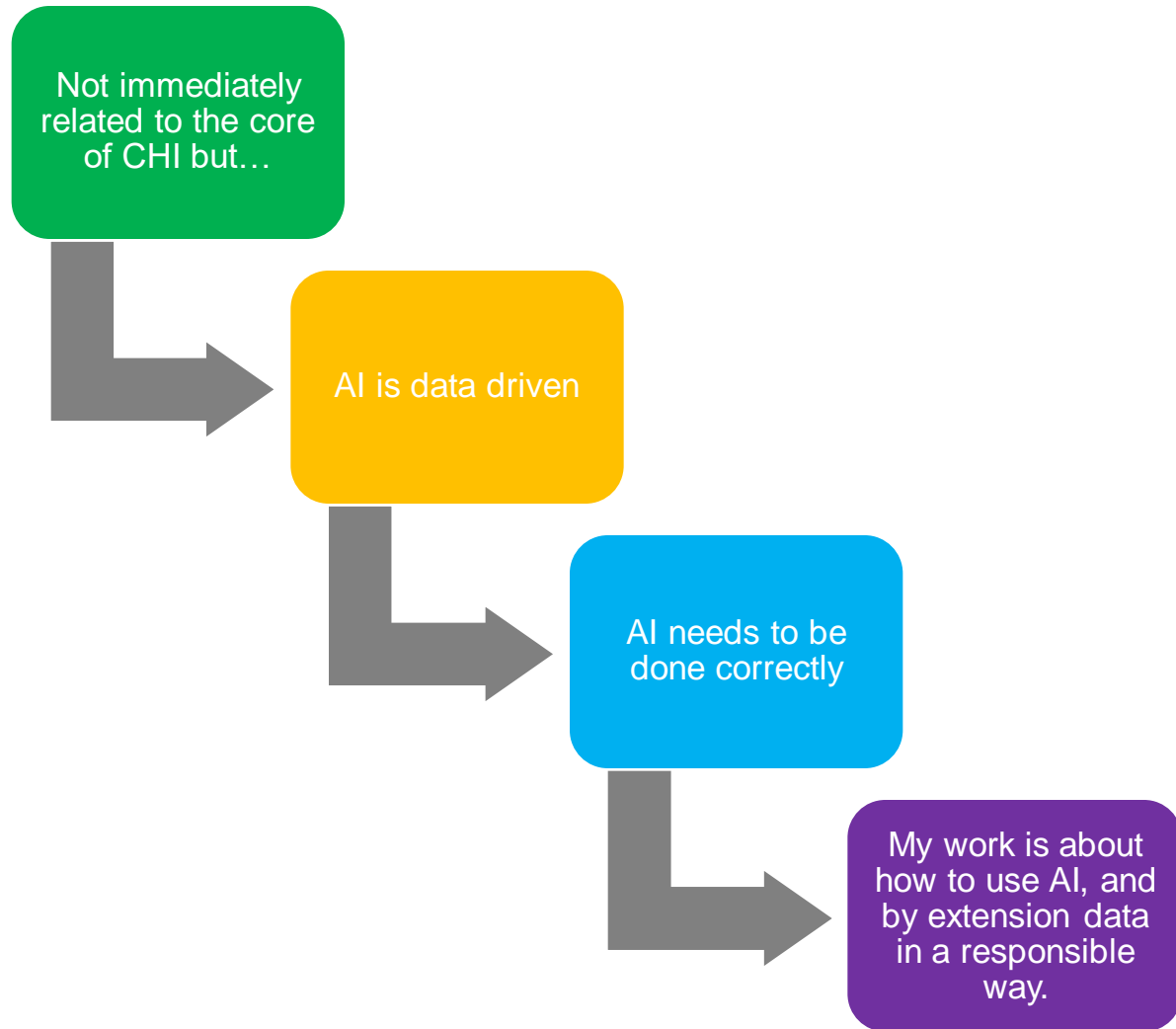
Intermediate level
ICSs, AHSN and similar bodies; Implementing

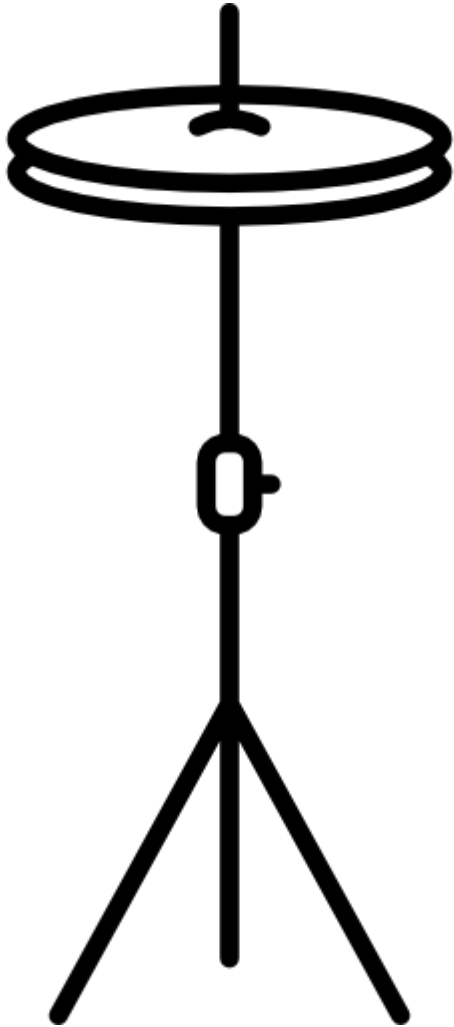
Local level
HCPs and local populations; Using



Production and implementation of AI

X





- **Framework** for equity analysis
- **Involving** target groups
- **Prioritising** impact

Public advisors

- Two advisors
 - Helped to shape the review
 - Less involvement in later stages
- ☺ Fresh perspectives.
- ☹ Sometimes role a bit unclear.



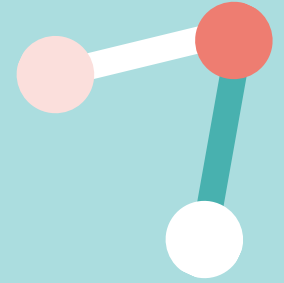
Good days and bad days

😊 More confidence in the PhD process; end of the tunnel

😊 Exploring future options

😞 Working from home (😊)

😊 Teaching, networking



Thank you 😊

