

Putting Marmot into practice

The use of administrative data to profile the health and well being of populations at any geographical scale and drive forward change

Abigail Knight & Tim Madelin
Public Health , NHS Tower Hamlets
Dr Somen Banerjee, Joint Director of Public Health



'Marmot'

aka



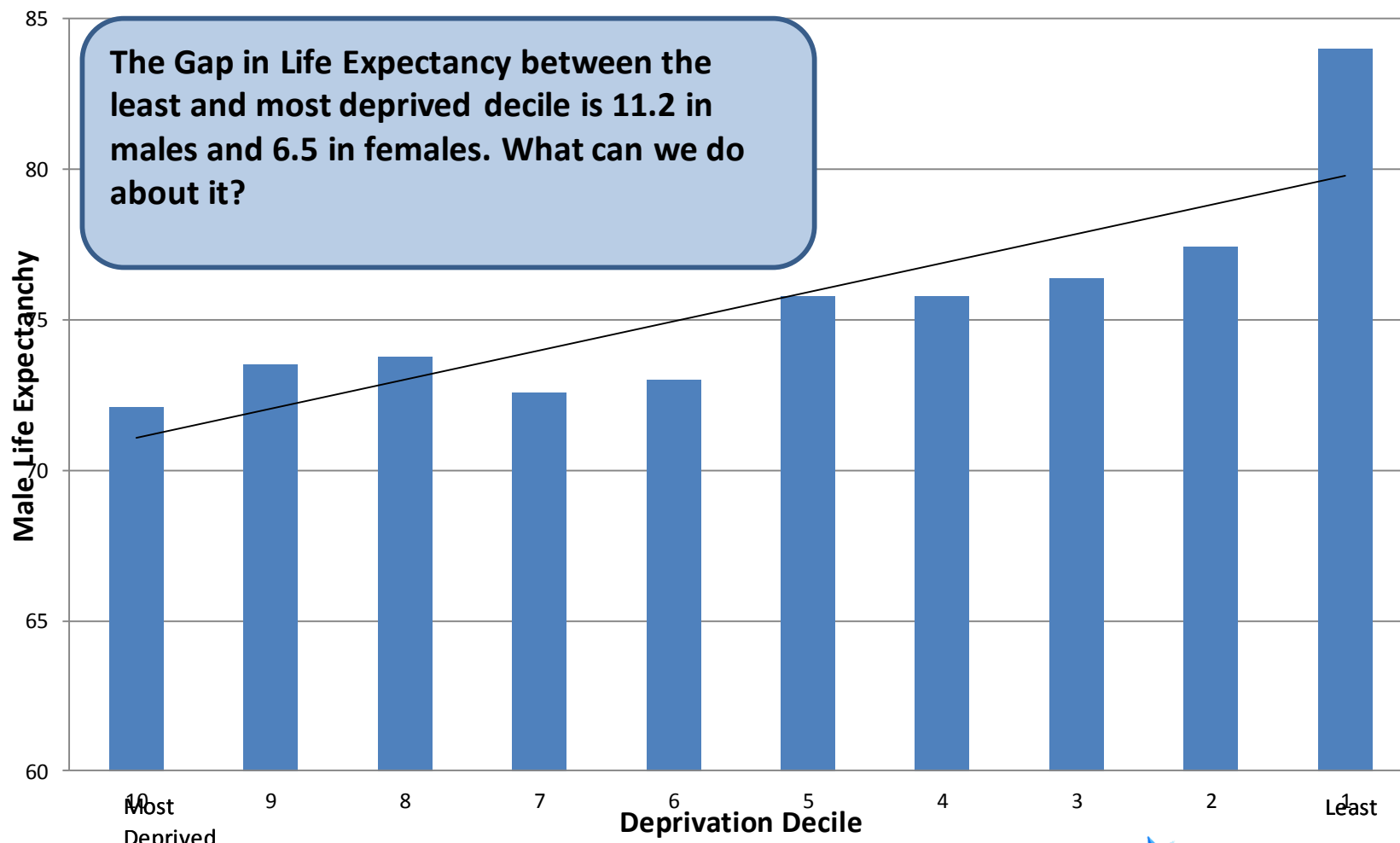
Strategic Review of Health Inequalities
in England post-2010

Priorities;

1. Give every child the best start in life.
2. Enable all children, young people and adults to maximise their capabilities and have control over their lives.
3. Create fair employment and good work for all.
4. Ensure a healthy standard of living for all.
5. Create and develop healthy and sustainable places and communities.
6. Strengthen the role and impact of ill health prevention.



New in 2009 - Slope Indicator



Diagnostic approach to the problem posed

Principles

- Marmot framework
- Slope Indicator a lever to drive a health inequalities strategy
- Elucidate which of the 'accumulation of positive/negative' impacts can be locally influenced
- Need to address
 - What is the local picture?
 - What should we be doing?
 - What are we doing?
 - How more do we need to do?
 - What more do we need to know?
- Started developing a deeper insight into the socioeconomic gradient of health locally (local picture)
- Working through how to use this to drive further action

Approach

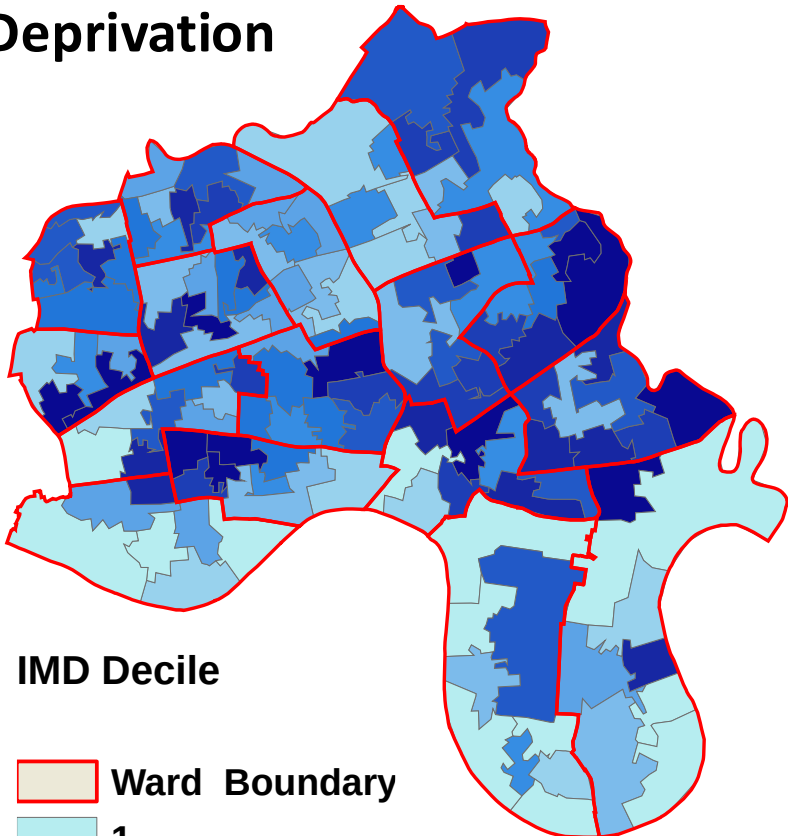
- Characterise each deprivation decile?
 - Social determinants
 - Health behaviours
 - Health outcomes
 - Health and social costs
- How does this translate?
 - At locality level
- How do social characteristics link to health?
- How do the insights shape an inequalities strategy?
 - Priorities
 - Partners
 - Settings
 - Interventions

"The definition of insanity is doing the same thing over and over again and expecting different results"

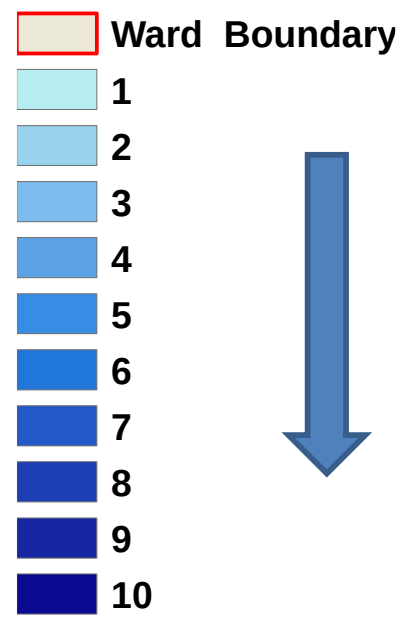
Albert Einstein

Deprivation

This translates to predictable geographical variation in death rates linked to ward level deprivation....

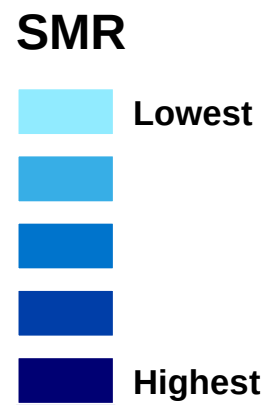
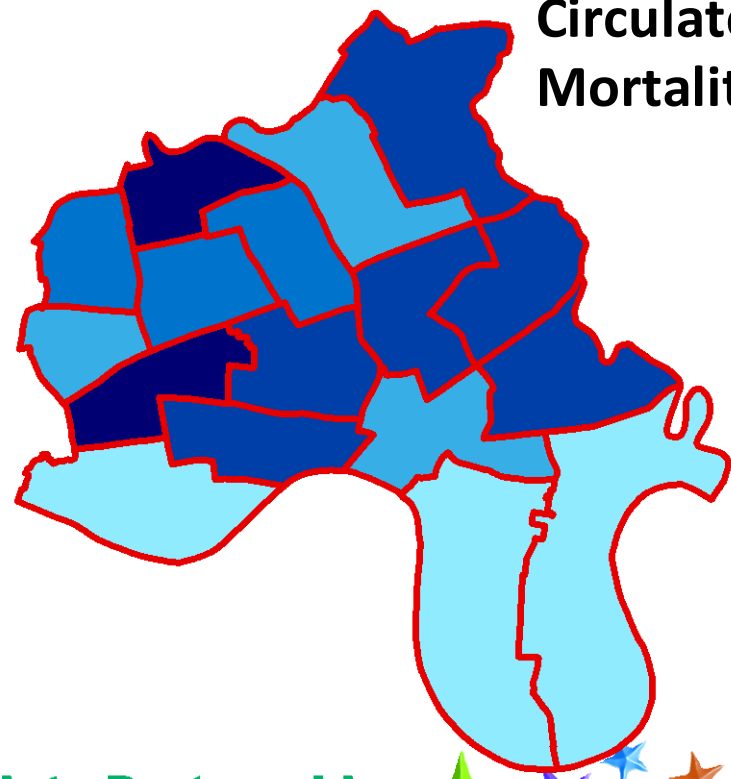


IMD Decile



Increasing Deprivation

Circulatory Disease Mortality Rates

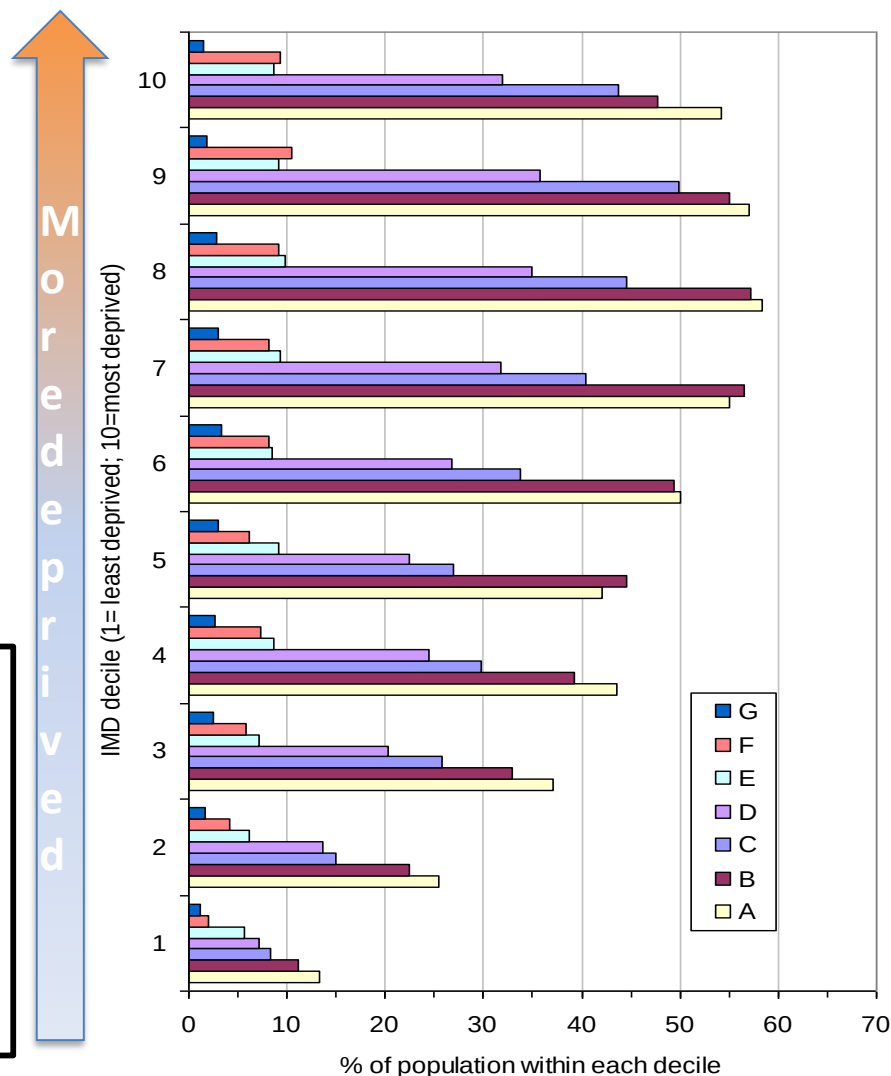


What are the factors driving *Tower Hamlets* deprivation?

IMD is a composite score of:

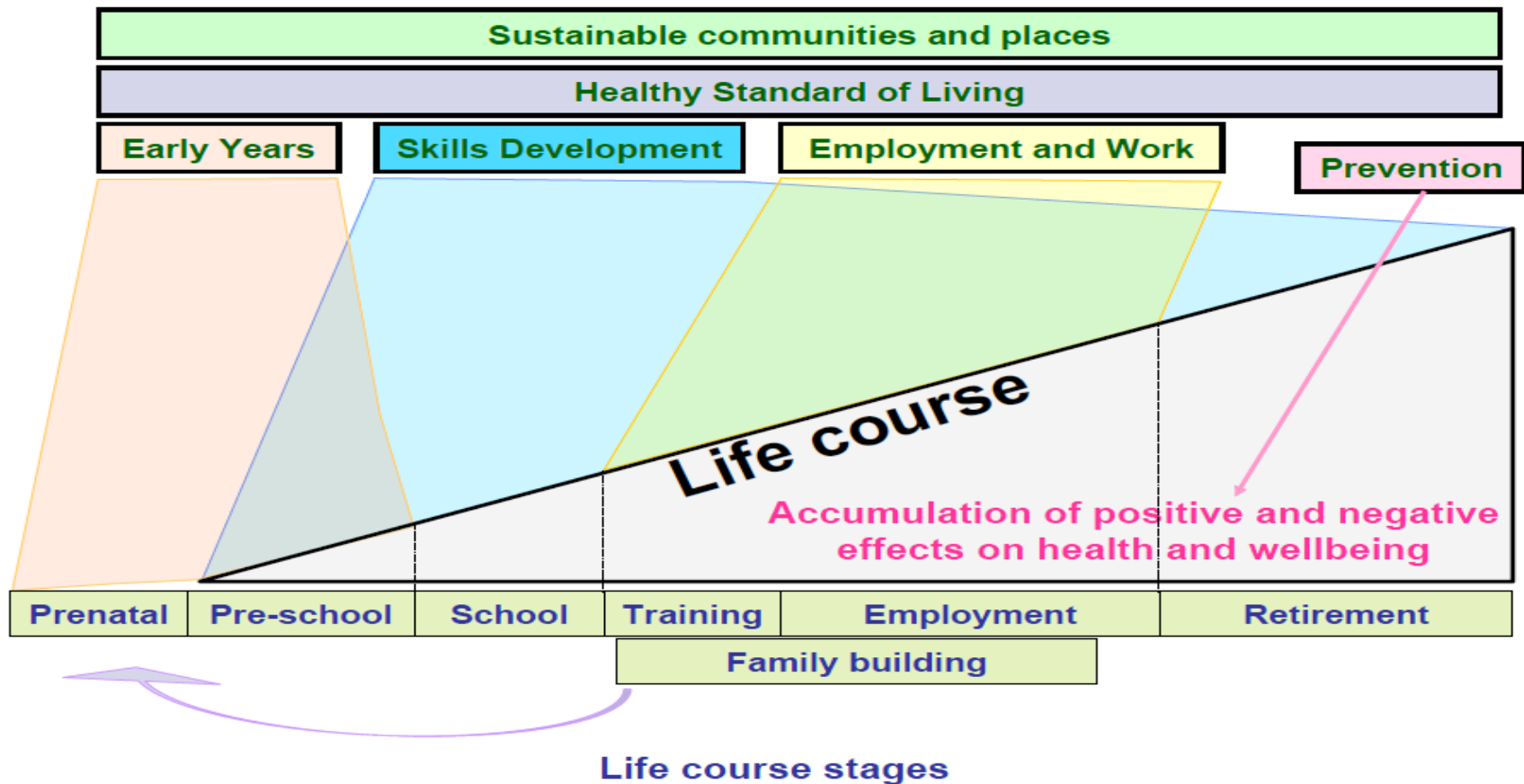
- Income
- Employment
- Health Deprivation and disability
- Education, skills and employment
- Housing and services
- Crime
- Living Environment

-  % means tested benefits
-  % social tenure
-  % Bangladeshi
-  % <65 living in households with 3+
-  % single parent household
-  % in 3-generational households
-  % aged 65+ living alone



The Marmot Review provides evidence of the association between social determinants across the life course and health outcomes

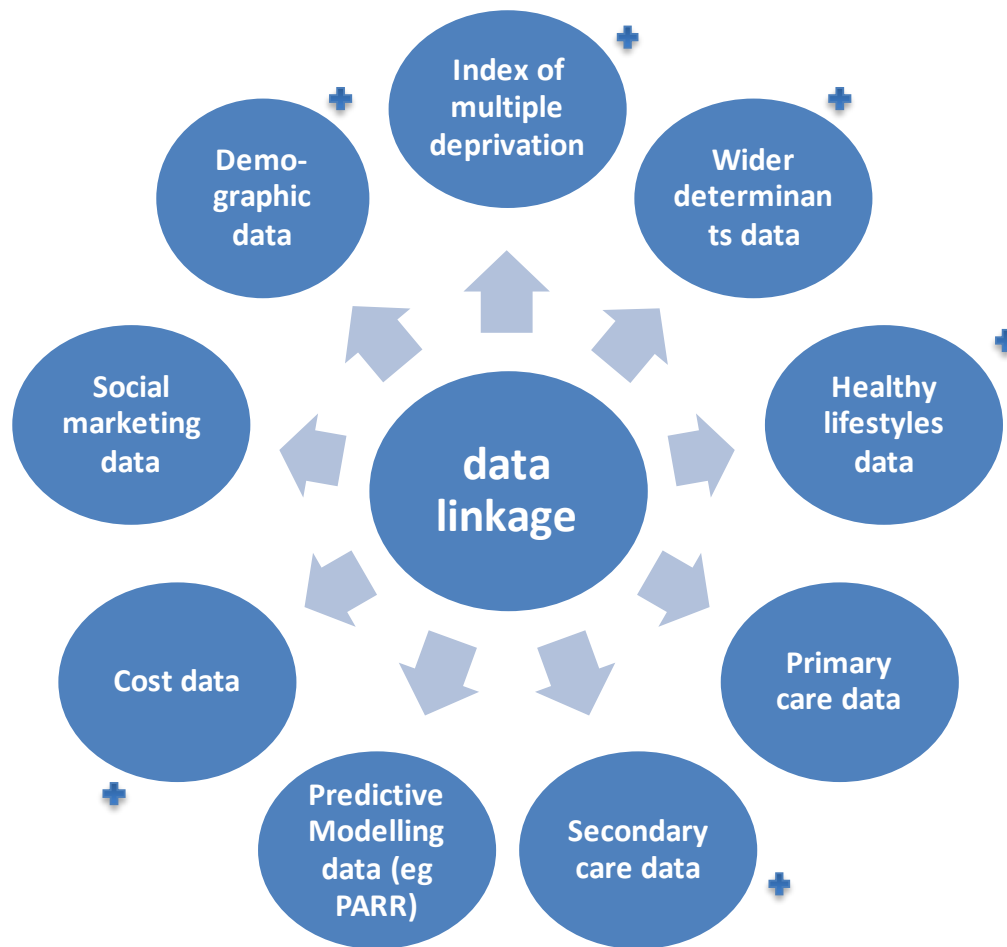
Areas of action



We built on the existing population growth model, and linked further health and social care datasets

Further data sets added. Linked at

- Household level where key fields e.g. NHS no: in dataset
- SOA where data quality less robust



Our approach enables us to quantify the relationship at a very local level through data linkage

Demography/ Population	Wider determinants	Healthy lifestyles/ Risk factors	Services	Health outcome
Age Gender Ethnicity Social service group • learning disability • vulnerable adult • sensory impairment • physical disability • mental health	Receiving means tested benefit Social tenure Single parent 3 generation households 3+ children living alone	Smoking Alcohol use Diet Physical activity Low birth weight Access to fast food outlets	Admission rates Elective/non elective Secondary care costs Cancer screening GP practices Social care packages	Life expectancy CVD mortality Cancer mortality Births Deaths

Aspiration to further
include:
Incapacity benefit,
children's services data,
health visiting, district
nursing, primary care



How do we analyse this data?

Started from a neutral position

- Analysed data to show key variables that explain >95% of variance.
- Used regression modelling to estimate cost of individual factors.
- As geo-referenced database carried out some spatial analysis e.g. proximity of transport nodes etc

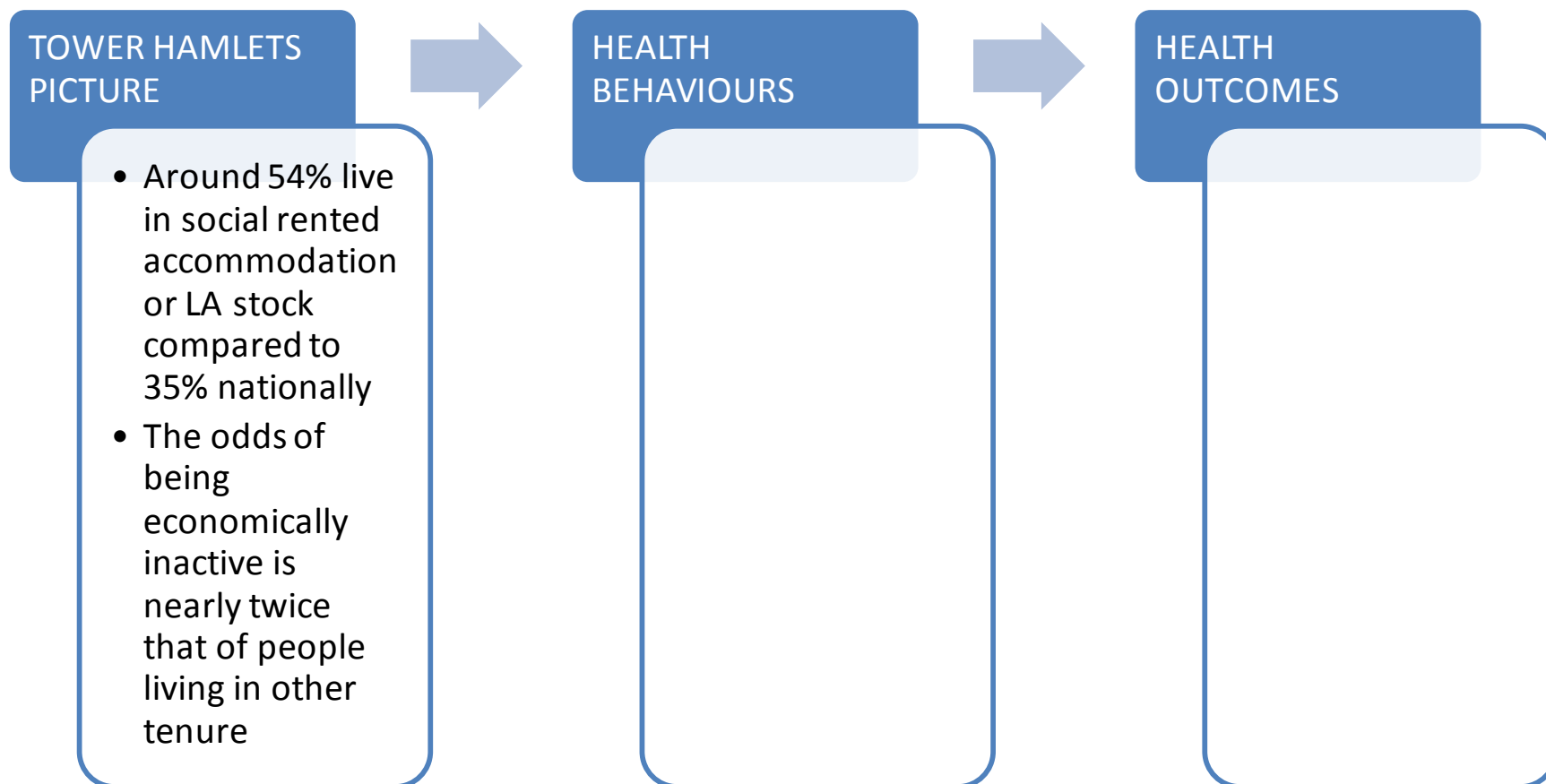


PERSON

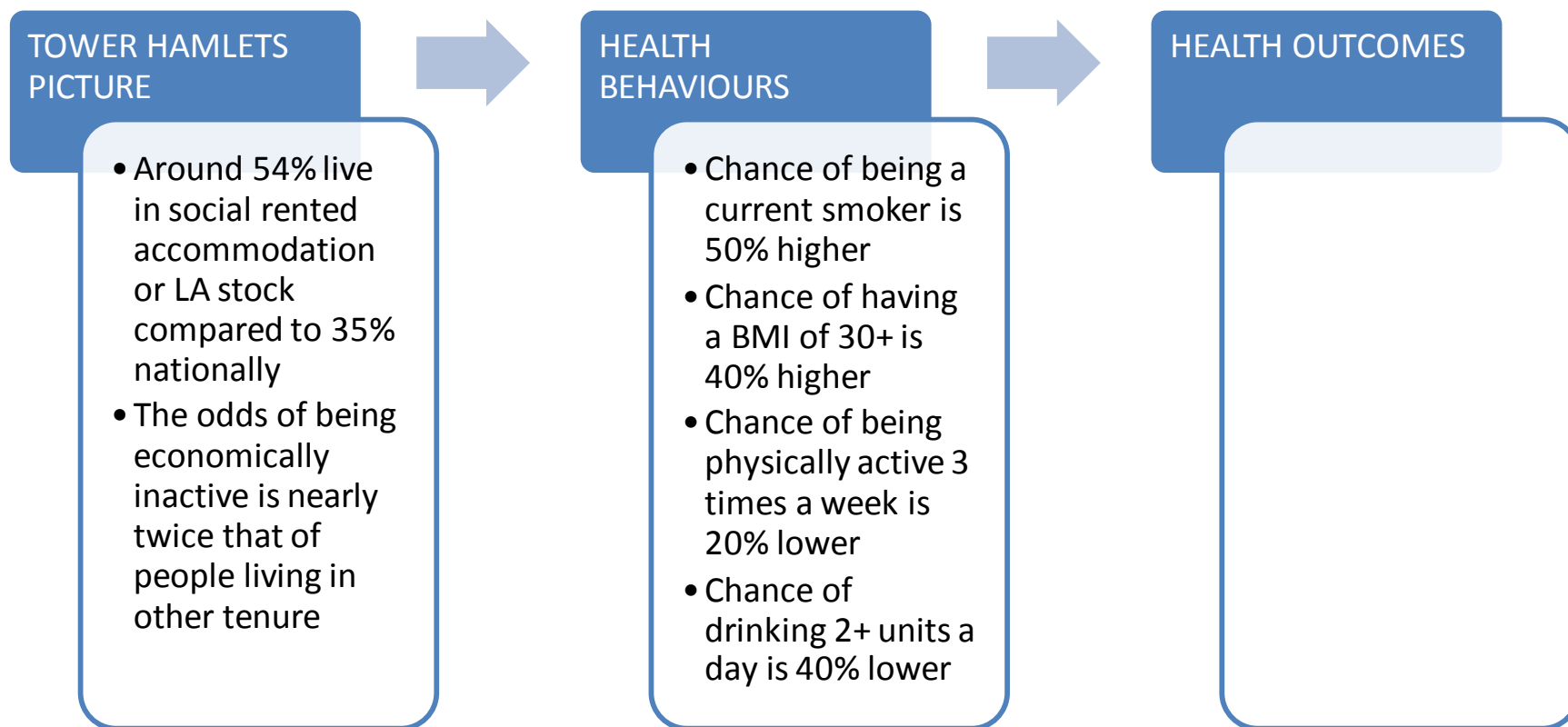
- We can profile people according to their socio-demographic characteristics
- We can further characterise them by their association with health behaviours and health outcomes



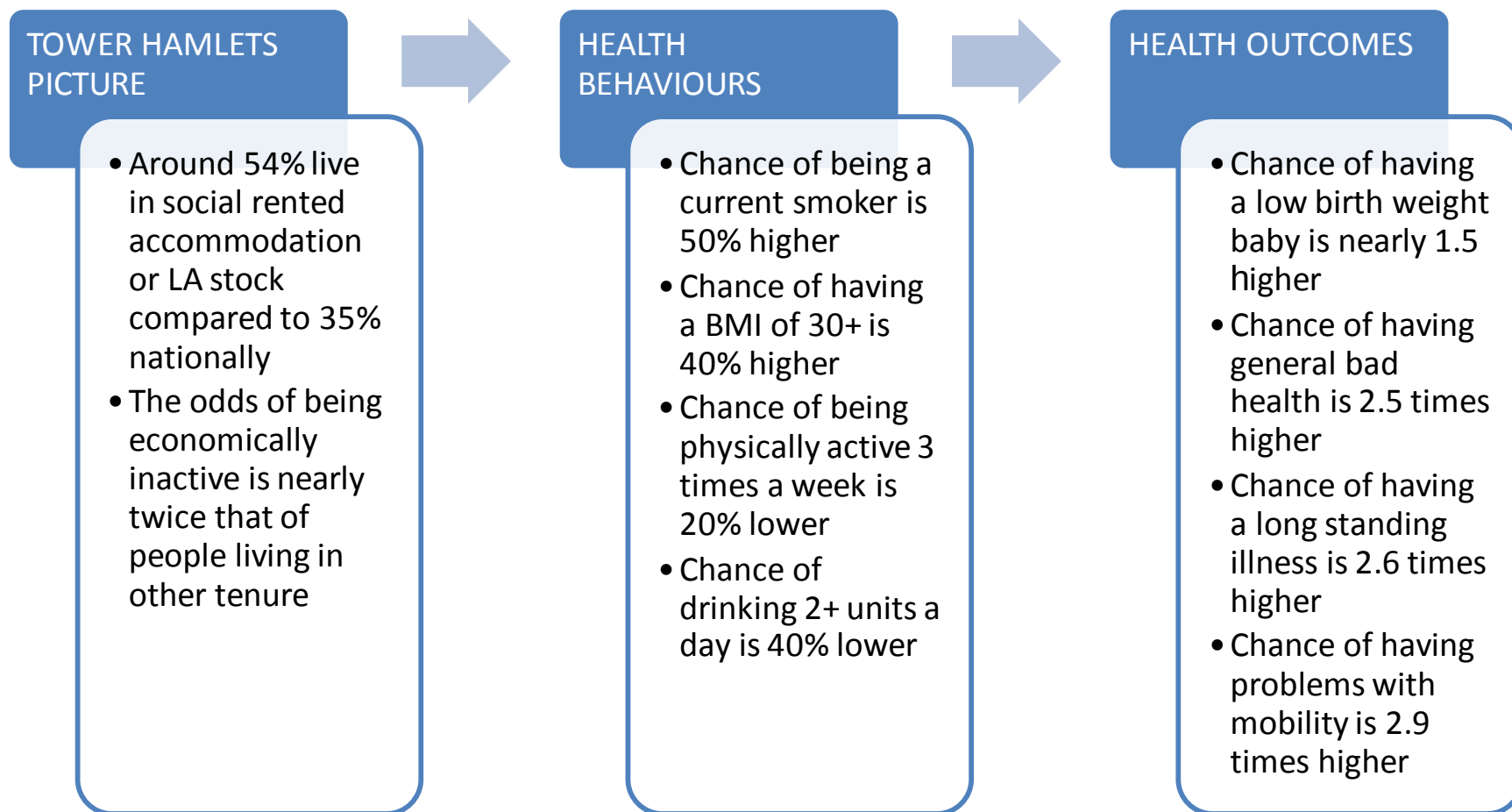
Example: People who live in social housing



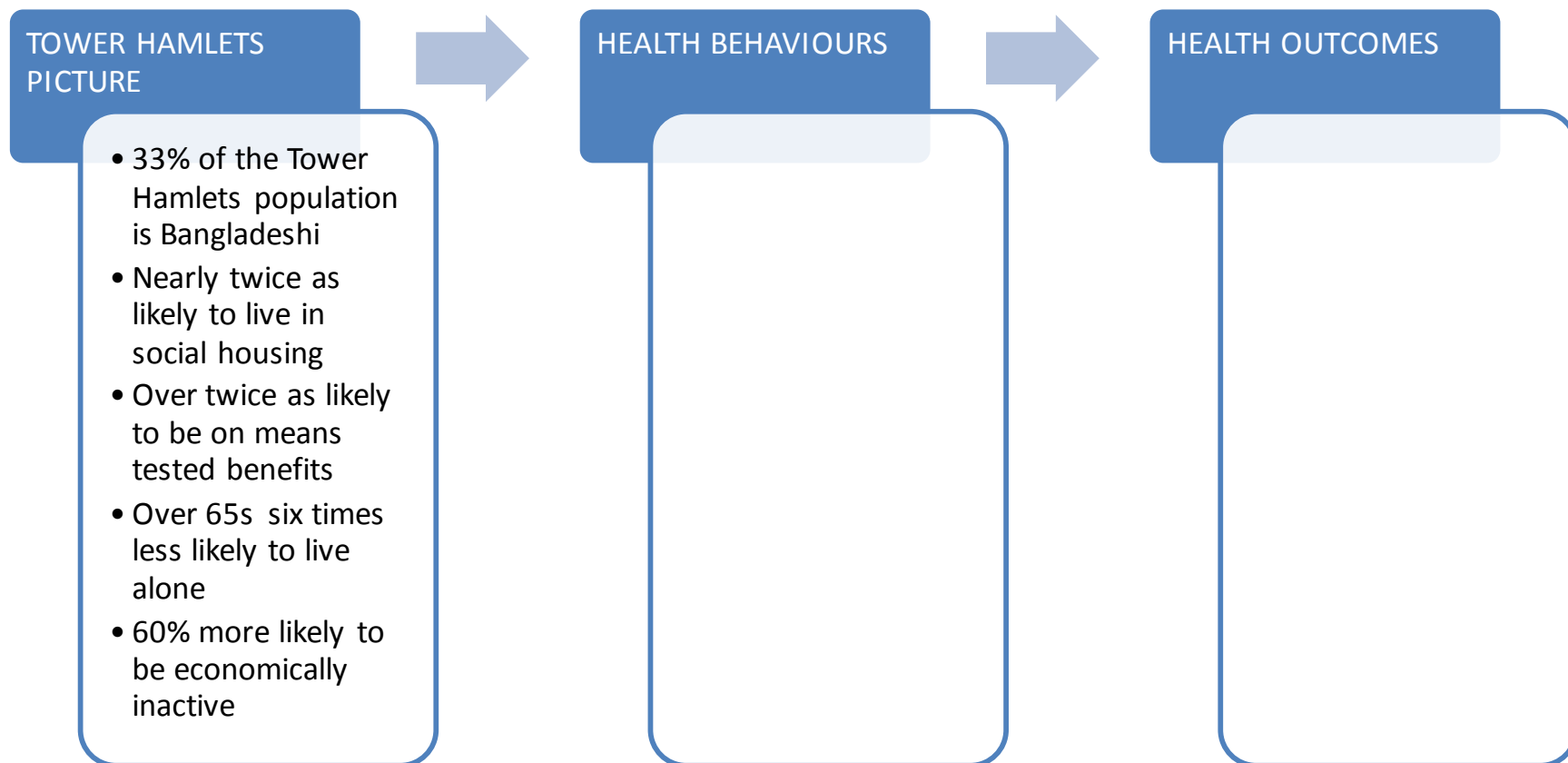
Example: People who live in social housing



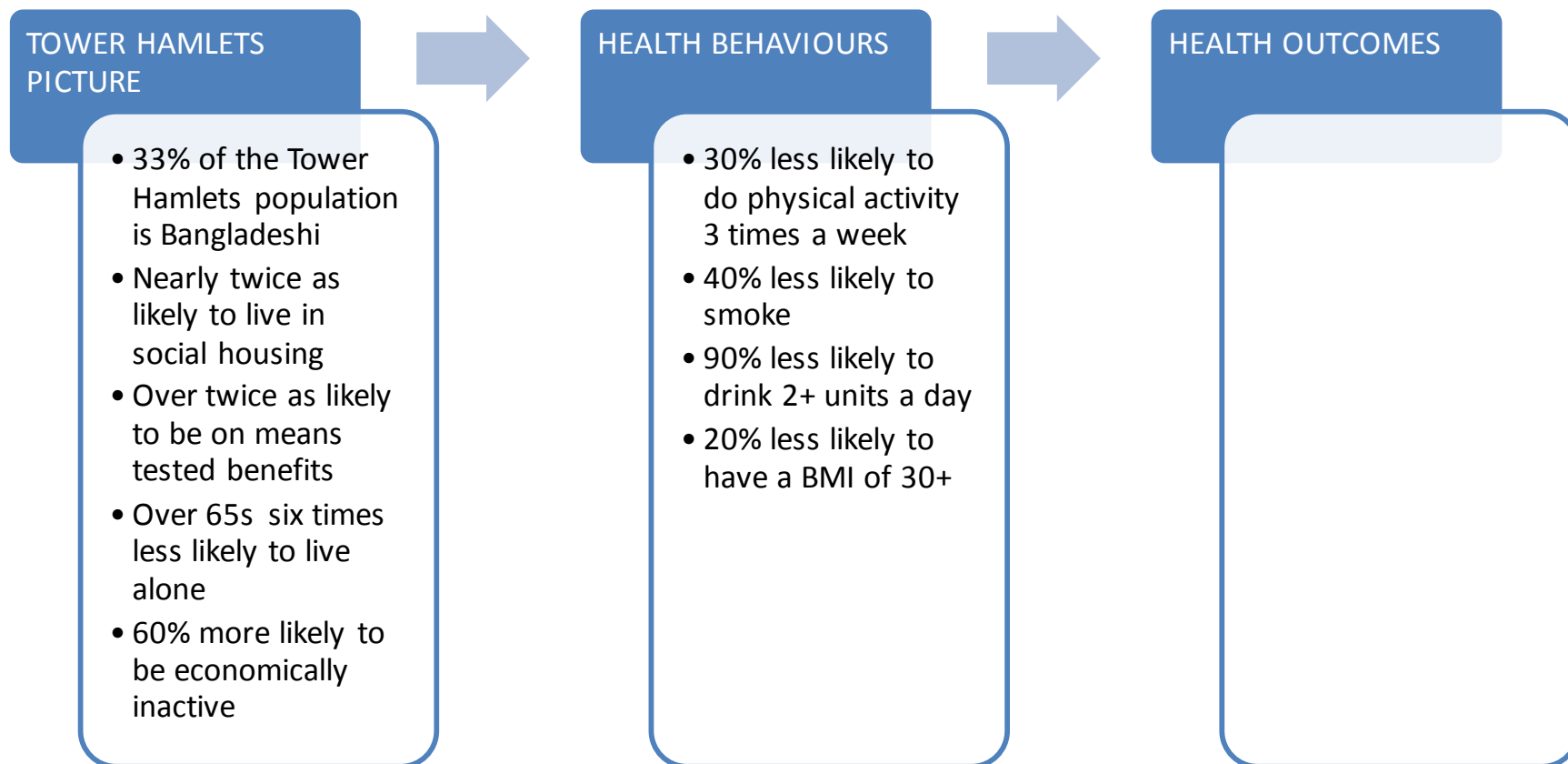
Example: People who live in social housing



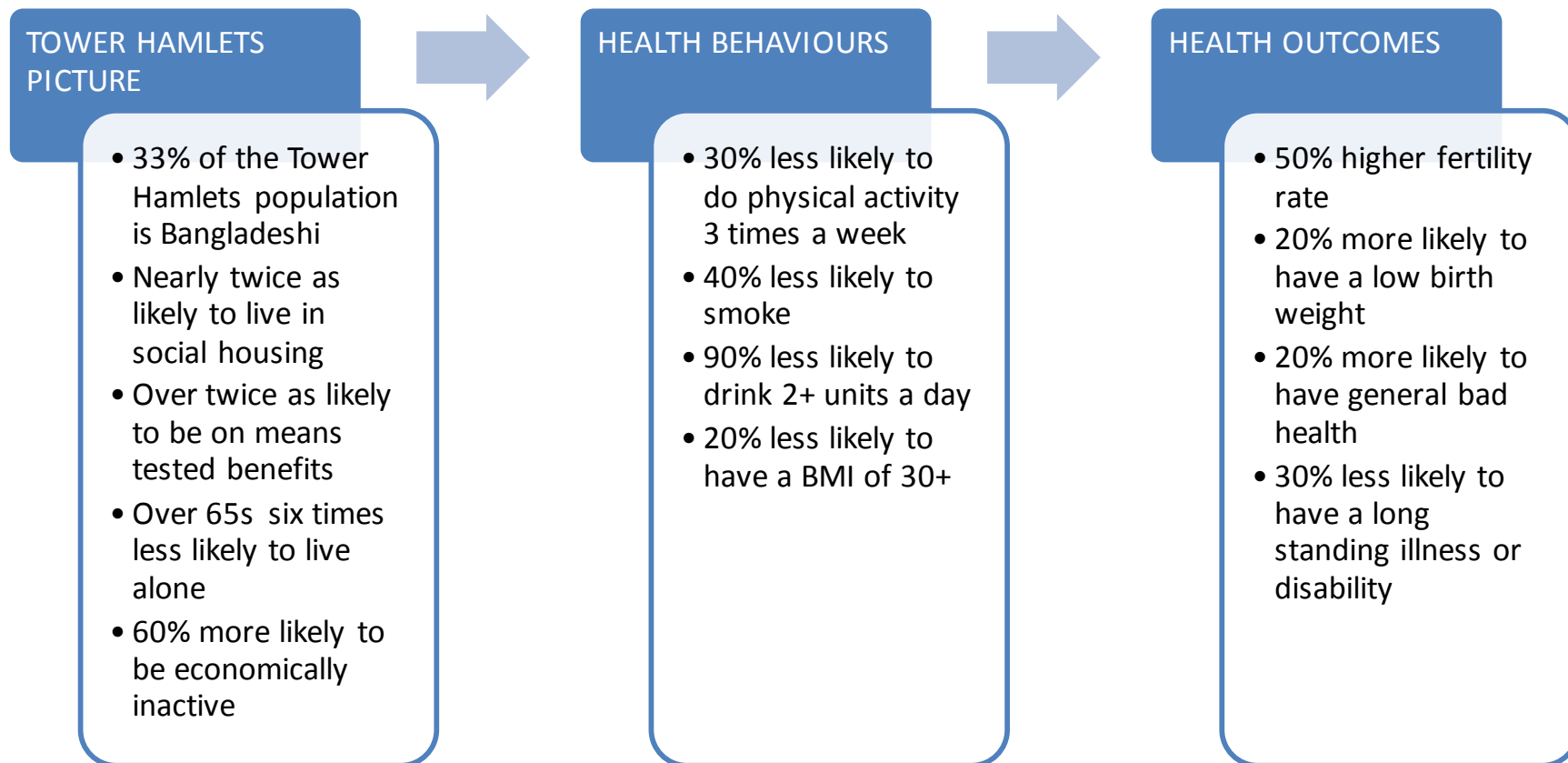
Example: People who are Bangladeshi



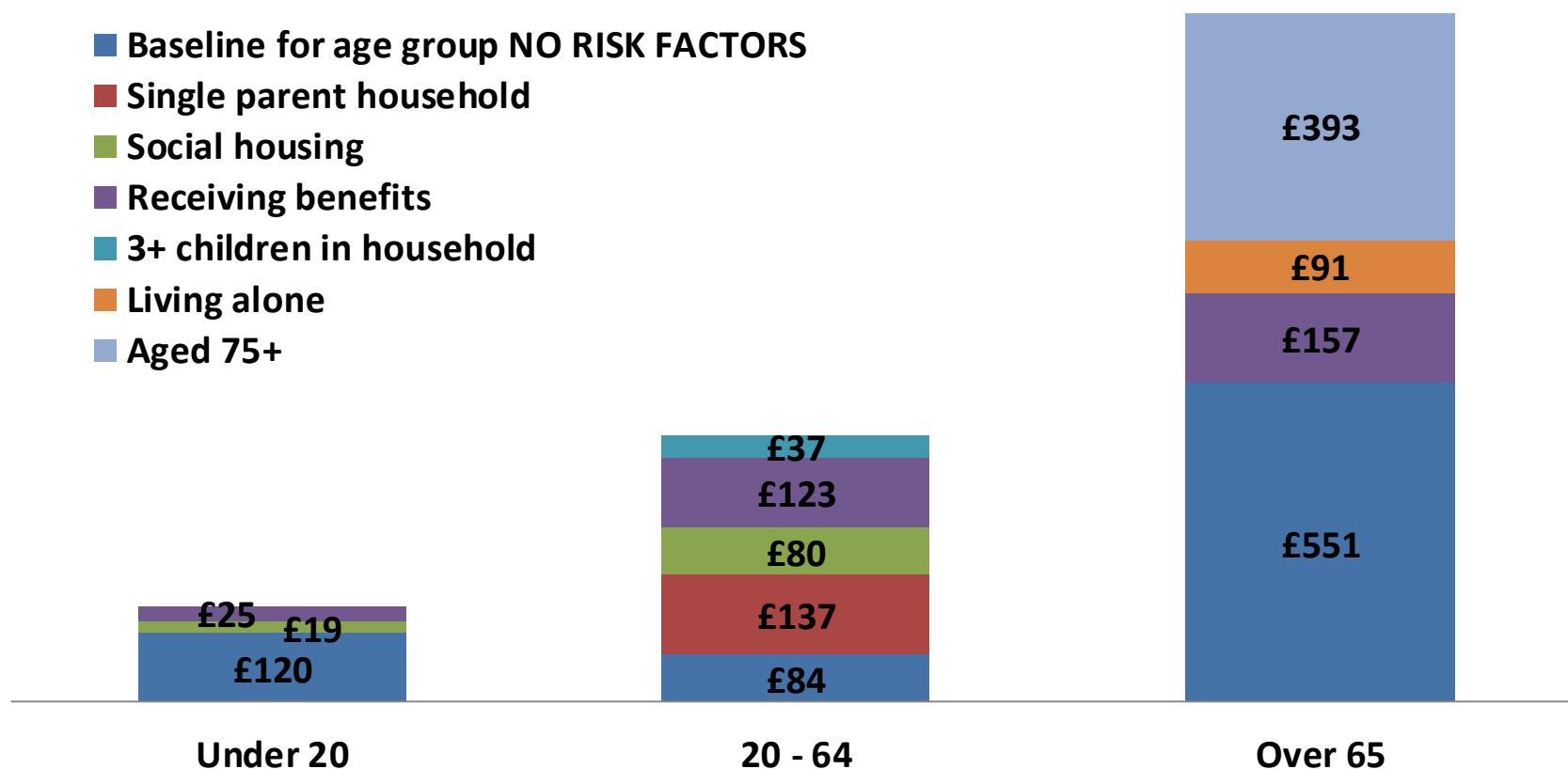
Example: People who are Bangladeshi



Example: People who are Bangladeshi



The economic argument for targeting resources more intelligently – socio-demographic factors are predictive of secondary care expenditure

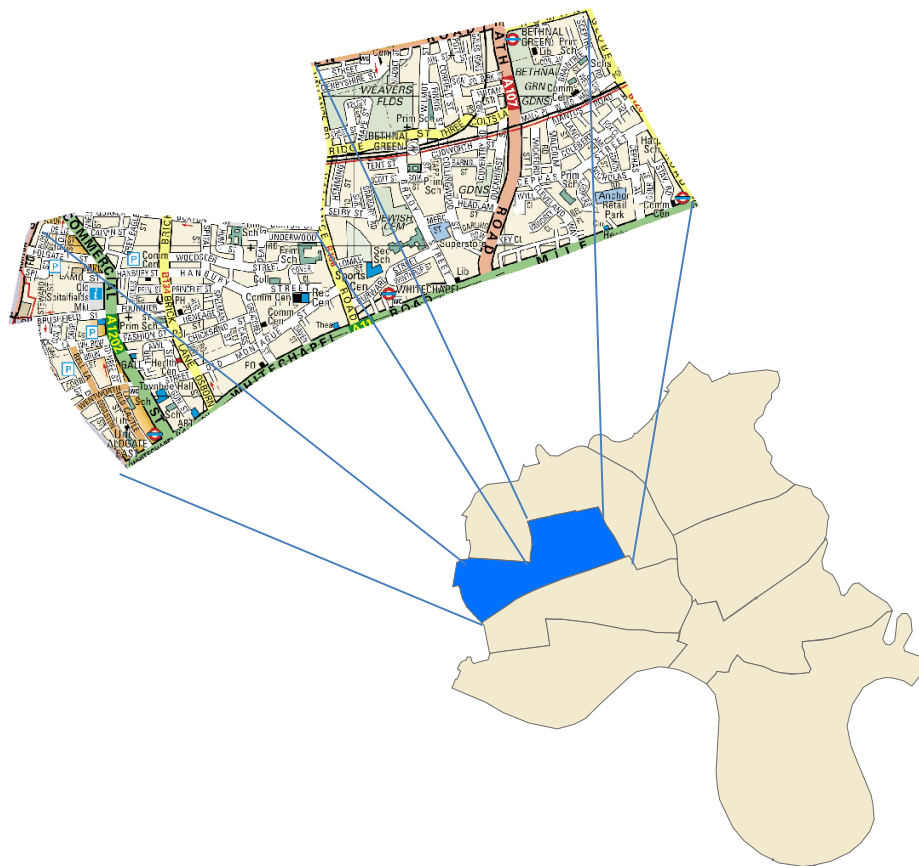


PLACE

- We can profile areas at different levels of geography according to different requirements.
- Examples: localities, wards, lower super output areas, deprivation deciles, GP catchment areas, people living within 500 metres of a given children's centre, etc.



We can produce local area profiles using this intelligence

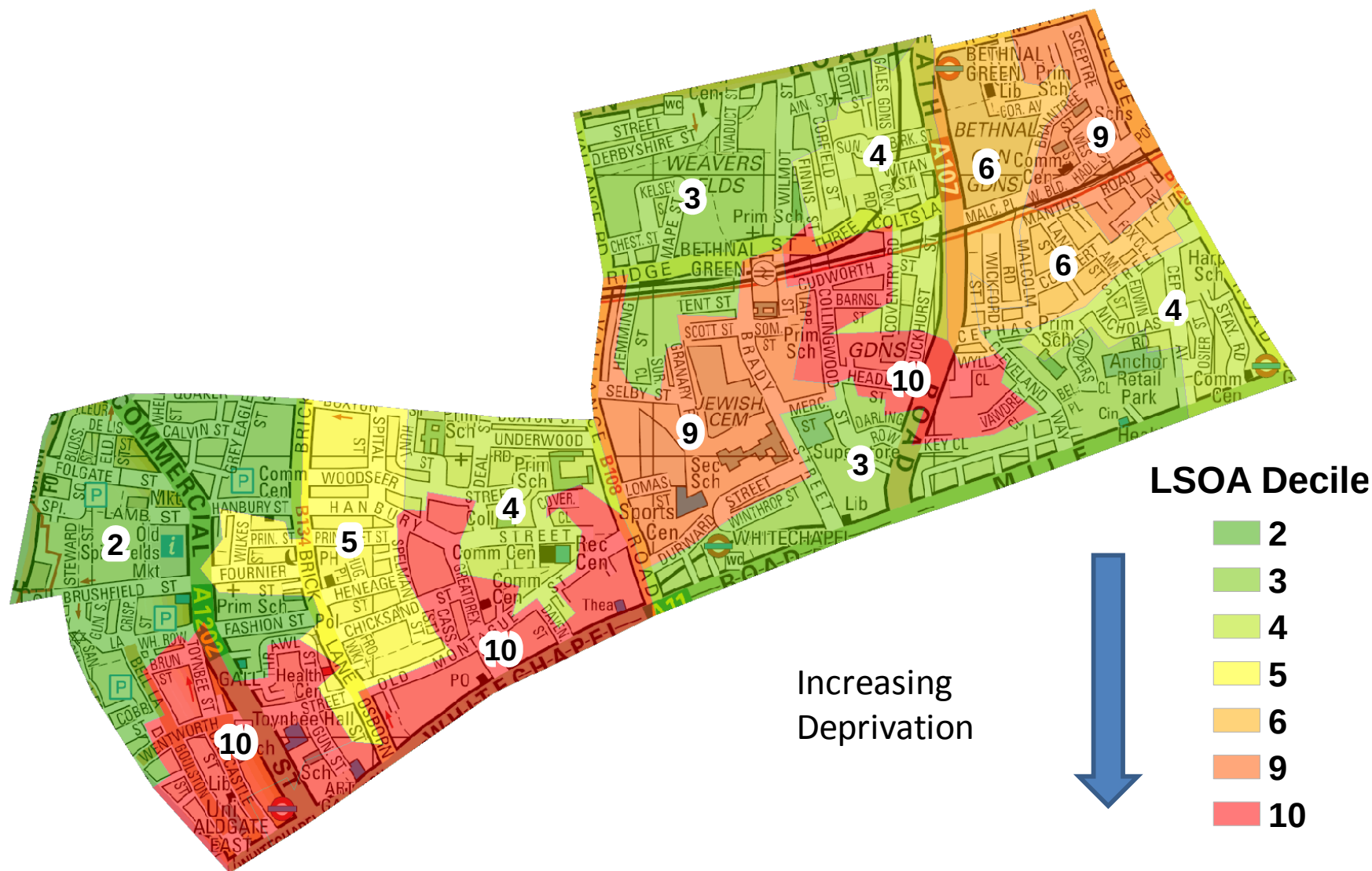


Local Area Partnership 2

- Covers 2 wards
- 48% of households on means tested benefits
- 45% Bangladeshi
- 5.5% Lone parent households
- 10% households are 3 generational
- Hospital admission rates and costs similar to Tower Hamlets average



What does this mean in practice?



Example: Small area inequalities



Example: Small area inequalities



- Bangladeshi population 50% below the borough average
- 10% of households receiving means tested benefits
- 50% less people in general bad health
- 50% less mobile difficulties
- 56 hospital admissions per 1000 population annually
- Secondary care costs £80 per head



- Bangladeshi population 15% above the average
- 35% of households receiving means tested benefits
- 10% more people in general bad health
- Mobility problems consistent with borough average
- 151 hospital admissions per 1000 population annually
- Secondary care costs £210 per head

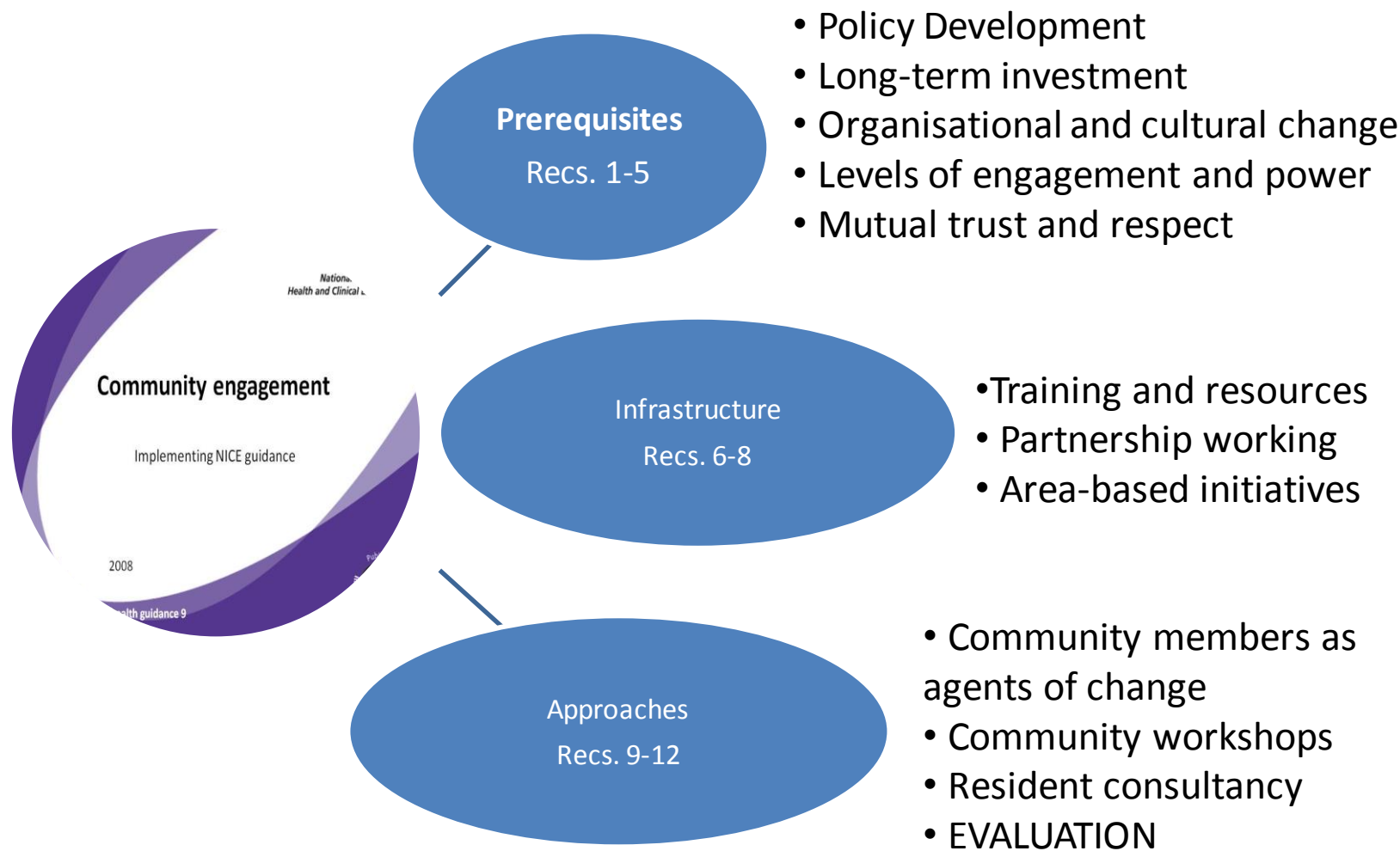


PRACTICE

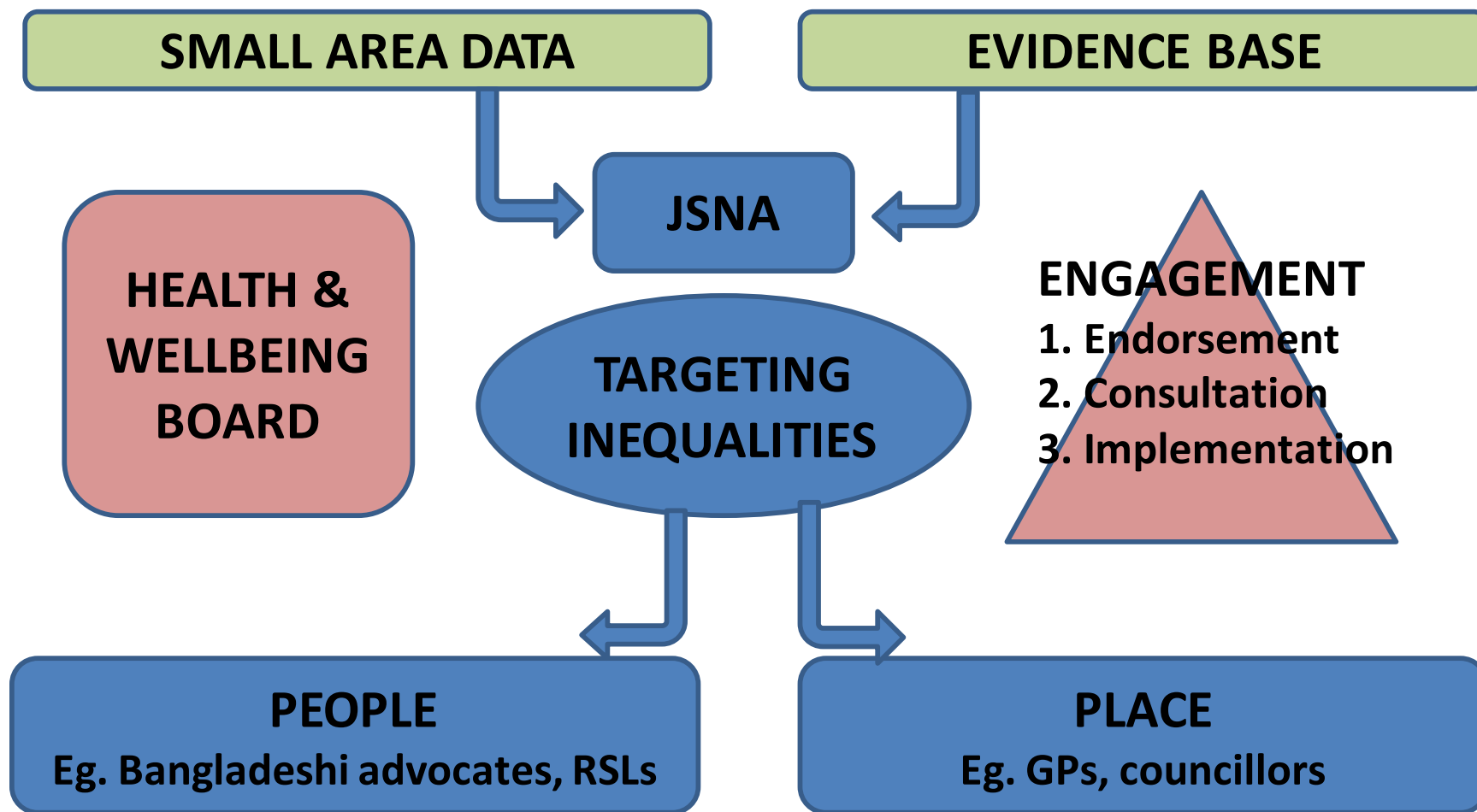
- We can combine this health intelligence with the broad evidence base supporting best practice community-based intervention
- Public Health can inform commissioners of local priorities and evidence of what works in response to this. We can support providers to make these recommendations relevant and practical to local services.



The evidence base enables constructive *Tower Hamlets* engagement on how we can put this into action



Public Health, through Health and Wellbeing Boards, have a role in engagement and enabling



Conclusion & Discussion

- For Tower Hamlets – need data at a small area level
- Overcomes some of the problems around ecological fallacy and Modifiable Areal Unit Problem
- No new data collected – using what we have more effectively. It is important that we maintain data flows as public health moves out of the NHS
- Ability to finally put a service cost on inequality
- This should be Public Health core business
- Analysis is only the start – needs to flow through to change on the ground

