

# Data Mining for Public Health

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**Public health** is "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals." (1920, C.E.A. Winslow)<sup>[1]</sup>

Public health is typically divided into **epidemiology**, **biostatistics** and **health services**. **Environmental**, social, behavioral, and occupational health are other important subfields.

## Wider determinants of Health

**Economic   Education   Housing   Transport   Deprivation   Environment**

**Life style factors   Genetics**

# Dataset and Challenges

## ONS Mortality and Births dataset

CENSUS 2001 -- 2011

Hospital Episode Statistics

Secondary user services

Prescription dataset

QOF

National children obesity programme

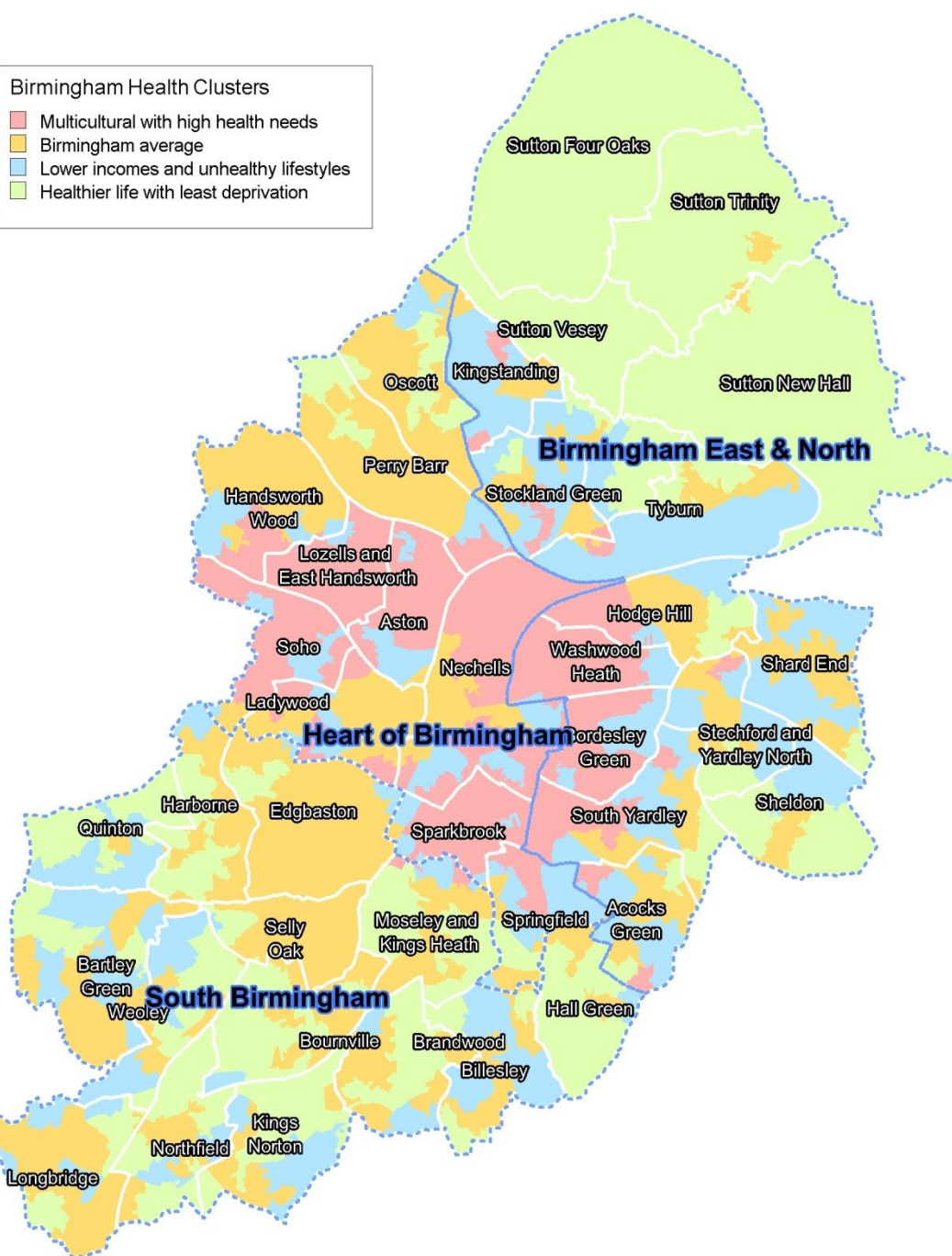
Care First

Surveys

GP records

## Birmingham Health Clusters

- Multicultural with high health needs
- Birmingham average
- Lower incomes and unhealthy lifestyles
- Healthier life with least deprivation



### Multicultural with high health needs

- South Asia communities
- Heavy CVD needs
- Mixed communities with crime and health problems

### Birmingham average

- Educated youths
- Semis
- Lower taxation band

### Lower incomes and unhealthy lifestyle

- Very mixed ethnicities
- Lower-level housing and smoking problems
- Benefits dependency with alcohol-attributable admissions

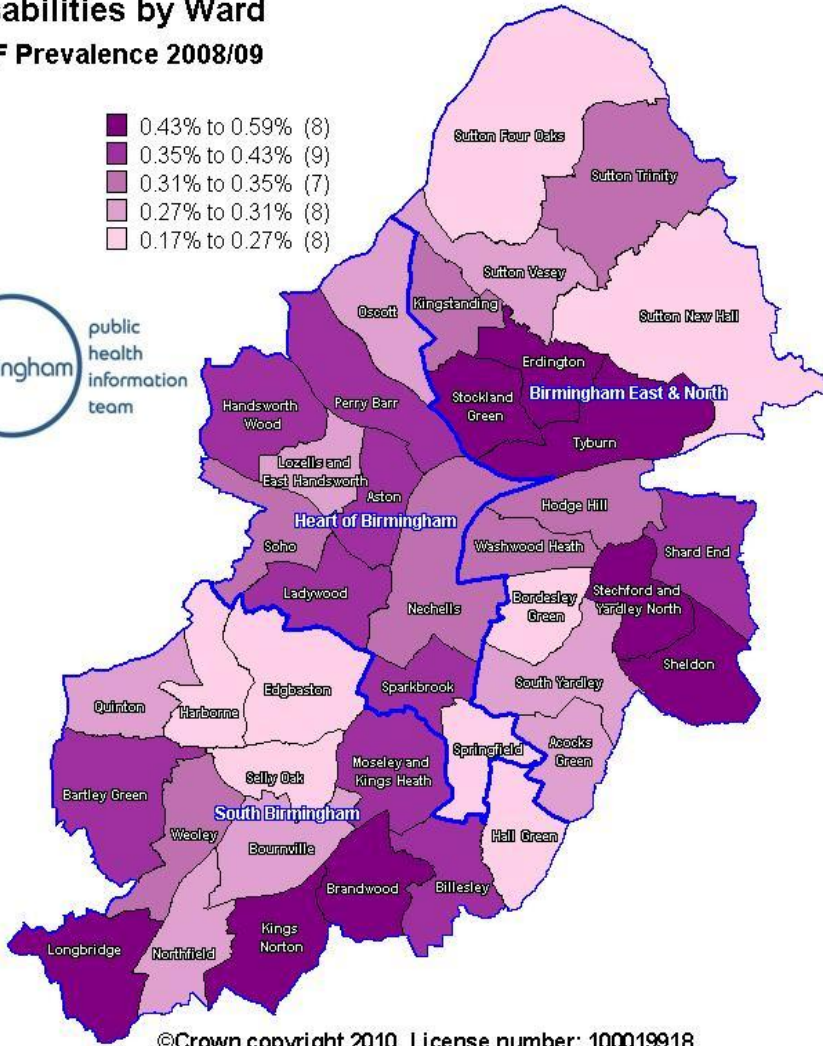
### Healthier lives with least deprivation

- Upper-level taxation housing
- Affluent elders with cancer needs
- Mid-level taxation band

# Prevalence of Learning Disabilities by Ward

QOF Prevalence 2008/09

- 0.43% to 0.59% (8)
- 0.35% to 0.43% (9)
- 0.31% to 0.35% (7)
- 0.27% to 0.31% (8)
- 0.17% to 0.27% (8)

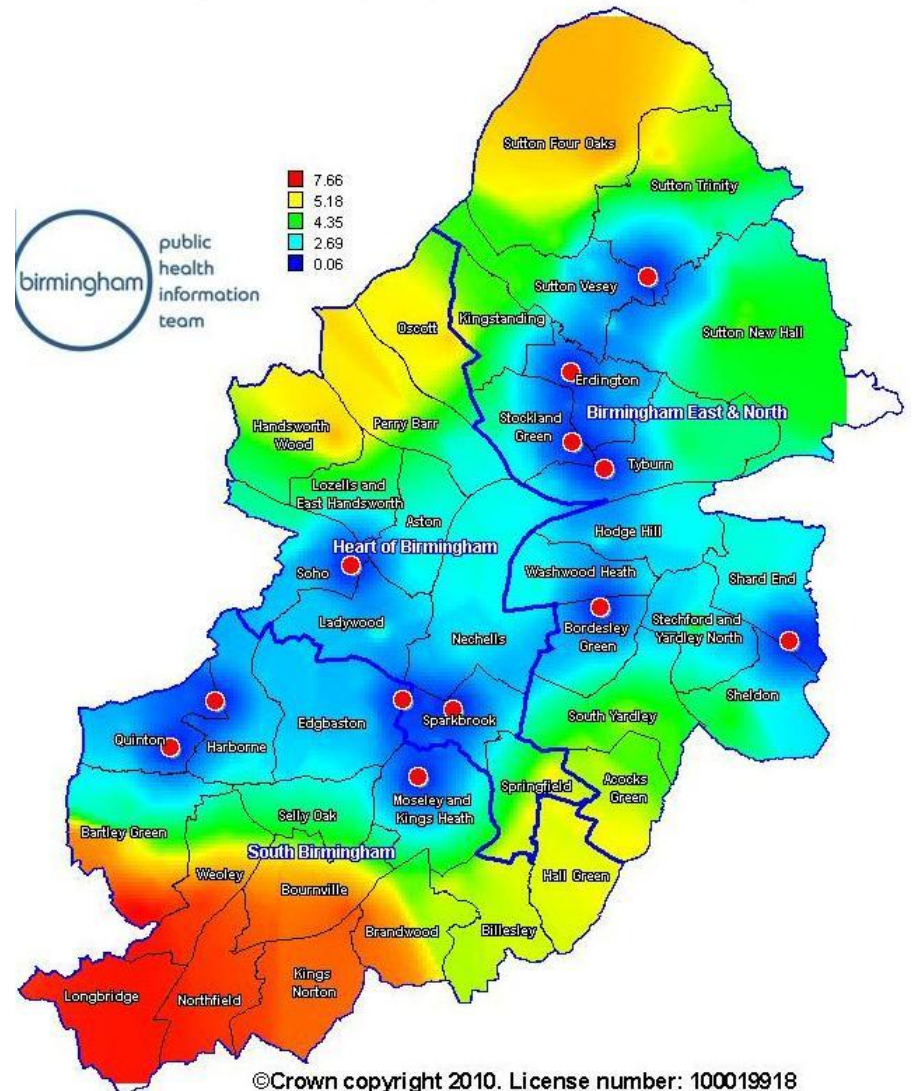


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# Distance from Birmingham postcodes to Learning Disability Day Centres in Birmingham (km)



- 7.66
- 5.18
- 4.35
- 2.69
- 0.06



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