

Subnational Population Projections for England

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- Subnational Population Projections for England.
- 2003 based, projecting population, births, deaths, net migration forward for 25 years to 2028
- Used by:
 - Department of Health
 - Office Deputy Prime Minister
 - Labour Force Survey
 - Department for Education and Skills

General Principles

- Based on past trends and not policy based
- Use latest mid year population estimate as base
- Calculated at small area level or building brick
- Constrained to national projections

Basic Formula

$$P_p = P_c + B * G_1 + B * G_2 - D + M_w + M_{il} + \dots M_{in}$$

- single year of age, gender and area
- repeated each projection year

Stages in the model

- Ageing on
- Fertility
- Mortality
- Internal migration
- International migration

- Births registrations form basis
- Local differentials calculated from observed data
- Provides projected births by age of mother
- Controlled nationally

Mortality

- Uses death registrations
- Local differentials calculated from observed data
- Projected numbers of deaths by age
- Controlled nationally

Internal Migration 1

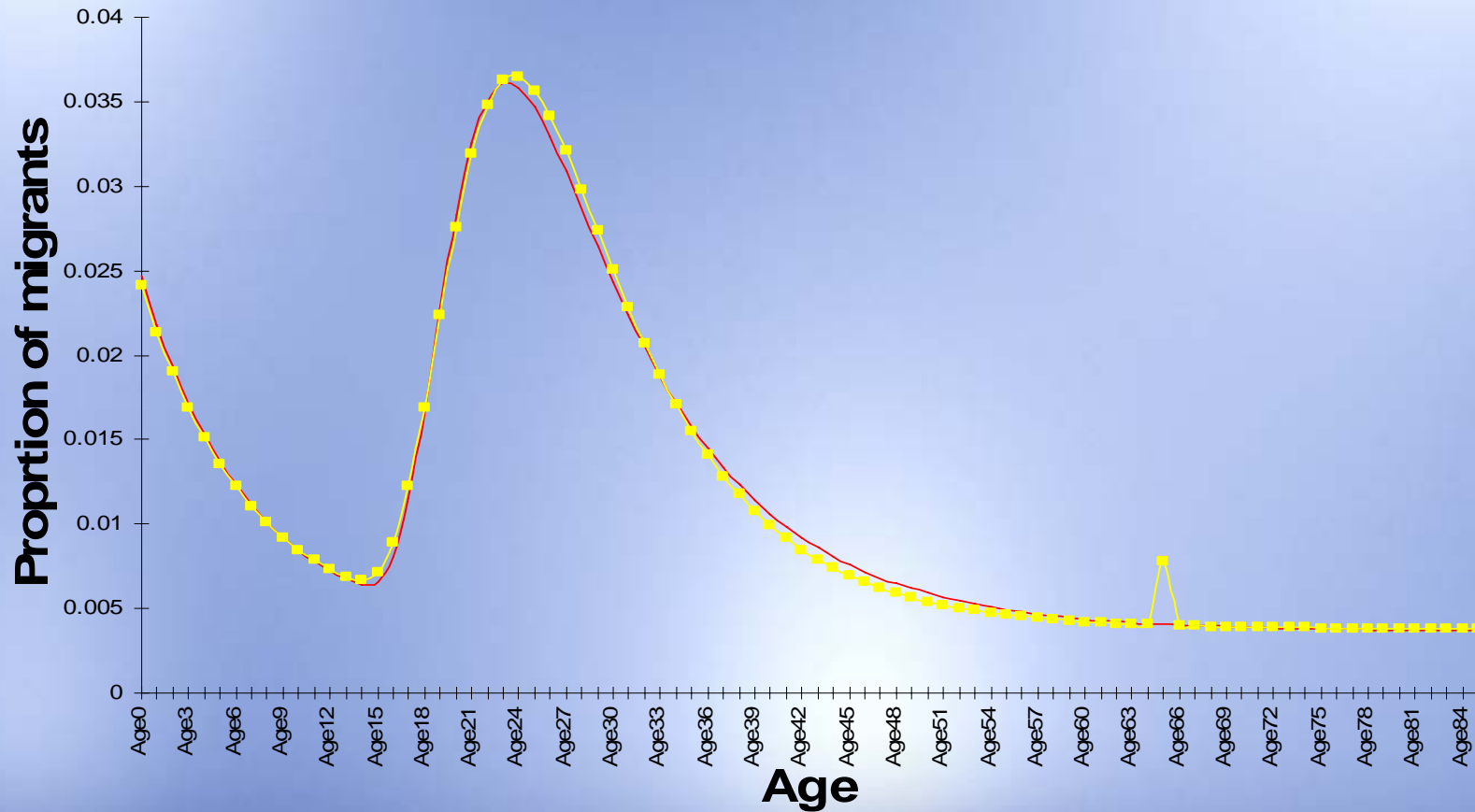
- Internal migration assumptions are derived using data from the Patient Register Data System (PRDS)
- Origin/destination by single year of age and sex

Internal Migration 2

- Model out migration probability
- Probability applied to population to give out migrants for that area
- Apply matrix to calculate in-migrants for each destination area

Typical Migration Age Profile

Age profile



International Migration

- Migration streams dictated by data
 - rest of world measured by International Passenger Survey (IPS)
 - rest of UK (cross border)
 - rest of world that are seeking asylum or visitor switchers
- Distribute national in and out migrants using Census 2001

Population Controls

- Each element is controlled to national totals
- Final population control
- Projected population is new base
- Repeat process for 25 years

Aggregation

- Aggregate building bricks to:
 - unitary authorities, county districts, London boroughs
 - local authority
 - strategic health authorities
 - Government Office Regions

Processes

- Draft projections produced
- Consultation on first year migration assumptions
- Any adjustments applied
- Publication of final projections and supporting material

- Difficulties in measuring migration
- Population types
- Reflection of recent changes
- Stretching data

Ideas for the Future

- Variant projections?
- Fitness for many purposes?
- Measurement of uncertainty?
- Other geographies?