

# Epidemiology of hepatitis B in the UK (England and Wales)

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# Hepatitis B: surveillance



## Objectives

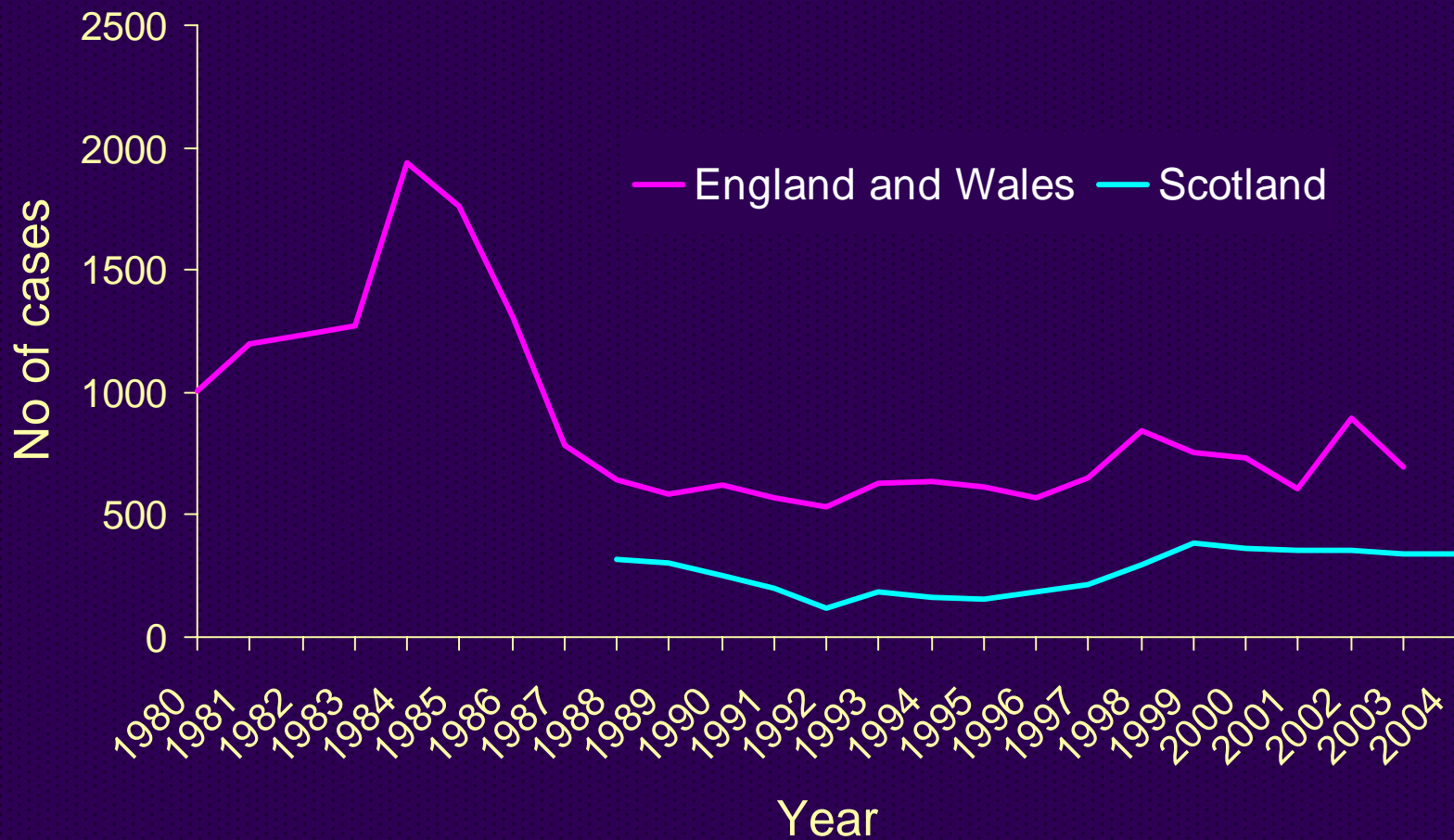
- determine incidence, prevalence & burden
- choose and monitor control strategies
- identify outbreaks

## Routine sources of data

- statutory notifications (clinical)
- laboratory reporting
- deaths

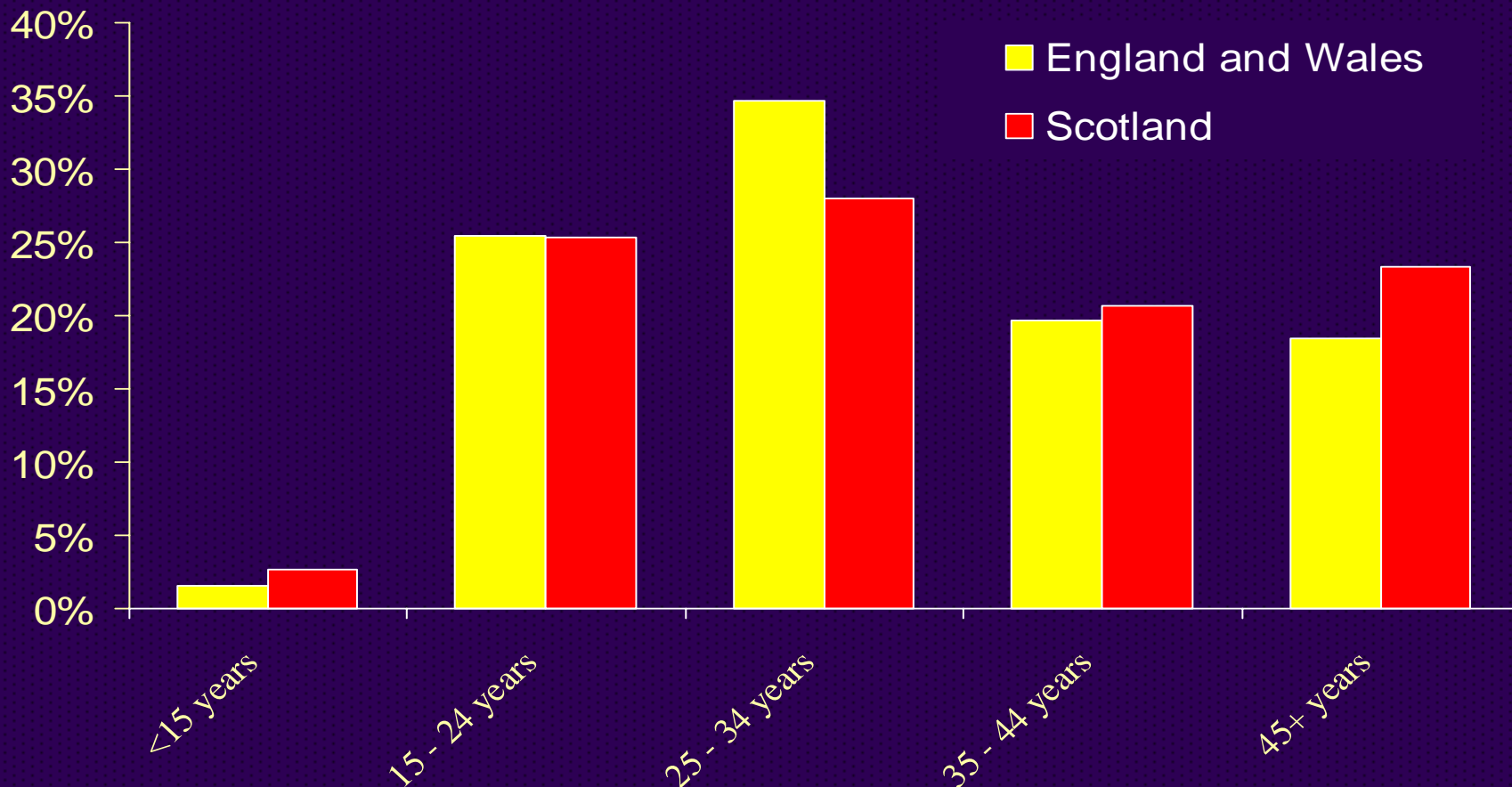
# Laboratory reports of hepatitis B

## England and Wales, Scotland 1980-2003



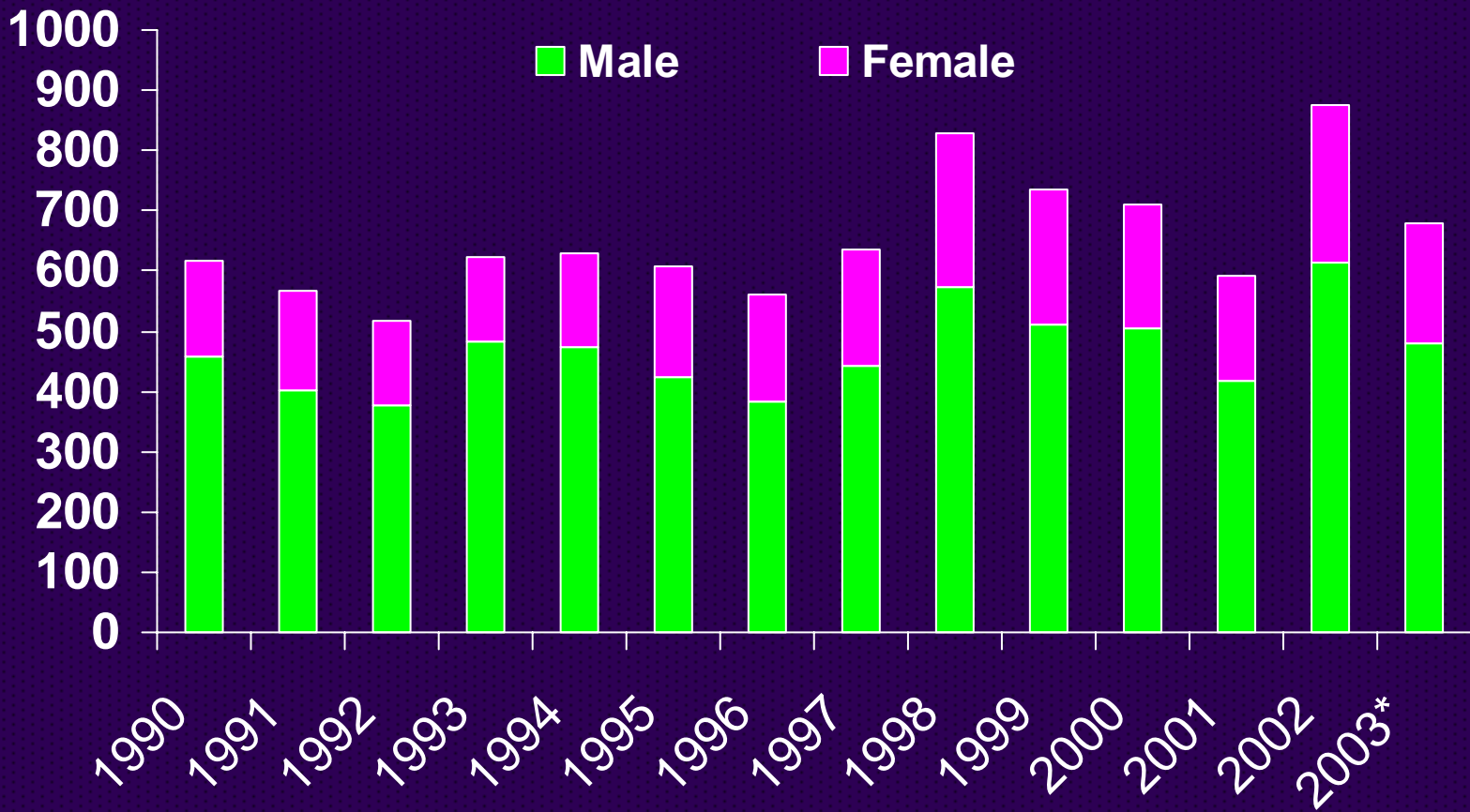
# Age distribution of HBV laboratory reports

*England and Wales and Scotland, 1995-2003*

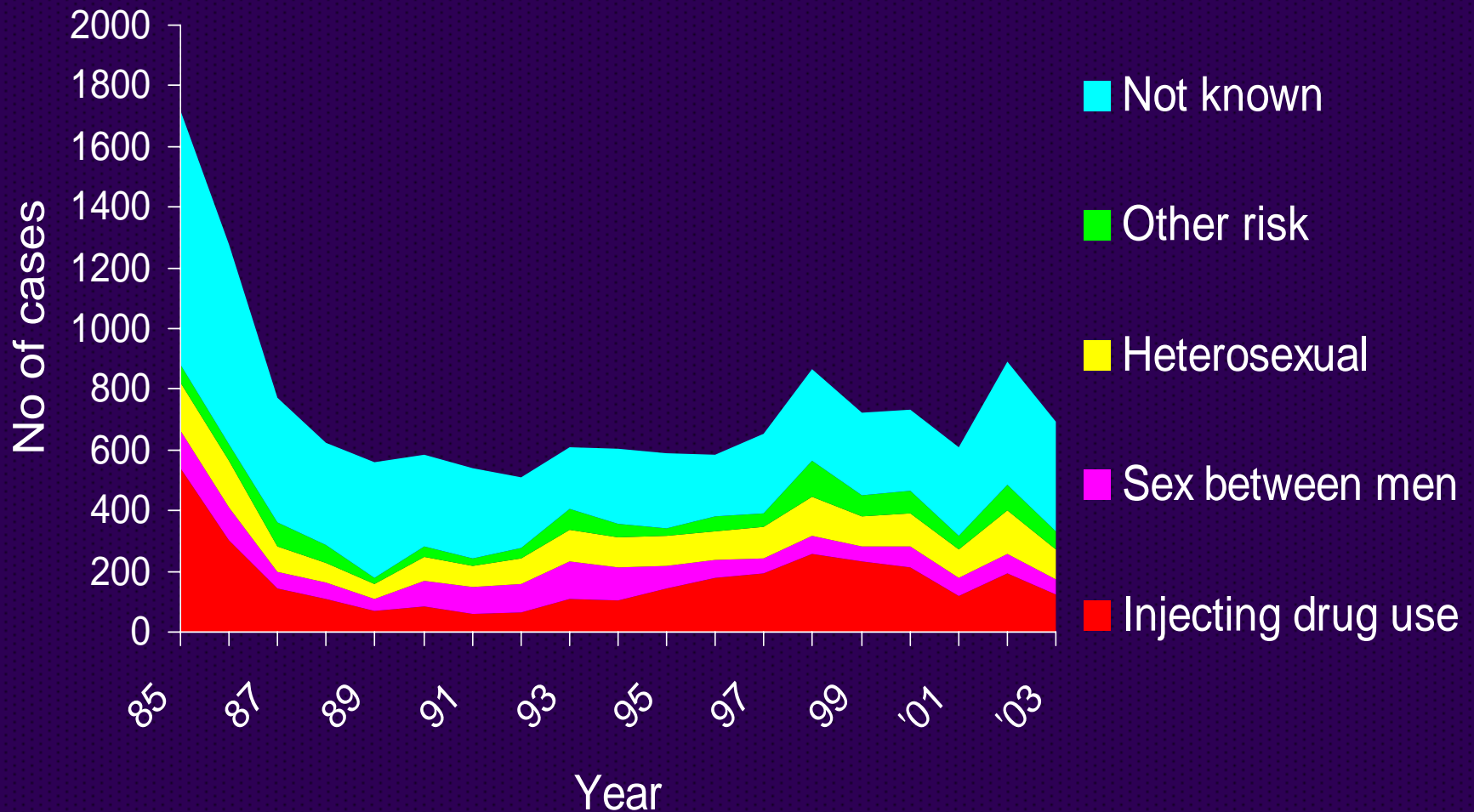


# Acute HBV laboratory reports to Cfl

*By sex, 1990-2003*



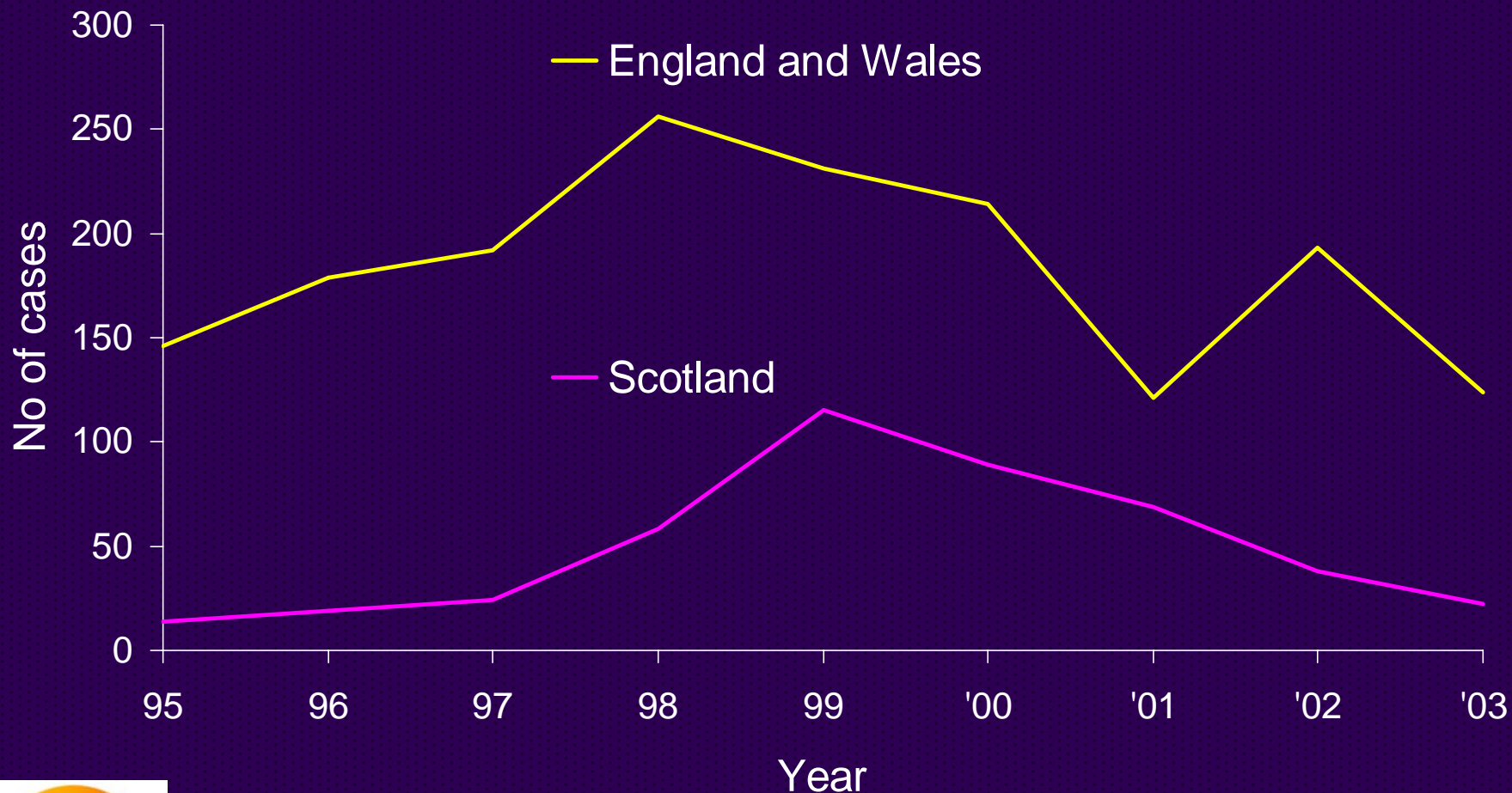
# Acute HBV by major exposure categories England and Wales, 1985-2003





# Hepatitis B in injectors

*England and Wales, Scotland 1995-2003*



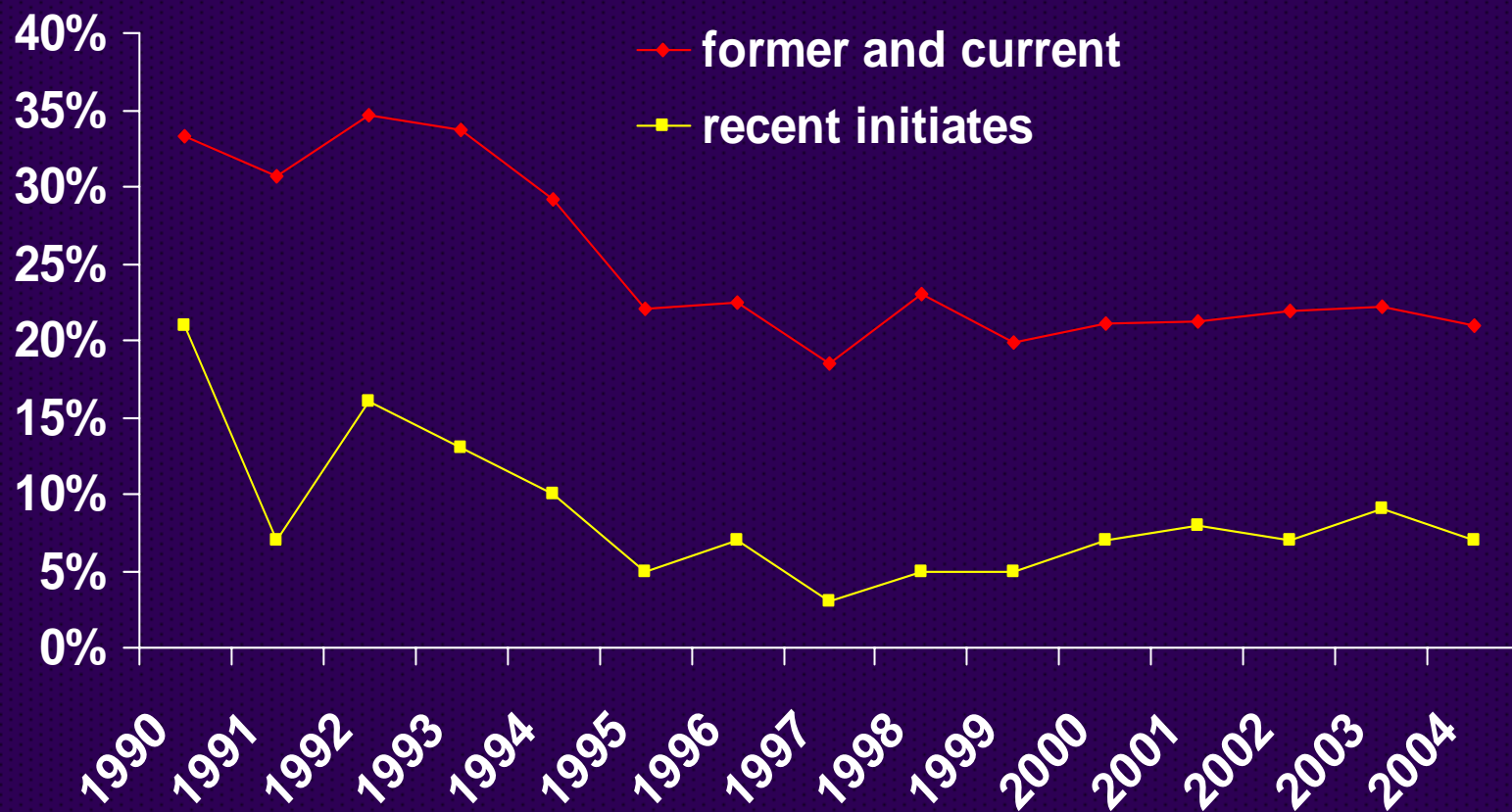
# Reports of acute hepatitis B



- incidence fell in late 1980s and early 1990s
  - fall in cases in IDUs
- Minor increase in cases in IDUs since mid 1990s
  - Confirmed by prevalence of anti-HBc in UAPMP
  - Also increase in cases with no reported history
  - Age and sex profile of NRI cases and secular trends follow those of IDUs
- IDUs driving the epidemiology of hepatitis B



# Anti-HBc prevalence in IDUs attending services in England, UAPMP

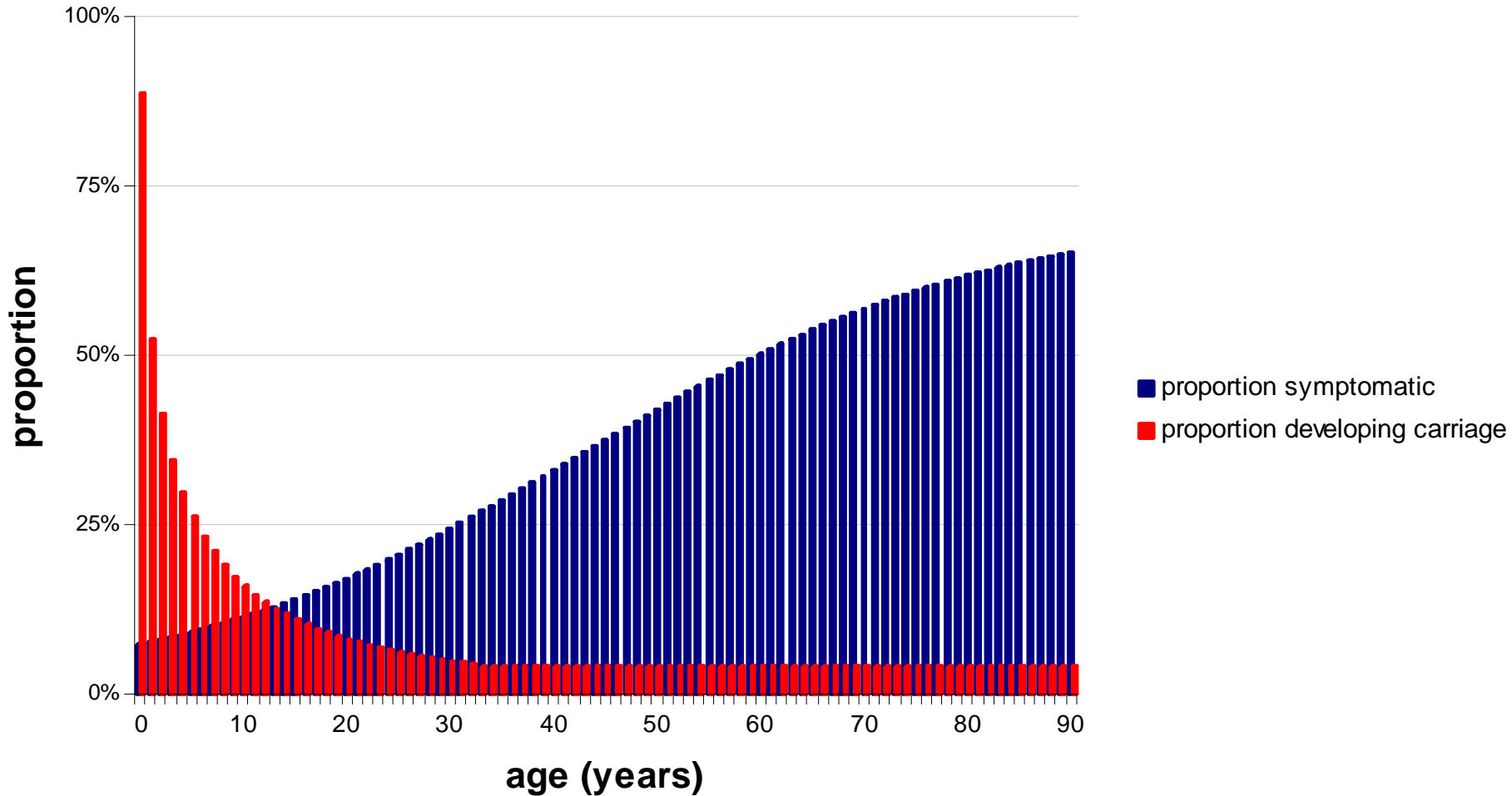


# Estimating the true incidence of acute and chronic hepatitis B

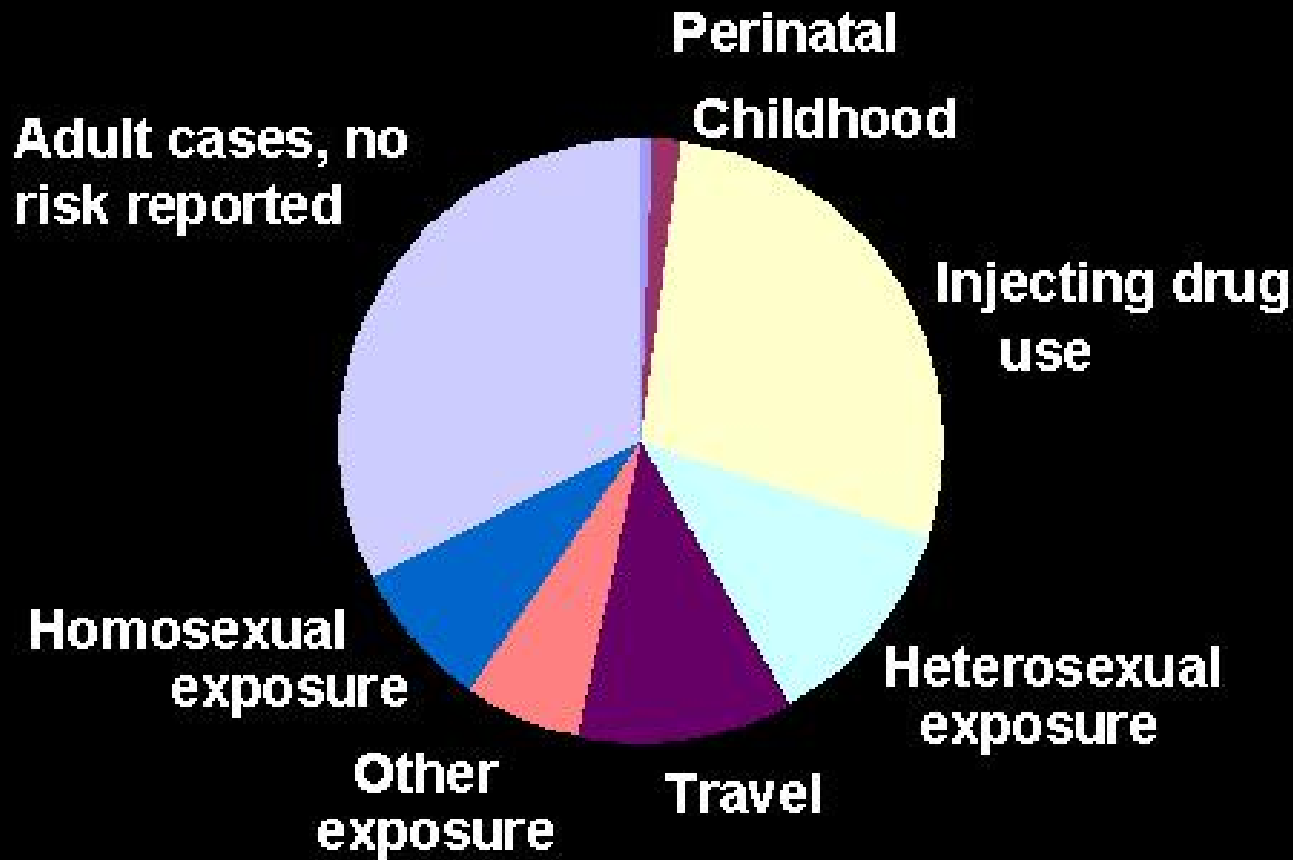


- Incidence of infection estimated from laboratory reports
  - Allowing for under-reporting
  - Allowing for age dependent chance of being symptomatic
- Incidence of chronic infection
  - Allowing for age-dependent risk of becoming a chronic carrier
- Adjusted incidence rate 5.5 per 100,000 per year
- However – risk is not homogenous

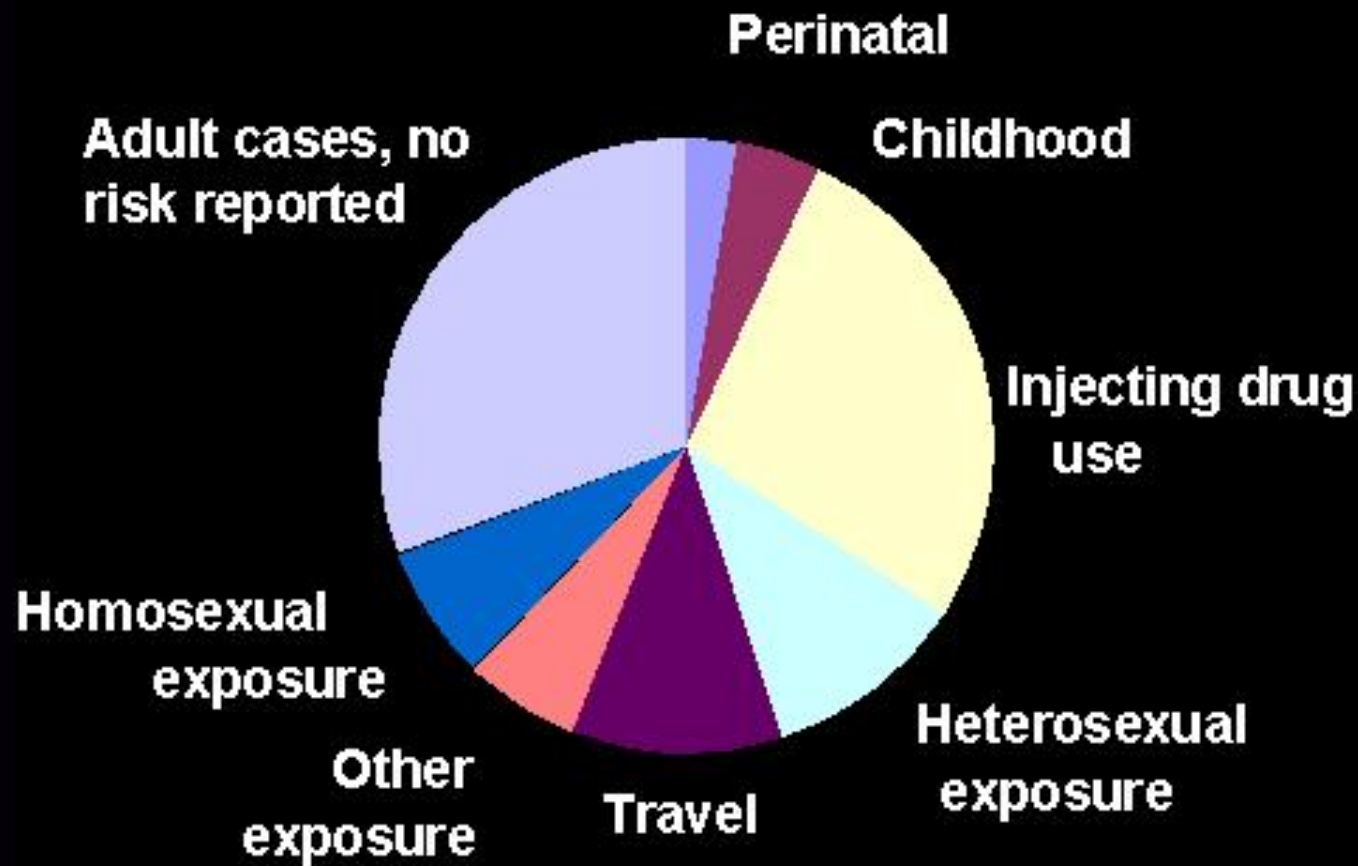
# Proportion of hepatitis B infections symptomatic and developing carriage by age



# Reported acute HBV infections by exposure category (n=675/yr)

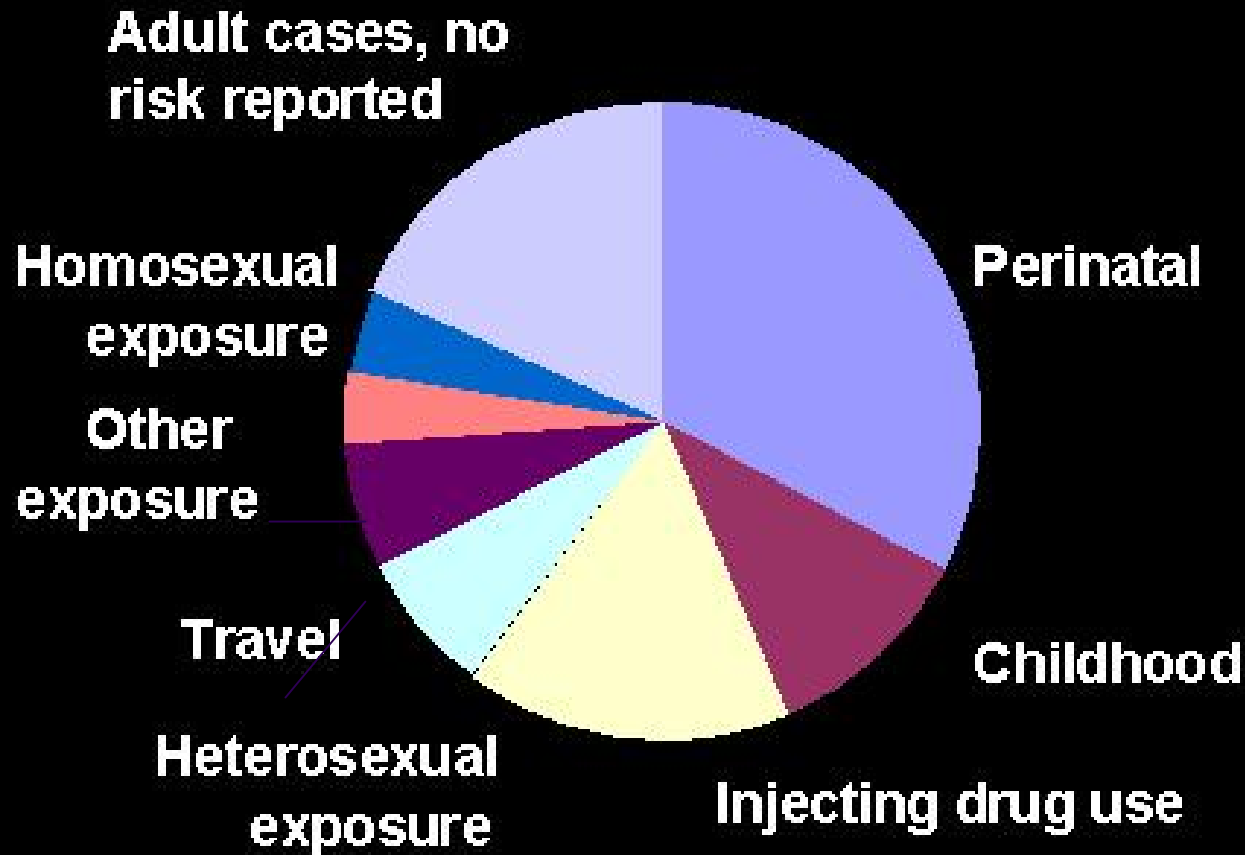


# Estimated new HBV infections by exposure category (n=2,876/yr)





# Estimated new chronic infections by exposure category (n=216/yr)



# Who is at risk of acquiring chronic infection?



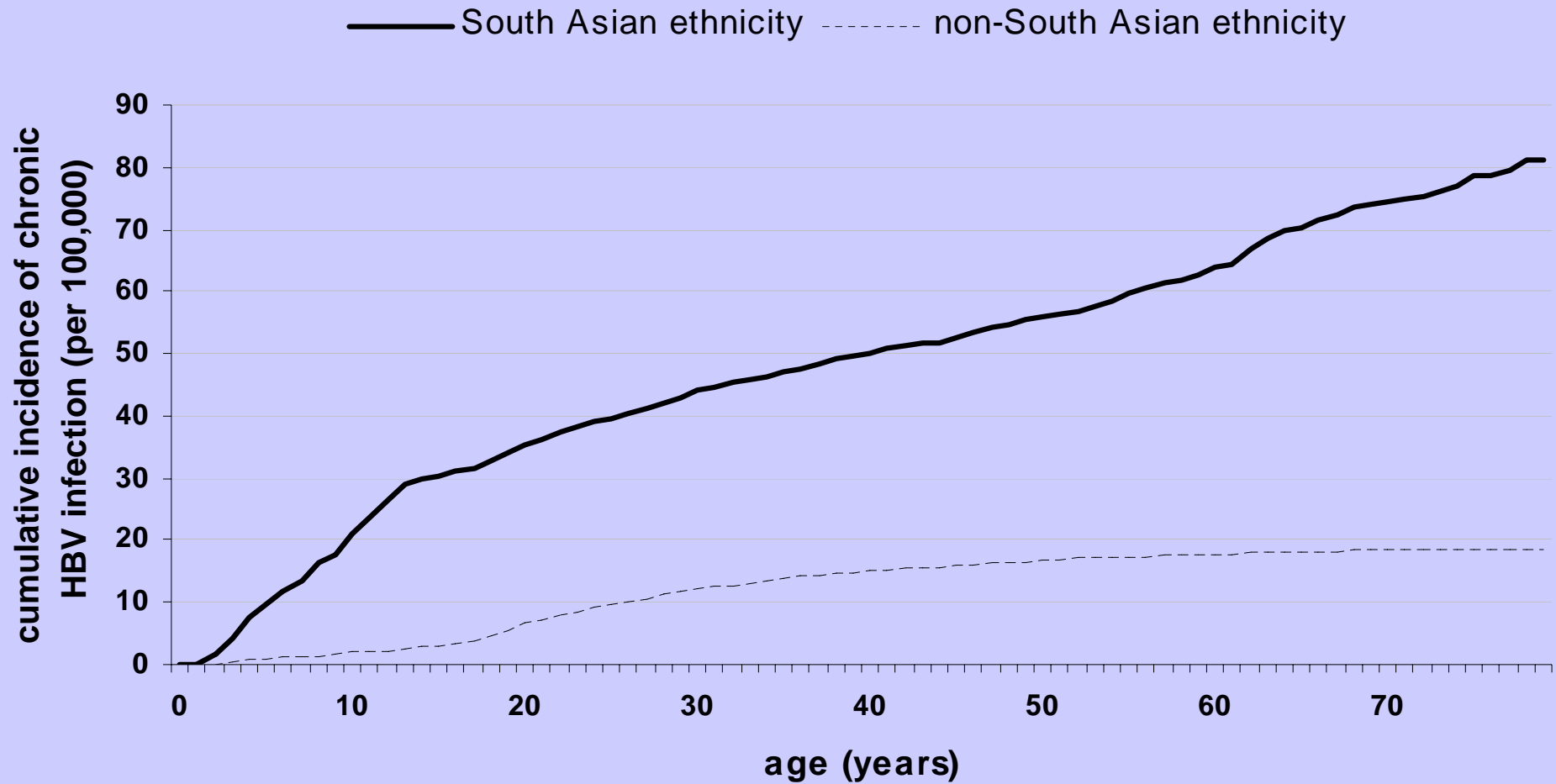
- Annual estimated total of 216 chronic infections per year
  - adult risk groups form majority of reported cases (particularly IDUs)
  - Contribution of perinatal and childhood infections is relatively more important to new chronic infections
- Small contribution to current pool of 150,000-200,000 carriers
  - Also contribution of estimated 6,500 chronic infection from new inward immigration
- Is risk of UK acquired infection higher in immigrants and ethnic minority groups?

# Hepatitis B - names analysis



- Validated programme for assigning South Asian ethnicity using names (Nam Pechan)
- Applied Nam Pecham to laboratory reports
  - 8.5% with South Asian names
- Possible perinatal infections were excluded
  - Preventable by antenatal screening
- Incidence in South Asians
  - 3.1 times greater overall ( $p < 0.0001$ )
  - 11 times greater in children ( $p < 0.0001$ )

# Cumulative incidence of hepatitis B infection, England and Wales, by ethnic group



# Incidence of hepatitis B in ethnic minority children



- Analysis suggests higher than background incidence in south Asian children, different risk factor profile
  - Probably children travelling to country of origin
- Likely to be similar or higher for other ethnic minorities with origin in high prevalence countries
- Oral fluid study of (anti-HBc) of inner city children in four localities (aged 8-11 years)
  - Incidence of post-natal infection for UK born children was 11.7 per 100,000 (18.26 per 100,000 for those with parents born in high prevalence areas)
- Equivalent to a chronic infection risk of around 2 per 100,000
  - compares to an overall rate of 0.3 per 100,000 person years

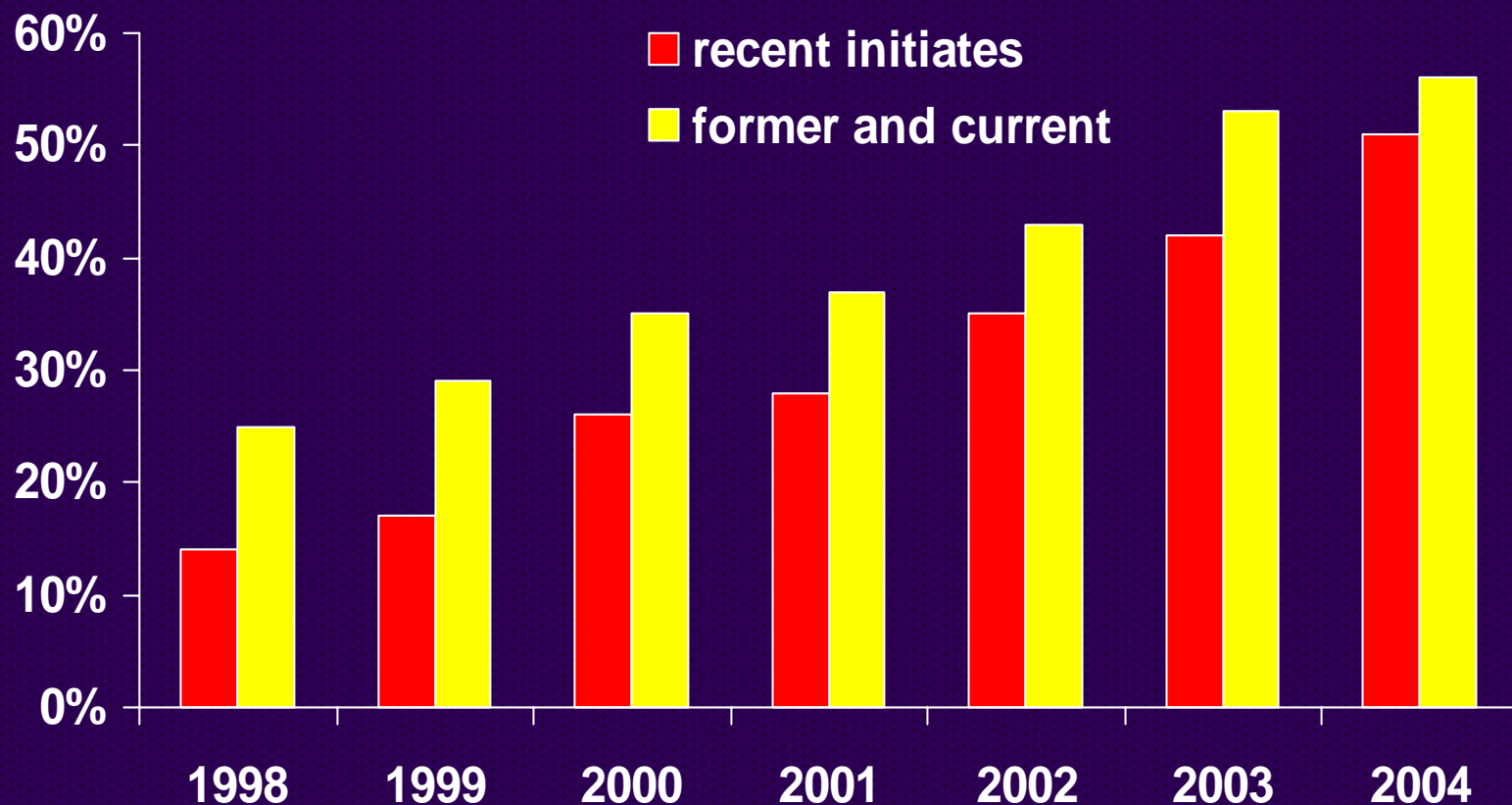


# Selective vaccination of high risk groups



- Gay men
  - Generally better vaccination in this group in GUM clinics
  - Identified as part of sexual health strategy
  - Vaccine provided centrally to clinics
  - Evidence of major increase in coverage
- Injecting drug users
  - Initial failure to vaccinate in specialist services
  - Additional resources identified
  - Major drive to vaccinate in prison
  - Coverage in IDUs improving slowly

# Self-reported coverage of hepatitis B vaccine IDUs attending services by year, UAPMP



# Summary



- UK is a very low incidence country
  - acute cases predominantly in adults
  - high proportion in high risk groups
  - ethnic minority children may also be at risk
- UK is a low prevalence country
  - carriage rates high in ethnic minorities
  - Role of vaccination limited within UK
  - many carriers acquired infection in childhood (prior to immigration to UK)
  - Scope for improving current control

# Acknowledgements



- Lesley Wallace (Health Protection Scotland)
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