

HCV Co-infection in the UK Collaborative HIV Cohort (UK CHIC) Study

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on behalf of the UK CHIC Steering Committee**

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Background

- Prevalence of HCV/HIV co-infection varies widely
- UK HCV/HIV prevalence data is limited
- Implications of HCV co-infection
 - Increased progression of liver fibrosis
 - Reduced response rates to HCV treatment
 - Increased toxicity related to HAART
 - Impaired CD4 response to HAART?
- BHIVA Co-Infection Guidelines (2003)
 - Audit standard - all patients should be tested for HCV

Objectives

To describe:

- Trends in HCV testing over time
- Factors associated with HCV testing
- HCV prevalence
- Relationship between HCV and route of HIV acquisition

Methods: UK CHIC

- Contains data from all patients attending 7 UK centres from January 1996 onwards
- Data collection
 - Demographics
 - Antiretroviral treatment history
 - Laboratory data; CD4, HIV RNA, HBV/HCV status
 - AIDS events
 - Deaths
- 21256 HIV + patients
 - 61% MSM, 29% heterosexual, 4% IVDU
 - 79% male

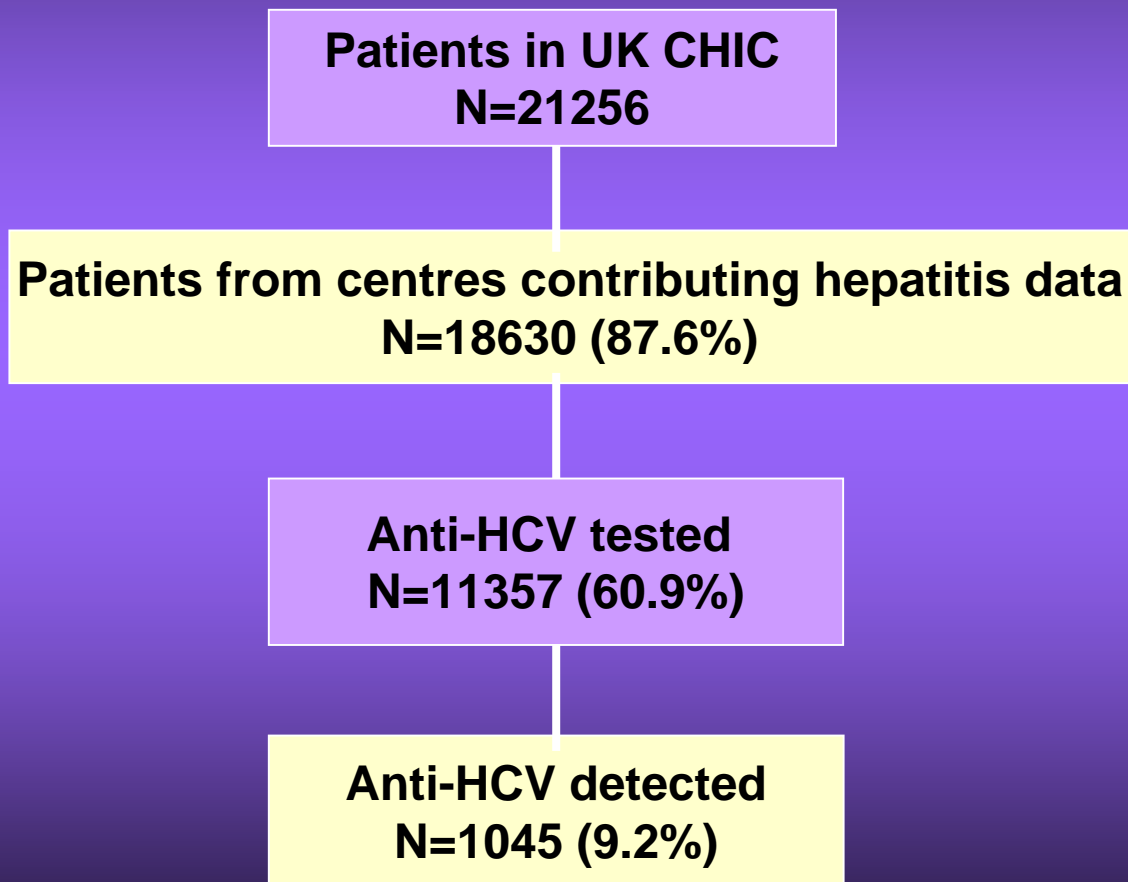
Methods: inclusion criteria

- 6/7 centres contributed HCV testing data and were included in the analysis
- Data to the end of 2003
- Analysis restricted to anti-HCV status
 - Data on HCV RNA less widely reported

Statistical Analysis

- Prevalence of Hepatitis C was calculated according to calendar year
- Chi-squared and Mann-Whitney tests were used to compare those tested against those not tested in univariate analyses
- Multivariate analyses were carried out using Logistic regression

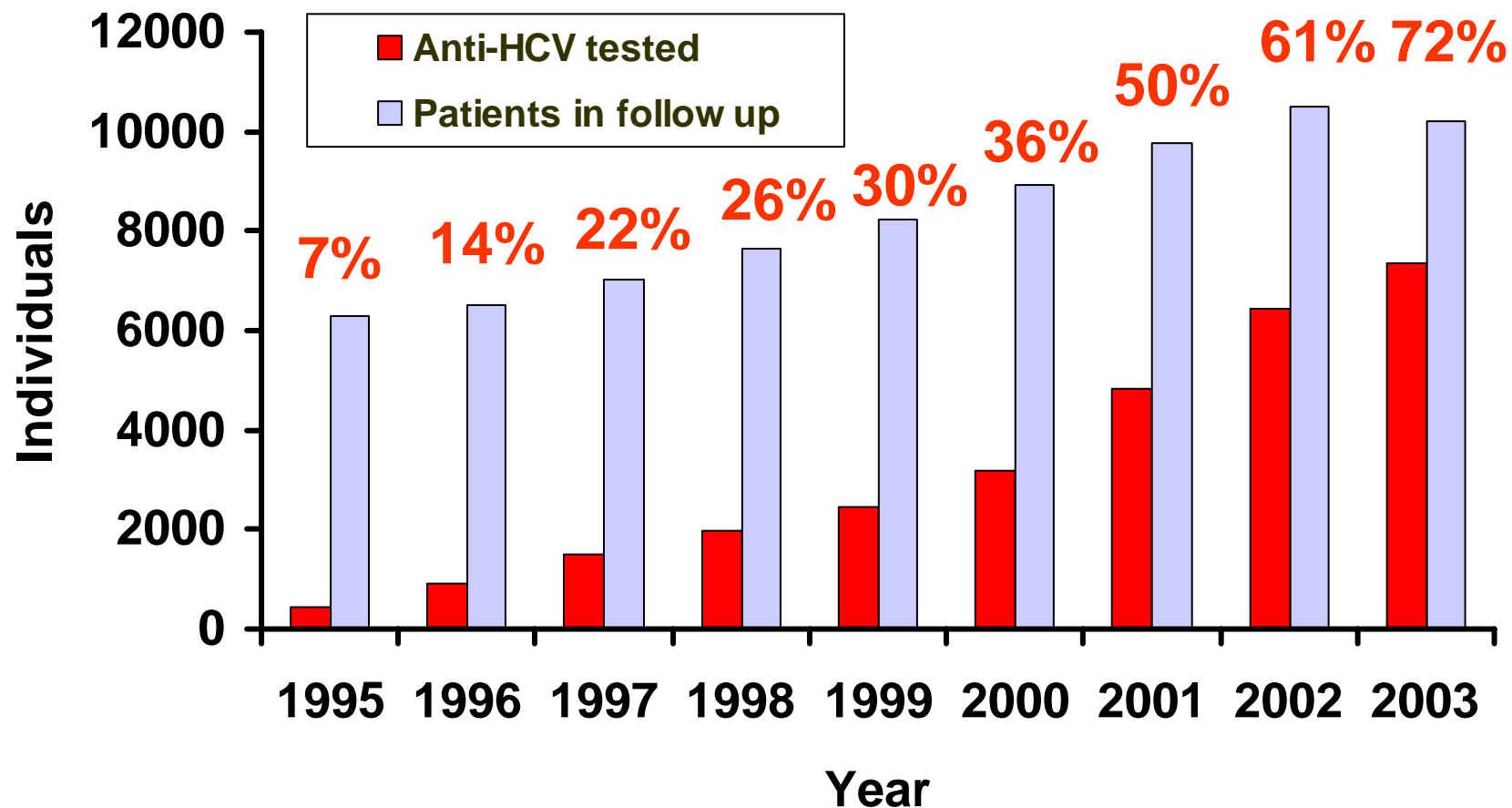
Patient Disposition



Results: demographics

| | | Antibody Test N=11357 |
|-------------------------|-----------------|--------------------------|
| Age (years) | Median (IQR) | 36.3 (31.4, 42.1) |
| Sex N (%) | Male | 9386 (82.6) |
| | Female | 1969 (17.3) |
| Ethnicity N (%) | White | 7770 (68.4) |
| | Black Caribbean | 259 (2.3) |
| | Black African | 1954 (17.2) |
| | Other | 1374 (12.1) |
| Risk Group N (%) | Homo/Bisexual | 7806 (68.7) |
| | Heterosexual | 2852 (25.1) |
| | IVDU | 427 (3.8) |
| | Other | 272 (2.4) |

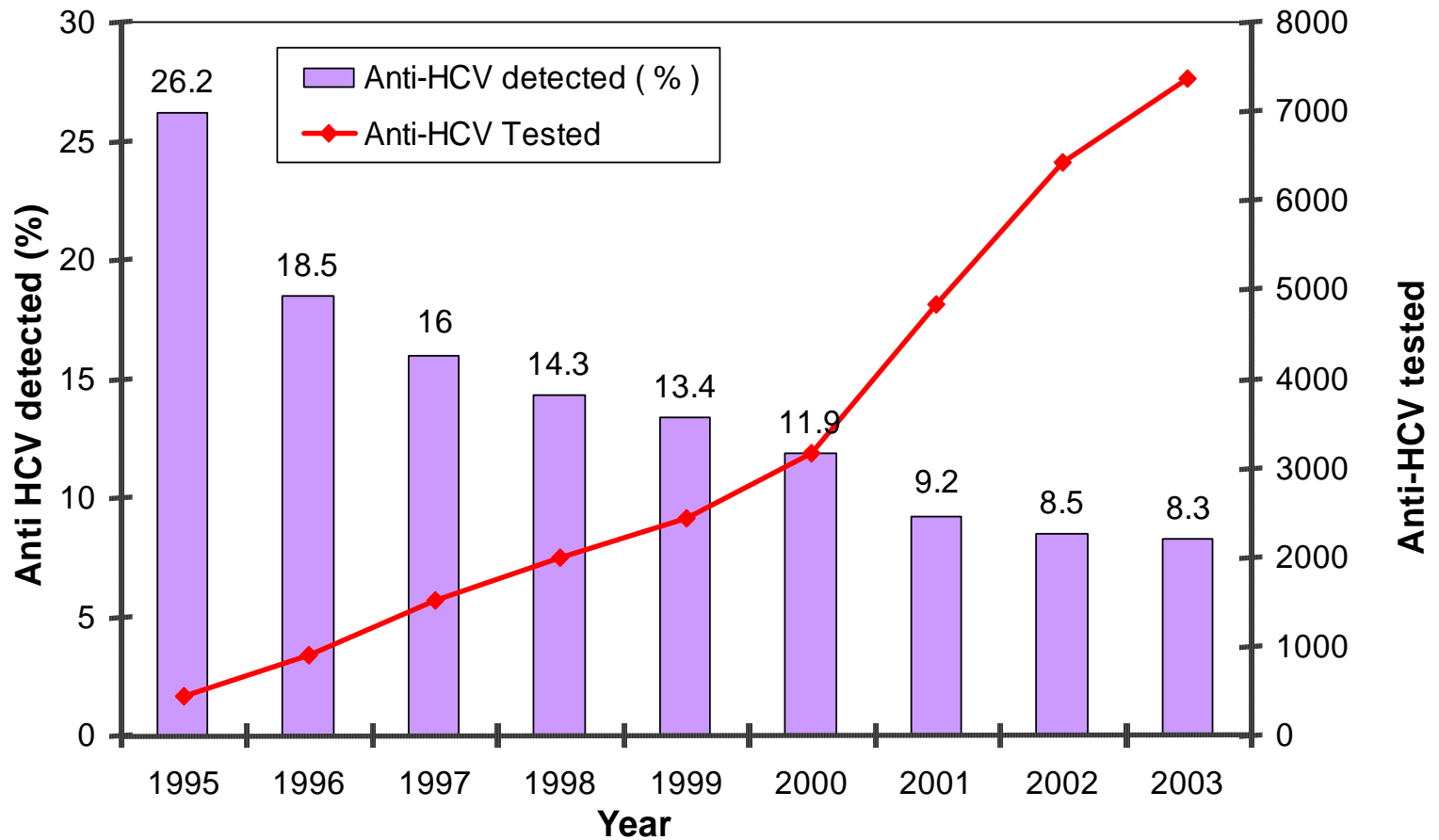
Anti-HCV testing trends over time



Factors associated with anti-HCV testing in the first 18 months after entering the cohort

| | | Odds Ratio | 95% CI | P-Value |
|--------------------------------------|---------------|------------|--------------|---------|
| Sex N (%) | Male | 1 | - | - |
| | Female | 0.96 | (0.85, 1.08) | 0.495 |
| Ethnicity N (%) | White | 1 | - | - |
| | Black African | 0.81 | (0.71, 0.92) | 0.096 |
| | Other | 0.80 | (0.72, 0.89) | 0.027 |
| Risk Group N (%) | Homo/Bisexual | 1 | - | - |
| | Heterosexual | 0.74 | (0.65, 0.85) | 0.281 |
| | IVDU | 1.40 | (1.15, 1.71) | <0.001 |
| | Other | 0.23 | (0.19, 0.28) | <0.001 |
| Year first seen In cohort | ≥2002 | 1 | - | - |
| | 1999-2001 | 0.32 | (0.30, 0.36) | <0.001 |
| | 1996-1998 | 0.14 | (0.12, 0.15) | <0.001 |
| | <1996 | 0.02 | (0.01, 0.02) | <0.001 |

Detectable anti-HCV tests over time



Factors associated with detectable anti-HCV

| | | Odds Ratio | 95% CI | P-Value |
|------------------------------|---------------------|------------|-----------------|---------|
| Sex N (%) | Male | 1 | - | - |
| | Female | 1.23 | (0.95, 1.59) | 0.124 |
| Ethnicity N (%) | White | 1 | - | - |
| | Black African | 0.22 | (0.16, 0.31) | <0.001 |
| | Other | 0.73 | (0.60, 0.88) | 0.001 |
| Risk Group N (%) | Homo/Bisexual | 1 | - | - |
| | Heterosexual | 1.46 | (1.13, 1.88) | 0.003 |
| | IVDU | 94.59 | (73.44, 121.84) | <0.001 |
| | Other | 4.36 | (1.17, 5.91) | <0.001 |
| Year of test | ≥2002 | 1 | - | - |
| | 1999-2001 | 1.34 | (1.17, 1.60) | <0.001 |
| | 1996-1998 | 2.01 | (1.64, 2.45) | <0.001 |
| | <1996 | 4.88 | (3.56, 6.68) | <0.001 |
| No. of previous tests | Per 1 test increase | 1.60 | (1.51, 1.71) | <0.001 |

Also adjusted for whether or not patients had started treatment before test date, last CD4 and last Viral Load measurement before test

Limitations

- Analysis based on primary risk factor for HIV acquisition -underestimates IVDU
- A proportion of patients with anti-HCV will have cleared infection - overestimate the burden of HCV disease
- May underestimate UK wide prevalence

Conclusions

- UK CHIC anti-HCV prevalence 9.2%
- Patients in current follow up
 - 72% have been tested for anti-HCV
 - 8.3% anti-HCV prevalence
- HIV positive patients with unknown anti-HCV status

UK CHIC and further analyses

- Inclusion of other centres
- Expand hepatitis data
 - HCV RNA and LFT's
- Further analyses
 - Response to HAART in HCV/HIV
 - Time to change of HAART in HCV/HIV
 - Progression and mortality in HCV/HIV

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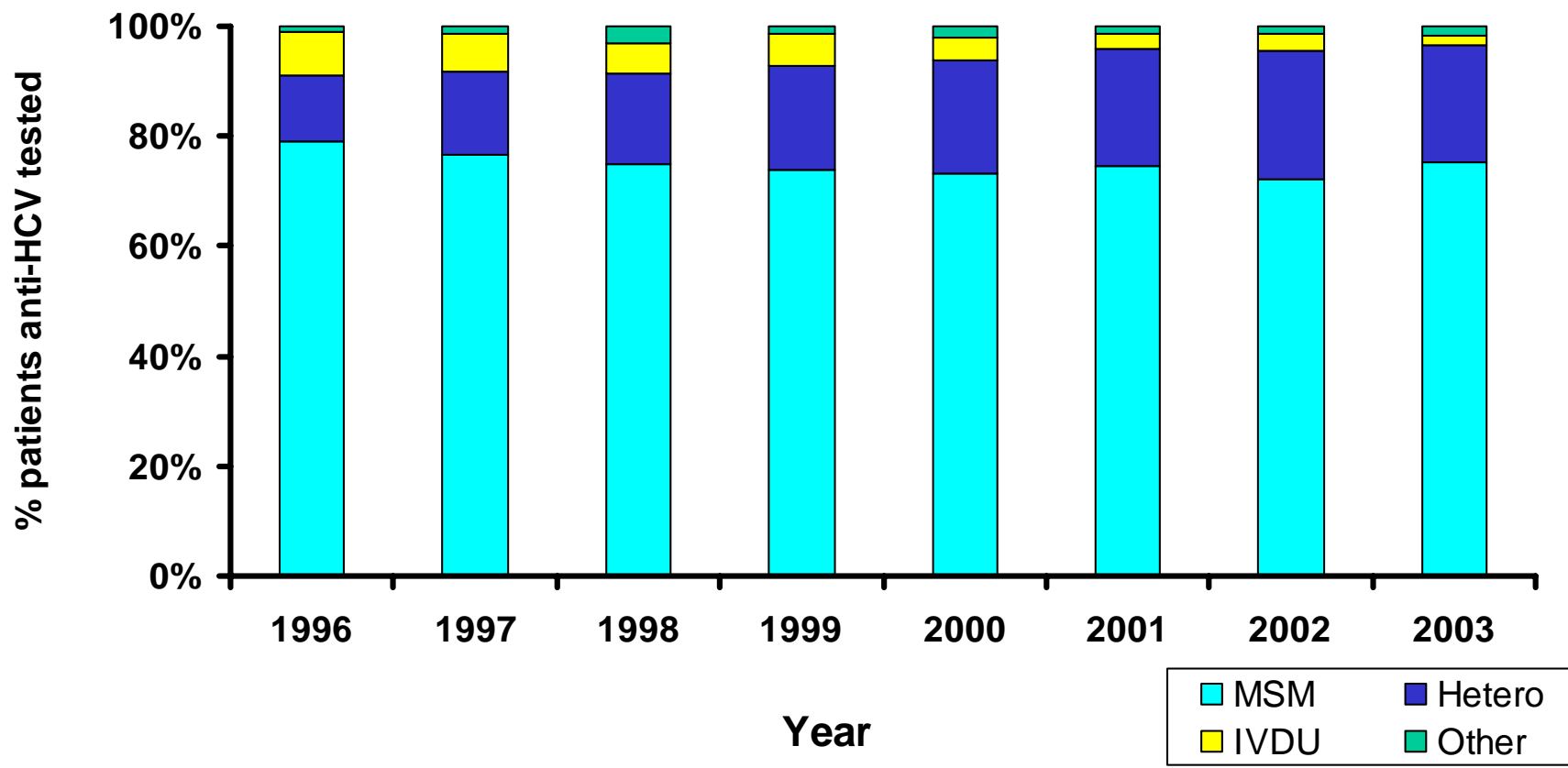


Results

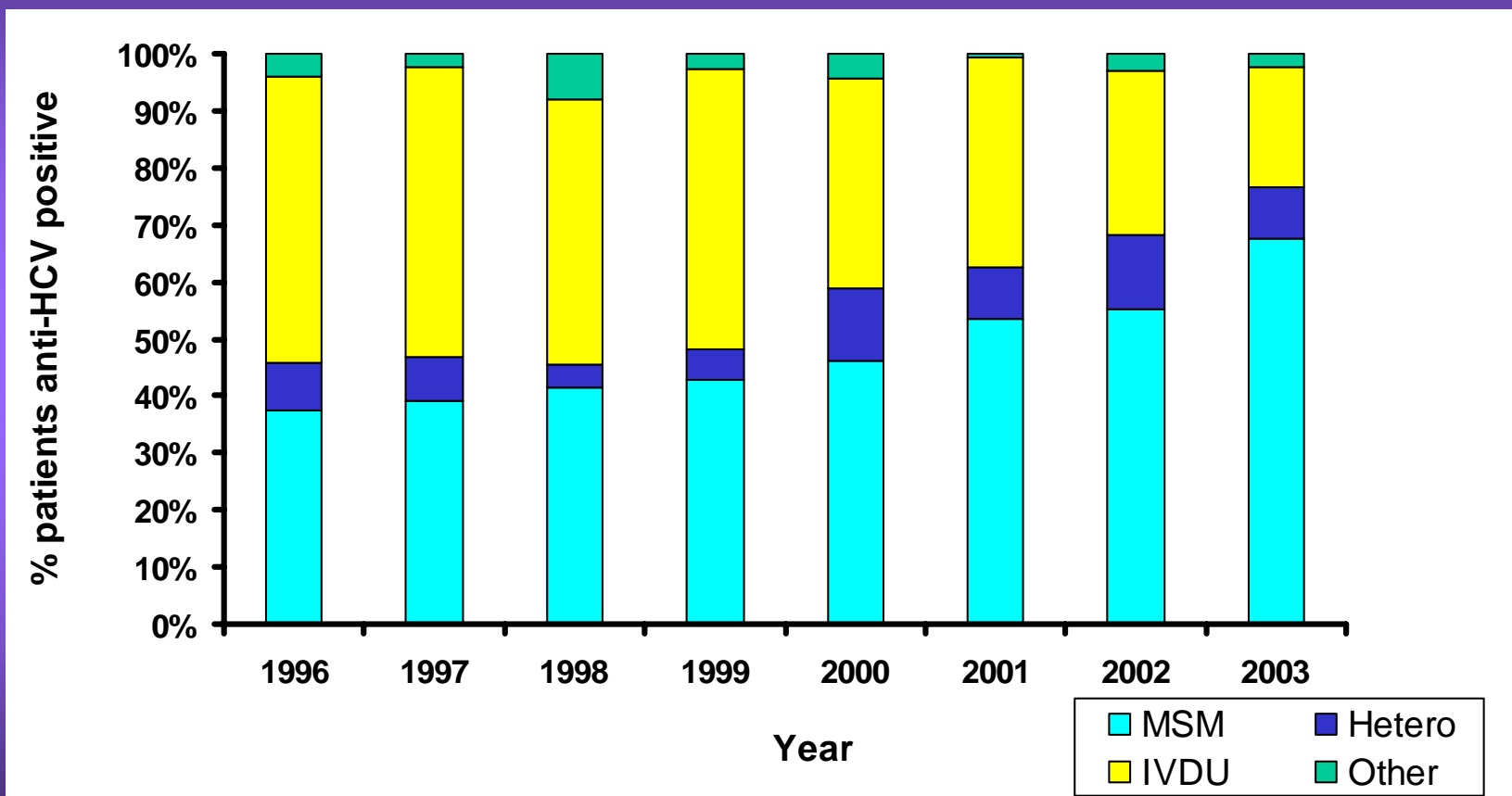
| | Median follow up Years | IQR |
|------------------------|---------------------------|------------|
| UK CHIC | 4.1 | (1.8, 8.4) |
| Anti-HCV tested | 5.0 | (1.8, 9.2) |

Median time to first anti-HCV test from first seen date
1.1 years (IQR: (0.0, 6.2))

Anti-HCV testing: exposure category



Anti-HCV positive: exposure category



Univariate ORs: testing in 18 months

| Variable | | Odds Ratio | 95% CI | P-Value |
|-------------------------|---------------|------------|--------------|---------|
| Sex N (%) | Male | 1 | - | - |
| | Female | 1.25 | (1.16, 1.35) | <0.001 |
| Ethnicity N (%) | White | 1 | - | - |
| | Black African | 1.45 | (1.34, 1.57) | <0.001 |
| | Other | 1.17 | (1.08, 1.28) | 0.525 |
| Risk Group N (%) | Homo/Bisexual | 1 | - | - |
| | Heterosexual | 1.43 | (1.33, 1.53) | <0.001 |
| | IVDU | 1.04 | (0.89, 1.22) | 0.2550 |
| | Other | 0.59 | (0.51, 0.69) | <0.001 |
| Year first seen | ≥ 2002 | 1 | - | - |
| In cohort | 1999-2001 | 0.36 | (0.33, 0.39) | <0.001 |
| | 1996-1998 | 0.17 | (0.15, 0.18) | <0.001 |
| | <1996 | 0.02 | (0.02, 0.03) | <0.001 |

Univariate ORs: anti-HCV positive

| Variable | | Odds Ratio | 95% CI | P-Value |
|-------------------------|---------------|------------|--------------|---------|
| Sex N (%) | Female | 1 | - | - |
| | Male | 0.97 | (0.96, 0.98) | <0.001 |
| Ethnicity N (%) | White | 1 | - | - |
| | Black African | 0.92 | (0.91, 0.93) | <0.001 |
| | Other | 0.97 | (0.96, 0.98) | <0.001 |
| Risk Group N (%) | Homo/Bisexual | 1 | - | - |
| | Heterosexual | 0.98 | (0.97, 0.98) | <0.001 |
| | IVDU | 2.22 | (2.18, 2.26) | <0.001 |
| | Other | 1.11 | (1.08, 1.14) | <0.001 |
| Year first seen | ≥ 2002 | 1 | - | - |
| In cohort | 1999-2001 | 1.02 | (1.00, 1.02) | 0.009 |
| | 1996-1998 | 1.07 | (1.05, 1.08) | <0.001 |
| | <1996 | 1.23 | (1.20, 1.26) | <0.001 |