

## Annex 2. Pooled data of five surveys - Analysis of age at first sex (Emma Slaymaker, LSHTM)

This analysis included all five surveys (HSRC 2002, HSRC 2005, NCS 2006, HSCR 2009, NCS 2009). It addressed the following questions:

- Did the surveys yield different results?
- Has there been a change over time, assuming these surveys are representative

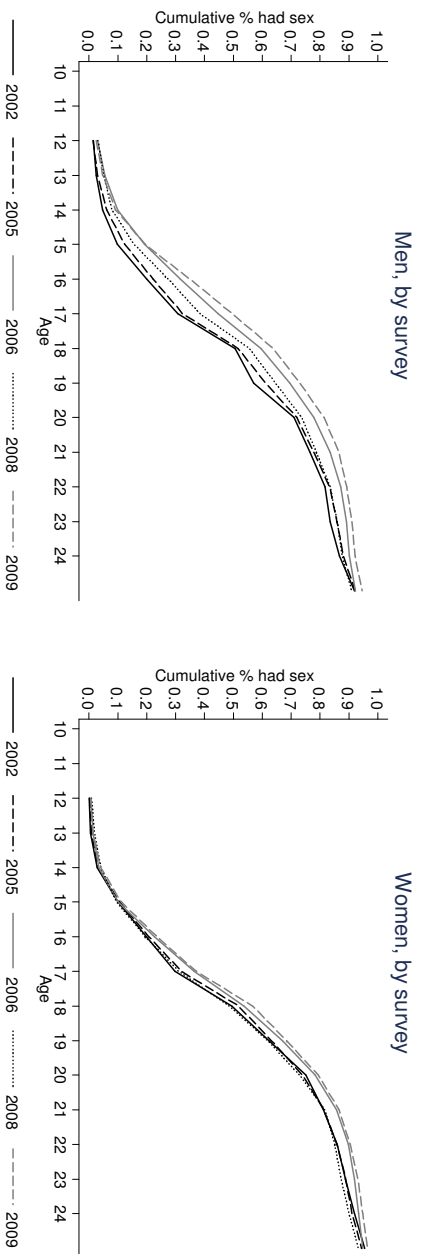
### Methods

The analysis used the age at first sex (AFS) reported by each survey respondent. Respondents who had never had sex were included in the analysis at their current age and censored. Survival analysis used to estimate the cumulative proportion of respondents who reported having had sex by age.

Graphs show the failure functions (% had sex by age) for men and women for survey year (all ages combined) and for birth cohort (all surveys combined). The graphs by survey year show whether the surveys yielded different results: some of this could be genuine changes as older people age out of the survey and younger people age in there may be some changes in AFS. However, given that the surveys cover seven years and that AFS remains constant over a lifetime we would not expect much change.

The graphs by birth cohort show whether there have been real changes in AFS over time. By pooling the data from the different surveys, any differences in response between surveys is minimised. On the graphs, a shift to the left indicates a younger age at first sex (a greater proportion have had sex at any given age).

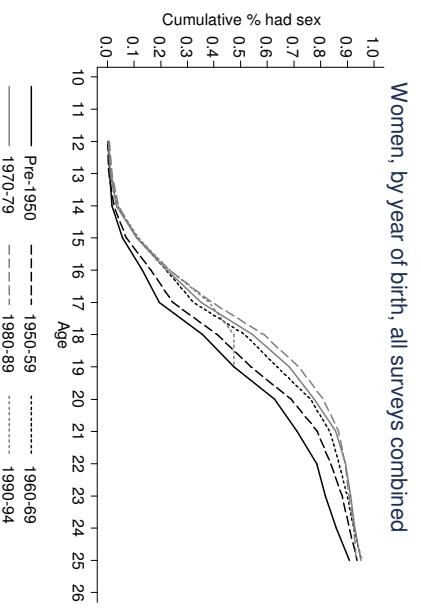
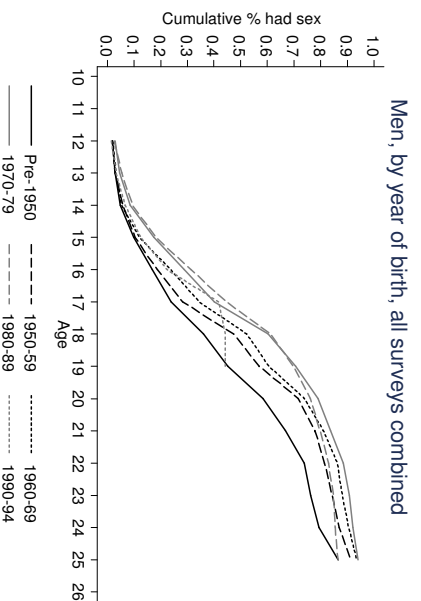
### Results and Discussion



**Men:** Age at first sex reported in the NCS surveys was much younger than in the HSRC surveys.

**Survey seemed to have quite an impact on reported AFS.**

**Women:** AFS reported in NCS slightly younger than in the HSRC but difference is less pronounced than for men.



**Men:** AFS was highest for men born before the 1950s and lowest for men born in the 1970s and 1980s. Men born in the 1990s might be starting sex later, but it is too early to tell as they are still very young.

**Women:** AFS has got steadily younger between those born before the 1950s and the cohort from the 1980s. Again, some evidence than those born in the 1990s may be starting sex later than those born in the 1980s.

Results from Cox regression models, controlling for year of survey and birth cohort, confirm that the differences apparent on the graph are unlikely to be due to chance.

For men, the NCS respondents reported a lower age at first sex - Hazard ratios (HR, describing the chance of having sex) are higher for NCS respondents in both 2006 and 2009 compared to the 2002 HSRC respondents. There is no difference between the three HSRC surveys.

For women respondents in the 2008 HSRC reported a higher age at first sex than 2002 respondents (HR is lower than 1) but there are no other differences.

For both men and women there has been a gradual decline in AFS over time for people born before 1950 up until the cohort born in the 1970s. Compared to men and women born in the 1980s (whose first sex occurred between the mid-1990s and the present), those born before 1950 were much less likely to have had sex at a given age (HR for men 0.69 (95% CI 0.62-0.76); HR for women 0.64 (95% CI 0.58-0.7)).

Median AFS was 20 for men and women born before 1950 and 18 for those born in the 1980s. The decline in AFS continued until the 1980s for women, but not for men: the HR for women, comparing 1970s to 1980s, was 0.91 (p=0.02) whereas the HR for men showed no difference between these two groups - 1.01 (p=0.9).

For men, the cohort born the 1990-1994 appears to be starting sex later than the cohort born in the 1980s, the HR is 0.8, showing that the chance of starting sex has declined relative to the 1980s (p=0.02).

|                 | Men         |                  |               | Women       |                  |               |
|-----------------|-------------|------------------|---------------|-------------|------------------|---------------|
|                 | HR          | 95% CI           | p-value       | HR          | 95% CI           | p-value       |
| <b>2002</b>     | 1           |                  |               | 1           |                  |               |
| <b>2005</b>     | 1.00        | 0.92-1.08        | 0.9810        | 0.95        | 0.88-1.03        | 0.1872        |
| <b>2006</b>     | <b>1.14</b> | <b>1.06-1.23</b> | <b>0.0005</b> | 1.01        | 0.94-1.09        | 0.7532        |
| <b>2008</b>     | 1.06        | 0.96-1.16        | 0.2415        | <b>0.90</b> | <b>0.84-0.97</b> | <b>0.0056</b> |
| <b>2009</b>     | <b>1.26</b> | <b>1.16-1.38</b> | <b>0.0000</b> | 1.03        | 0.95-1.11        | 0.4892        |
| <b>pre 1950</b> | <b>0.69</b> | <b>0.62-0.76</b> | <b>0.0000</b> | <b>0.64</b> | <b>0.58-0.70</b> | <b>0.0000</b> |
| <b>1950-59</b>  | <b>0.80</b> | <b>0.72-0.89</b> | <b>0.0001</b> | <b>0.73</b> | <b>0.69-0.79</b> | <b>0.0000</b> |
| <b>1960-69</b>  | <b>0.90</b> | <b>0.82-0.99</b> | <b>0.0242</b> | <b>0.87</b> | <b>0.78-0.97</b> | <b>0.0087</b> |
| <b>1970-79</b>  | 1.01        | 0.91-1.11        | 0.9111        | <b>0.91</b> | <b>0.85-0.99</b> | <b>0.0213</b> |
| <b>1980-89</b>  | 1           |                  |               | 1           |                  |               |
| <b>1990-94</b>  | <b>0.80</b> | <b>0.66-0.97</b> | <b>0.0231</b> | 1.01        | 0.85-1.19        | 0.9344        |