Tuesday 9 August 2011
Parallel session 3
3.1 NOVEL APPROACHES TO REDUCING BIAS

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3.1.1 DOES DROP-OUT FROM COHORT STUDIES BIAS ESTIMATES OF SOCIOECONOMIC INEQUALITIES IN HEALTH?

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Introduction Scandinavian studies exploiting record-linkage have shown that although cohort members tend to be healthy and affluent compared to the whole population, this does not bias at least certain well-established exposure-outcome associations. It is unknown whether this holds when estimating health inequalities. Individuals of lower socioeconomic position (SEP) may be less likely to consent to participation in a cohort study and more likely to drop-out over time.

Methods We assess whether socially-patterned drop-out affects the estimation of health inequalities in the Avon Longitudinal Study of Parents and Children. In this UK cohort, children of higher SEP (measured by maternal education) are more likely to continue participating as they get older. We estimate SEP inequalities in maternal and infant outcomes for which we have data on almost the whole cohort (birthweight and length, breastfeeding, preterm birth, maternal obesity and smoking during pregnancy, N = 12,000). We then restrict analyses to individuals who participated in subsequent data collections when the child was aged 9 (N ~ 7000) and aged 15 (N ~ 5000).

Results Drop-out was related to SEP and outcomes, so under missing data theory analysis may be biased. For each outcome, inequality was greatest in the full sample; the more selected the sample became, the more the inequality was underestimated; for example, mean birthweight difference between highest and lowest SEP was 116 g (95% CI 78 to 153) in the full sample, but 93 g (95% CI 5 to 119) in those attending at ages 9 and 15 respectively.

Conclusion Selection bias in cohorts may result in underestimation of health inequalities.