Method of assessing sample trend.

To assess annual trend in numbers for each given stage and population group we fitted Poisson regression models with annual time and time squared as independent covariates. To adjust for vaguely indicated relative variation in the estimated means for each observation we used probability weights based on the relative proportion of the inverse of the standardised credible interval of the total for this statistic. This assumes that this interval is proportional to relative sample size for given year and population and stage of treatment and that sample sizes for each year are based on similar sized populations. Robust variance assumptions were made to account for remaining heteroskedasticty in the model fit. We used backwards selection to reduce to a univariate model if appropriate at p(alpha=0.05). We assessed fit using chi-squared test for deviance and we used a z test to test for randomness in the order and magnitude of residuals. We used a Wald test to test for the significance of time in the model. Output was also assessed using graphical output of predicted mean and observed mean against time.

We also investigated modelling of sampled mean based on repeated sampling for each year group and assuming a normal distribution for each observation about the indicated mean and assuming the credible interval represented a 95% confidence interval for the observed mean for this distribution. Slight skew in the observed credible interval was accounted for by assuming symmetry about the mean based on the larger absolute difference between respective credible interval bounds and the mean, which is a conservative assumption.