Appendix 2: Regression models and interpretation of intrinsic estimator coefficients

Regression models

The goodness-of-fit statistics for the single and two factor regression models and APC model are shown in Table 1. The IE model with the lowest AIC and the highest log-likelihood values was the best model when compared with the other simple models.

Table 1 Goodness-of-fit statistics for single and two factor regression models and APC model

Model	Male - More Deprived			Female - More deprived		
	df	Log-likelihood	AIC	df	Log-likelihood	AIC
Age	15	-430	890	15	-355	740
Period	9	-464	945	9	-391	801
Cohort	22	-447	938	22	-388	820
Age+period	22	-408	860	22	-349	742
Age+cohort	35	-387	843	35	-330	729
Period+cohort	29	-443	944	29	-384	825
Age+period+cohort (intrisic estimator)	40	-355	790	40	-320	720
Model	Male - Less Deprived			Female - Less deprived		
	df	Log-likelihood	AIC	df	Log-likelihood	AIC
Age	15	-532	1094	15	-467	964
Period	9	-553	1125	9	-488	995
Cohort	22	-548	1141	22	-481	1007
Age+period	22	-511	1067	22	-446	935
Age+cohort	35	-487	1044	35	-391	853
Period+cohort	29	-540	1138	29	-476	1009
Age+period+cohort (intrisic estimator)	40	-432	945	40	-385	849

df, degrees of freedom; AIC, Akaike information criterion

Interpretation of intrinsic estimator coefficients

IE Coefficients are interpreted as follows for age, period and cohort:

1) Take the exponential of the coefficient (eg in Figure 4 and Table 1 of online supplementary Appendix 3, the coefficient for females aged 50-54 is 0.547 so the age effect for females aged 50-54 is exp0.547 = 1.73)
2) The resulting number is an incident rate ratio (IRR) (eg 1.73 means that females aged 50-54 years are 73% more likely to commit suicide than the reference category of females.
3) The reference category is the mean effect of all ages, periods or cohorts combined (eg the reference category for the age effect for females aged 50-54 years is the mean effect of all age groups for females).
4) A negative coefficient returns an IRR below 1 (less likely than the mean to commit suicide) and a coefficient of 0 will return an IRR of 1 (likelihood of committing suicide is equal to the mean).