Supplementary Appendix 1A- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.024 [-0.005 to 0.052]
During (2000-2010)	-0.093 [-0.144 to -0.042]
After (2011-2017)	0.032 [-0.034 to 0.097]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3825	
Estimates based on a fixed effects segmented regression model using LA panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. Deprivation measure from 1981.	

Supplementary Appendix 1B- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.053 [0.008 to 0.097]
During (2000-2010)	-0.187 [-0.268 to -0.106]
After (2011-2017)	0.097 [-0.026 to 0.220]
11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3831	
Estimates based on a fixed effects segmented regression model using LA panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. Deprivation measure from 2001.	

Supplementary Appendix 1C- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.035 [-0.004 to 0.073]
During (2000-2010)	-0.125 [-0.197 to -0.054]
After (2011-2017)	0.046 [-0.044 to 0.137]
11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3826	
Estimates based on a fixed effects segmented regression model using LA panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. Deprivation measure from 2011.	

Supplementary Appendix 1D- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.031 [0.003 to 0.059]
During (2000-2010)	-0.093 [-0.145 to -0.040]
After (2011-2017)	0.026 [-0.039 to 0.091]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3874	
Estimates based on a fixed effects regression model using a LA level panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. 2004 Index of Multiple Deprivation used as the measure of deprivation.	

Supplementary Appendix 2- Model Specification

The model specification used in the main text is shown below:

$$IMR_{LA,t} = \alpha_0 + \beta_1 t_1 + \beta_2 Dep91 + \beta_3 Dep91 * t_1 + \beta_4 t_2 + \beta_5 Dep91 * t_2 + \beta_6 t_3 + \beta_7 Dep91 + u_{LA} + \varepsilon_{LA,t}$$

Where $IMR_{LA,t}$ is the infant mortality rate in local authority LA at time t, α_0 is the constant term, t_1, t_2 and t_3 are marginal spline terms representing the annual trend term before, during and after the strategy period, and $Dep91$ is dummy variable indicating whether the local authority was in the most deprived quintile of the Townsend index at the time of the 1991 census. u_{LA} represents the time invariant local authority specific error term and $\varepsilon_{LA,t}$ represents the idiosyncratic random error term. All models also included robust standard errors to control for serial correlation and heteroscedasticity in the error term.

In order to test whether the random effects (RE) model or the fixed effects (FE) model should be used, we implemented the Hausman Test (HT) (Hausman 1978), which tests the assumption that the unobserved individual level heterogeneity in uncorrelated with the explanatory variable(s). Under the null hypothesis that the individual level heterogeneity in uncorrelated with the explanatory variable(s), a rejection of the null hypothesis implies that the FE should be used rather than RE, as it is more efficient. In this case, the results from the HT implied that the FE Model was the preferred specification, with this model controlling for the unobserved time invariant confounders that vary between the different local authorities. The results from the RE model are shown in Supplementary Appendix 4.

Supplementary Appendix 3A- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1998)	0.038 [0.002 to 0.074]
During (1999-2009)	-0.112 [-0.177 to -0.047]
After (2010-2017)	0.026 [-0.051 to 0.104]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3862	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2017 and break points at 1998 and 2009.	

Supplementary Appendix 3B- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.038 [0.002 to 0.073]
During (2000-2009)	-0.110 [-0.173 to -0.048]
After (2010-2017)	0.027 [-0.055 to 0.109]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3861	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2017 and break points at 1998 and 2010.	

Supplementary Appendix 3C- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1998)	0.038 [0.003 to 0.073]
During (1999-2011)	-0.110 [-0.170 to -0.051]
After (2012-2017)	0.035 [-0.054 to 0.124]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3862	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2017 and break points at 1998 and 2011.	

Supplementary Appendix 3D- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.035 [0.002 to 0.068]
During (2000-2009)	-0.119 [-0.185 to -0.054]
After (2010-2017)	0.042 [-0.037 to 0.121]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3842	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016 and break points at 1999 and 2009.	

Supplementary Appendix 3E- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.034 [0.001 to 0.067]
During (2000-2011)	-0.115 [-0.174 to -0.055]
After (2012-2017)	0.050 [-0.040 to 0.140]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3840	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016 and break points at 1999 and 2011.	

Supplementary Appendix 3F- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-2000)	0.033 [0.001 to 0.064]
During (2001-2009)	-0.131 [-0.199 to -0.064]
After (2010-2017)	0.064 [-0.018 to 0.145]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3825	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016 and break points at 2000 and 2009.	

Supplementary Appendix 3G- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-2000)	0.032 [0.001 to 0.063]
During (2001-2010)	-0.125 [-0.189 to -0.061]
After (2011-2017)	0.061 [-0.024 to 0.147]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3822	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016 and break points at 2000 and 2010.	

Supplementary Appendix 3H- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-2000)	0.031 [0.000 to 0.062]
During (2001-2011)	-0.123 [-0.183 to -0.062]
After (2012-2017)	0.069 [-0.023 to 0.161]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3821	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016 and break points at 2000 and 2011.	

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
Supplementary Appendix 4- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Before (1983-1999)	0.034 [0.001 to 0.067]
During (2000-2010)	-0.116 [-0.178 to -0.053]
After (2011-2017)	0.042 [-0.042 to 0.125]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3917	
Estimates based on a random effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010.	

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
Supplementary Appendix 5- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Before (1983-1999)	0.034 [0.001 to 0.067]
During (2000-2010)	-0.082 [-0.118 to -0.045]
After (2011-2017)	-0.040 [-0.100 to 0.021]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3840	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Linear spline terms.	

Supplementary Appendix 6A- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.018 [-0.012 to 0.048]
During (2000-2010)	-0.077 [-0.113 to -0.041]
After (2011-2017)	-0.044 [-0.105 to 0.016]
N=11,192, Overall R^2 =0.3691	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Top 1% of IMR excluded.	

Supplementary Appendix 6B- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.024 [-0.003 to 0.052]
During (2000-2010)	-0.075 [-0.109 to -0.042]
After (2011-2017)	-0.046 [-0.106 to 0.014]
N=10,740, Overall R^2 =0.3184	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Top 5% of IMR excluded.	

Supplementary Appendix 6C- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.026 [-0.007 to 0.059]
During (2000-2010)	-0.098 [-0.160 to -0.036]
After (2011-2017)	-0.034 [-0.116 to 0.048]
N=11,062, Overall R^2 =0.3797	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Bottom 1% of IMR excluded.	

Supplementary Appendix 6D- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Period	**Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]**
Before (1983-1999)	0.016 [-0.017 to 0.049]
During (2000-2010)	-0.089 [-0.151 to -0.027]
After (2011-2017)	-0.027 [-0.106 to 0.053]
N=10,741, Overall R^2 =0.3744	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Bottom 5% of IMR excluded.	

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
Before (1983-1999)	0.013 [0.007 to 0.018]
During (2000-2010)	-0.020[-0.028 to -0.011]
After (2011-2017)	0.004 [-0.014 to 0.022]
N=11,305 (323 Local Authorities x 35 Years), Wald Chi-Squared Statistic = 3940.97	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2017. Poisson regression model with break points at 1999 and 2010.	

Supplementary Appendix 7-Trend in absolute inequalities in the number of infant deaths between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the number of infant deaths.

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
	Supplementary Appendix 8- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).
Before (1983-1999)	0.005 [0.001 to 0.009]
During (2000-2010)	-0.017 [-0.024 to -0.010]
After (2011-2017)	0.006 [-0.004 to 0.016]
N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3879	
Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2016. Break points at 1999 and 2010. Continuous measure of deprivation.	

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
Supplementary Appendix 9- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).	
Before (1983-1999)	
Top Quintile	[Reference]
2nd Quintile	-0.022 [-0.074, 0.031]
3rd Quintile	-0.014 [-0.066, 0.039]
4th Quintile	0.018 [-0.038, 0.074]
Bottom Quintile	0.025 [-0.030, 0.081]
During (2000-2010)	
Top Quintile	[Reference]
2nd Quintile	0.033 [-0.066, 0.131]
3rd Quintile	-0.009 [-0.107, 0.089]
4th Quintile	-0.066 [-0.169, 0.037]
Bottom Quintile	-0.119 [-0.225, -0.013]
After (2011-2017)	
Top Quintile	[Reference]
2nd Quintile	-0.057 [-0.218, 0.103]
3rd Quintile	-0.002 [-0.164, 0.160]
4th Quintile	-0.055 [-0.212, 0.102]
Bottom Quintile	0.006 [-0.157, 0.170]

N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.3879

Estimates based on a fixed effects regression model using LA panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. Categorical measure of deprivation.

Period	Annual change in absolute gap in the IMR between the most deprived LAs and the rest of England [95% CI]
Before (1983-1999)	0.034 [0.001 to 0.067]
During (2000-2010)	-0.116 [-0.178 to -0.053]
After (2011-2017)	0.042 [-0.042 to 0.125]
% of LA White	-0.022 [-0.031 to -0.013]

Supplementary Appendix 10- Trend in absolute inequalities in the IMR between the most deprived local authorities and the rest of England, before, during and after the English HI strategy period. Trend is shown as the annual increase or decrease (minus values) in the absolute gap in the IMR (defined as the number of deaths under one per 1000 births in the local authority area).

N=11,305 (323 Local Authorities x 35 Years), Overall R^2 =0.4034

Estimates based on a random effects regression model using a LA level panel dataset of IMR from 1983 to 2017. Break points at 1999 and 2010. Also includes % of the LA who are white as an extra explanatory variable.