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1 **Ominous trends in childhood cancer mortality – who was right?**

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16 To the Editor: A previous report in 1999 by Bleyer on US SEER data suggested that decreases in the death rate from childhood cancer  
17 would cease completely by 2010 [1]. In response to this a corresponding analysis was conducted using data from England and Wales, for  
18 the same temporal period, and found that there was a similar decrease in deaths from childhood cancer from 8 to 3 per 100,000 children  
19 aged 0-14 years between 1958 and 1995. The authors speculated that there were two possibilities. Either deaths from childhood cancer  
20 would be completely eliminated by 2018 or would reach a point of no further improvement [2]. In order to see which, if any, of these  
21 predictions were correct we re-visited this important question by analysing recent temporal trends using up to date data on deaths in  
22 children. Cancer mortality data on children aged 0-14 years for the whole of England and Wales, who died during 1981-2014, were  
23 extracted from the Office for National Statistics [3]. Crude death rates per 100,000 children per year, together with 95% confidence  
24 intervals (CIs), were calculated, based on mid-year population estimates from the Office for National Statistics. Temporal trends in death  
25 rates were analysed using Poisson regression models that included time period as a covariate. The crude cancer mortality rates for all  
26 children have fallen from 5.11 (95% CI 4.67-5.55) per 100,000 children per year in 1981 to 2.32 (95% CI 2.03-2.62) in 2014. Rates for  
27 males and females in 1981 were respectively 5.48 (95% CI 4.84-6.12) and 4.73 (95% CI 4.12-5.33). In 2014 these rates had fallen  
28 respectively to 2.59 (95% CI 2.15-3.02) and 2.05 (95% CI 1.65-2.45). Analysing pooled data for both sexes using Poisson regression  
29 models with log of population as the offset, revealed that the trend was log-linear (Figure 1). Alternative models in which the log of the  
30 rate had trends that were cubic or quadratic were tried. However, the best fitting model was one with a linear downward trend. Parker and  
31 Craft had speculated that by 2018 either there could be zero deaths, no further reduction in mortality or something in between [2]. This  
32 updated analysis demonstrates that the latter scenario is what has happened. It is clear that there is a continued decrease in mortality

33 from childhood cancer and that this is likely to continue. The model predicts that the mortality rate will decrease exponentially, so that by  
34 2024 the death rate would be predicted to be 1.84 per 100,000 children per year and by 2034 it would be predicted to be 1.47 per  
35 100,000 children per year. Future efforts should concentrate on factors that may eventually lead to zero deaths. These could include  
36 improvements in therapeutic interventions [4-6].

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73 **LEGEND LIST**

74 **Fig.1.** Trends in cancer mortality crude rates for children aged 0-14 years in England and Wales

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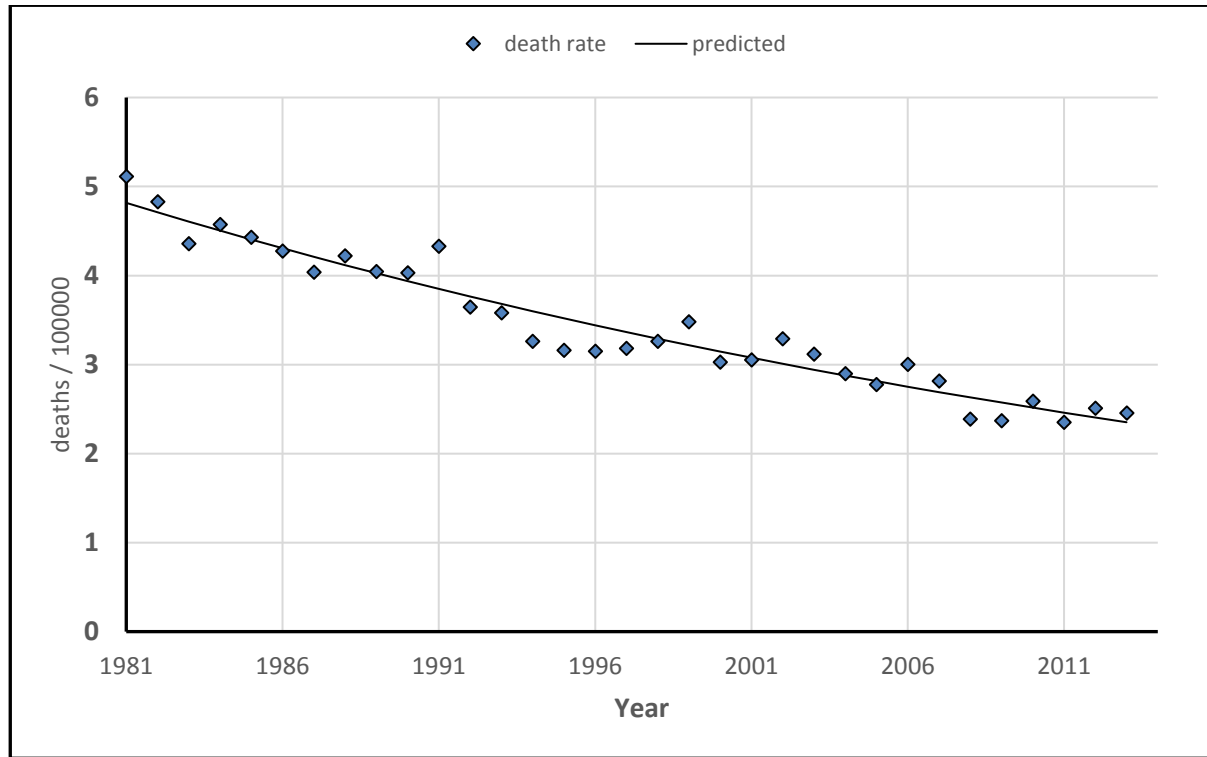
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