

Incinerator link with infant mortality: A tale of two doctors

by Michael Ryan BSc, C Eng, MICE

In 2008, Dr Harry Burns, Chief Medical Officer for Scotland, and Dr Robert Maynard of the Health Protection Agency (HPA), independently replied to letters from individuals concerned about the adverse health effects from proposed incinerators in their communities. They'd cited my research which found a consistent link between exposure to incinerator emissions and elevated rates of infant mortality in downwind electoral wards.

The letter of 11 November 2007 to Dr Burns is reproduced here:

Dr Harry Burns
Chief Medical Officer
St Andrews House
Regent Road
EDINBURGH, EH1 3DG

30.11.07

Dear Dr Burns,

Please stop the incinerator

You may remember an exchange of letters between us in February and March this year. Your detailed replies were greatly appreciated.

In particular, you sought to put my mind at rest about health concerns relating to a new incinerator planned for Binn Farm, near Glenfarg. To that end you cited a report by Elliot *et al* from 1996, which claimed that the apparent increase in risk of cancer associated with living near to incinerators was probably caused by socio-economic factors.

However new evidence has since come to light, which indicates that health problems near incinerators may not always be caused by socio-economic factors. A study carried out by independent researcher Michael Ryan has discovered that infant mortality in Chingford Green, a prosperous part of London close to Edmonton incinerator, is three times the national average (the article is attached).

I therefore feel that the precautionary principle should now be invoked, and that before permission is given for any new incinerator, new research should be carried out examine the implications of Mr Ryan's evidence.

I look forward to your reply at your earliest convenience.

Yours sincerely,

The news article mentioned in the above letter was in the Waltham Forest Guardian of 2 August 2007:

Concerns over infant death rates in Chingford Green
2nd August 2007
By Jonathan Bunn

CONCERNS have been raised that an abnormally high rate of infant mortality in an affluent area of Waltham Forest could be caused by toxic incinerator fumes.

Chingford Green Ward has the second highest number of child deaths relative to its population in the whole of London, according to the most recent figures.

Infant mortality rates are usually found in areas of high deprivation but Chingford Green Ward is the second richest part of the borough.

The ward is close to Britain's largest incinerator in Edmonton and one researcher, Michael Ryan, says he has gathered evidence from across the country that areas situated where toxic emissions start to fall to the ground have a high rate of child deaths.

He says his research has uncovered a similar picture across London, with babies more likely to die if they live close to and downwind of large incinerators.

Dr Dick van Steenis, a former GP and advisor to a House of Commons air pollution select committee, shares Mr Ryan's concerns and has called for tighter regulations to prevent the distribution of PM2.5 particles, a cocktail of heavy metals small enough to be breathed in.

The latest published figures for infant mortality from 2003-5 show there were 292 live births in Chingford Green and five recorded infant deaths.

This equates to an infant mortality rate of 17.1 deaths per 1,000 live births, three times the average rate for England and Wales.

Infant mortality rates in Waltham Forest are historically high with the borough having the highest child death rate in London as recently as 2001.

A spokeswoman for Waltham Forest Primary Care Trust (PCT) said: "The PCT has requested the data from Mr Ryan and will consider it carefully.

"Improving the health of mothers and their babies is one of the key public health priorities of the PCT.

"Due to the very small numbers involved, infant mortality data is supplied to the PCT on a borough rather than a ward basis, with data pooled over three years."

<https://www.guardian-series.co.uk/news/1592749.concerns-infant-death-rates-chingford-green/>

Dr Burns' anonymised reply of 17 January 2008 can be seen on pages 2 and 3.

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Your ref:
Our ref:
17 January 2008

Dear [redacted]

WASTE INCINERATION AND HUMAN HEALTH

Thank you for your recent letter concerning the above issue and prompted by your concerns over plans for an incinerator for Binn Farm near Glenfarg. Although your letter is dated, 8 March 2007, from its content and the fact that it was received by my office late last year, I assume this to be typographical error

As you acknowledge, we corresponded on this matter early in 2007 at which time I directed you to a number of sources relating to waste incineration and human health. I understand you found these, to an extent, reassuring.

In your most recent letter you have alerted me to work by Mr Michael Ryan, an independent researcher, reported on the website of the East London and West Essex Guardian, a local newspaper circulating in the Waltham Forest area of London.

During investigations, Mr Ryan has assembled information on infant deaths in London from which he observes that Chingford Green Ward has the second highest number of infant deaths relative to population in the whole of London. The ward is apparently next to Britain's largest incinerator in Edmonton. As Chingford is an affluent area, Mr Ryan presents his work as a challenge to the view that any contribution to poor health from domestic waste incinerators is unlikely to be distinguishable from the effects of socioeconomic factors.

An internet search has revealed a lively debate taking place in the Waltham Forest area and a commitment by the local Primary Care Trust (PCT) to obtain and examine Mr Ryan's data. My staff have made contact with the PCT to learn more of the background. We have been advised that the issues are indeed current and a spokesperson for the PCT addressed a meeting of North Chingford Community Council on the matter as recently as 14 January 2008.

The PCT state that the information chosen by Michael Ryan is correct in that, in a certain ward in north Waltham Forest during 2003/5, there were 5 infant deaths in 3 years, amongst 292 births. Mr Ryan has presented this as a rate of 17.1 per 1,000 live births. The view of the London Health Observatory (LHO) who advise the PCT is that small area data are

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insufficiently robust to show that differences in rare events like infant mortality at this level are not simply the result of chance. The confidence intervals are wide and overlap suggesting a ward level analysis is inappropriate. Indeed, in conducting an analysis at the much larger level of aggregation (Local Authority/Primary Care Trust) the LHO in their "Born Equal Report" on infant mortality in London combined 3 years of data. To obtain large enough numbers to do an analysis at ward level the LHO suggest they would have to combine data for 10-15 years at least. They consider that this would render the exercise meaningless.

By implication, if Mr Ryan had chosen different years he would have obtained a different rate, because the numbers are so very small. It is my understanding that there were no infant deaths in that ward in 2002. The Chingford Green ward is as Mr Ryan attests, affluent and has the highest life expectancy and lowest Standardised Mortality Rate in Waltham Forest. It might also be argued that were major problems caused by PM 2.5 particulates (which Mr Ryan pinpoints as the cause) this might affect people throughout the life course, giving rise to excess/earlier deaths from e.g. respiratory diseases or cancers.

In conclusion, I am grateful to you for bringing Mr Ryan's work to my attention. However, in my own experience, our discussions with Waltham Forest PCT and the reported views of London Health Observatory all serve to affirm me in my view of the need to be very cautious in the interpretation of small area health data. Accordingly, I see no reason at present to depart from the view set out in earlier correspondence perhaps best encapsulated in a recent position statement by the UK Health Protection Agency <http://www.hpa.org.uk/chemicals/incineration.htm> that *Incinerators emit pollutants into the environment but provided they comply with modern regulatory requirements such as the Waste Incineration Directive, they should contribute little to the concentrations of monitored pollutants in ambient air. Epidemiological studies and risk estimates based on estimated exposures, indicate that the emissions from such incinerators have little effect on health.*

Your sincerely

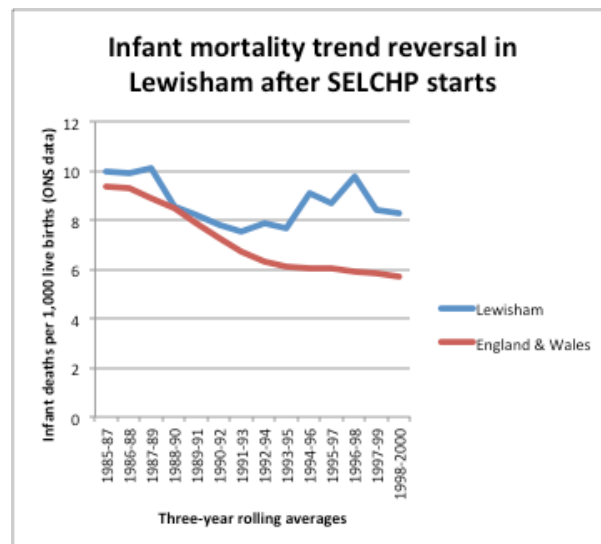


DR HARRY BURNS

On 12 April 2007, Harriet Grant of BBC Radio London came to Shrewsbury to interview me about high infant mortality in London electoral wards exposed to incinerator emissions. She emailed the London Health Authority (LHO) for comment and received an email claiming that the LHO’s advisers had told them that air pollution played no part in infant mortality. On learning of that email exchange, I made a request under the Freedom of Information Act asking for the names of the LHO’s advisers and received a letter claiming that the LHO “couldn’t remember”.

The LHO’s opinion in Dr Burns’ above letter about scrutinising a set of 10-15 years of electoral ward infant mortality data was something that Dr Burns, or anyone in Scotland responsible for protecting the public from industrial PM2.5 emissions, could have followed up.

Alternatively, Dr Burns could have easily used the “more robust” data at Council level and looked to see whether infant death rates worsened in Lewisham after the SELCHP incinerator started operating there in 1993.



The above graph isn’t an isolated case; it’s the norm as Dr Burns or anyone else could have found by checking ONS data in Councils exposed to emissions after incinerators started operating in Edmonton, Nottingham, Coventry, Kirklees, Birmingham, Sheffield, Dudley, Wolverhampton, Bolton etc.

Although a likely “official explanation” for the consistent pattern of post-incinerator rises in rates of infant deaths in exposed Councils could be: “Oh, but they are older incinerators.”, the data show that it must be wrong to adjust ONS data for deprivation, ethnicity and socioeconomic status. The following study has done so before wrongly concluding no link between the higher infant mortality and exposure to incinerator emissions:

“Conclusions

We found no evidence that exposure to PM₁₀ from, or living near to, an MWI operating to current EU standards was associated with harm for any of the outcomes investigated. Results should be generalisable to other MWIs operating to similar standards.”

Fetal growth, stillbirth, infant mortality and other birth outcomes near UK municipal waste incinerators; retrospective population based cohort and case-control study (Environment International Volume 122, January 2019, Pages 151-158)

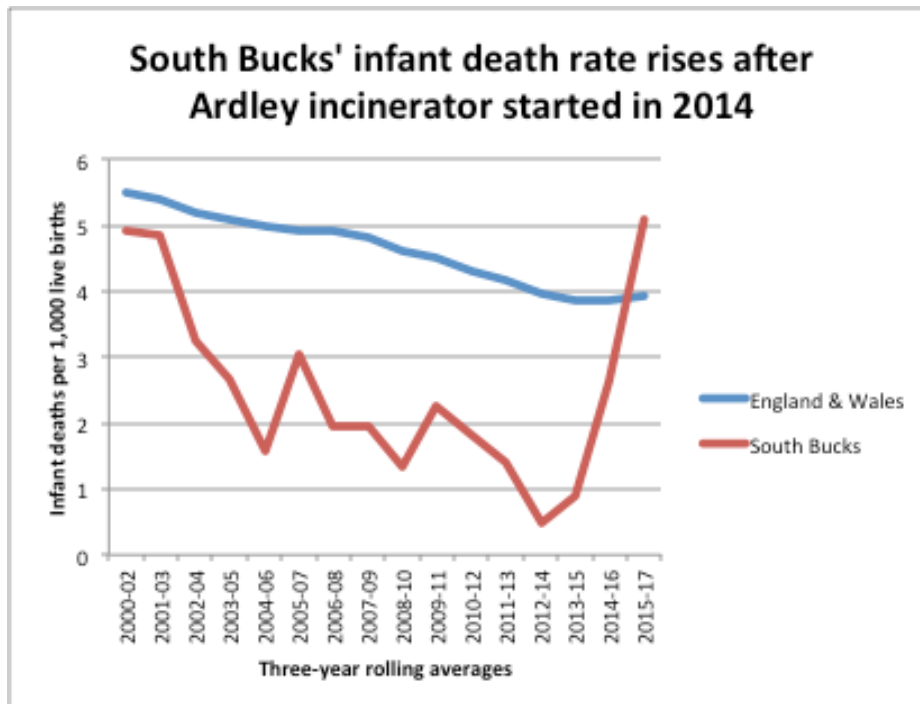
<https://www.sciencedirect.com/science/article/pii/S0160412018316398>

There were two long periods that London’s electoral ward boundaries were unchanged out of the 22 years of Vital Statistics 4 data that I’ve purchased from ONS: the seven years 1994-2000 and the twelve years 2002-2013. I mapped the 12-year set and looked at any group of four wards that made a single group and saw that there was a fifteen-fold difference between the average infant death rate of 9.2 per 1,000 live births in the highest group clustered around the Edmonton incinerator and lowest group’s average rate of 0.6 per 1,000.

Borough	Ward	Live births	Infant deaths 2002-2013 ONS data	Infant deaths per 1,000 live births
Enfield	Lower Edmonton	3738	36	9.6
Enfield	Upper Edmonton	3827	36	9.4
Waltham Forest	Valley	1834	16	8.7
Haringey	White Hart Lane	2710	23	8.5
	Totals	12109	111	9.2

Borough	Ward	Live births	Infant deaths 2002-2013 ONS data	Infant deaths per 1,000 live births
Bromley LB	Darwin	589	0	0
Bromley LB	Shortlands	1034	0	0
Bromley LB	Hayes and Coney Hall	1652	2	1.2
Bromley LB	Kelsey and Eden Park	1844	1	0.5
	Totals	5119	3	0.6

Dr Maynard’s correspondent was concerned higher infant mortality would result due to emissions from the proposed Ardley incinerator sited close to South Buckinghamshire.



The letter of 14 August 2008 to Dr Robert Maynard can be seen here:

Dr Maynard didn't give a proper reply to the points made and neither did he inform his correspondent, in his letter of 21 August 2008, that the HPA had been threatened with being referred to the Information Commissioner for failing to respond to my FoI request. I'd asked for a list of incinerators around which the HPA had examined the rates of illness and rates of premature deaths at all ages at electoral ward level and compared upwind-v-downwind wards. The HPA then admitted that no such data had been examined around any incinerator. The HPA's negligence was reported in both the Dorking Advertiser and the Surrey Mirror of 22 May 2008:

<https://www.ukhr.eu/incineration/dorking-advertiser-22-05-2008.jpg>

Dr Maynard's letter can be seen here:



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21st August 2008

Dear _____

Thank you for your letter dated 14th August 2008.

You have set out your arguments clearly but I'm afraid I have little to add to what I said to you on the telephone. My main points were:

1. You have not been able to substantiate your claims that exposure to emissions from incinerators causes an increase in infant mortality. The material you quote from Michael Ryan is not adequate: it has not, as far as I know, been published in a high quality scientific journal which would provide rigorous peer review including statistical review of the design and analysis of studies. Simply claiming that infant mortality is higher down wind of incinerators really will not do: you need to show that you have taken into account confounding factors that could also be playing a part. You would also need to explain why some wards in the downwind direction do not have higher than expected infant mortality rates, if indeed this is the case. Colleagues and I have undertaken a literature search in this area: we have failed to find persuasive evidence to support your assertions. Please note that the literature search focused on studies published in the peer-reviewed literature.
2. You have not been able to provide evidence to show that incinerators have a significant effect on local concentrations of air pollutants. In my view they are unlikely to have such an effect: as I explained, as a source of particulate matter they contribute far less than does road traffic. Without such evidence there is no case for

launching a study of the alleged effects of incinerators on children's health. If it could be shown, that levels of pollutants generated by incinerators were high in near by areas then there would be a case for such a study. But there is no evidence to support this, and I can see no evidence to suspect that this might be the case.

3. I agree with you when you say that air pollution has an effect on child health. This is very clearly set out in the World Health Organisation's publication: Effects of Air Pollution on Children's Health and Development (2005): I and a number of colleagues contributed to this report.

4. You ask a number of questions, towards the end of your letter. Answering those that I might be expected to be able to answer would mean rehearsing, again, the points made above.

Yours sincerely



Dr Robert Maynard CBE FRCP
Health Protection Agency
Air Pollution and Noise Unit

The Environment Agency continues to issuing incinerator permits, whilst relying upon inaccurate and very misleading "expert opinion" that there's no harm to health from emissions.

With the clear link between exposure to incinerator emissions and higher rates of infant mortality it's still a scandalous case of:

"We stand by our expert opinion that there's no link between infant mortality and exposure to incinerator emissions – despite ONS data consistently showing otherwise."

*****End*****