Birth defect rates in Greater London 1995-2002

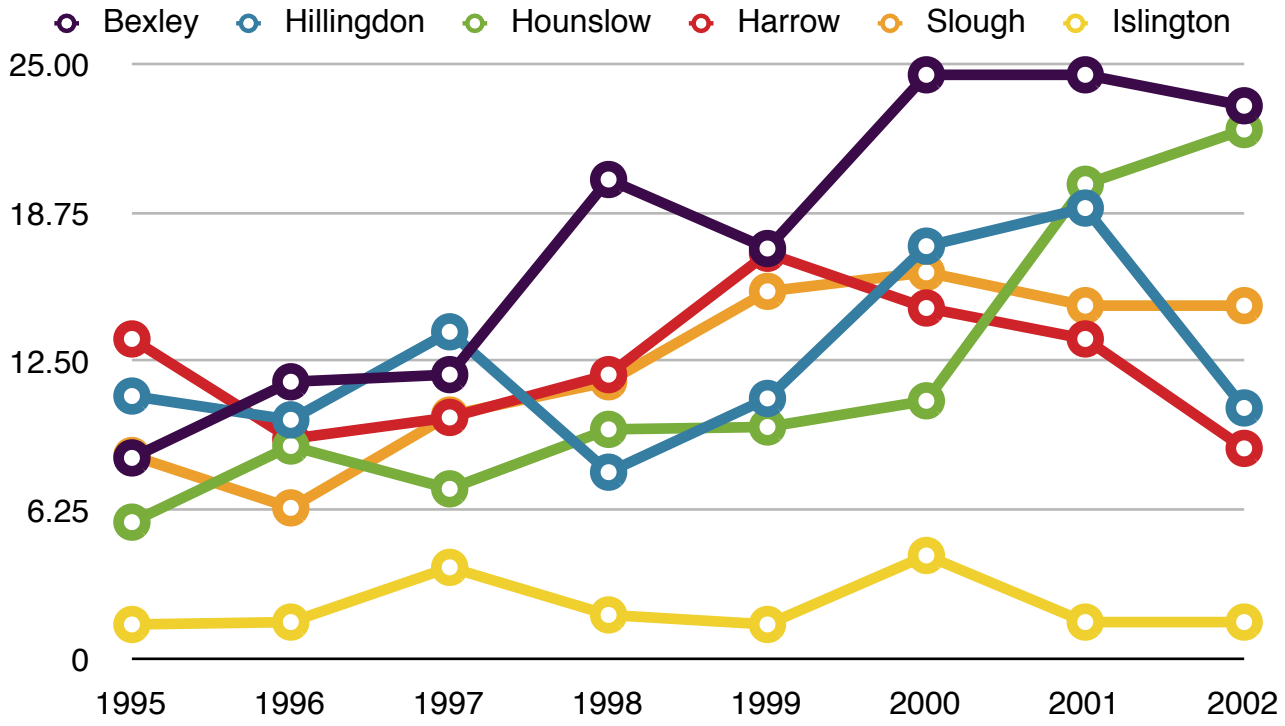
by Michael Ryan BSc, C Eng, MICE

Summary

Bexley, the only London Borough with an incinerator authorised to burn radioactive waste [White Rose, Sidcup], and which is also subject to industrial PM2.5 emissions from three other sources, has had the highest rate of babies born with defects out of the 31 Greater London Primary Care Trusts [PCTs] for each of the five years 1998-2002.

The rates of babies recorded as born with defects in Bexley during 2002 was between 15 and 59 times greater than in Islington. The precise ratio is unknown as the number of babies born with defects in Islington was listed as "less than 5", whereas there were 59 babies recorded with defects in Bexley, the total recorded births in 2002 being 2,526 in Islington and 2,530 in Bexley.

Grundon's incinerator at Colnbrook is authorised to burn radioactive waste, hence there are elevated rates of babies born with birth defects in PCTs downwind. There is an association of high birth defect rates with grounding of industrial PM2.5 air pollution in Greater London as demonstrated by Professor Louise Parker and others in the Cumbria study of babies with birth defects. [1]



Rates of babies born with defects per 1000 recorded births in some Greater London PCTs
(based on ONS data)

Birth defects are known to be caused by radioactivity, organophosphate herbicide/pesticides, and industrial PM2.5 emissions of dioxins, some heavy metals, and PAHs. Incinerator emissions can contain all these, hence the higher birth defect rates associated with radioactive waste-burning incinerators. [2]

Birth defect rates are one of over 20 health parameters that are raised due to industrial emissions of PM2.5s as detailed by Dr Dick van Steenis MBBS in reports at www.countrydoctor.co.uk and four medical journals.

Introduction

Most of the 31 PCTs in Greater London share boundaries with the Boroughs - and both PCTs and Boroughs have obligations to protect the health of citizens. The PCTs have access to both current and historic health data and the opportunity to analyse it. The Boroughs have decision-making powers over planning matters and disposal of waste and also have a duty to protect public health.

The unpublished birth defect data released on Ministerial instruction by the Office of National Statistics [ONS] show large variations in rates of babies recorded as being born with defects in different PCTs and elevated rates in PCTs where there is grounding of PM2.5 emissions from incinerators and other industrial sources, including crematoria, oil refineries and everybody using waste oils and solvents as fuel.

Politicians' concerns over incineration and birth defects

The Green Party MEPs, Dr Caroline Lucas and Jean Lambert, wrote to Dr John Reid MP [Secretary of State for Health] on 4 August 2004 expressing concern at reports of birth defects being associated with incinerator emissions and enclosing a copy of the article "Birth defect risks rise close to incinerators" [The Independent, 29 May 2003]. The Green Party MEPs also requested details of studies carried out or proposed by the Department of Health that might further explore such risks. The reply sent to the Green Party MEPs by Melanie Johnson MP [Under Secretary of State for Public Health] on 7 September 2004 [3] was ill-advised, foolhardy, contained inaccurate information and also displayed a lack of diligence on the part of the Department of Health in analysing birth defect data that has been collected since January 1964 on the instruction of the Chief Medical Officer at the Ministry of Health as a direct result of the thalidomide scandal [4].
Ms Johnson's letter of 7 September 2005 stated the following without references: "There is no convincing evidence to support your concern about a possible link between environmental pollution from incinerators and birth defects. Several epidemiological studies on waste incinerators and birth defects have been published, with no consistent evidence of any association."

Ms Johnson further alleged: "the numbers [of babies born with defects] have actually fallen both in 2001 and 2002, the latest year for which data are available."

However, the truth is that ONS data reveals a massive 40% rise in the rate of babies born with defects in England from 1995 to 2000, followed by a 7.4% fall from 2000 to 2002 [which might reflect higher termination rates due to better scanning techniques]. Ms Johnson and her advisers have clearly ignored the Parker report [1], despite the fact that she was responding to a letter sent by Jean Lambert MEP and Dr Caroline Lucas MEP which enclosed a copy of The Independent article of 29 May 2003 about the Parker report.

Data collection [& how the Bexley problem has been hidden by ONS]

When data is gathered, there is often scope to increase the quality of the data collected such that the aims can be more readily met. The birth defect data was collected "as a means of providing early information of causal factors of congenital malformation" [4] and yet the quality of data published by ONS has diminished over time, instead of increasing. Also, forty years of data collection should have been more than enough for the Department of Health to identify "causal factors of congenital malformation", especially given the fact that they would also have access to other health data linked to industrial PM2.5 emissions such as asthma, diabetes 2, stroke, heart attack, ME, autism/MS, cancers, infant mortality, depression, obesity, hypothyroidism, arthritis etc. [5]

The ONS publishes birth defect data annually, yet the single most important statistic, ie the numbers of babies recorded as being born with birth defects in each location in England and Wales, was last published in the 1987 data, thus denying any researcher the opportunity to identify any trends or patterns in the rates of babies born with birth defects.

Bexley and Greenwich birth defect data was published separately by ONS from 1987 to 1993 and then combined data for "Bexley & Greenwich" was published from 1994 to 2000. In 2001, Bromley's birth defect statistics were combined with those for Bexley & Greenwich. The amalgamations hid both the high Bexley figures and also elevated birth defect rates in Greenwich following work on the Millennium Dome - the rise in school asthma rates in Greenwich [from 11.9% in 1996 to 50% after works started] already measured. Case study 4 in AAEM report, [7].

Rates of babies recorded as born with defects per 1,000 total births [ie live & stillbirths] in Primary Care Trusts in London area, based on ONS data

Primary Care Trust	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Barking & Dagenham	6.5	7.0	5.2	4.5	2.6	6.4	6.6	5.3
Barnet	5.1	4.0	0.9 max	1.6	1.2	3.9	8.5	8.3
Bexley	8.5	11.7	12.0	20.2	17.3	24.6	24.6	23.3
Brent Teaching	1.0 max	1.0 max	1.0 max	1.3	1.2	11.4	8.9	6.0
Bromley	9.0	5.6	7.6	7.1	6.1	7.6	6.1	6.7
Camden	7.2	7.7	7.5	3.4	6.0	4.3	6.1	4.2
City & Hackney Teaching	14.7	12.5	10.7	11.8	9.4	9.8	8.1	8.6
Croydon	6.8	20.1	26.2	10.5	12.3	20.2	16.0	15.0
Ealing	14.6	8.7	5.2	5.8	5.8	14.7	12.2	6.7
Enfield	6.9	10.4	11.1	5.0	7.3	2.8	1.9	1.0 max
Greenwich	7.5	4.1	5.8	8.8	10.7	9.8	1.2 max	1.2 max
Hammersmith & Fulham	10.4	7.7	8.7	8.1	7.1	13.3	13.0	10.8
Haringey Teaching	2.0	3.6	4.9	3.9	5.5	3.5	10.6	14.9
Harrow	13.5	9.3	10.2	12.0	17.1	14.8	13.5	8.9
Havering	6.2	5.8	3.6 min	7.3	5.9	5.2	6.3	3.5
Hillingdon	11.1	10.1	13.8	7.9	11.0	17.4	19.0	10.6
Hounslow	5.8	9.0	7.2	9.7	9.8	10.9	20.0	22.3
Islington	1.5 max	1.6max	3.9	1.9	1.5 max	4.4	1.6 max	1.6 max
Kensington & Chelsea	4.2	5.5	3.0	2.0 max	6.6	7.4	6.0	6.9
Kingston	5.2	3.9	11.0min	9.9	9.6	13.8	11.1	5.5
Lambeth	1.9	0.9 max	0.9 max	0.9 max	0.9 max	0.9 max	2.3	3.6
Lewisham	10.0	12.3	5.5	3.3	1.8	2.6	3.2	1.5

Primary Care Trust	1995	1996	1997	1998	1999	2000	2001	2002
Newham	6.0	3.1	2.2	3.4	0.8 max	2.8	2.9	1.0
Redbridge	1.3 max	1.6	1.2 max	1.3 max	1.6	1.2 max	1.3 max	1.2 max
Richmond & Twickenham	4.4	8.5	4.2	6.8	8.0	15.1	10.0	7.8
Southwark	14.2	9.8	8.5	9.4	2.4	3.6	1.0 max	2.9
Sutton & Merton	12.4	14.9	8.2	8.9	8.9	8.6	6.7	5.8
Tower Hamlets	9.5	10.6	9.7	7.5	9.9	12.3	7.1	7.8
Waltham Forest	5.5	7.4	9.2	12.1	7.3	10.7	8.2	7.8
Wandsworth	14.4	19.9	14.9	16.2	10.9	10.3	12.6	10.7
Westminster	2.1	2.5	1.7 max	2.2	1.6 max	5.8	5.8	3.9
Slough	8.6	6.4	10.3	11.7	15.5	16.3	14.9	14.9

Notes:
1. Numbers less than 5 of babies born with defects, or stillborn were not disclosed due to confidentiality. In 1997, less than 5 babies were stillborn and the 3.6 per 1,000 figure is based on 4 stillborn babies and marked "min"

2. Primary Care Trusts with less than 5 babies born with defects were assumed to have 4 such babies for the above rates, hence the designation "max".

3. Islington has been used as a "control" for all locations in England & Wales as it is in the heart of the largest urban area and therefore any effects of traffic fumes can be ignored when comparing with other locations. If just one baby had been born with a defect in Islington in 2002, the rate would have been 0.4 babies with defects per 1,000 births ie 1 in 2,526 births.

4. Bexley's birth defect rate was the highest recorded birth defect rate in London in each of the years 1998, 1999, 2000, 2001 and 2002.

5. ONS published data showed Bexley data separately until 1994 when it was combined with Greenwich. In 2001, "Bexley & Greenwich" were combined with Bromley. Birth defect data has been collected since 1964.

6. ONS ceased publishing the numbers of babies notified with defects in each location after 1987.

7. Slough has been included because Grundon's Colnbrook incinerator is one of two in the London area authorised to burn radioactive waste, the other being White Rose, Sidcup, in Bexley Borough.

The disparity between Bexley and Islington

If birth defects are random events, and not associated with industrial emissions of PM2.5s from incinerators or other sources [such as power stations, oil refineries, cement works etc.] there would be a one in 31 chance of any PCT in Greater London having the highest rate of babies born with defects in any year. If any PCT had the highest rate for two successive years, the odds of such a sequence would be one in 961. Bexley has had the highest rate of babies born with defects out of the Greater London PCTs for each of the 5 years 1998 to 2002 and the odds of such a sequence being a chance event are one in 28,629,151, which is approximately twice as unlikely as winning the national lottery jackpot with a single £1 ticket.

If birth defects are primarily caused by traffic emissions, Islington - which is in the heart of the largest urban area in the UK- could reasonably be expected to have high rates, and yet the rate of babies born with defects in Islington are far lower than the average rates for England during the years 1995 to 2002 and the differential in rates between Bexley and Islington was between 15 and 59 during 2002.

Bexley is the only Greater London Borough which has an incinerator authorised to burn radioactive

waste [White Rose, Sidcup] according to data supplied to me by Barbara Young, Chief Executive of the Environment Agency in her letter of 28 December 2002.

Bexley is also home to the sewage sludge incinerator at Crossness, which has been burning sludge after dumping of sludge in the North Sea was recognised to be harmful.

Depending on wind direction, Bexley also receives PM2.5 emissions from the SELCHP incinerator at Deptford and Littlebrook D Power Station, just outside Dartford.

Islington is relatively free from the above emissions unless the wind is from the south east - which has more often been the case in recent years, thus increasing rates of birth defects and a range of other health parameters as detailed by Dr Dick van Steenis in The Lancet [6] and at www.countrydoctor.co.uk [7, 8] Detailed studies of 9 health parameters in electoral wards in parts of Shropshire by Dr van Steenis and the author confirm that where birth defect rates were high, so were the other 8 health parameters. The Shropshire childhood asthma survey and analysis of stillbirth and infant mortality rates by electoral ward in Shropshire show the differences between living upwind and downwind of industrial PM2.5 pollution. [9, 10]

The Greater London PCTs that trail Bexley in rates of babies born with defects are mostly clustered downwind of Grundon's radioactive waste-burning incinerator at Colnbrook.

Comparison between Bexley and Islington

Year		Bexley	Islington
1995	Live births	2827	2640
	Stillbirths	10	12
	Total births	2837	2640
	No of babies recorded with defects	24	less than 5
	Rate of babies with defects/1000 births	8.5	1.5 max
1996	Live births	2807	2501
	Stillbirths	7	23
	Total births	2814	2524
	No of babies recorded with defects	33	less than 5
	Rate of babies with defects/1000 births	11.7	1.6 max
1997	Live births	2725	2571
	Stillbirths	15	16
	Total births	2740	2524

Year		Bexley	Islington
	No of babies recorded with defects	56	10
	Rate of babies with defects/1000 births	12.0	3.9
1998	Live births	2764	2569
	Stillbirths	11	18
	Total births	2775	2587
	No of babies recorded with defects	56	5
	Rate of babies with defects/1000 births	20.2	1.9
1999	Live births	2759	2607
	Stillbirths	16	16
	Total births	2775	2623
	No of babies recorded with defects	48	less than 5
	Rate of babies with defects/1000 births	17.3	1.5 max
2000	Live births	2674	2720
	Stillbirths	11	16
	Total births	2685	2763
	No of babies recorded with defects	66	12
	Rate of babies with defects/1000 births	24.6	4.4
2001	Live births	2627	2499
	Stillbirths	14	20
	Total births	2641	2519
	No of babies recorded with defects	65	less than 5
	Rate of babies with defects/1000 births	24.6	1.6 max
2002	Live births	2518	2508
	Stillbirths	12	18
	Total births	2530	2526
	No of babies recorded with defects	59	less than 5
	Rate of babies with defects/1000 births	23.3	1.6 max

Notes:

1. Above data supplied to Michael Ryan by the Office of National Statistics [ONS] on Ministerial instruction.

2. The government have been gathering birth defect data since January 1964. The last year that ONS published the numbers of babies born with defects in each of the 200 locations listed in Congenital Anomaly Statistics was in 1987. The lack of such an important statistic from in the published ONS birth defect data from 1988 onwards has denied freelance researchers the opportunity to identify variations in rates of babies born with defects in locations such as in Bexley and Islington.

Conclusions

There is an obvious and measurable association between industrial PM2.5 emissions from incinerators and other sources with elevated rates of babies born with birth defects, particularly when radioactive material is burnt. This study uses government data and shows that modern incinerators are unsafe as revealed in the excellent Sint Niklaas report [11].

There is a total, callous lack of diligence on the part of the Department of Health in dealing with the known and escalating health damage caused by industrial PM2.5 emissions. Birth defects, infant mortality, childhood asthma and autism are early indicators of serious ill-health and premature death consequences of incinerators and other industrial sources of PM2.5s. PM2.5s have risen sharply due to the switch to hazardous fuel mixes [SLF, etc.], mainly from 1997.

The government are using the Health Protection Agency [HPA] to issue propaganda to bulldoze their incineration programme regardless of consequences. The HPA vilified the Cumbria study and use the misleading report by Elliot and others, which only looked at solid cancers within 10 years of exposure to incinerator emissions, knowing that solid cancers are only diagnosed 15 to 20 years after exposure.

There is a lack of diligence on the part of Local Authorities in adopting a safer method of waste disposal e.g. plasma-gasification, which is significantly cheaper than incineration and doesn't cause health damage. Incineration costs approximately £63 per tonne for disposal and causes health damage costs of an equivalent sum. Plasma-gasification has a nett cost of £21 per tonne and doesn't produce about a tonne of toxic ash to be disposed of to landfill for every three tonnes of waste incinerated.

The collection of birth defect data from January 1964 has been shown to be another example of a government knee-jerk reaction to a major public health scandal that could and should have led to improvements in public health. The way that the published data has been downgraded suggests that there was never any intention to use the data for the intended purpose, thereby insulting the thalidomide victims and their families who might have expected that their tragedies could help prevent future tragedies.

Bexley's birth defect rates are likely to increase following the decision to allow White Rose incinerator to burn unlimited amounts of radioactive material according to table 2.1.2 on page 6 of their latest permit which was issued by the Environment Agency on 13 December 2005. [12]

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See letter from Melanie Johnson to Caroline Lucas on next pages

From the Parliamentary Under Secretary of State for Public Health
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7 September 2004

Dr Caroline Lucas
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Dear Dr. Lucas,

Thank you for your letter of 4 August 2004 to John Reid concerning increasing rates of birth defects in England and Wales.

There is no evidence that the number or rates of children born with birth defects in England and Wales have increased. Since 1964, notifications of congenital anomalies among live and stillbirths in England and Wales have been provided by the National Health Service on a voluntary basis to the National Congenital Anomaly System (NCAS, maintained by the Office for National Statistics). In regions where a congenital anomaly register exists, this method of notification to NCAS has gradually been replaced since 1998 with direct data transfer from these registers. The more complete ascertainment of cases resulted in a marked increase in notifications in 1998, 1999 and 2000. Despite continuing improvements in coverage to the voluntary notification system, the numbers have actually fallen both in 2001 and 2002 (the latest year for which data are available).

There is no convincing evidence to support your concern about a possible link between environmental pollution from incinerators and birth defects. Several epidemiological studies on waste incinerators and birth defects have been published, with no consistent evidence of any association.

Emissions from modern waste incinerators in the United Kingdom are subject to stringent controls introduced since the periods captured in the studies noted above. It is probable that few, if any, of the incinerators studied would have complied with present day requirements. For example, none of the four incinerators considered in the Cumbria study described in the Independent article was subject to regulation

under the Environmental Protection Act 1990 Part 1, and three of them have closed (although they were very small, and unlikely to contribute significantly to environmental pollution). The fourth is not a waste incinerator but a pet crematorium, which is also very small and is situated in a remote area.

Yours sincerely,

Melanie Johnson

MELANIE JOHNSON