Cancer rates in Walsall and location of the M6 and former mining works

The PCT is aware of concerns in Alumwell, both regarding cancer rates and regarding pollution, both from the M6 and from former mineworkings. When considering any link between cancer and pollution there are several caveats to consider, including

- association does not automatically mean causation - even if there are higher than expected numbers of cases in an area with higher than normal pollution levels one cannot automatically jump to the conclusion that the pollution is causing cancer; for instance the pollution levels may be only recent, the person with cancer may not have lived in the area at the time there was pollution, or they may have other risk factors for cancer.

- cancer usually has a very long period from exposure to cause to development of disease - disease can occur decades after exposure to the trigger.

- there are relatively few clear examples of environmental pollution being responsible for cancer.

- there needs to be a mechanism by which environmental pollutants can reach people, for example from groundwater, inhalation of polluted air, dust from active sites or via the food chain if eating locally grown food products.

The numbers of people who are recorded as having died from cancer are routinely available to the PCT, but to properly interpret the numbers we must study the cancer rates, since numbers of cancer in isolation do not tell us anything about the underlying population - for example cancer is much more common in older people, so a large number of deaths from cancer in a location might simply reflect a nursing home with many old people.

The PCT asked the West Midlands Cancer Intelligence Unit to calculate "directly age-standardised" rates per 100,000 people for cancer incidence (numbers of new cases per year) and mortality (deaths per year). This allows comparisons to be made between areas with differently aged populations. The WMCIU has to validate the cancer data, some of which might come or be corrected a considerable time after diagnosis or death (if for instance there was a post-mortem) so their validated rates will always be at least a year or two behind the present. The most recent data at ward level currently available to the PCT goes to 2008, but the WMCIU has advised that these rates do not usually show large changes over time.

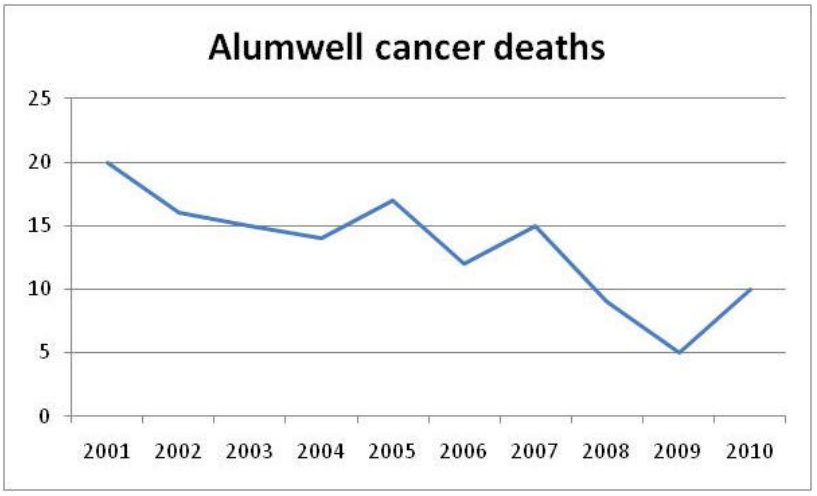
When analysing cancers according to the site of the body they affect, the number of cases in a given neighbourhood is sufficiently small to make the rates fluctuate quite widely unless aggregated over a considerable period of time. Furthermore, when only a small number of people in a small area develop cancer over a period of time it can be easy to identify those individuals, and where the number of cases of cancer is less than five in a unit of time and geography, by convention that data is withheld from publication to prevent the possibility of those patients being identified and hence protect patient confidentiality. Where data cannot

be released it is indicated by ND (non disclosable) in the tables. However, the rates in Alumwell in these five years were not statistically significantly different from the rates in Walsall as a whole. For the same reason, ages of individual patients cannot be disclosed. Gynaecological cancers affect only women; prostate only affects men, hence the NA (not applicable) abbreviation in certain cells in the following tables.

In addition to calculating the rates, the WMCIU has calculated the "95% confidence intervals" for the rates. Rates at neighbourhood level or for individual types of cancer are based on very small numbers of cases which will naturally vary due to random variation of observed cases. The confidence intervals show the extent to which chance alone could account for this natural variation. By convention this is calculated so that if measured on another occasion, 19 out of 20 times the true rate would still lie between these numbers. So for example with all cancer cases in men in Alumwell, although the observed rate is 483 cases per 100,000 men, the population of Alumwell is fairly small, meaning there is plenty of scope for natural variation, and effectively this rate could have been anywhere between 374 and 606 by chance alone.

When making comparisons between different areas, if the confidence intervals do not overlap, the measured incidence or mortality rates are said to be significantly different and in such circumstances the difference is unlikely (but not impossible) to be a chance finding.

To illustrate the effect that small numbers of cases has, the following graph shows the actual number of cancer deaths in Alumwell over the last decade. These numbers are not the same as the cancer rates in the tables below, nor can they be directly compared, since the rates are the number of cases divided by the number of people in the population after adjustment to take account of the different age profiles of different areas. However, it does show that there is significant variation between one year and the next and a year with few cases may well be followed by a year with considerably more cases and vice versa, purely by chance.



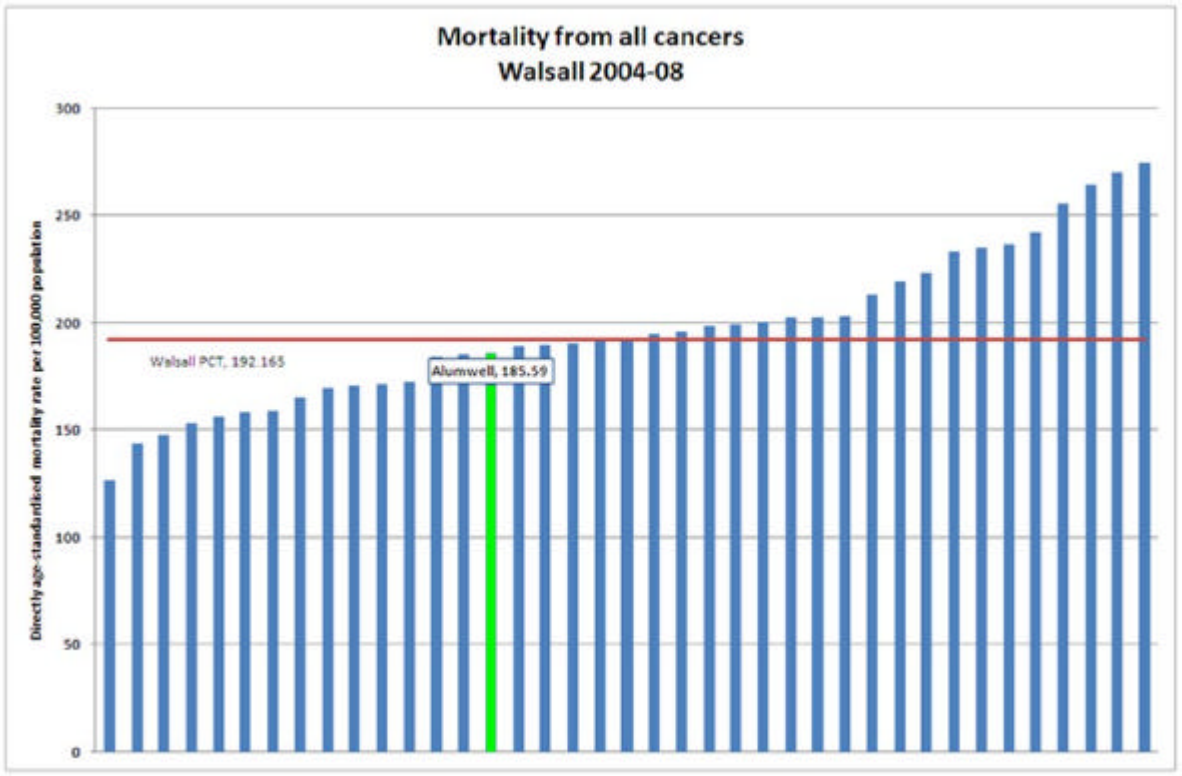
Active monitoring of air pollution in the M6 corridor and the area around the former copper works is undertaken respectively by Walsall Council and on behalf of DEFRA. This monitoring includes airborne metals that are related to carcinogenic effects, with the latest published results indicating no undue cause for concern.

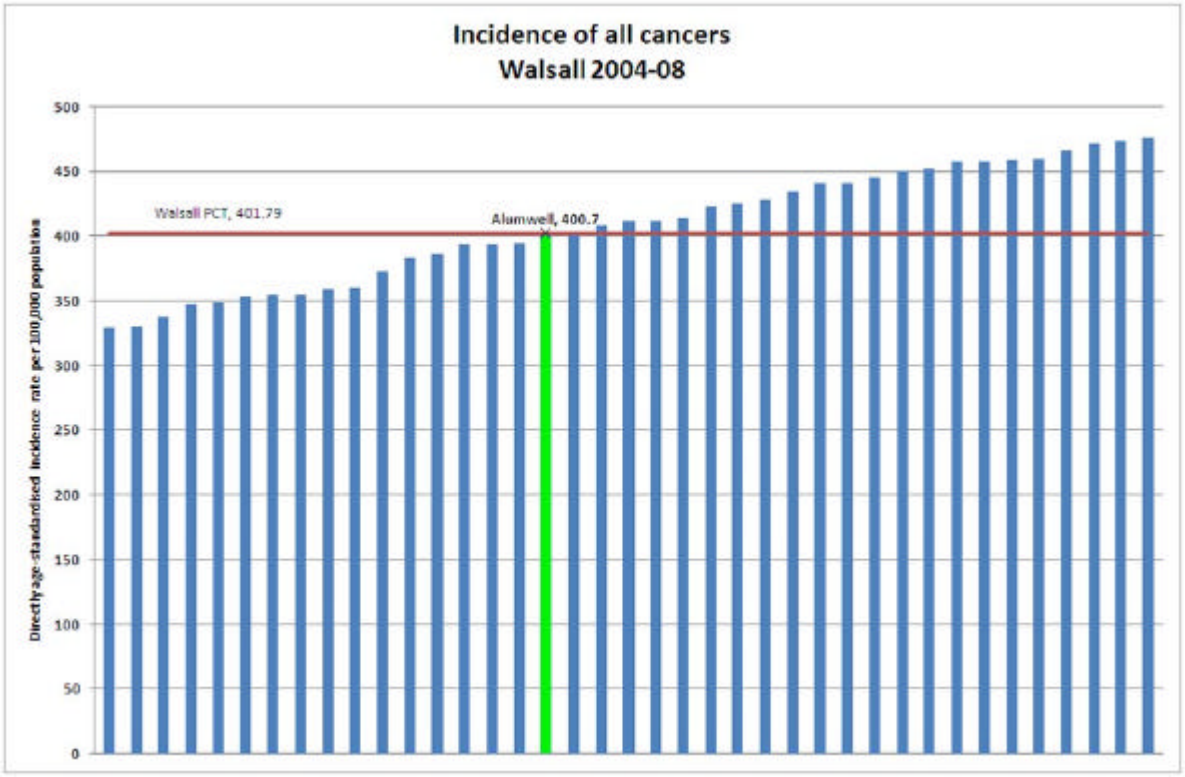
Cancer Incidence, Walsall and Alumwell (2004-2008) per 100,000

		Males		Females		Persons	
		Rate	CIs	Rate	CIs	Rate	CIs
All cancers	Walsall PCT	436	(421-451)	367	(354-381)	402	(392-412)
	Alumwell	483	(374-606)	318	(236-413)	401	(332-478)
Head & Neck	Walsall PCT	20	(17-23)	11	(9-13)	15	(13-18)
	Alumwell	ND	ND	ND	(3-42)	31	(15-56)
Upper gastrointestinal	Walsall PCT	37	(33-42)	14	(11-16)	25	(23-28)
	Alumwell	ND	ND	ND	(7-56)	22	(10-42)
Bowel	Walsall PCT	67	(61-73)	37	(33-41)	52	(48-55)
	Alumwell	ND	ND	ND	(5-49)	57	(34-89)
Hepatic & Pancreas	Walsall PCT	21	(17-24)	14	(11-16)	17	(15-19)
	Alumwell	ND	ND	ND	(6-50)	21	(10-41)
Lung	Walsall PCT	74	(68-80)	38	(34-43)	56	(52-60)
	Alumwell	121	(70-186)	20	(6-42)	70	(44-105)
Sarcomas	Walsall PCT	3	(2-5)	3	(2-4)	3	(2-4)
	Alumwell	ND	ND	ND	ND	ND	ND
Melanoma	Walsall PCT	11	(8-13)	12	(9-14)	11	(9-13)
	Alumwell	ND	ND	ND	ND	ND	ND
Breast	Walsall PCT	1	(0-2)	130	(122-138)	65	(61-70)
	Alumwell	0	(0-0)	88	(46-144)	44	(23-72)
Gynaecological	Walsall PCT	NA	NA	58	(53-64)	NA	NA
	Alumwell	NA	NA	66	(31-112)	NA	NA
Male genitalia	Walsall PCT	10	(8-13)	NA	NA	NA	NA
	Alumwell	ND	ND	NA	NA	NA	NA
Prostate	Walsall PCT	99	(93-107)	NA	NA	NA	NA
	Alumwell	80	(40-135)	NA	NA	NA	NA
Urological	Walsall PCT	35	(31-40)	11	(9-13)	23	(21-25)
	Alumwell	ND	ND	ND	ND	15	(5-32)
Brain & CNS	Walsall PCT	9	(7-12)	5	(4-7)	7	(6-9)
	Alumwell	ND	ND	ND	ND	ND	ND
Haematological	Walsall PCT	33	(29-37)	22	(19-25)	27	(25-30)
	Alumwell	ND	ND	ND	ND	29	(14-53)

Cancer mortality, Walsall PCT and Alumwell (2004-2008) per 100,000

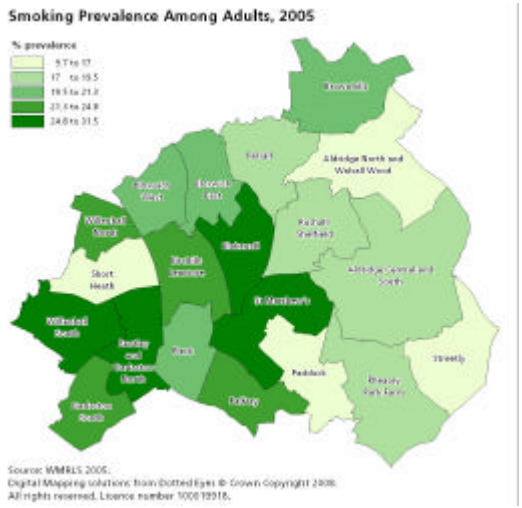
		Males		Females		Persons	
		Rate	CIs	Rate	CIs	Rate	CIs
All cancers	Walsall PCT	228	(218-239)	156	(148-164)	192	(185-199)
	Alumwell	255	(178-344)	117	(74-168)	186	(142-237)
Head & Neck	Walsall PCT	6	(5-8)	2	(1-2)	4	(3-5)
	Alumwell	ND	ND	ND	ND	ND	ND
Upper gastrointestinal	Walsall PCT	28	(24-32)	11	(9-13)	20	(18-22)
	Alumwell	ND	ND	ND	ND	15	(6-33)
Bowel	Walsall PCT	31	(27-35)	18	(15-21)	25	(22-27)
	Alumwell	60	(27-106)	19	(6-40)	39	(22-65)
Hepatic & Pancreas	Walsall PCT	17	(14-20)	11	(9-14)	14	(12-16)
	Alumwell	ND	ND	ND	ND	ND	ND
Lung	Walsall PCT	62	(56-67)	31	(28-35)	47	(43-50)
	Alumwell	115	(65-178)	24	(9-47)	69	(44-103)
Sarcomas	Walsall PCT	1	(0-2)	2	(1-3)	1	(1-2)
	Alumwell	0	(0-0)	0	(0-0)	0	(0-0)
Melanoma	Walsall PCT	3	(2-4)	1	(0-2)	2	(1-3)
	Alumwell	0	(0-0)	0	(0-0)	0	(0-0)
Breast	Walsall PCT	0	(0-0)	29	(25-32)	14	(13-16)
	Alumwell	0	(0-0)	ND	ND	ND	ND
Gynaecological	Walsall PCT	NA	NA	17	(14-20)	NA	NA
	Alumwell	NA	NA	20	(5-45)	NA	NA
Male genitalia	Walsall PCT	1	(0-1)	NA	NA	NA	NA
	Alumwell	0	(0-0)	NA	NA	NA	NA
Prostate	Walsall PCT	24	(21-27)	NA	NA	NA	NA
	Alumwell	ND	ND	NA	NA	NA	NA
Urological	Walsall PCT	15	(12-18)	5	(4-7)	10	(9-12)
	Alumwell	ND	ND	ND	ND	ND	ND
Brain & CNS	Walsall PCT	6	(4-8)	4	(2-5)	5	(4-6)
	Alumwell	ND	ND	ND	ND	ND	ND
Haematological	Walsall PCT	17	(14-20)	10	(8-12)	14	(12-16)
	Alumwell	ND	ND	ND	ND	ND	ND



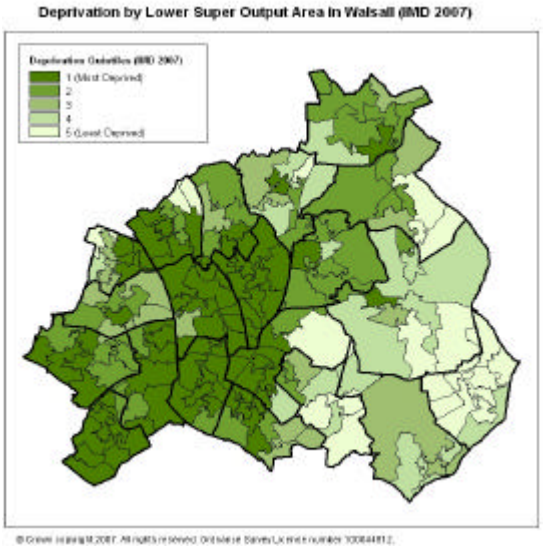


Graphs displaying the incidence and mortality from cancers, Alumwell (green) versus other Walsall neighbourhoods, and the Walsall average incidence and mortality (red line), 2004 to 2008

Smoking prevalence

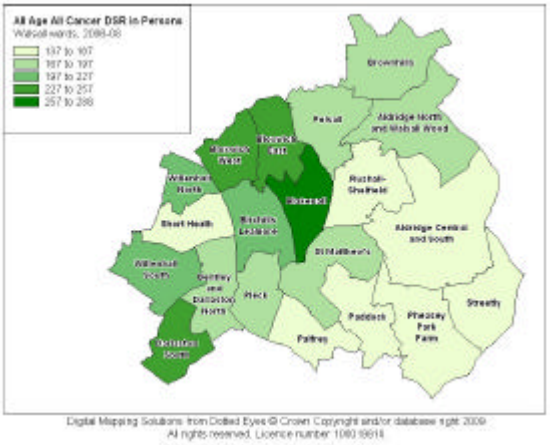


Deprivation, IMD scores



Interestingly, when measured at ward level, the age-standardised cancer rates compare quite closely with Index of Multiple Deprivation (IMD) scores, smoking prevalence, rates of coronary heart disease, tuberculosis and many other diseases and shows that all these are more common in areas with lower income and deprivation. The following maps illustrate that fairly close relationship, areas in the south west and central Walsall plus the north east corner taking in Brownhills having greater levels of deprivation, greater risk factors for a variety of diseases and greater incidence and mortality from a variety of diseases (including cancer) that are known to be linked to deprivation.

Cancer standardised mortality rates



Recommendations:

That the Health Scrutiny and Performance Panel notes this report and in particular that there is no evidence to suggest that cancer rates in Alumwell are significantly elevated compared to rates anywhere else in Walsall.

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