

The Nuclear Laundry - again!

New cluster of childhood cancers and leukaemia far worse than Seascale

A Low Level Radiation Campaign Briefing for activists

March 2004

History repeated

Twenty years ago researchers for the Yorkshire TV programme *Windscale - the Nuclear Laundry* discovered that childhood leukaemia in Seascale, near Sellafield, is twelve times higher than the national average. Now the Welsh TV channel HTV has done the same thing for the Menai Strait, which lies between Anglesey and north Wales. Mud banks in this area are contaminated by Sellafield's discharges.

Like YTV, HTV has identified the children involved and has interviewed them and their parents. A documentary was broadcast on the Welsh language channel S4C on February 10th.

These are real children, so it will be hard for the authorities to deny the data. The cluster is more severe than Seascale and its statistical strength is far greater.

When we took our son to hospital in Liverpool we were surprised to hear someone speaking Welsh. It's odd that so many families from north Wales are here.
Lyn, mother of 5 year-old leukaemia patient Aled.

Caernarfon

In the seaside town of Caernarfon leukaemia in the 0 - 4 year-old age group is more than 20 times higher than the UK national average. Brain cancers in the 0 - 14 age group are 18 times the average.

Elevated risks not confined to the town - the 34 wards surrounding the Menai Strait have

- an 8-fold excess of leukaemia in children younger than 4
- a 5-fold excess of brain and spinal cancer in children younger than 15
- a 10-fold excess of retinoblastoma in children under 14. (Retinoblastoma, a rare eye cancer, has been associated with radioactivity since the Seascale cluster of leukaemia is accompanied by a 20-fold excess of retinoblastoma in children of Sellafield workers.)

Not a random cluster

The statistical significance of all the results is very high, so this is not a chance occurrence. Nor is it a temporary thing - it shows in Cancer Registry records going back to 1974 and it's getting worse.

Watchdogs have failed

The Menai findings are shocking in themselves, but in their historical context they reveal a scandalous failure of organisations which were set up to advise on radiation risks and to monitor public health data.

1983 - political storm and speedy response

The political fallout of *Windscale - the Nuclear Laundry* was so great that a special Government committee was immediately set up to investigate. It first met on 22nd November 1983 - just 3 weeks after the broadcast. The Chairman was Sir Douglas Black. Within a few months the committee reported.

Black's recommendations:

- Health advice

The committee was surprised that there were no official bodies looking at the health effects of radioactive discharges or coordinating the assessment of their overall impact on the population.

As a result the Department of Health set up the Committee on Medical Aspects of Radiation in the Environment - COMARE. COMARE's terms of reference are "to assess and advise Government and the devolved authorities on the health effects of natural and man-made radiation in the environment and to assess the adequacy of the available data and the need for further research".

- Early warning

The Black committee was impressed by the quantity of available statistics, but dismayed that it was a TV programme that had found the cluster ('though the report said the YTV team "may have performed something of a public service.'). The committee thought there ought to be an official, centralised monitoring system to look at health statistics around installations that produce discharges. This would give "early warning of untoward health effects". Thus the Small Area Health Statistics Unit (SAHSU) was born.

Cancer Registries

Since the early 1970s the health authorities in Britain have collected information on cancer diagnoses for the purposes of research and public health planning.

It was the job of COMARE, SAHSU and the Cancer Registry in Cardiff to find the massive cluster on the Menai. Why did they fail?

Missing one Seascale cluster may be regarded as a misfortune; missing two looks like carelessness.
(Wilde: "The Importance of Being Honest")

COMARE, despite its remit, has never "assess[ed] the health effects of ... radiation" for itself. It has always accepted the conventional though widely criticised views of the National Radiological Protection Board (NRPB). For example, when COMARE looked at the Seascale cluster they realised that the children's

lymph nodes (a critical tissue in the aetiology of leukaemia) would be contaminated with inhaled particles. NRPB calculated the likely radiation doses but diluted them by defining the lymph system as virtually all the contents of the chest and abdomen, whereas in reality the lymph nodes weigh only a few grammes. COMARE unquestioningly accepted this nonsense. They conclude that doses to the people of Seascale were far too small to cause the leukaemia, so there must be some other explanation for the cluster - their favourite is "population mixing".

SAHSU adopts equally dodgy methods. They treat nuclear installations as if they were lawn sprinklers, spreading their radioactive pollution evenly in all directions. They ignore the directionality of rivers, marine currents, tidal flows and prevailing winds. If, nevertheless, an area affected by discharges shows an elevated risk SAHSU assumes it's a random fluctuation and massages it down towards the average rate using a statistical technique called Bayesian Smoothing. On this logic they'd say a road wasn't dangerous for hedgehogs because in the fields near the road you don't find any squashed ones.

Welsh Cancer Intelligence and Surveillance Unit (WCISU) is responsible for Welsh cancer data. WCISU has a history of erasing data. (See page 3.)

Cancer Registries across the country are blocking researchers' access to small area health data.

They already knew

Long before the HTV documentary the authorities knew cancer in Wales was a problem:

- In 1994 Wales Cancer Registry (WCR) published a statement that childhood leukaemia in Wales was twice as common as expected. They were going to investigate.
- In 1995 WCR told LLRC that they had confirmed 95% of the cases - in other words the excess was real.

- 1995 all of WCR's small area data was leaked to us (in contrast to their publications, which only show aggregated data for large areas).
- 1996 WCR was closed down.
- 1997 Using the WCR data we reported that children who live along the Irish Sea coast of Wales have a higher than average risk of contracting cancer and leukaemia (see below).
- 1998 The new cancer registry in Wales revised WCR data, wiping out 3500 cancer cases.
- 1999 BBC TV broadcast *Sea of Troubles*, a documentary based on our research
- 1999 COMARE "investigated" (see box page 3)
- 2000 Dafydd Wigley MP called for a full independent inquiry

2001 letter to *Daily Post*, (Liverpool)
We have to support the wonderful child cancer unit at Alder Hey, because ten children with cancer are diagnosed each month along the north Wales coast.
 - parents of a nine-year-old Acute Lymphoblastic Leukaemia patient who died last year.
 We told HTV: *This rate of new cases represents a 10 to 20-fold excess.*

What we found in 1997 - samples of our analysis of the Wales Cancer Registry data.

	Relative Risk
Bangor	11
Caernarfon	8
Colwyn Bay	5

Leukaemia risk in children aged 0 - 4 in three coastal towns in north Wales 1974 - 89 compared with England and Wales national average 1979

Mean distance from sea (km)	Relative Risk
0.56	3.6
1.4	2.5
4.2	1.0

Relative risks of cancer in children aged 0 - 4 between 1984 and 1988 at various distances from the Irish Sea (i.e. for the whole coastal strip, including the towns)

A Tale of Two Studies

When we reported that people living near the Irish Sea had excess cancer risks the Welsh Assembly asked COMARE to investigate. Welsh Cancer Intelligence and Surveillance Unit told COMARE that they had replicated our analysis and had found no excess. This wasn't true. They had used different and inappropriate figures for populations, the area they studied was different, and 15% of the children had been wiped from the data which WCISU had inherited from the old Wales Cancer Registry.

	Our study using Wales Cancer Registry data	WCISU pretended reworking using adjusted Wales Cancer Registry data
Period of study	1974 – 1989	1974 - 1989
Cancer data used	"All malignancies" age 0 - 14 = 1188 (total agrees with WCR's 1992 and 1994 publications)	"All malignancies" age 0 - 14 = 1054 in WCISU's April 1998 version of WCR data Later readjusted down to 1006 in WCISU's presentation to COMARE (15% fewer cases than WCR)
Base population	1981 census wards aggregated (the correct period for the data)	1991 census wards aggregated (21% more children than in 1981)
How close to the sea?	800 metres	5 Kilometers
Excess risk found	1.4-fold in 800 metre strip statistically significant (2.2 fold at ages 0 - 4)	1.11 in 5 Km strip (not statistically significant)

Why didn't WCISU look at the strip nearest to the sea, as we did? How did COMARE let them get away with purging the databases and using population figures from the wrong census period?

What we found (cont.)

Cancer risk near the sea was raised by 40% and all age groups were affected. Living as little as a mile from the sea was far safer.

The bottom line

During the 15 years covered by the WCR data 5,500 more people had been registered with cancer than would have been found in an average population of the same size. The odds of this happening by chance are many millions to 1 against. (See www.llrc.org for more)

The official response

Following the lead given by WCISU and COMARE, the Welsh Assembly responded in 1999

by claiming that the data were unreliable. No-one has explained just where the unreliability crept in.

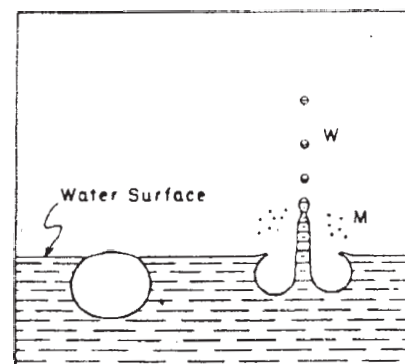
When children are dying it's hard to cover up and, like James Cutler in 1983, HTV was alerted by worried parents. Helped by us, a researcher with local knowledge of north Wales investigated for two years.

HTV asked WCISU for an interview for the documentary. They refused. HTV asked WCISU if their records suggested there was a cluster around the Menai. There was no answer. WCISU said they needed time to conduct research but they didn't say they would do it.

What causes high cancer risk near the sea?

Radioactivity from Sellafield, weapons test fallout and nuclear power stations clings to fine particles of silt in estuaries and mud-flats in the sea. Silt is churned up by wave action; air bubbles burst, throwing microscopic particles into the air. These are blown onto the land and can be inhaled, resulting in high radiation doses to the body tissues they lodge in.

The diagram shows how particles form when bubbles burst. Collapse of the bubble film causes a jet of water. The large droplets W originate from disintegration of the jet. Smaller particles can form from the bursting of the bubble film.



What should happen next and how you can help

- **The Department of Health should disband COMARE and SAHSU because for 20 years they have failed to protect public health. The DoH should set up a new inquiry with a remit similar to the Black committee.**

Write about this to

Rt. Hon. John Reid MP, Secretary of State for Health, Richmond House, 79 Whitehall, London SW1A 2NS
and

Elliot Morley MP, Minister for Environment, DEFRA, Nobel House, 17 Smith Square, London SW1A 3JP

- Write to **your MP** at House of Commons, London SW1A 0AA.
- If you live near any coast affected by radioactive discharges write to **your local Council** and **local papers** (this applies to places like Essex and Somerset, as well as the west coast).
- If you live in Scotland write to **your MSP** at Scottish Parliament, Edinburgh EH99 1SP
- In Wales write to **your Assembly Member** at National Assembly for Wales, Cardiff Bay, Cardiff CF99 1NA

- **The Welsh Assembly should insist on an investigation of what happened to the databases of the Wales Cancer Registry after it was shut down in 1996 (we have called for this inquiry to be done by the Police).**

Write about this to

Jane Hutt, Minister for Health & Social Services, National Assembly for Wales
Cardiff Bay
Cardiff CF99 1NA

- **Health Authorities covering areas next to the Irish Sea ought to consider the financial implications of the raised cancer risks.**

Write about this to your **local Strategic Health Authority, NHS Trust or Health Council**. We have contact details for health bodies in north west England, north Wales, Northern Ireland and the west of Scotland. Write or 'phone us for a copy of our list or find it at www.llrc.org/menailist.htm

This Briefing can be downloaded from our web site at www.llrc.org/menabriefing.htm Further printed copies and a small leaflet for activists to use are available free of charge on request. Use the form below. LLRC is very short of funds. Please be generous.

We are negotiating for a grant to make VHS video copies of HTV's documentary *Cancer in Children*. We will distribute them directly to the people and bodies listed on this page but your support remains vital - MPs tend to bin mailings from campaigns but they listen to what their constituents say. We will send you news of the video initiative later but only if you are on our data base - please make sure we know about you. Videos will be available to activists (we may have to make a small charge to cover costs - probably £3.00).

 LLRC, The Knoll, Montpellier Park, LD1 5LW UK ☎01597 824771 email: bramhall@llrc.org

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