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This is a summary of the original report by Dr Frank Daly. The material removed from this version contained personal clinical information. Dr Daly has confirmed that this version does not alter the context, tone or meaning of his original report.

Dr Chrissie Pickin
Deputy Director of Public Health
Department of Health and Human Services
GPO Box 125
Hobart, Tasmania, 7001

Dear Dr Pickin,

Review of clinical data on a number of residents Rosebery, Tasmania

I submit this report following your emails and letter of January 27 2010.

In formulating this report, I examined the documents provided, which included:

1. Files containing doctors correspondence and investigation results for 10 patients
2. CD containing the files including Dr Ernst's presentation to the Tasmanian Department of Health, the final report of the 'Investigation into concerns regarding seepage water in a Rosebery locality 2008/2009 April 2 2009', Professor Priestly's final report of February 27 2009 and reports of soil and water testing.

Summary

1. There is no evidence in the documents provided that any of the patients in the Rosebery cohort have sustained sufficient environmental exposures to internalise a dose of any metal so as cause poisoning or adverse health effects.

2. Heavy metal poisoning is not a single clinical entity, but a generic term to describe the adverse health effects of a number of metals. The diagnosis of metal poisoning is based on the documentation of a significant specific environmental source, a physio-chemically plausible route of exposure, the objective measurement of a body burden of metal known to cause biological effects, and objective evidence of target organ adverse effects consistent with the suspected metals. According to the documents provided, none of the patients in this cohort meet diagnostic criteria for poisoning or adverse health effects by any of the heavy metals, in isolation or in combination.

3. There is no epidemiological evidence in the peer review literature to support the general hypotheses of synergistic effects in humans exposed to arsenic, cadmium, chromium or lead in combinations in an occupational or environmental setting at what would normally be regarded as sub-toxic levels. When lead, zinc, copper and cadmium are found together the clinical features resemble those of lead intoxication alone. The Agency for Toxic Substances and Disease (ATSDR), a branch of the Centres for Disease Control (CDC) in the United States, has a legislative mandate to investigate priority hazardous substances in the environment. This includes the interactions of mixtures of hazardous substances that might occur in the environment and to which human populations might be exposed. The ATSDR has investigated possible additive or synergistic interactions between the combination arsenic, cadmium, chromium and lead, plus the combination lead, manganese, zinc and copper in

humans following environmental exposures. The methodology outlined by the ATSDR investigation can then be used to recommend approaches to public health.

4. The ATSDR methodology requires rigorous risk assessment and quantitative evidence of significant exposure. There is no basis for the theory that pathological testing or biological markers are irrelevant when multiple metals are involved. The contrary view is supported by the literature; objective pathological or biological testing is vital to assist in accurate risk assessment, especially if multiple agents are present. This has not been documented in any of the cases described in this cohort.

5. Many patients have ill-defined clinical syndromes. There is a paucity of documented information regarding thorough histories, physical examination and targeted investigations in some cases. There appears to have been an early clinical presumption in some cases that symptoms are related to a generic diagnosis of heavy metal poisoning, despite serial testing that does not support this conclusion. Thus there is the danger in some cases of premature diagnostic closure, whereby a significant diagnosis is missed due to early anchoring of an alternative incorrect diagnosis. Several patients in this cohort may require further medical evaluation.

6. A number of patients in this cohort have complex and perplexing clusters of symptoms without documentation of any associated objective medical signs or pathological abnormalities. In some cases this is despite exhaustive medical review and investigation over several years. The presence of multiple symptoms in multiple organ systems without any objective medical signs or pathological abnormalities raises the possibility of functional somatic disorders, which occurs in up to 4% of the population. Many of the functional somatic syndromes have constellations of symptoms similar to the ones described in some patients in this cohort. Rejection of such patients' symptoms is counter-productive, hinders the establishment of therapeutic relationships and prevents the restoration of function. Despite the controversies surrounding these functional somatic syndromes and the polarisation of the medical community with regards to their existence, classification and aetiology, it is possible to approach such patients in a compassionate way. A rational approach to the development of therapeutic relationships, ongoing investigation where required, and long-term management of all patients should be adopted.

Yours sincerely

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