Submission to the Environment Protection Authority (EPA) Inquiry 2015

Dora Pearce PhD (Environmental Epidemiology)
[redacted]
Mount Clear
Victoria 3350
[redacted]

Thank you for the opportunity to make a submission to the Environment Protection Authority (EPA) Inquiry, with the expectation that the Victorian EPA will have the necessary funding, resources, capabilities and scientific expertise to fulfil its role; the power to regulate and monitor polluting sources, and enforce compliance, remedial action or clean up; engage with and/or direct other government agencies to identify and remediate environmental contamination arising from past poor practices and prevent future problems; and political independence to ensure a clean environment and the health and wellbeing of all Victorians.

The EPA should be our leading environmental health agency, with legislative powers to override, or enlist the multidisciplinary skills and services of, other agencies including the Department of Health and Human Services (DHHS), Department of Economic Development, Jobs, Transport and Resources (DEDJTR), Department of Environment Land, Water and Planning (DELWP), and Local Government when site contamination or disease clusters are suspected.

The suite of analytical, technological and scientific equipment available for use by EPA staff must be sufficient to enable them to conduct independent investigations at a world class level, and provide expert advice in response to queries from other government agencies and the public. Access to spatially referenced data from a wide range of sources, including environmental, geochemical, demographic, cancer registry and hospital admission data, as well as that required for air dispersion modelling of emissions using AUSPLUME, is essential.

EPA must guide Local Government on planning issues where residential development encroaches on areas of past toxic chemical or pesticide use and historical gold mining, since it has been shown that systemic arsenic uptake from soil by children in the Goldfields region is ongoing (Martin et al., 2013; Pearce et al., 2010) and cancer incidence is higher in areas with elevated soil arsenic concentrations (Pearce et al., 2012). Further, dust from ongoing mining operations and unvegetated mine waste dumps has the potential to increase arsenic exposure in nearby residential communities (Martin et al., 2014). Development of overlays using geographic information system (GIS) technology to delineate arsenic contamination of soil and mine waste dumps, in particular tailings, is required in collaboration with DEDJTR to facilitate residential planning.

EPA must have an independent regulatory role in the development of Environment Effect Statements (EES) for new proposals for mining and industry, and adequate statutory powers to veto potentially hazardous proposals. To be fully effective and influential, EPA resourcing must be adequate to enable consistent and continuous representation throughout EES proceedings. EPA Guidelines on buffer zones to protect nearby communities from offsite emissions, dust and noise, should be mandatory, not merely recommendations that can be overridden by proponents or other government agencies. To promote environmental justice, the EPA should also provide independent expert advice to communities confronted with responding to proposals that potentially impact on their environment, health and wellbeing.

Similarly, EPA should provide consistent and continuous expert representation on Environmental Review Committees (ERCs), with sufficient power to ensure appropriate and independent

monitoring of offsite emissions and runoff. EPA representatives should be alert to discrepancies between monitoring results and proposal projections, and if necessary, assess potential health risk in conjunction with DHHS.

Site contamination is not always obvious – identification may be based on prior usage or observable environmental damage, but site contamination may not be recognised until anecdotal evidence of a perceived cluster of symptomatic disease is investigated. Acute exposures to toxic chemicals, whatever the source or exposure pathway, may trigger the onset of symptoms that are quickly detected: and therefore diagnosed and treated. Chronic or low-level long-term exposures may cause adverse health effects that are less easily identifiable, particularly if they have a long latency period, such as cancer.

When community concerns of a suspected disease cluster are raised, the EPA should have the power to direct DHHS and/or Local Government to investigate. According to the *Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards (2012 update*) (ENV75) enHealth, [Available from the Department of Health website: http://webarchive.nla.gov.au/gov/20140214190645/https://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-environ.htm]

Section 10.3 Investigation of apparent clusters:

> *"The assessment of an apparent cluster of non-communicable disease is a complex and resource-intensive task. It commonly involves investigation of a number of reported cases of cancer, or some other adverse health effect likely to be linked to an environmental exposure. It should be managed using a multidisciplinary approach using standardised analytical tools. The trigger for a cluster investigation is often the 'perception' that the incidence of the disease is unusually high in a region or scenario linked to a possible environmental exposure source (e.g. near a waste dump, or in an occupational setting). The assessment is usually first centred on whether the observed number of cases is consistent with that expected from the background incidence, or whether there is a sufficiently common pattern to the nature of the cancers or other health effect."*

Disease cluster detection will require appropriately qualified epidemiologists, preferably with spatial statistical skills, to conduct investigations. Establishment of a centralised unit may be necessary to ensure that such investigations are able to ascertain cause and effect, as individual Local Governments may lack the necessary resources. EPA must follow up with expert advice and enforcement of site remediation and/or cessation of polluting operations when necessary to protect public health and promote environmental justice.

For example, ongoing community concerns in the Bendigo area in relation to environmental hazards and adverse health effects, primarily due to historical and current gold mining activities, have received considerable media attention (ABC News 18 May 2015: Bendigo groundwater storage sparks Woodvale arsenic contamination fears http://www.abc.net.au/news/2015-05-18/woodvale-residents-worried-about-potential-arsenic/6476878). According to the Social Health Atlas of Australia (PHIDU, 2014), people in the Statistical Local Area (SLA, 2011 ASGC) of Gr. Bendigo (C) – Eaglehawk, rank their health status poorly compared to elsewhere in Victoria, and while this area is socioeconomically disadvantaged and smoking is a prevalent risk factor, it cannot be assumed that lifestyle factors alone explain the significantly elevated indirectly age-standardised death ratio (SDR) of 156 (95% CI 121 – 191) for cancer in the years 2008-2012: that is, there are around 60% more premature deaths due to cancer than expected in the population aged 0-74 years in this locality.

Scrutiny at a finer spatial resolution is urgently needed if existing localised cancer clusters are to be detected and steps taken to ensure environmental justice for affected communities. Should a disease cluster be detected with no clear causal association identified by environmental monitoring data, it may be necessary to broaden the monitoring strategy, or recognise that current guidelines for contaminants may be above threshold levels for disease causation. For instance, the Australian blood lead intervention level has recently been revised down to 5 mg/dL (Dong et al., 2015). A lack of evidence due to a deficit or absence of monitoring data or investigative research must not be interpreted as a "negative" finding or failure to establish a plausible causal pathway between an environmental exposure and adverse health outcomes!

Finally, in my opinion, Victoria should avoid the use of hydraulic fracturing in the extraction of natural gas. Monitoring of co-produced coal seam gas water, which may contain residual fracking fluid constituents, has detected hazardous substances with known adverse health consequences, such as benzene, previously linked with leukaemia, and given rise to fears of contamination of surface and ground waters (Navi et al., 2015).

Thank you for this opportunity to express my opinions on the role of the Victorian EPA.

Dora Pearce

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