Commentary to MoH on report titled:
"Draft Interim report of the Community–based health & incident monitoring of the aerial spray programme January – December 2002. Author: Hana Blackmore.

1. Purpose:

ESR was commissioned by the Ministry of Health to provide commentary on the report written by Hana Blackmore (Feb 2003) entitled "Draft Interim Report of the Community-based Health and Incident Monitoring of the Aerial Spray Programme January to December 2002". The Terms of Reference were to:

- Appraise and comment on the methodology of the report, including data collection and analysis, and subsequent interpretation and recommendations in the report.
- Comment on the implications of the report for the public health.
- Recommend what further work, if any, should be undertaken in relation to the report.

2. Background:

The reviewers have no detailed prior knowledge of events or publications referred to in the paper. The time frame has been such that it has not permitted an in depth review or independent verification of the data or sources cited.

3. Report Content:

The Blackmore report was prompted by concerns from the West Auckland community members that authorities did not adequately communicate the extent (duration and intensity) of the Painted Apple Moth aerial spraying programme and were dismissive of health symptoms experienced. The report highlights the following concerns:

a. Significant and ongoing health effects
b. Significant 'non health' effects, including
- economic hardship (both for individuals and for local businesses);
- disruption of schooling for children and
- anger with government authorities, especially MAF

These effects were apparently compounded by a number of other factors including:
a. A lack of choice in avoiding exposure, especially for vulnerable people.
b. The construction of the health risk assessment.
c. The attitude of various personnel.
d. A lack of timely social support.

4. Comments on Report Structure & Methods:

The Blackmore report is a community based study that collates data from 315 individuals. It details adverse effects to human health that appear related to exposure from the Painted Apple Moth aerial spray programme. The report documents a range of reported adverse health effects, and whilst description of these are the focus of the report, it also collates data on other adverse effects in the community of a 'non-health' nature.

The report is clear, concise and the reasoning sound. It displays no obvious significant methodological or other flaws which might suggest that the observations and subsequent findings lacked veracity or credibility. Importantly, it explicitly recognises the limitations of the report's approach in terms of the attribution of exposure and health effects.

The process of data collection and database construction would seem appropriate and sound, especially given the limited resource base. The report clearly explains the structure of the database, including exclusion and inclusion criteria, especially where data was complex. The report explicitly recognises possible 'bias' in the pathways for information acquisition in the early phases of the process

The data presented in the body of the report supports the conclusions drawn, and presented in the summary. The summary accurately captures the key features of the reports various sections.

One observation for consideration is that while the self reporting methods used in the study would likely include a high percentage of the most severely effected individuals, the size of this group is not known for certain. Additional limitations exist in the extent to which the health and other concerns documented in the Blackmore report are representative of possible effects on the wider West Auckland population exposed to the aerial spray

5. Comments on Report Findings:

This is structured to include several key issues, namely specific human health effects, other reported adverse effects, and finally key factors of the spray programme perceived to have prompted the community's concerns.

a. Specific Human Health Effects:

1. An array of human health effects are documented, many of the reported respiratory, neurological, eye and skin symptoms would be consistent with existing medical and lay understandings of a possible immediate physiological response to an irritant aerosol spray.
2. For some symptoms the linkage is less clear; some being difficult to interpret and appearing to have a multifactorial aetiology. Similarly some of the reported prolonged or chronic conditions, are difficult to comment on without a more detailed knowledge of the individuals personal situation, including medical history.
3. The symptoms vary in specificity and cross a wide spectrum of morbidity. This includes apparent significant unexpected deterioration in existing disease symptoms, and the advent of new health problems.

b. Other Adverse Effects

1. Particular concerns clearly exist in relation to vulnerable family members especially spraying of children at school.
2. Some children and adults reported fear and anxiety from the low flying planes.
3. There was significant uncertainty and disruption to many facets of everyday life for many people, generating considerable disquiet.
4. Of particular concern was the disruption to children's educational activities, ie poor attendance and performance at exams, and the impacts this might have on future opportunities in life.

5. The economic and financial consequences described included health expenses, transport and relocation costs, loss of sick leave entitlements, loss of revenue, and in some instances loss of employment as a result of prolonged illness,
6. Less measurable costs resulting from restricted mobility were also described..
7. These adverse effects were particularly significant for those with limited discretionary spending.

Both the health related and non-health related adverse effects observed in the Blackmore report are associated with several factors of the PAM aerial spray programme. These are expressed in the report as dissatisfaction with:

c. Information Supply to Community:
1. Public information campaigns would appear not to have been effective in addressing all community concerns.
2. The lack of timely information, in particular from MAF, would appear to have compounded a lack of choices for some, especially for those with limited mobility.
3. Adequate notification of, or subsequent responses to, requests for information on spraying times and other queries would appear to have been sub-optimal in some instances.
4. The lack of timely information on aircraft movements limited the ability to avoid exposure.

d. Exposure assessment, predictive modelling, or contingency planning for possible adverse effects:
1. The possibility of indirect exposure from persistence of residual spray in the environment including dwellings is raised and would not appear to have been effectively addressed.
2. Spraying frequency, coverage, intensity and duration has clearly expanded significantly beyond that initially anticipated. It has occurred over a far greater area, with a far larger population exposed. This has potential public health consequences.
3. Exposure for some in high intensity spray zones may have been far higher than initially estimated. Unintentional overlap compounding exposure in some areas.
4. The divergence of advice on adverse health effects between the HRA and the community experiences merits closer examination.
5. It is not clear as to how effective or flexible the HRA was in responding to the changing exposure scenarios, or accommodating individual variations in illness experience.

e. Diagnostic, treatment and rehabilitation responses:

1. There would appear to be a relationship between the conduct of the campaign by MAF and a considerable number of psychological symptoms.
1. There are concerns over possible long-term damage, especially to children.
2. There is an apparent lack of trust in the impartiality of certain officials eg some health professionals.
3. It would appear that communication may have been sub-optimal between various sets of health care providers and individuals
4. Concern was expressed over personal and clinical data transmission between health care providers.
5. MAF doctors provided assessment, but the report comments on the lack of provision for treatment or reimbursement of expenses.

5. Recommendations:

Whatever the outcome of further investigations, action is urgently needed to ameliorate the current level of disquiet and distrust, if this is not to become a chronic problem. Specifically there is a need to:

a. Develop an acceptable framework for dialogue with the community to resolve existing problems and enable future dialogue.
b. Review public information campaigns, and mechanisms used to communicate with individuals registering concern, particularly regarding the timeliness, content and comprehensibility of the information.
c. Understand, including model, the nature and extent of exposure and possible mechanisms of this exposure.
d. Understand the basis for the construction of the Health Risk Assessment.
e. Consider the use of epidemiological studies, both case control and cohort, in tandem with support to a community based monitoring system.
f. Understand the nature and distribution of adverse effects, with particular regard to exposure, geographic, demographic and other features including the possible contribution of pre-morbid and/or environmental conditions.
g. Consider individual exposure studies to clarify the nature of the allergic skin and conjunctival reactions.

Dr. David Phillips, a public health medicine specialist with the Institute of Environmental Science and Research (ESR)