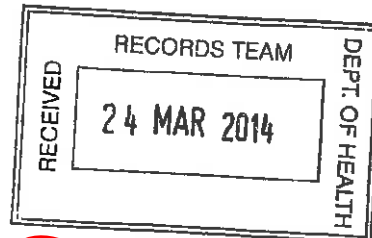


**Axele-Brigitte Mary**

**From:** DG Dg correspondence  
**Sent:** Friday, 21 March 2014 3:25 PM  
**To:** Julie Hartley-Jones; Richard Gair; Jeannette Young  
**Cc:** MD20-Cairns&Hinterland-HSD; CHO CHO  
**Subject:** BR058729 FINAL  
**Attachments:** BR058729 FINAL.pdf



Good afternoon

Please find attached documentation signed by the Director-General.

Please note comments from the A/DG in the brief:

"Could we please -

- 1 - Provide to the CHO to liaise with the HHS in relation to the process from this point.
- 2 - Could the CHO ensure the Commissioner Fire and Rescue is kept abreast of development (Mr Lee Johnson 3635 3072)."

A copy of this brief has been provided to the Minister for noting.

Thank you  
Kind regards  
Axele

Axele-Brigitte Mary 3234  
 Aaron Gibson 3234 s 73  
 Amanda Uhlmann 3234

Office of the Director-General | Department of Health | Queensland Government

DG Correspondence@health.qld.gov.au | www.health.qld.gov.au



Customers first



Ideas into action



Unleash potential



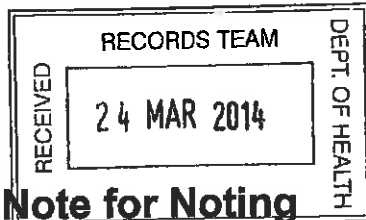
Be courageous



Empower people



Great state. Great opportunities.



Department RecFind No:	BR058729
Division/HHS:	Cairns and Hinterland HHS
File Ref No:	

## Briefing Note for Noting

Director-General

Requested by: Chief Executive, Cairns and Hinterland Hospital and Health Service

Action required by: 20 March 2014

**SUBJECT: Possible expansion of cancer cluster at Atherton Fire Station**

### Proposal

That the Director-General:

- ✓ Note the likely need to re-open the 2008 investigation into the cancer cluster at Atherton Fire Station.

### Urgency

1. Urgent - Due to likely media interest.

### Headline Issues

2. The top issues are:
  - s.47(3)(b) additional cancer cases in staff who worked the Atherton Fire Station, which Queensland Health investigated as a cancer cluster in 2008.
  - Tropical Public Health Services Cairns is awaiting confirmation diagnosis before progressing with re-opening the investigation.

### Blueprint

3. How does this align with the Blueprint for Better Healthcare in Queensland?
  - Health services focused on patients and people – Patients are at the centre of all we do.
  - Empowering the community and our health workforce – Transparency promotes public confidence.

### Key Issues

4. Tropical Public Health Services Cairns (TPHS) – part of the Cairns and Hinterland Hospital and Health Service - has been notified of possible cases of cancer in staff who have worked at Atherton Fire Station.
5. An assessment was undertaken in 2008 of three cases of brain tumour and two other cancer cases diagnosed over a 15 year period in staff who had worked at Atherton Fire Station.
6. One of the recommendations of the 2008 report *Queensland Health investigation into concerns regarding cases of cancer in firefighters working at Atherton Fire Station, April 2008* (Attachment 1) stated:
 

'The investigation will be reopened if another person at Atherton Fire Station is diagnosed with brain cancer.'
7. TPHS anticipates that the Fire and Emergency Services will wish to re-open the cancer cluster and will request that Queensland Health conduct the cluster assessment.
8. TPHS would use the *Queensland Health Guidelines: Assessment of clusters of non-communicable disease 2012*, ([http://www.health.qld.gov.au/ph/Documents/pdu/cluster\\_assessment.pdf](http://www.health.qld.gov.au/ph/Documents/pdu/cluster_assessment.pdf)) when conducting an assessment. As happened in 2008, it is anticipated that the role of the Queensland Fire and Emergency Services would be that of 'Cluster Manager' while TPHS' role would be that of 'Cluster Assessor'.

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File Ref No:	

9. The investigation in 2008 attracted significant statewide and national media coverage and these new cases are expected to lead to renewed community and media interest.

#### Background

10. In December 2007, Queensland Fire and Rescue Service management raised concerns regarding the number of cases of cancer amongst firefighters at Atherton Fire Station.
11. There was concern that something about the station or the house next to the station, where staff had resided in the past, was the cause of the cancers.
12. Queensland Health conducted an assessment to determine if there was an increased incidence of brain tumours amongst current and former workers at Atherton Fire Station and to determine if there were any possible hazardous agents at the Station that may have been associated with an increased cancer rate.
13. From 1992 to 2007, five cases of cancer were identified amongst current and former staff members at Atherton Fire Station. There were three cases of brain tumours, one case of colon cancer and one case of prostate cancer. The cases of colon cancer and prostate cancer were not included in the cluster analysis.
14. The 2008 report found:
- There was a higher than expected rate of brain cancer amongst staff at Atherton Fire Station which fitted the epidemiological definition of a brain cancer cluster.
  - When examining the possible environmental hazards at the station and the associated house, no hazards were identified that were known to be associated with brain tumours.
15. A copy of the ministerial briefing note accompanying the final report in 2008 is attached (Attachment 2).  
In October 2008, the house that was part of the investigation was demolished.
16. On 24 February 2014, the Assistant Commissioner, Queensland Fire and Emergency Services, Far Northern Region contacted the Director, Tropical Public Health Service (Cairns) to advise of s.47(3)(b) cancer cases in ; at Atherton Fire Station.
- 17.

#### Consultation

18. The Assistant Commissioner, Queensland Fire and Emergency Services, Far Northern Region
19. Note that Dr Jeannette Young, Chief Health Officer has been briefed on this issue and has indicated that she is content with the proposed approach.

#### Attachments

20. Attachment 1: *Queensland Health investigation into concerns regarding cases of cancer in firefighters working at Atherton Fire Station, April 2008*
- Attachment 2: BR036961 - Ministerial Brief on Atherton Fire Station investigation final report.

Department RecFind No:	BR058729
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File Ref No:	

**Recommendation**  
That the Director-General:

Note the likely need to re-open the 2008 investigation into the cancer cluster at Atherton Fire Station.

APPROVED/NOT APPROVED

NOTED

*Archival copy  
MICHAEL CLEGG*

IAN MAYNARD  
Director-General

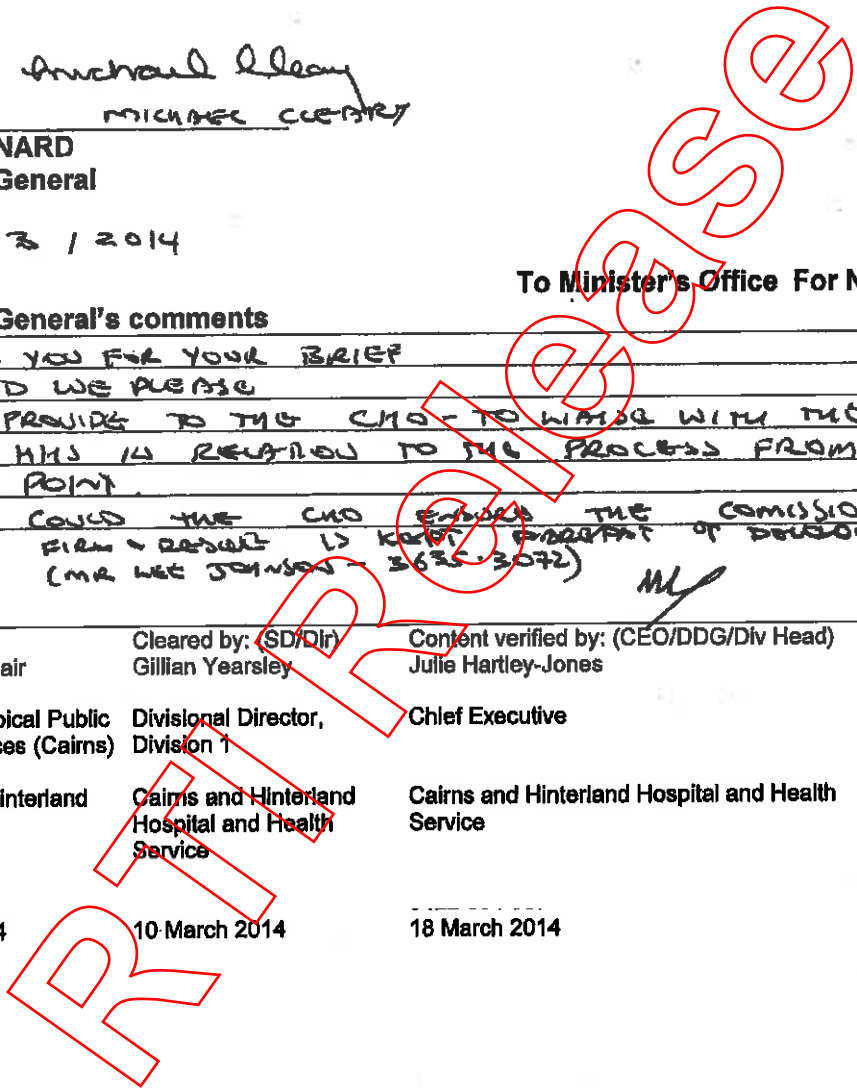
18 / 3 / 2014

To Minister's Office For Noting

Director-General's comments

THANK YOU FOR YOUR BRIEF
COULD WE PLEASE
① PROVIDE TO THE CHO - TO WORK WITH THE
HHS IN RELATION TO THE PROCESS FROM THIS
POINT.
② COULD THE CHO ENFORCE THE COMMISSIONER'S
FIRM & RESOLVE IS KEPT SEPARATE OF DEVELOPMENT
(MR WEE JOHNSON - 3635-3072)

Author Dr Richard Gair	Cleared by: (SD/Dir) Gillian Yearsley	Content verified by: (CEO/DDG/Div Head) Julie Hartley-Jones
Director, Tropical Public Health Services (Cairns)	Divisional Director, Division 1	Chief Executive
Cairns and Hinterland HHS s73	Cairns and Hinterland Hospital and Health Service	Cairns and Hinterland Hospital and Health Service
6 March 2014	10 March 2014	18 March 2014



**Queensland Health investigation into concerns  
regarding cases of cancer in firefighters working  
at Atherton Fire Station**

**April 2008**

RTI Release



**Queensland  
Government**  
Queensland Health

# Investigation of concerns regarding cases of cancer in firefighters working at Atherton Fire Station

## Executive Summary

### Background

Concerns regarding cases of cancer amongst firefighters at Atherton Fire Station were raised by Queensland Fire and Rescue Service management in December 2007. In response, Queensland Fire and Rescue Service requested assistance from Queensland Health to investigate the concerns of the staff at the Station. For the purposes of this report the Station comprises two buildings, the firefighting Station and the residential house.

In parallel with this investigation, there is increasing international evidence which suggests there may be an association between firefighting as a profession and higher rates of some types of cancer, particularly testicular cancer, prostate cancer and non-Hodgkin lymphoma.<sup>1</sup>

The Queensland Health investigation at Atherton Fire Station was divided into two aspects. One involved an epidemiological assessment of the occurrence of cancer in past and current staff members at the Station. The second aspect of the investigation involved an assessment of possible hazardous exposures in the workplace. It is important to keep in mind that proper consideration of a potential cluster involves consideration, in unison, of both the nature and magnitude of exposures to environmental agents and the epidemiological aspects of the investigation when assessing whether there is likely to be a particular causal agent responsible for the cancers.

The aims of the investigation were to determine if there was an increased incidence of a particular type of cancer amongst current and former workers at Atherton Fire Station and to determine if there were any possible hazardous agents at the Station that may have been associated with an increased cancer rate.

### Methods

Cancer case information (diagnostic and other personal details) was collated by Queensland Fire and Rescue Service and provided to Queensland Health. The case list was based on self-reporting by staff members as well as the extensive knowledge of key long-serving staff members. Case list details were checked against the Queensland Cancer Registry and, as required, with the treating doctor(s) with informed consent from the cases. Queensland Fire and Rescue Service supplied the data on the length of employment of Atherton Fire Station staff to Queensland Health.

Possible hazardous agents were identified through interviews with previous and current staff at Atherton Fire Station, including some of the men diagnosed with cancer. For the purposes of this report both the workplace environment and broader Atherton environment were considered. The carcinogenic risks of identified possible hazardous agents were assessed by literature review. The focus of the investigation was on the possible hazards present at Atherton Fire Station rather than an assessment of the broader risks associated with firefighting. Results from environmental testing will be released by Queensland Fire and Rescue Service in a separate report.

### Results

From 1992 to 2007, five men were diagnosed with cancer amongst current and former staff members at Atherton Fire Station. Three of the men were diagnosed with brain cancer, one man was diagnosed with colon cancer and one with of prostate cancer. The cases of colon cancer and prostate cancer were not considered as part of the statistical analysis, as they are different types of

cancer occurring in different parts of the body. Expert advice indicated that the three brain cancer cases were all subtypes of a related group of brain cancers (astrocytoma group) and thus warranted further statistical analysis as a group.

Statistical tests were used to explore the data as to whether the number of brain cancer cases at the Station exceeded the number of cases that would be expected, based on the Queensland population. In the period 1992 to 2007, there was an increased rate of astrocytoma group brain cancers among firefighters at Atherton Fire Station compared with the Queensland population. The extent of this increase is unable to be determined accurately. The best estimate suggests that the rate of brain cancer at the Atherton Fire Station ranged from 21 to 62 times higher than Queensland. However, the statistically small number of cases, limitations of standard statistical tests in cluster investigations and uncertainties in the data (and diagnoses of brain cancer), means that the results are difficult to interpret meaningfully.

The list of possible hazardous agents that might have been present at Atherton Fire Station does include some possible carcinogens. However, none of the possible carcinogens that were listed have been documented in the international scientific literature to cause the types of cancer observed at Atherton Fire Station. In addition, there was no common plausible agent at Atherton Fire Station that all three of the men diagnosed with brain cancer were exposed to.

### **Conclusions**

#### *Relating to Atherton Fire Station*

When examining the possible environmental hazards at the Atherton Fire Station there were no agents that were linked to causing brain cancer. It is unlikely that there is a hazard at the Station that is responsible for the cancers.

There was an elevated rate of brain cancer (of the astrocytoma group) amongst staff at Atherton Fire Station. The extent of this increase is uncertain due to limitations in the epidemiological assessment. This increased rate of brain cancer fits the epidemiological definition of a cluster, whereby a cluster is defined as a greater-than-expected number of cancer cases that occurs within a group of people in a geographic area over a period of time. The single bowel and prostate cancer cases are unrelated to the brain cancer cases and are not part of the brain cancer cluster.

#### *Relating to firefighting*

It was not in the scope of this investigation to fully examine the cancer risks associated with firefighting. However, it should be noted that the scientific literature has not implicated brain cancer strongly, but there is some evidence that there might be an association with firefighting. The possibility remains that one or more of the cases of brain cancer identified amongst the Atherton firefighters could be related to exposures experienced while firefighting, rather than exposures from working at Atherton Fire Station or living in the adjacent house. This will probably never be known.

In light of the investigations conducted at Atherton Fire Station, the feasibility of an epidemiological assessment of brain cancer incidence of Queensland firefighters, including comparison with Atherton Fire Station, should be conducted. In addition, assessment of the feasibility of further investigation of the possible association between firefighting and cancer, particularly brain cancer and those cancers identified by the International Agency for Research on Cancer (e.g. prostate cancer, testicular cancer and non-Hodgkin lymphoma) should be considered.

## **Recommendations**

The recommendations from the Queensland Health investigation have been split into two parts to address the concerns related specifically to Atherton Fire Station and to the possible brain cancer risks associated with firefighting.

### ***Part A: Recommendations related to Atherton Fire Station***

1. The Director of Anatomical Pathology, Royal Brisbane Hospital to review the pathology slides of the three men diagnosed with brain cancer to ensure the correct diagnosis was made and grouping of the brain cancer cases was valid.
2. An epidemiological investigation has been conducted at Atherton Fire Station and no further epidemiological investigation is currently required.
3. The investigation will be reopened if another person at Atherton Fire Station is diagnosed with brain cancer.
4. The investigation may be opened if new information becomes available in the scientific literature about the causes of brain cancer or if there are new concerns about particular environmental hazards associated with Atherton Fire Station.
5. The findings of this investigation should be communicated to the staff members at Atherton Fire Station, representatives from the United Firefighters Union, the firefighting community more broadly, and in relevant literature.
6. Queensland Health will give further consideration to the findings of the investigation once the report from the environmental testing is made available.

### ***Part B: Recommendations pertaining to firefighting***

7. Queensland Fire and Rescue Service continue to promote the use of personal protective equipment to control the hazards that firefighters are exposed to.
8. The feasibility of an epidemiological assessment of brain cancer incidence of Queensland firefighters including comparison with Atherton Fire Station, should be conducted.
9. The feasibility of an epidemiological study or disease registry should be considered to examine the possible risks associated with firefighting in relation to cancer, particularly brain cancer and those types of cancer identified in the evaluation of the International Agency for Research on Cancer (e.g. testicular cancer, prostate cancer and non-Hodgkin lymphoma).



## Summary of findings and interpretation of the investigation into the concerns regarding cases of cancer in firefighters working at Atherton Fire Station<sup>1</sup>

There are a number of approaches that can reasonably be taken when investigating a report of a possible cancer cluster. Key factors to consider in undertaking any cluster investigation are:

- o such investigations commonly do not provide a definitive answer
- o most apparent clusters are almost certainly chance occurrences of cancers
- o only a small number of cluster investigations have identified important relationships between work-related exposures and cancer and
- o dismissing apparent clusters without appropriate investigation, consideration and consultation is likely to result in acrimony among concerned staff, and the escalation of tension and worries in the affected workforce.

Key questions that need to be answered in any cluster investigation include the following:

- o Has the affected population been identified fully?
- o Have all the cases been identified?
- o Are all the cases of the same (or similar) type?
- o Is there statistical evidence to suggest that the number of cases is in excess of what would be expected in the population?
- o Do the cancer types have a known common cause, whether occupational or non-occupational?
- o Did the persons diagnosed with cancer have a common occupational (or non-occupational) exposure?
- o If there is a common exposure, is the level of exposure sufficient to account for the rate of cancer?
- o Are there known workplace exposures that could have contributed to the occurrence of the cancers?
- o Did the cancers occur at an appropriate time after the possible workplace exposures?
- o Are there any plausible non-occupational causes for the apparent cluster?
- o On the balance of probabilities, is it likely that the identified cancers occurred as a result of occupational exposures?

The Queensland Health investigation was divided into two distinct aspects. One involved an epidemiological assessment of the occurrence of cancer in past and current staff members at the Station. The second part of the investigation involved an assessment of possible workplace hazards. It is important to keep in mind that proper consideration of a potential cluster involves consideration of both the nature and magnitude of the environmental agents and the epidemiological aspects of the investigation when assessing whether there is likely to be a causal agent responsible for the cancers.

A number of other aspects of cluster investigations need to be kept in mind when interpreting the results of the Atherton Fire Station investigation. These include:

### Random factors

Cancer is a term representing many diseases with a variety of causes.<sup>2</sup> While about one third of all cancer cases and deaths are due to known risk factors, cancer usually occurs as a random event. For a given set of risk factors, exactly when a cancer becomes clinically evident, and who it affects, is largely determined by random factors.

### Statistical tests

Statistical tests are based on probability. Those commonly used in medicine assume that a population that is being assessed statistically has been randomly chosen. In a cluster

<sup>1</sup> The wording and structure used in this section is heavily based on a general approach proposed by the independent reviewer, Dr Tim Driscoll

investigation, that is nearly always not the case. The population is usually investigated because it is already suspected of having a high rate of cancer, NOT because an exposure of concern was identified first. This makes the interpretation of the usual statistical tests problematic. If the investigation is undertaken because a high rate was expected, it is not surprising that a high rate might be found. In nearly all cases, this high rate will have occurred because of the randomly occurring factors mentioned previously. Unfortunately, statistical analysis requires more than a few cases to produce meaningful results. If the observed number of cases is small, the estimates of risk become difficult to estimate accurately.

#### **Reaching a final opinion**

Investigations of cancer clusters rarely result in definitive answers. Unfortunately, significant uncertainty is commonly present no matter what investigations are undertaken. The most appropriate approach is therefore to base a final opinion and recommendation on all the available evidence. Quite often it is the information on exposures that provides the most useful basis for a final opinion, rather than relying on statistical analysis. This is because of the inherent problems in any epidemiological investigation and the associated statistical tests that might be undertaken. Epidemiological information should not be interpreted in isolation or used as the sole basis for an opinion on cancer clusters.

#### **Overall interpretation in the Atherton Fire Station investigation**

From an assessment of the environmental hazards suspected to be present at Atherton Fire Station, it appears that none of the possible hazards have been documented in the international literature to cause the types of cancer observed at Atherton Fire Station. On the assumption that this is correct, the original set of questions regarding cancer cluster investigation can be considered in this specific instance to provide a preliminary opinion on the remaining two key questions:

- Is there truly an increased rate of a particular type of cancer amongst current and former workers at the Atherton Fire Station?
- If so, is there evidence that this high rate is due to exposures associated with work at the Station?

#### ***Has the affected population been identified fully?***

No.

Comment: The affected population under investigation is former and current staff members of the Atherton Fire Station. The population includes permanent and auxiliary firefighters. Due to changes in staff administration systems at the Station in 1995, not all employees over the study period could be identified.

#### ***Have all the cases been identified?***

Most probably.

Comment: It is difficult to be absolutely sure that all of the firefighters diagnosed with cancer have been identified, but given the extensive media coverage and local social networks and knowledge it appears unlikely that cases will have been missed.

#### ***Are all the cases of the same (or similar) type?***

Some of the cancers are similar.

Comment: In this investigation, there were three types of brain cancer (one gemistocytic astrocytoma, one glioblastoma and one anaplastic astrocytoma), one type of colon cancer (adenocarcinoma) and one type of prostate cancer (adenocarcinoma). The three brain cancers are all considered subtypes of 'diffuse astrocytoma'. There is a tendency for these tumours to progress over time. That is, gemistocytic astrocytoma tends to progress to anaplastic astrocytoma and anaplastic astrocytoma tend to progress to glioblastoma multiforme with the passage of time.

The colon cancer and prostate cancer are not considered to be similar to each other or the brain cancers.

***Do the cancer types have a known common cause, whether occupational or non-occupational?***

There are some known risk factors for brain cancer, prostate cancer and colorectal cancer as separate diseases, but there is limited evidence to suggest a common cause for all three types of cancer.

Comment: The main risk factors for:

- (a) brain cancer are exposure to ionising radiation and family history of the disease<sup>3</sup>
- (b) prostate cancer are family history and possibly an association with a diet high in fat and low in fruit and vegetable intake<sup>4, 5</sup>
- (c) colorectal cancer are inflammatory bowel disease, obesity, family history and possibly smoking<sup>4, 6, 7</sup>

A search of the scientific literature found one paper<sup>8</sup> which found that US commercial pilots and navigators had increased mortality of kidney, prostate, brain, colon, lip, buccal cavity and pharynx cancer. However, these cancers could not be linked to a common environmental exposure.

The scientific literature provides conflicting and/or vague evidence about possible links between brain cancer and environmental exposures. Much research has been conducted, but little progress has been made because even though some studies find associations, there is insufficient evidence to suggest causation for many of the agents under investigation.<sup>9</sup> Furthermore, the scientific literature has not implicated brain cancer strongly, but there is some evidence that there might be an association with firefighting.

***Is there statistical evidence to suggest that the number of cases is in excess of what would be expected in this population?***

Only the brain cancer cases were included in the statistical analysis. In the period 1992-2007, there was an increased rate of astrocytoma group brain cancers among firefighters at Atherton Fire Station compared to the Queensland population. The extent of this increase is unable to be determined, but the elevated rate of brain cancer at Atherton Fire Station fits the epidemiological definition of a cluster.

Comment: The best estimate of the rate of brain cancer in the Atherton Fire Station staff is between 21 to 62 times higher than the rate for Queensland. However, due to the statistically small number of cases and limitations of standard statistical tests in cluster investigations, this epidemiological assessment has considerable uncertainty. These estimates do not consider possible confounding factors such as family history of brain cancer, previous exposure to ionising radiation nor the previous occupations of the cases. This information was unobtainable for two of the three cases. These risk factors may have played a role in the development of brain cancer amongst the three cases.

***Did the persons diagnosed with cancer have a common occupational (or non-occupational) exposure?***

Partially.

Comment: All of the staff identified had worked as firefighters based at Atherton Fire Station. There was no major common incident that all of the cases had attended.

***If there is a common exposure, is the level of exposure sufficient to account for the rate of cancer?***

Unknown.

Comment: The only common exposure that was identified was firefighting as an occupation. It was not possible to quantify exposures retrospectively. There have also been changes in firefighting

practice and the use of personal protective equipment over time which would make it extremely difficult to estimate the level of exposure to a carcinogen.

**Are there known workplace exposures (at the Station) that could have contributed to the occurrence of the cancers?**

No.

Comment: The list of possible workplace hazardous agents reported by the staff at the Station, even if demonstrated to have been at high levels of exposure, would not have accounted for the types of cancers observed at the Station.

**Did the cancers occur at an appropriate time after the possible workplace exposures?**

Uncertain.

Comment: The time between exposure to a cancer-causing agent, or the existence of other risk factors, and the development of cancer can be decades.<sup>2</sup> Length of service information was available for all three of the firefighters diagnosed with brain cancer. The three men had served at Atherton Fire Station for 2.2 years, 4.4 years and approximately 9-10 years, respectively, before their diagnoses. Without knowing the cause of the elevated rate of brain cancer at Atherton Fire Station, it is difficult to make any firm conclusions about an appropriate time between a possible workplace exposure and the diagnosis of cancer. However, it is generally accepted in the scientific literature that a reasonable latency period for brain cancer is ten years or more.<sup>10, 11, 12, 13</sup>

**Are there any plausible non-occupational causes for the apparent cluster?**

Unknown.

Comment: The non-occupational risk factors for the firefighters diagnosed with brain cancer were not able to be extensively investigated. Only one of the three men diagnosed with brain cancer was able to be interviewed. Interviews with relatives were either not possible or did not provide any additional detail about possible non-occupational exposures.

**On the balance of probabilities, is it likely that the identified cancers occurred as a result of occupational exposures at the Station?**

On the balance of probabilities, it is unlikely that the cancers diagnosed amongst firefighters from Atherton Fire Station were related to exposures experienced whilst working at the Station. There were three different types of cancers identified: brain, colon and prostate cancer. It is highly unlikely that there is a common exposure that caused all three types of cancers. In addition, it is unlikely that the elevated rate of brain cancer at the Station was a result of exposures at the Station. The main risk factors for brain cancer are ionising radiation and family history. There were no known sources of ionising radiation present at the Station and family history of brain cancer was not able to be fully or accurately assessed.

#### **Final opinion**

An analysis of possible hazards at the Station did not identify any agents that would cause the types of cancer observed. In particular, there was no common plausible causal agent at the Atherton Fire Station that all three cases of brain cancer were exposed to. There was an elevated rate of brain cancer amongst firefighters at the Atherton Fire Station compared to the Queensland population. The extent of this elevation of cancer rate is uncertain. There is some evidence to suggest a possible association between firefighting and brain cancer, but the evidence does not suggest a strong link. This evidence would not explain the magnitude of the elevated rate at the Station.

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This report was prepared by Queensland Health and reviewed by the Queensland Health Cluster Investigation Steering Committee. Members include Senior Medical Officers, Epidemiologists and Statisticians from Queensland Health, as well as experts from the University of Queensland and the Cancer Council, Queensland.

This report was reviewed by Dr Tim Driscoll (MBBS BSc(Med) MOHS PhD FAFOM FAFPHM). Dr Driscoll is an independent consultant in epidemiology, occupational health and public health. He is a specialist in occupational medicine and public health medicine, being a fellow of the Australasian Faculty of Occupational and Environmental Medicine and the Australasian Faculty of Public Health Medicine.

# 1. Rationale for investigation

## Background

- Atherton Fire Station (AFS) is a small rural fire station located in the Atherton Tablelands, approximately 60km southwest of Cairns. Currently, the Station has 12 permanent staff and 15 auxiliary firefighters, all of whom are males. The average age of current firefighters at AFS is 39.4 years. The average length of service of current staff at AFS is 8.6 years. Anecdotal reports from Queensland Fire and Rescue Service (QFRS) indicated that there was nothing unusual about the demographics of the staff at AFS compared to other fire stations in Queensland.
- From time to time, there are community concerns about possible environmental or occupational causes of cancer in Queensland and Queensland Health takes such concerns seriously. All potential cancer clusters reported to Queensland Health are investigated according to the *Guidelines for assessing clusters of non-communicable diseases*<sup>7</sup> by a multidisciplinary team, including Senior Medical Officers, Epidemiologists and Environmental Health Officers. Queensland Health developed the Guidelines to provide a systematic investigation of such concerns. The Guidelines are described in more detail on page eleven.
- In June 2004, Queensland Health was notified by QFRS about two firefighters diagnosed with brain cancer who worked at AFS.
- To address the concerns raised by QFRS in 2004, a brief investigation was conducted. Information provided at the time indicated that only one of the cases had been stationed at AFS for more than three years, whereas scientific literature indicated that the usual latency between exposure and the onset of a brain tumour was at least ten years. After consultation with medical experts, it was determined that a more detailed Queensland Health investigation of the two cases of brain cancer would not be able to find a possible cause of the cancers.
- In December 2007, QFRS staff raised concerns again with Queensland Health after it was revealed that three more staff at AFS had been recently diagnosed with cancer. At the time two of the staff were suspected to have been diagnosed with bowel cancer and one with testicular cancer, although it was later shown that two of the three had benign conditions and did not meet the case definition. These were additional to the previous two men diagnosed with brain cancer reported in 2004.
- There was concern that something about the Station or the house next to the Station, where staff had resided in the past, was the cause of the cancers.
- In December 2007, QFRS established the Atherton Taskforce, chaired by the Deputy Commissioner. The purpose of the Taskforce was to coordinate the investigation into the health concerns raised by staff. Membership included QFRS, United Firefighters Union, Queensland Health and Workplace Health and Safety Queensland.
- Key staff from the Atherton Taskforce participated in meetings with AFS staff and their families, and these were held every three weeks to ensure that staff were updated about the progress of the investigation. A newsletter was also produced by QFRS to ensure information was being disseminated to concerned staff.

## Scope

The scope of this report is confined to the investigation conducted by Queensland Health into the possibility of a cancer cluster at Atherton Fire Station. Matters related to the results from environmental testing commissioned by QFRS will be released in a separate report. This investigation does not directly consider the broader question of possible cancer risks associated with firefighting, but the issue is possibly related to the observations at Atherton Fire Station and is considered in this context.

## Cancer cluster Investigations

A cancer cluster is defined as a greater-than-expected number of cancer cases that occurs within a group of people in a geographic area over a period of time.<sup>14</sup> There are many cancer cluster investigations reported in the scientific literature. Each year, United States health departments respond to over 1,000 inquiries about suspected cancer clusters.<sup>15</sup>

*Cancer* is a term representing many diseases with a variety of causes.<sup>2</sup> Cancers are very common diseases with a wide range of risk factors. In most investigations into concerns about clusters, basic information is collected about the number and types of cancers and then compared with the numbers and types of cancers occurring in the general population. The investigations also collect information about possible hazardous agents that may be present in the environment.

Clusters where environmental causes have been found have tended to:

- be a rare type of cancer;
- consist of a large number of cases of one particular cancer rather than several types;
- occur in a well-defined group or setting, or a group in which it is not usually seen where there has been "intense and sustained exposure to an unusual chemical, occupation, infection or drug"<sup>16</sup>
- have been initiated by an alert from a health surveillance system.<sup>15,16,17</sup>

## Guidelines for cluster enquiries and investigations

Community concerns about possible environmental causes of cancer are legitimate and Queensland Health takes such concerns seriously. To ensure a standard, systematic, rigorous and integrated process to deal with reports of suspected disease clusters, Queensland Health has developed a set of guidelines and supporting documents to undertake cluster investigations. The Guidelines were developed in consultation with a number of experts (both Queensland Health as well as independent experts) and is similar to international protocols for cluster investigations.<sup>14,18</sup>

The *Queensland Health Guidelines for assessing clusters of non-communicable diseases*<sup>19</sup> outlines the general steps following a report of a suspected cluster, which include:

- Analysis of the specific circumstances reported to determine if there are more cases than would be expected in a group of people considering their gender, age, etc (an epidemiological investigation)
- Analysis of the environmental situation to determine if there are any environmental factors that may have caused the disease (an environmental and /or toxicological investigation), if warranted by actual evidence of a cluster
- Examination of the medical research literature
- A series of increasingly detailed and more complex epidemiological or environmental investigations if determined necessary by the previous steps.

In the situation of Atherton Fire Station (AFS), the following was done:

- Data collection on the types of cancers that occurred amongst past and present staff at AFS and verifying the diagnosis against the Queensland Cancer Registry and/or the treating doctor(s) following informed consent
- A review of possible environmental hazards that may have been present at AFS without conducting any environmental testing.

## Cancer in Queensland

In 2005, there were about 20,088 new cases of cancer diagnosed in Queensland (11,236 males and 8852 females). The most commonly diagnosed cancers in Queensland in 2005 were prostate cancer (2846 new cases), melanoma (2658 cases), colorectal cancer (2604), breast cancer (2423 cases) and lung cancer (1779 cases).<sup>20</sup>

The most commonly diagnosed cancers in men in Queensland in 2005 were prostate cancer (2846 cases), melanoma (2553), colorectal cancer (1430), lung cancer (1138) and colon cancer (887). For Queensland females, the most commonly diagnosed cancers were breast cancer (2404 cases), colorectal cancer (1171), melanoma (1105), colon cancer (847) and lung cancer (641).<sup>20</sup>

In 2003, the risk of a diagnosis for any type of cancer in Australia for males was 1 in 3 before the age of 75 and 1 in 2 before the age of 85. For females, the risk of being diagnosed with any type of cancer was 1 in 4 before the age of 75 years and 1 in 3 before the age of 85.<sup>21</sup>

The Australian Bureau of Statistics found that cancer was the leading cause of death in Queensland in 2005. Cancers were the main underlying cause of death for 7136 deaths which represented 30.4% of all deaths in Queensland.<sup>22</sup>

## Risk factors for brain, prostate and colon cancer

Cancers diagnosed today are usually related to events that happened many years ago. Cancers do not develop immediately even after contact with a known carcinogen. Instead, there is often a long period, 10 to 40 years or more, between the first exposure to a known carcinogen and medical diagnosis of a cancer known to be associated with the carcinogen. This makes it very difficult to track what caused the cancer in any particular case. The cancers we see now are usually related to combinations of many years of certain lifestyle behaviours, exposure to a carcinogen(s) many years ago and genetic factors. The causal factors for most cancers are not fully known. While exposures to carcinogenic factors may increase the likelihood of cancers arising, the emergence of a particular cancer in an individual at a particular time is often difficult to explain.

### 1. Brain cancer

Brain cancers are relatively rare, with 295 new cases diagnosed in Queensland in 2005.<sup>20</sup> Incidence rates of brain cancer were slightly higher in males (8.6 cases per 100,000) compared with females (6.3 cases per 100,000). The 60-64 to 80-84 year age groups have the highest incidence rates of brain cancer.<sup>20</sup> The main risk factors for brain cancer are exposure to ionising radiation and family history.<sup>3</sup>

The scientific literature provides conflicting and/or vague evidence about possible links between brain cancer and environmental exposures. Much research has been conducted, but little progress has been made because even though some studies find increased risk associations, there is insufficient evidence to suggest causation for many of the agents under investigation.<sup>8</sup>

Occupational studies using job exposure matrices have found increased risk of brain cancer amongst a range of industries including manufacturing, rubber and plastics production, trade of durable goods, cleaners, textile workers and construction.<sup>10, 23</sup> Elevated risk for astrocytic cancers



were also observed amongst people employed in agricultural crop production and printing/publishing.<sup>24</sup> None of these studies attempted to isolate the agents responsible for the elevated risk associated with the listed occupations.

Vinyl chloride has been suggested as a possible brain carcinogen, however, the evidence in the scientific literature is conflicting.<sup>11, 25</sup> Scientific evidence about the possible risks associated with dietary nitrites is also conflicting, with one study finding an increased rate of brain cancer associated with nitrites<sup>26</sup> and another finding no association.<sup>27</sup> There is some evidence to suggest a possible increased risk of brain cancer associated with lead<sup>28, 12</sup>, however, these studies are all based on job-exposure matrices, rather than assessing individual exposure to lead.

Links between electromagnetic radiation and brain cancer have been researched, however, the results are conflicting. For example, one study in Canada found an association between occupational exposure to magnetic fields and brain cancer<sup>29</sup> and a Danish study found no increased risk of brain cancer associated with magnetic fields.<sup>30</sup> There has been considerable research into possible links between the radiofrequency radiation from cellular phone use and brain cancer, with a large international case control study being conducted. Results from Germany<sup>31</sup>, France<sup>32</sup> and Sweden<sup>13</sup> all found no association between regular mobile phone use and gliomas nor meningiomas. A Japanese study quantified the specific absorption rate of radiation from mobile phones and found no increased rate of glioma nor meningioma.<sup>33</sup>

## **2. Prostate cancer**

Prostate cancer is the most commonly diagnosed cancer in Queensland in 2005, as mentioned above. The main risk factors for prostate cancer are family history and possibly an association with a diet high in fat and low in fruit and vegetable intake.<sup>4, 5</sup> Several occupational studies have found elevated prostate cancer rates associated with trichloroethylene in aerospace and radiation workers<sup>34</sup> and electromagnetic fields amongst electric utility workers.<sup>35</sup> Both of these studies used job exposure matrices to assess exposures rather than direct measurement of workers exposure to these agents. A population based case control study found that serum levels of oxychlorodane and polychlorinated biphenyl 180 were associated with increased rate of prostate cancer.<sup>36</sup> However, an inconsistent dose-response relationship was observed.

## **3. Colorectal cancer**

As indicated above, colorectal cancer was the third most commonly diagnosed cancer in Queensland in 2005. The main risk factors for colorectal cancer are inflammatory bowel disease, obesity, family history and possibly smoking.<sup>4, 6, 7</sup> Some studies have also found an association between sedentary work and colon cancer.<sup>37, 38</sup> There have been some studies which have found association between colorectal cancer and various occupations (e.g. workers handling dyes in the textile industry) or occupations where certain chemicals are used (e.g. polyurethane workers), but exposures of individuals participating in the studies were not assessed with accuracy.<sup>39, 40</sup> One study found an association between colorectal cancer and high serum concentrations of mono-ortho polychlorinated biphenyls congeners 28 and 118.<sup>41</sup>

## **Cancer risks associated with firefighting**

While this investigation relates only to possible hazards at the Atherton Fire Station, it is important to consider the broader risks associated with firefighting. There is a growing body of evidence suggesting elevated risks of certain types of cancer amongst firefighters. Firefighters are exposed to a diverse range of chemicals and combustion products, some of which are known carcinogens, such as benzene, benzo[a]pyrene, 1,3-butadiene and formaldehyde.<sup>42, 43, 44</sup> Information from the Monographs of the International Agency for Research on Cancer (IARC) suggests that benzene has been associated with acute non-lymphocytic leukaemia<sup>45</sup>, benzo[a]pyrene with lung cancer<sup>46</sup>, 1,3-butadiene with leukaemia<sup>46</sup> and formaldehyde has been linked with nasopharyngeal cancer<sup>47</sup>.

A meta-analysis and review of 32 studies about the cancer risks associated with firefighting was recently published.<sup>48</sup> The review examined scientific studies which included firefighters from the United States, Great Britain, New Zealand, France, Germany, Canada, Australia and Denmark. The results indicate that firefighters had a 'probable' cancer risk for multiple myeloma, non-Hodgkin lymphoma, prostate and testicular cancers. Brain cancer was on the list of nine types of cancer that were rated with a 'possible' cancer risk. The summary risk estimate (derived from the 15 scientific papers examining brain cancer risk) for brain cancer amongst firefighters was 32% higher than the general population. However, within the eight studies examining the risk associated with firefighting and brain cancer mortality, there were some conflicting findings. Thus brain cancer was listed as a 'possible' risk rather than a 'probable' risk in the meta-analysis.<sup>48</sup> Please note that the classification of risk in the meta-analysis is different from that used by IARC.

In December 2007, the World Health Organization's International Agency for Research on Cancer (IARC) reviewed all the evidence about the cancer risks associated with firefighting. The IARC Working Group updated the meta-analysis described above and concluded:

"Epidemiological studies of firefighters have noted excess cancer risks compared with the general population. Consistent patterns are difficult to discern due to the large variations in exposure across different types of fires and different groups of firefighters. Relative risks were consistently increased, however, for three types of cancer: testicular cancer, prostate cancer and non-Hodgkin lymphoma."<sup>44</sup>

On the basis of 'limited evidence of carcinogenicity in humans', the IARC Working Group classified occupational exposure as a firefighter as "possibly carcinogenic" (see Appendix for details about IARC classifications).<sup>44</sup>

## 2. Epidemiological investigation

An epidemiological investigation was conducted to determine the types of cancer in staff at Atherton Fire Station (AFS) and if there was an increased rate of a particular type of cancer amongst current and former workers at the Station. We have used some technical jargon to accurately describe parts of the investigation. We have used the term 'case' in its technical sense but understand the massive impact that a cancer diagnosis has on a person and those around them.

### Case definition

Initially a case was defined as all self-reported cases of any type of cancer among staff members employed at Atherton Fire Station that were confirmed by the Queensland Cancer Registry or treating doctor. The date of diagnosis must have occurred after commencement of employment. The study period was from 1<sup>st</sup> January 1992 to 31<sup>st</sup> December 2007. This is referred to as the 'initial case definition'.

Following expert advice on the similarities of the brain cancer cases, the case definition was revised to: 'All self-reported cases of brain cancer among staff members employed at Atherton Fire Station that were confirmed by the Queensland Cancer Registry or treating doctor. The date of diagnosis must have occurred after commencement of employment. The study period was from 1<sup>st</sup> January 1992 to 31<sup>st</sup> December 2007.' This is referred to as the 'revised case definition'.

### Case ascertainment and workforce data

The extent to which all cancer cases can be identified, and the type of cancer confirmed, in any cancer cluster study, depends on the available data sources.

Information about staff suspected of having cancer was collated by staff at Queensland Fire and Rescue Service (QFRS) and provided to Queensland Health. The case list was based on self-reporting by staff members as well as the extensive social network of key long-serving staff at AFS. In instances where a staff member had died or had left the Station, the case list details were checked against the Queensland Cancer Registry. For staff members who were diagnosed with cancer since 2005, informed consent was sought to confirm their diagnosis with their treating doctor(s), because the Cancer Registry data were yet to be fully verified.

In the interests of determining the full extent of the possible cluster, no time limit (study period) was initially established. Based upon the date of diagnosis of the self-reported cases, the study period became 1<sup>st</sup> January 1992 to 31<sup>st</sup> December 2007. This study period was used in the initial and revised case definitions.

QFRS was asked to provide work history details on all staff employed at the Station during the study period. The human resource system at QFRS changed significantly over time and reliable workforce records were obtainable from 1995 onward. There were no electronic records of staff who had worked at AFS prior to 1995. Some paper workforce records from the 1980s were located at the Station, but they did not provide reliable information about length of service of staff serving at AFS. For the purposes of this investigation both auxiliary and permanent firefighters were included as staff members of AFS.

Ascertainment of possible cases using the extensive knowledge and social networks of long-serving staff members was considered to be accurate. In addition, QFRS disseminated regular newsletters throughout Queensland, asking former AFS staff who may have been diagnosed with cancer to contact the QFRS telephone hotline. There was also considerable local, state and national media coverage. While further determination of the accuracy of the number of cancer cases in present and past employees could be undertaken, that would require checking of the personal details of each of the staff members against the Queensland Cancer Register. Such checking involves potential legal issues of confidentiality and thus individual staff would need to give permission for their medical and personal details to be investigated. In addition, in order to determine if people who no longer resided in Queensland had been diagnosed with cancer, the Cancer Registry in the relevant Australian state would need to be checked.

The staff diagnosed with cancer and still currently employed at AFS were interviewed. The focus of the interview was on possible hazardous exposures at the Station and any noteworthy incidents they attended during their careers as firefighters. Two of the men diagnosed with brain cancer had died and it was only possible to interview a relative of one of these men.

### Statistical analysis

Epidemiologists use data from state cancer registries to calculate an "expected" number of cases in a given population, in order to determine whether the number of people with cancer in a reported cluster may be more than expected. The "expected" number of cases is then compared with the "observed" number of identified cases. The size of the ratio of these numbers is considered and then the role of chance in obtaining a ratio of this size is assessed by performing one or more statistical tests. This is a standard procedure used in cluster investigations worldwide.

For the purposes of this analysis, only the three brain cancers were considered. To calculate person-time at risk since the commencement of employment at AFS, for the whole Station, each of the three cases were omitted from the person-years calculation after the year in which their cancer was first diagnosed, where the information was available. The start dates for the cases used in these calculations were those provided by QFRS, as mentioned above. All of the staff who did not develop brain cancer were included in the analysis through to 31<sup>st</sup> December 2007, regardless of whether they were still employed at AFS.

Age-specific rates of brain, meninges and other central nervous system cancers for all of Queensland were used, as obtained from the Queensland Cancer Registry, in order to calculate the number of cancers that would have been expected if the people employed at AFS had the same incidence of cancer as all people in Queensland. Age specific rates of each separate year 1992 to 2005 were applied. The analysis commenced from 1992 as this was the year that the first brain cancer was diagnosed amongst AFS staff. The year 2005 is the most recent year for which clean validated data are available from the Queensland Cancer Registry, so Queensland rates for 2005 were applied to the AFS employment data for 2006-2007. This is unlikely to materially affect the results. Five year age groups were used to obtain the expected number of cases.

Age standardised data were then used to calculate the Standardised Incidence Ratio (SIR). SIR is a numerical expression that compares how many people in the study population were diagnosed with cancer to how many diagnoses would be expected (hypothetically) if the incidence rate of cancer in the study population was the same as the incidence rate of cancer in the reference population.<sup>78</sup>

Therefore:

$$SIR = \frac{O}{E} \text{ where;}$$

*O* is the observed number of brain cancer cases reported for the population under study, and *E* is the expected number of cases that would have occurred if the age-specific rates for the entire population (that is, Queensland) were applied to the staff who had ever worked at AFS.

Measures of statistical significance are described using *p* values and confidence intervals. These measures are more fully explained in the Definitions section. However for ease of understanding, if a *p* value is greater than 0.05 or the confidence interval includes 1.0, the standard interpretation is that the finding is not statistically significant and is accepted as being probably due to chance.

Statistical tests to determine significance of the findings of this study were calculated using the statistical software package STATA and based on methods outlined by Ulm.<sup>49</sup> The *p* values associated with the measure of SIR were obtained using the methods outlined by Breslow and Day.<sup>50</sup>

The analysis did not take into account some factors which are known to alter the assessment of brain cancer risk in a population. These factors may affect the SIR, and taking them into account would reduce the confidence interval. These factors include;

- potential confounders such as genetics for brain cancer and previous exposure to ionising radiation, where the cases may have a different proportion of these factors than the Queensland population;
- adjustment for implied multiple comparisons of the study population, (see Terms and Definitions).

## Results

Nine possible cases of cancer were identified. Four of these were excluded from the analysis as they did not meet the initial case definition described above. Considering the four excluded cases:

- One was reportedly diagnosed with cancer in the 1990s but no record matching his name and date of birth was found on the Queensland Cancer Registry. In addition, there were limited workforce records about him. The only information that was found suggested he was posted at the Malanda Fire Station.
- One was confirmed to have been diagnosed with a pre-cancerous villous adenoma of the colon, which was considered to be benign.
- One was confirmed to have been diagnosed with a benign (non-cancer) tumour of the testicle

- One was found to have a melanoma diagnosed in the 1990s. This particular person was an administrative officer who processed pay cheques at all the fire stations in the Atherton Tablelands. He sometimes used the office space at Atherton Fire Station, but was only present 3-4 days per month and not classified as a staff member of AFS.

Benign tumours were not included in this investigation, which is standard epidemiological practice in cancer cluster investigations. Malignant tumours can spread to other parts of the body, whereas benign tumours only grow locally. Benign tumours generally do not cause as many problems or are as life threatening, but the risk of harm from them depends on their size and location.

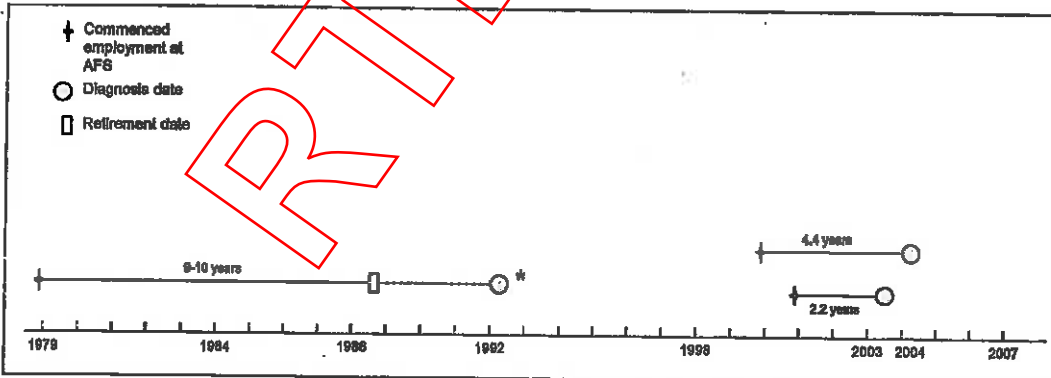
Using the initial case definition, there were five confirmed cases of cancer among staff at AFS over a period of 15 years. Four of the cases were recorded on the Queensland Cancer Registry and one was confirmed by the treating doctor. All of the cases were men. The age range at diagnosis of these five cases was 44 to 69 years and the median age was 55 years.

A range of different types of cancer was reported. There were three different types of brain cancer (one gemistocytic astrocytoma, one glioblastoma and one anaplastic astrocytoma), one type of colon cancer (adenocarcinoma) and one type of prostate cancer (adenocarcinoma). Two of the three men diagnosed with brain cancer had died by the time of the investigation.

With regards to the brain cancers, gemistocytic astrocytoma, anaplastic astrocytoma, and glioblastoma are different, but related brain tumours. The revised *World Health Organization Classification of Tumours of the Central Nervous System* places them under astrocytic tumours as they arise from glial cell types.<sup>61</sup> In addition, astrocytomas are thought to progress via a series of genetic changes to glioblastoma multiforme.<sup>62</sup> Given their similar cell origins and progression between types, it is reasonable to consider them together in an evaluation of a possible cancer cluster.<sup>63</sup> There is a possibility that the pathology of the brain cancers may not be accurate and a review of the slides by the Director of Anatomical Pathology at the Royal Brisbane Hospital is required.

The ages at diagnosis of the three cases of brain cancer were 44, 50 and 69 years and the timing of the diagnosis in relation to the years of service at Atherton Fire Station is shown in Figure 1. One man had served for 9-10 years at AFS in the 1980's, retired in 1988 and was diagnosed with brain cancer in 1992. The other two men diagnosed with brain cancer commenced their service in 1999 and 2001, respectively. Thus, it was unlikely that there was a common acute point source agent at the Station that may have caused all three cancers.

Figure 1: Timeline of service and diagnosis of brain cancer amongst firefighters Atherton Fire Station



\*Years of service and length of service for this man are estimates from anecdotal information.

The total number of person-years of follow-up was 449. Based on the employment data provided by QFRS and the age profile of the AFS staff over the 15 year period, the number of brain cancers expected amongst the 82 staff members employed at AFS since 1992 was 0.049.

Based on the three brain cancer cases, the standardized incidence ratio (SIR) was  $3/0.049 = 62$ ; 95% confidence interval 13 to 181;  $p=0.002$ . The standard interpretation is that the rate of brain cancer diagnosis amongst AFS staff ranges between 13 to 181 times higher than the Queensland population, but the best estimate of the rate is 62 times higher than the general Queensland population. This result is statistically significant and may not be due to chance alone.

As shown in Figure 1, one firefighter had worked at AFS for 2.2 years before his diagnosis and the other had worked at AFS for 4.4 years before his diagnosis. If the latency period of brain cancer was ten years or more and the exposure that caused the brain cancer was present at AFS, it is impossible that two of the cases would have developed brain cancer from exposure to an agent at AFS. If that is the case, then only one of the men diagnosed with brain cancer could be included in the statistical analysis. The SIR then becomes 21 and confidence intervals range from 0.5 to 115. This means that the true rate at AFS may be half that of the Queensland population ranging up to 115 times higher than the Queensland population.

### Limitations and Issues

There are several uncertainties involved in the epidemiological cluster identified at AFS:

- a. Application of epidemiological methods to statistically small numbers of an uncommon cancer in a small group of people (large uncertainty)
- b. Implied multiple comparisons in post-hoc analysis of observations (large uncertainty)
- c. Identifying an appropriate denominator population (small uncertainty)
- d. Analysing different but related cancers as the same disease (small uncertainty)
- e. Identification of all cases and possible misclassification (small uncertainty)

Thus, when interpreting the results of this investigation there are a number of other factors to consider:

1. The study period of the investigation begins in the year that the first firefighter was diagnosed with brain cancer. This approach does not take into consideration the years before this man was diagnosed where there were no reported cases of brain cancer. Using this approach, the SIR is higher than it would have been if the study period went further back in time. However, given the small number of staff at Atherton Fire Station, extending the study period back in time is still likely to yield an elevated SIR.
2. The SIR was calculated using the comparison of the rate at AFS compared with the Queensland population. The rate of brain cancer at AFS only includes the astrocytoma group of brain cancers. However, the broad grouping of brain cancer, which includes cancer of the brain, meninges and other parts of the central nervous system, was used in the Queensland comparison group. If the SIR was calculated using only the astrocytoma group of brain cancers for the Queensland population, the SIR is likely to be larger.
3. The presumed degree of similarity of the three brain cancers and thus consideration of them as a group adds uncertainty to the results. The three brain cancer types are treated above as if they were the same disease, although the causation, pathology and progression of these tumours is poorly understood. If in fact one of the three sub-types were more different, due either to errors in the pathology of the cases or our understanding of the relationships between them, the evidence for clustering would be much weaker. There is a need to have the pathology slides reviewed to ensure the information about the types of brain cancer is accurate.

4. As with most cluster investigations, the analysis does not take into account the potential confounders other than age. Other possible confounders include genetics for brain cancer and previous exposure to ionising radiation, where the cases may have a different proportion of these factors than the Queensland population. This was not able to be accurately assessed.
5. The expected number of cases was derived from the total Queensland population, not specifically the male population. If the male population had been used for comparison, it would not greatly alter the SIR, as the rates of brain cancer in males and females in Queensland are similar.<sup>20</sup>
6. The quality of the workforce data was incomplete which means that the expected number of cases may not be accurate. Thirteen out of 16 years of workforce data were available and it was assumed that the workforce in 1992-1994 was similar to that in 1995-2007. There is no way of knowing whether this assumption would under- or over-estimate the expected number of cases. However, it was expected that the impact on the SIR would be minimal.
7. The exact latency period for brain cancer is unknown. Generally, cancers can have latency periods of decades<sup>2</sup>. Epidemiological studies have tended to assume a minimum ten year latency period for brain cancer.<sup>10, 11, 12, 13</sup> For the two men where accurate length of service data were available, one had only worked for 2.2 years at AFS and the other for 4.4 years. It is unlikely that these men were exposed to a common causative agent at AFS due to the short time frame for the latency of cancer. Anecdotal reports relating to the man diagnosed with brain cancer in 1992 suggested he lived in the house next to the Station for 9-10 years some time in the 1980s, with a retirement date in 1988.
8. Although every effort has been made to ensure all cases were counted, it is possible that some additional cases of cancer may have not been counted. However this can not be further evaluated using currently available information.
9. The analysis considered the risk to be the same for auxiliary firefighters and permanent staff members. Data from the Australian Incident Reporting System supplied by QFRS suggested that longer serving permanent staff members had worked longer total hours compared to the auxiliary staff. However, anecdotally, it was indicated that some of the permanent and auxiliary staff slept at the Station in the past, making it difficult to ascertain accurately whether there would be any real difference in risk for auxiliaries compared to permanent staff. This issue was discussed with the staff at Atherton Fire Station and they were comfortable with the risk being considered the same for the purposes of this investigation.
10. In making statistical comparisons – typically at a “95% confidence level” – five of 100 comparisons may be significantly different by chance alone. For example, cancer registers record information on about 80 different types of cancer. Using these facts, statisticians at the California Department of Health Services have calculated that there is a 98% chance that a given community will show a statistically significant, but totally random, elevation in the rate of at least one type of cancer. Thus, even when a statistical test shows there is a “statistically significant” difference between the observed and the expected number of cases, in many instances the significant difference is due to chance and not to a real hazard in the community.
11. A grouping of cancer cases needs to be considered within an appropriate population and not just a population narrowly defined by the cluster itself, unless there is good reason to do so, such as a clearly identifiable exposure to a known or suspected agent. According to Olsen *et al*;<sup>64</sup> “The more narrowly the underlying population is defined, the less will be the number of expected cases, the greater will be the estimate of excess rate, and often the

more pronounced will be the statistical significance'. As with all cluster investigations, the boundaries of the AFS investigation in time, space, and person were defined after the event, through boundary shrinkage,<sup>54</sup> the so-called Texas sharp-shooter problem<sup>55</sup>: (The Texas sharpshooter shoots at the side of a barn and then draws a bull's-eye around the bullet holes). This can occur when a number of cancer cases may be noticed and the population base drawn around a small area when there is no evidence to suggest that the population in the small area is different to the much larger surrounding population. This makes it difficult to assess the role of chance in a definitive way, such as can be done in a study with a pre-specified hypothesis.

12. This result is not adjusted for implied multiple comparisons of study populations, (see Terms and Definitions). By not adjusting for multiple comparisons these results underestimate the role of chance in obtaining the observed results. Many statisticians adjust p values from a cluster investigation for implied multiple comparisons.<sup>56</sup> More specifically, when a suspected cancer cluster is reported from one place it implies that comparisons have taken place in many similar places about which we do not hear because no clusters were found.<sup>57</sup> Further, there are many other types of cancer and other time periods, which imply more comparisons. The more comparisons performed, the greater the probability of observing the cluster in question due to chance.

### 3. Environmental appraisal

#### Worksite assessment

For the purposes of this report the environmental appraisal considered both the workplace environment and the broader Atherton environment.

Queensland Fire and Rescue Service (QFRS) checked with local government authorities and confirmed that the AFS site was not located on a registered contaminated land site. The Station and house, which makes up the AFS site, was built in 1959 and previous to that, anecdotal evidence suggests that the site had been used as pasture land for horses. The house was used by various staff, but has not been used since 2004.

QFRS provided data from the Australian Incident Reporting System, which links each staff member to particular incidents. The data were analysed to see if there were any trends or patterns.

Throughout the investigation, staff members were asked to identify any major incidents they had attended where chemicals and/or radiation were suspected to be present. Current and former staff members at AFS were also asked to identify any possible agent they thought may have led to cancer amongst staff at the Station. Interviews with four of the men with suspected cancer diagnoses were conducted (two were included in this investigation and two were excluded as their diagnoses were confirmed to be benign tumours). QFRS staff were also asked whether any known ionising radiation sources were present at the Station. For the purposes of this report both the workplace environment and broader Atherton environment were considered.

Once an agent was identified, it was cross checked against the *Agents Reviewed by the International Agency for Research on Cancer (IARC) Monographs*.<sup>58</sup> IARC is recognised internationally as the agency that assesses and determines the carcinogenic risks associated with various agents and occupations. Possible causative agents were also cross checked against the *Toxicological Profiles* written by the Agency for Toxic Substances and Disease Registry (ATSDR), which is part of the US Department of Health and Human Services. If an agent was not present on the IARC Monograph list nor the list of ATSDR's Toxicological Profiles, a literature search of Medline was conducted using the search string "[agent name] and cancer".



It is important to consider when appraising the information in the next section, not only whether there was a potential exposure to a hazardous agent but the level, frequency and duration of such exposures. For firefighters, the exposures may be substantially reduced by the use of appropriate personal protective equipment in some circumstances. In a description of the review by IARC of the carcinogenic risks to firefighters, the difficulties of assessing exposures were acknowledged:

"For intermittent, but intense, exposures to highly variable complex mixtures, conventional measures, such as years of employment or number of firefighting runs, can be poor surrogates for exposure. The available epidemiological studies are inherently limited by this issue."<sup>44</sup>

## Results

Data from the Australian Incident Reporting System did not prove to be useful for assessing the hazards posed to staff attending incidents. Incidents were classified into broad categories (e.g. bush/grass fires, structural fires, motor vehicle accidents, chemical incident, confined space rescue etc). There was no additional information about the types of chemical incidents or types of structural fires that could be used to determine possible hazards. Anecdotally, discussions with QFRS staff suggested that the types of incidents that staff from AFS attended were no different to those attended by other crews at fire stations in the Tablelands.

Interviews and discussions with staff at AFS identified several concerns relating to possible exposures. Hazardous agents were mainly restricted to those that might be present at the Station. However, several concerns were raised that pertained to hazards that may be present in the broader community of the Atherton Tablelands or some agents that the firefighters may be exposed to that are relatively unique to the Tablelands environment.

The concerns identified by staff at AFS were:

- The house next to the Station, which was damaged by termites and treated with pesticides
- The training facility for testing breathing apparatus
- Exhaust emissions from the fire trucks in the Station
- Faulty compressor for re-gassing breathing apparatus
- Barn fires, in particular tobacco barns
- Radioactive fall out following nuclear weapons testing in the Pacific Ocean.
- Firefighting foams.

Each of these concerns is discussed in greater detail below, separated into hazards at the fire station and non-fire station related hazards. All of the possible hazardous agents identified and their potential carcinogenicity are listed in Table 1.

Other than the hazardous agents identified by AFS staff, the Queensland Health cluster investigation team did not identify any other environmental hazards, specific to the Atherton firefighters, capable of causing an excess of brain cancers.

### **Fire station related hazards**

#### **1. House next to the station**

The fire station and the house next to it were built in 1959. The house was the residence for various staff members who served at AFS. In 1991, the house was severely damaged by termites. The house was repaired by some of the staff at AFS and once re-built, it was treated with pesticides. Since 1991, the house received annual pesticide treatments until 2004. The house has not been used since 2004. Some of the staff at AFS expressed concerns about the pesticides that were used to treat the house. QFRS traced the pest controller who had conducted some of the treatments at the house. The chemicals used were chlorfos (trichlorfon), pyrethrins and

chlorpyrifos. Anecdotal reports from a staff member who lived in house in the early 1990s also reported that arsenic-based chemicals and dieldrin were also used to treat the house.

It was not possible to establish whether all of the cases had contact with the house, but the three men diagnosed with brain cancers had all lived in the house. This does not prove a link between possible hazards at the house and cancer. The families of two of the men diagnosed with brain cancer and many other families lived at the house and have not been diagnosed with cancer. In addition, it was not possible to determine whether the time scale from possible exposure to the diagnosis of cancer was appropriate, considering the long latency periods for cancer. Furthermore, as shown in Table 1, there are no known associations between the chemicals in the possible exposures identified by staff at AFS and brain cancer. Another point to note was that the case diagnosed in 1992 lived in the house before the termite problem, whilst the other two cases lived in the house after the termite problem. There does not appear to be a common exposure that would account for all three cases of brain cancer.

## **2. Training facility**

Atherton Fire Station has a breathing apparatus (BA) training facility, which is unique to the Tablelands. The training facility is a small building into which smoke is blown so the firefighters can gain practice at using their breathing apparatus correctly. In the 1990s, before non-toxic smoke machines were introduced, many kinds of materials were collected and burnt to generate the smoke for the training facility. Staff reported that cardboard, wood, grass clippings, plastic and any other combustible materials were burnt. It is difficult to assess exactly what compounds the staff may have been exposed to, but they are likely to be similar to those of grass fires and structural fires, to which firefighters are generally exposed. There was no reason to believe that there would be any unique exposures at the training facility that firefighters would not ordinarily be exposed to at grass or structural fires.

## **3. Exhaust emissions from the fire trucks**

When an alert is received, the firefighters start up the trucks in the Station, while all the crew are putting on their protective equipment. The protective equipment was stored in the engine bay at AFS. Prior to the introduction of diesel trucks in 2000, petrol trucks were used by AFS. During the investigation, QFRS re-arranged the Station so that protective equipment is stored out of the engine bay away from the exhaust emissions and exhaust extractors are being installed at the Station.

## **4. Faulty compressor**

From the early 1980s until the mid 1990s, AFS re-gassed their own air cylinders used for the breathing apparatus (BA). Several of the staff members at AFS recall that during this period the air compressor used to re-gas the cylinders was not maintained correctly, which resulted in oil and water entering the cylinders. It was not possible to trace the exact type of oil used in the compressor, making it difficult to determine the cancer risk associated with this issue. Regardless of carcinogenic risk, it is unlikely that this would explain the apparent cluster as two of the cases of brain cancer definitely would not have been exposed to the oil in their BA, as they started their service at AFS 5-6 years after the compressor had been replaced.

## **Non-fire station related hazards**

### **5. Tobacco barn fires**

Some of the firefighters mentioned how they had fought tobacco barn fires in the past. They expressed concern about the chemicals used to treat the tobacco. Some of the chemicals used in the treatment of tobacco include phosphine and methyl bromide to keep pests away. Tobacco was grown in selected areas of the Tablelands and although this may not be an exposure unique to firefighters from AFS (i.e. Mareeba Fire Station and other stations in the Tablelands may have also been exposed), it would only be an exposure in tobacco growing areas. If the fires only involved the combustion of treated tobacco, there is likely to be very little exposure to phosphine and methyl bromide: These fumigants rapidly dissipate following the treatment process and the residual amounts on the tobacco would likely present a negligible risk. However, if stocks of these agents

combusted during a tobacco barn fire there are possible opportunities for greater exposure to either the agents and/or their combustion products. In this situation, the acute toxicity risks would be more relevant.

#### **6. Radioactive fallout following nuclear testing**

Longer serving members of AFS remembered that there were concerns about radioactive fallout over the Tablelands and that milk from Malanda was routinely tested for radioactivity. Some of the firefighters were concerned that they may have been exposed to radiation by working in the Tablelands.

The Australian Government monitored the fallout over Australia over the latter half of 1973 following nuclear weapons testing by France in the Pacific.<sup>59</sup> The monitoring program consisted of measuring daily deposits of fallout, air sampling and the sampling of milk supplies throughout Australia over a three month period. One of the milk sampling sites was located at Malanda. Results from the sampling program indicate that the milk collected from Malanda had very low levels of external gamma radiation. The levels of radiation in Malanda milk were lower than the Australian average. On the basis of all the results from the monitoring program, the Australian Ionising Radiation Advisory Committee concluded that:

"the Australian population would incur less than one additional case of any thyroid cancer, leukaemia, other malignancy or serious disability from genetic mutations."<sup>59</sup>

Given that only one additional case of any type of cancer was expected in the entire Australian population, it is extremely unlikely that radioactive fallout from nuclear weapons could be responsible for a cancer focus at Atherton Fire Station. In addition, for the three men diagnosed with brain cancer, none of the cases were present at AFS during 1973. Of note, any exposure to radiation from the fallout was not AFS specific, but would have been experienced by the broader Tableland community. There is no evidence of elevated levels of cancer in the Tablelands area. Data from the Queensland Cancer Registry for 1990 to 2004 suggest that the direct age standardised rate of all types of cancer in the Atherton Statistical Local Area was 448 cases per 100,000, which is similar to the rate for all cancers in Queensland (486 cases per 100,000).

#### **7. Fire fighting foams**

Some of the staff raised concerns about the use of firefighting foams. One of the ingredients of firefighting foam is perfluorooctanyl sulfonate (PFOS). PFOS has been found in low levels throughout the environment and the human population even though its health effects are not well understood.<sup>60</sup> It is unlikely that firefighting foams would be the cause of the apparent cluster given that most of the fires fought by AFS staff do not require the use of foam. The foams are used approximately three times per month at AFS, mainly for training purposes. Information from QFRS indicates that the use of fire fighting foams at AFS is similar to the use of the foams at other rural fire stations in the Tablelands.

#### **Summary of results**

From the list of possible hazards identified, none of the agents that were identified as possible carcinogens caused the types of cancers that were observed at AFS (Table 1). The main type of cancer associated with the hazardous agents listed by AFS staff is lung cancer. In addition, there was no common plausible agent that all three men diagnosed with brain cancers were exposed to. Furthermore, one of the brain cancer cases did not serve at AFS at the same time as the other two. This suggests that there was no common acute point source hazard that could possibly cause the brain cancers.

**Table 1: Carcinogenic potential of possible exposures identified by staff at AFS.**

Possible exposure	IARC classification*	ATSDR carcinogen remarks	Types of cancer associated with agent
Chlorpyrifos	Not evaluated	Not known whether chlorpyrifos causes cancer in people. Animal studies have shown no link to any type of cancer. <sup>61</sup>	
Pyrethrins		No evidence that pyrethrins cause cancer in animals or humans. <sup>62</sup>	
Deltamethrin	Not classifiable (Group 3) <sup>63</sup>		
Fenvalerate	Not classifiable (Group 3) <sup>63</sup>		
Permethrin	Not classifiable (Group 3) <sup>63</sup>		
Chlorfos (Trichlorfon)	Not classifiable (Group 3) <sup>64</sup>	Not evaluated	
Dieldrin	Not classifiable (Group 3) <sup>46</sup>	No conclusive evidence that dieldrin causes cancer in humans. Shown to cause liver cancer in mice. <sup>65</sup>	
Arsenic-based compounds*	Carcinogenic to humans (Group 1) <sup>66</sup>	Inorganic arsenic is a known human carcinogen <sup>67</sup>	Known carcinogen of the skin and lungs and a possible association with liver and bladder cancer
Diesel engine exhaust	Probably carcinogenic (Group 2A) <sup>68</sup>	Not evaluated	Lung cancer and possibly bladder cancer
Petrol engine exhaust	Possibly carcinogenic (Group 2B) <sup>68</sup>	Not evaluated	No particular types of cancer identified
Phosphine	Not evaluated	Not classifiable <sup>69</sup>	
Perfluorooctanyl sulfonate (component of AFFF foam)	Not evaluated	Not evaluated	Cancer risk has not been assessed. Concern about this chemical was raised as it accumulates at low levels in the environment and in humans <sup>60</sup>
Triethanolamine (component of AFFF foam)	Not classifiable (Group 3) <sup>70</sup>	Not evaluated	
Methyl bromide	Not classifiable (Group 3) <sup>46</sup>	Not evaluated	

\*See Appendix for an explanation of the IARC classifications

\*Evaluation applies to inorganic arsenic. The evaluation applies to the group of chemicals as a whole and not necessarily to all individual chemicals within the group.

## Limitations and issues

- The list of possible hazardous agents should be interpreted with caution, as the list was constructed through reports from staff at AFS, rather than scientific measurement. Given the diversity of cancers observed at AFS, environmental testing was not recommended by Queensland Health, as there was no clear public health threat identified.
- It is unlikely, but there may have been a hazardous agent that was not identifiable to staff of Atherton Fire Station and the Queensland Health team that may have been carcinogenic.
- If a possible hazardous agent is mentioned, it does not mean that it was present at AFS nor at the incident scenes that AFS staff responded to. In addition, if an agent was present, it does not mean that a person was exposed in concentrations and for lengths of time that might cause harm.
- The list of possible hazardous agents does not consider measures taken to possibly mitigate exposures, such as the use of breathing apparatus.
- Some of the possible hazardous agents identified have not been extensively tested for carcinogenic risk and their true carcinogenic potential is not well understood.
- Only the carcinogenic risk of these hazards has been evaluated. Some of these hazardous agents have other health effects that were not in the scope of this investigation.
- Besides ionising radiation and family history, there is very little known about the causes of brain cancer.
- There were difficulties in obtaining detailed past exposure histories as two of the three brain cancer patients have died. A relative of one of the men did not know of any possible past exposures and relatives of the other man were not able to be traced.

## 4. Findings and recommendations

This investigation was undertaken due to staff concerns about cancers occurring in their workplace. The aims of the investigation were to determine if there was an increased incidence of a particular type of cancer amongst current and former workers at Atherton Fire Station and to determine if there were any possible hazards at the workplace that may have been associated with an increased cancer rate.

### Findings:

1. There were five cases of cancer diagnosed amongst staff at AFS since 1992. Three other suspected cases were excluded after investigations showed they were not diagnosed with cancer and a further case was excluded as not an AFS staff member.
2. Three of the cases were brain cancers, one was a colon cancer and one was a prostate cancer. Expert advice indicated that the three brain cancers should be considered together, as they can progress to a similar type of brain cancer (astrocytoma group). The prostate and colon cancers were not considered in further statistical analysis as they were different types of cancers.
3. The age at diagnosis of the three brain cancer cases was 44, 50 and 69 years. One of the cases was within the 60-64 to 80-84 year peak age groups for brain cancer diagnosis in Queensland.
4. There was an increased rate of astrocytoma group brain cancers among firefighters at Atherton Fire Station in the period 1992-2007, compared to the Queensland population. The extent of this increase is unable to be determined.

5. For the study period, the best estimate of the rate of brain cancer amongst staff at the Atherton Fire Station ranged from 21 to 62 times higher than the Queensland average, when considering the possible latency periods of brain cancer. However, the statistically small number of cases, limitations of standard statistical tests in cluster investigations and uncertainties in the data and diagnoses of brain cancer means that the results are difficult to interpret meaningfully.
6. The list of suggested hazardous agents identified by staff at AFS includes some possible carcinogens. However, none of the possible carcinogens listed have been documented to cause the types of cancer observed at AFS, particularly brain cancer.
7. The period of service for two of the three brain cancer cases overlapped. The fact that not all of the cases were serving simultaneously suggests that there is no common acute hazard that may have given rise to the brain cancers.
8. There was no common plausible hazardous agent that all three of the brain cancer cases were exposed to during their service at AFS. Even though all three had stayed at the house next to the Station, there were no hazardous agents identified at the house that are known to cause brain cancer.
9. Given the possible brain cancer latency periods and the timing of employment at AFS, it is highly unlikely that there is a common environmental exposure at AFS that gave rise to all three of the cancers.
10. There are important limitations to the study which mean that there may be some variation in the real measure of risk.

#### **Overall conclusions**

The overall conclusions are based on the findings from the epidemiological investigation, the environmental appraisal and the current state of knowledge in the international scientific literature.

An analysis of possible hazards at the Station did not identify any agents that would cause the types of cancer observed. There was an elevated rate of brain cancer amongst firefighters at the Atherton Fire Station compared to the Queensland population. The extent of this elevation of cancer rate is uncertain. There was no common plausible causal agent at the Atherton Fire Station that all three cases of brain cancer were exposed to. There is some evidence to suggest a possible association between firefighting and brain cancer, but the evidence does not suggest a strong link. This evidence would not explain the magnitude of the elevated rate at the Station.

#### **Recommendations**

##### *Part A: Recommendations related to Atherton Fire Station*

1. The Director of Anatomical Pathology, Royal Brisbane Hospital to review the pathology slides of the three men diagnosed with brain cancer to ensure the correct diagnosis was made and grouping of the brain cancer cases was valid.
2. An epidemiological investigation has been conducted at Atherton Fire Station and no further epidemiological investigation is currently required.
3. The investigation will be reopened if another person at Atherton Fire Station is diagnosed with brain cancer.
4. The investigation may be opened if new information becomes available in the scientific literature about the causes of brain cancer or if there are new concerns about particular environmental hazards associated with Atherton Fire Station.

5. The findings of this investigation should be communicated to the staff members at Atherton Fire Station, representatives from the United Firefighters Union, the firefighting community more broadly, and in relevant literature.
6. Queensland Health will give further consideration to the findings of the investigation once the report from the environmental testing is made available.

*Part B: Recommendations pertaining to firefighting*

7. Queensland Fire and Rescue Service continue to promote the use of personal protective equipment to control the hazards that firefighters are exposed to.
8. The feasibility of an epidemiological assessment of brain cancer incidence of Queensland firefighters including comparison with Atherton Fire Station, should be conducted.
9. The feasibility of an epidemiological study or disease registry should be considered to examine the possible risks associated with firefighting in relation to cancer, particularly brain cancer and those types of cancer identified in the evaluation of the International Agency for Research on Cancer (e.g. testicular cancer, prostate cancer and non-Hodgkin lymphoma).

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## 5. Terms and Definitions

**Agent (of disease):** A factor such as a chemical substance or form of radiation, whose presence, excessive presence or (in the case of a deficiency disease) relative absence is essential for the occurrence of a disease.<sup>71</sup>

**Association:** A statistical dependence between two or more events, characteristics or other variables.<sup>71</sup>

**Carcinogen:** A cancer-causing substance or agent.<sup>72</sup>

**Cancer risk:** The potential for exposure to a contaminant to cause cancer in an individual or population is evaluated by estimating the probability of developing cancer over a lifetime. Cancer risk is the likelihood, or chance, of getting cancer. The term "excess risk" is used because we all have a "background risk" of about one in four chances of getting cancer in our lifetimes, and excess risk is risk greater than this background risk.<sup>71</sup>

**Case:** A person in the population or study group identified as having the particular disease under investigation. A variety of criteria can be used to identify cases, as detailed in the case definition.<sup>71</sup>

**Causality:** The relating of causes to the effects they produce. It must be emphasised that epidemiological evidence by itself is insufficient to establish causality though it can provide powerful circumstantial evidence.<sup>71</sup>

**Chance:** The term chance is used with a number of meanings in the community. In this document, we use 'chance' according to the following meaning. Chance is something that happens unpredictably without discernible human intention or discoverable cause. In the context of a slightly increased number of cancer cases in a particular setting, the increase due to chance relates to something that happens unpredictably (or haphazardly) in the community without any particular reason being the cause.

**Cluster:** A greater-than-expected number of cases that occurs within a group of people in a geographic area over a period of time.<sup>14, 15, 73</sup> Determination of a cluster using statistical methods does not imply a cause for the reported excess number of cases. A significant association between disease and exposure may indicate that one causes the other. But it may mean that both are related to a third variable that influences both. Or it may be a coincidence.<sup>73</sup>

**Confidence interval:** The interval with a given probability, eg 95%, that the true value of a variable is contained within the interval.<sup>71</sup>

**Confounding:** A situation in which a measure of the effect of an exposure on risk is distorted because of the association of exposure with other factor(s) that influence the outcome under study.<sup>71</sup>

**Epidemiology:** The branch of medicine that deals with the study of the causes, distribution, and control of disease in human populations.<sup>71</sup>

**Exposure:** Contact of a chemical, physical or biological agent with the outer boundary of an person e.g. Inhalation, ingestion or dermal contact.<sup>74</sup>

**Hazard:** The capacity of an agent to produce a particular type of adverse health effect.<sup>74</sup>



**Incidence:** The number of new cases of disease in a defined population over a specific time period.<sup>71</sup>

**Incidence rate:** The rate at which new events, such as brain cancer diagnosis, occur in a population. The numerator is the number of new events that occur in a defined period; the denominator is the population at risk of experiencing the event during this period, sometimes expressed as person-time.<sup>71</sup>

**Latency period:** The delay between exposure to a disease causing agent and the appearance of manifestations of the disease.<sup>71</sup>

**Multiple comparisons:** Adjustment of the p values from a cluster investigation for implied comparisons with similar populations. One common way to adjust for multiple comparisons is by the Bonferroni adjustment:  $p_{adjusted} = 1 - (1 - p_{unadjusted})^n$ ; where  $n$  is the number of multiple comparisons.

Selection of a value of  $n$  is subjective. For example, in the current investigation,  $n$  could include fire stations in Brisbane, Queensland or Australia. It could refer to metropolitan fire stations or rural fire stations.

**p value (probability):** The probability that a test statistic would be as extreme as or more extreme than observed if the null hypothesis were true. The null hypothesis states that the results observed in a study are no different from what might have occurred as a result of chance alone. Investigators may arbitrarily set their own significance levels, but in most epidemiologic work, a study result whose probability value is less than 5% ( $p < .05$ ) or 1% ( $p < .01$ ) is considered sufficiently unlikely to have occurred by chance to justify the designation 'statistically significant'.<sup>71</sup>

The p value is a statistical measure which we use in studies to determine the likelihood that there is a true difference between the groups we are studying. It is a statement of the probability that the difference observed could have occurred by chance if the groups were really alike (ie. if the null hypothesis was true – that no true difference exists). Generally, before conducting the study, we decide on a pre-determined cut off value for the p value. Convention usually dictates using a p value of 0.05, but we could choose a different p value such as 0.1 or 0.025. When we choose  $p < 0.05$  as our cut-off, this means that a result  $< 0.05$  indicates there is less than a 5% likelihood that the difference observed between the two groups has occurred by chance alone. If 100 studies exactly the same as ours were conducted and found the same estimate of the SIR, in 95 of them (95%) this difference between the groups would not have occurred by chance.

**Risk factor:** is anything that increases a your chance of getting a disease such as cancer.<sup>3</sup>

## 6. Appendix

The International Agency for Research on Cancer (IARC) is a part of the World Health Organization and is the peak body for evaluating and determining the cancer risks associated with various agents, exposures and occupations. More information about the process of evaluating agents is available on the IARC website (<http://monographs.iarc.fr/ENG/Preamble/index.php>)

During an evaluation, all of the available evidence is considered and an agent is then classified into one of the following categories<sup>75</sup>

**Group 1:** The agent is carcinogenic to humans.

This category is used when there is sufficient evidence of carcinogenicity in humans. Exceptionally, an agent may be placed in this category when evidence of carcinogenicity in humans is less than sufficient but there is sufficient evidence of carcinogenicity in experimental animals and strong evidence in exposed humans that the agent acts through a relevant mechanism of carcinogenicity.

**Group 2.**

This category includes agents for which, at one extreme, the degree of evidence of carcinogenicity in humans is almost sufficient, as well as those for which, at the other extreme, there are no human data but for which there is evidence of carcinogenicity in experimental animals. Agents are assigned to either Group 2A (probably carcinogenic to humans) or Group 2B (possibly carcinogenic to humans) on the basis of epidemiological and experimental evidence of carcinogenicity and mechanistic and other relevant data. The terms probably carcinogenic and possibly carcinogenic have no quantitative significance and are used simply as descriptors of different levels of evidence of human carcinogenicity, with probably carcinogenic signifying a higher level of evidence than possibly carcinogenic.

**Group 2A:** The agent is probably carcinogenic to humans.

This category is used when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals. In some cases, an agent may be classified in this category when there is inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals and strong evidence that the carcinogenesis is mediated by a mechanism that also operates in humans. Exceptionally, an agent may be classified in this category solely on the basis of limited evidence of carcinogenicity in humans. An agent may be assigned to this category if it clearly belongs, based on mechanistic considerations, to a class of agents for which one or more members have been classified in Group 1 or Group 2A.

**Group 2B:** The agent is possibly carcinogenic to humans.

This category is used for agents for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. It may also be used when there is inadequate evidence of carcinogenicity in humans but there is sufficient evidence of carcinogenicity in experimental animals. In some instances, an agent for which there is inadequate evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals together with supporting evidence from mechanistic and other relevant data may be placed in this group. An agent may be classified in this category solely on the basis of strong evidence from mechanistic and other relevant data.

**Group 3: The agent is not classifiable as to its carcinogenicity to humans.**

This category is used most commonly for agents for which the evidence of carcinogenicity is inadequate in humans and inadequate or limited in experimental animals.

Exceptionally, agents for which the evidence of carcinogenicity is inadequate in humans but sufficient in experimental animals may be placed in this category when there is strong evidence that the mechanism of carcinogenicity in experimental animals does not operate in humans.

Agents that do not fall into any other group are also placed in this category.

An evaluation in Group 3 is not a determination of non-carcinogenicity or overall safety. It often means that further research is needed, especially when exposures are widespread or the cancer data are consistent with differing interpretations.

**Group 4: The agent is probably not carcinogenic to humans.**

This category is used for agents for which there is evidence suggesting lack of carcinogenicity in humans and in experimental animals. In some instances, agents for which there is inadequate evidence of carcinogenicity in humans but evidence suggesting lack of carcinogenicity in experimental animals, consistently and strongly supported by a broad range of mechanistic and other relevant data, may be classified in this group.

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5310 3579  
11 APR 2008

Queensland Health  
MINISTERIAL BRIEFING NOTE FOR INFORMATION

**TO** Minister Robertson  
**FROM:** General Manager  
Northern Area Health Service  
**SUBJECT** Queensland Health investigation into concerns regarding cases of cancer in firefighters working at Atherton Fire Station

Advisor	<i>Lane</i>
Dated	15/4/08
Further information required	Noted
Minister	<i>[Signature]</i>
Dated	17/4/08

RECEIVED
MINISTERIAL OFFICE
15 APR 2008
MINISTER
PER SEC
ADMIN
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ACTION
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### PURPOSE

To inform the Minister that the final report has been completed on the investigation of a cancer cluster at Atherton Fire Station and the Department of Emergency Services is ready to release the findings to staff at the Station.

### RECOMMENDATION

It is recommended that the Minister note the investigation of a cancer cluster at Atherton Fire Station has been completed and the final report is being released to the firefighters at the Station on 12 April 2008.

### FUNDING SOURCE

- Internal funding supported Queensland Health investigations.

### CURRENT ISSUES

- Queensland Fire and Rescue Service (QFRS) within the Department of Emergency Services is managing the investigation of a cancer cluster at Atherton Fire Station. The investigation was divided into two aspects. One involved an epidemiological assessment of the occurrence of cancer in past and current staff members at the Station. The second aspect of the investigation involved an assessment of possible hazardous exposures in the workplace.
- The Queensland Health report on the investigation was reviewed by the Queensland Health Cluster Investigation Steering Committee. Members include senior medical officers, epidemiologists and statisticians from Queensland Health, as well as experts from the University of Queensland and the Cancer Council, Queensland.
- Dr Tim Driscoll, an external epidemiology consultant, reviewed the Queensland Health report.
- From 1992 to 2007, five cases of cancer were identified amongst current and former staff members at Atherton Fire Station. There were three cases of brain cancer, one case of colon cancer and one case of prostate cancer. The cases of colon cancer and prostate cancer were not considered to be part of the statistical analysis, as they are different types of cancer occurring in different parts of the body. Expert advice indicated that the three brain cancer cases were all subtypes of a related group of brain cancers and thus warranted further statistical analysis as a group.
- There was an elevated rate of brain cancer amongst staff at Atherton Fire Station. The extent of this increase is difficult to determine due to uncertainties in the epidemiological assessment. This increased rate fits the epidemiological definition of a brain cancer cluster. The single bowel and prostate cancer cases are unrelated to the brain cancer cases and are not part of the brain cancer cluster.

*See Comments*

Author's Name: Megge Miller Position: Senior Epidemiologist Unit/District: Tropical Public Health Network Tel No: 4046 8524 Date: 8 April 2008	Cleared by: (DM/SD/SDIR) Name: Brad McGulloch Position: Director Tropical Public Health Network Unit/District: Northern Tel No: 4050 3600 Date: 8 April 2008	Cleared by: (GM/ED) Name: Dr Jill Newland Position: Director Clinical Support AHS: Northern Tel No: 4050 3641 Date: 10 April 2008	DD <i>[Signature]</i> 12/4
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- When examining the possible environmental hazards at the station there were no agents that were linked to causing brain cancer. It is unlikely that there is a hazard at the station that is responsible for the cancers.
- It is possible that the brain cancers may be related to firefighting as an occupation. The scientific literature has found inconsistent results relating to the possible association between firefighting and brain cancer. In light of the investigations conducted at Atherton Fire Station, the feasibility of an epidemiological assessment of brain cancer incidence of Queensland firefighters, particularly in relation to comparison with Atherton Fire Station should be conducted. In addition, assessment of the feasibility of further investigation of the possible risks associated with firefighting in relation to cancer, particularly brain cancer and those identified in the evaluation of the International Agency for Research on Cancer (e.g. testicular cancer, prostate cancer and non-Hodgkin lymphoma), is warranted. QFRS have indicated that they support these recommendations.
- Preliminary advice on the overall findings and recommendations was provided to staff of Atherton Fire Station on 7 April 2008.
- The Queensland Health report was submitted 'in-confidence' to the Deputy Commissioner, QFRS on 8 April 2008.
- Discussions have occurred at a senior level between Queensland Health and QFRS recommending:
  - The Director-General officially send the Queensland Health report to the Commissioner, QFRS.
  - The report release will occur at Atherton Fire Station at 5.30pm, 12 April 2008 in the presence of firefighters and the Minister of Emergency Services, Deputy Commissioner, QFRS, a representative from the United Firefighters' Union and Director, Tropical Population Health Network.
  - The Minister for Emergency Services intends to table the report in Parliament following the release of the report to the firefighters at Atherton Fire Station.
  - The media will be managed by QFRS, with Queensland Health available to answer health-related questions, particularly those related to cancer clusters and their investigation. QFRS have indicated that a media briefing will take place on 13 April 2008 in Brisbane.

#### PROPOSED ACTIONS

- The Acting Director-General to provide the Commissioner, Queensland Fire and Rescue Service with the final report on the investigation of a cancer cluster at Atherton Fire Station.

#### BACKGROUND

- Atherton Fire Station is a small rural fire station located in the Atherton Tablelands, approximately 60km southwest of Cairns. Currently, the station has 12 permanent staff and 15 auxiliary firefighters.
- There are community concerns about possible environmental causes of cancer and Queensland Health takes such concerns seriously. All potential cancer clusters reported to Queensland Health, including those relating to breast cancer, are investigated according to the Queensland Health *Guidelines for assessing clusters of non-communicable diseases* by a multidisciplinary team, including senior medical officers, epidemiologists, statisticians and environmental health officers. Queensland Health has these guidelines to ensure the systematic investigation of such concerns. Queensland Health developed the guidelines in consultation with independent experts from relevant disciplines.
- In June 2004, Queensland Health was notified about two cases of brain cancer amongst staff at Atherton Fire Station by QFRS.
- To address the concerns raised by Atherton Fire Station in 2004, a brief investigation was conducted. Information provided at the time indicated that only one of the cases had been stationed at Atherton Fire Station for more than three years, whereas scientific literature indicated that the usual latency

Author's Name: Megge Miller Position: Senior Epidemiologist Unit/District: Tropical Public Health Network Tel No: 4046 8524 Date: 8 April 2008	Cleared by: (DM/SD/SDIR) Name: Brad McCulloch Position: Director Tropical Public Health Network Unit/District: Northern Tel No: 4050 3600 Date: 8 April 2008	Cleared by: (GM/ED) Name: Dr Jill Newland Position: Director Clinical Support AHS: Northern Tel No: 4050 3641 Date: 10 April 2008	DG
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between exposure and the onset of a brain tumour was at least ten years. After consultation with medical experts, it was determined that a more detailed Queensland Health investigation of the two cases of brain cancer would not be able to find a possible cause of the cancers.

- In December 2007, QFRS staff raised concerns again with Queensland Health after it was revealed that three more staff at Atherton Fire Station had been recently diagnosed with cancer. At the time two of the staff were suspected to have been diagnosed with bowel cancer and one with testicular cancer, although it was later shown that two of the three had benign conditions and were not included in the investigation. These were additional to the previous two cases of brain cancer reported in 2004.
- In December 2007, QFRS established the Atherton Taskforce, chaired by the Deputy Commissioner. The purpose of the Taskforce was to coordinate the investigation into the health concerns raised by staff. Membership included QFRS, United Firefighters Union, Queensland Health and Workplace Health and Safety Queensland.
- Key staff from the Atherton Taskforce participated in meetings with Atherton Fire Station staff and their families, and these were held every three weeks to ensure that staff were updated about the progress of the investigation. A newsletter was also produced by QFRS to ensure information was being disseminated to concerned staff.

#### MEDIA IMPLICATIONS AND KEY MESSAGES

- Media liaison is being managed by QFRS in conjunction with Queensland Health, with Queensland Health to answer health-related questions. It is expected there will be significant media interest in the release of the report.

#### ATTACHMENTS:

- Attachment 1: Investigation of concerns regarding cases of cancer in firefighters working at Atherton Fire Station.
- Attachment 2: Summary of the review of the report by Dr Tim Driscoll, an external epidemiology consultant.

#### Minutes

Cluster investigations are very complex statistically & are often conducted in the glare of publicity - not necessarily conducive to good science. Our role here was a scientific one. Of note:

- There is a cancer cluster, yielding considerable between 20-60 fold increase in the rate of brain cancer.
- We can't tell whether this is chance, fire fighting or fire fighting in Atherton.
- There has been an external review of the QH report, the I also the views of the external review (see pp 5-6) about how this should be presented.
- The media, though, is being handled by your colleague

<p>Author's Name: Megge Miller          Position: Senior Epidemiologist          Unit/District: Tropical Public Health Network          Tel No: 4046 8524          Date: 8 April 2008</p>	<p>Cleared by: (DM/SB/SDIR)          Name: Eric McCulloch          Position: Director Tropical Public Health Network          Unit/District: Northern          Tel No: 4050 3600          Date: 8 April 2008</p>	<p>Cleared by: (GM/ED)          Name: Dr Jill Newland          Position: Director Clinical Support          AHS: Northern          Tel No: 4050 3641          Date: 10 April 2008</p>	<p>DG</p>
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**MINISTER'S COMMENTS**

RTI Release

<b>Author's Name:</b> Megge Miller <b>Position:</b> Senior Epidemiologist <b>Unit/District:</b> Tropical Public Health Network <b>Tel No:</b> 4046 8524 <b>Date:</b> 8 April 2008	<b>Cleared by: (DM/SD/SDIR)</b> <b>Name:</b> Brad McCulloch <b>Position:</b> Director Tropical Public Health Network <b>Unit/District:</b> Northern <b>Tel No:</b> 4050 3600 <b>Date:</b> 8 April 2008	<b>Cleared by: (GM/ED)</b> <b>Name:</b> Dr Jill Newland <b>Position:</b> Director Clinical Support <b>AHS:</b> Northern <b>Tel No:</b> 4050 3641 <b>Date:</b> 10 April 2008	<b>DG</b>
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RECEIVED	RECORDS TEAM	DEPT. OF HEALTH
	- 4 APR 2014	

Department RecFind No:	BR058729
Division/District:	Cairns and Hinterland HHS
File Ref No:	

**Briefing Note Noting**  
 The Honourable Lawrence Springborg MP  
 Minister for Health



21 MAR 2014

Requested by: Chief Executive, Cairns and Hinterland Hospital and Health Service

Action required by: 20 March 2014

**SUBJECT: Possible expansion of cancer cluster at Atherton Fire Station**

**Proposal**  
 That the Minister:

**Note** the likely need to re-open the 2008 investigation into the cancer cluster at Atherton Fire Station.  
**Note** attachments are available upon request.

~~APPROVED~~ NOT APPROVED      NOTED      NOTED

*[Signature]*  
 LAWRENCE SPRINGBORG  
 Minister for Health

1 14 114

*[Signature]*  
 Chief of Staff  
 27 March 2014.

Minister's comments

<i>Please make sure that Jack Springborg affair is made aware of this</i>
<i>[Signature]</i>

**Briefing note rating**

1      2      3      4      5  
 1 = (poorly written, little value, and unclear why brief was submitted). 5 = (concise, key points are explained well, makes sense)  
 Please Note: All ratings will be recorded and will be used to inform executive performance.

**COPY**

Department RecFind No:	BR058729
Division/HHS:	Cairns and Hinterland HHS
File Ref No:	

## Briefing Note for Noting Director-General

Requested by: Chief Executive, Cairns and Hinterland Hospital and Health Service

RECEIVED	RECORDS TEAM	DEPT OF HEALTH
	- 4 APR 2014	

Action required by: 20 March 2014

**SUBJECT: Possible expansion of cancer cluster at Atherton Fire Station**

### Proposal

That the Director-General:

- ✓ Note the likely need to re-open the 2008 investigation into the cancer cluster at Atherton Fire Station.

### Urgency

1. Urgent - Due to likely media interest.

### Headline Issues

2. The top issues are:

- s.47(3)(b) additional cancer cases in staff who worked the Atherton Fire Station, which Queensland Health investigated as a cancer cluster in 2008.
- Tropical Public Health Services Cairns is awaiting confirmation a \_\_\_\_\_ diagnosis before progressing with re-opening the investigation.

### Blueprint

3. How does this align with the Blueprint for Better Healthcare in Queensland?

- Health services focused on patients and people – Patients are at the centre of all we do.
- Empowering the community and our health workforce – Transparency promotes public confidence.

### Key issues

4. Tropical Public Health Services Cairns (TPHS) – part of the Cairns and Hinterland Hospital and Health Service - has been notified of possible cases of cancer in staff who have worked at Atherton Fire Station.
5. An assessment was undertaken in 2008 of three cases of brain tumour and two other cancer cases diagnosed over a 15 year period in staff who had worked at Atherton Fire Station.
6. One of the recommendations of the 2008 report *Queensland Health investigation into concerns regarding cases of cancer in firefighters working at Atherton Fire Station, April 2008* (Attachment 1) stated:  
*'The investigation will be reopened if another person at Atherton Fire Station is diagnosed with brain cancer.'*
7. \_\_\_\_\_ TPHS anticipates that the Fire and Emergency Services will wish to re-open the cancer cluster and will request that Queensland Health conduct the cluster assessment.
8. TPHS would use the *Queensland Health Guidelines: Assessment of clusters of non-communicable disease 2012*, ([http://www.health.qld.gov.au/ph/Documents/pdu/cluster assessment.pdf](http://www.health.qld.gov.au/ph/Documents/pdu/cluster%20assessment.pdf)) when conducting an assessment. As happened in 2008, it is anticipated that the role of the Queensland Fire and Emergency Services would be that of 'Cluster Manager' while TPHS' role would be that of 'Cluster Assessor'.

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Division/HHS:	BR058729
File Ref No:	Cairns and Hinterland HHS

9. The investigation in 2008 attracted significant statewide and national media coverage and these new cases are expected to lead to renewed community and media interest.

#### Background

10. In December 2007, Queensland Fire and Rescue Service management raised concerns regarding the number of cases of cancer amongst firefighters at Atherton Fire Station.
11. There was concern that something about the station or the house next to the station, where staff had resided in the past, was the cause of the cancers.
12. Queensland Health conducted an assessment to determine if there was an increased incidence of brain tumours amongst current and former workers at Atherton Fire Station and to determine if there were any possible hazardous agents at the Station that may have been associated with an increased cancer rate.
13. From 1992 to 2007, five cases of cancer were identified amongst current and former staff members at Atherton Fire Station. There were three cases of brain tumours, one case of colon cancer and one case of prostate cancer. The cases of colon cancer and prostate cancer were not included in the cluster analysis.
14. The 2008 report found:
- There was a higher than expected rate of brain cancer amongst staff at Atherton Fire Station which fitted the epidemiological definition of a brain cancer cluster.
  - When examining the possible environmental hazards at the station and the associated house, no hazards were identified that were known to be associated with brain tumours.
15. A copy of the ministerial briefing note accompanying the final report in 2008 is attached (Attachment 2).  
In October 2008, the house that was part of the investigation was demolished.
16. On 24 February 2014, the Assistant Commissioner, Queensland Fire and Emergency Services, Far Northern Region contacted the Director, Tropical Public Health Service (Cairns) to advise of s.47(3)(b) cancer cases in at Atherton Fire Station
- 17.

#### Consultation

18. The Assistant Commissioner, Queensland Fire and Emergency Services, Far Northern Region
19. Note that Dr Jeannette Young, Chief Health Officer has been briefed on this issue and has indicated that she is content with the proposed approach.

#### Attachments

20. Attachment 1: Queensland Health investigation into concerns regarding cases of cancer in firefighters working at Atherton Fire Station, April 2008
- Attachment 2: BR036961 - Ministerial Brief on Atherton Fire Station investigation final report.

Department RecFind No:	BR058729
Division/HHS:	Cairns and Hinterland HHS
File Ref No:	

**Recommendation**  
That the Director-General:

Note the likely need to re-open the 2008 investigation into the cancer cluster at Atherton Fire Station.

APPROVED/NOT APPROVED

NOTED

*Anchored Clean*  
*MICHAEL CUNNEY*

IAN MAYNARD  
Director-General

18 / 3 / 2014

To Minister's Office For Noting

Director-General's comments

THANK YOU FOR YOUR BRIEF
COULD WE PLEASE
① PROVIDE TO THE CMO - TO WAIVE WITH THE HHS IN RELATION TO THE PROCESS FROM THIS POINT.
② COULD THE CMO ENSURE THE COMMISSIONER FILE - RESULT IS KEPT FROM PRODUCE OF DOCUMENTS (MR LEE JOHNSON - 2633-3072)

Author Dr Richard Gair	Cleared by: (SD/Dir) Gillian Yearsley	Content verified by: (CEO/DDG/Div Head) Julie Hartley-Jones
Director, Tropical Public Health Services (Cairns)	Divisional Director, Division 1	Chief Executive
Cairns and Hinterland HHS	Cairns and Hinterland Hospital and Health Service	Cairns and Hinterland Hospital and Health Service
s73 6 March 2014	10 March 2014	18 March 2014

RECEIVED



HOEHL-001261 Recall

QCOS/003620 P1  
01 AUG 2014

RECORDS TEAM	
RECEIVED	06 AUG 2014
OLD	HEALTH
<input type="checkbox"/> Minister's office	

### Brief for Approval

Requested by:  
 Department

Department RecFind No:	BR059592
Division/HHS:	Cairns & Hinterland HHS
File Ref No:	

**SUBJECT:** Director-General to approve access to line-listed cancer data to Tropical Public Health Services (Cairns) to facilitate the re-investigation of the cancer cluster at the Atherton Fire Station

#### Recommendation/s

1. It is recommended that the Director-General approve the release of line-listed (nominal) data on brain cancer to the Director of Public Health (Dr Richard Gair) and the Senior Epidemiologist (Dr Sonia Harman) at Tropical Public Health Services Cairns (TPHS Cairns) in order to facilitate the re-investigation of the cancer cluster at the Atherton Fire Station (AFS).

#### Headline Issues

2. There has been another case of s.47(3)(b) cancer (from the same group of cancers as previous cases) recently diagnosed from the Atherton Fire Station (As per BR058729).
3. In light of this new case, Queensland Fire and Rescue has requested the re-opening of the investigation into the cancer cluster.
4. TPHS Cairns requires access to nominal (patient) data on brain cancers in the Atherton area to accurately investigate the incidence and prevalence of these conditions as part of the cancer cluster investigation.
5. The Queensland Cancer Registry requires approval from the Director-General to release this data.

#### Background

6. In 2007 a cluster of cancer cases, including cancer was identified in a group of fire fighters who worked and/or resided at the Atherton Fire Station.
7. Extensive epidemiological and environmental investigations were carried out in response to the potential cluster. The report concluded there was a higher than expected incidence of brain cancer cases, however a causal agent or link was not identified at that time.
8. Due to the sensitivities surrounding the cluster of cases and the investigation not identifying a conclusive link, the final report indicated that the investigation would be re-opened if additional cases presented.
9. This aligns with the blueprint for Better Healthcare in Queensland:
  - Health Services focused on patients and people -- patients are at the centre of all we do.
  - Empowering the community and our health workforce -- Transparency promotes public confidence.

#### Consultation

10. TPHS Cairns has been in consultation with Queensland Fire and Rescue and the Queensland Cancer Registry.
11. TPHS has previously discussed the re-investigation of the cancer cluster with the Office of the Chief Health Officer, and more recently consulted with the Senior Epidemiologist at the Communicable Diseases Branch, who was involved in the original investigation.

DRAFT

Department: RecFind No:	BR059592
Division/HHS:	Cairns & Hinterland HHS
File Ref No:	

APPROVED/NOT APPROVED NOTED

*Ian Maynard*  
 IAN MAYNARD  
 Director-General

04 AUG 2014

To Minister's Office for Approval   
 for Noting

Director-General's comments


Minister's Office Use Only  
 APPROVED/NOT APPROVED NOTED

NOTED

LAWRENCE SPRINGBORG  
 Minister for Health

Chief of Staff

/ /

/ /

Minister's comments


Briefing note rating 1 2 3 4 (1 = poor and 4 = excellent)

Author Dr Sonia Harmen	Cleared by: (SD/Dir) Gillian Yearsley	Content verified by: (CEO/DDG/Div Head) Julie Hartley-Jones
Manager of Health Surveillance Tropical Public Health Services (Cairns)	Divisional Director Family Health & Wellbeing Cairns & Hinterland HHS	Chief Executive Cairns & Hinterland HHS
s73 30 May 2014	2 June 2014	
Cleared by: Dr Richard Gair, 30 May 2014	Cleared by: Robin Moore, COO	30 June 2014

28 OCT 2014

# Brief for Approval

Requested by:

Department

Minister's office

Department RecFind No:	Page 1 of 2
Division/HHS:	BR060085
File Ref No:	HSCI

**SUBJECT: Investigation into asbestos exposure and asbestos-related disease in areas surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane**

## Issue(s)

1. The Health Minister has announced an investigation into asbestos related disease outcomes among people who lived near the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne, and also those who lived near the James Hardie fibrolite plant in Doggett St, Newstead.
2. A preliminary epidemiological report examining asbestos related disease in those living or formerly living in the area surrounding the plants has been requested by the Director-General within two days.
3. The epidemiologist who has been tasked to perform this preliminary work is not able to access the required information from the Queensland Cancer Registry without written approval from the Director-General.
4. While the Department of Health is the custodian for the Queensland Cancer registry data, the mesothelioma registry is not held by the Department of Health, Queensland. Access to more specific information regarding mesothelioma, including exposure data, is available from the mesothelioma registry, however, the procedure to gain access to this information can take several months.

## Background

5. The asbestos plant in Gaythorne operated from 1936 until 1983, while the plant in Newstead operated from the mid 1930s until its closure in 1983.
6. There is an investigation being conducted by the Health Department in Victoria into community risk related to asbestos exposure from a Wunderlich plant in Sunshine, Melbourne. The preliminary epidemiological assessment undertaken as part of this investigation looked at Cancer registry data for cases of mesothelioma up to three kilometres from the factory site.

## Recommendation/s

7. It is recommended that the Director-General
8. Approve the release of the following information from the Queensland Cancer Registry:
  - Line listings of mesothelioma cases in the suburbs of: Everton Hills, Arana Hills, Mitchelton, Everton Park, Stafford, Stafford Heights, Gaythorne, Enoggera, Grange, Newmarket, Keperra, Ashgrove, McDowall, Alderley, Lutwyche, Windsor, Wilston, Kelvin Grove, Red Hill, Paddington, Petrie Terrace, Brisbane City, Kangaroo Point, East Brisbane, Norman Park, Morningside, Eagle Farm, Hamilton, Ascot, Clayfield, Woolloowin, Albion, Bulimba, Balmoral, Hawthorne, New Farm, Teneriffe, Newstead, Bowen Hills, Fortitude Valley, Spring Hill and Herston from the Queensland Cancer registry to Daniel Francis, Senior Epidemiologist, Metro North Public Health Unit.
  - The following data items are to be released: QCR Number, Surname, First Name, DOB, Sex, Diagnosis Date, Site Code, Morphology Code, Diagnosis street address, Diagnosis Suburb, Diagnosis postcode, 2006 SLA, 2011 SLA, Date of Death, Underlying Cause of Death, Description, Address at Death, Suburb at Death, Postcode at Death, Occupation, Indigenous status
9. Sign the attached letter to Ms Carly Scott, Registrar, Queensland Cancer Registry (Attachment 1)

## Attachments

10. Attachment 1: Letter to Ms Carly Scott, Registrar, Queensland Cancer Registry – DG075323

Department RecFind No:	BR060085
Division/HHS:	HSCI
File Ref No:	

~~NOTED~~ / APPROVED

*Ian Maynard*  
 Ian Maynard  
 Director-General

28 OCT 2014

To Minister's Office for Approval for Noting

Director-General's comments


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NOTED

NOTED

LAWRENCE SPRINGBORG  
Minister for Health

Chief of Staff

/ /

/ /

Minister's comments


Briefing note rating 1 2 3 4 (1 = poor and 4 = excellent)

Author Dr Suzanne Huxley	Cleared by. (SD/Dir) Sophie Dwyer	Content verified by. (CEO/DDG/Div Head) Dr Jeannette Young
Senior Medical Officer	Executive Director	Chief Health Officer
Health Protection Unit	Health Protection Unit	HSCI Division
s73		
28 October 2014	28 October 2014	28 October 2014

Red diagonal watermark: "RTI Released"



Enquiries to: Ms Sophie Dwyer  
 Executive Director  
 Health Protection Unit  
 Telephone:  
 File Ref: DG075323

28 OCT 2014

Miss Carly Scott  
 Registrar  
 Queensland Cancer Registry  
 553 Gregory Terrace  
 FORTITUDE VALLEY QLD 4006

Dear Miss Scott

You may be aware that the Minister has announced an investigation into asbestos related disease outcomes among people who lived near the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne, and also those who lived near the James Hardie fibrolite plant in Doggett Street, Newstead.

I have requested a preliminary epidemiological report examining asbestos related disease in those living or formerly living in the area surrounding the plants to inform this investigation.

To enable this to occur I have approved release of the following information from the Queensland Cancer Registry:

Line listings of mesothelioma cases in the suburbs of Everton Hills, Arana Hills, Mitchelton, Everton Park, Stafford, Stafford Heights, Gaythorne, Enoggera, Grange, Newmarket, Keperra, Ashgrove, McDowall, Alderley, Lutwyche, Windsor, Wilston, Kelvin Grove, Red Hill, Paddington, Petrie Terrace, Brisbane City, Kangaroo Point, East Brisbane, Norman Park, Morningside, Eagle Farm, Hamilton, Ascot, Clayfield, Wooloowin, Albion, Bulimba, Balmoral, Hawthorne, New Farm, Teneriffe, Newstead, Bowen Hills, Fortitude Valley, Spring Hill and Herston from the Queensland Cancer registry to Daniel Francis, Senior Epidemiologist, Metro North Public Health Unit.

The following data items are to be released: QCR Number, Surname, First Name, DOB, Sex, Diagnosis Date, Site Code, Morphology Code, Diagnosis street address, Diagnosis Suburb, Diagnosis postcode, 2006 SLA, 2011 SLA, Date of Death, Underlying Cause of Death, Description, Address at Death, Suburb at Death, Postcode at Death, Occupation, Indigenous status

Should you require further information, the Department of Health's contact is Ms Sophie Dwyer, Executive Director, Health Protection Unit, on telephone s73

Yours sincerely

Ian Maynard  
 Director-General  
 Queensland Health

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# Brief for Approval

Requested by:

Department  Minister's office

RECEIVED	RECORDS TEAM	DEPT OF HEALTH
3 07/10/2014 8 2		

Page 1 of 2

Department RecFind No:	BR060086
Division/HHS:	HSCI
File Ref No:	HC003910

**SUBJECT: Investigation into asbestos exposure and asbestos-related disease in areas surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane**

## Issue(s)

1. The Health Minister has announced an investigation into asbestos related disease outcomes among people who lived near the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne, and also those who lived near the James Hardie fibrolite plant in Doggett St, Newstead.
2. A multi-agency working group will be assembled to assess the history of the sites, examine the epidemiology of asbestos related disease in those living or formerly living in the area surrounding the plants, with the primary aim of determining if there are any ongoing health risks to the local residents due to past practices and make recommendations as appropriate.
3. The Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine, Melbourne.
4. The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne. A one kilometre danger zone around the former Wunderlich asbestos plant has been advised in the Courier Mail article. There are five schools within the one kilometre zone.
5. There is likely to be a high level of community concern, especially among people currently or formerly living in the nominated one kilometre zone. The media story related to the Sunshine Wunderlich factory in Victoria noted that families living 1.5 kms from the factory had suffered disease outcomes. The investigation may raise community expectation of intensive sampling and remediation within the nominated one kilometre zone or even more widely. There is also the potential for claims against government agencies with responsibility for authorisation of asbestos plant including subsequent land use approvals.
6. To undertake this body of work, the Health Protection Unit (HPU) will need to employ an additional staff member which will take its staff allocation above the MOHRI for HPU.

## Background

7. The asbestos plant in Gaythorne operated from 1936 until 1983, while the plant in Newstead operated from the mid-1930s until its closure in 1983.
8. In a media report in the Courier Mail, 27 October 2014, a lawyer who specialises in asbestos related compensation, Mr Thady Blundell, is quoted to claim there have been up to 20 compensation claims involving residents who lived near the Gaythorne plant.

## Consultation

9. A multi-agency working group is proposed to be assembled, led by the Department of Health and including staff from the HPU, Metro North Public Health Unit, a thoracic physician (Dr Fong), Brisbane City Council (BCC), Asbestos Unit, Workplace Health and Safety and contaminated land Unit, Department of Environment and Heritage Protection (DEHP). The Department of Housing and Public Works may also be included if appropriate.
10. Consultation will also be undertaken with Legal Unit and other internal and external parties as required, including the Interagency Asbestos Group.
11. A process of community engagement and consultation will be undertaken including seeking information from the community members via 13HEALTH

## Recommendations

It is recommended that the Director-General:

1. Endorse the Draft Terms of Reference for the investigation (Attachment 1)
2. Sign the letter to the Chief Executive Metro North Hospital and Health Service (Attachment 2)
3. Sign the letters inviting interagency participation (Attachments 3-6)

## Attachments

- Attachment 1: Draft Terms of Reference for the investigation
- Attachment 2: Letter to the Chief Executive, Metro North Hospital and Health Service – DG075324
- Attachment 3: Letter to the Director-General, DEHP – DG075325
- Attachment 4: Letter to the Divisional Manager, BCC – DG075326
- Attachment 5: Letter to the Deputy Director-General, DJAG – DG075327
- Attachment 6: Letter to Dr Fong – DG075329

Department RecFind No:	BR060086
Division/HHS:	HSCI
File Ref No:	HC003910

NOTED / APPROVED

*Ian Maynard*

Ian Maynard  
Director-General

29 OCT 2014

To Minister's Office for Approval   
for Noting

Director-General's comments

Please prepare a media statement.

Minister's Office Use Only

APPROVED/NOT APPROVED NOTED

NOTED

LAWRENCE SPRINGBORG  
Minister for Health

Chief of Staff

Minister's comments

Briefing note rating

1 2 3 4 (1 = poor and 4 = excellent)

Author Dr Suzanne Huxley	Cleared by: (SD/Dir) Sophie Dwyer	Content verified by: (CEO/DDG/Div Head) Dr Jeannette Young
Senior Medical Officer	Executive Director	Chief Health Officer
Health Protection Unit	Health Protection Unit	HSCI Division
s73		
28 October 2014	28 October 2014	28 October 2014

# DRAFT: Terms of Reference

## Investigation into asbestos exposure and asbestos-related disease surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane

### Purpose

The purpose of this investigation is to determine if there are any ongoing health risks for residents living in proximity to the site of the Wunderlich asbestos plant at Bellevue Street, Gaythorne or the site of the James Hardie fibrolite plant at Doggett Street, Newstead.

### Scope

The scope of this investigation is to:

- Examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead; and
- Establish the history of the sites, including historical practices that may have led to community exposure to asbestos, and their subsequent management as contaminated sites;
- Examine the likely exposure to asbestos in the community from the asbestos plants by reviewing relevant literature which assesses asbestos exposure levels around similar plants and review of other identified sources of information relating risk of exposure to asbestos to distance from an asbestos plant;
- Establish as far as possible the epidemiology of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead;
- Undertake community engagement and consultation with possible exposed community members;
- Make recommendations on health protection or mitigation measures to manage ongoing risks from past practices to appropriate agencies and the community.

### Background of Investigation

The Wunderlich asbestos plant in Gaythorne operated from 1936 until the early 1980's, while the James Hardie fibrolite plant in Newstead operated from the mid-1930's until its closure in 1983.

There has been extensive media coverage of the Wunderlich asbestos plant in Sunshine, Victoria as well as related community concern, following the release of an investigative report by a media outlet. As a result the Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine.

The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne.





## Multi-Agency Working Group Membership

A multi-agency working group, led by the Department of Health, will be assembled to undertake this investigation. It will include staff from:

- Health Protection Unit, Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council planning
- Asbestos Unit, Department of Justice and Attorney General and
- DEHP contaminated land group

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required.

## Conduct of the Investigation

It is planned that this investigation will be undertaken in two phases.

**Phase 1** will involve:

- Epidemiological investigation of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead (initial report within seven (7) days;
- Preliminary information gathering including examination of the history of the sites, including historical practices that may have led to community exposure to asbestos;
- Review of relevant literature which assesses asbestos exposure levels around similar plants and review of other identified sources of information relating risk of exposure to asbestos to distance from an asbestos plant;
- Preliminary community engagement and consultation with possible exposed community members;

**Phase 2** will involve:

- Examination current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead; and
- Compilation of recommendations on health protection or mitigation measures to manage ongoing risks from past practices to appropriate agencies and the community.

## Issues

There are a number of issues that may prevent a useful outcome to the investigation. These include

- Epidemiological investigation will only locate those with disease outcomes who still live in the area. There may be many others who have moved in the intervening time (possibly interstate or overseas).
- In order to assess the possible ongoing risks, the working group will need to review options regarding environmental testing and the extent of testing that may be required.
- Depending on the outcome of the investigation there is no current commitment to undertake any remediation activities in the area. If needed, this would be extremely costly across such a wide area.
- The presence of a number of sensitive sites in the area (including 5 schools) is likely to create further anxieties in regard to the investigation.



Enquiries to: Sophie Dwyer  
Executive Director  
Health Protection Unit  
Telephone: [redacted]  
File Ref: DG075324

29 OCT 2014

Ms Kerrie Mahon  
Acting Chief Executive  
Metro North Hospital and Health Service  
PO Box 150  
RBWH Post Office  
HERSTON QLD 4029



Dear Ms Mahon *Kerrie,*

The Honourable Lawrence Springborg MP, Minister for Health, has announced an investigation into deaths and illness among persons who lived close to former asbestos factory sites in Bellevue St, Gaythorne and Doggett St, Newstead. Both of these sites are within the area covered by the Metro North Public Health Unit.

This investigation will be led by Ms Sophie Dwyer, Executive Director, Health Protection Unit, Department of Health. The successful conduct of this investigation will require the participation of staff from the Metro North Public Health Unit. I appreciate your support in this collaborative effort.

Please find enclosed the draft terms of reference for this investigation. I would be happy to provide further information regarding this investigation if required. If you have any questions please contact Ms Dwyer on telephone [redacted]

Yours sincerely

*Ian Maynard*  
Ian Maynard  
Director-General

RTI REQUEST

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Prepared by: Dr Suzanne Huxley  
Senior Medical Officer  
Health Protection Unit

s73  
28 October 2014

Cleared by: Sophie Dwyer  
Executive Director  
Health Protection Unit

28 October 2014

Cleared by: Dr Jeannette Young  
Chief Health Officer  
Chief Health Officer Branch

28 October 2014

Cleared by: Dr Michael Cleary  
COO and DDG  
Health Service and Clinical Innovation Division

October 2014

Reference DG075324

RTI Release



Enquiries to: Sophie Dwyer  
Executive Director  
Health Protection Unit  
Telephone: [redacted]  
File Ref: DG075325

29 OCT 2014

Mr Jon Black  
Director-General  
Department of Environment and Heritage Protection  
Level 13, 400 George Street  
Brisbane QLD 4000



Dear Director-General

I am writing to request the nomination of a suitable officer from your Department to participate in an investigation being led by the Department of Health. The Honourable Lawrence Springborg MP, Minister for Health, has announced an investigation into deaths and illness among persons who lived close to former asbestos factory sites in Bellevue St, Gaythorne and Doggett St, Newstead.

This investigation will be led by Ms Sophie Dwyer, Executive Director, Health Protection Unit, Department of Health, and a multi-agency working group will be assembled to participate in this investigation. It is planned that this group will comprise:

- Health Protection Unit, Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council
- Department of Justice and Attorney General, Asbestos Unit
- Department of Environment and Heritage Protection.

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required. An initial discussion was held with the inter-agency Asbestos Group on 27 October 2014.

Please find enclosed the draft terms of reference for this investigation. Would you please advise the name and contact details for a suitable nominee from your Division to participate in the multi-agency working group to Dr Suzanne Huxley, on [redacted] or [redacted] as soon as possible.

If you have any questions, please contact Ms Dwyer on telephone [redacted] s73 or Dr Huxley on telephone [redacted]. I appreciate your support in this collaborative effort.

Yours sincerely,

Ian Maynard  
Director-General

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28 October 2014

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Executive Director  
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28 October 2014

Cleared by: Dr Jeannette Young  
Chief Health Officer  
Chief Health Officer Branch

28 October 2014

Cleared by: Dr Michael Cleary  
COO and DDG  
Health Service and Clinical Innovation Division

Reference: DG075325

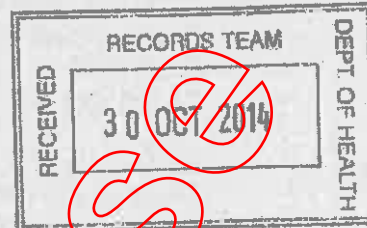
RTI Release



29 OCT 2014

Ms Vicki Toms  
Divisional Manager  
City Planning and Sustainability  
Brisbane City Council  
GPO Box 1434  
Brisbane QLD 4001

Enquiries to: Sophie Dwyer  
Executive Director  
Health Protection Unit  
Telephone: [redacted]  
File Ref: s733075326



Dear Ms Toms *Vicki,*

I am writing to request a nomination of an officer from your Division to participate in an investigation being led by the Department of Health. The Honourable Lawrence Springborg MP, Minister for Health, has announced an investigation into deaths and illness among persons who lived close to former asbestos factory sites in Bellevue St, Gaythorne and Doggett St, Newstead.

This investigation will be led by Ms Sophie Dwyer, Executive Director, Health Protection Unit, Department of Health, and a multi-agency working group will be assembled to participate in this investigation. It is planned that this group will comprise:

- Health Protection Unit, Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council
- Asbestos Unit, Department of Justice and Attorney General
- Department of Environment and Heritage Protection Contaminated Land Group.

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required. An initial discussion was held with the Inter-agency Asbestos Group on 27 October 2014.

Please find enclosed the draft terms of reference for this investigation. Would you please advise the name and contact details for a suitable nominee from your Division to participate in the multi-agency working group to Dr Suzanne Huxley, on telephone [redacted] s73 or [redacted], as soon as possible.

If you have any questions, please contact Ms Dwyer on telephone [redacted], or Dr Huxley on telephone [redacted]. I appreciate your support in this collaborative effort.

Yours sincerely

*Ian Maynard*  
Ian Maynard  
Director-General

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**Prepared by:** Dr Suzanne Huxley  
Senior Medical Officer  
Health Protection Unit  
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28 October 2014

**Cleared by:** Sophie Dwyer  
Executive Director  
Health Protection Unit  
28 October 2014

**Cleared by:** Dr Jeannette Young  
Chief Health Officer  
Chief Health Officer Branch  
28 October 2014

**Cleared by:** Dr Michael Cleary  
COO and DDG  
Health Service and Clinical Innovation Division

**Reference:** DG075326

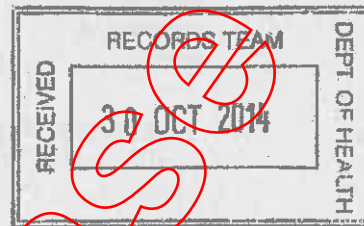
RTI Release



29 OCT 2014

Enquiries to: Sophie Dwyer  
Executive Director  
Health Protection Unit  
Telephone: [redacted]  
File Ref: DG075327

Mr Simon Blackwood  
Deputy Director-General  
Office of Fair and Safe Work Queensland  
Department of Justice and Attorney-General  
Level 20 State Law Building  
50 Ann Street  
BRISBANE QLD 4000



Dear Deputy Director-General *Simon,*

I am writing to request the nomination of an officer from your Department to participate in an investigation being led by the Department of Health. The Honourable Lawrence Springborg MP, Minister for Health, announced an investigation into deaths and illness among persons who lived close to former asbestos factory sites in Bellevue St, Gaythorne and Doggett St, Newstead.

This investigation will be led by Ms Sophie Dwyer, Executive Director, Health Protection Unit, Department of Health, and a multi-agency working group will be assembled to participate in this investigation. It is planned that this group will comprise:

- Health Protection Unit, Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council
- Department of Justice and Attorney General, Asbestos Unit
- Department of Environment and Heritage Protection Contaminated Land Group

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required. An initial discussion was held with the Inter-agency Asbestos Group on 27 October 2014.

Please find enclosed the draft terms of reference for this investigation. Would you please advise the name and contact details for a suitable nominee from your Division to participate in the multi-agency working group to Dr Suzanne Huxley, on telephone [redacted] s73, or [redacted], as soon as possible.

If you have any questions, please contact Ms Dwyer on telephone [redacted], or Dr Huxley on telephone [redacted]. I appreciate your support in this collaborative effort.

Yours sincerely

*Ian Maynard*  
Ian Maynard  
Director-General

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28 October 2014

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Chief Health Officer Branch  
28 October 2014

Cleared by: Dr Michael Cleary  
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Reference: DG075327

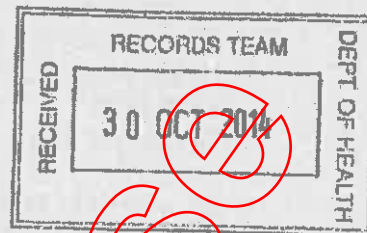
RTI Release



29 OCT 2014

Professor Kwun Fong  
Thoracic Physician  
The Prince Charles Hospital  
Rode Road  
CHERMSIDE QLD 4032

Enquiries to: Sophie Dwyer  
Executive Director  
Health Protection Unit  
Telephone: [redacted]  
File Ref: DG673829



Dear Professor Fong

I am writing to request your participation in an investigation being led by the Department of Health. The Honourable Lawrence Springborg MP, Minister for Health, has announced an investigation into deaths and illness among persons who lived close to former asbestos factory sites in Bellevue St, Gaythorne and Doggett St, Newstead.

This investigation will be led by Ms Sophie Dwyer, Executive Director, Health Protection Unit, Department of Health, and a multi-agency working group will be assembled to participate in this investigation. It is planned that this group will comprise:

- Health Protection Unit, Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician
- Brisbane City Council
- Asbestos Unit, Department of Justice and Attorney General and
- Department of Environment and Heritage Protection Contaminated Land Group

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required. An initial discussion was held with the Inter-agency Asbestos Group on 27 October 2014.

Please find enclosed the draft terms of reference for this investigation. If you are able to participate in the multi-agency task group, please contact Dr Suzanne Huxley, on telephone [redacted] or via email at [redacted]

If you have any questions, please contact Ms Dwyer on telephone [redacted], or Dr Huxley on telephone [redacted]. I appreciate your support in this collaborative effort.

Yours sincerely

*Ian Maynard*  
Ian Maynard  
Director-General

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Prepared by: Dr Suzanne Huxley  
Senior Medical Officer  
Health Protection Unit

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28 October 2014

Cleared by: Sophie Dwyer  
Executive Director  
Health Protection Unit

28 October 2014

Cleared by: Dr Jeannette Young  
Chief Health Officer  
Chief Health Officer Branch

28 October 2014

Cleared by: Dr Michael Cleary  
COO and DDG  
Health Service and Clinical Innovation Division

Reference: DG075329

RTI Release

**Title - Risks to community from closed Asbestos factories in Brisbane (Wunderlich at Gaythorne and James Hardie at Newstead)**

The Victorian Department of Health was contacted to obtain information on their investigation of potential exposure of the community from an old asbestos factory at Sunshine. In response to Director-General's questions I can advise as follows:

**1: Summary of how they have approached the issues with asbestosis raised in the 7.30 Report**

- a) In the first instance, they requested the Cancer Council to supply data on relevant asbestos related cancers particularly mesothelioma to determine if there was an increased risk for the nearby community, using a 1km, 2km and 3km radius, and then the whole local government area. There was a higher number of cases than expected, however this was not statistically significant due to the small numbers.

The particular focus on 1-3km reflects the work undertaken by the Herald Sun.

Queensland: We have commenced work with the epidemiologist at Metro North Public Health Unit to undertake similar work. Victoria has yet to access the mesothelioma register, which we are intending to do.

- b) They have established an Expert Advisory Group to provide advice on both the epidemiology and testing

Queensland: We are planning to establish an investigation group with representatives of relevant agencies. The Queensland investigation will require the cooperative effort of a number of agencies including Department of Environment and Heritage (contaminated land), Department of Justice and Attorney General (Workplace Health and Safety), Brisbane City Council and Metro North Health and Hospital Service.

- c) They are in the process of developing a testing plan to test around the factory and in roof cavities of local residences. They will choose a small number of houses and determine further work based on outcomes of the initial test.

Queensland: Advice from experts the Interagency Asbestos Group (interagency group chaired by DJAG) indicated that the problem with roof testing in the Queensland context is that if fibres are present they may not be related to the factory but the current or previous use of asbestos cement roofing products. A sampling plan will be developed by the Investigation group. The sampling plan needs to incorporate intelligence on the historical practices at the site (noting its proximity to a train line used to supply materials to the site) and the literature regarding asbestos levels.

communities where a factory is present. Initial advice is that the maximum range where local residents may have been at increased risk of higher than background asbestos exposure may be in the order of 1km.

- d) The Department is preparing information for community members on the issue, including information on where to seek help if required.

Queensland: This is a useful strategy that can be incorporated into the plan. A communication strategy will be part of the plan. It is intended to use 13HEALTH as a contact for people to obtain information, and also to track reports of exposure.

## 2. Overview of methodology for tracking/contacting patients

Victoria is using well established epidemiological methods to examine cancer data (which is notifiable) to assess patterns of disease in the community rather than contacting patients. They are not contacting patients. It is recognized that caution needs to be taken in interpreting the data. Geographical data does not distinguish between residential and occupational exposure. It is reasonable to assume that some local residents may also have worked at the factory.

Queensland: Queensland will follow similar approaches and will remain in contact with Victoria regarding addressing challenges in interpretation of data.

## 3. How Victorian planning requirements impact on exposures and health's response

The Environmental Protection Agency had already deemed the Sunshine site as a priority site and consequently oversees any development on the site. It is understood that the site closed in 1977 and was vacated in 1982. As part of the clean-up, a hole was dug on the site, asbestos waste product was buried and the hole was subsequently capped off. They reported that the capping is decaying at the edge and there is some evidence of erosion, which will need to be addressed. Also, there has been some illegal dumping on the site. The air has been monitored and there is no concern regarding fibres being released.

The area is an industrial precinct, and houses have been built around the area (approximately 2000 within a radius of 800m). ~~A existing factory building is brick and~~

~~much of it has been redeveloped.~~

Queensland: A similar regulatory system is in place in Queensland, managed by the Department of Environment and Heritage. Both locations are in residential/commercial areas. The Gaythorne site still has many of the original buildings standing (corrugated iron factory buildings with asbestos cement roofs), while the James Hardie site at Newstead has been substantially redeveloped. We will also be tracking down former employees of Queensland Health (as workplace health and safety was part of QH at the time) to identify if there are any more sites of concern.

A brief has been submitted which provides the terms of reference for the multi-agency working group, and letters to the respective agencies seeking their assistance.

**Resource implications:**

This investigation will use existing resources to the following components of the investigation:

- Epidemiology investigation (Metro North Public Health Unit)
- Examination of departmental records (all relevant agencies)
- 13Health and reporting
- Media

In order to facilitate coordination and to write the report, an additional staff member is required.

Environmental sampling and testing costs cannot be finalised until a testing plan is developed as part of the work of the multi-agency working group.

**Response for Deputy Director-General clearance**

**Author:** Sophie Dwyer  
Executive Director, Health Protection  
Chief Health Officer Branch

<sup>s73</sup>  
28 October 2014

**Cleared by:** Dr Jeannette Young  
Chief Health Officer

28 October 2014 – Yvonne Li, Senior Director CHOB

**Cleared by:** Dr Michael Cleary  
Deputy Director-General  
Health Service and Clinical Innovation

October 2014

**Elizabeth Brown**

---

**From:** Elizabeth Brown  
**Sent:** Friday, 24 October 2014 2:57 PM  
**To:** Uma Rajappa  
**Subject:** RE: Media enquiry: Asbestos-related illness - factory

In regard to the James Hardie site at Pinkenba / Meeandah, DEHP has confirmed that it is on the EMR.  
Liz

---

**From:** Uma Rajappa  
**Sent:** Friday, 24 October 2014 12:14 PM  
**To:** Elizabeth Brown  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory  
**Importance:** High

---

**From:** HProtSD\_dchocorro  
**Sent:** Friday, 24 October 2014 11:51 AM  
**To:** Uma Rajappa  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory  
**Importance:** High

Good day

Please refer to below, further information regarding this media issue.

Sincerely,

**Tania Glen**  
**A/Executive Support Officer for Sophie Dwyer**

Health Protection Unit | Chief Health Officer Branch  
t. 07 s73

---

**From:** CHO CHO  
**Sent:** Friday, 24 October 2014 11:49 AM  
**To:** HProtSD\_dchocorro  
**Cc:** Uma Rajappa  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory  
**Importance:** High

Hi Uma,

Please see email from Media, note that this is also being required from the Minister's office.

Thanks  
Crystella

**Correspondence Team**  
Chief Health Officer Branch | Health Services and Clinical Innovation  
Department of Health | Queensland Government  
Level 7, 147-163 Charlotte Street  
GPO Box 48, BRISBANE QLD 4001

t. 07 s73  
e. CHO CHO@health.qld.gov.au | www.health.qld.gov.au

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Phone:  
Crystella:  
Tracey (Thursday & Friday)  
Vanessa:  
Jess:



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Government

Great state. Great opportunity.

---

**From:** Kate Robinson  
**Sent:** Friday, 24 October 2014 11:44 AM  
**To:** CHO CHO  
**Cc:** Sdlo  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory

Hi again,

Can you please let the unit know the same journalist has also requested a response from the Minister's Office around this issue.

The Minister's Office have asked that public health review the story and advise what steps we will take to prove/disprove any similar situation at Gaythorne (and are we aware of any other sites?).

The Victorian case is compelling and it will be hard to argue why we would be different.

Thanks  
Kate

---

**From:** Kate Robinson  
**Sent:** Friday, 24 October 2014 10:44 AM  
**To:** CHO CHO  
**Cc:** news ([news@health.qld.gov.au](mailto:news@health.qld.gov.au))  
**Subject:** Media enquiry: Asbestos-related illness - factory

Hi CHO CHO

We've received an enquiry from the Courier Mail. They have been following a story in Victoria this week of an investigation into asbestos-related illnesses that may be linked to a factory (16 separate cases I believe). The factory is owned by a company called Wunderlich (story link below):

<http://www.abc.net.au/news/2014-10-22/asbestos-related-illness-linked-to-factory-in-melbourne/5833120>

The CM have discovered this same company had an asbestos-cement sheet factory in Brisbane (Gaythorne). From what I can see this factory closed in 1983.

They have asked if there has been an investigation involving this factory or if there is one planned. Can you please advise if QH is aware of any such investigation or if there are plans to.

Deadline is today. The story will be filed on Sunday for Monday's paper.



Many thanks  
Kate

---

Kate Robinson  
Senior Media Officer  
Media and Communications Unit | Office of the Director-General  
Department of Health | Queensland Government  
147 Charlotte Street Brisbane QLD 4000

t. 07 573

e | [www.health.qld.gov.au](http://www.health.qld.gov.au)



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RTI Release

## HProtSD\_dchocorro

---

**From:** Uma Rajappa  
**Sent:** Friday, 24 October 2014 3:23 PM  
**To:** HProtSD\_dchocorro; Sophie Dwyer  
**Cc:** Elizabeth Brown  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

**Categories:** With ED for Clearance

Hi Sophie,

We discussed the issue with Kate from the media unit and she believes that we just answer with the information we have.

1. We are not aware of any investigation being undertaken or planned in relation to the Wunderlich factory site in Gaythorne.
2. Another site is the James Hardie Site at Pinkenba/Meeandah. This site is currently a cement factory.
3. Both the sites are listed on the Environmental Management Register under the Environmental Protection Act (EMR). This is the responsibility of the Department of Environment and Heritage Protection
4. The EMR clearly identifies that the above two sites were used for asbestos manufacture and disposal .

Regards

Uma

**From:** Uma Rajappa  
**Sent:** Friday, 24 October 2014 12:14 PM  
**To:** Elizabeth Brown  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory  
**Importance:** High

**From:** HProtSD\_dchocorro  
**Sent:** Friday, 24 October 2014 11:51 AM  
**To:** Uma Rajappa  
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**Importance:** High

Good day

Please refer to below, further information regarding this media issue.

Sincerely,

**Tania Glen**  
**A/Executive Support Officer for Sophie Dwyer**

Health Protection Unit | Chief Health Officer Branch  
t. 07 s73

**From:** CHO CHO  
**Sent:** Friday, 24 October 2014 11:49 AM  
**To:** HProtSD\_dchocorro  
**Cc:** Uma Rajappa  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory  
**Importance:** High

Hi Uma,

Please see email from Media, note that this is also being required from the Minister's office.

Thanks  
Crystella

**Correspondence Team**  
Chief Health Officer Branch | Health Services and Clinical Innovation  
Department of Health | Queensland Government  
Level 7, 147-163 Charlotte Street  
GPO Box 48, BRISBANE QLD 4001  
T 07 3227 6617  
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Always upload new templates from QHEPS: <http://qheps.health.qld.gov.au/corro-templates/home.htm>

**Phone:**  
Crystella: s73  
Tracey (Thursday & Friday)  
Vanessa:  
Jess:



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Government

**From:** Kate Robinson  
**Sent:** Friday, 24 October 2014 11:44 AM  
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**Cc:** Sdio  
**Subject:** FW: Media enquiry: Asbestos-related illness - factory

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The Minister's Office have asked that public health review the story and advise what steps we will take to prove/disprove any similar situation at Gaythorne (and are we aware of any other sites?).

The Victorian case is compelling and it will be hard to argue why we would be different.

Thanks  
Kate

**From:** Kate Robinson  
**Sent:** Friday, 24 October 2014 10:44 AM  
**To:** CHO CHO

**Cc:** news ([news@health.qld.gov.au](mailto:news@health.qld.gov.au))

**Subject:** Media enquiry: Asbestos-related illness - factory

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The CM have discovered this same company had an asbestos-cement sheet factory in Brisbane (Gaythorne). From what I can see this factory closed in 1983.

They have asked if there has been an investigation involving this factory or if there is one planned. Can you please advise if QH is aware of any such investigation or if there are plans to.

Deadline is today. The story will be filed on Sunday for Monday's paper.

Many thanks

Kate

Kate Robinson  
Senior Media Officer  
Media and Communications Unit | Office of the Director-General  
Department of Health | Queensland Government  
147 Charlotte Street Brisbane QLD 4000  
t. 07 55373  
e. [www.health.qld.gov.au](http://www.health.qld.gov.au)



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**Andrea Casasola**

---

**From:** Sophie Dwyer  
**Sent:** Monday, 27 October 2014 9:41 AM  
**To:** Michael Cleary  
**Cc:** Jeannette Young; Suzanne Huxley; John Piispanen; Uma Rajappa  
**Subject:** RE: Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

Thanks Michael

We will include the following

- BCC planning, as they manage land issues
- Workplace Health and Safety (lead agency asbestos)
- DEHP contaminated land group
- Metro north
  - o Dr Fong
  - o Public health unit

The PHU have indicated they are happy to work closely with us on this.

Steps will include, in the first instance

- Look back at records regarding the history of the site
- Epidemiology of the community surrounding site

We will assess from there. I note the report states that there have been a number of legal settlements as well. I might ask legal if there is anything we can do to obtain information on them.

Any other suggestions most welcome.

Regards

Sophie Dwyer PSM  
Executive Director, Health Protection  
Chief Health Officer Branch

Ph: s73  
Mob:

---

**From:** Michael Cleary  
**Sent:** Monday, 27 October 2014 9:22 AM  
**To:** Sophie Dwyer  
**Subject:** Fwd: Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

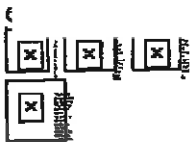
Kind Regards,

Michael

Dr Michael Cleary PSM  
MBBS (UQ) MHA (UNSW) FACEM FRACMA AFACHSE

Chief Operations Officer  
Health Service and Clinical Innovation Division  
Department of Health | Queensland Government  
Level 16, 147 – 163 Charlotte Street Brisbane QLD 4000  
t. 07 s73

[www.health.qld.gov.au](http://www.health.qld.gov.au)



Begin forwarded message:

**From:** Michael Cleary  
**Date:** 27 October 2014 8:59:35 AEST  
**To:** Sophie Dwyer < >  
**Cc:** Jeannette Young < >  
**Subject:** Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

Hi,

Thanks for looking into this matter.

As discussed a multi-agency task group would be good. Focus could be as indicated on looking at Disease frequency and Environmental Hazards. Perhaps we could as a first step we could draft some TOR.

I suggest that Dr K Fong from TPCH and someone involved with the Mesothelioma Register would be useful.

Could we see about getting something through today please.

<http://www.couriermail.com.au/news/queensland/investigation-into-links-between-asbestosrelated-cancers-and-brisbane-suburbs-near-factories/story-fnihsrf2-1227102923022?login=1>

Could HSCI Corro please set up a weekly update.

Kind regards

Michael

## Elizabeth Brown

---

**From:** Uma Rajappa  
**Sent:** Monday, 27 October 2014 9:45 AM  
**To:** Elizabeth Brown  
**Subject:** FW: Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

---

**From:** Sophie Dwyer  
**Sent:** Monday, 27 October 2014 9:41 AM  
**To:** Michael Cleary  
**Cc:** Jeannette Young; Suzanne Huxley; John Plispanen; Uma Rajappa  
**Subject:** RE: Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

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Any other suggestions most welcome.

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Sophie Dwyer PSM  
Executive Director, Health Protection  
Chief Health Officer Branch

Ph: 07 s73  
Mob

---

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**Sent:** Monday, 27 October 2014 9:22 AM  
**To:** Sophie Dwyer

**Subject:** Fwd: Investigation into links between asbestos-related cancers and Brisbane suburbs near factories | The Courier-Mail

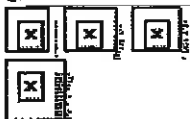
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Michael

Dr Michael Cleary PSM  
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Chief Operations Officer  
Health Service and Clinical Innovation Division  
Department of Health | Queensland Government  
Level 16, 147 – 163 Charlotte Street Brisbane QLD 4000

t. s73

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Could HSCI Corro please set up a weekly update.

Kind regards

Michael



**Elizabeth Brown**

---

**From:** Elizabeth Brown  
**Sent:** Monday, 27 October 2014 12:28 PM  
**To:** Suzanne Huxley  
**Subject:** Wunderlich draft TOR (3)  
**Attachments:** Wunderlich draft TOR.docx; Wunderlich draft TOR (3).docx

Hi Suzanne

Comments from both Uma and I – done somewhat separately so not aligned.

Liz

RTI Release

# DRAFT Terms of Reference

## Investigation into asbestos exposure and asbestos-related disease surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane

### Scope and Purpose

The purpose of this investigation is to:

- ~~Assess~~ Establish the history of the sites including historical practices that have led to community exposure to asbestos;
- ~~examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead~~
- ~~Assess~~ Establish as far as possible the epidemiology of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead;
- ~~Examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead; and~~
- ~~Recommendations on health protection or mitigation measures to manage ongoing risks from past practices~~

Comment [EB1]: Recommendations do not match with the other purposes - if the recommendations are to be realistic, we would only need to undertake dot point 3. The others have no relevance.

Comment [EB2]: Who will be responsible for implementing the measures that will be recommended?

This investigation will be limited to an area with a radius of approximately 1km around both sites.

### Background of Investigation

The Wunderlich asbestos plant in Gaythorne operated from 1936 until the early 1980's, while the James Hardie fibrolite plant in Newstead operated from the mid-1930's until its closure in 1983.

There has been extensive media coverage of the Wunderlich asbestos plant in Sunshine, Victoria as well as related community concern, following the release of an investigative report by a media outlet. As a result the Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine.

The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne.

### Multi-Agency Task Working Group Membership

A multi-agency task group will be assembled to undertake this investigation. It will include staff from:

- Health Protection Unit, Queensland Department of Health
- Metro North Public Health Unit, Metro North Hospital and Health Service



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- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council planning
- Workplace Health and Safety Asbestos Unit, Department of Justice and Attorney General and
- DEHP contaminated land group
- Mesothelioma register ??

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Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required.

### Custom toolbar issues

There are a number of issues that may prevent the a useful outcome to the investigation. These include

- Epidemiological investigation will only locate those with disease outcomes who still live in the area, there may be many others who have moved in the intervening time (possibly interstate or overseas).
- In order to assess the possible ongoing risks, a door to door taskforce will be needed. This relies on a large amount of manpower and an intensive sampling regime. Owner or occupier permission will be needed to undertake this task.
- Depending on the outcome of the investigation there is no current commitment to undertake any remediation activities in the area. If needed, this would be extremely costly across such a wide area.
- The presence of a number of sensitive sites in the area (including 5 schools) is likely to create further anxieties in regard to the investigation.

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RTI RELEASE

# DRAFT Terms of Reference

## Investigation into asbestos exposure and asbestos-related disease surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane

### Scope and Purpose

The purpose of this investigation is to:

- ~~examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead~~
- Assess-Examine:
  - the epidemiology of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead;
  - current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead due to past practices, and
- Recommend health protection or mitigation measures to manage ongoing risks from past practices to appropriate agencies and community

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This investigation will be limited to an area with a radius of approximately 1km around both sites.

### Background of Investigation

The Wunderlich asbestos plant in Gaythorne operated from 1936 until the early 1980's, while the James Hardie fibrolite plant in Newstead operated from the mid-1930's until it's closure in 1983.

There has been extensive media coverage of the Wunderlich asbestos plant in Sunshine, Victoria as well as related community concern, following the release of an investigative report by a media outlet. As a result the Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine.

The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Belgrove Avenue, Gaythorne.

### Multi-Agency Task Working Group Membership

A multi-agency task group will be assembled to undertake this investigation. It will include staff from:

- Health Protection Unit, Queensland Department of Health (Chair)
- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service

Comment [UR1]: Could be a working group of the IAG (inter-agency asbestos group)

Great state. Great opportunity.



Brisbane City Council planning

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• Workplace Health and Safety Asbestos Unit, Department of Justice and Attorney General, and

DEHP contaminated land group

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Mesothelioma register??

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Consultation will also be undertaken with the inter-agency asbestos group, Legal Unit and other internal and external parties as required.

Custom toolbar

RTI Release

## Uma Rajappa

---

**From:** Suzanne Huxley  
**Sent:** Monday, 27 October 2014 1:12 PM  
**To:** Sophie Dwyer  
**Cc:** Uma Rajappa  
**Subject:** Wunderlich brief and draft TOR

Hi Sophie

Please find attached the brief and draft TORs incorporating Uma and Liz Brown's comments. Mary is looking into how many schools may be in the 1 km radius area.

The Victorian investigation looked at cases of mesothelioma in a 2km radius but I am not sure if the entire investigation was looking at a 2km radius or just the case finding.

Cheers

Suzanne

Dr Suzanne Huxley  
Senior Medical Officer  
Health Protection Unit

s73

Phone

RTI Release

**Elizabeth Brown**

---

**From:** Elizabeth Brown  
**Sent:** Monday, 27 October 2014 4:07 PM  
**To:** Suzanne Huxley  
**Cc:** Uma Rajappa  
**Subject:** Wunderlich draft TOR (2) (2) (2)  
**Attachments:** Wunderlich draft TOR (2) (2) (2).docx

Hi Suzanna

Uma reminded me that Dr Cleary indicated he wanted a rep from the meso register on the working group.  
Liz

RTI Release

## DRAFT Terms of Reference

### Investigation into asbestos exposure and asbestos-related disease surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane

#### Scope and Purpose

The purpose of this Investigation is to:

- Establish the history of the sites including historical practices that may have led to community exposure to asbestos;
- Undertake a literature search to investigate evidence for the likely risk of exposure based on the distance from the asbestos plant;
- Establish as far as possible the epidemiology of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead;
- Examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead; and
- Make recommendations on health protection or mitigation measures to manage ongoing risks from past practices to appropriate agencies and the community.

This investigation will be limited to an area with a radius of approximately 1km around both sites based on evidence from relevant literature, unless epidemiological evidence indicates otherwise.

Comment [E01]: Can we state this categorically at present given we have no information about past practices or spi disease outcome data?

#### Background of Investigation

The Wunderlich asbestos plant in Gaythorne operated from 1936 until the early 1980's, while the James Hardie fibrolite plant in Newstead operated from the mid-1930's until it's closure in 1983.

There has been extensive media coverage of the Wunderlich asbestos plant in Sunshine, Victoria as well as related community concern, following the release of an investigative report by a media outlet. As a result the Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine.

The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne.

#### Multi-Agency Working Group Membership

A multi-agency task group, led by the Department of Health, will be assembled to undertake this investigation. It will include staff from:

- Health Protection Unit, Department of Health

Great state. Great opportunity.



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Government



- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council planning
- Asbestos Unit, Department of Justice and Attorney General and
- DEHP contaminated land group
- Australian Mesothelioma Registry

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required.

## Issues

There are a number of issues that may prevent a useful outcome to the investigation. These include

- Epidemiological investigation will only locate those with disease outcomes who still live in the area. There may be many others who have moved in the intervening time (possibly interstate or overseas).
- In order to assess the possible ongoing risks, the working group will need to review options regarding environmental testing and the extent of testing that may be required.
- Depending on the outcome of the investigation there is no current commitment to undertake any remediation activities in the area. If needed, this would be extremely costly across such a wide area.
- The presence of a number of sensitive sites in the area (including 5 schools) is likely to create further anxieties in regard to the investigation.

**Suzanne Huxley**

---

**From:** Suzanne Huxley  
**Sent:** Monday, 27 October 2014 4:12 PM  
**To:** Sophie Dwyer  
**Subject:** Asbestos Wunderlich  
**Attachments:** DG Brief Gaythrone asbestos.docx; Att 1 Draft TOR Asbestos investigation.docx

Hi Sophie

Hopefully this is ready to go away.

I have done this as a brief for noting. If we want sign off on the TORs then I will need to change the format to a brief for approval.

Please let me know either way.

Regards

Suzanne

Dr Suzanne Huxley  
Senior Medical Officer  
Health Protection Unit

s73

Phone:

RTI Release

**Brief for Noting**

Requested by:

 Department  Minister's office

Department RecFind No:	
Division/HHS:	
File Ref No:	

**SUBJECT: Investigation into asbestos exposure and asbestos-related disease in areas surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane.**

**Issue(s)**

1. The Health Minister has announced an investigation into asbestos related disease outcomes among people who lived near the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne, and also those who lived near the James Hardie fibrolite plant in Doggett St, Newstead.
2. A multi-agency working group will be assembled to assess the history of the sites, examine the epidemiology of asbestos related disease in those living or formerly living in the area surrounding the plants, examine any ongoing health risks due to past practices and make recommendations as appropriate
3. The Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine, a Melbourne suburb.
4. The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne. A one km danger zone around the former Wunderlich asbestos plant has been advised in the Courier Mail article. There are five (5) schools within the one km zone.
5. There is likely to be a high level of community concern, especially among people currently or formerly living in the nominated one kilometre zone. The media story related to the Sunshine Wunderlich factory in Victoria noted that families living 1.5 kms from the factory had suffered disease outcomes. The investigation may raise community expectation of intensive sampling and remediation within the nominated one kilometre zone or even more widely. There is also the potential for claims against government agencies with responsibility for authorisation of asbestos plant including subsequent land use approvals.
6. To undertake this body of work the Health Protection Unit will need to employ an additional staff member which will take its staff allocation above the MOHRI for HPU.

**Background**

7. The asbestos plant in Gaythorne operated from 1936 until 1983, while the plant in Newstead operated from the mid-1930's until its closure in 1983.
8. In a media report in the Courier Mail, 27 October 2014, a lawyer who specialises in asbestos related compensation, Mr Thady Blundell, is quoted to claim there have been up to 20 compensation claims involving residents who lived near the Gaythorne plant.

**Consultation**

9. A multi-agency working group is proposed to be assembled, led by the Department of Health and including staff from the Health Protection Unit, Metro North Public Health Unit, a thoracic physician (Dr Fong), Brisbane City Council, Asbestos Unit, Workplace Health and Safety and contaminated land Unit, DEHP. The Department of Housing and Public Works may also be included if appropriate.
10. Consultation will also be undertaken with Legal Unit and other internal and external parties as required, including the Interagency Asbestos Group.

**Attachments**

Attachment 1: Draft Terms of Reference for the Inter-agency working group

Department RecFind No:	
Division/HHS:	
File Ref No:	

**NOTED**

**Dr Michael Cleary  
 Chief Operations Officer and  
 Deputy Director-General  
 Health Service and Clinical  
 Innovation Division**

/ /

**Deputy Director-General's comments**

Author	Cleared by: (SD/Dir)	Content verified by: (CEO/DDG/Div Head)
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RTI REQUESTS

# DRAFT: Terms of Reference

## Investigation into asbestos exposure and asbestos-related disease surrounding the Wunderlich plant in Gaythorne and the James Hardie fibrolite plant in Newstead, Brisbane

### Scope and Purpose

The purpose of this investigation is to:

- Establish the history of the sites, including historical practices that may have led to community exposure to asbestos;
- Examine the likely exposure to asbestos in the community from the asbestos plants by reviewing relevant literature which reviews asbestos exposure levels around similar plants and review of other identified sources of information evidence relating risk of exposure to asbestos to distance from an asbestos plant;
- Establish as far as possible the epidemiology of asbestos-related disease near the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead;
- Examine current asbestos exposure for people living near the sites of the Wunderlich asbestos plant, Gaythorne and the James Hardie fibrolite plant, Newstead; and
- Make recommendations on health protection or mitigation measures to manage ongoing risks from past practices to appropriate agencies and the community.

### Background of Investigation

The Wunderlich asbestos plant in Gaythorne operated from 1936 until the early 1980's, while the James Hardie fibrolite plant in Newstead operated from the mid-1930's until its closure in 1983.

There has been extensive media coverage of the Wunderlich asbestos plant in Sunshine, Victoria as well as related community concern, following the release of an investigative report by a media outlet. As a result the Office of the Chief Health Officer, Victorian Department of Health, is currently undertaking an urgent investigation to examine issues related to asbestos exposure from the Wunderlich asbestos factory in Sunshine.

The Courier Mail, 27 October 2014, contained media reports relating to asbestos exposure and asbestos-related disease linked to the Wunderlich asbestos plant in Bellevue Avenue, Gaythorne.

### Multi-Agency Working Group Membership

A multi-agency task group, led by the Department of Health, will be assembled to undertake this investigation. It will include staff from:

- Health Protection Unit, Department of Health

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- Metro North Public Health Unit, Metro North Hospital and Health Service
- Thoracic physician (Dr Fong), The Prince Charles Hospital and Health Service
- Brisbane City Council planning
- Asbestos Unit, Department of Justice and Attorney General and
- DEHP contaminated land group

Consultation will also be undertaken with the Inter-agency Asbestos Group, Legal Unit and other internal and external parties as required.

## Issues

There are a number of issues that may prevent a useful outcome to the investigation. These include

- Epidemiological investigation will only locate those with disease outcomes who still live in the area. There may be many others who have moved in the intervening time (possibly interstate or overseas).
- In order to assess the possible ongoing risks, the working group will need to review options regarding environmental testing and the extent of testing that may be required.
- Depending on the outcome of the investigation there is no current commitment to undertake any remediation activities in the area. If needed, this would be extremely costly across such a wide area.
- The presence of a number of sensitive sites in the area (including 5 schools) is likely to create further anxieties in regard to the investigation.

RTI RELEASED