

# The *Healthwise* Kwinana Alumina Refinery Cancer Incidence Study

Presenter - Dr Michael Donoghue  
Chief Medical Officer – Alcoa of Australia

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# Healthwise

## Background

- 1994 Alcoa initiated Healthwise,
  - A scientific study to determine whether there are any relationships between health outcomes and working at Alcoa in Australia.
- Healthwise is the only study of its kind in Australia's aluminium industry.
  - Conducted by some of Australia's leading health researchers at Monash University and the University of Western Australia.
- International Scientific Advisory Board has been established.
  - Internationally renowned and independent experts plus union and Alcoa representatives.
- The most comprehensive occupational health study in Australia
- Participation rate of >90% high compared to similar studies.

# Healthwise

## When, who and what.

- Those with continuous service of 90 days or more from 1 January 1983 have been included
- People may not be aware they are in the study.
- Three components of the Healthwise research program.
  - Cross sectional study (respiratory)
  - Cancer and mortality study
  - New starters respiratory study
- This presentation covers cancer incidence at Kwinana.

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## How are the results obtained?

- Cancer registers are searched.
- The number of cancers observed within the Alcoa workforce (past and present) is determined, then compared with the number expected on the basis of general population rates.
- The results are standardised for age.
  - Our workforce population is matched to those of a similar age in the general population.
- The different types of cancers are also analysed.
  - Study compares rates for all of the major cancer categories

# Healthwise

## Latest Kwinana Research

- This detailed study of Kwinana was requested by the WA Health Department to address repeated allegations by a small group of individuals about the health of Alcoa workers.
- The WA Health Department acknowledged that the Healthwise information is the most comprehensive and complete data available.
- The “Healthwise” researchers analysed cancer rates experienced within Kwinana Refinery as a whole,
- And examined cancer rates in specific work areas claimed by campaigners to be areas causing cancer to workers.
- The following slides share the results of this Kwinana study.

# Healthwise

## Kwinana refinery site

- 2257 male employees (past and present)
- 136 cancer cases observed in Kwinana group
- 158 expected on the basis of general population cancer rates.
- The number of observed cases is statistically no different to the number of expected cases.
- There were 7 cancer cases observed among 218 female employees. This was statistically no different to the number of cases expected on the basis of rates for females in the general population.
  - Female numbers were too small to analyse by different cancer types.

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## Kwinana - ever worked in K58 or K59 or Building 150 (Admin)

- 1104 employees.
- 63 cancer cases observed
- 82 expected in the general population
- Once again, fewer cases occurred in K58, K59 and the admin building than would have been expected on the basis of general population rates

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## Kwinana - ever worked in K58 or K59

- 875 employees. (past and present)
- 52 cancer cases observed in Kwinana group
- 71 expected on the basis of general population cancer rates
- Fewer cases occurred in K58 and K59 than would have been expected on the basis of general population rates

# Healthwise

## Kwinana - ever worked in K58

- 688 employees. (past and present)
- 38 cancer cases observed in Kwinana group
- 57 expected on the basis of general population cancer rates
- Fewer cases occurred in K58 than would have been expected on the basis of general population rates.

# Healthwise Update

## Male workers who have ever worked at Kwinana

Cancer Category	Obs	Exp	SIR
All cancers	136	158.7	85.7
Lip, oral cavity, pharynx	5	9.6	51.9
Digestive Organs	32	34.6	92.4
Respiratory intrathoracic	20	23.7	84.5
Melanoma	13	20.7	63.0
Mesothelioma	4	2.4	163.9
Male genitals	31	35.0	88.6
Urinary Tract	9	8.4	106.9
Brain / other CNS	5	3.0	166.6
Thyroid / other endocrine	1	1.2	85.8
Lymphoid / haematopoietic	6	12.1	49.6
Other	10	7.7	129.4

SIR Values:  
100 means same as  
pop. Rate.

Blue = Significantly  
lower than expected

Red = Significantly  
higher than expected

Black = Not  
significantly different

# Healthwise Update

## Male workers who have ever worked in K58 or K59 or Building 150 at Kwinana

Cancer Category	Obs	Exp	SIR
All cancers	63	82.2	76.6
Lip, oral cavity, pharynx	4	5.0	79.9
Digestive Organs	20	18.0	110.9
Respiratory intrathoracic	6	12.3	48.8
Melanoma	4	10.6	37.7
Mesothelioma	3	1.3	232.7
Male genitals	16	18.2	88.0
Urinary Tract	4	4.4	91.8
Brain / other CNS	1	1.6	64.5
Thyroid / other endocrine	0	0.6	
Lymphoid / haematopoietic	1	6.2	16.2
Other	4	4.0	100.3

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# Healthwise Update

## Male workers who have ever worked in K58 or K59 at Kwinana

Cancer Category	Obs	Exp	SIR
All cancers	52	71.4	72.8
Lip, oral cavity, pharynx	3	4.2	70.8
Digestive Organs	18	15.8	114.0
Respiratory intrathoracic	6	11.0	54.8
Melanoma	3	8.8	33.9
Mesothelioma	2	1.1	176.8
Male genitals	10	16.0	62.5
Urinary Tract	4	3.8	104.5
Brain / other CNS	1	1.3	76.9
Thyroid / other endocrine	0	0.5	-
Lymphoid / haematopoietic	1	5.3	18.9
Other	4	3.5	115.8

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# Healthwise Update

## Male workers who have ever worked in K58 at Kwinana

Cancer Category	Obs	Exp	SIR
All cancers	38	57.3	66.3
Lip, oral cavity, pharynx	1	3.4	29.4
Digestive Organs	11	12.7	86.7
Respiratory intrathoracic	4	8.8	45.6
Melanoma	3	7.1	42.2
Mesothelioma	1	0.9	110.4
Male genitals	9	12.9	70.1
Urinary Tract	4	3.1	130.2
Brain / other CNS	1	1.1	95.6
Thyroid / other endocrine	0	0.4	-
Lymphoid / haematopoietic	1	4.3	23.5
Other	3	2.8	108.3

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# Healthwise

## Summary of Kwinana findings

- None of the cancer types occurred more frequently than would have been expected on the basis of the general population rates, within the refinery or within any Kwinana department.
- None of the cancer types raised by external interest groups (ie brain, lymph and haematopoietic) occurred more frequently than would have been expected on the basis of general population rates.

# Healthwise

## Where to from here?

- Healthwise will continue.
- The next analysis of death and cancer statistics will take place in 2 to 4 years when further data becomes available.