Atlas of Healthcare Variation
Methodology | Lung cancer

General points:

- Data are not presented where the number of people was less than 10 (or less than 5 for indicator 3). This is to preserve confidentiality.
- People were assigned to their district health board (DHB) or regional cancer network (RCN) of domicile at the time of their cancer diagnosis unless otherwise noted. People who could not be assigned to a DHB were excluded from all analyses.
- Ethnicity data presented is prioritised ethnic group (Māori, non-Māori).
- Cancer rates in this Atlas are crude rates i.e. not age standardised. See Ministry of Health website www.moh.govt.nz and HQSC's general cancer incidence atlas www.hqsc.govt.nz/atlas/cancer for age standardised cancer incidence rates.
- Where there was more than one lung cancer registration for a patient the first diagnosis date was used for all analyses.
- The small numbers of lung cancer patients and wide confidence intervals for some DHBs make comparisons between DHBs difficult. The twenty DHBs in New Zealand are grouped geographically into four RCN areas. These RCN areas with a larger population base provide more stable indicator proportions for comparison.
- Note that indicator 2 and 5 only include patients first diagnosed in 2012 as the NNPAC radiotherapy code prior to July 2011 included both specialist appointments and radiotherapy treatment.

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- From the Ministry of Health: Chris Lewis and Jenny Hendrix for their assistance in providing the New Zealand Cancer Registry data and explaining the data collection processes.

Standard deviation
Data are presented as standard deviation from the mean.
Standard deviation is a statistical measure of variation from a mean. Assuming that recorded instances are normally distributed (ie, they are in the usual 'bell-shaped curve'), 68 percent of all recorded instances would be expected to be within one standard deviation either side of the mean and 95 percent within two standard deviations. The two 'middle' shades will be within one standard deviation of the mean.

Confidence intervals
Data for each DHB or RCN is presented as either rate per 100,000 population or percentage. Upper and lower confidence intervals were calculated to 95 percent level of confidence.

Additional data presented in Appendix tables

Indicator #1:	Lung cancer incidence, by DHB or RCN
Numerator	Number of people with first lung cancer registration in period 1 January 2008 – 31 December 2012
Denominator	Resident population, Statistics NZ population estimates
Data source	New Zealand Cancer Registry (NZCR), Statistics NZ
Analysis	Crude lung cancer incidence for 2008-12. See Table 1 in Appendix 2 for age specific rates by ethnic group (2008-12) - age groups 15–39, 40–59, 60–69, 70–79, 80+ - ethnic groups: Māori, non-Māori
Comments	Includes all NZCR registrations with ICD-10-AM diagnosis codes C33 or C34 (trachea, bronchus or lung).

Indicator #2:	Percentage of people with lung cancer who received anti-cancer treatment, by DHB or RCN
Numerator	Number of people with lung cancer who received radiotherapy, chemotherapy drugs or surgery, or a combination of these, within two years of diagnosis
Denominator	Number of patients aged 15 years and older with their first lung cancer registration in the period 1 January 2012 – 31 December 2012
Data source	NZCR, National Minimum Dataset, National Non-Admitted Patients Collection, Pharmaceutical Collections database
Analysis	Analysis includes 2012 patients only as the NNPAC radiotherapy code prior to July 2011 included both specialist appointments and radiotherapy treatment.
Inclusions/ exclusions	Includes lung cancer ICD-10-AM diagnosis codes C33–C34. See procedure codes for surgery (indicator #3) and chemical names for chemotherapy drugs (indicator #4a/4b) and diagnosis, procedure and purchase unit codes used for radiotherapy (indicator #5).

Indicator #3:	Percentage of people with lung cancer treated with surgery following diagnosis, by DHB or RCN
Numerator	Number of people with non-small cell lung cancer (NSCLC) and a pathological diagnosis who had surgery within two years of diagnosis
Denominator	Number of people with non-small cell lung cancer (NSCLC) aged 15 years and older with their first lung cancer registration in the period 1 January 2008 – 31 December 2012 and a pathological diagnosis.
Data source	NZCR, National Minimum Dataset
Analysis	Sub-analysis by five year average (2008-2012), three year rolling average (2008-10, 2009-11, 2010-12), age, ethnicity and gender.
Comment	Includes patient with the following ACHI (7th edition) procedure codes for lung cancer: 3843801 Lobectomy of lung — Lobectomy of lung 3844100 Lobectomy of lung — Radical lobectomy 9016900 Partial resection of lung — Endoscopic wedge resection of lung 3844001 Partial resection of lung — Radical wedge resection of lung 3843800 Partial resection of lung — Segmental resection of lung 3844000 Partial resection of lung — Wedge resection of lung 3844101 Pneumonectomy — Radical pneumonectomy 3843802 Pneumonectomy — Pneumonectomy
Inclusions/ exclusions	Includes lung cancer (ICD-10-AM diagnosis codes C33–C34) patients with a pathological diagnosis i.e. patients with the following basis of diagnosis codes: 5 (cytology or haematology), 6 (histology of metastases) or 7 (histology of primary). Excludes patients with the following small cell lung cancer (SCLC) morphology codes: M-80413, M-80423, M-80433, M-80443, and M-80453.
Further analysis	See Appendix 1 Table 2 for a summary of surgery for all NSCLC and pathologically confirmed NSCLC patients and Table 3 for a summary of surgery for NSCLC patients by extent of disease.

Indicator #4a:	Percentage of people with non-small cell lung cancer (NSCLC) dispensed chemotherapy drugs following diagnosis, by DHB or RCN
Numerator	Number of people with NSCLC cancer who were dispensed one or more chemotherapy drugs
Denominator	Number of people with NSCLC cancer aged 15 years or older with their first lung cancer registration in the period 1 January 2008 – 31 December 2012
Data source	NZCR, Pharmaceutical Collections database
Analysis	Sub-analysis by five year average (2008-2012), three year rolling average (2008-10, 2009-11, 2010-12), age, ethnicity and gender.
Comments	Includes the following chemotherapy drugs: *Chemical ID* *Chemical name* 3825 Carboplatin 3826 Cisplatin 1369 Cyclophosphamide 3834 Docetaxel 3813 Doxorubicin 3916 Erlotinib hydrochloride 2433 Etoposide 3847 Etoposide phosphate 3966 Gefitinib 3842 Gemcitabine hydrochloride 3815 Paclitaxel 2319 Vinblastine sulphate 2320 Vincristine sulphate 3816 Vinorelbine
Inclusions/ exclusions	Includes all lung cancer (ICD-10-AM diagnosis codes C33–C34) patients but excludes small cell lung cancer patients (morphology codes: M-80413, M-80423, M-80433, M-80443, and M-80453).

Indicator #4b:	Percentage of people with small cell lung cancer (SCLC) dispensed chemotherapy drugs following diagnosis, by DHB or RCN
Numerator	Number of people with SCLC who were dispensed one or more chemotherapy drugs
Denominator	Number of people with SCLC , aged 15 years or older with their first lung cancer registration in the period 1 January 2008 – 31 December 2012, who were confirmed by histology or cytology
Data source	NZCR, Pharmaceutical Collections database
Analysis	Sub-analysis by five year average (2008-2012), three year rolling average (2008-10, 2009-11, 2010-12), age, ethnicity and gender.
Comments	Includes the following chemotherapy drugs: *Chemical ID* *Chemical name* 3825 Carboplatin 3826 Cisplatin 1369 Cyclophosphamide 3834 Docetaxel 3813 Doxorubicin 3916 Erlotinib hydrochloride 2433 Etoposide 3847 Etoposide phosphate 3966 Gefitinib 3842 Gemcitabine hydrochloride 3815 Paclitaxel 2319 Vinblastine sulphate 2320 Vincristine sulphate 3816 Vinorelbine
Inclusions/ exclusions	The SCLC group included all cases of non-small cell lung cancer (morphology codes: M-80413, M-80423, M-80433, M-80443, and M-80453). Includes only lung cancer (ICD-10-AM diagnosis codes C33–C34) patients with a pathological diagnosis i.e. patients with the following basis of diagnosis codes: 5 (cytology or haematology), 6 (histology of metastases) or 7 (histology of primary).

Indicator #5:	Percentage of people with lung cancer receiving radiotherapy , by DHB or RCN
Numerator	The number of people who received radiotherapy in the two years following lung cancer diagnosis
Denominator	Number of people aged 15 years and older with their first lung cancer registration in the period 1 January 2012 – 31 December 2012
Data source	NZCR, National Minimum Dataset and National Non-Admitted Patients Collection
Analysis	Analysis includes 2012 people only as the NNPAC radiotherapy code prior to July 2011 included both specialist appointments and radiotherapy treatment.
Inclusions	Includes lung cancer ICD-10-AM diagnosis codes C33–C34. See Appendix 2 for table of diagnosis, procedure and purchase unit codes.

Other analyses in Appendix 3

Indicator	Percentage of people with lung cancer who consult a GP in 0-6 months prior to diagnosis by DHB
Numerator	Number of lung cancer registrations who consult GP within six months of diagnosis
Denominator	Number of people aged 15 years or older with first lung cancer registration in the period 1 January 2008 – 31 December 2012
Data source	Cancer registry and PHO enrolments
Analysis	See Table 4 in Appendix 3 for analysis by age and ethnicity (2008-2012)
Comments	Includes lung cancer (ICD-10-AM diagnosis codes C33–C34) patients with a GP consultation 0-6 months prior to cancer diagnosis. Note PHO enrolment dataset captures only the last consultation per quarter.

Indicator	Percentage of people with lung cancer with a pathological diagnosis
Numerator	Number of lung cancer cases diagnosed from cytology, histology of metastases or primary
Denominator	Number of people aged 15 years or older with first lung cancer registration in the period 1 January 2008 – 31 December 2012
Data source	New Zealand Cancer Registry
Analysis	See Table 5 in Appendix 3 for analysis by age and ethnicity (2008-2012)
Comment	Includes people with the following basis of diagnosis codes: 5 (cytology or haematology), 6 (histology of metastases) or 7 (histology of primary).

Indicator	Hospitalised people with lung cancer with a tobacco use or counselling diagnosis code
Numerator	Number of people with lung cancer who had a tobacco use or counselling diagnosis code recorded at any time during their hospital stay
Denominator	Number of people aged 15 years or older who were diagnosed with lung cancer between 2008 and 2012 and hospitalised at any time between 1 July 2007 and 30 June 2013.
Data source	NZCR and NMDS
Analysis	Five year average (2008-2012)
Inclusions	Includes people with the following ICD-10-AM codes
	F171 Mental and behavioural disorders due to use of tobacco, harmful use
	F172 Mental and behavioural disorders due to use of tobacco, dependence syndrome
	F173 Mental and behavioural disorders due to use of tobacco, withdrawal state
	T652 Tobacco and nicotine
	Z587 Exposure to tobacco smoke
	Z716 Counselling for tobacco use disorder
	Z720 Tobacco use, current
	Z8643 Personal history of tobacco use disorder

Survival analyses

Indicator	**Median survival for people with lung cancer**
Numerator	All people with lung cancer
Denominator	People with their first lung cancer diagnosis between 1 January 2008 and 31 December 2012
Data source	NZCR and Mortality Collection
Analysis	Median survival and Kaplan-Meier survival curves for whole lung cancer cohort and NSCLC cohort by extent of disease.
	Median survival for SCLC cohort by extent of disease.
Inclusions	Includes all people except those for whom the date of death was the same as the date of diagnosis
Method	Information about the deaths of people registered with lung cancer was obtained through passive follow-up. The records of all people with cancer registered in the period 1 January 2008 to 31 December 2012 were linked with dates of death for the period 1 January 2008 to 31 December 2012. For the purpose of this analysis it was assumed that all people with cancer for whom no death information was available were alive.
	The cohort method was used to calculate median survival. This method uses people diagnosed in a particular year and follows them for a defined number of years. People diagnosed between 2008 and 2012 were followed until the end of 2012. R version 3.2.0 and the survival package were used to plot Kaplan–Meier survival curves and calculate median survival from the date of diagnosis.
Notes	The survival analysis have not been risk adjusted for age, gender, ethnicity, socio-economic factors, medical history, comorbid illnesses, behavioural and social factors, physiologic factors or stage mix.

Appendix 1

Table 1. Number and age specific lung cancer rate per 100,000 population by ethnic group, 2008-2012

Age (years)	Māori		Non Maori	
	No.	Rate	No.	Rate
15-39	17	1	47	0.9
40-59	545	55.8	1139	23.1
60-69	692	312.1	2141	118.6
70-79	511	502.3	2706	244.9
80+	135	439.7	1983	280.2
Total	1900	60.9	8016	57.0

Table 2. Number of people receiving surgery, number and percentage of people with non-small cell lung cancer (NSCLC) receiving surgery, number and percentage of people with NSCLC with a pathological diagnosis receiving surgery by DHB and RCN, 2008-2012

Area	No. receiving surgery	All NSCLC		NSCLC with a pathological diagnosis[1]	
		No	% receiving surgery	No.	% receiving surgery
Northland	50	421	11.9	319	15.4
Waitemata	132	914	14.4	743	17.6
Auckland	97	723	13.4	551	17.2
Counties Manukau	126	885	14.2	729	17.1
Northern RCN	405	2943	13.8	2342	17.3
Waikato	62	781	7.9	611	10.0
Bay of Plenty	45	560	8.0	462	9.5
Lakes	15	238	6.3	188	7.4
Tairawhiti	13	142	9.2	98	13.3
Midland RCN	135	1721	7.8	1359	9.9
Taranaki	30	249	12.0	173	16.8
Whanganui	7	173	4.0	104	6.7
Hawke's Bay	40	384	10.4	306	13.1
MidCentral	30	386	7.8	275	11.2
Wairarapa	11	104	10.6	66	16.7
Hutt Valley	35	274	12.8	181	18.8
Capital & Coast	38	417	9.1	310	11.9
Central RCN	191	1987	9.6	1415	13.5
Nelson Marlborough	29	294	9.9	190	14.7
Canterbury	119	941	12.6	755	15.2
West Coast	9	82	11.0	62	12.9
South Canterbury	29	180	16.1	148	18.9
Southern	76	641	11.9	491	15.3
Southern RCN	262	2138	12.3	1646	15.9
All DHBs/RCNs	993	8789	11.3	6762	14.7

[1]Pathological diagnosis includes histology and cytology.

Table 3. Number and percentage of people with non-small cell lung cancer (NSCLC) with a pathological diagnosis[1] receiving surgery by extent of disease, by DHB and RCN, 2008-2012

Area	NSCLC localised and adjacent disease			NSCLC regional and distant disease		
	No. having surgery	Total	% having surgery	No. having surgery	Total	% having surgery
Northland	38	43	88.4	10	164	6.1
Waitemata	85	115	73.9	34	427	8.0
Auckland	71	91	78.0	19	340	5.6
Counties Manukau	90	101	89.1	29	435	6.7
Northern RCN	284	350	81.1	92	1366	6.7
Waikato	41	47	87.2	14	357	3.9
Bay of Plenty	31	44	70.5	11	228	4.8
Lakes	8	10	80.0	3	97	3.1
Tairawhiti	8	10	80.0	3	46	6.5
Midland RCN	87	111	79.3	31	728	4.3
Taranaki	16	17	94.1	12	87	13.8
Whanganui	5	6	83.3	2	43	4.7
Hawke's Bay	30	34	88.2	8	146	5.5
MidCentral	21	23	91.3	8	145	5.5
Wairarapa	10	11	90.9	1	33	3.0
Hutt Valley	21	23	91.3	11	90	12.2
Capital & Coast	27	38	71.1	9	163	5.5
Central RCN	130	152	85.5	51	707	7.2
Nelson Marlborough	14	16	87.5	13	112	11.6
Canterbury	84	97	86.6	28	414	6.8
West Coast	6	7	85.7	2	31	6.5
South Canterbury	19	22	86.4	8	74	10.8
Southern	47	52	90.4	24	282	8.5
Southern RCN	170	194	87.6	73	913	8.2
All DHBs/RCNs	672	807	83.3	249	3714	6.7

[1]Pathological diagnosis includes histology and cytology.

Note: There were 2241 NSCLC cases with a pathological diagnosis with missing extent data. Of these 72 (3.2%) received surgery.

Appendix 2. Codes used to identify radiotherapy events

NNPAC purchase unit codes

M50007	NNPAC	Oncology - Stereotactic radiosurgery
M50008	NNPAC	Oncology - Stereotactic radiotherapy
M50024	NNPAC	Oncology-Radiotherapy, External Beam Orthovoltage (July 2011 onwards)
M50025	NNPAC	Oncology-Radiotherapy, External Beam Megavoltage (linac) (July 2011 onwards)

NMDS diagnosis codes

Z081	NMDS	Follow-up examination after radiotherapy for malignant neoplasm
Z510	NMDS	Radiotherapy session
Z541	NMDS	Convalescence following radiotherapy

NMDS procedure codes

Code	Description
1500000	Radiation treatment, superficial, 1 field
1500300	Radiation treatment, superficial, >= 2 fields
1510000	Radiation treatment, orthovoltage, 1 field
1510300	Radiation treatment, orthovoltage, >= 2 fields
1522400	Radiation treatment, megavoltage, 1 field, single modality linear accelerator
1523900	Radiation treatment, megavoltage, >= 2 fields, single modality linear accelerator
1525400	Radiation treatment, megavoltage, 1 field, dual modality linear accelerator
1526900	Radiation treatment, megavoltage, >= 2 fields, dual modality linear accelerator
1532700	Brachytherapy with implantation of removable single plane, low dose rate
1532701	Brachytherapy with implantation of removable single plane, pulsed dose rate
1532702	Brachytherapy with implantation of removable multiple planes or volume implant, low dose rate
1532703	Brachytherapy with implantation of removable multiple planes or volume implant, pulsed dose rate
1532704	Brachytherapy with implantation of permanent implant, < 10 sources
1532705	Brachytherapy with implantation of permanent implant, >= 10 sources
1532706	Brachytherapy with implantation of removable single plane, high dose rate
1532707	Brachytherapy with implantation of removable multiple planes or volume implant, high dose rate
1533900	Removal of sealed radioactive source
1534200	Construction and application of radioactive surface mould
1536000	Brachytherapy, intravascular
1550000	Radiation field setting using simulator, simple
1550300	Radiation field setting using simulator, intermediate
1550600	Radiation field setting using simulator, complex
1550601	Radiation field setting using dedicated CT scanner
1550602	Radiation field setting for intensity modulated radiation therapy [IMRT]
1550900	Radiation field setting using diagnostic x-ray unit
1551800	Dosimetry by CT interfacing computer, simple
1552100	Dosimetry by CT interfacing computer, intermediate
1552400	Dosimetry by CT interfacing computer, complex
1552401	Dosimetry by CT interfacing computer for intensity modulated radiation therapy [IMRT]
1552700	Dosimetry by non-CT interfacing computer, simple
1553000	Dosimetry by non-CT interfacing computer, intermediate
1553300	Dosimetry by non-CT interfacing computer, complex
1553600	Brachytherapy planning, simple
1553601	Brachytherapy planning, intermediate
1553602	Brachytherapy planning, complex

1554100	Brachytherapy planning, intravascular
1555000	Radiation field setting for three dimensional conformal radiation therapy [3DCRT]
1555600	Dosimetry by CT interfacing computer for three dimensional conformal radiation therapy [3DCRT]
1555601	Dosimetry by non-CT interfacing computer for three dimensional conformal radiation therapy [3DCRT]
1560000	Stereotactic radiation treatment, single dose
1560001	Stereotactic radiation treatment, fractionated
1560002	Hemi body irradiation
1560003	Total body irradiation
1560004	Total skin irradiation
1600300	Administration of a therapeutic dose of Yttrium 90
1600900	Administration of a therapeutic dose of Iodine 131
1601200	Administration of a therapeutic dose of Phosphorous 32
1601500	Administration of a therapeutic dose of Strontium 89
1601800	Administration of a therapeutic dose of 153 SM-Lexidronan
9076400	Brachytherapy, intracavitary, low dose rate
9076401	Brachytherapy, intracavitary, high dose rate
9076500	Construction and fitting of immobilisation device, simple
9076501	Construction and fitting of immobilisation device, intermediate
9076502	Construction and fitting of immobilisation device, complex
9076503	Construction and fitting of customised blocks
9076504	Construction and fitting of treatment accessories
9076600	Brachytherapy using surface applicators, other sites
9096000	Administration of a therapeutic dose of other unsealed radioisotope

Appendix 3. Additional analysis for New Zealand lung cancer diagnosis and survival

These analyses for the overall New Zealand population are presented to add context to the DHB/RCN level analyses in the lung cancer atlas.

a) Lung cancer and smoking

Smoking is a known significant risk factor for lung cancer. Analysis of hospitalisation data for the lung cancer patients showed that:

- 88.0 percent of lung cancer patients had a tobacco use or counselling diagnosis code recorded at some time during their hospital stay.

b) Survival

Lung cancer treatment aims to prolong survival and improve quality of life by reducing the impact of symptoms. The median age at diagnosis for all lung cancer patients was 71 years (2008–12). People of Māori ethnicity had a lower median age than non-Māori (65 vs 72 years). Median survival (the time taken from the date of diagnosis for 50 percent of patients to die from their cancer) is one way of measuring survival of the whole cohort of patients diagnosed in 2008–12. The graphs below show the survival patterns for the whole cohort (Figure 1) and for NSCLC patients by disease extent (Figure 2).

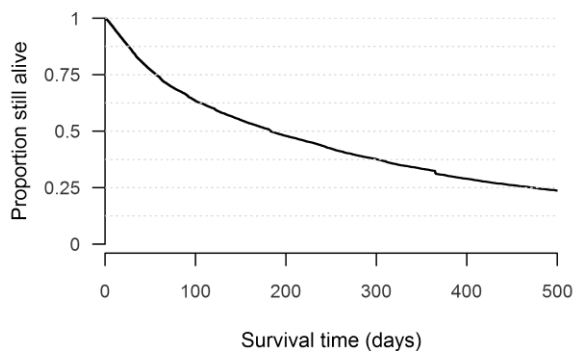Figure 1. Survival curve for all lung cancer, 2008–2012   Figure 2. Survival curve for NSCLC patients by disease extent, 2008–2012
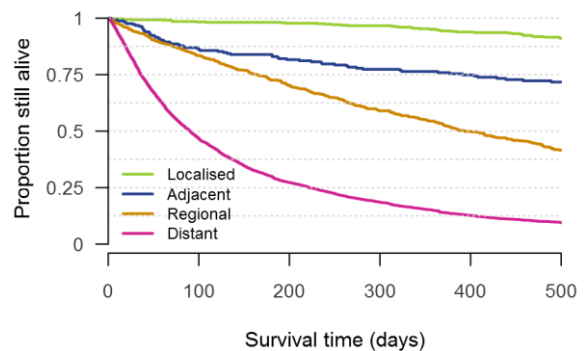
- The median survival for New Zealand (183 days) was lower than for England and Wales (221 days, 2012).
- The median survival for NSCLC patients was 1840 days for localised extent, 1101 days for adjacent tissue, 393 days for regional and 90 days for distant disease spread.
- The SCLC patient median survival was 111 days for distant and 305 days for localised/regional disease extent.

Survival rates should be interpreted with caution as survival time is calculated from the date of diagnosis recorded on the Cancer Registry.

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c) Diagnosis

It has been reported that diagnosis of cancer at a more localised stage is likely to lead to improved survival and quality of life [1].

- Extent of disease was available for 63.5 percent (62.7 percent for NSCLC and 70.2 percent for SCLC) of lung cancer patients (2008–12).
- Of those with documented extent, 74.6 percent of patients had distant (72.9 percent NSCLC and 86.7 percent SCLC) disease, 11.7 percent had regional, 4.2 had invasion of adjacent tissue and 9.5 percent had localised extent at diagnosis.
- New Zealand has a higher percentage of patients diagnosed with distant disease compared with other countries where the same staging system is used e.g. Australia (New South Wales, 49.1 percent) and United Kingdom (Northern Ireland, 56.8%).
- Compared to New Zealand, for SCLC 82% of United Kingdom (Northern Ireland) patients and 61.3% of Australian (New South Wales) patients had distant extent disease at diagnosis. For NSCLC patients, 47.5 percent of Australian and 53.1 percent of United Kingdom patients had distant extent at diagnosis [2]

The documentation of lung cancer staging data within the NZCR is considerably less than the Canadian cancer registries and the United Kingdom lung cancer clinical audit programme, which both have staging completion rates in excess of 90 percent.

Primary care

Lung cancer patients often have other comorbidities (eg, another respiratory disease such as chronic obstructive pulmonary disease or cardiovascular disease) and are high health care service users[3]. Patients may visit their GP regularly but it may be difficult to identify the lung cancer symptoms from their other diseases. Analysis of PHO enrolment data showed:

- 92.1 percent of patients consulted their GP at least once in the six months prior to diagnosis
- Māori consultation rates were slightly lower than non-Māori

Note these percentages may underestimate the consultation rate as the PHO enrolment dataset only includes the last GP consultation in a fixed quarter. Table 4 shows the consultation rates by age and ethnicity.

Table 4. Number and percentage of people with lung cancer who consulted their GP in the six months prior to diagnosis, by age and ethnicity, 2008-2012

	Māori		Non Māori	
Age (years)	No	%	No	%
15-39	14	82.4	38	80.9
40-59	454	83.3	985	86.5
60-69	624	90.2	1940	90.6
70-79	472	92.4	2576	95.2
80+	127	94.1	38	96.1
Total	1691	89.0	7445	92.9

Pathological diagnosis

A pathological diagnosis of lung cancer (ie, where cytology or histology reports are available) has become increasingly important in recent years as the effectiveness of different therapies depend on the histological subtype and the presence or absence of molecular markers. The rate of pathological diagnosis may reflect access to biopsy techniques, patient fitness to undergo procedures or patient choice. Table 5 shows the percentage of patients with a pathological diagnosis by age and sex.

- An average of 79 percent (DHB range 65-84 percent) of lung cancer patients had a pathological diagnosis available, 14 percent had a radiological diagnosis and 5 percent were diagnosed from their death certificate only.
- Pathological diagnosis rates decreased with age: 95.3 percent of 15-39 year olds had a pathological diagnosis compared with 55.6 percent for those aged 80 years old and over.
- The New Zealand pathological diagnosis rate is slightly higher than the England and Wales rate of 75.3 percent in 2012.

Table 5. Number and percentage of people with lung cancer with a pathological diagnosis, by age and ethnicity, 2008-2012

Age (years)	Māori		Non Māori	
	No	%	No	%
0-39	15	88.2	46	97.9
40-59	502	92.1	1061	93.2
60-69	606	87.6	1907	89.1
70-79	388	75.9	2162	79.9
80+	77	57.0	1101	55.5
Total	1588	83.6	6277	78.3

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