

Occupational Disease Surveillance Report

2000-2014

Barry Borman

Fei Xu

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DISCLAIMER

The data analysed in this report were supplied to the Environmental Health Indicators team, Centre for Public Health Research, Massey University by the Ministry of Health. The data sources are the National Minimum Dataset (Hospital Inpatient Events). For more information on the data source see [<http://www.health.govt.nz/nz-health-statistics>].

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For any enquiries about these data please contact Fei Xu on f.xu@massey.ac.nz.

Occupational Disease Surveillance

Key findings:

- During 2000-2014, there were 283,456 occupational disease/condition diagnoses involving 135,439 patients.
- For those selected conditions, diagnoses from females were 1.3 times as high as diagnoses from males.
- Females comprised the majority (%) of the diagnoses of chronic fatigue, asthma, anxiety and depression.
- Male comprised the majority (%) of the diagnoses of noised-induced hearing loss, leptospirosis, decompression sickness, crushing injury of wrist and hand, eye injury, mesothelioma, bladder cancer, burn and corrosion of wrist and hand and leukaemia
- For those selected conditions, Maori and Pacific people accounted for 19% and 6% of diagnoses, respectively.

The Environmental Health Indicators team extracts data from the Ministry of Health's National Minimum Dataset (NMDS) on discharges from publicly-funded hospitals ('hospital events' or 'hospitalisations') to monitor the prevalence of the occupational related diseases/conditions included in the "Occupational Health Action Plan to 2013" (OHA) and the "Serious Harm factsheet" (SHF) published by WorkSafe New Zealand¹ (Appendix 1) (Department of Labour, 2011a, 2011b).

Only those in the working age (15-64 years) during the hospital visit were reported. Transfers² and emergency department (ED) short stays³ were excluded from the analysis.

Two aspects of occupational diseases/conditions are discussed here:

- the number of occupational disease/condition diagnoses
- the number of individuals involved in these diagnoses

The number of diagnoses reflects the severity of those conditions and their burden on the New Zealand health system. The number of patients is indicative of the demographic distribution of the population that were affected by those diseases/conditions.

From 2000 to 2014, for those aged 15-64 years old (*Table 1-5*):

- There were 283,456 diagnoses with occupational diseases/conditions (Table 1) involving 135,439 patients (Table 5) (*i.e. a patient may have multiple hospital visits and be diagnosed with multiple occupational related diseases/conditions*).

¹ Formerly Department of Labour

² Transfers between hospitals, and between services within the same hospital, are sometimes recorded as a separate event. Exclusion of transfers avoids double counting of the same hospital event.

³ ED short stays (where the patient was seen in ED and discharged on the same or next day, without admission as an inpatient) has been reported inconsistently across time and DHB. Exclusion of the ED short stays makes the data comparable across time.

- For those selected conditions, diagnoses from females were 1.3 times as high as diagnoses from males (Table 1)
- On average, one female patient contributed to 2.2 diagnoses, while male 2.0 diagnoses. (Table 1 and 5)
- Females contributed to nearly three quarters (73%) of chronic fatigue, and over two thirds (69%) of asthma diagnoses (Table 2)
- Nearly two thirds of anxiety and depression diagnoses were from females (65% and 64% respectively) (Table 2)
- Males had the majority (96%) of diagnoses of noised-induced hearing loss, leptospirosis (89%), decompression sickness (88%) and crushing injury of wrist and hand (86%) (Table 2).
- Males contributed towards 78% of mesothelioma diagnoses and eye injury diagnoses, and 75% of bladder cancer, and burn and corrosion of wrist and hand diagnoses (Table 2).
- Nearly three out of five (59%) leukaemia diagnoses were from males (Table 2).
- The diagnoses of toxic effect of other and unspecified substance (poisoning) and lung cancer were similar in both genders (Table 2).
- For those selected conditions, Maori and Pacific people accounted for 19% and 6% of diagnoses, respectively (Table 2).
- One out of five patients (20%) was Maori (Table 5). For certain conditions, Maori patients accounted for an even larger proportion of patients such as lung cancer (26%), asthma (26%), burn and corrosion of wrist and hand (24%) and toxic effect of other and unspecified substance (21%) (Table 4).
- For those selected occupational related disease/conditions, Pacific people contributed to 7% of all patients (Table 5), and accounted for 10% of eye injury, asthma and dermatitis patients (Table 4)
- For time trend, from 2000 to 2014, there was a stable drop in the rate of asthma. The rates for asthma almost halved between 2000 and 2001 (Figure 1)
- The rate for depression went down and then up and the rate for leukaemia went up over the recent years (Figure 1).
- For most of those selected diseases and conditions, the rate fluctuated within a small range from 2000 to 2014 (Figure 1).

Table 1: Number of occupational related disease/condition diagnosis, by disease/condition, sex and ethnicity, 2000-2014

Disease/condition	Sex		Ethnicity				Total
	Female	Male	Maori	Pacific people	Other	Unknown	
Asthma	43102	19620	18235	7358	36457	672	62722
Depression	39238	21704	7948	1437	50783	774	60942
Anxiety	34960	19207	8008	1518	43981	660	54167
Leukaemia	12088	17439	3725	2055	23200	547	29527
Lung Cancer	15066	13925	7851	1543	19157	440	28991
Dermatitis	12380	9759	4762	2253	14813	311	22139
Eye injury	2071	7526	2173	1027	6119	278	9597
Bladder Cancer	1649	4977	548	117	5880	81	6626
Burn and corrosion of wrist and hand	1106	3301	1056	286	2987	78	4407
Mesothelioma	319	1142	137	18	1279	27	1461
Leptospirosis	87	712	173	15	580	31	799
Crushing injury of wrist and hand	100	631	136	65	519	11	731
Chronic fatigue (post viral fatigue syndrome)	428	160	18	2	559	9	588
Toxic effect of other and unspecified substance	197	204	81	21	293	6	401
Decompression sickness	38	268	42	1	252	11	306
Noise-induced hearing loss	2	50	5	0	46	1	52
Total	162831	120625	54898	17716	206905	3937	283456

Table 2: Percentage of occupational related disease/condition diagnosis, by disease/condition, sex and ethnicity 2000-2014

Disease/condition	Sex		Ethnicity				Total
	Female	Male	Maori	Pacific people	Other	Unknown	
Asthma	68.72	31.28	29.07	11.73	58.12	1.07	22.13
Depression	64.39	35.61	13.04	2.36	83.33	1.27	21.50
Anxiety	64.54	35.46	14.78	2.80	81.2	1.22	19.11
Leukaemia	40.94	59.06	12.62	6.96	78.57	1.85	10.42
Lung Cancer	51.97	48.03	27.08	5.32	66.08	1.52	10.23
Dermatitis	55.92	44.08	21.51	10.18	66.91	1.40	7.81
Eye injury	21.58	78.42	22.64	10.7	63.76	2.90	3.39
Bladder Cancer	24.89	75.11	8.27	1.77	88.74	1.22	2.34
Burn and corrosion of wrist and hand	25.10	74.90	23.96	6.49	67.78	1.77	1.55
Mesothelioma	21.83	78.17	9.38	1.23	87.54	1.85	0.52
Leptospirosis	10.89	89.11	21.65	1.88	72.59	3.88	0.28
Crushing injury of wrist and hand	13.68	86.32	18.6	8.89	71.00	1.50	0.26
Chronic fatigue (post viral fatigue syndrome)	72.79	27.21	3.06	0.34	95.07	1.53	0.21
Toxic effect of other and unspecified substance	49.13	50.87	20.2	5.24	73.07	1.50	0.14
Decompression sickness	12.42	87.58	13.73	0.33	82.35	3.59	0.11
Noise-induced hearing loss	3.85	96.15	9.62	0.00	88.46	1.92	0.02
Total	57.44	42.56	19.37	6.25	72.99	1.39	100.00

Table 3: Number of patients with occupational related disease/condition, by disease/condition, sex and ethnicity, 2000-2014

Disease/condition	Sex		Ethnicity				Total
	Female	Male	Maori	Pacific people	Other	Unknown	
Asthma	24870	12352	9533	3842	23284	563	37222
Anxiety	21946	14152	5547	1214	28817	520	36098
Depression	20112	13708	5242	1058	26969	551	33820
Dermatitis	10891	8089	3929	1839	12922	290	18980
Lung Cancer	4446	4357	2272	466	5846	219	8803
Eye injury	1912	6738	1928	907	5561	254	8650
Burn and corrosion of wrist and hand	994	3021	959	273	2711	72	4015
Leukaemia	1316	1956	463	216	2476	117	3272
Bladder Cancer	524	1431	154	41	1712	48	1955
Leptospirosis	83	684	160	12	564	31	767
Crushing injury of wrist and hand	97	607	132	63	499	10	704
Chronic fatigue (post viral fatigue syndrome)	360	132	18	2	465	7	492
Toxic effect of other and unspecified substance	179	194	80	19	268	6	373
Mesothelioma	70	285	21	5	319	10	355
Decompression sickness	37	234	36	1	223	11	271
Noise-induced hearing loss	2	45	5	0	41	1	47
Total	87839	67985	30479	9958	112677	2710	155824

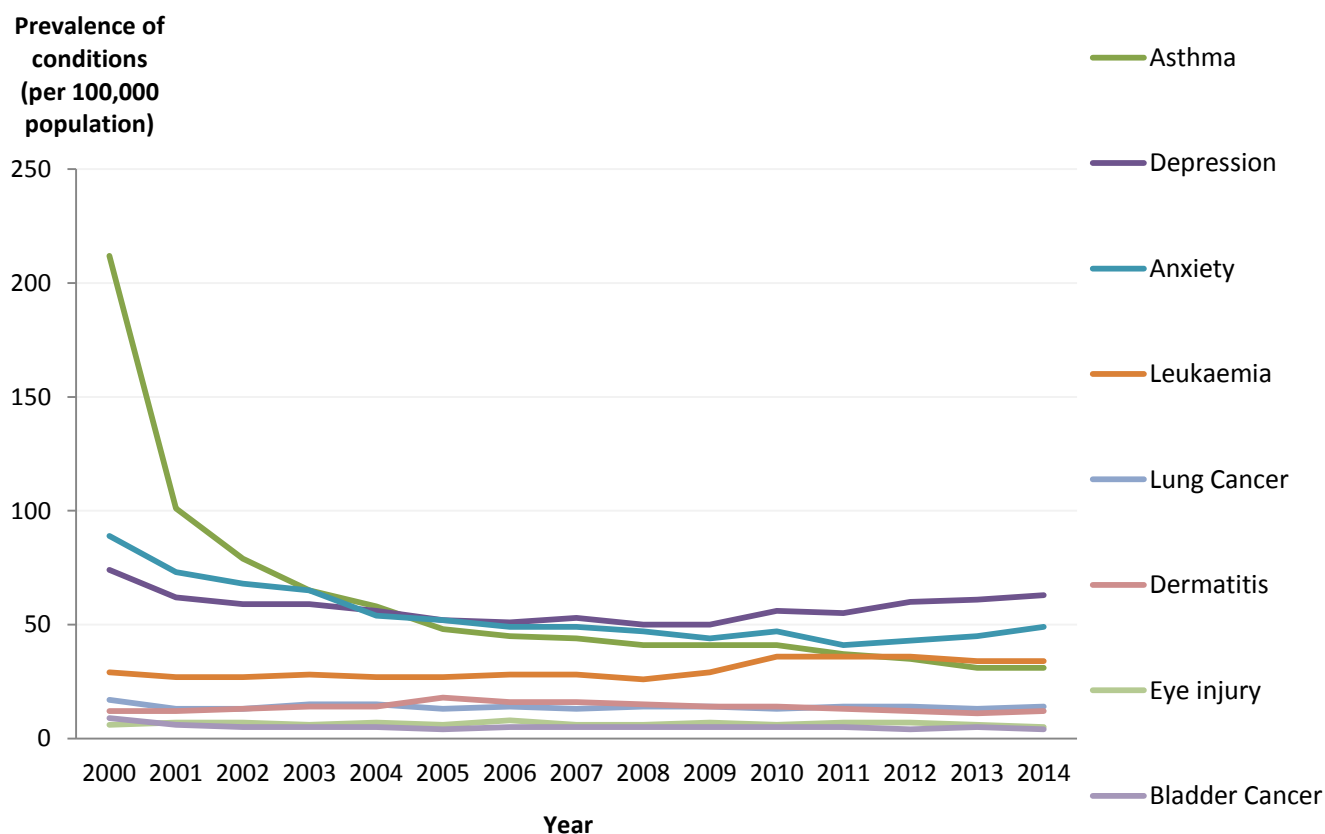
Table 4: Percentage of patient with occupational related disease/condition, by disease/condition, sex and ethnicity, 2000-2014

Disease/condition	Sex		Ethnicity				Total
	Female	Male	Maori	Pacific people	Other	Unknown	
Asthma	66.82	33.18	25.61	10.32	62.55	1.51	23.89
Anxiety	60.80	39.20	15.37	3.36	79.83	1.44	23.17
Depression	59.47	40.53	15.50	3.13	79.74	1.63	21.70
Dermatitis	57.38	42.62	20.70	9.69	68.08	1.53	12.18
Lung Cancer	50.51	49.49	25.81	5.29	66.41	2.49	5.65
Eye injury	22.10	77.90	22.29	10.49	64.29	2.94	5.55
Burn and corrosion of wrist and hand	24.76	75.24	23.89	6.80	67.52	1.79	2.58
Leukaemia	40.22	59.78	14.15	6.60	75.67	3.58	2.10
Bladder Cancer	26.80	73.20	7.88	2.10	87.57	2.46	1.25
Leptospirosis	10.82	89.18	20.86	1.56	73.53	4.04	0.49
Crushing injury of wrist and hand	13.78	86.22	18.75	8.95	70.88	1.42	0.45
Chronic fatigue (post viral fatigue syndrome)	73.17	26.83	3.66	0.41	94.51	1.42	0.32
Toxic effect of other and unspecified substance	47.99	52.01	21.45	5.09	71.85	1.61	0.24
Mesothelioma	19.72	80.28	5.92	1.41	89.86	2.82	0.23
Decompression sickness	13.65	86.35	13.28	0.37	82.29	4.06	0.17
Noise-induced hearing loss	4.26	95.74	10.64	0.00	87.23	2.13	0.03
Total	56.37	43.63	19.56	6.39	72.31	1.74	100.00

Table 5: Number of patients with occupational related disease/condition, by sex and ethnicity, 2000-2014

	Sex		Ethnicity				Total
	Female	Male	Maori	Pacific people	Other	Unknown	
Number	75237	60202	26623	9137	97187	2492	135439
Percent	55.55	44.45	19.66	6.75	71.76	1.84	100.00

Figure 1: Crude rate of work-related conditions by year, 15-64 years, 2000-2014



Note: The denominator was the population estimate from Statistics New Zealand.

Appendix 1: Occupational related diseases/conditions, ICD codes, and source document

	Diagnosis/injury	ICD code (10 th rev)	Source
1	Leptospirosis	A27	OHA
2	Lung Cancer	C33-C34	OHA
3	Mesothelioma	C45	OHA
4	Leukaemia	C91-C95	OHA
5	Bladder cancer	C67	OHA
6	Anxiety	F40, F41, F42, F43 And F06.4 (organic)	OHA
7	Depression	F32, F33 And F06.3 (organic)	OHA
8	Chronic fatigue (post viral fatigue syndrome)	G93.3	SHF
9	Noise-induce hearing loss	H83.3	OHA
10	Asthma	J45-J46	OHA
11	Dermatitis	L20-L21, L23-L28, L30	OHA
12	Decompression sickness	T70.3	SHF
13	Toxic effect of other and unspecified substance (excl nicotine) e.g. cyanide, paint, dye	T65 excl T65.2	SHF
14	Eye injury (combination group)		SHF
	- Injury of eye and orbit	S05	
	- Foreign body on external eye	T15	
	- Burn/corrosion confined to eye/adnexa	T26	
15	Burn and corrosion of wrist and hand	T23	SHF
16	Crushing injury of wrist and hand	S67	SHF

Appendix 2: Hospitalisation with a disease/condition

In this report, the results of occupational disease surveillance were based on the analysis of hospital records with at least one of the disease/condition listed in Appendix 1. All diagnoses were considered for a hospital event.

For example, suppose a patient visited the hospital with the principle diagnoses dermatitis and the second and third diagnoses asthma and anxiety. As a result of this visit, this patient contributed to three occupational related disease/condition diagnoses.

A patient who had visited hospital for multiple occupational related diseases/conditions was counted once in each of the disease/condition. This leads to the sum of patient with each of the occupational related disease/condition greater than the number of patients involved.

Transfers and Emergency Department short stay were excluded from the analysis.

References

- Department of Labour. (2011a). *Occupational Health Action Plan to 2013*. Retrieved from <http://www.business.govt.nz/worksafe/about/who-we-work-with/action-agenda-action-plans/occupational-health-action-plan-to-2013/occupational-health-action-plan.pdf>
- Department of Labour. (2011b). *Serious Harm - Health and safety in the workplace*. Retrieved from <http://www.dol.govt.nz/hs/law/quickguide/pdfs/seriousharm.pdf>