

# **Australian Firefighters' Health Study: Further Analysis of Volunteer Firefighter Data**



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## 1 Introduction

The Australian Firefighters' Health Study report was released in November 2014. <sup>[1]</sup>

The additional analyses on volunteers presented in this report are those discussed and agreed upon at the Firefighter Study's Advisory Committee meeting on 26th November 2014.

The Australian Firefighters' Health Study identified that volunteer firefighters who had not attended incidents had a higher mortality relative to those who had attended incidents. It is possible therefore that there could be a selection bias in that those who do not attend incidents may be less fit than those who do attend. It was agreed that there should be further analysis of the volunteer cancer and mortality comparisons to the general population after excluding individuals who had not attended an incident.

In addition, it was observed that there was a skewed distribution of volunteer firefighters by the number of incidents attended. Of those who had attended at least one incident, only a small proportion (<2%) of male volunteer firefighters had attended more than a thousand incidents. By contrast more than 43% of full time firefighters had attended at least a thousand incidents.

There was concern that the use of tertiles based on the number of incidents may have meant that tertiles 1 and 2 had very similar average numbers of attendances but the highest tertile had a very wide spread of attendances. This means that an excess of mortality or cancers in the highest tertile group might not be identified as a result of being diluted by the larger number of less exposed individuals. The large number of male volunteer firefighters in the cohort, however, would allow the formation of groups with more variability in the number of incidents, for example by using the career firefighter tertile cut points, while retaining adequate statistical power.

## **2 Methods**

The cohort assembly, incident attribution and cancer and death linkages have been described fully previously in the Australian Firefighters' Health Study 2014 report,<sup>[1]</sup> and only aspects relevant to these further analysis of the volunteer firefighter data are summarised here.

### **2.1 External statistical analyses**

External analyses are where the mortality and cancer incidence rates of the volunteers are compared to the rates of the Australian population.

The data were analysed by comparing the mortality and cancer incidence rates of the volunteers with those expected from Australian national population data with the same age distribution. The population reference rates were taken from data published by the AIHW in five year age bands.<sup>[2]</sup>

The overall Standardised Mortality Ratio (SMR) and overall Standardised Incidence Ratio (SIR) were calculated for men and women separately for the volunteer firefighters and were also calculated for the major death and cancer categories.

### **2.2 Internal statistical analyses**

Internal analyses are where the mortality and cancer incidence of groups within the cohort are compared to a reference group which is also defined from within the cohort.

A set of internal comparisons was undertaken for male volunteer firefighters. These analyses compared groups of cohort members internally against each other, rather than externally to the Australian population, as this can help to overcome the healthy worker effect. The Relative Mortality Ratio (RMR) for mortality and the Relative Incidence Ratio (RIR) for cancer incidence were calculated for male volunteer firefighters.

There were no female career firefighter incident data cut points in the Australian Firefighters' Health Study report because there were too few deaths or cancer to carry out such analyses.

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The exposure metrics derived from the incident data were:

- Total number of incidents attended,
  - Of these, the total number of fires attended,
    - Number of structural fires attended,
    - Number of landscape fires attended,
    - Number of vehicle fires attended.

Tertiles were calculated for each of these metrics separately based on cumulative number of incidents attended per individual per year. Table 1 presents the cut points used in the original analyses and in those which are presented and discussed below. The male career tertile cut points were used in further analyses of the male volunteer firefighters.

**Table 1: Cut points for tertiles of cumulative incidents per person-year used in RMR and RIR analyses**

		All Incidents	All Fires	Structural Fires	Landscape Fires	Vehicle Fires
Male career full-time	Tertile 1	>0 - 383	>0 - 220	>0 - 85	>0 - 40	>0 - 24
	Tertile 2	>383 - 1053	>220 - 576	>85 - 219	>40 - 143	>24 - 73
	Tertile 3	>1053	>576	>219	>143	>73
Male volunteers	Tertile 1	>0 - 6.6	>0 - 5.7	>0 - 3	>0 - 4.7	>0 - 2.4
	Tertile 2	>6.6 - 34.6	>5.7 - 25.5	>3 - 10.9	>4.7 - 18.4	>2.4 - 8
	Tertile 3	>34.6	>25.5	>10.9	>18.4	>8
Female volunteers	Tertile 1	>0 - 3	>0 - 2.9	>0 - 2	>0 - 2.2	>0 - 1.6
	Tertile 2	>3 - 16	>2.9 - 12	>2 - 6	>2.2 - 8.5	>1.6 - 4.4
	Tertile 3	>16	>12	>6	>8.5	>4.4

The tertiles were created by dividing the person-years contributed by firefighters into thirds based on cumulative number of incidents attended since first volunteering and allocating the events (deaths or cancers) to the tertile in which they occurred. Person years accumulated before attending an incident were included in the first tertile. Each individual may contribute person-years to more than one category as they can move up tertiles during follow-up. Table 2 shows the person years attributed to male and female volunteers when divided into tertiles based on cumulative counts of all incidents attended. The number of firefighters presented is a count of how many individuals were within each tertile category at any time during follow-up.

When the person-years for the male and female volunteers who attended incidents were divided by the career incident cut points, there were much smaller numbers in the higher-exposed groups than when divided into tertiles. This would be expected as the majority of volunteers across all agencies only attend a few incidents. Note that the firefighters who did not attend incidents or for whom no reliable incident data were available have not been included in these groups.

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**Table 2: Person years contributed to each tertile and number of volunteer firefighters in each tertile, excluding those who did not attend incidents**

		Number* of person years	Number* of volunteer firefighters
Male volunteers	Tertile 1	328,796	52,734
	Tertile 2	334,442	47,370
	Tertile 3	335,423	34,885
	Career 1	968,434	99,276
	Career 2	40,421	5,178
	Career 3	16,923	1,795
Female volunteers	Tertile 1	41,012	8,376
	Tertile 2	48,181	9,043
	Tertile 3	46,723	6,030
	Career 1	140,151	16,831
	Career 2	2,538	365
	Career 3	375	55

\* firefighters can be counted more than once if they move up tertiles during follow-up

The smaller number of female volunteer firefighters and incidents compared with male volunteer firefighters suggest that the use of the male career firefighter cut points would result in many analyses with numbers that were too small or zero. Therefore no analysis of female volunteers using career incident tertiles was possible.

The trend tests were conducted by assigning each incident exposure category a numeric value and using this in a Poisson regression model as a continuous variable and reporting its P-value. Trend tests are not reported for the analyses by the career tertile cut points because these were not linear groups.

The SMRs, SIRs, RMRs and RIRs were estimated using Stata software.<sup>[3]</sup> The RMRs and RIRs were adjusted for age and calendar period of service.



## **3 Results**

### **3.1 External analyses comparing to the general population**

#### **3.1.1 External cancer analyses**

Table 3 shows the results from the 2014 analysis of male volunteers for overall cancer and specific cancer categories (left side of Table 3), along with the new results when those who did not attend an incident were excluded (right side of Table 3). As previously reported, for all male volunteers there were significantly fewer cancers than expected overall, and significantly fewer cancers for many of the specific cancer types. There were significant increases of male reproductive cancers and in particular, prostate cancer. When these analyses were repeated for only those who attended incidents, there was very little change to the results, despite over a third of the cohort being excluded. There were still significantly fewer cancers than expected overall, and for most specific types of cancer, with very little change to the SIR point estimates. The increased risk of developing prostate cancer remained after those who had not attended incidents were excluded, with very little change in the level of risk.

The results for cancer incidence for female volunteers are shown in Table 4. The initial analyses which included all female volunteer firefighters found that female volunteers had similar cancer rates to the general population, except for an increased risk of melanoma and decreased risks of cervical and bladder cancer. Those who had not attended an incident made up over half of the cohort and when these were removed for the further analyses, there was little change to the results. There were similar cancer rates overall and for specific cancer types compared to the general population. However, the excess risk of melanoma was no longer evident and the reduced risk for cervical cancer also disappeared when the analyses was restricted only to those who attended an incident.

#### **3.1.2 External mortality analyses**

The original analysis in the Australian Firefighters' Health Study 2014 report which compared mortality for all male volunteers to the general population is reported in the left side of Table 5. There were significantly fewer deaths than expected for overall mortality, and significantly fewer deaths for all major causes of death, except for deaths by fire. When this analysis was repeated including only male volunteer firefighters who were known to have attended incidents, there was very little change in the results, with significantly fewer deaths for overall

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mortality and for all major categories of death. Therefore, there was little change in the SMR point estimates when those who had not attended an incident were excluded.

The results for female volunteers are presented in Table 6 and, similar to the males, with little change in the findings when those who had not attended an incident were excluded from the analysis. There were still significantly fewer deaths than expected overall for female volunteers, and for most major categories of death, though for some of the analyses the number of deaths became quite small and were no longer significantly reduced as a result of reduced power.

## **3.2 Internal analyses comparing cancer and mortality within the cohort**

### **3.2.1 Internal cancer analyses**

Table 7 and Table 8 present internal cancer incidence analyses for male volunteer firefighters compared by tertiles or by groups of numbers of incidents attended.

In Table 7, the RIRs were derived using those with no incidents as the comparison group, and were the original analyses presented in Table 61 of the Australian Firefighters' Health Study report., whereas in Table 8, the male career firefighter tertiles are used and the lowest tertile is used as the comparison group. Therefore, the results in Table 8 differ from those in Table 7.

As previously presented, Table 7 shows that when compared to male volunteers who never attended an incident, those who did attend incidents had a similar or reduced risk of cancer overall and for most specific types of cancers. There is an increased risk of testicular cancer, seen in those who attended more incidents, although this does not increase monotonically across increasing tertiles of exposure.

When career firefighter tertiles are used (Table 8) a similar pattern was seen; the male volunteers' risk of most cancers did not increase with increased number of incidents attended when compared to those in the lowest group of incidents. One difference from the original analysis is that there was a significant and monotonic increase in risk for kidney cancer across groups of number of incidents attended, particularly for structural and landscape fires.

### **3.2.2 Internal mortality analyses**

Table 9 and Table 10 present internal mortality analyses for male volunteer firefighters comparing tertiles of incidents attended groups.

In Table 9 the RMRs were derived using those with no incidents attended as the comparison group (these are the data presented in Table 53 of the Australian Firefighters' Health Study 2014 report). The trend tests in Table 9 were carried out across male volunteer tertiles 1-3 however (i.e. excluding those with no incidents).

As previously presented, Table 9 shows that when compared to male volunteers with no incidents, the volunteers with recorded incidents have a significantly reduced risk of most causes of death and a significantly reduced risk for many incident tertiles.

The analyses in Table 10 compared groups of male volunteers using career firefighter cut points (see Table 1) which identified groups of volunteer firefighters who had attended higher number of incidents than was seen in Table 9. There was no consistent pattern of increased risk of death with increasing attendances for overall mortality, or for most major causes of deaths (malignancies, nervous system, respiratory, digestive, injury). One difference compared with the original analysis was that there were significantly increased RMRs for circulatory disease and more specifically for ischemic heart disease (IHD) for attendance at incidents overall, and for most types of fires.

Some other RMRs were significantly increased but did not show a monotonic rise across the groups. Attendance at vehicle fires was most often associated with increased relative mortality (all malignancies, nervous system and respiratory deaths).

## 4 Discussion

Following the release of the findings in the Australian Firefighter Health study in December 2014, there were questions raised that if a large proportion of the volunteer group had never attended incidents, they may have a different risk of cancer and death and maybe diluting any effect for those who did attend incidents. Volunteers who had not attended incidents accounted for around one third of male volunteers and more than half of the female volunteers.

In this further analysis, removal of volunteers who had not attended incidents had little effect on the cancer or mortality risk estimates when compared to the general population. The findings were similar to those found in the previous analyses although the previous excess of melanoma in female volunteers was no longer present when the analysis was restricted only to those who attended an incident.

The internal cancer and mortality male volunteer analyses were repeated using the male career firefighter tertiles to provide more contrast between the exposure groups. There was evidence of an association between attendance at fires and increased risk of death from circulatory disease, in particular IHD and an increased risk of developing kidney cancer, which were not evident using the previous methodology to categorise exposures.

Tobacco smoking is known to be a significant cause of IHD but data from CFA Healthwatch suggest that male CFA volunteers are less likely to smoke than the general population. Mortality from IHD, COPD and lung cancer incidence are all reduced when compared to the general population which may be a result of this lower smoking rate. When the male volunteers were divided by the number of incidents there was a significant and dose-related increased relative risk of IHD for those who attended more landscape fires compared to those in the group with the lowest number of incidents. It is possible but unlikely that smoking rates differed sufficiently between the groups to account for this effect. Exposure to outdoor pollution, such as small particles, has been shown to be a trigger for cardiac arrests.<sup>[4]</sup> There has also been recent Australian evidence that exposure to bush fire smoke is associated with increased risk of out of hospital cardiac arrests.<sup>[5]</sup>

No other causes of death or types of cancer were associated with attendance at incidents and the overall patterns were broadly similar to those found in the previous analyses.

The male volunteer tertile 3 in the original analysis was defined to include those who had attended more than 34 incidents, but this also included some firefighters who had attended more than 5000 incidents. This was thus a heterogeneous group in terms of incidents attended. The use of the career tertiles cut points (e.g. career tertile 2 for all incidents was more than 383 to 1053 incidents attended, and for career tertile 3 greater than 1053

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incidents attended). This resulted in two more uniformly exposed groups for the higher number of incidents. These groups are probably more informative than the original groups and suggest that IHD deaths and kidney cancer have a significant association with increasing exposure to fires, particularly structural fires.

The difference in number of incidents between the male volunteer groups in the original analyses presented was small. The use of the career firefighter tertiles in the additional analysis did however result in much smaller numbers of cancers and deaths in the higher tertiles of exposure, which reduced the power of the study to detect associations for less common outcomes.

As noted in the original study report, it should be emphasised that landscape fires may go on for days or even weeks, which is rare for structural or vehicle fires. A simple count of the incidents does not take this into consideration. Information on fire intensity or duration was not available on an individual basis so this factor could not be taken into account in the analyses.

The loss of statistical power caused by excluding a number of firefighters who had not attended incidents had little effect on the further analyses when comparing to the general population.

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## **5 Conclusion**

When male or female volunteer firefighters who had not attended an incident were excluded, there was little change to the SMRs and SIRs when compared to the risks when they were included. Volunteer firefighters who attended incidents had significantly reduced mortality and male volunteer firefighters had significantly reduced cancer incidence compared to the general population.

The use of career firefighter cut points resulted in the formation of more highly exposed groups than was the case when using the volunteer tertile analyses as in the original report. The further internal analyses using these cut points showed that male volunteer firefighters had increased risk of IHD deaths and kidney cancer compared to those male volunteer firefighters who had attended fewer incidents.

## 6 References

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**Table 3: Standardised cancer Incidence Ratios\* and 95% confidence intervals for male volunteer firefighters to 31/12/2010 for all male volunteers (as in 2014 report) and for male volunteers that attended incidents compared to the Australian population**

Cancer Categories	Volunteer Firefighters (N=157,931) (Table 11 2014 report)			Volunteer Firefighters who attended incidents (N= 100,126)		
	O	E	SIR (95%CI)	O	E	SIR (95%CI)
<b>All Malignancies</b>	<b>7057</b>	<b>8216.17</b>	<b>0.86 (0.84 - 0.88)</b>	<b>4491</b>	<b>5262.53</b>	<b>0.85 (0.83 - 0.88)</b>
<b>Lip, Oral Cavity &amp; Pharynx</b>	<b>245</b>	<b>342.79</b>	<b>0.71 (0.63 - 0.81)</b>	<b>159</b>	<b>226.43</b>	<b>0.70 (0.60 - 0.82)</b>
Lip	125	108.68	1.15 (0.96 - 1.37)	87	72.31	1.20 (0.96 - 1.48)
<b>Digestive Organs</b>	<b>1297</b>	<b>1679.28</b>	<b>0.77 (0.73 - 0.82)</b>	<b>808</b>	<b>1071.70</b>	<b>0.75 (0.70 - 0.81)</b>
Oesophagus	77	117.63	0.65 (0.52 - 0.82)	57	75.10	0.76 (0.57 - 0.98)
Stomach	116	166.98	0.69 (0.57 - 0.83)	74	106.56	0.69 (0.55 - 0.87)
Colorectal	897	1052.62	0.85 (0.80 - 0.91)	553	671.79	0.82 (0.76 - 0.89)
Colon	526	603.91	0.87 (0.80 - 0.95)	333	382.80	0.87 (0.78 - 0.97)
Rectum	301	334.48	0.90 (0.80 - 1.01)	181	215.49	0.84 (0.72 - 0.97)
Liver	39	118.61	0.33 (0.23 - 0.45)	18	76.13	0.24 (0.14 - 0.37)
Pancreas	116	156.67	0.74 (0.61 - 0.89)	77	99.38	0.77 (0.61 - 0.97)
<b>Respiratory</b>	<b>429</b>	<b>869.75</b>	<b>0.49 (0.45 - 0.54)</b>	<b>263</b>	<b>551.19</b>	<b>0.48 (0.42 - 0.54)</b>
Larynx	36	80.74	0.45 (0.31 - 0.62)	22	52.48	0.42 (0.26 - 0.63)
Lung	371	766.31	0.48 (0.44 - 0.54)	228	483.92	0.47 (0.41 - 0.54)
<b>Melanoma</b>	912	916.15	1.00 (0.93 - 1.06)	590	600.13	0.98 (0.91 - 1.07)
<b>Mesothelioma</b>	<b>42</b>	<b>65.17</b>	<b>0.64 (0.46 - 0.87)</b>	<b>22</b>	<b>40.95</b>	<b>0.54 (0.34 - 0.81)</b>
<b>Male Reproductive</b>	<b>2763</b>	<b>2564.17</b>	<b>1.08 (1.04 - 1.12)</b>	<b>1777</b>	<b>1627.43</b>	<b>1.09 (1.04 - 1.14)</b>
Prostate	<b>2655</b>	<b>2368.28</b>	<b>1.12 (1.08 - 1.16)</b>	<b>1692</b>	<b>1497.47</b>	<b>1.13 (1.08 - 1.19)</b>
Testis	99	107.14	0.92 (0.75 - 1.13)	81	73.35	1.10 (0.88 - 1.37)
<b>Urinary tract</b>	<b>334</b>	<b>461.48</b>	<b>0.72 (0.65 - 0.81)</b>	<b>205</b>	<b>294.52</b>	<b>0.70 (0.60 - 0.80)</b>
Kidney	196	239.97	0.82 (0.71 - 0.94)	130	156.06	0.83 (0.70 - 0.99)
Bladder	117	195.23	0.60 (0.50 - 0.72)	67	122.13	0.55 (0.43 - 0.70)
<b>Brain &amp; Other CNS</b>	116	134.42	0.86 (0.71 - 1.04)	81	88.58	0.91 (0.73 - 1.14)
Brain	114	129.27	0.88 (0.73 - 1.06)	80	85.15	0.94 (0.74 - 1.17)
<b>Thyroid &amp; Other Endocrine</b>	62	76.25	0.81 (0.62 - 1.04)	<b>33</b>	<b>50.62</b>	<b>0.65 (0.45 - 0.92)</b>
Thyroid	58	70.30	0.83 (0.63 - 1.07)	<b>30</b>	<b>46.70</b>	<b>0.64 (0.43 - 0.92)</b>
<b>Unknown Site</b>	<b>101</b>	<b>184.25</b>	<b>0.55 (0.45 - 0.67)</b>	<b>59</b>	<b>116.81</b>	<b>0.51 (0.38 - 0.65)</b>
<b>Lympho-haematopoetic</b>	<b>663</b>	<b>817.01</b>	<b>0.81 (0.75 - 0.88)</b>	<b>426</b>	<b>524.79</b>	<b>0.81 (0.74 - 0.89)</b>
Hodgkin Disease	33	38.66	0.85 (0.59 - 1.20)	23	25.94	0.89 (0.56 - 1.33)
Non-Hodgkin Lymphoma	<b>267</b>	<b>321.54</b>	<b>0.83 (0.73 - 0.94)</b>	181	208.63	0.87 (0.75 - 1.00)
Follicular-NHL	74	79.10	0.94 (0.73 - 1.17)	56	52.00	1.08 (0.81 - 1.40)
Diffuse-NHL	<b>126</b>	<b>153.10</b>	<b>0.82 (0.69 - 0.98)</b>	82	99.00	0.83 (0.66 - 1.03)
Myeloma	<b>74</b>	<b>99.13</b>	<b>0.75 (0.59 - 0.94)</b>	48	63.24	0.76 (0.56 - 1.01)
Leukaemia	194	216.52	0.90 (0.77 - 1.03)	<b>108</b>	<b>139.04</b>	<b>0.78 (0.64 - 0.94)</b>
MDS	42	51.74	0.81 (0.59 - 1.10)	31	30.57	1.01 (0.69 - 1.44)
<b>All Other Cancers</b>	93	105.47	0.88 (0.71 - 1.08)	68	69.38	0.98 (0.76 - 1.24)
Male Breast	12	14.46	0.83 (0.43 - 1.45)	12	9.29	1.29 (0.67 - 2.26)

\* Statistically significantly elevated SIR results are in **red**, statistically significantly reduced SIR results are in **blue**



**Table 4: Standardised cancer Incidence Ratios\* and 95% confidence intervals for female volunteer firefighters to 31/12/2010 for all female volunteers (as in 2014 report) and for female volunteers that attended incidents compared to the Australian population**

Cancer Categories	Volunteer Firefighters (N=37,097) (Table 13 2014 report)			Volunteer Firefighters who attended incidents (N=16,320)		
	O	E	SIR (95%CI)	O	E	SIR (95%CI)
<b>All Malignancies</b>	1027	1061.23	0.97 (0.91 - 1.03)	421	434.12	0.97 (0.88 - 1.07)
<b>Lip, Oral Cavity &amp; Pharynx</b>	16	19.70	0.81 (0.46 - 1.32)	7	8.07	0.87 (0.35 - 1.79)
Lip	6	5.09	1.18 (0.43 - 2.56)	2	2.07	0.96 (0.12 - 3.48)
<b>Digestive Organs</b>	163	164.88	0.99 (0.84 - 1.15)	63	62.31	1.01 (0.78 - 1.29)
Oesophagus	4	5.39	0.74 (0.20 - 1.90)	0	1.94	-
Stomach	<b>4</b>	<b>11.68</b>	<b>0.34 (0.09 - 0.88)</b>	1	4.47	0.22 (0.01 - 1.25)
Colorectal	131	116.11	1.13 (0.94 - 1.34)	51	44.21	1.15 (0.86 - 1.52)
Colon	81	74.18	1.09 (0.87 - 1.36)	31	27.70	1.12 (0.76 - 1.59)
Rectum	38	28.19	1.35 (0.95 - 1.85)	14	11.08	1.26 (0.69 - 2.12)
Liver	<b>1</b>	<b>5.75</b>	<b>0.17 (0.00 - 0.97)</b>	1	2.18	0.46 (0.01 - 2.55)
Pancreas	13	16.88	0.77 (0.41 - 1.32)	3	6.11	0.49 (0.10 - 1.43)
<b>Respiratory</b>	66	73.32	0.90 (0.70 - 1.15)	34	27.55	1.23 (0.85 - 1.72)
Larynx	0	1.38	-	0	0.53	-
Lung	65	69.92	0.93 (0.72 - 1.18)	34	26.18	1.30 (0.90 - 1.82)
<b>Melanoma</b>	<b>147</b>	<b>118.07</b>	<b>1.25 (1.05 - 1.46)</b>	57	51.21	1.11 (0.84 - 1.44)
<b>Mesothelioma</b>	3	2.04	1.47 (0.30 - 4.29)	1	0.77	1.29 (0.03 - 7.19)
<b>Breast</b>	349	364.41	0.96 (0.86 - 1.06)	142	153.41	0.93 (0.78 - 1.09)
<b>Female-Reproductive</b>	<b>88</b>	<b>110.27</b>	<b>0.80 (0.64 - 0.98)</b>	37	45.75	0.81 (0.57 - 1.11)
Cervix	<b>12</b>	<b>22.51</b>	<b>0.53 (0.28 - 0.93)</b>	5	10.33	0.48 (0.16 - 1.13)
<b>Urinary tract</b>	23	29.46	0.78 (0.49 - 1.17)	7	11.29	0.62 (0.25 - 1.28)
Kidney	19	19.35	0.98 (0.59 - 1.53)	6	7.74	0.77 (0.28 - 1.69)
Bladder	<b>2</b>	<b>7.61</b>	<b>0.26 (0.03 - 0.95)</b>	0	2.69	-
<b>Brain &amp; Other CNS</b>	15	14.98	1.00 (0.56 - 1.65)	6	6.30	0.95 (0.35 - 2.07)
Brain	13	14.12	0.92 (0.49 - 1.57)	5	5.93	0.84 (0.27 - 1.97)
<b>Thyroid &amp; Other Endocrine</b>	41	40.98	1.00 (0.72 - 1.36)	15	18.55	0.81 (0.45 - 1.33)
Thyroid	39	40.04	0.97 (0.69 - 1.33)	14	18.15	0.77 (0.42 - 1.29)
<b>Unknown</b>	15	19.52	0.77 (0.43 - 1.27)	6	7.20	0.83 (0.31 - 1.81)
<b>Lympho-haematopoetic</b>	90	90.75	0.99 (0.80 - 1.22)	37	36.29	1.02 (0.72 - 1.41)
Hodgkin Disease	8	5.98	1.34 (0.58 - 2.63)	6	2.94	2.04 (0.75 - 4.44)
Non-Hodgkin Lymphoma	38	37.81	1.00 (0.71 - 1.38)	18	15.12	1.19 (0.71 - 1.88)
Follicular-NHL	14	11.29	1.24 (0.68 - 2.08)	9	4.64	1.94 (0.89 - 3.68)
Diffuse-NHL	15	15.67	0.96 (0.54 - 1.58)	6	6.18	0.97 (0.36 - 2.11)
Myeloma	13	10.25	1.27 (0.68 - 2.17)	4	3.84	1.04 (0.28 - 2.67)
Leukaemia	23	20.93	1.10 (0.70 - 1.65)	6	8.41	0.71 (0.26 - 1.55)
MDS	3	4.55	0.66 (0.14 - 1.93)	2	1.53	1.31 (0.16 - 4.73)
<b>All Other Cancers</b>	11	12.85	0.86 (0.43 - 1.53)	9	5.40	1.67 (0.76 - 3.16)

\* Statistically significantly elevated SIR results are in **red**, statistically significantly reduced SIR results are in **blue**

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**Table 5: Standardised Mortality Ratios\* and 95% confidence intervals for male volunteer firefighter deaths to 30/11/2011 compared to the Australian population for all male volunteers (as in 2014 report) and for those male volunteers who attended incidents**

Cause of Death Categories	Volunteer Firefighters (N=163,094) (Table 7 2014 report)			Volunteer Firefighters who attended incidents (N=102,073)		
	O	E	SMR (95%CI)	O	E	SMR (95%CI)
<b>All Causes of Death Combined</b>	<b>4647</b>	<b>8676.93</b>	<b>0.54 (0.52 - 0.55)</b>	<b>2768</b>	<b>5371.81</b>	<b>0.52 (0.50 - 0.53)</b>
<b>All Malignancies</b>	<b>1900</b>	<b>3202.94</b>	<b>0.59 (0.57 - 0.62)</b>	<b>1166</b>	<b>1992.94</b>	<b>0.59 (0.55 - 0.62)</b>
<b>All Nervous System</b>	<b>121</b>	<b>266.65</b>	<b>0.45 (0.38 - 0.54)</b>	<b>61</b>	<b>161.84</b>	<b>0.38 (0.29 - 0.48)</b>
<b>All Circulatory</b>	<b>1250</b>	<b>2430.98</b>	<b>0.51 (0.49 - 0.54)</b>	<b>724</b>	<b>1477.81</b>	<b>0.49 (0.45 - 0.53)</b>
Hypertensive	31	50.92	0.61 (0.41 - 0.86)	18	30.16	0.60 (0.35 - 0.94)
Ischaemic Heart Disease	718	1462.46	0.49 (0.46 - 0.53)	411	899.32	0.46 (0.41 - 0.50)
Cerebrovascular	189	424.74	0.44 (0.38 - 0.51)	100	250.67	0.40 (0.32 - 0.49)
<b>All Respiratory</b>	<b>216</b>	<b>587.02</b>	<b>0.37 (0.32 - 0.42)</b>	<b>124</b>	<b>346.76</b>	<b>0.36 (0.30 - 0.43)</b>
COPD	115	316.71	0.36 (0.30 - 0.44)	63	187.84	0.34 (0.26 - 0.43)
<b>All Digestive</b>	<b>108</b>	<b>338.91</b>	<b>0.32 (0.26 - 0.38)</b>	<b>70</b>	<b>214.27</b>	<b>0.33 (0.25 - 0.41)</b>
Diseases of the Liver	50	198.40	0.25 (0.19 - 0.33)	33	130.17	0.25 (0.17 - 0.36)
<b>All Injury &amp; Trauma</b>	<b>663</b>	<b>926.81</b>	<b>0.72 (0.66 - 0.77)</b>	<b>405</b>	<b>616.35</b>	<b>0.66 (0.59 - 0.72)</b>
All Accidents	405	507.67	0.80 (0.72 - 0.88)	245	334.53	0.73 (0.64 - 0.83)
Fire	19	10.37	1.83 (1.10 - 2.86)	13	6.87	1.89 (1.01 - 3.24)
Suicide	204	340.71	0.60 (0.52 - 0.69)	130	230.33	0.56 (0.47 - 0.67)
<b>All Other Causes</b>	<b>379</b>	<b>923.61</b>	<b>0.41 (0.37 - 0.45)</b>	<b>211</b>	<b>561.84</b>	<b>0.38 (0.33 - 0.43)</b>
Dementia & Alzheimers	57	147.68	0.39 (0.29 - 0.50)	30	80.30	0.37 (0.25 - 0.53)
Diabetes	86	232.82	0.37 (0.30 - 0.46)	51	141.73	0.36 (0.27 - 0.47)

\* Statistically significantly elevated SMR results are in red, statistically significantly reduced SMR results are in blue

**Table 6: Standardised Mortality Ratios\* and 95% confidence intervals for female volunteer firefighter deaths to 30/11/2011 for all female volunteers (as in 2014 report) and for those female volunteers that attended incidents compared to the Australian population**

Cause of Death Categories	Volunteer Firefighters (N= 37,962) (Table 8 2014 report)			Volunteer Firefighters who attended incidents (N= 16,900)		
	O	E	SMR (95%CI)	O	E	SMR (95%CI)
<b>All Causes of Death Combined</b>	<b>526</b>	<b>822.93</b>	<b>0.64 (0.59 - 0.70)</b>	<b>206</b>	<b>286.41</b>	<b>0.72 (0.62 - 0.82)</b>
<b>All Malignancies</b>	<b>268</b>	<b>359.13</b>	<b>0.75 (0.66 - 0.84)</b>	118	133.98	0.88 (0.73 - 1.05)
<b>All Nervous System</b>	<b>11</b>	<b>31.78</b>	<b>0.35 (0.17 - 0.62)</b>	<b>3</b>	<b>10.66</b>	<b>0.28 (0.06 - 0.82)</b>
<b>All Circulatory</b>	<b>100</b>	<b>184.17</b>	<b>0.54 (0.44 - 0.66)</b>	<b>35</b>	<b>53.85</b>	<b>0.65 (0.45 - 0.90)</b>
Hypertensive	2	6.26	0.32 (0.04 - 1.15)	1	1.63	0.61 (0.02 - 3.41)
Ischaemic Heart Disease	37	80.85	0.46 (0.32 - 0.63)	11	23.31	0.47 (0.24 - 0.84)
Cerebrovascular	24	49.67	0.48 (0.31 - 0.72)	10	14.22	0.70 (0.34 - 1.29)
<b>All Respiratory</b>	<b>21</b>	<b>56.05</b>	<b>0.37 (0.23 - 0.57)</b>	<b>3</b>	<b>17.70</b>	<b>0.17 (0.03 - 0.50)</b>
COPD	11	28.70	0.38 (0.19 - 0.69)	1	9.13	0.11 (0.00 - 0.61)
<b>All Digestive</b>	<b>15</b>	<b>29.91</b>	<b>0.50 (0.28 - 0.83)</b>	6	10.51	0.57 (0.21 - 1.24)
Diseases of the Liver	5	13.75	0.36 (0.12 - 0.85)	0	5.63	-
<b>All Injury and Trauma</b>	66	61.82	1.07 (0.83 - 1.36)	29	27.36	1.06 (0.71 - 1.52)
All Accidents	47	35.10	1.34 (0.98 - 1.78)	20	14.96	1.34 (0.82 - 2.06)
Fire	2	1.93	1.04 (0.13 - 3.74)	2	0.41	4.92 (0.60 - 17.8)
Suicide	14	19.05	0.73 (0.40 - 1.23)	8	8.99	0.89 (0.38 - 1.75)
<b>All Other Causes</b>	<b>44</b>	<b>100.08</b>	<b>0.44 (0.32 - 0.59)</b>	<b>11</b>	<b>32.34</b>	<b>0.34 (0.17 - 0.61)</b>
Dementia & Alzheimers	13	19.71	0.66 (0.35 - 1.13)	3	4.65	0.64 (0.13 - 1.88)
Diabetes	11	20.96	0.52 (0.26 - 0.94)	3	6.78	0.44 (0.09 - 1.29)

\* Statistically significantly reduced SMR results are in blue

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**Table 7: Relative cancer Incident Ratios\* and 95% confidence intervals for ALL male volunteer firefighters to 31/12/2010 by number of incidents and incident types in tertiles (adjusted for age and calendar period) Trend test across individuals with incidents only (Table 61 Final Report Dec 2014)**

Cancer Categories	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>All Malignancies</b>	Zero incidents	1768	Ref	1934	Ref	3927	Ref	2186	Ref	4561	Ref
	Tertile 1	<b>1162</b>	<b>0.89 (0.82 - 0.96)</b>	<b>1066</b>	<b>0.90 (0.83 - 0.97)</b>	<b>478</b>	<b>0.87 (0.79 - 0.96)</b>	<b>933</b>	<b>0.91 (0.84 - 0.98)</b>	359	0.93 (0.83 - 1.04)
	Tertile 2	1706	1.01 (0.94 - 1.08)	1619	1.01 (0.95 - 1.08)	863	0.95 (0.88 - 1.02)	1503	1.03 (0.96 - 1.10)	603	0.96 (0.88 - 1.05)
	Tertile 3	1566	0.98 (0.92 - 1.05)	1583	0.99 (0.92 - 1.06)	934	1.01 (0.94 - 1.09)	1580	1.01 (0.94 - 1.08)	679	1.02 (0.94 - 1.10)
	Trend test		<b>P = 0.01</b>		<b>P = 0.02</b>		<b>P = 0.01</b>		<b>P = 0.02</b>		P = 0.14
<b>Lip, Oral Cavity &amp; Pharynx</b>	Zero incidents	53	Ref	56	Ref	131	Ref	65	Ref	152	Ref
	Tertile 1	45	1.08 (0.72 - 1.61)	43	1.16 (0.77 - 1.72)	15	0.68 (0.39 - 1.16)	37	1.09 (0.73 - 1.64)	15	0.95 (0.56 - 1.62)
	Tertile 2	59	1.16 (0.80 - 1.68)	60	1.29 (0.89 - 1.86)	34	1.07 (0.74 - 1.57)	59	1.34 (0.94 - 1.91)	21	0.95 (0.60 - 1.51)
	Tertile 3	54	1.10 (0.75 - 1.62)	52	1.10 (0.76 - 1.61)	31	0.97 (0.66 - 1.44)	50	1.07 (0.74 - 1.55)	23	1.00 (0.64 - 1.55)
	Trend test		P = 0.92		P = 0.76		P = 0.29		P = 0.81		P = 0.90
<b>Digestive Organs</b>	Zero incidents	348	Ref	383	Ref	733	Ref	428	Ref	846	Ref
	Tertile 1	<b>198</b>	<b>0.78 (0.65 - 0.93)</b>	<b>183</b>	<b>0.79 (0.66 - 0.94)</b>	<b>61</b>	<b>0.62 (0.48 - 0.81)</b>	<b>161</b>	<b>0.83 (0.69 - 0.99)</b>	<b>46</b>	<b>0.68 (0.50 - 0.92)</b>
	Tertile 2	290	0.85 (0.73 - 1.00)	<b>265</b>	<b>0.82 (0.70 - 0.97)</b>	152	0.90 (0.75 - 1.07)	256	0.88 (0.76 - 1.03)	119	1.03 (0.85 - 1.25)
	Tertile 3	311	0.99 (0.85 - 1.16)	316	0.99 (0.85 - 1.15)	<b>201</b>	<b>1.17 (1.00 - 1.37)</b>	302	0.98 (0.84 - 1.13)	136	1.10 (0.92 - 1.32)
	Trend test		<b>P = 0.01</b>		<b>P = 0.01</b>		<b>P &lt; 0.01</b>		P = 0.07		<b>P = 0.01</b>
<b>Colorectal</b>	Zero incidents	235	Ref	258	Ref	490	Ref	291	Ref	571	Ref
	Tertile 1	<b>135</b>	<b>0.78 (0.63 - 0.97)</b>	127	0.82 (0.66 - 1.01)	<b>46</b>	<b>0.71 (0.52 - 0.96)</b>	110	0.83 (0.67 - 1.03)	37	0.81 (0.58 - 1.14)
	Tertile 2	200	0.87 (0.72 - 1.06)	182	0.84 (0.69 - 1.02)	110	0.97 (0.79 - 1.20)	177	0.90 (0.75 - 1.09)	78	1.01 (0.79 - 1.28)
	Tertile 3	210	0.99 (0.82 - 1.20)	213	0.99 (0.83 - 1.19)	134	1.17 (0.96 - 1.42)	202	0.96 (0.80 - 1.15)	94	1.13 (0.91 - 1.41)
	Trend test		<b>P = 0.03</b>		P = 0.06		<b>P &lt; 0.01</b>		P = 0.18		P = 0.10
<b>Respiratory</b>	Zero incidents	134	Ref	146	Ref	277	Ref	168	Ref	305	Ref
	Tertile 1	<b>65</b>	<b>0.68 (0.51 - 0.92)</b>	<b>62</b>	<b>0.73 (0.54 - 0.98)</b>	26	0.74 (0.50 - 1.12)	<b>46</b>	<b>0.62 (0.45 - 0.86)</b>	14	0.60 (0.35 - 1.03)
	Tertile 2	113	0.89 (0.69 - 1.14)	108	0.90 (0.70 - 1.16)	50	0.80 (0.59 - 1.08)	102	0.92 (0.72 - 1.18)	36	0.89 (0.63 - 1.26)
	Tertile 3	<b>84</b>	<b>0.72 (0.55 - 0.95)</b>	<b>80</b>	<b>0.68 (0.52 - 0.90)</b>	<b>43</b>	<b>0.68 (0.49 - 0.94)</b>	<b>80</b>	<b>0.68 (0.52 - 0.89)</b>	41	0.95 (0.68 - 1.31)
	Trend test		P = 0.87		P = 0.84		P = 0.22		P = 0.31		<b>P = 0.01</b>
<b>Lung</b>	Zero incidents	116	Ref	126	Ref	243	Ref	145	Ref	263	Ref
	Tertile 1	<b>54</b>	<b>0.66 (0.48 - 0.92)</b>	<b>50</b>	<b>0.69 (0.50 - 0.97)</b>	21	0.71 (0.45 - 1.11)	<b>39</b>	<b>0.62 (0.44 - 0.89)</b>	<b>12</b>	<b>0.62 (0.35 - 1.12)</b>
	Tertile 2	101	0.92 (0.70 - 1.19)	98	0.95 (0.73 - 1.24)	40	0.74 (0.53 - 1.03)	89	0.93 (0.71 - 1.21)	30	0.87 (0.60 - 1.28)
	Tertile 3	<b>73</b>	<b>0.73 (0.54 - 0.98)</b>	<b>70</b>	<b>0.69 (0.52 - 0.93)</b>	40	0.73 (0.52 - 1.02)	<b>71</b>	<b>0.70 (0.53 - 0.93)</b>	39	1.05 (0.75 - 1.48)
	Trend test		P = 0.72		P = 0.84		P = 1.00		P = 0.82		P = 0.11
<b>Melanoma</b>	Zero incidents	215	Ref	243	Ref	495	Ref	263	Ref	572	Ref
	Tertile 1	175	1.01 (0.83 - 1.23)	157	0.94 (0.77 - 1.16)	95	1.09 (0.87 - 1.36)	146	1.03 (0.84 - 1.27)	73	1.17 (0.91 - 1.50)
	Tertile 2	220	1.06 (0.88 - 1.28)	210	1.03 (0.86 - 1.24)	115	0.95 (0.77 - 1.16)	203	1.13 (0.94 - 1.36)	78	0.92 (0.73 - 1.17)
	Tertile 3	188	0.93 (0.76 - 1.13)	188	0.90 (0.75 - 1.09)	<b>93</b>	<b>0.76 (0.61 - 0.95)</b>	186	0.97 (0.80 - 1.17)	75	0.85 (0.67 - 1.08)
	Trend test		P = 0.41		P = 0.64		<b>P = 0.02</b>		P = 0.51		P = 0.06

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Cancer Categories	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>Male Reproductive</b>	Zero incidents	663	Ref	724	Ref	1509	Ref	822	Ref	1791	Ref
	Tertile 1	452	0.95 (0.84 - 1.06)	416	0.97 (0.86 - 1.09)	192	1.00 (0.86 - 1.17)	372	1.01 (0.89 - 1.14)	126	0.93 (0.77 - 1.11)
	Tertile 2	686	1.08 (0.97 - 1.02)	640	1.07 (0.97 - 1.19)	354	1.02 (0.91 - 1.15)	569	1.04 (0.94 - 1.16)	232	0.96 (0.84 - 1.10)
	Tertile 3	616	1.04 (0.93 - 1.16)	637	1.06 (0.96 - 1.18)	362	1.03 (0.92 - 1.15)	654	1.10 (1.00 - 1.22)	268	1.03 (0.91 - 1.17)
	Trend test		P = 0.17		P = 0.15		P = 0.67		P = 0.13		P = 0.26
Prostate	Zero incidents	647	Ref	705	Ref	1459	Ref	800	Ref	1729	Ref
	Tertile 1	423	0.92 (0.81 - 1.04)	387	0.94 (0.83 - 1.07)	174	0.98 (0.84 - 1.15)	342	0.98 (0.86 - 1.11)	107	0.86 (0.71 - 1.05)
	Tertile 2	658	1.06 (0.95 - 1.19)	615	1.06 (0.95 - 1.18)	340	1.02 (0.91 - 1.15)	544	1.02 (0.92 - 1.14)	222	0.96 (0.83 - 1.10)
	Tertile 3	590	1.02 (0.91 - 1.14)	611	1.05 (0.94 - 1.17)	345	1.02 (0.90 - 1.14)	632	1.09 (0.98 - 1.21)	260	1.04 (0.91 - 1.18)
	Trend test		P = 0.14		P = 0.14		P = 0.66		P = 0.09		P = 0.09
Testis	Zero incidents	14	Ref	16	Ref	47	Ref	19	Ref	59	Ref
	Tertile 1	<b>28</b>	<b>2.02 (1.06 - 3.86)</b>	<b>29</b>	<b>2.09 (1.13 - 3.86)</b>	18	1.37 (0.79 - 2.37)	<b>30</b>	<b>2.19 (1.23 - 3.91)</b>	17	1.53 (0.89 - 2.64)
	Tertile 2	<b>28</b>	<b>2.17 (1.14 - 4.14)</b>	<b>25</b>	<b>1.93 (1.03 - 3.63)</b>	14	1.15 (0.63 - 2.10)	<b>25</b>	<b>1.96 (1.08 - 3.57)</b>	10	1.05 (0.54 - 2.06)
	Tertile 3	24	1.84 (0.95 - 3.58)	<b>24</b>	<b>1.90 (1.00 - 3.59)</b>	15	1.25 (0.70 - 2.24)	20	1.68 (0.89 - 3.17)	8	0.83 (0.40 - 1.75)
	Trend test		P = 0.71		P = 0.70		P = 0.75		P = 0.35		P = 0.16
Urinary tract	Zero incidents	81	Ref	90	Ref	182	Ref	99	Ref	201	Ref
	Tertile 1	47	0.81 (0.56 - 1.16)	40	0.75 (0.51 - 1.09)	20	0.82 (0.52 - 1.31)	39	0.87 (0.60 - 1.27)	18	1.12 (0.69 - 1.82)
	Tertile 2	79	1.03 (0.75 - 1.41)	78	1.06 (0.78 - 1.43)	33	0.80 (0.55 - 1.16)	69	1.05 (0.77 - 1.43)	32	1.19 (0.82 - 1.74)
	Tertile 3	74	1.05 (0.76 - 1.44)	73	1.01 (0.74 - 1.38)	46	1.10 (0.80 - 1.53)	74	1.07 (0.79 - 1.45)	30	1.05 (0.71 - 1.54)
	Trend test		P = 0.19		P = 0.17		P = 0.21		P = 0.33		P = 0.67
Kidney	Zero incidents	41	Ref	46	Ref	97	Ref	50	Ref	109	Ref
	Tertile 1	26	0.83 (0.51 - 1.36)	23	0.78 (0.47 - 1.29)	14	0.95 (0.54 - 1.67)	23	0.93 (0.57 - 1.54)	10	1.00 (0.53 - 1.92)
	Tertile 2	45	1.13 (0.74 - 1.72)	44	1.13 (0.75 - 1.72)	21	0.91 (0.56 - 1.45)	41	1.20 (0.79 - 1.82)	24	1.55 (1.00 - 2.42)
	Tertile 3	55	1.44 (0.96 - 2.17)	54	1.37 (0.93 - 2.05)	35	1.49 (0.01 - 2.20)	53	1.44 (0.98 - 1.13)	24	1.47 (0.94 - 2.29)
	Trend test		<b>P = 0.02</b>		<b>P = 0.02</b>		P = 0.08		P = 0.08		P = 0.45
Lympho-haematopoetic	Zero incidents	170	Ref	180	Ref	366	Ref	211	Ref	429	Ref
	Tertile 1	113	0.89 (0.70 - 1.12)	108	0.96 (0.75 - 1.22)	45	0.83 (0.61 - 1.13)	82	0.81 (0.62 - 1.04)	39	0.99 (0.71 - 1.39)
	Tertile 2	155	0.96 (0.77 - 1.19)	152	1.03 (0.83 - 1.27)	76	0.90 (0.70 - 1.15)	150	1.07 (0.86 - 1.32)	51	0.86 (0.65 - 1.16)
	Tertile 3	149	0.99 (0.79 - 1.23)	147	1.01 (0.81 - 1.25)	100	1.17 (0.94 - 1.46)	144	0.97 (0.79 - 1.21)	68	1.09 (0.84 - 1.40)
	Trend test		P = 0.40		P = 0.74		<b>P = 0.03</b>		P = 0.27		P = 0.50
NHL	Zero incidents	65	Ref	69	Ref	149	Ref	81	Ref	179	Ref
	Tertile 1	49	0.99 (0.68 - 1.44)	49	1.11 (0.77 - 1.61)	18	0.78 (0.48 - 1.27)	37	0.92 (0.62 - 1.36)	15	0.88 (0.52 - 1.51)
	Tertile 2	60	0.96 (0.68 - 1.37)	64	1.12 (0.79 - 1.57)	34	0.96 (0.66 - 1.39)	59	1.08 (0.77 - 1.51)	17	0.67 (0.41 - 1.10)
	Tertile 3	67	1.13 (0.80 - 1.59)	59	1.02 (0.72 - 1.45)	40	1.12 (0.79 - 1.59)	64	1.09 (0.78 - 1.52)	30	1.12 (0.76 - 1.65)
	Trend test		P = 0.47		P = 0.63		P = 0.19		P = 0.46		P = 0.28

\* Statistically significantly elevated RIR results and statistically significant positive trends are in **red**, statistically significantly reduced RIR results and statistically significant negative trends are in **blue**

[Type text]

**Table 8: Relative cancer Incident Ratios\* and 95% confidence intervals for only those male volunteer firefighters who attended incidents to 31/12/2010 by number of incidents and incident types using career firefighter cut points (adjusted for age and calendar period)**

Cancer Categories	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>All Malignancies</b>	Career 1	4184	Ref	4191	Ref	4283	Ref	3566	Ref	4191	Ref
	Career 2	210	1.09 (0.95 - 1.26)	217	1.09 (0.95 - 1.25)	<b>142</b>	<b>1.20 (1.01 - 1.42)</b>	681	1.07 (0.98 - 1.16)	218	1.08 (0.94 - 1.24)
	Career 3	97	1.05 (0.86 - 1.28)	83	1.02 (0.82 - 1.27)	66	1.08 (0.84 - 1.37)	244	1.05 (0.92 - 1.19)	82	1.06 (0.85 - 1.31)
<b>Lip, Oral Cavity &amp; Pharynx</b>	Career 1	151	Ref	151	Ref	154	Ref	129	Ref	153	Ref
	Career 2	<b>7</b>	<b>1.03 (0.48 - 2.19)</b>	7	1.01 (0.47 - 2.16)	3	0.70 (0.22 - 2.20)	25	1.11 (0.72 - 1.71)	6	0.82 (0.36 - 1.84)
	Career 3	1	0.31 (0.04 - 2.25)	1	0.37 (0.05 - 2.64)	2	0.96 (0.24 - 3.88)	5	0.66 (0.27 - 1.60)	0	-
<b>Digestive Organs</b>	Career 1	750	Ref	753	Ref	773	Ref	627	Ref	754	Ref
	Career 2	<b>49</b>	<b>1.42 (1.06 - 1.89)</b>	48	1.33 (0.99 - 1.78)	29	1.35 (0.93 - 1.96)	<b>138</b>	<b>1.22 (1.02 - 1.47)</b>	43	1.18 (0.87 - 1.61)
	Career 3	9	0.54 (0.28 - 1.04)	7	0.47 (0.23 - 1.00)	6	0.54 (0.24 - 1.20)	43	1.03 (0.75 - 1.40)	11	0.79 (0.43 - 1.43)
Colorectal	Career 1	517	Ref	518	Ref	530	Ref	429	Ref	519	Ref
	Career 2	32	1.35 (0.94 - 1.93)	33	1.33 (0.94 - 1.89)	21	1.43 (0.92 - 2.21)	<b>96</b>	<b>1.25 (1.00 - 1.56)</b>	31	1.24 (0.87 - 1.79)
	Career 3	<b>4</b>	<b>0.35 (0.13 - 0.94)</b>	<b>2</b>	<b>0.20 (0.05 - 0.80)</b>	2	0.26 (0.07 - 1.05)	28	0.98 (0.67 - 1.44)	<b>3</b>	<b>0.31 (0.10 - 0.98)</b>
<b>Respiratory</b>	Career 1	247	Ref	246	Ref	252	Ref	218	Ref	248	Ref
	Career 2	9	0.79 (0.41 - 1.54)	12	1.01 (0.57 - 1.81)	7	1.01 (0.48 - 2.14)	29	0.74 (0.50 - 1.09)	9	0.76 (0.39 - 1.47)
	Career 3	7	1.27 (0.60 - 2.69)	5	1.03 (0.42 - 2.49)	4	1.09 (0.41 - 2.93)	16	1.08 (0.65 - 1.80)	6	1.31 (0.58 - 2.95)
Lung	Career 1	214	Ref	213	Ref	218	Ref	186	Ref	215	Ref
	Career 2	8	0.81 (0.40 - 1.65)	11	1.07 (0.58 - 1.96)	7	1.17 (0.55 - 2.49)	27	0.81 (0.54 - 1.21)	9	0.88 (0.45 - 1.71)
	Career 3	6	1.26 (0.56 - 2.84)	4	0.95 (0.35 - 2.56)	3	0.95 (0.30 - 2.95)	15	1.18 (0.70 - 2.00)	4	1.01 (0.38 - 2.73)
<b>Melanoma</b>	Career 1	558	Ref	559	Ref	570	Ref	486	Ref	558	Ref
	Career 2	18	0.71 (0.45 - 1.14)	17	0.67 (0.41 - 1.08)	13	0.82 (0.47 - 1.42)	80	0.95 (0.75 - 1.20)	23	0.85 (0.56 - 1.30)
	Career 3	14	1.20 (0.71 - 2.04)	14	1.42 (0.83 - 2.41)	7	0.92 (0.44 - 1.93)	24	0.86 (0.57 - 1.29)	9	0.89 (0.46 - 1.72)
<b>Male Reproductive</b>	Career 1	1659	Ref	1664	Ref	1699	Ref	1408	Ref	1657	Ref
	Career 2	80	1.04 (0.83 - 1.30)	77	0.95 (0.75 - 1.19)	52	1.10 (0.83 - 1.45)	276	1.08 (0.94 - 1.22)	87	1.08 (0.87 - 1.34)
	Career 3	38	1.00 (0.73 - 1.38)	36	1.06 (0.77 - 1.48)	26	1.03 (0.70 - 1.51)	93	0.95 (0.77 - 1.17)	33	1.05 (0.74 - 1.48)
Prostate	Career 1	1578	Ref	1581	Ref	1615	Ref	1337	Ref	1577	Ref
	Career 2	77	1.04 (0.83 - 1.31)	76	0.97 (0.77 - 1.23)	52	1.15 (0.87 - 1.52)	264	1.07 (0.94 - 1.22)	83	1.08 (0.87 - 1.35)
	Career 3	38	1.04 (0.75 - 1.43)	36	1.10 (0.79 - 1.53)	26	1.06 (0.72 - 1.57)	92	0.97 (0.78 - 1.19)	33	1.09 (0.77 - 1.54)
Testis	Career 1	78	Ref	80	Ref	81	Ref	69	Ref	77	Ref
	Career 2	3	0.94 (0.30 - 2.97)	1	0.33 (0.05 - 2.35)	0	-	11	1.16 (0.61 - 2.21)	4	1.13 (0.42 - 3.10)
	Career 3	0	-	0	-	0	-	1	0.41 (0.06 - 2.99)	0	-
<b>Urinary tract</b>	Career 1	187	Ref	184	Ref	188	Ref	154	Ref	187	Ref
	Career 2	12	1.40 (0.78 - 2.52)	<b>17</b>	<b>1.95 (1.18 - 3.20)</b>	<b>10</b>	<b>1.94 (1.03 - 3.66)</b>	35	1.27 (0.88 - 1.84)	15	1.68 (0.99 - 2.84)
	Career 3	6	1.47 (0.65 - 3.31)	4	1.13 (0.42 - 3.06)	<b>7</b>	<b>2.63 (1.24 - 5.59)</b>	16	1.59 (0.95 - 2.67)	3	0.88 (0.28 - 2.74)
Kidney	Career 1	115	Ref	114	Ref	116	Ref	91	Ref	114	1
	Career 2	9	1.70 (0.86 - 3.34)	<b>12</b>	<b>2.22 (1.22 - 4.02)</b>	<b>7</b>	<b>2.15 (1.00 - 4.62)</b>	<b>26</b>	<b>1.58 (1.02 - 2.45)</b>	<b>13</b>	<b>2.34 (1.32 - 4.16)</b>
	Career 3	<b>6</b>	<b>2.37 (1.04 - 5.38)</b>	4	1.84 (0.68 - 4.99)	<b>7</b>	<b>4.23 (1.97 - 9.08)</b>	<b>13</b>	<b>2.24 (1.25 - 4.01)</b>	3	1.41 (0.45 - 4.44)

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Cancer Categories	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>Lympho-haematopoetic</b>	Career 1	391	Ref	392	Ref	400	Ref	336	Ref	393	1
	Career 2	24	1.36 (0.90 - 2.05)	24	1.32 (0.87 - 1.99)	<b>18</b>	<b>1.65 (1.03 - 2.64)</b>	63	1.08 (0.82 - 1.41)	22	1.17 (0.76 - 1.80)
	Career 3	11	1.32 (0.72 - 2.40)	10	1.38 (0.74 - 2.58)	8	1.45 (0.72 - 2.92)	27	1.29 (0.87 - 1.91)	11	1.55 (0.85 - 2.83)
NHL	Career 1	168	Ref	169	Ref	172	Ref	144	Ref	169	1
	Career 2	10	1.30 (0.69 - 2.47)	11	1.39 (0.75 - 2.56)	8	1.67 (0.82 - 3.40)	28	1.09 (0.73 - 1.64)	9	1.10 (0.56 - 2.16)
	Career 3	3	0.82 (0.26 - 2.58)	1	0.32 (0.04 - 2.25)	1	0.42 (0.06 - 2.97)	9	1.00 (0.51 - 1.96)	3	0.96 (0.31 - 3.02)

\* Statistically significantly elevated RIR results and statistically significant positive trends are in **red**, statistically significantly reduced SIRs are in **blue**

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**Table 9: Relative Mortality Ratios\* and 95% confidence intervals for ALL male volunteer firefighters to 30/11/2011 by number of incidents and incident types in tertiles** (adjusted for age and calendar period) Trend test across individuals with incidents only (Table 53 Final Report December 2014)

Causes of Death	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>All Causes of Death Combined</b>	Zero incidents	1546	Ref	1693	Ref	3036	Ref	1898	Ref	3418	Ref
	Tertile 1	688	0.65 (0.59 - 0.71)	599	0.62 (0.57 - 0.69)	208	0.54 (0.47 - 0.62)	507	0.62 (0.56 - 0.69)	158	0.59 (0.50 - 0.69)
	Tertile 2	1116	0.82 (0.76 - 0.89)	1049	0.81 (0.75 - 0.88)	456	0.71 (0.64 - 0.78)	966	0.82 (0.76 - 0.88)	324	0.76 (0.67 - 0.85)
	Tertile 3	964	0.80 (0.74 - 0.87)	973	0.80 (0.74 - 0.86)	614	0.98 (0.90 - 1.07)	943	0.79 (0.73 - 0.85)	414	0.92 (0.83 - 1.01)
	Trend test		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>
<b>All Malignancies</b>	Zero incidents	600	Ref	661	Ref	1236	Ref	738	Ref	1390	Ref
	Tertile 1	288	0.74 (0.64 - 0.85)	255	0.72 (0.62 - 0.83)	78	0.56 (0.44 - 0.70)	207	0.70 (0.60 - 0.82)	66	0.69 (0.54 - 0.89)
	Tertile 2	469	0.89 (0.79 - 1.00)	426	0.84 (0.74 - 0.95)	198	0.77 (0.66 - 0.90)	415	0.91 (0.80 - 1.02)	143	0.84 (0.71 - 1.00)
	Tertile 3	409	0.89 (0.78 - 1.01)	424	0.90 (0.79 - 1.02)	254	1.01 (0.88 - 1.16)	406	0.87 (0.77 - 0.99)	167	0.93 (0.79 - 1.09)
	Trend test		<b>P = 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P = 0.02</b>		P = 0.08
<b>All Nervous System</b>	Zero incidents	48	Ref	53	Ref	82	Ref	56	Ref	90	Ref
	Tertile 1	16	0.50 (0.28 - 0.88)	12	0.41 (0.22 - 0.76)	4	0.40 (0.15 - 1.10)	10	0.42 (0.22 - 0.84)	5	0.73 (0.30 - 1.83)
	Tertile 2	26	0.63 (0.40 - 1.02)	26	0.65 (0.41 - 1.04)	9	0.53 (0.26 - 1.05)	24	0.70 (0.43 - 1.13)	6	0.54 (0.24 - 1.24)
	Tertile 3	19	0.52 (0.30 - 0.88)	18	0.48 (0.28 - 0.82)	14	0.84 (0.48 - 1.50)	19	0.55 (0.32 - 0.92)	8	0.68 (0.33 - 1.41)
	Trend test		P = 0.94		P = 0.75		P = 0.13		P = 0.61		P = 0.86
<b>All Circulatory</b>	Zero incidents	428	Ref	469	Ref	826	Ref	529	Ref	918	Ref
	Tertile 1	171	0.62 (0.52 - 0.74)	141	0.57 (0.48 - 0.69)	42	0.49 (0.36 - 0.66)	118	0.58 (0.47 - 0.71)	31	0.53 (0.37 - 0.76)
	Tertile 2	283	0.75 (0.65 - 0.87)	264	0.73 (0.63 - 0.85)	107	0.64 (0.52 - 0.78)	229	0.70 (0.60 - 0.82)	76	0.70 (0.56 - 0.89)
	Tertile 3	270	0.84 (0.72 - 0.98)	278	0.85 (0.73 - 0.99)	177	1.08 (0.92 - 1.27)	276	0.85 (0.73 - 0.98)	127	1.10 (0.91 - 1.32)
	Trend test		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>
<b>IHD</b>	Zero incidents	240	Ref	261	Ref	458	Ref	288	Ref	507	Ref
	Tertile 1	86	0.55 (0.43 - 0.71)	71	0.51 (0.39 - 0.67)	24	0.49 (0.32 - 0.74)	64	0.57 (0.43 - 0.75)	18	0.55 (0.34 - 0.89)
	Tertile 2	151	0.71 (0.58 - 0.87)	144	0.71 (0.58 - 0.87)	63	0.67 (0.51 - 0.87)	125	0.69 (0.56 - 0.86)	49	0.81 (0.60 - 1.08)
	Tertile 3	174	0.95 (0.78 - 1.15)	175	0.94 (0.77 - 1.14)	106	1.15 (0.93 - 1.42)	174	0.96 (0.80 - 1.16)	77	1.19 (0.93 - 1.51)
	Trend test		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>		<b>P &lt; 0.01</b>
<b>All Respiratory</b>	Zero incidents	78	Ref	88	Ref	154	Ref	107	Ref	169	Ref
	Tertile 1	27	0.58 (0.37 - 0.89)	16	0.37 (0.22 - 0.64)	7	0.51 (0.24 - 1.10)	12	0.32 (0.18 - 0.58)	6	0.66 (0.29 - 1.50)
	Tertile 2	66	1.00 (0.72 - 1.40)	68	1.05 (0.76 - 1.44)	26	0.89 (0.59 - 1.35)	47	0.74 (0.52 - 1.04)	15	0.81 (0.48 - 1.38)
	Tertile 3	31	0.58 (0.38 - 0.88)	30	0.53 (0.35 - 0.80)	15	0.53 (0.31 - 0.90)	36	0.58 (0.40 - 0.85)	12	0.60 (0.33 - 1.08)
	Trend test		P = 0.91		P = 0.64		P = 0.65		P = 0.19		P = 0.69
<b>COPD</b>	Zero incidents	44	Ref	48	Ref	85	Ref	58	Ref	90	Ref
	Tertile 1	11	0.42 (0.22 - 0.82)	6	0.26 (0.11 - 0.61)	3	0.42 (0.13 - 1.33)	3	0.15 (0.05 - 0.48)	4	0.89 (0.32 - 2.43)
	Tertile 2	36	0.98 (0.63 - 1.52)	37	1.05 (0.68 - 1.62)	13	0.81 (0.45 - 1.45)	26	0.76 (0.48 - 1.20)	8	0.82 (0.40 - 1.69)
	Tertile 3	16	0.53 (0.30 - 0.94)	16	0.51 (0.29 - 0.91)	6	0.38 (0.17 - 0.88)	20	0.60 (0.36 - 0.99)	5	0.47 (0.19 - 1.16)
	Trend test		P = 0.71		P = 0.45		P = 0.53		P = 0.09		P = 0.24

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Causes of Death	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>All Digestive</b>	Zero incidents	35	Ref	36	Ref	69	Ref	43	Ref	75	Ref
	Tertile 1	20	0.83 (0.48 - 1.44)	20	0.97 (0.56 - 1.67)	6	0.67 (0.29 - 1.56)	14	0.74 (0.40 - 1.36)	5	0.84 (0.34 - 2.10)
	Tertile 2	23	0.75 (0.44 - 1.26)	27	0.98 (0.59 - 1.61)	15	1.00 (0.57 - 1.74)	28	1.03 (0.64 - 1.67)	12	1.23 (0.67 - 2.27)
	Tertile 3	27	0.95 (0.57 - 1.57)	22	0.81 (0.48 - 1.39)	15	1.01 (0.58 - 1.78)	20	0.70 (0.41 - 1.20)	13	1.27 (0.71 - 2.30)
	Trend test		P = 0.60		P = 0.56		P = 0.36		P = 0.76		P = 0.56
<b>All Injury &amp; Trauma</b>	Zero incidents	218	Ref	235	Ref	412	Ref	252	Ref	470	Ref
	Tertile 1	<b>119</b>	<b>0.64 (0.51 - 0.80)</b>	<b>114</b>	<b>0.65 (0.52 - 0.82)</b>	<b>55</b>	<b>0.60 (0.45 - 0.80)</b>	<b>110</b>	<b>0.72 (0.57 - 0.90)</b>	<b>36</b>	<b>0.52 (0.37 - 0.73)</b>
	Tertile 2	<b>148</b>	<b>0.78 (0.63 - 0.96)</b>	<b>141</b>	<b>0.78 (0.63 - 0.96)</b>	<b>62</b>	<b>0.63 (0.48 - 0.82)</b>	142	0.88 (0.72 - 1.09)	53	0.76 (0.57 - 1.01)
	Tertile 3	<b>138</b>	<b>0.74 (0.59 - 0.91)</b>	<b>133</b>	<b>0.75 (0.61 - 0.93)</b>	94	0.99 (0.79 - 1.24)	<b>119</b>	<b>0.76 (0.61 - 0.94)</b>	64	0.91 (0.70 - 1.18)
	Trend test		P = 0.27		P = 0.29		<b>P &lt; 0.01</b>		P = 0.77		<b>P &lt; 0.01</b>
Suicide	Zero incidents	63	Ref	73	Ref	122	Ref	78	Ref	136	Ref
	Tertile 1	42	0.75 (0.51 - 1.11)	<b>36</b>	<b>0.63 (0.42 - 0.95)</b>	21	0.72 (0.46 - 1.16)	37	0.74 (0.50 - 1.10)	13	0.61 (0.34 - 1.08)
	Tertile 2	38	0.67 (0.45 - 1.01)	39	0.68 (0.46 - 1.00)	<b>14</b>	<b>0.46 (0.26 - 0.80)</b>	42	0.82 (0.56 - 1.19)	16	0.76 (0.45 - 1.27)
	Tertile 3	50	0.88 (0.60 - 1.27)	45	0.77 (0.53 - 1.13)	36	1.22 (0.84 - 1.77)	36	0.70 (0.47 - 1.04)	28	1.32 (0.88 - 1.99)
	Trend test		P = 0.45		P = 0.36		<b>P = 0.03</b>		P = 0.77		<b>P = 0.01</b>

\* Statistically significantly reduced RMR results are in **blue**, statistically significant positive trends are in **red**



[Type text]

**Table 10: Relative Mortality Ratios\* and 95% confidence intervals for only those male volunteer firefighters who attended incidents to 30/11/2011 by number of incidents and incident types using career firefighter tertile cut points (adjusted for age and calendar period)**

Causes of Death	Groups	O	All Incidents	O	All Fire Incidents	O	Structural Fire Incidents	O	Landscape Fire Incidents	O	Vehicle Fire Incidents
<b>All Causes of Death Combined</b>	Career 1	2590	Ref	2595	Ref	2645	Ref	2220	Ref	2589	Ref
	Career 2	117	1.04 (0.86 - 1.25)	118	1.00 (0.83 - 1.21)	78	1.18 (0.94 - 1.47)	399	1.06 (0.95 - 1.18)	123	1.04 (0.87 - 1.25)
	Career 3	61	1.16 (0.90 - 1.50)	55	1.19 (0.91 - 1.56)	45	1.31 (0.98 - 1.76)	149	1.08 (0.91 - 1.27)	56	1.29 (0.99 - 1.68)
<b>All Malignancies</b>	Career 1	1082	Ref	1084	Ref	1108	Ref	926	Ref	1081	Ref
	Career 2	58	1.23 (0.95 - 1.61)	60	1.21 (0.93 - 1.56)	<b>38</b>	<b>1.38 (1.00 - 1.91)</b>	171	1.08 (0.91 - 1.27)	<b>63</b>	<b>1.29 (1.00 - 1.66)</b>
	Career 3	26	1.16 (0.79 - 1.72)	22	1.11 (0.73 - 1.69)	20	1.37 (0.88 - 2.13)	69	1.15 (0.90 - 1.47)	22	1.19 (0.78 - 1.81)
<b>All Nervous System</b>	Career 1	57	Ref	58	Ref	49	Ref	56	Ref	673	Ref
	Career 2	2	0.80 (0.20 - 3.29)	1	0.69 (0.10 - 4.98)	9	1.08 (0.53 - 2.21)	2	0.78 (0.19 - 3.21)	29	0.99 (0.68 - 1.43)
	Career 3	2	1.73 (0.42 - 7.11)	2	2.66 (0.65 - 10.88)	3	0.98 (0.31 - 3.16)	3	3.18 (0.99 - 10.17)	<b>22</b>	<b>1.60 (1.05 - 2.45)</b>
<b>All Circulatory</b>	Career 1	675	Ref	684	Ref	558	Ref	679	Ref	119	Ref
	Career 2	28	0.90 (0.62 - 1.31)	25	1.47 (0.99 - 2.19)	<b>116</b>	<b>1.22 (1.00 - 1.49)</b>	23	0.75 (0.50 - 1.14)	4	0.79 (0.29 - 2.13)
	Career 3	<b>21</b>	<b>1.71 (1.11 - 2.64)</b>	<b>15</b>	<b>1.67 (1.00 - 2.78)</b>	<b>50</b>	<b>1.38 (1.03 - 1.84)</b>	<b>22</b>	<b>1.95 (1.28 - 2.99)</b>	1	0.42 (0.06 - 3.03)
IHD	Career 1	381	Ref	382	Ref	386	Ref	309	Ref	381	Ref
	Career 2	15	0.90 (0.54 - 1.50)	16	0.90 (0.55 - 1.49)	15	1.54 (0.92 - 2.58)	<b>71</b>	<b>1.33 (1.03 - 1.72)</b>	15	0.87 (0.52 - 1.45)
	Career 3	<b>15</b>	<b>1.91 (1.14 - 3.20)</b>	<b>13</b>	<b>1.86 (1.07 - 3.23)</b>	<b>10</b>	<b>1.95 (1.04 - 3.64)</b>	<b>31</b>	<b>1.54 (1.06 - 2.23)</b>	<b>15</b>	<b>2.34 (1.39 - 3.92)</b>
<b>All Respiratory</b>	Career 1	119	Ref	121	Ref	108	Ref	120	Ref	63	Ref
	Career 2	4	0.73 (0.27 - 1.99)	3	1.05 (0.33 - 3.31)	12	0.67 (0.37 - 1.22)	3	0.57 (0.18 - 1.80)	3	1.07 (0.34 - 3.42)
	Career 3	1	0.47 (0.07 - 3.34)	0	-	4	0.56 (0.21 - 1.52)	1	0.53 (0.07 - 3.81)	<b>4</b>	<b>3.05 (1.11 - 8.38)</b>
COPD	Career 1	61	Ref	60	Ref	61	Ref	53	Ref	61	Ref
	Career 2	1	0.39 (0.05 - 2.79)	2	0.73 (0.18 - 2.99)	2	1.41 (0.35 - 5.78)	7	0.81 (0.37 - 1.77)	1	0.38 (0.05 - 2.74)
	Career 3	1	0.83 (0.12 - 6.02)	1	0.93 (0.13 - 6.71)	0	-	3	0.85 (0.27 - 2.73)	1	1.06 (0.15 - 7.67)
<b>All Digestive</b>	Career 1	62	Ref	64	Ref	59	Ref	64	Ref	387	Ref
	Career 2	5	1.75 (0.70 - 4.35)	4	2.45 (0.89 - 6.72)	5	0.48 (0.19 - 1.20)	4	1.34 (0.49 - 3.69)	12	0.75 (0.42 - 1.34)
	Career 3	3	2.64 (0.83 - 8.43)	2	2.34 (0.57 - 9.56)	6	1.59 (0.69 - 3.70)	2	1.80 (0.44 - 7.34)	6	0.90 (0.40 - 2.02)
<b>All Injury &amp; Trauma</b>	Career 1	389	Ref	395	Ref	341	Ref	384	Ref	203	Ref
	Career 2	10	0.65 (0.34 - 1.21)	4	0.40 (0.15 - 1.08)	54	1.06 (0.79 - 1.41)	15	0.86 (0.51 - 1.44)	8	0.91 (0.45 - 1.85)
	Career 3	6	1.12 (0.50 - 2.52)	6	1.42 (0.63 - 3.19)	10	0.68 (0.36 - 1.27)	6	1.00 (0.45 - 2.24)	0	-
Suicide	Career 1	123	Ref	122	Ref	127	Ref	101	Ref	123	Ref
	Career 2	5	0.98 (0.04 - 2.39)	6	1.23 (0.54 - 2.80)	1	0.31 (0.04 - 2.19)	23	1.50 (0.95 - 2.36)	5	0.88 (0.36 - 2.16)
	Career 3	2	0.93 (0.23 - 3.75)	2	1.18 (0.29 - 4.77)	2	1.45 (0.36 - 5.87)	6	1.39 (0.61 - 3.19)	2	1.01 (0.25 - 4.08)

\* Statistically significantly elevated RMR results and statistically significant positive trends are in red