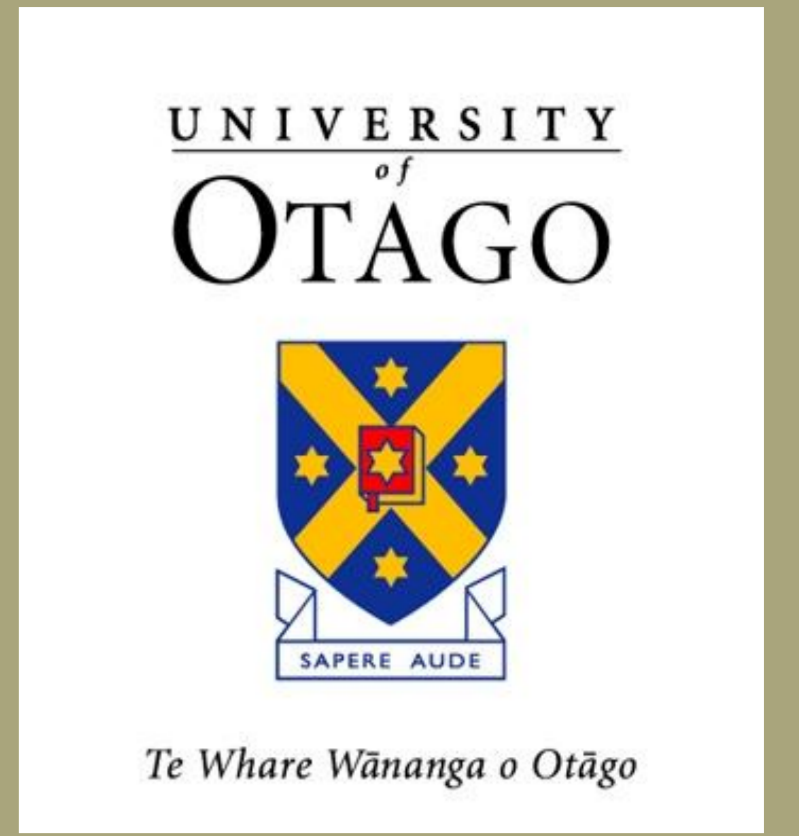


Injury Epidemiology and New Zealand Military Personnel in World War One



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Introduction

Despite the large mortality burden of World War One (WW1) on New Zealand (NZ) military forces, no analysis using modern epidemiological methods has ever been conducted. We aimed to study injury-related mortality amongst NZ military forces for WW1 and consider issues around preventability.

Methods

An electronic version of the Roll-of-Honour for NZ Expeditionary Force (NZEAF) personnel in WW1 was obtained and supplemented with further coding. The numbers of NZ military personnel in the Northern Hemisphere by year were used for denominator values [unpublished PhD thesis work by JA Summers]. We also performed literature searches to provide context.

Results

There were a total of 16,703 deaths among NZEF personnel during the war (28 July 1914 to 11 November 1918), albeit with many additional deaths from wounds and disease in subsequent months. Injury deaths predominated:

- 65.1% were “killed in action” (KIA),
- 23.4% “died of wounds” (DOW),
- 1.0% were other injuries (“accidents”, drowning, and executions),
- 10.5% were other causes (mainly disease eg, influenza).

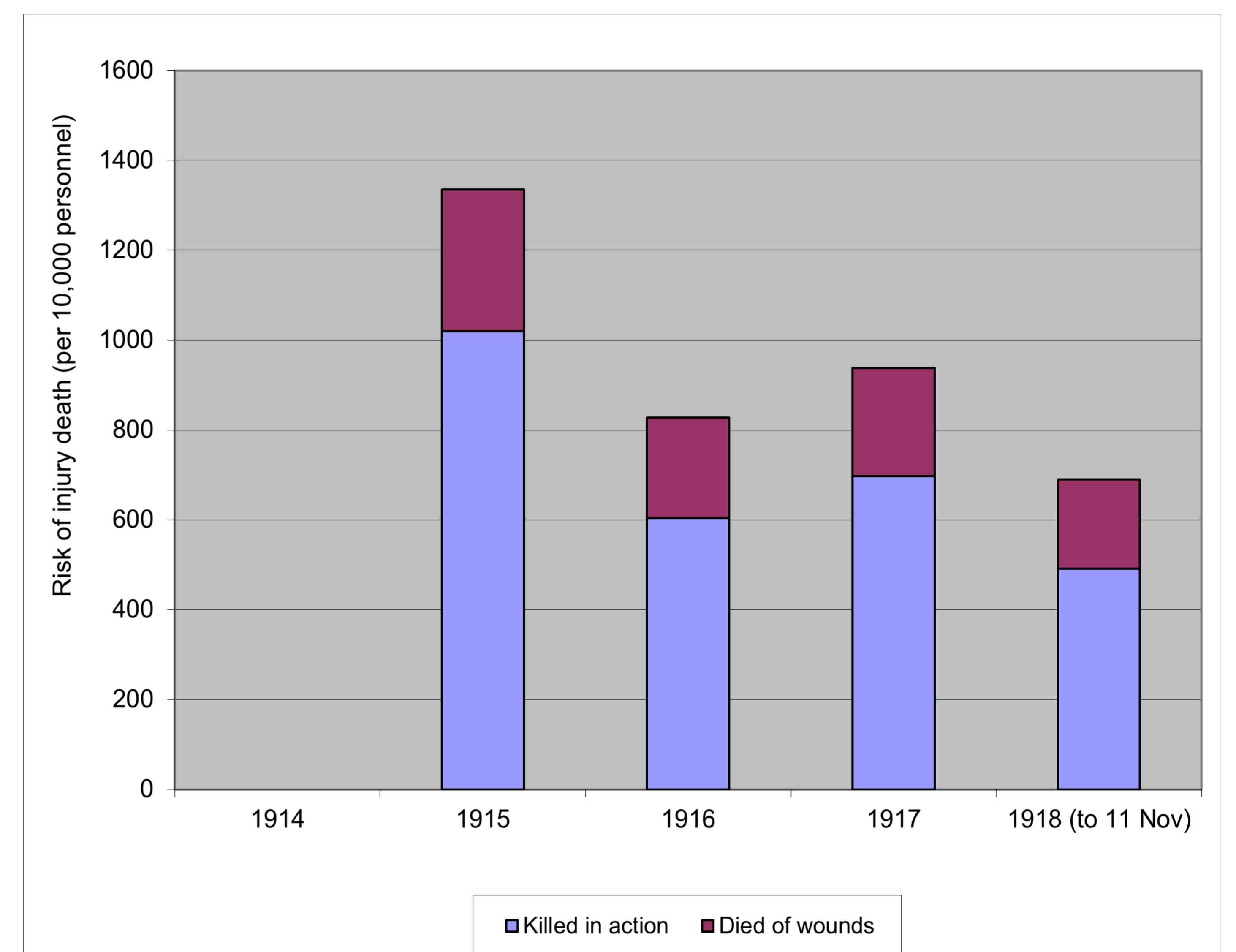
During the course of the war the annual risk of injury death (for KIA + DOW in the Northern Hemisphere) declined after peaking at 1335 per 10,000 in 1915 (Gallipoli campaign) (see Figure 2). The proportion of DOW deaths out of all injury deaths did not decline over time and peaked in 1918 at 28.8%. This suggests that any improvements in medical services for the wounded were overwhelmed by other factors (eg, changes in weaponry such as artillery and changes in military tactics); though improved evacuation processes may also have raised this proportion.

Cumulative injury mortality proportions for WW1 differed by ethnicity: European/Other (1245/10,000); Māori (906); and Pacific soldiers (83). This pattern may reflect differing roles in the military [1] (and contrasts with the pattern for disease deaths [2]).

Figure 1: Wounded World War I New Zealand soldiers being placed in an ambulance, France (6 April 1918). Courtesy of: Alexander Turnbull Library, Wellington, New Zealand. Reference Number: 1/2-013096-G; Photographer: Henry Armytage Sanders.



Figure 2: Annual risk of injury death for NZ military personnel in WW1 in the Northern Hemisphere (with no injury deaths in 1914)



While historical interpretations differ, there are many plausible preventive measures that could have reduced mortality eg,:

- better diplomacy and communication to prevent the war [3-5];
- better military planning eg, to avoid failed campaigns such as Gallipoli [6], or such battles as the Battle of Passchendaele (described as “the worst fiasco in New Zealand’s military history” [7]);
- improved preventive measures such as use of steel helmets by troops earlier in the war and tighter restrictions on the provision of alcohol in military rations (though views on the hazard posed by alcohol for injury risk in this war varied and may have often been minor given the doses involved [8]).
- improved design and resourcing of military medical services which had many deficiencies, especially initially [9-11].

Conclusions

WW1 was by far the worst mass injury event in New Zealand’s history, exceeding all other wars and natural disasters. Many of these injury deaths could have been prevented through better diplomacy, military planning and improved medical services.

References

1. Soutar M. 'Ngā pakanga ki tāwāhi – Māori and overseas wars – Māori and the First World War', Te Ara – the Encyclopedia of New Zealand, [updated 11 June 2012]. <http://www.TeAra.govt.nz/en/nga-pakanga-ki-tawahi-maori-and-overseas-wars/2>.
2. Summers J, Wilson N, Baker M. Ethnic gradient in mortality amongst the New Zealand military personnel in World War One. [Poster presentation]. 2010 Australasian Epidemiological Association Annual Scientific Meeting. Sydney, Australia, 29 September – 1 October 2010. <http://www.otago.ac.nz/wellington/otago022955.pdf>.
3. Keegan J. The First World War. New York: Vintage Books; 2000.
4. Tuchman B. The Guns of August. New York: Ballantine Books; 1994.
5. Glover J. Humanity: A Moral History of the Twentieth Century. New Haven: Yale University Press; 2000.
6. Hart P. Gallipoli. London: Profile Books Limited; 2011.
7. McGibbon I. 'First World War – Western Front, 1916 to 1917', Te Ara – the Encyclopedia of New Zealand, [updated 18 April 2012]. <http://www.TeAra.govt.nz/en/first-world-war/5>
8. Holmes R. Tommy: The British Soldier on the Western Front 1914-1918. London: HarperCollins Publishers; 2004. (NB: NZ troops also had alcohol provided in rations).
9. Martin A. A Surgeon in Khaki. London: Arnold; 1915.
10. Waite F. The New Zealanders at Gallipoli. Auckland: Whitcombe and Tombs Limited; 1921.
11. Elliott JS. The New Zealand Hospital Ships. Auckland: Whitcombe and Tombs Limited; 1923.