

Appendix: Additional methods and acronyms, abbreviations and terms list used in this study

Additional methods—sample selection

The sample was derived from a previous study on NZEF participants in WWI.¹ In summary, this former work involved the following steps:

- In February 2021, data were downloaded on all NZEF participants in WWI from the Auckland War Memorial Museum's Cenotaph website database.² This was 104,993 individual names, which was 99.1% of war participants according to an official estimate of 105,986.³
- Within this dataset we randomly selected a 5% sample of personnel (the random number generator in Microsoft Excel was used for all randomisation processes). From this sample the following were then excluded:
 - a. Non-veterans (defined as those dying in the war and subsequent weeks up to 31 December 1918), with this group being 18.2% of the sample.
 - b. Female participants (who were nurses and volunteers), with this being 0.47% of the sample.
 - c. Pasifika military personnel who came from South Pacific Islands to join the NZEF, with this group being 0.50% of the sample. This grouping was excluded given the focus of this former study was on veterans from New Zealand and because there is large heterogeneity in backgrounds for Pasifika populations (in demography and culture).
- Then, given the focus of the previous study being on NZEF veterans exposed to war overseas, a random subset of 1,000 personnel were further examined to exclude the following:
 - a. Being a non-veteran (as per the definition above) on closer examination of the records.
 - b. Not seeing active war service overseas (e.g., not actually leaving New Zealand, deserting on route or being deemed medically unfit prior to war exposure).
 - c. Only serving in Samoa (since this theatre of the war involved no conflict with Germany).
 - d. Being part of a non-New Zealand military force (e.g., the Australian Imperial Force

(AIF), or the Royal Navy of the United Kingdom [UK]).

The above process left 887 personnel in the sample out of the subsample of 1,000. Of these, the age at death could be ascertained from archival sources in 96.6% (857/887). Then, out of this group of 857 personnel with lifespan data (to ensure that they survived the war), we randomly selected 200 personnel for the in-depth analysis of their morbidity experience.

Exclusions from the sample

In 14 cases (7.0%) the selected individuals in the sample of 200 had to be excluded. These included those subsequently found on close examination to be ineligible for inclusion (i.e., only went to Samoa [n=1]; participated in another military force [n=1]; the military file was completely missing [n=2], or because a section of the military file was missing [n=10]). These individuals were then replaced with others from the sub-sample of 857 personnel to remake up the 200 sample for this morbidity study.

Acronyms, abbreviations and terms (of potential relevance to future researchers)

The following acronyms, abbreviations and terms were derived from a range of sources, including:

- Official New Zealand sources: <https://nzhistory.govt.nz/war/ww1-abbreviations-acronyms> and <https://natlib.govt.nz/researchers/guides/first-world-war-medical-services/>
- A New Zealand genealogical resource: <https://freepages.rootsweb.com/~sooty/genealogy/ww1abbreviations.html>;
- A UK source: <https://www.longlongtrail.co.uk/soldiers/a-soldiers-life-1914-1918/common-british-army-acronyms-and-abbreviations-of-the-first-world-war/>.

List of acronyms, abbreviations and terms

- 1AAH = 1st Australian Auxiliary Hospital, Luna Park, Cairo
- 1AGH = 1st Australian General Hospital
- 2nd Australian Depot Weymouth; used for convalescence; available from <https://birtwistlewiki.com.au/wiki/Weymouth>

- AFB = Army Form B
- AS = “Active Service”
- A/H = Admitted hospital
- Abbasich = Canadian Stationary Hospital, Alexandria
- Abbassia = Hospital, Cairo
- Ad Hosp or “Adm Hosp” = for admission to hospital.
- AGH = Australian General Hospital
- Alder Hay = Liverpool Orthopaedic Centre, Liverpool
- Amb = Field ambulance
- Ampt or Amp = Amputation
- Aotea Home/House = a convalescent facility in Heliopolis, Cairo, Egypt (not classified as a hospital in this current study); available from <https://natlib.govt.nz/records/22564172>
- Aquitania = a hospital ship
- ASH = Australian Stationary Hospital
- Aus CCS = Australian Casualty Clearing Station
- Balmer Lawn = A part of No.1 New Zealand General Hospital (Brockenhurst)
- BRC = British Red Cross
- BRCH = British Red Cross Hospital
- Bright’s disease (also just “Bright”); in modern terms this is acute or chronic nephritis (a kidney disease)
- Brighton = New Zealand officers and nurses convalescent homes
- B’hurst = see Brockenhurst
- Brock = see Brockenhurst
- Brockenhurst = No.1 New Zealand General Hospital (Hampshire, England)
- BW = Bullet wound
- C/F = Compound fracture
- Can CCS = Canadian Casualty Clearing Station
- Can GH = Canadian General Hospital
- Can Stat Hosp = Canadian Stationary Hospital
- Cas = Casualty
- Cashmere Military Sanatorium, Christchurch = New Zealand military hospitals and convalescent homes
- CCH = Casualty clearing hospital
- CCS = Casualty clearing station
- Classified A (disabled officer or nurse) = Fit for general service
- Classified A1 = Fit for active service
- Classified B (disabled officer) = Fit for service in a garrison or labour unit abroad
- Classified B1 = Able to be made fit by medical treatment
- Classified C (disabled officer or nurse) = Fit for home service: (i) active duty with troops
- Classified C (disabled officer or nurse) = Fit for home service: (ii) sedentary employment only
- Classified C1 = Likely to become fit for service overseas after special training
- Classified C2 = Permanently unfit for active service but fit for service in New Zealand
- Classified D = Permanently unfit
- Classified D (disabled officer or nurse) = For admission to a command depot
- Classified E (disabled officer) = Requiring indoor hospital treatment: (i) in an officers military of auxiliary convalescent hospital
- Classified E (disabled officer) = Requiring indoor hospital treatment: (ii) in an officers hospital
- Classified F (disabled officer or nurse) = Permanently unfit for any further military service
- Consumption = an archaic name for tuberculosis
- Coy = Company
- CPDI = Chronic-Pulmonary Disease, Indeterminate
- CPT = Chronic pulmonary tuberculosis
- CSM = Cerebrospinal meningitis
- DAH = Disorderly action of the heart; this was also sometimes called “effort syndrome” or “soldier’s heart”; often the result of stress or fatigue, it does not imply there was any organic disease; available from <https://www.longlongtrail.co.uk/what-were-vdh-and-dah/>
- Dang ill = On dangerously ill list
- DAS = Died at sea
- DDS = Defence Dental Service
- DI = Dangerously ill (e.g., placed on dangerously ill list)
- DOD = Died of disease
- DOI = Died of illness
- DOW = Died of wounds
- DRS = Divisional rest station
- EGH = Egyptian General Hospital
- Endell St = Endell Street Military Hospital, London
- Fd/Fld Amb = Field ambulance
- FA = Field ambulance
- Fargo = “Fargo Military Hospital” at Larkhill on Salisbury Plain
- Forest Park = A part of No.1 New Zealand General Hospital (Brockenhurst)
- Gas hysteria and “gas neurosis” = Anxiety during a gas attack⁴

- Gen/Genl H or GH = General hospital
- Gezirah = Anglo American Hospital, Cairo
- Ghajn Tuffieha = Convalescent camp, Malta
- Ghizel = Red Cross Hospital, Cairo
- GSW = Gunshot wound
- GSW RWU = Gunshot wound, remaining with unit
- H'church/Hch = New Zealand convalescent hospital (Hornchurch) in London, England
- Heliopolis = Heliopolis Palace: 1st Australian General Hospital, Egypt (see Aotea, a convalescent home also at Heliopolis)
- Helouan = Convalescent hospital, Egypt
- Hornchurch = New Zealand convalescent hospital (London)
- Hos = Hospital
- HS = Hospital ship
- ICT = Inflammation of the connective tissue
- IDK = Internal derangement of the knee
- Isol Hosp = Isolation hospital
- Isolation H = Isolation hospital
- Kantara = the 24 Stat Hospital Kantara Egypt
- KIA = Killed in action
- King George V Hospital, Rotorua = New Zealand military hospitals and convalescent homes
- Lady Godley's = Convalescent hospital, Egypt
- M I Hospital = Military infectious hospital
- M/U = Medically unfit
- Maheno = A hospital ship (New Zealand)
- Manor Hospital, Epsom = Epsom, Surrey; from 1916 became Manor War Hospital
- Marama = A hospital ship (New Zealand)
- MB or Med/B = Medical board
- MDS = Main dressing station
- Mental = a mental health condition
- MG = Machine gun
- MGB = Machine gun bullet
- MH Tidworth = Tidworth Military Hospital (in the UK)
- Mt Felix = NZEF Hospital, near 2nd General Hospital, Walton-on-Thames
- Mudros/Moudros = a port on the island of Lemnos, Greece
- NYD = Not yet diagnosed
- NYDN = Not yet diagnosed
- NZ Con Depot = New Zealand convalescent depot
- NZ Con Hom = New Zealand convalescent home
- NZGH = New Zealand General Hospital
- NZGH Brockenhurst = No.1 New Zealand General Hospital, Brockenhurst, England
- NZGH Codford = No.3 New Zealand General Hospital, Codford, England
- NZGH W on T = No.2 New Zealand General Hospital, Walton-on-Thames, England
- NZHS = New Zealand hospital ship
- P de K = New Zealand General Hospital, Pont de Koubbeh, Cairo; later 2nd New Zealand Stationary Hospital
- P/U or PU = Permanently or physically unfit
- Phthisis = an archaic term for any disease that causes wasting of the body, especially pulmonary tuberculosis; in this study it is generally assumed to be pulmonary tuberculosis
- PIE = Proximity to the battle, Immediacy of treatment and Expectancy of recovery, including return to duty⁵
- Pnt de K = New Zealand General Hospital, Pont de Koubbeh, Cairo; later 2nd New Zealand Stationary Hospital
- Pont de Koubbeh/Kubb = New Zealand General Hospital, Pont de Koubbeh, Cairo; later 2nd New Zealand Stationary Hospital
- Post-concussion syndrome (PCS) and post-concussional disorder (PCD)
- POW = Prisoner of war
- PTB = Pulmonary tuberculosis
- PTSD = Post-traumatic stress disorder (see terms for "shell shock" and DAH)
- PUO = Pyrexia (fever) of unknown origin (described in the UK context as "*medical term usually applied to Trench Fever*")
- Queen Mary Hospital = Hanmer Springs, New Zealand; used for rehabilitation for mental and nervous conditions, particularly shell-shock
- Ramleh = Hospital, Alexandria, Egypt
- RAP = Regimental aid post
- Ras El Tin = Military hospital, Alexandria, Egypt
- Rotorua = May refer to King George V Military Hospital in Rotorua
- Rouen = New Zealand embarkation camp and hospital, Rouen
- Salah El Din (Saladin) = Citadel Hospital, Cairo
- Scabies = a mite infestation that could result in hospitalisation
- SC = soft chancre (an STI; the modern term is chancroid)
- Segregation = Isolation (for infectious disease)
- Ser ill = On seriously ill list
- SH or Stat Hos or Sty or Sty H = Stationary hospital

- Shell shock synonyms; Wikipedia gives these other terms for “shell shock”: “Bullet wind”, “soldier’s heart”, “battle fatigue”, “operational exhaustion”. Wikipedia gives these other terms for “Da Costa’s syndrome” (another outdated term): “soldier’s heart”, “cardiac neurosis”, “chronic asthenia”, “effort syndrome”, “functional cardiovascular disease”, “neurocirculatory asthenia”, “primary neurasthenia”, “subacute asthenia” and “irritable heart”. Wikipedia also details combat stress reaction: also known as “combat fatigue”, “battle fatigue”, or “battle neurosis”. Words used in the text by Carbery: concussion neurasthenia, psychasthenia, hysteria or neurasthenia (in: <http://nzetc.victoria.ac.nz/tm/scholarly/tei-WH1-Medi-t1-g1-t1-body-d14.html#n353>). Also by Carbery: “Mental States”; see also “DAH” in this glossary. Terms from Horrocks:⁶ nervous conditions variously described as “shell shock”, concussion neurasthenia, hysteria, exhaustion, pithiatism, and psychasthenia. Other possible terms include: “combat stress reaction” (CSR), “war neurosis”, “war strain” and “battle fatigue”.
- Shoubra = Infectious diseases hospital, Shoubra, near Cairo
- SI = Seriously ill (Placed on SI list)
- SI List = Seriously ill list
- SIW = Self-inflicted wound
- Soft sore = Chancroid, a sexually transmitted infection
- SOS or Str off str = Struck off strength (although this might not necessarily be health related): “*A soldier no longer capable of active service is removed from the list of soldiers available for serving at the front*”
- Southwark = Southwark Military Hospital, East Dulwich, Greater London
- SW = Shrapnel wound
- TAT = Temporary ambulance train
- TB = an abbreviation for tuberculosis, but in some contexts it may be “Temporary Base (medical)”
- Trench fever = a bacterial disease (*Bartonella quintana*) transmitted by body lice; also known as “five-day fever”, “quintan fever”
- Trench foot/feet = a condition resulting from prolonged wet feet; it could result in hospitalisation, amputations and death
- Trench mouth = In modern day terms it is “acute necrotizing ulcerative gingivitis” (ANUG), a mixed bacterial condition; in the WWI context it was probably related to poor living conditions, malnutrition, smoking and extreme psychological stress; see also Vincent’s gingivitis in this glossary
- TU = Temporarily unfit
- VD = Venereal disease (in modern terminology: “sexually transmitted infection”) e.g., gonorrhoea or syphilis
- VD Section = Venereal disease section (attached 3rd New Zealand General Hospital, Codford)
- VD Ward = Venereal disease ward
- VDC = Venereal disease, chancre (modern term is chancroid)
- VDG = Venereal disease, gonorrhoea
- VDH = Valvular disease of the heart
- VDS = Venereal disease, syphilis
- VDSC = Venereal disease, soft chancre (modern term is chancroid)
- Ven Hosp = Venereal disease hospital
- Ven Section = Venereal disease section (attached 3rd New Zealand General Hospital, Codford)
- Vincent’s angina = an archaic term for pharyngitis and tonsillitis together
- Vincent’s gingivitis = an archaic term for necrotising ulcerative gingivitis; see “trench mouth” in this glossary
- W RWU = Wounded, remaining with unit
- Walton/Walton-on-Thames = No.2 New Zealand General Hospital, Walton-on-Thames, England
- Whitlow = an infection of the finger and especially the fingertip that is typically caused by infection of a virus (such as the herpes simplex virus)
- WIA = Wounded in action
- Wnd = Wound or wounded
- Woodcote Park = Military convalescent hospital, Epsom, Surrey (in use in 1915)
- WWCS = Walking wounded collecting station

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