

**Multisite Survey of Workplace Wellbeing in Aotearoa New Zealand Emergency Departments 2020.**

(WoWe@NZEDs 2020)

Dr Mike Nicholls

**Study Title:**

Multisite Survey of Workplace Wellbeing in Aotearoa New Zealand Emergency Departments 2020.

**Short title:** WoWe@NZEDs 2020

**Reference Number:**

ADHB: 7782

AHREC: 1164

Ethics approval: Auckland Health Research Ethics Committee,

Expiry date for this approval 07/02/2023.

Reference number AH1164.

**Date and Version No:** 24 February 2020. Version 16

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**Funder:**

A+ Trust 7782

Australasian College for Emergency Medicine Morson-Taylor Grant 2019

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**Signature:**

A handwritten signature in blue ink, consisting of a series of connected loops and a long horizontal stroke extending to the right.

**Conflicts of Interest:** None declared.

**Confidentiality Statement**

This document contains confidential information that must not be disclosed to anyone other than the authorised individuals from the University of Auckland, and the Investigator Team.

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**1. SYNOPSIS**

<b>Long Study Title</b>	Multisite Survey of Workplace Wellbeing in Aotearoa New Zealand Emergency Departments 2020.	
<b>Short Study Title</b>	WoWe@NZEDs 2020	
<b>Nature of Study</b>	All staff (medical, nursing and others) working emergency departments throughout New Zealand. Recruited by site investigators at each site.	
<b>Participants</b>	All staff (medical, nursing and others) working emergency departments throughout New Zealand. Recruited by site investigators at each site.	
<b>Number of participants</b>	Estimated 1000-1500 total individual participants at 10-15 sites across NZ.	
<b>Planned Study Period</b>	9 <sup>th</sup> March 2020-3 <sup>rd</sup> April 2020 (coincides with “Wellness Week”)	
	<b>Objectives</b>	<b>Outcome Measures</b>
<b>Primary</b>	Measure staff burnout in New Zealand emergency departments.	Copenhagen Burnout Inventory (CBI)
<b>Secondary</b>	To document the baseline wellbeing of medical, nursing and other staff in New Zealand emergency departments.	<b>WoWe@NZEDs 2020 Survey.</b> Includes several quantitative measures: Net Promoter Score; measure of satisfaction with work-life balance; measure of sense of meaning in work; etc.
<b>Other Secondary</b>	To assist individual departments prioritise further quality improvement work focusing on workplace wellbeing.	<b>WoWe@NZEDs 2020 Survey.</b> Six questions requiring free text answers provide qualitative data for assessing attitudes, ideas and what matters to staff.
<b>Other Secondary</b>	To reassess and compare measures of wellbeing at Auckland City Hospital Adult ED 2 years after a baseline 2018 study.	<b>WoWe@NZEDs 2020 Survey.</b> Analysis of changes of important outcomes, e.g. CBI, between the 2018 and 2020 surveys.
<b>Study design</b>	Cross sectional electronic survey using REDCap software. Estimated time commitment for participants is 10-15 minutes.	
<b>Statistics and analysis</b>	A statistician is a member of the research group. Standard descriptive statistics will be used to summarise the presenting and burnout features. The percentages meeting burnout criteria will be compared between demographic groups using Chi-squared tests, mean burnout scores compared using 1-way ANOVA.	
	Qualitative data analysed using principles of constructivist grounded theory by a member of the research team, a paid qualitative researcher using NVivo Pro. Overarching themes describing the frequently discussed ideas and concepts as perceived by the participants will be supported by quotations from staff selected based on fit and how well they explain the themes.	
<b>Data management and confidentiality</b>	All study data will be entered by the participant onto a REDCap database. Participants will not be identified on any study documents nor any electronic database.	
<b>Ethical and regulatory considerations</b>	The protocol, informed consent form, participant information sheet and any proposed advertising material will be submitted to the appropriate ethics committee(s) and host institution(s) for written approval.	
<b>Masters Dissertation</b>	To fulfill the requirements of a 60-point dissertation (University of Auckland Masters of Health Science) the Principle Investigator (Dr Mike Nicholls) will submit a project to the university based upon a subset of data gathered for the current project (WoWe@NZEDs 2020). This will be an analysis of the primary objective data.	

## 2. ABBREVIATIONS

ACEM	Australasian College for Emergency Medicine
ACH	Auckland City Hospital
ADHB	Auckland District Health Board
AED	Adult Emergency Department
CBI	Copenhagen Burnout Inventory
DHB	District Health Board
ED	Emergency Department
EM	Emergency Medicine
GCP	Good Clinical Practice
HDEC	Health and Disability Ethics Committees
HWG	Healthy Workplace Group
NPS	Net Promoter Score
PI	Principal Investigator
PIS	Participant Information Sheet
REC	Research Ethics Committee
SOP	Standard Operating Procedure
WoWe	Workplace Wellbeing

## 3. BACKGROUND AND RATIONALE

Shanafelt and colleagues explain that “wellness goes beyond merely the absence of distress and includes being challenged, thriving, and achieving success in various aspects of personal and professional life.”<sup>(1)</sup> As well as being important for individuals, the wellbeing of staff is considered integral to the development and maintenance of high performing health systems.<sup>(2-4)</sup> If health systems are to achieve the goals of the 2008 “Triple Aim” of improving the health of the population they serve, improving the experience of care, and reducing the costs of care,<sup>(5)</sup> workforce wellbeing requires deliberate consideration. The fourth dimension of the “Quadruple Aim”, “improving the experience of providing care” <sup>(2)</sup> is worth pursuing from ethical,<sup>(6)</sup> fiscal,<sup>(7)</sup> and patient outcome<sup>(8-10)</sup> viewpoints. This is common sense to those who work at the frontline of healthcare. How else can we achieve the best for our patients if we ourselves are not at our best?<sup>(11)</sup>

A 2018 study at Auckland City Hospital Adult Emergency Department (ACH AED) measured the baseline burnout and wellbeing of emergency department (ED) staff,<sup>(12)</sup> 270 of 380 potential participants (71%) participated.<sup>(12)</sup> All staff groups were represented, 48% (183/380) completed the CBI. Personal burnout was 42% (n=77), work-related burnout 35% (n=64), client related burnout 28% (n=51). Nurses and females were significantly (<0.05) more likely to have burnout in at least one of the three domains. Despite these findings 72% agreed/strongly agreed that AED was an excellent place to work, 81% found their work meaningful and 42% felt well informed regarding important decisions (a key measure of



engagement). With respect to overall wellbeing and burnout four key themes were identified: supportive teamwork and relationships; providing high quality patient care; resourcing; and workload issues.

EDs remain a high-stress environment, where key clinical decisions have to be made in time critical manor, with clinical staff often balancing multiple patients and clinical demands. Such an environment may make staff susceptible to burnout and negatively impact on staff wellbeing. To date there is a paucity of information regarding staff burnout and wellbeing in EDs internationally, and New Zealand EDs in particular. Baseline information is indispensable if strategies to improve staff burnout and wellbeing are to be instigated via quality improvement initiatives.(13) Improvements in staff burnout and wellbeing in pressured health environments like EDs can result in both improvement in fiscal (7) and patient centred outcomes.(8-10)

This study seeks to measure the baseline burnout and wellbeing in EDs throughout Aotearoa New Zealand. The results may be generalisable to non-participating EDs in New Zealand, and elsewhere in Australasia and internationally. Repeat surveys in future years will enable comparison within and between departments.

As part of the study, repeat assessment will occur at ACH AED 24 months after a pilot study,(12) following Quality Improvement strategies to improve staff burnout and wellbeing, thus providing the opportunity to measure the impact of attempted improvements.

Masters Dissertation. To fulfil the requirements of a dissertation (University of Auckland Masters of Health Science 60 point dissertation) the Principle Investigator (supervised by 2 co-investigators (VS and PJ)) will submit a project based upon the data gathered for the current project. This project will be restricted to an analysis of the primary objective, that is, prevalence of burnout.

## 4. OBJECTIVES AND OUTCOME MEASURES

### Primary Objective

- Measure staff burnout in New Zealand emergency departments. Burnout will be measured using the Copenhagen Burnout Inventory, a validated questionnaire consisting of 19 questions divided into three sub-scales measuring (a) personal burnout (b) work-related burnout and (c) patient-related burnout.(14)

Masters Dissertation: To fulfil the requirements of a dissertation (University of Auckland Masters of Health Science 60 point dissertation) the Principle Investigator (supervised by 2 co-investigators (VS and PJ)) will submit a project based upon the data gathered for the current project. This project will be restricted to an analysis of the primary objective, that is, prevalence of burnout.

### Secondary Objectives

- Measure the baseline wellbeing of medical, nursing and support staff in New Zealand emergency departments.
- To document participant ideas for improvement in wellbeing at each ED.

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The questions will be based upon those from the 2018 WoWe@AED survey (see file attached). *The final survey questions may be modified based upon a current literature review by two of the authors (MN and AM).* Quantitative and qualitative data will be analysed.

Secondary objectives will be assessed by the following:

The Net Promotor Score (NPS) will be used to measure satisfaction of staff – asking: “On a scale of 0 to 10 how likely are you to recommend this ED as a place to work?”(15, 16) The NPS may provide a useful summary of staff satisfaction and is easily calculated by subtracting the number of detractors (those who rate 0-6) from the number of promoters (those who rate 9-10), expressed as a percentage.

General questions: (see WoWe@AED 2018 survey questions).(12, 15) Likert scale response

- How would you rate your quality of life overall?
- How would you rate your quality of life in the last week?
- Overall, the ED is an excellent place to work
- My job makes me feel as though I am part of something meaningful
- I am satisfied with my work/life balance
- I feel recognised for my contribution.

Five questions/statements requiring a written response:

- What matters to me most in my work in the emergency department (ED) is....
- What gets in the way of what matters to me is...
- What can we do to improve the culture of our departments?
- What can we do to improve the efficiency of our department?
- What can we do to improve our personal resilience?
- Further comments please

Basic Demographic data: age (range in 10 years); gender; ethnicity (as per MoH guidelines); staff role: doctor, nurse, security, orderly, clerical, health care assistant, cleaner, other.

### **Secondary Objectives:**

- Assess changes in wellbeing at Auckland City Hospital Adult ED 2 years after an initial study. To assess and compare measures of wellbeing at Auckland City Hospital Adult ED 2 years after an initial study.(12) All measures above (primary objective and secondary objectives) will be assessed for clinically and statistically significant change.

## **5. STUDY DESIGN**

This is a cross-sectional observational study. Data will be collected over a 4-week period between 9<sup>th</sup> March and 3<sup>rd</sup> April 2020 via an anonymous survey, WoWe@NZEDs 2020 (Workplace Wellbeing at New Zealand Emergency Departments) undertaken in all participating New Zealand EDs. This is based on the 2018 WoWe@AED pilot.(12) The electronic survey will use REDCap (<https://www.project-redcap.org>) (<https://redcap.fmhs.auckland.ac.nz/>). Participants will be required to fill in an electronic survey which is expected to take 10-15 minutes to answer.

No questions will require a compulsory answer except for consent, and whether the participant considers their primary place of work outside the home to be the ED. If consent is not given the survey will end. If the ED is not the participants' primary place of work, or they do not work there regularly, the survey will end.

Masters Dissertation: The dissertation project will be restricted to an analysis of the primary objective, that is, prevalence of burnout. The dissertation will not affect the collection of data.

## **6. PARTICIPANT IDENTIFICATION AND RECRUITMENT**

### **6.1. Study Participants**

Full- and part-time medical, nursing and other staff (including orderlies, security staff, clerical staff, health care assistants, cleaners and others) working in participating emergency departments throughout New Zealand are eligible.

Based upon interest shown throughout New Zealand as of January 13 2020, we estimate that there will be 1000-1500 participants. ((50% response rate) \*(15 Emergency Departments)\*(between 50-400 potential participants per ED))

The ACEM definition of an emergency department is used for this study and is *"a dedicated hospital-based facility specifically designed and staffed to provide 24-hour emergency care. An Emergency Department cannot operate in isolation and must be part of an integrated health delivery system within a hospital both operationally and structurally."*(17)

### **6.2. Inclusion Criteria**

- Participant is willing and able to give informed consent for participation in the study
- AND: Work in the Emergency Department as a member of the ED workforce.
- AND: The ED is the primary site of employment, outside the home.
- OR: work regularly in the ED, (at least 1 shift/day/night per week, on average).

### **6.3. Exclusion Criteria**

- Those who are not primarily part of the regular paid ED workforce. For example, medical registrars that work in ED, and short-term locums, are excluded.

## 7. STUDY PROCEDURES

Site investigators at each ED will oversee recruitment at their department. Local champions in each staff group (for example nursing, clerical, medical) will encourage participation among their peers. (Local champions are NOT incentivised with recruitment bonuses, etc, so will not be encouraged to coerce recruits). Participants will be made aware of the study by various means: email; access to a central website link ([www.nzemn.org](http://www.nzemn.org)); face-to-face approaches by local research assistants; and other means considered appropriate by the local research teams.

Links to the survey will be sent to all staff via email. Survey links will also be available on staff computers for those who do not use email.

The participant will declare whether they work in the ED, as defined above. If they meet the inclusion and exclusion criteria, they are eligible and are able to continue with the survey.

A participant information summary, which will appear on opening the survey link, will provide detailed information about the survey to participants prior to any questions being asked. (This can be found in the document "WoWe@NZEDs 2020\_Participant Information Summary"). Consent will then be requested from participants by asking the first question of the survey, "Do you consent to participating in this survey".

More detailed participant information will be available in the form of a Participant Information Sheet. (The document entitled "Participant Information Sheet. WoWe@NZEDs 2020. Full Version. Jan 14 2020")

An electronic link to the WoWe@NZEDs 2020 survey will be provided. Participants will be able to answer this at any time within the study period. The link will ensure anonymity, as all potential participants will have access to the same, single link. Participants must answer the survey once only, from start to finish.

It will not be possible for participants to withdraw their consent or remove their answers once they have been submitted. This is because the study is anonymous and impossible to track a particular participant's answer. However, there is a "save and return" function in the survey, so that if participants choose, they may take the survey over several attempts, and withdraw at any stage by not submitting their answers.

The study period will commence at 08:00 Monday 9<sup>th</sup> March 2020 and end at 17:00 Friday 3<sup>rd</sup> April 2020. An individual's participation will end once they have completed and submitted the survey.

## 8. STATISTICS AND ANALYSIS

The sample size for this study is not based on a formal power calculation. All potential participants will be approached to enter the study and it is anticipated that between 1000-1500 participants from 10-15 sites will be recruited. Continuous variables are reported as mean and standard deviation (SD) or median and interquartile range (IQR) and categorical variables as frequencies and percentages (%) as appropriate.

Baseline demographic characteristics, burnout, wellbeing measures and qualitative responses will be recorded and reported. Subgroups based on pre-enrolment characteristics are specified a priori: (i) ED type; rural, regional, metropolitan (ii) ED site; (iii) age group; <30, 30-39; 40-49;50-59; >60; (iv) work group; nurse, doctor, clerk, security and other; (v) gender (vi) ethnicity; Maori, Pasifika, Pakeha, other.

Burnout and wellbeing measures will be compared between these groups using Chi-squared or Fisher's exact test for categorical variables and 1-way ANOVA or Wilcoxon summed rank tests for continuous variables. Multivariate regression models using multiple linear regression and logistic regression will be developed to determine the independent effects of the baseline features on burnout and wellbeing. A two-tailed p-value<0.05 will be taken to indicate statistical significance.

**Qualitative data** will be analysed using the data analysis principles of constructivist grounded theory(18) by a qualitative researcher who works outside of emergency medicine. The data will be extracted from REDCap and imported into the software programme NVivo Pro version 11. The analysis of the qualitative information will be guided by the five key processes outlined in the constructivist grounded theory approach 1) Initial coding, 2) Line by line coding, 3) Focused coding, 4) Comparative methods and 5) Memo writing.(18) These themes will then be categorised 'under' overarching themes that describe the overall frequently discussed ideas and concepts as perceived by the participants. Supporting quotations from staff will be selected based on fit and how well they explain or add value to the themes.

Masters Dissertation: The 60 Point dissertation by the PI and supervised by 2 co-investigators (VS and PJ) will be based upon the assessment of the primary objective.

## DATA MANAGEMENT

The Primary investigator, statistician (CF) and qualitative researcher (FP) will be only members of the team that may access the data. Access is controlled by the PI.

All study data will be entered directly by the participant onto a REDCap database. The name and any other identifying detail will NOT be included in any study data electronic file. Data will be stored on secure password protected work computers for seven years.

## 9. RESPONSIVENESS TO MĀORI

Ms. Marama Tauranga is a member of our research team. She has extensive Māori research experience.

We envisage that this study may benefit Māori emergency department workforce and patients. Our aim, ultimately, is to identify barriers to workplace wellbeing in emergency departments, and potential solutions to those barriers. Epidemiologic studies are required to document baseline measures of burnout and wellbeing.((13)page 7) Workforce wellbeing and development may be improved if the workplace caters to the needs of a given workforce, in this case, Māori workforce. Ensuring a workplace that is responsive to the needs of its Māori workforce may help build a numerically strong, able and knowledgeable Māori workforce, one of the two major goals of the Health Research Council related to Māori health research.((19) page 3) This may ultimately improve outcomes for all patients, including Māori. We envisage that this might therefor contribute to reducing inequalities in health outcomes between Māori and other New Zealanders.

A sub-analysis of outcomes by Māori ethnicity is planned, so participants' Level 1 ethnicity status will be collected as part of the study. <http://www.health.govt.nz/publication/ethnicity-data-protocols-health-and-disability-sector>

We hope to recruit 1000-1500 participants at 15 sites for the study. Staff/participant group size at each site (emergency department) will vary throughout Aotearoa, from a minimum of around 50 to a maximum of 400. In our 2018 study at our workplace 6.3% were NZ Maori. Other EDs have a greater proportion of Maori staff. Assuming proportion of Maori staff approximates ethnicity of the entire population, we estimate that up to 15% of participants may be Maori. Assuming 6-15% of participants are Māori, there will be 60-225 Māori participants in total.

<https://www.stats.govt.nz/infographics/major-ethnic-groups-in-new-zealand>

Māori participants will be recruited using the following steps to ensure adequate participation: All staff at participating EDs will be invited to participate, including Maori. Local investigators will be empowered to recruit staff at their sites by means that are locally appropriate, including focusing on particular staff groups, including Māori. We hope that this may include part or all invitations being available in te reo Māori.

The main cultural issues that may arise for Māori who may participate in the study may be privacy and confidentiality of personal information. These issues will be managed in the collection of data which will be by anonymous online survey. That is, identity will be anonymous. In the presentation of results, where some information included in reports or publications may unintentionally identify a participant, particularly where the participant group is small or specialised, safe guards will include where groups of 5 or less are possible, e.g. "Maori nurses over the age of 70" these results will be presented so that groups are larger than 5 individuals, e.g. "Maori nurses over the age of 40".

We have a pragmatic Māori dissemination strategy. We hope that by making research information accessible in a suitable format and timely manner we will maximise the project's potential benefits and minimise the risk of damage caused by the inappropriate circulation of confidential information. Some consultation has occurred prior to the start, and ongoing dialogue during the study, will help determine the appropriate dissemination strategies for the results of the project. Potential audiences will include all participants (including Māori participants), Māori health organisations and Māori health providers, Māori representative organisations, including ACEM (<https://acem.org.au/Content-Sources/Advancing-Emergency-Medicine/Cultural-competency/Achieving-Equity-for-Maori-in-Aotearoa-New-Zealand>), policy makers, other researchers and the communities from which the information was sourced.

#### **QUALITY CONTROL AND QUALITY ASSURANCE PROCEDURES**

The study will be conducted in accordance with the current approved protocol, relevant regulations and standard operating procedures.

### **10. ETHICAL AND REGULATORY CONSIDERATIONS**

The Investigator will ensure that this study is conducted in accordance with the principles of the Declaration of Helsinki.

The protocol, informed consent form, participant information sheet and any proposed advertising material will be submitted to the AHREC, and host institution(s) for written approval.

The Primary Investigator will submit and, where necessary, obtain approval from the above parties for all substantial amendments to the original approved documents.

Responses will be collected anonymously using the Survey Distribution Tools > Public Survey Link. The survey questionnaire will not contain any questions asking the participants for identifying data (ex: What is your email? name? address?).

The participants will not be identified on any study documents nor any electronic database. The survey will ensure participant identity will be anonymous. The responses of an individual cannot be identified by members of the study team or members of their healthcare organization.

While the greatest care will be taken to protect anonymity of participants, some information included in reports or publications may unintentionally identify a participant, particularly where the participant group is small or specialised. Safe guards include: Where groups of 5 or less are possible, e.g. "male nurses over the age of 70" these results will be presented so that groups are larger than 5 individuals, e.g. "male nurses over the age of 40".

One of the limitations of the previous survey was that participants could not save a partially completed survey and return to it later.(12) The software being used in this survey (REDCap) enables this function

(the "save and return" function). This feature can be enabled on the Online Designer > Survey Settings page under the "Save & Return Later" section. Once enabled, a respondent will be able to return to their response and make any edits to it even if they have fully completed the survey. Once enabled as part of the "Save & Return Later" feature, respondents will need to provide a Return Code in order to make edits to a completed survey.

All documents will be stored securely and only accessible by study staff and authorised personnel. The study will comply with the Data Protection Act, which requires data to be anonymised as soon as it is practical to do so.

Participants will not be paid for their participation in the research, nor will there be expenses reimbursed.

The PI shall submit annually and on request, a Progress Report to the AHREC, the A+Trust and ACEM.

## **11. FINANCE AND INSURANCE**

Funding is from grants from the A+ Trust (8872) and ACEM (Morson-Taylor Grant 2019).

## **12. PUBLICATION POLICY**

The Investigators will be involved in reviewing drafts of the manuscripts, abstracts, press releases and any other publications arising from the study. Authors will acknowledge the study funders. Authorship will be determined in accordance with the ICMJE guidelines and other contributors will be acknowledged.(20)

Because this project may form the basis for ongoing improvement in each ED, involving participants in an understanding of the results is considered vital to future improvement work. Study results will be disseminated to study participants by several means, including publications in national and regional journals, presentations at conferences, as well as local newsletters and staff meetings. We will also make use of social media and link readers to a central website ([www.nzemn.org](http://www.nzemn.org)) where important findings will be displayed in various forms catering to likely interested parties.

The study results will form the basis of a 60-point Masters dissertation for the PI. All University of Auckland policies will be adhered to.

## **13. APPENDIX: see file WoWe@AED questions.pdf.**



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