

ABSTRACT

The physically and psychologically demanding nature of the tasks performed by operational firefighters in fire and rescue agencies across Australia place greater risks to health of personnel than in usual circumstances. Evidence demonstrates that individuals with underlying health issues are at greater risk of experiencing a cardiovascular event (heart attack, cardiac arrest, stroke etc.) or physical injury when performing activities of moderate to vigorous intensity. A recent Beyond Blue and Bushfire and Natural Hazards CRC survey of emergency services members highlighted a greater number of mental health issues than the average for other areas of employment. Therefore, ensuring that all employees and volunteers are physically and psychologically capable of performing their roles in a safe manner is imperative.

Guaranteeing that individuals have support and access to services that could act to identify early signs and symptoms is critical to this process. The Fit for Duty Program acknowledges that it is not known whether CFA volunteer firefighters are safe to carry out their operational roles from a holistic health perspective and as a result, intervention is required. In the pilot phase of the Fit for Duty program, several approaches were trialled for medical assessments. CFA have partnered with Deakin University to develop task-based physical assessment activities that represent the wider range of tasks required for wildfire firefighting. These activities were reviewed by volunteer members who set the benchmarks for the assessment. It is envisaged that the physical assessment component will be broadened to include other higher risk areas of structural firefighting and technical response. An awareness, education and support approach was adopted for the psychological component which incorporates new and existing CFA Wellbeing education and support programs.

Fit for Duty pilot: ensuring the safety of CFA members and increasing access to health services

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This paper provides some fresh insights into opportunities for fire and rescue agencies to better support the health and safety of their members through presenting the approach, outcomes and lessons learned from the Fit for Duty Pilot Program. Benefits to members have already been realised in this approach which challenges our agencies and industry to re-examine the role of duty of care and suggests that such initiatives are well-founded.

Background

Firefighting is an inherently high-risk job with significant physical and psychological demands that lead to increased risks to the health and wellbeing of firefighters compared to the general population (Banes 2014; Elpidoforos et al. 2011; Wolkow et al. 2013). Supporting this, Wolkow et al., (2013) found that volunteer firefighters in Victoria do not benefit from the “Healthy Worker Effect” (HWE) that career Firefighters do, meaning the physical nature of the job does not translate to healthier lifestyles among volunteer firefighters.

Volunteer firefighters have similar cardiovascular risk factors to that of the general population (Banes 2014; Elpidoforos et al. 2011; Wolkow et al. 2013). Risk factors include hypertension, hyperlipidaemia, abdominal obesity, poor dietary intake and physical inactivity (Heart Foundation 2019). Relative Risk data from CFA health monitoring in 2017-2018 reflects this, with 23.2% of a sample of 7,630 volunteer firefighters with a cardiovascular Relative Risk rating of high (17.5%) or very high (5.7%).

Firefighting requires a certain level of health and fitness for safe and effective response, and it is therefore necessary for fire agencies to assess firefighters’ fitness for duty in relation to work tasks (Lord, Snow & Aisbett 2013). An entry-level physical selection test to assess the demands of tanker-based firefighting was developed (Lord, Snow & Aisbett 2013). The assessment involves three tasks that represent over 50 firefighting tasks observed among thousands of wildfire firefighters during planned burns across Australia.

Fit for Duty pilot program for volunteer firefighters

Volunteer firefighters are a crucial part of Victoria’s Country Fire Authority (CFA), making up approximately 95% of operational members, thus, without them the organisation would not be able to provide its services. CFA does not know whether

volunteer firefighters are safe and well to carry out their operational roles at any given time.

This conflicts with organisational obligations and values, particularly in relation Section 21 of the OHS Act 2004, which states:

An employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health" and CFA's value of Safety First.

The aim of Fit for Duty is to increase the health and safety of volunteer firefighters by identifying and addressing health risks associated with firefighting, to introduce minimum standards to increase volunteer safety. The program was developed and piloted among volunteers from urban fire brigades in CFA's South West Region from 2018-2019. Stakeholder engagement and consultation throughout the pilot contributed to development and adaptations. The program's intent remained unchanged throughout the course of the pilot: to increase health and safety, to increase access to health services, to be easy to participate in and to provide a safe and supportive environment for volunteers. It was a requirement that all program components meet this intention statement to be practical, effective and accepted by key stakeholders.

Methodology

Pilot program development and implementation methods

The South West Region project team worked with subject matter experts across the organisation to develop an initial concept for the program, being a focus on a stepped approach to the identification of health-related risks to operational volunteers. This approach acknowledged the different levels of risk to health that are associated with different firefighting roles.

To develop suitable measurements for risk levels, the project team consulted with operational volunteers from South West Region urban fire brigades and various operational staff members. Consultation took place at local fire stations, whereby the team presented the intent of the program and the concept of a risk-based approach. Feedback from these sessions were compiled. Three program components were developed for piloting among the CFA South West Region urban volunteer firefighter cohort.

Medical component:

The pilot program's medical component consisted of two steps: completion of a medical declaration form and a CFA-conducted health check. The medical declaration form consists of a self-assessment, asking members to declare any known medical conditions. The CFA health check involved cardiovascular health screening, measuring blood lipids and glucose, waist circumference, weight, heart rate and blood pressure. CFA's health team travelled to each individual brigade involved in the pilot to conduct health checks.

If any potential health issues were indicated by completing the medical declaration form or health checks, members were referred to their medical practitioner for further advice regarding their fitness for duty. Participation in the pilot components would not impact a member's ability to remain operational, unless a medical professional advised otherwise.

Completion of the medical component acted as a prerequisite to the physical component.

Physical component:

The physical component consisted of the Tanker-based Assessment, the physical selection test that was developed by researchers from Deakin University. This is the first physical assessment of its kind in Australia and CFA was the first organisation to trial the assessment among a volunteer cohort. Assessment tasks were designed to look and feel like firefighting tasks while assessing role-related physical fitness.

The assessment involved three tasks that were to be completed within the timeframe set by CFA volunteers. Tasks included rake hoeing 1.8 lots of 360L of pine bark mulch over a space of 1.5 metres in less than 2 minutes and 30 seconds; dragging and maneuvering a charged 38mm hose in an M-shaped obstacle measuring a total of 54m in length in less than 90 seconds; using one arm to wind two lengths of 38mm hose in less than 2 minutes and 20 seconds. Assessment equipment was taken to each participating fire station by the project team so that assessments could be run locally for brigade convenience.

Psychological component:

The psychological component involved an awareness-based approach as opposed to setting minimum standards and screening. It included offering mental health first aid training to increase awareness, knowledge and skills to empower local-level support.

CFA's existing wellbeing services were also promoted, such as wellbeing and resilience education for brigades, and various member wellbeing assistance and support programs.

Evaluation methods: data collection and analysis

Medical component:

Data from completed medical declaration forms and CFA health checks were securely recorded and stored by CFA's Health Services Manager. Desensitised data was then stored in spreadsheets to track participant numbers and pilot outcomes.

Physical component:

At each physical assessment session, participants names and scores for each task were recorded. Scores were then entered onto a spread sheet enabling efficient reporting of participation rate and assessment outcomes.

Psychological component:

Courses were coordinated by the project team, with final participant lists established. A follow-up feedback questionnaire was emailed to all participants. The participant list and anonymous feedback provided were recorded on spreadsheets.

Table 1: Outcomes of medical components and GP referrals.

	% cleared by GP	% not cleared by GP	% made non-operational temporarily	% made non-operational indefinitely	% who acquired role restrictions
% of total members referred to GP (n=48)	70.8%	29.1%	4.1%	2%	22.9%

Feedback:

Qualitative data was gathered using online surveys (Survey Monkey), mail-out questionnaires, telephone discussions, focus group-style brigade and group meetings and utilisation of a feedback email address. Feedback that was sought from all stakeholders and included the perceptions on the approach the project team took, the opinions of, and experiences with, the program components, what worked well and what aspects need improvement. Feedback was recorded and compiled into a spread sheet. A thematic qualitative analysis was used to categorise data into themes, generating a feedback summary.

Members also believed that only those in high-risk roles should be required to complete medical assessments as their roles are more dangerous and physically demanding.

One member was thankful to the program for acting as a trigger for undergoing further medical assessments:

I hadn't been to the doctor in years. I was diagnosed with high blood pressure and early stage bowel cancer. I am now managing my blood pressure, and the doctor said that if I had waited a few more years, the bowel cancer wouldn't have been as easy to deal with.

Results & Discussion

A total of 448 volunteer firefighters from classification 4 and 5 brigades in CFA's South West Region participated in the pilot program (434 participated in medical components, 268 participated in the physical component, 14 participated in mental health first aid training).

Medical Component

A total of 434 operational volunteers participated in the medical component (completion of medical declaration form and CFA health check). This component highlighted potential health issues for some volunteers, resulting in referral to medical practitioners for professional advice.

Forty-eight of the 434 participating volunteers (11%) were referred to their General Practitioner (GP) for follow-up. Table 1 presents data on the outcomes for volunteers who were referred to their GP.

Two members were made non-operational temporarily due to existing medical conditions. These members returned to their operational duties once the appropriate medication and health management plans were in place. One member self-nominated to remain non-operational indefinitely due to acknowledgement that they were no longer fit for duty. Eleven members remained operational, with specific restrictions to duties that are to be maintained long-term with oversight by the relevant Operations Manager and brigade Captain.

Key feedback themes

Members were concerned with the privacy and confidentiality of their medical information. Members were also concerned that brigades would lose many members, potentially resulting in reduced response capacity.

Members believed that their own medical practitioners should conduct their health checks instead of the CFA health team.

Lessons learned

- The current CFA medical forms and processes are outdated and ineffective and due for review.
- The CFA health team do not have capacity to conduct health checks for all members on top of existing CFA Health Programs.
- Medical assessments are best to be completed by an individual's own GP for greater practicality for members, as well as the benefits associated with an individual's GP being familiar with and aware of the patient's medical history.
- Sending members to their own GP is more cost-effective than delivering CFA health checks.

Physical Component

Twenty physical assessment sessions were held, with a total of 268 participants. Five (1.8%) participants did not meet the trialled assessment benchmarks by a small margin. Members of various age, sex and body types could successfully complete the assessment tasks.

Key feedback

Members believed the assessment tasks were too easy, and that current training and skills maintenance drills are more arduous. The assessment was perceived as a waste of time as it did not adequately measure members' physical ability to conduct tanker-based firefighting. The equipment used was of poor quality, not readily available to brigades and therefore reduced practicability of the assessment. While the tasks were designed to look the firefighting tasks, participants still perceived them to be irrelevant, i.e. use of rake hoes was not seen as common.

Table 2: CFA volunteer health and safety data: recorded incident types from 2014-2019

Medical Issues	Physical Fitness Issues	Psychological Issues
62.9%	37%	76%

Lessons Learned

- Those in wildfire firefighting roles (with lower physical demands) may not benefit from a physical screening test.
- The medical assessment component potentially picked up anyone who may not have passed the physical, rendering the physical assessment redundant.
- Physical assessments for firefighters should focus on higher-risk firefighting roles to ensure they are worthwhile.
- Assessment equipment should be readily available to brigades, i.e. regular firefighting equipment held at fire stations or districts.
- Assessments must be able to be delivered at local brigade locations for volunteer convenience.

Psychological Component

Three Mental Health First Aid courses was organised, with a total of 28 course participants. A mix of males and females of different ages attended the courses.

Key feedback

Feedback suggested that the course was worthwhile and participants would recommend it to others. Negative feedback included the perception that the course was draining, with more theory than practical skill development as experienced in regular first aid training. However, it was acknowledged that the support for people with mental health issues is of a different nature than physical health issues.

Lessons Learned

- The course is not suitable for all people as it contains distressing content
- While the course aims to educate Australian adults on mental health and mental illness, it is important that suitable participants are chosen for the course, such as those who are empathetic, approachable and not as likely to be triggered by the content.

Detailed Risk Assessment

Following completion of the pilot program and evaluation, it was acknowledged that further exploration, stakeholder engagement and analysis of organisational risk was required before implementing a program across the state. As a result, a detailed risk assessment was established, measuring organisation health risk as very high, supported by the following data.

Conclusion

The Fit for Duty pilot program addressed health and safety risks faced by volunteer firefighters through the development and trial of risk-based health components.

The pilot identified the potential of positive health outcomes associated with a preventative health program for volunteer firefighters, highlighting positive impacts associated with medical assessments and early detection.

While the physical assessment did not yield intended benefits, it was a positive step in the right direction. Future physical assessments for firefighting may benefit from focusing on higher risk roles. It is important that assessment tasks seem relevant to the role of volunteers and assessments must be able to be held at local fire stations with readily available equipment that is regularly used by brigades.

The pilot yielded a number of learnings, including the need to focus on the different levels of risk of different firefighting roles, the need for a program for volunteers to be as practical and user-friendly as possible, and the importance of including target stakeholders along the program development journey.

Recommendations

- It is important to understand the program's target group, and to include them as key stakeholders throughout program development and beyond.
- It is important when obtaining feedback and suggestions from key stakeholders, that there is evidence of that feedback being taken on board to ensure trust among the program target group.
- Medical assessments are of highest value when it comes to health prevention for volunteer firefighters, as they respond to the higher risk of cardiovascular and respiratory health conditions.
- Medical assessments must be handled with strict privacy and confidentiality.
- Use of thorough, evidence-based processes and partnerships with trusted organisations is crucial for program success and building trust with target groups.
- Ensure sufficient timelines are developed and followed, allowing room for unforeseen time constraints.

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