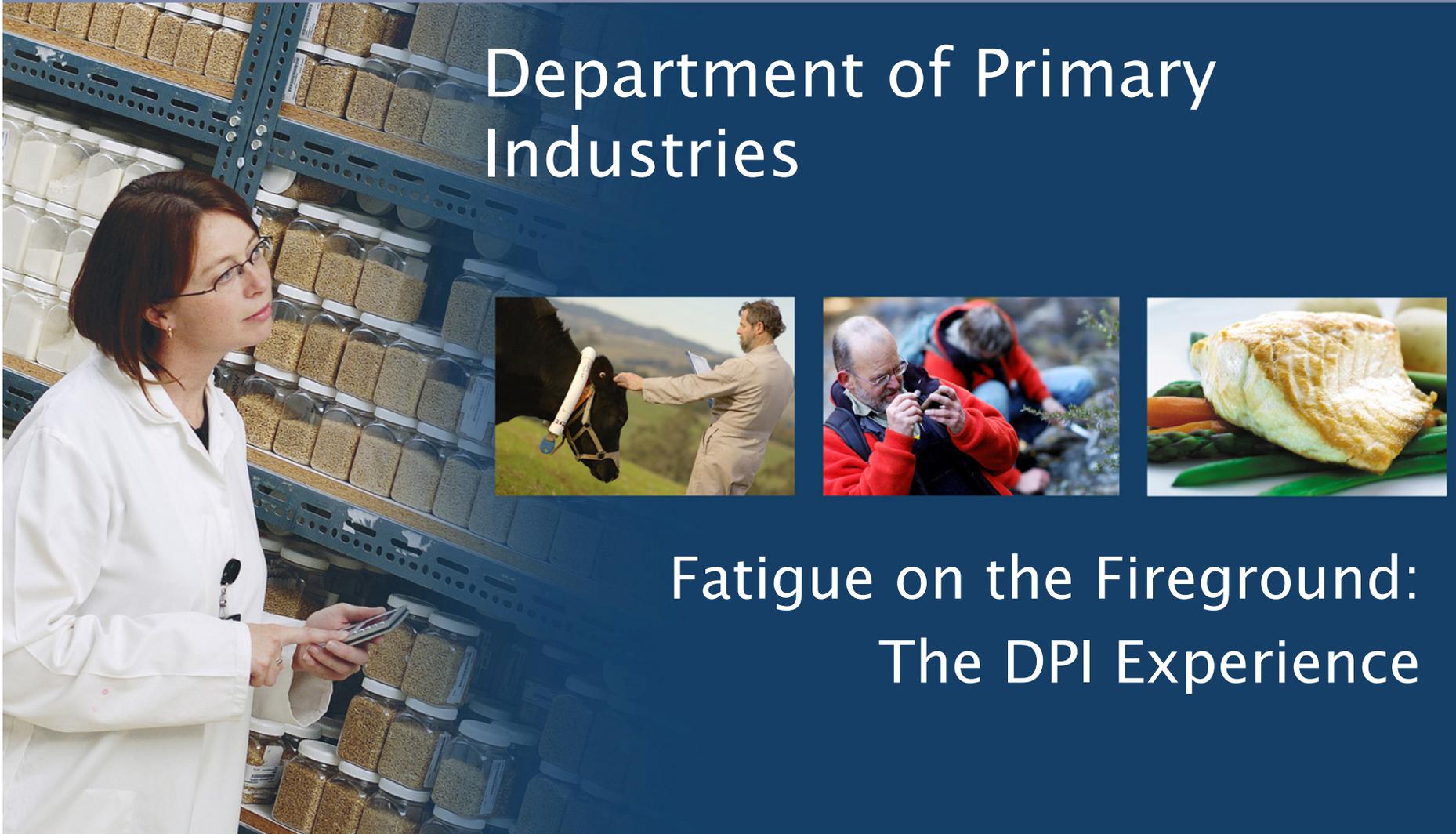


DEPARTMENT OF
PRIMARY INDUSTRIES

Department of Primary Industries



Fatigue on the Fireground:
The DPI Experience

DPI - Overview

- DPI employs over 2500 staff who work from more than 80 locations across the State.
- Our staff manage and regulate the use of Victoria's natural resources and encourage industries to develop them in the most efficient way by using our world-class science.
- We also help them to meet the needs of consumers in Victoria and overseas.
- The Department supports the agriculture, fisheries, petroleum, minerals, energy and forest industries in Victoria.
- DPI uses a collaborative approach to influence improvements in industry performance and to encourage the adoption of new technologies and development practices.
- It does this by using its expertise in science and technology to provide information and advice on the use and management of resources.
- DPI also assists industries by running a range of community education and extension programs.



DPI and Emergencies

Lead agency for:

- Agriculture
 - Drought
 - Aquaculture
- Plant disease
 - Phylloxera
 - Locust
- Animal disease
 - Anthrax
 - Avian Influenza
- Essential services disruptions

Partner agency for:

- Fire and other DSE led emergencies
- Exotic Marine Pest Incursion
- Mine and quarry rescue

Lead recovery agency:

- Fish/aquaculture
- Primary Producers i.e. bushfire recovery



DPI – OHS Assurance Program

- In the summer of 2006/07, almost 800 employees of the Department of Primary Industries Victoria (DPI) were heavily involved in Victoria's wildfire fighting efforts.
- These operations required prolonged rotations and lengthy shifts as the intensity and scale of the fires was unprecedented in Victoria.
- DPI's corporate risk management strategy recognised the difficulties in both maintaining effective deployments of staff whilst ensuring their occupational health and safety (OHS).
- One of the key issues identified was the impact of fatigue on fire fighters and its management so that OHS was not compromised and the fire fighting effort was maximised.
- DPI undertook a quality assurance review for all aspects of OHS during the fire campaign.
- The reviews consisted of structured interviews, observations and debriefs. These were conducted by a team of medical practitioners, organisational psychologists, OHS and fire fighting experts.

Obligations as the Employer

DPI as an Employer

- Public Administration Act 2004
 - Secretary of DPI is the employer.
- As an employer DPI has duties Under Sections 21 and 23 of the Victorian Occupational Health and Safety Act to provide and maintain a working environment that is safe and without risks to health.
- These duties under these Acts are not transferable even though DPI staff volunteer to participate in fire suppression activities with other organisations
- DPI needs to continue to discharge duties of employer.
- Inadequate to rely on other agencies alone to ensure that DPI's duty of care is being met.
- DPI implemented the quality assurance process to ensure that its staff were safe and that it was discharging its duties as an employer.



Fatigue and OHS

Why was Fatigue Identified as a risk factor?

- DPI conducted a risk management process to identify all OHS risks that could impact on the safety and health of our staff.
- Anecdotal evidence that people were working extended shifts and concurrent rotations
- People indicated that they needed a break
- Expert advice and knowledge of the risk factors associated with fatigue was obtained by DPI
- The Department had already responded as a Lead Agency to a number of other emergencies during the year (e.g. Locust) and the organisation and its people had been stretched.
- Fatigue is an emerging health and safety issue
- The high cost of WorkCover claims associated with fatigue related injuries

OHS Management Review



Objective:

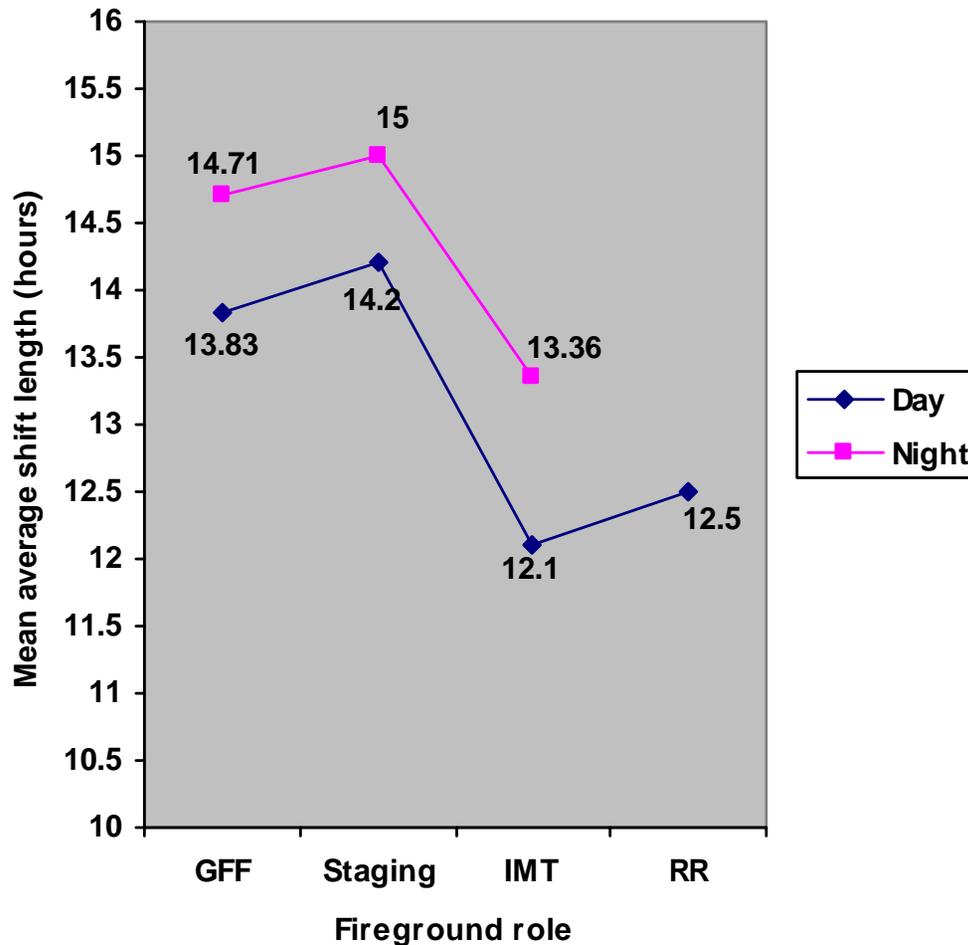
- To determine the current status of the management of the areas of psychological wellbeing, medical and health and fatigue management for staff involved in fires/rural recovery
- Focus on fatigue management

Method

- Combination of Face to Face and telephone interviews
- 66 DPI staff interviewed across the state
- Qualitative and Quantitative data was gathered.
- Open ended questions
- Data gathering over a four week period from January – Feb 2007

Shift Length - Findings

Figure 1: Mean average shift length by Role and Shift type



The average shift length worked did vary by role and whether the person is working day / night

Those staff who worked as general fire fighters or in the staging area worked significantly longer hours on average than those staff who worked in the IMT or RR.

Whilst there were differences the analysis indicates that there is no significant differences between night shift and day shift in average shift length.

However the staff who were working night shifts reported that recovery was more problematic. They got less sleep, sleep during the day due to light, heat, noise etc).

Discussion

- Staff who worked as night shift fire fighters reported the greatest problems with fatigue and staff who worked night shift in IMT also reported significant issues with fatigue.
- Fatigue was significantly affected by the type of accommodation provided to night shift staff. All mentioned the difficulty of trying to sleep during the day in conditions that were hot, too light and noisy. Most said that they had experienced poor quality of sleep and had averaged only 3-4 hours of sleep per rest period.
- Those night shift staff who had been accommodated in single, air-conditioned, darkened motel rooms reported being able to obtain 5-6 hours of sleep on average per shift.
- Heavy demands placed on mapping staff and rural recovery staff due to time critical nature of their work.
- Participants who had worked night shift uniformly had a negative evaluation of accommodation provided.

Discussion

- It was common practice for DPI staff to be deployed in the early morning to night shift duties and then travel to the fire and commence a 12 hour night-shift that same night, resulting in them going without sleep for 24 + hours.
- 12 shifts often blew out to 16 to 18 hours once travel time from fire line was included.
- DPI Managers identified the management of fatigue of staff deployed to the fire fight as a significant challenge.



DPI Improvement Strategy

1. DPI is committed to reducing the impact of fatigue on its staff involved in fire suppression activities
2. We will continue to pro-actively monitor our staff and their working hours and rest duration (length and quality)
3. Review our procedures and practices regarding travel and accommodation standards:
 - where practicable, staff should travel to the fire ground and accommodate themselves the day before taking up night shift duties.
 - staff rostered onto night shift be given priority for accommodation in air conditioned, dark and quiet locations
 - Further investigation of means by which driving by staff while fatigue may be eliminated or reduced



DPI Improvement Strategy

4. Increase awareness of the conditions for managers under which staff deployed to emergency duties.
5. Institution of a mentoring system for staff deployed to the fire ground, particularly novices to assist them to adjust / cope with the conditions
6. Increase the numbers of specialist staff such as mappers who were identified as being in short supply and “overworked”.
7. Supply for Rural Recovery Field officers with technology that will permit them to enter data into systems while in the field (PDA's etc) to reduce back office time.



Summary

- We know fatigue is an emerging OHS issue
- We have a traditional system of 12 hour shift that extends to 16 – 18 hours (and in some cases more than 24).
- Logistics and demands usually extend shift to 14-18 hrs shift in practice.
- Staff are reporting fatigue
- Recovery is ad hoc and needs to be addressed by specific protocols
- Our staff volunteer to undertake fire fighting duties and we need to ensure maximum participation
- With climate change the density, frequency and duration of the fire season is likely to increase.
- This will place many demands on our staff for longer periods



Conclusion

What does this mean?

- We will have to adapt to this changing environment so that our staff are willing and able to undertake fire fighting duties for extended periods
- We can not stand still otherwise the regulatory authorities will regulate us and make the decisions as to how we manage fatigue
- We need to be pro-active and self regulate so that regulations regarding hours of work are not placed upon us
- We will need to demonstrate that we are concerned about the issue of fatigue and that we are doing everything practicable (as required by the OHS Act) to ensure a safe working environment.



A Way Forward

The Challenge

- To reduce the impact of fatigue on our staff and ensure operational effectiveness.
- Review current solutions for managing fatigue regularly and improve our procedures and processes to respond to the changing conditions.
- Audit our procedures and processes for fatigue management to ensure best practice and compliance
- Challenge the status quo – are there other ways we can deploy staff and manage their fatigue?
 - Are we able to reduce shift length – For example use overlapping 9 hour shifts?
 - Can we improve recovery techniques?
- We need to conduct further research regarding potential shift changes to ensure any mooted changes are workable.



The Result of Fatigue



You are the Safety Manager for DPI

Three of your staff were trapped in this car. They drove home after working and being awake for 36 hours.

How would **you** explain how this happened to the three families of the people inside?

What would **you** say to WorkCover when they asked how do you manage fatigue?