# Shift working driver fatigue programme – a pilot programme to raise awareness and motivate change among employees and employers

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## Abstract

The NZ Transport Agency (NZTA) is developing a driver fatigue programme to educate and gather the information needed to help prevent shift worker fatigue-related car crashes. Employers will get a baseline level of self-reported fatigue from employees before starting and finishing a shift, and how fatigued they are before driving home. Employees will get served education tips before work and when driving home. There is also a suite of products, resources and tools available to help reduce instances of driver fatigue and begin a culture of awareness and action around fatigued driving in workplaces.

## The Issue

New Zealand had 285 fatal and 2,534 serious injury crashes in 2016 (Ministry of Transport, 2018). Being fatigued significantly increases the risk of a crash. Fatigue was identified as a contributing factor in 28 fatal and 119 serious injury crashes (Ministry of Transport, 2017). Shift workers are six times more likely to be involved in a fatigue related road crash than other workers (VicRoads, 2015). Alongside this, a sample review of CAS (crash analysis) data for 2013 fatigue related crashes, revealed most people who were crashing were people who work shifts, long or irregular hours (referred to as shift workers).

Therefore, shift workers are a high-risk group, and this makes sense when you consider some factors that contribute towards fatigue: insufficient sleep, working/driving during times when we usually sleep, and long periods of work or activity without a break (NZTA, 2015).

There is also a 19% difference in perception between staff and management about how overtired workers are in the workplace (WorkSafe NZ, 2017). While employers are interested in fatigue in the workplace, the drive to and from work has often been viewed as an individual's personal responsibility.

## The Solution

To understand what employees and employers think and feel about fatigued driving, qualitative research was undertaken. A key finding was that to motivate change, we needed to identify the level of fatigue in the employers' direct workforce and to create an interaction between the employer and the employee. A simple way to simultaneously collect data for the employer and give employees a self-assessment tool with fatigue education tips was required. This led us to the development of a holistic 5-phase programme designed to capture data, engage, educate and analyse (Table 1).

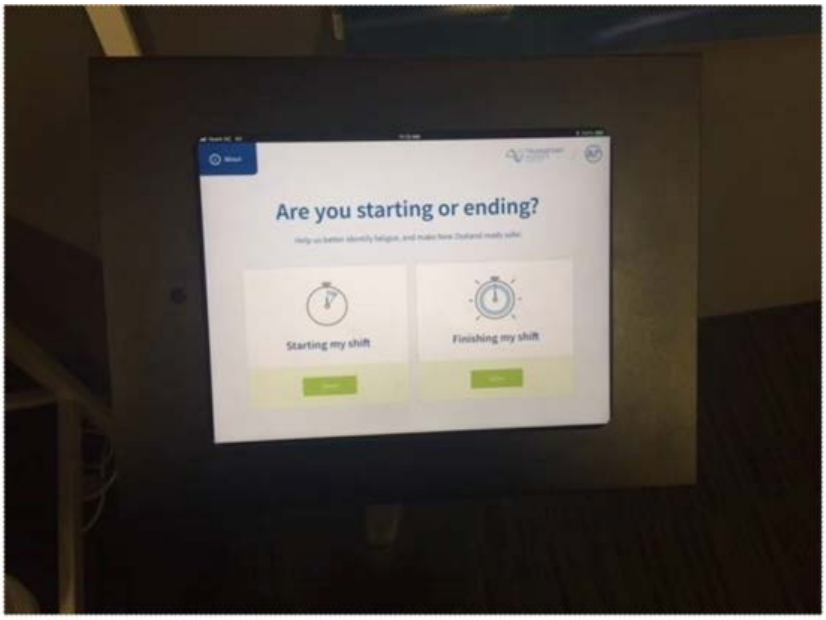
***Table 1. Fatigue Holistic 5-Phase Programme***

| **Phase 1 (4 Weeks)** | **Phase 2 (2 Weeks)** | **Phase 3 (6 Weeks)** | **Phase 4 (4 weeks)** | **Phase 5 (2 Weeks)** |
|---|---|---|---|---|
| Data capture | Reporting | Assisting | Capture 2.0 | Feedback |
| Data capture tool is used daily by staff (anonymously) before and after their shift to:<br><br>•Generate a baseline level of fatigue for staff.<br>•Generate a view of how fatigued staff are before driving.<br>•Provide staff vital fatigue information before work/driving home. | Provide a report of the level of fatigue to management and employees. | Introduce a suite of products, resources and tools to help reduce instances of driver fatigue.<br><br>All materials support the message the programme is designed to communicate. | The data capture tool is re-implemented to see any change in workforce overall level of driver fatigue. | A second report is provided to the management and employees to see any changes from first capture phase and what areas might still need attention. |

To develop the programme, we collaborated with WorkSafe NZ and with Massey University's Sleep/Wake Research Centre to provide insights into similar work, the best way to design the data capture tool (Figure 1), and education tips that would be beneficial to the shift worker.

A phase one trial was undertaken for four months within NZTA's Wellington and Auckland Transport Operations Centres who operate shift rosters (WTOC = 50 staff and ATOC = 65 staff). Staff reported to two questions, two times each day, so not onerous.

***Figure 1. Data Capture Tool***



## Results

Findings showed 26% of WTOC and 23% of ATOC shift workers are fatigued before getting behind the wheel. Overall, there were improvements for WTOC especially for both high risk occasions, starting or finishing night shifts, 8% and 6% respectively. The focus on these shifts had a small impact. Because of their high risk the programme will continue to target them.

ATOC didn't move significantly and was consistent with the first round. Conclusions here are that they are yet to see improvements and should therefore keep focusing on the same high-risk shifts (driving home from either shift, and particularly night shifts).

Another outcome from the pilot is that use of the data capture tool increased 74% for WTOC and 64% for ATOC, which shows the assist phase motivated staff to use the tool more.

## Conclusion

Whilst this pilot stage was brief, there have been some improvements and feedback has been positive. The data capture tool and reports provided the catalyst for both employees and employers to talk about fatigue levels, what are the issues and potential solutions to address these.

There were improvements in the trial sites that suggest access to the information and tools has started to help improve some levels of fatigue. Staff and management need to remain conscious of the highest risk shifts and continue to promote taking a 15-minute nap before driving when seriously tired.

A phase two pilot trial is planned to test the approach in other shift working companies and feedback from staff and management from this trial will help shape the next iteration of the programme.

## References

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