Analysis of fatal and serious injury collisions on Irish roads during peak and off-peak hours (2014-2018)

October Bank Holiday Launch

24 October 2019

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Introduction

RSA

- The context of this analysis is Action 6 of the Mid-Term Evaluation of the government Road Safety Strategy which sets out to: *'identify the profile of fatal and serious injury collisions occurring during off-peak travel times to inform education/enforcement strategies.'*

- For the purposes of this presentation, off-peak travel times were defined as travel occurring over the period 10pm-5.59am.

- For simplicity, and for comparison purposes, peak hours were defined as travel during the hours of 6am-9.59pm (peak and inter-peak combined).

Data sources for analysis

- Data from the Irish Road Traffic Collision Database, based on collision records transferred from An Garda Síochána to the RSA, have been used for the analysis in this presentation.
- The analysis is based on aggregate data from 2014-2018 in the case of fatal collisions, and 2014-2017 for serious injury collisions.

Time Period	Collisions	Casualties
2014 - 2018	781 fatal	836 fatalities
2014 - 2017	3,087 serious	3,518 serious injuries

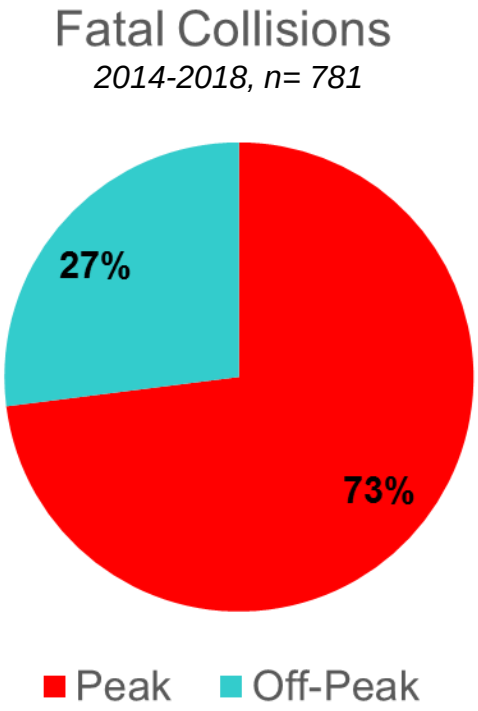
- A separate data source provided by the Health Research Board was used to provide the analysis on fatalities occurring in 2013-2016 with a positive toxicology for alcohol: the National Drug-Related Deaths Index (NDRDI).

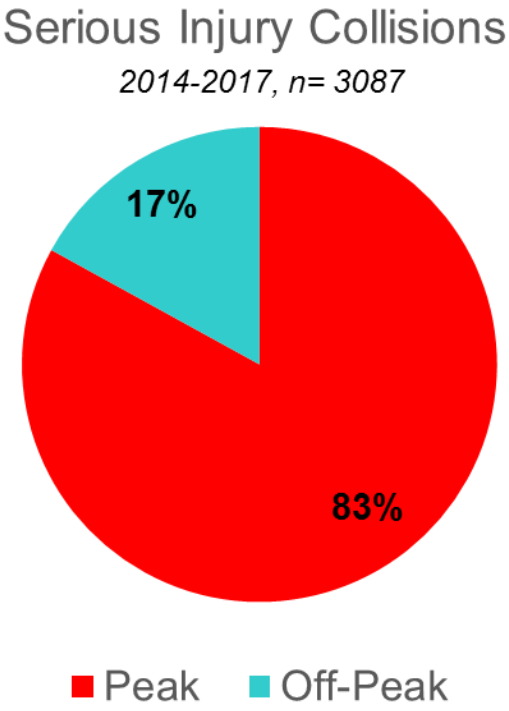
Data for 2017-2018 are provisional and subject to change.

Presentation outline

- Incidence of fatal and serious injury collisions during peak and off-peak travel times.
- Profile of collisions (peak versus off-peak): time, day of week, location.
- Profile of fatalities (peak versus off-peak): road user type, gender and age.
- Peak versus off-peak fatalities with a positive toxicology for alcohol (2013-2016).

Incidence of fatal and serious injury collisions, peak and off-peak





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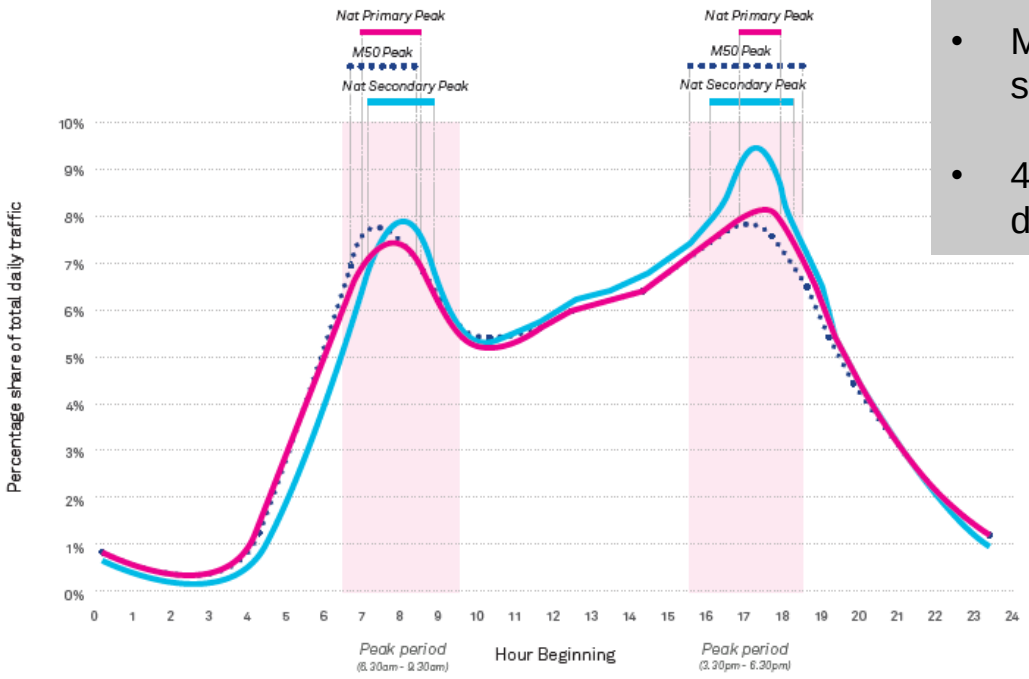
Percentage share of daily traffic for the national road network (TII)

E: ROADS USAGE OVER THE DAY

Profile of the usage of the National Roads network by time of day

The peak periods on our National Roads are extending outwards due to increased demand and congestion.

In the morning, the peak period lasts between 6.30am and 9.30am whilst in in the evening, the peak covers the period between 3:30pm and 6:30pm. Peak traffic hours have a level of traffic some 30% to 50% above off-peak levels. The M50 is the most used road in the country with daily weekday traffic of up to 146,000 along its busiest sections. The peaks on the M50 are more prolonged than other roads with significant traffic flows being maintained during off-peak periods. The trend of 'peak hour spreading' continued in 2018, with the peak period share of total daily M50 traffic reducing by 0.4% in both the AM and PM Peaks compared to the previous year.



Source: TII National Transport Model, 2018

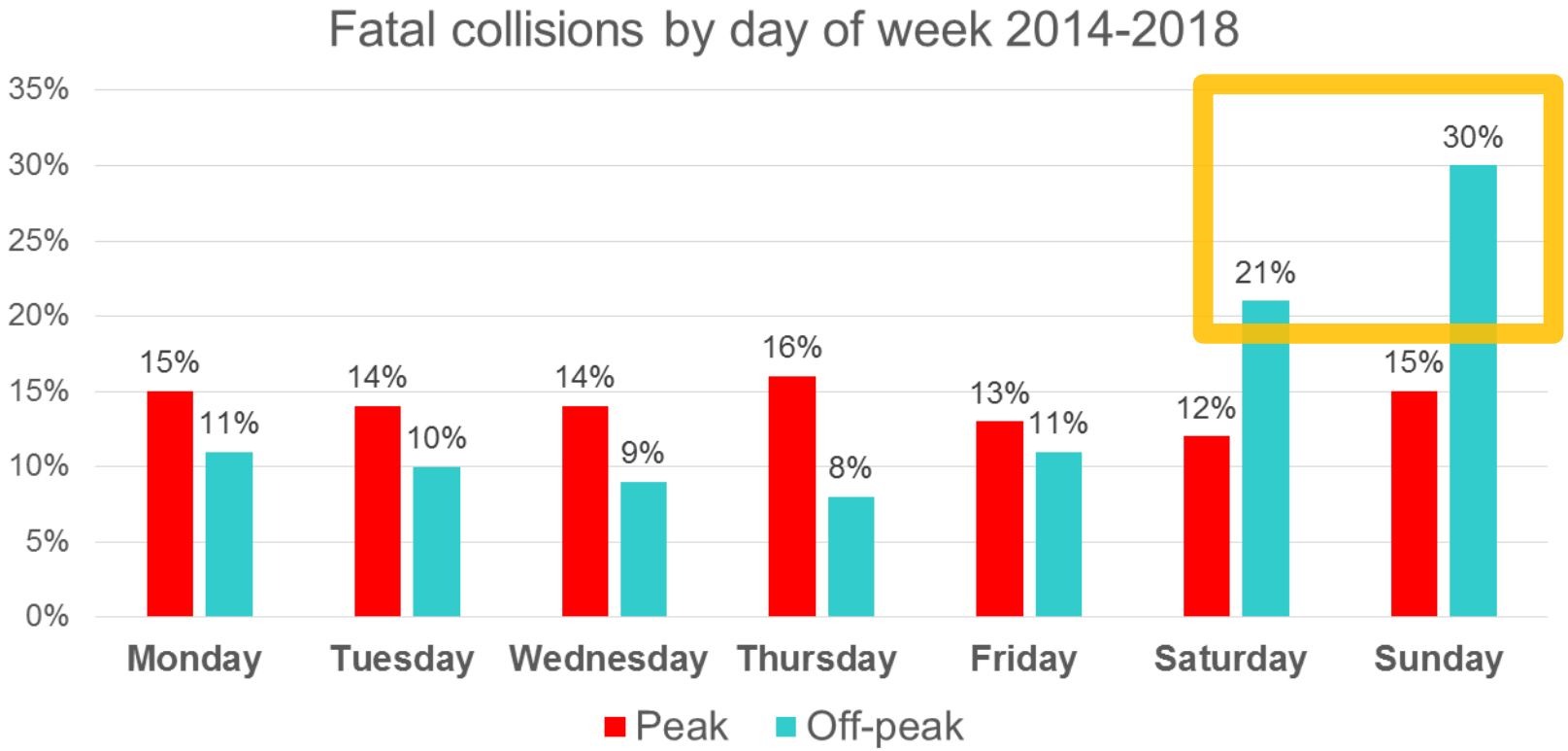
Transport Infrastructure Ireland
National Roads Network Indicators 2018

- 10pm-midnight 1-2% share of daily traffic
- Midnight to 4am: 0-1% share of daily traffic
- 4am-6am, 1-4% share of daily traffic

Source: TII National Roads Network Indicators, April 2018

Collision Profile

Day of week



Base: Fatal collisions (2014-2018, n=781).

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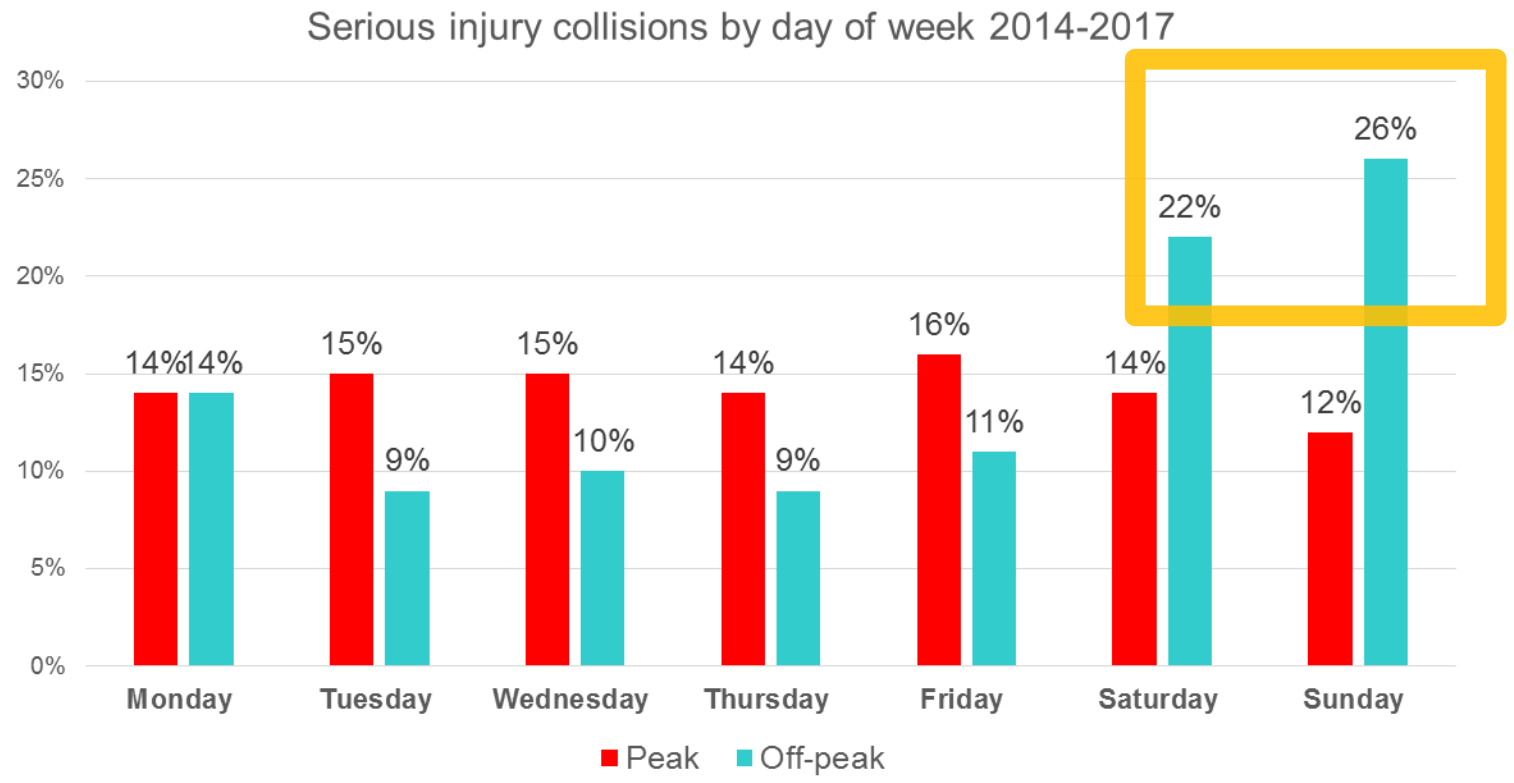
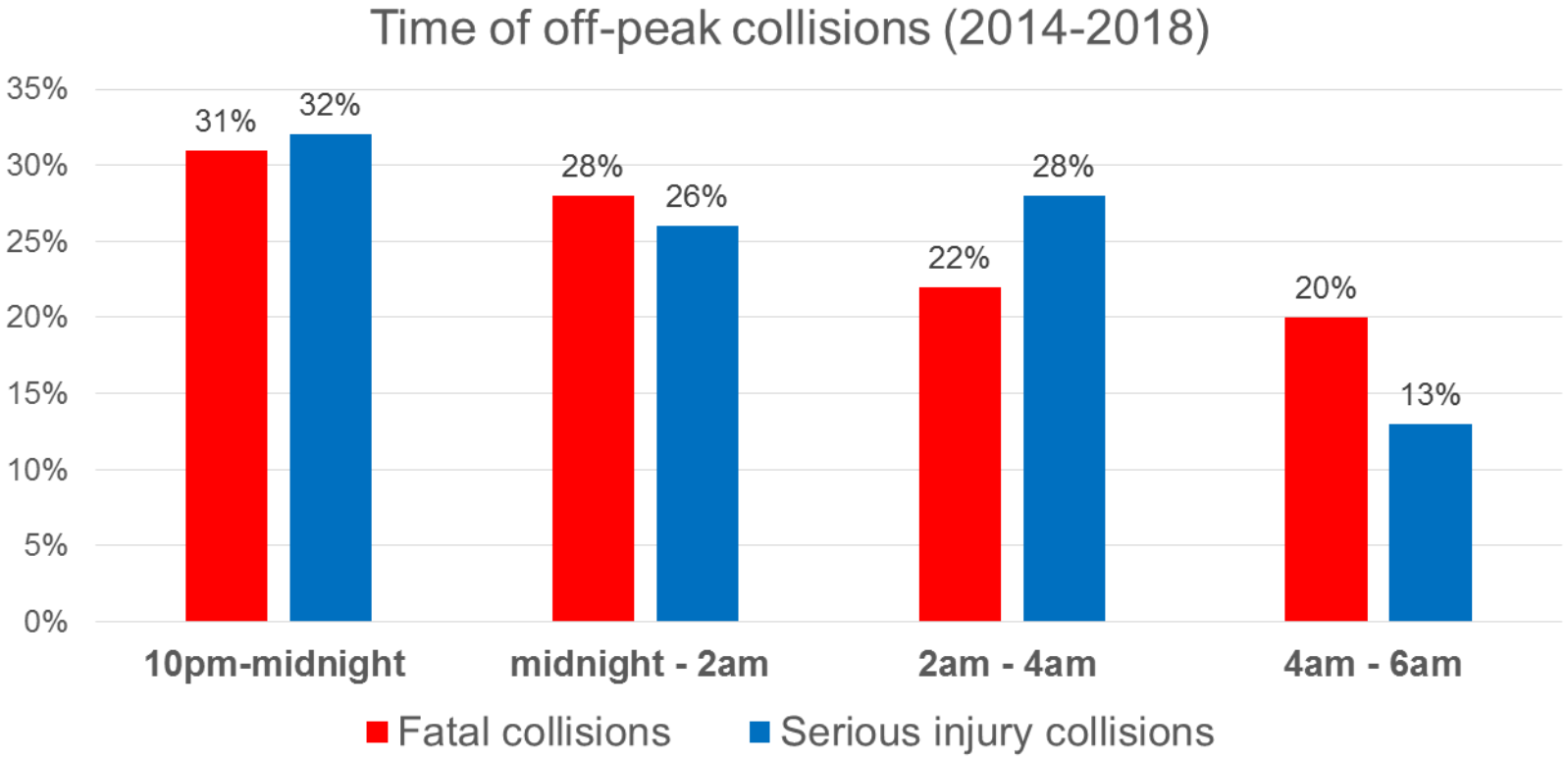
Day of week



Base: Serious injury collisions (2014-2017, n=3,087).

Data for 2017-2018 are provisional and subject to change.

Off peak fatal and serious injury collisions by time-band



Base: All off-peak fatal collisions (2014-2018, n=213), & off-peak serious injury collisions (2014-2017, n=530).

Data for 2017-2018 are provisional and subject to change.

Off-peak fatal collision profile

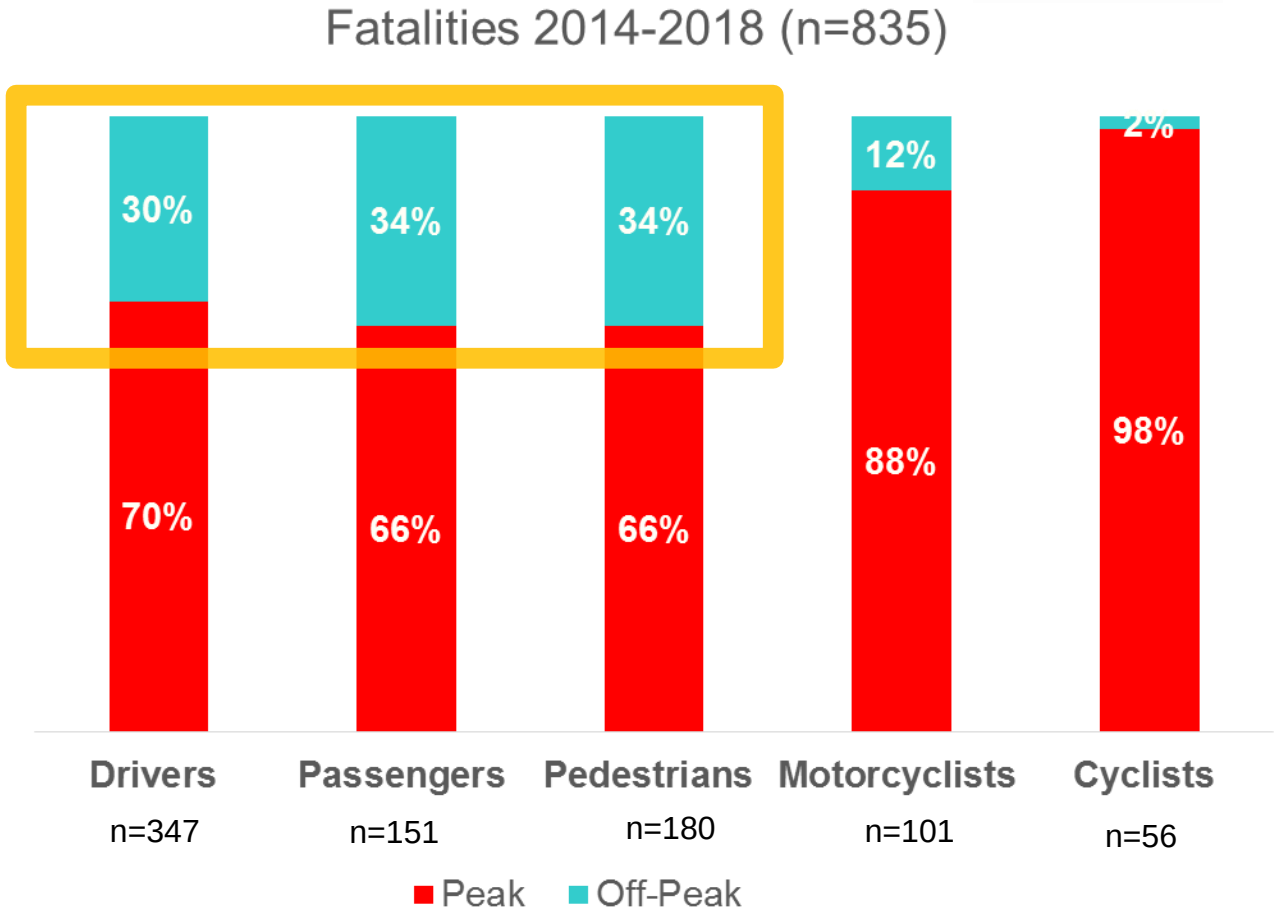
- The counties with the highest number of fatal collisions during off-peak hours (2014-2018), were Dublin (33), Donegal (18), and Louth (17).
- 69% of off-peak fatal collisions occurred on rural roads (speed limit of 80km/h and above).
- 7 in 10 fatal collisions during off-peak hours not involving pedestrians, were single vehicle collisions.
- The highest number of off-peak fatal collisions occurred in June (25). Overall, off-peak fatal collisions were most likely to occur in the months June to October (50%).

Base: All off-peak fatal collisions (2014-2018, n=213).

Data for 2017-2018 are provisional and subject to change.

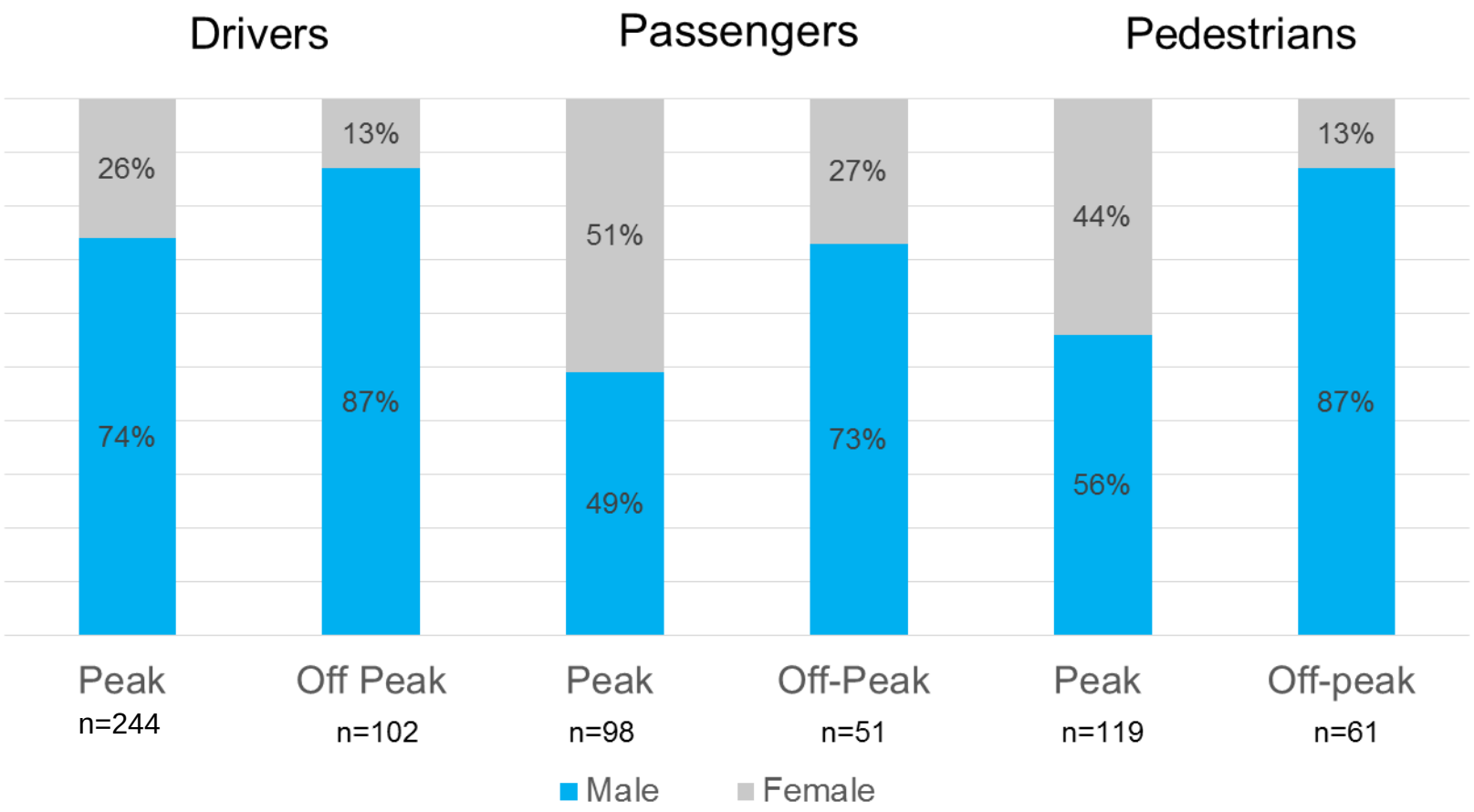
Fatality Profile

Road users killed, peak and off-peak



Data for 2017-2018 are provisional and subject to change.

Gender of road users killed 2014-2018, peak and off-peak



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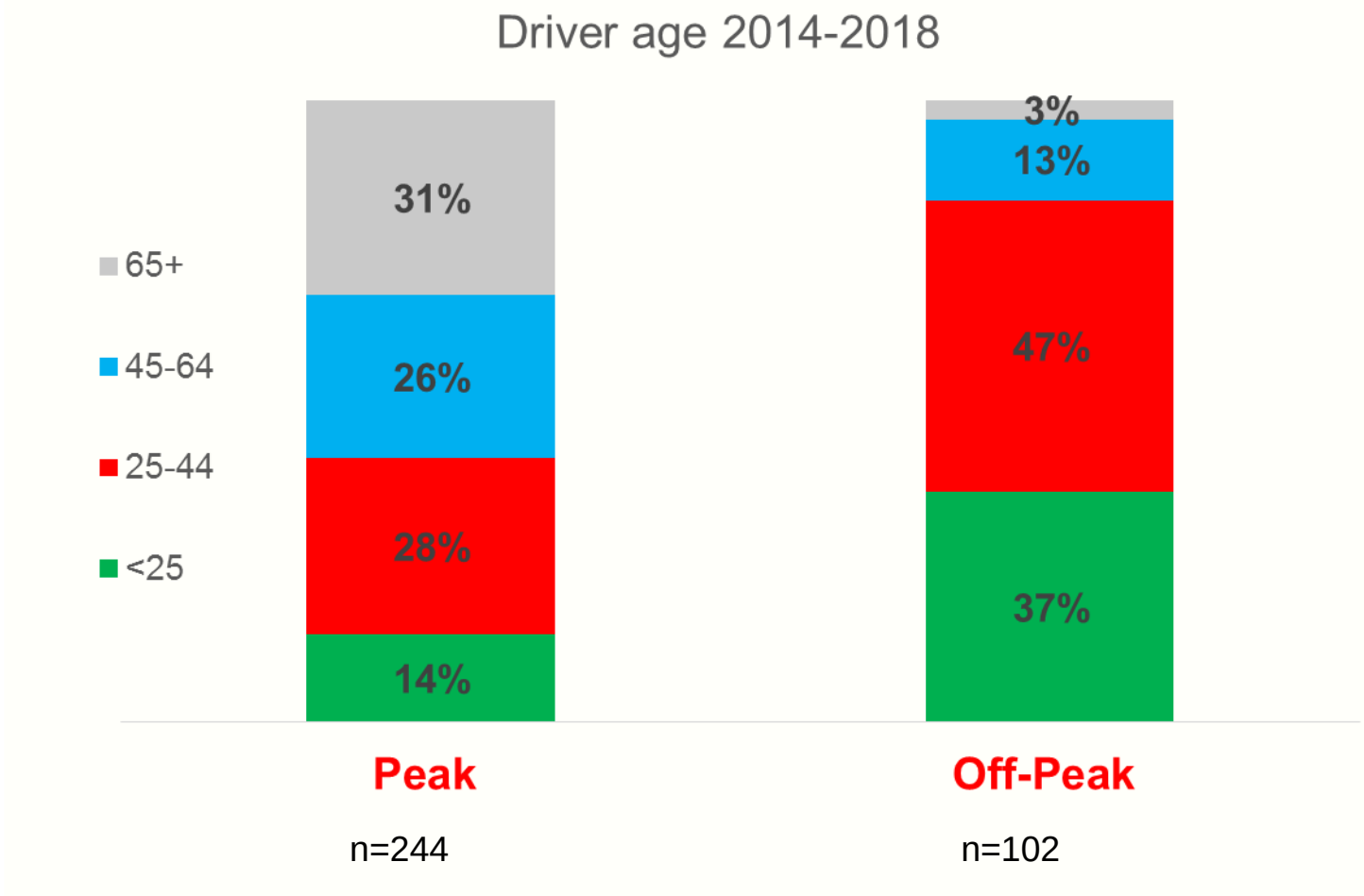
Age profile of drivers killed, peak and off-peak



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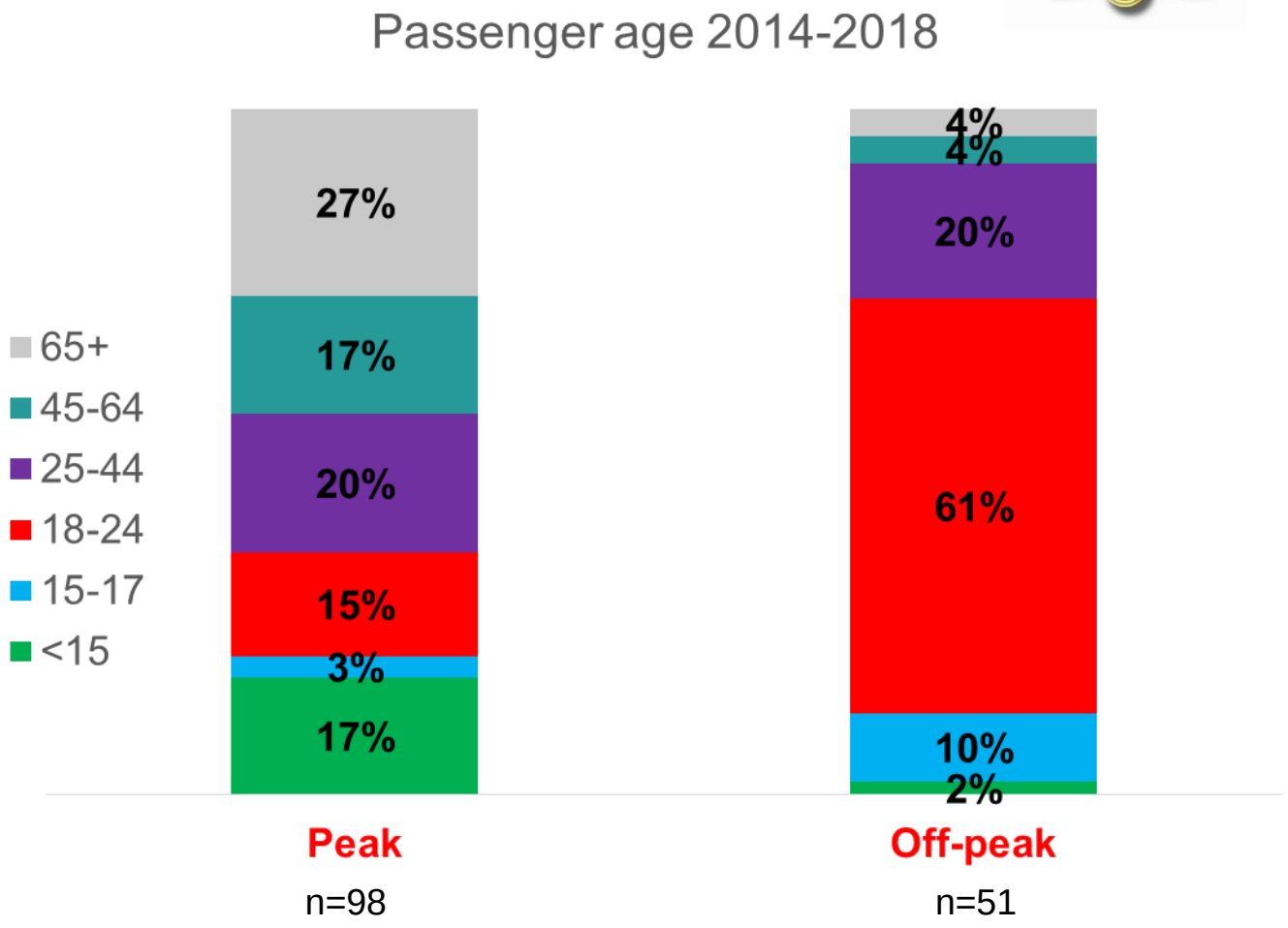
Age profile of passengers killed, peak and off-peak



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Fatalities with a positive toxicology for alcohol (2013-2016)

Data overview

- The Health Research Board (HRB) collect Road Traffic Collision (RTC) fatalities data annually on behalf of the RSA from closed Coronial files using the National Drug-Related Deaths Index (NDRDI) methodology.

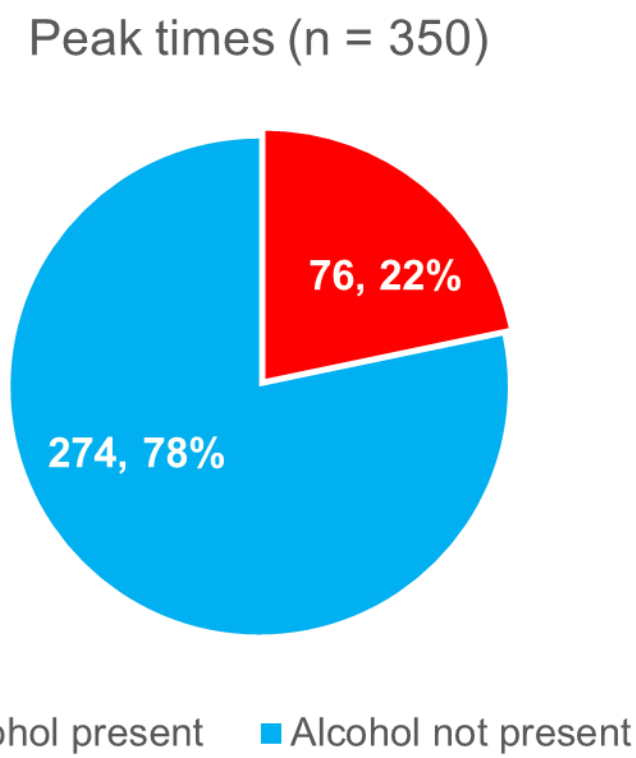
- To date, the RSA have access to Coronial data for RTC fatalities that occurred in 2013-2016.

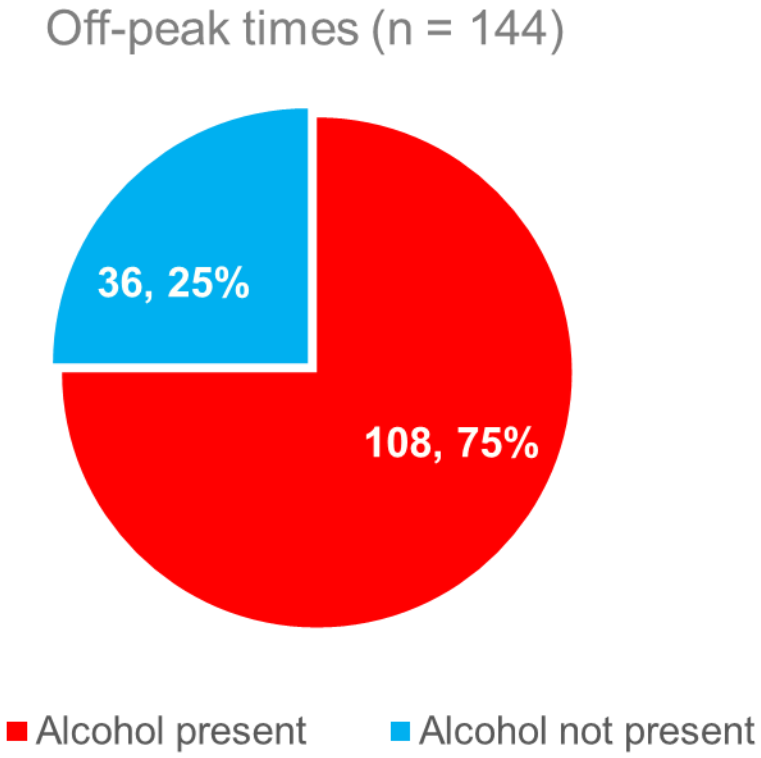
- Coronial files generally contain: An Garda Síochána Investigation Report, Forensic Collision Investigation (FCI) Report, witness(es) deposition/statement(s), autopsy report, toxicology report, death certificate and the Coroner's verdict.

Data overview

- There are 574 road user fatalities captured in the 2013-2016 Coronial files data.
- This analysis focuses on 494 of these road user fatalities, who had a toxicology result suitable for analysis available (86.1%).
- Alcohol is categorised as being present on toxicology where the Blood Alcohol Concentration (BAC) is >20mg alcohol per 100ml blood (or equivalent in urine).
- 184 of the 494 road user fatalities had a positive toxicology for alcohol (37.2%).

Travel times and alcohol consumption (2013-2016)





Conclusions

- More than a quarter of fatal collisions (2014-2018) occurred during off-peak hours, and almost 1 in 5 serious injury collisions (2014-2017) occurred during this time.
- Off-peak hours must be given appropriate priority for enforcement activity, particularly given that traffic volumes are lower during these times.
- Based on analysis of collision data (2014-2018), investing enforcement in off-peak hours on Saturday, and in particular, on Sunday, is recommended.
- Enforcement activity and education initiatives should target vulnerable groups for off-peak hours: young male drivers and passengers, and male pedestrians.
- As three quarters of off-peak fatalities (2013-2016) had a positive toxicology for alcohol, alcohol checkpoints during off-peak hours should be maximised. Education initiatives on the risks of drink-driving and walking home drunk must continue.

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