

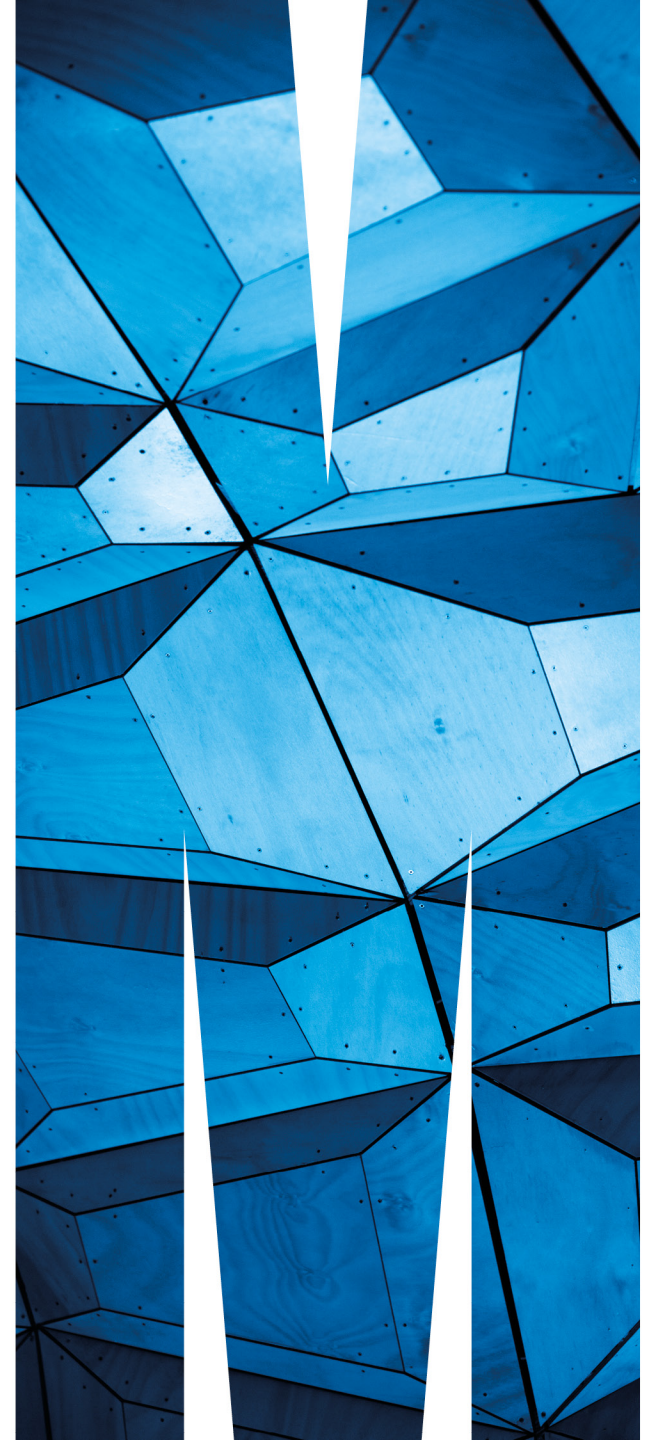


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Work absence and return to work pathways among those with transport-related injury

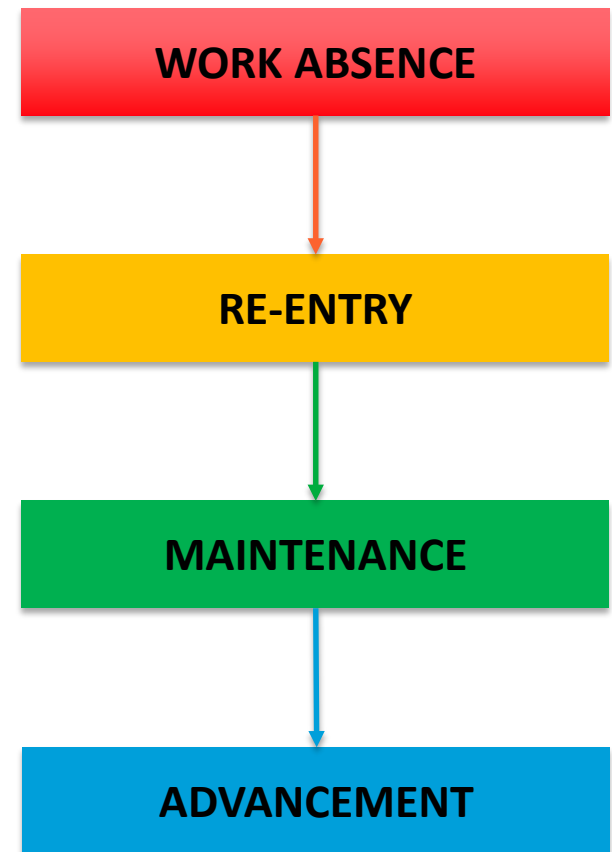
Dr Shannon Gray





BACKGROUND

- Fatalities or hospitalization statistics generally describe RTC impact
 - Reductions generally associated with improved safety
 - Underestimate true burden of RTCs as they miss non-fatal or less-severe injuries
- Work absence can be detrimental to long-term health
 - Worklessness associated with higher mortality, poorer physical and mental health, higher health service use, higher likelihood of chronic conditions
- RTW after injury widely recognized as an important rehabilitation and recovery step, and an important marker of function
 - RTW can help preserve pre-injury skills, confidence and self-efficacy



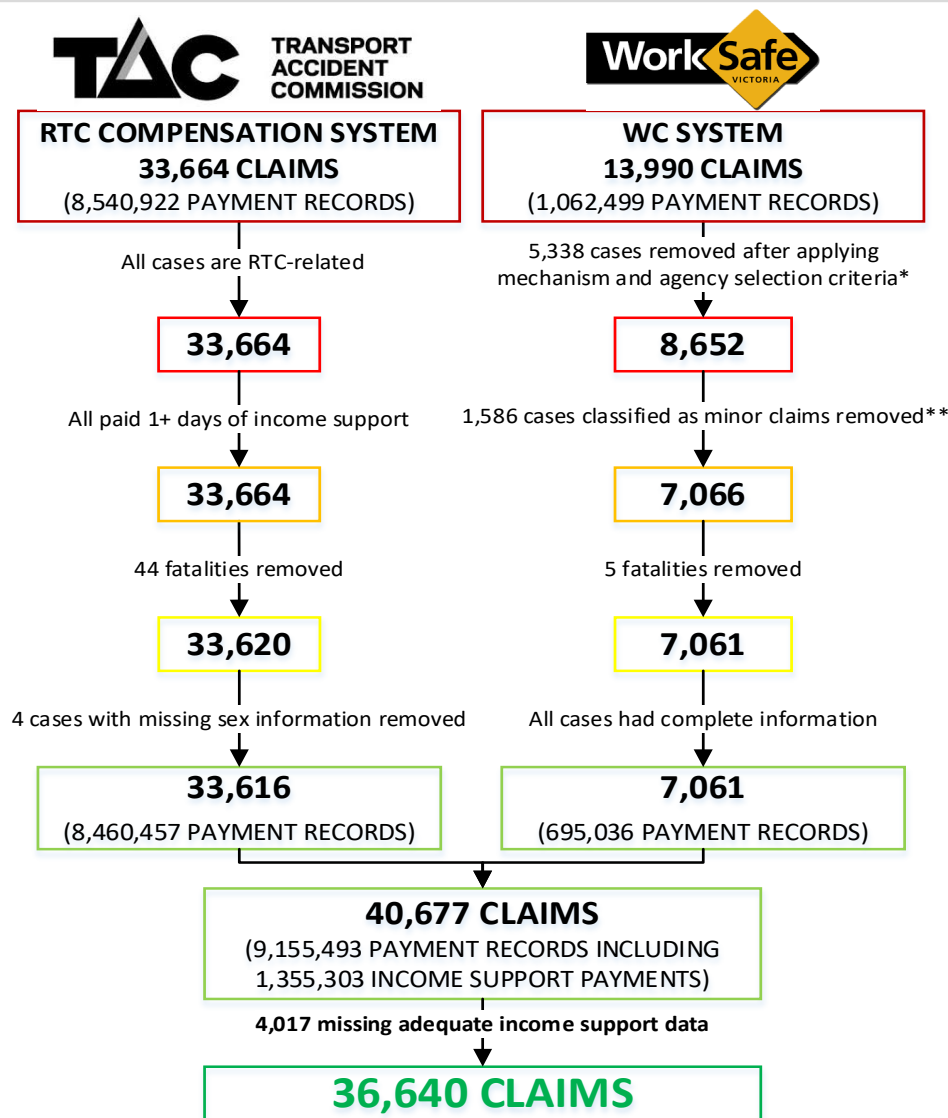
Work absence:

1. To quantify work absence due to compensable road traffic crashes in Victoria, Australia
2. To determine the characteristics associated with prolonged work absence

Return to work pathways:

1. To determine the types of return to work pathways that road traffic crash survivors take
2. To determine the differences in return to work pathways between compensation systems
3. To determine factors associated with attempted graduated return to work and relapse

SELECTION CRITERIA



*WC system selection criteria:

Mechanism of injury	Agency of injury
Vehicle accident Rollover	Trucks, semi-trailers, lorries Buses, trolleybuses, minibuses Cars, station wagons, vans, utilities Motorcycles, sidecars and scooters Pushbikes Railway, tramway lines Trains Tractors All-terrain vehicle Traffic and ground surfaces

**Minor claims are those that did not reach the medical excess of time loss was <10 days and the employer buy out option was not used.



DATA HARMONISATION

- Date of injury
- Age at time of injury (5)
 - Grouped into ten-year age brackets
- Sex (2)
- Road user group (8)
 - Derived from:
 - Mechanism and agency of injury (WC system)
 - Claimant role and vehicle insurance class (RTC compensation system)
- Type of main injury (13)
 - WC system cases collapsed into RTC compensation injury categories (using nature and location of injury), then further reduced due to small cell counts and related categories
- Length of hospital stay (5)
 - Using 'Admissions' dataset (WC system) and date of first hospital stay (RTC compensation system), grouped into:
 - No hospital attendance
 - Hospital attendance but not overnight stay
 - Stays of 1-6 days, 7-27 days, 28+ days
- Compensation system (2)
- Payment type (2)
- Start of payment date
- End of payment date

DATA MANIPULATION

Claimant 123XYZ received full income replacement commencing 03/03/2010, and this payment ended on 09/03/2010. The claimant then received partial income replacement from 10/03/2010 to 16/03/2010. From 17/03/2010 to 23/03/2010, claimant 123XYZ received no income replacement due to returning to work fully, however was back on full income replacement on 24/03/2010 due to a failed return to work attempt.

	03/03/2010							10/03/2010							17/03/2010							24/03/2010				
Column	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
123XYZ	F	F	F	F	F	F	F	P	P	P	P	P	P	P	N	N	N	N	N	N	N	F	F	F	F	F
978JFD	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
468BUF	F	F	F	F	F	F	F	P	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	N	N	N
789YUT	P	P	P	P	P	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
223RRT	F	F	F	F	F	F	F	F	F	F	F	P	P	P	P	P	P	P	P	F	F	F	F	F	F	F

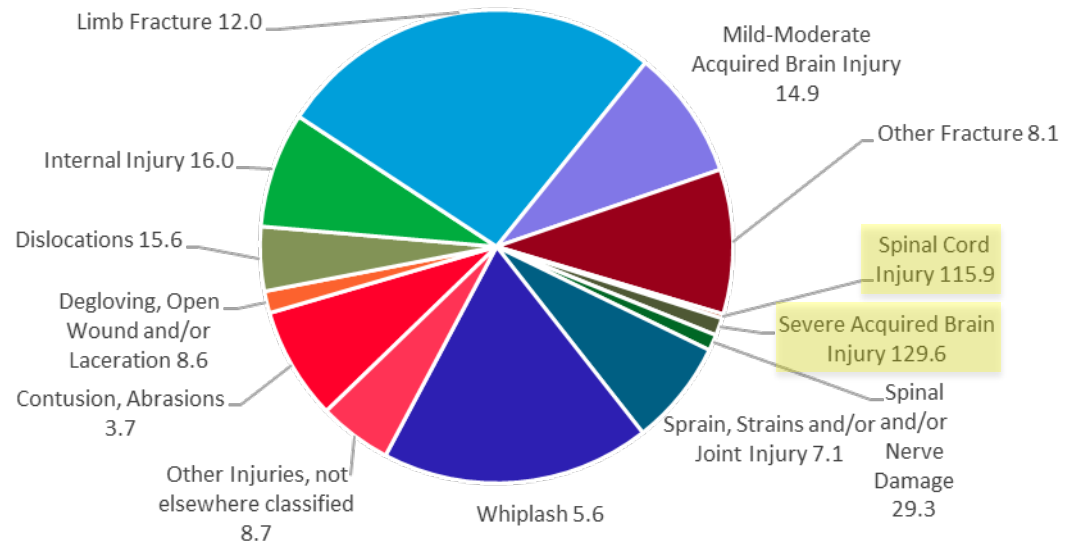
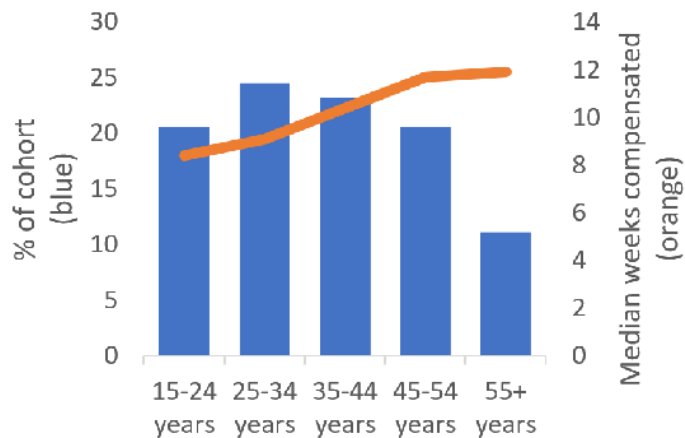
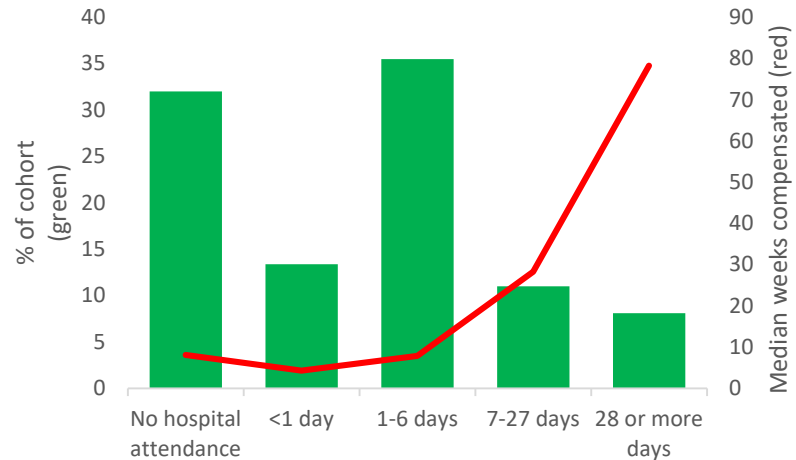
14 days/
2 weeks

14 days/
2 weeks

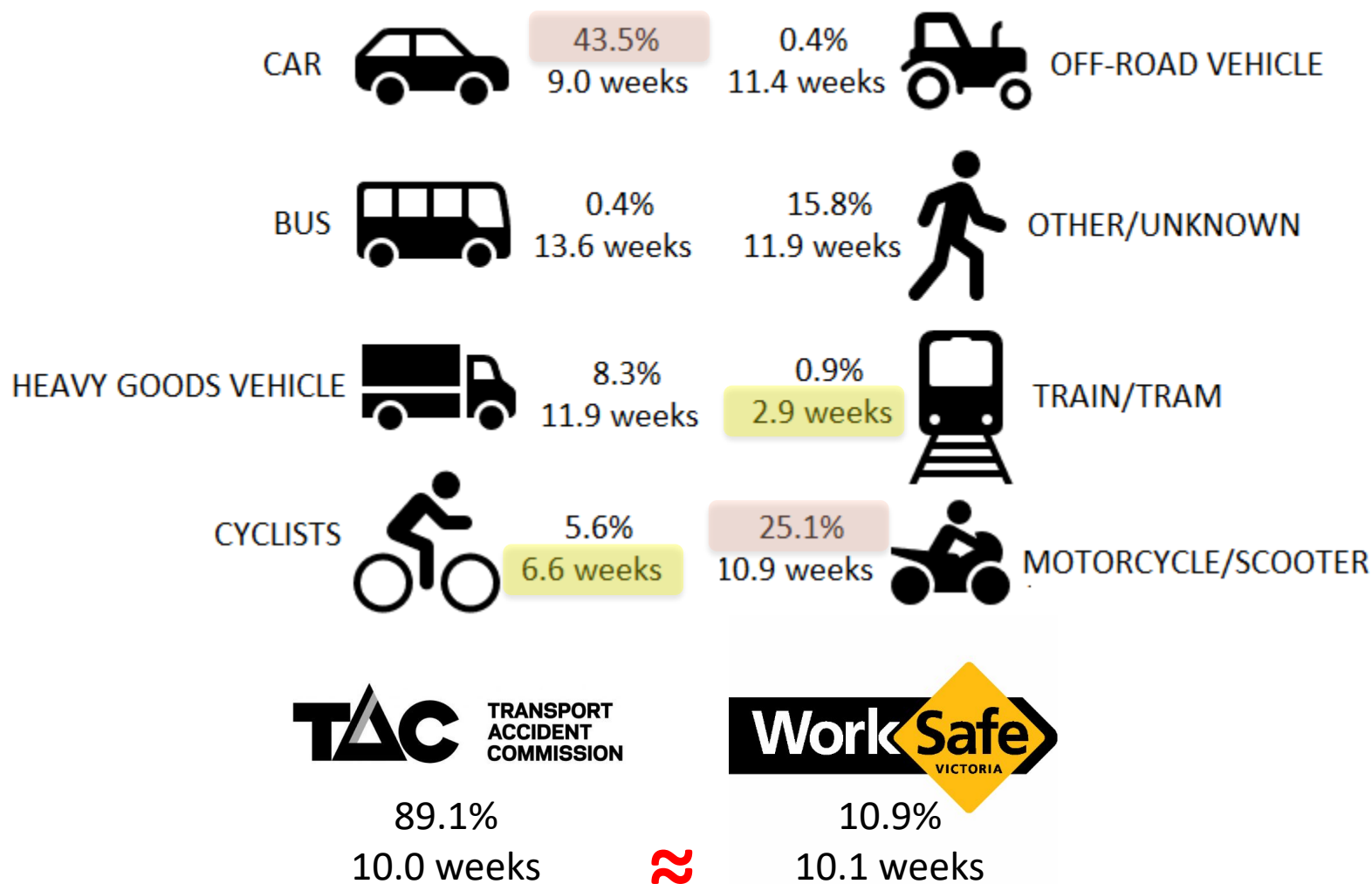
- To calculate work absence, the number of compensated days (F or P, later converted to weeks) were calculated over a 3-year follow-up period (1095 days/columns)
- To determine RTW pathways, the patterns of income replacement were recognised and flagged depending on their group or whether they attempted graduated RTW or relapsed over a 128 week follow-up period (896 days/columns)

- Work absence
 - Primary outcome: duration of work absence (in weeks)
 - Descriptive statistics: frequency, median compensated weeks
 - Cox regression: to determine the effect of predictors on work absence
- RTW pathways
 - First outcome: type of RTW pathway (5 groups: full RTW, graduated RTW, partial RTW, no RTW, relapse)
 - Second outcome: relapse flag
 - Third outcome: attempted graduated RTW flag
 - Descriptive statistics: frequency
 - Multivariable logistic regression: to determine likelihood of relapsing/attempting graduated RTW

RESULTS – DESCRIPTION OF COHORT

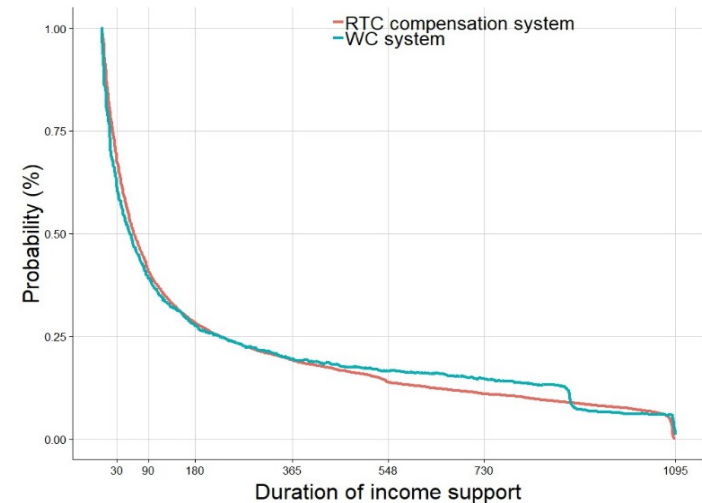
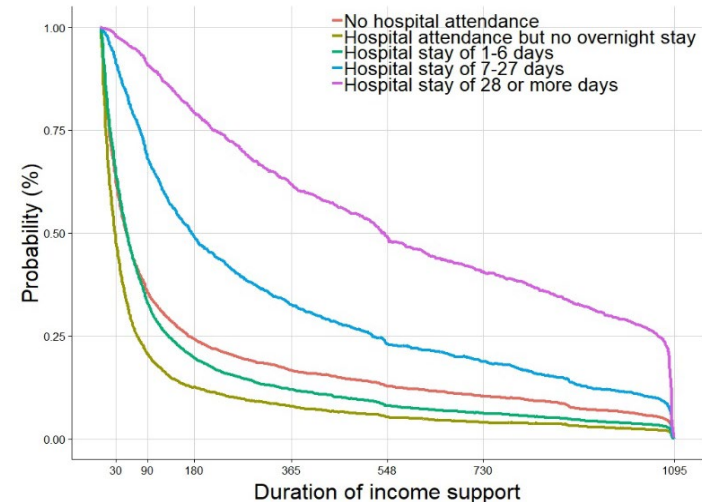


RESULTS – DESCRIPTION OF COHORT



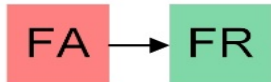
RESULTS

- **Longer:**
 - Severe acquired brain injury
 - Spinal cord injury
 - Spinal and/or nerve damage
 - Dislocations
 - Increasing age
- **Shorter:**
 - Males
 - Cyclists
 - Train/tram
 - Hospital visit without stay
 - WC system
 - Contusions, abrasions
 - Degloving, open wounds, lacerations

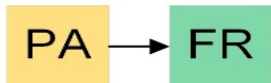


RESULTS

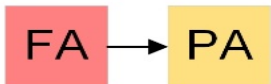
FULL RTW (N = 24,437, 66.7%)



GRADUATED RTW (N = 2,648, 7.2%)



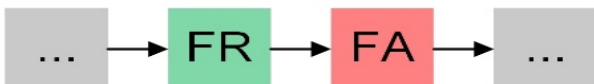
PARTIAL RTW (N = 190, 0.5%)



NO RTW (N = 1,142, 3.1%)



RELAPSE (N = 8,223, 22.4%)



- Full RTW highest is those with:
 - Contusions, abrasions (77.0%)
 - Non-limb fractures (71.9%)
 - Hospital treatment, no stay (81.5%)
 - Hospital stay of 1-6 days (72.9%)
- No RTW highest in those with:
 - Severe acquired brain injury (26.6%)
 - Spinal cord injury (28.3%)
 - Hospital stay of 28+ days (15.0%)
- Relapse highest in those with:
 - Dislocations (32.6%)
 - Severe acquired brain injury (38.4%)
 - Hospital stay 7-27 days (34.2%)
 - Hospital stay of 28+ days (40.9%)
 - WC system (39.1%)

RESULTS – ODDS OF RELAPSE

HIGHER ODDS	REFERENCE	LOWER ODDS
Females	Males	
35-54 years	25-34 years	15-24 years
<div>116%</div> Dislocations Whiplash	Limb fracture	Contusions, abrasions Degloving, open wound and/or lacerations Mild-moderate ABI Non-limb fracture Spinal cord injury
Hospital stay of 7-27 days Hospital stay of 28+ days	Hospital stay of 1-6 days	Hospital treatment without stay
<div>138-245%</div>	Car	Cyclists Train/tram
<div>248%</div> WC system	RTC compensation system	

RESULTS – ODDS OF ATTEMPTING GRADUATED RTW

HIGHER ODDS	REFERENCE	LOWER ODDS
Females	Males	
	25-34 years	15-24 years 55+ years
Dislocations	Limb fracture	Contusions, abrasions Degloving, open wound and/or lacerations Spinal cord injury
Hospital stay of 7-27 days Hospital stay of 28+ days	Hospital stay of 1-6 days	Hospital treatment without stay No hospital attendance
WC system	RTC compensation system	

101-207%

298%

CONCLUSIONS

- Work absence a measurable and potentially important metric for assessing RTC injury impact in working age people
 - This metric potentially applicable across many jurisdictions as RTC compensation systems exist in most parts of the world
- Half of all working adults injured in RTCs absent ≥ 10 weeks
 - Reinforce the need to focus on road safety, injury prevention and RTW rehabilitation
- Most at risk of prolonged work absence were those with spinal cord or severe acquired brain injuries
 - Provides opportunity to target specific individuals to develop strategies to reduce work absence
 - Occupation-specific rehabilitation
 - Encouraging graduated RTW

CONCLUSIONS

- Information from RTW pathway study can assist the development of effective work disability prevention strategies
 - By understanding predictors of relapse we can identify and target those most at risk to tailor more appropriate RTW strategies
- Through understanding those least likely to attempt graduated RTW can be targeted to encourage this pathway
 - This is of particular value for those less likely to attempt graduated RTW yet have higher likelihood of relapse (e.g. older individuals)
- Large discrepancies between compensation systems with both likelihood of relapse and attempting graduated RTW
- Findings suggest compensation systems could review their case management practices to improve RTW outcomes
 - Ensuring effective communication between all RTW stakeholders
 - Encouraging graduated RTW

THANK YOU

Dr Shannon Gray