

# Road safety priorities for high risk groups in Northern Ireland

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**Road safety priorities for high risk groups in Northern Ireland**

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Client: **Department of the Environment, Northern Ireland**  
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# 1 Introduction

## 1.1 Background

The Road Safety Education Officer Service (RSEOS) is currently being reviewed by the Department of the Environment's (DOE's) Road Safety and Vehicle Regulation Division (RSVRD). The aim of the review is to make appropriate arrangements for the future provision of road safety services in Northern Ireland (NI). This review is being carried out by the Business Consultancy Service (BCS) of the Department of Finance and Personnel's Delivery and Innovation Division.

The overall BCS review has the following objectives:

- Review RSEOS and make recommendations on how the provision of road safety services could be enhanced in the context of supporting the objectives outlined in the Road Safety Strategy 2010-2020
- Consider whether there might be synergies in relevant communication programmes that would allow key messages to be effectively delivered
- Provide options for the location of RSEOS within the DOE structure, assess the pros and cons of each option and make recommendations
- Provide advice and recommendations on resources used for, and the funding of, road safety services
- Make recommendations on the potential opportunities for DOE to enhance and extend partnership working, including new alternative mechanisms for the delivery of road safety services
- Provide recommendations on the management and introduction of any changes that are proposed as a result of the review

The main aim of the current project is to support the BCS review of RSEOS by giving expert advice and guidance. The overall objective is to develop road safety management recommendations that can be considered in the BCS review.

The project has three Work Packages:

- Work Package 1: Review evidence base
- Work Package 2: Best practice review
- Work Package 3: Ad hoc support for specific road safety issues

This report relates to the first Work Package. In order to complete the work a review of documentation was undertaken, along with a review of published data. Additional analyses have been undertaken to 'fill in the gaps' where existing analyses have not provided sufficient detail.

This review of current documentation, data and additional new analyses identifies the road safety issues relevant to each of the age groups targeted by the RSEOS in order that current RSEOS activities and focus can be assessed. Understanding the real road safety issues that underlie casualty rates will allow the more effective focussing of the service's activities in the future.

A second report "Best Practice Review" provides the results of the second Work Package.

## 1.2 Current RSEOS activities

According to the RSEOS website, the service currently has the following responsibilities:

- Deliver a road safety programme in nursery, primary and secondary schools
- Teaching resources and materials

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- Teaching aid calendars
  - Cycling proficiency in primary schools
  - Walking bus initiative in primary schools
  - Child pedestrian safety training (mainly in socially disadvantaged areas)
  - Ensure road safety is timetabled in post primary education
  - Increase offering of Motor Vehicle and Road User Studies GCSE in post primary education
  - Provide driver training scheme to students aged 17-19 years of age in post primary schools and further education colleges (Teen activities – drink/drug driving, speed, seatbelt use)
  - Provide advice on child safety seats and restraints

Although the current focus of the RSEOS is largely upon the delivery of road safety education to those in full time education, there are additional activities that are undertaken in order to promote life-long road safety education and therefore the focus of the service is not entirely limited to children and young people. It seems likely that in the future the RSEOS will increasingly work with other groups, and so other age groups that are at high-risk of involvement in road traffic collisions are identified in this report.

### **1.3 Report Structure**

Following this introduction the report has the following structure:

- Section 2 provides a brief methodology for the Work Package
- Section 3 provides the results of the review of existing documentation and data
- Section 4 presents analyses by curriculum age group, by road user type
- Section 5 provides a summary of findings to inform the future focus of the RSEOS



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## 2 Method

Two main activities were proposed as part of this Work Package:

- Document review
- Data review

These are described in more detail in the sections that follow.

### 2.1 Document Review

Several documents have been reviewed as part of this exercise, in order to determine the policies, targets and issues that are of relevance to the provision of road safety services in NI.

These documents included:

- Northern Ireland Road Safety Strategy 2002-2012 (2002)
- Road Safety Strategy for Northern Ireland 2010-2020 (in preparation)
- NI Road Safety Problem Profile 2003-2008 (2010)
- Reported Injury Road Traffic Collision Statistics 2009 (NISRA, 2010a)
- NISRA Seatbelt Survey (NISRA, 2010b)
- Recently completed and on-going work on deprivation and child pedestrian casualties (Colin Buchanan, 2010)
- Statistical analyses of motorcycle casualties in NI (Mullen, 2009)
- Performance indicator and casualty forecasting work undertaken by TRL on behalf of DOENI (Broughton and Lawton, 2009)
- Benchmarking road safety report produced by TRL on behalf of DOENI (Knowles, Sexton, Lawton and Charman, 2010)
- Defining a vision for NI report produced by TRL (Lynam and Lawton, 2010)
- Draft findings from the 'Children and Young People - Rural Road Safety' project (Colin Buchanan, in preparation)

These documents have been reviewed in order to present the overall road safety picture in Northern Ireland, and to identify those groups that are of greatest concern and at highest risk of being involved in a road traffic collision in NI.

### 2.2 Data Review

The aim of this subtask is to ensure that any recommendations of this project are data-led. It is important to ensure that road safety services are focused on the 'real' road safety issues that underlie road safety statistics.

Interventions need to be focused on the correct demographic group and on specific behaviours that can be changed. As such identifying these from data becomes critical to the success of any programme of activity.

#### 2.2.1 Review of Existing Published Data

It was initially envisaged that most of the required data would be available in the documents that are mentioned above. However it was not clear whether the data would be disaggregated sufficiently for the purposes of this project.

Each of the documents listed above have been reviewed in detail for relevant data and the results of this review are presented in Section 3 of this report.

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### **2.2.2 New Analyses**

Most of the data analyses that are presented in the published literature identify two particular groups of relevance to the activities of RSEOS that are focussed on children and young people: children (0 to 15 or 16 years) and young people (16 or 17 to 24 years). However it is clear that the delivery of road safety education and the appropriateness of materials/topics/themes etc will differ greatly, especially among the 0-15/16 year age group.

There are a number of reasons why additional analyses are advantageous:

- The road safety challenges faced by those at different stages of the 0-15/16 year old age group are likely to differ greatly, and this will be largely dependent on the degree of independence experienced at each age and the cognitive and social development of children
- The RSEOS delivery needs to sit alongside and be incorporated into the common curriculum and so analyses should address each key stage age group
- The messages and materials that are appropriate for use with children of different ages within the 'child' category will differ greatly, analysing the issues that underlie the road safety problem for each age group will allow the overall focusing and tailoring of these

The additional new analyses have been undertaken to provide an understanding of the road safety challenges faced by children and young people at different age groups within these categories. These analyses explore, to some extent, the road users that are over represented in the data, and the causal factors relevant to each demographic at high risk. Understanding the key themes and trends for each narrow age group and the contributory factors underlying their involvement in road traffic collisions will allow the RSEOS to focus the efforts and materials more appropriately in the future.

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## 3 Review Results

### 3.1 Road Safety in Northern Ireland

The 'Northern Ireland Problem Profile' (2010) provides an excellent insight into the road safety issues of primary concern in NI. The document was prepared in 2010, eight years after the launch of the Northern Ireland Road Safety Strategy 2002-2012 (2002), and monitors progress against the targets initially set for the strategy in 2002. The problem profile document aims to identify those road user groups who are most at risk, those who are most frequently the cause of road traffic collisions, and behaviours and attitudes that make the greatest contribution to the number of casualties that are killed or seriously injured.

The NI Problem Profile (2010) notes that good progress has been made towards reducing the number of road traffic casualties in NI. However it also observes that 778 people lost their lives, and a further 6,842 suffered serious injuries during the five years upon which the analyses in the report were based.

According to the 'Reported Injury Road Traffic Collision Statistics 2009' report (NISRA, 2010a), 115 people were killed on the roads in NI in 2009, and a further 1,035 were seriously injured. This corresponds to a rate of 64.3 KSIs per 100,000 population in comparison to 44.8, 47.8 and 40.7 in England, Scotland and Wales respectively.

#### 3.1.1 Road User Group

The table below shows the number of Killed and Serious Injuries (KSIs) by road user group and the percentage of all KSIs by group (data from NISRA, 2010a).

**Table 3.1 Casualties killed or seriously injured by road user type (2009)**

Road User Group	Number of KSIs	Percentage of total KSIs in 2009 (%)
Drivers of motor vehicles	459	40
Passengers	264	23
Pedestrians	215	19
Motorcyclists	154	13
Pedal cyclists	32	3
Pillion passengers	7	1
Other road users	19	2
<b>All road users</b>	<b>1035</b>	<b>100</b>

Forty percent of all KSIs in NI in 2009 were drivers of motor vehicles, with passengers and pedestrians being the next largest casualty groups. Risk to each of these groups cannot be calculated per se, as data for exposure (e.g. vehicle kms driven, distance walked etc) are not readily available.

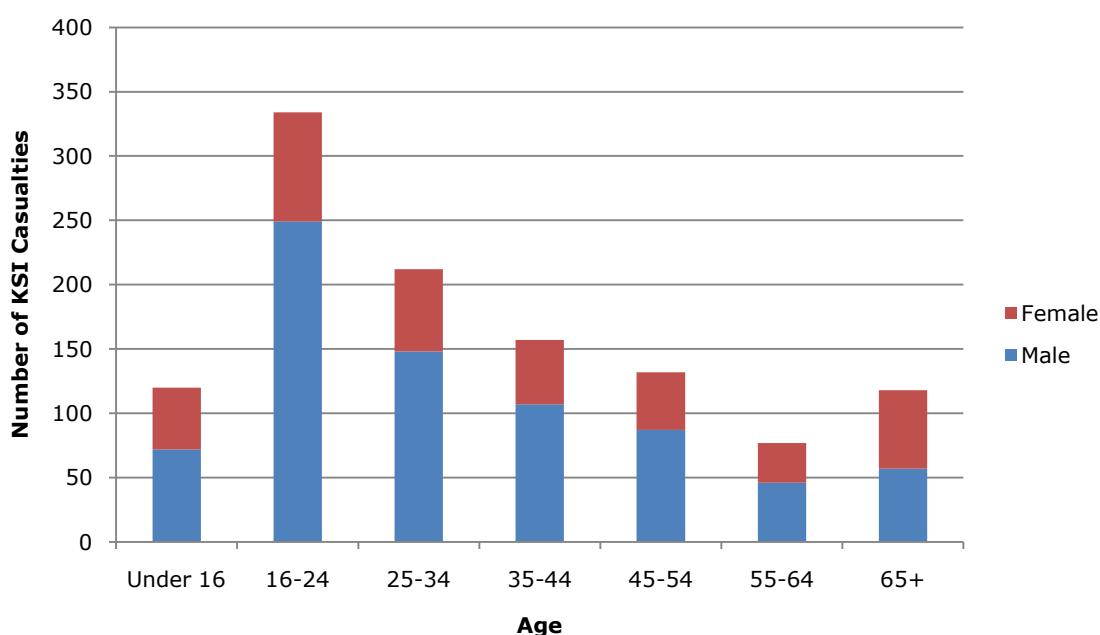
A similar pattern of data are reported in the NI for the 10 year and 6 year data sets, however the proportion of KSI casualties that are motorcyclists has increased from 6% of all KSIs in the 1996-2000 baseline to 13% of all KSIs in 2008 and 2009. The proportion of all road user casualties that are motorcyclists appears to be relatively low in NI at 13% in comparison to 21% of all KSIs in GB.

Although the percentage of KSIs that are motorcycle riders is low in NI in comparison to GB, the emerging trend suggests that motorcyclist casualties should be of increasing concern in Northern Ireland. Analyses that examine the growth of motorcycle use against the number of KSI casualties would provide a more robust picture of this particular issue.

According to the NI Problem Profile, pedestrians accounted for 1,286 of the 7,620 KSI casualties in NI between 2003 and 2008. This equates to 17% of all road traffic casualties.

### 3.1.2 Age and Gender

In 2009, there were 115 fatalities, 1,035 serious injuries and 8,617 slight injuries resulting from road traffic collisions (data from NISRA, 2010a). Figure 3.1 shows KSI casualties by age group and by gender.



**Figure 3.1 Casualties killed or seriously injured in 2009 by age and gender (data from NISRA, 2010a)**

In 2009, one third of the fatalities (33.9%) in NI were aged between 16 and 24 years old and over one-sixth (17.4%) were aged over 65 years old. Males accounted for over three-quarters of all road fatalities, although this proportion differs slightly by age the over-representation of males extends across all age groups and across all road user groups.

Males aged between 16 and 24 are most likely to be killed or injured in road traffic collisions. When the risk of being killed or seriously injured per 100,000 population is calculated, the figures follow a similar pattern. In 2009, there were 209 males between the ages of 16 and 24 who were killed or seriously injured per 100,000 population, representing a very high risk. Males aged 16-24 are just under three times more likely to be killed or seriously injured in comparison to females of the same age, or males aged 45 to 54.

The benchmarking report (Knowles, Sexton, Lawton and Charman, 2010) aimed to make comparisons of road safety performance between NI and Great Britain (GB). Some of the analyses compared casualty severity by age group (see Table 3.2).

**Table 3.2 Distribution of 2008 casualties by age of casualty (from Knowles et al., 2010)**

NI figures from Northern Ireland casualty data, GB figures from DfT (2009a)

Age group	Killed		KSI		All	
	NI	GB	NI	GB	NI	GB
0-15yrs	7%	5%	9%	10%	10%	10%
16-19yrs	19%	12%	14%	14%	13%	13%
20-29yrs	25%	21%	24%	22%	25%	24%
30-49yrs	21%	29%	30%	30%	33%	33%
50+yrs	28%	32%	22%	24%	19%	20%

Knowles et al. (2010) found that there were higher percentages of fatalities in the younger age groups of 0-15, 16-19 and 20-29 in NI when compared to GB. In contrast, a higher percentage of older fatal casualties occurred in GB. Similar trends were not found with the lower severity casualties.

Table 3.3 shows the percentages of KSIs that were fatal, by age group, in 2008.

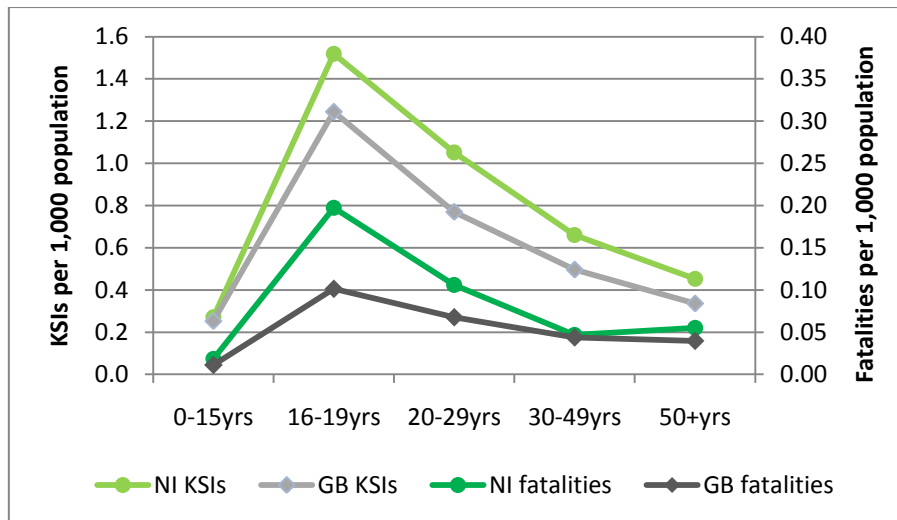
**Table 3.3 Severity of 2008 casualties by age of casualty (from Knowles et al., 2010)**

NI figures from Northern Ireland casualty data, GB figures from DfT (2009a)

Age group	% of all KSIs which were Fatal	
	NI	GB
0-15yrs	7%	4%
16-19yrs	13%	8%
20-29yrs	10%	9%
30-49yrs	7%	9%
50+yrs	12%	12%

Although sample sizes were small (and so caution in interpretation necessary), it seems that where young people are involved in a serious collision in NI, they were more likely to be killed in comparison to young people in GB.

Calculating the casualty rate per thousand people within age group adjusts for differences in population age distribution; the fatal and KSI casualty rates per thousand people are shown in Figure 3.2.



**Figure 3.2 Casualties per thousand people (2008) (from Knowles et al., 2010)**

Population figures from Office for National Statistics (2009), NI casualty figures from Northern Ireland casualty data, GB casualty figures from DfT (2009a)

Fatal and KSI rates per population are similar for both GB and NI for 0-15 year olds. For 16-19 year olds and 20-29 year olds, there are large differences between the rates for NI and GB, with risk being greater in NI. The fatal rate for NI 16-19 year olds (0.197 fatal casualties per thousand) is nearly twice the rate of that for GB (0.101 fatal casualties per thousand).

The relative severity and risk in NI for younger people in comparison to GB is of concern and indicates that there may be some opportunity for improving the safety of this group through road safety interventions that may include Road Safety Education (RSE).

### 3.2 High Risk Groups – Children and Young People

Some high risk groups have been identified from published literature and the results of the review are presented in the sections that follow.

#### 3.2.1 Children (0-15)

The Road Safety Strategy for Northern Ireland 2010-2020 (in preparation) has set a challenging target *"to reduce the number of children (aged 0 to 15) killed or seriously injured in road collisions by at least 55% by 2020"* (p5). This target is one of the primary targets for NI, and so a clear commitment has been made to improve child road safety.

The new Road Safety Strategy suggests that children and young people who have experienced road safety education interventions in early life will ultimately make safer drivers later in life. So starting road safety education at a young age is important. That said the Strategy recognises that the road safety education delivered in secondary schools and to young people might not be as comprehensive as that delivered in primary schools. Therefore improving RSE for older children is an emerging priority.

The majority of existing analyses consider the age category children as one group aged 0-15/16 years old. These analyses are not detailed enough to tease out issues of relevance to different subsets of children and so further analyses have been completed in Section 4 of this report.

In 2009, just over 10% of all KSI casualties were children, and children accounted for 3% of all fatalities. One-fifth of the child KSIs occurred on a journey to or from school (24 KSIs out of a total of 120) (NISRA, 2010a).

According to the NI Problem Profile, 8% of all road traffic fatalities (62) between 2003 and 2008 involved children aged between 0-15 years old. From 2003 to 2008, 810 children were killed or seriously injured. Boys are over represented in these KSI numbers:

- 61% of all child KSIs were male
- 69% of pedal cyclist child KSIs were male
- 61% pedestrian child KSIs were male
- 55% passenger child fatalities were male

Table 3.4 shows the number of child KSIs (0-15<sup>1</sup> year olds) by road user group using data from NISRA (2010a). The number of KSIs over a longer period of time (2003-2008) is also presented since the one year numbers are very low (data from NI Problem Profile, 2010).

**Table 3.4 Child (0-15 year old) casualties killed or seriously injured by road user type (data for 2009 from NISRA, 2010a; data for 2003-2008 from NI Problem Profile, 2010)**

Road User Group	Number of KSIs (2009)	Percentage of total KSIs in 2009	Number of KSIs (2003-2008)	Percentage of total KSIs 2003-2008
Pedestrians	71	59	399	49
Passengers	26	22	292	36
Pedal cyclists	11	9	62	8
Motorcyclists	3	3	17	2
Pillion passengers	2	2	14	2
Drivers of motor vehicles	2	2	5	1
Other road users	5	4	21	3
<b>All road users</b>	<b>120</b>		<b>810</b>	

Fifty-nine percent of all child KSI casualties were pedestrians in 2009 (49% for the 2003-2008 dataset), with the next largest group being passengers (22% in 2009, 36% in the 2003-2008 dataset). The differences in the percentages between the 2009 data and 2003-2008 data are likely to be due to the small numbers involved rather than any important trends; however these differences should continue to be monitored.

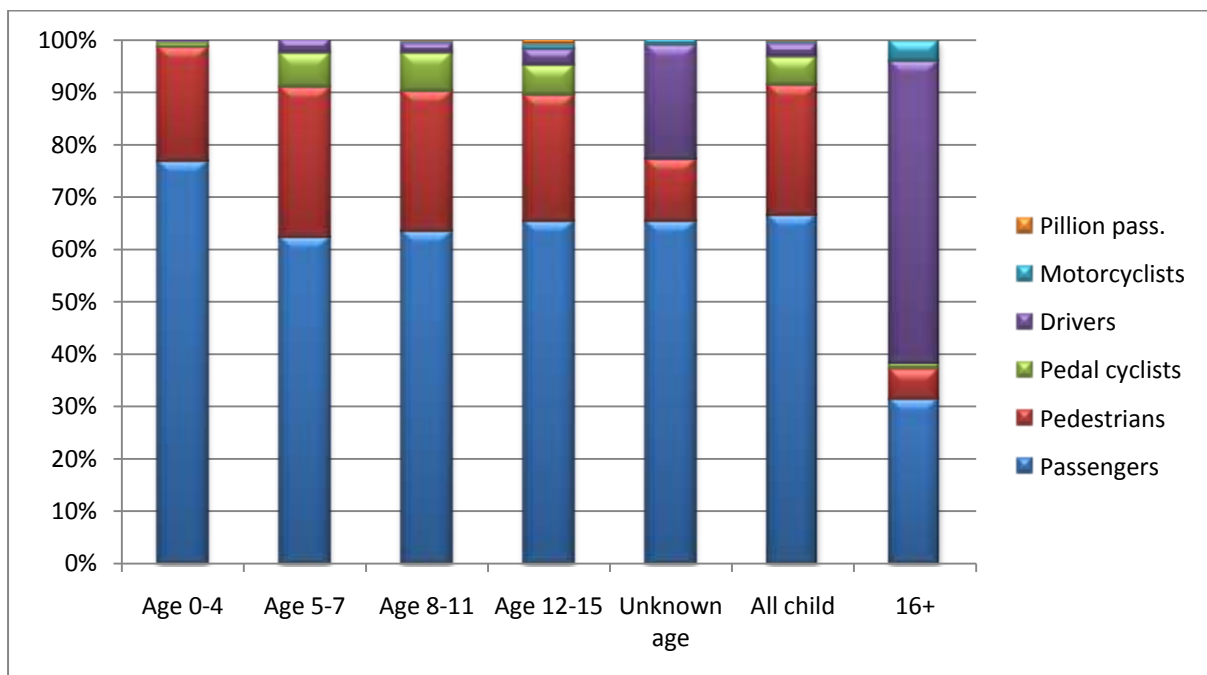
The Deprivation and Child Pedestrian Road Casualties report (Colin Buchanan, 2010) presents an analysis of casualties by age group and road user group (as shown in Table 3.5).

<sup>1</sup> Age 0 is excluded from most analyses since it is used to record unknown age

**Table 3.5 Child casualties by road user group and by age group (1999-2008) from Colin Buchanan (2010)**

Road User Group	Age not known	0-4	5-7	8-11	12-15	All child	16+
Passengers	60	1769	1455	2266	3022	8572	30148
Pedestrians	11	499	672	960	1104	3246	5583
Pedal cyclists	0	25	150	264	262	701	997
Drivers	20	10	60	67	145	302	55652
Motorcyclists	1	0	0	9	44	54	3871
Pillion pass.	0	1	0	10	38	49	210
<b>All road users</b>	<b>92</b>	<b>2304</b>	<b>2337</b>	<b>3576</b>	<b>4615</b>	<b>12924</b>	<b>96461</b>

The pattern of involvement by age seen here is slightly different to that presented above since all casualties are included in this table as opposed to only killed and seriously injured casualties. Figure 3.3 shows the data presented in Table 3.5 graphically to show the proportions of casualties at each age category by road user group.



**Figure 3.3 Child casualties by age and road user group (data from Colin Buchanan, 2010)**

The graph shows that the proportion of casualties belonging to each road user group differs with age. The proportion of casualties that are pedestrians reduces from 5-7 years to 12-15 years, and there is a corresponding increase in passenger casualties. The relatively high proportion of children that become casualties as passengers across all age groups may indicate that educating children and their parents on appropriate restraints and seatbelt use may be important.



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It is not possible to determine whether the changing proportions reflect a change in skill or any difficulty with coping with new levels of independence and different traffic conditions, since there are no exposure data to allow the calculation of relative risk.

DOENI are currently part way through a further project on the topic of deprivation which is due to be completed by April 2011. This piece of work will build on the recent research by Colin Buchanan and will develop a comprehensive programme of action measures to begin to address the road safety issues faced by children living in deprived areas. It is highly likely that many recommendations of this work will directly involve, or be of relevance to, the RSEOS, and so the outcomes of the project should be monitored closely.

### 3.2.1.1 *Pedestrians*

Over a five year period (2003-2008), half of the child KSI casualties were pedestrians and in 2009 pedestrians accounted for 59% of all child KSIs, indicating a real need to help children develop the skills required to be safe as pedestrians.

One growing area of concern is young people texting or using portable media while walking or cycling. Greater research is required to fully understand the impact of this on safety, and educational messages may need to be focussed on this particular behaviour.

According to the NI Problem Profile, Pedestrians aged 0-24 are at high risk of being involved in a collision, and this is true particularly for males.

The NI Problem Profile identified the main causes of child pedestrian collisions as:

- Heedless of traffic crossing carriageway
- Walk/run movement masked
- Walking or running into carriageway

Similarly, Colin Buchanan (2010) identified the top causation factors for child pedestrian casualties (1999-2008) as:

- Heedless of traffic crossing carriageway
- Walk/run movement masked
- Lack of supervision/escaping from custody

Colin Buchanan (2010) also found that:

- The majority of child pedestrian casualties occurred away from junctions (50%), however 38% of child pedestrian casualties occurred at T-junctions or staggered T-junctions
- 80% of child pedestrian casualties occurred away from pedestrian crossing facilities, where the child was crossing the road a high proportion were not using facilities

The new Road Safety Strategy (in preparation) reports the work by Colin Buchanan (2010) that found a highly statistically significant relationship between deprivation and child pedestrian casualties. Casualty rates increase with increasing deprivation, with rates for males being higher across all age groups (peaking at 5-7 years old where the rate for males is 3.34 per 1000 population). Moreover, the Deprivation Disparity Ratio (DDR) for child casualties is 4.78. This means that a child living in the most deprived area is almost 5 times more likely to be injured in a road traffic collision than a child living in the least deprived area.

The DDR figure varies with gender and age; with the greatest DDR being for females aged 5-7. Females living in the most deprived areas aged 5-7 are over 14 times more likely to be injured in a road traffic collision than those living in the least deprived area.

**Table 3.6 DDR by gender and by age group from Colin Buchanan (2010)**

<b>Gender</b>	<b>0-4</b>	<b>5-7</b>	<b>8-11</b>	<b>12-15</b>	<b>All children</b>
Female	9.63	11.03	5.08	1.93	4.54
Male	10.10	14.73	3.57	3.05	5.29
All	13.49	12.25	4.35	2.30	4.78

As a result of this work it is recommended that resource should be focused on deprived areas.

The Colin Buchanan report suggests that specific interventions aimed to address deprivation disparity might include:

- A national traffic club scheme
- Road crossing training for children (kerbcraft)
- Complementary speed enforcement devices and speed management programmes
- Improvements to infrastructure (including traffic calming and 20mph zones)
- Road safety inputs to the master planning of regeneration projects
- Local transport plans to include pedestrian reduction targets
- A distribution of road safety measures which target deprived areas

### **3.2.2 Young People (16/17-24)**

Some progress has been made in reducing the number of 17-24 year olds killed and seriously injured in road traffic collisions. According to the NI Problem Profile (2010), in 2008, the number of 17-24 year olds being killed or seriously injured was 25% below the 1996-2000 baseline average. While the 2002-2012 strategy did not have a specific target for 17-24 year olds, it was recognised that the group were at high risk and that they should be closely monitored.

The Road Safety Strategy for Northern Ireland 2010-2020 (in preparation) has set a challenging target "to reduce the number of young people (aged 16 to 24) killed or seriously injured in road collisions by at least 55% by 2020" (p5). An indication of the severity of the issue and the level concern is the priority given to young people in the new Strategy. The 3<sup>rd</sup> priority outlined in the new Road Safety Strategy is to work to protect young drivers (aged 16-24 years) and motorcyclists and the 4<sup>th</sup> priority to "Reduce inappropriate and illegal road user behaviours including speeding, drink and drug driving and carelessness and dangerous driving" (p3) has particular relevance to younger drivers.

It is seen as a priority to understand how to reach older children and young people with road safety messages, and particularly so for those who are not in formal education.

All of the evidence points towards 16-24 year olds being the highest risk age group, with risk being very high for young males.

The NI Problem Profile presents data from 2008 by road user group for 17-24 year olds (Table 3.7).

**Table 3.7 Young people (17-24 years old) casualties killed or seriously injured by road user type (2008)**

Road User Group	Number of KSIs (2008)	Percentage of total KSIs in 2008
Drivers of motor vehicles	130	44
Passengers	85	29
Motorcyclists	36	12
Pedestrians	36	12
Pedal cyclists	4	1
Pillion passengers	3	1
Other road users	0	0
<b>All road users</b>	<b>294</b>	<b>100</b>

Forty-four percent of all KSI casualties in this age group in 2008 were drivers of motor vehicles. A further 29% were passengers, and motorcyclists and pedestrians each accounted for 12% of KSIs.

According to the new Road Safety Strategy, 30% of all those killed in road traffic collisions were aged between 17 and 24. Sixty-four per cent of those deaths were caused by either speeding or alcohol/drug use.

In 2009, 16-24 year olds had a particularly high incidence of casualties being attributable to alcohol or drugs; 36% of all casualties attributable to alcohol/drugs were aged between 16 and 24. Moreover, according to the NI Problem Profile 17-24 year old males were the main group responsible for causing drink/drug related fatalities.

### 3.2.2.1 Car Drivers

The Road Safety Strategy for Northern Ireland 2010-2020 (in preparation) has a specific target for reducing the number of killed and seriously injured drivers under 25 years old. The NI Problem Profile (2010) reports that (between 2003 and 2008) 17-24 year old drivers accounted for 11% of licensed drivers, but were responsible for 38% of fatal collisions and 32% of fatal and serious collisions which involved a car or light goods vehicle (LGV).

The NI Benchmarking Report found that once all other factors (such as road network composition) are taken into account the road safety focus in NI should be on younger drivers on rural roads (Knowles, et al., 2010).

Five key causation factors have been identified for this age group where the 17-24 year old casualty was responsible for the collision:

- Excessive speed having regard to conditions
- Alcohol or drugs
- Wrong course/position
- Inattention or attention diverted
- Overtaking on offside without care

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The NI Problem Profile reports that 17-24 year old males accounted for 32% of KSIs that resulted from single vehicle collisions. Three main causation factors have been identified for this type of collision:

- Excessive speed having regard to conditions
- Alcohol or drugs
- Inattention or attention diverted

Excessive speed appears to be a particular problem, with nearly half (48%) of all casualties in this age and road user group attributed to excessive speed in 2009. Similarly the NI Problem Profile suggests that 17-24 year olds are the age group at the highest risk of being killed or seriously injured as a result of a collision attributed to speed. 17-24 year olds are three times more likely to be responsible for a fatal or serious collision caused by speed than the average car driver (where the car driver was deemed responsible).

Alcohol and drugs also appear to be a particular problem for this age group. According to the NI Problem Profile (2010), between 2003 and 2008 36% of drivers responsible for road traffic fatalities due to drink/drugs were aged 17-24 and male.

One issue raised in the NI Problem Profile is that there is concern over texting while driving, which may contribute to those collisions caused through inattention or attention diverted. Driving simulator studies carried out by TRL using drivers aged 17-24 years found that drivers were aware that when they were texting their driving skill was impaired and so tried to mediate their impairment by reducing their speed (Reed and Robbins, 2008). Texting while driving resulted in poor lane position control and also their ability to maintain a constant headway.

#### 3.2.2.2 *Car Occupants*

According to the NI Problem Profile, between 2003 and 2008, 35% of all passenger casualties were aged 17-24. During this time period, 669 passengers aged 17-24 were killed or seriously injured, 63% of whom were male.

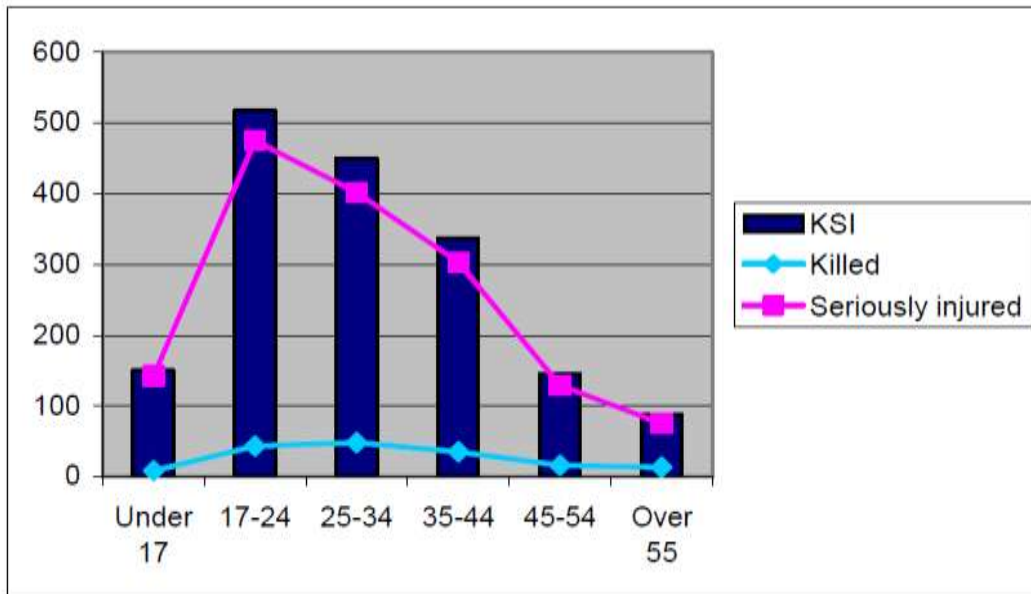
It is very likely that the high number of passenger casualties in this age group is due, at least in part, to younger people being killed or seriously injured in collisions where one of their peers is driving.

Seatbelt use is also mentioned as a concern in the NI Problem Profile. In the 2009 seatbelt wearing survey undertaken by Northern Ireland Statistics and Research Agency (NISRA, 2010b), 5% of 14-29 year old front seat and 13% of backseat passengers were not wearing a seatbelt.

#### 3.2.2.3 *Motorcyclists*

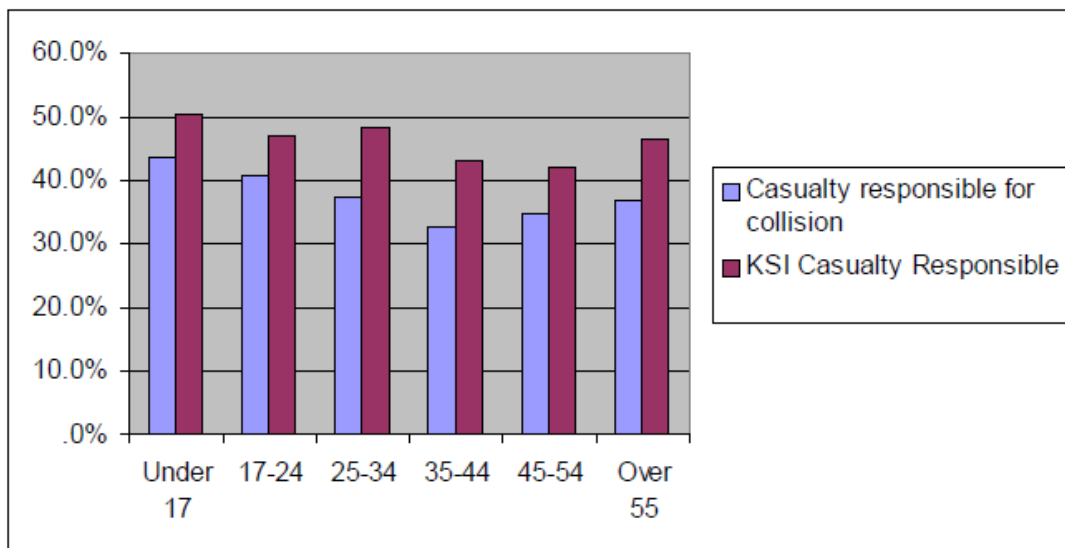
The recent analysis of motorcyclist collisions and casualties in NI highlighted that the majority (31%) of motorcycle KSIs were aged between 17 and 24, and most of those were male (Mullen, 2009). Mullen also found that 21% of motorcyclists involved in fatal and serious injury collisions were 'L-drivers'. Although motorcycling rates by age group are not known, it seems likely that young people are over represented in the casualty statistics.

Figure 3.1 shows motorcycle casualties by severity and age group.



**Figure 3.4 Motorcyle casualties by severity and by age from 1998-2007 (from Mullen, 2009)**

For all age groups, more than 68% of motorcyclist casualties were not responsible for the collision that they were involved in (57% in the case of KSIs). Figure 3.5 shows the proportion of motorcyclist casualties who were responsible for the collision they were involved in by age. The graph shows that those under 17 are most likely to be responsible for the collision they are involved in, particularly for KSI casualties. For under 17s, riders who were killed or seriously injured were responsible for the collision over 50% of the time.



**Figure 3.5 Proportion of motorcyclist casualties who were responsible for their collision by age from 1998-2007 (from Mullen, 2009)**

Although the analyses of causation factors presented by Mullen (2009) and in the NI Problem Profile did not consider age of the rider, the top 5 causation factors for all ages are likely to have some relevance to 16/17-24 year olds:

- Excessive speed having regard to conditions
- Alcohol or drugs – driver/rider

- 
- Inattention or attention diverted
  - Overtaking on offside without care
  - Emerging from minor road without care

Where the rider was responsible for the collision, the main causation factors were:

- Excessive speed having regard to conditions
- Alcohol or drugs – driver/rider
- Inexperience with type of vehicle
- Inattention or attention diverted

This suggests that the focus of educational interventions for motorcyclists should be concerned with excessive speed, alcohol or drug use and attention. The third causation factor whereby the reason for the collision was recorded as inexperience with type of vehicle may suggest that training and testing procedures may require enhancement (assuming the use of the vehicle was legal), that motorcyclists should be educated on the risk of riding a vehicle they are not familiar with, or there needs to be more active enforcement of motorcycle licences.

As might be expected, the majority (over 80%) of those injured in motorcycle collisions under the age of 17 were riding mopeds or lighter motorcycles (under 125 cc). For those in the slightly older age group (17-24) only 50% of the casualties were riding a 'lighter motorcycle'.

### **3.2.3 Children and Young People in Rural Areas**

The benchmarking research undertaken by TRL (Knowles et al., 2010) found that once all other factors were taken into consideration (e.g. differences in network composition) young people driving on rural roads were the real source of the NI road safety problem.

The work by Colin Buchanan (in preparation) examines this finding in more detail. In accordance with the TRL report, they found that casualty rates (per head of population) are significantly higher in rural areas than in urban areas, moreover it appears to be the case that rural non-built up areas have higher rates still than rural built up areas (though statistical significance cannot be demonstrated using the available data). Casualty rates are significantly higher in rural areas in comparison to urban areas, and these effects are particularly pronounced for higher severity collisions (fatal and serious).

#### **3.2.3.1 Young Rural Drivers**

The work recently completed by Colin Buchanan (in preparation) analysed only the collisions where the young rural driver was responsible for the collision to find out what the main causation factors were when the young person was responsible. This should help clarify what behaviours for young rural drivers are particularly problematic. The primary causation factors for rural areas where the driver was responsible are as follows:

- Under 16s
  - Excessive speed having regard to conditions
  - Inattention or attention diverted
  - Emerging from minor road without care
  - Overtaking on offside without care
  - Turning right without care
- 16-19 year olds
  - Excessive speed having regard to conditions

- 
- Inattention or attention diverted
  - Alcohol or drugs – driver/rider
  - Overtaking on offside without care
  - Emerging from minor road without care
  - 20-24 year olds
    - Inattention or attention diverted
    - Excessive speed having regard to conditions
    - Alcohol or drugs – driver/rider
    - Emerging from minor road without care
    - Overtaking on offside without care

These causation factors are particularly helpful for identifying behaviours that might be targeted for road safety education interventions in the future.

For example, for all of the age groups excessive speed and inattention/attention diverted are the top two causation factors where the young driver was responsible for the collision. This suggests that educational initiatives should focus on these behaviours for this age group. The appearance of alcohol/drug use in the top causation factors also suggests that this is a topic that needs addressing.

### 3.2.3.2 *Young Rural Pedestrians*

Colin Buchanan (in press) carried out similar analyses concerning collisions for which young rural pedestrians were considered to be responsible for the collision they were involved in. According to the work carried out by Colin Buchanan (in preparation), the primary causation factors for rural areas where the pedestrian was responsible are as follows:

- Under 16s
  - Heedless of traffic crossing carriageway
  - Walk/run movement masked
  - Lack of supervision/escaping from custody
  - Walking or running onto carriageway
  - Other pedestrian factor
- 16-19 year olds
  - Heedless of traffic crossing carriageway
  - Alcohol or drugs – pedestrian
  - Walk/run movement masked
  - Heedless of traffic walking or standing in carriageway – not crossing
  - Walking or running onto carriageway
- 20-24 year olds
  - Alcohol or drugs – pedestrian
  - Heedless of traffic crossing carriageway
  - Walk/run movement masked
  - Walking or running onto carriageway
  - Other pedestrian factor

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These causation factors are particularly helpful for identifying behaviours that might be targeted for road safety education interventions in the future.

For example, for 16-24 year olds, pedestrians are most likely to be involved in a collision for which they are responsible due to alcohol/drug use and due to crossing heedless of traffic. Educational campaigns might focus on the dangers of being killed or injured in a road collision as a result of alcohol/drug use and the need to look after friends who are intoxicated. Also it appears that young adults also need to understand that they are still at risk of being involved in a collision as a pedestrian and so they need to pay attention to traffic.

### **3.3 Other High Risk Groups**

#### **3.3.1 Older People**

During the lifetime of the Road Safety Strategy for Northern Ireland 2010-2020 (in preparation), the population of NI is projected to become gradually older, with people aged 65 and older increasing from 261,000 to 330,000 between 2010 and 2020. In response, the NI Problem Profile identifies those aged over 65 as a priority group. Moreover the new Strategy recognises that the elderly are a particularly vulnerable group in traffic who, if involved in a collision, are at an increased risk of a high severity or fatal outcome. In recognition of the importance of this group, the new Strategy includes some key performance indicators to monitor the progress of this high risk group.

The RSEOS has not traditionally focused its efforts on this group, however in the Road Safety Strategy for Northern Ireland 2010-2020 (in preparation) it is suggested that the DOENI will aim to understand the causes of collisions involving older people and will give consideration on how best to reach this group through working with partners, including the wider voluntary and community sector.

The NI Problem Profile reports that of the 778 fatalities that occurred between 2003 and 2008, 14% of those killed (109) were aged 65 and over. This group accounts for 10% of all deaths and serious injuries resulting from road collisions. This compares to the group being 18% of all licensed drivers (in June 2009). Interpreting the involvement of over 65s as being relatively low in relation to the proportion of licensed drivers might be misleading however since those aged 65 may undertake fewer and/or shorter journeys than younger age groups.

In 2009, the majority of KSIs for this age group were drivers of motor vehicles (40%), followed by pedestrians (29%) and passengers (27%) (NISRA, 2010a). Forty-five percent of the casualties in this age group were responsible for the collision that they were involved in, which somewhat contradicts a popular belief that older drivers and pedestrians might be hesitant and may not be able to judge speed adequately.

However where the casualty was responsible for the collision the causation factors are somewhat different from other age groups, suggesting that there may be a deterioration in driving skill with age. Educating older drivers about the deterioration that they might suffer may help them to avoid higher risk situations or may help them compensate for the deterioration.

For this age group, the NI Problem Profile reports that where the casualty was responsible for the collision, the main causation factors were:

- Heedless of traffic crossing carriageway
- Emerging from minor road without care
- Wrong course/position
- Inattention and attention diverted



- 
- Turning right without care

The NI Problem Profile highlighted a particular concern over the relatively high proportion of pedestrian casualties that were females over the age of 65. Between 2003 and 2008, 16% of pedestrian casualties were over the age of 65, with 59% of these being females.

A recent report published by RAC Foundation (Berry, 2011) found that although older drivers do tend to self-regulate (stop driving or reduce the number, length or type of journey); their self-regulation is far from perfect. Berry suggests that because older drivers find it hard to recognise their own cognitive decline, and because they are not equipped with good knowledge about their own road safety, they may under regulate (and not cease driving early enough) or over regulate (and therefore unnecessarily reduce their own mobility). He concludes that it is important to educate the older driver, their families and medical practitioners (e.g. General Practitioners and Opticians) in order to help 'nudge' older drivers towards safer road use and makes a number of recommendations that include:

- All drivers should need to self-certify their fitness to drive throughout their lives so that they start to consider issues relevant to physical and cognitive fitness to drive
- Older drivers should have to declare that they have sought medical advice in their self-certification in order to 'nudge' older drivers to do so without handing the power for this decision to GPs
- Older drivers should be able to proactively select licensing restrictions so that they can continue to drive and/or gain financial incentives from their insurance companies
- Training and education for older drivers should be more widely available, focusing on the impact of ageing on driving and what specific situations are of primary concern
- GPs and opticians should be educated on the impact of ageing on driving
- Education should also include the wider public in order that the families and friends of older drivers can be reached with accurate information

Mullen (2009) identifies that the crash rate among older motorcycle riders is increasing and that this is a priority (though it is not clear to what age group he refers). He suggests that the promotion of voluntary participation in refresher courses (Ridersafe and advanced off road) may be an option for improving the safety of the older rider. Moreover, he recommends that compulsory refresher training courses should be considered for those who cannot demonstrate that they have ridden regularly over the previous five years.

### **3.3.2 Driving for Work**

The National Travel survey estimates that approximately ¼ of all vehicle miles travelled annually on Britain's roads are undertaken for work (excluding commuting). This high degree of exposure translates into a significant involvement of work related traffic in collisions. Research on driving for work published by DfT (2004, as cited in the NI Problem Profile, 2010) suggests that up to 1/3 of road crashes in GB involve someone who is driving for work.

According to Occupational Road Safety Alliance (ORSA), between 25 and 33% of road traffic collisions in Great Britain involve someone using the road for work related purposes. ORSA estimate that between 556 and 741 people were killed in work related road traffic collisions in 2009, and a further 6,200 to 8,200 were seriously injured. The THINK! campaign estimates that 200 people each week in GB are killed or seriously injured while at work. More employees are killed in road collisions than in all other

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occupational accidents; according to ROSPA driving for work is the 'most dangerous activity that most people do'.

In terms of work related road safety, the drivers that are at risk are not just professional or commercial vehicle drivers. Rather, many people drive their own cars for work related purposes such as travelling to meetings and commuting.

DfT research using in-depth accident data (report number 58) found that there were no fundamental differences in the type and structure of work related road accidents and general road accidents. Work related drivers (using company cars, vans/pick-ups and LGVs) were more often to blame than other drivers; however this may simply be due to increased exposure and therefore a higher chance of being involved in a collision. Drivers of buses, taxis and emergency vehicles were more likely to be involved in a collision that was caused by another driver.

TRL is currently engaged by Institution of Occupational Safety and Health (IOSH) to complete some research on Work Related Road Safety (WRRS). The initial piece of research is nearing completion and results are due to be published in the first half of 2011. TRL has completed a systematic review of the current WRRS literature and a stakeholder consultation in order to appraise research on WRRS and the effectiveness of different road safety interventions and policies. Conclusions of this research may be of particular interest to RSEOS when available.

While there are no data that refer to the reason for the journey (work related or leisure related) in NI, it would seem reasonable to assume that a similar proportion of collisions are work related in NI as in GB. Therefore those driving at work may be at high risk and may merit some educational intervention. DOE are currently evaluating whether 'driving for work' should be a research priority for their forward programme.

According to DfT (2004), those companies with the lowest collision rates had the highest percentage of drivers with positive attitudes towards road safety. It may be possible to reach a high proportion of this group through encouraging responsible organisations to have clear and effective road safety policies. The results of the recent TRL work may inform the best manner by which to achieve this and may highlight how the RSEOS might be involved.

### **3.3.3 Foreign Nationals**

According to the NI Problem Profile Foreign National drivers are of increasing concern to the public. That said data on the nationality of those involved in collisions has only been recorded since April 2007, so there are not sufficient data to evaluate this perception.

The NI Problem Profile does however state concerns about the following issues:

- Perceived differences in road user cultures in other countries
- Possible language difficulties/barriers
- Standards of driving skills in other countries compared to those applied in NI
- Road user familiarisation with road signs
- Levels of knowledge and understanding of the advice and guidance contained in the NI Highway Code

Initial data analyses presented in NI Problem Profile suggest that collision data for this group should continue to be monitored closely.

Over the two year period (2007/08-2008/09) where data were available for the analyses presented in the NI Problem Profile, the data indicated that foreign nationals were involved in 9% (17 out of 200) of fatal and 6% (92 out of 1,657) of serious injury collisions. Of these collisions, foreign nationals were responsible for 76% and 66% of the collisions (for fatal and serious respectively). This responsibility level is relatively

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high, though caution should be used in interpretation since the number of collisions is low.

Important causation factors (in order of importance) for collisions involving foreign nationals were:

- Careless driving
- Alcohol/drugs – driver/rider
- Excessive speed

The same pattern of causation factors is apparent for those where the foreign national was responsible for the collision.

### 3.4 Adults

Although adults are not at high risk, there may be some clear priorities for this group that may inform future RSEOS activities.

In 2009, there were 578 people between the ages of 25 and 64 who were killed or seriously injured on the roads in NI. This represents half of all of those killed or seriously injured in NI. Two-thirds of KSIs in this age group were male.

Table 3.8 shows the ten year data (from January 2000 to March 2010) for those aged 25-64.

**Table 3.8: Road user group involvement for Adults (25 to 64 year olds)**

<b>Casualty class</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Pedestrian	104	693	797
Pedal cyclist	11	161	172
Motorcyclist	106	891	997
Car driver	295	3,196	3,491
Car passenger	82	1,153	1,235
Other vehicle occupants	53	578	631
<b>Total</b>	<b>651</b>	<b>6,672</b>	<b>7,323</b>

Nearly half (48%) of all casualties aged between 25 and 64 were car drivers, 17% were car passengers, 14% were motorcyclists and 11% were pedestrians.

Published analyses do not explore the primary crash types and causations for accidents involving just Adults aged between 25 and 64; therefore it has been necessary to assume that key themes from analyses including all age groups applies, broadly speaking, to this age group.

The NISRA (2010a) report identifies the principle causation factors reported in injury road traffic collisions (for the year 2009/10) as:

- In attention or attention diverted
- Excessive speed having regard to conditions
- Driving too close
- Emerging from minor road /driveway without care
- Alcohol or drugs (all road users)

- 
- Crossing/entering road junction without care
  - Turning right without care
  - Pedestrian heedless of traffic

The NI Problem Profile the following are key areas for concern:

- Excessive speed – accounts for 18% of KSIs, three-quarters of which are on rural roads
- Drink and drugs driving – accounts for 19% of deaths and 10% of serious injuries, 95% of those responsible are male, peaks between midnight and 4am
- Carelessness – driver carelessness accounts for 47% of all KSIs, carelessness is an important factor across all road user groups

### **3.4.1 Drivers**

The NI Problem Profile identifies the following key causations for drivers (excluding motorcyclists and 'other road users'):

- Excessive speed having regard to conditions
- Alcohol or drugs
- Inattention or attention diverted

### **3.4.2 Passengers**

Although Northern Ireland has higher seatbelt wearing rates than GB, some passengers are still being killed or seriously injured when not wearing a seatbelt.

### **3.4.3 Motorcyclists**

For all age groups, more than 68% of motorcyclist casualties were not responsible for the collision that they were involved in (57% in the case of KSIs). Mullen (2009) reports the top 5 causation factors for motorcyclists as:

- Excessive speed having regard to conditions
- Alcohol or drugs – driver/rider
- Inattention or attention diverted

Where the rider was responsible for the collision, the main causation factors were:

- Excessive speed having regard to conditions
- Alcohol or drugs – driver/rider
- Inexperience with type of vehicle

This suggests that the focus of educational interventions for motorcyclists should be concerned with excessive speed, alcohol or drug use and inattention. Inexperience with type of vehicle is also a key causation factor where the motorcyclist was responsible suggesting that motorcyclist training should be more extensive.

### **3.4.4 Pedestrians**

Pedestrians are responsible for 69% of the collisions in which they are the casualty. Carelessness is an important factor in pedestrian collisions, with 30% of pedestrian KSIs being attributed to 'heedless of traffic crossing carriageway'.

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## 4 Analyses by age group and road user type

The analyses that are already published present data on older drivers and foreign nationals, therefore these two age groups have not been included in the analyses in this section. Unfortunately it is not possible to complete further analyses relating to driving for work, because the purpose of the journey is not recorded in the police crash data. Therefore it is not possible to identify this potentially high risk group from the data.

The analyses here have been completed to better understand the road safety issues that are of particular relevance to smaller age groupings within the child and young people categories (Section 4.1). In addition, priorities for adults (aged 25-64) have been further explored (Section 3.4).

### 4.1 Analyses

#### 4.1.1 Age Groups

The two groups that require further analyses are children (1-15 years old) and young people (16 to 24 years old). In order to complete the analyses, the children and young people categories have been further broken down according to the common curriculum and current RSEOS delivery mechanisms. This will allow road safety issues to be identified for each of the age groups, and should allow for relatively straight forward translation into the materials used at each Key Stage in the Curriculum.

It should be noted that the absence of an issue at any age group may reflect the success of the current focus of the RSEOS rather than an indication of the need to stop current activities. Therefore the analyses presented here should just indicate where renewed vigour or focus is required, not where current activities or focus should be removed.

In order to simplify analyses, it has been necessary to assign each age to one category alone, therefore the groupings differ slightly to those in the common curriculum, e.g. children at the age of 6 may be in either 'Foundation' or 'Key Stage 1', here they will be assigned to the 'Foundation' age group. This makes sense since it would be advisable to educate children on any road safety issues that were likely to become a concern in the very near future just before they become an issue. Table 4.1 shows the analysis age groupings.

**Table 4.1: Analysis ages and corresponding curriculum level and school years**

Analysis ages	Group	School curriculum	School year
1-3	Pre-School/Nursery		
4-6	Foundation	Age 4-6	Years 1 and 2
7-8	Key Stage 1	Age 6-8	Years 3 and 4
9-11	Key Stage 2	Age 8-11	Years 5, 6 and 7
12-14	Key Stage 3	Age 11-14	Years 8, 9 and 10
15-16	Key Stage 4	Age 14-16	Years 11 and 12
17-19	Young People		
20-24	Young Adults		

Note that ages less than 1 are classed as age 1

### 4.1.2 Data

Road traffic collision data were provided for the analyses by Police Service Northern Ireland (PSNI).

In addition, population data have been used to calculate casualty rates per 100,000 population, these were obtained from the Northern Ireland Statistics and Research Agency (NISRA) website.

### 4.1.3 Dates

For most of the data, a ten year data set was requested to try and gain adequate numbers for reliable interpretation. The data set covers January 2000 to March 2010.

Contributory factors data have been collected by PSNI since April 2007, and so for these analyses data from April 2007 to March 2010 have been used to gain three full years of data.

### 4.1.4 Number of Reports

The 10 year database (from January 2000 to March 2010) provides 5,785 KSI casualties. This database has been used for the majority of the analyses. Contributory factors data are only available over a period of 3 years (April 2007 to March 2010), providing 594 KSI casualties.

## 4.2 Children and Young People

The overall number of Killed and Seriously Injured (KSI) casualties by age group are shown in Table 4.2

**Table 4.2: Number of KSI casualties included in analysis by age group and road user group (Jan 2000 – March 2010)**

Age group	Pedestrian	Pedal cyclist	Motor-cyclist	Car Driver	Car Passenger	Other vehicle occupant	Total
1-3	84	1	0	1	95	6	187
4-6	180	21	1	0	78	8	288
7-8	104	22	3	0	55	5	189
9-11	157	33	8	1	84	18	301
12-14	237	46	27	4	116	29	459
15-16	110	8	82	37	226	32	495
17-19	172	15	245	603	589	64	1,688
20-24	207	15	268	988	589	111	2,178
1-24 total	1,251	161	634	1,634	1,832	273	5,785

It should be noted that it is not possible to assess the risk for each road user group by mode and age since the relevant exposure data are not available (i.e. we do not have a measure of pedal cycle use for NI, nor distance travelled by each age group by car). Therefore the numbers in the table are not directly comparable and therefore challenging to interpret.

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However patterns do emerge that help identify the involvement of children in road traffic collisions by road user group.

Pedestrian collisions appear to be extremely prevalent at all ages and of significant concern, peaking at the age of 12-14 perhaps reflecting the independence children get at this age and as they travel further to secondary school.

It may be surprising to note that involvement of children in pedal cyclist collisions occurs as early as 4-6 years old. Understandably, the peak time for children to be involved in pedal cyclist collisions seems to be at the age of 12-14, perhaps as they gain their independence in terms of travel to and from school.

The involvement of children and young people as drivers and riders of motorcycles is also interesting, since they become affected long before they are legally permitted to use such modes of transport. The numbers of young people aged 17-19 and 20-24 that are killed or seriously injured in collisions as drivers or riders of motorcycles is extremely high and should be of paramount concern.

A relatively high number of very young children (aged 1-6) are killed or seriously injured as car passengers. From the age of 12, the number of children involved in collisions as passengers starts to become high, increasing significantly as children reach the 15-24 age groups. This may reflect children or adolescents being driven by their slightly older, but inexperienced friends.

#### **4.2.1 1-3 Years: Pre-School/Nursery**

Table 4.3 shows the number of killed and seriously injured casualties aged between 1 and 3 by casualty class.

**Table 4.3: Number of KSI casualties aged 1-3 by injury and user group (Jan 2000 – March 2010)**

<b>Casualty class</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Pedestrian	8	76	84
Pedal cyclist	0	1	1
Motorcyclist	0	0	0
Car passenger	8	88	96
Other vehicle occupants	0	6	6
<b>Total</b>	<b>16</b>	<b>171</b>	<b>187</b>

A large proportion of KSI casualties in this age group were car passengers (51%) and pedestrians (45%). In addition, of the 187 KSI casualties:

- 77% were in daylight, 20% in darkness
- 68% were male and 32% female
- 41% of the casualties were considered responsible

##### **4.2.1.1 Pedestrians**

There were 84 pedestrians aged between 1 and 3 killed or seriously injured between January 2000 and March 2010. Of these:

- 10% were killed
- Just over half (52%) occurred between 3pm and 7pm

- The vast majority occurred on roads with a 30mph speed limit
- 63% occurred away from a junction; 24% occurred at a T-junction
- 70% were boys

Even at this young age, gender is a strong risk factor for involvement in collisions.

Table 4.4 shows the number of killed and seriously injured pedestrians aged between 1 and 3 by location.

**Table 4.4: Number of KSI pedestrians aged 1-3 by injury and location (Jan 2000 – March 2010)**

<b>Location</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
In carriageway, on pedestrian crossing	0	1	1
In carriageway, crossing elsewhere within 50m of crossing	0	1	1
In carriageway, crossing elsewhere	1	47	48
On footway or verge	2	5	7
In centre of carriageway	2	7	9
In carriageway, not crossing	2	9	11
Unknown or other	1	6	7
<b>Total</b>	<b>8</b>	<b>76</b>	<b>84</b>

Fifty-seven per cent of KSI pedestrians aged 1-3 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty-four per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.5 shows the number of killed and seriously injured pedestrians aged between 1 and 3 by movement.



**Table 4.5: Number of KSI pedestrians aged 1-3 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	1	15	16
Crossing from driver's nearside masked by static vehicle	1	16	17
Crossing from driver's offside	1	13	14
Crossing from driver's offside masked by static vehicle	0	15	15
In carriageway stationary-not crossing	1	1	2
In carriageway stationary-not crossing-masked	0	2	2
Walking in carriageway facing traffic	0	3	3
Walking in carriageway back to traffic	2	0	2
Unknown or other	2	11	13
<b>Total</b>	<b>8</b>	<b>76</b>	<b>84</b>

Thirty-nine per cent of KSI pedestrians aged 1-3 were crossing from the drivers nearside (either masked or not masked by a static vehicle). Similarly, 35% were crossing from the drivers offside (either masked or not masked by a static vehicle). Over half (52%) of the children crossing a road were masked by a static vehicle.

In 82 out of 84 cases, the pedestrian was the only casualty in each accident. One of the casualties was in an accident with another pedestrian, and one with another road user. This suggests that the majority of these children were alone or anyone who was with them was not involved or uninjured in the accident.

Only 4 of 84 KSI pedestrians aged 1-3 were in accidents attended by the police and had contributory factors.

All four of these pedestrians were reported to have been responsible for the accident and none of the four vehicles involved were reported as being responsible for the accident. Two of the four pedestrians were in accidents where CF70 'stationary vehicle' was reported as a contributory factor.

#### 4.2.1.2 Car Passenger

There were 95 KSI car passengers aged between 1 and 3 in the study period. Of these:

- 63 were rear seat passengers; 32 were front seat passengers
- 8 were killed
- Where the use of a seatbelt or restraint was known (83 cases), 93% were using a seatbelt or restraint
- 65% occurred on a road with a 60mph speed limit
- 66% were boys

Sixty-three per cent of vehicle drivers were not reported as being responsible for the accident.

It is rather strange that there should be more male KSI passengers than females for this young age group.

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#### 4.2.2 4-6 Years: Foundation Stage

Table 4.6 shows the number of killed and seriously injured casualties aged between 4 and 6 by casualty class.

**Table 4.6: Number of KSI casualties aged 4-6 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	4	176	180
Pedal cyclist	0	21	21
Motorcyclist	1	0	1
Car passenger	4	74	78
Other vehicle occupants	1	7	8
<b>Total</b>	<b>10</b>	<b>278</b>	<b>288</b>

Sixty-three per cent of KSI casualties in this age group were pedestrians, 27% were car passengers and 7% were pedal cyclists. The increase in pedal cyclist incidents from the 1-3 age group reflects the fact children are becoming old enough to learn to cycle. In addition, of the 288 casualties:

- 78% were in daylight, 18% in darkness
- 62% were boys and 38% girls
- 63% of the casualties were considered responsible (this increase from the 1-3 age group may reflect the fact that children in this age group can cycle and walk on their own accord)

##### 4.2.2.1 Pedestrians

There were 180 KSI pedestrians aged 4-6 in the study period. Of these:

- 2% were killed
- About half (91) occurred between 3pm and 7pm
- The vast majority occurred on a road with a 30mph speed limit
- 52% occurred away from a junction; 38% occurred at a T-junction
- 64% were boys

Table 4.7 shows the number of killed and seriously injured pedestrians aged between 4 and 6 by location.

**Table 4.7: Number of KSI pedestrians aged 4-6 by injury and location (Jan 2000 – March 2010)**

Location	Killed	Seriously injured	KSI
In carriageway, on pedestrian crossing	0	6	6
In carriageway, crossing elsewhere within 50m of crossing	0	6	6
In carriageway, crossing elsewhere	3	105	108
On footway or verge	0	7	7
In centre of carriageway	1	23	24
In carriageway, not crossing	0	17	17
Unknown or other	0	12	12
<b>Total</b>	<b>4</b>	<b>176</b>	<b>180</b>

Sixty per cent of KSI pedestrians aged 4-6 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty-three per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.8 shows the number of killed and seriously injured pedestrians aged between 4 and 6 by movement.

**Table 4.8: Number of KSI pedestrians aged 4-6 by injury and movement (Jan 2000 – March 2010)**

Movement	Killed	Seriously injured	KSI
Crossing from driver's nearside	0	39	39
Crossing from driver's nearside masked by static vehicle	2	39	41
Crossing from driver's offside	2	44	46
Crossing from driver's offside masked by static vehicle	0	26	26
In carriageway stationary-not crossing	0	5	5
In carriageway stationary-not crossing-masked	0	2	2
Walking in carriageway facing traffic	0	3	3
Walking in carriageway back to traffic	0	1	1
Unknown or other	0	17	17
<b>Total</b>	<b>4</b>	<b>176</b>	<b>180</b>

Forty-four per cent of KSI pedestrians aged 4-6 were crossing from the drivers nearside (either masked or not masked by a static vehicle). Similarly, 40% were crossing from the drivers offside (either masked or not masked by a static vehicle).

Forty-four per cent of the children crossing a road were masked by a static vehicle.

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For 170 of the 180 pedestrian casualties aged 4-6, the pedestrian was the only reported casualty in the accident. Five casualties were in accidents where another pedestrian was injured, and five were in accidents where another road user was injured.

Out of the 180 KSI pedestrians aged 4-6, just seven were in accidents attended by the police and had contributory factors reported by the police.

Six out of the seven accidents reported the pedestrian as having some responsibility for the accident. The most common contributory factors were:

- CF 46: Lack of supervision/escaping from custody (2 casualties)
- CF 70: Stationary vehicle (2 casualties)

#### 4.2.2.2 *Cyclists*

Twenty-one cyclists aged 4-6 were killed or seriously injured in the study period. Of these:

- None of the KSIs were killed
- 14 were boys
- All involved other vehicle(s)
- 15 occurred at junctions
- All occurred on the road

Two KSIs were in accidents attended by the police and with contributory factors reported. No further analyses can be undertaken due to the low number.

#### 4.2.2.3 *Car Passenger*

There were 78 KSIs in this group. Of these:

- 4 were killed
- 62 were rear seat passengers; 16 were front seat passengers
- Where the use of a seatbelt or restraint was known (63 cases), 87% were using a seatbelt or restraint

Sixty per cent of vehicle drivers were not reported as being responsible for the accident.

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### 4.2.3 7-8 Years: Key Stage 1

Table 4.9 shows the number of killed and seriously injured casualties aged between 7 and 8 by casualty class.

**Table 4.9: Number of KSI casualties aged 7-8 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	6	98	104
Pedal cyclist	2	20	22
Motorcyclist	0	3	3
Car passenger	3	52	55
Other vehicle occupants	1	4	5
<b>Total</b>	<b>12</b>	<b>177</b>	<b>189</b>

Fifty-five per cent of KSI casualties in this age group were pedestrians, 29% were car passengers and 12% were pedal cyclists. In addition, of the 189 KSI casualties:

- 76% were in daylight, 18% in darkness
- 62% were male and 38% female
- 60% the casualty was considered responsible

#### 4.2.3.1 Pedestrians

There were 104 KSI pedestrians aged 7 or 8. Of these:

- 6% were killed
- 61% occurred away from a junction, 26% occurred at a T-junction
- 85% occurred on a road with a 30mph speed limit
- 69% were boys
- 67% occurred between 3pm and 8pm

Table 4.10 shows the number of killed and seriously injured pedestrians aged between 7 and 8 by location.

**Table 4.10: Number of KSI pedestrians aged 7-8 by injury and location (Jan 2000 – March 2010)**

Location	Killed	Seriously injured	KSI
In carriageway, on pedestrian crossing	0	6	6
In carriageway, crossing elsewhere within 50m of crossing	1	5	6
In carriageway, crossing elsewhere	1	55	56
On footway or verge	1	5	6
On refuge, central island or central reservation	1	0	1
In centre of carriageway	1	16	17
In carriageway, not crossing	0	7	7
Unknown or other	1	4	5
<b>Total</b>	<b>6</b>	<b>98</b>	<b>104</b>

Fifty-seven per cent of KSI pedestrians aged 7-8 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty-three per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.11 shows the number of killed and seriously injured pedestrians aged between 7 and 8 by movement.

**Table 4.11: Number of KSI pedestrians aged 7-8 by injury and movement (Jan 2000 – March 2010)**

Movement	Killed	Seriously injured	KSI
Crossing from driver's nearside	2	31	33
Crossing from driver's nearside masked by static vehicle	1	15	16
Crossing from driver's offside	2	23	25
Crossing from driver's offside masked by static vehicle	0	13	13
In carriageway stationary-not crossing	0	6	6
Walking in carriageway facing traffic	1	1	2
Walking in carriageway back to traffic	0	1	1
Unknown or other	0	8	8
<b>Total</b>	<b>6</b>	<b>98</b>	<b>104</b>

Thirty-seven per cent of KSI pedestrians aged 7-8 were crossing from the driver's nearside (either masked or not masked by a static vehicle). Similarly, 37% were crossing from the driver's offside (either masked or not masked by a static vehicle).

One-third (33%) of the children crossing a road were masked by a static vehicle.

In this age group, 97 of the 104 KSI pedestrians were the only casualty in each accident, four were in accidents where another pedestrian was also injured and three were in accidents where another road user was injured.

For just 3 of the 104 pedestrians contributory factors were reported, and the accident was attended by the police. This means further analyses of contributory factors cannot be done.

#### 4.2.3.2 Cyclists

There were 22 KSI pedal cyclists aged 7 or 8 in the study period. Of these:

- 2 were killed
- 17 were boys
- 12 occurred between 5pm and 7pm
- All were in an accident with another vehicle
- 15 were in accidents at junctions

All KSIs in this group were reported to have had some responsibility for the accident

Just one casualty in this group was in an accident which was attended by the police and had contributory factors. This means that further analyses cannot be undertaken.

#### 4.2.3.3 Car Passenger

There were 55 KSIs in this group. Of these:

- 3 were killed
- 40 were rear seat passengers; 15 were front seat passengers
- Where the use of a seatbelt or restraint was known (41 cases), 90% were using a seatbelt or restraint

Sixty per cent of vehicle drivers were not reported as being responsible for the accident.

#### 4.2.4 9-11 Years: Key Stage 2

Table 4.12 shows the number of killed and seriously injured casualties aged between 4 and 6 by casualty class.

**Table 4.12: Number of KSI casualties aged 9-11 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	5	152	157
Pedal cyclist	3	30	33
Motorcyclist	0	8	8
Car passenger	3	82	85
Other vehicle occupants	0	18	18
<b>Total</b>	<b>11</b>	<b>290</b>	<b>301</b>

Fifty-two per cent of KSI casualties in this age group were pedestrians, 28% were car passengers and 11% were pedal cyclists. In addition, of the 301 KSI casualties:

- 67% were in daylight, 29% in darkness
- 57% were male and 43% female
- 60% of the casualties were considered responsible

#### 4.2.4.1 Pedestrians

There were 157 KSI pedestrians aged 9-11 in the study period. Of these:

- 3% were killed
- 65% occurred between 3pm and 8pm
- 83% occurred on a road with a 30mph speed limit
- 56% occurred away from a junction; 34% occurred at a T-junction
- 59% were boys

Table 4.13 shows the number of killed and seriously injured pedestrians aged between 9 and 11 by location.

**Table 4.13: Number of KSI pedestrians aged 9-11 by injury and location (Jan 2000 – March 2010)**

Location	Killed	Seriously injured	KSI
In carriageway, on pedestrian crossing	0	5	5
In carriageway, crossing elsewhere within 50m of crossing	0	16	16
In carriageway, crossing elsewhere	2	90	92
On footway or verge	1	11	12
On refuge, central island or central reservation	0	2	2
In centre of carriageway	0	13	13
In carriageway, not crossing	2	9	11
Unknown or other	0	6	6
<b>Total</b>	<b>5</b>	<b>152</b>	<b>157</b>

Fifty-nine per cent of KSI pedestrians aged 9-11 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty-three per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.14 shows the number of killed and seriously injured pedestrians aged between 9 and 11 by movement.



**Table 4.14: Number of KSI pedestrians aged 9-11 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	1	47	48
Crossing from driver's nearside masked by static vehicle	1	20	21
Crossing from driver's offside	0	41	41
Crossing from driver's offside masked by static vehicle	0	18	18
In carriageway stationary-not crossing	1	4	5
Walking in carriageway facing traffic	2	1	3
Walking in carriageway back to traffic	0	3	3
Unknown or other	0	18	18
<b>Total</b>	<b>5</b>	<b>152</b>	<b>157</b>

Forty-four per cent of KSI pedestrians aged 9-11 were crossing from the driver's nearside (either masked or not masked by a static vehicle). Similarly, 38% were crossing from the driver's offside (masked or not masked by a static vehicle).

Thirty per cent of children in this age group crossing the road were masked by a parked car (this is a lower proportion than for younger children).

In this age group 147 of the 157 pedestrians were the only casualty in each accident. Eight were in accidents that included another pedestrian and two were in accidents where another road user was injured.

In this age group 10 out of 157 pedestrians were in accidents with contributory factors and attended by the police.

Seven pedestrians were reported with some responsibility for the accident, 3 were not responsible.

The most commonly reported contributory factor (reported for four of the pedestrians) was 'walk/run movement masked'.

#### 4.2.4.2 Cyclists

There were 33 KSI pedal cyclists aged 9-11. Of these:

- 3 were killed
- 19 were on a road with a 30mph speed limit
- 18 occurred at a junction
- 23 were boys
- 32 were in a collision which involved other vehicle(s)

Twenty-seven were reported to have had some responsibility for the accident

None of the KSIs in this group were in accidents which were attended by the police and had contributory factors reported and therefore contributory factors could not be analysed.

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#### 4.2.4.3 Car Passenger

There were 84 KSIs in this group. Of these:

- 3 were killed
- 54 were rear seat passengers; 30 were front seat passengers
- Where the use of a seatbelt or restraint was known (72 cases), 86% were using a seatbelt or restraint

Sixty-five per cent of vehicle drivers were not reported as being responsible for the accident.

#### 4.2.5 12-14 Years: Key Stage 3

Table 4.15 shows the number of killed and seriously injured casualties aged between 12 and 14 by casualty class.

**Table 4.15: Number of KSI casualties aged 12-14 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	14	223	237
Pedal cyclist	3	43	46
Motorcyclist	3	24	27
Car passenger	8	112	120
Other vehicle occupants	4	25	29
<b>Total</b>	<b>32</b>	<b>427</b>	<b>459</b>

Fifty-two per cent of KSI casualties in this age group were pedestrians, 26% were car passengers and 10% were pedal cyclists. In addition, of the 301 KSI casualties:

- 56% were in daylight, 36% in darkness
- 63% were male and 37% female
- 59% of the casualties were considered responsible

##### 4.2.5.1 Pedestrians

There were 236 KSI pedestrians in this age group. Of these:

- 6% were killed
- 62% were male
- 80% occurred Monday-Friday
- 44% occurred away from a junction; 35% at a T-junction
- 69% occurred on a road with a 30mph speed limit
- 73% occurred between 3pm and 10pm

Table 4.16 shows the number of killed and seriously injured pedestrians aged between 12 and 14 by location.

**Table 4.16: Number of KSI pedestrians aged 12-14 by injury and location (Jan 2000 – March 2010)**

<b>Location</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
In carriageway, on pedestrian crossing	0	14	14
In carriageway, within zigzag lines at crossing approach	0	2	2
In carriageway, crossing elsewhere within 50m of crossing	1	28	29
In carriageway, crossing elsewhere	6	95	101
On footway or verge	0	24	24
On refuge, central island or central reservation	0	2	2
In centre of carriageway	6	33	39
In carriageway, not crossing	1	18	19
Unknown or other	0	7	7
<b>Total</b>	<b>14</b>	<b>223</b>	<b>237</b>

Forty-three per cent of KSI pedestrians aged 12-14 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty-four per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.17 shows the number of killed and seriously injured pedestrians aged between 12 and 14 by movement.

**Table 4.17: Number of KSI pedestrians aged 12-14 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	2	75	77
Crossing from driver's nearside masked by static vehicle	1	21	22
Crossing from driver's offside	6	54	60
Crossing from driver's offside masked by static vehicle	3	24	27
In carriageway stationary-not crossing	0	9	9
Walking in carriageway facing traffic	0	13	13
Walking in carriageway back to traffic	1	8	9
Unknown or other	1	19	20
<b>Total</b>	<b>14</b>	<b>223</b>	<b>237</b>

Forty-two per cent of KSI pedestrians aged 12-14 were crossing from the drivers nearside (either masked or not masked by a static vehicle). Similarly, 37% were crossing from the drivers offside (masked or not masked by a static vehicle).

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Only 26% of the KSIs in this age group had crossed the road masked by a parked car. This is a lower proportion than for younger age groups.

In this group 215 of the KSI casualties were in accidents where they were the only casualty.

Twenty-two were in accidents where contributory factors were recorded and the accident was attended by the police. The most common contributory factors were:

- CF42 – Walk/run movement masked (recorded for 3 KSI pedestrians aged 12-14)
- CF55 – Pedestrian wearing dark clothing
- CF41 – Walking or running into carriageway

#### 4.2.5.2 *Cyclists*

There were 46 KSI pedal cyclists aged between 12 and 14 in the study period. Of these:

- 3 were killed
- All 46 involved at least one other vehicle
- 23 occurred between 4pm and 8pm
- 31 occurred on a road with a speed limit of 30mph; 14 were 60mph
- 32 occurred at a junction
- 33 were male

Two of the KSIs in this group were in accidents which were attended by the police and had contributory factors and hence it was not meaningful to analyse the contributory factors.

#### 4.2.5.3 *Car Passenger*

There were 116 KSIs in this group. Of these:

- 8 were killed
- 60% were rear seat passengers; 40% were front seat passengers
- Where the use of a seatbelt or restraint was known (85 cases), 81% were using a seatbelt or restraint
- 30% occurred in single vehicle accidents
- 19% of KSIs were in cars with a restricted driver

Sixty-four per cent of vehicle drivers were not reported as being responsible for the accident.

#### 4.2.6 15-16 Years: Key Stage 4

Table 4.18 shows the number of killed and seriously injured casualties aged between 15 and 16 by casualty class.

**Table 4.18: Number of KSI casualties aged 15-16 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	12	98	110
Pedal cyclist	1	7	8
Motorcyclist	3	79	82
Car Driver	8	29	37
Car passenger	21	205	226
Other vehicle occupants	2	30	32
<b>Total</b>	<b>32</b>	<b>427</b>	<b>459</b>

Twenty-two per cent of KSI casualties in this age group were pedestrians, 46% were car passengers, 17% were motorcyclists and 7% were car drivers. The sharp increase in the proportion of motorcyclist and car driver incidents compared to all the previous age groups reflects the fact that individuals of this age are becoming old enough to ride a motorcycle. The reduction in pedestrian/pedal cyclist incidents can be linked to the fact that as individuals reach this age, they are likely to be riding a motorcycle instead, or be driven in a car by their slightly older friends. Hence the increase in car passenger incidents is not surprising. In addition, of the 495 KSI casualties:

- 41% were in daylight, 48% in darkness
- 91% had the police attend the scene
- 65% were male and 35% female
- 37% the casualty was considered responsible (this is much lower than the younger age groups other than 1-3 group)

##### 4.2.6.1 Pedestrians

One hundred and ten pedestrians aged 15 or 16 were killed or seriously injured during the study period. Of these:

- 11% were killed
- 62% occurred between 3pm and 10pm
- 69% occurred on a road with a 30pmh speed limit
- 59% were male
- 44% non junction; 37% T-junction

Table 4.19 shows the number of killed and seriously injured pedestrians aged between 15 and 16 by location.

**Table 4.19: Number of KSI pedestrians aged 15-16 by injury and location (Jan 2000 – March 2010)**

<b>Location</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
In carriageway, on pedestrian crossing	1	5	6
In carriageway, within zigzag lines at crossing approach	0	1	1
In carriageway, crossing elsewhere within 50m of crossing	2	10	12
In carriageway, crossing elsewhere	3	46	49
On footway or verge	0	15	15
On refuge, central island or central reservation	1	0	1
In centre of carriageway	0	10	10
In carriageway, not crossing	4	8	12
Unknown or other	1	3	4
<b>Total</b>	<b>12</b>	<b>98</b>	<b>110</b>

Forty-five per cent of KSI pedestrians aged 15-16 were located in the carriageway (crossing) but not close to a pedestrian crossing. Twenty per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.20 shows the number of killed and seriously injured pedestrians aged between 15 and 16 by movement.

**Table 4.20: Number of KSI pedestrians aged 15-16 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	3	43	46
Crossing from driver's nearside masked by static vehicle	0	9	9
Crossing from driver's offside	4	16	20
Crossing from driver's offside masked by static vehicle	0	6	6
In carriageway stationary-not crossing	1	3	4
Walking in carriageway facing traffic	1	4	5
Walking in carriageway back to traffic	2	6	8
Unknown or other	1	11	12
<b>Total</b>	<b>12</b>	<b>98</b>	<b>110</b>

Fifty per cent of KSI pedestrians aged 15-16 were crossing from the driver's nearside (either masked or not masked by a static vehicle). Similarly, 24% were crossing from the driver's offside (masked or not masked by a static vehicle).

Being masked by static cars appears to have reduced in significance for this age group, perhaps reflecting the relative height of this age group.

Eleven of the KSI casualties in this group were in accidents attended by the police and with contributory factors reported. The most common contributory factor was CF38 – Heedless of traffic crossing carriageway, recorded for two of the casualties.

#### 4.2.6.2 Car Passenger

There were 226 KSIs in this group. Of these:

- 21 (4%) were killed
- 55% were rear seat passengers; 45% were front seat passengers
- Where the use of a seatbelt or restraint was known (168 cases), 65% were using a seatbelt or restraint
- 48% occurred in single vehicle accidents
- 14% were in vehicles which overturned
- 38% were in vehicles going ahead at a bend
- 23% of KSIs were in cars with a restricted driver
- 49% occurred on a Saturday or Sunday

Seventy-six per cent of vehicle drivers were not reported as being responsible for the accident.

Table 4.21 shows the age groups of the drivers of the cars in which the 15-16 year old passengers were killed or seriously injured. This shows that about half of these passengers were in cars with drivers aged 17-19.

**Table 4.21: Number of KSI car passengers aged 15-16 by driver age group (Jan 2000 – March 2010)**

Driver age	Killed	seriously injured	Total
12-14	0	1	1
15-16	0	10	10
17-19	11	100	111
20-24	5	29	34
25-64	5	58	63
65+	0	3	3
Unknown	0	4	4
<b>Total</b>	<b>21</b>	<b>205</b>	<b>226</b>

#### 4.2.6.3 Motorcyclist

There were 82 motorcyclists aged 15 or 16 killed or seriously injured (including pillion passengers) in the study period. Of these:

- 3 were killed
- 13 were pillion passengers
- 78 were male

- 19 were in single vehicle accidents
- 50 were on a road with a 30mph speed limit; 28 on 60mph
- 51 occurred near a junction
- 52 had a manoeuvre described as 'going ahead other'

Forty-nine of the KSI casualties were reported to have had some responsibility for the accident.

Ten KSI casualties in this category were in accidents where contributory factors were reported. Four of these had the contributory factor 'wrong course/position' attributed.

#### 4.2.6.4 Car Drivers

Thirty-seven KSIs in this group over the period. In these cases, the vehicle was being driven illegally. Twenty-eight per cent of these KSIs were killed.

Fourteen of the KSIs in this group were the only injured occupant of the vehicle they were driving. Either there were no passengers or any passengers were uninjured.

Twenty-three KSIs in this group were driving vehicles in which another occupant was injured, most commonly a passenger aged 15-16.

Eight KSIs were in accidents where contributory factors were reported. All of the drivers had some responsibility for the accident. The most commonly reported contributory factors were:

- CF26 – Inexperience with type of vehicle (4 KSIs)
- CF23 – Excessive speed having regard conditions (3 KSIs)

#### 4.2.7 17-19 Years: Young People

Table 4.22 shows the number of killed and seriously injured casualties aged between 17 and 19 by casualty class.

**Table 4.22: Number of KSI casualties aged 17-19 by injury and user group (Jan 2000 – March 2010)**

Casualty class	Killed	Seriously injured	KSI
Pedestrian	11	161	172
Pedal cyclist	0	15	15
Motorcyclist	22	223	245
Car Driver	62	541	603
Car passenger	79	507	586
Other vehicle occupants	5	62	67
<b>Total</b>	<b>179</b>	<b>1,509</b>	<b>1,688</b>

Ten per cent of KSI casualties in this age group were pedestrians, 36% were car drivers, 35% were car passengers, and 15% were motorcyclists. The increase in the proportion of car driver casualties compared to the 15-16 age group reflects the fact that this age group are old enough to drive legally. Hence it is not surprising that the proportion of car passenger casualties drops as a consequence. In addition, of the 1,688 KSI casualties:



- 36% were in daylight, 48% in darkness
- 75% were male and 25% female
- 45% of the casualties were considered responsible

#### 4.2.7.1 Pedestrians

There were 172 KSI pedestrians aged 17-19 in the study period. Of these:

- 6% were killed
- 55% non-junction; 30% T-junction
- 72% were male
- 63% occurred between 8pm and 4am
- 45% occurred on a Saturday or Sunday
- 66% occurred on a road with a 30mph speed limit

Table 4.23 shows the number of killed and seriously injured pedestrians aged between 15 and 16 by location.

**Table 4.23: Number of KSI pedestrians aged 17-19 by injury and location (Jan 2000 – March 2010)**

Location	Killed	Seriously injured	KSI
In carriageway, on pedestrian crossing	0	11	11
In carriageway, crossing elsewhere within 50m of crossing	1	20	21
In carriageway, crossing elsewhere	3	50	53
On footway or verge	0	20	20
On refuge, central island or central reservation	0	2	2
In centre of carriageway	1	18	19
In carriageway, not crossing	5	30	35
Unknown or other	1	10	11
<b>Total</b>	<b>11</b>	<b>161</b>	<b>172</b>

Thirty-one per cent of KSI pedestrians aged 17-19 were located in the carriageway (crossing) but not close to a pedestrian crossing. Thirty-one per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.24 shows the number of killed and seriously injured pedestrians aged between 17 and 19 by movement.

**Table 4.24: Number of KSI pedestrians aged 17-19 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	2	41	43
Crossing from driver's nearside masked by static vehicle	0	9	9
Crossing from driver's offside	2	40	42
Crossing from driver's offside masked by static vehicle	0	8	8
In carriageway stationary-not crossing	0	11	11
Walking in carriageway facing traffic	0	8	8
Walking in carriageway back to traffic	6	22	28
Unknown or other	1	22	23
<b>Total</b>	<b>11</b>	<b>161</b>	<b>172</b>

Thirty per cent of KSI pedestrians aged 12-14 were crossing from the driver's nearside (either masked or not masked by a static vehicle). Similarly, 29% were crossing from the driver's offside (masked or not masked by a static vehicle).

In this age group, 156 KSIs were the only casualty in the accident.

Sixteen pedestrians in this group were in accidents that were attended by the police and had contributory factors reported. The most commonly reported contributory factors were:

- CF47 – alcohol or drugs – pedestrian (4 KSIs)
- CF41 – walking or running into carriageway (4 KSIs)
- CF55 – Pedestrian wearing dark clothing (3 KSIs)

#### 4.2.7.2 Car Passenger

There were 586 KSIs in this group. Of these:

- 79 (13%) were killed
- 40% were rear seat passengers; 60% were front seat passengers
- Where the use of a seatbelt or restraint was known (418 cases), 67% were using a seatbelt or restraint
- 48% occurred in single vehicle accidents
- 14% were in vehicles which overturned
- 31% were in vehicles going ahead at a bend
- 61% were males
- 26% of KSIs were in cars with a restricted driver
- 47% occurred on a Saturday or Sunday

Seventy-seven per cent of vehicle drivers were not reported as being responsible for the accident.

Table 4.25 shows the number of KSI casualties in this group according to the age of the car driver. This shows that about half of these car passenger KSI casualties were in cars with drivers in the same age group (17-19).

**Table 4.25: Number of KSI car passengers aged 17-19 by driver age group (Jan 2000 – March 2010)**

Driver age	Killed	Seriously injured	Total
15-16	1	10	11
17-19	44	250	294
20-24	22	145	167
25-64	12	87	99
65+	0	1	1
Unknown	0	17	17
<b>Total</b>	<b>79</b>	<b>510</b>	<b>589</b>

#### 4.2.7.3 Motorcyclists

There were 245 motorcyclists (including pillion passengers) aged between 17 and 19 in the study period. Of these:

- 22 were killed
- 14 were pillion passengers
- 98% were male
- 56% were described as 'going ahead other', 18% (including 10 of those killed) were 'going ahead at a bend'
- 65% occurred near a junction
- 16% (and half of those killed) were in single vehicle accidents
- 56% occurred on a road with a 30mph limit; 35% on 60mph

Fifty-five per cent were reported as having some responsibility for the accident.

Sixteen were in accidents where contributory factors were reported. The most commonly reported contributory factors were:

- CF26 – Inexperience with type of vehicle (6 KSIs)
- CF23 – Excessive speed having regard conditions (3 KSIs)

#### 4.2.7.4 Car Drivers

There were 603 KSI car drivers aged 17-19 in the study period. Of these:

- 10% were killed
- 79% were male
- With respect to licences:
  - 40% had an unrestricted licence
  - 40% were 'R-drivers', that is, having passed their driving test within the last year, and who must not exceed 45 mph

- 8% were learner drivers
- 8% had no licence
- Where known, 18% of KSIs (and 46% of fatalities) were not wearing a seatbelt
- 13% overturned
- 45% were 'going ahead other', 35% were going ahead at a bend
- 36% occurred on a Saturday or Sunday
- 38% occurred between 6pm and midnight
- 74% occurred on a road with a 60mph speed limit
- 65% occurred away from a junction

Just over half (54%) of KSI casualties in this group were driving cars and were the only casualty in their vehicle. Either there were no passengers or any passengers were uninjured.

Twenty-nine per cent of KSI casualties in this group were driving cars in which there was a passenger casualty, most commonly aged 17-19.

Nine per cent of KSI casualties in this group were driving cars in which there were three or more injured passengers, most commonly aged 17-19.

In this group 98 KSIs were in accidents with contributory factors reported and attended by the police. Of these 82 were reported as having some responsibility for the accident. The most commonly reported contributory factors were:

- CF23 – Excessive speed having regard conditions (16 KSIs)
- CF26 – Inexperience with type of vehicle (16 KSIs)
- CF21 – Inattention or attention diverted (10 KSIs)
- CF4 – Wrong course/position (8 KSIs)

#### **4.2.8 20-24 Years: Young Adults**

Table 4.26 shows the number of killed and seriously injured casualties aged between 20 and 24 by casualty class.

**Table 4.26: Number of KSI casualties aged 20-24 by injury and user group (Jan 2000 – March 2010)**

<b>Casualty class</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Pedestrian	23	184	207
Pedal cyclist	0	15	15
Motorcyclist	30	238	268
Car Driver	103	885	988
Car passenger	57	532	589
Other vehicle occupants	9	102	111
<b>Total</b>	<b>222</b>	<b>1,956</b>	<b>2,178</b>

Ten per cent of KSI casualties in this age group were pedestrians, 45% were car drivers, 27% were car passengers and 12% were motorcyclists. There is a slight increase in the

proportion of car drivers and as a consequence a slight reduction in the proportion of car passengers. In addition, of the 2,178 KSI casualties:

- 42% were in daylight, 47% in darkness
- 72% were male and 28% female
- 46% of the casualties were considered responsible

#### 4.2.8.1 Pedestrians

There were 207 pedestrians killed or seriously injured aged between 20 and 24 in the study period. Of these:

- 11% were killed
- 67% occurred on a road with a 30mph speed limit
- 74% were male
- 55% occurred between 8pm and 4am
- 48% occurred on a Saturday or Sunday

Table 4.27 shows the number of killed and seriously injured pedestrians aged between 20 and 24 by location.

**Table 4.27: Number of KSI pedestrians aged 20-24 by injury and location (Jan 2000 – March 2010)**

Location	Killed	Seriously injured	KSI
In carriageway, on pedestrian crossing	0	12	12
In carriageway, crossing elsewhere within 50m of crossing	1	23	24
In carriageway, crossing elsewhere	3	66	69
On footway or verge	1	19	20
On refuge, central island or central reservation	1	2	3
In centre of carriageway	10	30	40
In carriageway, not crossing	5	21	26
Unknown or other	2	11	13
<b>Total</b>	<b>23</b>	<b>184</b>	<b>207</b>

Thirty-three per cent of KSI pedestrians aged 17-19 were located in the carriageway (crossing) but not close to a pedestrian crossing. Nineteen per cent were in the centre of the carriageway (either crossing or not crossing).

Table 4.28 shows the number of killed and seriously injured pedestrians aged between 20 and 24 by movement.

**Table 4.28: Number of KSI pedestrians aged 20-24 by injury and movement (Jan 2000 – March 2010)**

<b>Movement</b>	<b>Killed</b>	<b>Seriously injured</b>	<b>KSI</b>
Crossing from driver's nearside	2	51	53
Crossing from driver's nearside masked by static vehicle	0	11	11
Crossing from driver's offside	7	37	44
Crossing from driver's offside masked by static vehicle	1	12	13
In carriageway stationary-not crossing	5	15	20
Walking in carriageway facing traffic	1	7	8
Walking in carriageway back to traffic	4	16	20
Unknown or other	3	35	38
<b>Total</b>	<b>23</b>	<b>184</b>	<b>207</b>

Thirty-one per cent of KSI pedestrians aged 20-24 were crossing from the driver's nearside (either masked or not masked by a static vehicle). Similarly, 28% were crossing from the driver's offside (masked or not masked by a static vehicle).

In this group 182 of the KSI casualties were the only casualty in the accident.

Twenty-six pedestrians in this group were in accidents that were attended by the police and had contributory factors reported. The most commonly reported contributory factors were:

- CF55 – Pedestrian wearing dark clothing (4 KSIs)
- CF38 – Heedless of traffic crossing carriageway (3 KSIs)
- CF43 – Using pedestrian crossing without care (3 KSIs)

#### 4.2.8.2 Car Passenger

There were 589 KSIs in this group. Of these:

- 57 (10%) were killed
- 37% were rear seat passengers; 63% were front seat passengers
- Where the use of a seatbelt or restraint was known (402 cases), 70% were using a seatbelt or restraint
- 46% occurred in single vehicle accidents
- 14% were in vehicles which overturned
- 30% were in vehicles going ahead at a bend
- 63% were males
- 48% occurred on a Saturday or Sunday

Seventy-three per cent of vehicle drivers were not reported as being responsible for the accident.

Table 4.29 shows the driver ages for the KSI casualties in this group. Forty-seven per cent of this group were in cars with a driver of similar age (20-24).

**Table 4.29: Number of KSI car passengers aged 20-24 by injury and driver age (Jan 2000 – March 2010)**

Driver age	Killed	Seriously injured	Total
15-16	1	3	4
17-19	11	72	83
20-24	29	250	279
25-64	16	179	195
Unknown		28	28
<b>Total</b>	<b>57</b>	<b>532</b>	<b>589</b>

#### 4.2.8.3 Motorcyclists

There were 268 KSI motorcyclists (riders and passengers) aged 20-24 killed or seriously injured in the period. Of these:

- 30 were killed
- 12 were pillion passengers
- 92% were male
- 20% were in single vehicle accidents
- 57% were described as 'going ahead other'
- 71% were near a junction
- 50% occurred on a road with a speed limit of 30mph; 36% with 60mph

Over half (51%) were reported as having some responsibility for the accident.

Twenty-eight were in accidents where contributory factors were reported. The most commonly reported contributory factors were:

- CF23 – Excessive speed having regard conditions (5 KSIs)
- CF26 – Inexperience with type of vehicle (4 KSIs)

#### 4.2.8.4 Car Drivers

There were 998 Car drivers aged between 20 and 24 killed or seriously injured in reported collisions in the study period. Of these:

- 10% were killed
- 80% had an unrestricted licence
- 68% were male
- 72% were on roads with a 60mph speed limit
- 37% were in single vehicle accidents
- 18% were in vehicles which overturned
- 44% were described as 'going ahead other' and 32% were going ahead at a bend
- 63% were away from a junction
- 30% occurred between 6pm and midnight

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The use of seatbelts was unknown in 27% of cases. Where it was known, 13% of KSIs (including 40% of fatalities) were not wearing a seatbelt.

Sixty-three per cent of car drivers in this age group were the only occupant of their vehicle to be injured. Either there were no passengers or any passengers were uninjured.

In this group 99 KSIs were in accidents with contributory factors reported and attended by the police. Of these 76 were reported as having some responsibility for the accident. The most commonly reported contributory factors were:

- CF23 – Excessive speed having regard conditions (25 KSIs)
- CF26 – Inexperience with type of vehicle (8 KSIs)
- CF21 – Inattention or attention diverted (8 KSIs)
- CF4 – Wrong course/position (6 KSIs)
- CF22 – Alcohol or drugs – rider/driver (6KSIs)



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## 5 Summary of Findings

Overall there are two main groups that are at 'high risk' of being involved in a road collision in Northern Ireland. These are:

- Young people (aged 16-24), particularly males and in rural areas (drivers and pedestrians)
- Older people aged over 65 years old

The involvement of young people in road traffic collisions is of great concern and significant importance, with those aged 16-24 accounting for one-third of all road fatalities in Northern Ireland. The majority of 16-24 year old casualties are male. A greater amount of resource needs to be focused on reaching this particular group, arguably over and above all other demographic groups in Northern Ireland.

Although children (aged 0-15 years) are not at high risk per se, their involvement in road traffic collisions is of significant concern, featuring prominently in the NI Road Safety Strategy. In particular those children most at risk of involvement in a road traffic collision are from deprived areas and are male.

Other high risk groups have been identified from the literature as being:

- Those driving for work
- Foreign nationals

In the sections that follow, key themes and findings are summarised. It is not possible to comment on the precise allocation of resource that should be applied to each issue; however this summary should provide an indication of demographics and behaviours that need to be targeted.

## 5.1 Children

Table 5.1 provides a summary of the key themes found in collision data that may be used to inform the future focus of the RSEOS. Casualty class is presented in order of importance for each age group. Recent work suggests that it may be appropriate to focus resource on deprived (Colin Buchanan, 2010) and rural areas (Colin Buchanan, in preparation).

**Table 5.1: Key themes in the data for Children which may require focus**

Age group	Casualty class	Demographics	Behaviours	Key issues
0-3 (Pre-School/Nursery)	Car passenger		Restraint not used in 7% of KSIs*	
	Pedestrian	Males over represented	Crossing away from facilities Masked by parked vehicles	High severity outcome
4-6 (Foundation Stage)	Pedestrian	Males over represented	Crossing away from facilities Masked by parked vehicles Lack of supervision/escape	
	Car passenger		Seatbelt not worn in 13% of KSIs	
	Cyclist	Males over represented		Majority occurred at junctions
7-8 (Key Stage 1)	Pedestrian	Males over represented	Crossing away from facilities Masked by parked vehicles	
	Car passenger		Seatbelt not worn in 10% of KSIs	
	Cyclist	Males over represented		High number after school (5pm-7pm) Majority occurred at junctions
9-11 (Key Stage 2)	Pedestrian	Males over represented	Crossing away from facilities Masked by parked vehicles	
	Car passenger		Seatbelt not worn in 14% of KSIs	
	Cyclist	Males over represented	Majority occurred at junctions	Majority responsible

Age group	Casualty class	Demographics	Behaviours	Key issues
12-14 (Key Stage 3)	Pedestrian	Males over represented	Crossing away from facilities Masked by parked vehicles Walking/running into carriageway Dark clothing	Increasing number involved at night
	Car passenger	Large proportion in cars with a new (R-restricted) driver	Seatbelt not worn in 19% of KSIs Large proportion of single vehicle crashes (implies loss of control/speed)	
15-16 (Key Stage 4)	Cyclist	Males over represented		Majority occurred at junctions Majority after school More occurring at night and on 60mph roads
	Car passenger	High proportion being driven by slightly older friends (aged 17-19) – reflected in crash types (single vehicle) Quarter in cars with a new (restricted) driver	Seatbelt not worn in 35% of KSIs	High severity outcome
	Pedestrian	Males over represented	Crossing away from facilities Headless of traffic crossing carriageway	High severity outcome High proportion at night
	Motorcyclist	Males over represented	Wrong course/position Often responsible for collision	Large number at junctions Majority on low speed limit roads
	Illegal car driving	Often other young people of same age are injured	Inexperience with type of vehicle Excessive speed having regard to conditions	Very high severity outcome

\*Restraint use not available for all cases

## 5.2 Young People/Young Adults

Table 5.2 provides a summary of the key themes and findings found in collision data that should inform the future focus of the RSEOS. Casualty class is presented in order of importance for each age group.

**Table 5.2: Key themes in the data for Young People and Young Adults which may require focus**

Age group	Casualty class	Demographics	Behaviours	Key issues
17-19 (Young People)	Car driver	Males over represented High proportion (40%) of new (restricted) drivers	Poor seatbelt wearing rates (KSIs not wearing seatbelt 18%, fatalities 46%)*	High severity outcome High proportion at weekend
			Excessive speed having regard conditions Inexperience with type of vehicle Inattention or attention diverted Wrong course/position	High proportion at night (6pm to midnight) High proportion on rural roads High proportion of single vehicle accidents (at bends or overturned)
	Car passenger	High proportion being driven by same age group – reflected in crash types (single vehicle) Over quarter were in cars with new (restricted) driver Males over represented	Seatbelt not worn in 33% of KSIs	Very high severity outcome Large proportion at weekend
	Motorcyclist	Males over represented	Inexperience with type of vehicle Excessive speed having regard conditions	Often at junctions or bends
	Pedestrian	Males over represented	Crossing away from facilities Walking in carriageway back to traffic Alcohol/drugs Walking/running into carriageway Pedestrian wearing dark clothing	Majority occurred between 8pm and 4am Large proportion occurred at the weekend

<b>Age group</b>	<b>Casualty class</b>	<b>Demographics</b>	<b>Behaviours</b>	<b>Key issues</b>
20-24 (Young Adults)	Car driver	Males over represented	High proportion of KSIs not wearing a seatbelt (13%) Excessive speed having regard conditions Inexperience with type of vehicle Inattention or attention diverted Wrong course/position Alcohol/drugs	High severity outcome High proportion at night (6pm to midnight) High proportion on rural roads High proportion of single vehicle accidents (at bends)
	Car passenger	High proportion being driven by same age group – reflected in crash types (single vehicle) Males over represented	30% not wearing seatbelt	High severity outcome High proportion at weekend
	Motorcyclist	Males over represented	Excessive speed having regard conditions Inexperience with type of vehicle	High severity outcome Often at (or near) junctions
	Pedestrian	Males over represented	Crossing away from facilities Pedestrian wearing dark clothing Headless of traffic crossing carriageway Using pedestrian crossing without care	High severity outcome High proportion at night and at weekend

\*Restraint use not available for all cases

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## **5.3 Other High Risk Groups**

### **5.3.1 Older People**

With respect to drivers in this age group, the main causation factors (where the older driver was responsible) were:

- Heedless of traffic crossing carriageway
- Emerging from minor road without care
- Wrong course/position
- Inattention and attention diverted
- Turning right without care

The RAC Foundation report (Berry, 2011) suggested that older people should be educated to help them to effectively self-regulate their driving.

The NI Problem Profile highlighted a particular concern over the relatively high proportion of pedestrian casualties that were females over the age of 65.

### **5.3.2 Driving for Work**

Companies and individuals need to be educated concerning the risk that is faced by the workforce in driving for work. One role that could be undertaken by RSEOS is providing educational resources and guidance on Work Related Road Safety for responsible companies.

### **5.3.3 Foreign Nationals**

Foreign national drivers are responsible for a high proportion of the collisions that they are involved in (76% of fatal and 66% of serious injury collisions).

Important causation factors (in order of importance) for collisions involving foreign nationals are:

- Careless driving
- Alcohol/drugs – driver/rider
- Excessive speed

## **5.4 Adults**

Priorities for adults aged between 25 and 64 (so effectively the general population) are:

- Excessive speed
- Drink and drugs driving
- Carelessness/inattention for drivers and pedestrians
- Close following

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# Road safety priorities for high risk groups in Northern Ireland



This report has been produced in order to support a review of the Road Safety Education Officer Service (RSEOS) in Northern Ireland. The report provides a review of documentation and published data alongside new analyses of collision data in order to clearly identify what should be the priorities for the RSEOS going forward.

Overall there are two main groups that are at 'high risk' of being involved in a road collision in Northern Ireland. These are:

- Young people (aged 16-24), particularly males and in rural areas (drivers and pedestrians)
- Older people aged over 65 years old

The involvement of young people in road traffic collisions is of great concern and significant importance, with those aged 16-24 accounting for one-third of all road fatalities in Northern Ireland. The majority of 16-24 year old casualties are male. A greater amount of resource needs to be focused on reaching this particular group, arguably over and above all other demographic groups in Northern Ireland.

Although children (aged 0-15 years) are not at high risk per se, their involvement in road traffic collisions is of significant concern, and they feature prominently in the NI Road Safety Strategy. In particular those children most at risk of involvement in a road traffic collision are from deprived areas and are male.

Other high risk groups have been identified from the literature as being:

- Those driving for work
- Foreign nationals

In addition to the findings of the document and data review, new analyses identified key themes apparent in the Northern Ireland collision data.

## Other titles from this subject area

- INS005** How can we produce safer new drivers? S Helman, G B Grayson and A M Parkes. 2010
- TRL673** Monitoring progress towards the 2010 casualty reduction target – 2008 data. J Broughton and J Knowles. 2010

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