

Audit of Personal Injury Collisions involving Young Car Drivers in Essex

2007 – 2009



INTRODUCTION

This document is an in-depth report based on an analysis of personal injury collisions involving young car drivers aged from 17 to 25 in Essex along with an extensive review of the national literature.

The purpose of the report, which is aimed at road safety professionals and other parties interested in casualty reduction, is to inform the future direction of the Road Safety Strategy for the county. The activities of the Essex Casualty Reduction Board are data-led and as such, rely on information provided by statistical analysis to inform priorities for activity by identifying groups, behaviours and geographic areas most at risk as well as helping to identify developing trends. Data is shared with Essex County Council's partner agencies along with colleagues in the Area and District Offices, in order to facilitate a focussed approach at a local level.

The Government's Road Safety Strategy, *Tomorrow's Roads – Safer for Everyone*, published in March 2000, included targets to reduce the number of people killed or seriously injured (KSI) in Great Britain as a result of road traffic collisions by 40%, based on the annual average for 1994-98. This target is to be achieved by 2010. Although there is currently no national target specific to young car drivers, this group is involved in a large proportion of personal injury road collisions (over one-fifth of KSI casualties between 2007 and 2009 were as a result of a collision deemed the fault of a young car driver). This report will therefore assist Essex in directing interventions to the areas of greatest need and help to reduce further the number of people injured on the roads of Essex each year.

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Executive summary

The following report provides a detailed data analysis of STATS19 information recorded by the police for personal injury collisions in Essex which involved young car drivers between January 2007 and December 2009. Trends identified for Essex were similar to national trends¹ and key findings are shown below. These findings should be considered when identifying intervention strategies aimed at young car drivers.

Overarching trends

More than half of all young people in Essex aged between 17 and 25 hold a full car licence - assuming all these are regular drivers this equates to over 80,000 drivers. Analysis has shown that cars driven by young drivers were generally older than those driven by older drivers which may increase the injury risk of the occupants or increase the severity of any injuries received in the event of a collision.

In Essex, young car drivers were deemed responsible for nearly one third of all fatal and serious car collisions between 2007 and 2009 despite making up less than one-fifth of the car driver population.

Collisions deemed the fault of young car drivers, especially teenagers, resulted in more casualties compared to collisions deemed the fault of older car drivers. This may be a reflection of a greater number of passengers carried (and subsequently injured) in cars driven by young car drivers.

Men are more likely to be licence-holders/main drivers than females but the large discrepancy in crash rate with respect to age and gender implies that being male and being young makes you a more risky driver:

- Both male and female young car drivers had higher collision rates compared to older drivers aged 26 and over from the same gender group. Male teenagers had the highest collision rate of all car driver groups;
- Teenage male drivers in Essex had nearly five times the blameworthy collision rate of older male drivers aged from 26 to 59. Teenage females had three times the blameworthy collision rate of older female drivers aged from 26 to 59. Collisions deemed the fault of teenage female drivers have been increasing in recent months;
- Drivers in their early 20s (both sexes) had double the blameworthy collision rate of older drivers aged from 26 to 59 from the same gender group.

When do young car drivers crash?

Young car drivers were involved in proportionally more 'off-peak' collisions i.e. those between 7pm and 7am compared to older drivers, as well as proportionally more weekend collisions. This partly reflects differences in travel patterns between young and older drivers with the former making more evening and night-time trips, a time when factors such as alcohol, drugs, being tired, speed and peer pressure are all likely to contribute to collision risk [reference 4].

¹ Comparing trends for Essex with key findings listed in the IAM Motorcycling Facts report (J. Hopkin) as well as with other research literature (referenced in square brackets).

Although most young car driver collisions happened in daylight a greater proportion happened after dark compared to older drivers, with young males and teenage females having the highest proportion. This again reflects travel patterns but may also be related to a lack of night-time driving experience among young car drivers, with novice drivers rarely taking lessons in darkness in order to familiarise themselves with the different skills needed. Young drivers may also perceive the roads at night to be safer as there is less traffic and as a result they may increase their driving speed or pay less attention to the road [references 4 and 8].

Evidence suggests that young car drivers and teenage females in particular cope less well with driving in bad weather or on wet road surfaces compared to older drivers.

Where do young car drivers crash?

Collisions involving young car drivers, like those for older drivers, were most common on built-up roads where they peaked at junctions. With respect to KSI collisions, those involving all driver age groups were more common on non built-up roads but with young car drivers having proportionally more away from junctions on B-class and unclassified non built-up roads. This is a likely reflection of the ability of young car drivers to safely negotiate bends, with a far greater proportion of young drivers recorded as going ahead on a bend at the time of a crash compared to older drivers. National research has shown that in bend situations young male drivers often choose speeds which are significantly faster than the speeds chosen by either older males or female drivers of any age [reference 7].

The districts of Epping Forest, Colchester, Chelmsford and Braintree recorded the largest numbers of collisions deemed the fault of a young car driver. Within these districts this group was deemed responsible for between 20 and 25% of all recorded road collisions.

Most young car drivers involved in collisions in Essex came from the districts of Chelmsford and Colchester. However districts with the highest collision rates were Maldon, Uttlesford and Tendring (184, 173 and 171 crashes per 10,000 young car drivers respectively – these districts also had the highest blameworthy crash rates).

Why do young car drivers crash?

Compared to young female drivers, young male drivers were more commonly associated with 'culpable faults' such as careless/reckless driving or being in a hurry, aggressive driving and/or exceeding the speed limit, as well as a loss of control and driving under the influence of drugs and/or alcohol. Young women drivers were more commonly associated with 'judgement faults' such as failing to judge another vehicle's path or speed and poor turn or manoeuvre.

Young male drivers recorded a slightly higher proportion of overtaking collisions than other driver groups. This trend, mirrored nationally, suggests that young drivers fail to judge overtaking opportunities and this could be due to their more aggressive driving style and choice of higher driving speeds. Overtaking collisions involving young car drivers commonly occur on bends where there is little visibility ahead [references 1 and 4].

Young car drivers also recorded proportionally more single vehicle collisions compared to older drivers and skidding was recorded for many of these, implying that inappropriate (too fast) speed was a factor. Research suggests that a higher degree of risk acceptance amongst younger drivers leads to risk-taking behaviour such as speeding with some young drivers not perceiving speed as a high risk behaviour due to their overconfidence in their control and recovery skills [reference 1].

Other considerations

National research identified particular factors which may be relevant to young car drivers in Essex. A list of these factors is given below.

- ❖ Seat-belt wearing: Nationally, seat-belt wearing is lowest amongst young drivers involved in collisions and amongst young males in particular. Seatbelt-wearing is also lower for drivers involved in night-time collisions compared to those involved in collisions during daylight hours [reference 3];
- ❖ Attitude: Research shows that different attitudes to driving and road use exist at an early age with boys having an increased tendency to enjoy faster speeds compared to girls and being more likely to condone violations committed by drivers such as speeding. Boys think driving will be easier and make them popular to a greater extent than do girls and are also more influenced by peer pressure (“will drive the way their friends expect them to”). The same patterns seen for pre-drivers exist for drivers: males report more sensation seeking, anti-social and competitive behaviour than females with these particular characteristics positively associated with an affinity for fast speeds and acceptance of driving infringements. In a nutshell, young drivers know the correct driving behaviour but attitudes, opinions and beliefs stop them from practising it [references 1 and 7];
- ❖ Hazard perception: Although young car drivers have excellent vehicle control skills and fast reactions they have poor hazard perception and tend to over-estimate their abilities. Young car drivers take longer to react to hazardous situations than more experienced drivers [reference 9].
- ❖ Parental influence: There is evidence to suggest that the driving attitudes of parents influence those of their children when they become drivers [reference 9];
- ❖ Novice drivers: The collision risk for novice drivers is highest during the first year after the test has been passed. Driver age and driving experience combine to lessen the risk with more mature novice drivers having a much lower risk compared to younger novices. It has been suggested that when individuals first embark on their driving career they should be made aware of the types collision most likely to involve their age and gender group as reducing the confidence displayed by novice drivers may lessen their collision risk [references 3, 4 and 7];
- ❖ Driving for work: In Essex 7% of teenage car driver collisions occurred when the driver was on work-related journey, for car drivers in their 20s through to their 50s this figure doubled to 15%. Research has suggested that young car drivers/novice drivers may be less prepared with respect to driving for work as they may be required to drive under conditions not covered by the driving test (e.g. driving at night, on motorways and driving larger vehicles than they are used to) [reference 5];
- ❖ Passengers: Driving with passengers significantly increases the risk of a collision for young car drivers and for young male drivers in particular. The more passengers the higher the risk as they are (i) a distraction to the young driver, (ii) may encourage them to drive in a more risky way and (iii) give the driver a perceived lack of control over their driving style e.g. speeding. Young car drivers are also more likely to be driving older, smaller cars than older drivers which, when carrying a lot of passengers, handle very differently compared to single occupancy [references 1, 6, 8 and 10].

Background information

Young people can apply for a provisional driving licence up to 3 weeks before their 17th birthday and sit the theory test on the day they reach 17. National research [reference 3] has shown that the risk of a crash is negligible during the learning to drive period but that this risk increases markedly in the year following the passing of the test. As age and driving experience increase so the likelihood of a crash falls, with driving experience being the dominant factor. Inexperienced drivers are predominantly young people and drivers aged from 17 to 25 years old crash more often than expected given their numbers on the roads.

In Essex nearly half of all those aged between 17 and 19 possess a full car driving licence with this figure rising to nearly two-thirds for those aged between 20 and 25. This report was commissioned by Essex County Council to provide an analysis of personal injury collisions involving young car drivers in Essex and make recommendations from the findings in order to inform Council road safety strategies and interventions with respect to the safety of riders, their passengers and other road users in Essex. The last young car driver audit was produced in 2003 by Mouchel and was a detailed analysis of collisions involving car drivers aged from 17 to 25. The following report presents a similar analysis for the 3 years to December 2009.

Approach

All personal injury collisions involving car drivers aged 17 to 25 were analysed alongside separate analyses for older car drivers to identify any age-related differences. Driver age groups were selected as 17 to 19, 20 to 25, 26 to 59, 60 to 79 and 80 plus. For certain analyses the two oldest age groups were combined to form a 60 plus age group in order to increase the data set and make trends more reliable. Three years collision data to December 2009 was extracted and tabulated from the Accsmap database with some analyses done after exporting data from Accsmap into MS Excel.

Trends relating to all collisions involving young car drivers are shown throughout the report under appropriate headings, with trends relating to KSI collisions presented separately where possible (KSI collisions represented a smaller data set compared to all collisions which in some cases made it difficult to identify reliable trends).

Individual collision records were dip sampled to determine causes. The vehicle recorded as Vehicle 1 (V1) by Essex Police is normally associated with the vehicle most likely to carry the blame for the collision and so causation factors associated with this vehicle give insight into the causes or behaviours that precipitated the collision. Each collision record lists a maximum of 6 contributory factors (judged by a police officer to have been relevant), with each factor tagged as either 'very likely' or 'possible'. For the purposes of this report, and to improve accuracy, only contributory factors with a 'very likely' tag were considered.

Comparisons were made between the number of collisions recorded for each Essex district but a lack of data with respect to the number of car trips made by young car drivers as well as distance travelled, both in Essex and its districts, prevented appropriate comparisons to be made. Comparisons were instead made using driver population data obtained from the DVLA and although not as accurate as comparisons based on car use, did give an indication of any disparity between districts.

Analysis

Car collisions in Essex: 1994 to 2009 timeline

The Government has a target to reduce the number of people killed or seriously injured on the road by 40% in 2010 compared to the baseline figure (the annual average for the baseline period from 1994 to 1998). Between 2007 and 2009 collisions deemed the fault of a car driver (Vehicle 1) resulted in 1573 KSI casualties - 70% of all KSI casualties recorded in Essex for this period. Collisions deemed the fault of a young car driver resulted in 488 KSI casualties, 31% of all KSI casualties deemed the fault of a car driver and 22% of all KSI casualties recorded over the study period. Interventions which target young car drivers would, therefore, have a marked impact on KSI casualties in Essex and help the County achieve the Government's KSI reduction target by 2010.

By 2009 collisions involving young car drivers in Essex had reduced by two-fifths compared to baseline levels (792 fewer collisions). KSI collisions reduced by one-half compared to baseline levels (160 fewer KSI collisions).

Figure 1a shows the percentage reduction in KSI collisions deemed the fault of a car driver (Vehicle 1) compared to the corresponding baseline figure. Reductions in 'fault' KSI collisions were broadly similar across all car driver age groups with reductions for older drivers aged 60 and over smaller than those seen for younger age groups; this is a likely reflection of increasing numbers of older drivers on the roads in line with local and national population trends (the population of older people is increasing).

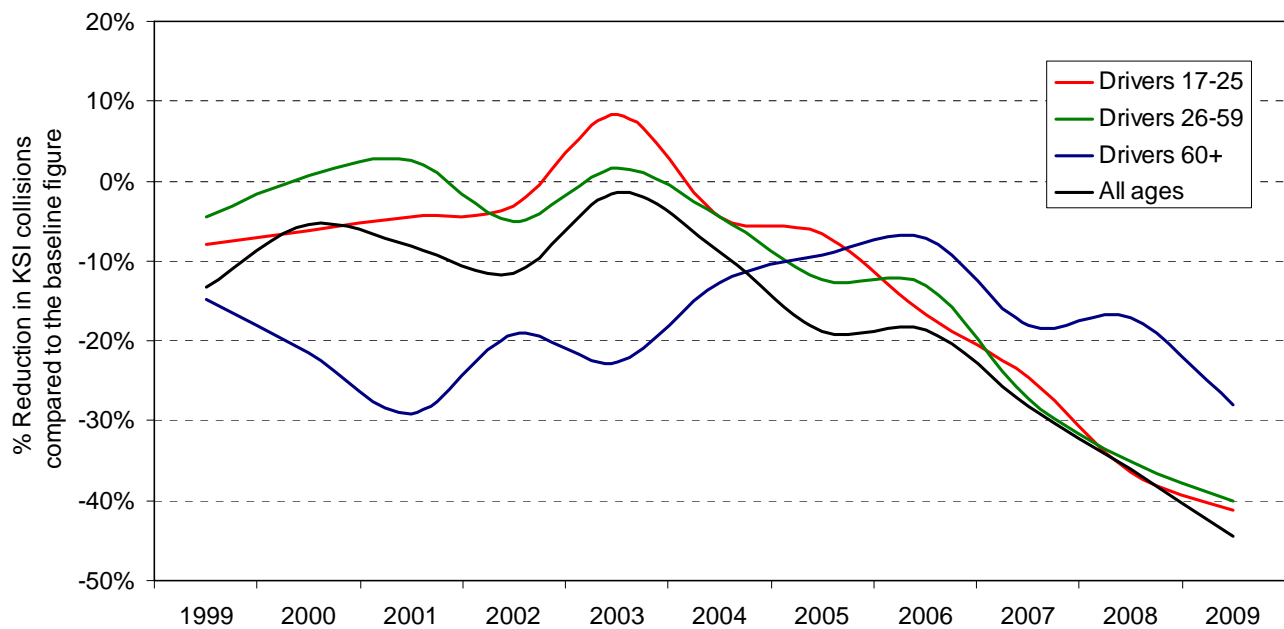


Figure 1a: The percentage change in the annual number of KSI collisions recorded between 1999 and 2009 compared to the baseline figure: car drivers of Vehicle 1 by age

Figure 1b shows the 12-monthly rolling totals for KSI collisions deemed the fault of a car driver between 2007 and 2009, normalised to the maximum number over this time period. It clearly shows that the number of KSI collisions deemed the fault of a teenage car driver increased during 2009 whereas those for drivers in their early twenties did not. Deeper analysis showed that although more KSI collisions continued to be deemed the fault of teenage male car drivers the number deemed the fault of teenage females was increasing and this emerging group may need special interventions to prevent this recent development translating into a long term trend.

Deeper analysis showed that over the study period young car drivers were deemed to have caused 32% of fatal car collisions¹, the corresponding figure for serious collisions being 29%.

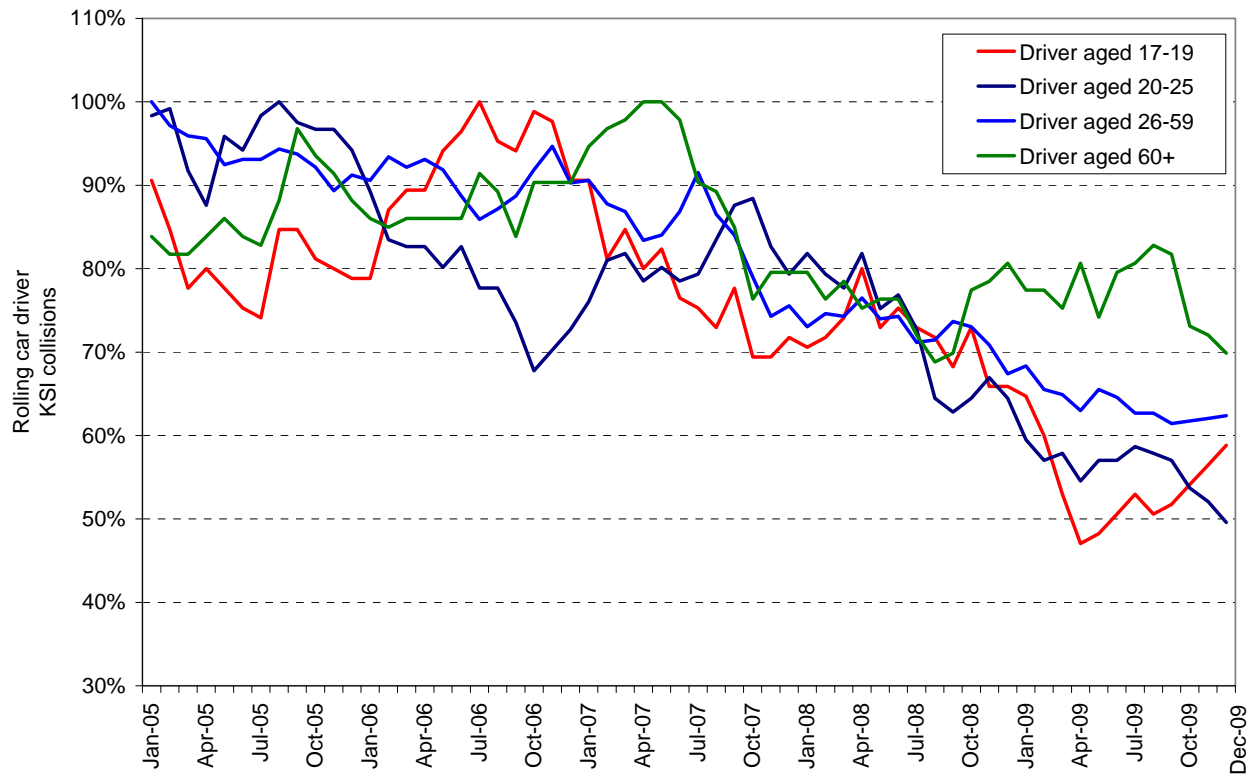


Figure 1b: Rolling 12-monthly KSI Collisions by driver age (Vehicle 1): normalised to maximum value between 2005 and 2009

¹ One third of all fatal car collisions where a car driver was recorded as vehicle 1

Effect of driver age

Between 2007 and 2009, car drivers aged 17 to 19 had many more collisions than would be expected given the number of licence-holders in this age group. Drivers aged 20 to 25 also had more collisions than would be expected. This group crashed less often than younger drivers but more often than drivers aged 26 and over (who crashed in proportion to the number of licence-holders in this age group), see Figure 2. A full breakdown of collisions by driver age is given in Appendix 1 on page 28.

Trends relating to Vehicle 1 were the same as those shown by Figure 2.

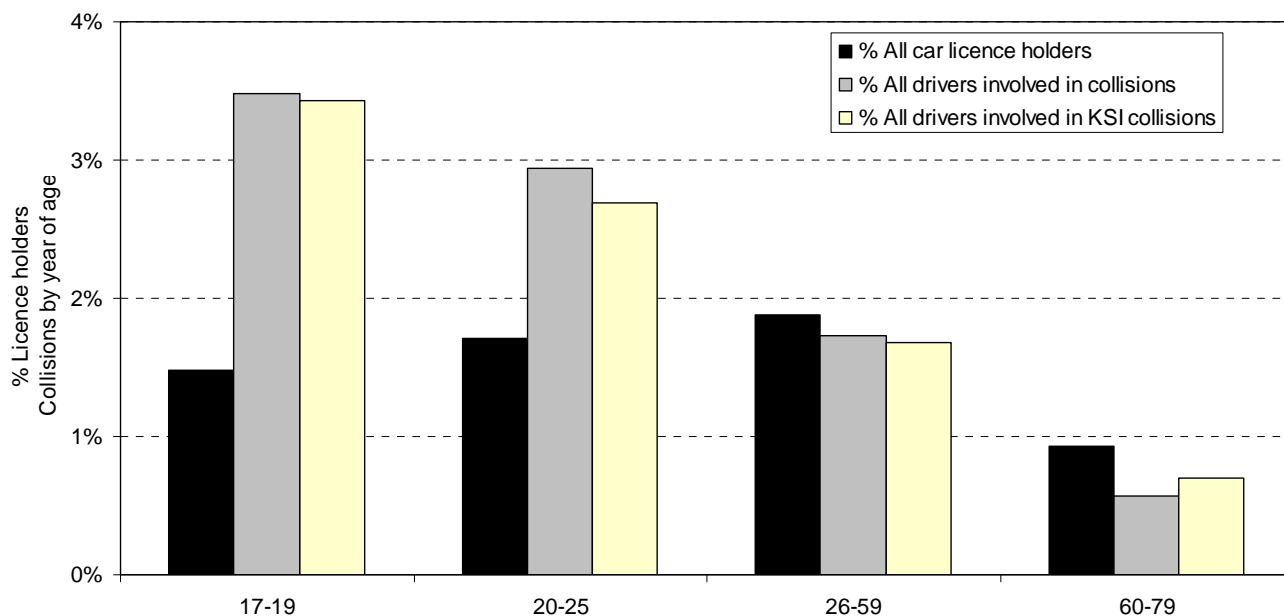


Figure 2: Collisions involving car drivers: percentage by year of driver age

Table 1a on the following page shows the number of casualties resulting from collisions deemed the fault of a car driver (Vehicle 1). The number of casualties per collision was greater for collisions deemed the fault of a young car driver, with the casualty rate being greatest for teenage drivers.

Car user casualties were the biggest injury group for all car driver (Vehicle 1) age groups with the number of car users injured per collision greatest for young car drivers; this group were involved in fewer collisions resulting in injury to other road users, most notably pedestrians, compared to older drivers and this is in line with national trends (young car drivers tend to drive at times when a pedestrian presence is low).

More car drivers were injured than passengers for each driver age group but the proportion of car passengers injured was greater for young car drivers, especially with respect to KSI injury. Deeper analysis showed that more car passengers were injured when a male car driver was deemed at fault rather than a female driver (for all age groups) but that collisions deemed the fault of a teenage driver (both sexes), or a male driver aged between 20 and 25, resulted in the highest number of car passenger injuries, see Table 1b on page 9.

		Casualties: Road user group						
Driver age	Collisions	Total	Other	Pedestrians*	Pedal cyclists	Car drivers	Car passengers	P2W users
17 to 19	1004	1494	22	68	24	827	507	46
20 to 25	1453	2031	51	138	51	1175	534	82
26 to 59	3840	5063	171	555	264	2752	1033	288
60 to 79	829	1095	36	163	58	539	225	74
80 plus	175	234	12	31	16	105	59	11
Total	7301	9917	292	955	413	5398	2358	501
		Casualties per collision						
17 to 19		1.49	0.02	0.07	0.02	0.82	0.50	0.05
20 to 25		1.40	0.04	0.09	0.04	0.81	0.37	0.06
26 to 59		1.32	0.04	0.14	0.07	0.72	0.27	0.08
60 to 79		1.32	0.04	0.20	0.07	0.65	0.27	0.09
80 plus		1.34	0.07	0.18	0.09	0.60	0.34	0.06
Total		1.36	0.04	0.13	0.06	0.74	0.32	0.07
		KSI Collisions	KSI Casualties					
17 to 19	167	203	1	22	6	101	62	11
20 to 25	234	285	4	46	12	120	81	22
26 to 59	655	737	9	144	46	333	112	93
60 to 79	173	190	2	41	8	71	34	34
80 plus	41	44	1	9	4	18	9	3
Total	1270	1459	17	262	76	643	298	163
		KSI Casualties per collision						
17 to 19		1.22	0.01	0.13	0.04	0.60	0.37	0.07
20 to 25		1.22	0.02	0.20	0.05	0.51	0.35	0.09
26 to 59		1.13	0.01	0.22	0.07	0.51	0.17	0.14
60 to 79		1.10	0.01	0.24	0.05	0.41	0.20	0.20
80 plus		1.07	0.02	0.22	0.10	0.44	0.22	0.07
Total		1.15	0.01	0.21	0.06	0.51	0.23	0.13

Table 1a: Road casualties resulting from collisions deemed the fault of a car driver (car recorded as Vehicle 1)

*In collisions involving a vehicle(s) and a pedestrian, the vehicle will automatically be coded as Vehicle 1 even if the pedestrian was deemed responsible for the collision.

		Male car driver (Vehicle 1)				Female car driver (Vehicle 1)			
Driver age		17 - 19	20 - 25	26 - 59	60 plus	17 - 19	20 - 25	26 - 59	60 plus
Passenger casualties	Front seat	0.23	0.17	0.09	0.13	0.20	0.11	0.08	0.07
	Back seat	0.16	0.10	0.05	0.03	0.13	0.06	0.04	0.03
	Total passengers	0.39	0.27	0.14	0.16	0.33	0.16	0.12	0.09

Table 1b: Car passenger casualties (V1) per collision by car driver (V1) age and gender

Effect of gender

Male car drivers (all ages) comprised 60% of all car drivers involved in collisions; the corresponding figure for KSI collisions was 67%. This is partly to be expected as men are more likely to be main drivers than women although the proportion of women as main drivers has been increasing in recent years, reflecting an increase in licence holding among women [reference 2].

Data in Table 2 shows the number of car collisions per head of driver population in Essex. In order to improve accuracy, rates shown were calculated from crash data pertaining to drivers who both lived and crashed in Essex (not all collisions in Essex would have involved resident drivers and Essex car drivers are also involved in collisions outside the County boundary²).

	Driver population (2010, DVLA)	Rate per 10,000 drivers				
		Collisions	KSI Collisions	Collisions (Vehicle 1)	KSI Collisions (Vehicle 1)	
Males						
17-19	12675	200	32	146	26	
20-25	29060	116	19	76	14	
17-25	41735	142	23	98	17	
26-59	181493	60	10	30	6	
60-79	59144	45	8	24	5	
80 plus	9976	46	9	36	8	
Females						
17-19	11705	122	15	76	11	
20-25	27534	96	9	46	6	
17-25	39239	104	11	55	7	
26-59	171511	54	7	23	4	
60-79	43307	33	6	17	4	
80 plus	4529	37	9	29	7	

Table 2: Essex collisions by driver age and gender: Annual rate per 10,000 drivers (drivers from Essex only)

² Data from MAST Online (2007-09) showed that around 25% of all Essex car drivers who were involved in collisions throughout the UK crashed outside the Essex County boundary (with 37% of all car drivers involved in collisions in Essex not County residents).

Table 2 on the preceding page also shows that:

- Teenage drivers had the highest number of collisions (and KSI collisions) per head for each gender group, followed by drivers in their early twenties;
- Of all driver age groups, teenage drivers exhibited the largest gender difference with respect to collision rates, especially for KSI collision rates. Gender differences reduced with increasing driver age, shown graphically by Figure 3 below;
- Young male drivers aged from 17 to 25 had more than double the KSI collision rate of similarly aged young female drivers;
- The collision rate (and KSI collision rate) for blameworthy collisions was nearly 5 times higher for teenage male car drivers than for male drivers aged 26 to 59, male drivers aged from 20 to 25 had more than double the ‘older male driver’ rate;
- The collision rate (and KSI collision rate) for blameworthy collisions was three times higher for teenage female car drivers than for female drivers aged 26 to 59, female drivers aged from 20 to 25 had double the ‘older female driver’ rate.

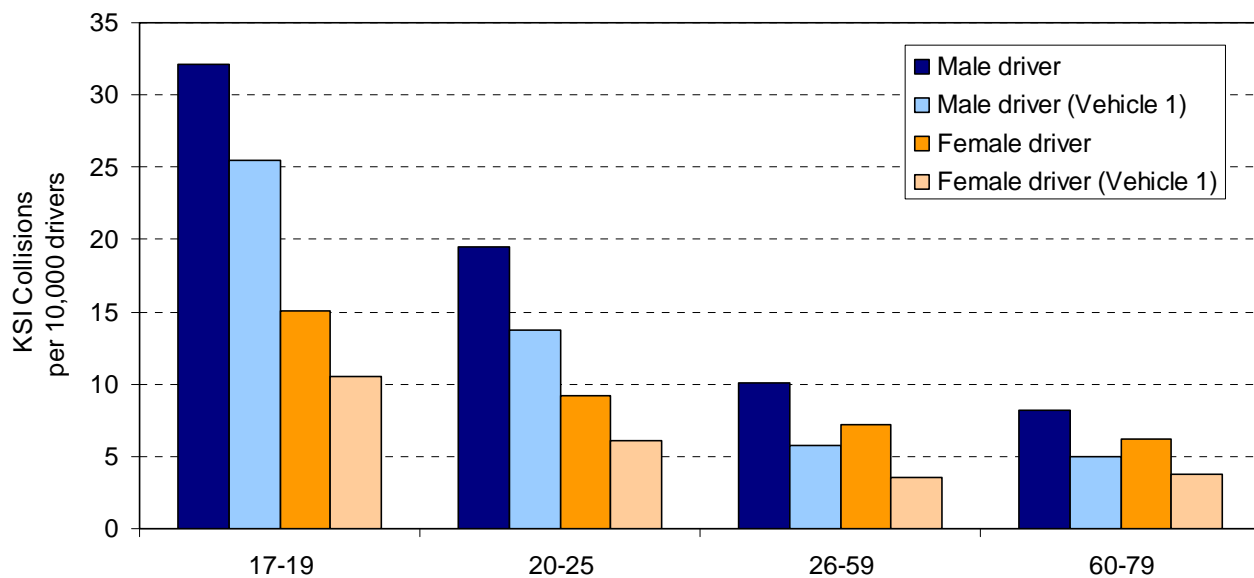


Figure 3: KSI collisions per 10,000 car drivers (car licence-holders) by driver age and gender
Data shown here is for Essex drivers who crashed in Essex

Up to the age of 60 collisions deemed the fault of a male car driver (Vehicle 1) had higher severity ratios³ compared to collisions deemed the fault of female drivers, see Figure 4 overleaf. The severity ratio was not greater for younger drivers aged 25 or under but above the age of 60 increased for both sexes, a likely reflection of age-related frailty, with the highest severity ratio recorded for female drivers in their 80s and over.

³ The severity ratio is the proportion of KSI collisions to all collisions

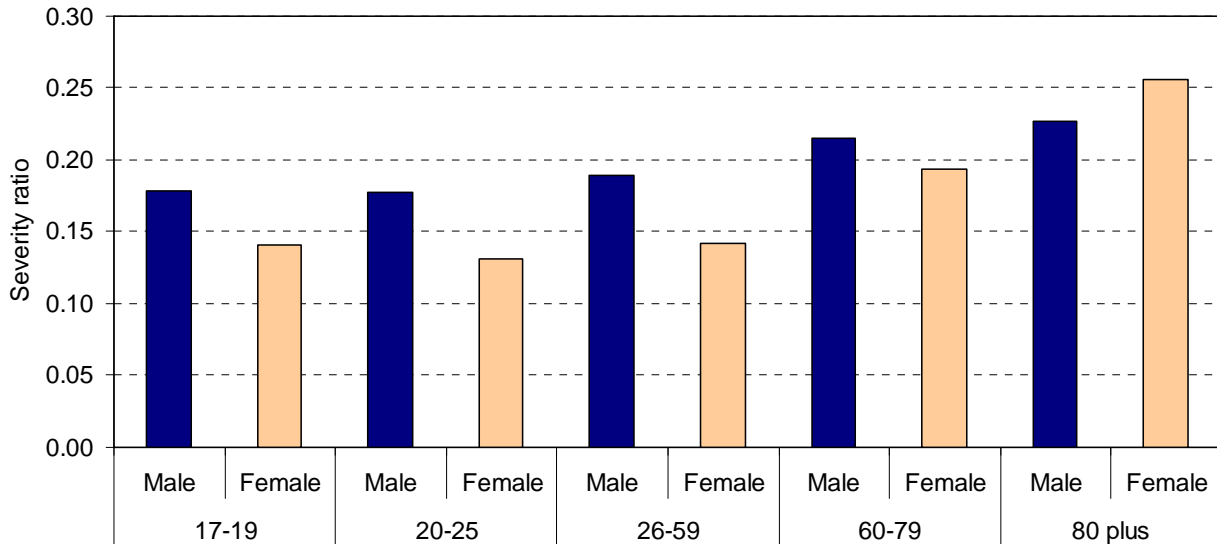


Figure 4: Severity ratio of collisions by driver age and gender (Vehicle 1)

When do collisions involving young car drivers occur?

Seasonality and day of week

Approximately one-quarter of young car driver collisions occurred in each of the four seasons.

Young car drivers had proportionally more weekend collisions compared to older drivers. This proportion increased for KSI collisions for all age and gender groups, with young car drivers still having proportionally more compared to older drivers, see Figure 5.

Male drivers crashed more often at the weekend than females although there was no gender difference between male and female teenagers.

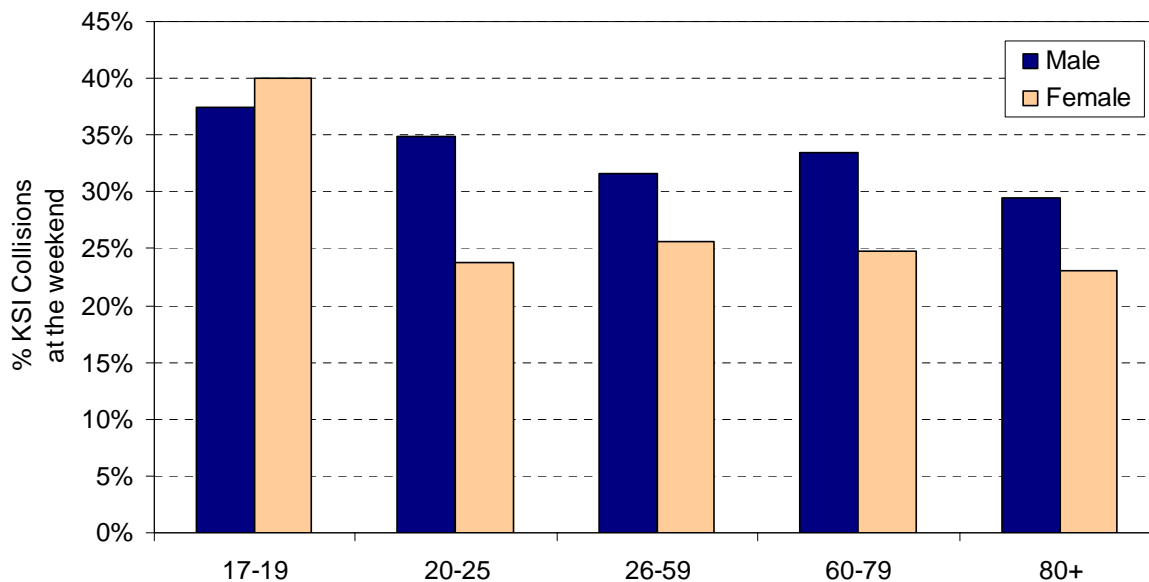


Figure 5: Car drivers involved in KSI collisions by age group: percentage at the weekend

Time of day

Temporal trends were broadly similar for all age groups with peaks on weekdays during the early and late main commuting periods (8-9am and 5-6pm) and at lunch-time (1-2pm). However, with respect to the late afternoon peak, collisions involving teenage drivers did not fall away as sharply as they did for older drivers, continuing well into the evening before tailing off around midnight, see Figure 6(i).

Both teenagers and young drivers in their early 20s were involved in proportionally more collisions in the late evening and at night than older drivers and this trend was more pronounced for KSI collisions.

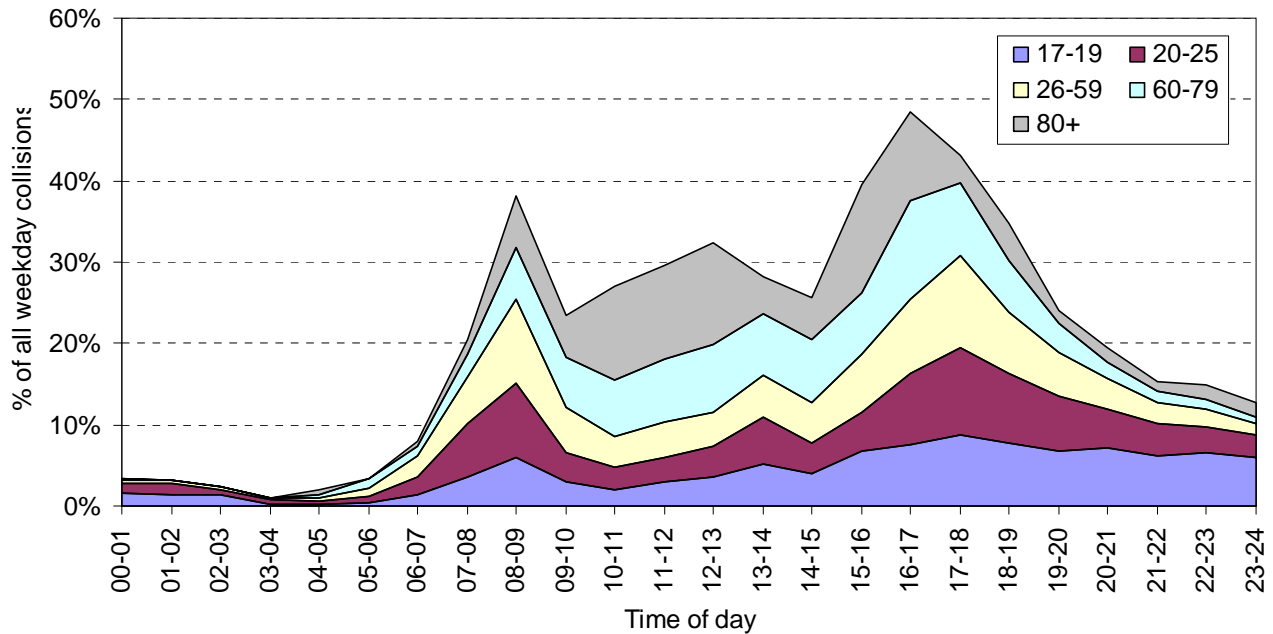


Figure 6(i): Collisions by hour of day (Monday to Friday) by age of driver involved: cumulative percentage by age group

With respect to weekend collisions, trends across the age groups were again broadly similar with collisions increasing after 8am to peak around 1pm. Again, whereas collisions involving drivers aged 26 and over gradually reduced during the afternoon and evening, those involving younger drivers continued throughout the evening and into the early hours, see Figure 6(ii) overleaf. Deeper analysis showed that young male car drivers had a relatively high proportion of collisions late on Friday nights/early on Saturday mornings (the reliability of trends here was reduced by limited data).

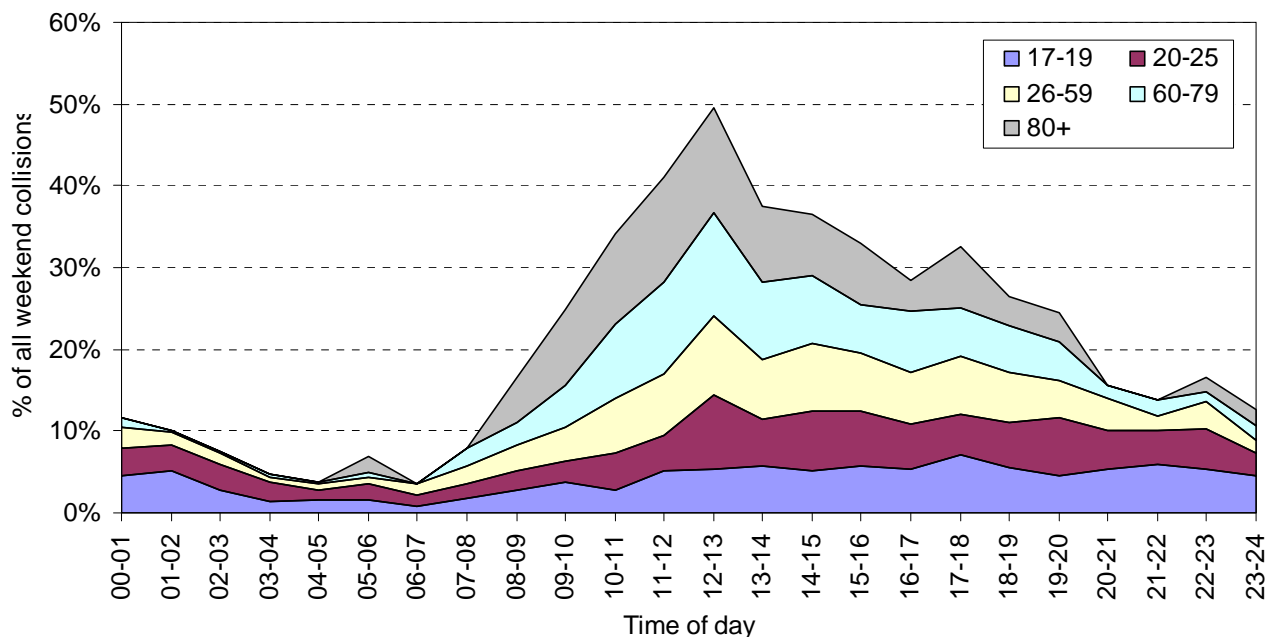


Figure 6(ii): Collisions by hour of day (Saturday and Sunday) by age of driver involved: cumulative percentage by age group

Off-peak collisions are classed as those between 7pm and 7am. Young car drivers, especially teenagers, had the highest proportion of ‘off-peak’ collisions both during the week and at weekends, see Table 3 below. For all driver age groups the proportion of ‘off peak’ collisions was greater for KSI collisions.

Driver age:		17-19	20-25	26-59	60 plus
Percentage of all weekday collisions (Monday to Friday) which occurred ‘off-peak’					
All Collisions	Male driver	41%	34%	25%	13%
	Female driver	35%	21%	15%	9%
KSI Collisions	Male driver	48%	45%	35%	18%
	Female driver	44%	26%	20%	13%

Driver age:		17-19	20-25	26-59	60 plus
Percentage of all weekend collisions (Saturday to Sunday) which occurred ‘off-peak’					
All Collisions	Male driver	47%	45%	28%	15%
	Female driver	37%	30%	17%	8%
KSI Collisions	Male driver	45%	55%	29%	13%
	Female driver	42%	42%	18%	19%

Table 3: Car drivers involved in collisions: percentage occurring between 7pm and 7am on weekdays and weekends

Light conditions

The proportion of collisions occurring in darkness was highest for young car drivers, especially teenagers. Male drivers of all age groups were more likely to be involved in collisions after dark than female drivers although the gender difference was less apparent for teenage drivers and drivers from the oldest age group, see Figure 7.

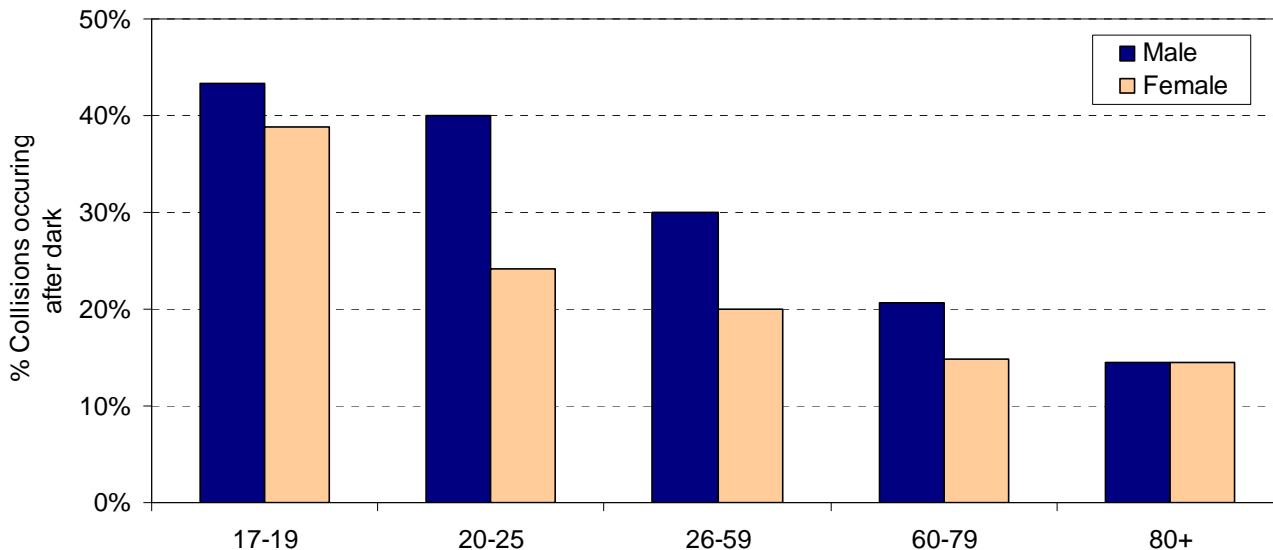


Figure 7: Collisions occurring in the hours of darkness: percentage by age group

Road surface and weather conditions

Most collisions occurred during fine weather and when the road surface was dry, regardless of the age of the driver involved. However, the proportion of collisions which occurred during inclement weather (rain, snow, fog or mist), or when the road surface wet or damp, was higher for young car drivers, especially teenage females, compared to older drivers. KSI collisions did not increase markedly during inclement weather or when the road surface for wet or damp (for all driver age groups).

Where do collisions involving young car drivers occur?

Built-up and non built-up roads

Regardless of the age of the driver involved most collisions occurred on built-up roads⁴, peaking on unclassified roads.

KSI collisions occurred slightly more often on non built-up roads with those involving young male drivers, especially teenagers, peaking on B-class and unclassified roads, see Figure 8(i) overleaf. Very few male teenage drivers crashed on motorways.

⁴ Built-up roads are those with an upper speed limit of 40mph or less; non-built up roads are those with an upper speed limit of 50mph or more.

With respect to KSI collisions involving female drivers on non built-up roads, the difference between the age groups was less marked. However, KSI collisions involving teenage female drivers peaked on unclassified roads, see Figure 8(ii).

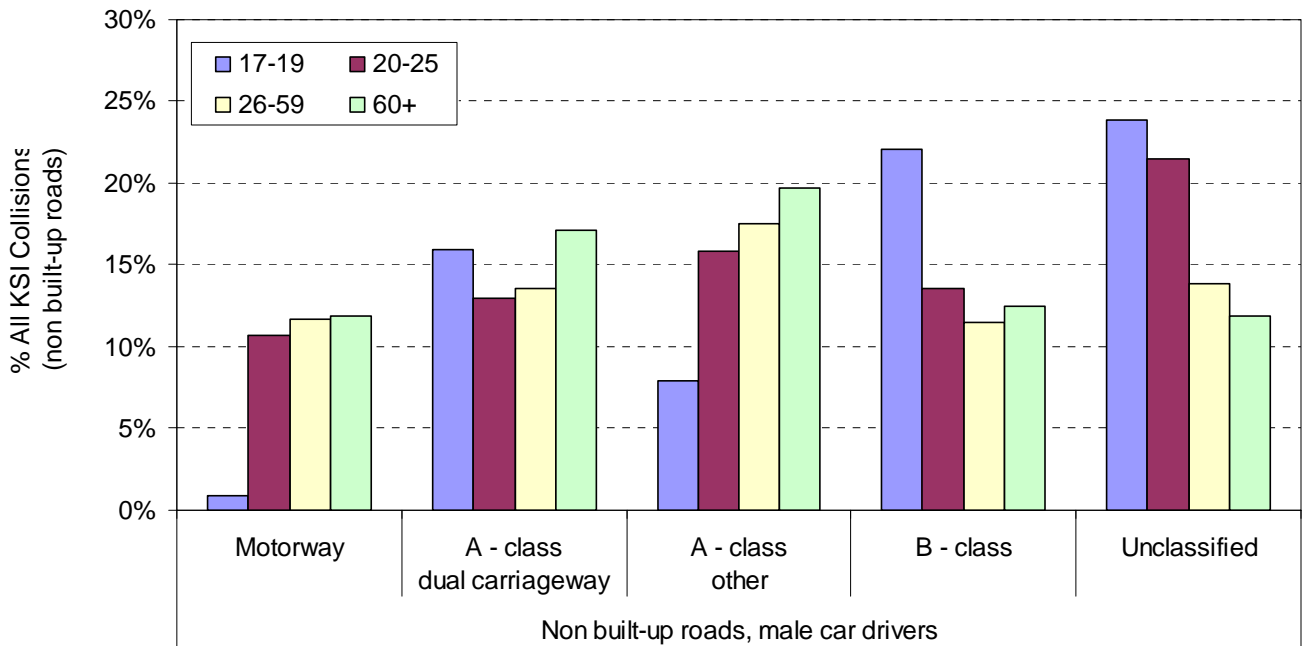


Figure 8(i): KSI Collisions involving male car drivers on non built-up roads: percentage by age group and road class

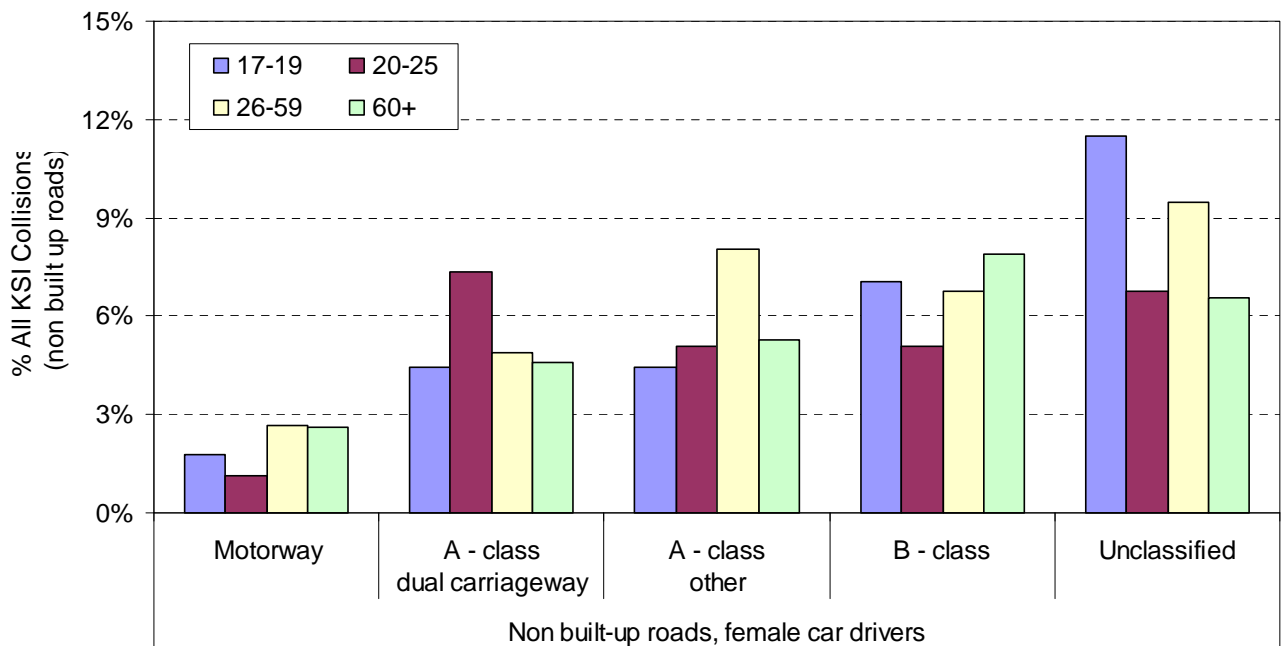


Figure 8(ii): KSI Collisions involving female car drivers on non built-up roads: percentage by age group and road class

Junctions

Collisions which occurred on built-up roads peaked at junctions whereas on non built-up roads they peaked away from junctions. Young car drivers, especially teenagers, had proportionally more collisions away from junctions on non built-up roads than did older drivers.

What types of collisions are young car drivers involved in?

Single and multiple vehicle collisions

Table 4(i) below and 4(ii) overleaf show that:

- Young car drivers, especially teenagers, had proportionally more single vehicle collisions than older drivers;
- Young male drivers were involved in a higher proportion of single vehicle collisions compared to young female drivers;
- A higher proportion of KSI collisions were single vehicle collisions for all age and gender groups; and
- Young car drivers were less likely to be involved in single vehicle collisions involving pedestrians or cyclists. Collisions involving young car drivers tended to occur during the evenings and later at night, a time when a pedestrian and pedal cyclist presence is likely to be low.

Driver age	Driver sex	Single vehicle collision	Single vehicle collision involving pedestrian or cyclist	Two or more vehicles involved
17 - 19	Male	22%	5%	74%
	Female	18%	4%	77%
20 - 25	Male	16%	5%	78%
	Female	9%	4%	86%
26 - 59	Male	8%	6%	86%
	Female	5%	7%	88%
60 - 79	Male	3%	9%	88%
	Female	5%	9%	86%

Table 4 (i): Collision types by driver age: percentage of all collisions per age group (totals may not add up to 100% due to rounding)

Driver age	Driver sex	Single vehicle collisions	Single vehicle collision involving pedestrian or cyclist	Two or more vehicles involved
17 - 19	Male	25%	7%	68%
	Female	22%	6%	72%
20 - 25	Male	23%	10%	67%
	Female	16%	13%	71%
26 - 59	Male	12%	10%	78%
	Female	7%	14%	80%
60 - 79	Male	5%	12%	82%
	Female	6%	14%	80%

Table 4(ii): KSI collision types by driver age: percentage of all collisions per age group (totals may not add up to 100% due to rounding)

Vehicle manoeuvre

Young males and teenage females had proportionally more collisions going ahead on a left or right hand bend, especially for collisions which occurred on non built-up roads, see Figure 9(i) below and Figure (9ii) overleaf. The proportion of collisions which occurred while the driver was overtaking was slightly greater for young male car drivers than for other driver groups (data not shown here).

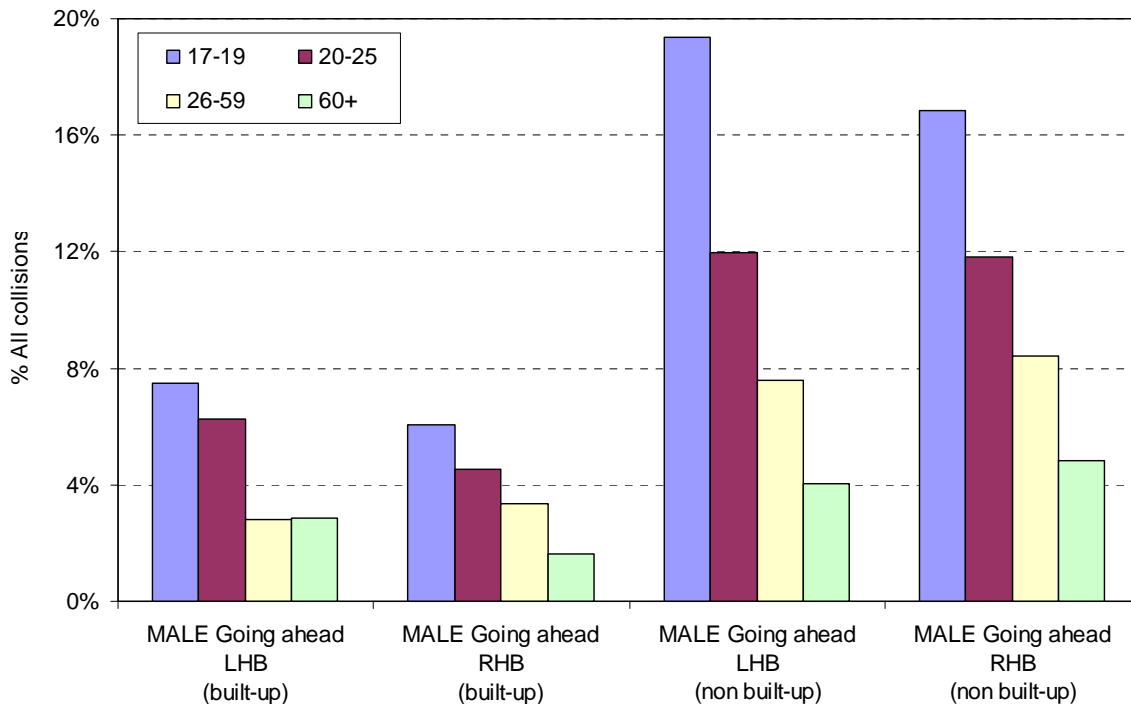


Figure 9(i): Collisions with male car driver recorded as going ahead on a left-hand bend (LHB) or on a right-hand bend (RHB): percentage by age group and road type

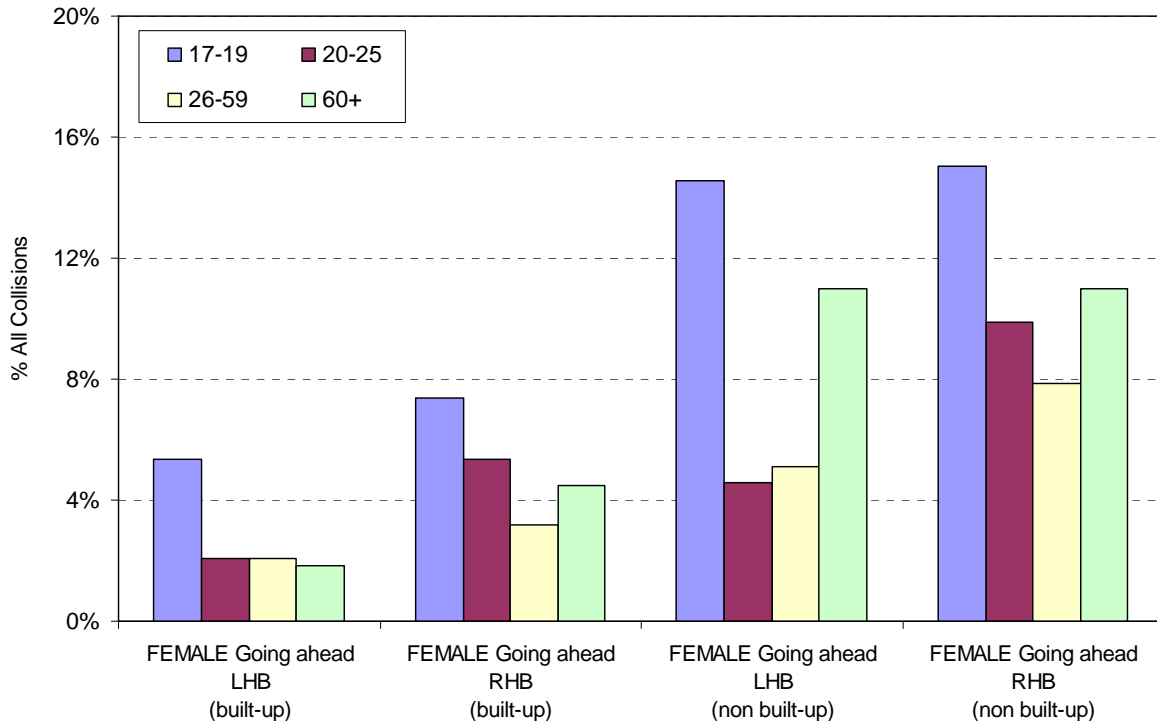


Figure 9(ii): Collisions with female driver recorded as going ahead on a left-hand bend (LHB) or on a right-hand bend (RHB): percentage by age group and road type

Skidding and overturning

Young car drivers (both sexes) were more likely than older drivers to be involved in collisions, especially KSI collisions, where the car they were driving skidded and/or overturned, see Figure 10.

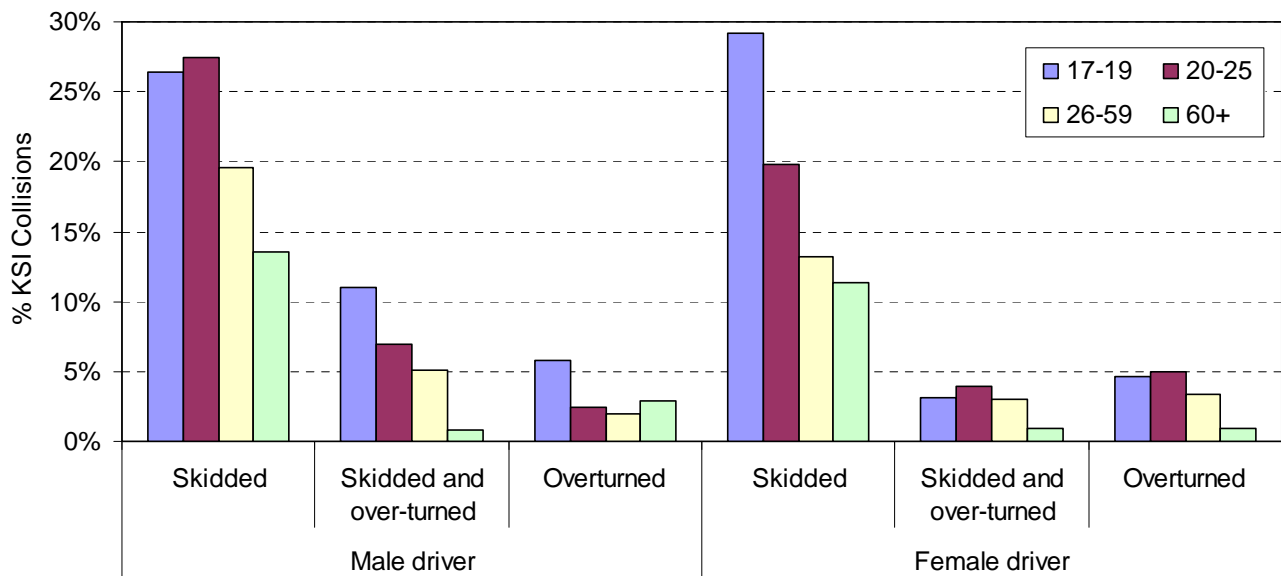


Figure 10: KSI collisions by driver age: percentage of all collisions involving skidding and/or overturning

Drivers of all age groups were more likely to have skidded and/or overturned if they had been recorded as the driver of Vehicle 1, with young car drivers still the most likely to skid/overturn. Indeed, nearly half of all teenage driver (Vehicle 1) KSI collisions involved skidding and/or overturning.

Skidding was commonly recorded for single vehicle collisions. More than one half of young driver lone vehicle KSI collisions involved skidding with the equivalent figure for older drivers being nearer one-third.

Running off the road and collisions with roadside objects

Cars were more likely to have left the carriageway if driven by a young driver, with young males more likely to leave the carriageway than young females. Both groups were more likely to have hit a roadside object upon leaving the carriageway, with this being especially true for KSI collisions.

Contributory factors

The vehicle recorded on STATS19 as Vehicle 1 by Essex Police is normally associated with the vehicle most likely to carry the blame for the collision. Contributory factors recorded for Vehicle 1 will therefore give insight into the causes or behaviours that precipitated the collision. Each collision record lists a maximum of 6 contributory factors (judged by a police officer to have been relevant), with each factor tagged as either 'very likely' or 'possible'. For the purposes of this report, and to improve accuracy, only contributory factors with a 'very likely' tag were analysed.

STATS19 categorises contributory factors into groups of related factors, see Appendix 2 on page 29. These categories, along with a speed-related category⁵ ('travelling too fast for the conditions' or 'exceeding the speed limit'), were used to compare the contributory factors recorded for the difference age groups, see Figure 11(i) and Figure 11(ii) overleaf.

⁵ Speed-related factors are categorised on the STATS19 form as 'injudicious action' but have been removed from this category here to avoid double counting.

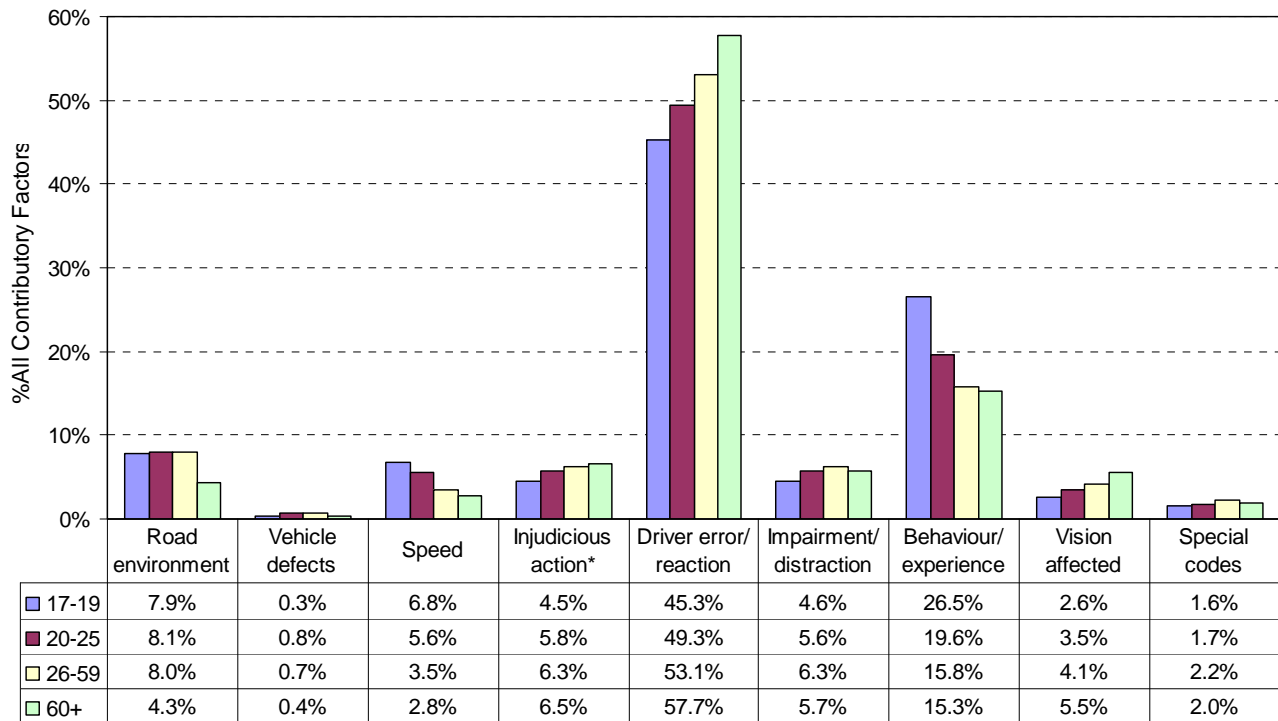


Figure 11(i): Contributory factors for slight collisions: proportion (of all factors assigned) by category and car driver age (factors assigned to Vehicle 1 only)

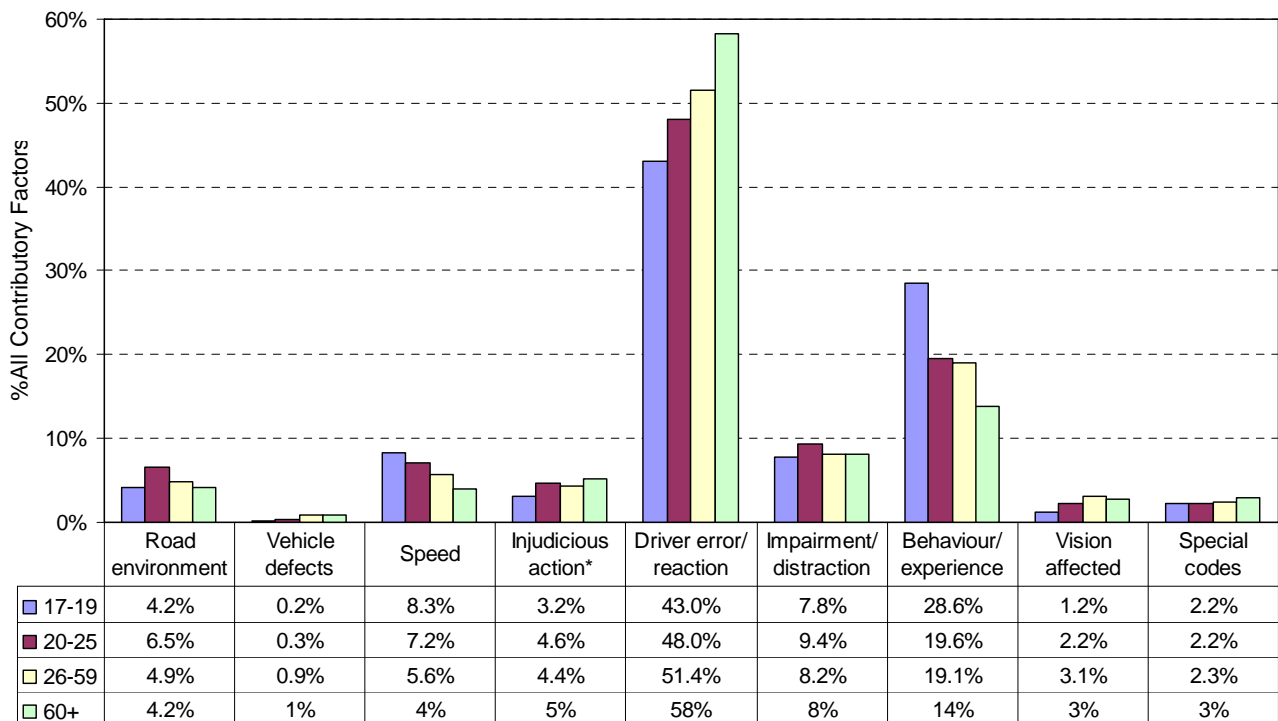


Figure 11(ii): Contributory factors for KSI collisions: Proportion (of all factors assigned) by category and car driver age (factors assigned to Vehicle 1 only)

* Injudicious action excludes 'exceeding the speed limit' and 'travelling too fast for the conditions' which were separated under Speed. STATS19 guidance states that 'exceeding the speed limit' should be used if a driver was exceeding the speed limit and travelling too fast for the conditions but in practice both factors are sometimes used together. Comparisons between driver age groups can still be made however (assuming both factors to be recorded in equal proportions for all drivers).

The proportions of contributory factors relating to behaviour/experience and speed were higher for young drivers⁶ (Vehicle 1), especially teenagers. Conversely, the proportion of contributory factors relating to driver error or reaction was lower for this group.

The most commonly recorded individual contributory factors are shown in Table 5 overleaf. Although the percentage differences between the driver age groups are relatively small - a likely reflection of the small data sets involved – comparisons do give an indication of age-related differences:

- ‘Learner or inexperienced driver’ was attributed to teenage drivers more often than any other driver group. This is to be expected since most novice drivers are under 20;
- ‘Loss of control’ was recorded more frequently for young drivers, especially teenagers, compared to drivers aged 26 or more. Over the study period more than one-third of KSI collisions deemed the fault of a young car driver were related to loss of control, higher than for older drivers;
- Speed-related factors (travelling too fast for the conditions or exceeding the speed limit), along with aggressive driving, were recorded in higher proportions for young drivers. Over the study period, collisions deemed the fault of a young car driver were almost twice as likely to record speed as a factor compared to collisions deemed the fault of older car drivers (around one-fifth of all collisions and KSI collisions deemed the fault of a young car driver were recorded as speed-related’);
- The contributory factor ‘slippery road (due to weather)’ was attributed to young car drivers slightly more often than older drivers.

Deeper analysis revealed that, with respect to KSI collisions, young male drivers recorded a higher proportion of the contributory factors ‘loss of control’, ‘careless, reckless or in a hurry’, ‘aggressive driving’ and ‘exceeding the speed limit’ than did young females whereas, compared to young male drivers, young females recorded a higher proportion of the contributory factors ‘failed to judge another’s path or speed’, ‘poor turn or manoeuvre’ and ‘slippery road (due to weather)’.

⁶ Analysis of a snapshot of driving offence data collected by Essex Police during 2010 supported the trends shown above with more fixed penalty notices for driving offences issued to young vehicle drivers (and motorcyclists), and to males in particular, than to vehicle drivers/motorcyclists from older age groups.

Contributory Factor (CF) / %All CFs	17-19	20-25	26-59	60 plus
Loss of control	13.9%	13.2%	11.0%	7.9%
Careless, reckless or in a hurry	13.0%	12.6%	12.6%	10.7%
Failed to look properly	11.5%	12.7%	15.1%	23.0%
Learner or inexperienced driver	10.0%	2.5%	2.7%	1.6%
Failed to judge another person's path or speed	6.4%	8.4%	10.2%	10.5%
Impaired by alcohol	5.9%	6.5%	5.3%	3.4%
Travelling too fast for the conditions	5.6%	4.0%	3.5%	3.0%
Poor turn or manoeuvre	5.4%	4.5%	7.1%	8.9%
Aggressive driving	4.6%	3.0%	2.7%	0.6%
Slippery road (due to weather)	3.7%	4.0%	3.0%	2.6%
Exceeding the speed limit	2.7%	3.2%	2.1%	0.2%
Swerved	2.4%	3.0%	3.0%	2.4%

Table 5: The 12 most common contributory factors recorded for car drivers (V1) involved in KSI collisions: Proportion of all factors assigned by driver age group

Alcohol and drug-related collisions

On average 3% of all drivers involved in collisions failed or refused a roadside breath-test. With respect to KSI Collisions this figure was slightly higher at 5%. Figure 12 overleaf shows that, for KSI collisions, proportionally more young males failed or refused a roadside breath-test than did older male drivers. Of female drivers, the proportion of breath-test failures/refusals was greatest for teenage drivers although the level was still below that for their male counterparts.

The number of collisions where a car driver was recorded as being impaired by drugs (illicit or medicinal) was small (30 car drivers were recorded as very likely to have been impaired by drugs over the 3 year period to December 2009). Most 'drug drivers' were male with young males recording proportionally more drug-related collisions than older males although, due to small numbers, this finding must be viewed with caution. Drug-related contributory factors were often cited together with alcohol-related factors although the strength of this relationship lessened for women and older male drivers (which may imply medicinal rather than illicit drugs were a factor here).

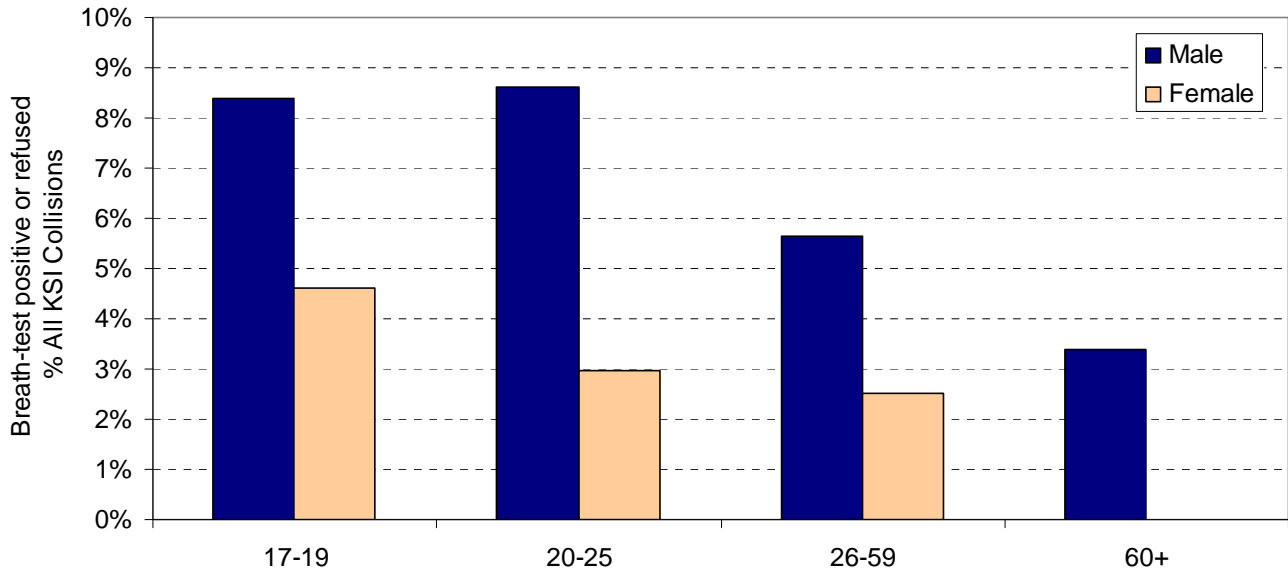


Figure 12: KSI collisions: percentage of breath-tests positive or refused by car driver age and gender

Hit and run collisions

The proportion of car drivers involved in hit and run collisions was very small. Approximately 3% of male drivers and 1% of female drivers were recorded as ‘hit and run’ drivers with young males, especially those aged from 20 to 25, more likely than any other group to be ‘hit and run’ drivers (5%).

Ages of cars involved in collisions

Young car drivers involved in collisions, especially teenagers, were more likely than older drivers to be driving a car over 10 years old which may put the occupants at greater risk of injury/more severe injury as older cars offer less EuroNCAP protection than newer cars, see Figure 13.

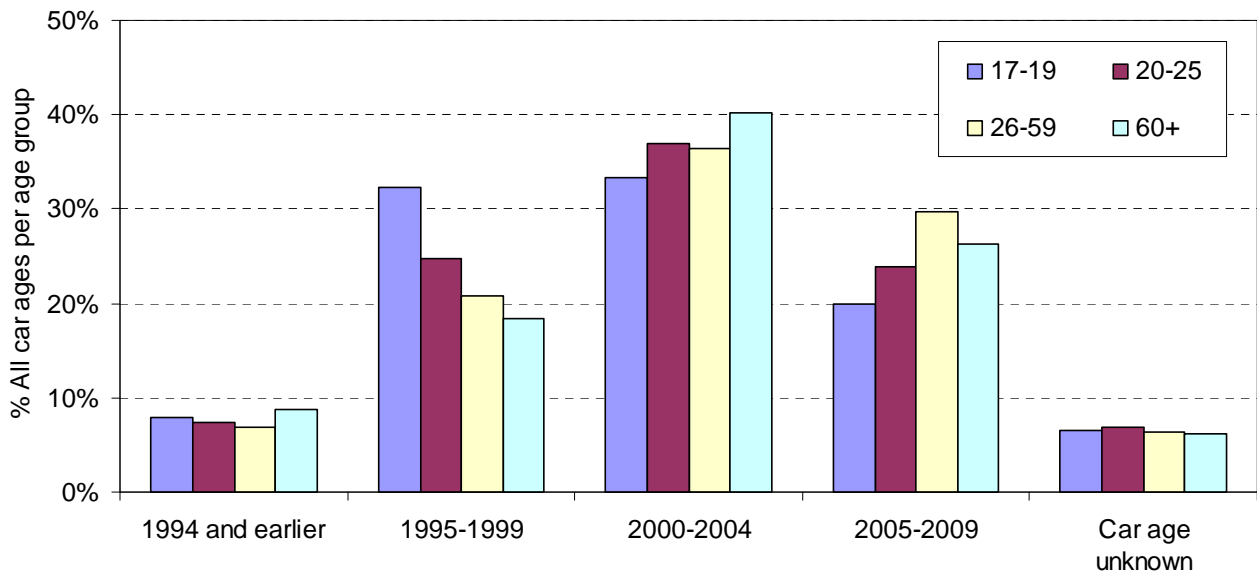


Figure 13: KSI collisions by driver age: percentage of all KSI collisions by age of car

Locations of collisions

Figure 14a below and 14b on the following page show the number of collisions deemed the fault of a young car driver for each of the Essex districts (young car driver recorded as Vehicle 1). The proportion of young car driver (V1) collisions compared to all collisions recorded for each of the Essex districts is also shown (by the black line).

Epping Forest, Colchester and Chelmsford recorded the largest number of young car driver (V1) collisions and KSI collisions, followed by Tendring and Braintree. In all of these districts, young car driver (V1) collisions comprised between 22% and 24% of all recorded collisions and between 18% and 23% of all recorded KSI collisions.

Maldon and Rochford both recorded a relatively low number of young car driver (V1) collisions and KSI collisions but in these districts, this driver group was deemed responsible for over one-quarter of all recorded collisions and KSI collisions.

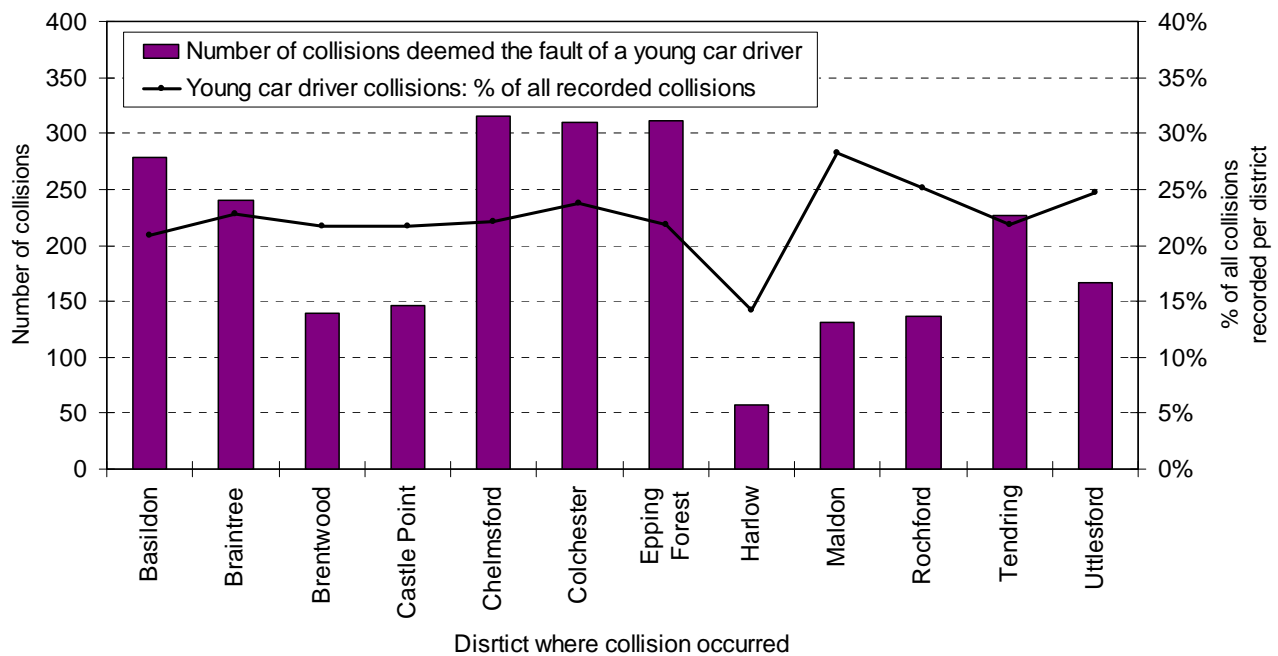


Figure 14a: The number of young car driver collisions (V1) recorded per district and the proportion young car driver collisions made up of the total number of collisions recorded in each of these districts (black line)

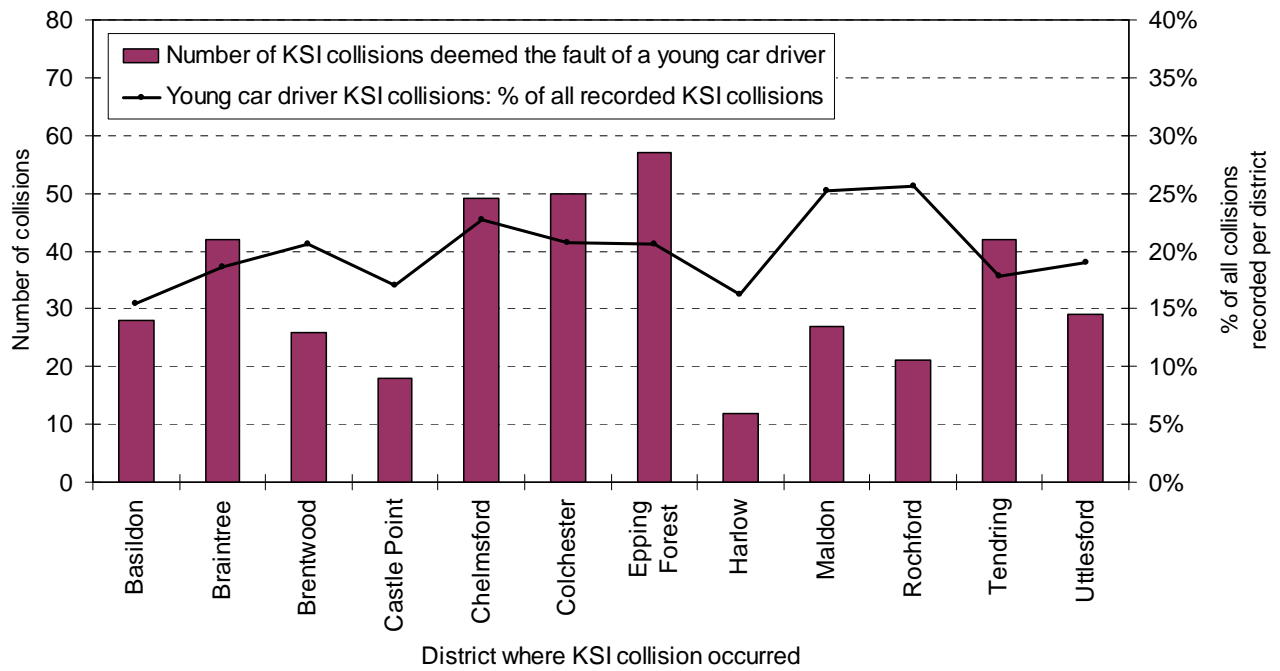


Figure 14b: The number of young car driver KSI collisions (V1) recorded per district and the proportion young car driver KSI collisions made up of the total number of KSI collisions recorded in each of these districts (black line)

Residency and driver demographics

Most (60%) teenage car drivers were local to the district where the crash occurred; the corresponding figure for drivers in their 20s or over was nearer 50%.

In general less than 10% of young car drivers involved in collisions in Essex did not come from Essex or the Unitary Authority Areas of Southend-on-Sea or Thurrock. However, there were exceptions with nearly one-third of young car drivers who crashed in Epping Forest coming from the London area. In Brentwood approximately one-fifth of young car drivers involved in collisions came from the London area whereas in Uttlesford, approximately one-fifth lived in neighbouring counties in East Anglia as well as in the London area.

Further analysis showed that young car drivers from Tendring were most likely to have crashed in their home district, closely followed by drivers from Uttlesford and Castle Point.

Figure 15 overleaf shows that most young car drivers who were involved in collisions in Essex came from the districts of Chelmsford and Colchester. However, based on driver populations, those districts with the highest collision rates were Maldon, Uttlesford and Tendring. These districts also had the highest blameworthy collision rates. The districts of Braintree, Chelmsford and Castle Point also had higher collision rates than the County average of 124 collisions per 10,000 drivers.

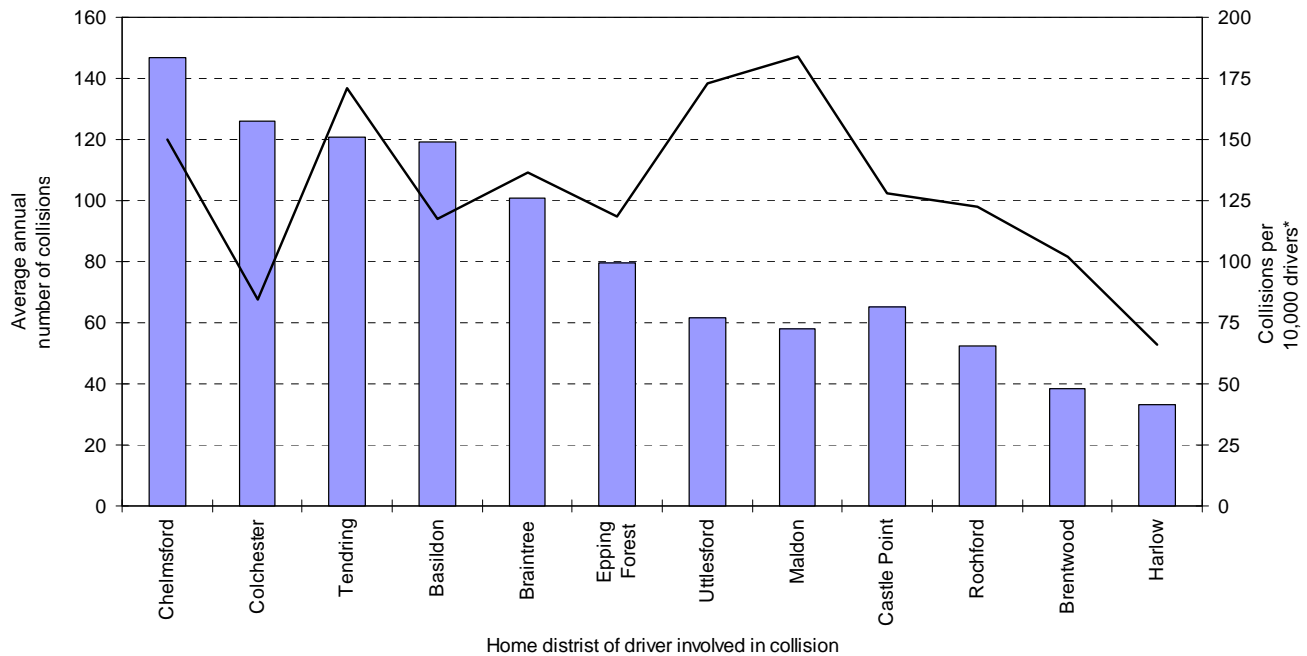


Figure 15: Number of Essex collisions involving young car drivers by driver home district and collision rates for each district per 10,000 drivers⁷

*The number of young car drivers living in each district was estimated by assuming the proportion of young people holding a car licence would be the same within the districts as at County level (data supplied by the DVLA)

MAST⁸ Online contains road collision and casualty information for the United Kingdom alongside socio-demographic insights into its communities using Mosaic Public Sector. A greater understanding of the socio-demographic profiles of the people involved in collisions can facilitate decision making and planning to reduce casualties (More detail on Mosaic profiling, including Mosaic types, is given in the glossary).

It is acknowledged that young car drivers are less likely than older drivers to be home owners and as a result socio-demographic profiling based on young car driver's home postcodes may be misleading. However, by assuming that young car drivers (especially teenagers) are likely to live with their parents, Mosaic profiling may enable key messages to be marketed to the young driver via those nearest to them.

MAST Analysis revealed that, between 2007 and 2009, the Mosaic Groups of young car drivers from Essex (involved in collisions anywhere in the UK) reflected the Mosaic Groups within Essex as a whole (based on the annual mileage index⁹). Most young car drivers (or their parents) were from Mosaic Groups C, B, A and H and Table 6 overleaf shows the best communication methods for each of these groups. Young car drivers from Mosaic Group K (people living in rural areas far from urbanisation) had more crashes than expected given their

⁷ The young car driver populations for each Essex district were estimated by applying the Essex percentage of full driving licence-holders aged 17 to 25 (DVLA, 2010) to Essex population data (Office of National Statistics, 2007).

⁸ Market Analysis and Segmentation Tools, MAST Online is a web-based road collision data analysis tool. MAST contains crash data for the years 2004 to 2009 inclusive.

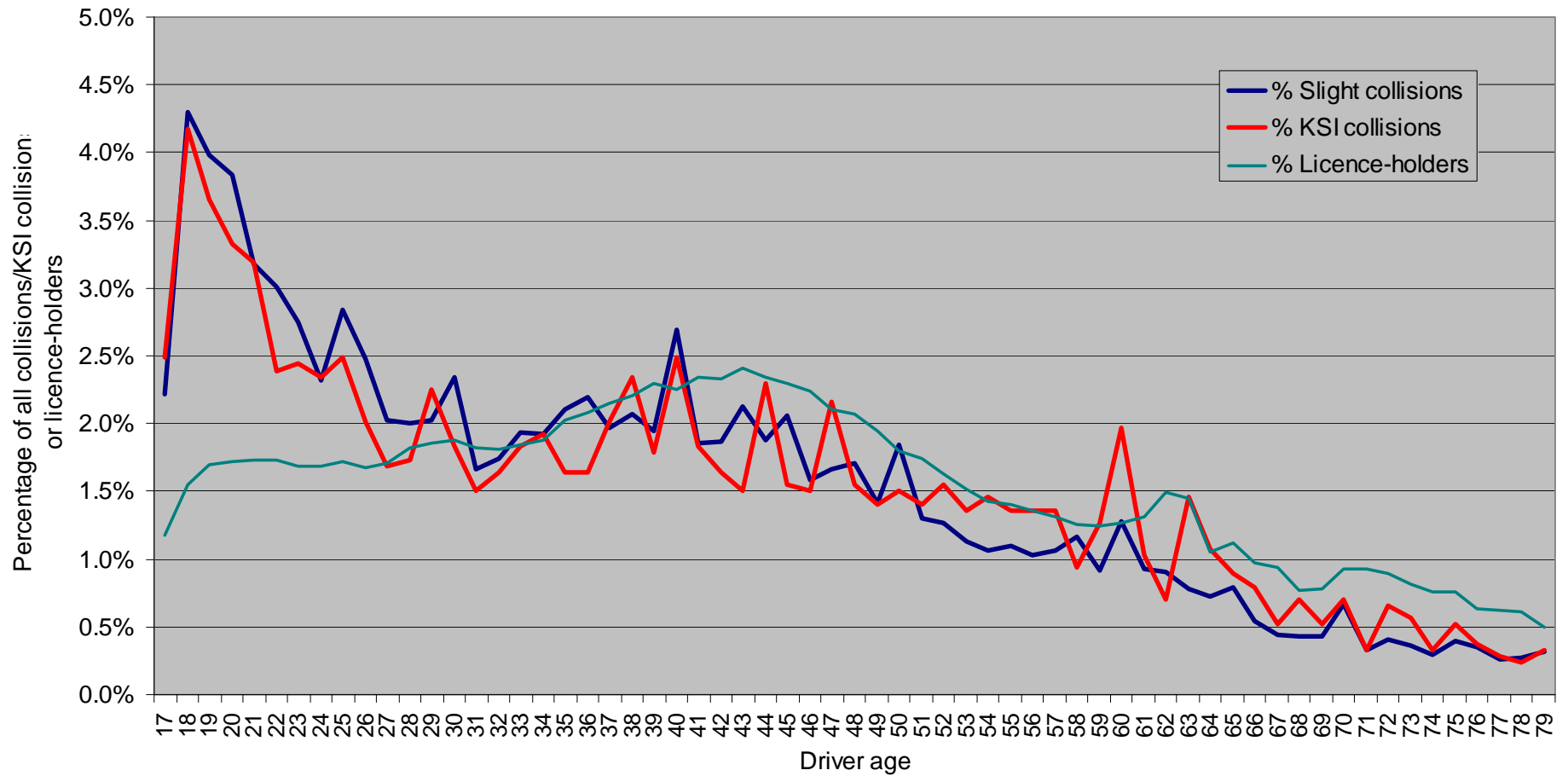
⁹ The average annual mileage index is based on the mean of driver responses when asked how many miles they drive in a year, according to representative surveys, when weighted by regional trends.

annual mileage; most drivers from this group came from the Districts of Maldon and Uttlesford as well as from Chelmsford and Braintree.

Mosaic Group (see Glossary for further information)	Communication Receptive	Communication Unreceptive
C: "Families who are successfully established in comfortable, mature homes. Children are growing up and finances are easier"	Broadsheet newspapers Telephone advice lines	GP surgeries Posters TV
B: "Families with focus on career and home, mostly younger age groups now raising children"	Digital TV Entertainment magazines Internet/e-mail Mid-market tabloids	Broadsheet newspapers Terrestrial TV
A: "People with rewarding careers who live in sought after locations, affording luxuries and premium quality products"	Broadsheet newspapers Heavyweight magazines Internet Telephone advice lines	Posters Telemarketing TV
H: "People who though not well-educated are practical and enterprising and may well have exercised their right to buy"	Radio Red top newspapers Telemarketing TV	Broadsheet newspapers Internet Magazines Telephone advice lines
K: "People living in rural areas where country life has not been influenced by urban consumption patterns"	Broadsheet newspapers Heavyweight magazines Internet Telephone advice lines	Posters Telemarketing TV

Table 6: Most common Mosaic Groups for young car drivers (or their parents): Young car drivers from Essex who crashed anywhere in the UK between 2007 and 2009

Appendix 1: Car drivers involved in collisions in Essex: percentage by age compared to the proportion of licence holders



Appendix 2: Contributory Factors (from current STATS19 form)

1. Select up to six factors from the grid, relevant to the accident.
2. Factors may be shown in any order, but an indication must be given of whether each factor is **very likely (A)** or **possible (B)**.
3. Only include factors that you consider contributed to the accident. (i.e. do NOT include "Poor road surface" unless relevant).
4. More than one factor may, if appropriate, be related to the same road user.
5. The same factor may be related to more than one road user.
6. The participant should be identified by the relevant vehicle or casualty ref no. (e.g. 001, 002 etc.), preceded by "V" if the factor applies to a vehicle, driver/rider or the road environment (e.g. V002), or "C" if the factor relates to a pedestrian or passenger casualty (e.g. C001).
7. Enter U000 if the factor relates to an uninjured pedestrian.

Road Environment Contributed	101	102	103	104	105	106	107	108	109	
	Poor or defective road surface	Deposit on road (e.g. oil, mud, chippings)	Slippery road (due to weather)	Inadequate or masked signs or road markings	Defective traffic signals	Traffic calming (e.g. speed cushions, road humps, chicanes)	Temporary road layout (e.g. contraflow)	Road layout (e.g. bend, hill, narrow carriageway)	Animal or object in carriageway	
Vehicle Defects	201	202	203	204	205	206				
	Tyres illegal, defective or under-inflated	Defective lights or indicators	Defective brakes	Defective steering or suspension	Defective or missing mirrors	Overloaded or poorly loaded vehicle or trailer				
Injudicious Action	301	302	303	304	305	306	307	308	309	310
	Disobeyed automatic traffic signal	Disobeyed 'Give Way' or 'Stop' sign or markings	Disobeyed double white lines	Disobeyed pedestrian crossing facility	Illegal turn or direction of travel	Exceeding speed limit	Travelling too fast for conditions	Following too close	Vehicle travelling along pavement	Cyclist entering road from pavement
Driver/Rider Error or Reaction	401	402	403	404	405	406	407	408	409	410
	Junction overshoot	Junction restart (moving off at junction)	Poor turn or manoeuvre	Failed to signal or misleading signal	Failed to look properly	Failed to judge other person's path or speed	Passing too close to cyclist, horse rider or pedestrian	Sudden braking	Swerved	Loss of control
Impairment or Distraction	501	502	503	504	505	506	507	508	509	510
	Impaired by alcohol	Impaired by drugs (illicit or medicinal)	Fatigue	Uncorrected, defective eyesight	Illness or disability, mental or physical	Not displaying lights at night or in poor visibility	Cyclist wearing dark clothing at night	Driver using mobile phone	Distraction in vehicle	Distraction outside vehicle
Behaviour or Inexperience	601	602	603	604	605	606	607			
	Aggressive driving	Careless, reckless or in a hurry	Nervous, uncertain or panic	Driving too slow for conditions or slow vehicle (e.g. tractor)	Learner or inexperienced driver/rider	Inexperience of driving on the left	Unfamiliar with model of vehicle			
Vision Affected by	701	702	703	704	705	706	707	708	709	710
	Stationary or parked vehicle(s)	Vegetation	Road layout (e.g. bend, winding road, hill crest)	Buildings, road signs, street furniture	Dazzling headlights	Dazzling sun	Rain, sleet, snow or fog	Spray from other vehicles	Visor or windscreen dirty or scratched	Vehicle blind spot
Pedestrian Only (Casualty or Uninjured)	801	802	803	804	805	806	807	808	809	810
	Crossing road masked by stationary or parked vehicle	Failed to look properly	Failed to judge vehicle's path or speed	Wrong use of pedestrian crossing facility	Dangerous action in carriageway (e.g. playing)	Impaired by alcohol	Impaired by drugs (illicit or medicinal)	Careless, reckless or in a hurry	Pedestrian wearing dark clothing at night	Disability or illness, mental or physical
Special Codes	901	902	903	904						*999
	Stolen vehicle	Vehicle in course of crime	Emergency vehicle on a call	Vehicle door opened or closed negligently						Other - Please specify below

Driver/Rider Only (Includes Pedal Cycles and Horse Riders)

	1st	2nd	3rd	4th	5th	6th
Factor in the accident	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Which participant? (e.g. V001, C001, U000)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Very likely (A) or Possible (B)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

* If 999 Other, give brief details
 (Note: Only use if another factor contributed to the accident **and include it in the text description of how the accident occurred**)

These factors reflect the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation

GLOSSARY

Accsmap - Accsmap is a Geographic Information System (GIS) based collisions database which shows the location and detail of all injury collisions in Essex against a map base.

Baseline - Government targets to reduce road casualties by 2010 are measured against the mean average casualty figures between the years 1994 -1998, known as the baseline.

Built-up road (urban road) – defined as a road with a speed limit of 40mph or less. These are often but not always built up areas.

Casualty – a person who is either killed or seriously injured (KSI) or slightly injured. Slight injury is defined as any injury which is neither "fatal" nor "serious" - for example, a sprain, bruise or cut which is not judged to be severe, or slight shock requiring roadside attention.

Collisions – these are personal injury collisions which have been recorded by the police using STATS19. KSI collisions are those resulting in at least one person being killed or seriously injured.

Contributory factors (CF) – these are the factors which, in the reporting police officer's opinion, contributed significantly to the cause of the collision. Only factors considered to have contributed to the collision are meant to be reported and each factor is attributed to a specific 'participant' (for example, driver, passenger, or pedestrian) and is recorded with a confidence of 'very likely' or 'possible'. In addition to the contributory factors, the reporting officer at a road accident is required to submit a brief text description detailing what they perceive as the main causes of the collision.

Junction collision – a collision occurring at or within 20 metres of a junction.

KSI – a casualty who is either killed (within 30 days of the collision) or seriously injured as a result of a collision. Serious injury is defined as (a) an injury for which a person is detained in hospital as an in-patient; (b) any of the following injuries (whether or not the person is detained in hospital): Fractures, concussion, internal injuries, crushings, severe cuts and lacerations or severe general shock requiring treatment and (c) any injury causing death 30 or more days after the collision.

MAST Online/Mosaic profiling – MAST Online is a web-based data analysis tool which combines collision data (from Stats19) with socio-demographic data (Experian Mosaic) - linked using postcodes. MAST can identify which groups of people are crashing most often, which groups are crashing more than would be expected given their population numbers and what the best communication methods are for reaching out to certain groups.

Experian Mosaic categorises residents into similar Mosaic Groups (A to K), based on shared characteristics (e.g. housing location, property value, debt/credit behaviour, health, employment et al.). The most common Mosaic Groups in Essex are: Type A – 'People with rewarding careers who live in sought after locations, affording luxuries and premium quality products'; Type B – 'Families with focus on career and home, mostly younger age groups now raising children'; Type C – 'Families who are successfully established in comfortable, mature homes. Children are growing up and finances are easier' and Type H – 'People who though not well-educated are practical and enterprising and may well have exercised their right to buy'.

Each Mosaic Group (and the Mosaic Types falling under this group) is receptive to different forms of communication/marketing strategies and so a better understanding of the Mosaic Groups comprising the largest proportions of vehicle drivers/casualties in Essex can facilitate decision-making around intervention messages.

Mosaic profiling – see MAST Online.

Non built-up road (rural road) – defined as a road with a speed limit of over 40mph. These are often but not always non-built up areas.

Severity ratio –this is the number of KSI collisions as a percentage of all collisions.

STATS 19 - STATS19 is the data set collected by a police officer when a road injury collision is reported to them. STATS19 covers collisions involving injury occurring on the public highway (including footways) in which at least one road vehicle or a vehicle in collision with a pedestrian is involved which becomes known to the police within 30 days of its occurrence. The vehicle need not be moving and collisions involving stationary vehicles and pedestrians or users are included. Excluded from STATS19 are confirmed suicides; death from natural causes; injuries to pedestrians with no vehicle involvement (e.g. a fall on the pavement); and accidents in which no one is injured but a vehicle is damaged.

Vehicle 1 (V1) – The vehicle recorded as Vehicle 1 (V1) by Essex Police is normally associated with the vehicle most likely to carry the blame for the collision.

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www.drivingcasualtiesdown.org