Department for Transport

Reported road casualties in Great Britain: quarterly provisional estimates year ending June 2016

There were 1,800 road deaths in the year ending June 2016; this is not statistically different from the year ending June 2015.

About this release

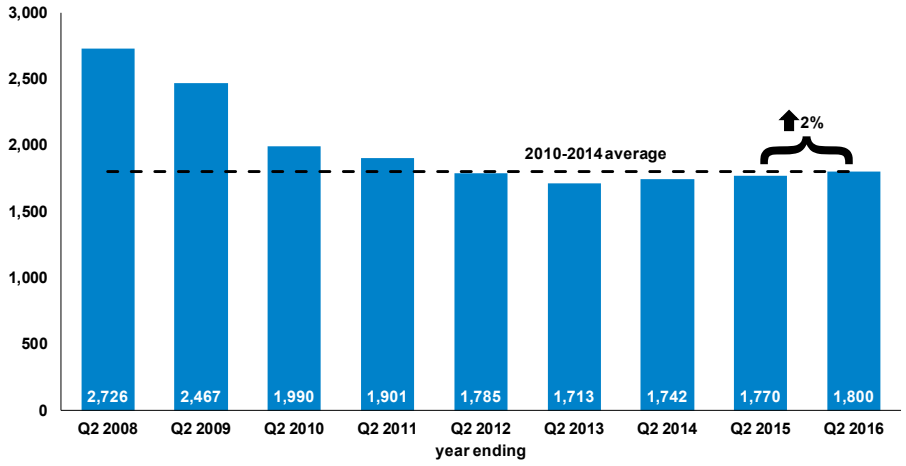
This publication provides the number of personal-injury road traffic accidents in Great Britain that were reported to the police for the year ending June 2016. It also includes the number of people killed or injured in these accidents and which road user group they were in.

Uncertainty

The figures in this publication are estimates and are subject to revision in future releases. See the uncertainty section.

In this publication

Road deaths: GB, rolling years ending June, 2008-2016



- A total of 24,620 people were **killed or seriously injured** (KSI casualties) in the year ending June 2016, **up by 3 per cent** from the previous year.
- There were 185,010 **casualties** of all severities in the year ending June 2016, **down by 2 per cent** from the previous year.
- **Motor traffic levels rose by 1.5 per cent** compared with the year ending June 2015.
- The overall **casualty rate per vehicle mile decreased by 4 per cent** over the same period.

What we can conclude: There has been a statistically significant increase in the number of people killed or seriously injured in road traffic accidents between the years ending June 2015 and 2016. This indicates that there are a number of factors that have combined together to worsen some aspects of safety on Britain's roads. However, it is not definitive evidence of a continued worsening in road safety.

What we cannot conclude: Although the number of people killed in road traffic accidents has increased between years, this change is small enough that it can be explained by the natural variation in deaths over time. Therefore there is not yet enough evidence to say that the number of fatalities is changing between years.

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Overall results

Rolling year ending June 2016

- In the year ending June 2016, there were **1,800 reported road fatalities**, a 2 per cent increase from 1,770 in the previous year. This **increase is not statistically significant.** This means that the increase is probably to do with a combination of factors that have come about by chance, rather than any specific change.

- **Killed or seriously injured casualties** (KSIs) **increased by 3 per cent** to 24,620 compared with the year ending June 2015. This change is **statistically significant** at the 99% confidence level. The number of serious injuries has increased more than fatalities. This suggests that different factors could be affecting each of the types of severities. One partial explanation, though, could be in changes in reporting practices leading to casualties who would have formerly been classified as slight injuries being reclassified to serious injuries (see the CRASH section).

- The total number of **casualties decreased by 2 per cent** to 185,010 (see Chart 1). This change is **statistically significant** at the 99% confidence level. On the face of it, this suggests that the decrease is a reflection of genuine changes in road safety rather than natural variation. As described above, though, it could also partly reflect changes in reporting practices.

- Motor vehicle traffic increased by 1.5 per cent over the same period.

Table RAS45001: Reported road casualties by severity, GB: year ending June 2016

	Number/percentage change compared with previous 12 months			
ALL CASUALTIES	Jul-14 to Jun-15	Jul-15 to Jun-16 (P)	Percentage change	statistically significant?
Killed	1,770	1,800	↑2%	ns
KSI [1]	23,914	24,620	↑3%	**
Slightly injured	165,435	160,390	↓3%	***
All casualties	189,349	185,010	↓2%	***

P Provisional estimates
1 Killed or seriously injured
** statistically significant at 0.01 level.
*** statistically significant at 0.001 level.
ns not statistically significant at 0.05 level.

Definition

Casualty: A person killed or injured in an accident. Casualties are sub-divided into killed, seriously injured and slightly injured.

Rolling year: a period of 12 months that begins and ends on a set day. In this publication the rolling year ending June 2016 represents the 12 months beginning on the 1st July 2015 and ending on the 30th June 2016.

A full list of the definitions used in this release can be found here.

2010-2014 average

The 2010-14 average is used as a comparison time frame in both this publication and the accompanying statistical tables. This average has been updated from the 2005-09 average used recently to reflect the latest trends.

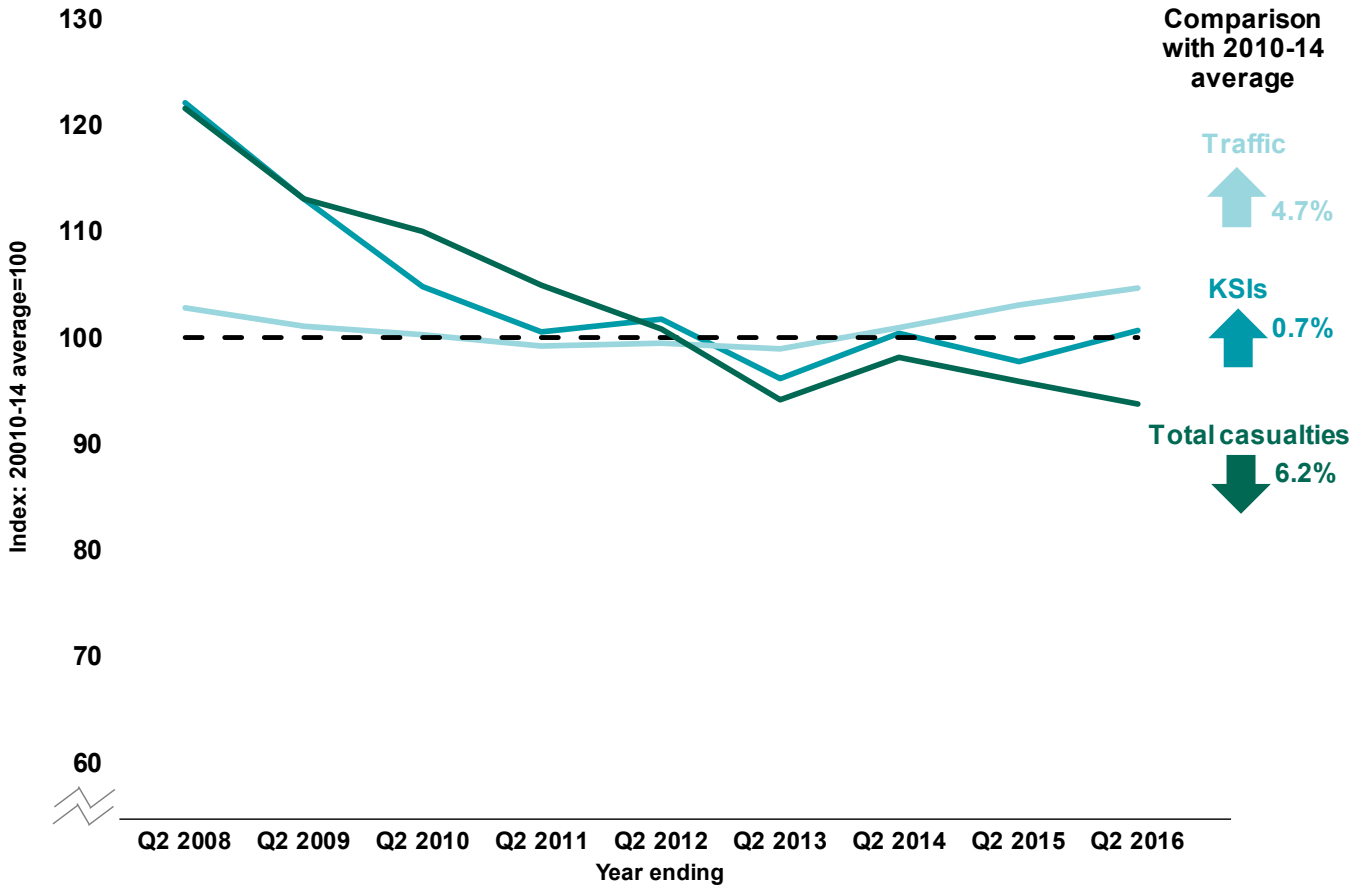
Statistical significance

The number of casualties can fluctuate from year to year and there is interest in knowing the extent to which these fluctuations represent an indication of a real underlying trend as opposed to random year-to-year variation.

A **statistically significant** change is one we can be sure is large enough that it can be considered as an indication of a real underlying trend.

A change that is **not statistically significant** is one that is likely to have come about by chance and therefore represents random year-to-year variation.

Chart 1: Killed or seriously injured, total casualties and traffic compared with the 2010-14 average, GB, years ending June 2008 to 2016



Figures for April to June 2016

- Between April and June 2016, **450 people were killed** in reported road accidents, a 7 per cent increase from 420 in the same quarter of 2015. **KSI casualties increased by 2 per cent** to 6,080 over the same period.
- **Casualties of all severities decreased by 3 per cent** to 44,250 in comparison with the same quarter in 2015.
- Quarterly casualty figures are prone to fluctuation as they are strongly affected by external factors such as the weather. Therefore the changes in quarterly casualty figures in this release should be interpreted with caution.
- Motor traffic levels increased by 1 per cent over the same period.

Tables

• Reported road casualties by severity (estimates): Great Britain, rolling annual totals, quarterly, table RAS45001.

• Road traffic (vehicle miles) by vehicle type in Great Britain, quarterly from 1993, table TRA2501.

• Reported road casualties by severity (estimates): Great Britain, quarterly and annual, table RAS45003.

Table RAS45002: Reported road casualties by severity: GB, Apr - Jun 2016

	Number/percentage change compared with same quarter last year			
ALL CASUALTIES	Q2 2015	Q2 2016 (P)	Percentage change	statistically significant?
Killed	420	450	↑7%	ns
KSI [1]	5,958	6,080	↑2%	ns
Slightly injured	39,682	38,170	↓4%	***
All casualties	45,640	44,250	↓3%	***

P Provisional estimates
1 Killed or seriously injured
*** statistically significant at 0.001 level.
ns not statistically significant at 0.05 level.

Casualty rates

- In the year ending June 2016, fatalities increased by 2 per cent and traffic levels rose by 1.5 per cent compared with the previous year. As a result, the **fatality rate per billion vehicle miles increased slightly by 0.2 per cent.**
- Total casualties decreased by around 2 per cent over the same period. When combined with the rising traffic volume the overall **casualty rate per billion vehicle miles decreased by 4 per cent** in the year ending June 2016.
- In comparison with the second quarter of 2015, fatalities increased by 7 per cent, KSIs by 2 per cent and overall casualties decreased by 3 per cent in the period April to June 2016. Over the same period, traffic levels increased by 1 per cent. As a result, the fatality rate per billion vehicle miles increased by 6 per cent. The overall casualty rate fell by 4 per cent over the same period.

Road user type

Rolling year ending June 2016

- There was a decrease in KSI casualties for **pedal cyclists** and **motorcyclists** in the year ending June 2016, but an increase in pedestrian and car occupant KSIs (see Table RAS45006).
- **Pedal cyclist KSIs fell by 3 per cent** to 3,350 and **motorcyclist KSIs by 1 per cent** to 5,420 in the year ending June 2016.
- **Pedestrian KSIs increased by 3 per cent** to 5,440 and **car occupant KSIs by 9 per cent** to 9,290 in the year ending June 2016.

2010-2014 average

Car occupant casualties in the year ending June 2016 compared with the 2010-2014 average:

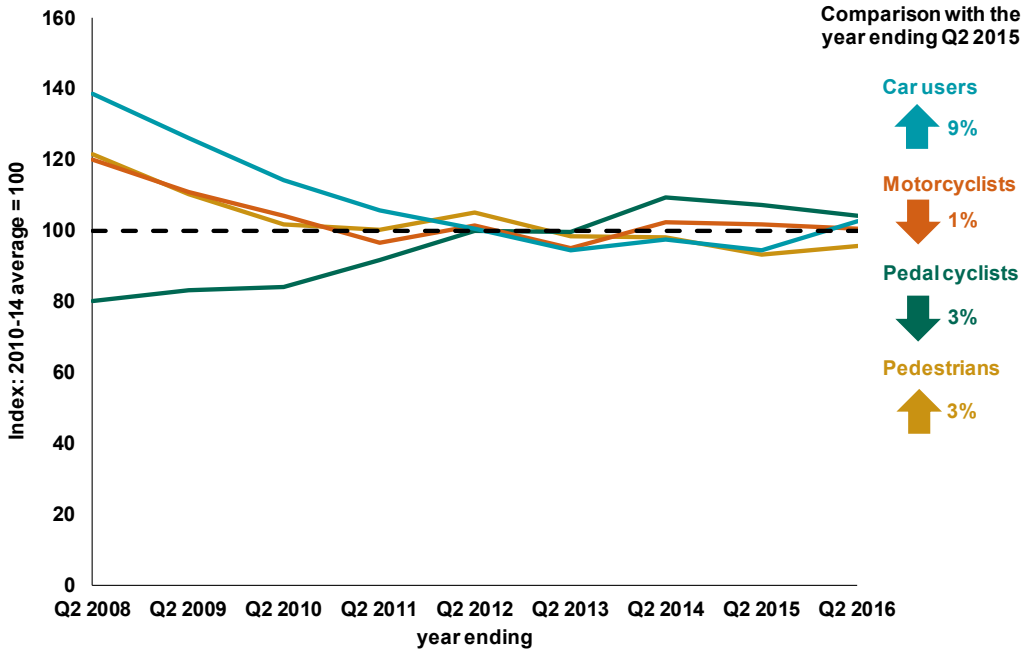
KSI	↑ 3%
All casualties	↓ 7%

- There were 1,950 **child (aged 0-15) KSI casualties** in the year ending June 2016, unchanged from the year ending June 2015. **Child pedestrian KSIs decreased by 4 per cent** to 1,240. **Child casualties of all severities decreased by 0.4 per cent** compared with the previous year to 15,980.

Table RAS45006: KSI casualties by road user type: GB, year ending June 2016

ROAD USER TYPE	Number/Percentage change compared with previous 12 months		
	Jul-14 to Jun-15	Jul-15 to Jun-16 (P)	Percentage change
	8,553	9,290	↑9%
	5,478	5,420	↓1%
	3,448	3,350	↓3%
	5,303	5,440	↑3%
All	23,914	24,620	↑3%

Chart 2: Reported killed or seriously injured casualties by road user type, GB: rolling years ending June, 2008-2016



Figures for April to June 2016

- KSI casualties decreased for all road user groups except car users in the second quarter of 2016 compared with the same quarter of 2015 (see Table RAS45007).

- **Car occupant KSIs increased by 12 per cent** in comparison with the same quarter of the previous year. However, **pedestrian KSIs decreased by 3 per cent, pedal cyclist KSIs by 1 per cent and motorcyclist KSIs by 5 per cent,** compared with the same quarter of 2015.

2010-2014 average

Motorcycle user casualties in the year ending June 2016 compared to the 2010-2014 average:

KSI	↑ 1%
All casualties	↑ 1%

2010-2014 average

Pedal cyclist casualties in the year ending June 2016 compared to the 2010-2014 average:

KSI	↑ 4%
All casualties	↓ 4%

2010-2014 average

Pedestrian casualties in the year ending June 2016 compared to the 2010-2014 average:

KSI	↓ 4%
All casualties	↓ 5%

2010-2014 average

Child (aged 0-15) casualties in the year ending June 2016 compared to the 2010-2014 average:

KSI	↓ 13%
All casualties	↓ 10%

- **Child KSIs decreased by 14 per cent** to 490 and child casualties of all severities decreased by 6 per cent in the second quarter of 2016. Child pedestrian KSIs decreased by 24 per cent to 290.

Table RAS45007: KSI casualties by road user type: GB, April to June 2016

ROAD USER TYPE	Number/Percentage change compared with same quarter last year		
	Q2 2015	Q2 2016 (P)	Percentage change
	2,049	2,300	↑12%
	1,561	1,490	↓5%
	919	910	↓1%
	1,149	1,120	↓3%
All	5,958	6,080	↑2%

- Quarterly casualty figures are prone to fluctuation as they are strongly affected by external factors such as the weather. Therefore the changes in quarterly casualty figures in this release should be interpreted with caution.

Tables

• Reported road casualties by severity and road user type (estimates): Great Britain, rolling annual totals, updated quarterly, table RAS45006.

• Reported road casualties by severity and road user type (estimates): Great Britain, latest available quarter, table RAS45007.

Road type

Rolling year ending June 2016

- **Fatal accidents on major roads** (motorways and A roads) **increased by 2 per cent** in the year ending June 2016. Fatal accidents on **minor roads** (B, C and unclassified roads) **increased by 3 per cent** over the same period.

- The total number of fatal or serious accidents on major roads increased by 3 per cent in the year ending June 2016. Fatal or serious accidents on minor roads increased by 2 per cent between the year ending June 2015 and 2016.

Definitions

Built-up roads: Accidents on "built-up roads" are those which occur on roads with speed limits (ignoring temporary limits) of 40 mph or less.

Non built-up roads refer to speed limits over 40 mph.

Major roads: includes motorways and A roads.

- On roads with a speed limit over 40 mph (**non-built-up roads**) fatal accidents **decreased by 1 per cent**, and fatal or serious accidents increased by 4 per cent in the 12 months to June 2016. There was a 6 per cent increase in fatal accidents on roads with a speed limit of up to and including 40 mph (**built-up roads**) with a **2 per cent increase in fatal or serious accidents** over the same period.

Figures for April to June 2016

- **Fatal or serious accidents on major roads increased by 10 per cent** in the second quarter of 2016. However, fatal or serious accidents on **minor roads decreased by 5 per cent over** the same period.

- Total accidents on major roads decreased by 7 per cent in comparison with the second quarter of 2015. However, the total number of accidents on minor roads increased by 1 per cent.

- **Fatal accidents on non-built-up roads** decreased by 7 per cent in the second quarter of 2016. However, fatal accidents on built-up roads increased by 35 per cent over the same period. Fatal or serious accidents on non-built-up and built-up roads increased by 5 and 1 per cent respectively compared with the same quarter of 2015.

Tables

• Reported road accidents, by road type (estimates): Great Britain, rolling annual totals, updated quarterly, table RAS45009.

• Reported road accidents by road type (estimates): Great Britain, latest available quarter, table RAS45010.

Background to trends

Uncertainty in the provisional estimates

The provisional statistics are based on data supplied by police forces with **some imputation** to account **for months that are either missing entirely or for which more data are expected later** in the year. There are forces that have not provided data for at least some of the period April to June 2016: three forces have not provided data for June 2016, one force has not provided any data for May and June 2016 and one force has not provided any data for the whole quarter. In particular, no data for June was received from the Metropolitan police. This force accounts for a large share of road casualties (see ras30007). Although it is not unusual for some forces to be missing, the relative size of this force means that there is considerable uncertainty associated with these estimates and it is possible that there could be large changes when these figures are revised in future publications.

An imputation method is used to estimate the missing data. For example, we were supplied with records for 432 fatalities in GB in the second quarter of 2016. We have then imputed 22 additional fatalities to fill in gaps in force data for the quarter. This gives an estimated 454 fatalities for the second quarter of 2016 which is rounded to 450 fatalities. The uncertainty in the figures comes from the imputed figures: forces may well have outcomes that differ from what the model estimates. The more data missing the greater the uncertainty (particularly when data is missing from larger forces).

Weather

April, May and June 2015 were all fairly close to the long term average (LTA) temperature with each

month within 1 ºC. In terms of precipitation, April and June 2015 were drier than average. May 2015 was over 60 per cent wetter than average. The temperatures for April, May and June 2016 were also relatively close to the LTA with the temperature in April within 1 ºC below the LTA and the temperatures in May and June within 1 ºC above the LTA. Precipitation in April and May 2016 was close to the LTA. However, precipitation in June 2016 was over 40 per cent higher than the LTA.

However, the weather-adjusted casualty figures for these quarters were not significantly different from the actual figures (see Table 5). It is therefore **likely that the increases in fatalities and KSIs and fall in total casualties in the second quarter of 2016 compared to the same quarter of 2015 would have occurred even if conditions in both quarters had been closer to the average.**

Largely due to the warmer temperatures in the last six months of 2014 the weather-adjusted figure for road deaths in the year ending June 2015 is 1,749 compared with the 1,770 actually observed. This suggests that if conditions had been closer to average in the years ending June 2016 and 2015 the increase in road deaths would have been larger at roughly 3.2 per cent compared with the 1.7 per cent actually observed (see Table 5). Nevertheless, this increase is still not large enough to be statistically significant.

Statistical model

The Department has developed a statistical model to produce weather-adjusted road casualty figures. The weather-adjusted casualty figures should be interpreted as the number of road casualties we would have expected in a given year or quarter had the temperature and precipitation in each month been at the long term average. Further information can be found at:

www.gov.uk/government/uploads/system/uploads/attachment_data/file/463100/weather-on-road-casualties.pdf

www.gov.uk/government/uploads/system/uploads/attachment_data/file/463049/rrcgb2014-03.pdf

Long term average (LTA)

The Met Office use 30 year averages for UK temperature and precipitation to assess changes in the latest temperature and precipitation data. Currently the 1981-2010 average is used for comparison: www.metoffice.gov.uk/climate/uk/summaries/2015/annual.

Tables

• Reported weather-adjusted road casualties by road user type, Great Britain, annual from 1991, table RAS30080.

Table 5: Published and weather-adjusted casualties by severity, GB

Quarter/Year	Fatalities		KSI		Slightly injured		Total casualties	
	Published	Weather-adjusted	Published	Weather-adjusted	Published	Weather-adjusted	Published	Weather-adjusted
Q2 2015	420	414	5,958	5,996	39,682	39,774	45,640	45,770
Q2 2016	450	460	6,080	6,080	38,170	38,010	44,250	44,090
Percentage change between quarters	*7.1%*	*10.6%*	*2.1%*	*1.4%*	*-3.8%*	*-4.4%*	*-3.1%*	*-3.7%*
Year ending June 2015	1,770	1,749	23,914	23,828	165,435	166,013	189,349	189,841
Year ending June 2016[1]	1,800	1,810	24,620	24,510	160,390	160,380	185,010	184,890
Percentage change between years	*1.7%*	*3.2%*	*3.0%*	*2.8%*	*-3.1%*	*-3.4%*	*-2.3%*	*-2.6%*

1. All statistical models work within reasonable operating parameters. The model used here is based on long-term trends in temperature and precipitation. It does not take into account events that are considerably more extreme than have been recorded before, and similarly it cannot take into account consequences such as flooding and road closures. As a result we do not believe that the model produces a reliable adjustment of the casualty figures for December

2015. It is impossible to say what the outcome would have been had the weather in December been closer to the long term average. The adjusted December 2015 figures have therefore not been included in the year ending June 2016 weather-adjusted figures.

CRASH

There is some evidence that some police forces are recording more accidents with a serious severity and fewer with a slight severity when using the CRASH system. The early indications are that there has been around a **2 percentage point move from slightly injured casualties to seriously injured casualties.**

Definition

CRASH: Collision Recording and Sharing system. This is a new centralised system used by some police forces to record road traffic collisions.

Only half of the English police forces are currently using CRASH (and these forces only account for around 40 per cent of casualties in England) and most of the forces adopted the system between January and May 2016. Therefore only around 19 per cent of all casualties in the year ending June 2016 will have been recorded on CRASH. As a result, whilst the change in the split between serious and slight may have influenced the increase in seriously injured casualties reported here, it cannot have accounted for much of the rise.

The Department is carrying out some research into why casualties being recorded on CRASH are more likely to be recorded as having serious injuries than slight injuries. The findings of this research will be reported with or before the publication of the final 2016 figures. It is likely, though, that the change has come about either through better recording of the injury type (in which case the new data are more accurate), or incorrect recording of whether slightly injured casualties were admitted to hospital (in which case the increase in serious injuries is incorrect).

Conclusions

Although there has been an increase in KSIs and fatalities and a fall in slightly injured and total casualties in the year ending June 2016, **these changes should be interpreted with caution**. Firstly, as discussed above, the increase in fatalities in the year ending June 2016 is not statistically significant. Therefore we cannot be sure that there has been a real change in fatalities. Instead this increase is likely to have come about by chance. However, the increase in killed or seriously injured casualties is statistically significant so we can be sure that there has been a real worsening in KSIs. In addition, the decreases in slightly injured and total casualties are statistically significant so we can be sure that there has been a real improvement for these severities. As discussed in the section on uncertainty, there are a number of police forces with missing data for April to June 2016 which creates **considerable uncertainty in these estimates.** Once the missing data from these forces become available later in the year it is possible that there could be large revisions to the April to June 2016 figures.

In addition, given that this publication only provides data for the second quarter of 2016 it is **too**

early to draw any conclusions about the trend for 2016. We will have more idea of the trend for 2016 when quarter 3 road casualty estimates are published in February 2017. This publication will also include revised casualty estimates for April to June 2016.

Strengths and weaknesses of the data

- The quarterly figures are based on estimates. No single quarter's figures should be taken in isolation as an indication of long-term trend, as there are seasonal fluctuations particularly in the smaller categories of road user. The 2016 Q2 results are based on complete (April to June 2016) figures provided by 38 police authorities with partial data for five authorities. Adjustments are made to take account of missing data. Table RAS45011 provides a list of which police authorities are included in these figures. As described above, there is considerable uncertainty in the adjustments.

- Comparison of road accident reports with death registrations shows that very few, if any, road accident fatalities are not reported to the police. However, it has long been known that a considerable proportion of non-fatal casualties are not known to the police, as hospital, survey and compensation claims data all indicate a higher number of casualties than suggested by police accident data.

- The data used as the basis for these statistics are therefore not a complete record of all personal injury road accidents, and this should be kept in mind when using and analysing the figures. However, police data on road accidents (STATS19), whilst not perfect, remain the most detailed, complete and reliable single source of information on road casualties covering the whole of Great Britain, in particular for monitoring trends over time.

- Following requests from users, we have started to include casualty rates in the quarterly release i.e. casualty rates per mile. They are based on provisional casualty and traffic estimates and are subject to revision at the end of the year.

- Provisional traffic estimates do not include pedal cycling estimates. We have attempted to adjust for this in the figures by adding in approximately 1% extra vehicle miles. This ratio is based on the relationship between all motor vehicle traffic and pedal cycle traffic for 2013 to 2015.

Tables

• Reported road casualties by police force area, rolling annual totals, updated quarterly, table RAS45011.

Further information

A full list of the definitions used in this publication can be found here: www.gov.uk/government/uploads/system/uploads/attachment_data/file/462818/reported-road-casualties-gb-notes-definitions.pdf.

Further information on Reported Road Casualties Great Britain, including information about the variables collected on the STATS19 form, historical publications and factsheets, can be found at: www.gov.uk/government/publications/road-accidents-and-safety-statistics-guidance.

- Estimates are based on information reported to the Department for Transport 17 weeks after the end of the second quarter 2016. Figures are based on information available on 26 October 2016.

Background notes

- The Reported Road Casualties Great Britain Quarterly Provisional Estimates web page provides further detail of the key findings presented in this statistical release. The tables are available at: www.gov.uk/government/statistics/reported-road-casualties-in-great-britain-provisional-estimates-april-to-june-2016
- A note on methodology can be found at: www.gov.uk/government/publications/road-accidents-and-safety-statistics-guidance
- National Statistics are produced to high professional standards as set out in the Code of Practice for Official Statistics. They undergo quality assurance reviews to ensure that they meet customer needs. The first assessment report (report number 4) and letter confirming that the statistics have been designated as National Statistics are available at: www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html. The statistics were reassessed during 2013 and the report, number 258, was published at the link above on the 25th July 2013.
- Details of Ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found here: www.gov.uk/government/publications/road-accident-and-safety-statistics-pre-release-access-list
- The latest annual road safety publication, Reported road casualties Great Britain, annual report: 2015, is available at: www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2015. Final 2016 road casualty figures will be published in the 2016 main results release, due in June 2017.

Next release

The next release of reported road casualty statistics, will be the July to September provisional estimates. This will be published in February 2017.