



Department for Transport

# Reported Road Casualties in Great Britain: quarterly provisional estimates Q1 2015

There were 1,740 road deaths in the year ending March 2015, down by 1 per cent compared with the year ending March 2014.

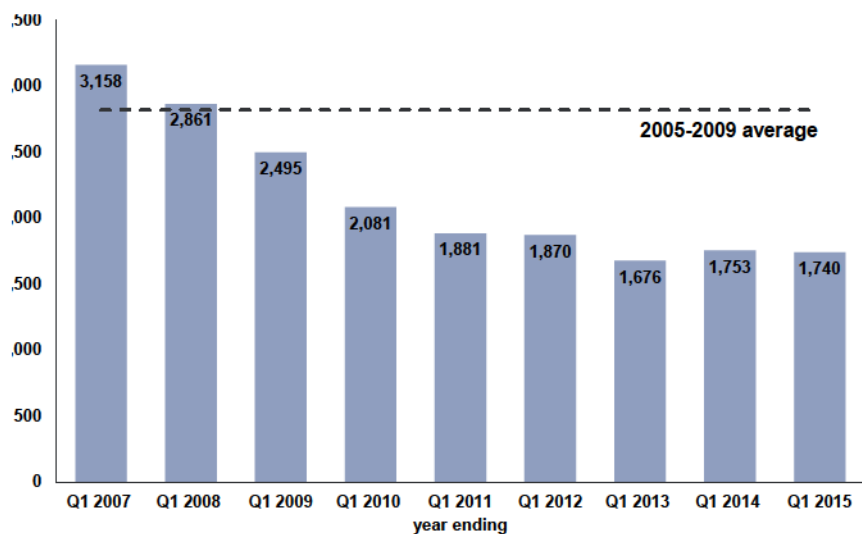
## About this release

This publication provides the number of personal-injury road traffic accidents in Great Britain that were reported to the police for year ending March 2015. It also includes the number of people killed or injured in these accidents and which road user group they were in.

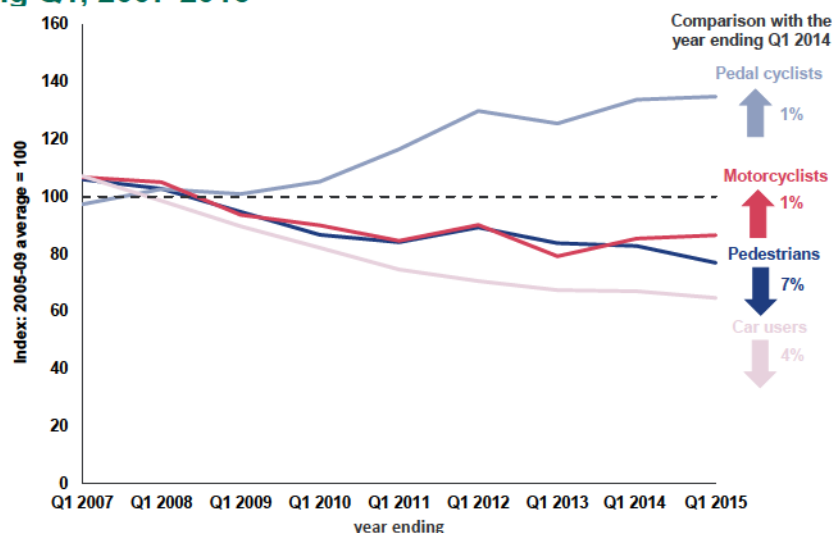
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Fatalities in reported road accidents, GB: rolling years ending Q1, 2007-2015



Reported KSI casualties by road user type, GB: rolling years ending Q1, 2007-2015



- ▶ A total of 23,570 people were **killed or seriously injured** (KSI casualties) in the year ending March 2015, down 3 per cent from the year before.
- ▶ **Motor traffic** levels rose by 1.8 per cent compared with the 12 month period ending March 2014. The overall **casualty rate per vehicle mile** decreased by 2 per cent for the same period.

# Overall results

## Rolling years ending March

- In the year ending March 2015 there were 1,740 **reported road fatalities**, a 1 per cent decrease from 1,753 in the previous year.
- Killed or seriously injured casualties** (KSIs) decreased by 3 per cent to 23,570 and the **total number of casualties** decreased by 2 per cent to 186,060
- It is likely that the differences in **weather conditions** between the first quarters of 2014 and 2015 played a significant part in the decreases in casualties. This is discussed in more detail in the section on [background to trends](#).
- Motor vehicle traffic** increased by 1.8 per cent over the same period.

## Definition

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

A full list of the definitions used in this release can be found [here](#).

**Table RAS45001: Reported road casualties by severity, GB: year ending 2015 Q1**

ALL CASUALTIES	Number/percentage change compared with previous 12 months			
	Apr-13 to Mar-14	Apr-14 to Mar-15 (P)	Percentage change	Traffic <sup>1</sup> percentage change
Killed	1,753	1,740	↓1%	↑1.8%
KSI <sup>2</sup>	24,202	23,570	↓3%	↑1.8%
Slightly injured	165,610	162,490	↓2%	↑1.8%
<b>All casualties</b>	<b>189,812</b>	<b>186,060</b>	<b>↓2%</b>	<b>↑1.8%</b>

P Provisional estimates

1 Motor traffic (excludes pedal cycles)

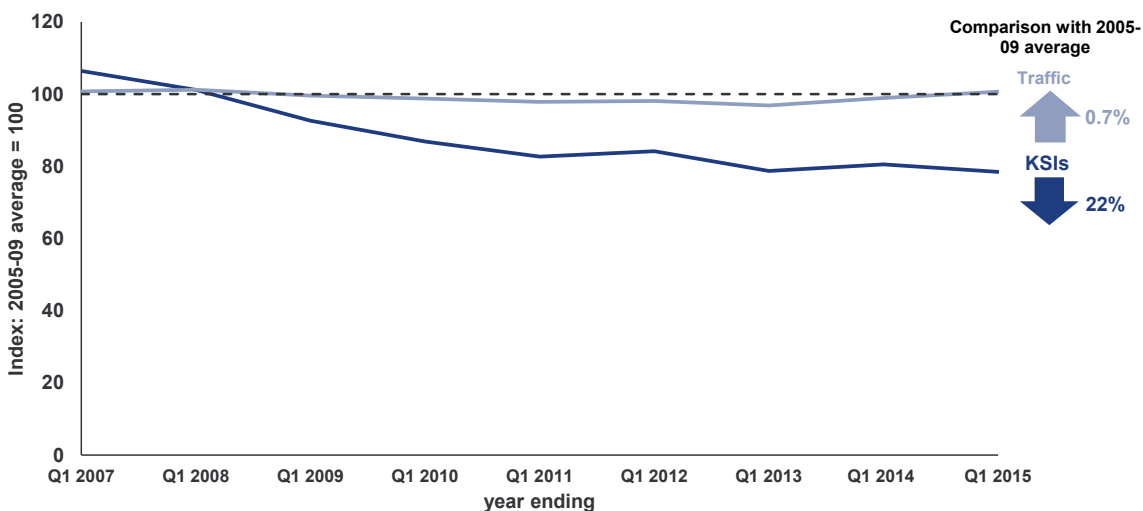
2 Killed or seriously injured

## Detailed statistics

Reported road casualties by severity: table [RAS45001](#).

Road traffic: table [TRA2501](#)

**Chart 1: Reported killed or seriously injured casualties and motor traffic, GB: rolling years ending Q1, 2007-2015**



## Figures for January to March

- Between January and March 2015, 340 people were **killed** in reported road accidents, a 10 per cent decrease from 376 in the same quarter of 2014.
- KSI casualties** and **slightly injured casualties** both decreased by 18 per cent from the first quarter in 2014, to 4,540 KSI casualties and 32,940 slightly injured casualties in 2015 Q1.
- Casualties of **all severities** fell by 18 per cent from the same period in 2014 to 37,480.
- Motor vehicle traffic** levels increased by 1.8 per cent between January and March 2015 compared with the same quarter in the previous year.

### 2005-2009 average

The 2005-2009 average is used as a comparison timeframe in both this publication and the accompanying statistical tables. This average is the baseline for the [Strategic Framework for Road Safety Outcomes](#).

### Detailed statistics

Reported road casualties by severity, quarterly: table [RAS45002](#)

**Table RAS45002: Reported road casualties by severity, GB: 2015 Q1**

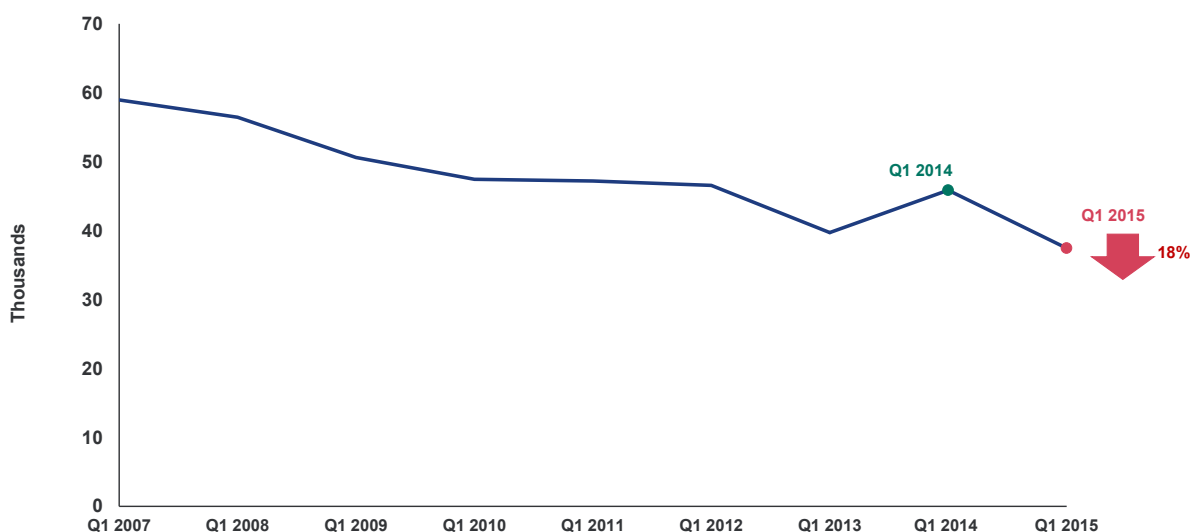
	Number/percentage change compared with same quarter last year			
	Q1 2014	Q1 2015 (P)	Percentage change	Traffic <sup>1</sup> percentage change
<b>ALL CASUALTIES</b>				
Killed	376	340	↓10%	↑1.8%
KSI <sup>2</sup>	5,544	4,540	↓18%	↑1.8%
Slightly injured	40,349	32,940	↓18%	↑1.8%
<b>All casualties</b>	<b>45,893</b>	<b>37,480</b>	<b>↓18%</b>	<b>↑1.8%</b>

P Provisional estimates

1 Motor traffic (excludes pedal cycles)

2 Killed or seriously injured

**Chart 2: Reported road casualties, GB: rolling years ending Q1, 2007-2015**



## Casualty rates

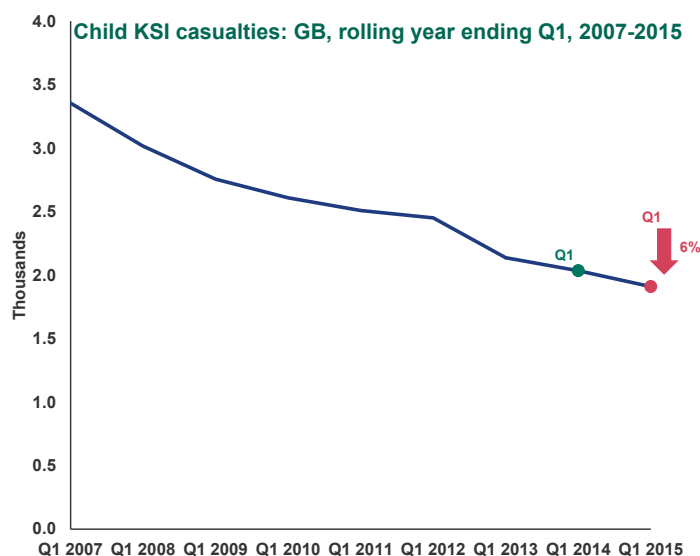
- In the year ending March 2015, **fatalities** fell by 1 per cent while **traffic levels** rose by 1.8 per cent compared with the previous year. As a result the **fatality rate per billion vehicle miles** decreased by 1 per cent.
- The **rate for total casualties** of all severities decreased by a greater amount, at 2 per cent, compared with the year ending March 2014. The overall casualty rate fell by more than the fatality rate as there was a larger decrease in slightly injured casualties than there was in fatalities.
- In the first quarter of 2015, fatalities decreased by 10 per cent, and KSI casualties, slight casualties and overall casualties all fell by 18 per cent compared with the first quarter 2014. Over the same period, traffic levels increased by 1.8 per cent. As a result, the **fatality rate per billion vehicle miles** fell by 11 per cent and the **casualty rate for all other severities** fell by 20 per cent.

## Road user type

### Rolling years ending March 2015

- There was a decrease of 7 per cent in **pedestrian KSIs** to 5,200 in the year ending March 2015 compared with the previous year. **Car user KSI casualties** fell by 4 per cent to 8,400 compared with the previous year.
- In contrast, **motor and pedal cyclist KSI casualties** both rose by 1 per cent in the year ending March 2015. Pedal cyclist KSI casualties rose to 3,410 and motorcyclist KSIs rose to 5,470.

- Child (0-15) KSI casualties** decreased by 6 per cent to 1,910 and **child pedestrian KSI casualties** decreased by 8 per cent. Child casualties of all severities decreased by 3 per cent to 15,860 compared with the previous year.



### 2005-2009 average



**Car occupant** casualties in the year ending March 2015 compared to the 2005-2009 average:

KSI	↓ 35%
All casualties	↓ 31%

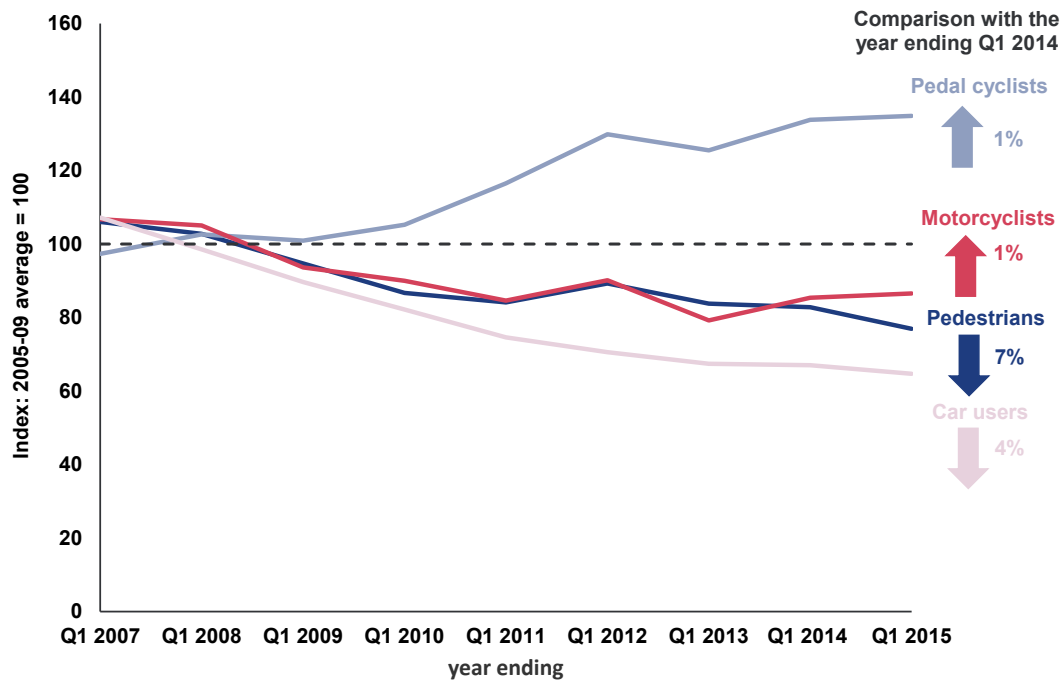
### 2005-2009 average




**Pedestrian** casualties in the year ending March 2015 compared to the 2005-2009 average:



KSI	↓ 23%
All casualties	↓ 22%


**Chart 3: Reported killed or seriously injured casualties by road user type, GB: rolling years ending Q1, 2007-2015**





**2005-2009 average** 

**Pedal cyclist casualties** in the year ending March 2015 compared to the 2005-2009 average:

KSI	 35%
All casualties	 23%

**2005-2009 average** 

**Motorcycle user casualties** in the year ending March 2015 compared to the 2005-2009 average:

KSI	 13%
All casualties	 13%

**January to March 2015**

- **KSI casualties** decreased for all road user groups from the first quarter of 2014 to the first quarter of 2015:
  - **pedestrian KSI casualties** fell by 21 per cent to 1,150;
  - **motorcycle and pedal cycle KSI casualties** fell by 830 (down 16 per cent) and 580 (down 14 per cent) respectively;
  - **car user KSI casualties** fell by 20 per cent to 1,730;
  - **child KSI casualties** decreased by 36 per cent to 310 and **child casualties of all severities** decreased by 23 per cent. **Child pedestrian KSI casualties** and total casualties decreased by 34 and 23 per cent respectively.

**Road type**

**Rolling years ending March 2015**

- **Fatal or serious accidents** on **major roads** (motorways and A roads) and **minor roads** decreased by 4 per cent and 1 per cent respectively. However, fatal accidents on minor roads rose by 1 per cent for the year ending March 2015.
- On roads with a **speed limit over 40 mph** (non-built-up roads) **fatal or serious accidents** decreased by 3 per cent. There was also a 2 per cent decrease on roads with a **speed limit of up to and including 40 mph** (built-up roads).

## Figures for January to March 2015

- **Accidents of all severities decreased on all road types** between January and March 2015 compared with the same period in the previous year:
  - **fatal or serious accidents** on **major roads** decreased by 19 per cent and decreased by 17 per cent on **minor roads**;
  - **fatal or serious accidents** on **non-built-up** and **built-up roads** decreased by 21 and 16 per cent respectively compared with the same period in 2014.

## Background to trends

Historically, the first quarter of the year usually has the lowest casualty numbers of each severity for the whole year. At one level, therefore, it is not surprising that the casualty figures for the first quarter of 2015 are lower than the final three quarters of 2014. To counter this, though, there were indications that the 2014 figures could have represented a change to an upward trend in reported road casualties. This point was discussed in more detail in [Main results: 2014](#), as published in June 2015.

One of the conclusions in Main results: 2014 was that the trends had become very complex and conflicting factors and evidence made it hard to surmise if the 2014 figures did, in fact, represent a genuine worsening in road safety in Britain, a one-off upward blip, or a plateauing of reported casualty numbers. The results contained within [this](#) report do not provide much help in indicating which of these potential options is correct.

As is noted in every provisional release of quarterly statistics, the results from individual quarters should be used with caution. The data are always imperfect and this quarter, as with every quarter in the past, are based on incomplete returns from police forces. The returns are incomplete in three ways: a) some forces have not provided data for the whole period (specifically, two forces have not provided data for February and March 2015); b) even where forces have provided data for a given month, this does not mean that every accident that was reported to the force have been included in the return at this stage (accident records are not provided to us until they have been entered and validated by the original police force or local authority); and c) detailed validation has not yet been carried out on the records (this final validation, carried out at the end of the year by us, police forces and local authorities can result in details of the accident record being changed, or accidents being removed entirely). Although we have processes to deal with the first two problems (both of which would result in underreporting if ignored), these processes are imperfect and could well produce an estimate that is incorrect.

In particular, the casualty numbers for 2015 Q1 are very low for all severities. If they are proved to be correct, with the exception of fatalities, it will be to be the lowest quarter on record for KSI, serious, slight and overall injuries. Given that the estimated number of deaths, 340, is only 4 higher than the lowest confirmed quarter ever (2013 Q1), it is plausible that this quarter could set the

new lowest record for fatalities as well. This opens a potential concern for the interpretation of the figures. One outcome could be that the estimates will be close to the final figures and the quarter will turn out to be the best quarter on record. The second possible outcome is that police forces have withheld more accident records than usual at this stage, and the process used to scale up for these 'missing' records is underestimating just how many are missing. At this point in time, there is no evidence to indicate that the second option is correct and it is not something that has happened before. Nevertheless, it is important to highlight this potential outcome and consider it in the light of the seemingly large reductions in casualties.

The average temperature across Britain in the first quarters of both 2014 and 2015 is a potential explanation for reported casualties dropping so much in the year ending March 2015. Since 2012, the first quarters of each year have seesawed between being relatively warm and relatively cold. As shown in Table 1, the first quarter of 2012 was relatively warm, with an average temperature of 1.2°C above the long term average (LTA). This was followed by a very cold first quarter in 2013 (1.5°C below the LTA) which was associated with a 15 per cent fall in casualties. The first quarter of 2014 reversed this trend and was warmer than 2012, at 1.3°C above the LTA and a 15 per cent increase in casualties. Finally, 2015 Q1 had an average temperature that was a fraction below the LTA, but was much colder, on average, than 2014 Q1. This most recent quarter had 18 per cent fewer casualties than in the same quarter of 2014.

### Long term average (LTA)

The Met Office uses 30 year averages for UK temperature and rainfall to assess changes in the latest weather conditions. Currently the 1981-2010 average is used as a comparison period: [www.metoffice.gov.uk/climate/uk/summaries/2014/annual](http://www.metoffice.gov.uk/climate/uk/summaries/2014/annual)

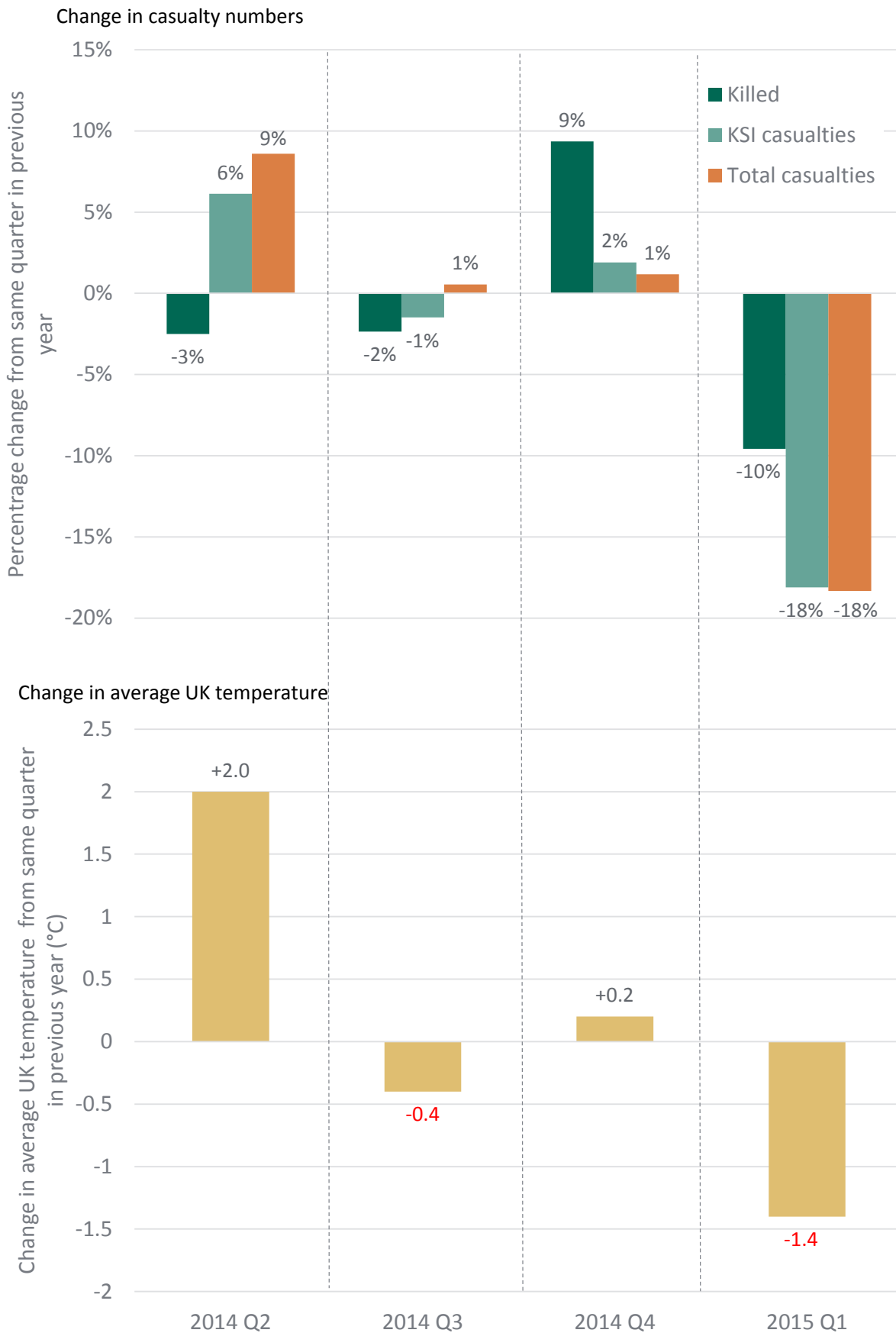
**Table 1: Change in number of casualties and average UK temperature between first quarters of the year: 2012-2015**

Year	Number/percentage change compared with Q1 in the previous year		
	Temperature difference from long term average (°C)	Number of casualties	Percentage change in casualties
2012	1.2	46,590	↑ 1%
2013	-1.5	39,751	↓ 15%
2014	1.3	45,893	↑ 15%
2015	-0.1	37,480	↓ 18%

The possible affect that the average UK temperature has had on the figures for each quarter of years ending March 2014 and 2015 is shown in Chart 4. In general, the quarters that were warmer in year ending March 2015 than in the year ending March 2014 tended to result in a higher number of casualties across all severities. For the quarters that were colder in the latter year, the opposite is true. This is not the case for every quarter and every severity, and the affect is not always equal. For instance, 2014 Q2 was 2.0°C warmer than 2013 Q2 and both serious and slight casualties increased between the years. Yet the number of fatalities fell between the years. The fourth quarter showed a different pattern: 2014 Q4 was only slightly warmer than 2013 Q4 but whilst fatalities

increased by 9 per cent, overall casualties only increased by 1 per cent.

**Chart 4: Change in reported casualty numbers and average UK temperature for each quarter: year ending March 2015**





The important conclusion to take from these patterns is twofold. First, as has been demonstrated in previous statistical publications from the Department for Transport and in work carried out in other countries such as France and Belgium, the weather, and especially average temperatures, is a strong influencing factor on accident and casualty numbers. However, the second key point is that it is not the only factor, and the interaction between weather and other factors is complex. This is demonstrated by the fact that the relationships in Chart 4 are neither direct nor linear (i.e. the response in casualty numbers to changing temperatures is not the same in every quarter or every severity).

Even with statistics for the first quarter of 2015, there is no definitive interpretation of the current overall trend for reported road casualties on British roads. One plausible possibility is that the factors affecting road safety have reached a balancing point and, all factors being equal, overall casualty numbers are reaching a point of stasis. If this is true, the variation in figures we have seen over 2014 and 2015 are more likely to be as a result of random variation and influenced by one-off factors and / or changes in the weather.

No matter the uncertainty of the trend for the overall figures, there are still some definitive, ongoing trends for some road user groups. Despite a fall in pedal cyclist KSI casualties between the first quarters of 2014 and 2015, the year ending figures show that the pedal cyclist KSI casualties are continuing to increase.

## Statistical significance in changes in casualty numbers

As described in the [Main results: 2014](#) publication, we have developed some tests to check for statistical significance in the changes in numbers of reported road casualties. Although the tests used on the annual data can be applied to the provisional quarterly data, the outputs should be treated with caution. The tests do not make any allowances for uncertainty in the figures being used: they assume that the casualty figures are complete counts of all the records. This is fine for the annual figures as we know that police forces have no more reportable accidents on file and everything has been submitted. However, the provisional quarterly data are not complete records of all the reportable accidents during January to March 2015: not all police forces have provided data for the whole period and most forces will send additional records for this period at a later date. In theory, therefore, any statistical test needs to take this uncertainty into account and it should mean that it is more difficult to get a statistically significant change.

At this point in time we have not yet modified the tests to take into account this uncertainty. This should be kept in mind when interpreting these results. In practice, anything that appears to be statistically significant or nearly statistically significant should be regarded with some caution.

As was produced for the 2014 figures, there are two approaches to testing the significance. First there is a test in the absolute change in the figures. This test indicates that the decrease in KSI

casualties, slightly injured casualties and overall casualties between both the first quarter of 2014 and 2015, and the years ending March 2014 and 2015 are statistically significant at the 95% confidence level. The change in fatalities, though, is not. It is possible, if not likely, that had the uncertainty of the estimates been taken into account, though, the rolling year changes will have been found to be not statistically significant. The changes between just the first quarters are so large that even taking into account uncertainty, they are likely to remain significant. It is important to note, though, that it is not unusual to have statistically significant changes between individual quarters as the number of accidents can be affected by so many external factors.

The second test is to compare the estimates with a forecast of what the casualty figures would have been if the recent trends had continued. The table below gives the outcome of testing both the year ending March 2015 and just the first quarter of 2015. It shows that although all the severities are close to the lower forecast, none of the rolling year changes are statistically significant. Again, if uncertainty were to be taken into account it is likely that the lower forecast would be even lower.

	<b>Fatalities</b>	<b>KSI casualties</b>	<b>Slightly injured</b>	<b>All casualties</b>
Year ending Mar 2014 actual	1,753	24,202	165,610	189,812
<i>Year ending Mar 2015 estimate</i>	1,740	23,570	162,490	186,060
Year ending Mar 2015 central forecast	1,770	23,980	163,290	188,470
Year ending Mar 2015 upper forecast	1,830	24,500	165,900	191,170
Year ending Mar 2015 lower forecast	1,720	23,500	160,850	185,920
Statistically significant change? <sup>1</sup>	No	No	No	No
<i>2015 Q1 estimate</i>	340	4,540	32,940	37,480
2015 Q1 central forecast	394	5,317	38,031	44,547
2015 Q1 upper forecast	456	5,845	40,638	47,249
2015 Q1 lower forecast	341	4,838	35,592	42,000
Statistically significant change? <sup>1</sup>	Yes	Yes	Yes	Yes

**Table 2: Statistical significance tests for year ending March 2015 and 2015 Q1**

1. These tests do not take into account uncertainty. Therefore any change that appears to be statistically significant at this stage might not be so if uncertainty was taken into account.
2. As the fatality figure is so close to the lower forecast, it should be regarded as definitely not being statistically significant once uncertainty is taken into account.

In contrast, all of the severity levels for the first quarter of 2015 are below the lower forecast, suggesting that the quarterly decrease could be significant. As explained above, though, if

uncertainty were taken into account the lower forecast would be lower than it is, and it is possible that some or all of the severities would cease to have statistically significant changes.

The conclusion is that the decreases in rolling year reported casualty numbers are definitely not statistically significant when compared with the forecast. However, it is likely that some of the changes between the first quarters of 2014 and 2015 will be statistically significant. This is not unusual, though, and it is more likely to reflect external influencing factors than any real change in road safety outcomes.

## 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 2015 Q1 results are based on complete (January to March 2015) figures provided by 41 police authorities with partial data for two authorities. Adjustments are made to take account of missing data. Table RAS45011 provides a list of which police authorities are included in these figures.
- 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 2012 to 2014.

## Background notes

- Estimates are based on information reported to the Department for Transport 16 weeks after the end of the latest quarter. Figures are based on information available on 28 July 2015.
- 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-jan-to-mar-2015](http://www.gov.uk/government/statistics/reported-road-casualties-in-great-britain-provisional-estimates-jan-to-mar-2015)
- A note on methodology can be found at: [www.gov.uk/government/publications/road-accidents-and-safety-statistics-guidance](http://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](http://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](http://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: main results 2014, is available at: [www.gov.uk/government/statistics/reported-road-casualties-in-great-britain-main-results-2014](http://www.gov.uk/government/statistics/reported-road-casualties-in-great-britain-main-results-2014), and the most recent annual report (for 2013) is available at: [www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013](http://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2013). Final figures for 2015 will be published in Main Results 2015, due in June 2016.

### 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/48822/reported-road-casualties-gb-notes-definitions.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48822/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/transport-statistics-notes-and-guidance-road-accident-and-safety](http://www.gov.uk/transport-statistics-notes-and-guidance-road-accident-and-safety).

## Next releases

Reported road casualties Great Britain, Annual Report 2014 will be published in September 2015

The next quarterly release of reported road casualty statistics, for the year ending June 2015, will be published in November 2015