

## Methodology

Fourteen weeks after the end of each quarter, a judgement is made as to whether data available for each police force for each month are complete. This decision is made using comparisons with figures from previous years and consulting the relevant force to see if they are aware of any late returns. Data sets that are not complete are considered to be missing and need to be estimated for the purpose of producing the national estimates.

In broad terms the estimation process proceeds as follows? The first step is to calculate average growth (or reduction) rates for the forces with complete data. A separate growth rate is calculated for each month and for each category to be published (for example, pedestrians killed or seriously injured, pedestrians slightly injured, pedal cyclists killed or seriously injured). The growth rate is calculated from the equivalent month of the previous year to eliminate the effects of seasonal fluctuations in road accidents.

Growth rate = 
$$\frac{(\sum \text{police forces with complete data})}{(\sum \text{the same police forces for the equivalent month of previous year})}$$

Each missing police force month is estimated by multiplying the data from the same police force from the same month from the previous year by the appropriate growth rate. Data (actual or estimated) are now available for all police force months.

A scaling factor is applied to all police force months (regardless of whether they were considered complete at the start of the process or have been estimated). The scaling factor compensates for the few accidents, which are reported later for those police force months judged complete and used in estimates. Even if the vast majority of data have been submitted there are likely to be a few accidents that do not find their way into the system for several months. The scaling factor is calculated by monitoring the levels of under-reporting of accidents for the same month from previous years. A separate scaling factor is required for each month in the quarter and for each month in earlier quarter revisions.

[NB: The figures in Table RAS54010 are not scaled.]

Once the data have been scaled, summing the data for each police force for the relevant months produces the quarterly estimates. Note that estimated figures are rounded to the nearest 10.

### Levels of reporting

Comparisons with death registrations show 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 and hospital, survey and compensation claims data all indicate a higher number of casualties than are reported. Previous studies comparing police and hospital data (e.g. Simpson 1997<sup>8</sup>) have suggested that around 60 per cent of road casualties attending hospital reported their accident (with around 20 per cent not being recorded in the

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<sup>8</sup> See for example 'Comparison of Hospital and Police Casualty Data: A National Study' by H F Simpson. Report available for free download from <http://www.trl.co.uk> (search for 'TRL272').

STATS19 database). Studies also confirm the view that the police are more likely to underestimate severity of injury because of the difficulty in distinguishing severity at the scene of the accident.

Our best estimate produced in 2011, derived primarily from National Travel Survey (NTS) data for 2010, is that the total number of road casualties in Great Britain each year, including those not reported to police, is within the range 660 thousand to 800 thousand with a central estimate of 730 thousand. A discussion of how this estimate has been derived, and its limitations, together with information on complementary sources of data on road accidents and casualties, are contained in the Survey data on road accidents article of Reported Road Casualties Great Britain: 2010 Annual report, which can be found at:

<http://webarchive.nationalarchives.gov.uk/20120801131304/http://www.dft.gov.uk/statistics/releases/road-accidents-and-safety-annual-report-2010/>

This estimate will be updated again in mid 2013, once the National Travel Survey (NTS) data for 2011 is available. The survey article will be published as a separate document to the Roads Accidents and Safety Annual Report 2011.

Although STATS19 does not provide complete coverage of road accidents and casualties, this does not in itself make it unsuitable for monitoring changes over time, assuming that levels of reporting to police have not changed. There have been a number of studies of levels of reporting of road accidents in recent years (see article referred to above for references). These have shown different patterns and to date there is no clear or conclusive evidence of a systematic change in levels of reporting at national level.

STATS19 remains the single most useful source of data on road accidents and resulting casualties in Great Britain. In particular, it is the only national source to provide detailed information on accident circumstances, vehicles involved and resulting casualties. However, since it is not a complete record of all injury accidents and resulting casualties, and this should be borne in mind when using and analysing the data. Users of STATS19 data should be aware that, whilst comparisons with survey data suggest that the police data is sufficiently representative of casualties by road user type, levels of reporting to police may vary according to the accident circumstances. For example, it is known that few single vehicle pedal cycle accidents are included in STATS19.

In addition, particular local circumstances (for example organisational changes, reviews of coding practice and local initiatives) may affect the data and trends over time, particularly at local level. Therefore, as with most data sources, users of STATS19 are advised to carefully explore relevant issues before drawing conclusions from the data and the Department is happy to offer advice in this area.