

# Seat Belts: Time for Action



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March 2020

# Seat Belts: Time for Action

Parliamentary Advisory Council for Transport Safety,  
in association with Direct Line Group

March 2020

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## Foreword

The UK has a proud road safety record. Over 35 years ago mandatory seat belt wearing came into force, proving to be one of the most effective road safety interventions in the history of motoring. Today, the vast majority of UK drivers and passengers wear a seat belt and the level of road deaths is much lower. Yet, despite its effectiveness, the evidence points to seat belts being the UK's forgotten road safety priority. Last year we published an important analysis following an apparent increase in the number of deaths involving car drivers and passengers not wearing a seat belt. Over 200 people died (more than a quarter of all deaths in cars) and a further 1,000 people were seriously injured.

We were very pleased that the Department for Transport welcomed our report and said it would consult on amending the penalties for failing to wear a seat belt

This new report, based on over 1,000 records obtained from police forensic police collision investigators (PFCI), including more recent data from 2018, shows that the level of death and injury is probably even greater, with 273 deaths in the UK where a seat belt was not worn in 2018 alone. It offers a more robust assessment than the Stats19 data which formed the basis of our analysis last year. And while Stats19 records road injury collisions in Great Britain, PFCI data also includes Northern Ireland.

While there is no clear pattern, seat belt wearing varies across police force areas with as many as 60% and as few as 10% of those who died not wearing a seat belt.

Failure to wear a seat belt is more prominent amongst some demographics, especially those aged under 35 or from deprived areas. These groups also tend to drive older cars which have inferior seat belt reminder systems. It often goes hand-in-hand with other high-risk driving behaviours, such as drink driving. A seat belt does not prevent the crash but it greatly increases the chances of surviving it.

PACTS and Direct Line Group believe these findings are significant. They have given us extra cause to keep campaigning for practical recommendations to drive up wearing rates. We remain of the view that sound, evidence-led solutions covering seat belt education, enforcement and technology need to be stepped up. Most crucially, we want to see the introduction of penalty points for non-wearing of seat belts. Penalty points would act as an important signal, are backed by the public and would bring England, Scotland and Wales into line with Northern Ireland which introduced penalty points over ten years ago and saw wearing rates increase. Seat belt non-wearing is the only one of the police "fatal 4" risky behaviours (seat belts, speed, alcohol/drugs and distraction) that does not incur penalty points.

Now is the time for action.

We are grateful to the police forces who took the time to respond to our data requests. Without their support we would not be able to offer this fresh insight on an important issue that is seeking to enhance road safety in the UK.

**David Davies, Executive Director, PACTS**

### Executive summary

In 2019, PACTS in association with Direct Line, published 'Seat Belts: The Forgotten Road Safety Priority'. It concluded that seat belt wearing had been overlooked by the road safety community and by government. This was despite the fact that data published by the Department for Transport (DfT) showed that, in 2017, 27% of those who died in cars in Great Britain were not wearing a seat belt. It recommended a step-change in attention to seat belts; in particular, that failure to wear a seat belt should be made an endorsable offence, attracting three penalty points. A survey commissioned by Direct Line Group found that 72% of the British public believe that three or more penalty points should be mandatory for those not wearing a seat belt. Three months later, in the Road Safety Statement 2019, the DfT announced that it was considering the PACTS report and the "practicality of imposing penalty points".

This new report, 'Seat Belts: Time for Action' further investigates deaths involving seat belt non-use in the UK, this time using Police Forensic Collision Investigator (PFCI) data.

PFCI data is collected by specialist officers and police staff at all fatal and many serious injury collisions in the UK. It is used as evidence by Coroners and in civil and criminal courts, all of whom recognise PFCI's expertise. PFCI data is likely to be more accurate than Stats19 data for any given collision because PFCIs are more highly trained in collision investigation than the officers who complete Stats19 forms, because they are given more time to complete their reports and because PFCI reports must meet a higher standard of evidence than Stats19 forms.

PACTS obtained this data by submitting Freedom of Information requests to all 45 UK police forces, requesting PFCI data on seat belt status for fatalities in 2016, 2017 and 2018. Twenty-three forces supplied data, providing information on 1,122 fatalities, 41% of the 2,711 fatalities where a seat belt was available or legally required.

The PFCI data showed that, on average in the UK, from 2016 to 2018, the seat belt was not worn in 27% of fatalities where a belt was available or legally required. In 2018, for which most records were available, it was 31%. By comparison, the published Stats19 data for Great Britain, recorded lower rates: an average of 25% of deaths in 2016-2018, and 26% in 2018.

If this data PFCI is assumed to be representative, it would mean that there were 739 road deaths in the UK where the seat belt was not worn between 2016 and 2018 and 273 in 2018 alone. If collision risk and survival rates were the same for those wearing and not wearing a seat belt, we would expect only 4% of deaths to be unbelted, or 34 deaths in Great Britain in 2018.

Significantly, Northern Ireland, where the penalty for not wearing a seat belt is three points, has the lowest percentage of deaths where a seat belt was not used of any UK nation. There were also substantial differences in the percentage of unbelted fatalities across police forces within England, ranging from 11% in the combined Avon and Somerset, Gloucestershire and Wiltshire Police Force area to 60% of fatalities investigated by Cleveland Police.

This report endorses the recommendations of the previous PACTS/Direct Line report for action on seat belt wearing, particularly that the Government should consult on the introduction of penalty points for seat belt non-wearing.

It also recommends that PFCIs review Stats19 fatal accident reports for the seat belt wearing record before they are submitted to the DfT. This could be extended to the other “fatal 4” factors and prevent substantial numbers of deaths and serious injuries.

### Introduction

Seat belt non-wearing has not received the focus it warrants from governments or the road safety community in recent years. Published data from the Department for Transport shows that in 2018 more than 200 drivers and passengers were killed and nearly 1,000 seriously injured on Great Britain's roads when not wearing a seat belt, despite generally high wearing rates (96.5% drivers, 93.1% front seat passengers and 90.7% of rear seat passengers in 2017).<sup>1</sup> Figures from the DfT also suggest that the percentage of people who died in cars while not wearing a seat belt rose from 20% in 2016 to 27% in 2017 and 26% in 2018.

PACTS published 'Seat Belts: The Forgotten Road Safety Priority' in April 2019. The report provided a detailed analysis and history of the seat belt wearing problem in the UK and collated international evidence on seat belt wearing and misuse. It found that those who are killed or seriously injured when not wearing a seat belt were more likely to be: male, young (16-35 years), living in more deprived areas, travelling at night, travelling in older vehicles, impaired by alcohol or drugs, speeding and driving aggressively.<sup>2</sup>

The evidence also suggests that seat belt non-wearing is influenced by people forgetting to wear their seat belt or lacking a 'seat belt habit', feeling safe without a seat belt, believing that a seat belt can be dangerous, feeling uncomfortable in a seat belt, peer pressure, sensation seeking, a wish to rebel or libertarian instincts, and a perceived lack of enforcement. It is unclear which reasons are the most significant influences on seat belt non-wearing. Furthermore, it is likely a combination of factors leads to an individual's decision to not wear their seat belt.<sup>3</sup>

The 2019 report made recommendations on how to increase seat belt wearing and thereby reduce the number of deaths and serious injuries on UK roads. It recommended:

- increasing focus on seat belt wearing in road safety work;
- making not wearing a seat belt an endorsable offence with three penalty points (already the case in Northern Ireland, where seat belt wearing rates overtook Great Britain's when penalty points were introduced);
- enhancing enforcement through intelligence-led, targeted measures and supporting new camera technology;
- reviewing existing road safety education activities to see if seat belt wearing is given due attention and;
- Euro NCAP and others encouraging manufacturers to develop additional safety features to encourage seat belt wearing and improve the effectiveness of seat belts.<sup>4</sup>

The report also recommended that when a police forensic collision investigation has been undertaken, the Stats19 record on that collision should be reviewed by the

<sup>1</sup> Department for Transport (2019). *Seatbelt and mobile phone use surveys: Great Britain, 2017*. Department for Transport

<sup>2</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

<sup>3</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

<sup>4</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

trained PFCIs who would have had an opportunity to assess in more detail whether a seat belt had been worn.

In the Department for Transport's Road Safety Statement 2019, it announced that it was considering introducing penalty points and would consult on the matter.<sup>5</sup> A survey commissioned by Direct Line Group found that 72% of people support the introduction of penalty points for seat belt non-wearing. This report's findings reiterate the need to act on seat belt wearing and the need for the Government to consult on the introduction of penalty points for seat belt non-wearing.

This report provides data on seat belt wearing collected by police Forensic Collision Investigators (PFCIs), specialist police officers and police staff who produce in-depth reports on all fatal and some serious collisions. PFCI data may be able to provide a more accurate picture of seat belt wearing in the UK because of the deeper knowledge and expertise possessed by PFCIs and the comparatively low rate of 'unknown' seat belt status in PFCI data (in Stats 19, seat belt status is recorded as "unknown" in 49% of deaths while 14% of deaths are recorded as 'worn but not independently confirmed'). This report will also provide a more localised picture of seat belt wearing, with data provided by police force area, allowing for regional comparisons.

Furthermore, the report provides insight into collision investigation systems. PFCI data is often overlooked as a resource by police forces, local authorities and national governments. There are discrepancies in how PFCI data is used by police forces and local authorities, and how they identify best practice. The report highlights opportunities for gaining insight from forensic collision data and demonstrates how the road safety community can be better linked to forensic data.

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<sup>5</sup> The Department for Transport (2019). *The Road Safety Statement 2019: A Lifetime of Road Safety*. Department for Transport

### Forensic collision investigation

Police Forensic Collision Investigators (PFCIs) are highly trained specialist police officers and police staff whose role is to attend the scene of and investigate fatal and life threatening collisions or serious crimes - including where a vehicle has been used as a weapon - to gather and provide expert evidence to the investigation team and the Courts (further details on their role and training is available in Appendix 1).<sup>6</sup> All forensic collision investigation evidence is subject to a critical review by a Senior PFCI or their nominated deputy. Moreover it is 'a requirement that any conclusion or expert opinion expressed in a PFCI's report is independent and capable of being supported by the available evidence in the case, the expertise, experience and qualifications of the author, or published scientific research and in line with their role as an expert witness, under Criminal and Civil Procedures Rules.'<sup>7</sup>

The data used in this report comes from the reports of PFCIs. PFCIs gather evidence from the seat belts to determine whether the seat belt was serviceable, whether it was being used at the time of the collision and the seating position of occupants. Evidence collected includes but is not limited to: friction burns on the webbing, upper fixing hardware and fastening tongues; webbing being 'roped' within the hardware; clothing fibres, fluids or tissue melted or fused on the webbing; and whether pretensioners have activated.<sup>8</sup> Seat belt use can also be established through markings on the car interior, injury patterns and, where available, data collected by car systems (including the airbag electronics and other data recorders).<sup>9</sup>

PFCI data on seat belt wearing is likely to be more accurate than data in Stats19 for a number of reasons.

- PFCIs have significantly more expertise around crash investigation than the officers who fill in Stats19 forms who are typically response officers or roads police officers without specialist collision investigation training.
- Stats19 forms generally must be completed by the time an officer finishes their shift and are often completed by the roadside, whereas PFCIs have more time to complete their analysis.
- Collision investigation and providing an accurate picture of collisions is an essential part of a PFCI's role whereas it may be less of a priority for other officers who will often have a wide range of tasks to handle at and following a collision.
- PFCIs do not use the 'worn but not independently confirmed' category that is used in Stats19. It is unclear how reliable this category is and the higher standard of evidence required in PFCI reports means their results will be more robust.

<sup>6</sup> College of Policing. (2019). Policing Professional Profile: *Forensic Collision Investigator*. College of Policing

<sup>7</sup> NPCC (2018). Forensic collision investigation and reconstruction within the police service.

<sup>8</sup> ITAI, NPCC and AiTS (2019). *Good Practice in Forensic Road Collision Investigation A guide for practitioners*.

<sup>9</sup> Pers. Comms. PFCIs

Overall, the greater expertise of PFCIs and higher standard of evidence required in PFCI reports means data on seat belt wearing based on PFCI reports is likely to be more accurate than that in Stats19.

### How is Stats19 data collected?

- Stats19 data is normally collected by police officers, usually response officers or roads police at the scene, by phone or online. Some data is based on reports by the public at a police station after a collision.
- Officers fill out Stats19 forms (example in Appendix 2), normally via an app. This includes information about the collision (location, road type, contributory factors etc.) and those who are injured or killed in the collision (age, home postcode etc.).
- Stats19 forms are often filled out by the roadside and generally must be filled out by an officer before their shift ends.
- Stats19 data is collated and processed by DfT who publish key statistics in Reported Road Casualties Great Britain. In Northern Ireland, the Police Service of Northern Ireland publish their data in Road Traffic Collision Statistics.
- In some police forces and local authorities, Stats19 data is reviewed by road safety teams and/or forensic collision investigators before being sent to the DfT. However, this is not routine.
- Stats19 data on seat belt use is published in Reported Road Casualties Great Britain as Area/Indicator 4.7 in RAS41001 Summary Indicators (formerly the Key Outcome Indicators – Strategic Framework for Road Safety: Great Britain), only the percentage of car occupants killed who were not wearing a seat belt is published.

### How is Police Forensic Collision data collected?

- PFCI data is collected by specialist police officers and police staff who are highly trained in forensic collision investigation. Currently the qualifications required to fulfil the role are variable and not enforced. However, work is ongoing nationally and will mean that they are required to hold a University Certification in Professional Development in Forensic Collision Investigation, hold a Certificate of Higher Education in Forensic Collision Investigation and by 2025 attain or be on the pathway to attain a BSc in Forensic Collision Investigation.
- PFCI reports are written by PFCIs and are all subject to critical review by a senior PFCI or a nominated deputy.
- Evidence collected on seat belt use includes but is not limited to: friction burns on the webbing, upper fixing hardware and fastening tongues; webbing being ‘roped’ within the hardware; clothing fibres, fluids or tissue melted or fused on the webbing; and whether pretensioners have activated.<sup>1</sup> Seat belt use can also be established through markings on the car interior, injury patterns and, where available, data collected by car systems (including the airbag electronics and other data recorders).
- PFCI reports may be used by Coroners or in Criminal or Civil Court. The expertise of PFCIs is recognised by all UK courts.
- Reports are digitised by some police forces and some data may be extracted and used in a searchable database. However, this is not routine, and practices vary between police forces.

### Methodology

PACTS submitted Freedom of Information requests in 2019 to 45 UK police forces. Police forces were asked to provide the number of fatalities PFCIs attended in 2016, 2017 and 2018 and, based on PFCI reports, whether the seat belt was worn, not worn or if seat belt status was unknown for each fatality. Where the time taken to fulfil this request exceeded the cost of compliance under Section 12 of the Freedom of Information Act a new request was submitted for the data from 2018 alone. Stats19 data was also collected and organised by police forces to allow for comparison.

Thirty nine police forces responded to the FOI requests and 23 provided data. This 23 includes Avon and Somerset, Gloucestershire and Wiltshire Police who run a joint PFCI programme and provided their data collectively. Overall, PACTS received data on 1122 fatalities, 328 from 2016, 379 from 2017 and 415 from 2018. Seat belt status was known in 950 of these records. This provides PACTS with data on seat belt wearing on 35% of the 2711 fatalities where a seat belt was available or legally required from 2016, 2017 and 2018 in *the UK*. By comparison, seat belt status was known in 52% of fatalities where a seat belt was available or legally required in *Great Britain* in Stats19 from 2016 to 2018 (1238 records). Seat belt status is definitively known (not counting 'unknown' or 'worn but not independently confirmed') in 37% of cases in Stats19, or 972 deaths.<sup>10</sup>

The PFCI data includes data from Northern Ireland, unlike Stats19 which is limited to Great Britain. As such, PFCI data and Stats19 data is not directly comparable. In the results section a GB figure is also provided from the PFCI data.

Unsurprisingly, the number of records provided varied significantly by police force with some (such as the Police Service of Northern Ireland, Avon and Somerset, Gloucestershire and Wiltshire Police and West Midlands and Staffordshire Partnership) providing information on over 100 fatalities while others (such as Cleveland, Merseyside and City of London forces) provided fewer than 20. Data has also been collected in a joint response from West Midlands Police and Staffordshire Police (for 2017) through PACTS contacts in the force. PFCI data has been compared to Stats19 data to show key differences. Road Safety Analysis (RSA) submitted a request for Stats19 data on seat belt wearing held by the DfT. RSA then sorted this data by Police Force to allow for comparison with PFCI data.

While the data collected by the FOI requests does not cover all fatalities in the UK, PACTS considers that there is sufficient data, and that it is of sufficient quality to provide a useful supplement to the previously published Stats19 data on seat belt non-wearing in collisions nationally. Furthermore, at a police force area level, where data is provided, it represents a complete picture of seat belt wearing amongst those who died on the roads in that year.

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<sup>10</sup> Department for Transport. Stats19 data, unpublished.

## Results

The data from PFCI reports, based on 1,122 fatalities (950 for which seat belt status was known) shows that the seat belt was not worn in 31% of fatal collisions where a seat belt was available or legally required in 2018. Between 2016 and 2018, a seat belt was not worn in 27% of collisions.

If this data is assumed to be representative across the UK, it would mean that there were 739 road deaths where the seat belt was not worn in the UK between 2016 and 2018. There were 232 deaths in 2016, 223 in 2017 and 273 in 2018 (Figure 1 and Table 1).

The higher unbelted fatality rate in 2018 is in part due to the inclusion of data from North Wales which was not provided in other years. There were 20 fatalities where the seat belt was not worn compared to 15 where it was worn in North Wales in 2018, one of only two areas where unbelted deaths exceeds belted deaths (the other being Leicestershire in 2018). However, even if this data was removed, the percentage of fatalities who were not wearing a seat belt remains higher in 2018 than in 2016 or 2017.

By comparison, data from Stats19 Britain suggests that the seat belt was not worn in 25% of road deaths in Great Britain in 2016-2018 where a seat belt was legally required. 22% did not wear their seat belt in 2016, 27% in 2017 and 27% in 2018.<sup>11</sup> If Stats19 data is presumed to be representative, the figures suggest that 576 people died in cars while not wearing a seat belt between 2016 and 2018. Stats19 figures suggest that in 2016, 164 car occupants died while not wearing a seat belt, this number was 212 in 2017 and 201 in 2018. Removing Northern Ireland from PFCI data suggests that in Great Britain, 227 people died on the roads while not wearing a seat belt in 2016, 220 in 2017 and 261 in 2018 (717 from 2016-2018).

If crash risk and crash survival was the same for those wearing and not wearing seat belts 4% of fatal collisions would be unbelted (based on the 96% wearing rate in 2017 Seat Belt and Mobile Phone Use Survey, Great Britain). This would be 34 deaths in Great Britain in 2018 and 104 deaths in Great Britain from 2016-2018. If the pattern of collision risk and collision survival were the same for both wearers and non-wearers we would expect 4% of those involved in collisions to have been not wearing a seat belt (based on the 2017 GB seat belt wearing rate of 96%).<sup>12</sup> We know that, in a collision, non-wearers have around twice the risk of being killed (around 2.5 times the risk in the front and 1.6 times the risk in the rear).<sup>13</sup> Therefore, if collision rate was equivalent for non-wearers and wearers, we would expect there to be 8 non-wearers for every 96 wearers among fatalities. The percentage of fatalities who are non-wearers, therefore, would be  $100 \times 8 / 104 = 7.7\%$ . The actual figure is far higher – 31% in 2018.

This suggests, as found by Hoyer in a study of Norwegian seat belt wearing, that non-wearers not only are more likely to die in the event of a collision but also have a higher collision risk (i.e. typically have more or worse collisions than seat belt wearers).<sup>14</sup>

<sup>11</sup> These figures differ from published statistics in Reported Road Casualties GB as they include a wider range of vehicles

<sup>12</sup> Department for Transport. (2019). Seatbelt and mobile phone use surveys: Great Britain, 2017. DfT

<sup>13</sup> Hoyer, A. (2016). 'How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?' *Accident Analysis and Prevention*, 88(1), 175-186.

<sup>14</sup> Hoyer, A. (2016). 'How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?' *Accident Analysis and Prevention*, 88(1), 175-186.

Stats19 figures differ from PFCI data in part because Reported Road Casualties GB presents data from Great Britain whereas the PFCI data presents data from the UK. They may also differ because as outlined in the Forensic Collision Investigation section, PFCIs are likely to record seat belt status more accurately than officers who complete Stats19 forms. PFCI data may also include some suicides which are removed from published Stats19 figures. Finally, while PFCI data does include 950 records, it is not as geographically complete as Stats19 data.

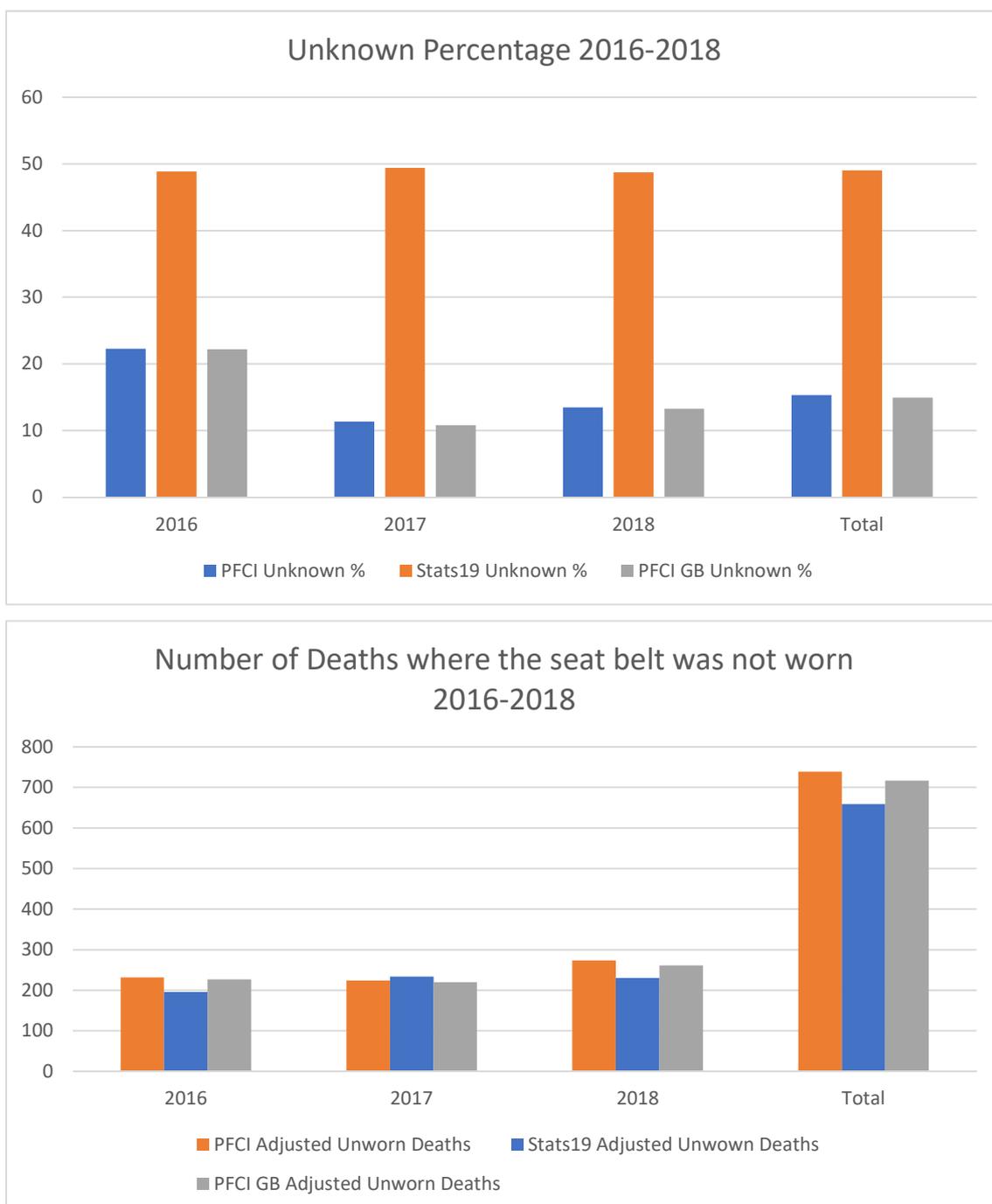


Figure 1: The percentage of deaths where a seat belt status was unknown by each data source. The number of deaths where a seat belt was not worn (2016-2018)

	2016	2017	2018	Total
<b>PFCI Number of Unworn Fatalities (UK)</b>	63	84	112	259
<b>Stats19 Number of Unworn Fatalities (GB)</b>	100	118	118	336
<b>PFCI Number of Unworn Fatalities (GB)</b>	56	78	103	237
<b>PFCI % Fatalities Where Seat Belt Was Not Worn (UK)</b>	25	25	31	27
<b>Stats19 % Fatalities Where Seat Belt Was Not Worn (GB, as published in Reported Road Casualties GB)</b>	20	27	26	25
<b>PFCI % Fatalities Where Seat Belt Was Not Worn (GB)</b>	25	26	31	28
<b>PFCI Projected Unworn Fatalities (UK)</b>	232	224	273	739 <sup>15</sup>
<b>Stats19 Projected Unworn Fatalities (GB)</b>	196	233	230	659
<b>PFCI Projected Unworn Fatalities (GB)</b>	227	220	261	717

	2016	2017	2018	Total
<b>PFCI Number of Records (UK)</b>	328	379	415	1122
<b>Stats19 Number of Records (GB)</b>	894	860	845	2599
<b>PFCI Number of Records (GB)</b>	284	342	384	1010
<b>PFCI Number of Fatalities Where Seat Belt Status was Known (UK)</b>	255	336	359	950
<b>Stats19 Number of Fatalities Where Seat Belt Status was Known (GB)</b>	457	435	433	1325
<b>PFCI Number of Fatalities Where Seat Belt Status was Known (GB)</b>	221	305	333	859
<b>PFCI % of Fatalities Where Seat Belt Status was Unknown (UK)</b>	22	11	14	15
<b>Stats19 of Fatalities Where Seat Belt Status was Unknown (GB)</b>	49	49	49	49
<b>PFCI of Fatalities Where Seat Belt Status was Unknown (GB)</b>	22	11	14	15

Table 1 and 2. The projected figure is calculated by expanding the number of records where seat belt status is known to be representative of all equivalent UK road deaths. E.g. if we had data on half of road deaths and 4 were unbelted, projected unworn fatalities would be 8 (information on 50% of road deaths = 4 unbelted deaths, projection is therefore that 100% of road deaths = 8 unbelted deaths. Number of record shows total records provided to PACTS including 'unknowns'.

The key findings from these results are that:

- In 2018, PFCI data suggests that 31% of those killed on UK roads where a seat belt was legally required were not wearing a seat belt
- PFCI data suggests that seat belt non-wearing may be more common in road deaths than official DfT statistics based on Stats19 do. (31% of GB road deaths not wearing a seat belt in 2018 in PFCI data compared to 27% in Stats19)
- Seat belt status is known in a significantly higher proportion of deaths in PFCI data than in Stats19 data (85% in PFCI data compared to 51% in Stats19, 2016-2018 average)

<sup>15</sup> Figure is calculated for 2016-2018 sample as a whole (27.3% of fatalities are unbelted 2016-2018, 27.3% of total fatalities in 2016-2018 = 739). It does not equal the sum of 2016, 2017 and 2018 projections due to Simpson's Paradox.

### Seat belt wearing across the UK

Due to the comparatively small number of cases in some police forces, caution should be taken before drawing conclusions from some regional data. Nevertheless, PFCI data suggests that there are some clear differences in recording and seat belt wearing between forces.



Figure 2: Police Force Areas in the UK (Police Scotland is one force which covers all of Scotland)

There are significant differences in the seat belt wearing rate in fatal collisions across police forces (Figure 3). PFCI data shows that the percentage of fatalities where a seat belt was not worn ranged from 11% in the combined Avon and Somerset, Gloucestershire and Wiltshire Police Force area to 60% of fatalities investigated by Cleveland Police (data is a 3 year average unless otherwise noted).

At a national level, the percentage of fatalities who were not wearing a seat belt between 2016 and 2018 was lowest in Northern Ireland (24% of fatalities) and highest in Wales (31%). 27% of fatalities in England were not wearing a seat belt. Police Scotland did not provide PFCI data because of the system used and time necessary to extract data from PFCI reports. Stats19 data suggests that 27% of fatalities in Scotland were not wearing a seat belt between 2016 and 2018. Northern Ireland is the only nation in the UK where seat belt non-wearing is an endorsable offence. After penalty points for seat belt non-wearing were introduced in Northern Ireland in 2007, seat belt survey data suggests that the wearing rate rose and overtook the rest of the

UK (historically Northern Ireland has had lower seat belt wearing).<sup>16</sup> This data supports the findings of seat belt survey data that Northern Ireland has the best record in seat belt wearing in the UK.

There is no clear urban or rural trend within the PFCI data with urban and rural police forces each having similarly low unbelted fatality rates (North Wales Police and Cleveland Police) and high unbelted fatality rates (Suffolk Police and Merseyside Police). Similarly, there is no clear regional pattern in unbelted fatality rates.

The percentage of fatalities where a seat belt was not worn was highest in the Cleveland Police Force area at 60%, however there were only 5 fatalities recorded in this area. 57% of fatalities in North Wales were not wearing a seat belt (data only provided for 2018, 20 deaths). Furthermore, more than a third of fatalities were not wearing a seat belt in Surrey, Leicestershire, Thames Valley, West Yorkshire, Derbyshire and the West Midlands (West Midlands 2016 and 2018 only). The police force area with the lowest percentage of seat belt non-wearing was Avon and Somerset, Gloucestershire and Wiltshire where 11% of fatalities were not wearing a seat belt. Staffordshire, Merseyside and Suffolk had wearing rates of 20% or lower.

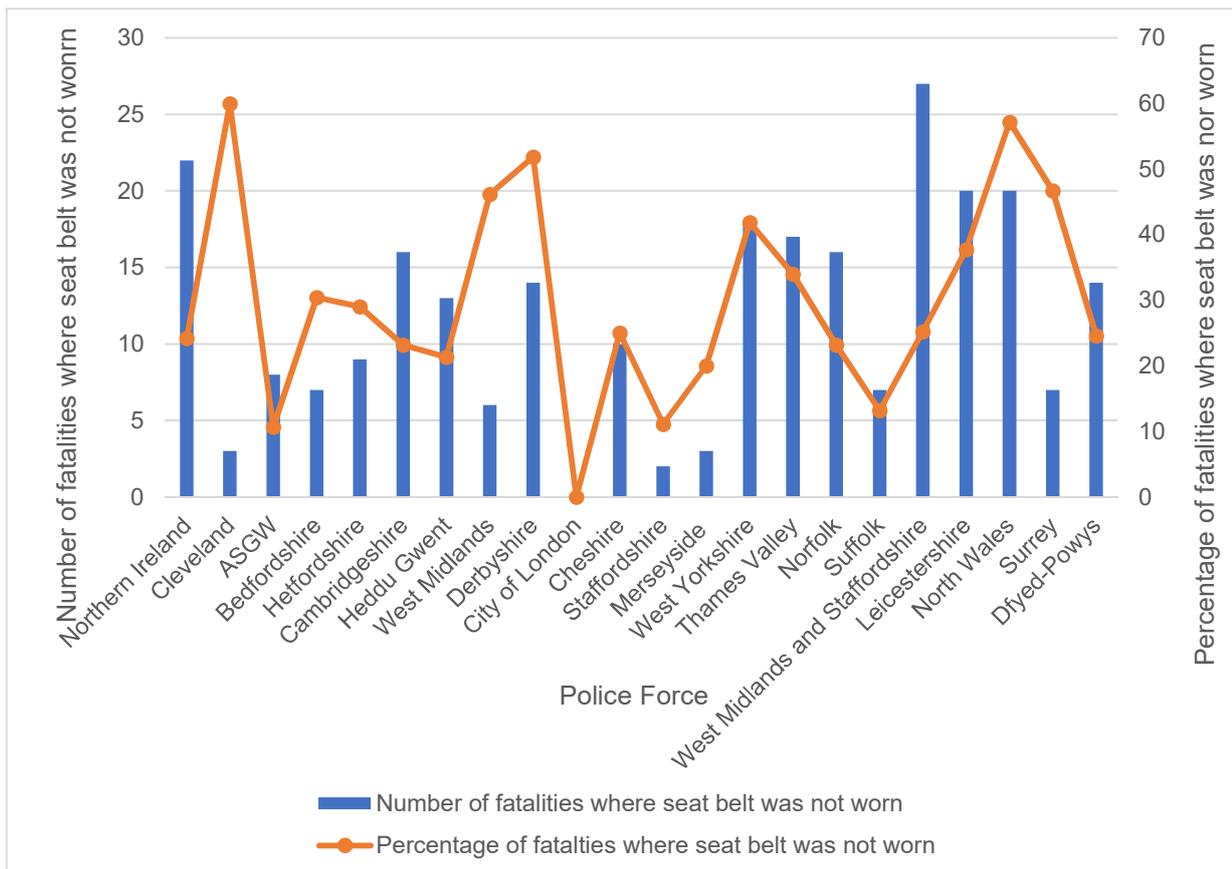


Figure 3: The number and percentage of fatalities where a seat belt was not worn by UK Police Force

<sup>16</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

### ‘Unknown’ in seat belt data

There are far fewer deaths where seat belt status is unknown in the data from PFCIs than in Stats19 data. In PFCI data, between 2016 and 2018 seat belt status was known in 85% of deaths. This figure was 78% in 2016, 89% in 2017 and 87% in 2018. By comparison, the figure in Stats19 has been 51% over the same time period (Figure 4).

The significantly higher known percentage of PFCI data is likely a product of the comparative knowledge of PFCIs and the time given to their investigation and reports in comparison to Stats19. The higher known percentage for PFCIs data shows a more complete picture of seat belt non-wearing than equivalent Stats19 data. For example, 63% of fatalities had an unknown seat belt status in Stats19 data in North Wales compared to 0% in PFCI data. Similarly, 45% of fatalities in Thames Valley were unknown in Stats19 compared to 0% in PFCI data.

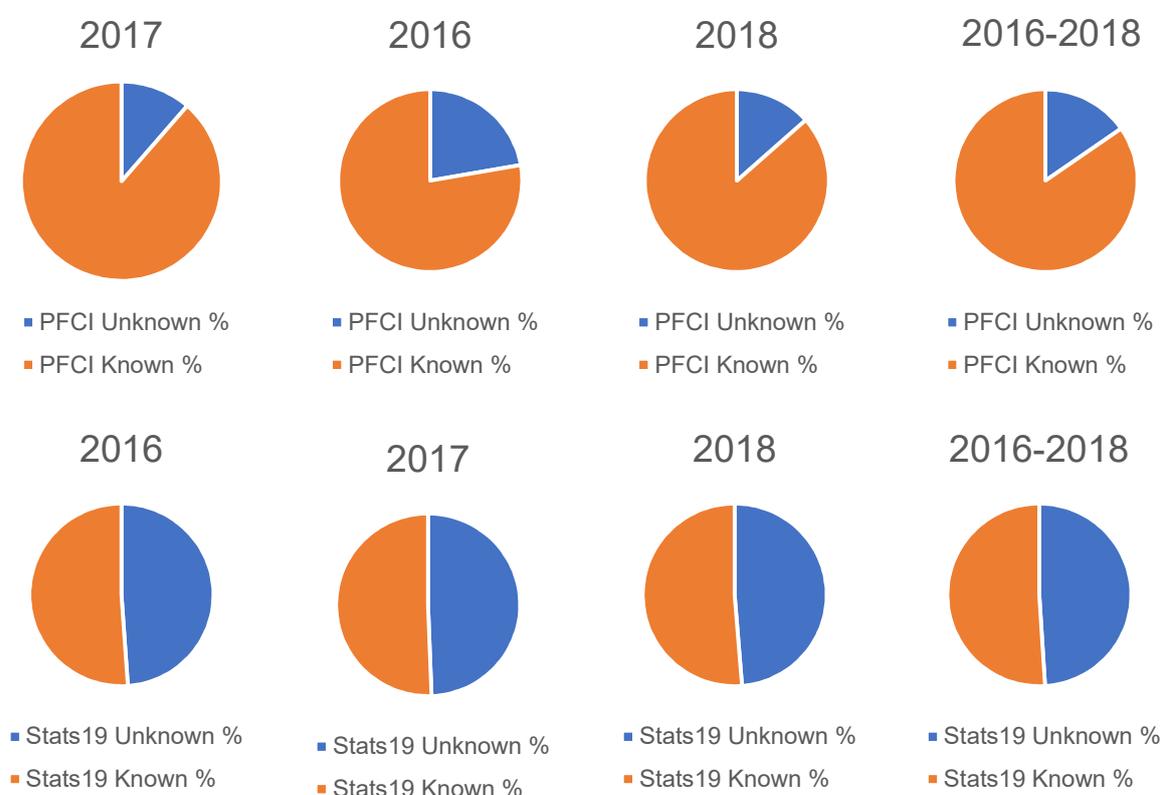


Figure 4: Percentage of fatalities where seat belt status was unknown, by data source

The percentage of fatalities where seat belt status was unknown in PFCI data varied across police forces, though it was 12% or below in the majority of police force areas. The unknown percentage was 0% in Cleveland, Heddu Gwent, Thames Valley and Leicestershire and below 10% in Norfolk, Suffolk, West Midlands and Staffordshire (joint 2017 data) and Cambridgeshire. The highest unknown percentage in the PFCI data was in the West Midlands (individual 2016 and 2018 data, 57%), Derbyshire (47%) and Staffordshire (individual 2016 and 2018 data, 40%). The unknown percentage was also higher than 20% in Surrey, West Yorkshire and Avon and Somerset, Gloucestershire and Wiltshire. It is unclear why the unknown rate is significantly higher in some police force areas.

## PFCI and Stats19 data

PFCI data suggests that more people died while not wearing a seat belt than is recorded in Stats19 and Reported Road Casualties Great Britain. PFCI data shows that 27% of those who died in the collisions where a seat belt was available or legally required in the UK were not wearing a seat belt from 2016-2018 (31% in 2018). By comparison Stats19 suggests that 25% of those who died in cars in Great Britain were not wearing a seat belt in 2016-2018 (27% in 2018). This translates to 739 unbelted road deaths in the UK (PFCI data) or 659 unbelted car occupant deaths in Great Britain (Stats19) between 2016 and 2018. PFCI data suggests 273 people died while not wearing a seat belt in the UK in 2018, while Stats19 data suggests 230 car users died while not wearing a seat belt in Great Britain in 2018.

There are similarly disparities for the percentage of fatalities where seat belt status was unknown. Seat belt status was known in 85% of fatalities where PFCI data is available compared to 51% in Stats19 (3 year average, 2016-2018). Seat belt status was known in 87% of fatalities where PFCI data is available in 2018, compared to 51% in Stats19. In a further 13% of cases in Stats19 seat belt status was recorded as 'worn but not independently confirmed', a category which is not used by PFCIs.

At a police force level there can be significant differences between the PFCI and Stats19 data. For example, Stats19 data suggests that in Norfolk there were 6 unbelted deaths between 2016 and 2018, 14% of fatalities were not wearing a seat belt and seat belt status was unknown in 33% of collisions. However, PFCI data shows that there 16 unbelted deaths, 23% of fatalities were not wearing a seat belt and seat belt status was unknown in 4% of casualties. 73% of police forces recorded a higher percentage of fatalities as not wearing a seat belt in PFCI data than in Stats19 data. Only one force recorded a higher unknown percentage in PFCI data than Stats19 (West Yorkshire, 34.8% in PFCI and 33.9% in Stats19).

Where PFCI data is available for a collision it is likely to be more accurate than Stats19 data. This is because PFCIs are better trained and have more time to complete reports than officers who complete Stats19 forms and there is a higher standard of evidence required in PFCI reports than in Stats19 (outlined in the section Forensic Collision Investigation). PFCI data also contains fewer fatalities where seat belt status was unknown than Stats19.

However, the PFCI data in this report does not have as complete a geographical range in Great Britain as Stats19 data (although it does include Northern Ireland, unlike Stats19). There is also information on fewer fatalities in the PFCI data set than Stats19 (though there are 950 fatalities where seat belt status is known).

For police force areas where PFCI data is provided, PFCI data is likely to be more accurate and reliable than Stats19 because it provides information on all fatalities which took place in that year and PFCI data on a fatality is likely to be more accurate than Stats19 data on the same fatality. At a national level, both have gaps as they are based on incomplete data sets. PFCI data is more likely to be reliable where it is available, though Stats19 includes a wider range of cases.

### Policy implications

#### Seat belt wearing in the UK

PFCI data suggests that more than 700 people have died on UK roads between 2016 and 2018 while not wearing a seat belt despite one being available or legally required. The same data suggests that 273 people died while not wearing a seat belt on UK roads in 2018. These figures are higher than those from Reported Road Casualties Great Britain, in part because data includes Northern Ireland.

The higher number of unbelted fatalities and higher percentage of fatalities indicated by PFCI data reiterates the need to act to increase seat belt wearing in the UK. The scale of death and serious injury associated with seat belt non-wearing means it cannot become a 'forgotten' road safety priority again. Police forces, the government and the road safety community in general have not paid enough attention to seat belt wearing. More focus on this issue is needed from across the road safety community, and interventions run to increase seat belt wearing. The results of an analysis of PFCI data reiterate the immense road safety impact that interventions to increase seat belt wearing in the UK could have. Furthermore, the strong record of Northern Ireland in seat belt non-wearing - a smaller percentage of fatalities in Northern Ireland were not wearing a seat belt than in any other UK nation - may contribute further evidence of the effectiveness of penalty points for seat belt wearing (which are currently in place in Northern Ireland), though data on Northern Ireland pre-penalty point introduction would be useful to confirm this suggestion.

#### Action on seat belt wearing

While seat belt wearing is the norm for the vast majority of vehicle occupants in the UK, the failure of a small percentage of vehicle occupants to wear a seat belt contributes to a high and disproportionate number of deaths and serious injuries. PFCI data suggest that in 2018, 273 people died on UK roads not wearing a seat belt when one was available or legally required.

The most recent and comprehensive study of the effectiveness of seat belts found that seat belts reduce both fatal and non-fatal injuries by 60% amongst front seat passengers and by 44% among rear seat passengers. Seat belt wearing by those in the rear also halves the fatality risk among belted front seat occupants compared to when those in the rear are unbelted.<sup>17</sup> This is because unbelted passengers in the rear pose a significant risk to those in the front seat when thrown forward in a collision.

In Norway, a country with a better record on seat belt wearing than the UK, it has been calculated that increasing seat belt wearing to 100% would decrease front seat deaths and serious injuries by 20%. The same study also calculated that where the unbelted percentage amongst driver fatalities is 25% (lower than PFCI data suggests is the case for those in all seats where a seat belt is available or legally required in the UK), front seat deaths and serious injuries would be reduced by 25%.<sup>18</sup>

<sup>17</sup> Hoye, A. (2016). 'How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?' *Accident Analysis and Prevention*, 88(1), 175-186.

<sup>18</sup> Hoye, A. (2016). 'How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?' *Accident Analysis and Prevention*, 88(1), 175-186.

Seat belt non-wearing is not a behaviour unique to one socio-demographic group or one situation. PACTS' previous report revealed that a small minority continue to not wear their seat belts - across all road types and in all traffic conditions. However, we do know that seat belt non-wearing is more prevalent amongst some socio-demographic groups and in certain conditions. Seat belt non-wearing is more prevalent amongst men and young people, namely those aged 16-35. It is also more common amongst those who live in the UK's most deprived areas, those that travel in the passenger seats, and those that drive older cars. While seat belt non-wearing is comparatively more common in deaths and serious injuries which occur on minor roads and those with a 30mph speed limit, more people die while not wearing a seat belt on "A" roads and those with a 60mph speed limit. Non-wearing is also associated with drink and drug driving, aggressive driving and driving at night.<sup>19</sup>

To increase seat belt wearing, PACTS recommends that not wearing a seat belt be made an endorsable offence with a penalty of three penalty points, in addition to the current £100 fine.<sup>20</sup> This would offer a more effective disincentive for seat belt non-wearing and there is strong evidence of the effectiveness of making not wearing a seat belt an endorsable offence. Penalty points were introduced for not wearing a seat belt in Northern Ireland in 2007. Drivers can receive three penalty points for not wearing a seat belt or for carrying an unbelted passenger who is under the age of 14. Passengers can receive two penalty points for not wearing a seat belt.<sup>21</sup> From 2007 to 2014 when seat belt surveys stopped, Northern Ireland gained and maintained higher wearing rates in all positions in cars than England and Scotland. Northern Ireland has seen a rise in rear seat wearing rates from 75% in 2003 and 85% in 2006 to the second best rate in the world (95%) by 2011. In this time the Northern Irish Government introduced penalty points, maintained high levels of enforcement and ran high profile education campaigns. PFCI data also shows that Northern Ireland has a comparatively good record on seat belt wearing. A lower percentage of fatalities were not wearing a seat belt in Northern Ireland than in any other nation in the UK. There is also evidence of the effectiveness of introducing penalty points at reducing unbelted death and serious injury in the Republic of Ireland, Italy and Spain.<sup>22</sup> The penalty for not wearing a seat belt is also the lowest of the 'fatal 4' (seat belt wearing, speeding (3+ points), drink driving (disqualification), mobile phone use (6 points)) despite the fact that all can result in death, a point highlighted by Chief Constable Anthony Bangham, NPCC lead for roads policing, at the Police Federation, Roads Policing Conference in 2020. A survey commissioned by Direct Line Group in 2019 found that 72% of the British public believe penalty points should be mandatory for those not wearing a seat belt.<sup>23</sup> In July 2019, the government announced that it was considering introducing penalty points for seat belt non-wearing and would consult if it decided to move forwards.<sup>24</sup> PFCI data reiterates the need to introduce penalty points to tackle over 250 unnecessary deaths each year.

<sup>19</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

<sup>20</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

<sup>21</sup> Department for Infrastructure. Northern Ireland Survey of Seat Belt Wearing 2014 annual report. DfI

<sup>22</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

<sup>23</sup> Direct Line Group (2019). [Penalty Points for Flouting Seat Belt Law](#).

<sup>24</sup> The Department for Transport (2019). *The Road Safety Statement 2019: A Lifetime of Road Safety*. Department for Transport

	GB Road Deaths (2018)	Minimum Penalty	Maximum Penalty
<b>Seat Belt Non-wearing</b>	230-261	£100 fine	£500 fine
<b>Drink Driving</b>	220-270	A driving ban of at least one year, an unlimited fine	6 months imprisonment
<b>Speeding</b>	177	3 penalty points and £100 fine	Driving ban and £2500 fine
<b>Mobile Phone Use</b>	25	6 penalty points and a £200 fine	Driving ban and £1000 fine

Table 3: Penalties and Deaths Associated with the Fatal 4

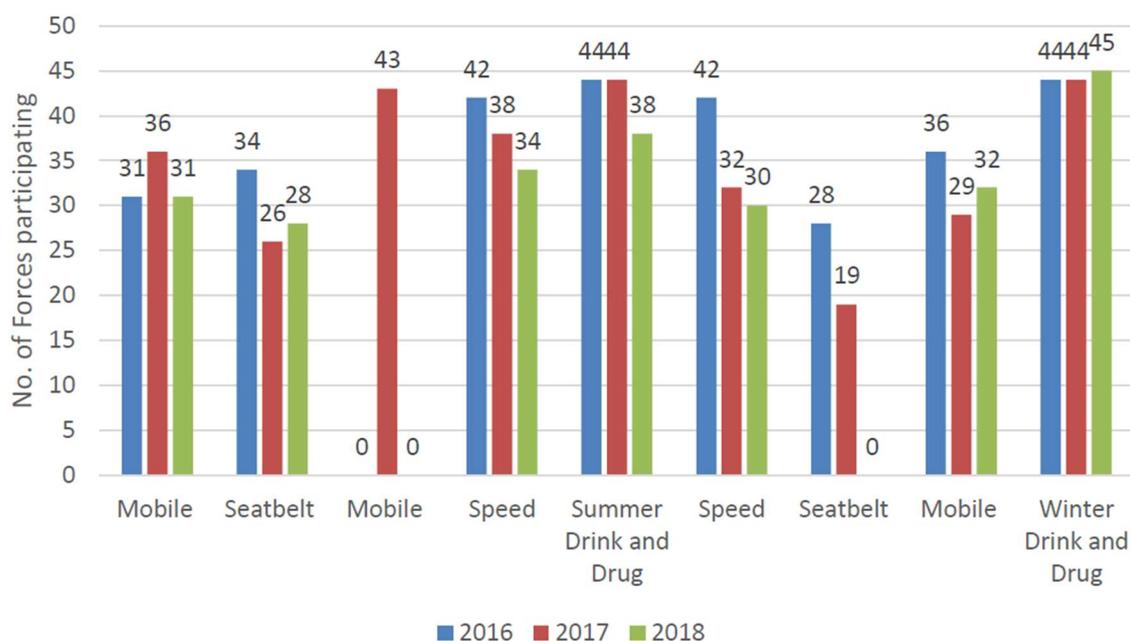


Figure 5: Police Force Participation in Fatal 4 Campaigns

Based on the evidence of the previous report, PACTS also recommends significantly enhancing enforcement of the seat belt law through targeted, intelligence-led measures including new camera technology. Efforts should also be made to increase the public perception of enforcement as the evidence shows that this has a significant impact on seat belt wearing.<sup>25</sup>

### Using knowledge from collision investigation

Data collected by PFCIs represents a useful source of information for the road safety community, if it can be accessed. PFCI data provides more depth and accuracy than data from Stats19. It can therefore provide a more detailed understanding of the causes of a crash and injury than other data. PFCI data may also be more reliable than Stats19 data, where information such as seat belt status or location may be filled out incorrectly. PFCI data, because of the greater detail and certainty it provides, may be able to give more useful information to understand and address collision clusters than Stats19.

<sup>25</sup> Webster, E., and Norbury, F. (2019). *Seat Belts: The Forgotten Road Safety Priority*. PACTS

Furthermore, PFCI reports provide more information on the condition of roads and road engineering which may have led to a collision. PFCI reports, because of the specialism of PFCIs and time and attention given to both data collection and report production, are likely to give a more accurate and nuanced description of collision causation. PFCI reports can enable road safety professionals to gain a better understanding of collision causation because of their detail and reliability. This may allow road safety professionals to design better interventions and develop more impactful road safety policies.

PFCI data may be of particular use to local authorities and road police. Local authorities and roads police are likely to get easier access to the unpublished PFCI data. It would be challenging for local authorities to get access to full reports – they may have to wait for a case to be complete and some information may have to be redacted - though getting access to key information would be significantly less challenging. Moreover, the data may be of more use when focusing on a smaller number of casualties because of the in-depth information provided. Some local authorities, such as Kent County Council take advantage of this resource, reviewing all Stats19 against PFCI reports in house. Devon County Council conduct Case Reviews of fatal collision with collision investigators and the police represented.<sup>26</sup> This ensures that data is both accurate and reliable. This data is then used in a collision dashboard, allowing for easy access to information on casualty profiles, type of collision, contributory parties etc. However, this is not routine across the local authorities and many have little to no contact with PFCIs and not access to PFCI data. The routine review of PFCI data by local authorities, and where possible the use of PFCI data in tools such as road safety dashboards would have significant benefits. It would provide local authorities (or others in the road safety profession) with detailed information on collisions and provide those working in local authorities with an accurate understanding of factors that led to someone dying on the roads. Routine review of PFCI data would have demonstrated the road safety impact of seat belt non-wearing and encourage local authorities, police forces and government to focus more on this issue. For example, PFCI data shows 14 people died while not wearing a seat belt in the Derbyshire Police Force Area in 2016-2018 (52% of deaths where seat belt status was known). However, Derbyshire Police issues just 226 penalties for not wearing a seat belt in 2016-2018, the fifth lowest in England and Wales. Similarly, Leicestershire Police issued just 439 penalties despite 20 unbelted deaths and Gwent Police 142 despite 13 deaths. By contrast, Merseyside Police issued 2783 penalties and had just 3 deaths. Figure 6 shows participation by police forces in NPCC fatal 4 campaigns. Just 28 police forces participated in the campaign in 2016, 19 in 2017 and the campaign was not run in 2018, the lowest of any of the fatal 4. Similarly, the number of FPNs issued for seat belt non-wearing in Great Britain has fallen from 171,737 in 2011 to 54,865 in 2018.<sup>27</sup> This also suggests that seat belt wearing does not get the same priority as other fatal 4 risks. Data on seat belt penalties issued and

<sup>26</sup> Pers. Comms. Devon County Council, Kent County Council

<sup>27</sup> Home Office. (2019). Police Powers and Procedures England and Wales, year ending 31 March 2019; Scottish Government. (2019) Recorded crime in Scotland 2018-2019.

unbelted deaths and serious injuries suggests that the level of seat belt enforcement is not evidence based across all police forces (data table in Appendix 4).

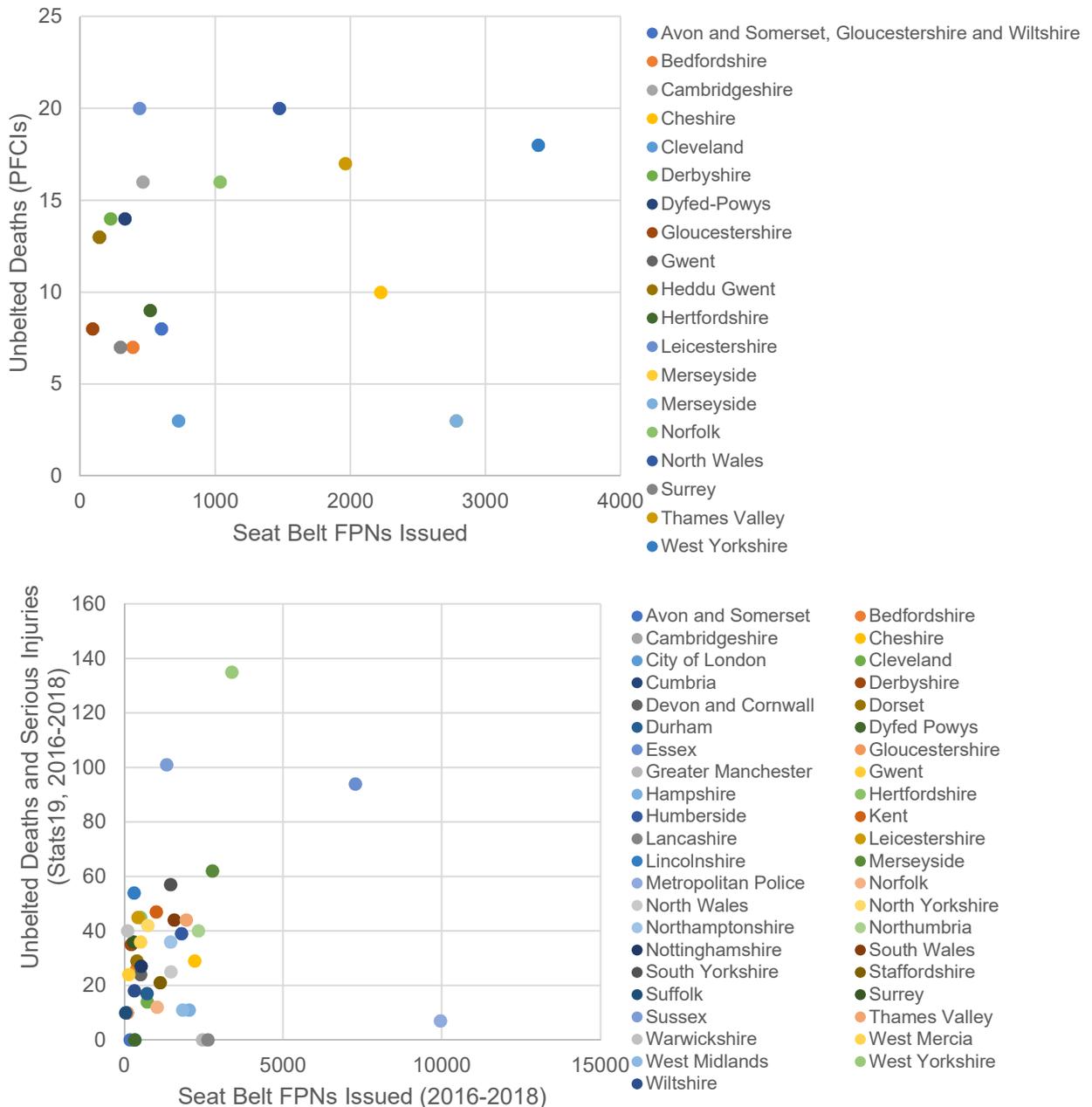


Figure 6: Number of deaths and serious injuries where a seat belt was not worn and number of FPNs issued for not wearing a seat belt (2016-2018). Note the different data sources. Data table in Appendix 4

Currently, some PFCI reports are stored as exclusively as hard copies and, in many areas, used purely for legal purposes in courts and by coroners. Police forces who were unable to provide data in response to the FOI request cited the time taken to review records. 10 police forces stated that the information on seat belt wearing requested was not retrievable or would take too much time to retrieve. According to these police forces, extracting information on seat belt wearing would have required the documents to be manually searched and this process would take over 18 hours (the maximum amount of time legally required to fulfil an FOI request). Indeed one

police force suggested that searching the appropriate records for PFCI data on seat belt wearing would take more than 18 hours for just two records, though an estimate of around half an hour per record was more typical of the forces who did not provide data. This system is clearly inefficient and makes detailed and useful information on collisions inaccessible. By contrast other police forces were able to provide more than a hundred records (Avon and Somerset, Gloucestershire and Wiltshire Police, Police Service of Northern Ireland) and a further nine police forces were able to provide more than 50 records because of their searchable storage of PFCI reports. PFCI data should routinely be stored and available through a searchable database.

Reforms to forensic collision investigation systems would provide local authorities and the wider road safety community with a rich resource to help reduce road deaths. All PFCI reports should be stored electronically and where possible, simple data on things like seat belt wearing, road type and accident location should be stored on a uniform, searchable database. This database could be used to (amongst other things) verify data from Stats19, as is currently done by some local authorities. Road safety teams and roads police from relevant authorities or partnerships should also routinely review PFCI reports for fatal collisions. No single local authority has a high enough number of deaths that this additional workload would seem excessive, even considering the tight resources at local authorities, (the most road deaths in an English local authority in 2018 was 56 in Lincolnshire or 112 if London is to be considered a single local authority) and it would provide significant insight into the causes of road deaths. PFCI data may also be of use for the DfT. If all Stats19 data was reviewed against PFCI data it would increase the accuracy of certain statistics, such as the percentage of people who die while not wearing a seat belt on British roads. The greater details included in PFCI reports may also allow for richer analysis of contributory factors or the profile of those who die on the roads. The insight PFCI reports give may enable local authorities and roads police to better target resources and reduce death and serious injuries.

Currently, the RAC Foundation is conducting a project aimed at developing and trialling new ways of investigating road crashes and establishing if there is a business case for investing more resources into collision investigation.<sup>28</sup> The project may recommend changes with significant consequences for the investigation of collisions. However, at least for the short to medium term, better linking PFCI data to the road safety profession can provide useful insights and make use of an overlooked resource.

Another potential reform which may enable better use of PFCI knowledge is the development of a PFCI CRASH app. CRASH is the collision reporting software, developed by the DfT and currently used by 20 police forces in England and Wales. The PFCI CRASH app will release data on vehicle examinations and PFCI's findings to the Department for Transport, thereby ensuring Stats19 data is updated and more accurate.

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<sup>28</sup> RAC Foundation (2019). [Road Collision Investigation Project](#).

### Conclusions and recommendations

This report finds that in 2018 an estimated 273 people died in road traffic collisions in the UK having not worn a seat belt. Failure to wear a seat belt does not cause a collision. However, in the event of a collision, wearing a seat belt is the single most important safety factor.

Analysis of fatal collision data from detailed Police Forensic Collision Investigations indicates that nearly one third of vehicle occupants who died on UK roads over the last three years did not wear a seat belt. This figure is higher than the figure reported by the Department for Transport (27% compared to 24%, 3-year average 2016-2018) based on Stats19 data. Neither figure is based on a complete data set and some records in Stats19 may be incorrect. However, they both confirm that seat belt non-wearing is a major contributory factor in UK road deaths.

This report reinforces the recommendations of the previous PACTS report on seat belt non-wearing. Interventions to increase seat belt wearing could substantially reduce the number of people killed or seriously injured. These should include:

- introduction of penalty points for seat belt non-wearing, bringing the rest of the UK into line with Northern Ireland which has the best record on seat belt wearing of any UK nation;
- enhanced enforcement through intelligence-led, targeted policing; further development and use of camera technology to deter and detect seat belt non-wearing;
- review of existing road safety education activities to see if seat belt wearing is given due prominence;
- well-researched education campaigns, to reinforce the social norms of seat belt wearing; and
- EuroNCAP and other bodies encouraging manufacturers to develop voluntary safety features which encourage seat belt wearing.

In addition, this report shows the potential for increased learning from PFCIs, which are currently under exploited. PFCI reports can offer significant in-depth insight into the causes of collisions, enabling road safety professions to better understand the causes of fatalities and serious injuries they are trying to prevent.

The Department for Transport is funding the Road Collision Accident Project to explore these issues, managed by the RAC Foundation.<sup>29</sup> PACTS strongly supports the project. This report demonstrates the value in relation to information about seat belt wearing.

In July 2019 the Department for Transport announced that it was considering introducing penalty points for seat belt non-wearing.<sup>30</sup> Seat belt wearing remains a vitally important issue for UK road safety and actions to increase seat belt wearing

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<sup>29</sup> <https://www.gov.uk/government/news/drink-drivers-face-swifter-justice-with-new-roadside-breathalysers>

<sup>30</sup> The Department for Transport (2019). *The Road Safety Statement 2019: A Lifetime of Road Safety*. Department for Transport, p27

would substantially reduce the number of people killed or seriously injured on UK roads.

This report 'Seat Belts: Time for Action', reiterates the recommendations of the previous PACTS report, 'Seat Belts: The Forgotten Road Safety Priority' outlined in Appendix 5. The findings of this new report also further supports the findings of the previous report that Northern Ireland has the best record on seat belt wearing of any UK nation and that the rest of the UK should introduce penalty points for seat belt non-wearing.

In addition, this report shows the value of PFCI data and the insights it provides regarding seat belt wearing. It is likely this would apply to other key contributory factors, particularly the fatal 4 (seat belts, speed, alcohol/drugs and distraction). While recognising that issues around confidentiality must be considered, PACTS recommends that:

- PFCI data should routinely be stored in and available to accredited analysts through a searchable database;
- Road safety teams and roads police from relevant authorities or partnerships should routinely review PFCI reports for fatal collisions to learn from them;
- Stats19 data for a fatal or serious collision should be checked for accuracy against the relevant PFCI report for seat belt wearing, where available, by the police force or local authority before Stats19 data is provided to the DfT.
- These checks could include other significant contributory factors, particularly the fatal 4.

### Appendix 1: The role and qualifications of PFCIs

Police Forensic Collision Investigators (PFCIs) are specialist police officers and police staff whose role is to attend the scene of and investigate fatal and life threatening collisions or serious crime where a vehicle has been used as a weapon to gather and provide expert evidence to the investigation team and the Courts.<sup>31</sup> PFCIs 'must be involved in the investigation of every road death at an early stage.'<sup>32</sup> PFCIs are currently expected to attain a UCPD (University Certification in Professional Development) in Forensic Collision Investigation within two years of beginning their training and within an additional two years, hold a Certificate of Higher Education in Forensic Collision Investigation.<sup>33</sup> PFCIs are also expected to undertake at least 25 hours per annum of continuing professional development. PFCIs must also be trained in a wide range of other skills including but not limited to Surveying/Laser Scanners and software, Human factors, Vehicle Examination and Computer animation and simulation.<sup>34</sup> The expertise of PFCIs is recognised by HM Coroners as well as both criminal and civil courts.

The process of forensic collision investigation is set out in the Forensic Collision Investigation and Reconstruction Protocol. All forensic collision investigation evidence is subject to a critical review by a Senior PFCI or their nominated deputy. Moreover 'it is a requirement that any conclusion or expert opinion expressed in a Forensic Collision Investigator's report is independent and capable of being supported by the available evidence in the case, the expertise, experience and qualifications of the author, or published scientific research and in line with their role as an expert witness, under Criminal and Civil Procedures Rules. It must also comply with the following: Scientific laws and physical principles must have been correctly used within their proper context. Any calculations used in reaching the conclusions are both valid and numerically correct. All references to published research should be fully cited.'<sup>35</sup>

The data used in this report comes from the reports of PFCIs. PFCIs gather evidence from the seat belts to determine whether the seatbelt was serviceable, whether it was being used at the time of the collision and the seating position of occupants. Evidence collected includes but is not limited to: friction burns on the webbing, upper fixing hardware and fastening tongues; webbing being 'roped' within the hardware; clothing fibres, fluids or tissue melted or fused on the webbing and; whether pretensioners have activated.<sup>36</sup> Seat belt wearing can also be established through markings on the car interior, injury patterns and, where available, data collected by car systems (including the airbag and electronic data recorders).

Data collected by PFCIs is then stored and used differently by different police forces. Where required, PFCIs and PFCI reports may be used to provide evidence to Coroners or in both criminal and civil court. Certain police forces digitise PFCI reports so they are searchable and information on seat belt wearing is stored in databases

<sup>31</sup> College of Policing. (2019). Policing Professional Profile: Forensic Collision Investigator

<sup>32</sup> NPCC (2018). Forensic collision investigation and reconstruction within the police service.

<sup>33</sup> College of Policing. (2019). Policing Professional Profile: Forensic Collision Investigator

<sup>34</sup> A full list can be seen in Appendix C NPCC (2018). Forensic collision investigation and reconstruction within the police service.

<sup>35</sup> NPCC (2018). Forensic collision investigation and reconstruction within the police service.

<sup>36</sup> ITAI, NPCC and AiTS (2019). Good Practice in Forensic Road Collision Investigation A guide for practitioners.

whereas other police forces store the information on paper and specific details are not easily searchable. In a limited number of cases, evidence collected by PFCIs is fed into Stats19 data as part of a review process.

## Appendix 2: Police Stats19 form

MG NSRF/C

Sept 2011

**2.8 DIRECTION OF VEHICLE TRAVEL**

1. Using the Example shown complete the FROM and TO boxes for the vehicles concerned, indicating direction of travel FROM and TO

2. If PARKED enter '00'

Vehicle 001	
FROM	TO

Vehicle 002	
FROM	TO

Vehicle 003	
FROM	TO

Vehicle 004	
FROM	TO

**EXAMPLE**

FROM	TO
1	3

### CASUALTY RECORD

<p><b>3.4 VEHICLE REFERENCE NUMBER</b> Enter VEH No. which CASUALTY occupied (for pedestrians, code vehicle that struck them first) e.g. 001,002 etc.</p> <p>Casualty 001 0 0 0 0 0 0    Casualty 002 0 0 0 0 0 0                  Casualty 003 0 0 0 0 0 0    Casualty 004 0 0 0 0 0 0                  Casualty 005 0 0 0 0 0 0    Casualty 006 0 0 0 0 0 0</p>	<p><b>3.7 SEX OF CASUALTY</b> <input checked="" type="checkbox"/> CASUALTY</p> <table border="1"> <tr><th colspan="2"></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr> <tr><td>Male</td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Female</td><td></td><td>2</td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p><b>3.8 AGE OF CASUALTY</b> (Estimate if necessary) For children less than a year enter 00</p> <p>Casualty 001   Casualty 002   Casualty 003   Casualty 004   Casualty 005   Casualty 006</p>			1	2	3	4	5	6	Male		1						Female		2						<p><b>3.20 CYCLE HELMET WORN</b> <input checked="" type="checkbox"/> CASUALTY</p> <table border="1"> <tr><th colspan="2"></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th></tr> <tr><td>Not a cyclist</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Yes</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>No</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Not known</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>			1	2	3	4	5	6	Not a cyclist	0							Yes	1							No	2							Not known	3																																																						
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### Appendix 3: Responses from police forces to PACTS

Police Force	Response	Provided data
Avon and Somerset, Gloucestershire, Wiltshire	Yes	Yes
Bedfordshire	Yes	Yes
Cambridgeshire	Yes	Yes
Cheshire	Yes	Yes
City of London	Yes	Yes
Cleveland	Yes	Yes
Derbyshire	Yes	Yes
Devon and Cornwall	Yes	No
Dfyyed-Powys	Yes	No
Essex	Yes	No
Gwent	Yes	Yes
Hampshire	Yes	No
Hertfordshire	Yes	Yes
Humberside	Yes	Yes
Kent	Yes	No
Kent	Yes	No
Lancashire	Yes	No
Leicestershire	Yes	Yes
Lincolnshire	Yes	No
Manchester	Yes	No
Merseyside	Yes	Yes
Metropolitan	No	No
Norfolk and Suffolk	Yes	Yes
North Wales	Yes	Yes
North Yorkshire	Yes	No
Northamptonshire	Yes	No
Northern Ireland	Yes	Yes
Northumbria	Yes	No
Nottinghamshire	Yes	No
Police Scotland	Yes	No
South Wales	Yes	No
South Yorkshire Police	Yes	No
Staffordshire	Yes	Yes
Surrey	Yes	Yes
Thames Valley	Yes	Yes
Warwickshire and West Mercia	Yes	No
West Midlands	Yes	Yes
West Yorkshire	Yes	Yes
Wiltshire	Yes	Yes

## Appendix 4: Unbelted fatalities and seat belt fixed penalty notices issued (2016-2018)

Police Force Area	Number of Seat Belt FPNs Issued 2016-2018	Number of Unbelted Deaths (PFCI) 2016-2018
Avon and Somerset, Gloucestershire and Wiltshire	601	8
Bedfordshire	389	7
Cambridgeshire	463	16
Cheshire	2225	10
Cleveland	727	3
Derbyshire	226	14
Dyfed-Powys	332	14
Gloucestershire	91	8
Gwent	142	13
Heddu Gwent	142	13
Hertfordshire	519	9
Leicestershire	439	20
Merseyside	2783	3
Norfolk	1035	16
North Wales	1475	20
Suffolk	43	7
Surrey	297	7
Thames Valley	1962	17
West Yorkshire	3391	18

Police Force Area	Number of Seat Belt FPNs Issued 2016-2018	Number of Unbelted KSIs (Stats19) 2016-2018
Avon and Somerset	192	0
Bedfordshire	389	26
Cambridgeshire	463	45
Cheshire	2225	29
City of London	340	0
Cleveland	727	14
Cumbria	96	10
Derbyshire	226	35
Devon and Cornwall	517	24
Dorset	398	29
Durham	721	17
Dyfed Powys	332	0
Essex	7283	94
Gloucestershire	91	10
Greater Manchester	2467	0
Gwent	142	24

<b>Hampshire</b>	2044	11
<b>Hertfordshire</b>	519	45
<b>Humberside</b>	1804	39
<b>Kent</b>	1015	47
<b>Lancashire</b>	2638	0
<b>Leicestershire</b>	439	45
<b>Lincolnshire</b>	315	54
<b>Merseyside</b>	2783	62
<b>Metropolitan Police</b>	9962	7
<b>Norfolk</b>	1035	12
<b>North Wales</b>	1475	25
<b>North Yorkshire</b>	749	42
<b>Northamptonshire</b>	1464	36
<b>Northumbria</b>	2334	40
<b>Nottinghamshire</b>	537	27
<b>South Wales</b>	1580	44
<b>South Yorkshire</b>	1466	57
<b>Staffordshire</b>	1132	21
<b>Suffolk</b>	43	10
<b>Surrey</b>	297	36
<b>Sussex</b>	1338	101
<b>Thames Valley</b>	1962	44
<b>Warwickshire</b>	111	40
<b>West Mercia</b>	519	36
<b>West Midlands</b>	1843	11
<b>West Yorkshire</b>	3391	135
<b>Wiltshire</b>	318	18

## Appendix 5: Recommendations of PACTS 2019 report: *Seat belts: the forgotten road safety priority*

To increase seat belt wearing and to reduce associated casualties, PACTS recommends:

### General

- Strong steps should be taken to increase seat belt wearing. This should take the form of a cohesive campaign which combines amplified, better designed education; stronger, disincentivising penalties; increased, targeted enforcement and effective technological interventions.
- The road safety profession needs to be more aware of the importance of seat belt wearing and the significant impact increased wearing rates could have on KSIs. A focus on avoiding collisions can distract from the importance of preventing serious injury.

### Penalties

- Not wearing a seat belt should be made an endorsable offence, with three penalty points issued for not wearing a seat belt.

### Enforcement

- Enforcement of the seat belt law should be significantly enhanced through intelligence led, targeted measures. The profile of enforcement and the perceived likelihood of being caught should be raised.
- Camera technology has great enforcement potential. It should be developed further and its use expanded. Clarity should be offered to all police forces on image quality needed for prosecutions. Education
- Existing road safety education activities should be reviewed to see if seat belt wearing is given due prominence.
- Well researched and planned education campaigns should be undertaken to reinforce the social norms of seat belt wearing while building public support for increased enforcement and penalties. Education methods must be based on sound principles of behaviour change and care should be taken with use of shock tactics. These campaigns need to target high risk groups whilst recognising that seat belt non-wearing continues throughout the whole UK population.
- Euro NCAP and others should continue to encourage manufacturers to develop additional voluntary safety features for new vehicles that could encourage seat belt wearing and improve the effectiveness of seat belts.

### Data and research

- Police forces should be required to continue to collect information on seat belt wearing for all KSIs in Stats19 reports. Where a police forensic collision investigation has been undertaken, the investigators review the Stats19 data. This principle should apply to seat belt wearing and could be applied more widely.
- DfT should continue to commission observational seat belt wearing surveys, at least every two years, and look at ways to improve the methodology, particularly using new technology.
- DfT should undertake regular surveys of driver attitudes towards seat belt wearing, ideally as part of a broader survey of car-user attitudes towards road safety.
- Further analysis should be undertaken of the profile of non-wearers and of collisions in which those who were killed and seriously injured were not wearing a seat belt. This should include covariate analysis which controls for the effects of other influences while recognising the limitations imposed by limited recording of wearing or otherwise of seat belts.

See: <http://www.pacts.org.uk/wp-content/uploads/sites/2/Final-Full-Web-Version-16.05.2019.pdf>



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