

Further analysis of the impact of the Incident Contact Centre on the trend in the rate of major injuries

HSE Statistics Branch

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Introduction

1. In recent years published figures showing the trend over time in the rate of major injuries have been complicated by an apparent discontinuity in 2003/04. As this discontinuity occurs in the middle of the time series for the Revitalising period, its presence needs to be accounted for in any judgement against the injuries target. Therefore, a detailed investigation was undertaken in 2008. The report issued following this investigation can be found at <http://www.hse.gov.uk/statistics/pdf/discontinuity.pdf> . It concluded that the discontinuity can be attributed with some confidence to the introduction of the Incident Contact Centre (ICC). This change in the arrangements for reporting resulted in an increase in the number of recorded major injuries. The report proposed that this increase was a consequence of three factors:

- the ICC did not interpret certain aspects of the definition of a major injury in quite the same way as had been done previously.
- the ICC were more flexible in their interpretation of some of the criteria for reportability.
- a centralised system led to improved reporting.

2. This current report covers further work that has been undertaken to demonstrate whether the establishment of the ICC resulted in a once-and-for-all shift in the RIDDOR dataset, or whether the ICC's interpretations and the level of reporting have now returned to the pre-ICC position.

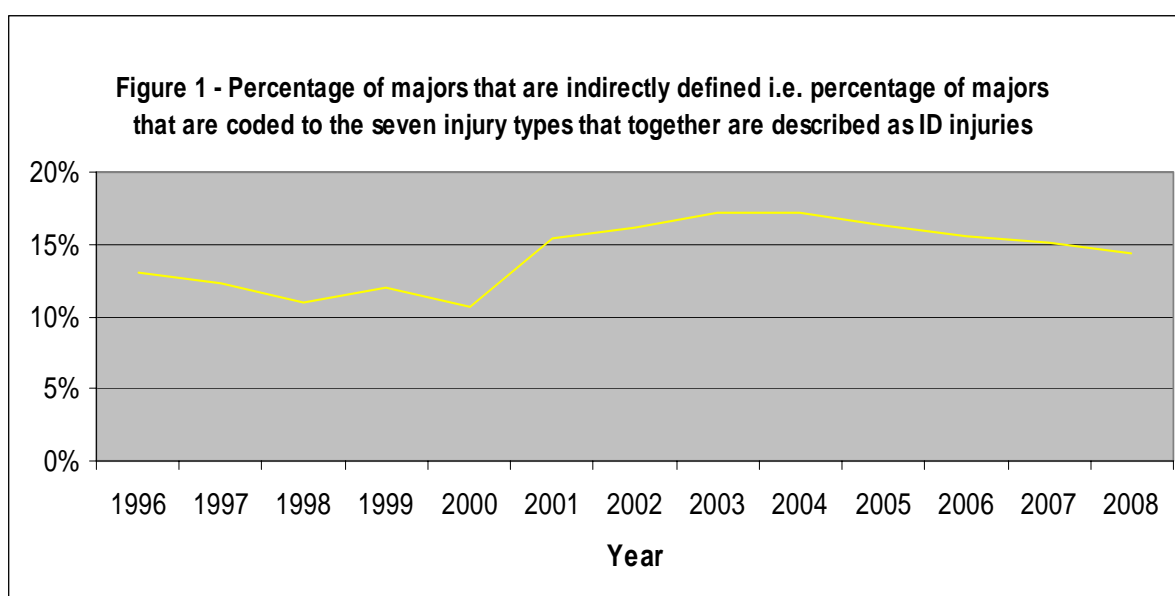
Part A - The interpretation of the definition of a major injury

3. Analysing the effect of the ICC interpreting certain aspects of the definition of a major injury in a slightly different way than had been the case previously is a complex problem. The approach taken in this report has been to focus on the types of record that were scrutinised by the FOD IT support team during the first three or four years of the operation of the ICC (for further detail see <http://www.hse.gov.uk/statistics/pdf/discontinuity.pdf>). These types of major injury records were originally selected for checking because from previous experience there was known to be a particular risk of misclassification, with some records being erroneously recorded as major when they really should have been over-3-day.

4. Two broad types of records were selected for checking by the FOD IT support team. First, there were the records of major injuries that had been coded as being of a nature that was not self-apparently serious or was vaguely specified. This subset of major records covers those whose injury coding was one of the following: sprain, superficial, contusion, laceration, multiple injuries, other known or other not known. For the purposes of this report this subset will be known as major injuries that are indirectly defined (ID), as opposed to all other types of major injury that tend to be more directly defined by their nature. With many of these ID records their coding as a major is based on information indicating that the injured person had been

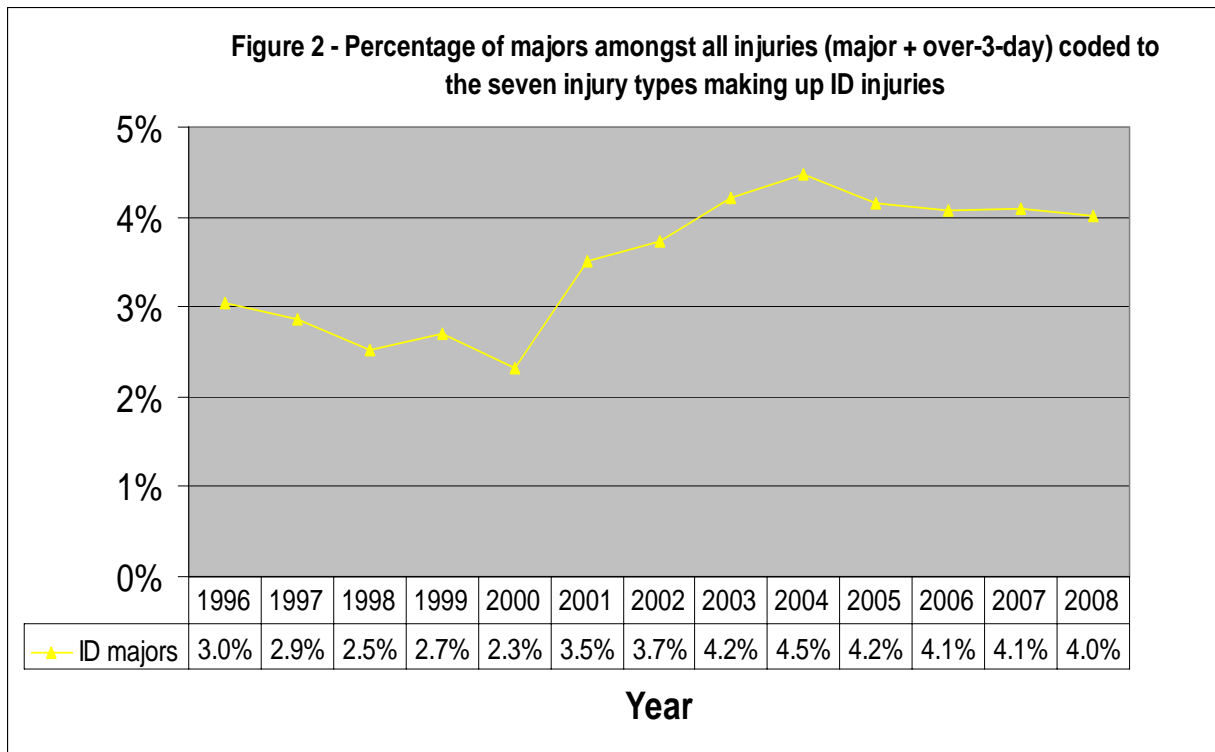
unconscious, resuscitated or required admittance to hospital for more than 24 hours. All of these three factors form part of the definition of a major injury. The second type of record scrutinised by the FOD IT support team were those involving more directly defined major injuries, such as fractures and dislocations, but where a text search revealed certain key words in the record that might cast doubt on the authenticity of the classification of the injury as being major. An example would be a fracture record where the word finger was mentioned in the main text field. This would be worthy of scrutiny because a fracture of a finger does not meet the criteria for a major injury.

5. Figure 1 shows the way in which the proportion of major injuries that are indirectly defined has varied over time. It is based on published data i.e. it is sourced from HSE's RAID database.



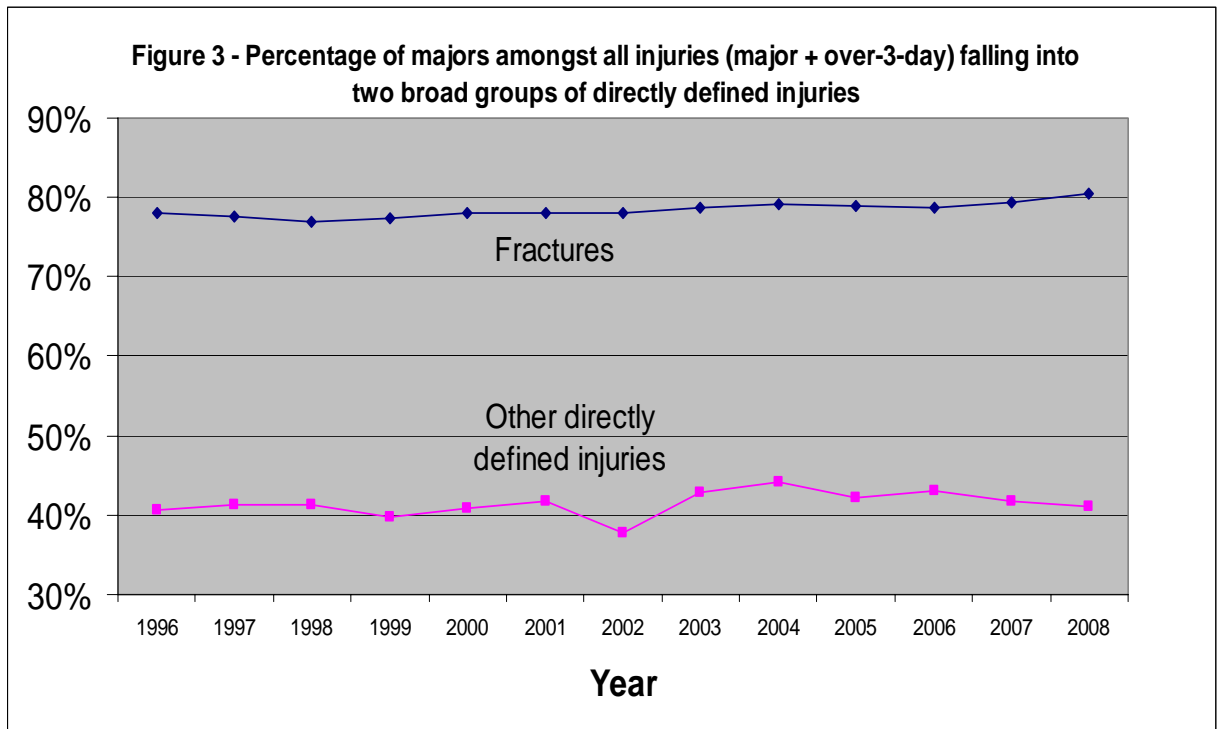
6. In considering this chart is probably advisable not to place too much emphasis on the years 2001/02 and 2002/03 as in these years the final figures recorded in RAID will have subject to considerable revision. Therefore, the best way to view this chart is to see the steady-state situations before and after the advent of the ICC as being represented by the data for 1996/97-2000/01 and 2003/04-2007/08 respectively. On this basis there would seem to be clear evidence of a step change in the proportion of ID major injuries.

7. A similar picture emerges when all injuries (major and over-3-day) in the seven categories that make up ID injuries are taken together and the trend over time in the proportion that are major is examined. This is shown in Figure 2 using RIDDOR data for employees. A step change is again clear and there is little sign of any return towards pre-ICC levels over recent years.



8. It can be seen that the proportion of major injuries amongst all injuries of a nature that would put them in the ID grouping has increased by about a third. Whilst major injuries make up a relatively small proportion of the total number of such injuries, this change from around 2.6% to around 4.1% will nevertheless have had a considerable bearing on the total number of major injuries. This is because at the time of the discontinuity there were around 125 000 injuries each year in the seven categories that make up ID injuries. Thus an increase of 1.5% can be estimated to have led to a situation in 2003/04 where there were 1900 additional major records present in the count, that probably would not have been there but for the introduction of the ICC.

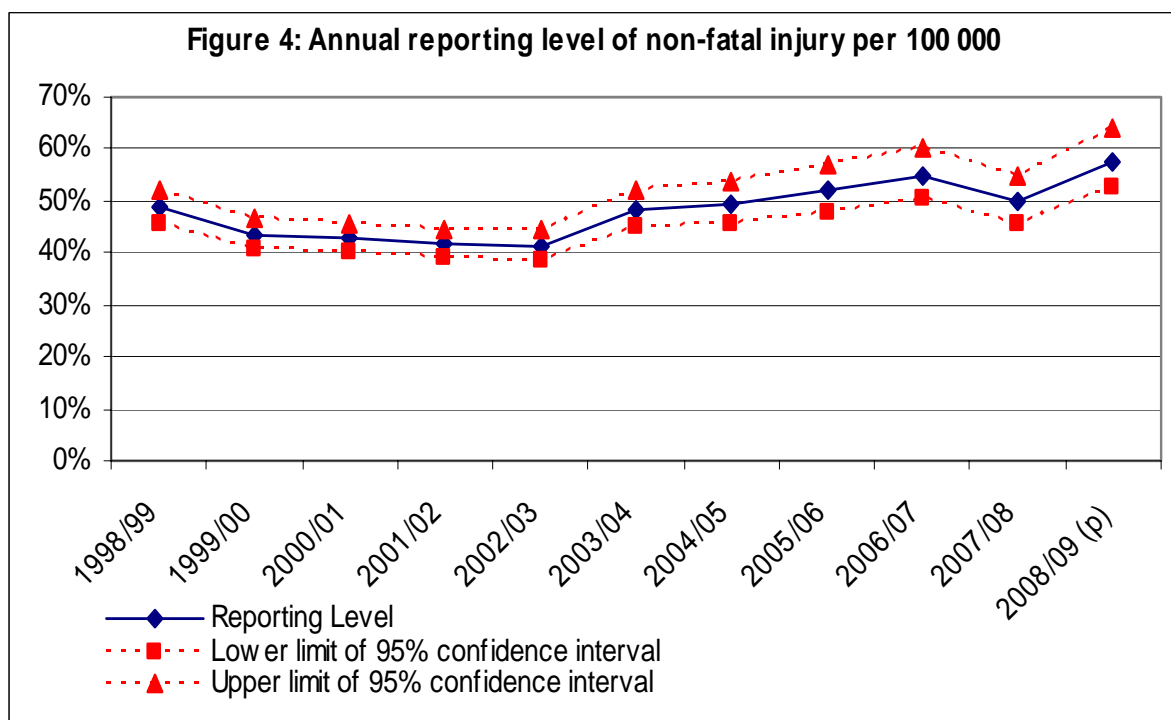
9. Figure 3 shows a similar analysis for the remainder of injuries outside of the ID grouping. For convenience, these directly defined injuries have been divided into two broad groups: fractures and all other injuries that are directly defined by their nature e.g. amputations or dislocations. With both of these injury groupings the proportion of major injuries has remained reasonably consistent across the relevant time period.



10. It would also be interesting to look at changes over time in the numbers of the second type of injury scrutinised by the FOD IT support team i.e. records with 'questionable' words in the main text box. However, this is not technically feasible as the archived records are not in a form that allows this type of injury to be readily identified in data collected before the advent of the ICC. Whilst this is unfortunate it should be noted that there are many fewer of this type of record. For example, in the dataset for 2003/04 there were about 1800 major records of this type whereas there were about 5400 records of ID major injuries.

Part B - The effect of the advent of the ICC on the level of reporting

11. The change in the level of reporting that followed from the establishment of the ICC is illustrated in Figure 4 below. The reporting level is calculated by comparing the numbers of accidents recorded in the LFS with the combined records of major and over-3-day accidents under RIDDOR.



12. Once again it is advisable to disregard the years 2001/02 and 2002/03 because of the revisions to the data that were undertaken downstream from the ICC. Therefore, the data for 1998/99 – 2000/01 should be compared to 2003/04 – 2005/06. Such a comparison again reveals a step change. The reporting level has probably increased as a consequence of two effects. The advent of the ICC made the reporting procedures more accessible. It is likely that this led to an increase in the proportion of accidents that were reported. Alongside this there would appear to have been a relaxation of the criteria for reportability. The evidence for this latter effect, whereby the criteria for reportability may have come to be interpreted less stringently by the ICC, is outlined in paragraphs 18 to 20 of the previous report (<http://www.hse.gov.uk/statistics/pdf/discontinuity.pdf>).

13. Figure 4 suggests that the reporting level has increased from 44.9% in the period 1998/99 - 2000/01 to 49.2% in the period 2003/04 - 2005/06. Thus, the reporting level improved by approximately 10% following the introduction of the ICC. Using this figure it can be estimated that an increase in reporting levels led to a situation in 2003/04 where there were around 2700 additional major injury records present in the count, which probably would not have been there but for the introduction of the ICC.

14. It should be noted that the above estimate is based on the assumption that the reporting level for major injuries is broadly the same as for over-3-day injuries. The key evidence for this comes from analysis of the Eurostat module of questions on types of injury that was included in the 1999 LFS. The results indicated that the distribution of injury types seen in the LFS

is the same as that among injuries reported under RIDDOR. Thus it was concluded that employers do not report one type of injury substantially more than another. However, the position is by no means certain, since there is some conflicting evidence. For example, surveys undertaken by HSL (see <http://www.hse.gov.uk/research/rrhtm/rr425.htm>) indicated that the level of reporting is higher for major injuries.

Part C – Making an adjustment for the discontinuity

15. This report has provided further evidence for the scale of the discontinuity. Even more importantly it has shown that the changes arising from the establishment of the ICC have not been subsequently corrected i.e. there has been a once-and-for-all shift in the dataset. Thus, it would be unduly simplistic to merely utilise the raw data when analysing the trend over the last ten years in the rate of major injuries. Even a crudely adjusted trend will be closer to the true picture than an unadjusted trend.

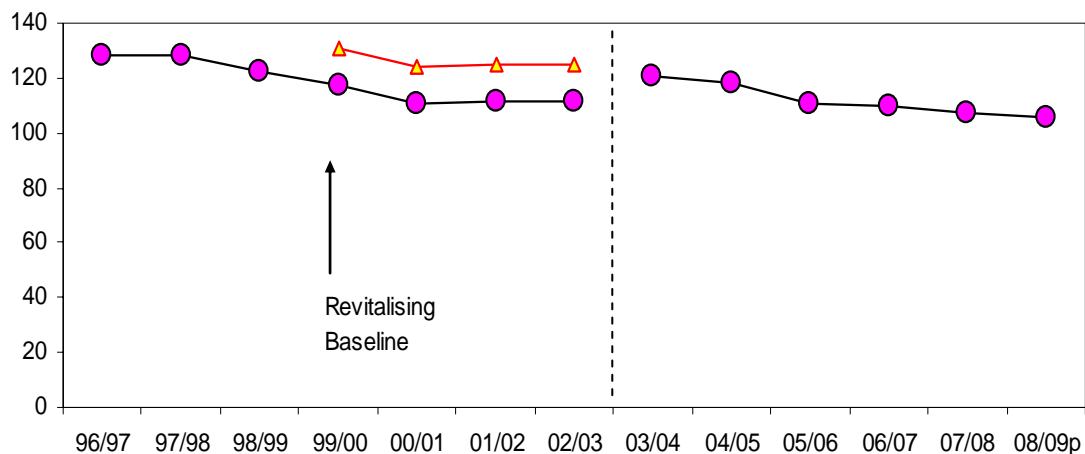
16. In making the necessary adjustment it has been decided to take a conservative approach. This decision has been made in recognition of the major impact the adjustment will have on the measurement of HSE's progress against the injury target set under Revitalising. In order to be conservative, caution has been applied in two ways. First, whilst an adjustment has been made for the change in the proportion of ID injuries that are classified as major, no allowance has been made for the likely increase in major injuries with 'questionable' words in the main text box (see paragraph 10). Second, in taking account of the change in the reporting level, it has been decided to adjust on the basis of only half of the increase that has been estimated to have occurred. This cautious approach makes allowance for the issues alluded to in paragraph 14 and other uncertainties surrounding the estimation of levels of reporting. In practice this means adjusting the pre-ICC counts to allow for changes in the reporting level on the basis of a 47/45 uplift, rather than the 49/45 uplift suggested by an improvement from 44.9% reporting to 49.2% reporting.

17. The adjustment has been undertaken by creating a revised back series for the 4 years prior to the discontinuity i.e. the pre-ICC years. The methodology has involved first increasing the count of ID major injuries for each pre-ICC year by 1.5% of the total (major + over-3-day) number of ID injuries. Then, the correction factor of 47/45 has been applied. In this way adjusted major injury counts have been estimated for each of the pre-ICC years. These adjusted counts have then been converted to rates using the historical employment figures.

18. Figure 5 shows a time series for the Revitalising period in which the pre-ICC data has been adjusted according to this methodology.

Figure 5. Rate of reported fatal and major injuries to employees

Rate of injury



Rate of reported injury (per 100 000 employees)				
Year	Fatal injury	Major injury	Fatal and major injury	Adjusted fatal and major rate
1999/00	0.7	116.6	117.3	131.1
2000/01	0.9	110.2	111.1	124.4
2001/02	0.8	110.9	111.7	124.9
2002/03	0.7	111.1	111.8	124.8
2003/04	0.7	120.4	121.1	n/a
2004/05	0.7	117.9	118.6	n/a
2005/06	0.6	110.5	111.1	n/a
2006/07	0.7	108.8	109.5	n/a
2007/08	0.7	106.7	107.4	n/a
2008/09p	0.5	105.1	105.6	n/a

DETAILS OF ADJUSTMENT

	fatal	EMPLOYEES major	F&M	EMP DATA	rate	ID injuries M&O3D	1.50% adjustment	new F&M	47 / 45 increase	Adjusted rate
1999/00	162	28 652	28814	24574452	117.3	126413	1896	30710	32215	131.1
2000/01	213	27 524	27737	24975337	111.1	125380	1881	29618	31069	124.4
2001/02	206	28 011	28217	25248035	111.8	123000	1845	30062	31535	124.9
2002/03	183	28 113	28296	25309862	111.8	121672	1825	30121	31597	124.8
2003/04	168	30 689	30857	25480543	121.1	125377				
2004/05	172	30 451	30623	25817233	118.6	116638				
2005/06	164	28 914	29078	26178296	111.1	113574				
2006/07	191	28 544	28735	26246907	109.5	108893				
2007/08	178	28 199	28377	26428100	107.4	104478				
2008/09p	129	27 594	27723	26261975	105.6	98990				