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The penalty points system in Ireland – Does it remain effective 14 years on?

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ABSTRACT

Introduction: Road traffic accidents (RTAs) are the leading cause of trauma related mortality in Ireland. The penalty points system (PPS) was introduced in Ireland in 2002 to incentivise safer driving and reduce injury. Its early effect was studied previously¹ which concluded that there was a slight reduction in RTA related femoral shaft fractures (a sensitive indicator of high energy trauma) and a dramatic reduction in RTA related discharges. We hypothesized that over the following 14 years, the penalty points system might lose its effectiveness.

Methods: Data was again collected from the same HIPE departments from six Dublin teaching hospitals and also University Hospital Waterford (to represent both an urban and a more rural population cohort respectively) examining RTA related femoral shaft fractures over an identical 6 month period (October–April). RTA related discharge data over an identical 6 month period was again acquired and analysed from Beaumont Hospital, Dublin (identical data source to previous study). These results were compared with the identical 6 month period in 2001/02 & 2002/03 (October–April).

Results: The total number of RTA related femoral shaft fracture discharges in Dublin decreased from 16 post introduction of PPS in the 2002/03 6-month period to 7 in 2015/16 6-month period. The number remained the same in the Waterford region ($n = 5$). The total RTA related discharges in Beaumont Hospital, Dublin decreased from 70 post PPS introduction to 57 in the 2015/16 6-month period. This represents an incidence rate of 4.5/1000 discharges (vs 6.9 post introduction) which was a statistically significant reduction ($p = 0.014$). The mean length of stay for these patients reduced from 13 to 7.7 days. There were consistent reductions in head injury (major & minor), lower limb fracture and facial fracture since the introduction of the PPS. The upper limb, pelvic/acetabular and thoracic injuries remained largely unchanged. Whilst RTA related spinal and abdominal injuries decreased after the introduction of the PPS, this study shows that these injuries have unfortunately increased since the post-PPS study in 2002/03.

Conclusions: These results further support the effectiveness of the penalty points system and at a time where road death figures are under the spotlight, endorse the efficacious strategies implemented by the road safety authority in Ireland.

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Introduction

RTAs have traditionally been the leading cause of fatal trauma in Ireland.² In 2013, the economic cost of road accidents in Ireland was estimated at €909.7 million or 0.56% as total of GDP.³ To contextualize, the economic cost of road accidents in the UK was reported as roughly £14.7 billion (€17.2) or 2% of GDP in the same year,⁴ €12.5 billion in the Netherlands in 2009⁵ and €2.25 billion in Sweden in 2005.⁶ The total cost of RTAs in high income countries ranges from 1.0 to 4.6% of GDP.⁷

The penalty points system (PPS) was introduced in Ireland in 2002 to incentivise safer driving and reduce injury/death/cost.⁸ The road safety authority (RSA) in Ireland is responsible for the development and introduction of strategy to reduce road deaths and injuries. The RSA introduced a system whereby committing any of a list of road traffic offences (63 offences as of April 2017) results in the application of “penalty points” on a personal driving license record held at the Department of Transport. Should a driver accumulate 12 penalty points within any given 3 year period (or 7 penalty points should the person drive under a learner permit or within 2 years of holding a full licence), he/she will be automatically disqualified from driving for 6 months.⁸ This is broadly a similar system to that currently existing in the UK with the main difference being that in the UK, the penalty points or endorsements range in the amount of time they exist on a driver's record (4–11 years vs 3 years in the Irish system).⁹ The accumulation of 12 points in both systems results in disqualification from driving. The RSA is currently building on the progress of three strategies between 1998 and 2012, with “Closing the Gap – The Fourth Road Safety Strategy 2013–2020”.¹⁰ Through four central pillars (Education, Enforcement, Engineering and Evaluation), this strategy aims to reduce road collision fatalities on Irish roads from 162 in 2012 to 124 or fewer in 2020. The strategy was so-called “closing the gap” as it aimed to match the enviable road safety records of the UK, Netherlands & Sweden. The target for RTA-related serious injuries is fewer than 330 per year or 61 per million population (472 serious injuries in 2012, therefore 30% reduction is the target).¹⁰

Following the introduction of the PPS in 2002, its effect was studied by way of analysing (i) a sensitive indicator of high energy RTAs (femoral shaft fracture has been previously been shown to correlate with high energy RTA related injury)¹¹ & (ii) the changes in workload secondary to RTAs in Beaumont Hospital over separate time periods (pre & post introduction of the PPS).¹ The author reviewed data from six teaching hospitals in Dublin to represent an urban cohort and data from University Hospital Waterford to represent a more rural cohort. For context, the catchment population of the 6 Dublin hospitals is estimated at 1,173,000 people in Dublin city & suburbs¹² whilst also providing a tertiary service for some other hospitals outside of Dublin. University Hospital Waterford provides trauma & orthopaedic services to a catchment population of roughly 500,000 people in South East Ireland.¹³

The author of this study concluded that (i) there was a slight reduction in RTA related femoral shaft fracture discharges and (ii) a dramatic reduction in RTA related

discharges following the introduction of the PPS. The author also reported that thoracic and head injuries were halved whilst the total number of limb injuries were maintained.¹

We hypothesised that over the years 2002–2016, the penalty points system might lose its effectiveness as a deterrent to dangerous driving and the reduction in femoral shaft fracture discharges and RTA-related discharges in Beaumont Hospital might not be sustained. The aim of this paper is to analyse whether the reductions detected by the previous author have continued to improve, remain unchanged or disimproved 14 years on.

Methods

To investigate the most up-to-date effect of the penalty points system, we examined the RTA -related femoral shaft fracture discharges from the six major Dublin teaching hospitals between 31/10/15 and 30/04/16 and compared this time period to the same two time periods previously investigated in the 2005 paper, namely 31/10/01–30/4/02 (pre-introduction of the PPS) and 31/10/02–30/4/03 (post-introduction of the PPS). Similarly, this data was collected from University Hospital Waterford for the same time period in order to investigate whether any identified change in the driving behaviour in the country's capital was occurring in the more rural setting. These figures were obtained, with the permission of the appropriate personnel, from the hospital inpatient enquiry (HIPE) systems departments within the six Dublin teaching hospitals, namely the Adelaide and Meath hospital (AMNCH), Beaumont hospital, Blanchardstown hospital, the Mater Misericordiae hospital, St. James's hospital, St. Vincent's hospital and University Hospital Waterford. Each HIPE department was requested to provide the number of patients, the age of the patients, the mechanism of injury in each case and the length of stay for each patient falling under the international casemix directory (ICD) codes 82111 (open femoral shaft fracture), 82101 (closed femoral shaft fracture) and S723 (fracture of shaft of femur) as a result of RTA. The total discharges from Beaumont hospital during these time periods with RTA related injuries – ICD E8100 – ICD E8199 – were also acquired and analysed.

Results

The total number of RTA-related femoral shaft fracture discharges in the Dublin region decreased whilst it remained unchanged in the Waterford region. The figures for the 3 time periods (pre-PPS, post-PPS and 14 years post-PPS) were 25, 16 & 7 in Dublin and 6, 5 & 5 in Waterford respectively (Graph 1).

In the Dublin region, the mean age for these patients remained at 31 years as compared to 24 years prior to the introduction of the PPS (24.4 (S.D. 9.4), 31.9 (S.D. 21.8) and 31.4 (S.D. 10.7) years of age). In the Waterford region, the mean age remained increased compared to pre-introduction of the PPS (21.2 (S.D. 6.1), 43.0 (S.D. 17) and 25.0 (S.D. 4.8) years of age).

The total RTA related discharges from Beaumont Hospital continued to decrease with 125 pre-PPS, 70 post-PPS and 57 discharges in the more recent period. The incidence rate of RTA related discharges per 1000 discharges significantly

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