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# Financial penalties for decreasing incidence, death and disability due to road traffic injuries: policy brief

## Key Policy Considerations

Road Traffic Injuries (RTI) are a leading cause of death and disability globally. The 2019 amendments of the Motor Vehicle Act increased penalties for lack of use of helmets, seat belt, for drinking under influence of alcohol and over speeding. The high fines have made its implementation a challenge.

Key considerations for decision making are:

1. There is no evidence from interventional studies on effect of **financial penalties for violation of helmet and seatbelt laws** in reducing road traffic injuries or deaths.
2. **Fines in combination with license suspension, vehicle impoundment and demerit point system with or without jail sentences for excessive speeding violations** may lead to statistically significant decrease in deaths due to RTI depending on context.
3. **Financial penalties alone for drinking under influence of alcohol (DUI) violations** does not lead to statistically significant decrease in road traffic fatalities and injuries.
4. **Financial penalties in combination with jail sentences with or without license suspension for DUI violation** leads to statistically significant decrease in road traffic crashes and injuries but in some studies, it was reported that the effect gradually wears over time. To sustain the effect, there is a need for sustained involvement of social groups or civil societies in advocacy and maintaining enforcement through local contextual reforms.

### What is a policy brief?

A policy brief is a summary of evidence from global research evidence to inform decision-making contextualised to a setting to inform policy decisions.

This policy brief is based on a rapid evidence synthesis conducted in 6 weeks, which is available as technical supplement to the brief.

### Why was this policy brief developed?

This was prepared on request from the **Atal Bihari Vajpayee Institute of Good Governance and Policy Analysis (AIGGPA)**, an autonomous policy think tank of the Government of Madhya Pradesh, India.

### Suggested citation

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5. **Mandatory fines with demerit points for DUI violations** was shown to show a large and significant decrease, which was sustained over time in a study from Japan, but the law made **both the bartender and the driver** legally responsible. Institution of such laws may be considered.

Integration of different departments such as road transport, police, civil societies, judiciary, local bodies of the community groups and media are important in implementing and sustaining interventions.

## Methodology

We conducted a rapid evidence synthesis and comprehensively searched five (Cochrane Library, Ovid Medline, Health Systems Evidence, EMBASE and SafetyLit) databases in July 2020 to identify studies which met the following criteria.

- **Population** - road users including but not limited to drivers, passengers and pedestrians.
- **Intervention** - financial penalties (fines) alone with or without non-financial penalties for violation/ infringement of helmet use, seat belt use, driving under influence of alcohol (DUI) and excessive speeding.
- **Comparison** - our comparison group were non-financial penalty alone or no penalty
- **Outcome**
  - Incidence of RTI
  - Incidence of road traffic crashes
  - Death (mortality) due to RTI/ road traffic crashes
  - Disability (physical/mental) due to RTI/road traffic crashes (as defined by primary study authors)
  - Severity of RTI/ road traffic crashes (as defined by primary study authors)
- **Study designs**
  - Randomised controlled trials
  - Non-randomised controlled trials
  - Controlled before-after studies
  - Interrupted time series studies (with minimum 3 time points before and after intervention)

Standard rapid evidence synthesis processes were used for study selection, data extraction and synthesis of data. A detailed methodology is available in the accompanying technical supplement.



## Summary of the evidence

We initially found 2516 studies. Based on the pre-specified inclusion criteria, 18 studies were considered potentially eligible for inclusion in the report. However, on full-text examination, 9 studies were considered relevant and/or eligible for inclusion. Among the 9 included studies, 4 were conducted in the United States and 1 each in Canada, Chile, Iran, Japan, and Taiwan.

A detailed summary of evidence is available in the accompanying technical supplement, but a brief summary is provided below:

1. We found no studies which have evaluated the effect of financial penalties for violations of helmet use or seat belt use laws. Evidence was available for financial penalties (alone or in combination with other penalties) for excessive speeding in one study in Canada (1) and DUI in eight studies (2-9) conducted in United States, Chile, Iran, Japan and Taiwan.
2. **Financial penalties (alone or in combination with other penalties) for excessive speeding**
  - Findings from one study found significant drop of average monthly collisions in one province and a non-significant drop in another that implemented fines in combination with license suspension, vehicle impoundment and demerit point system.
  - The province that added jail sentence along with fines, demerit points and vehicle impoundment saw a significant drop in average monthly collisions
  - This shows that financial penalties in combination with license suspension, demerit points, vehicle impoundment and jail sentence may lead to statistical decrease in deaths due to excessive speeding in different contexts
3. **Financial penalties (alone or in combination with other penalties) for DUI**
  - Findings of three studies (conducted in US, Iran and Chile) that reported on financial penalties alone show that fines alone do not have any sustainable statistically significant reduction in RTI deaths and injuries.
  - Findings from a large time-series study, covering all states of United States, and another conducted in Phoenix city of United States, show that fines in combination with jail sentence and license suspension can be effective in reducing road fatalities related to DUI



- Three studies (conducted in United States and Chile) that used fines with only imprisonment showed only an immediate drop in road traffic crashes and fatalities, which did not sustain over time.
- One study in Japan that used fines with demerit points found a significant change in reduction of road traffic injuries and fatalities which sustained from 1998-2004. The legislation also held bartenders and passengers at fault along with the driver
- This shows that financial penalties in combination with jail sentence and license suspension may be effective in immediate reduction of road traffic fatalities and injuries. However, for sustained effect involvement of media, social groups and community is required.
- Fines with demerit points can be effective if its implementation also penalises bartenders and passengers.

## Publishing notes

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### Competing interests

The authors do not have any relevant competing interests.

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