

## Deterring Drunk Driving in India

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Man driving car in India. Photo: Vipin Awatramani | J-PAL

**Location:** Rajasthan, India

**Sample:** 183 police stations across 10 districts

**Timeline:**  
2010 to 2011

**Partners:**  
Rajasthan Police  
Department for International Development (DFID)

*Every year, an estimated 1.2 million people die in traffic accidents worldwide, and evidence suggests that alcohol often plays a major role. To evaluate which strategies are most effective at preventing drunk driving and reducing traffic accidents, researchers evaluated an anti-drunk driving program in India. Overall, the anti-drunk driving program was effective in reducing traffic deaths and accidents, with these reductions driven entirely by police stations that implemented surprise checkpoints. Promising transfers to reserve police for good behavior more than doubled the number of drunk drivers brought to court.*

**Policy Issue:** Every year, motorized road transport results in more than 1.2 million deaths worldwide, and 91 percent of these occur in low- and middle-income countries. Evidence suggests that alcohol plays a major role in the frequency of traffic accidents. However, its exact role is difficult to

measure, especially in developing countries where police often lack the manpower and technology to measure drivers' alcohol levels. According to a World Health Organization (WHO) review of studies conducted in low-income countries in 2004, alcohol was detected in around half of fatally injured drivers.<sup>1</sup> Despite the high correlation between alcohol and traffic accidents, there is little evidence to date on which strategies are most effective at preventing drunk driving and reducing traffic accidents.

**Context of the Evaluation:** Police in India generally enforce drunk driving laws by a “selective breath checkpoint” strategy. Officers from local police stations set up fixed roadblock checkpoints that force passing vehicles to slow down, during which officers can order drivers to pull over for a brief conversation and potential breathalyzer test. If the driver is drunk (a blood alcohol concentration level of more than 30 mg of alcohol per 100 mL of blood), police confiscate

the vehicle and order the driver to appear in court for sentencing (varying from monetary fines to imprisonment). Prior to this study, roadblocks were rare, as breathalyzers had not yet been widely distributed to police stations.

Comparable to other Indian states in 2007, Rajasthan was ranked fourth out of 28 states in total crimes serious enough to warrant investigation without court order. The total police force consisted of nearly 71,000 personnel across 711 police stations.

**Details of the Intervention:** To investigate which strategies are most effective at preventing drunk driving and reducing traffic accidents, researchers partnered with the state police in Rajasthan to evaluate an anti-drunk driving program based on the existing policing procedures described above. Among 183 police stations in 10 districts, researchers randomly selected 123 to serve as the treatment group and implemented the selective breath checkpoint strategy. The remaining police stations formed the comparison group, and did not receive any specific instructions or additional resources to carry out an enforcement strategy.

Within the treatment group, researchers randomly assigned police stations to implement versions of the selective breath checkpoint strategy that differed along three dimensions:

1. The frequency of the roadblocks: To examine the relationship between policing intensity and drunk driving, treatment stations were randomly assigned to carry out a roadblock either one, two, or three nights per week. Police stations were also randomly assigned when to hold their last roadblock to create variation in the duration of checkpoints. Roadblocks were always held between 7 p.m. and 10 p.m.

2. The location of the roadblocks: To test the effectiveness of surprise checkpoints at random locations compared to fixed checkpoints, police stations were randomly assigned to hold their roadblocks at either:

- The “best” location for catching drunk drivers, selected by the local police chief, on the same day every week, or
- One of three “best” locations for catching drunk drivers, again chosen by the local police chief, with each night’s location chosen at random.

3. The personnel carrying out the roadblock: Previous research suggests that small incentives or minor monitoring

increases may improve police performance. To further examine the role of incentives, treatment stations were randomly assigned to implement two different personnel structures. Roadblocks were staffed by either:

- Officers from the local police station. For this personnel, manning the checkpoints was an additional responsibility on top of their existing duties. They were monitored by the existing police hierarchy and did not receive additional performance incentives.
- A dedicated team selected from the “Police Lines,” a district-level reserve force often considered to be a punishment posting since it removes officers from public contact. As an incentive, these officers were informed that good attendance, measured by GPS devices installed in their vehicles, would improve their chances for transfer to a different team.

Over two years, researchers used administrative data such as court records, breathalyzer data, and surveys from a set of randomly selected checkpoint locations to gather information on road accidents, deaths, and police performance.

**Results and Policy Lessons:** Overall, the anti-drunk driving program was effective in reducing traffic deaths and accidents, with these reductions driven entirely by police stations that implemented surprise checkpoints. Police Line teams, incentivized by the promise of transfers, brought more than twice as many drunk drivers to court as local station teams.

*Enforcement strategies:* Police stations that implemented surprise checkpoints saw a reduction of 17 percent and 23 percent in nighttime accidents and deaths, respectively, in areas they covered, relative to comparison stations, during and 90 days after the intervention. However, fixed checkpoints had no impact on nighttime accidents or deaths.

Compared to stations that implemented fixed checkpoints, surprise checkpoints proved more effective as checkpoint frequency increased. Increased checkpoint frequency reduced the number of drunk drivers caught per night at stations that implemented fixed checkpoints. This suggests that drivers learned fairly quickly over time about the new policing strategies at fixed checkpoints; more frequent checks may have sped up this learning and caused would-be

perpetrators to alter their driving routes.

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*Incentives:* Police Line teams were 30 percentage points more likely to arrive to their checkpoints on time compared to 40 percent of station teams, and 19 percentage points more likely to stay until closing time compared to 60 percent of station teams. Police Line teams also used breathalyzer tests 12 percentage points more than station teams, who used breathalyzer tests 60 percent of the time.

These results suggest that, when learning among perpetrators is quick, randomly implementing several roadblock checkpoints with high potential for violations may be a better use of scarce policing resources than regularly implementing a single roadblock at a the “best” high-potential location. Additionally, this evaluation suggests it is possible to incorporate incentives into a government system with limited capacity, and that incentives can have large impacts on productivity.

<sup>1</sup>WHO. 2004. *World Report on Road Traffic Injury Prevention*. Geneva: World Health Organization.

**Related Papers Citations:** *Banerjee, Abhijit, Raghavendra Chattopadhyay, Esther Duflo, Daniel Keniston, and Nina Singh. "Improving Police Performance in Rajasthan, India: Experimental Evidence on Incentives, Managerial Autonomy and Training." Working Paper, November 2014.* *Banerjee, Abhijit, Esther Duflo, Daniel Keniston, and Nina Singh. "The Efficient Deployment of Police Resources: Theory and New Evidence from a Randomized Drunk Driving Crackdown in India." NBER Working Paper No. 26224, September 2019.*

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