

Johns Hopkins International Injury Research Unit

World Health Organization
Collaborating Center
for Injuries, Violence and
Accident Prevention



Surveillance of speeding in Latin American cities

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Outline

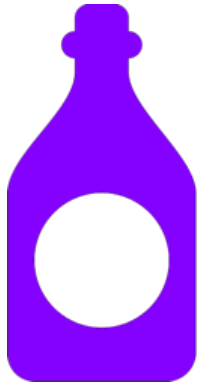
- JH-IIRU's role on the Bloomberg Initiative for Global Road Safety (BIGRS)
 - Global results on speed
 - Methods of road side speed observations
 - Observation sites for risk factors in three Latin American cities
 - The case of Bogota
 - The case of Fortaleza
 - The case of Sao Paulo
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Bloomberg Initiative for Global Road Safety

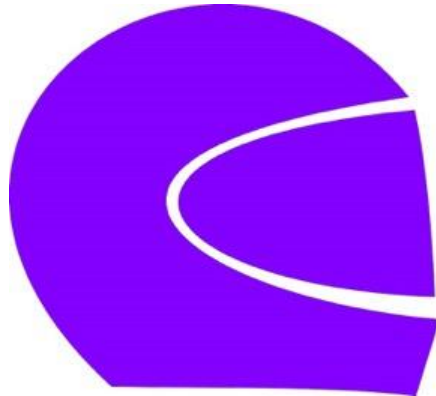


- Aim is to conduct evaluation and monitoring studies to strengthen decision-making processes by partners of the initiative and government officials in the ten cities of the initiative
- To conduct direct observations of road safety risk factors on helmet use, seatbelt wearing (and child restraints), speeding, and drinking & driving

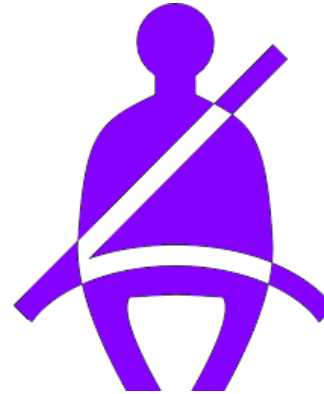
Sample sizes



216,411



2,482,608

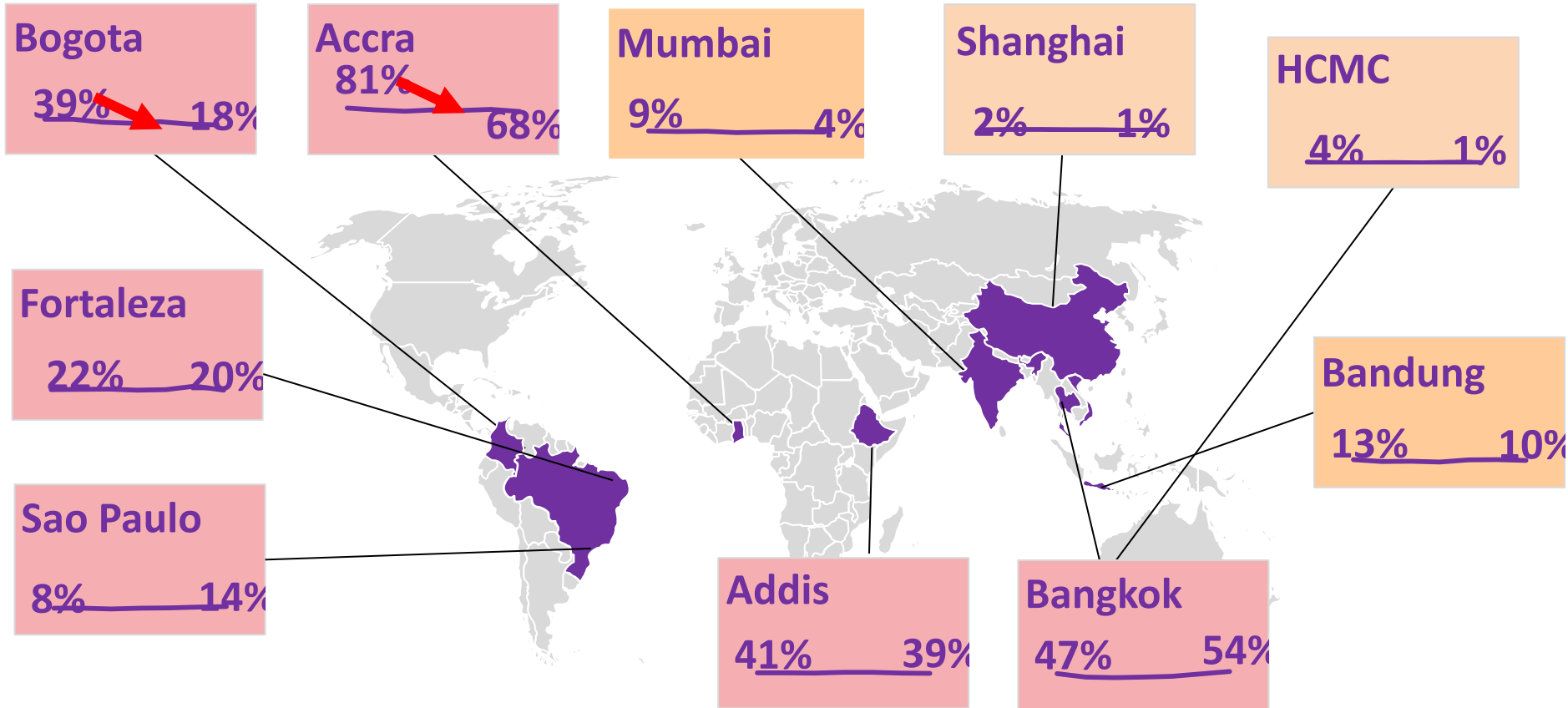


2,324,660



4,073,748

Trends in speed observational studies 2015-2018



Overview of the Monitoring Process



- Observational studies in all 10 cities
- 4 risk factors
- 2x per year
- Dissemination to partners
 - Twice a year technical and general audience reports
 - Monthly calls
 - City visits

Procedures for speeding



Procedures: Observation sites

- Roadside observational studies
 - Data collected at randomly selected locations throughout the city
 - Each location/site meets specific criteria
 - Regular time periods for data collection semi-annually
 - Data collection takes place during one to six weeks every six months
 - Each site is observed during the business week and weekend
 - Standardized methods across all BIGRS cities
 - Consistent indicators and definitions
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Procedures, contd.

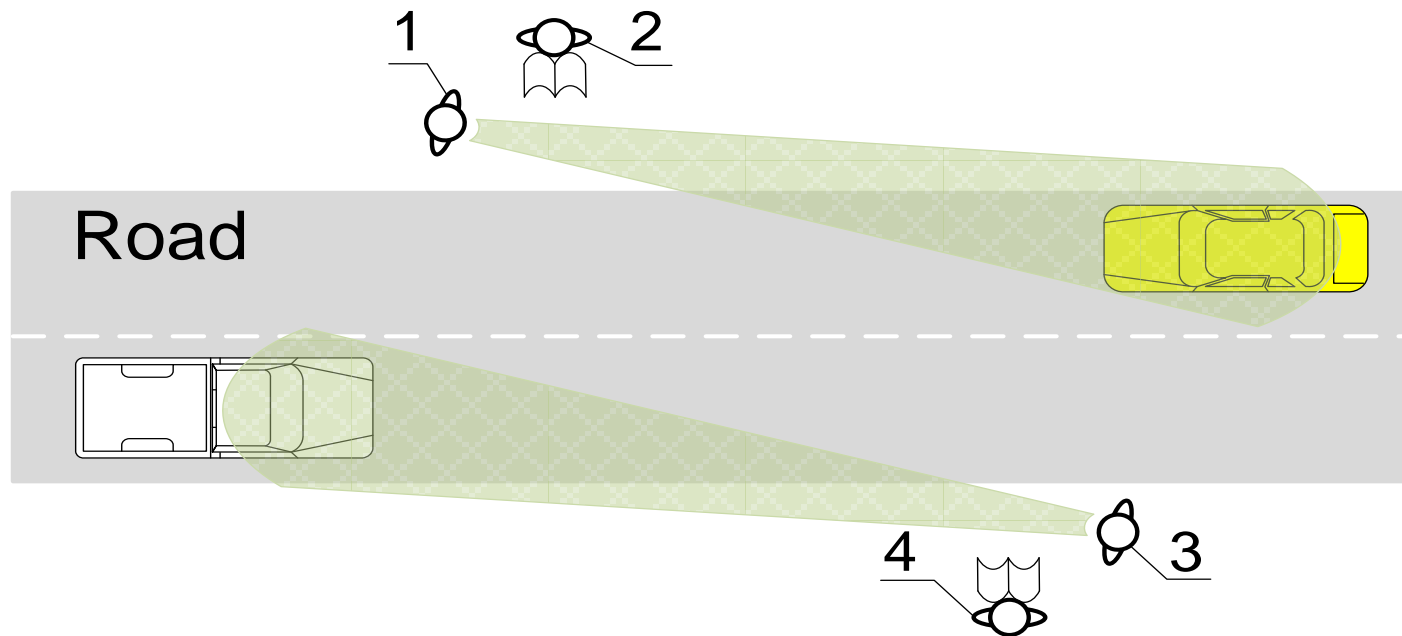
- Speeding:
 - Randomized 6-8 sites stratified by different SES variables
 - Used the selected sites to identify the nearest location where vehicles could be observed speeding as opposed to stopping
 - Location **NOT** at a junction or intersection
 - Location must be safe for observer
 - Location where observer may use the speed gun in accordance with its instructions.
 - **6-8 final sites selected in each city**
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Procedures, contd.

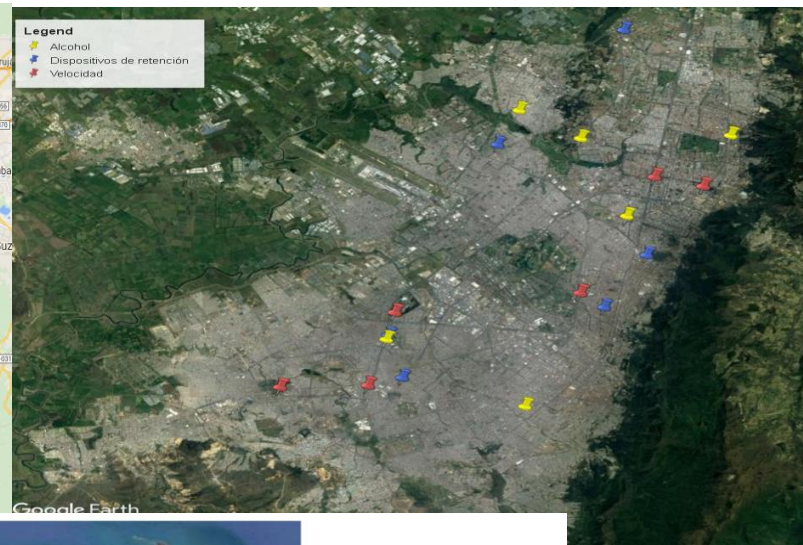
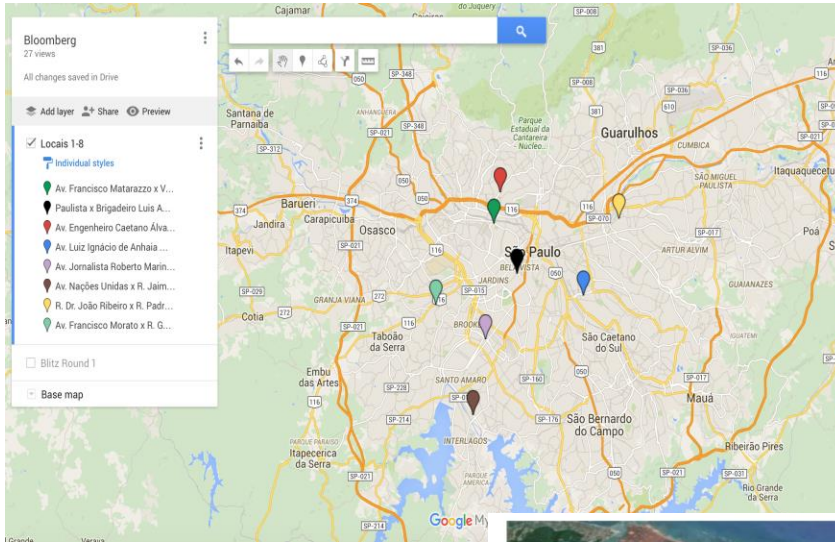
- Detailed description of observation sites was recorded
 - Location, geometry, etc.
 - Data collection
 - Each location is observed for at least 2 weekdays and 1 weekend day
 - Traffic volume is assessed for 15 minutes at each site prior to the start of the observation
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Procedures, contd.

- 2 data collectors per each site
- Five 90-minute time slots
- Speed was measured using speed radars



Distribution of speed sites in the three Latin American cities



- 1 Av. Pres. Castelo Branco
- 2 Av. Almirante Henrique Sabóia
- 3 Av. Humberto Monte
- 4 Av. dos Expedicionários
- 5 Av. Godofredo Maciel
- 6 Av. Washington Soares
- 7 Av. Aguanambi
- 8 Av. Juscelino Kubitschek

Results: Speeding



Speeding surveillance using road side observations

Advantages:

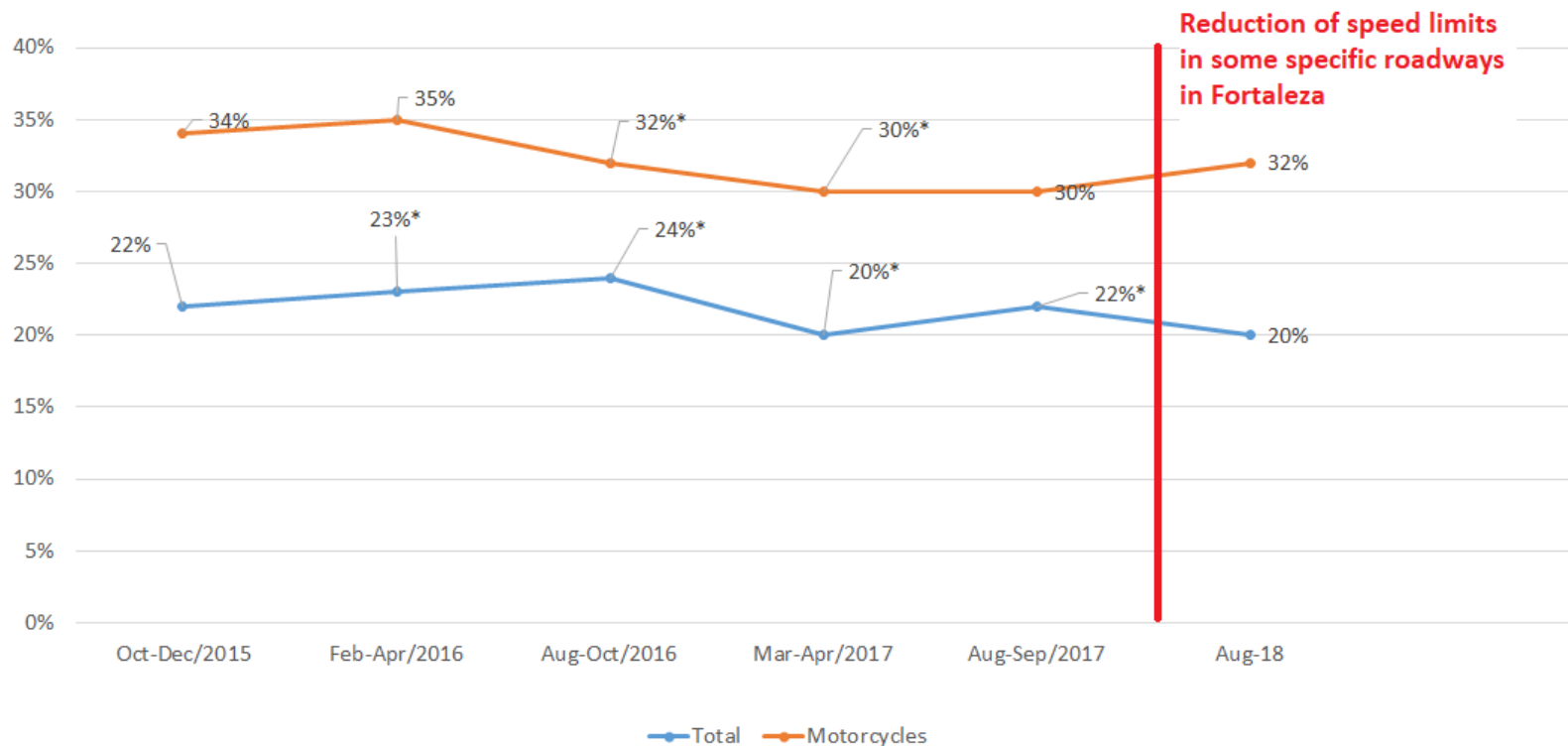
- Easily implemented by cities
- Minimizes privacy concerns and it is not proprietary data
- Minimizes risk of mismeasurement

Disadvantages:

- Difficult to scale to every part of the city as it is labor intensive
 - Security concerns
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Speeding in Fortaleza

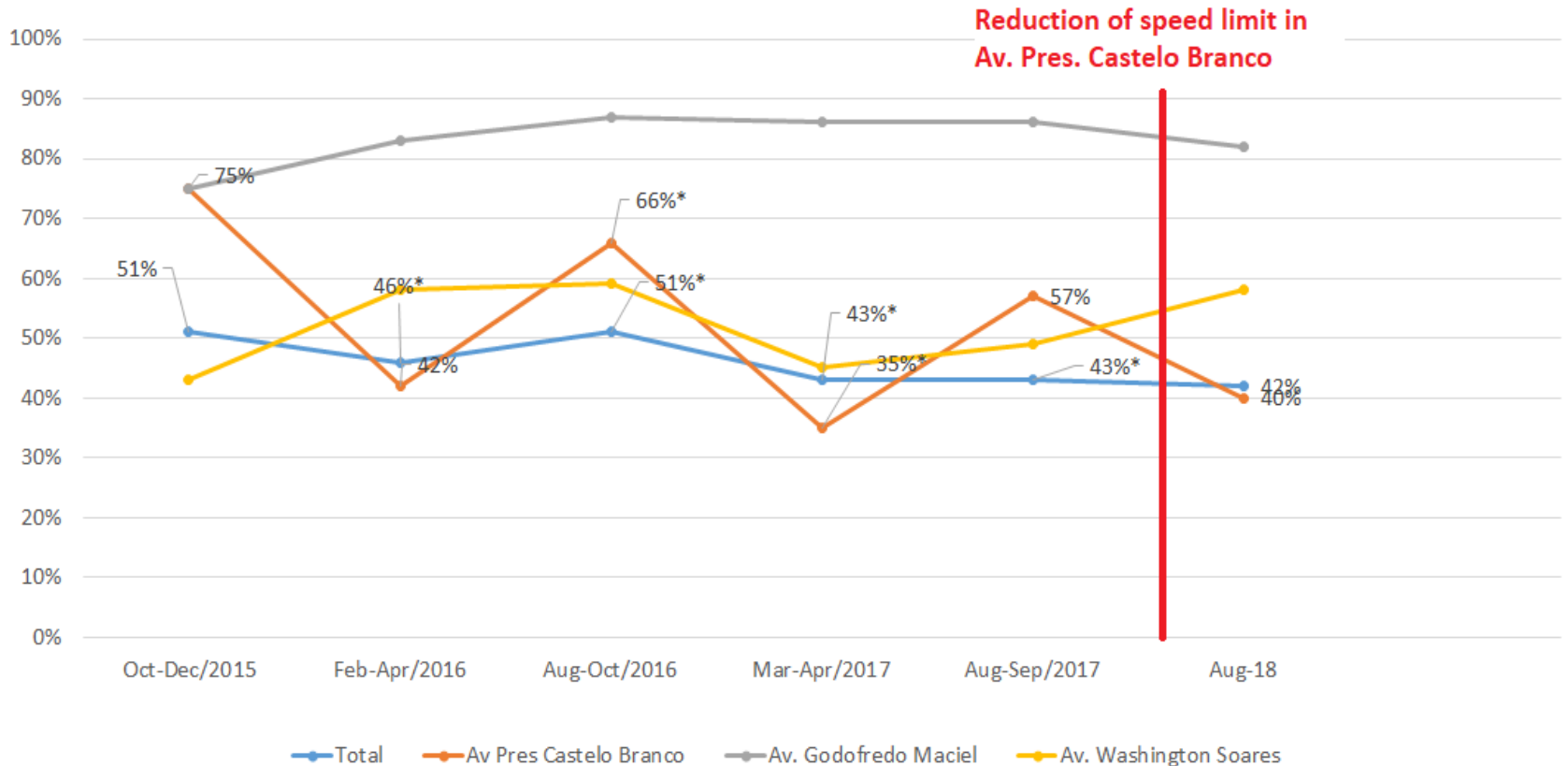
Prevalence of speeding in Fortaleza by round and type of vehicle



*denotes statistical significance between rounds. Labels only shown for all vehicles and motorcycles

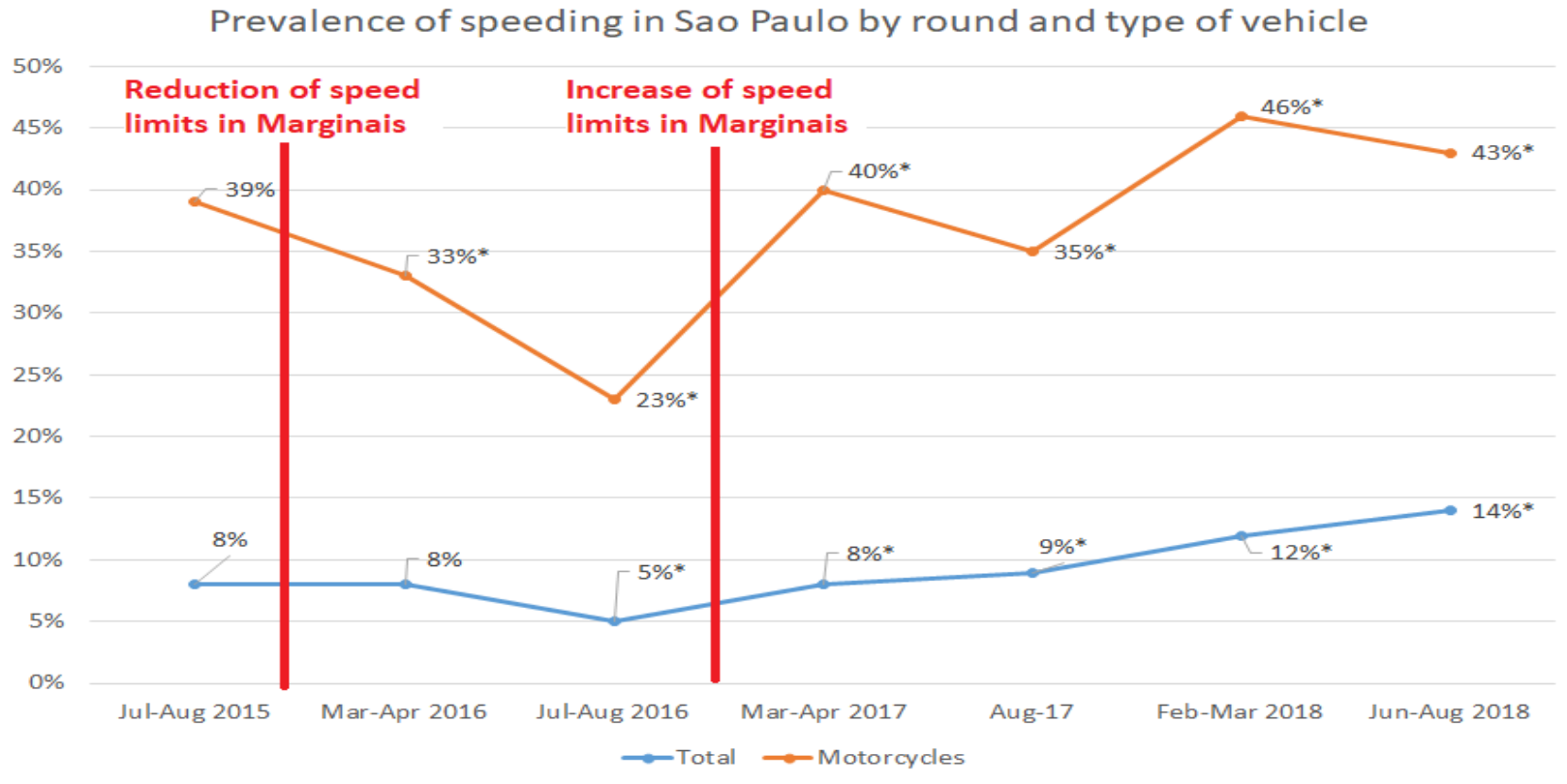
Unsafe speeds in Fortaleza (>50 km/h)

Prevalence of unsafe speeds in Fortaleza by round and site



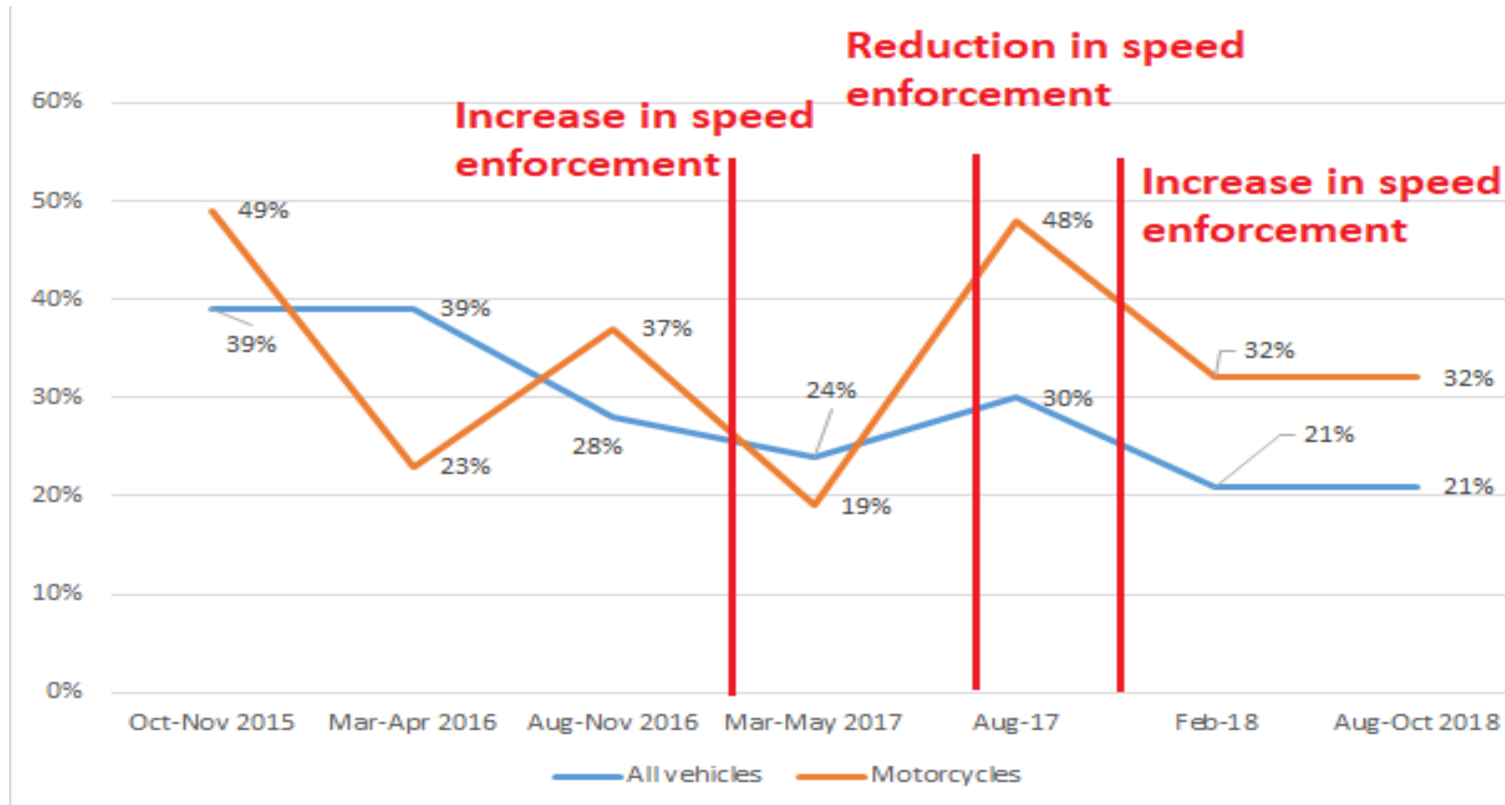
*denotes statistical significance between rounds. Labels only shown for all vehicles and motorcycles

Speeding in Sao Paulo



*denotes statistical significance between rounds

Speeding in Bogota



*denotes statistical significance between rounds

Speeding surveillance using road side observations

- Speeding surveillance using road side observations provides valuable data for decision makers, especially in LMIC.
 - There are technological alternatives that are promising, but we are just not yet at the point in which they are scalable in all LMIC.
 - The near future of speed surveillance in LMIC probably awaits a mixed approach using technology and road side observations.
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Thanks!

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