Objective and Background

- Chronic illness impacts driving.
- Clinicians must report driving concerns
- No agreed standardized tests for driving risk.
- In-car “black box” data - new data source
- Vehicles are typically shared by multiple drivers
- Drivers identification through signature
  - Distinguish drivers based on their habits

Methodology

- Candrive Dataset
  - In vehicle sensor data
  - Annual medical assessments
- Current focus drivers
  - Cognitive, Physical and General health stable over 1 year
  - Sole drivers of their vehicle
- Driving Preference Analysis
  - Frequency and length of Trips
  - Velocity and Velocity/posted limit
  - Time of day: Solar Cycle, Rush hour
  - Acceleration/Deceleration profiles
- Data Analytics

The Data Set

<table>
<thead>
<tr>
<th>Example Driver</th>
<th>Demographic Data</th>
<th>Female</th>
<th>Number of Trips</th>
<th>75 yrs at entry to study</th>
<th>1562</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Trips</td>
<td>75 yrs at entry to study</td>
<td>1562</td>
<td></td>
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<tr>
<td></td>
<td>Total Distance</td>
<td>3,425km</td>
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<tr>
<td>Analysis period</td>
<td>September to September (from entry into study)</td>
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</tbody>
</table>
| Deceleration Events | 24794 | 1

Analysis

Driver deceleration habits over 1 year – No indication of seasonal variation

Maximum Deceleration profile for driver for 1 year. Two phase relationship as size of velocity change increases

Two phase relationship for driver decelerations shown for both Mean and Maximum Deceleration

Two phase profiles for two drivers showing difference in profiles for the drivers.

Result – driver attribute to use to differentiate drivers

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