Fatalities and Injuries to Passenger Vehicle Occupants 0 - 8 Years Old based on Impact Attributes
Variables

- **Restraint Use**
  - Child Safety Seats
  - Lap and/or Shoulder Belts
  - None Used
  - Other / Unknown
Variables

- **Age**
  - Less than one
  - One to three
  - Four to eight

- **Seat Position**
  - Front Seat Passenger (middle and right side)
  - Second Seat
Variables

- **Impact Points**
  - Front impact
  - Rear impact
  - Near side impact
  - Far side impact
  - Middle seat, side impact
Variables

- **Data Sources**
  - FARS - Fatalities
  - CDS - Injuries
Exposure Data

- Number of passenger vehicle miles traveled has increased significantly from 1991 to 1999
- Child safety seat usage rates have increased for 0 - 3 year olds
- Lap and/or shoulder belt usage rates have increased for 4 - 8 year olds
Passenger Vehicle Occupants Killed, by Restraint Use
Passenger Vehicle Occupants Killed, by Restraint Use, Age 0-8

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age 0-8

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age<1

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age<1

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age 1-3

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age 1-3

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age 4-8

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Restraint Use, Age 4-8

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupant Fatality Rates per 100,000 Population, By Restraint Use, Age 0-8

Passenger Vehicle Occupant Fatality Rates per 100,000 Population, By Restraint Use, Age <1

Passenger Vehicle Occupant Fatalities Rates per 100,000 Population, By Restraint Use, Age 1-3

Data Source: 1991 - 1999 FARS, U.S. CENSUS BUREAU
Passenger Vehicle Occupant Fatality Rates per 100,000 Population, By Restraint Use, Age 4-8

Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use
Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age <1

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age 1-3

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age 4-8

Data Source: FARS 1991 - 1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age < 1

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

Front Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age <1

Front Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

Front Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

Front Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age < 1

Second Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 – 8

Second Seat

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age < 1

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

Data Source: FARS 1991-1999
Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

Data Source: FARS 1991-1999
Passenger Vehicle Occupant Injuries, by AIS, Body Part, and Restraint Use
Passenger Vehicle Occupant Injuries, by Body Part, Restraint Use, Age 0-8

Head Injuries

Summary

• **Number of Unrestrained fatalities and injuries have decreased for ages <1, 1-3, and 4-8**
• **Child safety seat usage rates have increased for 0 – 3 year olds**
• **Lap and/or shoulder belt usage rates have increased for 4 – 8 year olds**
• **Child Safety Seat fatalities**
  
  ♦ The second seat has replaced the front seat as the most frequently chosen seating position
  
  ♦ The majority of children killed in the front seat were unrestrained
• Front seat passenger fatalities by Impact Point
  - Front impact – 51 %
  - Rear impact – 4 %
  - Near side impact – 26 %
  - Far side impact – 9 %
  - Middle seat, side impact – 10 %
Summary (cont.)

• Second seat passenger fatalities by Impact Point
  ⊡ Front impact – 44 %
  ⊡ Rear impact – 14%
  ⊡ Near side impact – 25 %
  ⊡ Far side impact – 9 %
  ⊡ Middle seat, side impact – 8 %
• Number of head injuries far exceeds number of injuries to any other body part