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



Variables

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



Variables

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- **Age**
 - ◆ Less than one
 - ◆ One to three
 - ◆ Four to eight
- **Seat Position**
 - ◆ Front Seat Passenger (middle and right side)
 - ◆ Second Seat



Variables

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- **Impact Points**
 - ◆ Front impact
 - ◆ Rear impact

 - ◆ Near side impact
 - ◆ Far side impact
 - ◆ Middle seat, side impact



Variables

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- **Data Sources**
 - ◆ FARS – Fatalities
 - ◆ CDS – Injuries



Exposure Data

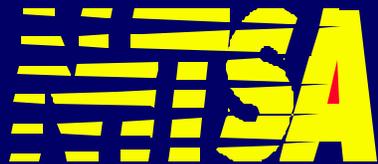
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- Number of passenger vehicle miles traveled has increased significantly from 1991 to 1999
- Child safety seat usage rates have increased for 0 – 3 year olds
- Lap and/or shoulder belt usage rates have increased for 4 – 8 year olds



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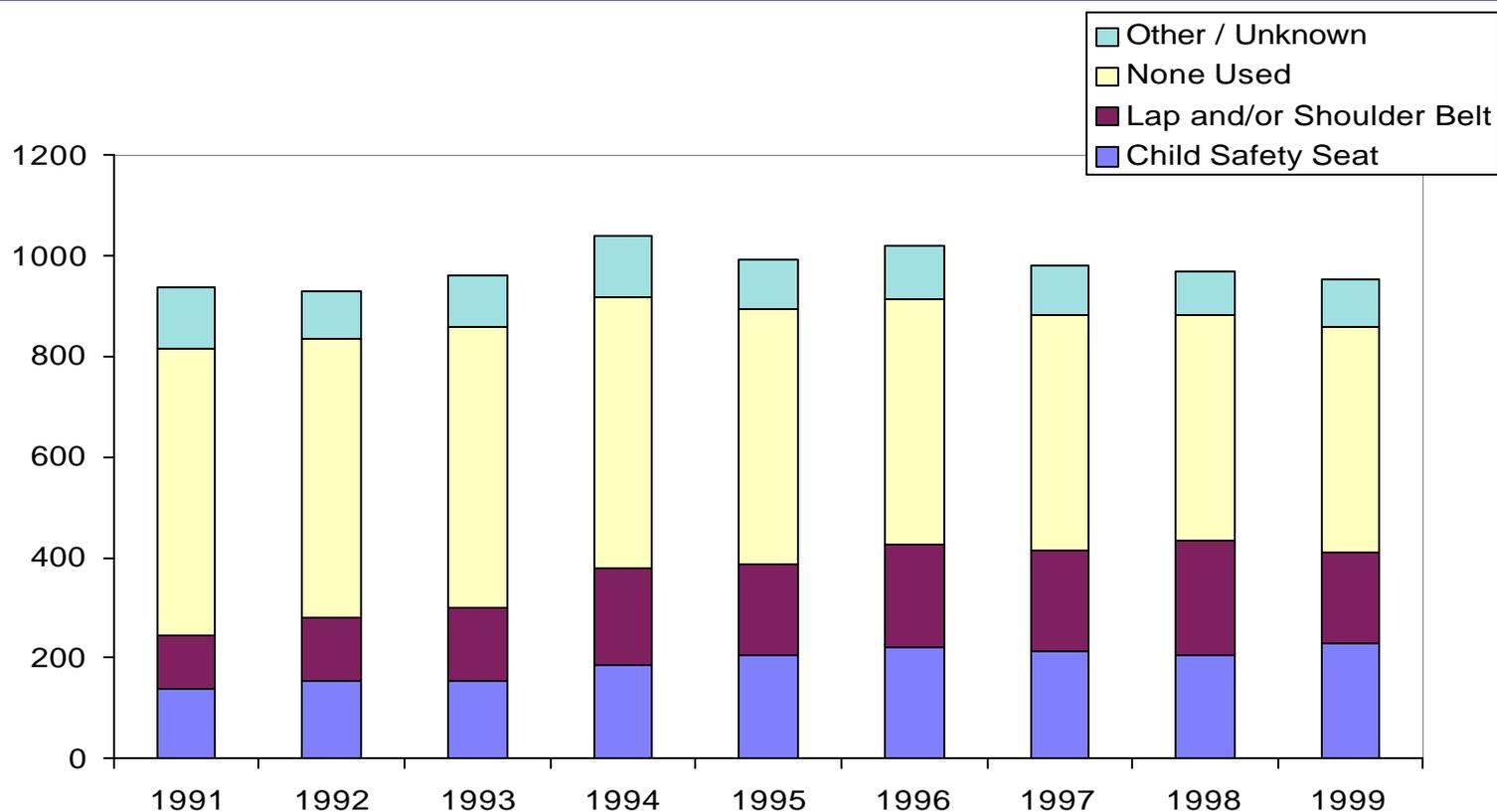
Passenger Vehicle Occupants Killed, by Restraint Use



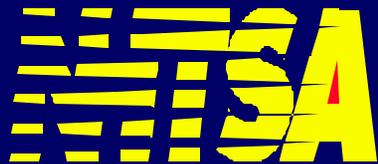
People Saving People

Passenger Vehicle Occupants Killed, by Restraint Use, Age 0-8

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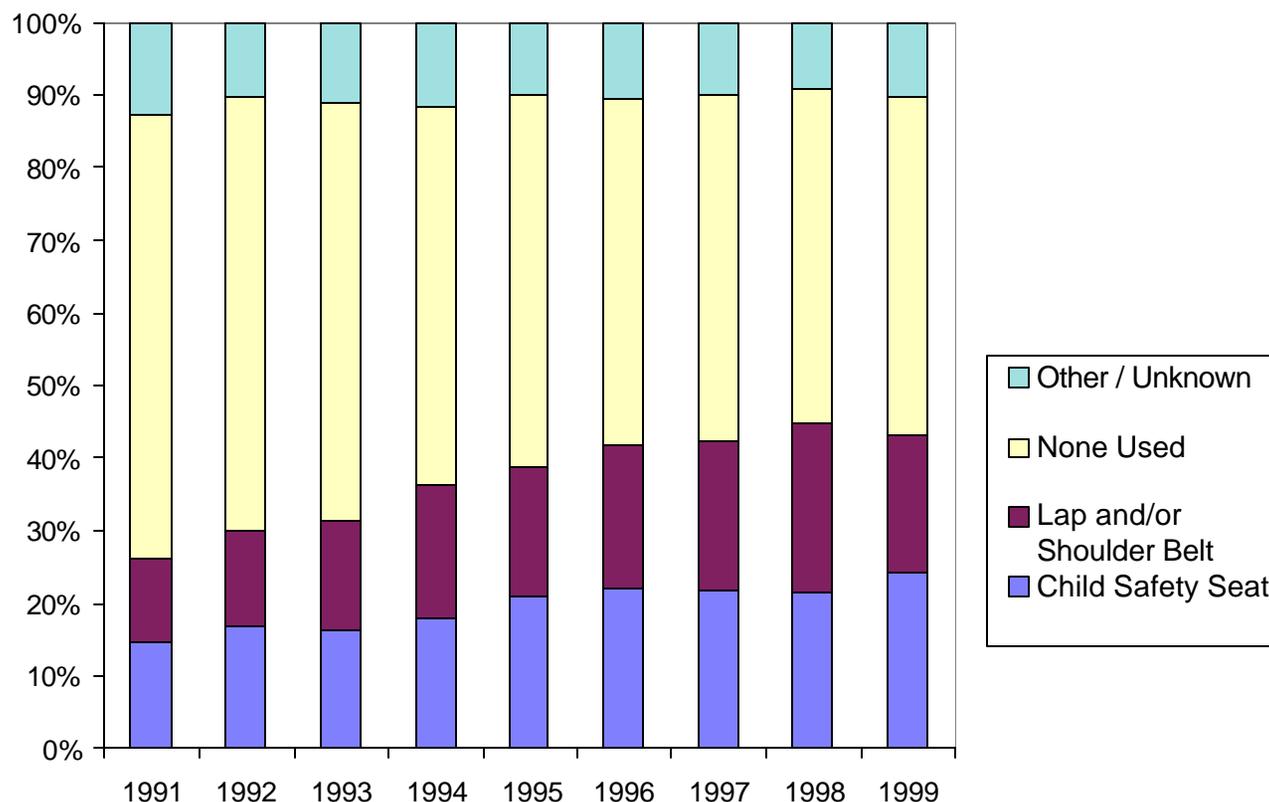
Data Source: FARS 1991 - 1999



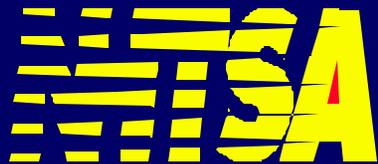
People Saving People

Passenger Vehicle Occupants Killed, by Restraint Use, Age 0-8

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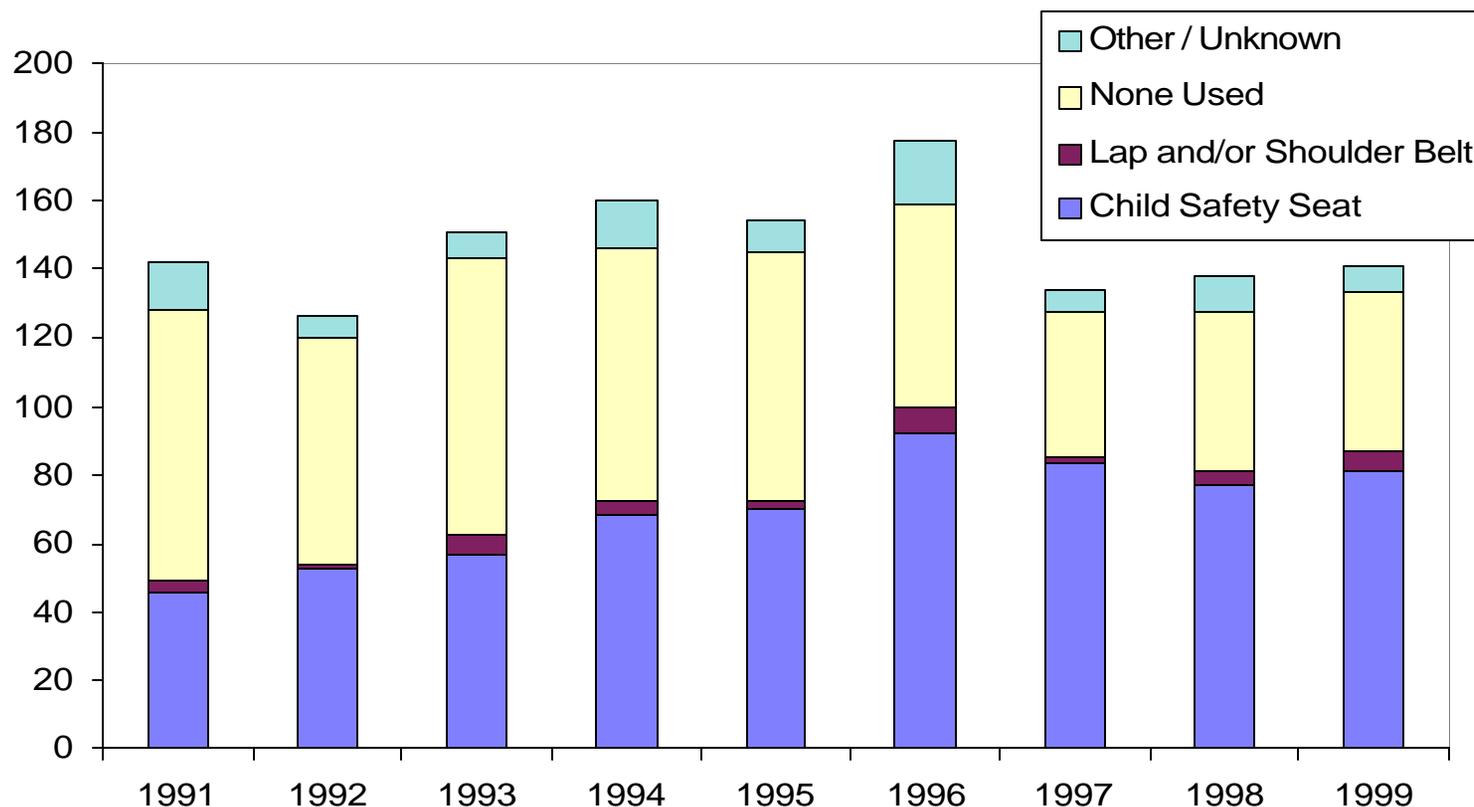
Data Source: FARS 1991 - 1999



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Passenger Vehicle Occupants Killed, by Restraint Use, Age <1

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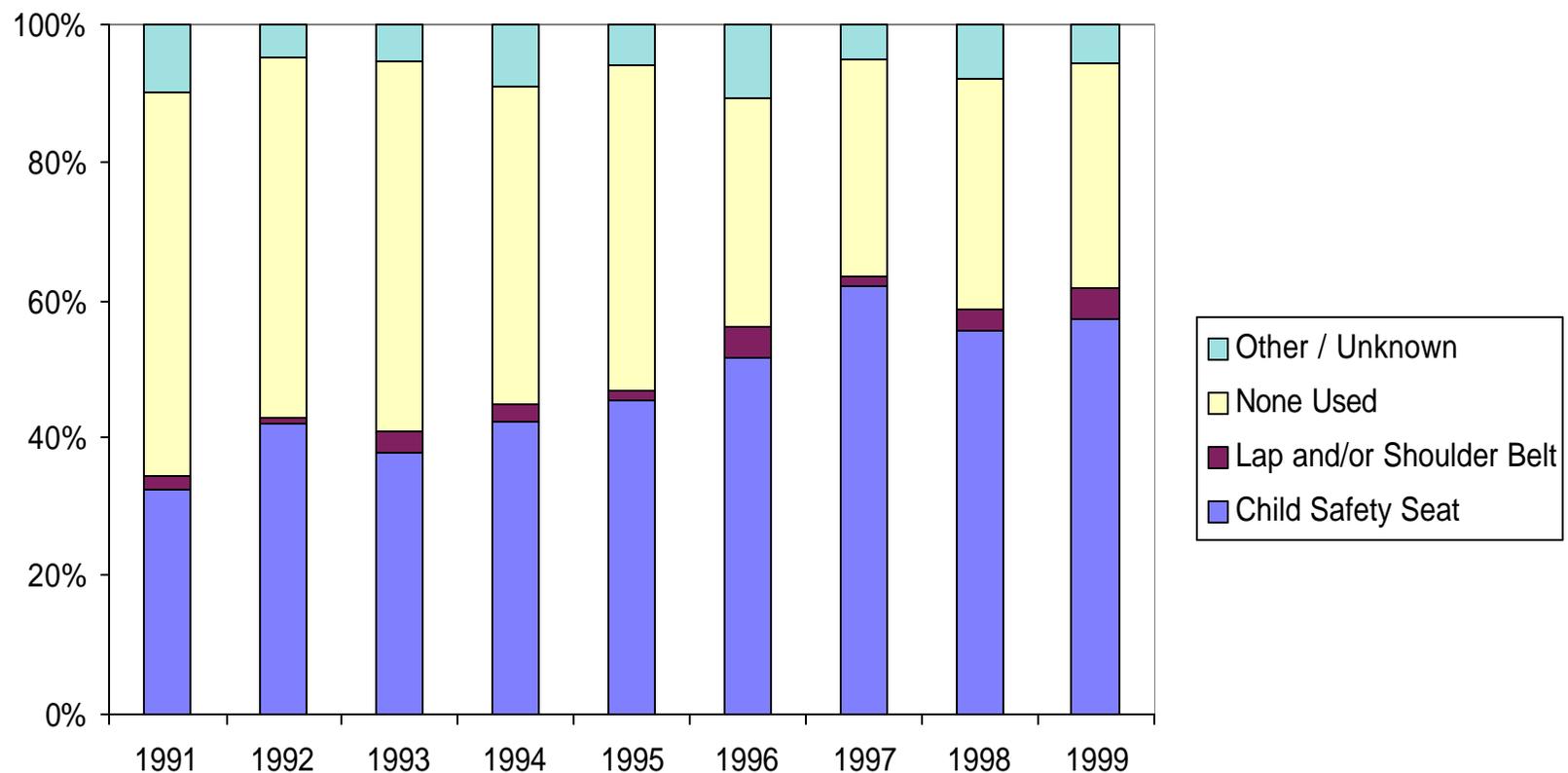
Data Source: FARS 1991 - 1999



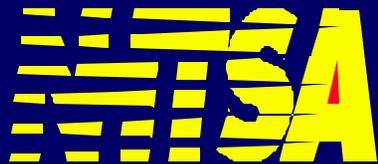
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Passenger Vehicle Occupants Killed, by Restraint Use, Age <1

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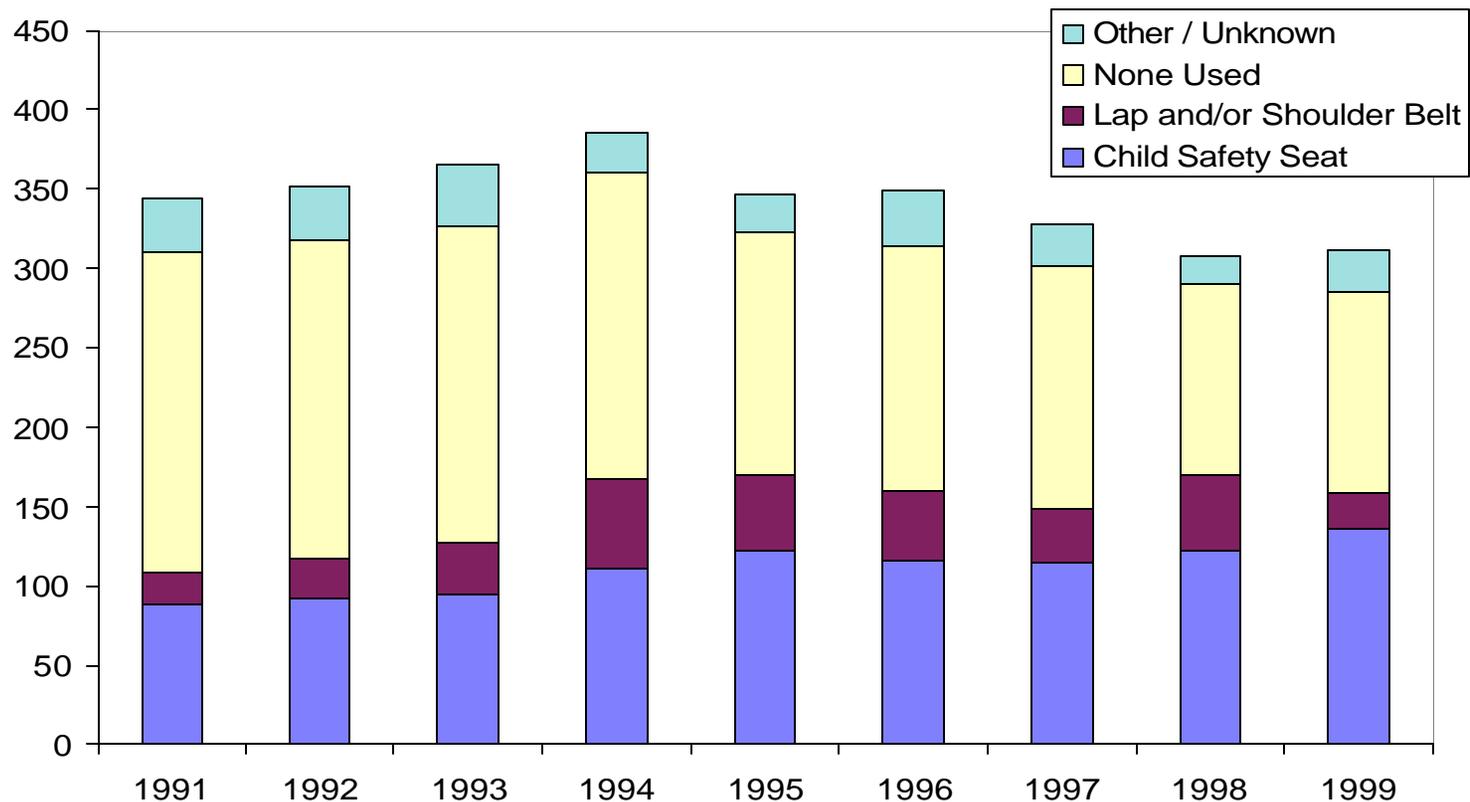
Data Source: FARS 1991 - 1999



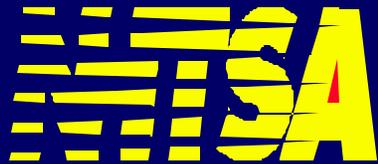
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Passenger Vehicle Occupants Killed, by Restraint Use, Age 1-3

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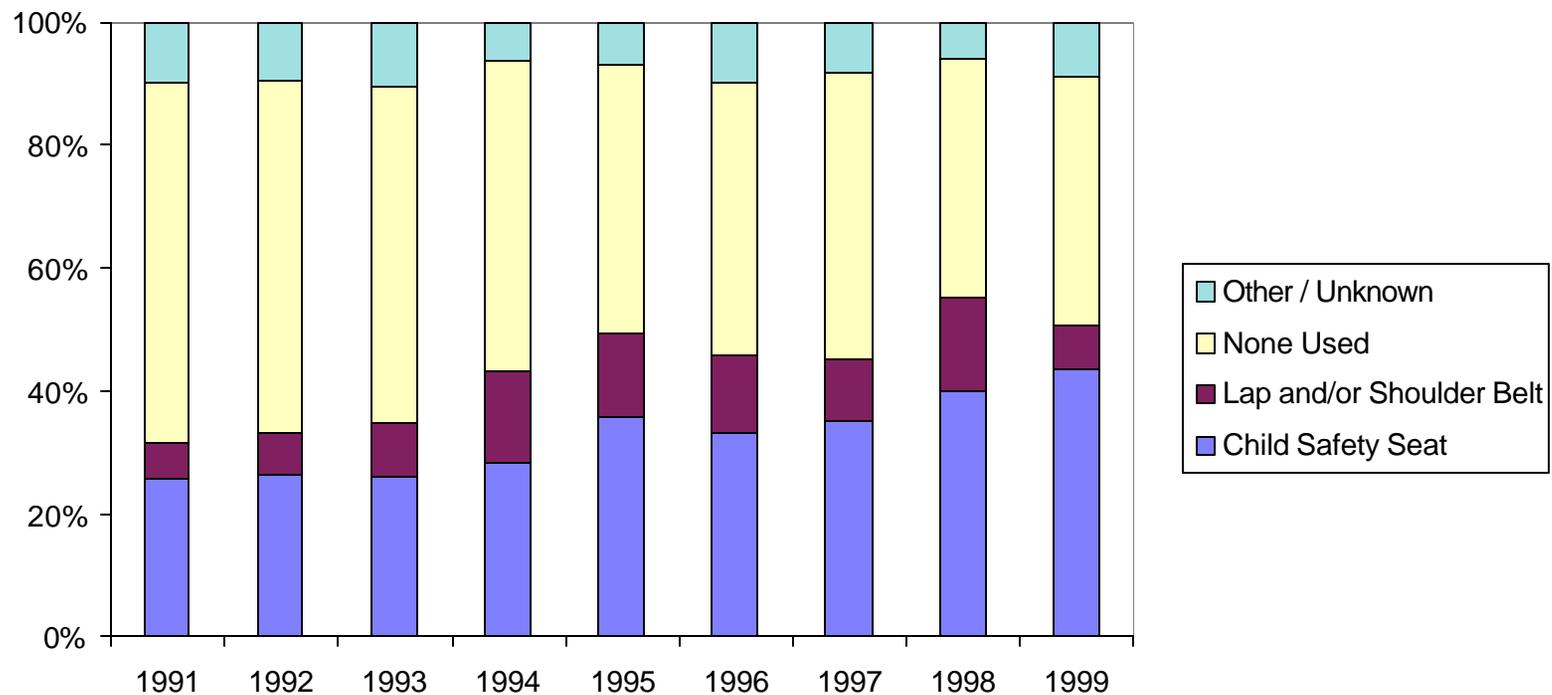
Data Source: FARS 1991 - 1999



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Passenger Vehicle Occupants Killed, by Restraint Use, Age 1-3

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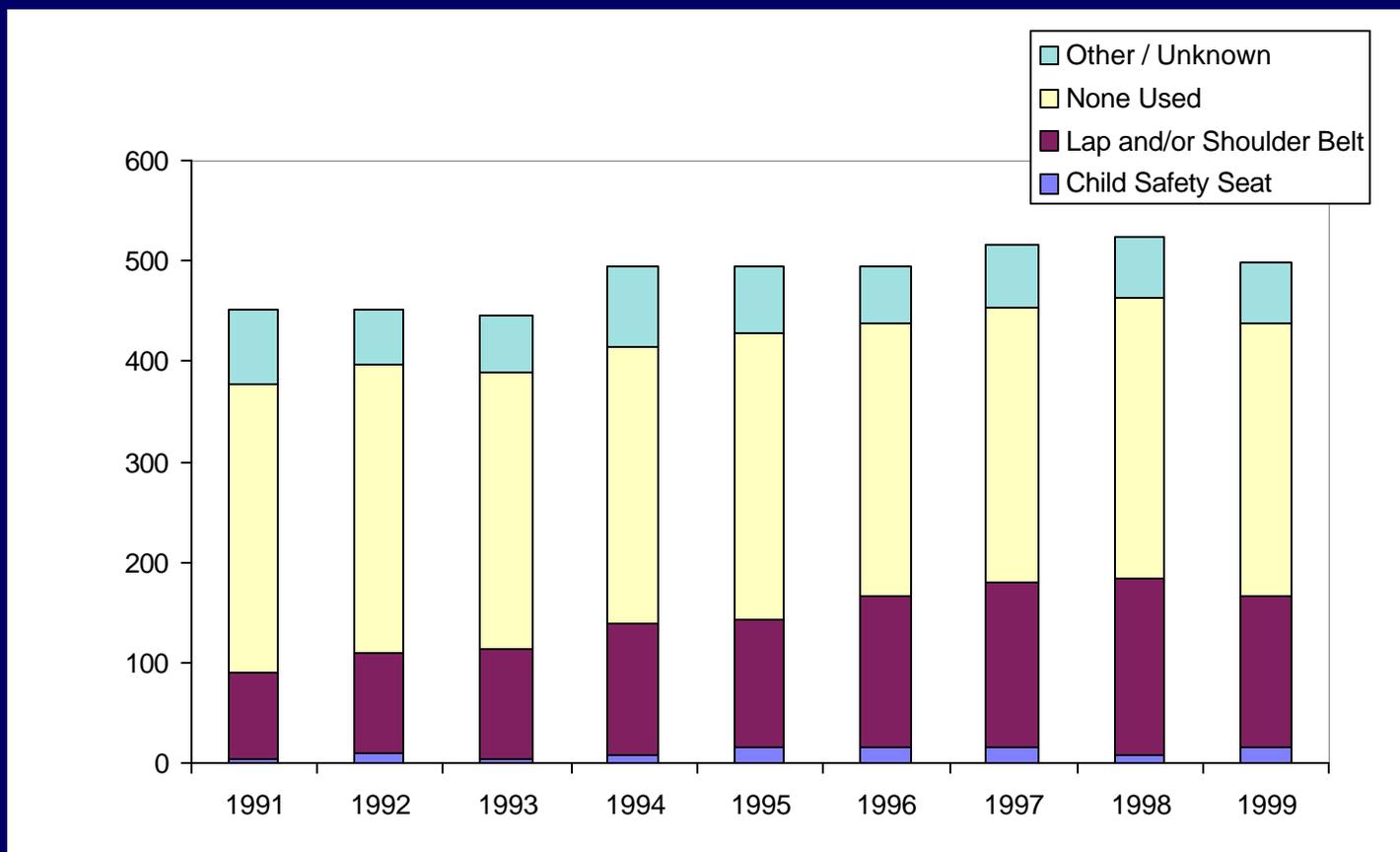
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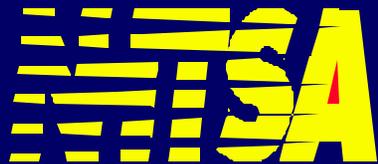
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Passenger Vehicle Occupants Killed, by Restraint Use, Age 4-8

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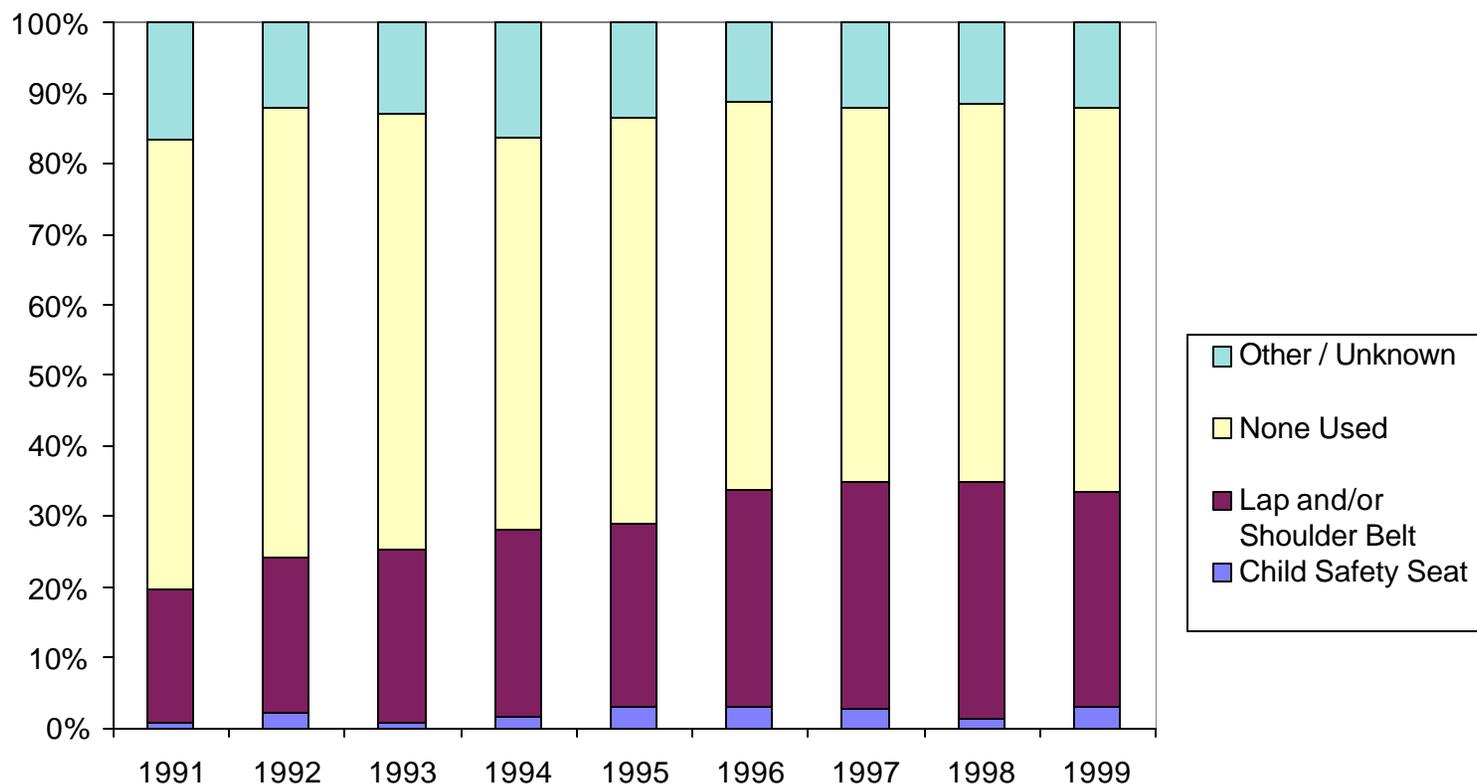
Data Source: FARS 1991 - 1999



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Passenger Vehicle Occupants Killed, by Restraint Use, Age 4-8

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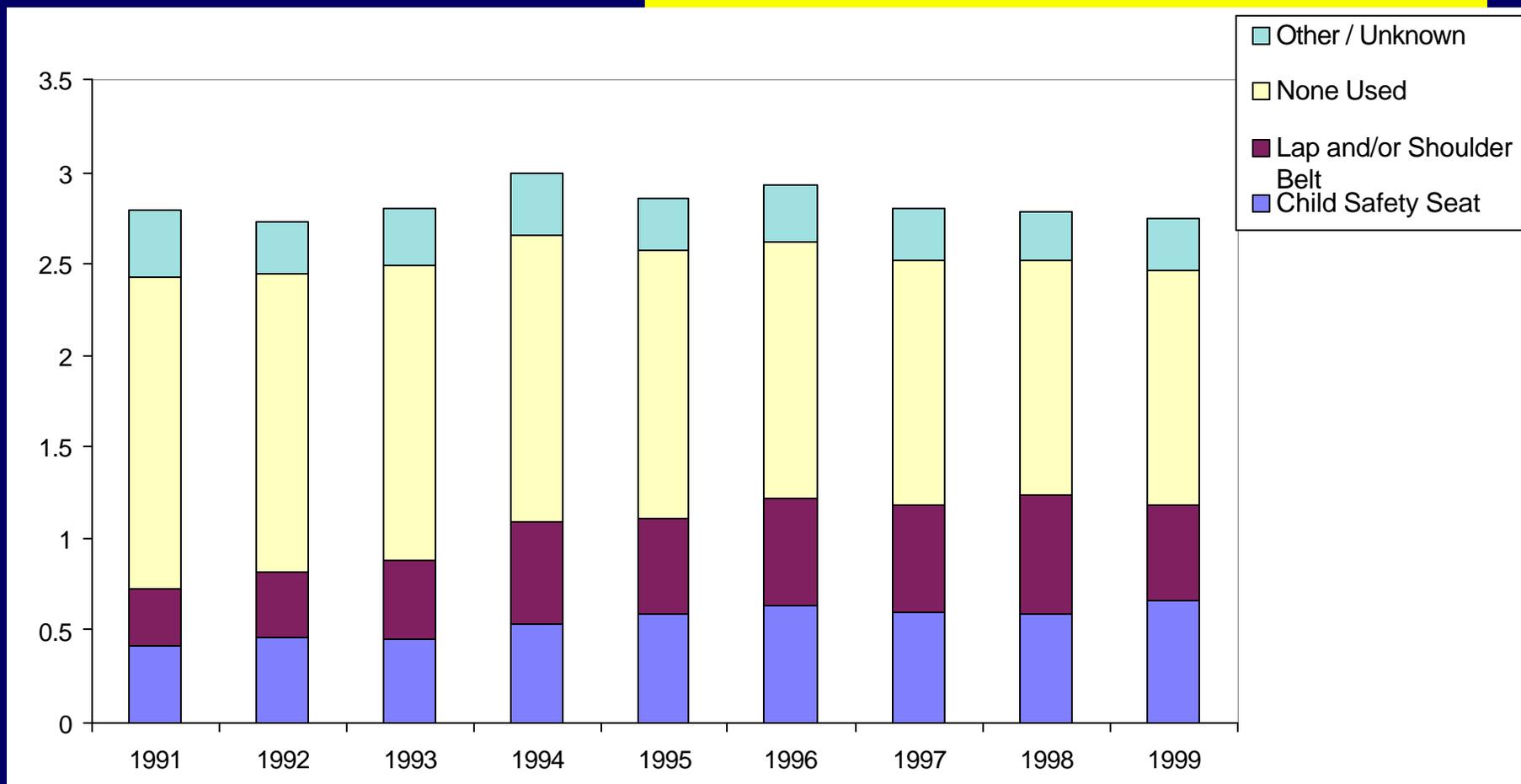


Data Source: FARS 1991 - 1999

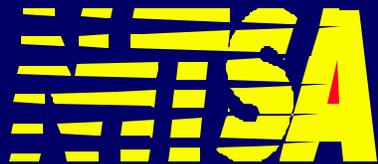


Passenger Vehicle Occupant Fatality Rates per 100,000 Population, By Restraint Use, Age 0-8

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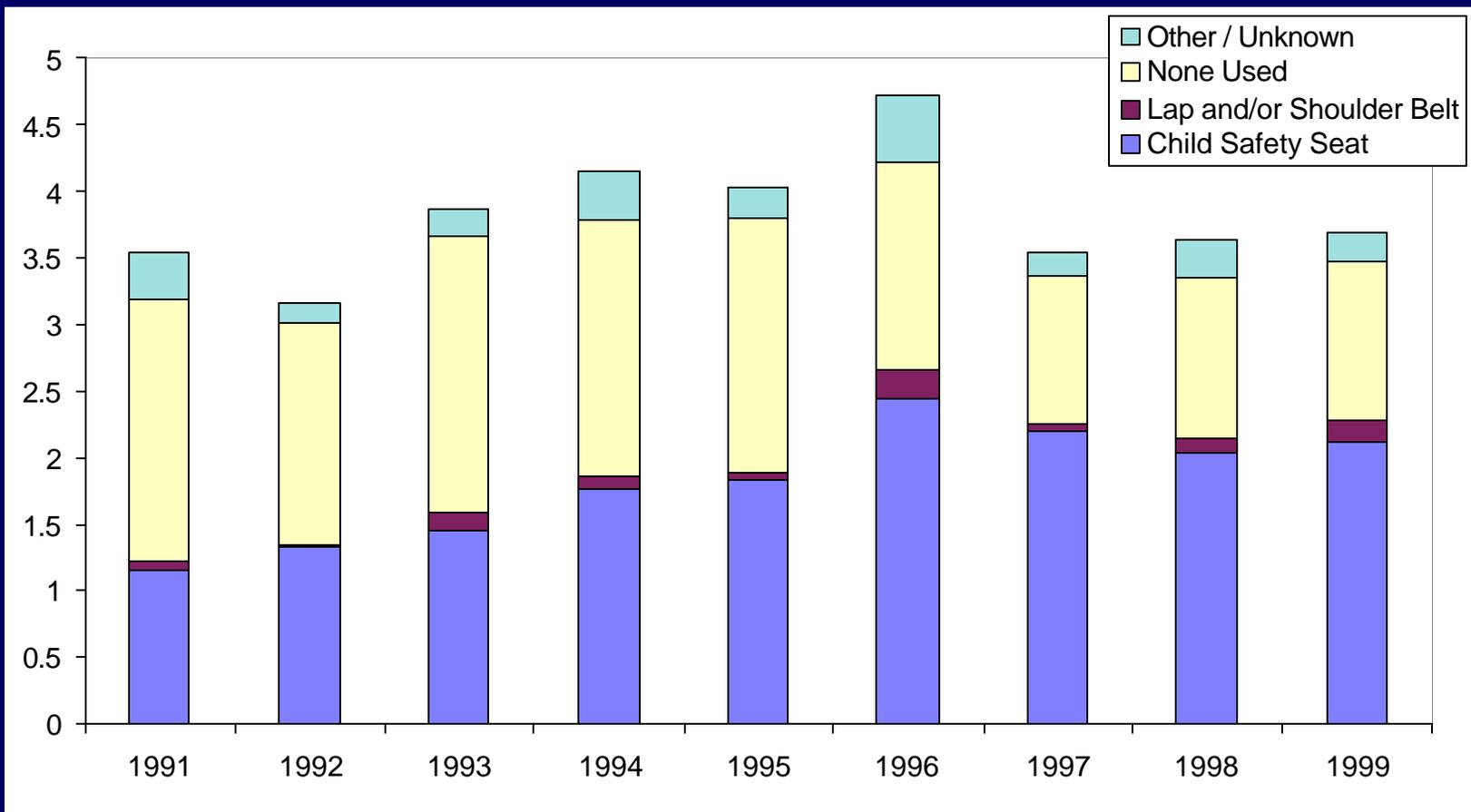
Data Source: 1991 - 1999 FARS, U.S. CENSUS BUREAU



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

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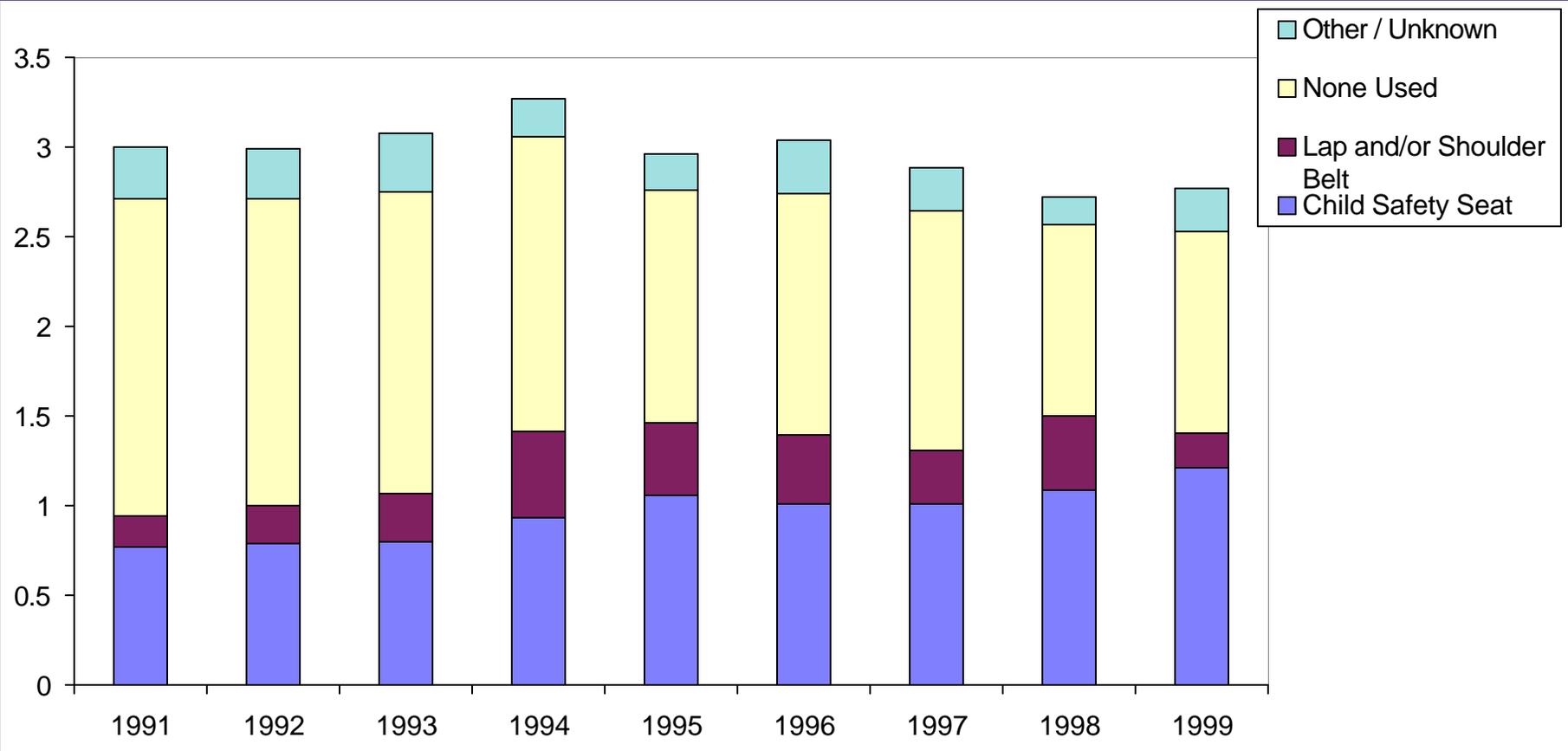


Data Source: 1991 - 1999 FARS, U.S. CENSUS BUREAU



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

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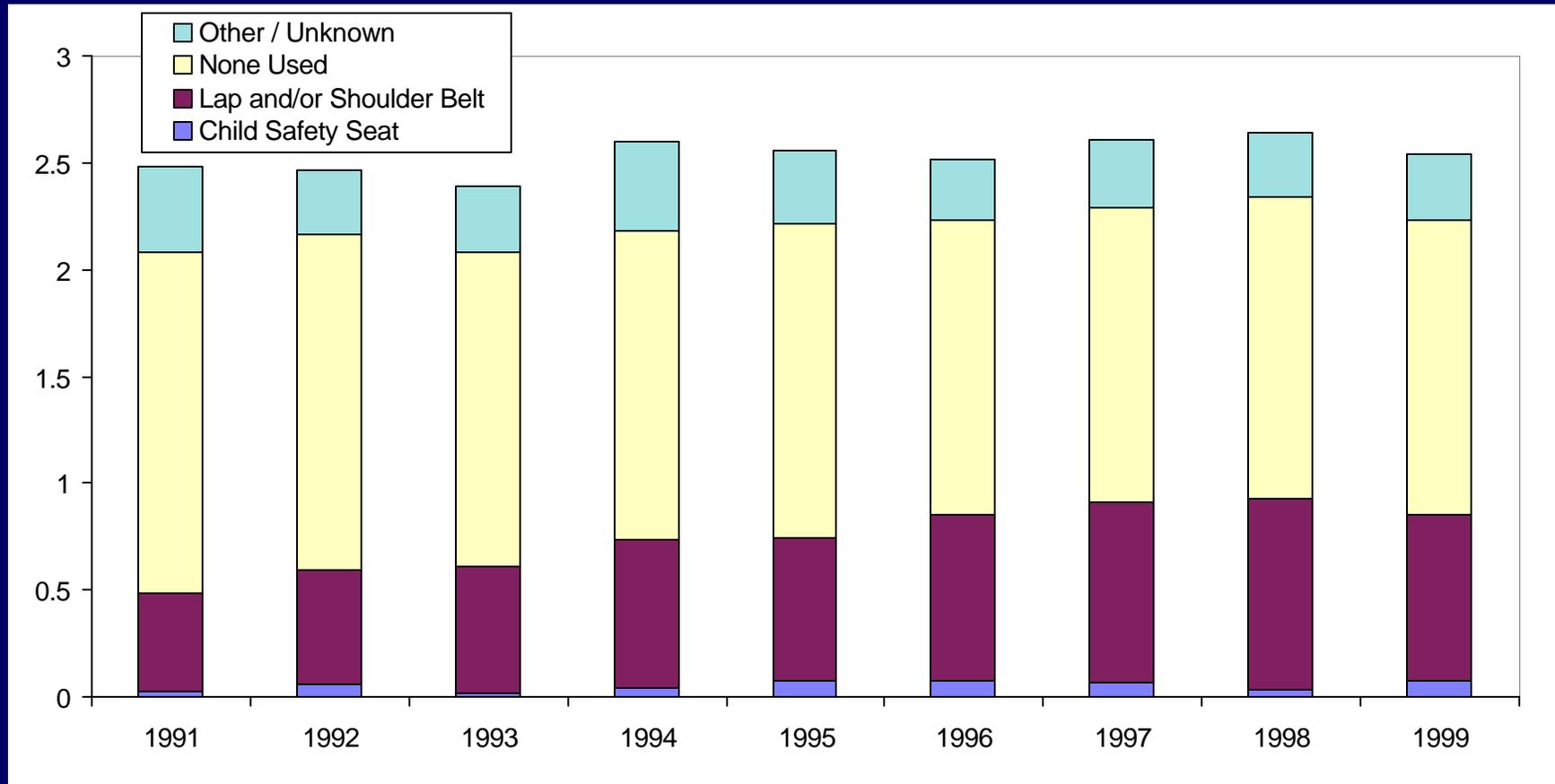


Data Source: 1991 - 1999 FARS, U.S. CENSUS BUREAU



Passenger Vehicle Occupant Fatality Rates per 100,000 Population, By Restraint Use, Age 4-8

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Data Source: 1991 - 1999 FARS, U.S. CENSUS BUREAU



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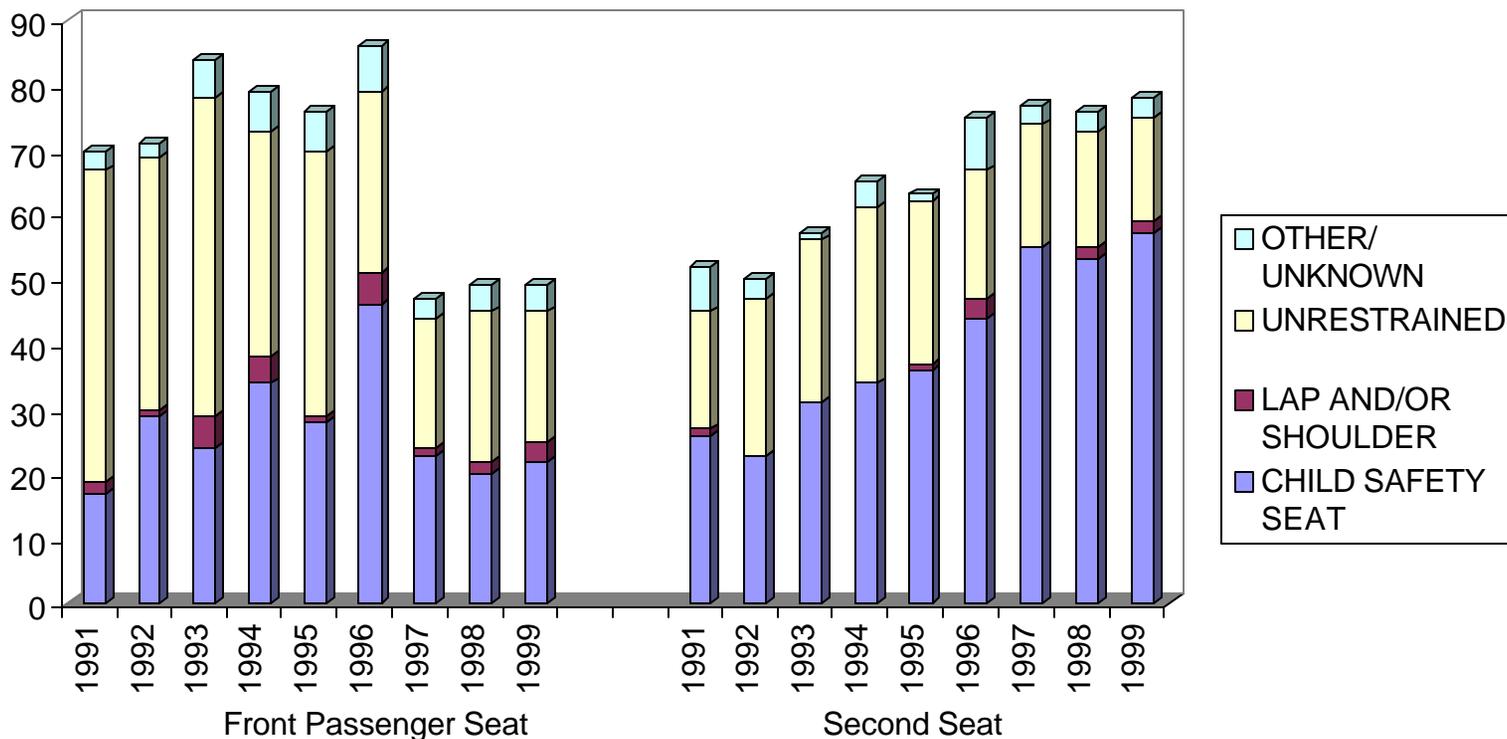
Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use



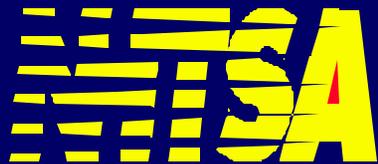
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Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age <1

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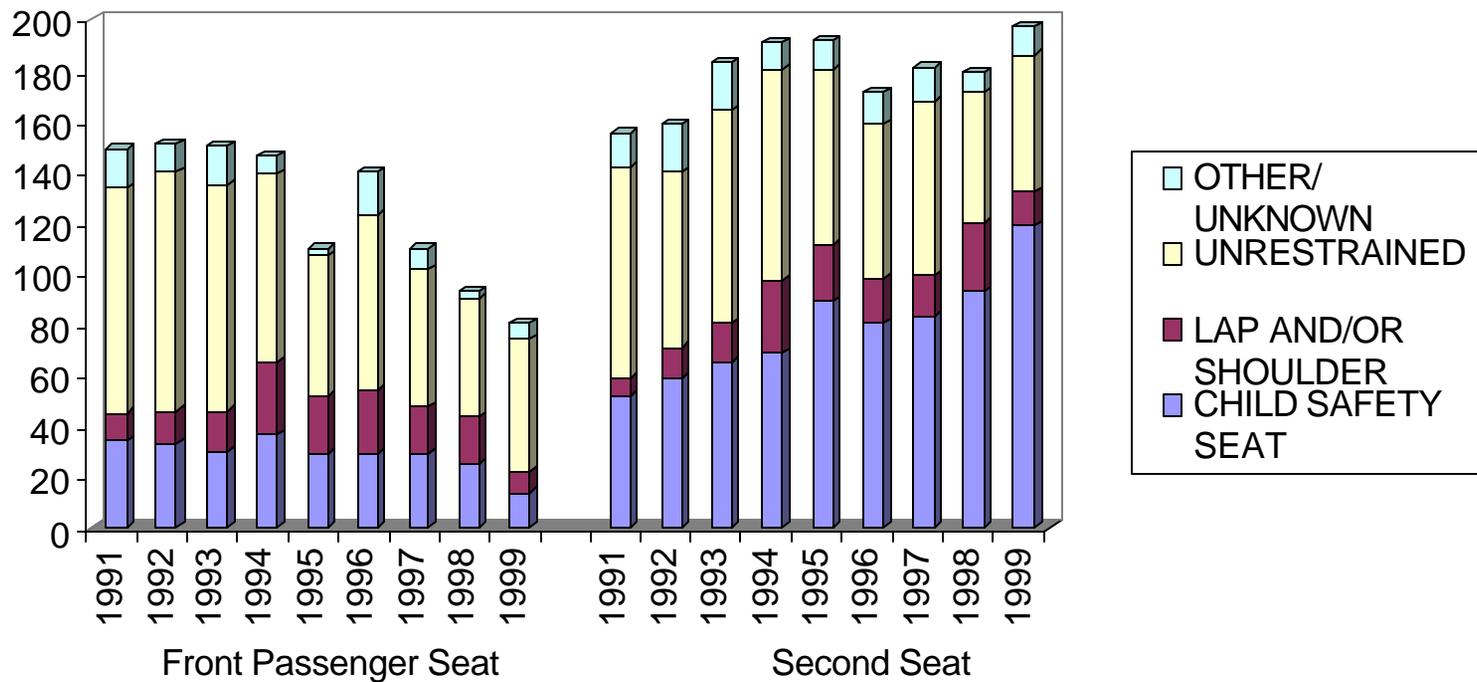
Data Source: FARS 1991 - 1999



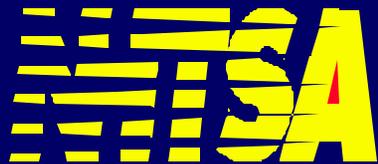
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Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age 1-3

National Center for Statistics & Analysis



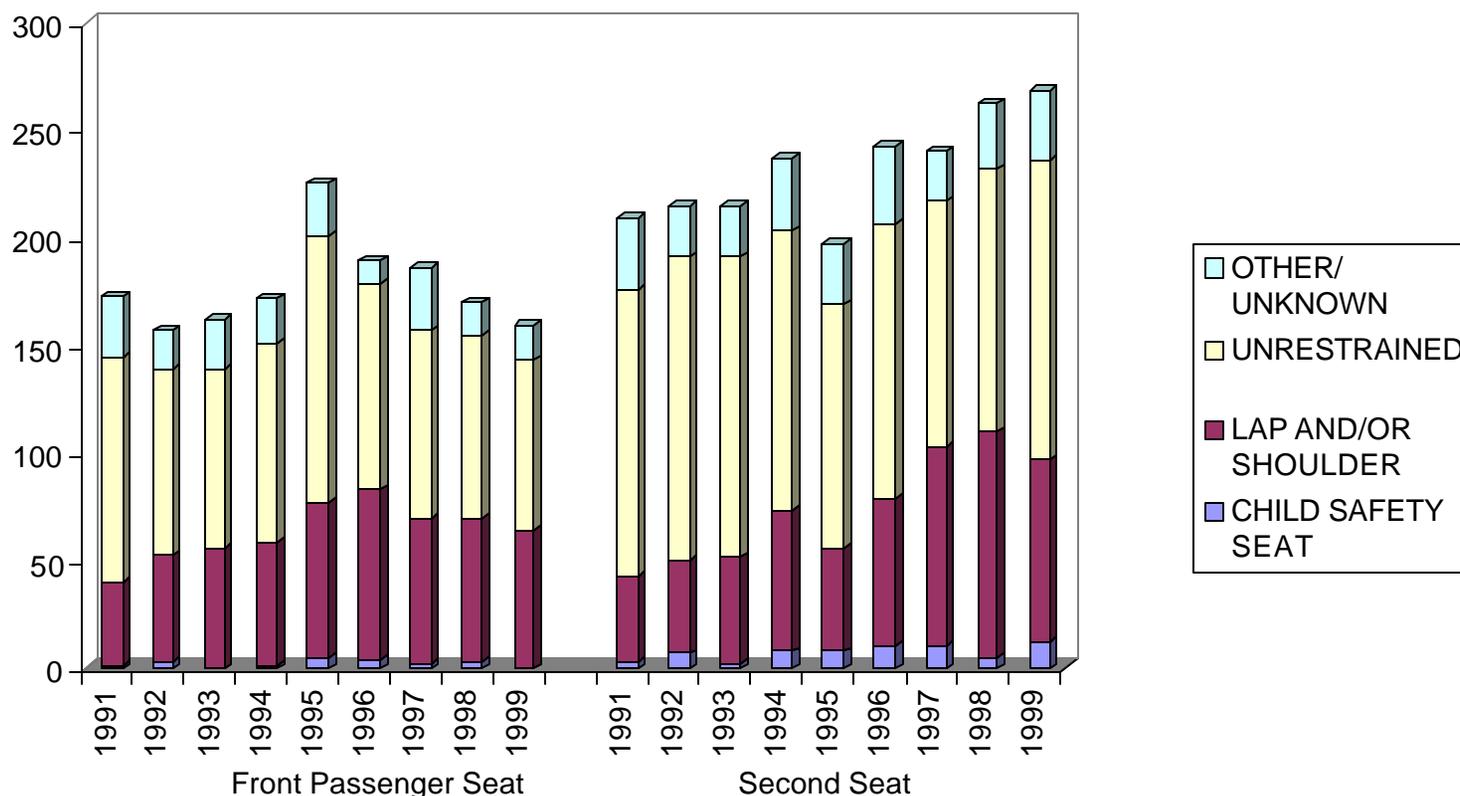
Data Source: FARS 1991 - 1999



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Passenger Vehicle Occupants Killed, by Seat Position and Restraint Use, Age 4-8

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Data Source: FARS 1991 - 1999



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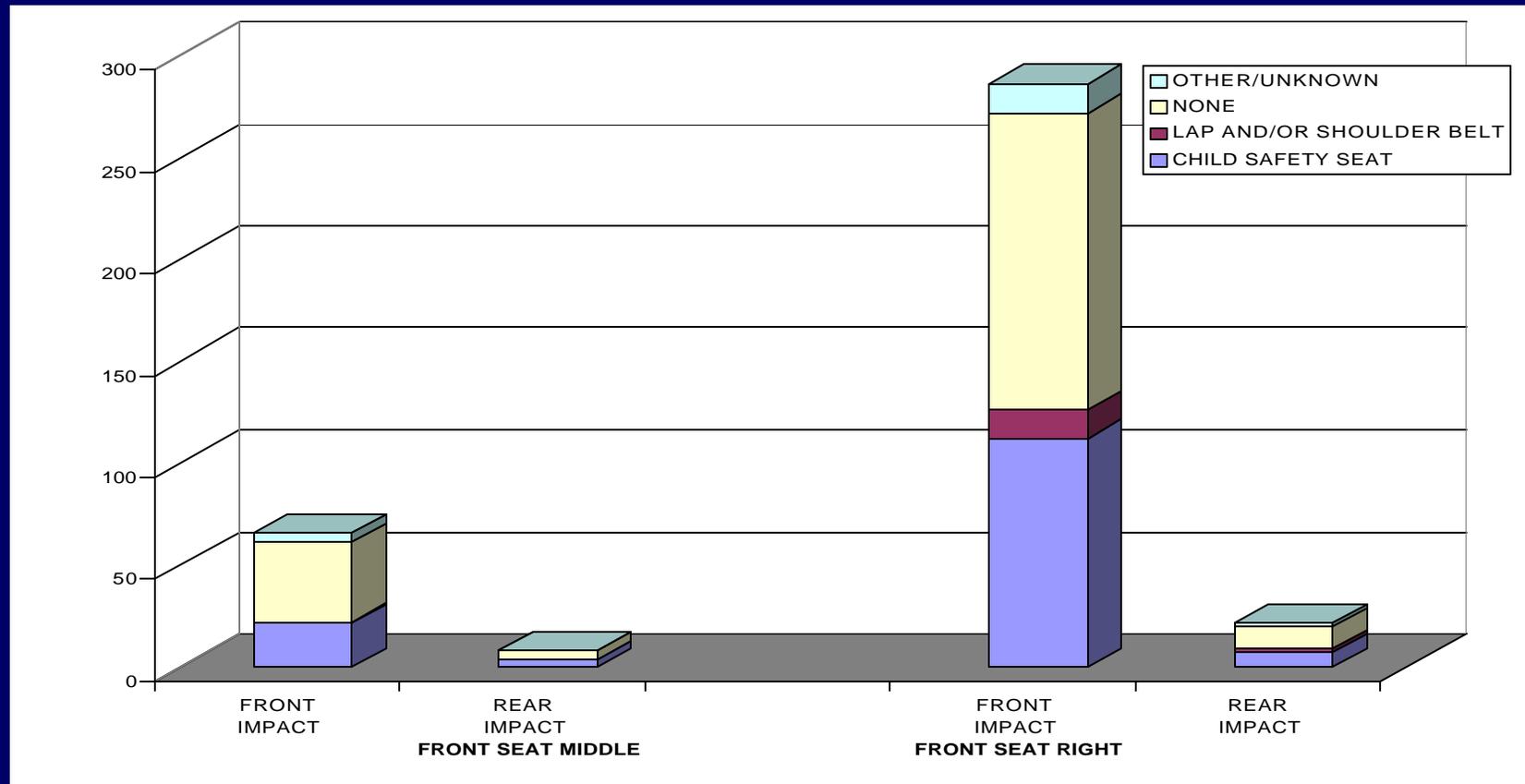
*Passenger Vehicle Occupants Killed,
by Impact Point, Seat Position,
and Restraint Use*



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

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Front Seat



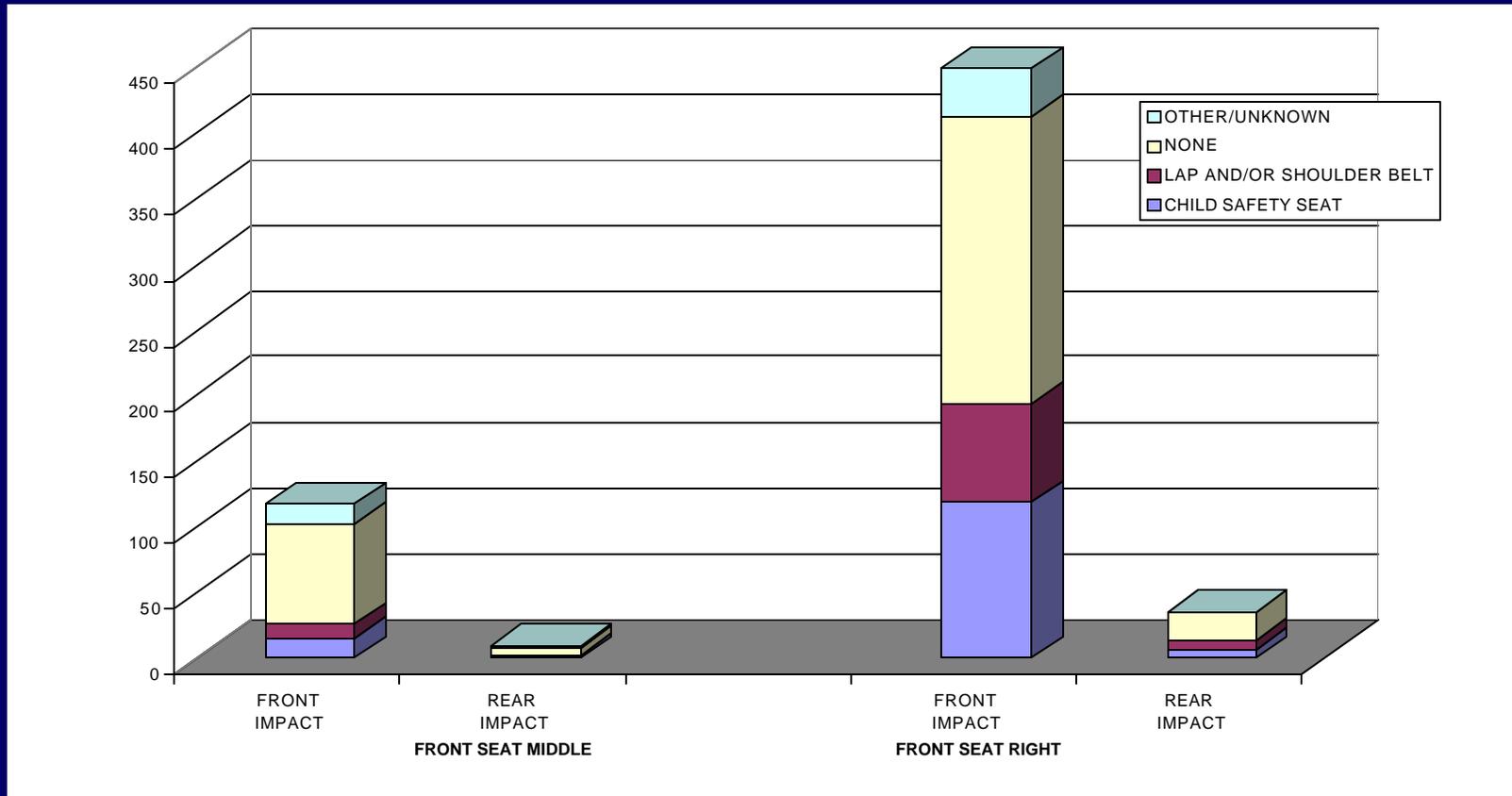
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

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Front Seat



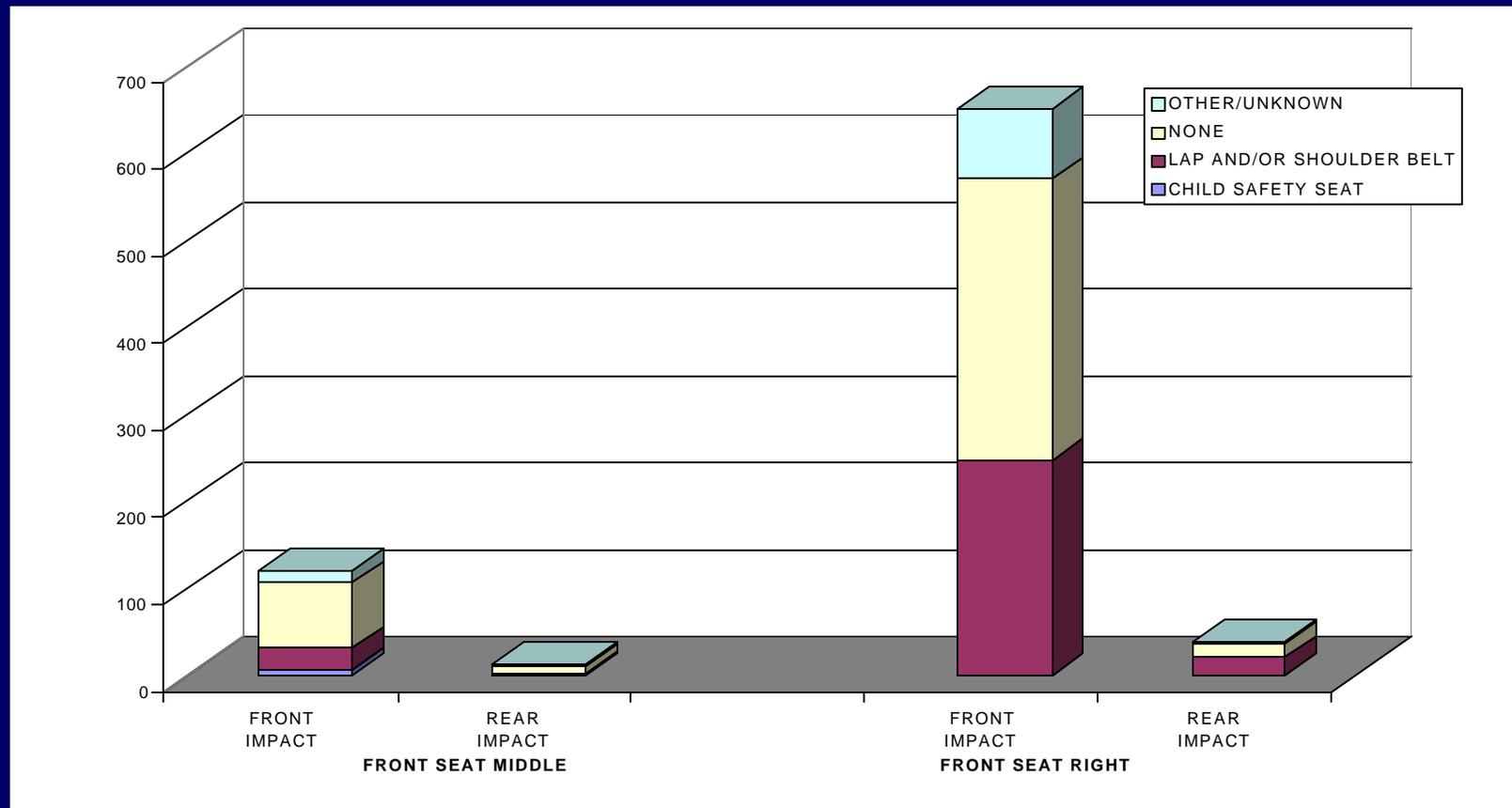
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

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Front Seat



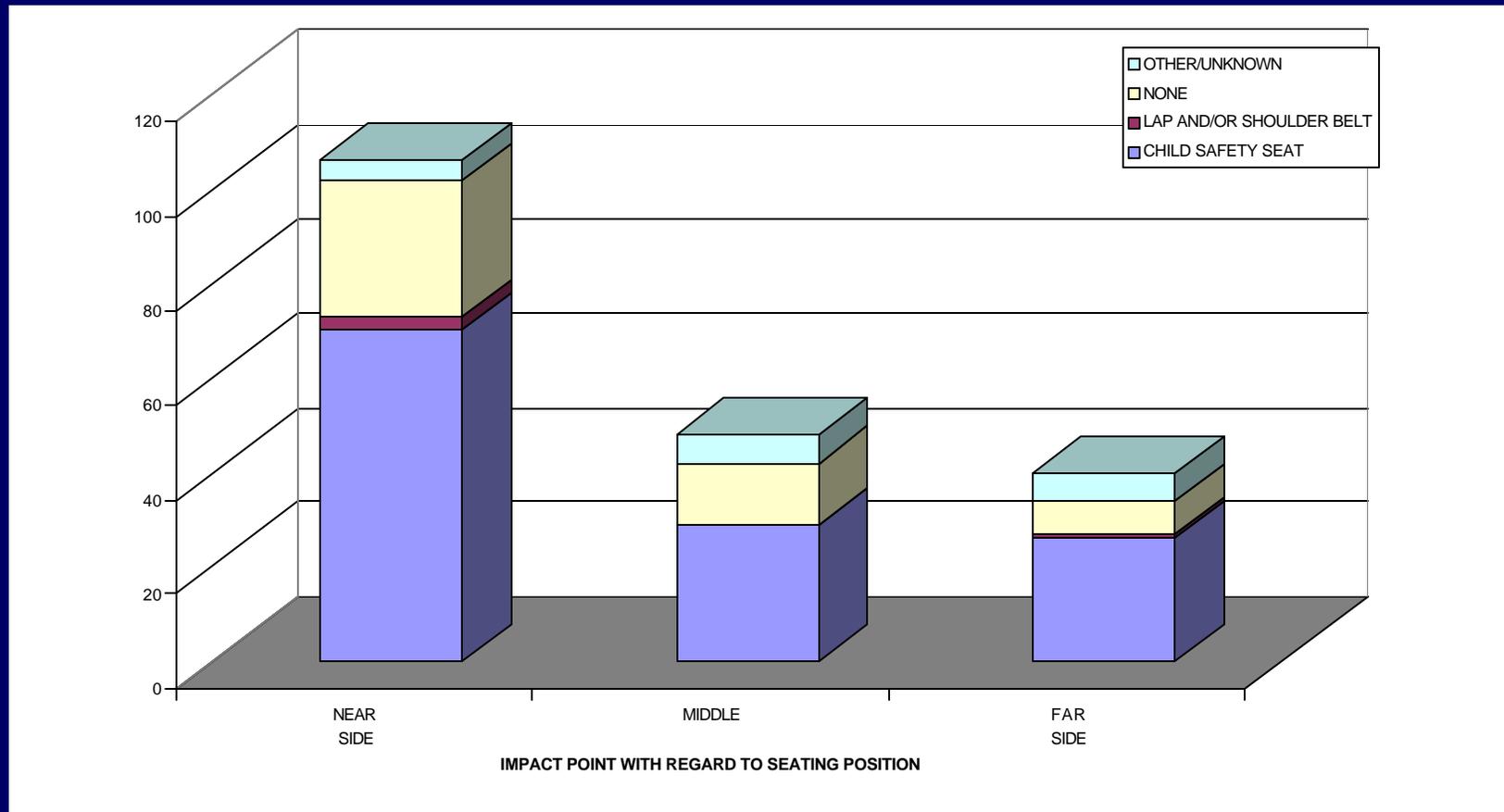
Data Source: FARS 1991-1999



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

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Front Seat



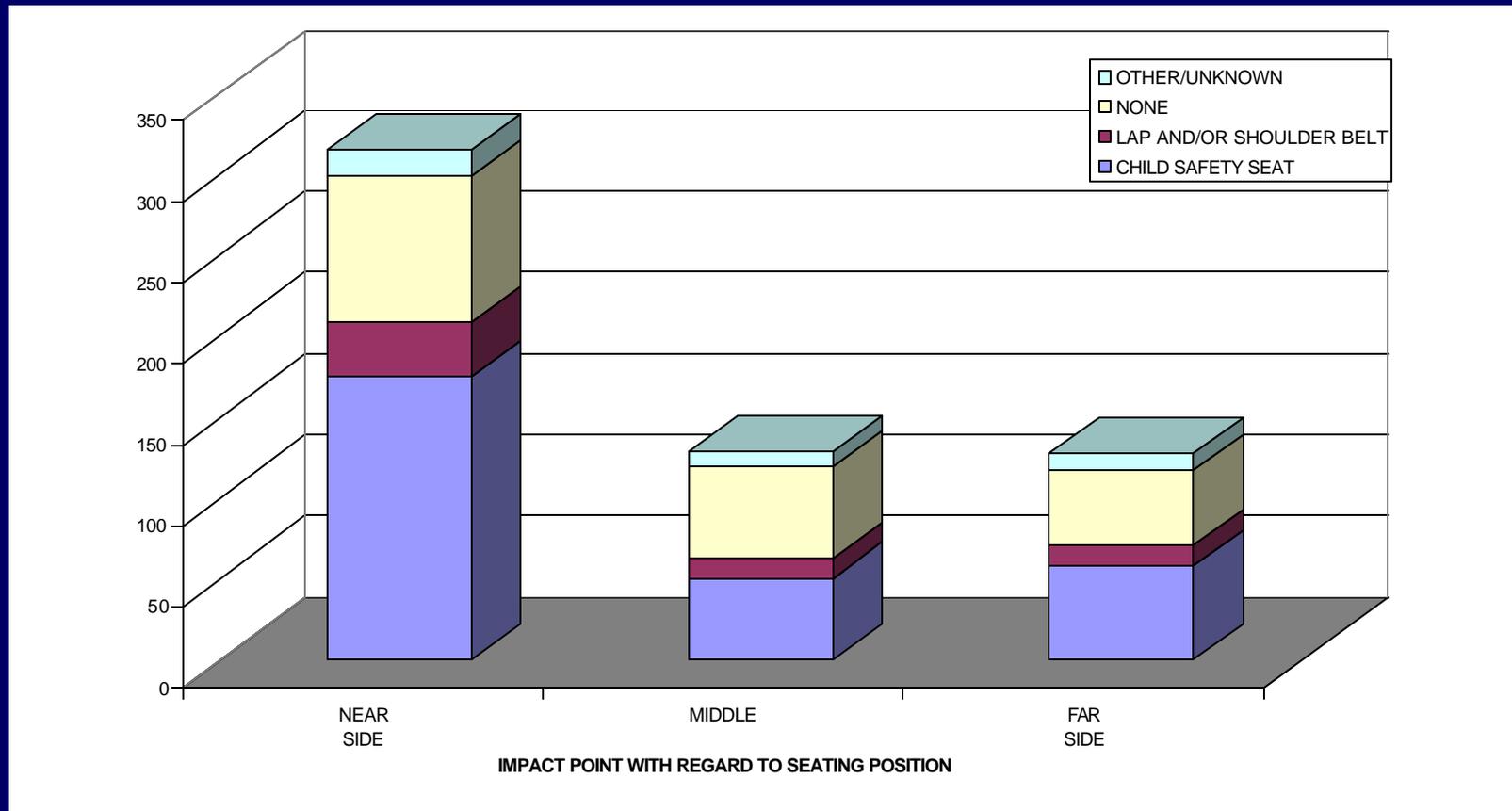
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

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Front Seat



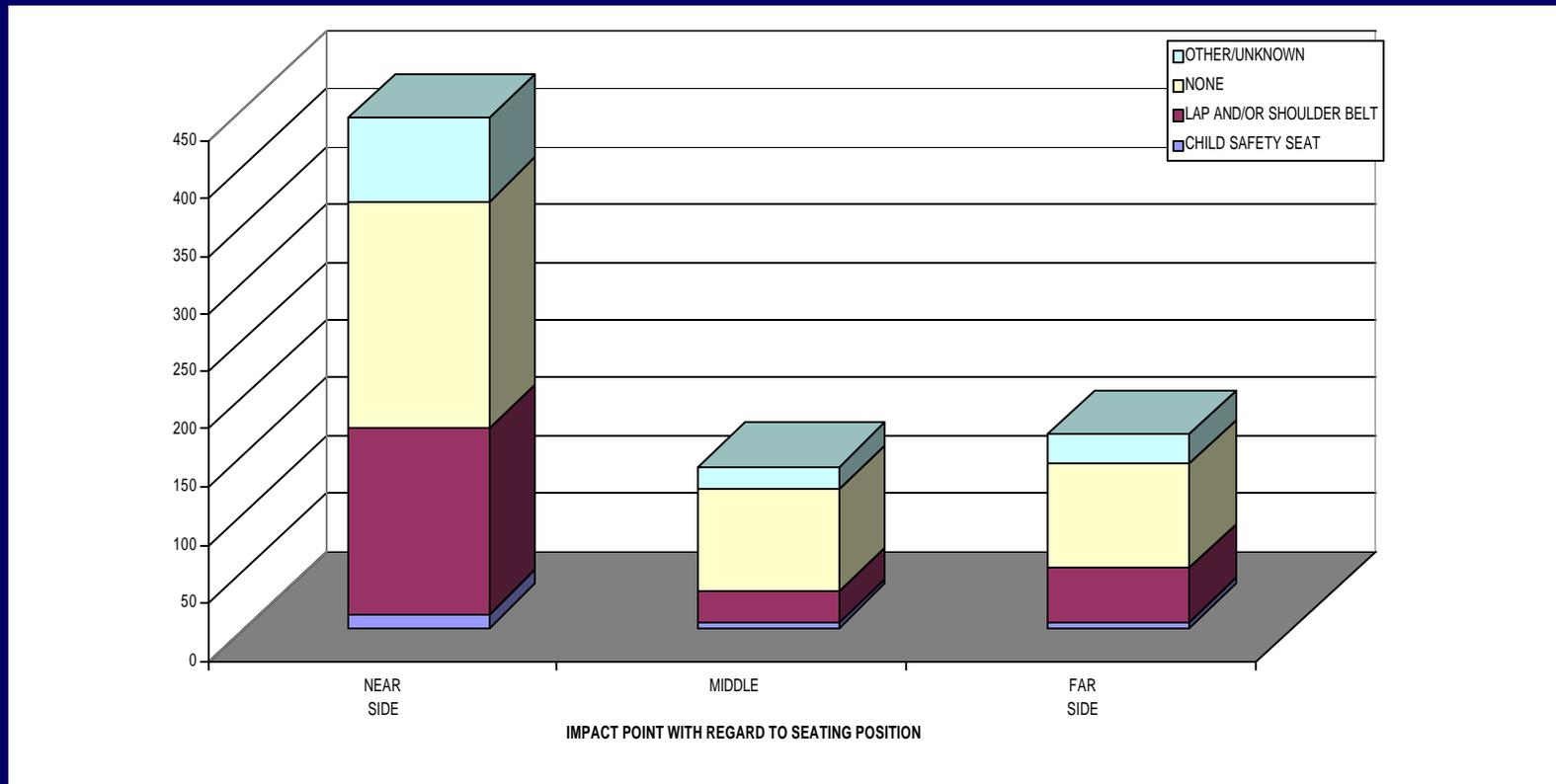
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

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Front Seat



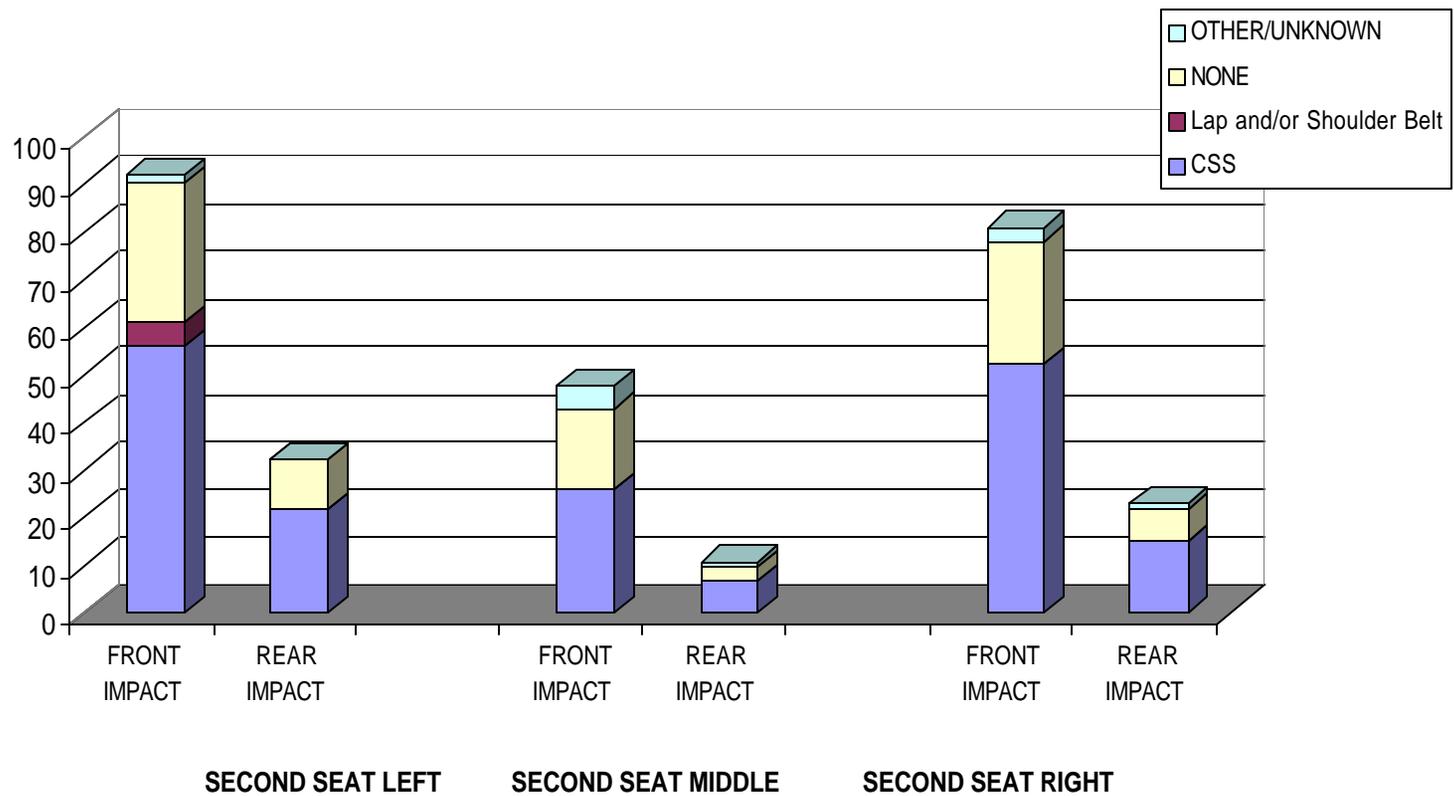
Data Source: FARS 1991-1999



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

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Second Seat



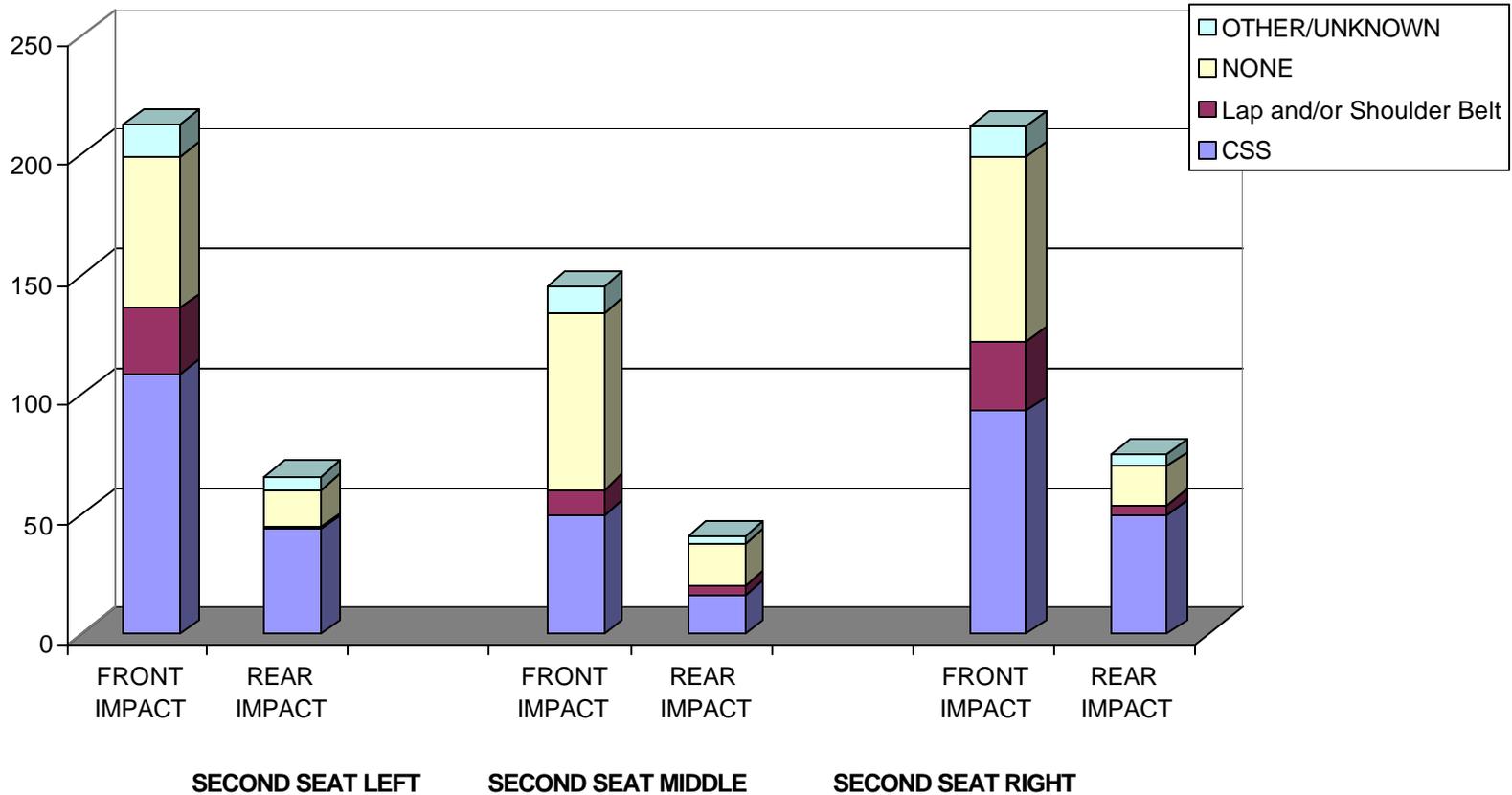
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

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Second Seat



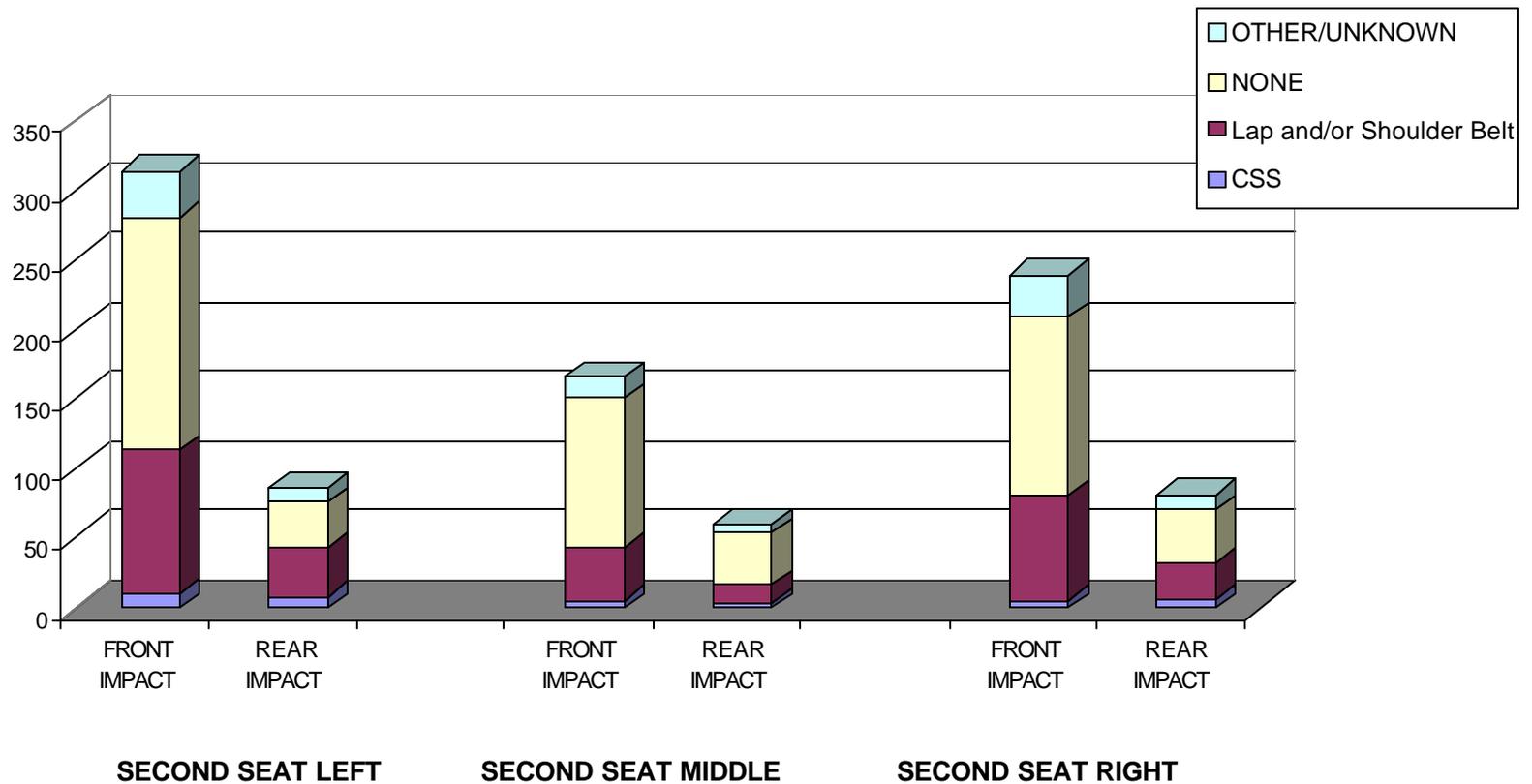
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

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Second Seat



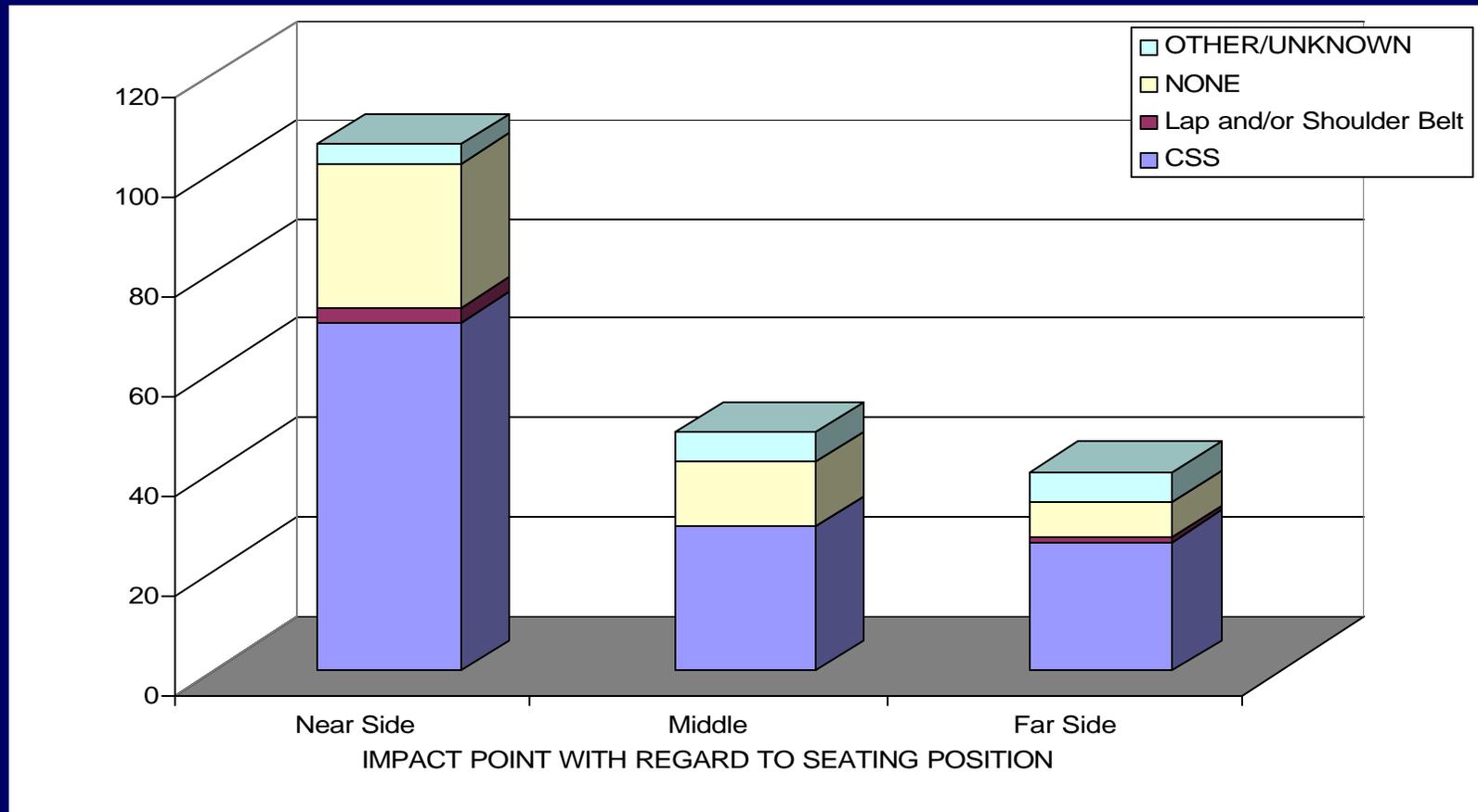
Data Source: FARS 1991-1999



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

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Second Seat



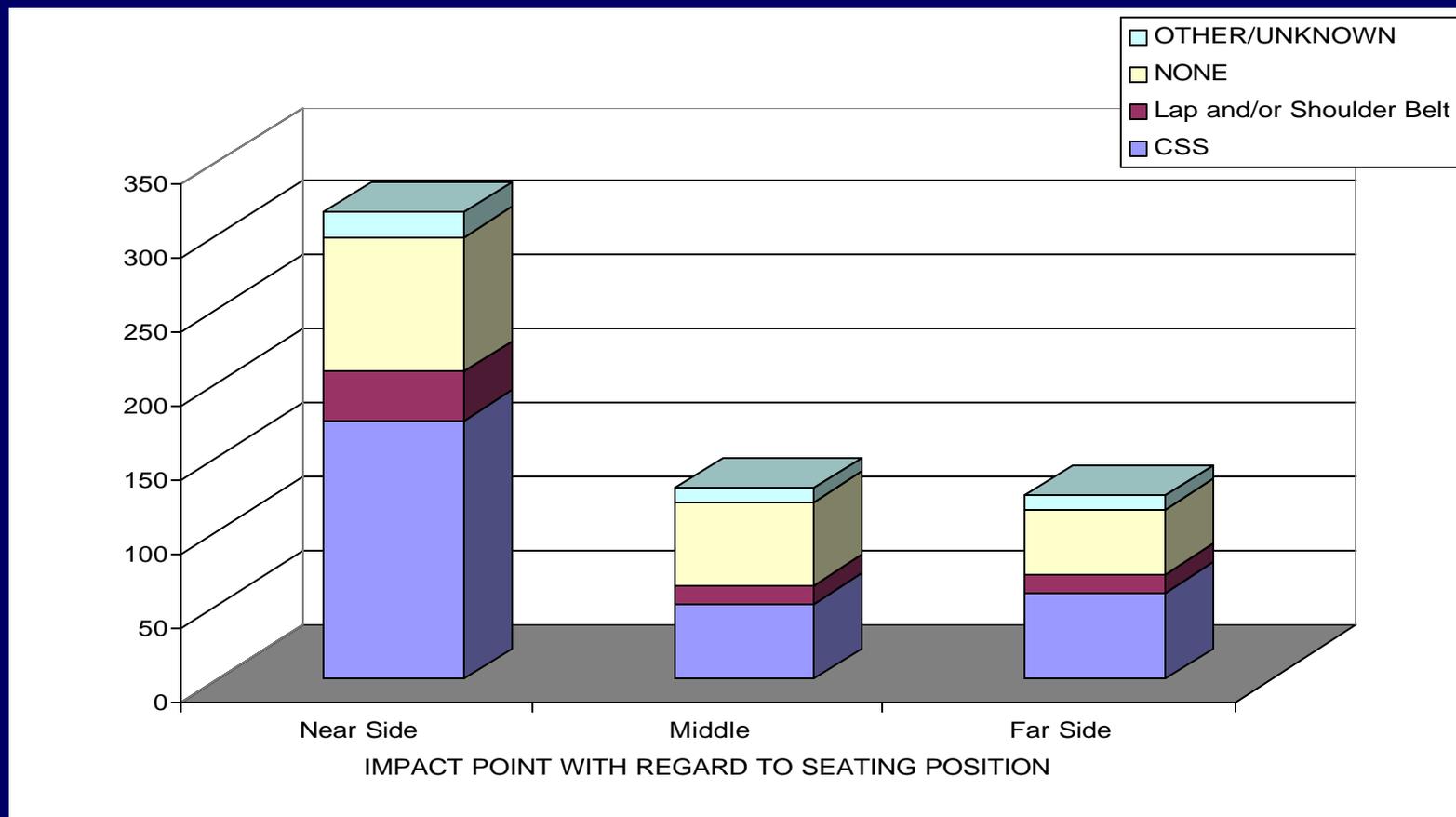
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 1 - 3

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Second Seat



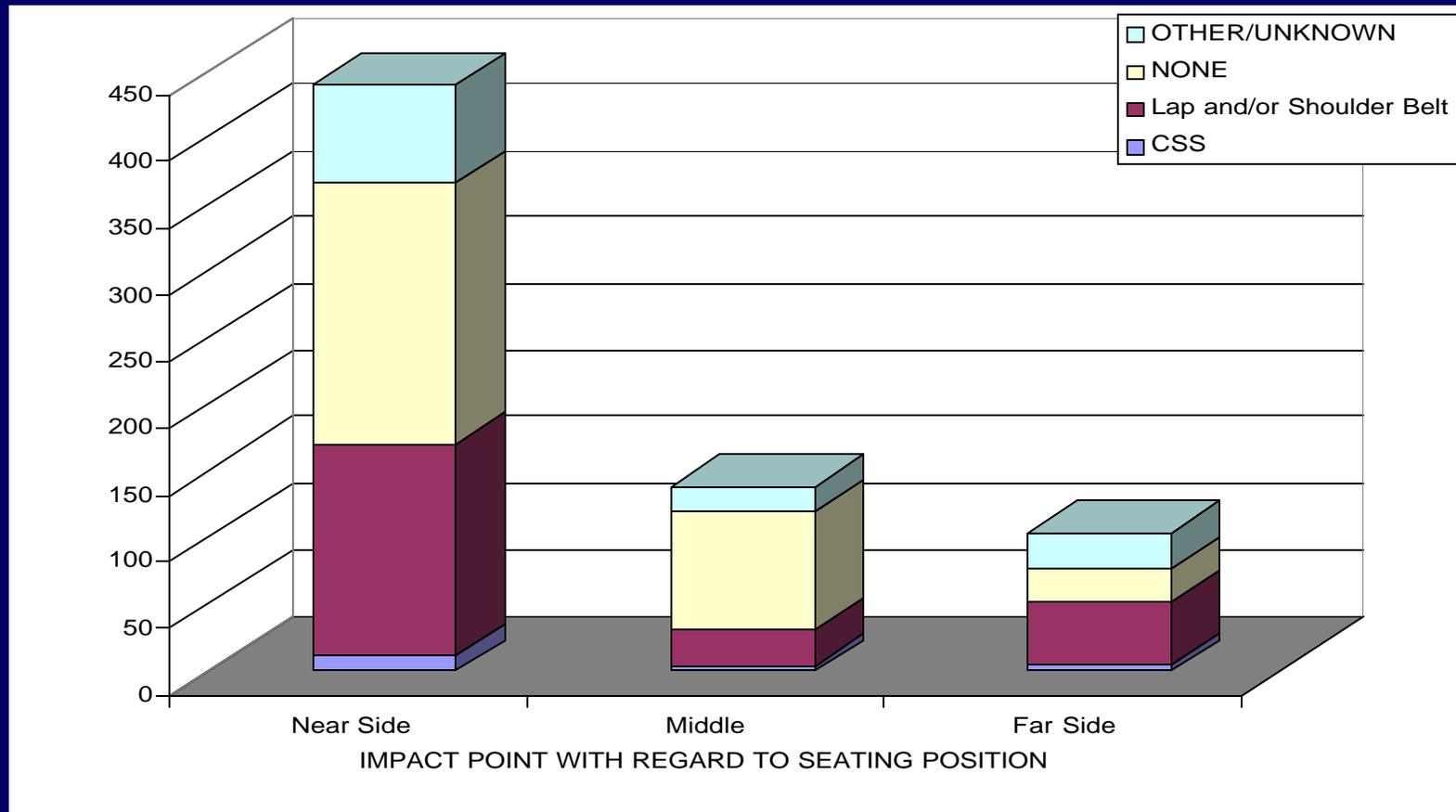
Data Source: FARS 1991-1999



Passenger Vehicle Occupants Killed, by Impact Point, Seat Position, and Restraint Use, Age 4 - 8

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Second Seat



Data Source: FARS 1991-1999



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Passenger Vehicle Occupant Injuries, by AIS, Body Part, and Restraint Use

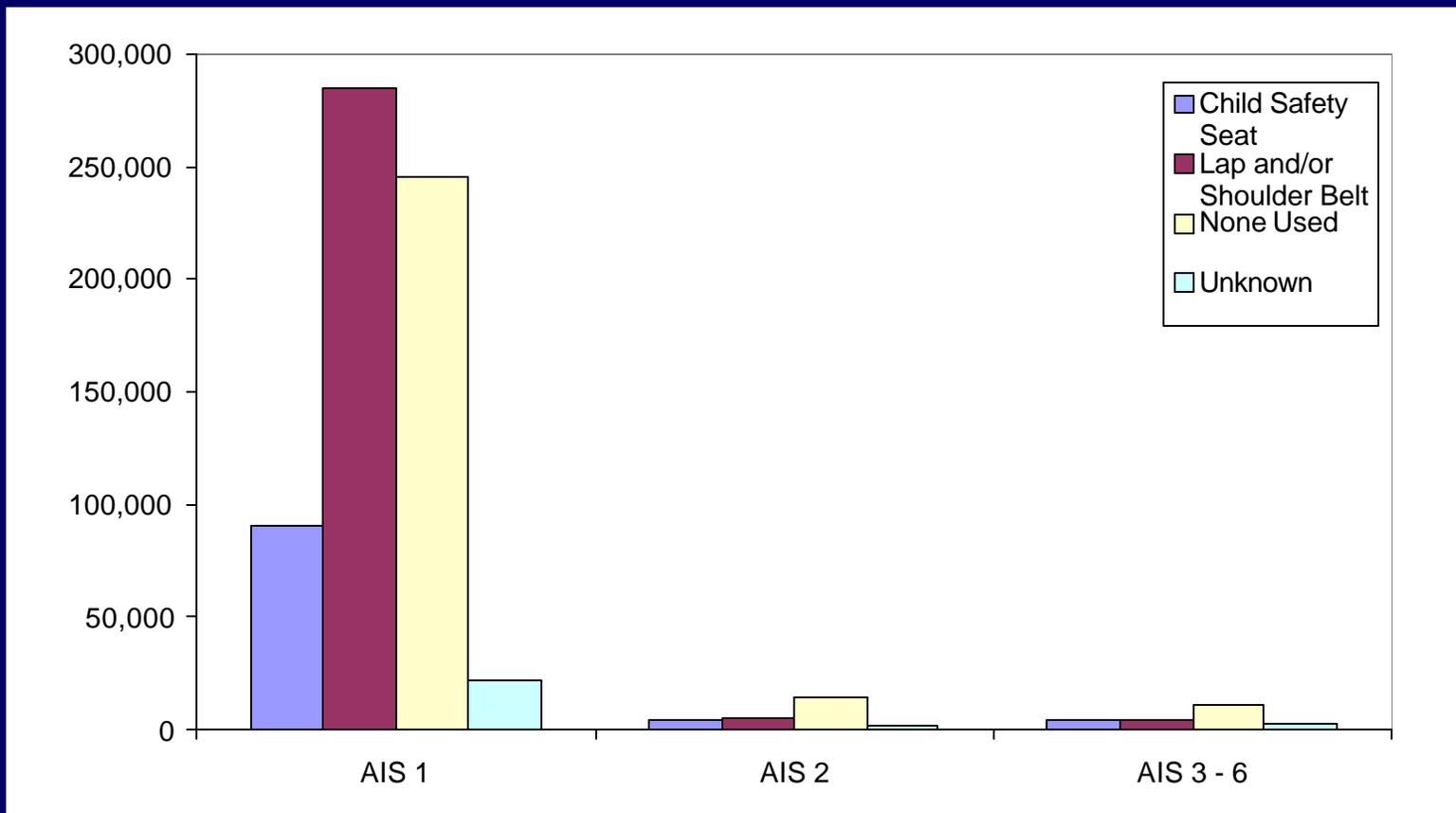


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Passenger Vehicle Occupant Injuries, by Body Part, Restraint Use, Age 0-8

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Head Injuries



Data Source: CDS 1991-1996, 1998-1999



Summary

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- **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**



Summary (cont.)

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- **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



Summary (cont.)

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- **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.)

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- **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 %



Summary (cont.)

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- Number of head injuries far exceeds number of injuries to any other body part