
Blue Ribbon Panel Public Meeting

Special Crash Investigations and National Automotive Sampling System CDS, and Alliance Air Bag Data Collection

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Presentation Overview

- Objectives of the Frontal Air Bag Data Collection Program
- SCI Data on Crashes Involving Air Bag Deployment Related Fatal and Seriously Injured Occupants.
- Redesigned Analysis
- Alliance Case Criteria
- CY 2002 Redesigned Data Available
 - Numbers of Cases / Vehicles
 - By Delta V / MAIS
- WWW Case Viewer



Objectives of the Frontal Air Bag Data Collection Program



- Crashes involving air bag deployment related fatal and seriously injured occupants.
 - The delta V is less than 25 mph
 - A Life Threatening or Fatal Injury related to the Air Bag Deployment.
- Examine the Safety Impact of New and/or emerging occupant protection system technology
 - Crashes involving Redesigned or Advanced Air Bag Deployments
 - Provide early detection of alleged or potential vehicle defects.
 - Other cases of interest



Special Crash Investigations

Frontal Crash Data



- **SCI Data Published Quarterly on NHTSA Web site:**
 - **Air bag deployment related fatal and seriously injured occupants with a delta V less than 25 mph.**
 - **Redesigned Air Bags**
 - **Advanced Air Bags**

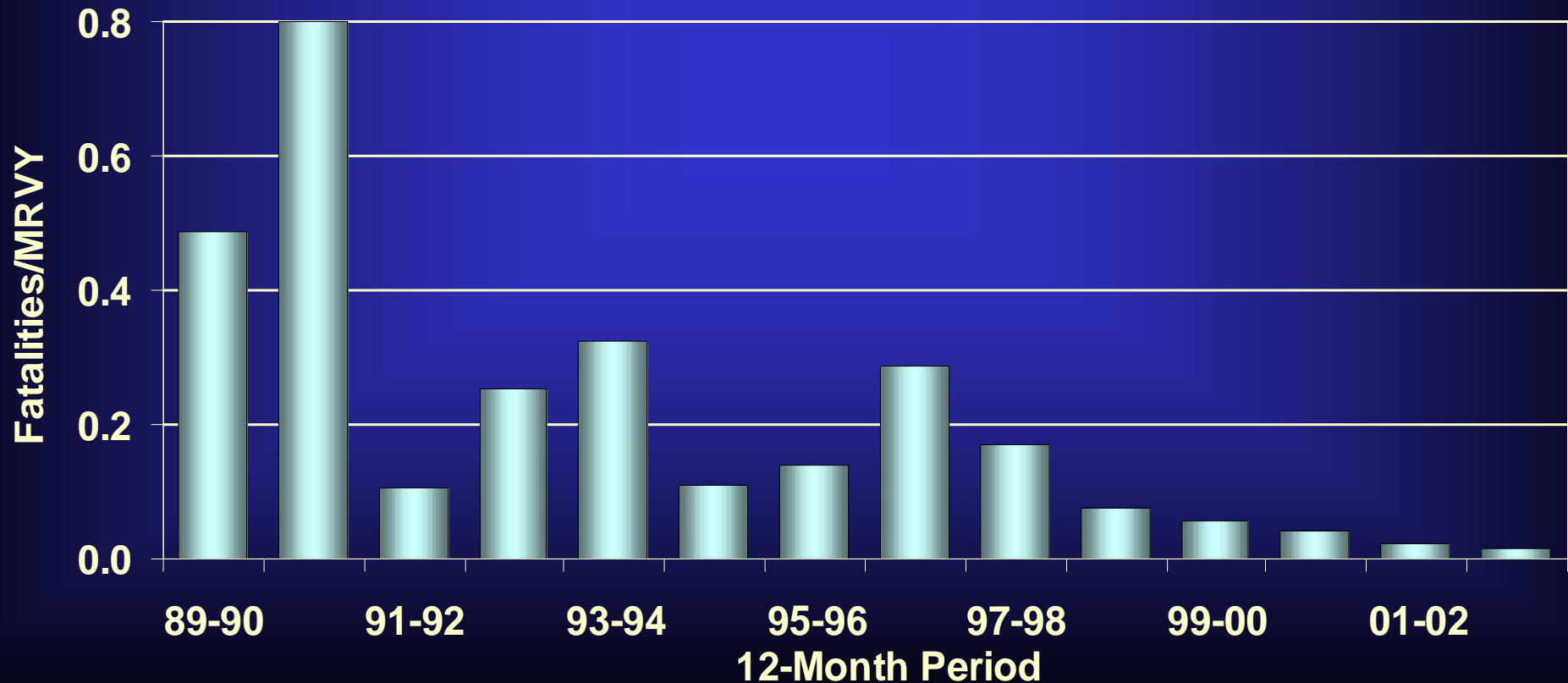


Special Crash Investigations

Frontal Crash Data



Adults Fatally Injured by a Driver Air Bag Normalized by Million Registered Vehicle Years Confirmed and Unconfirmed as of January 1, 2003

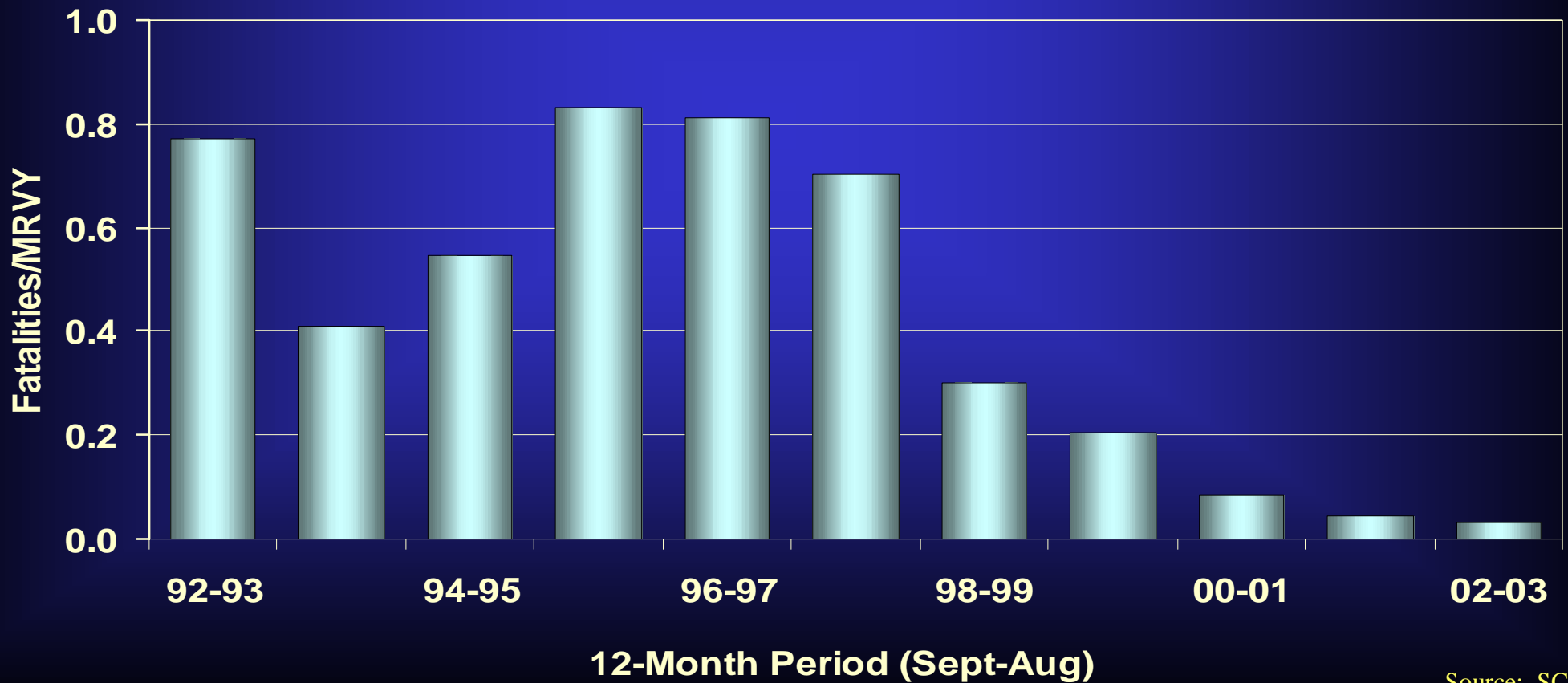


Special Crash Investigations

Frontal Crash Data



Children Fatally Injured by a Passenger Air Bag Normalized by Million Registered Vehicle Years Confirmed and Unconfirmed as of January 1, 2003



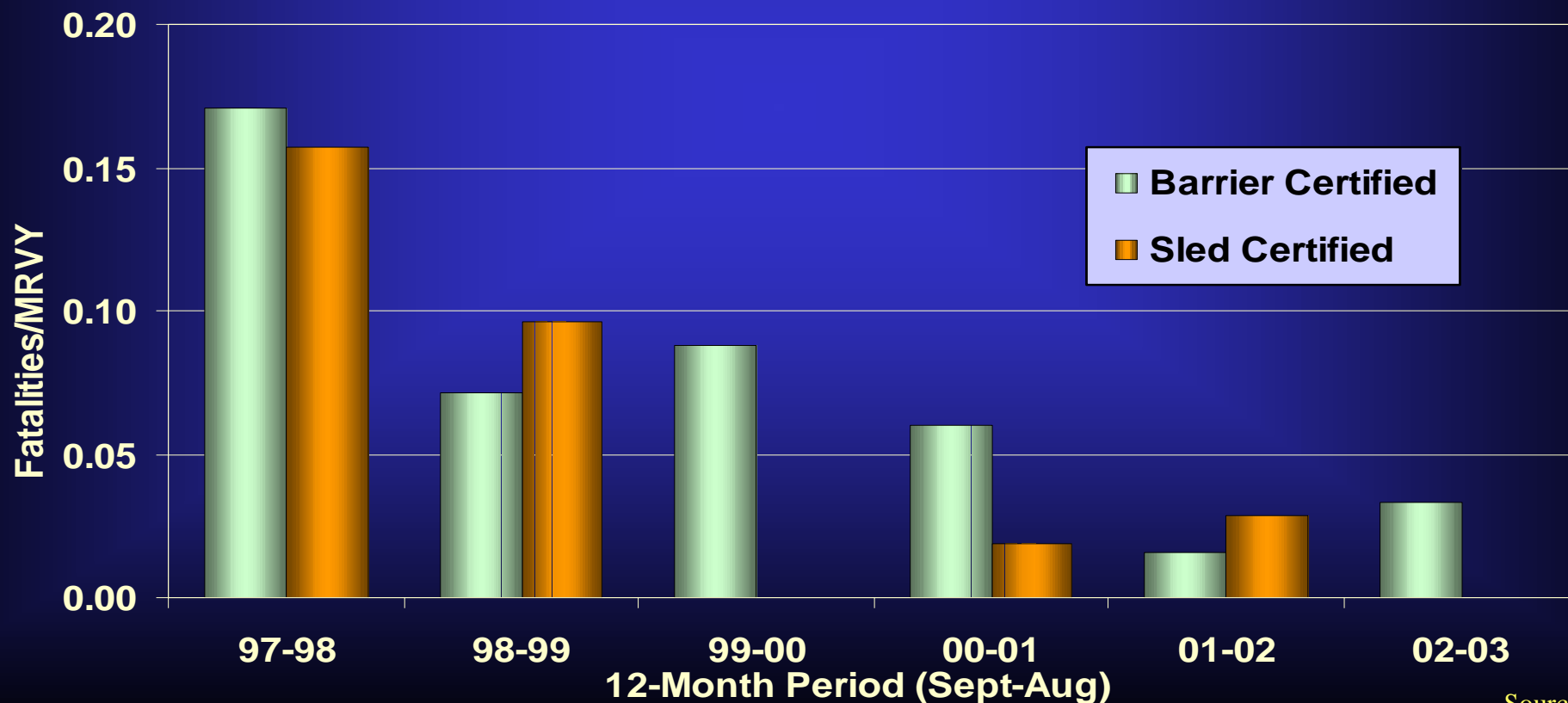
Source: SCI

Special Crash Investigations

Frontal Crash Data



Adults Fatally injured by a Driver Air Bag Barrier-Certified vs. Sled-Certified Normalized by Million Registered Vehicle Years Confirmed and Unconfirmed as of January 1, 2003



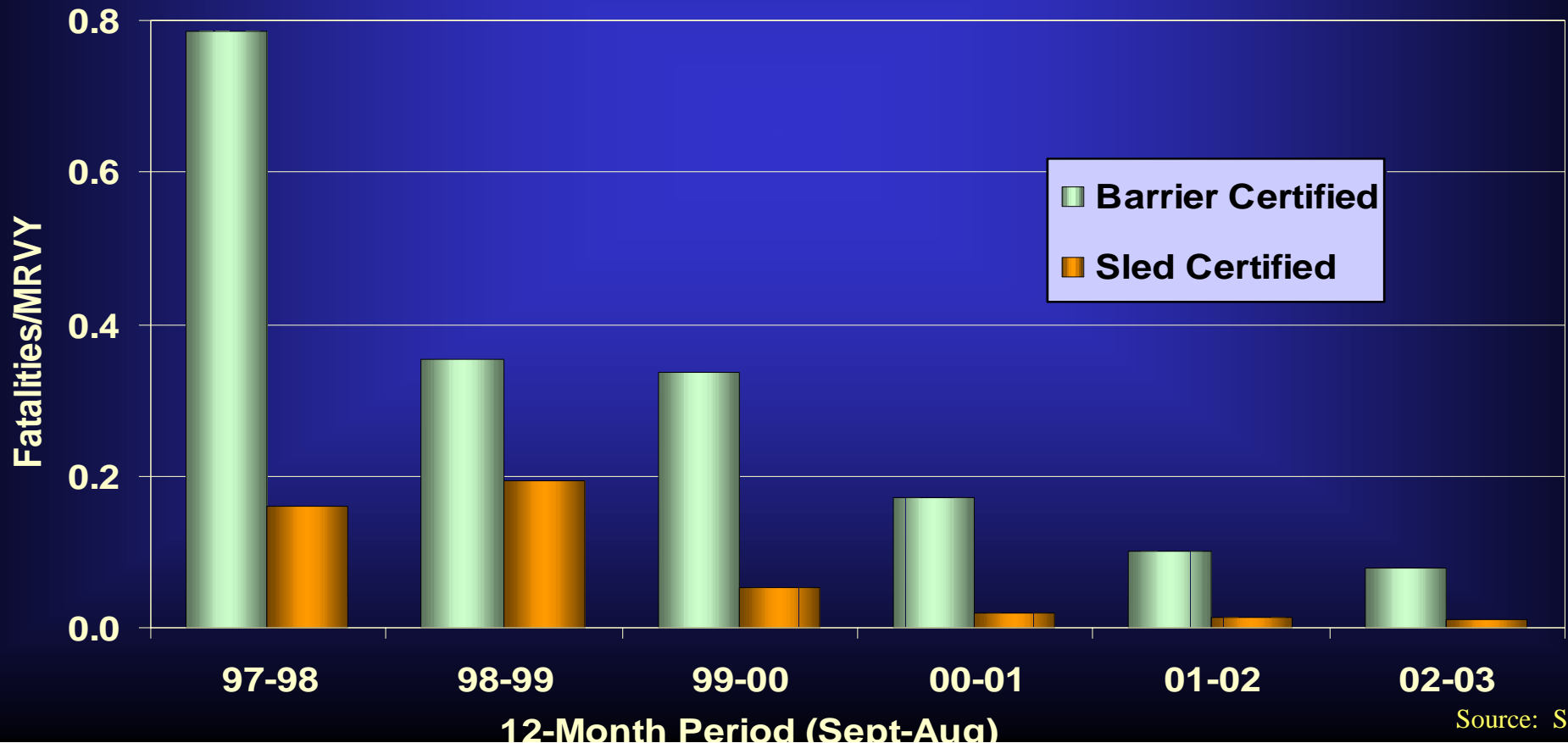
Source: SCI

Special Crash Investigations

Frontal Crash Data



Children Fatally injured by a Passenger Air Bag Barrier-Certified vs. Sled-Certified Normalized by Million Registered Vehicle Years Confirmed and Unconfirmed as of January 1, 2003



Special Crash Investigations

Frontal Crash Data



- The SCI is not aware of any cases with a fatal or life threatening injury related to the deployment of an Advanced Certified Air Bag

! WARNING

EVEN WITH ADVANCED AIR BAGS



- Children can be killed or seriously injured by the air bag
- The back seat is the safest place for children
- Always use seat belts and child restraints
- See owner's manual for more information about air bags

Redesigned Air Bag Study (RABSS) – Initial Criteria



- In FY1999 (October 1998) NHTSA initiated a Redesigned Air Bag Special Study (RABSS) in the SCI and NASS.
- October 1998 to December 1998
 - **All vehicles where a redesigned air bag deployed.**

RABSS Criteria



■ **Minimum Criteria:**

- **Model year 1998 or later vehicle with a redesigned air bag**
- **Frontal impact, no rollovers**
- **Vehicle towed**
- **Occupant seated in a position where redesigned bag deployed**

RABSS Criteria



■ **Cases of High Interest**

- **Child under 13 in position where redesigned air bag deployed**
- **Occupant protected by redesigned bag receives fatal injuries**
- **Driver and/or front right occupant protected by deploying redesigned bag transported to medical facility for treatment of injuries**
- **High severity crash (Delta V greater than 24 mph)**

RABSS Special Evaluations



- **NHTSA contracted for an Air Bag Analysis**
 - **Two engineers independently reviewed over 400 cases from RABSS**
 - **They answered judgment questions such as**
 - Was occupant out-of-position?
 - Was there steering wheel or instrument panel deformation related to occupant loading subsequent to an air bag deployment?
 - Was crash survivable?
 - What were injury sources?

RABSS Special Evaluations

Cases Evaluated



- 447 drivers
 - 34 fatalities
- 143 adult front passengers
 - 11 fatalities
- 31 child right/other front passengers
 - 7 fatalities

Total 621 assessments

RABSS Special Evaluations



- Evaluators judged whether there was steering wheel or instrument panel deformation related to occupant loading subsequent to an air bag deployment.
- Assessed air bag deployment with steering wheel rim/column deformation related to occupant loading for 30 drivers
 - **9 fatalities among the 30**
 - **Other 21 had at least moderate (AIS at least 2) injuries**
- Assessed air bag deployment with little or no steering wheel rim/column deformation related to occupant loading for 387 drivers
 - **5 fatalities among the 387**
 - **85 moderate to severe injury**
 - **297 none/minor**
- No passengers assessed as having an air bag deployment with little or no instrument panel loading related to occupant loading.

RABSS Special Evaluations



- Means within air bag deployment with steering wheel rim/column deformation related to occupant loading cases (all drivers)

Injury Severity	Count	Delta V (mph)	Weight (lbs)	BMI	Belted
AIS 0/1	0	-	-	-	-
AIS 2	6	23.5	186.7	27.7	17 %
AIS 3	10	26.6	181.9	27.4	30 %
AIS 4/5	5	35.2	193.8	28.2	80 %
Fatal	9	34.5	262.1	39.0	0 %

- 8 of 9 fatalities male; all 9 in smaller passenger cars

RABSS Special Evaluations



Means within air bag deployment with little or no steering wheel rim/column deformation related to occupant loading cases (drivers only)

Injury Severity	Count	Delta V (mph)	Weight (lbs)	BMI	Belted
AIS 0/1	297	15.7	164.9	25.4	83.1 %
AIS 2	54	19.8	174.8	25.2	77.8 %
AIS 3	27	26.7	172.1	25.7	55.6 %
AIS 4/5	4	22.7	125.7	20.4	100 %
Fatal	5	34.4	178.2	28.2	80.0 %

Alliance Case Criteria

Same as NASS CDS



- Late Model Year
- Frontal Impact
- Towed due to damage

Definition of LMY		Vehicle MY									
		1998	1999	2000	2001	2002	2003	2004	2005	2006	
	2002		X	X	X	X	O				
	2003			X	X	X	X	O			
	2004				X	X	X	X	O		
	2005					X	X	X	X	O	
			O	new model year (MY) released							

Data Availability

Statistical File



- Began data collection on “anecdotal” (unweighted) cases at the three Alliance PSUs on January 1, 2003.
- Began weighted file data collection on April 1, 2002
- Weighted File is scheduled for release July 31, 2003



CY 2002 NASS CDS File



■ Numbers of Cases

- **NASS CDS & Alliance = 4585**
- **NASS CDS cases meeting Alliance criteria = 1047**
- **Alliance team cases = 341**

■ Numbers of Vehicles Meeting Criteria

- **Alliance team vehicles meeting criteria = 368**
- **NASS CDS & Alliance vehicles meeting criteria = 1469**



CY 2002 NASS CDS File

Counts of Highest Delta V



DELTA V	ALLIANCE	ALL NASS
0-10	56	251
11-25	95	440
26 -30	2	27
> 30	12	39
UNKNOWN	197	692
INCOMPLETE	6	20
TOTAL	368	1469



CY 2002 NASS CDS File



- In NASS CDS and Alliance there are 66 vehicles meeting the criteria with highest delta V > 25 mph
 - **14 Alliance cases**
 - **52 NASS CDS**



Counts of Front Occupant's MAIS for delta Vs > 25 mph



MAIS	ALLIANCE	ALL NASS
0	1	4
1	3	14
2	3	13
3	2	16
4	0	6
5	0	3
6	0	1
Sub-Total	9	57
7	0	1
9	6	9
Incomplete	2	17
Totals	17	84

**NOTE: 7 = AIS Unknown, 9 = Unknown (includes:
"Injured, Details Unk" and unknown if injured.**



Data Availability

WWW Case Viewing



■ Preliminary Case Viewer

- In 2002, NHTSA began making clinical observations of the NASS CDS cases available via the WWW
- <http://www-nass.nhtsa.dot.gov/nass/prapproved/disclaimer.html>

■ NASS CDS Cases

- 1997 on
- <http://www-nass.nhtsa.dot.gov/BIN/NASSCASELIST.EXE/SETFILTER>

■ SCI Cases

- All confirmed cases
- All RABSS cases
- <http://www-nass.nhtsa.dot.gov/BIN/logon.exe/airmislogon>



Conclusions



- Preliminary, NASS CDS and SCI Cases Are Available for Viewing Via the WWW.
- The NASS CDS and Alliance PSUs Are Producing Cases of Interest.
 - **Delta Vs Equal to or Greater Than 25 Mph**
 - **Data for Assessing the Occupant Protection From the Air Bag**
- The SCI Continues to Investigate Crashes Involving Air Bag Deployment Related Fatal and Seriously Injured Occupants.



Questions?