Florida Problem ID
Preusser Research Group, Inc.
Presentation; November 20, 2019

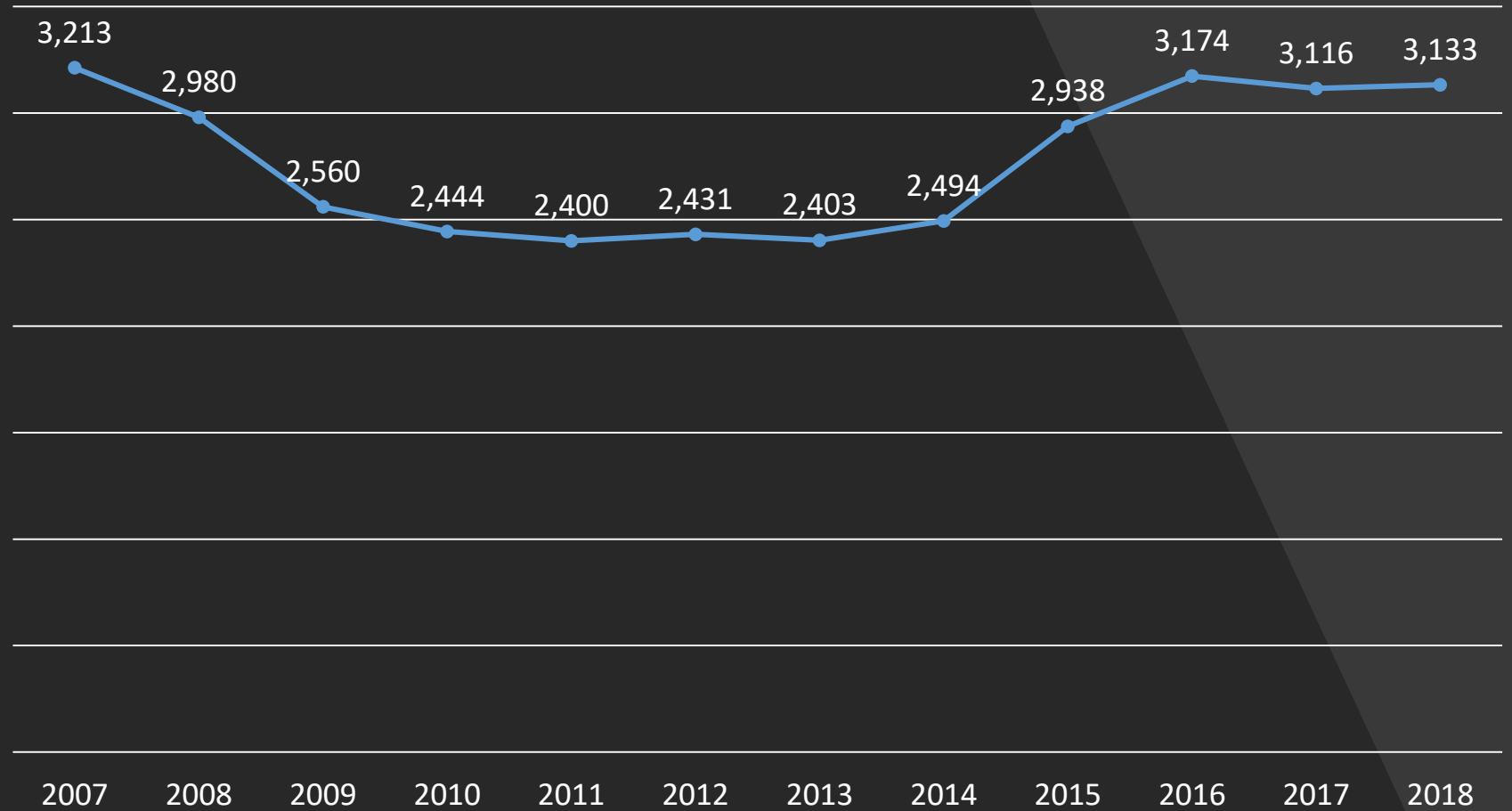# Strategic Action Plan Action

Objective 1.1: Identify the target demographic and audiences who are riding unrestrained

Strategy 1.1.1: Analyze crash, observational, and other data to identify key unrestrained audiences.

Step Number 1.1.1d: Develop a white paper to the FDOT Safety Office that includes a prioritized list of suggested Target audiences for material development.
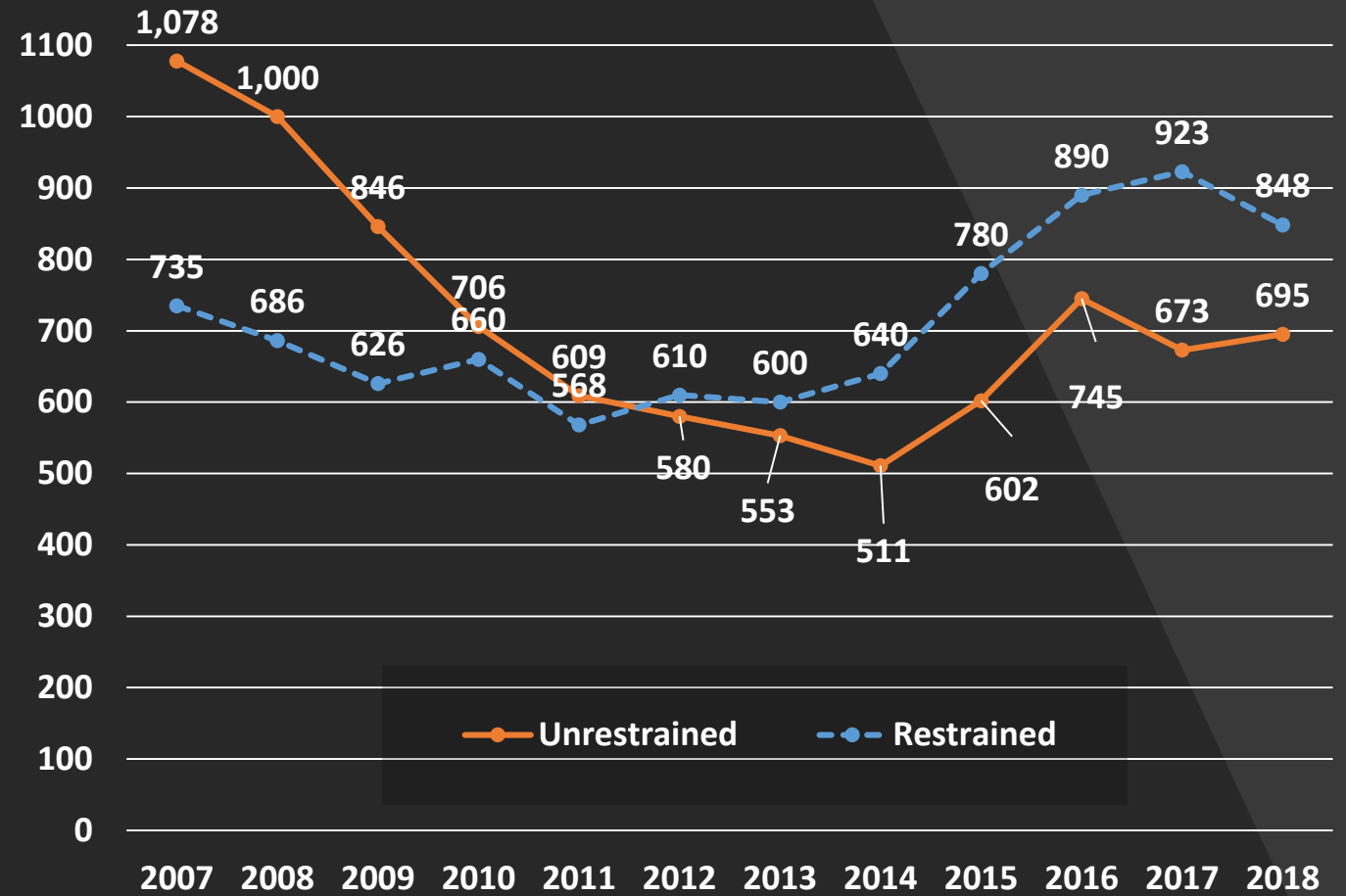
Total Crash Fatalities

2007-2012

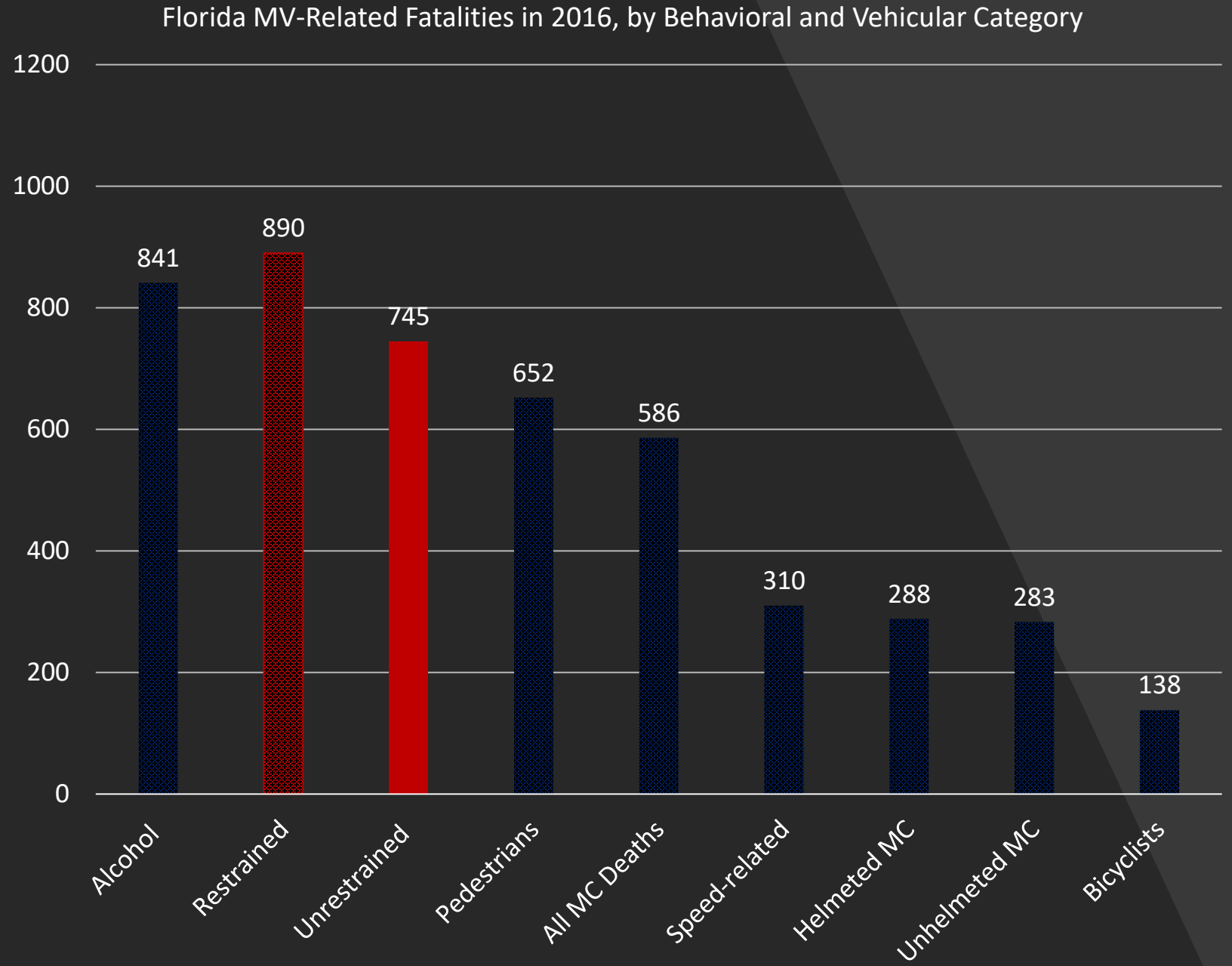Motor Vehicle-Related fatalities in Florida: 2007 through 2018

3,213 — 2,980 — 2,560 — 2,444 — 2,400 — 2,431 — 2,403 — 2,494 — 2,938 — 3,174 — 3,116 — 3,133

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

What's going on inside passenger vehicles?

Both restrained and unrestrained fatalities are up since 2014.

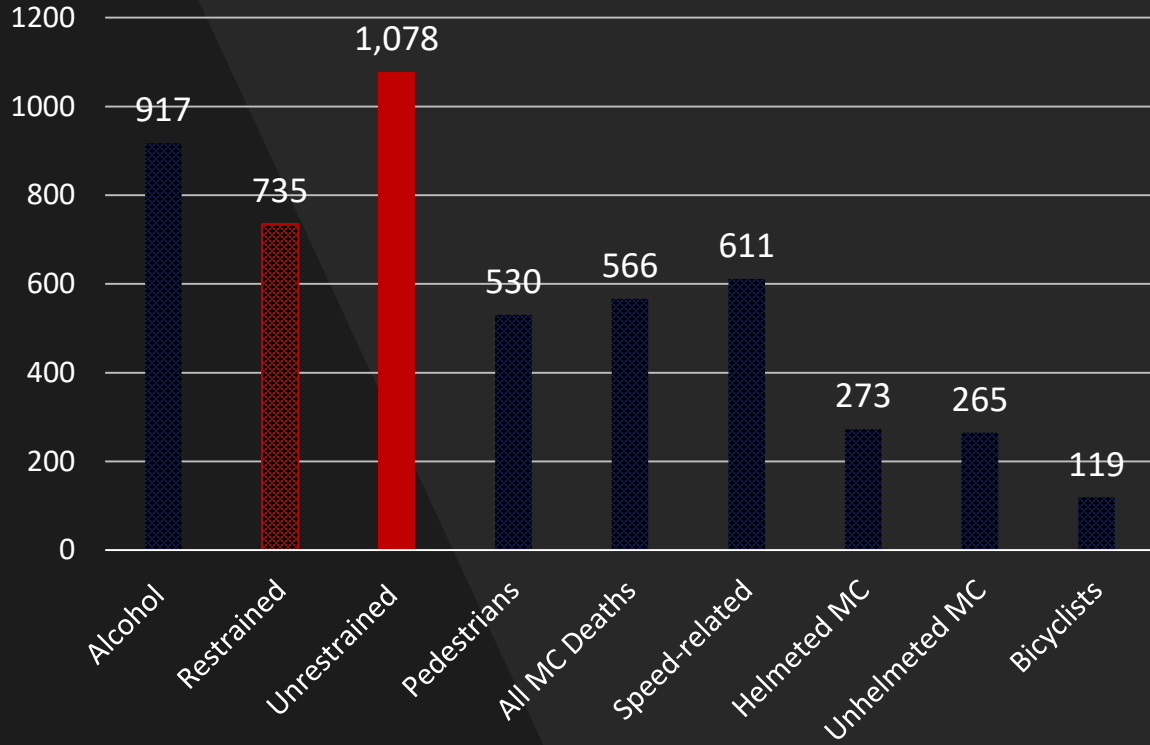**Number of Restrained & Unrestrained Fatalities in FL: 2007 -2018**

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Unrestrained	1,078	1,000	846	706	609	580	553	511	602	745	673	695
Restrained	735	686	626	660	568	610	600	640	780	890	923	848

Size of OP problem?

Florida MV-Related Fatalities in 2016, by Behavioral and Vehicular Category

Category	Fatalities
Alcohol	841
Restrained	890
Unrestrained	745
Pedestrians	652
All MC Deaths	586
Speed-related	310
Helmeted MC	288
Unhelmeted MC	283
Bicyclists	138

Florida MV-Related Fatalities in 2007, by Behavioral and Vehicular Category

Category	Value
Alcohol	917
Restrained	735
Unrestrained	1,078
Pedestrians	530
All MC Deaths	566
Speed-related	611
Helmeted MC	273
Unhelmeted MC	265
Bicyclists	119

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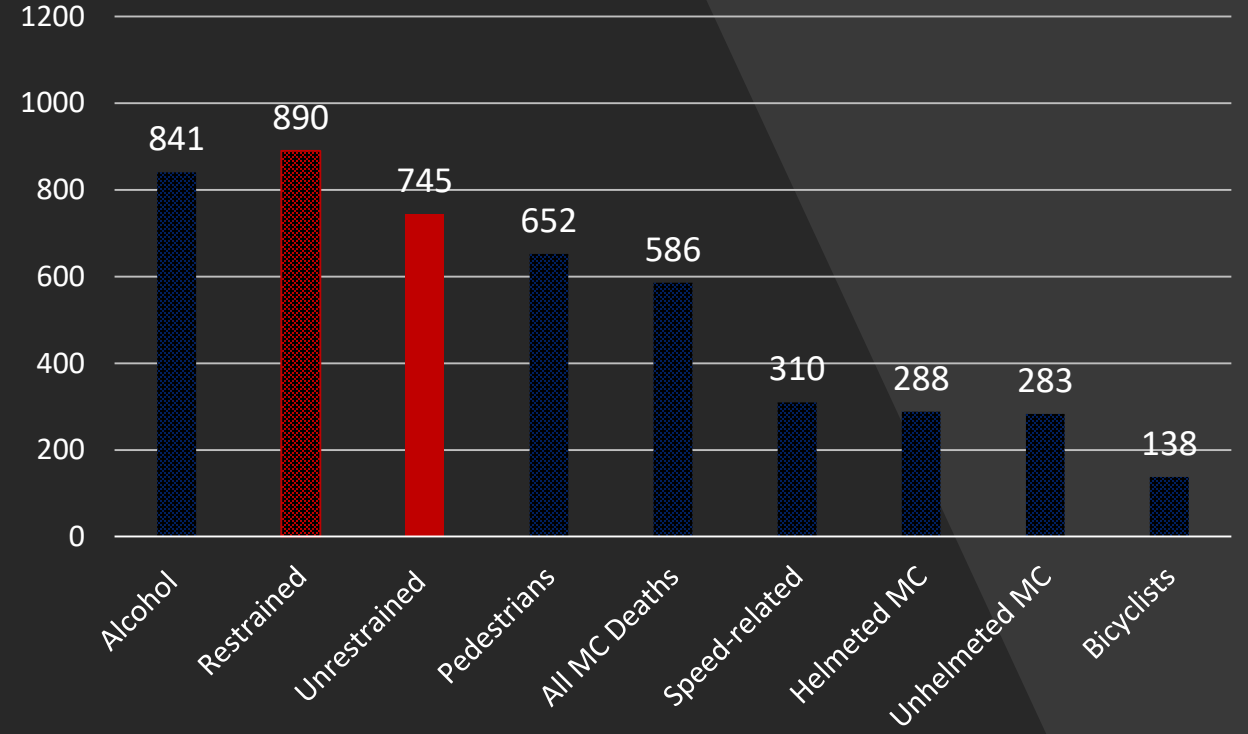
Our primary focus here is reducing unrestrained fatalities.
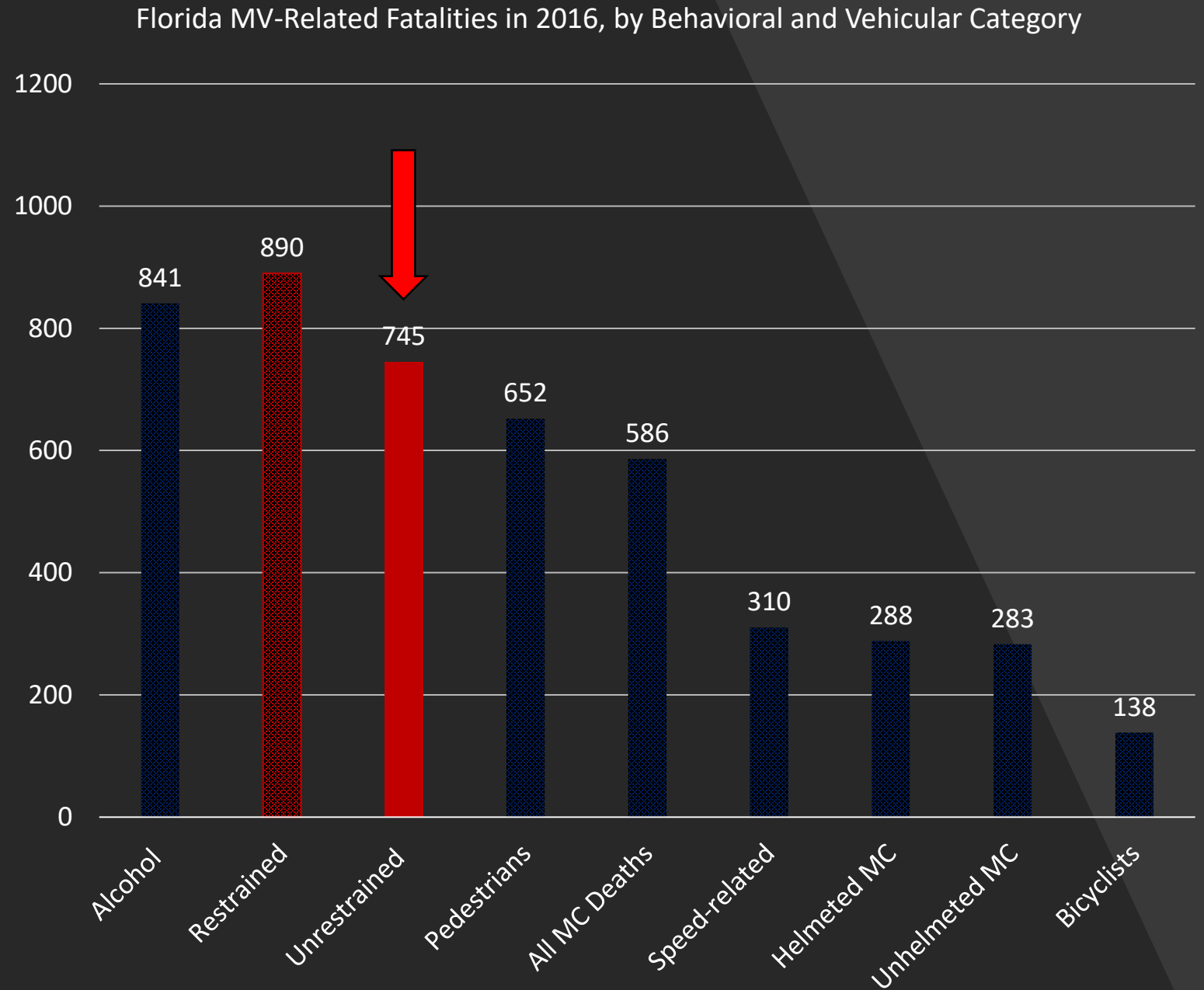
Sources of Data

1) FARS Data (NHTSA's National Center for Statistical Analysis)
2) Observational Data (Preusser Research Group)
3) Florida State Crash Data (Cambridge Systematics)
4) Hospital Data (State of Florida)

Variables of Interest

- Age
- Sex
- Race\Ethnicity
- Vehicle Type
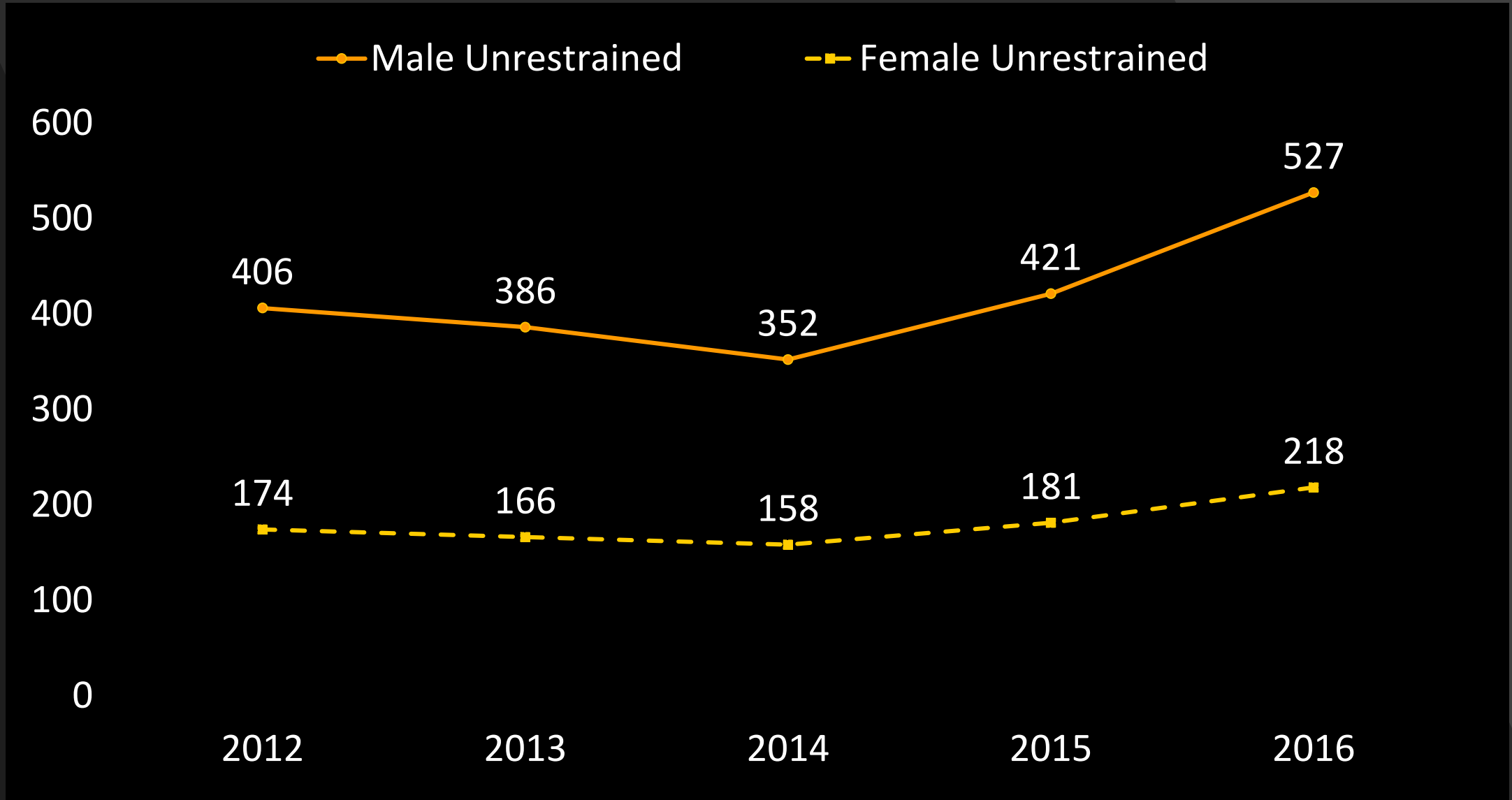- Seating Row
- Daytime/Nighttime
- Designated Market Area

We looked at…

Magnitude: **Annual <u>numbers</u> of belted/unbelted over time**
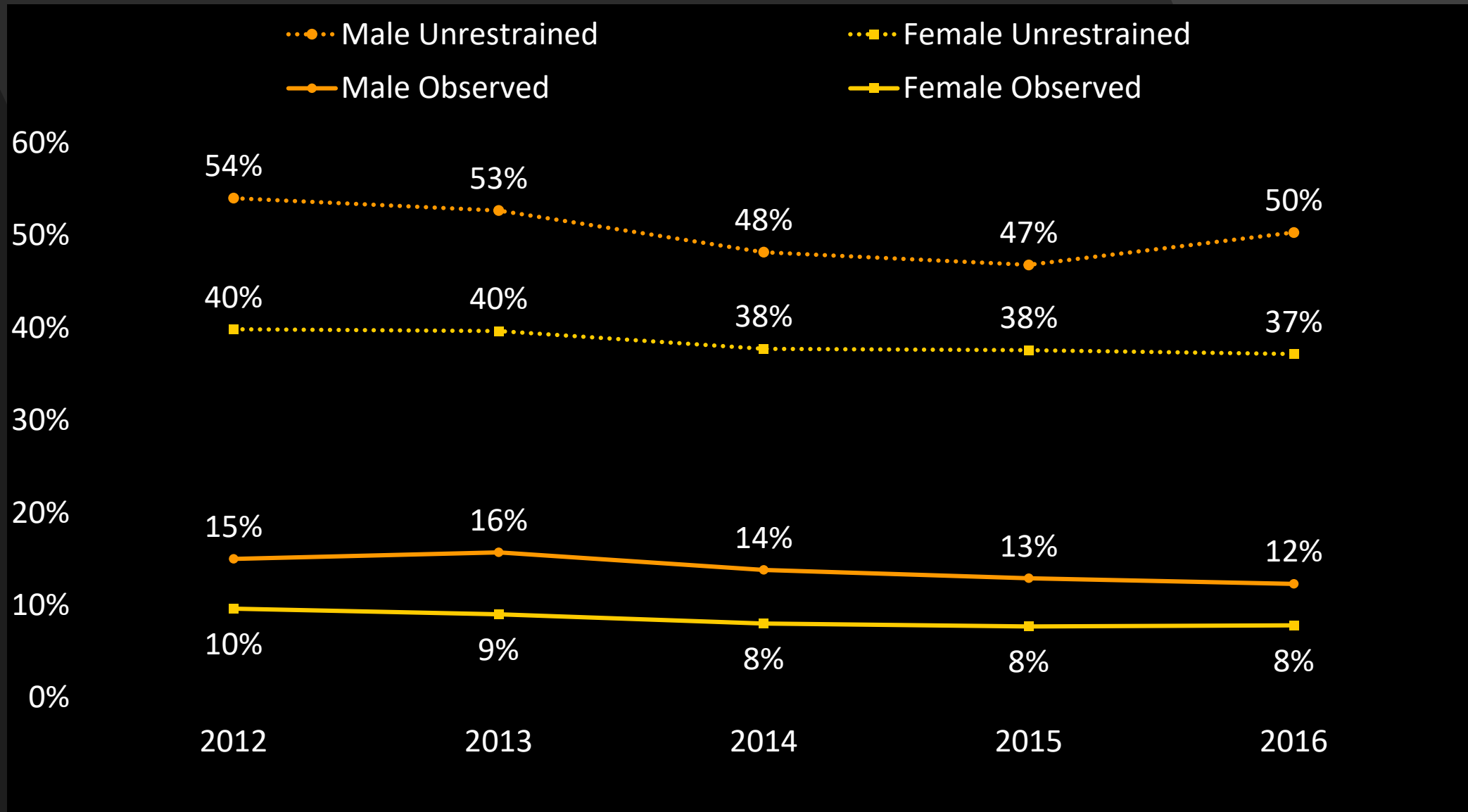**(per year 2008-2016)**

Rates: **% Unbelted**

Trends: In number and % restrained

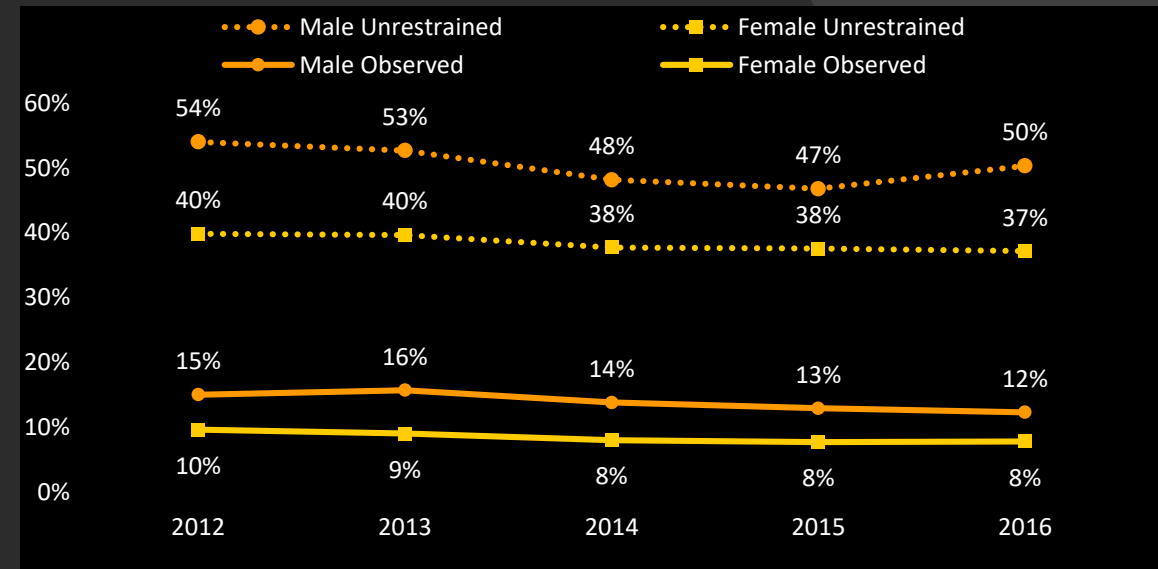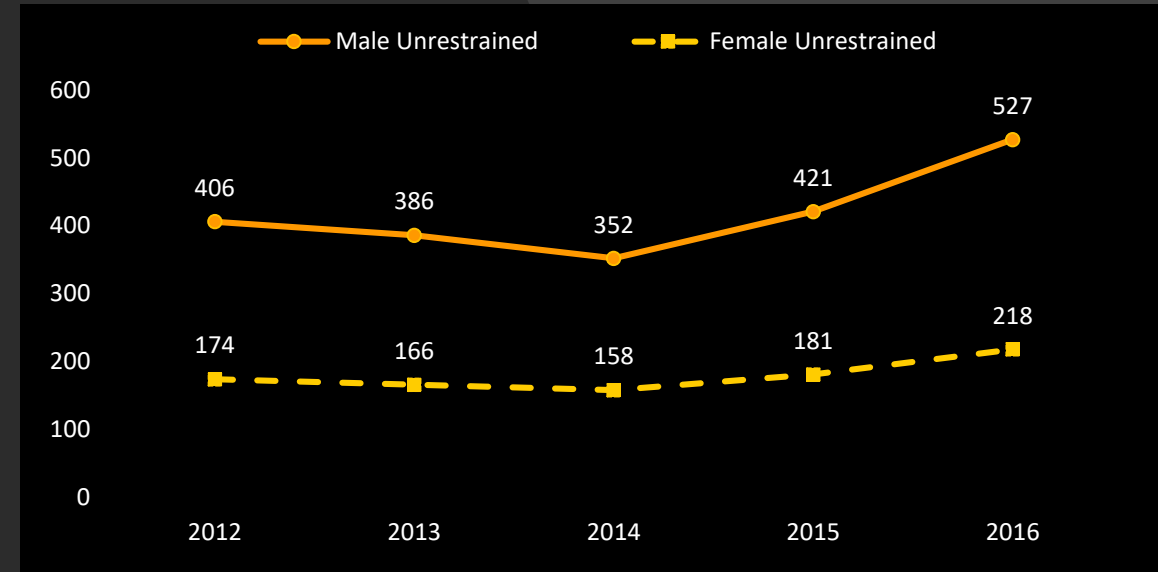Number of Unrestrained Fatalities by Sex of Occupant: 2012-2016

Percent of Fatalities Unrestrained and Observed Non-Use by Sex: 2012-2016

Sex of Occupant:

- 2.4 times more unrestrained male fatalities than female.
- Greater increase(s) in number of unrestrained fatalities after 2016 (50% for males vs. 38% females).
- Proportion of unrestrained males increased after 2015.

✓ Continue strategies focused on male occupants.

Age of Passenger Vehicle Occupant - 2016

Age Group	Restrained		Unrestrained		Unknown Use		Total w/Unk.	Total Known	Restraint Known	
	#	%	#	%	#	%			Used	Not Used
0-3	6	67%	2	22%	1	11%	9	8	75%	25%
4-7	11	52%	7	33%	3	14%	21	18	61%	39%
8-12	14	61%	8	35%	1	4%	23	22	64%	36%
13-15	4	20%	13	65%	3	15%	20	17	24%	76%
16-20	70	45%	80	51%	6	4%	156	150	47%	53%
21-24	79	40%	107	55%	10	5%	196	186	42%	58%
25-34	126	40%	167	54%	19	6%	312	293	43%	57%
35-44	93	47%	97	49%	6	3%	196	190	49%	51%
45-54	95	47%	107	53%	0	0%	202	202	47%	53%
55-64	100	60%	61	37%	5	3%	166	161	62%	38%
65-74	118	69%	44	26%	8	5%	170	162	73%	27%
75+	173	76%	52	23%	3	1%	228	225	77%	23%
Unk	1	100%	0	0%	0	0%	1	1	100%	0%
Total	890	52%	745	44%	65	4%	1,700	1,635	54%	46%

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Age – Youngest Children

Ages 0-3

- The numbers of fatalities among the **youngest age group (0-3)** is quite small relative to older age categories.

- Observational survey results indicate youngest occupants (0-3) were totally unrestrained 5% of the time. FARS data (2016) indicate 75% were restrained.

- ✓ Program efforts should continue and possibly be strengthened to keep problems from emerging.
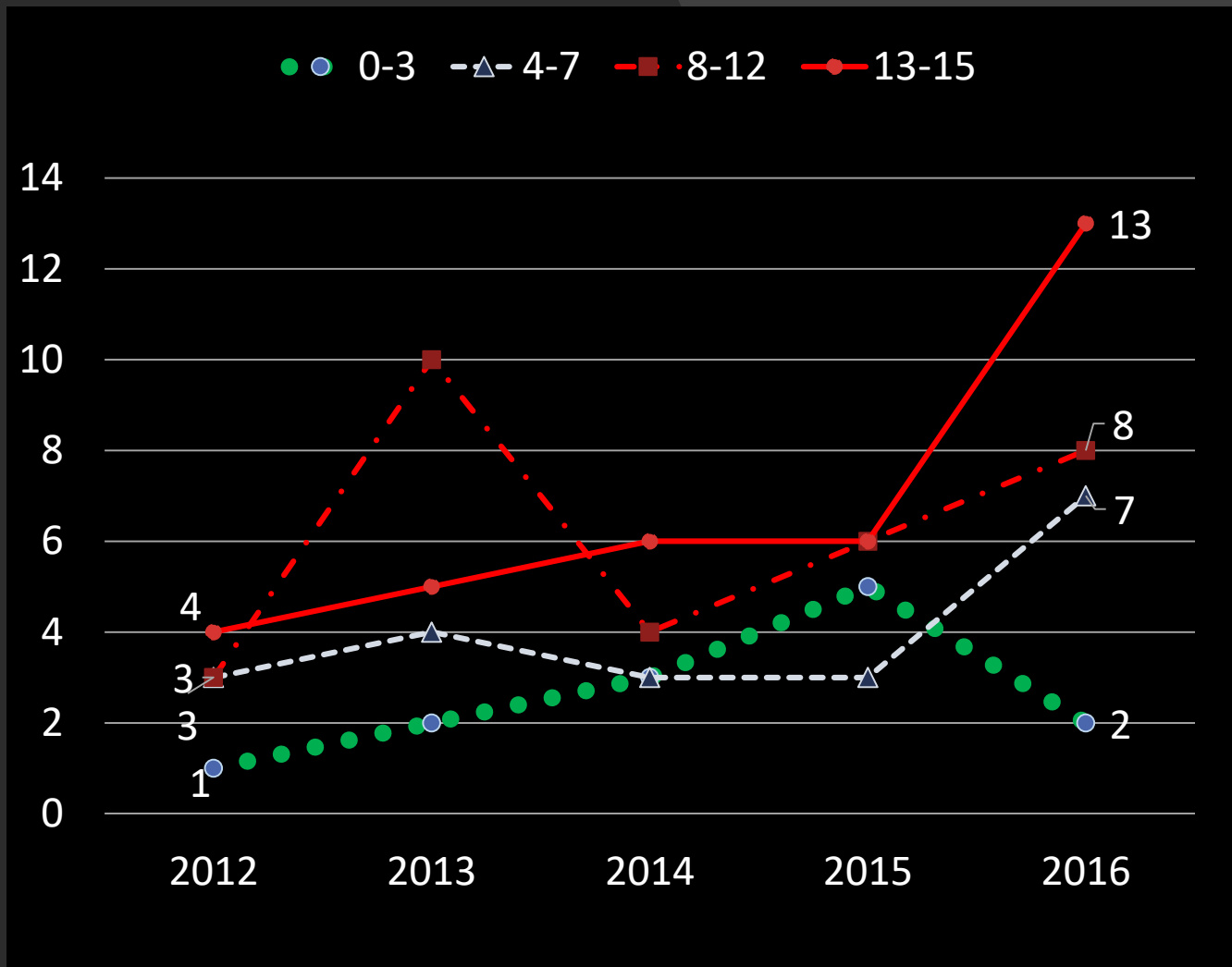
Age – Young Children

Ages 4 -7

- Observational and FARS data indicate that there is room for improvement among this age group.

- Despite having a relatively high usage rate in FARS (2016), observational survey data have indicated lower belt use compared to the other age groups.

✓ Bureau of Vital Statistics support the need to direct some level of focus to this group. General injury (i.e., among all crash victims; not just unrestrained) among this age group on a per population basis increased over the same time period.
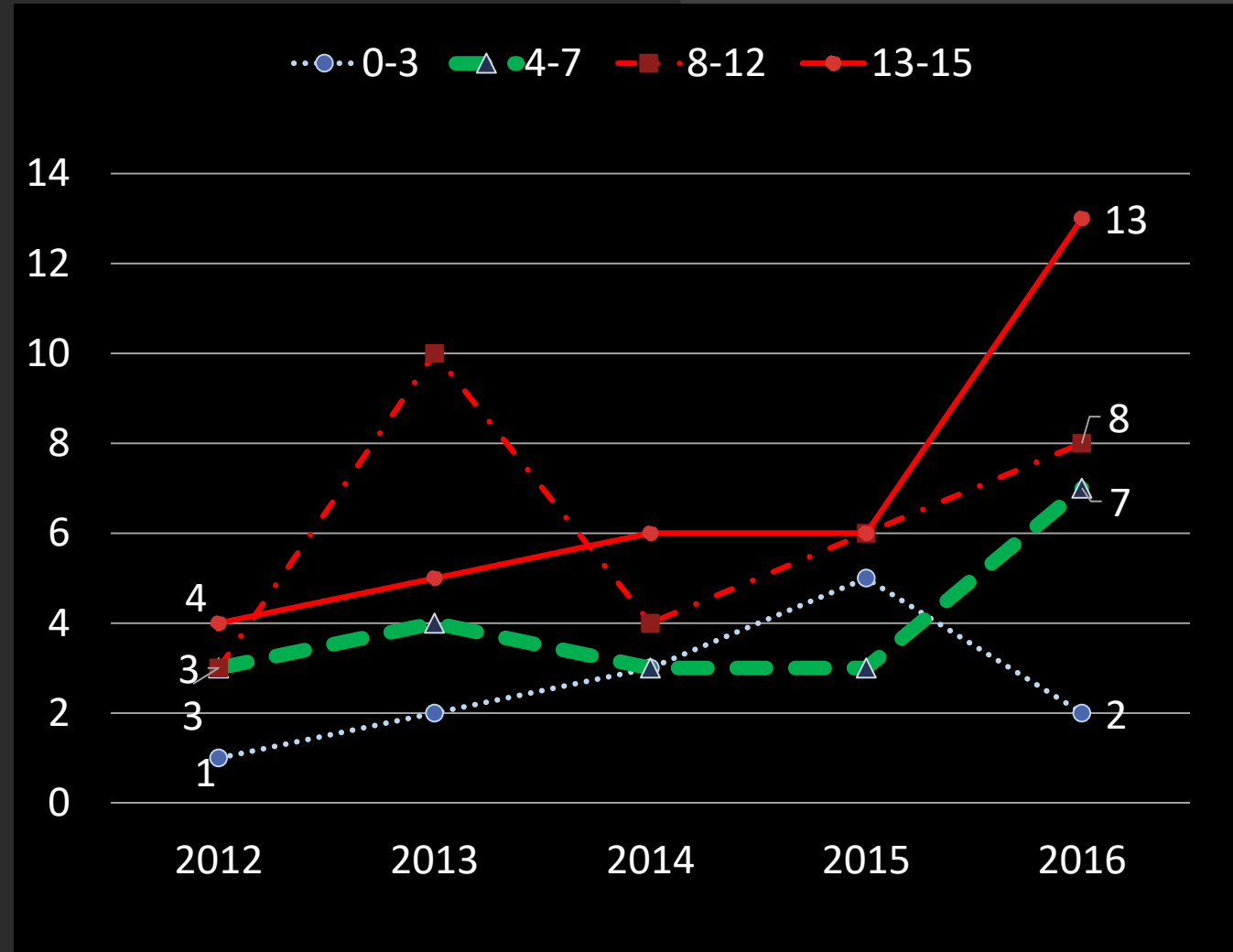
Age - Children

Ages 8-12

- Observational survey data indicated sizeable migration of these passengers to front seat.

- Observed belt usage was higher in front seat compared to rear seat (89% vs. 75%).

- Restraint usage among fatalities (front and rear) was relatively high (64%).

✓ Some level of focus should be put to promoting usage in the Rear among this age group (among others).
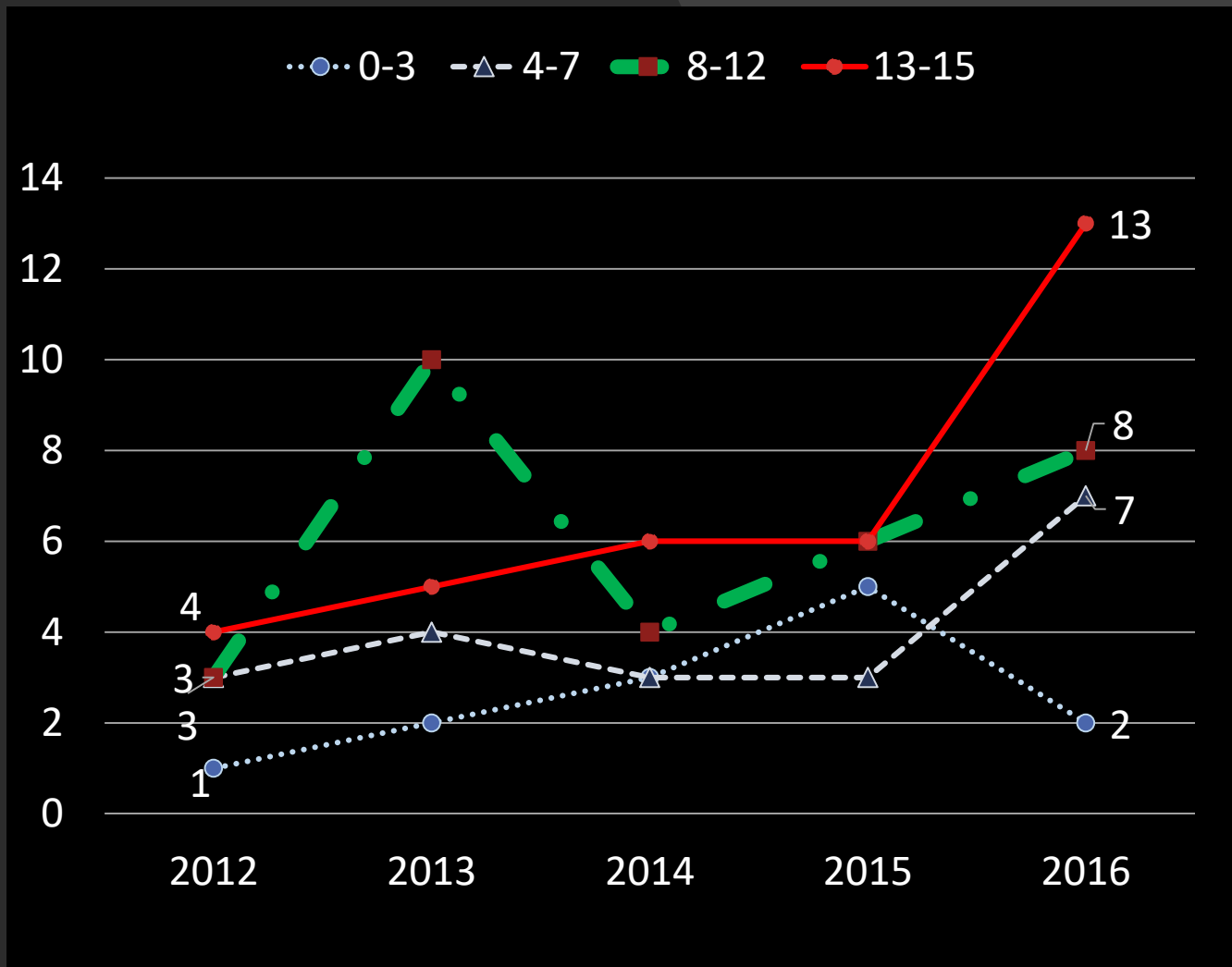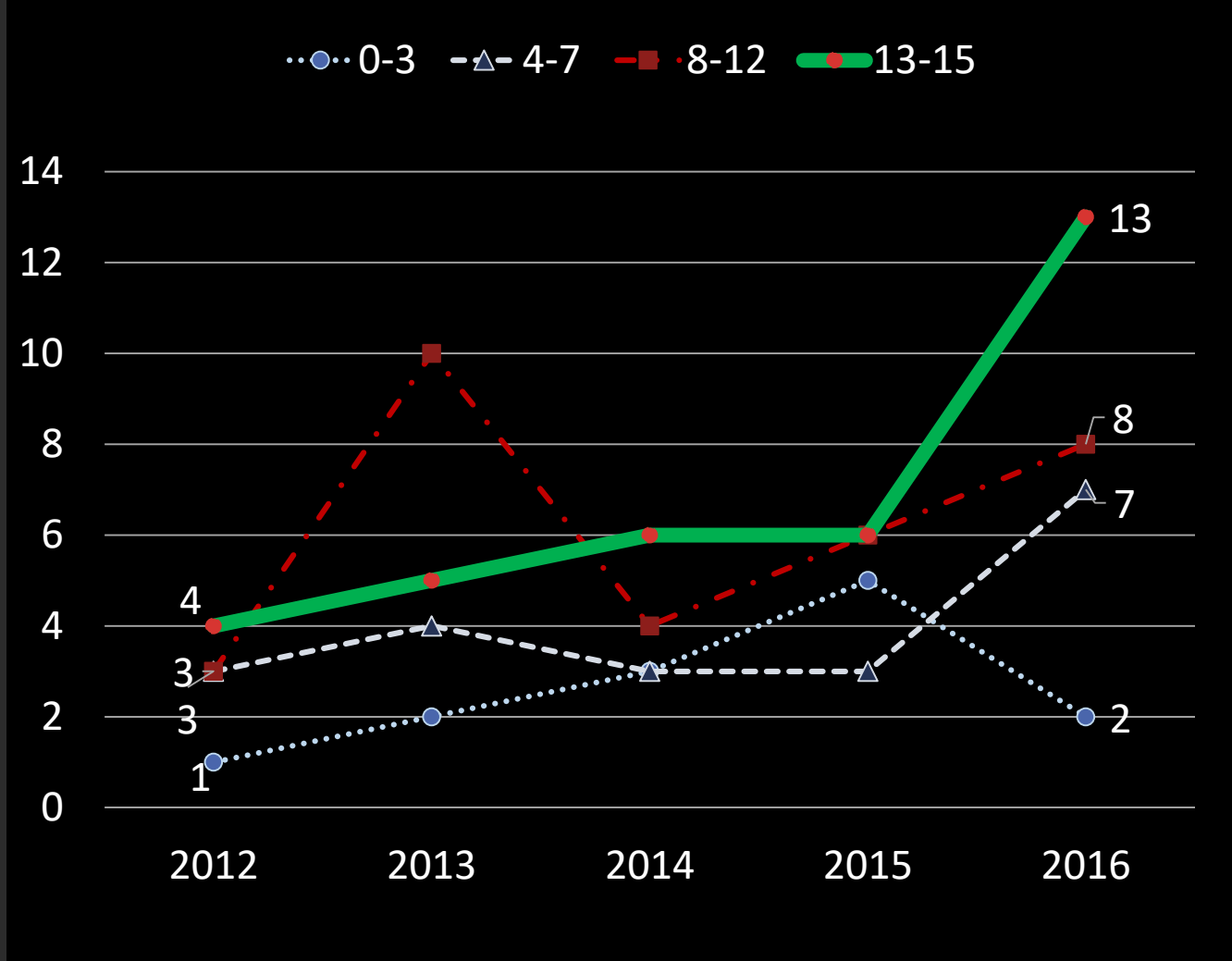
Age – Young Teens

Ages 13 - 15

- Alarmingly low usage in FARS (25% in 2016).

- There was a relatively large increase in unrestrained fatalities in 2016 (from 6 to 13).

✓ Consider placing some focus on this group.

Age – Late Teens/Early Adults

Ages 16-20

- Occupants **ages 16-20** showed a higher than average rate of non-use (53% in 2016) and a modest gain in number of unbelted fatalities.

Ages 21-24 & 25-34

- Occupants **Ages 21-34** represent a large portion of the overall fatalities and have among the highest rates of non-use (58% in 2016).

- Both age groups exhibited larger than average increases in unbelted fatalities.

Ages 35-44

- Occupants **Ages 35-44** also have higher than average non-use (51% in 2016) but are in less risky situations compared to younger age groups.

✓ Continued general focus on all age groups is likely important.
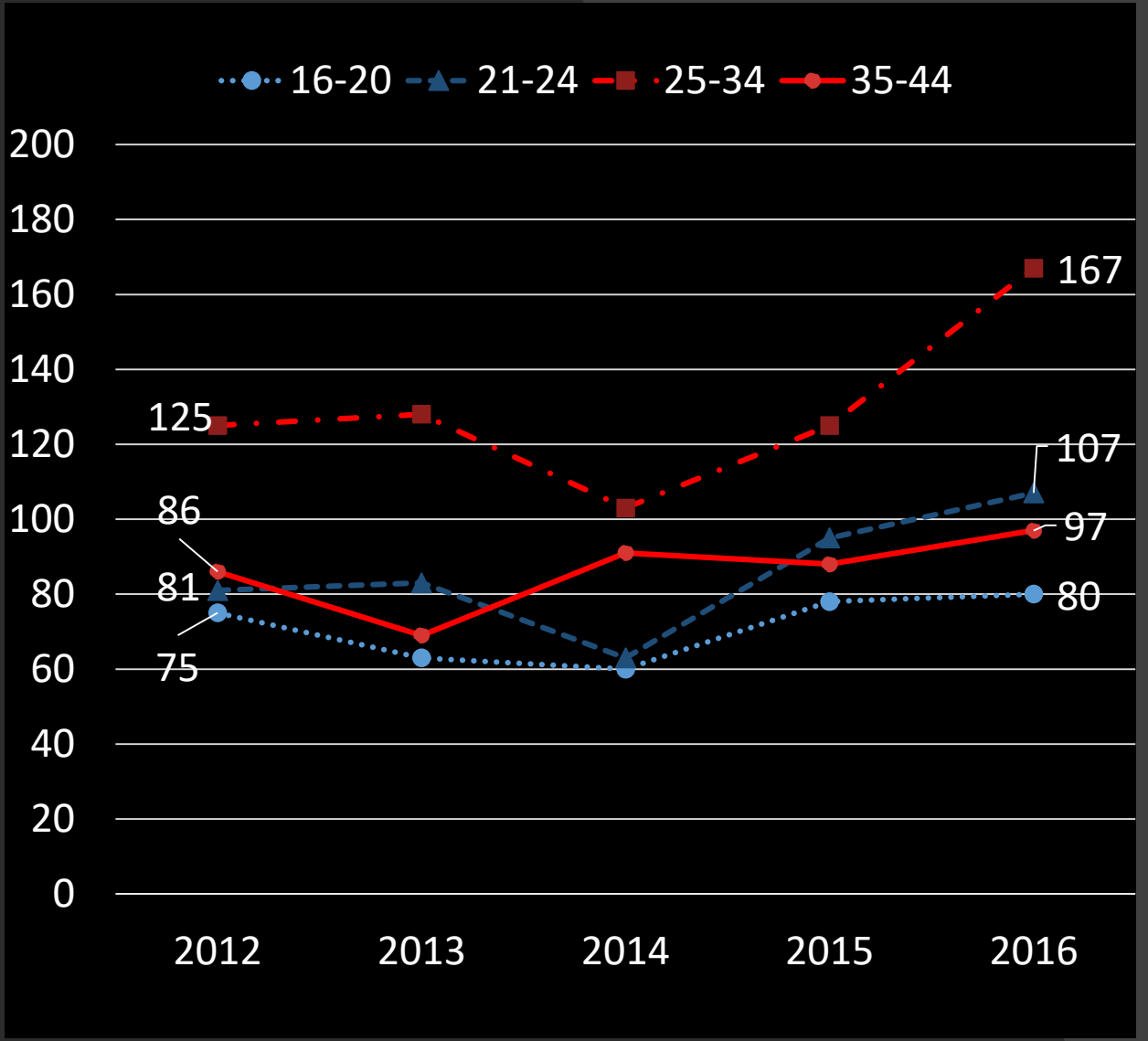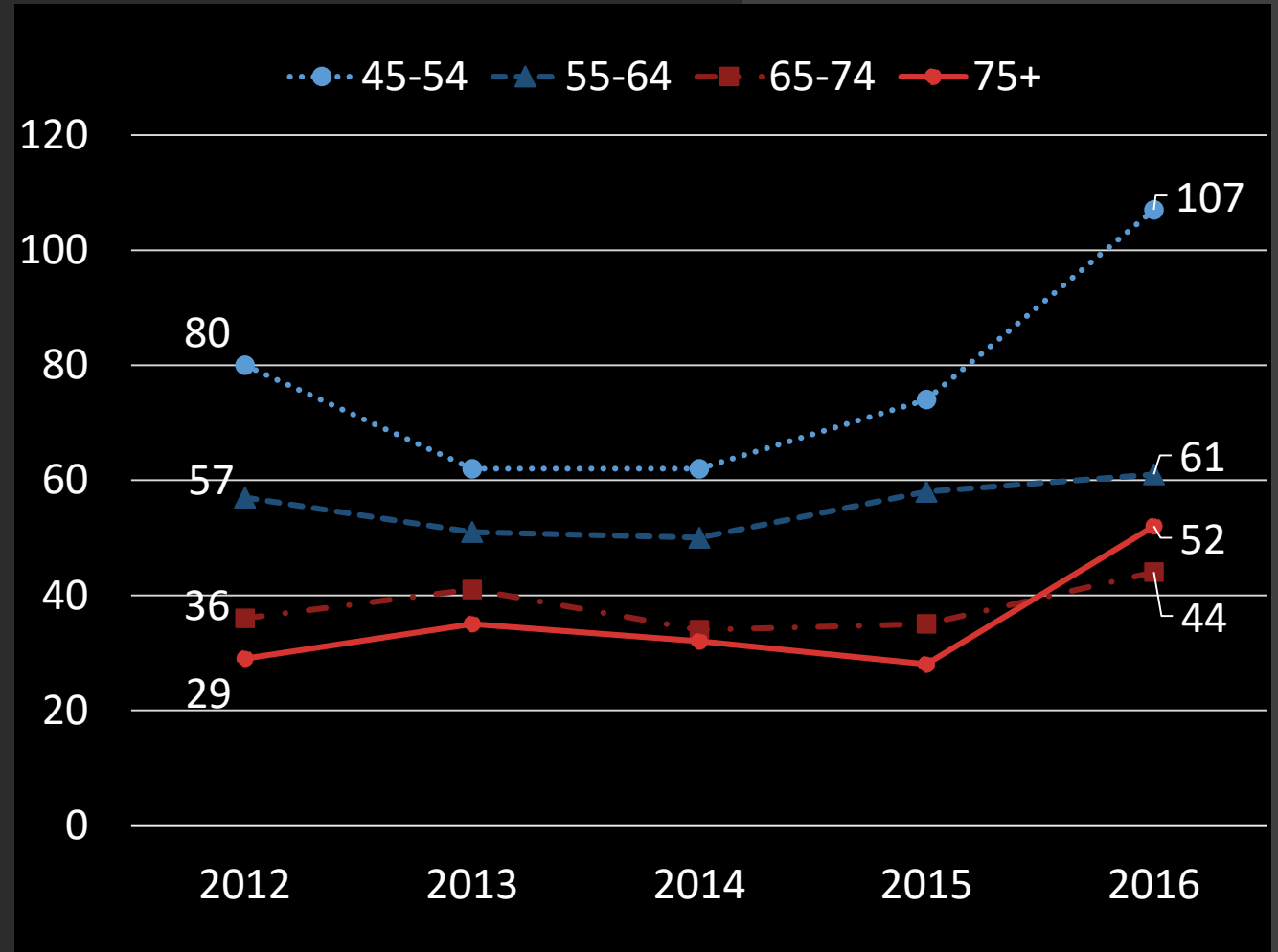
Age – Older Adults

Ages 45-54

- Very large increase in number of unbelted fatalities since 2014 (78%). Above average non-restraint usage (53%).

- This group would appear to be a group in need of less focus than other groups but large percentage increase that occurred over recent years deserves attention.

Ages 55-64

- The number of unbelted fatalities increased modestly compared to other age groups.

✓ Continued general focus on all age groups is important.

Age – Oldest Adults

Ages 65-74 and Ages 75 and Up

- A relatively large increase among those over age 65 and especially those ages 75+ could indicate an emerging problem.

- The oldest age group (75+) experienced the largest percent increase in number of unbelted fatalities 2016 (79%).

- Given the aging population of Florida, the increase in unrestrained fatalities among those **ages 75+** is likely a function of other factors (e.g., population growth).

✓ The problem should be further examined and addressed.
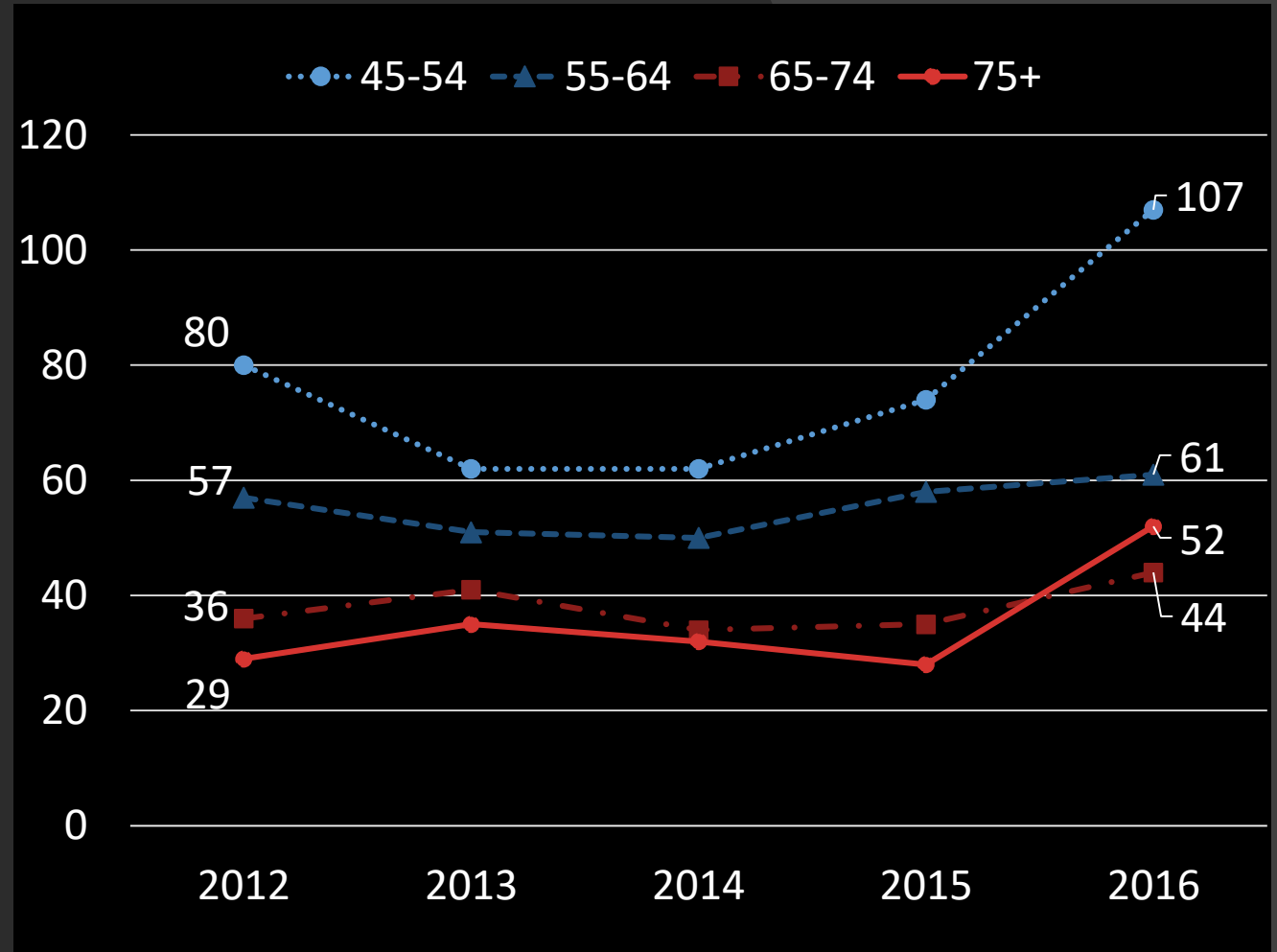
Race/Ethnicity

- FARS data indicate increased fatalities among both Black occupants and White occupants.

- Increase from 2014 to 2016:
  - Black occupant: 48%
 - White occupant: 48%
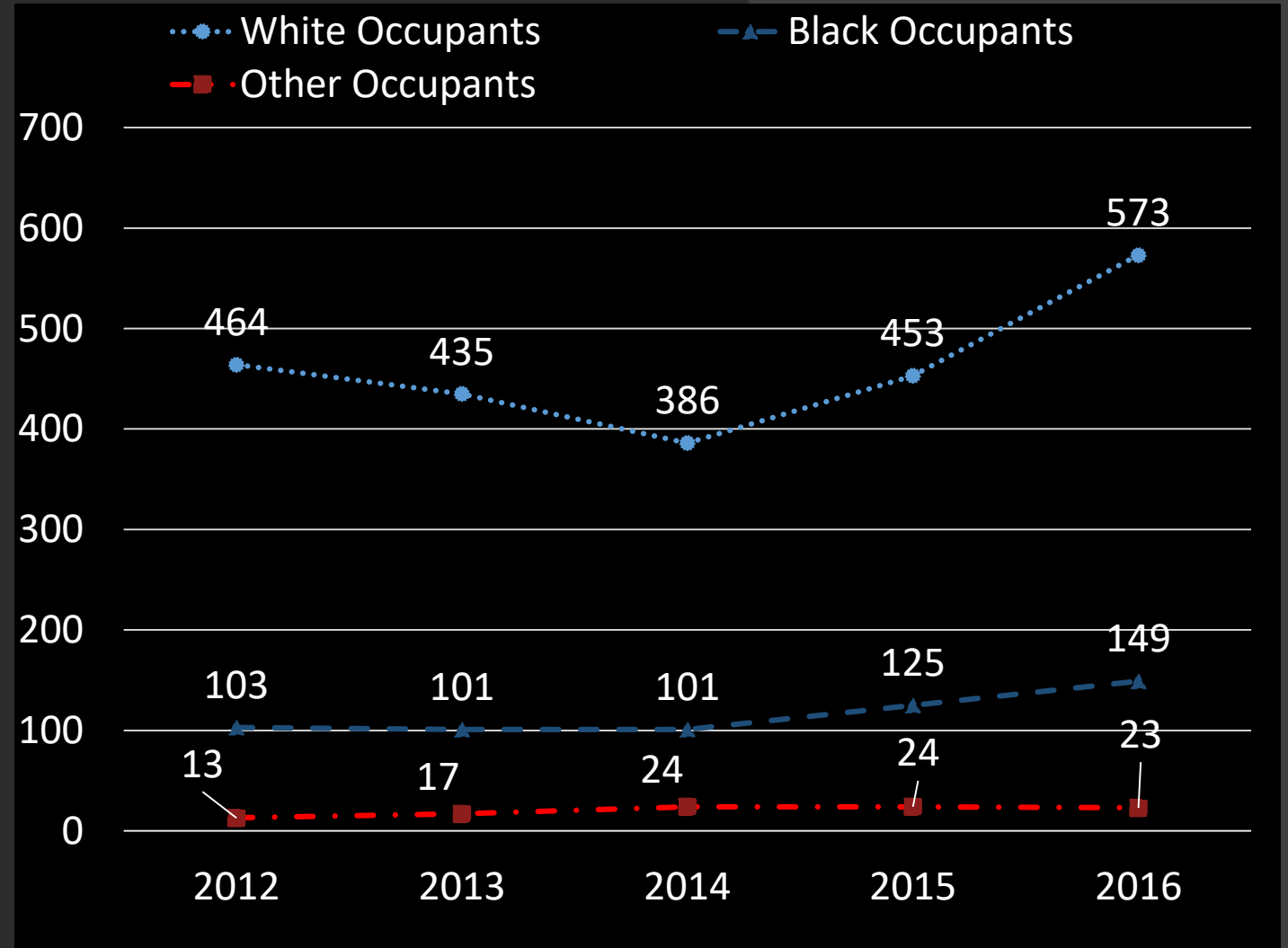
Race/Ethnicity

- The observed results and the use rate among fatally injured unrestrained occupants by race are similar. Both measures indicate higher non-use rates among **Black occupants.**

✓ Efforts to understand and develop programs to address differences among race is merited.

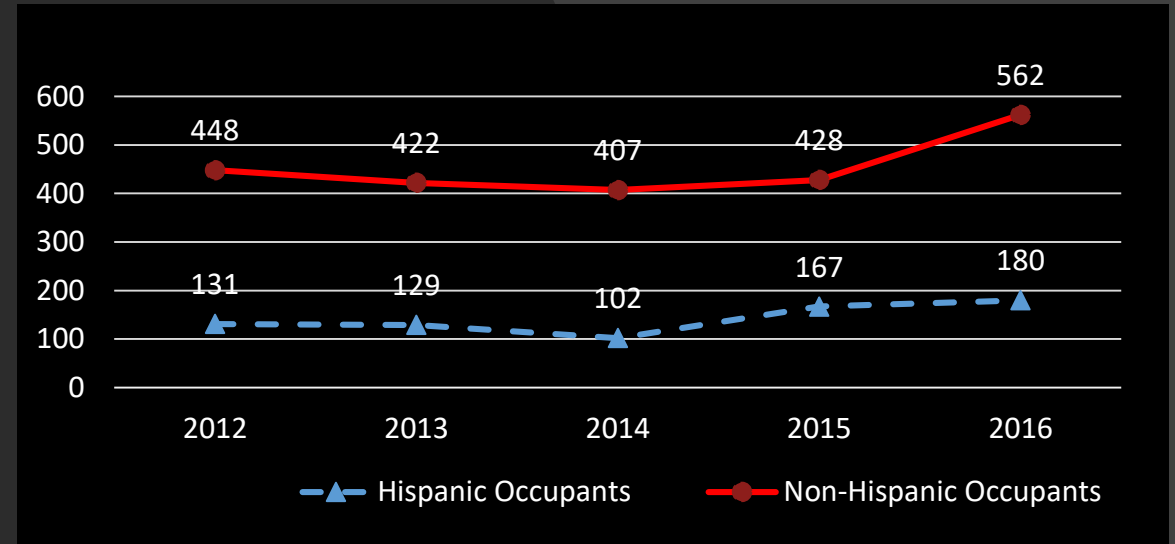**Percent of Observed Non-Use and Percent of Fatalities for Unrestrained White Occupants: 2012–2016**
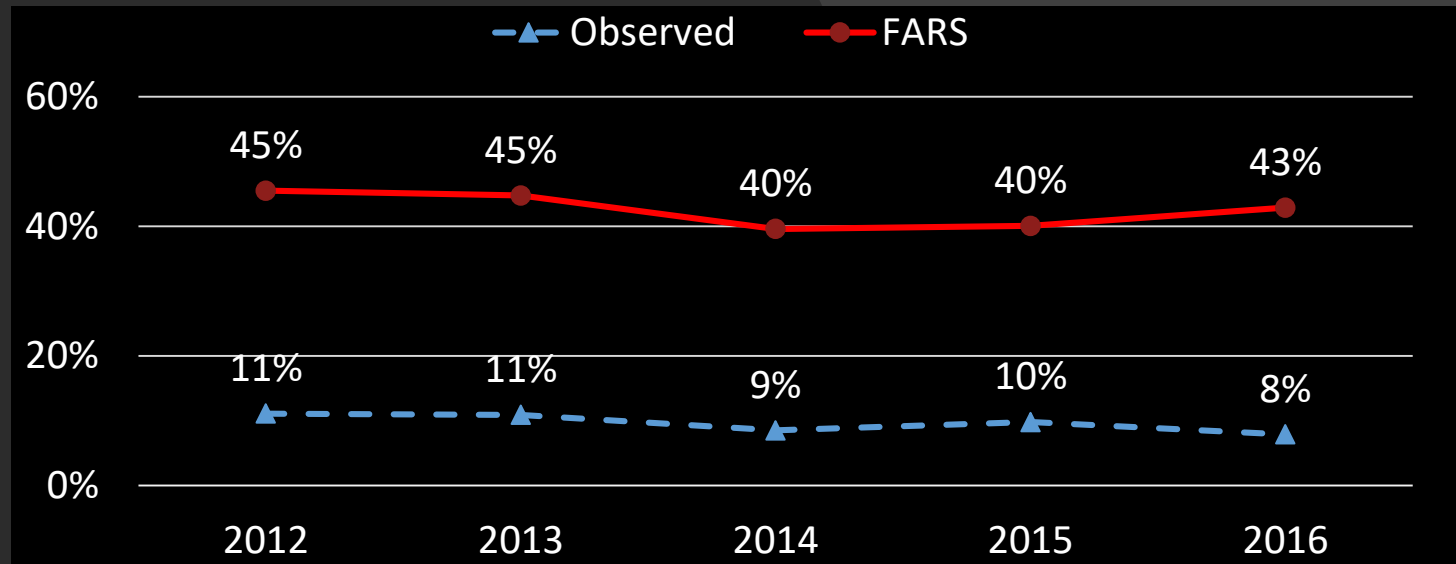
Percent of Observed Non-Use and Percent of Fatalities for Unrestrained Black Occupants: 2012–2016
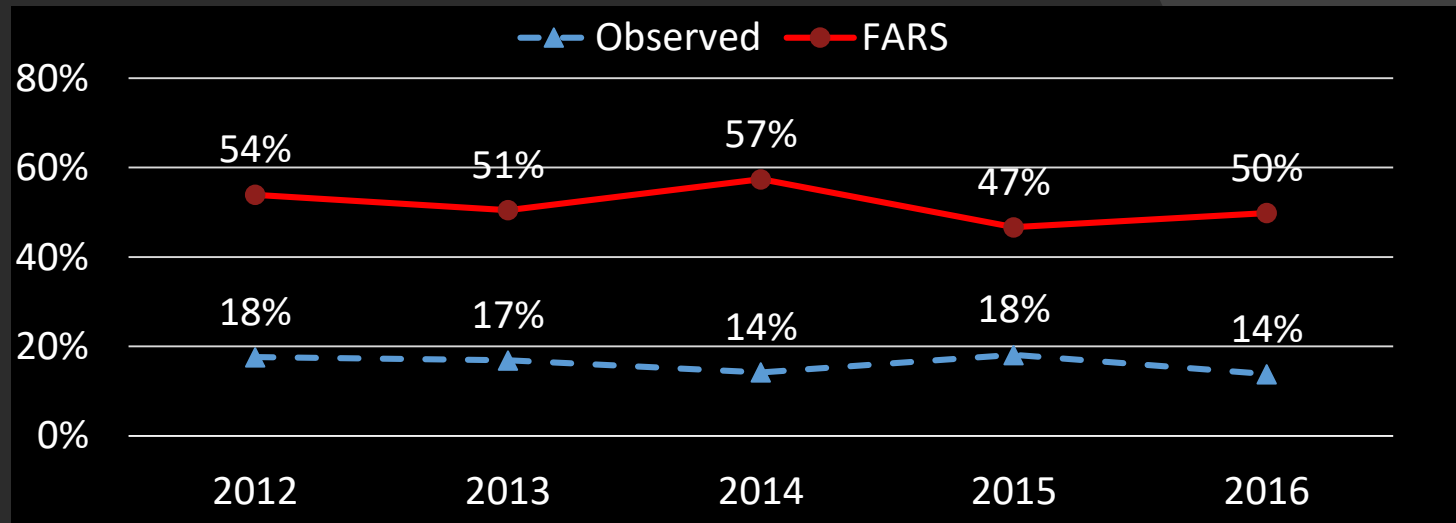
Hispanic vs. Non-Hispanic

- **Hispanic and non-Hispanic occupants** demonstrated similar rates of non-use in both observational studies and using FARS.

- **However**, FARS data indicated a large percentage increase in the number of unrestrained fatalities among Hispanics over the last few years (76% increase 2014-2016).

✓ Some focus should be placed on this group to determine the cause of the increase.

Hispanic vs. Non-Hispanic Occupants

Percent of Observed Non-Use and Percent of Fatalities for Unrestrained Hispanic Occupants: 2012–2016
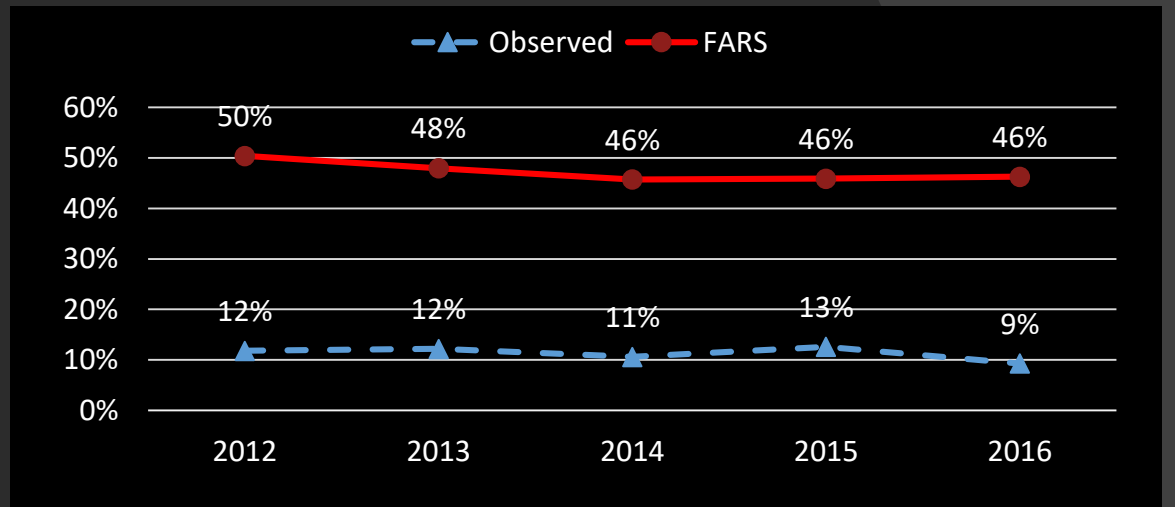
Passenger Vehicle Type

Vehicle Type	Restrained		Unrestrained		Unknown Use		Total w/Unk.	Total Known	Restraint Known	
	#	%	#	%	#	%			Used	Not Used
Passenger Cars	618	59%	385	37%	45	4%	1,048	1,003	62%	38%
Pickups	107	37%	179	62%	3	1%	289	286	37%	63%
SUVs	107	41%	143	55%	12	5%	262	250	43%	57%
Vans	58	62%	30	32%	5	5%	93	88	66%	34%
Other	0	0%	8	100%	0	0%	8	8	0%	100%
Total	890	52%	745	44%	65	4%	1,700	1,635	54%	46%

Passenger Vehicle Type

Passenger Cars

- **Passenger car** fatalities accounted for 61 percent of the total fatalities but had among the highest rate of usage, both observed and in FARS.

- A clear majority of vehicles on the road are passenger cars and their representation (61% of total fatalities) is likely not disproportionate.

- **Passenger van** fatalities were both low in number and high in usage.
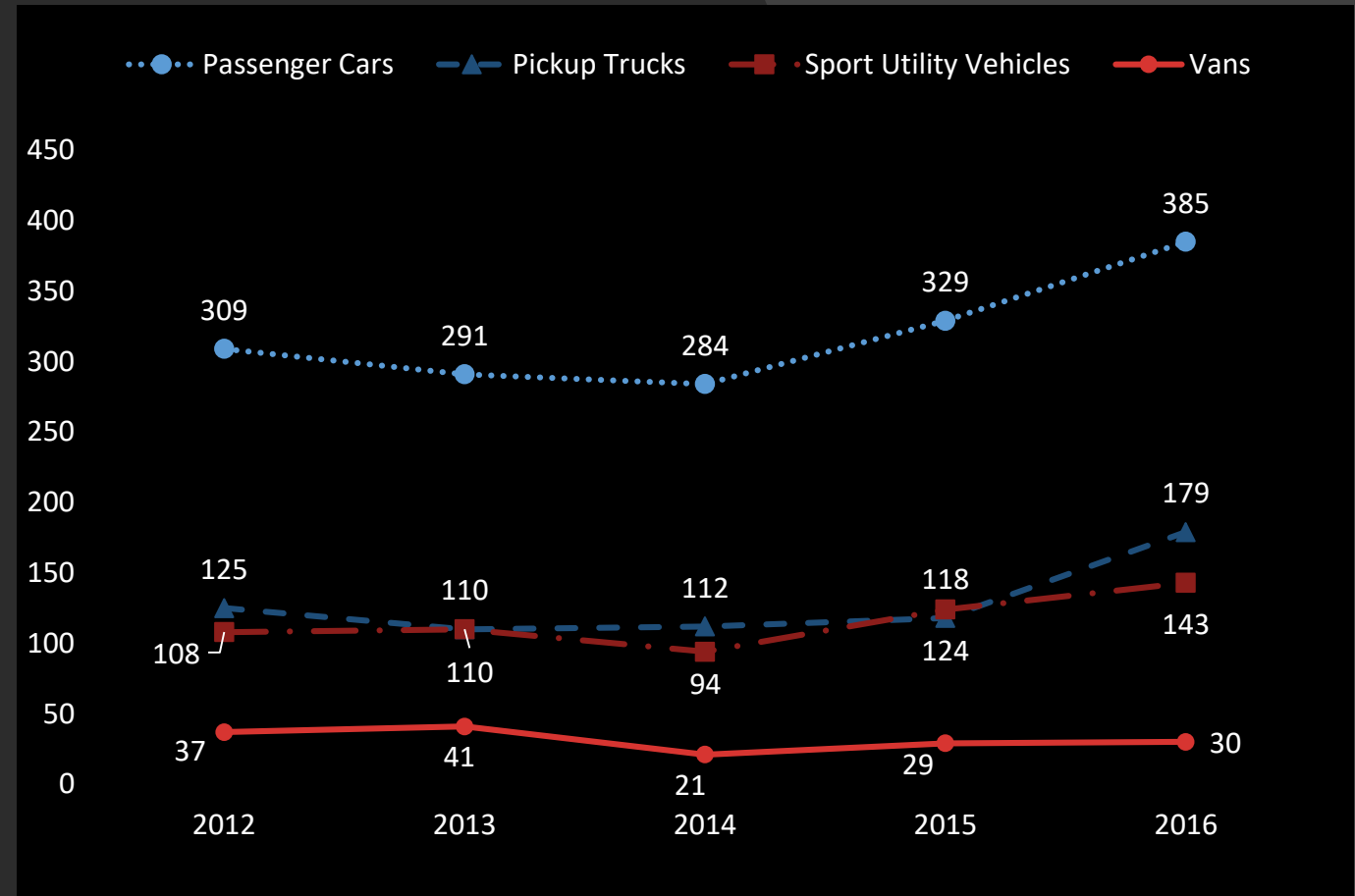
Pickup Trucks

- FARS data and observational survey data point to a pickup truck problem.

- Occupants in pickups accounted for 17% of all fatalities (2016).

- Occupant fatalities in **pickup trucks** were unbuckled far more often than any other vehicle type (63% of the time).

✓ Focusing on pickup truck occupants and/or situations and locations more likely to have pick-up truck occupants could reduce the number of unrestrained fatalities in the state.
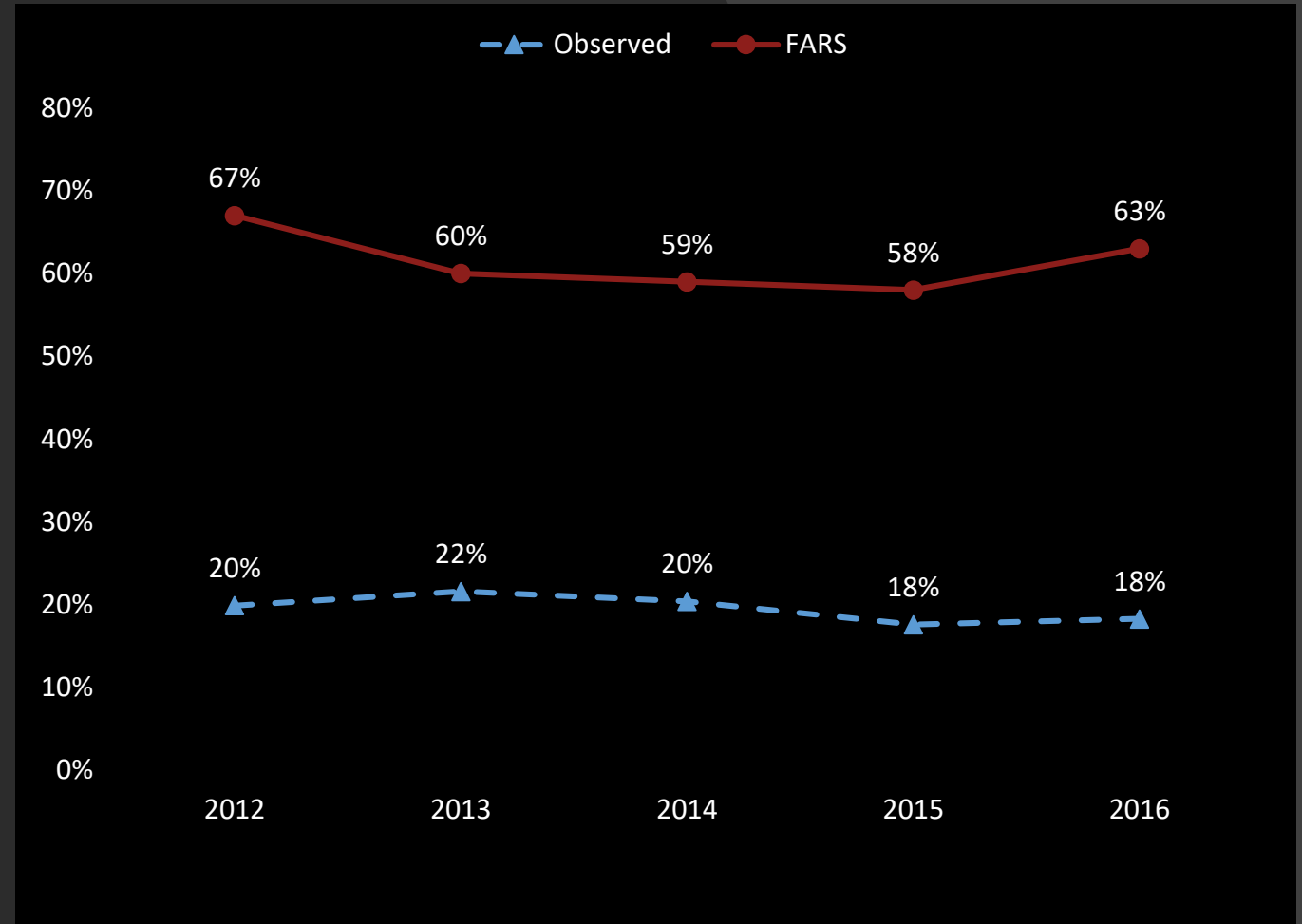
Sport Utility Vehicles

- **SUV occupants** have relatively high rate of being unrestrained (57%) compared to passenger cars (34%) and vans (38%).

- There exists, however, a divergence of findings; high observed use but low use in FARS

- One potential explanation is that SUVs are carrying more (unrestrained) passengers than observation surveys see in the front seat. Another explanation is perhaps there is a subclass of SUV occupants that tend to be particularly risky.

✓ Further investigation and/or program intervention may be warranted to reduce non-use among high risk SUV occupants.
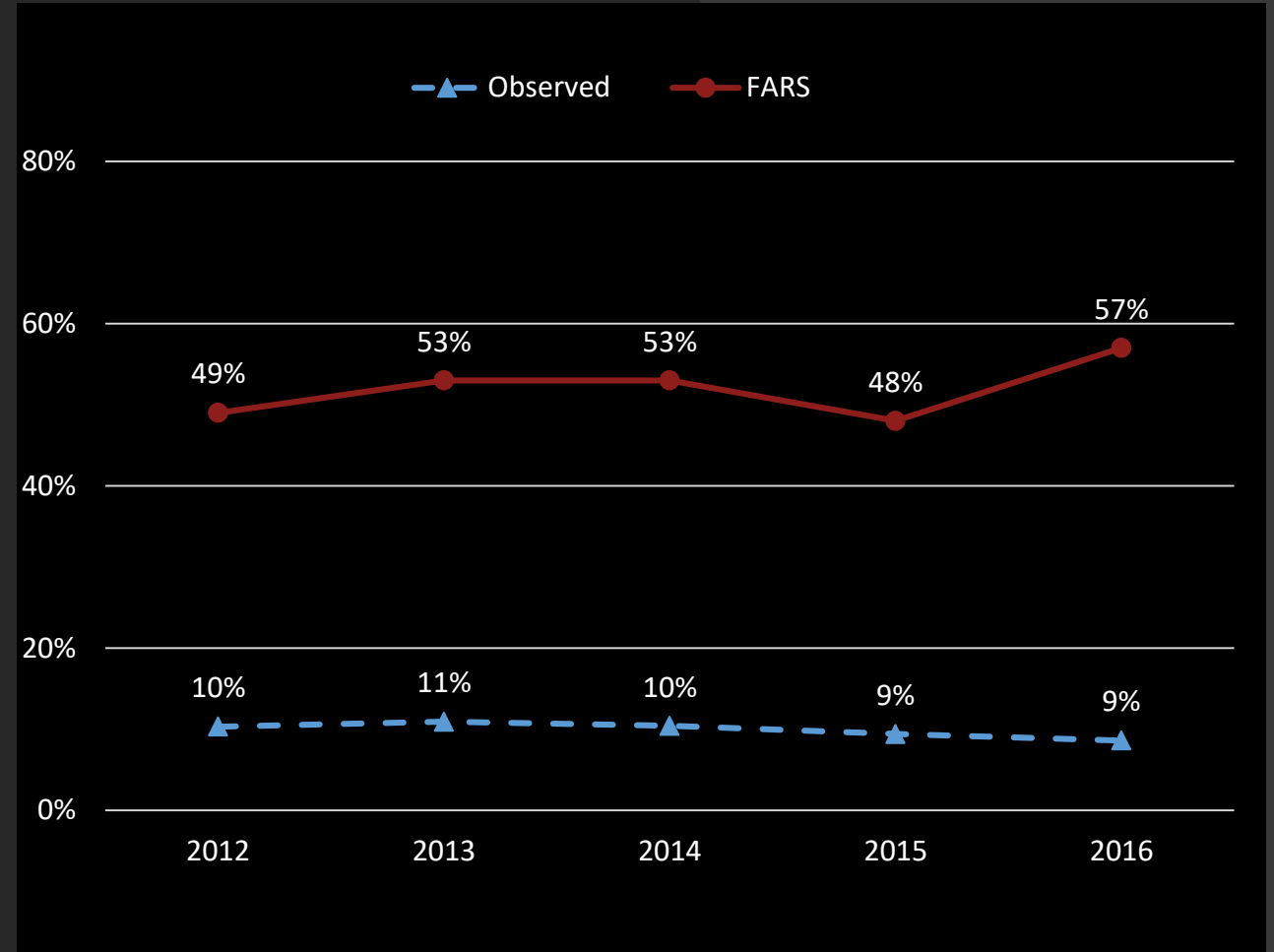
Time of Day

- **Nighttime travel** (loosely defined 6pm-6am) accounts for far less than half of the vehicle miles traveled.

- However, 62 percent of the unrestrained fatalities happen between the hours.

- Occupants at this time of day also demonstrate a 14-percentage point lower usage rate (FARS) than daytime travelers.

- ✓ A focus on nighttime restraint use is clearly warranted.
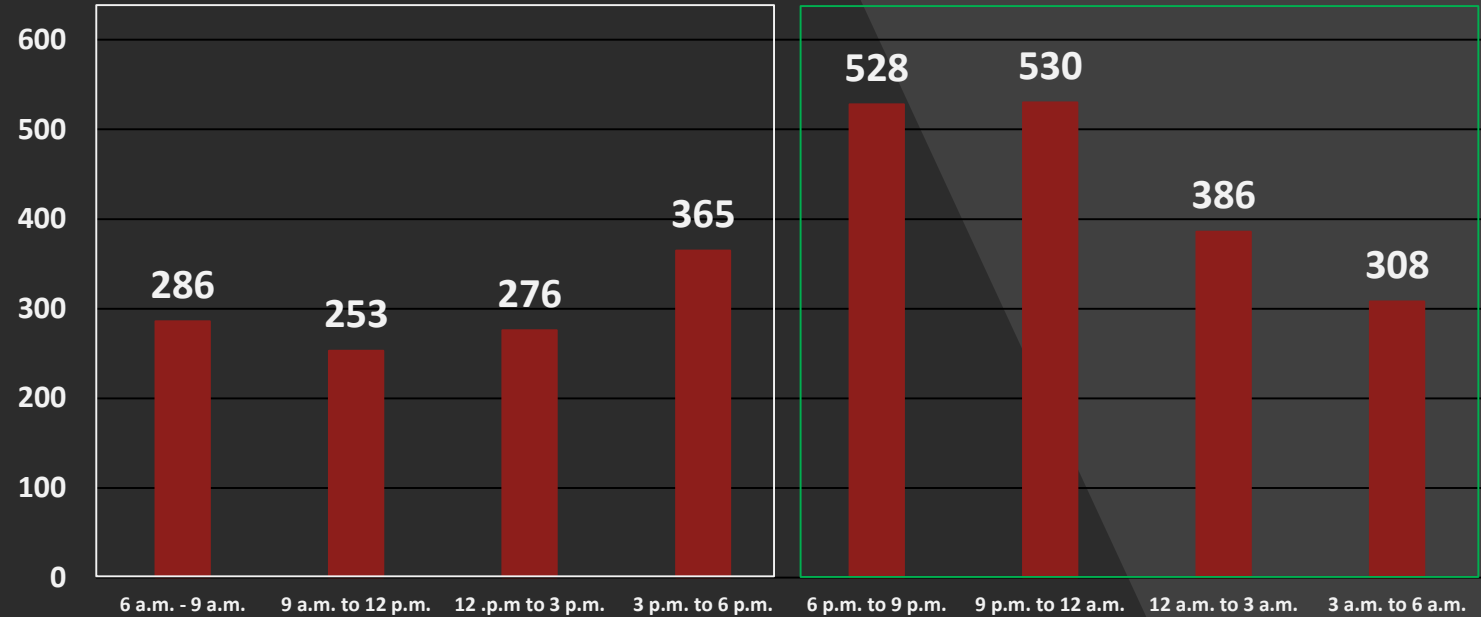
	6 a.m. - 9 a.m.	9 a.m. to 12 p.m.	12 .p.m to 3 p.m.	3 p.m. to 6 p.m.	6 p.m. to 9 p.m.	9 p.m. to 12 a.m.	12 a.m. to 3 a.m.	3 a.m. to 6 a.m.
Value	286	253	276	365	528	530	386	308

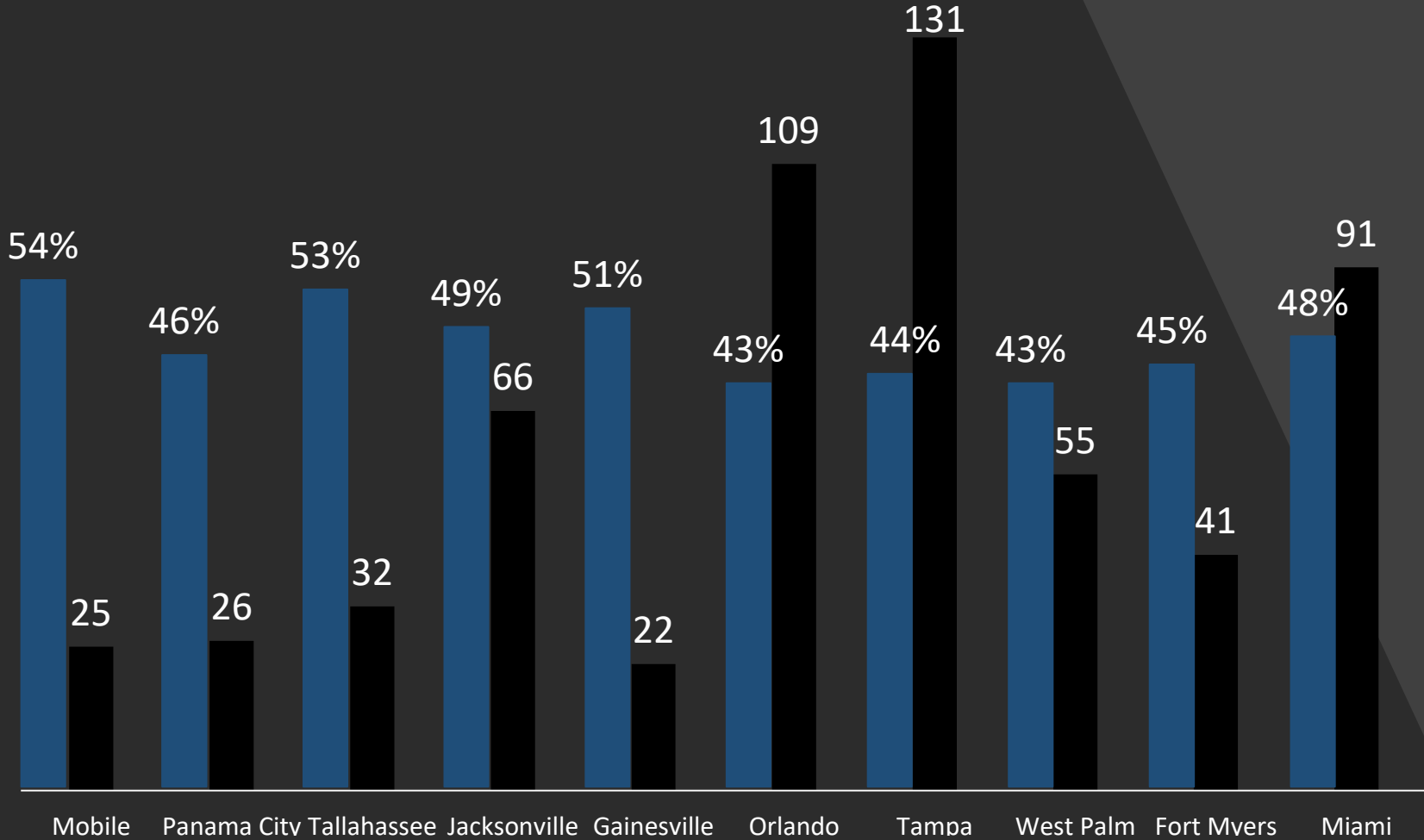|	Restrained		Unrestrained		Unknown Use		Total w/Unk.	Total Known	Restraint Known	
	#	%	#	%	#	%			Used	Not Used
Day 6 a.m.-6 p.m.	469	61%	283	37%	23	3%	775	752	62%	38%
Night 6 p.m.- 6 a.m.	421	46%	461	50%	42	5%	924	882	48%	52%
Unknown	0	0%	1	100%	0	0%	1	0	0%	100%
Total	890	52%	745	44%	65	4%	1,700	1,635	54%	46%

Seating Row

- **Rear seat occupants** make up a much smaller portion of Florida's unrestrained fatalities (11% when considering all non-front positions).

- Non-use in the rear seat appears to be a problem. Usage in FARS indicates a 20-percentage point difference in usage between front and non-front positions.

✓ Interventions aimed at encouraging rear seat restraint use could contribute to efforts aimed at decreasing the unrestrained fatalities.

	Restrained		Unrestrained		Unknown Use		Total w/Unk.	Total Known	Restraint Known	
	#	%	#	%	#	%			Used	Not Used
Front	830	55%	627	41%	56	4%	1,513	1,457	57%	43%
2nd	53	36%	89	60%	7	5%	149	142	37%	63%
Other	7	19%	29	81%	2	0%	38	36	17%	83%
Total	890	52%	745	44%	65	4%	1,700	1,635	54%	46%

Designated Market Area

FARS data 2012-2016 (Averages)

■ Unrestrained Percent of Deaths
■ Average Number of Unrestrained Deaths Per Year

DMA	Unrestrained Percent of Deaths	Average Number of Unrestrained Deaths Per Year
Mobile	54%	25
Panama City	46%	26
Tallahassee	53%	32
Jacksonville	49%	66
Gainesville	51%	22
Orlando	43%	109
Tampa	44%	131
West Palm	43%	55
Fort Myers	45%	41
Miami	48%	91

Designated Market Area

- **Jacksonville** and **Miami DMA's** have both high numbers of unrestrained fatalities and a higher percentage of non-use.

- The top left and bottom right quadrants represent DMAs with either high numbers of unrestrained fatalities or high non-use rates but not both.

- Finally, lower left quadrant, containing Panama City and Fort Meyers represent areas where both rates and numbers are lower.

- It may be useful to focus on have overall higher unrestrained fatalities.

Mobile (25, 54%)
Tallahassee (32, 53%)
Gainesville (22, 51%)
Jacksonville (66, 49%)
Miami (91, 48%)
Tampa (131)
44%
46%
45%
43%
43%
Panama City (26)
Ft. Myers (41)
W. Palm (55)
Orlando (109)

Unrestrained Percent of Occupant Deaths
(Median = 47%)

Number of Unrestrained Fatalities
(Median = 48)
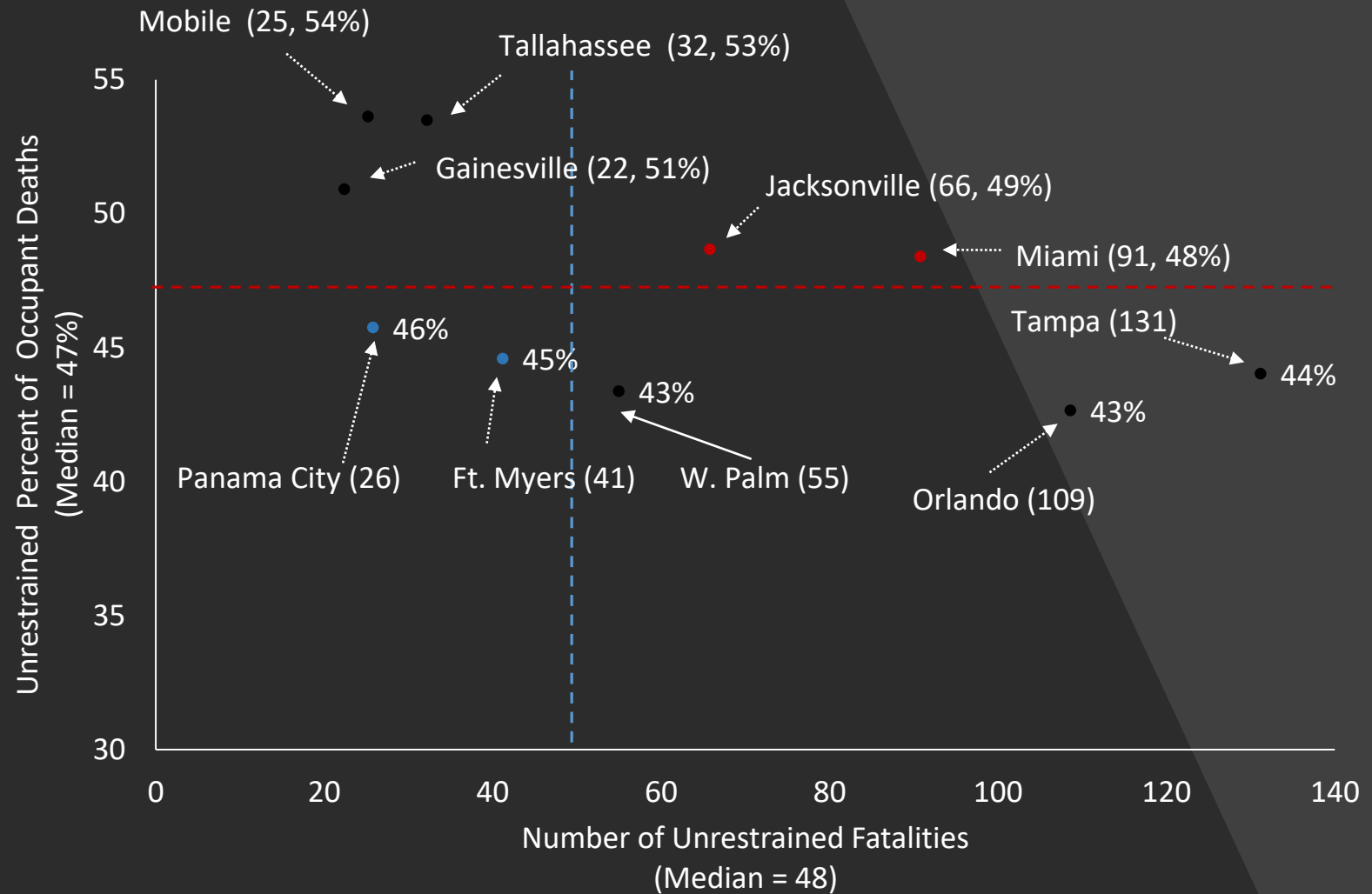
Consideration needs to be given to both magnitude and rate but also feasibility of focusing on specific sub-groups, likely resistance to messaging, and ability to conduct enforcement.

Rising to top based on their magnitudes, and relative difference in non-use rates from other groups.

Nighttime

Pickups trucks

Others might deserve focus based on rate of non-use rates alone, but these may represent a smaller portion of the unrestrained fatalities.

Black Occupants

Youngest teens (ages 13-15)

Rear seat occupants

Others stand out for being different in terms of magnitude alone, but these tend to be issues related to sheer volume of motorists (i.e. the more of any given group, the more fatalities are expected).

White occupants

Passenger cars

Trend data presented here also provide the Occupant Protection Coalition not only with a vision of which groups, places, times pose a problem, but how those problems are trending.

Hispanic occupants would appear to be a group in need of little focus until one recognizes the large percentage increase that occurred over recent years.

Similarly trends for **young teen occupants, oldest occupants, & SUVs** suggest placing some focus to those groups in terms of watching and perhaps heading off impending problems.

Lastly, it must be stressed that just because a group is not identified above does not mean it doesn't deserve attention. For example, the work currently done with **youngest child occupants** is believed to be keeping numbers of fatalities down and unrestrained fatalities down in particular.

END

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Percent Unrestrained Fatalities	**59%**	**59%**	**57%**	**52%**	**52%**	**49%**	**48%**	**44%**	**44%**	**46%**	**42%**	**45%**
Number Restrained Fatalities	735	686	626	660	568	610	600	640	780	890	923	848
Number Unrestrained Fatalities	1,078	1,000	846	706	609	580	553	511	602	745	673	695
Total Fatalities	1,813	1,686	1,472	1,366	1,177	1,190	1,153	1,151	1,382	1,635	1,596	1,543

- **<u>Strengths and Weaknesses</u>**

- **Based largely on fatality data (FARS)**

- **Hospital Data – Not very detailed/lacks usefulness**
- **Observational Data – Limited by location**

State Crash Data (severe injury level) –But reliability of belt usage/non-usage is suspect below the severe injury level.