

The Independent Monitor of Takata and the Coordinated Remedy Program

The State of the Takata Airbag Recalls

November 15, 2017

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I, John D. Buretta, as Independent Monitor of TK Holdings Inc. (“Takata”) and the Coordinated Remedy Program (the “Monitor”), submit this report to describe the current state of the Takata recalls, pursuant to Paragraph 42 of the Consent Order, dated November 3, 2015 (the “Consent Order”), issued pursuant to the authority of the National Highway Traffic Safety Administration and agreed to by Takata, and as amended as of May 4, 2016, and pursuant to the Coordinated Remedy Order, dated November 3, 2015, as amended by the Third Amended Coordinated Remedy Order, dated December 9, 2016.

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I. INTRODUCTION

The Takata airbag inflator recalls are the largest and most complex vehicle recalls in U.S. history. There are currently 19 affected vehicle manufacturers with an estimated 46 million unrepaired defective airbag inflators under recall in approximately 34 million U.S. vehicles. The words “grenade” and “ticking time bomb” accurately convey the lethal potential of these defective inflators.¹ To date, at least 13 people in the U.S. have died from injuries inflicted by defective Takata airbag inflators. In these fatalities, the Takata airbag inflator, instead of properly inflating to cushion the victim and prevent injury, has detonated in an explosion that tore apart its steel inflator housing and sprayed high-velocity metal shards at the victim. The victims have died from blunt head trauma, severance of the spine at the neck or extreme blood loss from lacerations to the chest, neck or face. Hundreds more have been seriously injured by the same kinds of metal shards shooting out from exploding Takata airbag inflators housed inside steering wheels or passenger-side airbag compartments. These are urgent safety recalls; and the combination of over a dozen affected vehicle manufacturers, tens of millions of affected vehicles and the severity of potential death or serious injury is unprecedented.

The U.S. Department of Transportation’s National Highway Traffic Safety Administration (“NHTSA”) has issued Coordinated Remedy Orders directing affected vehicle manufacturers to replace all defective Takata airbag inflators in U.S. vehicles. Most vehicle manufacturers have publicly pledged their commitment to maximizing the completion of recall repairs to the fullest extent possible.

This report assesses the present state of the Takata recalls. Repair completion rates vary widely by vehicle manufacturer, reflecting uneven historical efforts to tackle the complex task at hand. While some vehicle manufacturers have, for some time, dedicated significant resources and multi-pronged strategies to complete repairs with successful results, many manufacturers have only recently begun to pursue such efforts and some others continue to trail behind.

This report further details the research, innovative approaches and coordination efforts across the vehicle manufacturing industry that the Monitor, working closely with NHTSA, has provided pursuant to the authorities set out in the Coordinated Remedy Orders. NHTSA and the Monitor have engaged with the Takata recalls’ numerous stakeholders to develop and test strategies now demonstrated by pertinent data to increase significantly recall completion rates. As affected vehicle manufacturers have embraced these strategies and enhanced their own independent efforts, their completion rates have substantially improved. Repair rates have doubled or even tripled. Several affected vehicle manufacturers are also more quickly meeting or even exceeding completion milestones set by NHTSA.

¹ “Takata airbags”, “Takata inflators” and “Takata airbag inflators” all refer to airbag inflators manufactured and produced by Takata.

Finally, this report looks forward, describing recent initiatives the vehicle manufacturing industry itself has started to apply to the monumental task of removing these dangerous, defective items from all affected U.S. vehicles. From canvassing door-to-door to find vehicle owners, to conducting mobile repairs at homes and places of business, to increasing engagement with local automotive dealers and independent repair facilities, to improving vehicle owner data, many vehicle manufacturers have begun to recognize significant opportunities for improvement and are confronting the challenges head on, working together to develop industry-wide solutions.

II. THE DEFECT

An airbag inflator is a metal canister, often made of steel, which holds inside an explosive chemical propellant. As shown in Figure 1 below, inflators are commonly housed in the steering wheel on the driver's side of a vehicle and, depending on the vehicle type, in various other locations in both the driver's and passenger's area, including the passenger dashboard. In an airbag inflator that functions normally, the chemical propellant begins to burn upon activation by an electrical spark initiated as vehicle sensors detect a collision. When functioning properly, the chemical propellant burns in a fast and controlled manner, quickly emitting a gas through vents in the canister out into the airbag, which inflates to cushion the vehicle occupant.

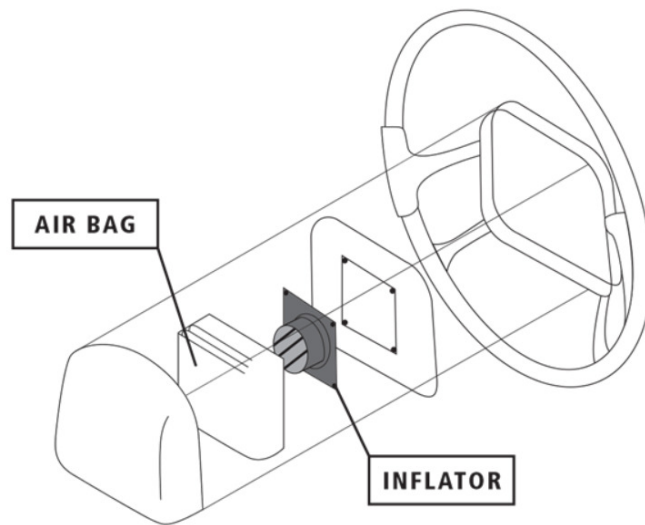


Figure 1: Diagram Showing Placement of Airbag and Inflator in a Steering Column

The danger posed by defective Takata airbag inflators stems from the tendency of the chemical propellant used in those defective inflators to burn in an uncontrolled manner—too fast and with too much explosive force. The metal canister cannot contain the explosion and breaks apart into sharp metal shrapnel that sprays out through the airbag and toward occupants of the vehicle. To many occupants who have experienced the explosion of a defective Takata airbag inflator, it is as if a bomb detonated in their vehicle. Figure 2 contains photographs of various vehicles in the aftermath of such an explosion. Figure 3 contains photographs of the metal shrapnel that shoots out of the disintegrating defective airbag inflators.

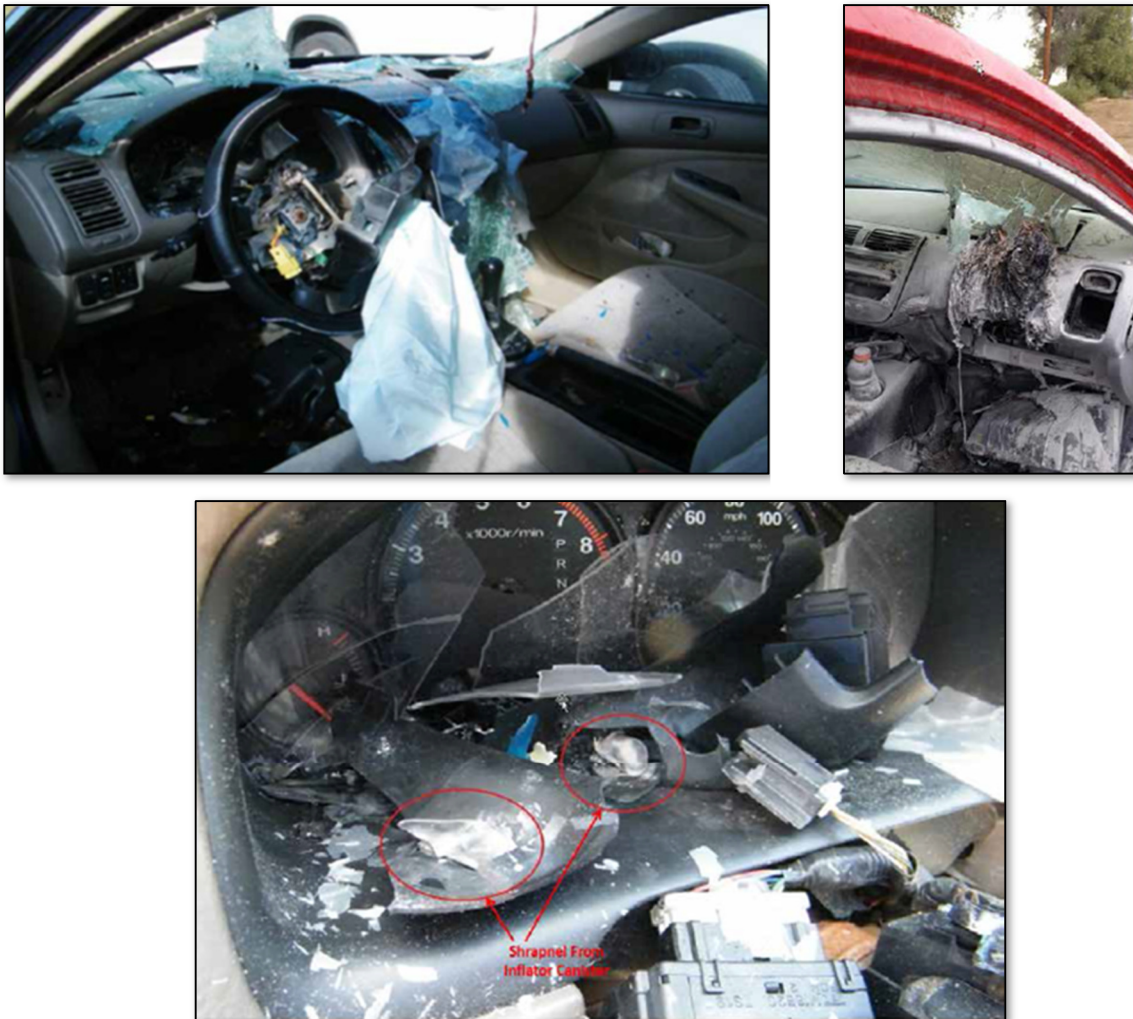


Figure 2: Photographs of Vehicles with an Exploded Driver-Side or Passenger-Side Defective Takata Airbag Inflator



Figure 3: Photographs of Disintegrated Defective Takata Airbag Inflator Shrapnel Following Explosion

The precise cause of the chemical propellant’s accelerated burn rate in defective Takata inflators is the tendency of the chemical—Phase Stabilized Ammonium Nitrate (“PSAN”)—to degrade over time when exposed to high absolute humidity² and high temperature thermal cycling.³ Takata is the only major airbag inflator manufacturer to have used PSAN as its chemical propellant. Defective Takata PSAN airbag inflators exposed to climates with high temperatures and high absolute humidity for long periods of time are more likely to explode, killing or injuring vehicle occupants. The Takata recalls encompass both driver-side and passenger-side airbag inflators that contain non-desiccated PSAN.⁴

While all defective Takata inflators are dangerous, there are certain subsets of inflators that are more likely to explode and kill or injure vehicle occupants. For example, testing of recalled inflators has indicated that inflators in a specific class of vehicles—referred to in the industry as “Alpha” vehicles—may have explosion rates of 50% or higher. In other words, there is at least a one-in-two chance that, if a vehicle of this type is in an accident in which the airbag deploys, then the airbag inflator will explode like a grenade. The inflators in these vehicles were exposed to high levels of humidity during Takata’s production process that accelerated the PSAN’s degradation.

² Absolute humidity is the amount of water vapor content in the air, calculated as grams of water vapor per cubic meter of air. Southern coastal regions of the United States typically experience the highest levels of absolute humidity. Testing suggests that regions with high absolute humidity pose the highest risk of a defective Takata inflator exploding during deployment. Using this testing, NHTSA has defined three zones that separate the United States and territories based on relative risk. Zone A, the highest risk zone, also known as the high absolute humidity or “HAH” zone, includes Alabama, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, Texas, Puerto Rico, American Samoa, Guam, the Northern Mariana Islands (Saipan) and the U.S. Virgin Islands.

³ Third Amendment to the Coordinated Remedy Order, dated December 9, 2016 (hereinafter “ACRO”) at ¶ 9, *In re: Coordinated Remedy Program Proceeding*, Dkt. No. NHTSA-2015-0055 (available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_public_-_third_amendment_to_the_coordinated_remedy_order_with_annex_a-corrected_12.16.16.pdf), attached as Appendix A. See also Expert Report of Harold R. Blomquist, Ph.D. (hereinafter “Blomquist Report”), *In re EA15-001, Air Bag Inflator Rupture* (available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/expert_report-hrblomquist.pdf). Thermal cycling is repeated exposure to temperature changes. In a testing environment, it can be simulated by exposing inflators to high and low temperatures at relatively high rates of change.

⁴ A desiccated PSAN inflator includes a desiccant compound that absorbs ambient moisture. The desiccant serves to slow or potentially eliminate the degradation of PSAN over time, possibly mitigating the risk of inflator explosion. A non-desiccated PSAN inflator does not include a desiccant to absorb moisture. While a limited subset of desiccated inflators are currently under recall, most desiccated inflators are not. Takata must continue testing these inflators in an effort to demonstrate their safety to NHTSA by December 31, 2019. If Takata is unable to demonstrate the safety of desiccated PSAN inflators by December 31, 2019, NHTSA may require additional desiccated inflators to be recalled.

III. REPORTED FATALITIES AND INJURIES

Thus far, defective Takata airbag inflators have caused 13 confirmed fatalities in the United States, involving people from all walks of life.

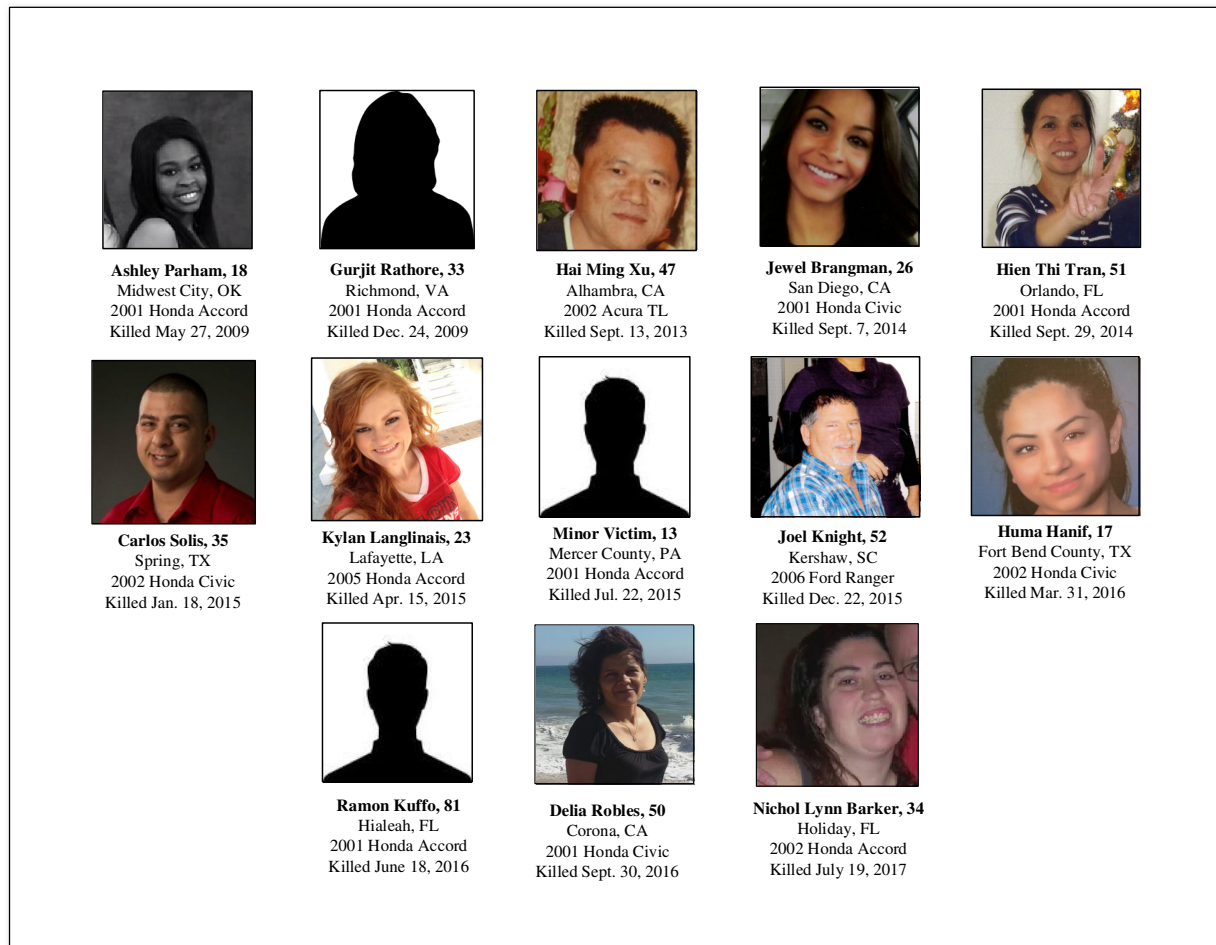


Figure 4: Confirmed Takata Airbag Inflator Fatalities

The 13 confirmed fatalities occurred in California (3), Florida (3), Texas (2), Louisiana (1), Oklahoma (1), Pennsylvania (1), South Carolina (1) and Virginia (1).

- Ashley Parham, an 18 year-old woman, died on May 27, 2009, in Oklahoma after her 2001 Honda Accord bumped into another vehicle in a parking lot, causing her Takata airbag inflator to explode. Ms. Parham died at the scene of the accident as a result of metal shrapnel puncturing an artery in her neck.
- Gurjit Rathore, a 33 year-old woman, died on December 24, 2009, in Virginia after a mail truck struck her 2001 Honda Accord, causing her Takata airbag inflator to explode. Ms. Rathore died after metal shrapnel pierced her neck and chest.
- Hai Ming Xu, a 47 year-old man, died on September 13, 2013, in California after his 2002 Acura TL struck a wall, causing his Takata airbag inflator to explode. The injuries caused by the shrapnel were so extensive that police responding to the scene initially thought Mr. Xu had been shot in the face.
- Jewel Brangman, a 26 year-old woman, died on September 7, 2014, in California after the 2001 Honda Civic she was driving struck another vehicle, causing her Takata airbag inflator to explode. Metal shrapnel pierced Ms. Brangman's neck, fatally severing her spinal cord.
- Hien Thi Tran, a 51 year-old woman, died on September 29, 2014, in Florida after her 2001 Honda Accord was involved in a minor collision, causing her Takata airbag inflator to explode. Ms. Tran sustained injuries from metal shrapnel striking her face, neck and chest, ultimately leading to her death.
- Carlos Solis, a 35 year-old man, died on January 18, 2015, in Texas after his 2002 Honda Civic collided with an oncoming vehicle while turning into an apartment complex, causing his Takata airbag inflator to explode. Metal shrapnel severed Mr. Solis's neck, killing him at the scene of the accident.
- Kylan Langlinais, a 22 year-old woman, died on April 15, 2015, in Louisiana after her 2005 Honda Civic crashed into a utility pole, causing her Takata airbag inflator to explode. Ms. Langlinais died four days after the accident as a result of metal shrapnel piercing her right carotid artery.
- A 13 year-old child died on July 22, 2015, in Pennsylvania after the 2001 Honda Accord the child was driving struck a tree, causing the Takata airbag inflator to explode. Despite this crash being relatively minor, the child died as a result of injuries sustained from metal shrapnel.
- Joel Knight, a 52 year-old man, died on December 22, 2015, in South Carolina after his 2006 Ford Ranger struck a cow on the road, causing his Takata airbag inflator to explode. Metal shrapnel struck Mr. Knight's neck and spine, killing him.
- Huma Hanif, a 17 year-old girl, died on March 31, 2016, in Texas after her 2002 Honda Civic was involved in a low-speed collision, causing her Takata airbag

inflator to explode. Ms. Hanif was killed by a metal fragment that punctured an artery in her neck.

- Ramon Kuffo, an 81 year-old man, died on June 18, 2016, in Florida after a strike from his hammer caused the Takata airbag inflator to explode in the 2001 Honda Accord he was attempting to repair. Mr. Kuffo died of blunt head trauma.
- Delia Robles, a 50 year-old woman, died on September 30, 2016, in California after her 2001 Honda Civic was involved in a low speed collision, causing her Takata airbag inflator to explode. Ms. Robles was killed by shrapnel that penetrated her chest.
- Nichol Lynn Barker, a 34 year-old woman, died on July 19, 2017, in Florida after her 2002 Honda Accord was struck by another vehicle, causing her Takata airbag inflator to explode. Ms. Barker died of blunt head trauma.

Short of death, there have been hundreds of confirmed injuries from defective Takata inflators across 27 U.S. states and territories. In addition, laboratory testing of Takata airbag inflators retrieved from recalled vehicles has identified inflators from 33 U.S. states and territories which, when tested, exploded. Figure 5 below shows the broad geographic reach of explosions of defective Takata inflators—illustrating the locations of inflators that have exploded both in vehicles (“field incidents”) and when retrieved and tested in a laboratory (“lab incidents”). As the map indicates, while incidents have been concentrated in higher risk HAH areas, many have also occurred in other regions.

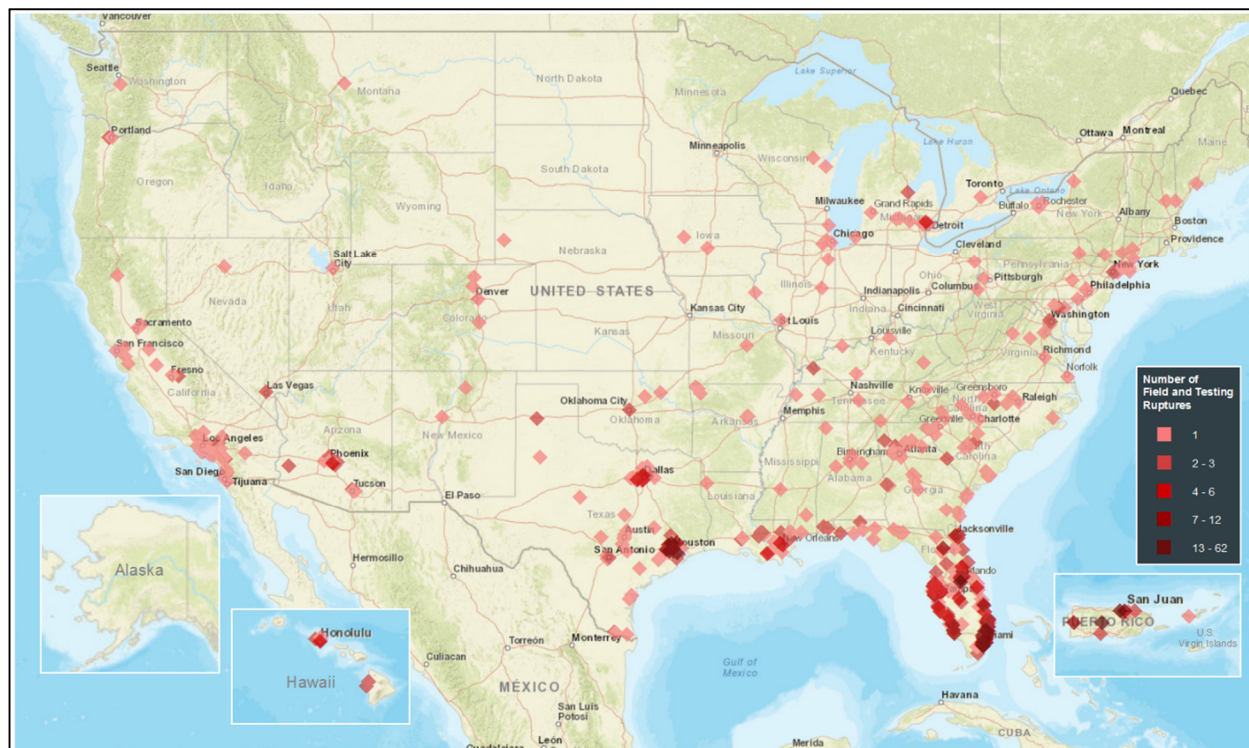


Figure 5: Map of U.S. Field and Lab Incidents Involving Defective Takata Airbag Inflators as of October 9, 2017

In many cases, surviving victims of Takata inflator explosions have become permanently disabled or disfigured. Stephanie Erdman, an Air Force Lieutenant from Florida, was driving her 2002 Honda Accord when the Takata airbag inflator in her vehicle exploded following a collision. Though Ms. Erdman's passenger suffered only minor scrapes and bruises, Ms. Erdman was permanently blinded when metal shrapnel flew out of the driver-side airbag inflator and pierced her right eye and cheek. Ms. Erdman has undergone multiple surgeries and therapies. On November 20, 2014, Ms. Erdman testified about the incident before the United States Senate Committee on Commerce, Science and Transportation. This is just one of many examples of victims who have suffered serious injuries as a result of defective Takata inflator explosions.



**Figure 6: Injuries Inflicted on Stephanie Erdman
by Defective Takata Airbag Inflator**

IV. THE RECALLED VEHICLE POPULATION

The Takata recalls present an unusual combination of challenges, including the recalls' vast scale—by far the largest in U.S. automotive history—the age of many of the vehicles under recall, the diversity of the recalled vehicle population and issues in securing a sufficient supply of replacement parts.

Currently, there are approximately 46 million Takata airbag inflators under recall, with scheduled expansion to about 65 million inflators by the end of 2018. These vehicles have been, and continue to be, fixed with either an interim or final repair. In an interim repair, the defective airbag inflator is replaced with a new airbag inflator containing PSAN. Interim repairs, which are used in instances where a final repair may not be immediately available, effectively mitigate the immediate risk posed to vehicle occupants because the PSAN propellant inside has not yet been exposed to prolonged humidity and/or thermal cycling.

A further expansion of the recalls is scheduled for the end of 2019, when all vehicles that received an interim remedy will need to be recalled again to receive a final remedy. Approximately 4.1 million additional vehicles will be recalled to replace interim repair inflators.⁵

⁵ While this number may increase as various affected vehicle manufacturers continue to use interim remedy inflators, some of the affected vehicle manufacturers are beginning to replace interim remedy inflators with final ones earlier than scheduled, which will serve to limit, to some extent, the number of repairs that will be part of the 2019 expansion.

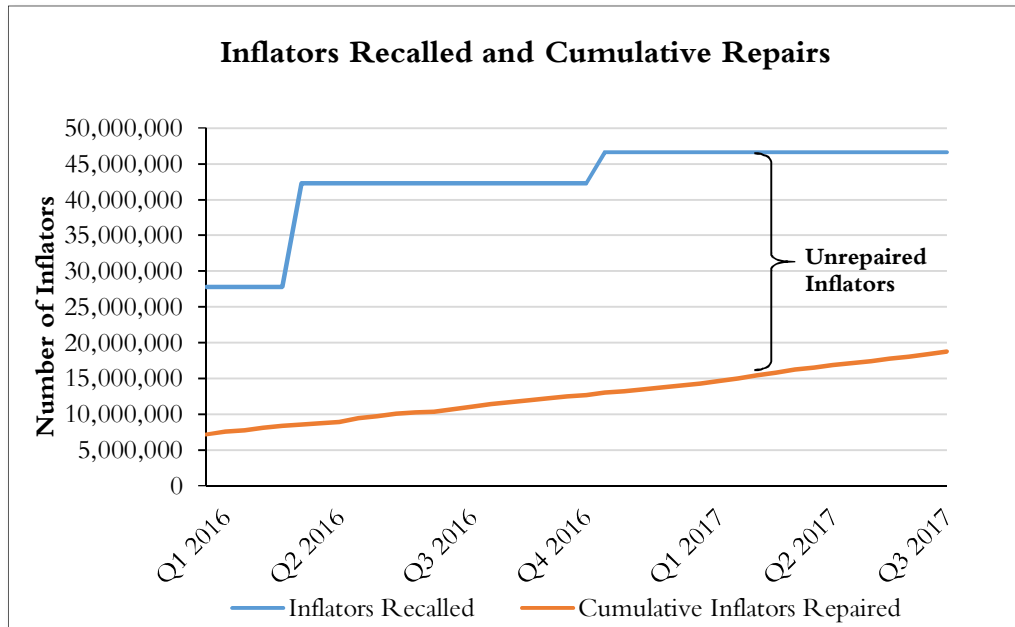


Figure 7: Inflators Recalled and Cumulative Repairs

Figure 7 above illustrates the number of inflators under recall over time and the number of cumulative repairs completed by the affected vehicle manufacturers. The number of affected inflators has changed as affected vehicle manufacturers have identified additional vehicles that must be reported as subject to the recalls, often in response to the filing of additional defect information reports (“DIRs”) by Takata. Increases in the number of affected inflators throughout 2016 are largely attributed to the expansion of the recall to include all non-desiccated PSAN inflators. Expansion of the affected vehicle population will occur again after Takata files DIRs at the end of 2017 and 2018 for all remaining non-desiccated PSAN inflators not currently under recall, other than interim remedy inflators, as to which Takata will file a DIR on December 31, 2019.

As the largest and most wide-reaching set of vehicle recalls in U.S. history, the Takata recalls require most affected vehicle manufacturers to implement nationwide recall initiatives on a significant scale. Figure 8, setting forth estimates of unrepaired vehicles and inflators by U.S. state and territory, illustrates that there are recalled inflators in all U.S. states and territories. Recalling these inflators requires a substantial dedication of resources and planning by vehicle manufacturers to ensure that recall efforts remain effective on a national scale. Various aspects of service offerings, outreach plans and other recall initiatives may function efficiently on a small scale but lose efficacy if simply replicated on a larger scale without restructuring human resources, data infrastructures and other logistics.

Estimates of Unrepaired Vehicles and Unrepaired Recalled Inflators as of September 15, 2017				
State / Territory	Inflators		Estimated Vehicles	
	Affected	Unrepaired	Affected	Unrepaired
1 Alabama	707,874	436,623	515,004	349,149
2 Alaska	77,994	47,108	56,064	37,998
3 Arizona	826,168	489,158	590,210	389,867
4 Arkansas	332,824	212,127	233,013	166,161
5 California	6,440,148	3,409,111	4,782,425	2,775,031
6 Colorado	772,029	413,356	554,514	340,831
7 Connecticut	564,088	292,833	417,190	246,959
8 Delaware	133,381	73,282	95,312	59,387
9 District of Columbia	63,195	31,069	47,999	28,500
10 Florida	3,015,908	1,759,011	2,262,173	1,438,885
11 Georgia	1,539,667	887,327	1,126,159	715,922
12 Guam	5,984	3,190	4,313	2,463
13 Hawaii	245,095	120,931	180,647	100,841
14 Idaho	211,801	113,644	147,757	90,841
15 Illinois	1,418,648	766,740	1,033,340	640,236
16 Indiana	694,568	393,357	488,588	314,765
17 Iowa	301,554	179,293	214,434	143,734
18 Kansas	346,727	195,031	244,818	155,225
19 Kentucky	481,354	296,888	345,631	239,783
20 Louisiana	597,539	382,621	436,194	303,228
21 Maine	174,149	99,441	131,799	83,198
22 Maryland	950,637	527,992	693,615	434,221
23 Massachusetts	949,363	510,269	711,346	433,199
24 Michigan	802,316	482,587	571,956	391,589
25 Minnesota	565,466	284,622	410,127	240,599
26 Mississippi	374,200	260,276	271,368	204,396
27 Missouri	677,655	398,004	484,634	321,706
28 Montana	138,034	77,500	97,228	61,758
29 Nebraska	223,729	124,665	155,979	99,199
30 Nevada	355,899	215,508	257,197	170,818
31 New Hampshire	207,427	114,611	156,035	95,972
32 New Jersey	1,274,938	697,135	937,998	570,921
33 New Mexico	270,605	167,965	190,508	129,909
34 New York	1,833,735	1,068,568	1,347,302	873,222
35 North Carolina	1,390,840	762,498	998,066	625,142
36 North Dakota	69,747	39,336	48,746	31,483
37 Ohio	1,492,187	835,817	1,064,981	670,692
38 Oklahoma	536,509	362,055	379,071	284,186
39 Oregon	543,679	260,330	384,538	215,810
40 Pennsylvania	1,658,508	918,429	1,216,770	751,014
41 Puerto Rico	341,100	218,843	295,149	193,857
42 Rhode Island	144,407	76,675	106,364	63,774
43 South Carolina	734,639	426,790	530,940	340,078
44 South Dakota	92,246	49,987	64,207	40,712
45 Tennessee	894,180	542,768	634,667	435,162
46 Texas	4,108,731	2,764,502	2,994,415	2,161,428
47 U.S. Virgin Islands	5,814	4,214	4,068	3,232
48 Utah	402,427	219,041	290,061	180,305
49 Vermont	103,998	53,810	79,770	45,815
50 Virginia	1,217,891	626,444	885,577	526,796
51 Washington	969,723	471,522	692,425	393,623
52 West Virginia	172,755	106,063	125,974	84,961
53 Wisconsin	578,919	293,987	418,006	245,803
54 Wyoming	80,792	48,870	55,108	37,911
55 Total	43,113,791	24,613,824	31,461,780	19,982,297

Figure 8: Takata Recalls by U.S. State and Territory⁶

Due to the vast scope of the Takata recalls, the geographic distribution of unrepaired inflators largely mirrors the general population distribution of the United States. As

⁶ Based on defective inflators by zip code as reported by affected vehicle manufacturers.

illustrated in Figure 9 below, of the unrepaired inflators for which the Monitor has zip code information, 43% are concentrated in the top 25 most populated metropolitan areas in the U.S., while 57% are concentrated in the top 50 most populated metropolitan areas. About 31% of unrepaired inflators are found in less populated areas.

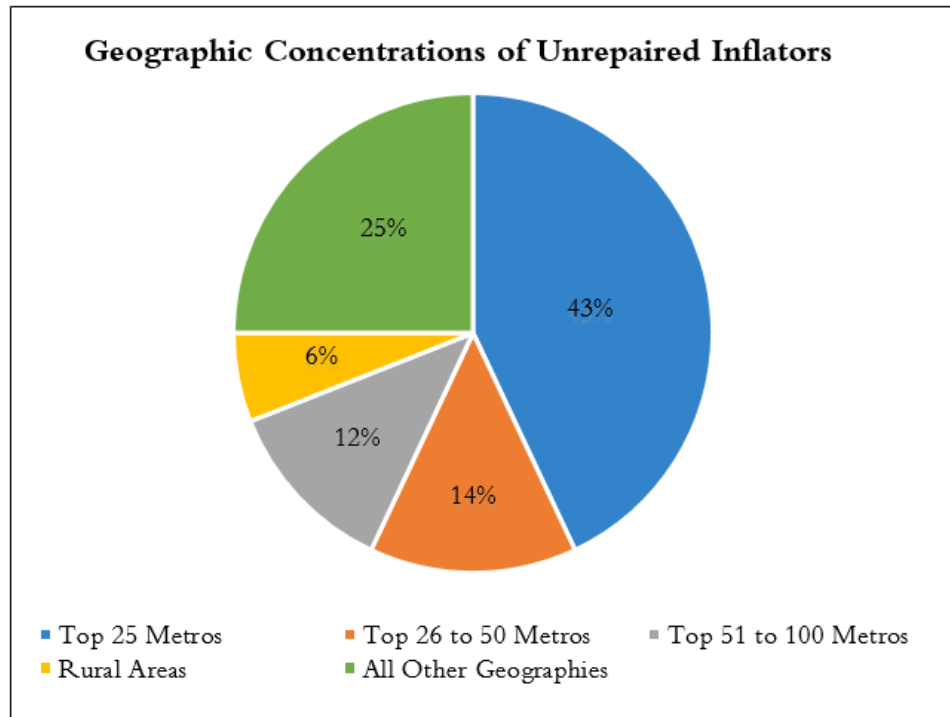


Figure 9: Geographic Concentration of Unrepaired Takata Inflators⁷

⁷ This Figure does not include zip codes reported as 99999, which is used as a default code in circumstances where vehicles lack recent registrations and are likely out of transit.

The map in Figure 10 highlights the particularly high concentration of unrepaired inflators in metropolitan areas such as Miami, Houston, Dallas and Los Angeles. Each of these cities is located in the higher-risk HAH zone.

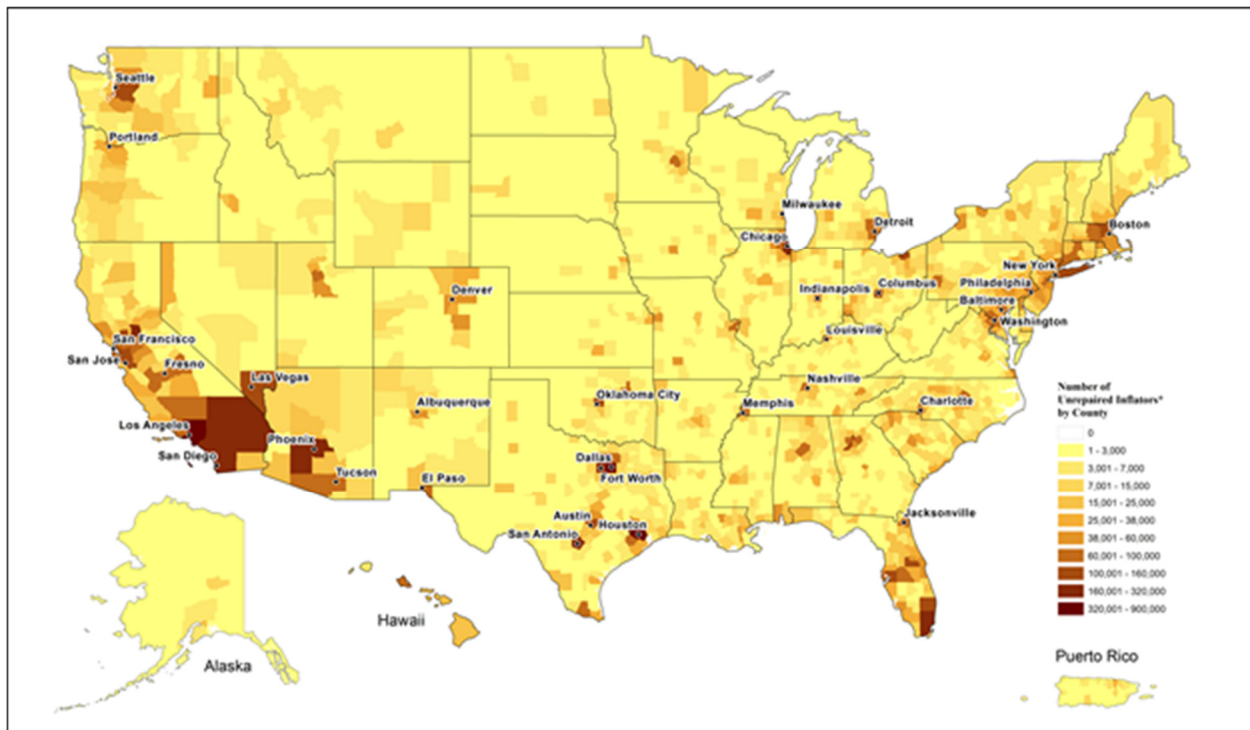


Figure 10: Map of Unrepaired Recalled Takata Inflators in Priority Groups⁸ 1-8

While the Takata recalls include a wide array of vehicle makes and model years, they currently primarily affect older vehicles. Over 97% of the vehicles presently under recall are over five years old and more than 75% of the vehicles currently under recall are more than ten years old. Figure 11 below shows all vehicles by model year currently under a recall as of September 15, 2017.

⁸ As discussed in further detail in Section VII, NHTSA categorizes the vehicles under recall into “Priority Groups” corresponding to the risk to vehicle occupants based on a vehicle’s age, exposure to heat and humidity, whether the inflator is in a driver- or passenger-side airbag and other factors.

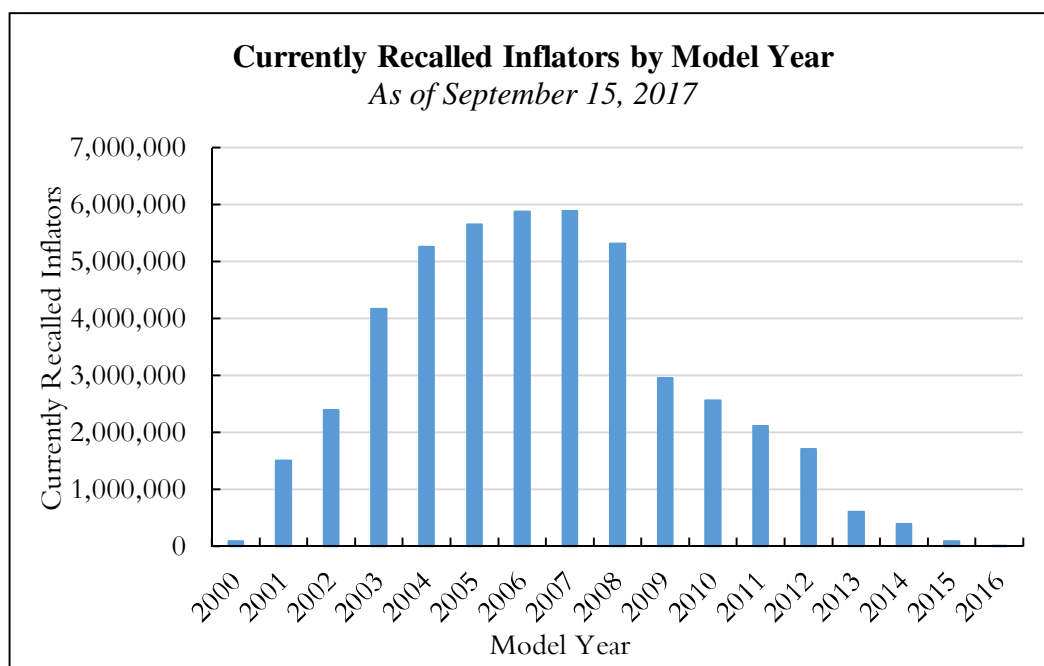


Figure 11: Currently Recalled Inflators by Model Year

Historically, recalls of older vehicles have had lower completion percentages than recalls of newer vehicles. Owners of older vehicles are less likely to have a relationship with a dealer and may be skeptical of dealerships. Owners of older vehicles are also less likely to be the original owners of the vehicles, meaning that dealers and manufacturers may not have the current owner's contact information from the sale of the vehicle. Some owners of older vehicles may not register their vehicles or update their address information at their DMV—the main source of contact information used by vehicle manufacturers to notify owners of open recalls. Owners of older vehicles also often have fewer resources and less flexibility to take their vehicles for repairs.

Another point of complexity in the Takata recalls is that they encompass over 200 different vehicle models, including economy light vehicles, luxury sports cars and heavy duty trucks manufactured by 19 different vehicle manufacturers. These vehicles vary widely in age, having been manufactured between 2000 and 2017. The diversity in vehicle type, age and model heightens the importance of understanding the population of affected vehicle owners in order to develop effective recall outreach. There is no one-size-fits-all solution for the broad array of vehicles and vehicle owners impacted by the Takata recalls.

Finally, a number of issues have in the past constrained the availability of replacement inflators needed to make repairs. The difficulty in securing a sufficient supply of replacement parts stems not only from the sheer quantity of replacement inflators required by the Takata recalls but also from various complications in the manufacturing and validation processes required to produce replacement inflators.

The defective Takata inflators now under recall were initially manufactured in one of two shapes: driver-side inflators had a toroidal shape (often described as looking like a hockey puck), while passenger-side inflators had a cylindrical shape. Within these two categories, there was significant variation and customization among inflators to match different vehicle makes and models. Thus, inflators made for one type of vehicle generally could not readily be used in another vehicle type. Additional manufacturing lines had to be created and validated before they could begin producing replacements for these older vehicle models. This delayed some affected vehicle manufacturers' ability to secure sufficient supplies of replacement parts for these older vehicle models. When the Takata recalls later expanded to include additional non-desiccated PSAN inflators, more manufacturing lines to create replacement parts for these inflators had to be created and validated, causing some additional delays in supply of some of these replacement parts.

Part supply constraints stymied the pace at which some affected vehicle manufacturers could make repairs and further complicated the recall notification process. For example, some vehicle manufacturers, in notifying consumers about the Takata recalls, indicated that parts were not available to complete the repair at the time, which created confusion and frustration for certain customers.

Supply constraints have now largely dissipated. Many manufacturing lines have been validated to produce the required replacement parts and production is occurring at a steady pace.

V. NHTSA'S COORDINATED REMEDY PROGRAM AND THE THIRD AMENDED COORDINATED REMEDY ORDER

On November 3, 2015, NHTSA issued a Coordinated Remedy Order ("CRO") to address the increasing scope, scale and complexity of the Takata recalls, the challenges associated with securing a sufficient supply of repair parts and the need for industry-wide efforts to accelerate recalls. The CRO was a comprehensive program that required the twelve vehicle manufacturers affected by the Takata recalls as of the date of the CRO to implement recall plans designed to repair all of their defective vehicles by December 31, 2017.⁹ The CRO categorizes the vehicles under recall into "Priority Groups" corresponding to the risk of airbag explosion based on a vehicle's age, exposure to heat and humidity, whether the inflator is in a driver- or passenger-side airbag and other factors, and requires the affected vehicle manufacturers to acquire a sufficient supply of remedy parts within specified time frames and to submit a plan for maximizing repairs of recalled vehicles.¹⁰

⁹ CRO ¶ 40, attached as Appendix B.

¹⁰ The CRO was amended on March 15, 2016, to modify the remedy schedule for BMW vehicles that used PSDI-4 airbag inflators. This extension was related to testing failures experienced by BMW in the development of final remedy parts that prevented BMW from meeting the timing requirements set forth in the CRO. The CRO was amended a second time on September 29, 2016, to modify the remedy schedule for certain GM, Daimler Vans and Ford vehicles. These extensions were related to challenges these three vehicle manufacturers experienced in developing final remedy parts that prevented them from meeting the timing requirements set forth in the CRO. Most recently, the CRO was amended on November 9, 2017 to modify the remedy schedule for certain Ford, MBUSA, BMW and Mazda vehicles. These extensions were related to challenges in acquiring a sufficient supply of interim replacement parts.

Also on November 3, 2015, NHTSA and Takata entered into a Consent Order based on Takata's violations of the National Traffic and Motor Vehicle Safety Act,¹¹ including failure to provide notice to NHTSA of safety-related defects and failure to comply with orders issued by NHTSA. This Consent Order required Takata to, among other things, pay a civil penalty, phase out the manufacturing and sale of PSAN inflators and retain an independent monitor to "review and assess Takata's compliance with [the] Consent Order" and "oversee, monitor, and assess compliance with the Coordinated Remedy Program".¹²

Based on additional testing and analysis, including a report by NHTSA's independent expert,¹³ NHTSA and Takata determined in May 2016 that all Takata non-desiccated PSAN airbag inflators would need to be recalled. This determination resulted in a significant expansion of the recalls to include additional passenger side airbags, adding seven new affected vehicle manufacturers and increasing the number of recalled inflators from approximately 23 million to approximately 70 million after all of the scheduled recall expansions are phased in over several years.

The recall expansion was addressed through the issuance of a Third Amended Coordinated Remedy Order (the "ACRO")¹⁴ to govern the recalls and incorporate the additional affected vehicle manufacturers and airbag inflators.¹⁵ The ACRO added new Priority Groups setting timeframes, prioritized by risk, for the 19 affected vehicle manufacturers to acquire a sufficient supply of replacement parts and launch particular recall campaigns.¹⁶ The dates by which affected vehicle manufacturers should acquire a sufficient supply of replacement parts and launch these campaigns are set forth in Figure 12 below.

¹¹ Consent Order, dated November 3, 2015 (hereinafter "Consent Order"), *In re: EA15-001 Air Bag Inflator Rupture* (available at <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/nhtsa-consentorder-takata.pdf>), attached as Appendix C.

¹² Consent Order ¶ 35, attached as Appendix C.

¹³ See, e.g., Blomquist Report.

¹⁴ ACRO, attached as Appendix A.

¹⁵ The CRO was amended a fourth time on December 27, 2016, to provide Nissan an extension to meet its completion milestone for certain vehicle models in Priority Group 3.

¹⁶ NHTSA and other organizations have found that time, temperature and humidity cause the PSAN degradation that leads to the risk of inflator explosion. Recognizing that the risk of explosion was not uniform across affected vehicles, NHTSA established priority groups based on vehicle age and geographic location in order to prioritize parts supply and repair activity for the highest risk vehicles.

Figure 12: Sufficient Supply & Remedy Launch Dates by Priority Group

Priority Group	Sufficient Supply & Remedy Launch Deadlines
Priority Group 1	March 31, 2016
Priority Group 2	September 30, 2016
Priority Group 3	December 31, 2016
Priority Group 4	March 31, 2017
Priority Group 5	June 30, 2017
Priority Group 6	September 30, 2017
Priority Group 7	December 31, 2017
Priority Group 8	March 31, 2018
Priority Group 9	June 30, 2018
Priority Group 10	March 31, 2019
Priority Group 11	March 31, 2020
Priority Group 12	September 30, 2020

The ACRO also sets forth a stepped series of deadlines for repairing a specified percentage of vehicles in each Priority Group. These completion percentage milestones assist the affected vehicle manufacturers by requiring that they regularly check in on their progress ahead of the ultimate deadline by which they are to repair all defective Takata airbag inflators and adjust their recall completion strategy where needed. These completion percentage milestones¹⁷ are set forth in Figure 13.

Figure 13: Quarterly Completion Milestones for Priority Groups 4-12

End of Quarter (After Remedy Launches)	Percentage of Campaign Vehicles Remedied
1st	15%
2nd	40%
3rd	50%
4th	60%
5th	70%
6th	80%
7th	85%
8th	90%
9th	95%
10th	100%

¹⁷ The ACRO quarterly completion milestones only apply to Priority Groups 4 through 12, as there are no quarterly completion milestones for Priority Groups 1 through 3 under the original CRO.

In addition, the ACRO requires all affected vehicle manufacturers to submit plans and certifications that track their progress and detail their intended next steps. These submissions are set forth in Figure 14.

For example, affected vehicle manufacturers are to submit recall engagement plans summarizing their strategy for maximizing recall repairs and reaching the completion milestones set forth in the ACRO. The plan must describe intended outreach activities and efforts to secure the replacement parts necessary for completing repairs. Manufacturers are also to submit quarterly supplements to the recall engagement plan discussing specific steps taken to achieve the completion milestones, the efficacy of their efforts to date and any additional efforts being considered.

Affected vehicle manufacturers are also required to certify that they have a sufficient supply of remedy parts in advance of each of the remedy launch deadlines set forth in the ACRO. These certifications incentivize affected vehicle manufacturers to order, secure and distribute remedy parts to dealer networks in a timely manner, ensuring that dealers are well equipped to make scheduled repairs. If a manufacturer is unable to secure a sufficient supply of remedy parts in advance of an ACRO launch deadline, it can file an extension request in advance detailing the reasons for the delay and the steps it is taking to meet the supply goals as soon as possible.

Finally, affected vehicle manufacturers are to submit proposed communications with vehicle owners to the Monitor for advance review and approval. Affected vehicle manufacturers are required to conduct supplemental outreach to vehicle owners, sending additional mailers, texts, emails and other communications each month beyond initial letter notifications about the need for repair. All of these proposed supplemental communications are to be submitted to the Monitor five days prior to the proposed publication date and adhere to the Coordinated Communications Recommendations issued by the Monitor on December 23, 2016 (described further in Section VIII).

Figure 14: Submissions Under the ACRO

ACRO Provision	Submission	Description
Paragraph 36	Recall Engagement Plan	Affected vehicle manufacturers are to submit plans at the outset of their recall efforts summarizing their intended strategy and course of action to maximize recall repairs, and articulate how these plans will permit them to reach the completion milestones set forth in the ACRO. The summary must include a narrative description of each affected vehicle manufacturer's outreach activities and efforts to secure replacement parts that will help maximize repairs.

Figure 14: Submissions Under the ACRO

ACRO Provision	Submission	Description
Paragraph 37	Quarterly Supplements to Recall Engagement Plan	<p>Affected vehicle manufacturers are to provide a narrative update on their Recall Engagement Plans. This summary must discuss what specific efforts the affected vehicle manufacturer has made with regard to each outreach activity described in the Recall Engagement Plan, the effectiveness of these efforts and activities and what metrics have been tracked to determine such effectiveness. Affected vehicle manufacturers must also describe any additional efforts they are considering, their efforts to implement the Monitor's recommendations and, if applicable, their reasons for not implementing the Monitor's recommendations.</p> <p>These submissions generally allow affected vehicle manufacturers to demonstrate their completion percentage strategies, the effectiveness of past efforts, planned activities for the future and the framework within which they are achieving success in the Takata recalls overall.</p>
Paragraph 38	Supply Certification	<p>Affected vehicle manufacturers must certify that they have a sufficient supply of remedy parts in advance of each of the remedy launch deadlines set forth in the ACRO. The certifications incentivize affected vehicle manufacturers to order, secure and distribute remedy parts to dealer networks in a timely manner, ensuring that dealers are able to repair vehicles without interruption.</p>
Paragraph 39	Supply Certification Extension Request	<p>Where an affected vehicle manufacturer is unable to secure a sufficient supply of remedy parts in advance of an ACRO launch deadline, they may seek an extension, permitting them to certify sufficient supply at a later time. These extension requests must be filed 45 days prior to the Supply Certification deadline, and explain (A) why the affected vehicle manufacturer is unable to meet the sufficient supply deadline, (B) the remedy part selection, validation and development process it is using, (C) the steps it is taking to obtain sufficient supply, (D) the number of replacement parts it reasonably believes will be available by the launch deadline and (E) the specific time period for which it requests the extension.</p>

Figure 14: Submissions Under the ACRO

ACRO Provision	Submission	Description
Paragraph 42	Supplemental Communications	<p>Affected vehicle manufacturers are to conduct supplemental outreach to vehicle owners, sending additional mailers, texts, emails and other communications each month beyond initial letter notifications required under 49 CFR §§ 573.6 & 573.14. All proposed supplemental communications must be submitted to the Monitor five days prior to their proposed publication date.</p> <p>These supplemental communications must also adhere to the Coordinated Communications Recommendations, issued by the Monitor on December 23, 2016 (described further in Section VIII), or propose alternative messaging with supporting data, analysis or rationales that the affected vehicle manufacturer believes justify deviation from the Coordinated Communications Recommendations.</p>
Paragraphs 45-48	Out-of-Transit Vehicles	<p>Affected vehicle manufacturers may account for certain vehicles as not requiring repair when they are likely out-of-transit, and thus no longer pose a safety risk to the U.S. public. Affected vehicle manufacturers may only classify vehicles as out-of-transit if they are at least five years old, have not been registered for at least three consecutive years and a nationally recognized data source corroborates that the vehicle is no longer in service. These provisions permit affected vehicle manufacturers to suspend their outreach efforts to vehicles classified as likely out-of-transit and reallocate these resources to vehicles that likely are in transit.</p>

The CRO and each amendment thereto together comprise the Coordinated Remedy Program and govern the obligations of the 19 affected vehicle manufacturers.

VI. THE MONITOR'S ACTIVITIES

The Monitor was selected by NHTSA and retained by Takata in December 2015. Pursuant to the Monitor's mandate to "oversee, monitor, and assess compliance with the Coordinated Remedy Program" (Consent Order ¶ 35), the "expect[ation] that the Monitor will develop and implement written procedures and may make additional recommendations aimed at enhancing the Coordinated Remedy Program and ensuring that all Coordinated Remedy Program deadlines . . . are met" (CRO ¶ 44) and the Monitor's authority to "take any other actions in the United States that are reasonably necessary to effectuate the Monitor's oversight and monitoring responsibilities" (Consent Order ¶ 39), the Monitor, in close coordination with NHTSA, engaged in a number of activities to properly oversee the Coordinated Remedy Program. The Monitor has conducted quantitative and qualitative research regarding the Takata recalls, identified and engaged the various stakeholders in the Takata recalls and piloted initiatives to equip vehicle manufactures with more tools to execute the recalls with greater success. These activities are described in greater detail below.

A. Qualitative and Quantitative Research

The Monitor has conducted research initiatives to better understand awareness of the Takata recalls and to test creative concepts and messages that would be more compelling to affected vehicle owners. These initiatives involved a Texas-based research program in the summer and fall of 2016 and a nationwide research program in the fall of 2017 to measure baseline metrics, gauge awareness and perception of the Takata recalls and test creative concepts and messages.

1. 2016 Research

The research conducted during the summer and fall of 2016 consisted of focus groups, in-depth interviews, online surveys and a "mystery shopper" program carried out in Texas, a state in the HAH zone with a large number of unrepaired high-risk vehicles.

a. Focus Groups

The focus groups were conducted from June 13 to 16, 2016, among drivers of older vehicles, defined as vehicles of model year 2010 or older. These focus groups were comprised of eight sessions, six of which were conducted in English and two of which were conducted in Spanish.

During the focus groups, participants displayed varying levels of knowledge and awareness regarding the Takata recalls. Though some participants had heard of a recent death caused by a defective Takata airbag, most did not believe the recalls were serious and were under the impression that the recalls involved very few vehicle models. After receiving accurate information during the focus groups about the dangers of defective Takata airbags and the large number of vehicles affected, participants recognized the urgency of the recalls.

The focus groups also tested variations of iconography to gauge which would most effectively prompt vehicle owners to have their vehicles repaired. Among focus group participants, the most effective icons were those with aggressive explosions, showing shrapnel flying toward the figure's face and body. There were also positive reactions to the use of a triangular shape as the universal caution sign. Fewer participants expressed interest in arrow shapes or circular figures with exclamation marks, and most participants did not believe those shapes and figures conveyed a sufficient level of urgency or danger.

The focus groups also tested taglines and phrasing, including “Is your airbag defective?”, “Is your airbag expired?” and “Check before you wreck”. Most focus group participants felt that the word “recall” by itself was insufficient to convey the urgency of the Takata recalls, and that words such as “urgent”, “dangerous” and “defective” were needed to call vehicle owners to action. Focus group participants also responded positively to the inclusion of the URL “AirbagRecall.com” in messaging because it conveys an immediate action item to check one’s vehicle for open Takata recalls at a website. Figure 15 shows some of the images and taglines the Monitor tested.



Figure 15: Sample Creative Images Tested

Based on the focus group research, the Monitor developed the Airbag Recall logo shown in Figure 16 below, which incorporates the creative elements found to be most impactful during the focus groups.

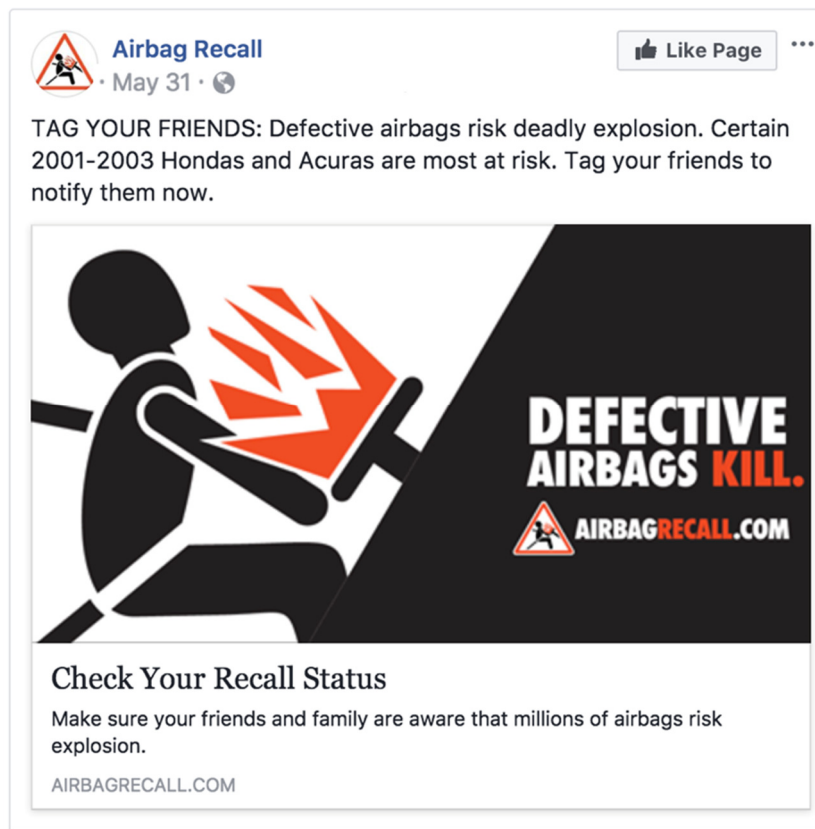


Figure 16: Airbag Recall Logo

The Monitor also used the research findings to develop creative assets such as the “Defective Airbags Kill” tagline, the AirbagRecall.com logo and pilot digital advertising shown in Figures 17 and 18.



Figure 17: Airbag Recall Poster



**Figure 18: Social Media Ad
Employing Optimal Creative Elements**

Finally, the focus groups explored the perceptions vehicle owners had with respect to having their vehicles repaired. Many focus group participants initially viewed the repair process as inconvenient and cumbersome, believing it would cost them a great deal of time and, to a lesser extent, resources. After learning that Takata recall repairs were free and could be completed in just a few hours, focus group participants expressed a greater willingness to have their vehicles repaired. The focus groups also probed how best to overcome the perceived inconvenience of having one's vehicle repaired. Participants indicated that services mitigating any interruption of daily activities, such as rental cars, mobile repair service and repairs being completed within an hour, were effective in motivating drivers in the event their vehicle was affected by the airbag recall.

b. In-depth Interviews

The Monitor also conducted 22 in-depth interviews between March 14 and 16, 2017, of vehicle owners who had their high-risk vehicles repaired after being canvassed by the

Monitor in Houston.¹⁸ Of those interviewed, three individuals were from Spanish-speaking households, two individuals were from Arabic-speaking households, one individual was from a Bengali-speaking household and one individual was from a Vietnamese-speaking household. Overall, the interviewees displayed a lack of awareness regarding the recalls and misunderstanding of the repair process.

Interviewees indicated that, prior to being canvassed, they either had not heard of the Takata recalls or were unaware of the dangers associated with the Takata defect. After being educated by a canvasser on the serious nature of the issue, they felt motivated to have their vehicles repaired.

Interviewees also expressed feelings of skepticism and distrust toward recall processes generally. Some interviewees had been taken advantage of in the past by misleading offers of other services (such as credit scams), and cited those experiences as the basis for their tendency to view recall-related outreach as inauthentic. These interviewees were also suspicious of notification letters that appeared to be mass mailings, believing that someone was trying to sell them something or solicit information to take advantage of them in some way.

Interviewees also believed that the repair process would be lengthy and inconvenient. Many did not own a second vehicle and often could not rely on other modes of transportation if their only vehicle was in a repair shop. Similarly, many interviewees indicated that others, such as their children, rely on their vehicles for transport and some indicated that they need their vehicles as part of their jobs. The prospect of being without a vehicle for an extended period of time posed a significant obstacle to completing the recall repair. Like the focus group participants, interviewees clearly indicated that being offered free rental vehicles and towing services would help overcome the inconvenience of getting their vehicles repaired. Many also stated that, if they had known that free rental and towing services were available, then they would have had their vehicles repaired sooner. Interviewees also expressed that extended and weekend service hours would make it easier for them to have their vehicles repaired.

Many interviewees had received a number of different forms of outreach from the Monitor's canvassing team prior to the canvassers arriving at their door, such as door hangers, phone calls and text messages. These interviewees indicated that the frequency of these communications underscored the importance of the Takata recalls for them and motivated them to complete the repair.

c. Online Surveys

The Monitor conducted two online surveys among Texans of age 16 and older. The first survey was conducted from July 19 to 27, 2016, among 802 Texas residents. The second survey was conducted from September 23 to October 3, 2016, among 800 Texas residents. Each survey had a portion that was conducted in Spanish.

¹⁸ Canvassing efforts are discussed in detail in Section VI.C.1.

These surveys tested the effectiveness of different kinds of language and phrasing in motivating vehicle owners to have their vehicles repaired. Participants in these surveys found that attention-grabbing language—such as “death” and “injury”—was more compelling and effective in conveying a sense of urgency. Conversely, these participants found that terms such as “important” and “risk” did not elicit as strong a sense of danger and thus were less effective in conveying the importance of the Takata recalls.

The surveys also tested participants’ reactions to different forms of messaging. Participants exhibited more emotional responses to materials telling the personal stories of victims of defective Takata airbag inflators and heightened the participants’ perception of the seriousness of the issue.

Participants also expressed the expectation that, in the case of an automotive recall, they would expect their vehicle manufacturer or local dealer to inform them of the issue and expressed interest in receiving recall notifications from these entities. Furthermore, participants indicated that rental cars provided by dealers and dealer assurances of short repair times were the most compelling incentives to motivate them to bring their vehicle in for repair.

d. Mystery Shopper Program

The Monitor conducted a “mystery shopper” program that followed affected vehicle owners through the repair process and interviewed them before, during and after the repair process, to determine which issues vehicle owners faced during this process and at which points. The program was conducted from August 18 to November 15, 2016 and followed 15 affected vehicle owners in the Houston and Dallas metropolitan areas.

The program found that the repair process was far less of an inconvenience than vehicle owners initially perceived, with many mystery shoppers describing it as easier than they had expected. Mystery shoppers were particularly surprised by how quickly the repair took place and for some the scheduling experience felt seamless, creating only a small inconvenience in their daily lives. However, in those situations where replacement parts were not available at the time the mystery shopper sought a repair, the experience was far more negative, particularly where the shopper found the dealership inattentive, uninformed, dismissive or out of step with information provided by the manufacturers.

2. 2017 Research

The research conducted during the fall of 2017 consisted of focus groups in two locations and a national quantitative survey, with an emphasis on individuals in the HAH zone. These activities aimed to further inform the Monitor’s understanding of vehicle owner perceptions and awareness of the Takata recalls.

a. Focus Groups

The Monitor conducted four focus groups—two in Atlanta on September 7, 2017, and two in Los Angeles on September 11, 2017. Three focus groups were conducted of English-speaking affected vehicle owners and of owners of older vehicles, while one focus group was

conducted among Spanish-speaking affected vehicle owners. Both Atlanta and Los Angeles were chosen as cities located in the HAH zone with large concentrations of affected vehicle owners.

Participants in the Los Angeles focus group were largely unaware of the Takata recalls and nearly all participants were unaware that their vehicles were affected. Some participants mentioned receiving a letter or postcard in the mail, and one Spanish-speaking participant noted that the postcard he received was entirely in English and was discarded because he could not understand its content. In Atlanta, most affected vehicle owners were aware of the Takata recalls but lacked an understanding of the scope and severity.

In both cities, participants found words like “defective” and “faulty” to be too general and vague and thus poor descriptors of the Takata inflators. Most focus group participants preferred urgent language that communicated that their airbags could kill or seriously injure them or their passengers. In addition, most participants had not been exposed to information regarding the previous deaths and serious injuries resulting from the Takata defect and found this information to be compelling. Several participants, after learning about the nature of the defect, described the issue as one of “killer airbags” or “deadly airbags.”

Participants across locations also indicated that they wanted to hear about the severity and danger of the issue from their affected vehicle manufacturer and their dealership, with an endorsement from the U.S. Department of Transportation to add credibility and underscore the severity of the problem.

The focus groups also re-tested the Airbag Recall logo, which depicted shrapnel exploding out of a steering wheel. Participants found the Airbag Recall logo clear, effective and logical, especially when paired with the URL AirbagRecall.com.

The focus groups also compared a postcard incorporating creative elements commonly used in the Airbag Recall campaign to a sample postcard modeled after existing mailers used by some affected vehicle manufacturers. Participants found that the Airbag Recall prototype, displayed in Figure 19, conveyed a clearer description of what happens when a defective airbag inflator deploys and a heightened sense of urgency than the affected vehicle manufacturer-inspired sample postcard, displayed as Figure 20.



Figure 19: Airbag Recall Prototype



Figure 20: Sample Postcard Modeled After Certain Affected Vehicle Manufacturer Mailings

b. Online Surveys

The Monitor also conducted a national online quantitative survey from September 19 to 25, 2017, among over 1,000 individuals of age 16 and older, with an oversampling of 419 individuals residing in the HAH zone. These surveys were conducted in both English and Spanish, based on the preference of the respondent.

The survey confirmed the Monitor's prior observations that affected vehicle manufacturers should engage in frequent, multi-touch outreach—that is, consistent, repeated messaging through multiple channels (described further in Section VIII). Nearly half of all survey respondents indicated that, until they took action to have their vehicles repaired, they would be open to being contacted once a week or even more frequently.

The survey also further confirmed the Monitor's earlier research findings regarding the need for clear, direct messages conveying the risk of injury or death. Survey results indicated that using descriptive and attention-grabbing words is most impactful in prompting vehicle owners to take remedial action. More than 85% of respondents felt that the word “recall” does not adequately convey the urgency of the Takata recalls, suggesting instead that the use of “emergency recall”, “mandatory recall” or “urgent recall” better describes the situation. In addition, respondents found the phrase that the defective Takata inflator “explodes, spraying sharp metal fragments” to be the most compelling way to describe the issue, and that “deadly airbags spray sharp metal fragments” is the best phrase to describe the reason for the Takata recalls.

Respondents also indicated that they consider the Takata recalls to be more serious after being exposed to the Monitor's sample messaging and creative materials. The survey also found that sharing real-life stories of victims' injuries from defective Takata inflators is successful in evoking concern on the part of vehicle owners, and that sharing real-life stories of deaths related to defective Takata inflators generates an emotional reaction from vehicle owners that prompts action.

Finally, the survey results reinforced the Monitor's earlier observation that affected vehicle manufacturers need to clearly communicate the services that reduce the inconvenience of getting a repair. The most popular accommodations respondents indicated that dealers could provide are loaner vehicles, completing repairs in less than one hour and convenient dealership hours, including at night and on weekends.

3. Overall Research Findings

The Monitor's research during 2016 and 2017 provides visibility into the challenges vehicle owners face in having their vehicles repaired, the communication barriers that impede affected vehicle manufacturers from prompting vehicle owners to have their vehicles repaired and solutions to overcome these issues. The key lessons from this research are described in detail below in Figure 21.

Figure 21: Key Research Lessons

Awareness and Understanding	
Awareness of seriousness of the recall still lacking	<p>Many are unaware of the dangers defective airbag inflators pose or the severity of the issue, regardless of whether their vehicle is affected.</p> <p>Vehicle owners in both the 2016 and 2017 focus groups did not initially display an appreciation for the breadth or gravity of the defect, or understand its potential impact on them or their loved ones.</p> <p>Both the qualitative focus groups and quantitative surveys indicated that many individuals who were aware of the Takata recalls did not associate the defect with death or serious injury.</p>
Statistics surrounding death and injury make an impact	<p>Sharing concrete facts such as the number of deaths and injuries from recalled inflators will help to educate drivers on the safety risks that defective airbags pose. Most participants in the 2016 and 2017 focus groups initially believed the Takata recalls were not an urgent matter, but, after learning that they affect as many as 70 million U.S. vehicles and have caused fatalities and hundreds of injuries, vehicle owners had a heightened and more accurate understanding of the dangers posed.</p>
Real-life examples help to create a sense of urgency	<p>Real-life stories about victims of defective Takata airbag inflators increase the perceived severity of the issue. Materials communicating stories and photographs of victims of the Takata defect elicited emotional responses from the 2017 focus group participants, who indicated that these materials helped them better understand the seriousness of the issue and more deeply appreciate the implications for them and their loved ones.</p>
Urgency	
Communicate urgency	<p>Outreach materials must unambiguously communicate the urgency of the situation and provide a clear and persuasive call to action. Focus group participants indicated they would want to be notified of such a serious recall with urgent, disruptive messages to ensure they were aware of the issue and understood its gravity. Messaging must capture the attention of vehicle owners so that the materials are not simply discarded and forgotten.</p>

Figure 21: Key Research Lessons

Communicate risk	Clear communication of risk made it more likely that recipients of recall outreach would take action to remedy the defect. Materials from the 2016 and 2017 focus groups and surveys that used bright, attention-grabbing colors, employed words like “kill” and “explode” and used provocative messaging were found to drive action most effectively. In contrast, words like “defective” and “faulty” are largely insufficient to motivate vehicle owners to act.
Send frequent and aggressive outreach	<p>Sending traditional mailers on one or two occasions will not adequately convey the urgency of the Takata recalls. Focus groups, in-depth interviewees and national survey respondents expressed that repeated reminders were crucial in the event of a serious, urgent safety risk.</p> <p>Most 2017 focus group participants indicated that such contact should occur at least weekly, while nearly two-thirds of survey respondents indicated that several notifications each month would be appropriate. Individuals who were canvassed and received multiple pre-canvass communications indicated that the frequency of communications underscored for them the importance of the Takata recalls and convinced them to act.</p>
Personalization	
Provide authenticity	The Monitor’s in-depth interviews demonstrate that many vehicle owners do not believe most recalls address serious issues and they are often skeptical of mass mailings from vehicle manufacturers. Participants in the focus groups often felt these types of outreach sought to “scam” them by making them pay for unnecessary services or provide private information that would be used in improper ways. Communications from vehicle manufacturers must clearly convey a message to owners that the repair is critical and available free of charge.
Personalize message content	Many focus group participants express a general disregard for items that appear to be generic mass mailings. They indicated that outreach should appear less like a mass solicitation and more like a legitimate communication made directly to them. Affected vehicle manufacturers should tailor notification letters, using personalized messages with the owner’s name and showing pictures of the make, model and model year of their vehicle, to convey that the outreach is meant specifically for them and for a particular reason.

Figure 21: Key Research Lessons

Owner Inconvenience	
Minimize inconvenience	<p>Participants perceived repairs to be time-consuming and expensive, while mystery shoppers reported that they initially perceived the inconvenience of the repair to be far greater than it turned out to be.</p> <p>Furthermore, the in-depth interviews demonstrated that many vehicle owners are unaware of specific services offered by affected vehicle manufacturers that would decrease the inconvenience. Interviewees were generally unaware of the availability of loaner vehicles and free towing to and from the repair shop. In fact, various interviewees indicated that had they known of these services, they would have been more likely to have had their vehicles repaired sooner.</p> <p>Communicating the speed and convenience of Takata recall repairs is key to ensuring vehicle owners get their vehicles repaired. All outreach should confirm the availability of replacement parts, free towing and other services that minimize inconvenience and cost to the customer.</p>
Provide a clear, simple process for taking action	<p>Outreach should provide immediate next steps through which recipients of outreach can take action to complete a repair. Participants in the focus groups indicated that they preferred outreach materials that provided an immediate next step, such as the AirbagRecall.com URL.</p> <p>Similarly, in both the focus groups and national survey, even vehicle owners who had prior awareness of the Takata recalls expressed the importance of outreach materials that provide a clear, simple and actionable process.</p>
Language	
Provide understandable content	<p>It is important that the content of outreach is clear and easy to understand so that recipients appreciate the urgency of the situation and are not distracted by technical or confusing language. Many participants in the focus groups and interviews indicated that they had previously received recall notifications but disregarded them because they did not understand the message or situation.</p> <p>Distributing content to vehicle owners is only the first step in motivating them to act—the content itself must be accessible and impactful.</p>

Figure 21: Key Research Lessons

Use simple words and phrases	<p>Focus group participants and national survey respondents expressed confusion at the meaning of technical terms such as “inflator.” Even among those who were familiar with the Takata recalls, use of the word “inflator” did little to enhance their understanding of the communications they received. Affected vehicle manufacturers should employ language that is simple and non-technical in nature to ensure recipients are not distracted or confused by unfamiliar terminology.</p>
Take stock of language preferences	<p>Providing outreach materials in a language the vehicle owners can understand is key to ensuring they understand the content of the message. One Spanish-speaking participant in the focus groups indicated that he received a recall notice, but threw it away because he did not understand what it said. Creating content in multiple languages, or tailoring content to the preferred language of the recipient, is necessary to ensuring individuals read and understand recall outreach.</p>
Use non-verbal images	<p>Many focus group and survey participants expressed difficulty in understanding messaging content modeled after affected vehicle manufacturers’ current collateral, either because the terminology used (such as the word “inflator”) was too technical or it was communicated in a language they did not speak. However, across all demographics, the 2016 and 2017 focus group participants found that non-verbal iconography such as the Airbag Recall logo was highly effective because it employs the bold, red triangle as the universal caution sign and clearly illustrates the danger of a ruptured airbag to a vehicle occupant. This was confirmed in both the 2016 and 2017 survey results, where respondents found the Airbag Recall logo to be a clear indicator of the urgency of the situation and to effectively motivate action.</p> <p>Messaging should employ non-verbal iconography like the shrapnel logo to ensure that messages resonate with key audiences regardless of the language they speak.</p>

Figure 21: Key Research Lessons

Medium	
Use multiple mediums of communication	<p>The focus groups and surveys in 2016 and 2017 indicated that there is no one medium of communication that is the “silver bullet” for reaching affected vehicle owners. Survey respondents expressed preferences for various modes of communication, such as traditional first-class mail, email, text message and social media. Most focus group participants agreed that using multiple communications channels or platforms, including phone calls, emails and postal mailings, is warranted given the urgency of the situation.</p>
Keep messaging consistent across channels	<p>Interviewees indicated that the use of consistent messaging across various channels of communication—such as mailers, phone calls, texts and emails—on multiple occasions, is particularly effective in motivating action. Affected vehicle manufacturers must not only use multiple mediums to reach owners, but also ensure that they communicate a consistent message to maximize impact and understanding.</p>

B. Engagement with Stakeholders

The Monitor met with a number of stakeholders in the automotive industry to better understand the nature and needs of the Takata recalls. These interviews and discussions have informed the Monitor's approach to the Takata recalls and provided valuable insights into potential areas for improvement of recall strategy among affected vehicle manufacturers.

1. NHTSA

In order to ensure that both the Monitor and NHTSA remain informed of all developments among affected vehicle manufacturers in the Takata recalls, the Monitor has had frequent communications with NHTSA since the onset of the monitorship. These communications include telephonic meetings scheduled weekly and bi-weekly on various topics, in-person presentations of findings and analyses, monthly in-person meetings to check in on certain affected vehicle manufacturers and other discussions regarding specific issues as they arise. Through this continuous flow of information, the Monitor regularly updates NHTSA on its observations and analysis regarding each affected vehicle manufacturer's progress under the Coordinated Remedy Program.

2. Affected Vehicle Manufacturers

The Monitor regularly communicates with the affected vehicle manufacturers. The Monitor initiated this engagement through a series of initial meetings with the affected vehicle manufacturers to better understand the then-current state of the Takata recalls. The Monitor then built a recall assessment of each affected vehicle manufacturer that considered completion percentages, part supply, past recall experience, past airbag recall completion percentages, injuries and fatalities reported from airbag inflator defects, other airbag defects unrelated to the Takata recalls, completion percentages from older vehicles, completion percentages from newly issued recalls, NHTSA investigations and experience in foreign recalls. This process was coordinated in consultation with NHTSA.

The Monitor then began to hold bi-weekly phone calls with each affected vehicle manufacturer to discuss new developments in completion activities, part supply and other issues relating to the Takata recalls. These standing calls have allowed the Monitor to better understand the activities the affected vehicle manufacturers conduct and their plans to launch new activities, and have provided a regular venue where the Monitor may make informal suggestions and recommendations.

3. Takata

The Monitor communicates frequently with Takata personnel in TK Holdings Inc.'s headquarters in Auburn Hills, Michigan, in regard to the Takata recalls. Takata provides updates on, among other things, inflator testing data, production volumes and supply forecasts. The Monitor's other oversight of Takata pursuant to separate obligations under the Consent Order is beyond the scope of this report.

4. Dealers

Franchised dealers are critical to the automotive recall process. Dealers are the only parties authorized to complete recall repairs and can serve as an important line of outreach to vehicle owners to motivate them to schedule repairs. Recognizing this, the Monitor sought to more fully understand the role dealers play in automotive recalls and the Monitor interviewed dealers for a wide variety of affected vehicle manufacturers.

These interviews occurred in Texas and Florida in May and June 2016. During these interviews, dealers expressed significant interest in conducting outreach for the Takata recalls and their view that they are uniquely positioned to engage their local communities. Many dealers told the Monitor that they understand their local markets in greater depth than do the affected vehicle manufacturers, which is a potential asset for enhancing recall outreach efforts with more tailored strategies.

Dealers also indicated that for their outreach efforts to be most effective, they need more complete and accurate data for affected vehicle owners, reasonable compensation for the services they provide and improved communications with affected vehicle manufacturers about part supply, loaner vehicle availability and other programs or initiatives.

The Monitor's observations regarding dealers' engagement with the Takata recalls are set forth in Figure 22.

Figure 22: Dealer Observations

Issue	Observation
Incentives	Many dealers do not feel adequately incentivized to prioritize completing or communicating the need for Takata recall repairs. While dealers are compensated by vehicle manufacturers for Takata recall repairs, the net margin for these repairs is insignificant and substantially less than what the dealership earns from making other kinds of repairs—such as warranty and private pay service repairs.
Awareness	Many dealers are unaware of critical details regarding the Takata recalls, the services the vehicle manufacturers have made available or the availability of replacement parts. For example, some dealers the Monitor interviewed were unaware that final remedy parts were available, that affected vehicle manufacturers would pay for rental vehicles or of the approximate number of vehicles with open Takata recalls in their area.
Data	Many dealers feel they receive inadequate data from affected vehicle manufacturers and inadequate resources to conduct outreach. Accordingly, dealers do not feel equipped to conduct outreach related to the Takata recalls. Dealers told the Monitor that the information shared by vehicle manufacturers was often voluminous and in a format that could not easily be reviewed or used. In addition, smaller dealers indicated that they simply did not have the resources to conduct proactive outreach. Larger dealers with internal business development centers indicated that the information they received from vehicle manufacturers, particularly for recalls of older vehicles, was often incorrect or incomplete.
Differentiation	Many dealers do not perceive that vehicle manufacturers differentiate the Takata recalls from other recalls or make the Takata recalls a priority. Many dealers indicated that the Takata recalls were treated as “just another recall”. Furthermore, many vehicle manufacturers do not measure the dealers’ performance related to the Takata recalls, discuss them individually with the dealers or solicit feedback or comments from the dealers. This reinforces the dealers’ perception that the Takata recalls are not a priority to the vehicle manufacturer.

5. Independent Repair Facilities

Independent repair facilities (“IRFs”) and collision centers are important players in the Takata recalls. Many owners of older vehicles do not visit dealerships for regular servicing or repairs and instead visit community-based IRFs to service their vehicles. Recognizing this, the Monitor has discussed IRF engagement strategies with affected vehicle manufacturers and encouraged them to leverage IRFs to notify vehicle owners of open Takata recalls and explore opportunities for information sharing.

The Monitor has also engaged software providers used by IRFs and collision centers in an effort to better understand the data available to these entities and the notification platforms they use during the repair process. This engagement taught the Monitor that these software platforms typically require the entry of a vehicle identification number (“VIN”) as an identifier for the repair facility databases, thus providing an opportunity for system integration that can verify whether the vehicle is under recall, what the defect is and how the IRF technician can assist in facilitating a repair at the dealership. In addition, the software platforms typically have the ability to collect owner contact information and repair order information, which can assist affected vehicle manufacturers in conducting recall outreach.

Engaging with these software providers, who have established relationships with many IRFs around the country, has also provided greater insight into the space IRFs occupy in the repair process. There is often a strong, trusted relationship between vehicle owners and local IRF technicians. In addition, there is typically a strong, trusted relationship between IRFs and franchised dealers, from whom IRFs often must purchase repair parts. IRFs also frequently have established relationships with local salvage and scrap yards, where replacement parts can be purchased as well. These various relationships make IRFs valuable touchpoints within the vehicle recall process.

6. Part Suppliers

The Monitor and NHTSA regularly review current part supply levels across all affected vehicle manufacturers. The Monitor and NHTSA also created a reporting mechanism called the “Supplier Dashboard”, through which suppliers report a number of data points regarding supply and capacity on a monthly basis, including information regarding inflator types, global monthly capacity levels, current and forecasted production, current and forecasted orders and total Takata replacement production volumes. In addition, the Monitor has monthly calls with each of these suppliers to discuss their submissions and any outstanding issues.

The Monitor also analyzes Takata’s replacement part and kit building capacity. The Monitor attends Takata airbag replacement kit calls, conducts bi-weekly calls with Takata and receives data related to kit production. The Monitor and NHTSA use this information in conjunction with the Supplier Dashboards to analyze monthly supply and demand for replacement parts by affected vehicle manufacturer and inflator type. This analysis allows the Monitor and NHTSA to observe the entire replacement part supply chain across all affected vehicle manufacturers and suppliers.

7. State and Local Governments

The Monitor has engaged a wide variety of other stakeholders at the local level, including state Departments of Motor Vehicles (“DMVs”), state Departments of Transportation, state Bureaus of Automotive Repair, local law enforcement departments and other local officials. These stakeholders have been receptive to the Monitor’s discussions regarding opportunities for raising awareness, notifying owners of open recalls and sharing recall-related information, and many have collaborated on a number of initiatives.

For example, the California DMV now raises awareness of the Takata recalls by playing videos in waiting areas that encourage vehicle owners to check whether their vehicles are subject to recalls. These videos are played in both English and Spanish. Figure 23 shows still shots from the English language version of this video.

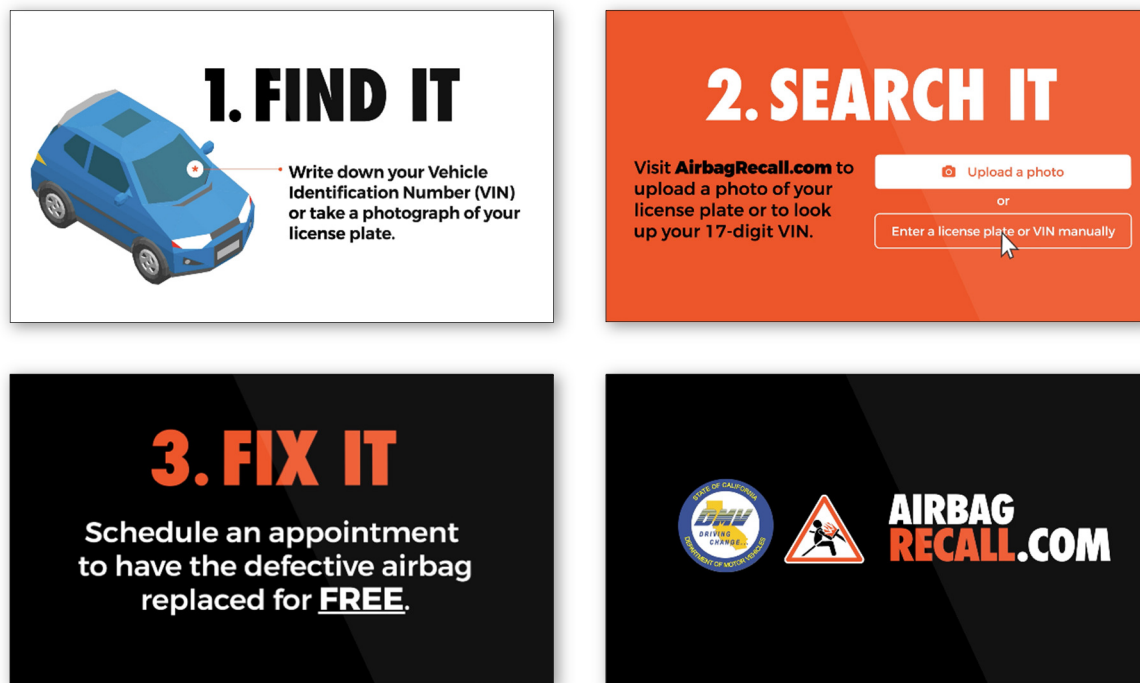


Figure 23: Still Shots from English Language Video Played by California DMV

An expansion of this effort to other state DMVs is currently underway in coordination with several affected vehicle manufacturers.

The Florida Department of Highway Safety and Motor Vehicles (“DHSMV”) has also conducted a coordinated state outreach initiative. The Florida DHSMV recently sent a letter in English and Spanish to registered owners of Alpha vehicles and accompanying literature regarding the Takata recalls.

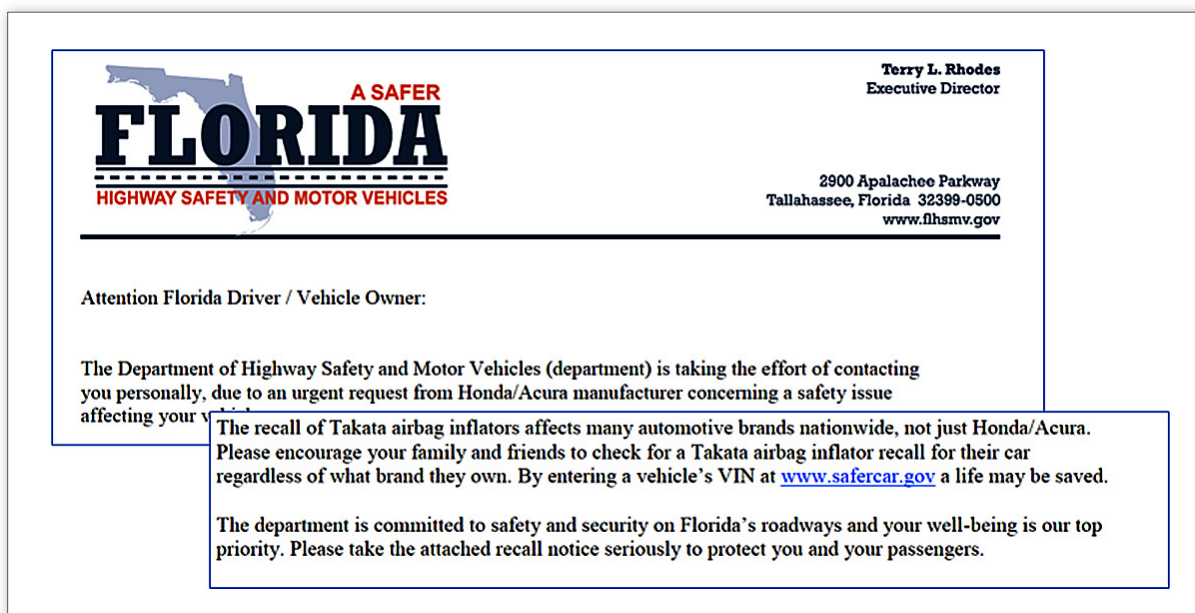


Figure 24: Excerpts from Letter to Registered Owners of Alpha Vehicles

The Monitor, working with NHTSA, has piloted a number of other initiatives with state and local government agencies, including working with the Houston Department of Public Works to include double-sided, bilingual inserts in more than 400,000 Houston water bills during the November 2016 billing cycle (See Figures 25 and 26).

IS YOUR AIRBAG DEFECTIVE?

More than 500,000 Houston airbags are defective. The repair is free.

Even a minor fender bender can cause these airbags to rupture, spraying metal shrapnel into drivers and passengers. Many serious injuries have been reported, and two Houston drivers have died.

The recall includes cars from more than a dozen automakers, but airbags in certain 2001-2003 Hondas and Acuras pose the most urgent threat – with up to a 50% chance of rupture.



AIRBAG RECALL

NO MATTER WHAT KIND OF VEHICLE YOU
DRIVE, VISIT WWW.AIRBAGRECALL.COM
TO LEARN IF IT IS UNDER RECALL.
IF SO, IT WILL BE REPAIRED FOR FREE.

FOR MORE INFORMATION, CALL
1.888.327.4236 OR VISIT SAFERCAR.GOV.

Figure 25: Front of Houston Water Bill Insert

¿TIENE DEFECTOS SU BOLSA DE AIRE?

Más de 500,000 bolsas de aire en Houston tienen defectos. La reparación es sin cargo.

Incluso un leve golpe al guardabarros puede provocar que estas bolsas de aire se rompan, esparciendo esquirlas metálicas hacia los conductores y pasajeros. Se informaron muchos casos de lesiones graves, y dos conductores en Houston han muerto.

Este retiro del mercado incluye automóviles de varios fabricantes, pero estamos seguros de que las bolsas de aire de los Honda y Acura modelo 2001-2003 representan la amenaza más urgente: una probabilidad de romperse de hasta el 50%.



AIRBAG RECALL

NO IMPORTA QUÉ CLASE DE VEHÍCULO
CONDUZCA, VISITE WWW.AIRBAGRECALL.COM
PARA SABER SI ES OBJETO DE RETIRO
DEL MERCADO. EN CASO AFIRMATIVO,
SE REPARARÁ SIN COSTO ALGUNO.

PARA MÁS INFORMACIÓN, LLAME AL
1.888.327.4236 O VISITE SAFERCAR.GOV.

Figure 26: Back of Houston Water Bill Insert

8. Insurance Companies

Insurers typically have accurate and current contact information for insured vehicle owners and regular contact with them through mail and email. As such, they are particularly well-positioned to communicate with affected vehicle owners regarding the need to have their vehicles repaired. However, insurers historically have not played significant roles in recall efforts. In addition, there is currently no single, centralized tool that would enable insurers to check insured vehicles on a large scale for open recalls, making it difficult for insurers efficiently to look up whether any vehicles under their purview have open recalls.

The structural impediments to engaging the insurance industry are particularly difficult for affected vehicle manufacturers to overcome working alone. Recognizing that industry-wide collaboration would likely be an effective way to engage this industry, the Monitor established a working group of nine affected vehicle manufacturers tasked with brainstorming and implementing initiatives to engage the insurance industry.¹⁹ In addition, the Monitor has established a working group dedicated to evaluating and tracking the development of a batch lookup tool—a centralized tool that would permit an entity to look up open recalls for a large group of vehicles at one time.

Since the Monitor established these initiatives, there has been substantial progress. A batch lookup tool is currently under development. There has also been some recent movement in working with insurers through salvage auctions, to enable repairs at auction facilities and in conjunction with recent hurricane responses. While this represents a small first step, the Monitor is hopeful that this engagement can be expanded into additional forms of collaboration with insurers.

C. Initiatives

The Monitor undertook a number of initiatives in conjunction with NHTSA to help affected vehicle manufacturers increase repair percentages. As discussed in further detail below, the Monitor piloted initiatives including canvassing vehicle owners door-to-door, enhancing vehicle owner data, bolstering affected vehicle owner reporting requirements, providing affected vehicle manufacturers access to a data visualization tool, building an Airbag Recall website and app, partnering with community groups to contact difficult-to-reach vehicle owners, advertising the airbag recalls, hosting summits for affected vehicle manufacturers and engaging salvage recovery vendors.

1. Vehicle Owner Canvassing

Because of the heightened risk posed by Alpha vehicles and the relative difficulty in reaching and motivating these vehicle owners to have their airbags replaced, the Monitor began a door-to-door canvassing pilot in Houston and Dallas—two cities located in the HAH zone—to repair these particularly dangerous vehicles and test the efficacy of canvassing.

¹⁹ This working group is discussed in greater detail in Section VI.C.9.

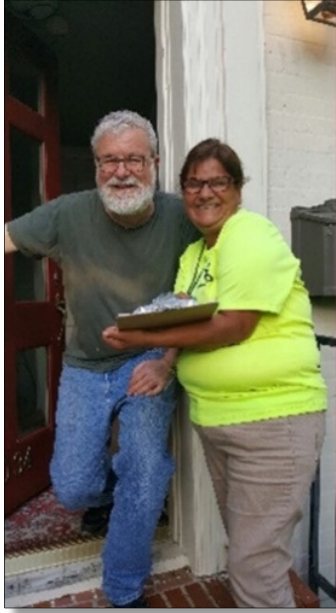


Figure 27: Canvassers in Texas

To commence its canvassing effort, the Monitor first aggregated contact information for these vehicle owners from a wide range of data sources, sourcing both DMV and non-DMV data. For many VINs, the data sources provided vehicle owner names, addresses, phone numbers and email addresses. The Monitor also undertook a comprehensive data integrity analysis—comparing data from each data source to identify any discrepancies. The Monitor established a tiered rating system for the level of confidence in each address; addresses with the highest levels of confidence were targeted first.

The Monitor then organized, trained and managed teams of canvassers in Houston and Dallas. The field canvass operated in teams of two, with one team member ordinarily proficient in Spanish. To prepare for the canvass, the Monitor developed scripts and educational literature for canvassers to use when speaking with affected vehicle owners or their friends and family. Training emphasized the need to carefully listen, identify the perceived barriers to vehicle repair and develop a relationship of trust.

To ensure the canvass had the proper data infrastructure to permit efficient canvassing and optimal information gathering, the Monitor developed a data-gathering tool called the Canvassing Daily Report (“CDR”), which captured information about the interaction each canvasser had with whomever answered the door. The CDR tracked whether contact was made with someone, whether that person was the vehicle owner, whether an appointment was scheduled, the language spoken by the individual who answered the door, whether the individual who answered the door indicated that the vehicle had been sold, scrapped or salvaged, and whether the owner had moved.

The Monitor analyzed weekly results from the CDRs to calculate the number of appointments made and completed. Using data collected cataloging the days of the week and times of day when canvassers made contact with owners, the Monitor identified particular times where canvassing attempts would be most effective.

The Monitor also tested whether contact immediately preceding the door-to-door interaction would enhance the likelihood of an affected vehicle owner scheduling an appointment. The Monitor sent postcards to vehicle owners in the days immediately preceding the planned canvassing activities indicating that canvassers would be in the vehicle owner’s neighborhood in the coming days, and communicated to the affected vehicle owner that they had an open Takata recall, the dangers of the defect and the importance of having their vehicle repaired. During the subsequent canvassing activities, canvassers reported that vehicle owners who had received this outreach and were expecting the canvass were often more willing to schedule an appointment.

The canvass pilot was effective in reaching vehicle owners and increasing repair activity. Data from the canvassing pilot showed canvassing to be five times more effective at its peak in these areas than all other outreach strategies employed by the vehicle manufacturer responsible for recalling these vehicles combined. During this period, the Monitor’s canvassing efforts accounted for 85% of all repairs for the type of vehicles targeted in Houston and Dallas. In the wake of the Monitor’s pilot, one affected vehicle manufacturer has recently launched a national canvassing effort for its highest risk unrepaired vehicle population, and other affected vehicle manufacturers are also considering canvassing.

2. Vehicle Owner Identification

Most affected vehicle manufacturers have historically relied on state DMV registration information to gather contact information for recall outreach. This information is collected and aggregated from different states’ DMV offices by third-party vendors who sell the data to affected vehicle manufacturers.

Affected vehicle manufacturers vary regarding how often they update their registration data. Some affected vehicle manufacturers update their registration data on a quarterly basis with others updating it less frequently.

To assess the efficacy of the industries' traditional approach to identifying current vehicle owners, the Monitor conducted a pilot assessment of DMV registration data for a particular group of older, high-risk vehicles in the Houston area. The Monitor's analysis focused on data from four providers, including two sources of non-DMV ownership data, one DMV-based source and a fourth source using license plate recognition technology. The results of this analysis confirmed the Monitor's and NHTSA's concerns that reliance on single-source owner DMV registration information, infrequently updated, is generally inadequate to identify correctly current vehicle owners, resulting in substantial numbers of outreach mailings being sent to an incorrect address. 52% of the VINs analyzed raised concerns that the DMV address in use was incorrect. Nearly 25% of the DMV addresses the Monitor evaluated did not match DMV addresses from other sources, and an additional 15% of VINs had an address from a non-DMV source that did not match the DMV address the affected vehicle manufacturer had provided. Information for 18% of VINs required further investigation due to destroyed, exported, stolen, salvaged or impounded classifications or registrations to entities and addresses marked undeliverable by the U.S. Postal Service.

The Monitor's door-to-door canvassing effort in Houston also confirmed examples of vehicles residing at addresses other than those on file at the DMV.

3. Data Analysis

Pursuant to the Monitor's authority to "take such reasonable steps, in the Monitor's view, as are necessary to be fully informed about the operations of the Coordinated Remedy Program" (CRO ¶ 44(a)), and the affected vehicle manufacturers' "affirmative duty to cooperate with and assist the Monitor in connection with the Coordinated Remedy Program" (CRO ¶ 44(d)), the Monitor took steps to understand the affected vehicle manufacturers' recall efforts. To this end, the Monitor requested a number of data fields necessary to permit the Monitor to be informed of and assess the manufacturers' completion percentages, completion rates, part supply and recall initiatives on an ongoing basis.

a. Dashboard Reporting

The Monitor has assisted the affected vehicle manufacturers in providing information by creating and maintaining the "Monitor Dashboard"—a template through which affected vehicle manufacturers provide the specific data points for tracking their progress under the Coordinated Remedy Program. This dashboard currently consists of nine separate data reports that affected vehicle manufacturers submit on a bi-weekly basis. The information requested and subsequent analysis conducted is set forth in Figure 28.

Figure 28: Monitor Dashboard Information Requests and Analysis

Monitor Dashboard Section	Information Requested	Analyses Conducted
Completion Overview	Counts of inflators affected and repaired by make, model and model year within each Priority Group, and counts of inflators affected and repaired within the HAH region and Zones A, B and C.	Monitoring completion percentages, incremental repairs and unrepaired inflators by affected vehicle manufacturers in total, by Recall Campaign, by Priority Group and by make, model and model year.
Registrant Model	Counts of inflators affected and repaired by make, model and model year for certain registration attributes, such as registration changes and ownership type.	Measuring repair activity among vehicles with the reported attributes to identify segments that are under- or over-performing relative to the average completion percentages.
Zip Codes	Counts of inflators affected and repaired by make, model and model year within each zip code.	Identifying unrepaired inflators and repairs within specific geographic areas, such as individual states, metropolitan area, counties and zip codes; analyzing repair activity within urban and rural areas.
Dealers	Repair activity for each dealer and additional dealer information such as size of dealership.	Identifying high- and low-performing dealers and comparing those performances to allow affected vehicle manufacturers to identify best practices and unique challenges faced by dealers.
Global²⁰	Inflator counts and types of Takata recalls under non-U.S. jurisdiction.	Analyzing parts capacity, as global inflator demand impacts domestic inflator supply.
Parts Available	Inventory of remedy parts by part number and counts of vehicles that use specific parts.	Measuring sufficiency of part supply.
Part Orders	Seven week part order forecast by part number.	Identifying expected parts that are not currently available for dealers to perform repairs but which have been ordered and can supplement future part supply.
Outreach	Types of outreach conducted and the number of recipients targeted by outreach type.	Tracking the types of outreach affected vehicle manufacturers are conducting, and the timing and duration of such activities.
Validation	Check totals from all other Monitor Dashboard sections.	Conducting quality control to ensure all information expected from the affected vehicle manufacturers is received and imported.

NHTSA and the Monitor continually evaluate the information provided by the Monitor Dashboard to ensure it is useful for monitoring the affected vehicle manufacturers' recall activities.

b. Data Integrity in the Monitor Dashboards

The Monitor developed the Monitor Dashboard with an understanding that it would need to be routinely reviewed to ensure the information provided by affected vehicle manufacturers is accurate. For this reason, the Monitor Dashboard is structured to permit easy comparison of the different sections within each bi-weekly submission to ensure the same data points are reported consistently across different reports. The structure also permits the Monitor to cross-reference information fields in new reports against those provided in previous reports, which further helps to ensure consistency.

The Monitor uses this system of internal checks to reconcile and analyze the various data sets provided by affected vehicle manufacturers, individually and in aggregate, to identify any errors or omissions. This allows concerns or questions about the integrity of data submissions to be quickly identified and addressed. Any data anomalies that the Monitor identifies are quickly communicated to the affected vehicle manufacturer responsible for the data report, and the Monitor works with the affected vehicle manufacturer to remedy the issue.

4. Formal Recommendations

Paragraph 44 of the CRO authorizes the Monitor to “make additional recommendations aimed at enhancing the Coordinated Remedy Program and ensuring that all Coordinated Remedy Program deadlines, including those in [the CRO], are met.” Based on the Monitor’s study of the recall, and in consultation with NHTSA, the Monitor has issued a number of formal recommendations to enable affected vehicle manufacturers to repair their recalled vehicles more quickly and navigate the complexity of the Takata recalls. These recommendations center on enhanced outreach methods, dealer relations and coordinated communications.

a. Enhanced Outreach Recommendations

On April 1, 2016, the Monitor recommended that affected vehicle manufacturers enhance their recall strategies by improving the quality of their outreach and engaging the private sector. These recommendations fit into four broad categories: (1) improving consumer outreach, (2) engaging dealerships, (3) engaging other third parties such as IRFs and outreach vendors to conduct outreach and (4) employing salvage recovery services to retrieve scrapped or salvaged inflators. The Monitor’s recommendations were based on a close analysis of the affected vehicle manufacturers’ Recall Engagement Plans and various discussions with industry stakeholders, described in greater detail in Section VI.B.

Prior to these recommendations, many affected vehicle manufacturers were employing conventional, homogeneous approaches to recall outreach, relying on boilerplate

²⁰ This metric is exclusive of U.S. inflator counts.

notification letters and automated “robocalls” to motivate vehicle owners to have repairs. The Monitor observed that, as to these conventional forms of outreach, many affected vehicle manufacturers were not targeting vehicle owners who frequently used the internet and apps. To address this, the Monitor recommended a number of enhanced outreach strategies that leveraged social media networks, mobile applications and SMS messaging to reach vehicle owners across a wider range of communications mediums, as well as improvements to the manufacturers’ websites to make recall outreach more prominent and user friendly.

In addition, many affected vehicle manufacturers were not significantly engaging dealers or other third parties to proactively conduct recall outreach. For example, many industry stakeholders indicated that vehicle owners often bring their vehicles to IRFs for servicing and repairs, rather than to a dealer, making them an effective touchpoint for some difficult-to-reach vehicle owners.

The Monitor also observed that many affected vehicle manufacturers were not targeting defective inflators that had been scrapped or salvaged before these inflators re-entered the stream of commerce. Based on discussions with industry stakeholders, the Monitor had observed that many third-party vendors specialized in targeting these inflators and could be helpful in addressing this discrete population.

b. Dealer Relations Recommendations

On July 15, 2016, the Monitor recommended that affected vehicle manufacturers more proactively engage with dealers and measure the number of Takata repairs their dealers complete. Prior to these recommendations, the Monitor had observed that some dealers appeared disengaged from the Takata recall process, unaware of its importance and lacking sufficient information to answer customer questions and notify affected vehicle owners about the need for repairs. To address this, the Monitor recommended that affected vehicle manufacturers direct communications to their dealers to provide them with customer data and guidance on recall messaging. For example, the Monitor recommended that affected vehicle manufacturers provide dealers with lists of VINs with open recalls in their respective areas, measure the number of vehicles they repaired on a regular basis and provide additional incentives.

To incorporate dealers into more targeted local recall outreach efforts, the Monitor also recommended that affected vehicle manufacturers implement systems through which they could share information with dealers and ensure they have the resources to conduct effective outreach. During initial interviews with the Monitor, many dealers indicated that they viewed themselves as well positioned to conduct recall outreach because they had pre-existing relationships with many local vehicle owners and familiarity with their community.

c. Coordinated Communications Recommendations

On December 23, 2016, the Monitor recommended that affected vehicle manufacturers use frequent, multi-channel outreach that clearly describes the dangers of defective Takata airbags and conveys a clear path to remedial action. Specifically, the Monitor recommended affected vehicle manufacturers use bright, attention-grabbing figures and colors in order to prompt affected vehicle owners to pay attention, and clearly convey in simple terms the danger of the Takata defect. In addition, the Monitor recommended affected vehicle

manufacturers use prominently displayed key messages communicating the urgency of having one's vehicle repaired, the steps affected vehicle owners could take to schedule repairs and that repairs are free. The Monitor further recommended these communications be made in both English and Spanish, to ensure that the many Spanish-speaking affected vehicle owner would be able to understand the content of these recall notices. To assist affected vehicle manufacturers in crafting such content, the Monitor provided them with a set of key messages and concepts that recall notifications should contain, and guidelines on the various methods and channels through which these communications should be sent to clearly convey the importance of having one's vehicle repaired.

As discussed more fully in Section VI, the Monitor based these recommendations on the qualitative and quantitative research conducted in 2016 as well as a prior industry studies conducted by affected vehicle manufacturers. This research found that conveying the urgency of having one's vehicle repaired in clear, easy to understand terms is an essential feature of effective recall outreach. In addition, this research found that the best way to convey urgency and communicate the issue in terms affected vehicle owners will understand is to use attention-grabbing phrases and non-verbal figures, and avoid technical terms such as "rupture" that confuse individuals not already familiar with the Takata defect. The research also found that perceived barriers regarding the inconvenience of repairs—such as the belief that they will cost a great amount of time and resources—could be overcome with clearer communications. Likewise, these collective studies found that using multiple channels of communication and sending affected vehicle owners multiple communications stressing the importance of having a repair were effective and necessary in motivating affected vehicle owners to have repairs.

Figure 29, below, provides a summary of the three sets of formal recommendations issued by the Monitor.

Figure 29: Formal Monitor Recommendations

Formal Recommendation	Summary
Enhanced Outreach Strategies (April 1, 2016)²¹	<p>The Monitor recommended that affected vehicle manufacturers enhance their outreach strategies by:</p> <p>(1) Engaging in consumer outreach, including using social media, leveraging customers' networks, using streaming media and apps, using phone calls and SMS messages, contacting customers that search their VINs online, making the recall pages of websites more user friendly, tracking and measuring outreach efficacy, using multiple relevant languages and engaging in marketing partnerships;</p> <p>(2) Engaging the private sector, including developing collateral and communications that can be shared with vendors, seeking out national and local used car sellers to partner with, performing outreach to owners of fleet vehicles, business and government vehicle owners, distributing outreach materials to IRFs and targeting used vehicle sales; and</p> <p>(3) Engaging with salvage vendors and providing VIN information to these vendors.</p>
Dealer Relations (July 15, 2016)²²	<p>The Monitor recommended that affected vehicle manufacturers ensure dealer recognition and accountability, provide dealers with customer data, leverage dealers to collect additional customer data, provide dealers with guidance regarding recall communications, expand the scope of dealer reimbursement policies, engage with wholesale auctions, evaluate technician training requirements and host dealer best practices roundtables.</p>

²¹ Recommendations of April 1, 2016, Independent Monitor for Takata and the Coordinated Remedy Program, attached as Appendix D.

²² Recommendations of July 15, 2016, Independent Monitor for Takata and the Coordinated Remedy Program, attached as Appendix E.

Figure 29: Formal Monitor Recommendations

Formal Recommendation	Summary
Coordinated Communications Recommendations (December 23, 2016)²³	The Monitor recommended that affected vehicle manufacturers pursue a multi-touch, multi-nodal communications strategy that employs non-traditional means of outreach (e.g., postcards, text messaging, social media); conveys the risk present by defective airbags in clear, accurate and urgent terms; anticipates and addresses possible consumer misperceptions relating to recall repairs and tailors communications to the individual owner and vehicle at issue to reinforce the message's credibility and distinguish it from commercial solicitations.

5. Data Visualization

The Monitor has developed a data visualization tool to summarize and analyze information provided by the affected vehicle manufacturers in the Monitor Dashboard. This tool enables affected vehicle manufacturers, NHTSA and the Monitor to easily review information, analysis, trends and maps based on the data provided through Monitor Dashboards as well as additional research and data secured by the Monitor. Specifically, the tool contains information submitted through dashboard reporting regarding completion percentages, completion percentages by specific owner attributes, dealer repair activity, outreach activity, repair part availability and Takata recalls for the affected vehicle manufacturer in foreign jurisdictions. The Monitor supplements this information with data from the U.S. census bureau and other publicly available sources.

The Monitor introduced this tool to affected vehicle manufacturers at the First Takata Recalls Summit in March 2017, and provided affected vehicle manufacturers access to it in April 2017. The Monitor also gave a demonstration of the tool's functionalities via WebEx when it granted affected vehicle manufacturers access to this tool.

Understanding the target audience by segmenting the population of unrepaired vehicle owners is key to ensuring effective, impactful recall outreach (discussed further in Section VIII). To this end, bi-variate maps—maps that graphically illustrate the relationship between two spatially distributed variables—provide an easy, efficient way for affected vehicle manufacturers to visualize and understand who their unrepaired vehicle owners are, what this data means and what their next steps should be to ensure their recall communications are understood by vehicle owners. This same information permits affected vehicle manufacturers to craft strategies regarding what services to offer to address owner inconvenience in getting their vehicles repaired. Furthermore, the various data points on dealerships provide affected vehicle

²³ Recommendations of December 23, 2016, Independent Monitor for Takata and the Coordinated Remedy Program, attached as Appendix F.

manufacturers with greater insight into how they can leverage their dealer network to increase repair rates.

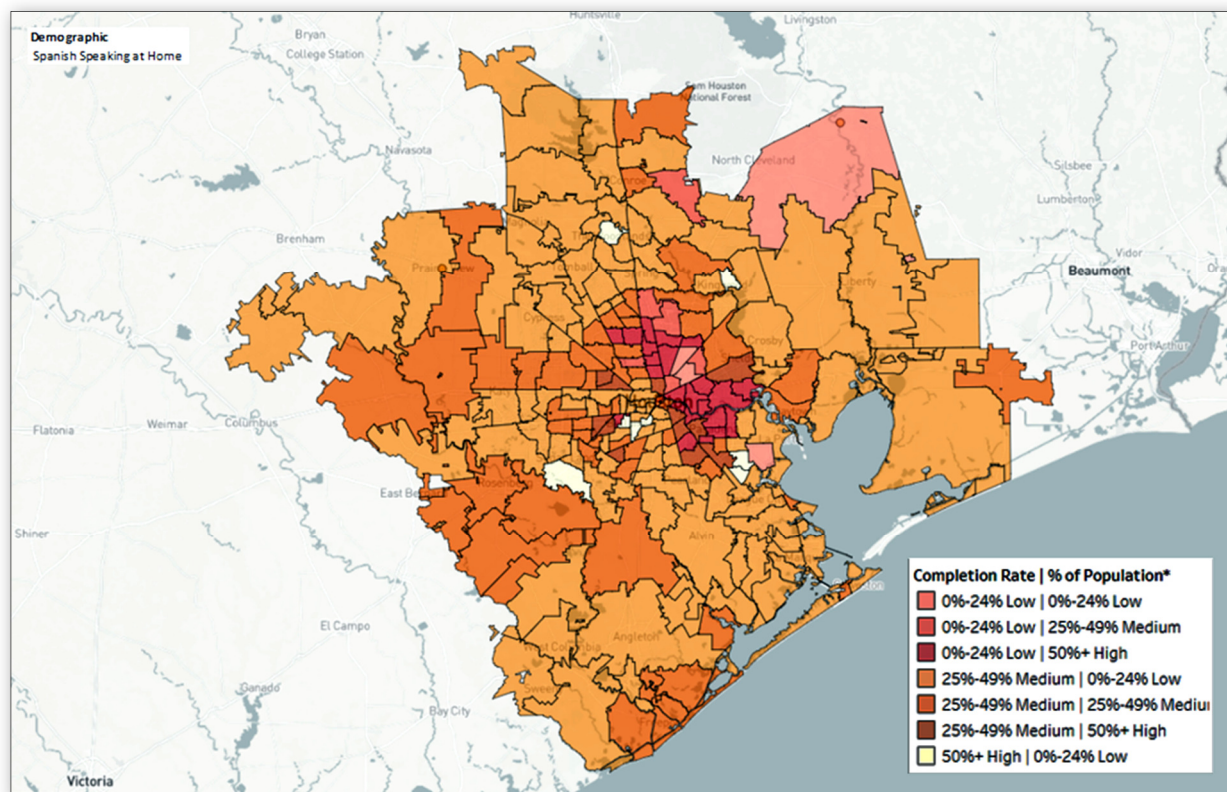


Figure 30: Correlations of Completion Percentages with Spanish-Speaking Population

Figure 30 provides an example of a bi-variate map for Houston, illustrating completion percentages cross-referenced against the percentage of homes in zip codes that are identified as Spanish speaking. The darkest shade of each color represents the highest concentration of homes identified as Spanish speaking. Red shades have low completion percentages for the Takata recalls and orange shades have moderate completion percentages for the Takata recalls. This map function helps to single out areas in the greatest need of recall outreach and provides insight into how to properly tailor outreach efforts to optimize impact.

The features in the data tool facilitate in-depth analysis and discussion between the Monitor, affected vehicle manufacturers and NHTSA, and demonstrate the value of detailed analysis to identify anomalies, trends and tactics. The bi-variate maps enable comparisons of repair activity and completion percentages by priority group, dealer, model make and year, zip code and other factors to permit affected vehicle manufacturers to plan next steps and visualize remaining tasks before they can meet the various Coordinated Remedy Program milestones. Finally, the data and visual tools provide NHTSA with greater visibility of data trends and completion percentage issues for specific affected vehicle manufacturers. The Monitor and NHTSA regularly discuss such trends, challenges or other observations regarding affected vehicle manufacturers' recall progress.

The Monitor has encouraged affected vehicle manufacturers to use these techniques to identify areas where communication could be customized to improve the likelihood that vehicle owners will receive notifications they understand, that clearly convey the urgency of the Takata recalls and that make it as easy as possible for the vehicle owner to schedule and make a repair. Recently, the Monitor has enabled all affected vehicle manufacturers, through this data tool, to view information such as this for 30 different languages. Several affected vehicle manufacturers are considering how to incorporate this data and analysis to improve completion percentages for the Takata recalls.

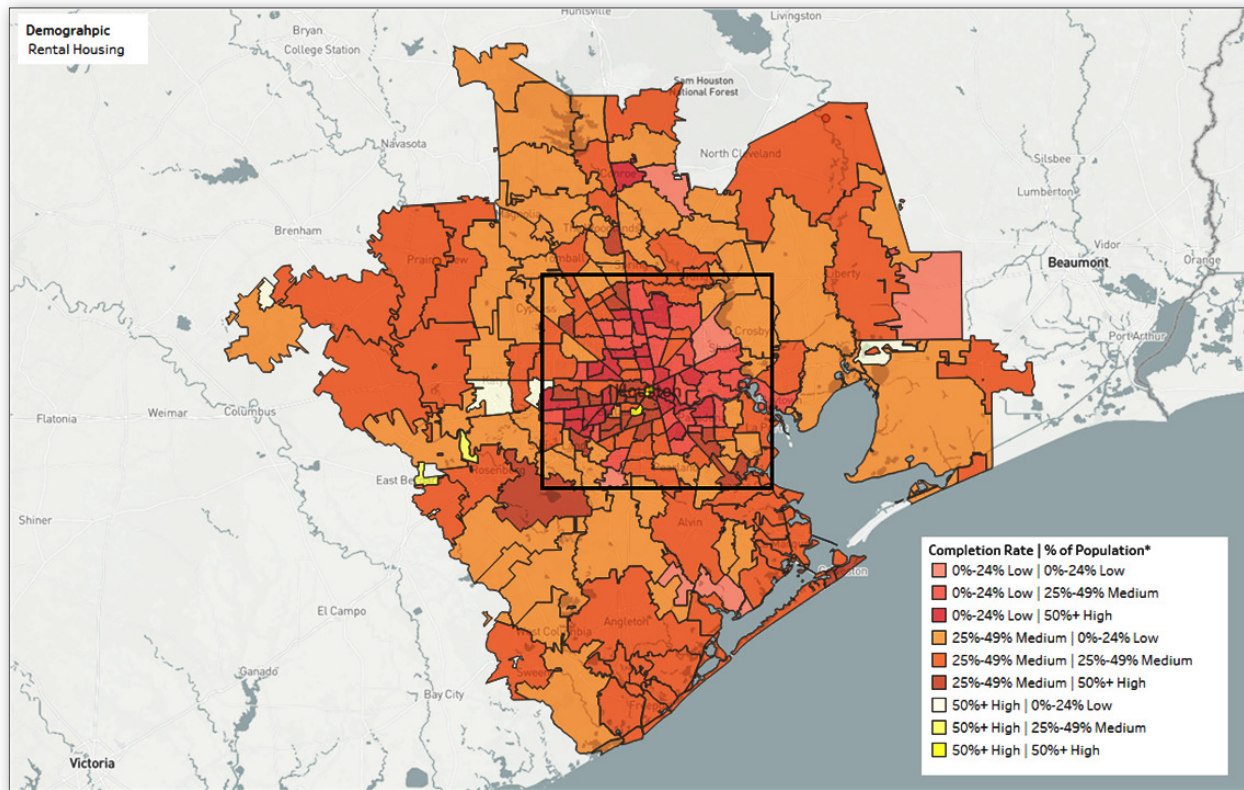


Figure 31: Correlations of Completion Percentages with Rental Housing

This data visualization tool also enables NHTSA and the Monitor to build from other initiatives. For example, through the Monitor's door-to-door canvassing in Houston and Dallas (discussed in Section VI.C.1), the Monitor observed that effectively contacting rental housing dwellers and scheduling their repair appointments can be challenging. Rental housing dwellers often have less time available to complete a repair and more frequently only have one vehicle per household. Figure 31 provides a map illustrating the concentrations of unrepaired inflators by rental housing, with the darkest shades of red indicating higher concentrations of both unrepaired inflators and rental households. This kind of map allows affected vehicle manufacturers to develop outreach materials and strategies that emphasize services making repairs more convenient, such as offering loaner vehicles, convenient repair hours and mobile service repairs at locations other than the dealership for areas that have particularly high concentrations of both unrepaired inflators and rental housing. The Monitor has also observed that address information for rental housing dwellers is often inaccurate, as renters move frequently without

updating their address with the DMV. Thus, maps of this type enable affected vehicle manufacturers to consider alternative notification techniques in certain zip codes that cast a wider net—such as outreach to large apartment building complexes with notifications posted in common areas.

More generally, the Monitor has encouraged affected vehicle manufacturers to use this data visualization tool to analyze each of its affected vehicle models and model years in large metropolitan areas across a number of demographic variables. Doing so enables the affected vehicle manufacturers to identify unique challenges vehicle owners may be facing, and to develop targeted strategies to overcome these challenges. Many affected vehicle manufacturers have expressed the value this data provides to them and indicated that they use it extensively in segmenting their unrepaired vehicle populations and formulating outreach strategies.

6. AirbagRecall.com

With NHTSA's and Takata's support, the Monitor analyzed the steps and impediments related to owners checking whether their vehicle is subject to a recall and launched a website called AirbagRecall.com to streamline the process. AirbagRecall.com helps overcome the observed barrier of owner inconvenience by making the user experience in learning about the Takata recalls, such as checking whether a vehicle is affected and getting a repair scheduled, as fluid and straightforward as possible. The website supplies easy-to-understand information regarding the Takata recalls, allows vehicle owners to check whether they have an open Takata recall by simply entering their license plate or VIN on the website and provides a phone number and a click-to-call option to a local dealer to immediately schedule a repair.

AirbagRecall.com represents, to the Monitor's knowledge, the first time license plates have been used directly to check a vehicle's open recalls. Previously, vehicle owners had to copy down the 17-digit VIN listed on their vehicle, then go online and type in the 17-digit VIN in order to check for open recalls. Screenshots of the website's easy-to-understand interface are provided in Figure 32.

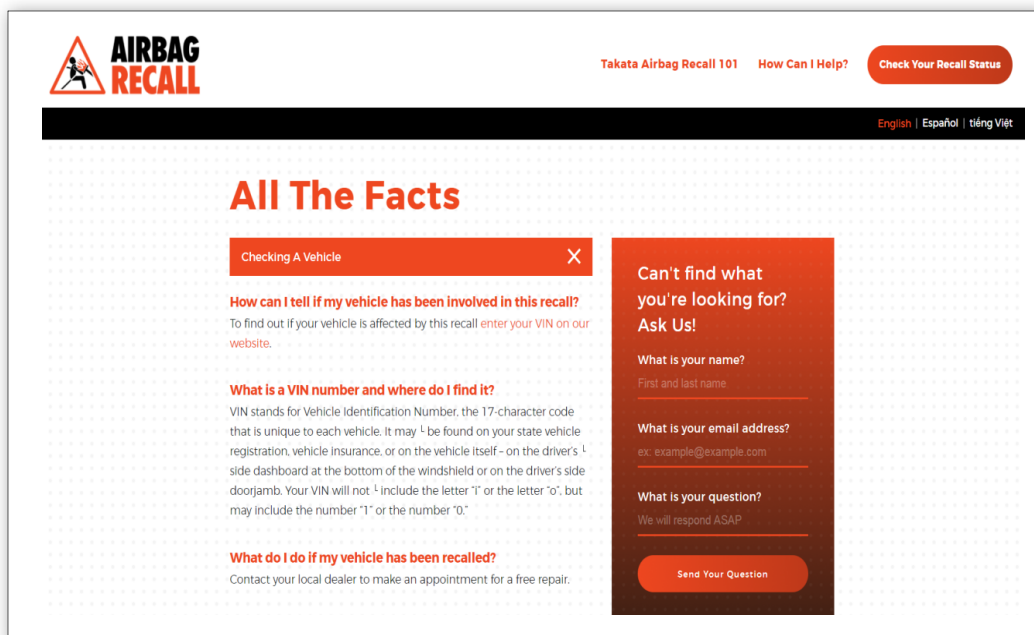
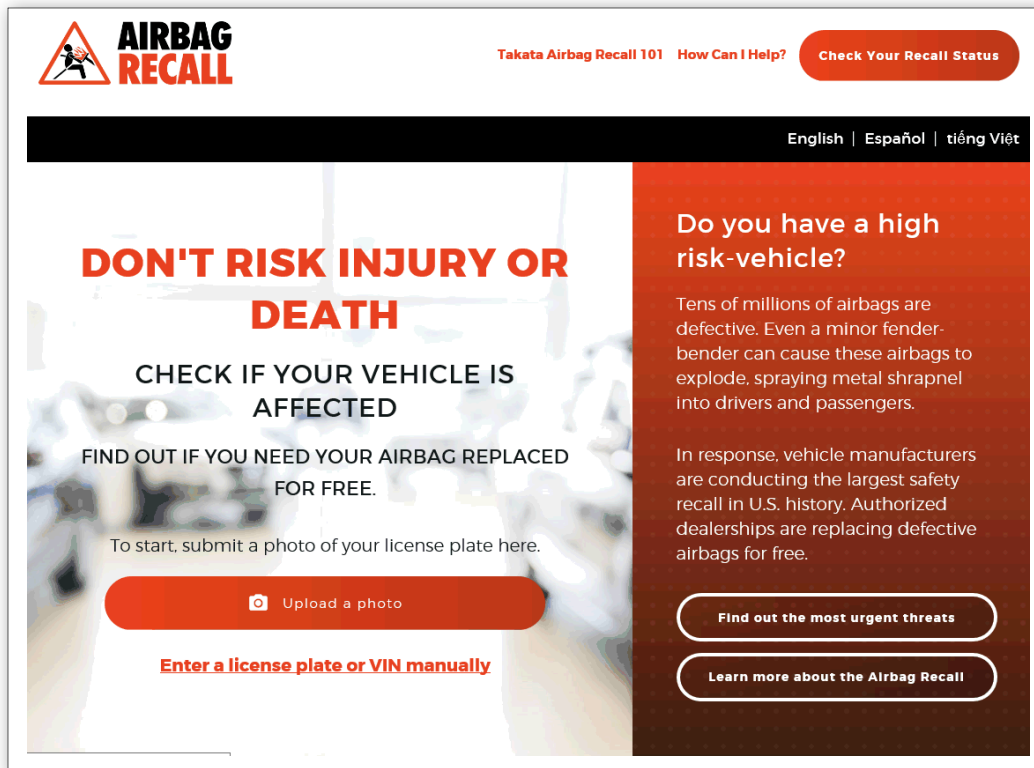


Figure 32: AirbagRecall.com Website

The Monitor also launched a mobile app with the same capabilities of AirbagRecall.com, as well as the capability to scan a license plate for open recalls by simply pointing a smartphone camera at the plate. This technology has never before been used in a

vehicle recall to the Monitor’s knowledge. By removing the step that required users to type in their license plate numbers or VIN, this app makes it as easy as possible for users to find out whether their vehicle has an open recall and also permits larger-scale VIN checks by outreach organizations. This app is available in the Google Play and iTunes store, where it may be downloaded for free. Screenshots of the app’s easy-to-use interface are provided in Figure 33.

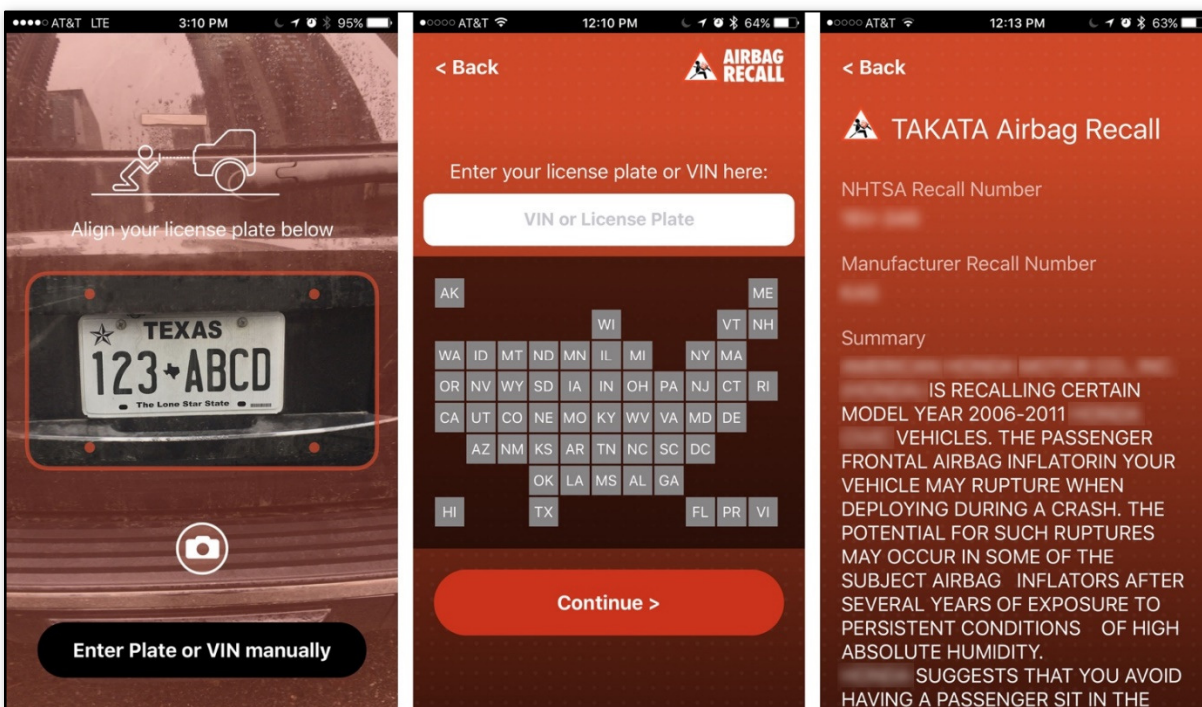


Figure 33: AirbagRecall App

Many affected vehicle manufacturers are currently in the process of integrating this app into their existing outreach plans.

7. Community Partners

In Houston, Dallas, Miami and Southern California, the Monitor launched pilot initiatives to mobilize local communities to engage in outreach regarding the Takata recalls and identify specific community members who could persuasively convey the message regarding the Takata recalls. This initiative aimed to leverage the familiarity and trust community members feel toward other community members, leading to improved receptiveness.

The Monitor, working with community leaders, has held press conferences, spoken with elected officials, engaged with DMVs and police departments, notified churches, libraries, schools, businesses, labor organizations, government agencies, non-profits, and cultural centers about the Takata recalls and conducted large-scale VIN check events in various communities. Community partners conduct frequent meetings with other community stakeholders and host multiple VIN check events per week.

Community partners are especially effective at engaging vehicle owners who are difficult to reach through traditional means. These hard-to-reach vehicle owners typically have limited English proficiency, lower levels of literacy and higher skepticism toward recalls in general. The confluence of these factors makes it challenging to engage the vehicle owner with a standard owner notification letter, robo-call, or email. The Monitor has witnessed community partners' ability to overcome these challenges and prompt individuals to get their vehicles repaired.

Figure 34 shows public officials in numerous cities raising awareness about the Takata recalls.



Cathy Phan, Outreach and Education Coordinator at Hope Clinic, Speaks During a Press Conference at Houston City Hall on July 12, 2016



Anitere Flores, State Senate President Pro-Tempore, Speaks During a Press Conference at the City of North Miami Police Department on January 18, 2017



Lieutenant David Ferry, Los Angeles Police Department, Speaks During a Press Conference at the Los Angeles Trade Technical College on March 27, 2017



Sylvester Turner, Mayor of Houston, Speaks During a Press Conference at Houston City Hall on July 12, 2017



Judge Clay Jenkins, Dallas County Judge, Speaks During a Community Planning Meeting July 12, 2017

Figure 34: Public Officials Raising Awareness of the Takata Recalls

With each wave of media attention, the Monitor has observed a corresponding increase in visits to AirbagRecall.com and an increase in vehicle repairs.

8. Paid Advertising

With input from the Monitor, Takata has conducted a targeted digital and social media ad campaign aimed at reaching drivers with vehicles containing the highest risk defective Takata inflators. Through a combination of display, search and social media advertising, vehicle owners see ads while browsing on mobile and desktop devices. The ads strategically vary, from videos to create awareness to display ads aimed at immediate action.

The pilot ads drove users to AirbagRecall.com, where users can enter their license plate or VIN to confirm that their vehicle has been impacted by the recall and contact a local dealership. Social media advertising such as sponsored Facebook posts allows friends and family to act as a value arbiter of the issue by sharing and tagging other users in comments to garner new attention. Frequent testing and optimization has been performed to make sure advertising content and tactics continue to be effective. From February 1 to September 25, 2017, with pilot advertising efforts during that period, the AirbagRecall.com program attracted 173,000 VIN look ups out of 634,000 unique visitors to the site.

9. Summits

The Monitor, in close collaboration with NHTSA, has hosted three Takata Recalls Summits (“Summits”) to examine issues in the Takata recalls to better enable affected vehicle manufacturers to share best practices in recall completion and develop industry-wide strategies.

The first Summit occurred in March 2017. The Summit covered a number of topics, including the current state of the Takata recalls, the importance of ensuring vehicle owner data quality, the importance of dealer engagement in the recall and the progress related to the use of canvassing in scheduling and completing repairs related to the Alpha population. Feedback was also provided related to certain Coordinated Remedy Program provisions, including the Coordinated Communications Recommendations. Various affected vehicle manufacturers also participated by presenting on a number of topics, including motivating and communicating with drivers, outreach efforts and a panel discussion on unique and innovative strategies for outreach and data enhancements.

The second Summit occurred in July 2017, and more heavily leveraged both content from and participation by the affected vehicle manufacturers. Like the first Summit, the Monitor provided all affected vehicle manufacturers with an update regarding the state of the Takata recalls and Monitor activities over the past quarter, and initiated a broader discussion of dealer engagement recommendations and the need for strategic planning by each affected vehicle manufacturer. A number of affected vehicle manufacturers also shared success stories as part of a discussion on innovations, including communications testing, engaging IRFs, researching vehicle owners, engaging in multi-channel outreach and implementing local plans. Finally, each of the working groups established at the First Summit presented on their progress over the last quarter, including both successes and challenges, and addressed questions and comments from the broader group of summit attendees.

The third Summit occurred in October 2017, and again leveraged content from the affected vehicle manufacturers in addition to content provided by the Monitor and NHTSA. During this summit, NHTSA provided a review of the state of the recalls and discussed a number of considerations regarding accounting for vehicles under the Coordinated Remedy Program. The Monitor presented to the affected vehicle manufacturers on its fall 2017 research findings and the recent updates to its data visualization tool. The summit then transitioned to a number of panel discussions by various affected vehicle manufacturers on how to overcome the different barriers facing all or most affected vehicle manufacturers, such as owner inconvenience, the need to engage the insurance industry and segmenting one's unrepaired vehicle owner population. The summit concluded with a series of breakout sessions for the various working groups, followed by updates regarding each working group's progress and next steps.

A summary of the key topics covered at each Summit is provided in Figure 35.

Figure 35: Key Summit Topics

Summit Date	Topic
March 2017	<ul style="list-style-type: none"> • Data integrity • Dealer engagement • Canvassing • Coordinated communications • Unique and innovative outreach strategies • Communicating with vehicle owners • Establishment of working groups
July 2017	<ul style="list-style-type: none"> • Targeted metropolitan analyses & data visualization • Strategic planning and forecasting • Communications research and testing • Third-party engagement: DMVs, IRFs • Dealer engagement: measurement and incentives • Innovative recall initiatives • Working group updates
October 2017	<ul style="list-style-type: none"> • 2017 research findings • Overcoming owner inconvenience • Understanding non-compliant owners through canvassing • Using IRFs to overcome challenges • Segmented communications • Engaging third parties: insurers, auctions and used car dealers • Vehicle accounting considerations • Working group breakout sessions and updates

10. Outreach Vendors

Certain outreach vendors specialize in developing and administering automotive recall outreach. Several affected vehicle manufacturers have used one such vendor for creative development, mailing, email, robo-calls, text messages and live-operator calls. This vendor conducts multiple, multi-channel outreach attempts each month to affected vehicle owners. This vendor can also assist affected vehicle manufacturers with data collection and analysis to determine the best contact information for owners of affected vehicles and which affected vehicles are no longer on the road.

Because this outreach vendor can take a large role in an affected vehicle manufacturer's communications and recall strategies, NHTSA and the Monitor have met with representatives of the company in person and via telephone. NHTSA and the Monitor review the company's standard mailing templates and call scripts, and have made a variety of observations—generally based on the CCRs—which have been largely accepted. In addition, the Monitor shares data analysis it conducts and its assessment of the outreach in use. These efforts are intended to enable the vendor to learn from NHTSA's and the Monitor's analysis and improve its data infrastructure to enhance the effectiveness of its outreach. Since NHTSA and the Monitor began engaging with this vendor, the outreach materials sent to affected vehicle owners have begun to reflect a clear emphasis on tailoring impactful content to the language preferences and education levels of the affected vehicle owners.

11. Salvage Recovery Vendors

Salvage inflator collection is a critical aspect of the Takata recalls. Many of the vehicles subject to the Takata recalls are very old and will encounter “end of life” circumstances such as total loss accidents, operational malfunctions, or damage from weather events. Tracking these vehicles is particularly challenging because, even when these events occur, registration data often does not change or at most may indicate that an insurer has taken title to the vehicle. In addition, many smaller salvage yards do not maintain sophisticated electronic inventory management systems that would enable them to easily identify whether the vehicles in their inventory have defective inflators.

The fact that defective inflators are in salvage vehicles does not negate the risk they pose, as IRFs or individuals completing repairs at home may still purchase these airbag inflators and install them in other vehicles without realizing they have open recalls. Salvage inflators may pose an even greater risk in the HAH zone due to a vehicle's exposure to high heat and humidity over the extended period of time the vehicle is not operational.

As an example of these risks, on March 3, 2017, Karina Dorado, an 18 year-old woman, was involved in a minor crash in Las Vegas involving her 2002 Honda Accord, resulting in the deployment of a defective Takata airbag inflator. At a nearby trauma center, surgeons removed pieces of the metal airbag inflator that damaged her vocal cords and trachea and treated her for additional injuries to her neck. Ms. Dorado's vehicle was previously involved in an accident in 2015 and declared a total loss by the insurer. The vehicle was then repaired using a salvage inflator and sold to Ms. Dorado's family, which had no knowledge of the defective Takata inflator used in the repair and no reasonable way of knowing the vehicle contained a defective Takata airbag inflator.

The Monitor met with a salvage recovery partner to understand which affected vehicle manufacturers were collecting salvaged inflators at the time, what challenges these affected vehicle manufacturers encountered, the scope of the salvage recovery's services and any potential opportunities for collaboration or further efficiencies. After learning more about these services, the Monitor assisted interested affected vehicle manufacturers in understanding the importance of salvage. Over time, an increasing number of affected vehicle manufacturers are using salvage recovery services to collect these defective inflators.

Recently, in response to the flooding from Hurricanes Harvey, Irma and Maria in September 2017, the Monitor, in coordination with affected vehicle manufacturers, has sought to accelerate repairs of flood-titled²⁴ vehicles with open Takata recalls. One prominent salvage auction company has been receptive to this idea and is working with the Monitor to identify ways to notify all affected vehicle manufacturers of flood-titled vehicles they are holding in inventory. This will enable vehicle manufacturers to repair the vehicle before they go through the auction process. Virtually all affected vehicle manufacturers have voiced support for this initiative and activities are underway.

VII. ASSESSMENT OF THE TAKATA RECALLS

Many affected vehicle manufacturers were initially slow to engage meaningfully and think strategically about how to maximize recall repairs and to deploy the kind of innovative recall techniques needed for the Takata recalls. More recently, with the issuance of the CRO, the ACRO and the various Monitor recommendations and the independent efforts of several manufacturers, there has been marked improvement in recall completion percentages.

A. Lagging Completion Percentages Prior to the ACRO

Prior to November 2015, affected vehicle manufacturers had, in most instances, low repair completion percentages and low rates of repairs. Figure 36 shows completion percentages of then-affected vehicle manufacturers as of November 2015, when the original Coordinated Remedy Order was issued. As Figure 36 illustrates, the best performing affected vehicle manufacturer at that time—which had already been repairing its affected vehicles for over 18 months and was not facing significant parts constraints—had repaired 41% of its affected vehicle population. The second highest performing affected vehicle manufacturer had a 22% completion percentage and several affected vehicle manufacturers had repaired fewer than 10% of their respective unrepaired vehicle populations.

²⁴ While titling requirements and restrictions vary by state, generally a vehicle receives a flood title when it has been in water deep enough to fill the engine compartment.

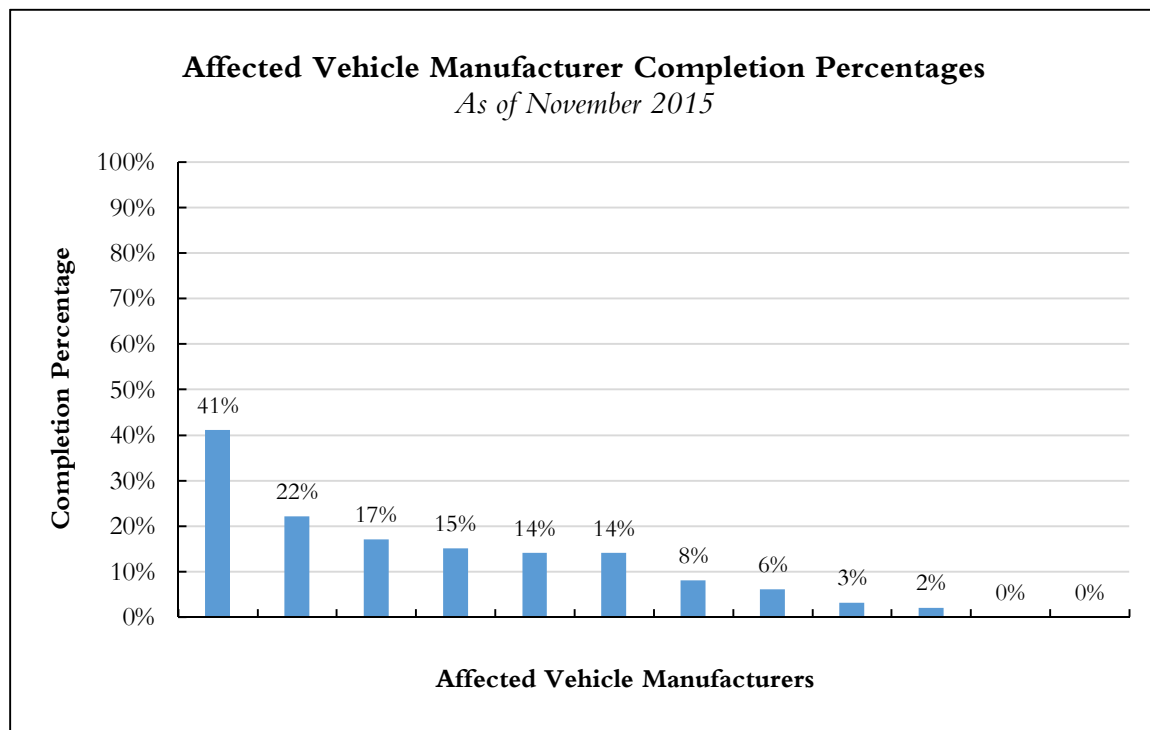


Figure 36: Affected Vehicle Manufacturer Completion Percentages as of November 2015

At the time, many affected vehicle manufacturers continued to rely on traditional recall techniques than strategic initiatives to target difficult-to-reach vehicle owners or ensure their recall outreach was as effective as possible. Even taking into account parts constraints and the recall campaigns' varying launch dates, these low overall completion percentages demonstrate the significant challenges affected vehicle manufacturers face in making repairs expeditiously.

During the period after the issuance of the CRO and before the issuance of the ACRO, there were several important developments. As the Monitor gathered information through the Monitor Dashboard, conducted regular calls with affected vehicle manufacturers, engaged with various stakeholders, shared observations with vehicle manufacturers and developed recommendations, certain vehicle manufacturers considered improvements to their recall initiatives. In addition, in May 2016, NHTSA announced Takata's expansion of the recalls to include all non-desiccated PSAN inflators, including all passenger-side inflators. This significant expansion of the recalls resulted in a large increase in the number of affected inflators and the necessity of developing replacement parts for passenger-side inflators over many months.

These factors resulted in many vehicle manufacturers concluding that status quo outreach would not be sufficient for the Takata recalls. Affected vehicle manufacturers began to implement enhanced recall escalation techniques, including proactively engaging dealers, segmenting unrepaired vehicle populations, improving communications content including the use of multi-lingual content, and deploying non-traditional forms of outreach. These techniques helped vehicle manufacturers begin to increase their completion percentages and remedy rates.

Prior to the issuance of the ACRO, repair completion percentages for Priority Group 1 through 3 vehicles followed a trajectory similar to that observed for other prior recalls of older vehicles. Figure 37 shows the completion percentage for a composite of other prior recalls of older vehicle as a blue line and completion percentages for Priority Group 1 through 3 vehicles (which similarly contain older vehicles) as an orange line. This figure demonstrates that typical recalls of older vehicles, which employ limited outreach efforts, experience a leveling off in completion percentage. In contrast, following the release of the ACRO, Priority Group 1 through 3 vehicles in the Takata recalls have seen a substantial increase in completion percentages. This is particularly notable given the significant challenges related to the repair of older vehicles that have been under recall for a significant period of time, such as the Priority Group 1 through 3 vehicles. The provisions of the ACRO and the ongoing efforts of NHTSA and the Monitor encourage affected vehicle manufacturers to develop the innovative outreach techniques that are resulting in a higher repair rate than typically experienced for recalls of older vehicles.

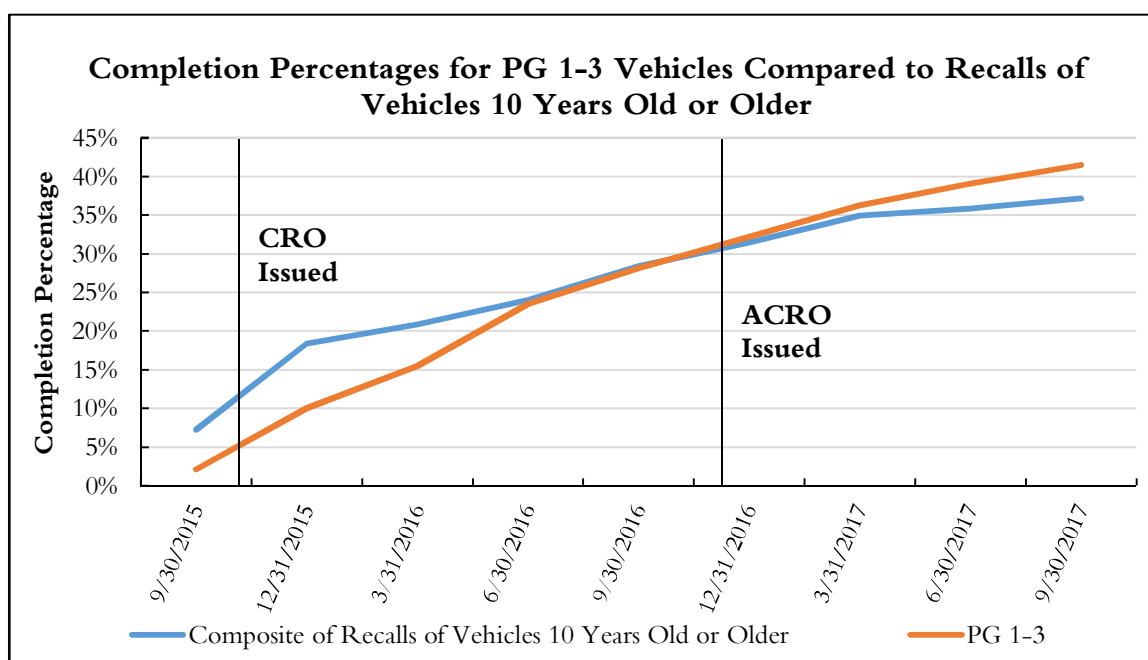


Figure 37: Completion Percentages for PG 1-3 Vehicles Compared to Recalls of Vehicles 10 Years Old or Older

B. Increasingly Robust Recall Completion Percentages Following the ACRO

On December 9, 2016, NHTSA issued the [Third Amended Coordinated Remedy Order](#). As discussed more fully in Section V, the ACRO adds new Priority Groups and requires all affected vehicle manufacturers to submit various plans and certifications that track their progress and chart out their intended next steps.

Priority Groups 4 and 5, which were added by the ACRO, have had the benefit of the Monitor’s recommendations of frequent, multi-touch outreach—that is, consistent, repeated messaging through multiple different channels—and other innovative repair strategies.

These Priority Groups have also enjoyed outreach efforts informed by best practices of other affected vehicle manufacturers and aided by new initiatives arising from industry collaboration encouraged by the Monitor and NHTSA. Furthermore, these Priority Groups have benefitted from the quarterly self-assessment, regular milestones and regular tracking of part supply required by the ACRO.

Figure 38 reflects completion performance for vehicles in Priority Group 4, as reported by each affected vehicle manufacturer as of the dashboard reporting cycle ending on September 15, 2017. Under the Coordinated Remedy Program, Priority Group 4 campaigns were scheduled to launch on or before March 31, 2017. Affected vehicle manufacturers are required to create and implement a plan designed to complete repair of forty percent of vehicles in Priority Group 4 by September 30, 2017, and fifty percent by year-end 2017. As Figure 38 illustrates, affected vehicle manufacturers have reported completion percentages in line with these milestones.

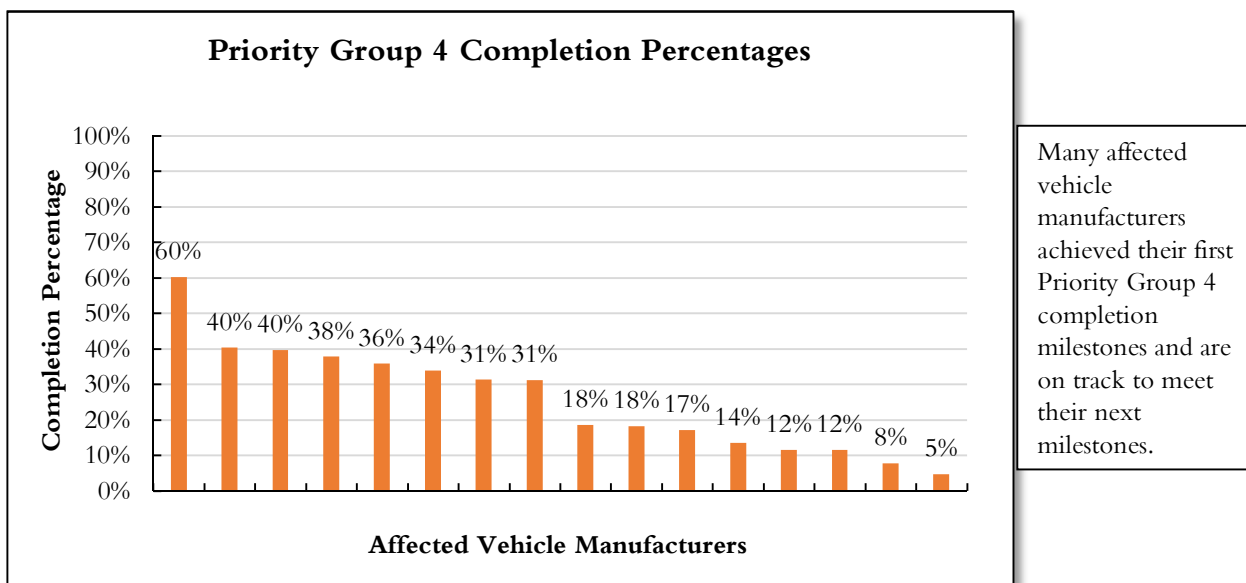


Figure 38: Completion Percentages by Affected Vehicle Manufacturers²⁵ for Priority Group 4²⁶

Figure 39 provides a comparison of the completion percentages between the campaigns that existed at the time the CRO was issued, which used mainly infrequent, letter-only communication, with the campaigns launched under Priority Group 4, which benefitted from NHTSA's and the Monitor's recommendations and observations regarding effective communication techniques. The blue bars in Figure 39 represent campaigns that existed prior to the issuance of the CRO. As the figure illustrates, repairs of vehicles in Priority Group 4 are

²⁵ Certain affected vehicle manufacturers, including those with the two lowest completion percentages, have requested, and were recently granted, extensions for a portion or all of their vehicles in this priority group.

²⁶ Completion rates include likely out-of-transit vehicles.

triple the amount of repairs that existed for vehicles in Priority Groups 1 through 3 during analogous quarters after campaign launch.

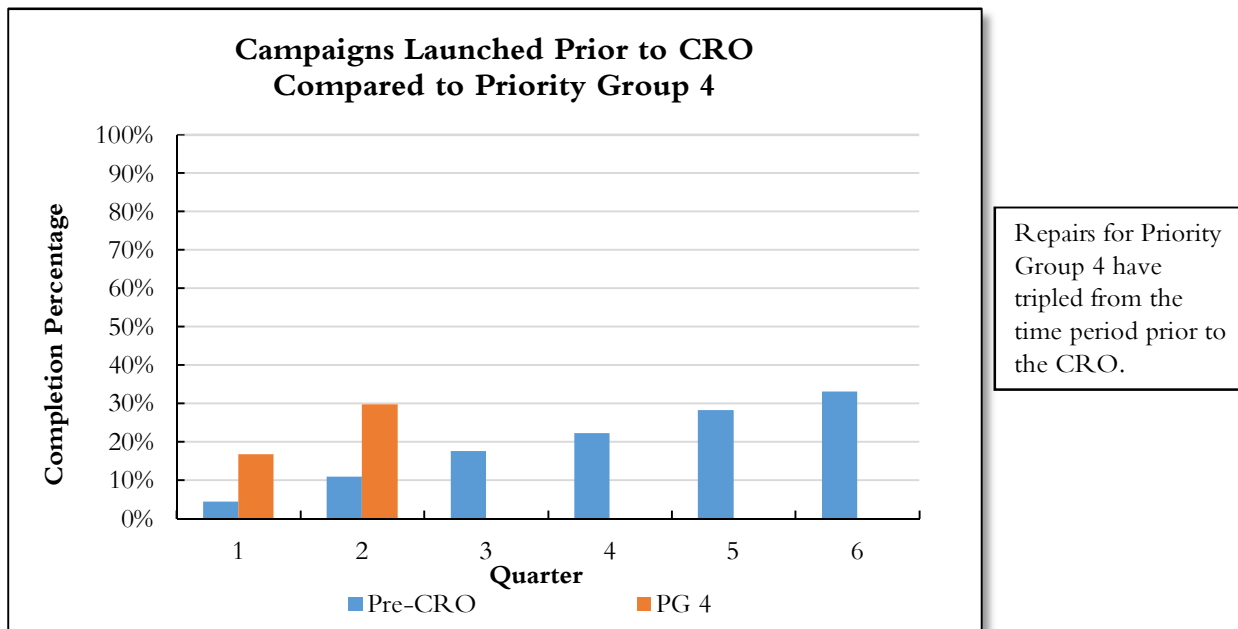


Figure 39: Completion Percentages of Campaigns Launched Prior to the CRO Compared to Priority Group 4

Figure 40 provides a comparison of the completion percentages for all six quarters for campaigns that were active prior to the ACRO.²⁷ Under the CRO, first quarter completion percentages were comparable to those that existed prior to the CRO. After the ACRO was issued, quarterly completion percentages began to significantly exceed those prior to the CRO. Campaigns enacted under the ACRO have achieved in just two quarters what previously took more than five.

²⁷ While this comparison is limited to the first two quarters of Priority Group 4, there is a single example of a Priority Group 4 remedy launch that was made available a year in advance of the ACRO sufficient supply and remedy launch deadline of March 31, 2017, and, thus, has six quarters of completions to measure.

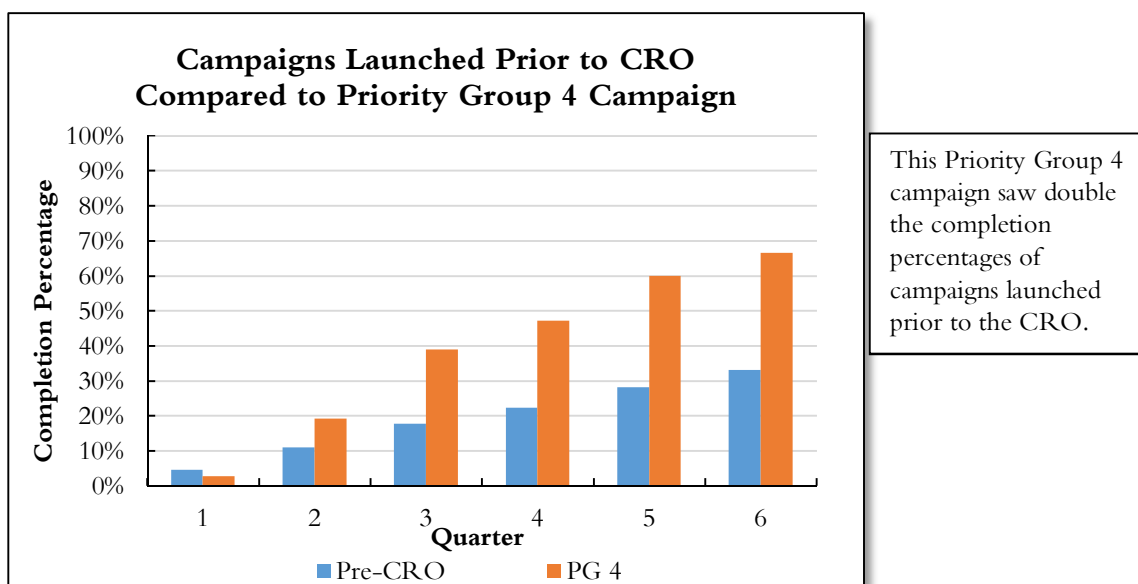


Figure 40: Completion Percentages of Campaigns Launched Prior to the CRO Compared to a Priority Group 4 Campaign²⁸

It is important to note that while the completion percentages of Priority Groups 4 and 5 have significantly outpaced those observed from Priority Groups 1 through 3 over the same time periods, the rates of repair for Priority Groups 4 and 5 are slowing. It will be increasingly challenging for affected vehicle manufacturers to improve completion percentages to 60% and higher. Affected vehicle manufacturers must continue to analyze the barriers that persist even after vehicle owners have been exposed to current forms of outreach. Expansion of programs under development or being piloted by many affected vehicle manufacturers, including leveraging IRFs, offering mobile service, using more aggressive and clear multi-lingual communications strategies, targeting communications through social media, incentivizing dealers, contacting after-market sellers of vehicles and repairing vehicles at auctions, will improve completion percentages. For some owners, particularly of older vehicles, the only means of effective communication may be door-to-door interaction.

Figure 41 reflects completion performance for vehicles in Priority Group 5 as of September 15, 2017. Priority Group 5 campaigns were scheduled to launch on or before June 30, 2017. Affected vehicle manufacturers are required to design a plan to repair 15% of the vehicles in Priority Group 5 by September 30, 2017, and 40% by year-end. Most affected vehicle manufacturers in this Priority Group have met the initial milestone requirement and are on pace to meet the 40% milestone by year-end. This is a marked improvement from vehicles in Priority Groups 1 through 3, some of which took 18 months to reach 41% completion (see Figure 36), as compared to Priority Group 5, which is on pace to reach 40% in just two quarters. Figure 41 also

²⁸ While the original and expansion campaigns launched at different times, the launch of these campaigns can be normalized using quarterly intervals beginning at the time of launch. Priority Group 4 remedies had a sufficient supply and remedy launch deadline of March 31, 2017 and most remedies were launched at this time. Thus, a comparison can be made between the first two quarters of completion for Priority Group 4 and the CRO campaigns. The orange represents one affected vehicle manufacturer that launched its Priority Group 4 campaign early and thus has six quarters of data.

shows that half of the affected vehicle manufacturers were able to achieve repair rates of at least 30% within two quarters. Many of the affected vehicle manufacturers that did not reach a repair rate of 30% within two quarters were experiencing parts constraints.

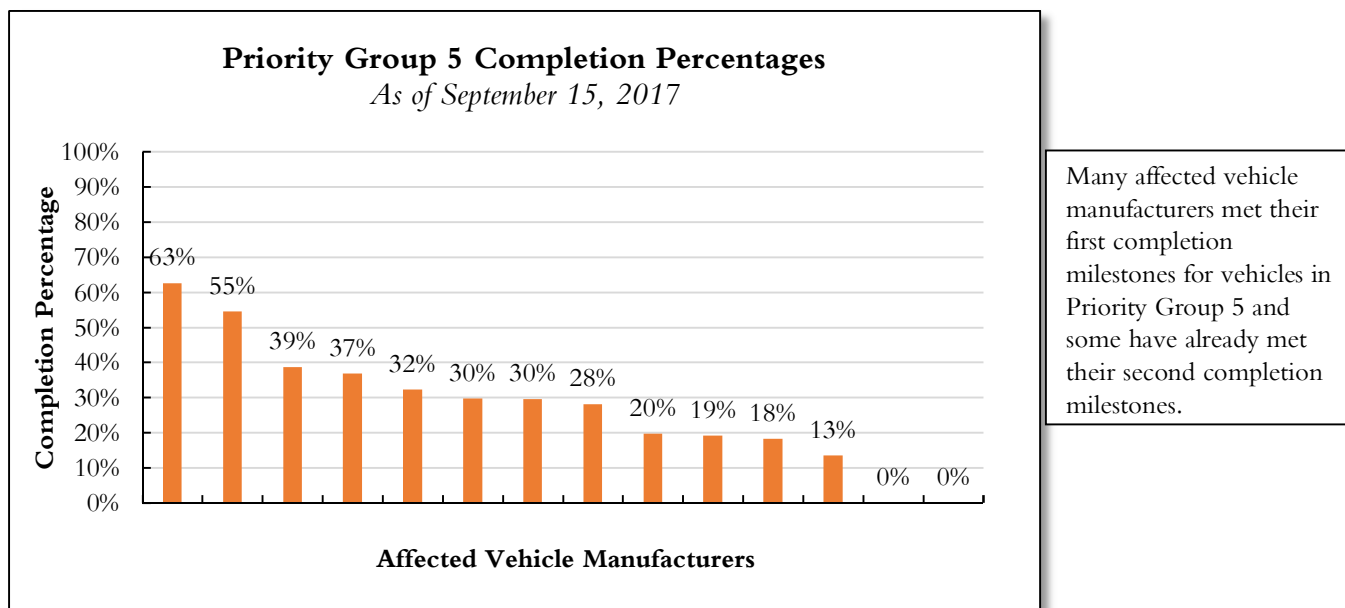


Figure 41: Recall Completion Percentages by Affected Vehicle Manufacturers for Priority Group 5²⁹

In addition, the relatively high completion percentages shown in Figure 41 result in part from the fact that many campaigns in Priority Group 5 launched earlier than required under the Coordinated Remedy Program. Paragraph 34 of the ACRO permits an affected vehicle manufacturer to “further accelerate the launch of a Priority Group to begin the recall remedy campaign at an earlier date, provided that the vehicle manufacturer has a sufficient supply available to do so without negatively affecting supply for earlier Priority Groups” with approval from NHTSA. Building on this, Paragraph 35 of the ACRO states that “[a]n Affected Vehicle Manufacturer further accelerating a Priority Group under Paragraph 34 herein shall not be penalized for launching early, and shall be held to the standard of meeting the remedy completion timeline as though the recall remedy campaign launched on the date established [in Paragraph 34].” In short, if a vehicle manufacturer launches a campaign early, it receives the benefit of extra time to reach its quarterly completion percentage milestones. Early campaign launches will become more common as part supply expands.

Figure 42 shows completion rates for Priority Groups 1 through 8 relative to each group’s respective December 31, 2017 milestone. The blue bars represent the actual completion percentages for each priority group as of October 27, 2017, while the orange bars represent each group’s forecasted completion percentages by December 31, 2017 based on current completion rates. The horizontal dashed lines represent the December 31, 2017 milestone for each priority

²⁹ The three affected vehicle manufacturers shown here with the lowest completion percentages have requested, and were recently granted, extensions for a portion or all of their vehicles in this Priority Group.

group. As the figure illustrates, Priority Groups 1 through 3, which were launched well before the ACRO, are much further from reaching their respective December 31, 2017 milestones than Priority Groups 4 through 8, which launched after the ACRO. The figure also illustrates that Priority Groups 7 through 8, which are not scheduled to be launched until 2018, have launched early under the ACRO and seen robust completion percentages.

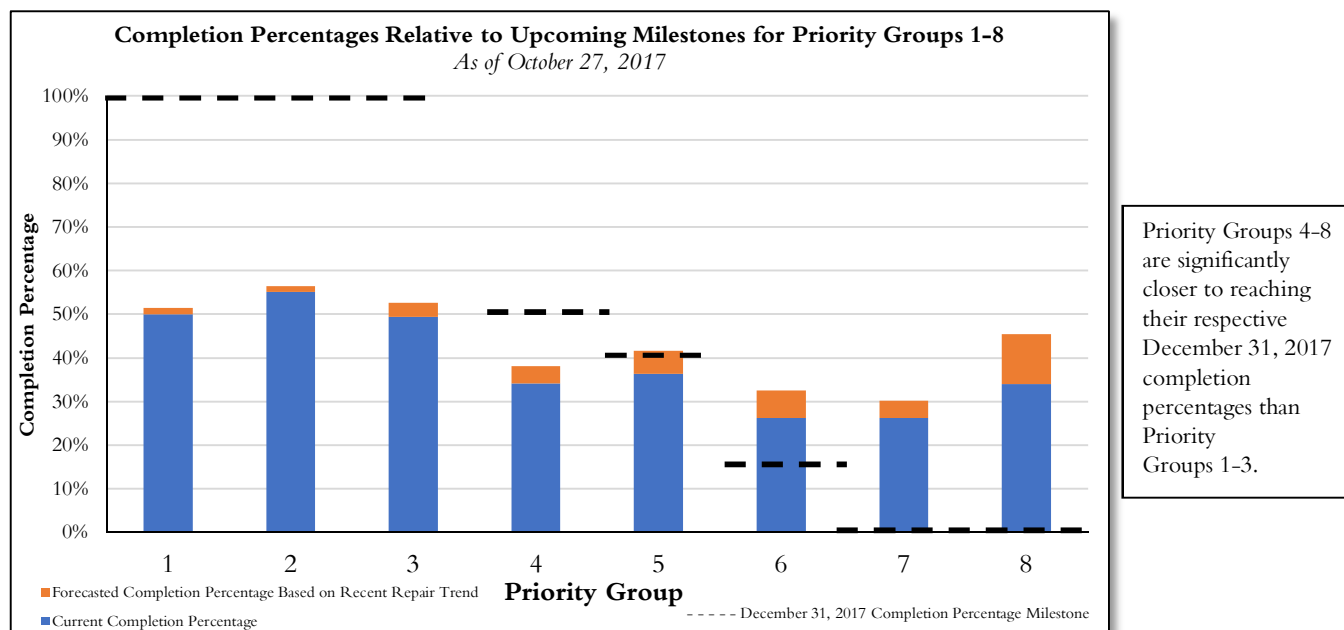


Figure 42: Completion Percentages Relative to December 31, 2017 Milestone for Priority Groups 1-8

VIII. OBSERVATIONS FOR FUTURE SUCCESS

The Monitor has observed a number of recall initiatives that have meaningfully improved various affected vehicle manufacturers' repair percentages.

A. Multi-touch, Multi-channel Communication

Some vehicle owners continue to lack awareness regarding the Takata recalls and the safety risks associated with these defective products. Few of those aware of the Takata recalls associate the defect with death and serious injury. To overcome these misperceptions, the Monitor's research to date indicates that communications regarding the recalls should be frequent and clearly written with a call to action. Many individuals surveyed or interviewed had previously received traditional recall notifications but disregarded them because they did not convey sufficient urgency. The Monitor's research shows that in cases of highly dangerous recalls, affected vehicle owners want to be notified with urgent, disruptive messages, repeated with great frequency in order to better ensure they become aware of the issue and understand its gravity. Several affected vehicle manufacturers have likewise advised the Monitor that one outreach attempt per month per vehicle is unlikely to be enough to motivate all owners to take action.

The Monitor's research also indicates that communications should be delivered frequently through multiple different channels or platforms that are integrated with consistent

branding and messaging, in order to increase the likelihood of reaching the affected vehicle owner and conveying an appropriate sense of urgency. The Monitor's research indicates that affected vehicle owners vary in terms of their preferred outreach method. Accordingly, there is no one medium that will be sufficient to reach the majority of affected vehicle owners. Furthermore, individuals interviewed expressed that receiving the same message through multiple different channels of communication, in and of itself, conveyed a sense of urgency that motivated them to take action. Outreach vendors used by the affected vehicle manufacturers have also indicated that weekly outreach across multiple channels, including phone calls, emails and postal mailings, is necessary to communicate properly with affected vehicle owners.

In sum, the Monitor's research indicates that it is not enough to rely on the traditional recall practice of sending vehicle owners a single letter or a few letters at infrequent intervals. Rather, affected vehicle manufacturers must actively attract owners' attention and persuade them to act using consistent messaging across multiple different channels of communication. This multi-channel, multi-touch approach reflects the fact that no single communication tactic alone is as effective as a combination of these tactics, and leverages the use of repeated notifications, in and of itself, to highlight the urgency of the situation in a way that isolated communications through a single medium cannot convey.

After consultation with NHTSA, the Monitor distilled its research findings and incorporated other observations regarding barriers to recall completions into a set of formal recommendations. The Monitor shared a series of Coordinated Communications Recommendations (the "CCRs") with the affected vehicle manufacturers on December 23, 2016.³⁰ The Coordinated Remedy Program incorporates these CCRs by reference.³¹

The CCRs reflect the importance of sending frequent, layered, multi-channel outreach which clearly describes the dangers of defective Takata airbag inflators and conveys a clear path to action. Specifically, the CCRs observe that:

- Affected vehicle manufacturers should use non-traditional means of outreach in addition to owner notification letters, including postcards, emails, phone calls, text messages and social media.
- Affected vehicle manufacturers should pursue multi-touch communication strategies to ensure that impacted vehicle owners receive at least one form of outreach per month until the affected vehicle is repaired.
- Vehicle owner contact information must be up-to-date, to ensure vehicle owners actually receive these outreach materials.
- Affected vehicle manufacturers should use clear, accurate and urgent messaging in order to convey the risk these defective airbag inflators pose.

³⁰ Appendix F.

³¹ ACRO ¶ 42, Appendix A.

- Affected vehicle manufacturers should proactively address potential consumer misunderstandings within their outreach efforts. For example, affected vehicle manufacturers should emphasize that recall repairs are free,³² and discuss the various services provided by dealers that make repairs more convenient, to encourage customers to respond to affected vehicle manufacturer outreach.
- Affected vehicle manufacturers should also ensure that they communicate to their dealers information regarding parts availability, services to make recall repairs more convenient and the importance of completing Takata recall repairs in order to avoid potential miscommunication between vehicle owners and dealers.
- Affected vehicle manufacturers should provide messaging that is credible and can be clearly distinguished from other generic solicitations to overcome distrust by vehicle owners of the communications. This can be done by tailoring the message with personalized information, such as the vehicle owner's name and/or vehicle make, and using official logos that lend authenticity to the communications, such as the U.S. Department of Transportation logo.
- Affected vehicle manufacturers should ensure that their communications are in both English and Spanish, and should include additional translations when appropriate.
- Affected vehicle manufacturers should use language that is simple and easy to understand, including by those with low literacy levels, as opposed to more technical terminology.
- Affected vehicle manufacturers should clearly convey that vehicle owners must take action to schedule a repair, and make scheduling these repairs as simple and accessible as possible.

While some affected vehicle manufacturers initially did not adopt these recommendations, most have since begun to implement them after hearing at the first two Takata Recalls Summits about the success of peers that embraced the recommendations. Figure 43 reflects the degrees to which various affected vehicle manufacturers have employed the CCRs. In the table, green connotes the greatest degree of adoption for each particular recommendation, while red connotes the lowest degree of adoption.³² As the Figure demonstrates, affected vehicle manufacturers have implemented the different recommendations to varying degrees.

³² Boxes labeled "N/A" connote that a few affected vehicle manufacturers with small recalled vehicle populations have not submitted supplemental communications of the specified type (*i.e.*, supplemental letter communications or emails) to the Monitor for review.

Figure 43: Affected Vehicle Manufacturers' Engagement with the CCRs

Coordinated Communications Recommendation		Affected Vehicle Manufacturers													
1	Wherever possible, include in every communication an option for the recipient to notify you that the vehicle in question has been sold, transferred, or is otherwise being primarily driven by a party not residing at the same address as the recipient.														
2	Adopt an escalation strategy—including but not limited to the use of more graphic imagery—for particular vehicles for which parts are available and the consumer has received multiple forms of outreach, but the vehicle has nonetheless still not been repaired.														
3	Describe the risk associated with the defect using simple language that emphasizes the risk of injury or death to both drivers and passengers stemming from shrapnel in the event of a rupture (e.g., “In even a minor fender bender, the airbag inflator in your vehicle could rip apart and send shards of shrapnel toward you and your passengers. People have been killed and seriously injured by this defect.”).														
4	Do not include information that is likely to mitigate the owner’s perception of the risk (e.g., “No ruptures have been observed in [affected vehicle manufacturer’s] vehicles to date.”).														
5	Use bold text to highlight particularly impactful words (e.g., “urgent”, “kill”).														
6	Include imagery that reinforces graphically the nature of the risk (such as the “shrapnel hazard icon” developed by and available from the Monitor).														
7	Avoid using generic or low-impact imagery (e.g., scenic pictures).														
8	In letter communications, include a red headline at or near the top of the letter, with prominently featured text, such as “Urgent Safety Recall”.														
9	In email communications, use the word “URGENT” in the subject line.														
10	Emphasize throughout all communications that repairs are free; repairs can be performed by any affected vehicle manufacturer-authorized dealer regardless of where the vehicle was purchased; and the owner will not be charged for any other service or repair unless the owner requests it.														

Coordinated Communications Recommendation		Affected Vehicle Manufacturers													
11	Affirmatively recognize the inconvenience presented by the need to have the vehicle repaired, and prominently feature the details of all services you or your dealers provide that address owner inconvenience associated with the repair (e.g., towing, provision of loaner or rental cars and extended dealer service hours).														
12	Advise consumers that they may contact NHTSA with any questions or concerns regarding the recall at 1-888-327-4236.														
13	In letter and postcard communications, collect in a boxed area a series of bullet points with the most relevant information (e.g., that the vehicle is defective, that the repair is free, how to schedule a repair and the details of any services you provide to address owner inconvenience).														
14	Wherever possible, address communications using the vehicle owner's name (avoid "Dear Vehicle Owner" or "Dear Resident").														
15	Prominently display your logo as well as logos of the Department of Transportation and NHTSA, consistent with instructions provided by NHTSA.														
16	Include a picture of the actual vehicle at issue near the top of the communication, including such details as the vehicle's make, model, model year, color and trim package, and repeat these same details in the text of the communication.														
17	Ensure that all communications are in—at a minimum—both English and Spanish, and assess whether employing additional languages may be appropriate in light of the characteristics of your specific owner population.														
18	Avoid scientific or technical jargon (e.g., "the inflator could produce excessive internal pressure upon deployment").														
19	In written communications, a font size of at least 11 pt. is recommended to ensure that consumers can reasonably engage with the content.														
20	Prominently feature (and, wherever possible, repeat numerous times) the telephone number consumers should call to schedule a repair.														

The Monitor has observed that adoption of the CCRs has improved steadily since the issuance of the ACRO. Many of the affected vehicle manufacturers have increased their use of aggressive imagery, text and formatting to illustrate the risks the defect poses to drivers and passengers. More affected vehicle manufacturers are using simpler language to describe the defect and the simple steps to repair vehicles. Spanish language content is also being used more widely.

The Monitor has observed improvements in completion percentages and rates among affected vehicle manufacturers that use multi-touch, multi-channel outreach. Figure 44 illustrates a difference in completion percentages of more than eight percentage points between an affected vehicle manufacturer that most significantly engaged in multi-touch, multi-channel communications and an affected vehicle manufacturer that failed to meaningfully implement this recommendation.

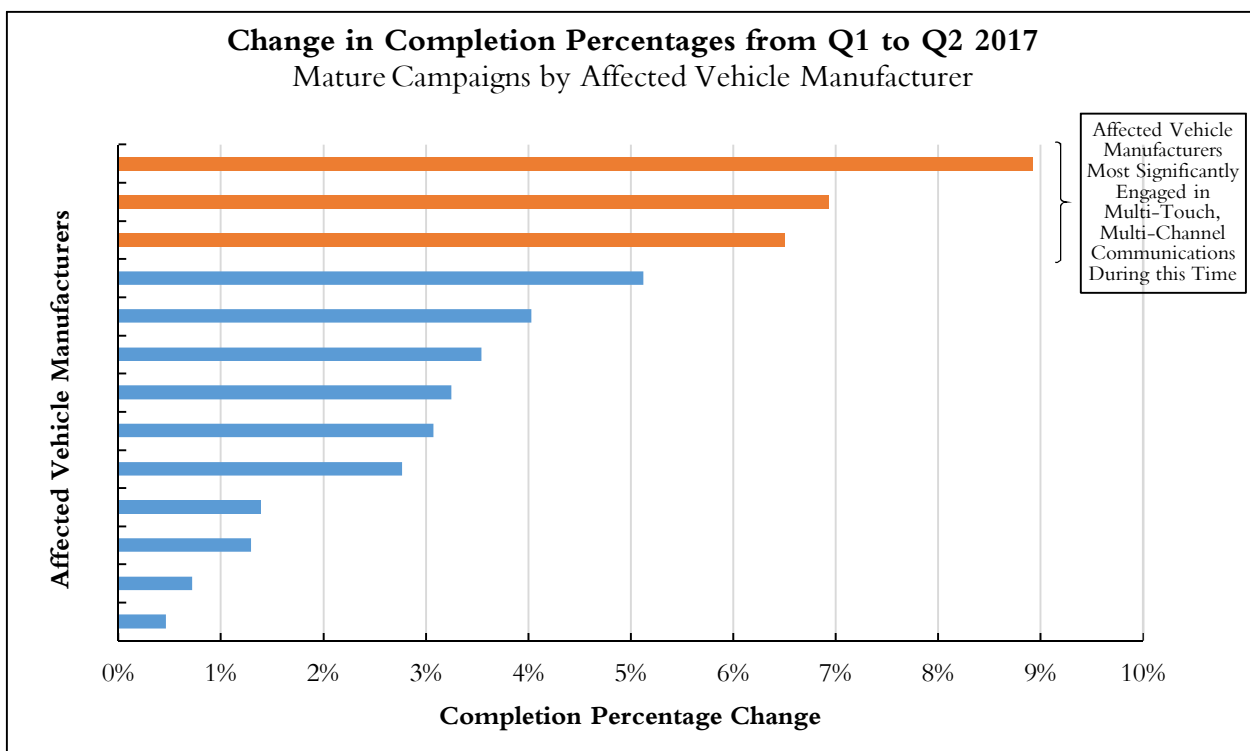


Figure 44: Affected Vehicle Manufacturers' Change in Completion Percentages from Q1 to Q2 2017

The impact of incorporating frequent, multi-channel outreach is even more pronounced when comparing vehicle owners that received such outreach to owners who did not. Figure 45 compares a campaign in which frequent, multi-channel outreach was used ("Comprehensive Outreach") to one in which only traditional letter outreach was used ("Simple Outreach"). The campaign using Comprehensive Outreach saw a significantly higher completion percentage each quarter than the campaign using Simple Outreach. This disparity between campaign performance rates increased over time, indicating that multi-channel, frequent outreach has an ongoing positive impact, even after six quarters of outreach activity.

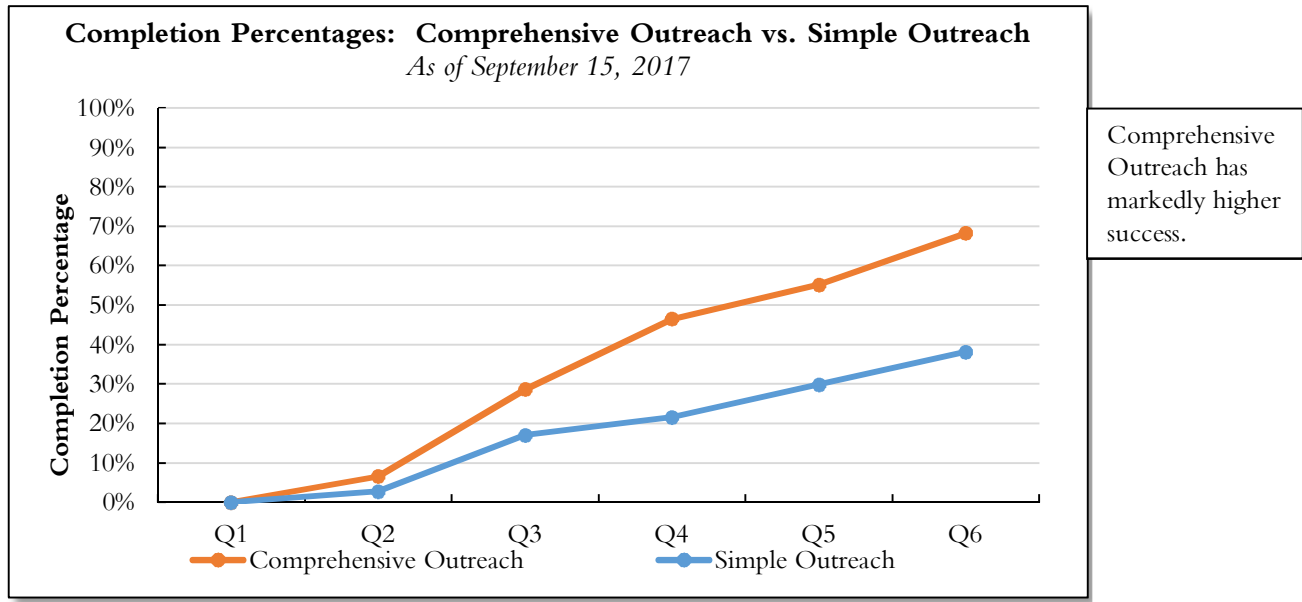


Figure 45: Completion Percentages: Comprehensive Outreach vs. Simple Outreach

Figure 46 similarly compares campaigns targeting similar model years of vehicles, but with varying degrees of outreach. As the figure illustrates, using frequent, multi-touch and multi-channel outreach (“Comprehensive Outreach”) results in a marked improvement in completion percentages relative to campaigns using traditional, infrequent outreach (“Simple Outreach”), even after just five months. Those vehicle manufacturers using Comprehensive Outreach saw completion percentages nearly twice as high as rates for vehicle manufacturers using Simple Outreach, when targeting similarly situated vehicles over the same period of time. After only five months of divergent communications methods, vehicle manufacturers employing Comprehensive Outreach had completion percentages over 35 percentage points higher than vehicle manufacturers employing Simple Outreach.

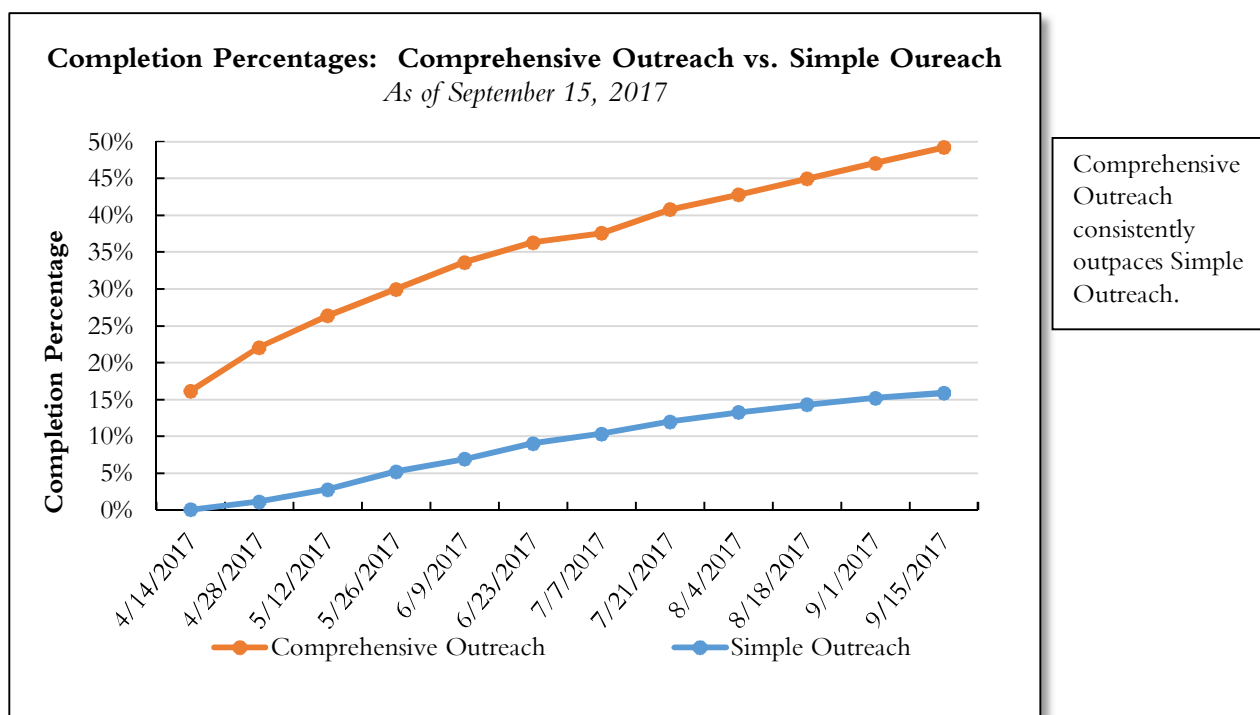


Figure 46: Completion Percentages: Comprehensive Outreach vs. Simple Outreach³³

The Monitor has observed similar trends when affected vehicle manufacturers' outreach activity is viewed through the lenses of compliance with discrete elements of the CCRs, as affected vehicle manufacturers that have most embraced the highest number of CCR elements have seen marked improvements in completion percentages. Figure 47 illustrates the variations in completion percentages among affected vehicle manufacturers based on the degree to which they have adopted the CCRs. In this figure, the orange line demonstrates the completion percentage in the first 10 weeks of repair activity for Priority Group 4 vehicles for an affected vehicle manufacturer that has adopted many of the elements of the CCRs, while the blue line demonstrates the same for an affected vehicle manufacturer that has not embraced many of the elements of the CCRs. For each vehicle manufacturer, part supply was sufficient at the time of launch.

³³ April 14, 2017 is when the Simple Outreach campaign began reporting data.

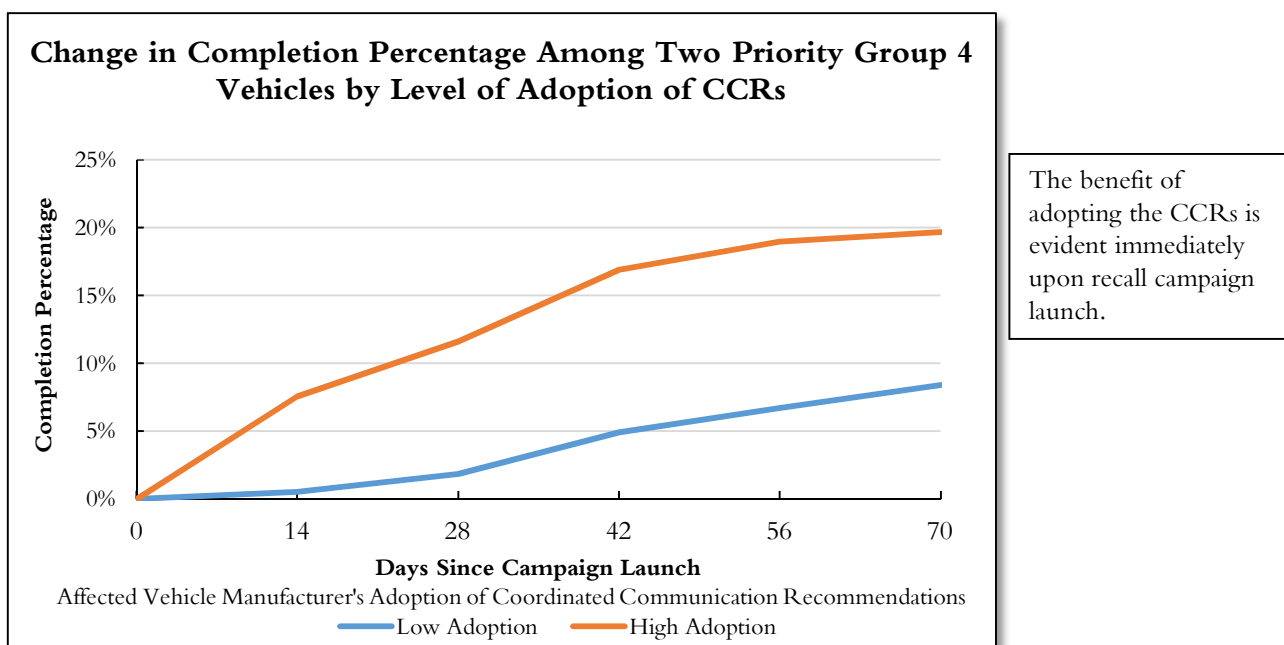


Figure 47: Change in Completion Percentage Among Two Priority Group 4 Vehicles by Level of Adoption of CCRs

Figure 48 shows a similar trend among affected vehicle manufacturers' recall efforts for Priority Group 5 vehicles. The orange line demonstrates the completion percentage in the first 10 weeks of repair activity for Priority Group 5 vehicles for an affected vehicle manufacturer that has adopted many elements of the CCRs, while the blue line demonstrates the same for an affected vehicle manufacturer that has not embraced many elements of the CCRs. As was observed among Priority Group 4 completion percentages, affected vehicle manufacturers who had adopted many elements of the CCRs had recall completion percentages doubling those of affected vehicle manufacturers that did not adopt many elements of the CCRs.

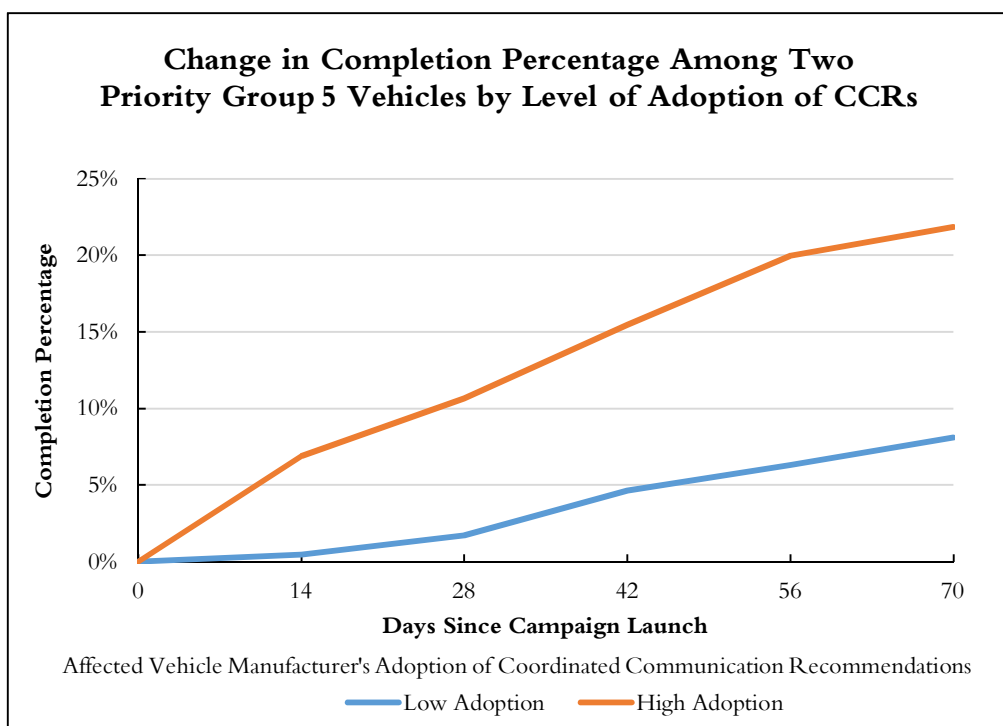


Figure 48: Change in Completion Percentage Among Two Priority Group 5 Vehicles by Level of Adoption of CCRs

There is still room for improvement. Many affected vehicle manufacturers do not yet personalize communications to recipients (by, for example, including a picture of the actual vehicle model, make, trim or color of the targeted vehicle) and messaging can in many instances be further clarified and simplified. Services available to minimize the inconvenience associated with the repairs can also be better highlighted in many instances.³⁴

B. Adherence to Monitor Recommendations

The Monitor has also observed that affected vehicle manufacturers who most engage with the Monitor's other formal recommendations have seen marked improvements in completion percentages and rates.

³⁴ In addition to the CCRs, Paragraph 42 of the ACRO also provides affected vehicle manufacturers with the ability to submit to NHTSA and the Monitor proposals for "alternative messaging, imaging, formats, technologies, or communications strategies, with any supporting data, analysis, and rationales" related to any proposed variation in communication from the CCRs. To date, none of the affected vehicle manufacturers has submitted any such proposals.

Figure 49 below summarizes affected vehicle manufacturers' adherence to the Monitor's recommendations, with green indicating the highest degree of adoption, yellow indicating an intermediary degree of adoption and red indicating low or no adoption.

Consumer Outreach	Dealer Relations	Private Sector Engagement	Salvage Recovery	CCR
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Figure 49: Summary of Affected Vehicle Manufacturer Compliance with the Monitor's Recommendations³⁵

Figure 50 sets forth the change in completion percentage for affected vehicle manufacturers with similarly situated populations of Priority Group 1 through 3 vehicles over the last six months. As this figure indicates, affected vehicle manufacturers that have most embraced the Monitor's recommendations have realized the greatest increases in completion percentages for these vehicles during this time. Conversely, affected vehicle manufacturers that have not

³⁵ The four affected vehicle manufacturers listed as N/A are luxury vehicle manufacturers with a very limited pool of recall vehicles.

embraced the Monitor’s recommendations have recognized the smallest increases in completion percentages during this time.

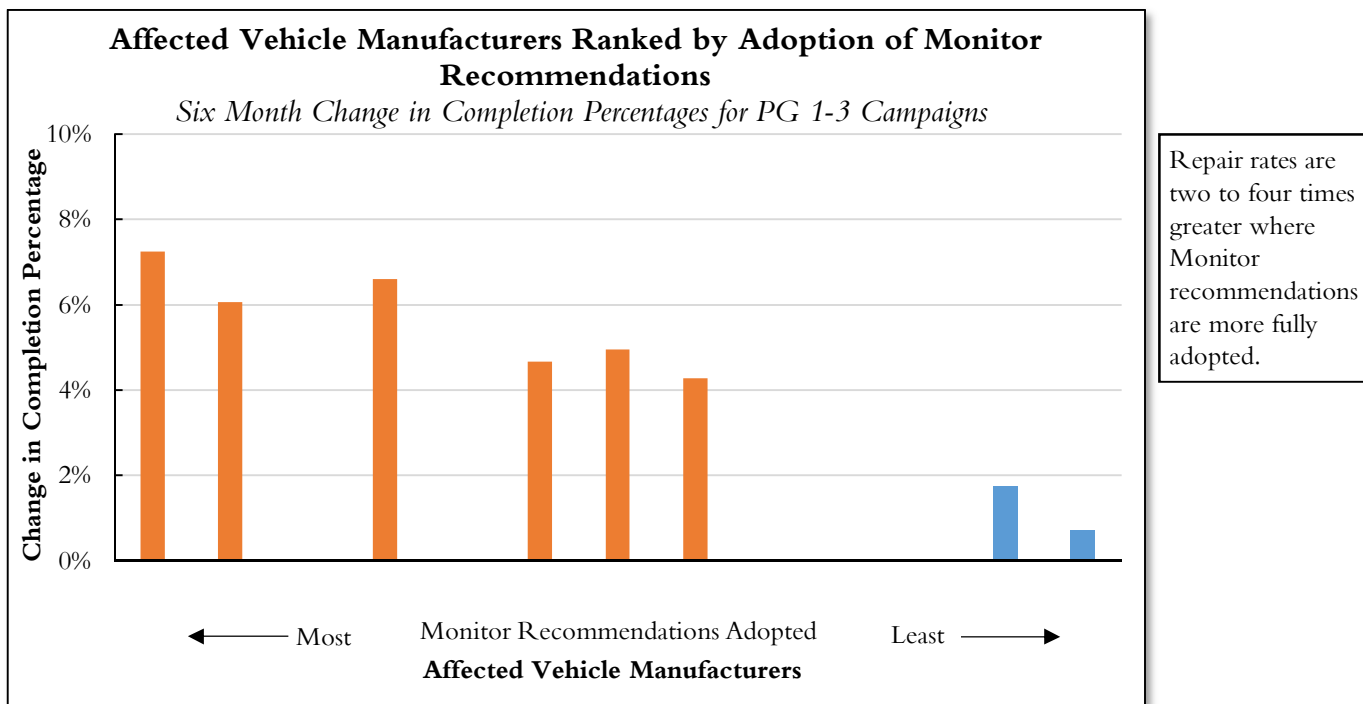


Figure 50: Change in Completion Percentages by Level of Adoption of Monitor Recommendations

C. Segmented Analysis

The Coordinated Remedy Program aims to ensure that all owners of vehicles with defective Takata airbags have their vehicles repaired. Ultimately, this requires affected vehicle manufacturers to locate and effectively communicate with owners of recalled vehicles to bring these vehicles into dealerships to be repaired. A nuanced understanding of who the owners of recalled vehicles are, and what will motivate them to act, is crucial to accomplishing this task.

The significant diversity among recalled vehicles, described above in Section IV, creates a corresponding diversity among unrepaired vehicle owners. Owners of these unrepaired vehicles generally differ demographically and in terms of socioeconomic status, with some vehicle owners having higher incomes, higher literacy levels or more alternative methods of transportation at their disposal should they need to leave their vehicle with a dealership for a day. Many unrepaired vehicle owners are not native English speakers and thus may not understand communications in English. Each of these factors influence the kinds of communications, outreach and service offerings that would be required to ensure these vehicle owners understand they have an open recall on their vehicle and to determine how best to motivate them to bring their vehicle in for a repair.

Figure 51 shows the completion percentages for each affected vehicle manufacturer’s highest and lowest performing vehicles in Priority Group 1 through 3. Each bar

corresponds to a particular subset of vehicles, distinguished by vehicle make, model and model year. As this figure illustrates, an individual affected vehicle manufacturer may use the same outreach methods and recall strategy with its entire population of unrepaired vehicle owners and receive vastly different responses based on make and model of vehicle. A recall strategy that generates a 72% completion percentage among one subset of vehicle owners may only generate a 24% completion percentage among another subset of vehicle owners.

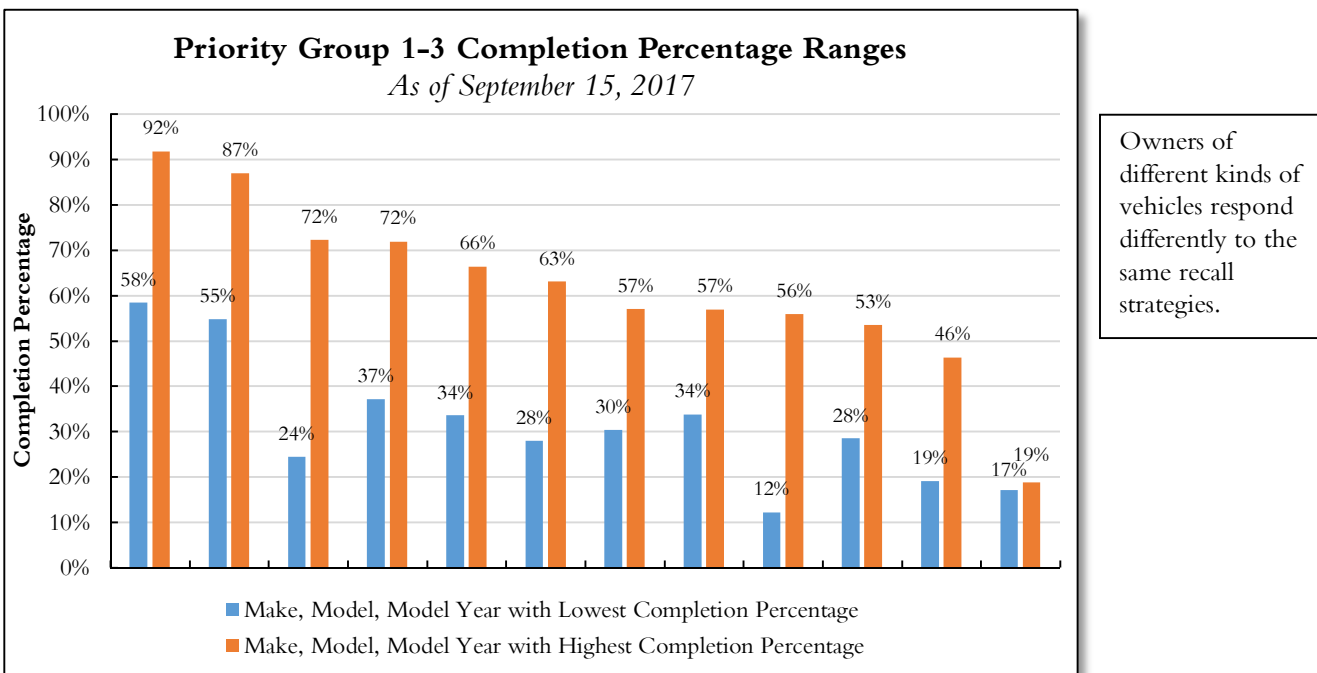


Figure 51: Completion Percentages For Highest and Lowest Performing Vehicle Subsets by Affected Vehicle Manufacturer

For this reason, affected vehicle manufacturers should segment their unrepaired vehicle owner population based on these various attributes and assess what types of outreach are most effective for each sub-population of vehicle owners.

Even recently, many affected vehicle manufacturers did not distinguish between different subsets of unrepaired vehicle owners. Instead, they used the same methods and materials to attempt to communicate with all unrepaired vehicle owners, regardless of their language preferences, education levels, proximity to dealers or ability to be without their vehicle for the length of the repair. Similarly, many vehicle manufacturers did not target where and when they would offer certain services, such as mobile repair centers or free rides to and from dealerships, based on the demographic and socioeconomic characteristics of different subpopulations. Instead, their recall efforts were based on an assumption that all vehicle owners would respond similarly to the service offerings and outreach tactics they employed.

To address this issue, the Monitor made various formal and informal recommendations to affected vehicle manufacturers, emphasizing the need to segment their populations of unrepaired vehicle owners and employ different strategies based on the needs of these respective subgroups. In December 2016, the Monitor issued its Coordinated Communications Recommendations, described in further detail in Section VI, which identified

the need to “[t]ailor communications to the individual owner and vehicle at issue” and “[e]nsure that [] messaging is accessible to owners with limited reading or English skills”. In spring 2017, the Monitor created a tool using a data visualization and business intelligence platform, discussed in Section VI—in which the Monitor creates color-coded maps displaying the kind of population segmentation vehicle manufacturers should consider to best understand their unrepaired vehicle owner population. The Monitor regularly reviews this data visualization tool and advises affected vehicle manufacturers regarding how they can use these segmentation maps and analysis techniques in formulating their recall strategies.

Though several affected vehicle manufacturers have started to meaningfully to study and try to understand the different segments of their unrepaired vehicle populations, most affected vehicle manufacturers continue to treat all unrepaired vehicle owners uniformly.

D. Strategic Forecasting

The Takata recalls require affected vehicle manufacturers to think strategically rather than reactively. Given the sheer size of the unrecalled vehicle population, the diversity among recalled vehicles and the national scope, it is important that affected vehicle manufacturers measure the success of the different initiatives and tactics they employ in executing their recall plans. Strategic forecasting is crucial to avoid wasting time and resources on ineffective methods and instead focus on proven, efficient recall tactics.

To this end, the Coordinated Remedy Program requires affected vehicle manufacturers to execute their recall remedy programs in a manner designed to complete a specific percentage of recall repairs by certain dates set out in the Coordinated Remedy Orders. To help affected vehicle manufacturers meet these requirements, the Coordinated Remedy Program also requires each affected vehicle manufacturer to submit written plans each quarter describing how it will reach these completion milestones. In April 2016, the Monitor issued formal recommendations emphasizing the need to “[i]mplement procedures to measure the success of customer outreach strategies by tracking associated VINs or other identifying information”.³⁶

While some affected vehicle manufacturers have made meaningful progress in measuring the success of different recall initiatives and making forecasts based on such information, many have yet to implement this recommendation. Nonetheless, affected vehicle manufacturers are demonstrating an increased awareness and understanding of the need to strategically forecast completion percentages and are attempting to plan strategically and measure their progress proactively.

³⁶ Appendix D.

E. Engaging Dealers

The Coordinated Remedy Program necessarily requires dealers to complete the recall repairs required under the Program. Accordingly, engaging with dealers is crucial to the Takata recalls.

However, some affected vehicle manufacturers do not actively provide their dealers with the training or materials needed to conduct recall outreach, motivate their dealers to notify vehicle owners of open Takata recalls or incentivize their dealers to dedicate time or resources to Takata recalls. Additionally, many affected vehicle manufacturers do not measure dealer recall performance. Given the crucial role of dealers in the repair process, measurements of dealer productivity can aid significantly in ensuring recall repairs are completed on a timely basis.

Affected vehicle manufacturers should also customize their approaches to different individual dealers. Dealers across the country have different capabilities, resources, numbers of affected vehicles in their area, numbers of service bays in which to conduct repairs and numbers of trained repair technicians. Accordingly, when developing strategies to engage dealers, affected vehicle manufacturers should develop solutions that accommodate this diversity of requirements and resources. Large, sophisticated dealers may require data be provided in specific formats so that it can be integrated with their business development centers. Smaller dealers, on the other hand, may need additional support from the affected vehicle manufacturer in order to complete proactive outreach. Based on dealer size, capacity and affected vehicle population goals, incentives may need to be customized to the capabilities of the dealer.

On July 15, 2016, the Monitor submitted a set of recommendations regarding relationships with dealers and strategies for leveraging the resources dealers offer.³⁷ These recommendations were developed based on the Monitor's meetings with various affected vehicle manufacturers' dealers across the HAH region. These recommendations urge the affected vehicle manufacturers to proactively engage and motivate dealers by, for example, ensuring dealer recognition and accountability, expanding dealer reimbursement policies, evaluating technician training requirements and hosting dealer best practices roundtables. In addition, the recommendations aim to ensure that affected vehicle manufacturers provide dealers with sufficient information and educational literature to adequately inform consumers of the Takata recalls and carry out recall repairs. The recommendations also urge affected vehicle manufacturers to provide dealers with customer data and messaging to use in recall outreach.

Figure 52 displays the success affected vehicle manufacturers have had when they engage dealers. In the figure, the blue line represents the bi-weekly repair rate of an affected vehicle manufacturer that began engaging its dealer network in early August 2017. This affected vehicle manufacturer used a number of tactics to incentivize its dealers to prioritize Takata recall repair and engage in recall outreach, including providing lists of affected vehicle owners in each dealers' respective area, measuring the repairs of each dealer and even going on a roadshow to visit its various field offices in August 2017. As this figure illustrates, a significant increase in the

³⁷ Appendix E.

manufacturer's repair rate followed these engagements—more than doubling in less than two months.

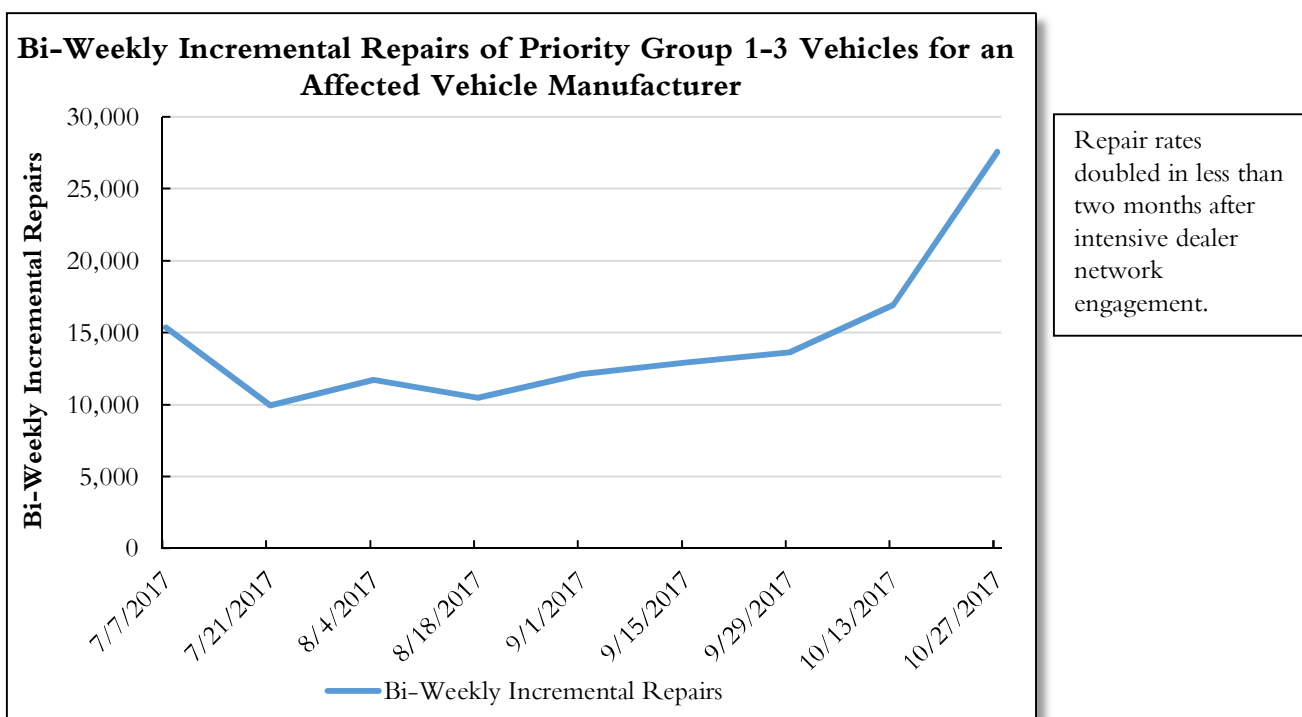


Figure 52: Bi-Weekly Incremental Repairs of Priority Group 1-3 Vehicles for an Affected Vehicle Manufacturer

F. Engaging IRFs

IRFs provide another important opportunity for connecting with vehicle owners, notifying them of open recalls and assisting them with completing the required repairs. To effectively engage with IRFs, affected vehicle manufacturers must be able to communicate with IRF technicians consistently and share necessary information.

Figure 53 illustrates the progress one affected vehicle manufacturer has made by engaging with IRFs—a practice it initiated in October 2016. As part of this engagement, the affected vehicle manufacturer developed a software system for providing IRF technicians with information that permits them to determine whether particular vehicles have open Takata recalls. Ready access to this information enables service technicians to notify vehicle owners that they need to have their vehicles repaired and work with them to schedule their repair appointments.

In this figure, the blue bars indicate the number of vehicles with open Takata recalls for this affected vehicle manufacturer that have been searched at IRFs who use this software. The orange bar indicates the number of those searched that were later repaired. As the affected vehicle manufacturer continues to engage with the IRFs to notify affected vehicle owners of open recalls, the amount of repairs it is able to complete steadily increases. From July through September 2017, this affected vehicle manufacturer was able to achieve an average monthly repair rate of over 5,000 vehicles by leveraging IRFs. Affected vehicle manufacturers like this one are now considering how to further incentivize IRFs to work with affected vehicle owners to schedule and complete repairs.

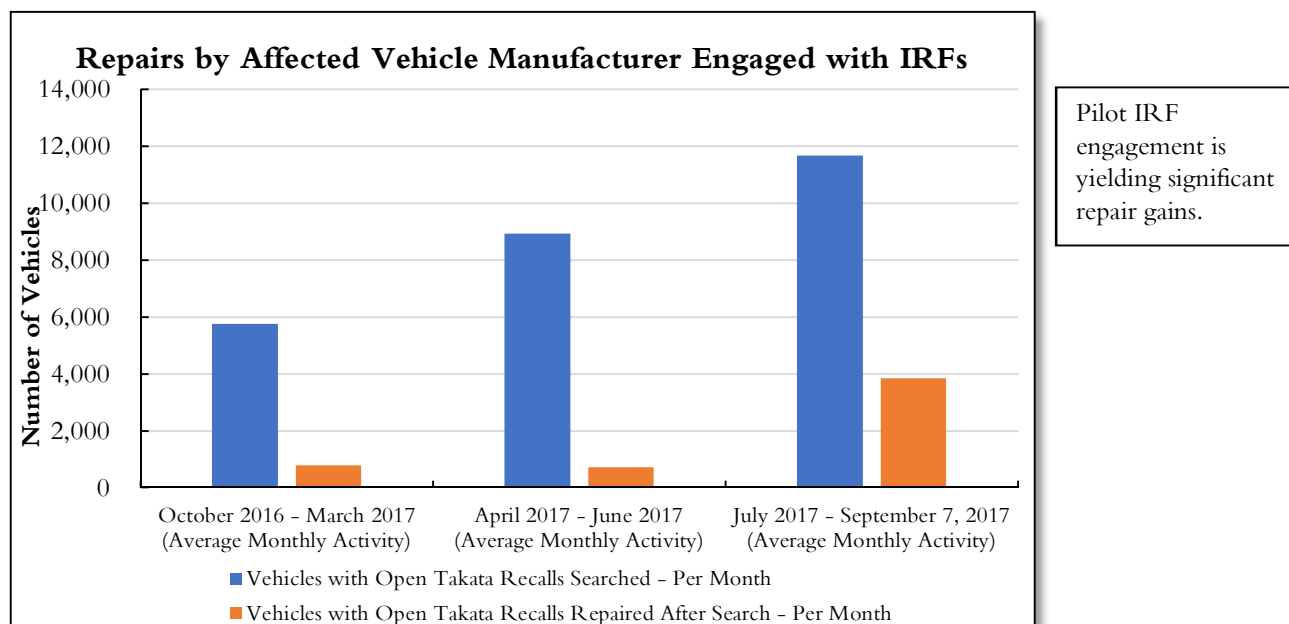


Figure 53: Repairs by an Affected Vehicle Manufacturer Engaged with IRFs

G. Scale and Resources

While many vehicle manufacturers have implemented innovative, groundbreaking pilots—such as mobile service, messaging customers through IRFs, dealer pilots and vehicle owner surveys/focus groups—the bulk of these new approaches have been deployed at local or regional levels. In order to adequately address the scale of the Takata recalls, affected vehicle manufacturers must transition to national strategies once they observe that a particular initiative is effective. Scaling requires significant forethought, logistical planning and resource dedication to ensure the national initiative is effective and efficient.

H. Cross-Functional Internal Expertise and Experience

Recall teams must possess diverse skill sets and employ individuals with expertise in different disciplines, including information technology, marketing and data analysis. Affected vehicle manufacturers generally have these resources at their disposal but in the past did not use them to inform their recall engagement strategy. Based on feedback from NHTSA and the Monitor, many of the affected vehicle manufacturers have begun to use personnel with more

diverse skill sets and experience and expertise in an effort to develop sophisticated solutions and strategies to accelerate recall completion.

I. Canvassing

Cumulative completion percentages generally stagnate over time because vehicle owners motivated by outreach have already contributed to the repair rate at an earlier stage. Even with the wide variety of outreach methods deployed by affected vehicle manufacturers, certain owners—particularly those of older vehicles—will continue to face challenges in understanding the severity of the defect, the actions they can take and the availability of resources to overcome inconvenience.

The Monitor has observed that in-person canvassing of these owners can serve to both cure these information gaps and effectively motivate these owners to have their vehicle repaired.

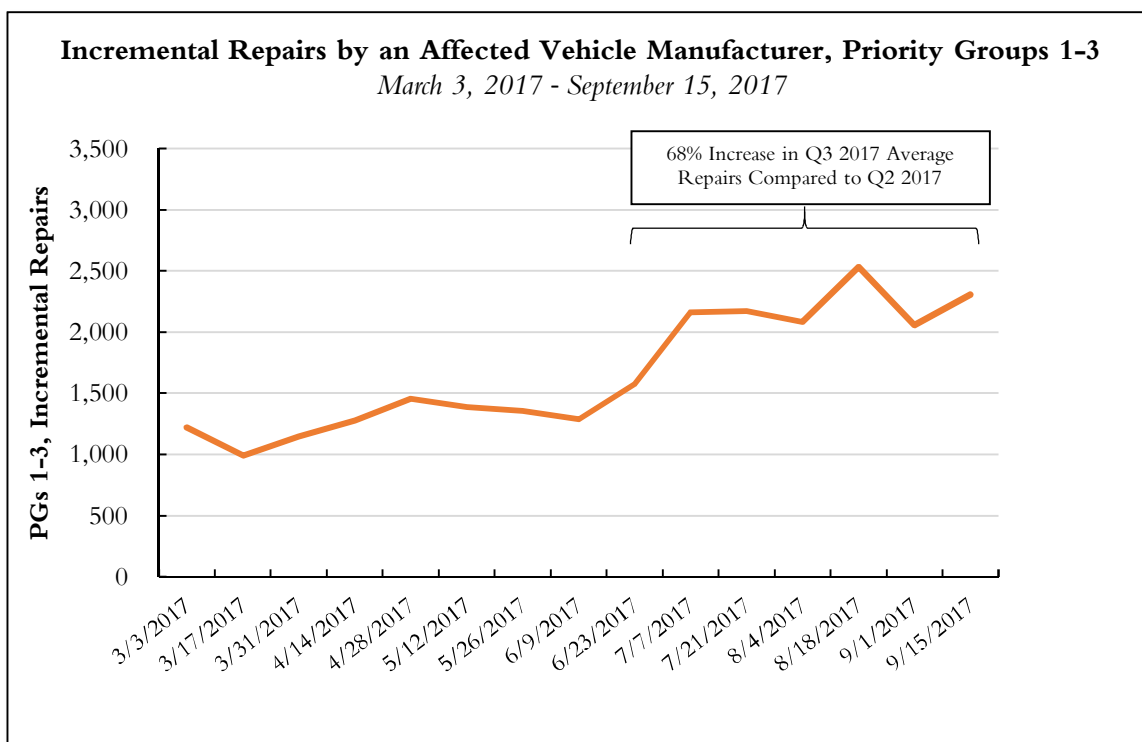


Figure 54: Incremental Repairs by an Affected Vehicle Manufacturer for Priority Groups 1-3³⁸

The population of vehicle owners depicted in Figure 54 received several different communications, including many of the innovative approaches recently deployed by other vehicle

³⁸ The population measured by the orange line excludes incremental canvassing-related repair counts for Houston and Dallas, Texas, as those populations were being canvassed by the Monitor during this period separately from the affected vehicle manufacturer.

manufacturers, resulting in relatively high completion percentages. Despite this success, some of these vehicle owners have not been motivated to repair their vehicles. In early 2017, this vehicle manufacturer implemented a canvassing initiative, which scaled gradually from February to May 2017 and then more rapidly from June to August 2017 to become a national canvass in September 2017. Despite the challenges typically associated with repairing older vehicles, this affected vehicle manufacturer's canvassing initiative has already begun to see significant success in repairing these difficult-to-reach vehicles.

In Figure 54, the orange line measures repairs of the manufacturer's Priority Group 1 through 3 vehicles that were canvassed. These vehicles had been under recall for a significant period of time. Modest canvassing activities began in January to February 2017 and expanded significantly in August to October 2017. As Figure 54 illustrates, where vehicle owners had been canvassed, bi-weekly incremental repairs increased by 68% from the previous quarter's average repair rate. The average amount of repairs completed every two weeks (*i.e.*, the pace at which repairs were made as measured bi-weekly) increased over eight times for vehicle owners that were canvassed.

As this example illustrates, it may be that for certain vehicle owners, individuals will need to visit the homes of the owners in order to more fully explain the risks of the defective airbag inflators and assist in scheduling an appointment and arranging alternative transportation. In other cases, visiting a vehicle owner's address in person may reveal that the contact information used to conduct previous outreach was inaccurate.

J. Summary of Monitor's Observations for Success

The observations detailed in this section all have the potential to contribute to an effective vehicle outreach strategy and assist affected vehicle manufacturers with successfully completing repairs. A summary of the Monitor's observations for future success is set forth in Figure 55.

Figure 55: Summary of Monitor's Observations for Success

Observation for Success	Implementation
Coordinated Communications	The Monitor issued formal Coordinated Communications Recommendations based on research and analysis that emphasize the importance of sending frequent, multi-channel outreach that clearly describes the dangers of defective Takata airbag inflators and conveys a clear path to action.
Segmented Analysis	The Monitor issued formal and informal recommendations to affected vehicle manufacturers to segment unrepaired vehicle owner populations and employ different strategies based on the needs of each respective segment.
Strategic Forecasting	The Monitor issued formal recommendations to affected vehicle manufacturers to measure the success of the different initiatives and tactics they employ in executing their recall plans, so they can avoid expending time and resources on ineffective methods and instead dedicate their resources to proven, efficient recall tactics.
Engaging Dealers and IRFs	The Monitor issued formal recommendations urging affected vehicle manufacturers to engage and motivate dealers, including measures to ensure dealer recognition and accountability, expand dealer reimbursement policies, evaluate technician training requirements and host dealer best practices roundtables.
Scale and Resources	Affected vehicle manufacturers should transition from local to national strategies once they observe that a particular initiative is effective. In doing so, affected vehicle manufacturers must plan strategically, dedicating significant forethought, logistical planning and resources to ensure the national initiative is effective and efficient.
Cross-functional Expertise	In an effort to develop more sophisticated solutions and strategies to accelerate recall completion, the Monitor and NHTSA have made recommendations to affected vehicle manufacturers advising them to use personnel with more diverse skill sets, experience and expertise.
Canvassing	Affected vehicle manufacturers should undertake door-to-door canvassing initiatives later in recall campaigns to proactively encourage vehicle owners to schedule repairs, verify their contact information and understand in greater detail the barriers vehicle owners face in completing repairs.
Enhanced Outreach Based on Risk	Affected vehicle manufacturers should address the heightened risk posed by certain inflator types with enhanced outreach strategies, including canvassing and multi-touch, multi-node communications that are tailored to affected vehicle owners.

IX. CONCLUSION

While there remains much room for improvement in the Takata recalls, affected vehicle manufacturers are beginning, on an industry-wide basis, to make meaningful progress toward developing sound strategic approaches. Affected vehicle manufacturers are more readily exploring multi-touch, layered communications, mobile repair, engagement of third parties such as independent repair facilities and door-to-door canvassing in order to remove defective inflators from U.S. roadways. Through collaboration between affected vehicle manufacturers, NHTSA and the Monitor, the response to the Takata recalls is being transformed.