Car crashes rank among the leading causes of death in the United States.

National Survey of Child Passenger Safety Technicians on the LATCH System, United States, 2013

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AAA Foundation for Traffic Safety

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Title

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About the Sponsor

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Founded in 1947, the AAA Foundation in Washington, D.C. is a not-for-profit, publicly supported charitable research and education organization dedicated to saving lives by preventing traffic crashes and reducing injuries when crashes occur. Funding for this report was provided by voluntary contributions from AAA/CAA and their affiliated motor clubs, from individual members, from AAA-affiliated insurance companies, as well as from other organizations or sources.

Introduction

Child safety seats (CSS) significantly reduce risk of fatal injury for infants and toddlers.[1-3] Observational studies, however, have repeatedly shown very high rates of CSS misinstallation and other misuse which may reduce their effectiveness.[4-6] A previous study by the AAA Foundation for Traffic Safety examined issues with the current state of the Lower Anchors and Tethers for CHildren (LATCH) system in passenger vehicles, in order to inform possible revisions to National Highway Traffic Safety Administration (NHTSA) regulations governing LATCH.[7] That study presents recommendations for improving the LATCH system to increase the rate of correct installation of CSSs based on a review of the contextual background of LATCH and usability issues; a workshop of Child Passenger Safety (CPS) instructors, technicians, and human factors experts; and a human factors systems analysis focused on user errors during installation of a CSS using LATCH. NHTSA is currently initiating an update of the Federal Motor Vehicle Safety Standard (FMVSS) 225, which regulates the vehicle components of LATCH and how CSSs are secured to the vehicle. Quesenbery's "5 E's of Usability" were used as a guideline for evaluating LATCH.[8] According to Quesenbery, end user products should be effective, efficient, engaging, error tolerant, and easy to learn.

This report presents the results of a national survey of CPS instructors and technicians. The objective of the survey was to supplement the previous study with insights from these professionals regarding their observations of how parents and other caregivers use and misuse LATCH, and their opinions regarding how the LATCH system could be improved to facilitate proper use and reduce the prevalence of serious misuse. The LATCH system has been required since September 2002 (model year 2003) in all passenger vehicles with a gross vehicle weight rating of 8,500 pounds or less and buses with a weight rating of 10,000 pounds or less, per FMVSS 225. The purpose of this standard was to "ensure…proper location and strength for the effective securing of child restraints, to reduce the likelihood of the anchorages systems' failure, and to increase the likelihood that child restraints are properly secured and thus more fully achieve their potential effectiveness in motor vehicles.[9]"

In 1997, AAA National assisted NHTSA with the National Child Passenger Safety pilot program and served as the original certification agency for the program beginning in 1998. The Standardized Child Passenger Safety Training Certification is now managed and administered by Safe Kids Worldwide with partnerships with NHTSA, the National Child Passenger Safety Board, and State Farm, and was established to train and certify CPS technicians as well as instructors to provide hands-on CSS checks for parents and caregivers. These checks help increase correct installation of CSSs and technicians observe use and misuse of LATCH in the real world by a wide variety of end users. AAA now serves on the National Child Passenger Safety Board assisting NHTSA with revisions to the national curriculum. AAA continues to develop educational materials, videos and national partnerships to support the issue and educate the general public on proper CSS use, and advocates for strong CPS laws at the state level. Additionally, AAA clubs nationwide participate in CSS checks, operate fitting stations, assist with CPS classes, and serve as a resource in their communities.

Methodology

The survey instrument was developed in coordination with the previous study to inform the topic areas and questions, and was thoroughly reviewed and commented on by several CPS experts. Each of Quesenbery's 5 E's is covered to some extent in the questionnaire, with the exception of how engaging LATCH is for parents and caregivers, which CPS technicians and instructors would have little if any means of assessing. The questionnaire was presented in sections, each consisting of a series of ratings or a multiple choice question covering LATCH ease-of-use issues for parents, caregivers, and other end users; LATCH installation errors that the respondent may have seen in the field; and design improvements that would facilitate easy, consistent, and correct use of CSSs. There was also an open-ended item where respondents could enter up to 400 characters to add to or emphasize issues covered in the survey. The results are integrated with those of the multiple choice questions in this section.

Respondents were instructed to answer the questions based on their personal experience as well as interaction with parents and caregivers. For some questions, this meant reporting their direct observations, and for others, speculating based on these experiences. Basic demographic information was also collected. Most questions asked respondents to rate whether they agreed or disagreed with a given statement (e.g., *"LATCH is more complicated than it should be."* Response options: *Strongly agree, Agree, Neutral, Disagree, Strongly disagree*). The questionnaire was made available in English. Respondents were allowed to skip any item that they did not wish to answer.

Respondents were sampled randomly from a searchable online database of CPS technicians and instructors maintained by Safe Kids Worldwide.[10] The database provides contact information for more than 16,000 technicians and instructors in the United States who chose to have their contact information listed in the database, representing approximately 44 percent of all CPS technicians and instructors in the United States.[11] A link to the survey and an introductory letter was emailed to 2,936 CPS technicians and instructors whose contact information was obtained from the database; 533 completed responses were received between October 29 and November 12, 2013 (18.2% response rate). The data were collected using the online survey data collection tool SurveyMonkey.[12]

The data were not weighted, as all CPS technicians and instructors who consented to being listed in the previously-mentioned database had an equal probability of being sampled. Percentages reported here were based on the total number of valid responses for each individual item, with respondents who did not answer a given item excluded from the tabulation for that item unless otherwise noted. No item was skipped by more than 29 respondents (5.4%).

Results and Discussion

Respondents were asked four questions regarding their degree of experience as CPS instructors/technicians and their state of residence. The results are summarized below in Table 1.

Table 1. Respondent Demographics for CPS Technician/Instructor Survey on LATCH Installation, United States, 2013 (N=533)

CPS Status	%
Currently a certified CPS Technician	81.1
Currently a certified CPS Instructor	12.6
CPS Technician -- lapsed certification	0.8
CPS Instructor -- lapsed certification	0.2
Unknown	5.4
Length of service as a CPS technician and/or instructor	
More than 10 years	18.4
6 to 10 years	24.2
1 to 5 years	40.0
Less than 1 year	12.0
No response	5.4
Frequency of inspecting CSS installations	
About once a week	37.5
About once a month	24.8
Several times a year	28.3
Once a year or less	3.9
No response	5.4
Number of seat installations per year	
More than 50	32.1
10 to 50	52.7
Less than 10	9.8
No response	5.4
Census Division	
New England (CT, ME, MA, NH, RI, VT)	6.0
Mid-Atlantic (NJ, NY, PA)	10.5
East North Central (IL, IN, MI, OH, WI)	18.4
West North Central (IA, KS, MN, MO, NE, ND, SD)	10.5
South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)	16.1
East South Central (AL, KY, MS, TN)	5.4
West South Central (AR, LA, OK, TX)	7.9
Mountain (AZ, CO, ID, MT, NV, NM, UT, WY)	9.9
Pacific (AK, CA, HI, OR, WA)	9.8
No response	5.4

Respondents were first asked to rate the degree to which they agreed or disagreed with statements about the LATCH system's effectiveness and ease of learning. See Table 2 for all results from this section. More than four in five respondents agreed that "LATCH is an effective system for achieving a correct CSS installation." Nearly two in three agreed that "overall, the benefits of LATCH outweigh the disadvantages," and three in five agreed "LATCH is a vast improvement over using a seat belt to install a child safety seat." In contrast to the experts in the workshop in the previous study, who identified many areas needing improvement, only slightly more than half of survey respondents agreed that "the LATCH system needs to be improved;" 28.3 percent were neutral and 17.1 percent disagreed. Half of respondents disagreed that "LATCH is more complicated than it should be," while only 29.7 percent agreed and 20.7 percent were neutral.

Table 2. CPS Technicians' and Instructors' Opinions and Perceptions of the LATCH System Effectiveness and Ease of Learning (N=533)

	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Agree-Total (%)	Disagree-Total (%)
LATCH is an effective system for achieving a correct child safety seat installation	27.8	53.5	14.0	4.2	0.6	81.3	4.7
Overall, the benefits of LATCH outweigh the disadvantages	21.9	42.3	25.1	9.2	1.5	64.2	10.8
Using LATCH is a vast improvement over using a seat belt to install a child safety seat	25.6	34.2	25.6	11.8	2.8	59.8	14.7
The LATCH system needs to be improved	17.3	37.3	28.3	15.4	1.7	54.6	17.1
LATCH is more complicated than it should be	9.4	20.3	20.7	40.0	9.6	29.7	49.6

Respondents were asked to rate how much they agreed or disagreed with statements about LATCH installation relating to effectiveness, efficiency, error tolerance, and ease of learning (Table 3). Four of out five survey respondents agreed that "LATCH installation errors are not obvious to parents and caregivers," with one in four answering "strongly agree," a serious issue, especially for those who do not get the installation checked by a certified technician. A lesser majority agreed that "most parents and caregivers trust LATCH as much as they trust seat belts." Slightly less than half agreed with what experts in the workshop identified as the primary benefit of LATCH – that using LATCH increases the likelihood of correct installation by parents and caregivers – and half agreed that it is easier to achieve a correct installation using LATCH.

A majority of respondents agreed that it is easy for parents and caregivers to find both the CSS components of LATCH and LATCH use information in the CSS manual. In contrast to

the ease of locating CSS LATCH components and use information in the CSS manual, only 35.3 percent of respondents agreed that it is easy for parents/caregivers to locate the vehicle components of LATCH, and only 40.7 percent agreed that it is easy for users to locate use information in the vehicle manual. This was echoed by recommendations resulting from the human factors analysis and expert workshop to improve labeling of lower anchor positions and tether anchors, as well as in the open-ended survey responses, in which respondents expressed frustration locating and accessing anchors in vehicles and vehicle owners' manuals when conducting checks.

Half of respondents agreed that "installing a CSS using LATCH takes less physical effort than installing one using the vehicle seat belt," although the expert workshop and human factors analyses identified physical issues contributing to difficulty using lower anchors: the stiff seat padding and/or upholstery surrounding lower anchors, the anchors being too far recessed to easily access, as well as the anchors being covered for cosmetic purposes or otherwise obstructed. These issues were frequently mentioned in the open-ended responses by CPS technicians/instructors and their suggestions included standardization of the location and appearance of lower anchors as well as painting the lower anchor in a contrasting color. Nearly half of respondents disagreed that "using LATCH correctly is intuitive for most parents and caregivers," though more than a third agreed. Similarly, while two in five agreed that "LATCH use information is easy for parents and caregivers to understand," nearly a third disagreed. When asked how much instruction most parents and caregivers need in order to use LATCH correctly, 72.2 percent of CPS technicians/ instructors reported that users need at least "in-person instructions by a CPST," (24.7% cited in-person instruction, and 47.5% said both written instructions and in-person instruction were also necessary for most) (Table 4). A majority of respondents (59.3%) agreed that "on average, installing a CSS with LATCH is faster than installing one using the vehicle seat belt;" nearly a quarter disagreed with this statement.

Some respondents voiced frustration with the quality of instructions in the CSS and vehicle manuals. The language may be too complicated for the lay person to understand, and the diagrams can be confusing. Other respondents thought the instructions were good but that parents and caregivers do not take the time to read them or do not know they are available. Multiple responders suggested having videos to accompany the instructions, as users may be more likely to watch a video than read a manual and a video may be better for depicting proper installation, and one suggested that the CSS and vehicle seats should have a label reminding the user to refer to the vehicle manual. Several respondents pointed out that many CSS manuals do not adequately cover installation using the seat belt.

Table 3. LATCH installation instructions, issues, and errors reported by CPS technicians/instructors (N=519)

	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Agree-Total (%)	Disagree-Total (%)
LATCH installation errors are not obvious to parents and caregivers	24.6	55.9	11.7	7.0	0.8	80.5	7.8
The CSS components of LATCH are easy for parents and caregivers to find	9.1	58.7	18.0	13.1	1.2	67.8	14.3
LATCH use information is easy for parents and caregivers to locate in their CSS's manual	9.7	54.2	21.2	13.3	1.5	63.9	14.9
Most parents and caregivers trust LATCH as much as they trust seat belts	14.9	46.8	20.7	15.7	1.9	61.7	17.6
It is easier for a parent or caregiver to figure out how to correctly install a CSS using LATCH than using the vehicle seat belt	8.1	41.1	22.4	24.9	3.5	49.2	28.4
On average, installing a CSS with LATCH is faster than installing one using the vehicle seat belt	18.5	40.8	17.7	19.1	3.9	59.3	22.9
On average, installing a CSS with LATCH takes less physical effort than installing one using the vehicle seat belt	13.3	36.6	17.5	26.8	5.8	49.9	32.6
Parents and caregivers are more likely to install a CSS correctly if they use LATCH than if they use the vehicle seat belt	9.9	36.6	22.1	27.3	4.3	46.4	31.5
LATCH use information is easy for parents and caregivers to understand	4.2	36.4	27.7	26.2	5.4	40.7	31.6
LATCH use information is easy for parents and caregivers to locate in their vehicle's manual	7.0	32.8	23.3	28.9	8.0	39.8	36.9
The vehicle components of LATCH are easy for parents and caregivers to find	5.4	29.9	25.3	33.8	5.6	35.3	39.4
Using LATCH correctly is intuitive for most parents and caregivers	7.4	27.5	16.8	40.4	7.9	34.8	48.4

Table 4. Instruction most parents and caregivers need in order to use LATCH correctly, according to CPS Technicians/Instructors (N=518)

	Proportion (%)
Both written instructions as well as in-person instruction by a CPST	47.5
In-person instruction by a CPST	24.7
Written instructions in both vehicle and CSS manual	23.2
Written instructions in CSS manual	3.5
Written instructions in vehicle manual	1.0
No instruction	0.2

The next sections of the questionnaire asked about the frequency of encountering LATCH installation issues and errors when inspecting CSS's installed by parents or caregivers, including general issues/errors using LATCH (Table 5), errors using lower attachments and anchors (Table 6), and errors using tethers (Table 7).

Most respondents had encountered each of the general LATCH errors and issues to some extent in the course of their inspections, though the frequencies of each error/issue varied greatly (Table 5). Most respondents reported often or occasionally encountering the errors of "use of LATCH and seat belt at the same time" and "LATCH-installed seats not installed tightly," and less often, "LATCH-installed seat at incorrect angle" was observed. Through the open-ended responses, it was gleaned that many parents and caregivers believe it is safest to use both LATCH and the seat belt and are often unclear that this is not allowed.

Recommendations from respondents to address this issue include amending FMVSS 225 procedures to require testing with the seat belt and LATCH in use simultaneously, and more conservatively, clearly labeling on the LATCH components that they should not be used with the seat belt. Respondents also reported that some parents believe using LATCH is safer than using the seat belt, and may use a seating position other than the desired rear center seat just so they can use LATCH, or may use LATCH beyond its weight limit. They recommended explaining on the CSS label and in manuals that both LATCH and the seat belt used independently are safe methods for installing a CSS and that if a tight fit cannot be achieved using LATCH, the seat belt may work better (or the seat may not fit well in the vehicle). Several respondents reported opting to use the seat belt rather than LATCH in order to achieve a tight enough installation in some cases. Other respondents noted that it is often very difficult to tighten the straps on the lower attachments, and several specifically mentioned the ease of tightening the straps on models with one-pull system for tightening LATCH. In addition to usage errors, nonuse of LATCH was also explored: four out of five reported often or occasionally seeing nonuse due to unavailability in the desired seating position, and three in four reported often or occasionally seeing nonuse due to unawareness of its availability. One of the major recommendations from the previous study[1] was to make LATCH available in the rear center seat position and all three back seat positions where space allows, which was also reiterated in the responses to the open-ended item. Clarifying instructions in vehicle and CSS manuals, as well as strategic

educational outreach, as recommended in the previous study and by survey respondents, are other means to address nonuse and misuse.

Table 5. Frequency of Encountering General Errors and Issues with LATCH Reported by CPS Technicians/Instructors (N=514)

	Often (%)	Occasionally (%)	Very Rarely (%)	Never (%)
Use of LATCH and seat belt at same time	44.6	39.3	13.4	2.7
LATCH installed seat not installed tightly	32.9	46.7	18.9	1.6
LATCH installed seat at incorrect angle	15.0	49.3	30.5	5.2
LATCH not in use due to unavailability in desired position	35.7	46.8	15.4	2.1
LATCH not in use due to parent or caregiver being unaware of availability	19.5	54.9	23.2	2.5

Almost 80 percent of technicians/instructors reported encountering lower attachments being connected to the wrong anchor bar for that seating position often or occasionally in their CSS inspection (Table 6). Many of the open-ended responses emphasized the high frequency of this error in CSS installation inspections, typically in the rear center seat. Best practices as of this publication suggest this is the safest seating position in crashes, yet LATCH is often only available in the outboard seats. Instructions in the vehicle manual do not always make it clear whether or not the inner anchor bars of outboard lower anchors can be used for a center seat installation, though it is not permitted in most cases. It is also confusing when three tether anchors are available but only two seating positions have lower anchors. Some respondents suggested making it obvious that the outboard anchors cannot be used for a center installation and requiring dedicated anchors in the center seat whenever possible.

More than half observed improper routing of flexible attachment straps often or occasionally. Recommendations from respondents that may help decrease improper routing include color-coding the lower attachment routing paths, or having two sets of lower attachments for convertible CSSs so the attachments do not have to be rerouted when converting from rear-facing to forward-facing positions.

Nearly half of respondents often or occasionally encountered installations in excess of the lower anchor weight limit, though 14.9 percent reported never encountering this. Many respondents used the open-ended item to comment on weight limits. The overarching theme of the comments was that weight limits need to be increased and standardized and much more clearly indicated on labels on CSSs and in manuals, as many parents and caregivers are unaware there are limits. Lower attachments attached to car parts other than anchor bars were only seen occasionally or very rarely by 73.1 percent, and 18.8 percent reported

never seeing this error. However, some respondents reported having trouble themselves discerning tether anchors from cargo tie-downs, especially in SUVs and minivans, and suggested setting a standard, unique color for anchors.

The majority of respondents reported encountering each of the issues with lower attachment and anchors included, with attachment hooks being difficult to press open seen often or occasionally by 74.9 percent, and difficulty reaching lower anchors with attachments and difficulty finding anchors seen often or occasionally by 66.8 percent and 63.5 percent, respectively. Difficulty using lower attachments and anchors was reiterated in the open-ended responses, which also revealed another issue which was not covered in the survey: uninstalling a CSS, especially one that was installed as tightly as is recommended, can be very difficult for parents and caregivers as well as CPS technicians/instructors.

Respondents overwhelmingly preferred rigid, snap-on lower attachments with button releases that can only be attached right side up over flexible hook-on connectors. The hook-on connectors are very difficult to install right side up and it is often unclear that there is a right side up, so many parents and caregivers attach the hook upside down. These hooks are also very hard to release to remove the CSS. Respondents observed that only higher-end seats tend to have snap-on lower attachments. Some respondents reported instructing parents and caregivers to use the seat belt rather than LATCH if they plan to frequently move the CSS between vehicles.

Many recommendations in the prior human factors analyses study may help prevent these errors and issues, including: clear labeling of the location of all lower anchors that are not readily visible; consistency in lower attachment design; standardizing and/or increasing lower anchor and tether anchor weight limits; and minimum accessibility ease-of-use standards for lower anchors.

Table 6. Frequency of Encountering Errors and Issues with Lower Attachments and Anchors Reported by CPS Technicians/Instructors (N=512)

	Often (%)	Occasionally (%)	Vary Rarely (%)	Never (%)
Lower attachments attached to wrong anchor bars for the seating position used	31.3	48.5	18.6	1.6
Flexible attachment strap is routed improperly through the path	12.6	43.4	37.3	6.7
Lower anchor weight limit exceeded	19.0	28.8	37.4	14.9
Lower attachments attached to car part other than anchor bars	8.0	29.0	44.1	18.8
Lower attachment hooks difficult to press open	31.7	43.2	21.1	3.9
Lower anchor difficult to reach with lower attachments	20.7	46.1	24.6	8.6
Lower anchors difficult to find	17.8	45.7	32.0	4.5

Encountering errors with tether routing and anchors was reported with comparable frequency to errors with lower attachments and anchors: most technicians/instructors had seen the errors included either often or occasionally (Table 7). Tethers were reported not to be in use when use would have been appropriate often or occasionally by 82.5 percent of respondents, in strong agreement with previous studies and the experts in the workshop. Tethers were also observed to be twisted (17.6% often, 43.4% occasionally), misrouted (15.4% often, 50.4% occasionally), or attached to something other than the tether anchor (16.2% often, 43.7% occasionally). Issues with finding and accessing tether anchors were also reportedly seen often or occasionally by a majority of respondents, though most respondents had rarely or never encountered the issue of tether straps being too short. Improvements included in the prior study that may help prevent these errors and issues include clear labeling of tether anchors and improved consistency of design, terminology, labels/icons, and weight limits used in vehicles and indicated in their manuals, all of which were also touched on by many respondents in the open-ended item.

Table 7. Frequency of Encountering Errors and Issues with Tether Strap Routing and Anchors Reported by CPS Technicians/Instructors (N=507)

	Often (%)	Occasionally (%)	Very Rarely (%)	Never (%)
Tether not in use when it would have been appropriate	39.1	43.4	15.6	2.0
Tether strap twisted	17.6	43.3	29.4	9.7
Tether strap attached to something other than tether anchor	16.2	43.7	30.2	9.9
Mistakes with tether routing	15.4	50.4	28.1	6.1
Tether anchor difficult to find	18.8	47.1	28.9	5.1
Tether anchor difficult to access	14.1	44.8	35.3	5.8
Tether strap too short	2.0	14.2	43.8	40.0

Limitations

This survey has several limitations. Administration was limited to a random sample of the population of CPS technicians/instructors who choose to make their contact information public, which, as mentioned earlier, represents 44 percent of all technicians/instructors, and the results are based on those who chose to complete the questionnaire. Without data on the remainder of CPS technicians/instructors who choose not to list their contact information publicly, it is not clear exactly how generalizable the results are to all CPS technicians/instructors, although there is no obvious reason why their experience checking CSSs should differ fundamentally between the two groups. The use of close-ended multiple choice structure for the majority of the questionnaire allowed for gathering a lot of information in a relatively short time, but also limited the available response options and the level of detail. This was alleviated to an extent by the open-ended item, where respondents could reiterate an issue included in the questionnaire or highlight an issue or recommendation that was not in the questionnaire. There is also the possibility of reporting

bias in any survey, but given the level of commitment to CPS among the study population, it is likely the respondents answered all questions as accurately as possible.

Another limitation is inherent in the role of CPS technicians/instructors, who interact with parents and caregivers at CSS checks. The results of this survey reflect experience with the population of parents and caregivers that attend checks. Parents and caregivers who do not get their CSS installations checked by a CPS technician/instructor may encounter issues and commit LATCH installation errors similar to those of the parents and caregivers who do.

Conclusions

The results of this survey of CPS technicians and instructors on LATCH installation augment those of the expert workshop and human factors analyses conducted in the previous study and provide additional support for many of the recommendations within that study.[7] These technicians/instructors are out in the field, constantly gaining experience, and the usability issues and errors they reported mirrored many of those identified in the prior study. Many of the recommendations presented in the previous report were echoed by survey respondents. These recommendations may help minimize or eliminate many of these errors and issues, especially those relating to standardizing design, clarifying labeling and information in vehicles and their manuals and on CSSs and their manuals, and minimum accessibility of vehicle components of LATCH. These recommendations are briefly discussed below, and more information can be found in the previous report.

LATCH Availability: Providing LATCH in the rear center back and all three back seat positions where space allows would prevent parents and caregivers from having to choose between using LATCH in an outboard seating position versus seating their child in the center seating position without LATCH.

Standardization: Standardizing weight limits for both lower and tether anchors, as well as increasing the weight limits significantly, would reduce much of the confusion surrounding weight limits which may prevent use of LATCH and/or premature graduation to booster seats. Requiring minimum accessibility and ease-of-use standards, such as a maximum lower anchor depth and clearance angle, would likely help mitigate issues with locating vehicle LATCH components and correctly using them.

Information Requirements: Clear and consistent labeling, terminology, and icons for all LATCH components, both on the CSS and in the vehicle, as well as their respective manuals, would likely help minimize confusion about the LATCH system and prevent many errors seen in the field, such as lower attachments connected to parts other than lower anchors. Warnings about specific problems to avoid, such as this and others, would also likely be beneficial. Information should also stress the importance of tethering with or without LATCH, which may help prevent tether nonuse when applicable.

Public Awareness and Education: Educational efforts can be used to complement improvements to LATCH design and information. These should use terminology consistent with that in vehicle and CSS manuals. This could address nonuse due to lack of awareness of LATCH, as well as increase parent and caregiver trust in LATCH.

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