

ATTACHMENT D1-WORKSHOP PROCEEDINGS

**IDENTIFYING AND MEASURING
CHILD RESTRAINT MISUSE**

Tuesday, March 12, 2002

Capital Holiday Inn
550 C Street, NW
Washington, DC

PROCEEDING BY:

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10201 Lee Highway
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P R O C E E D I N G S (10:05am)

**Agenda Item: Types of Child Injury Security in
Vehicle Crashes and Other Events**

MR. DECINA: The rest of the day is going to be open discussions. I think what we'll do is I will have the panelists give their two cents of the topic first. But as each panelist says something, I'm okay with anybody can blurt out disagreeing or agreeing or adding to that.

So this next hour, what I'd like to do is at least let's talk about what happens when children are either in seats or not in seats and what are the significant injuries to the body? I listed body regions from the top down. If I have mistyped a body region and I should add to this list, let me know. I can throw more on the side.

But this is a free for all for the panelists and what I would like to do and we can start with Laurie on this side, is what do you think and what are the injuries out there related to misuse that you see the most or know about the most? For example, you can say I think most of the misuses I see are injuries.

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MS. WALL: I don't necessarily see injuries because I'm on this end of this, the pre-crash end, but I do see --

MR. DECINA: Throw your two cents out on what you think the injuries are that are out there and what you think they're attributed to as far as misuse or lack of seat use.

MS. WALL: I guess head and face would be primary particularly because of the small interiors in a lot of vehicles and loose harnesses which would allow a child. The injuries would be increased with a looser harness and a small interior, you would be more likely to see the head stripes.

For kids wearing just the lap belt who are in position for that and even kids wearing lap/shoulder belts in proper position. Now, I don't know too much about it, but those are the things pre-crash that I would anticipate. Loose harness would definitely result in increased head, face, and spine injuries. I don't know. You're asking me the wrong questions.

MR. CAMPBELL: In terms of injury, my experience has been more with product litigation and when you get to the point that you've got an injury in a child restraint, primarily, it comes from three key areas: head contact, ejection, and intrusion. That's where most of the

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injuries in litigation tend to stem from. Intrusion, there's not a lot to do with child restraints.

MR. DECINA: If another vehicle has gone into the vehicle and crushed the kid?

MR. CAMPBELL: Correct. You're right there at the point of impact and there is going to be impact along with the vehicle is the incoming vehicle. In the area of head contact, that can come from mostly what I've seen and the investigations that have been done in my experience, you find some sort of issue with the product. Either the harness is not being used, the child wasn't in the child restraints that they claim they were, or some issues that resulted from say shoulder belts being in lower slots for forward face that resulted in higher head exposure on contact.

MR. DECINA: Are they blaming the manufacturers for the seatbelt not being belted through properly at all? Do those cases come up whether the seat flew into the windshield because they didn't realize they were doing the wrong ---

MR. CAMPBELL: They don't blame the manufacturer for the misrouting. They generally claim that the belt was correctly routed. It's up to the manufacturer to do their

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due diligence and find out what does the evidence say really happened. Most times, it's the parents claiming that it was done correctly as far as the result and something else went wrong --- The objection is not a hard system, not securing the child restraint in or something like that. Objection can be random, but as you look at it, we have to talk about not only misuse of the child restraint but also the vehicle restraint because the child restraint may not be properly installed and it may not be a position where the child restraint should be.

You need to look at the variety of products that are there. You've got rear facing infant seat, convertible car seats that are used rear facing and forward facing for infants, but they can be rated to 20 pounds or 22 or 30. It's the misuse in one type of seat rated at a certain weight rating, may not be as significant a risk in another.

MR. DECINA: You're saying these risks are on the head and neck kind of risks?

MR. CAMPBELL: In those that I have indication.

MR. DECINA: Head and neck?

MR. CAMPBELL: You don't see a lot of neck injury. Mostly head injuries that I recall. Then you've got harness boosters that you need to look at, bumper positioning

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boosters. There are a variety of different car seats that are rated with a variety of different weights and rates. Misuse of a 40 pound forward facing seat with a 45 pounder can be considered a misuse because it's over the weight rating, but that may be less of a concern in an infant seat used with a 25 pounder rear facing that's only rated for 20 or something like that.

MR. DECINA: Inspection clinics get the make and model of the seat. It almost sounds like I need to get make and model what I go out and ----

MS. WEBER: Do they know what the limits are on the child restraint?

SPEAKER: Or do they know the specifics for it?

MR. CAMPBELL: As opposed to model.

MR. DECINA: I'm throwing everything out today because I have to go out in the field to collect this data in 10 minutes of time.

MR. CAMPBELL: More important may be the weight rate because if you get the model number, you still have to know what it's rated for forward facing. Get the rating and is the child appropriate for that weight rating. There are so many of them to accommodate the different children at different weights. They don't fit a pattern with 20 pounds

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in a year and 40 pounds in four years. Some children are in a convertible seat at 40 pounds at 2.5 years old.

MR. DECINA: One of the things we're trying to do here is to come up with things to look for that really matter. How many times has anybody ever found an actual case in the field where the child was 42 pounds in a restraint rated for 40 and something fell and something happened.

I just don't think that this is all that significant. If you're coming within 20 percent of that weight, things aren't going to happen any different. As you know, child restraints are way over designed.

MS. WEBER: Has the state informed you to look at that level of the seats?

MS. CORNEJO: We collect weight, but we don't know the exact.

MS. WEBER: You don't compare it to the weight that's rated on the restraint system.

MR. BUTLER: Do you collect model information?

MS. CORNEJO: We do collect model information, but we've never done any ---

MS. WEBER: How about --- is that something you pay attention to whether the child is too big?

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MS. WALKER: Absolutely and it's not atypical to find a kid who's 36 pounds still riding in an infant seat. A seat is a seat is a seat and they don't differentiate with weights. As long as they're using something, they feel that they're protecting the child.

MS. FERGUSON: Still we're facing up to an older age. Maybe that protects them in some way.

MS. WEBER: Don't they turn them around and put the belt over the front?

MS. WALKER: Sometimes. It's a different issue. The hardest is that they're too hard and too long to actually connect the harness. So the kid is just riding with the harness strap around his neck.

MR. CAMPBELL: From what Kathy said, they turn the infant around, put the older child in it and put the belt over the back. It's definite misuse.

MS. WEBER: That's getting into a different level of misuse than using a forward or rear facing restraint.

MR. CAMPBELL: If you're 42 pounds and 40 pound might be an incorrect use, but the risk is low. The misuse is when you've got a 60 pound child in a 40 pound seat. There is some place where it goes from incorrect to misuse.

MS. DONOVAN: On that large lap on-- how they just

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come up with age appropriateness and the restraints as opposed to looking at the nuances of weight. If you have a 3 year old in an infant seat, that's the wrong seat.

MS. WEBER: This is something, the details that we have to get into.

MR. CAMPBELL: A rear facing seat could have a 3 year old in it at 30 pounds. It could be appropriate if they fit and they're in the weight range.

MR. HALL: I made a comment about the weights and obtaining weights. In our surveys we do in North Carolina, our observational surveys, we also ask the driver for the weight of the child and we feel fairly confident and comfortably using that weight that's given for a couple of reasons.

I think the weight is probably more critical. The smallest child you're talking about from rear to front facing. That's the time of life when the parents are paying attention to this and actually going to the doctor. And so they can tell you it's 19 pounds, 6 ounces most of the time.

Regardless of what the actual weight is, it's the parents' perception of how big the child is. The child may actually be 38 pounds and they tell you it's 35 pounds or 32 pounds, that's a question of, for me, in terms of perception

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whether the child is 32 or 35 pound or whatever is best and best practice tells us front facing and full harness.

I'm fairly confident and comfortable with using the weight.

MR. DECINA: How much of a weight difference that people would end up being a concern, but I notice from personal experience that parents are far off that. We had parents like 15 pounds off. We would get them on the scale and they were off by 12-15 pounds at the booster end of things.

MS. WEBER: We saw the same thing at Boost America, 850 seats within one week that we did and parents would routinely tell us their child was 38-40 pounds and they were 24-28 pounds. They wanted the free seat. So they didn't even know that 40 was the cut off, but they just felt that their child was ready for it. When we asked the weight, they would tell 38-40 and it would be much lower. I don't know that you could always take the parents word for it, particularly those older kids.

MS. WALKER: When it's 16 pounds I guess that it's a little more appropriate at those times where parents are constantly seeing the pediatrician every six weeks or whatever it is, but when you get up to the time when they're

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over 27 and they're 3-4 years old, it's probably pretty far off.

MR. CAMPBELL: That's usually not in child restraints. That's non-restraint.

MR. BUTLER: Primarily neck injuries and head injuries.

MR. DECINA: For those who do inspection work, how often do you see this seat in the front sides with the air bags? Are people picking up on that?

MS. YOGANANDA: It's getting better.

MS. WALKER: It's still out there, but it's not as prevalent as it was. The deaths have gone way down.

MR. DECINA: Kathy, a few minutes.

MS. WEBER: I think that the way it should be approached is that you want to look at what kinds of injuries have the most severe long term consequences for the child.

MR. DECINA: Does that mean the child for life?

MS. WEBER: Yes, rather than how often it happens. The long term consequences come from the head and spinal injuries. The severe head injuries and spinal cord injuries although it turns out that spinal cord injuries are extremely rare.

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But if they happen, it's devastating. You have to add in how severe the consequences are and then we can also look at how often they happen, but can we keep them from every happening would also be a good thing if it's a simple fix.

One of those fixes is to keep children rear facing longer. I would say that the transition between rear and forward, rear facing longer and the transition between rear and forward facing is one of the more critical things for the younger children.

Head injuries turn out be extremely frequent. That is the severe injury that happens and you want to look at things that mitigate head excursion. As Dave said, the intrusion situation is a little tough to deal with from the child restraint's point of view. There are some things that maybe can be done, but in the child restraint design situation, but not so much the parents can do once they're committed to a particular child restraint.

That really isn't something that entered this protection from intrusion may be not be some important from this particular study's point of view except to the extent that you can control interaction with that intrusion from restraining excursion.

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Things like having the belts tight, having the harnesses tight. Having the child the farthest from possible places of intrusion like in the center helps, but of course, you can't call that a misuse.

The next level comes down to things that can happen that may have some consequences that maybe in long term aren't so severe, but this would be like facial injury. It may not be life threatening, but it has a devastating affect on a child's life if they are injured from the point of view that they're face is messed up a long time.

That gets into the head and the face, but the facial injury relates to excursion. If you can keep the face from smacking into anything, it's pretty good you're not going to have a broken nose. We get into the harness straps, anything that keeps things tight. The belts and the harness.

I say the locking clip is highly overrated and those two one could stick into the excursion control stuff, but I really don't think it has as much effect as just having the harness strap snug in the first place.

MR. DECINA: So you're saying locking clip and chest clip may possibly be things that aren't critical. I wouldn't agonize over them. Another thing that can be

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really devastating for kids is extremity injuries. If you damage the growth plate on the end of the long bone, you can have several consequences for the rest of the kids' life.

Unfortunately, child restraints don't protect those extremities very well. I can't think of anything you could do differently with the child restraint except maybe keep the arm from being so close to the window. It's generally an excursion. I've got two critical things: rear facing as long as you can stand it and keep those belts and harnesses tight.

MS. WALKER: If you have to have to use the walking clip to keep the belts tight, how can you say?

MS. WEBER: There are circumstances where under practical examination, you may find that things don't work. I don't know whether the locking clip is worth all the hoopla.

MR. CAMPBELL: I thought your belt tight was the harness and child restraining keeping those tight.

MS. WEBER: I think the child restraint harness is probably more critical, yes.

MR. CAMPBELL: If the vehicle belts ---

MS. WEBER: In the vehicle, the belts self adjust a lot.

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MR. CAMPBELL: Right.

MR. DECINA: Placement of the harness straps and holds the reinforced back.

MS. WEBER: The thread over the harness straps can have different can be critical on that and also comes into the excursion thing and I wasn't going to get into all the details of what makes a good tight installation, but certainly the strap slots can have two effects.

If you're rear facing and the strap slots are too high, the child can ramp up the back. If you forward facing, the strap slots are too low. Even if it's reinforced, you will increase that excursion because the child's head curls down underneath the strap that has this extra strap that has the extra loop in it and in effect, it's looser.

This can be measured, but it's like being able to pinch an inch out of the straps. By the way, the pinch test is a very useful thing to use in the field for harness strap tightness. If you can pinch it, it's too loose. If you can pinch it a lot, it's even than actually having an actual measure there. You can pinch the strap and if you can get "x" amount.

There are design issues, geometric issues there

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that all contribute to the tightness of the child's installation into the restrain system and we can talk about those details. But anything that significantly increases excursion is something you want to watch out for.

MS. WALKER: I'm concerned about that locking clip. I don't want to go back to it.

MS. WEBER: I think we can talk about when it matters and when it doesn't.

MS. WALKER: The perception from parents is when they turn a corner and their carseat rolls over, that's not good. And that's a good point.

MS. WEBER: The beauty of the lap system is that the child restraint does not slide within the belt and these add-on latch attachment belts are still going to allow the child restraint to waddle and slide and slip in this add-on belt that is gotten rid of by the latch attachment which actually fixes the child restraint relative to the belt.

MR. BUTLER: It depends on what system you have it attached to.

MS. FERGUSON: A lot of them will probably ---

MS. WEBER: A lot that I see appear to be the type that would be sliding forward. I thought the ones that specifically manufactured lap systems all had to stop.

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MR. CAMPBELL: Some are permanent.

MR. DECINA: So if the seat is wobbling, we're talking everything.

MS. WALKER: Just excursion.

MS. FERGUSON: It's going to be side impact and front impact. The seat is going to move toward the intrusion too and you're going to get contact with it.

MR. CAMPBELL: If the belt is not secure, I don't think we'll have forward excursion. It may add to side impact on the struck side. It will be on the non-struck side.

MS. WEBER: Right. On the struck side, the child gets hit regardless of where the belt is.

MR. CAMPBELL: The child can be supported by the vehicle, on the non-struck side it may go toward the oncoming crash, but you're far away from it.

MS. WALKER: That's essentially with the ELR retractor, you essentially have an unlocked belt. As the vehicle is moving routinely in traffic, you have an unlocked belt basically on that seating because it can slip and slide. Do we agree on that?

MR. CAMPBELL: I think it's a question of how loose will that belt become?

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MS. WALKER: Very loose. Railroad tracks, potholes, turns.

MR. CAMPBELL: It doesn't readjust each time.

MS. WALKER: It doesn't. It may adjust slightly, but it doesn't pull tight out of the lap hook.

MR. BUTLER: It won't be tight. It will just be snug.

MS. WALKER: I've seen it where it's not snug and I did it myself. I drove my own kid in a seat and that didn't work. It kept getting looser and looser and looser.

MR. BUTLER: If you want to have it properly installed and you don't have a locking tongue or a cinching, switching ELR retractor, you need to have a locking clip to hold the lap belt tight, but it's difficult for someone going in and looking at a child restraint to know which system does this vehicle have.

MR. DECINA: At this stage of the day, talk about the injuries related to misuse. Let's not totally worry yet about how I'm going to collect the data. Let's keep it open and free-flowing on the injuries and misuse.

MR. BUTLER: Clearly, if the belt isn't tight as it should be, and that I would say is misuse, if they're not using locking equipment, the belt isn't tight. That's a

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problem.

MS. FELDMAN: I was going to say with it wobbling back and forth, if you have a side impact crash, plus you have it wobbling, you're going to have a twisting of the neck would be ---

MS. WEBER: That's never been documented as an injury mechanism in the field.

MR. YOGANANDA: She's right. You don't get that kind of a component. The head can rotate, but you don't get injuries by pure rotation in a side impact. It's mostly head impact with the rotation.

MS. FELDMAN: I had heard a different thing at Children's Hospital.

MR. YOGANANDA: We saw one case and that was a debatable issue now. You see once in a while a case where twisting is a factor. It's not very well documented, but we saw. We saw neck injuries, but that was debatable.

MR. BUTLER: For example, like a hangman's fracture, you can break a neck more easily if you both pull and twist at the same time. That may have been what happened. It's a tension injury, but it can be a combination of tension and bending and twisting that happens at a lower course than pure tension.

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MR. DECINA: The wobbliness of the seat is creating injuries that are critical, right?

MR. BUTLER: One thing that's different now is tether straps are a major factor in reducing excursion in side impact and forward impact, more in side than in forward, but in all impacts tether straps can be very effective in reducing the excursion.

There are now built-in tethers in all new vehicles and all new child restraints, forward facing have tether straps on them. You should start to see a significant number of child restraints with tether straps. Then you come up with the question of if the child restraint has a tether strap, is it misused if it isn't attached? If the vehicle has an anchor and not using a child restraint with a tether strap, is that misuse?

If they have both, I think it's clearly misuse. It should be attached, but some people say that if you just have a child restraint that has a strap, but there's no anchor in the vehicle, that's not misuse. Well, I think that could have a very major effect on injury risk because the tether strap is so effective in reducing head excursion.

MR. CAMPBELL: As you look at tether, you should also look how secure that lap belt is. The locking clip in

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that scenario doesn't carry the same sort of magnitude it does when there's no tether on rear facing or forward facing.

MR. DECINA: There is no doubt that given 10 minutes of time, I will collect as much misuse data as I can. I will focus on getting all of the serious misuses first, but given a minute or two, I will probably collect as much misuse as possible. At least now we can categorize it. Kathy, anything else?

MS. WEBER: No, I'm done.

MR. YOGANANDA: The most frequent injury is the head injury. Period. And then all other injuries, if you prevent head injuries, I think you'll prevent almost all the other injuries or minimize almost all other injuries. If you basically look at it, it can happen in either one of two ways: impact or a deceleration.

Injection leads to impact. Head contact is a secondary to impact. Intrusion also leads to impact. If you have minimize impact, you minimize head injuries. The other difficult thing is the deceleration where you don't have an impact and yet, you will see injuries.

Those injuries are not always very frequent in pediatric populations. If you were looking at the data, I

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would certainly collect the belt tightness because any time you have excursion, there is a good chance you have impact. Even though the vehicular interior structures may not be that user friendly in terms of padding or having some type of reinforcement, if you prevent impact, you don't have contact.

MS. FERGUSON: You do see some non-contact, but what you want to know is, is there anything you can do about deceleration injuries in terms of how the seat is attached or designed or are there some forces which no matter what you do, even if you have limited intrusion and excursion, there are some situations where you kind of handle it?

MR. YOGANANDA: At very high speed impacts, you can't protect them. In moderate impacts, the key is that you and I are sitting, if you can maintain that during an impact, you will not get an injury because we don't have injuries as we talk and run and sleep.

Now during an impact, you're not going to maintain that kind of interrelationship between the torso and the neck and the head. So the less interrelationships you have, the less motions you will have between the body regions, the less chances you will have for any kind of an injury whether it's impact or deceleration.

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If you can design a seat that has a good amount of chest harness or shoulder harness in the seat. And if that can prevent flopping of the head, then you have less forces on the neck. Any type of system that prevent the differential motion between the head, neck, and torso will be the best. Obviously, you cannot have zero motion.

MS. FERGUSON: So this harness are going to have more forward motion and that's going to be more of a problem in terms of deceleration even?

MR. YOGANANDA: Exactly. Even without impact, you have a loose harness, that will be like a propelling action or a funneling action and that you want to watch.

MS. WEBER: It also delays the coupling with the vehicle and you don't take advantage of the ride down.

MR. BUTLER: It's important to start decelerating the child as soon in the crash as you can. That's one advantage of built in child seats. You have a more direct connection to the vehicle. Another thing that we've seen is seats that have these sticky straps, they seem to do a very good job of getting the dummy involved in the crash sooner rather than letting the dummy slide on those slippery nylon straps. That seems to have a big effect on reducing the non-contact neck tension, just because you're starting to

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slow down the dummy sooner.

MS. FERGUSON: What is it that you're talking about?

MS. WEBER: Tom explained how this works, but I can't remember.

MR. BUTLER: Basically, shoulder straps go through the harness and there is another strap that goes underneath that harness strap and it is between the harness strap and the child's chest and it has a surface that's ribbed or has foam on it that increases the interaction with the dummy's clothing. It increases the friction and grabs onto the child quicker.

MR. CAMPBELL: Actually anchored to the back of the child restraint so that it does not move with the shoulder belts. It holds the shoulders back and prevents the dummy from sliding down the shoulder belt. It holds them more upright. I have seen some cases where if you do hold the upper torso very securely and tether it as in the case of a harness and hold it back, you can get very high hit that way.

MS. FERGUSON: That's what I was wondering. That was sort of my question. There are some downsides to tethering and holding.

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MR. CAMPBELL: You have to have a certain amount of energy absorption in your system to help dissipate some of that energy. Otherwise, it all goes right to the front.

MR. YOGANANDA: But if it does not impact, you will not have a serious injury. Deceleration injuries in kids are not, in fact, 10-15 years ago, they were talking about this was only in adults and they were talking about injuries without contact, very bad head injuries, but now they have shown that without impact, they don't get serious injuries in adults and the same is true in kids. Impact is the biggest culprit. I'm not saying it will never happen, but impact is the biggest culprit. If you can avoid impact, you've minimized a lot of head injuries.

MS. WEBER: There also isn't anything any parent can do anything about. It really doesn't enter into this discussion today. It's not something where let me tweak my shoulder harnesses to keep my hip down. That's just isn't what we're going to do.

MR. BUTLER: It isn't important. If parents would keep tether straps tight, they could improve the situation.

MR. DECINA: Rebecca, do you want to say anything relating to the databases that you have and injuries that you know are most prevalent.

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MS. CORNEJO: I think mostly our data just supports what everybody has already said.

MR. DECINA: Does the database go into misuses of seats at all?

MS. CORNEJO: We attempt to capture data on misuse, but if you remember, that's based on parent report and it's incredibly difficult to assess that. You ask things about what is the harness tight, one finger or one fist, and it's all very subjective. It's a telephone interview. The questions do work out and are better able to assess misuse.

MR. DECINA: They don't always have the seats though in the vehicle at the time of the crash investigation.

MS. CORNEJO: In our database, injuries and child restraints are very rare. So when we look at the most severe crashes, the crashes with intrusion, there is a suggestion that misuse may play a role, but we don't have any significant data to say. Most misuse shows a trend toward an increase risk of injury. That's any injury and the more significant injuries.

MR. DECINA: Paul, do you want to say something?

MR. MORRIS: When Dave talked about intrusion injuries, you said crushing. Most of the intrusion injuries

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are not really crushing injuries. They're acceleration injuries from the vehicle, another vehicle coming in and rapidly accelerating the child that it hits. So it's more of an impact injury. Even if there's nothing on the other side of the vehicle of the child to crush the child against, intrusion injuries are still caused by the high speed of impact not crushing.

MS. CORNEJO: I think that a lot of people have known the research that we did in 1999. It's just unfortunate that the three things that have been identified and most people are agreeing with are the most severe are the three top things that we found. This is unfortunate and most of the parents that we are talking about don't have the seatbelts tight enough on the seats, don't have the harness straps snug enough, and don't have the harnesses in the right slot. I think that that particular one is important.

It was interesting to me to find out that it seems like everyone is consistent, that's something that can come out of this that we can start eliminating from our list that it might be that what we do is it's going to be hard to pick 3-5 things today, but if there are 3-5 things that you can take off the 25, you start to get to the most important pieces.

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MR. DECINA: The majority of seats still have chest grips or are they getting away from them?

MS. WALKER: Fisher-Price but their Safe Embrace out without chest clips several years ago. And they felt that this was a non-necessity and they had seats returned in massive numbers as there were defects. The public was crying for the chest clip and felt that was an essential part of the seat.

MS. FERGUSON: It gives them a sense that it's tighter than it really is?

MS. WEBER: You can see it on there. It's visible. They focus on this being important to the extent that people attach that and not the buckle. If it's going to make people think that this is the key to restraining your child as opposed to something else, then maybe it's doing more harm than good.

MR. BUTLER: It's interesting that in Europe, you're not allowed to have a chest clip. If you sell a child restraint in the US and in Europe, in US everybody wants to have a chest clip and in Europe, you're not allowed to have it. Is every child restraint in Europe misused because it doesn't have a chest clip? One concern is that if the chest clips are too high, that increases the risk of

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neck injury.

MS. WEBER: It slides down in the crash. I would worry about it creating slack. If you're going like this, you're adding another .5 inch of slack in the strap. If people are putting these strap hooks on, that's not going to do the neck injury because the thing will slide down in a crash.

MS. MC CRAY: Even with some of these more heavy duty, that's more of what I would call the flimsy type.

MR. BUTLER: I would say that those are not going to come apart. All the chest clips that we're using, they come apart in a crash and they're designed to that. Every time you watch a crash test, sometimes we don't clip them up because it doesn't really make a difference in the test, but if they are together, they come apart during the crash.

We got a lot of complaints from parents who had their kids that they could snap them apart. So we made them harder to come apart even though they're still designed to come apart in a crash. It doesn't really affect the crash performance. It's a question of does it help to hold the belt on the shoulders when the child is sleeping, leaning to the side, hanging over. That's the thing that's difficult to assess.

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MS. WEBER: It's potentially a pre-crash position.

MS. FERGUSON: But if you have the harnesses snug enough, you probably don't need it.

MS. WEBER: It's one less thing for parents to have to worry about.

MR. HALL: The focus on the retainer clips has been produced by all the technicians that we train.

MS. WALKER: It was an issue even before the class occurred.

MR. HALL: I've seen more attention on it and a lot depends on the instructor. A lot don't understand, and focus on the new technicians that come out and look at the seats that didn't need a retainer clip and where's the retainer clip.

MS. WALKER: That's an education piece that if we're not looking at it as a necessity, why is it there and we have to tell people why it's not going to be there in the future if it's coming off.

MR. HALL: And that that is one of the leading misuses that is noted on the diagram.

MS. WEBER: When you get 80 percent of people that don't have the chest clip exactly positioned at arm pit level and you have them resolve the issue, but you have a

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lot that maybe didn't need to be used. All of a sudden, you've got 75 percent misuse for things that don't make any difference.

MR. DECINA: We'll come back to the chest clip a little later in the day, but what you're saying is the chest clip is really not a significant part that's affecting head injury.

MS. WALKER: It's usually a improperly positioned chest clip with buckle that's improperly adjusted. That's one of many misuses that was found on the seat.

MR. HALL: That would be the more difficult aspect of this is when you have the multiple misuse, do they just add together or how do they multiply on top of each other?

MR. DECINA: In the last study, I think we did at least do an analysis between the types of misuses, but again, misuse is so prevalent across all the parts.

MS. WEBER: So if the harness is tight so that you can't pinch it and the chest belt is improperly positioned, in your data, you would probably say that that's correct use.

MR. DECINA: We'll figure that out this afternoon.

MR. HALL: You might say that it would be incorrect use due to the fact that it's not being used according to

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the manufacturer's instructions or whatever, but is it significant misuse, that would be likely to increase injury?

MS. FELDMAN: I had a question before because I understood that to be a pre-crash positioning of the strap and unlike the dummy the child wiggles. Is there any data on real-life use of it that it is playing its role?

MR. BUTLER: There's some issue about what its role is and we had a significant number of complaints from parents and we called the little houdinis who their job in a child restraint is to get out. They wiggle and they found that they could snap that thing open and get one and then the other arm out and just sit there with just the lap belt and crotch strap on.

Is that the job of the chest clip? For some kids, they need that. That's a real problem that there are some kids who are very reluctant to sit properly in a child restraint. On the other hand, most parents have kids that are happy to do it sitting there properly.

MS. FERGUSON: What I'm hearing is that the actual position of the chest clip does not seem to be particularly critical.

MS. WEBER: It might actually give somebody a false sense that this is actually connected when if you didn't

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have the chest clip, maybe they'd see that the straps were all loopy and falling off their shoulders. But you can put the chest clip on and hold them together and they must be okay now.

MR. KHAUAJI: It does. As a matter of fact, it does give a false sense.

MS. FERGUSON: It's together. At least it's together.

MR. KHAUAJI: There is a perception on parent's part that if it is properly positioned ---

MS. WEBER: Then everything else is okay and that's not the case.

MR. KHAUAJI: Two important misuses are seat belt and harness. If you can control these things, everything else is secondary. But I think I would like to hear from the smart people up there what else could be.

MS. WEBER: Having a small child forward facing is not a good thing to do.

MS. FERGUSON: You would extend the age to what?

MS. WEBER: I would do it as long as you can stand it.

MS. FERGUSON: I don't think anybody every understands that and maybe parents have a preference to

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having the child forward facing particularly when they have them in the rear because then they really feel that there's no connection then.

MR. HALL: I agree with everything that's been said. Just a few points, when I think about when we are doing our training whether it's the technicians or teaching parents, really what we're doing is trying to accomplish a few basic principles which as it's been said to protect the head and neck and particularly the spinal cord.

For one thing to prevent ejection and in the case of just using the seat belts is to get the forces loaded where you want them and to prevent the jackknife and over the lap belt. Anything that is done that increases the likelihood of head injury, movement of the head is important and is misuse.

Some of the things we're going to have even more difficulty with thinking about along the lines of when we're determining misuse or incorrect use or whatever, defining it as opposed to best practice. What constitutes misuse of a seat? What constitutes incorrect use of a seat and non-adherence with best practice recommendations?

For instance, the 10-month old, 23 pound infant who is in a forward facing seat where the manufacturer has

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listed it can be used for a child from 22 pounds up. Is that consistent with best practice recommendations? No. Is it misuse of the seat or incorrect use of the seat? No, because it's in accordance with the manufacturer's instructions.

I think whatever we do, it is very critical that we come up with objective measures such as harness snugness or belt tightness or position of the retainer clip or whatever. I have a feeling that on a lot of the forms that we're getting back, I don't doubt that a lot of belts are too loose and a lot of harnesses are too loose, but as long as it's subjective, is the harness snug enough?

Well, we've got a lot of these technicians who are overzealous and if the kid isn't turning blue, then the harness is too loose. No, it's not snug enough. I cinch it down just a fraction of an inch. So, it's not loose now.

MR. DECINA: Here's an example of a car seat. I hope everyone can see that.

MR. HALL: It's the same thing with the seat belt. Is the seat belt tight enough? Well, no, when I shook it, it wasn't shaking the whole vehicle. So it's not tight enough, I'm going to cinch it down.

MS. DI CAPO: We've given technicians guidelines

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about stuff. So you're assuming the person knows what we provided as guidelines. There is a ton of technicians out there that shouldn't be technicians and shouldn't be documenting this stuff. In general, harness straps are not snug enough. Belts are generally not tight enough and occasional, the harness straps are nothing great. Our data didn't find anything that was unusual from personal experience.

MS. WEBER: Can you try the pinch test on a lap belt? I'm always very skeptical of this moving the seat and pulling the thing and if it moves, it's bad.

MS. FERGUSON: How bad is it?

MS. WEBER: That's a very poor way to measure and I don't know how that all started.

MS. WALKER: If you open the vehicle door and you can pull the seat and it comes all the way out of the vehicle, obviously it's too loose.

MS. FERGUSON: I remember watching a TV program one day. They had had a checkpoint and this reporter was just absolutely shocked and horrified because the seat could move more than once inch. I was looking at it thinking they had three men trying to put this thing in there and just learning on it. I'm thinking is the inch really that

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important.

MS. WALKER: Maybe five inches is bad.

MR. BUTLER: I can show you severe crash tests with child restraints that have more than an inch of slack and they do very well, but you put that same child restraint in another vehicle that has very limited head excursion space, and they don't have that room for head excursion.

So it is somewhat vehicle sensitive. If you have a typical family sedan or mini-van, it's not really that necessary for a frontal crash to have it really tight. In other vehicles, it is necessary and it also depends on how much foam there is in the seat.

If you have a soft foam seta, you'd better have it tighter. If you have a real contouring seat with hard foam and like a lot of the rear facing seats now in front-wheel drive cars, they don't see that much movement of child restraints if they're in their own --- slightly loose.

MS. DI CAPO: For parents, we have to err on the side of keeping it tight.

MS. FERGUSON: I want to come back just for a minute. We have this study and it's not complete, but the question is what do you see when you look in these databases and certainly the first look we've had is that there is

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pretty gross misuse. Another one might be the they're actually not attached to the seat itself. Those are the ones you see more often.

There was one where they talked about harness slots being in the wrong position, but most have been literally not attached. I know these another things are important, but what's more important it seems to me is I'm having a hard time thinking of a parent who thinks that not attaching it to the vehicle is going to make is useful. How are we doing such a bad job that hey haven't done that.

MS. WALKER: Sometimes they have done it and somebody else has unbuckled it. There are all sorts of things that happen where the parent did their best.

MS. FERGUSON: The kid undoes it?

MS. WALKER: The toddler, the kid sitting next to the kid in the car seat. Red is their favorite color. They push the button and it's undone.

MR. BUTLER: Or they reach down and unbuckle their own belt and they hit the wrong buckle. They don't notice and pay attention.

MR. DECINA: We're in a hurry and our studies have shown in the past that if the car seat is being moved around from car to car, there is a higher chance of misuse as well.

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MS. MC CRAY: I've seen a case where it was inadvertently unlatched and the seat belt was so taut, it was tight and the buckle was in tension and accidentally hit by a briefcase or something like that and they didn't even realize the seat had become unlatched. That was Larry Decina's.

(Laughter.)

MR. BUTLER: With some seat belts, you can put the child restraint in there tightly and have the belts buckled and then push the button and the child restraint will not release. The belt will stay there, the friction will hold the clips, the bound in the bundle, but then people drive along and they slam on their brakes and suddenly the child restraint comes out because there's enough force to pull the latch out of the buckle. It overcomes the friction and the child restraint goes flying and they say the buckle failed. MR. DECINA: I'm thinking of a new question for you that we have never asked before on any of the surveys, which is how often do you find yourself, you've attached the kid to the seat and the seat to the vehicle and yet the kid comes out of it? That would be an interest?

MR. CAMPBELL: Karen said coming up with something that's convenient for the parent to check and the one inch

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is something that's been developed as reasonably descriptive term to evaluate tightness, but in reality, with head contact and excursion being of concern, that's not the direction we really want to check. We really do want to check because something that moves sideways may be not moving forward any more than if it's a little tighter. It's a convenient way to ask the question and evaluate it on a consistent basis.

You have to be a little careful to what is it trying to tell you and what we're trying to use it for? It may not significantly contribute to head excursion. On the other hand, it may. But it's much easier to tell a parent to reach in and just shake it back and forth to make sure it's still secure than it is to say judge the one inch. I'm not sure they'll do that.

MS. WALKER: It's a good indicator of whether the belt is locked or not. That's my bigger concern. You can buckle the belt and it's easier now with the newer vehicles with the cinching latch and I wouldn't worry about that fraction of an inch that it may loosen at some point.

If I'm talking about a vehicle from 1994 that has no locking mechanism on either the belt or the latch plate until the moment of crash, I don't have a lot to belt when

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I'm riding around. That's a big issue. It's buckled. The parent has the perception that they've protected their child and they're locked in and they are not locked in.

MS. WEBER: In a crash they're locked.

MS. WALKER: Driving loosens that every time you hit a bump or a railroad track or you turn.

MS. WEBER: I'm not laughing, I don't know it gets progressively looser and I would have to say that nobody uses a locking clip in Europe and they have all free sliding ELR belts.

MR. BUTLER: A lot of the child restraints have them built in.

MS. WEBER: Historically, they didn't. I guess just from other evidence I'm skeptical that the locking clip, I can see how in individual situations and if you actually got in there and felt that this thing had three inches of slack in it, you need to help along the retractor system.

It's not working or the friction isn't there, but I think there is an awful lot of Free sliding latch weights on the URL that holds the child restraint perfectly well without a locking clip. It adds another level of, this is just too complicated for me to even deal with, and the very

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thing to do would be if they could just tug on that shoulder belt every now and then to make sure hat it's time.

MR. KHAUAJI: That is not my experience. I have done a few clinics. I agree with Laurie and that needs to be addressed. That is a very critical issue. I'm getting confused now. On one side you are convincing me, but that is not my experience. We need some more data on this.

MR. DECINA: We're going to have more on the misuse pieces. Do you want to add anything to the injury topic?

MS. FERGUSON: Not much more than I've already said. Head injury is the big one. When we've done very limited crash tests and you tend to get high neck loads in these crash tests in seats and in dummies. You don't see that in the real world. Again, I think we have to be a little bit cautious about what we look at in terms of crash tests versus real world. I think we really have to focus on real world.

MR. DECINA: Why is that? Because the dummy's head is heavier?

MR. YOGANANDA: I think it is the dummy with respect to human life. It is the neck that propels the head. It is not that the head just comes out. The dummies have been scaled from the 50 year male to a 1-year old, 6-

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year old and the reason the neck loads are higher is that you're applying the lower threshold and that's why they are seen in some of the end cap tests.

When they have the 3-year old dummies, in almost all cases, they get high neck loads. Do you see this neck injury? No, you see a lot of head injuries so is the neck load real or is the threshold not real. That's the question.

MS. DI CAPO: I wonder if this is something Bill said on best practices, but there's been a lot of discussion about the head contact and about intrusion. I just wondered if we really haven't talked about the position and the placing of the seat in the vehicle and center position.

MR. DECINA: That is open for discussion especially in talking about injuries and types of injuries.

MS. FERGUSON: Do we look, do you ever look at the distance between the front and back seat? If you have an occupant in the front seat, and the child restraint is behind it, you're getting more excursion of that seat than if it was an empty seat potentially.

MS. WEBER: I don't think we can saddle parents with making those kind of decisions.

MS. FERGUSON: I agree, but they're all factors.

MS. DI CAPO: The latch in most vehicles, but

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conditioning them, is there cases where we should be telling parents that they should continue to restrain your child in the center rear with the seat belt as opposed o the latch.

MS. WALKER: That scares the heck out of me because people that now have two children are faced with an incredible decision with which child gets the middle position. If you're reading the new owner's manuals for the new vehicles that have side impact gads in the back seat and they're saying don't put a child restraint next to them.

MR. BUTLER: Who says don't put a child restraint next to them?

MS. WALKER: They're in the instructions even in the child restraint manufacturers instructions. We're beginning to reference to side air bags.

MR. BUTLER: Really? They're saying don't put it next to a side curtain?

MS. WALKER: Side bags. So parents are in this position now where they're going to have to be making decisions as to which child sits where and has increased risk which is tough.

MR. DECINA: No more kids anyone.

MS. WALKER: There are even vehicles you can't use for center seating position and then we're giving them

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advice, use the center position and there is not center position.

MS. FERGUSON: Not in the center. I talked to a reporter the other day who, although she had latch system continues to put her child n the middle because they don't have that latch system in the middle.

MS. FELDMAN: The latch system in the middle is not, in some cars it's shorter. The cars that have it in the middle are not fitting the car seats because the seats are wider. The outboards are, but not in the middle for all vehicles.

MS. WEBER: Then it's not and actual lap position.

MS. FERGUSON: You're right. They are sometimes very short, very small, and they don't fit properly.

MS. FELDMAN: I had a question about trucks in terms of what you were saying about the vehicle and more recent research about head injury in trucks and what would be misuse?

MR. DECINA: You mean pick-up trucks?

MS. FELDMAN: Pick-up trucks especially among supposedly new immigrant families. Sometimes the family vehicle is the pick-up truck.

MR. BUTLER: There are pick-up trucks that have a

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lot of space in the rear seat and some that have very limited space. We make crew cab pick ups in the compact size and in the full-size, but we also make these extended cab pick ups and some manufacturers have forward facing seats, some side facing, but in both cases, there is very limited space.

I don't think there is a practical way to avoid head contact when you have such a limited space. Even if you're in a child restraint, there isn't enough head excursion space even if the child restraint is tethered it's not going to be prevent hitting the front seat.

On the other hand, on the full-size extended cab pick ups, the space back there is marginal. It's a situation where probably if the front seat is in the center of its adjustment, there is enough space. If the child restraint is installed tightly and it's tethered, are not going to have a problem. But if it's not installed tightly and it's not tethered, you're probably, in a serious crash get some head contact with the front seat.

Space in a full size extended cab is the same or maybe a little more space than you get in a small sporty car like the Mustang or Camaro, a Celica, they have head excursion space in the rear.

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MR. DECINA: I want to try to recap real briefly, but I want to ask all of the Netso folks if they want to add anything about injury patterns that they see with things they look at?

MS. MURIN: I was wondering the category of injury you're talking? We see the most severe injury is no restraint, nothing, not even a belt system. Without putting a category on injury.

MR. DECINA: What would I look at with the gross misuses that I would definitely have to look at even though I would be looking at them anyway that are causing the most serious injuries?

MS. WALKER: No restraint. No harness. No safety belt.

MS. FERGUSON: All of those are basically a restraint.

MS. WALKER: No harness, they're strapped in and the perception is that they're using a child restraint.

MR. DECINA: Direction of the seat, right?

MR. HALL: We consider any rear facing seat from an air bag.

MS. MC CRAY: Now, when you say the direction of the seat, there was some discussion earlier about that

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borderline.

MR. DECINA: On the next topic, we'll talk about is that characteristic. Direction of the seat is a gross misuse that has serious implications for head/neck injuries? For the most of body regions, most are head and neck.

MR. BUTLER: Say spine.

MS. WEBER: A significant part of the head is face. There are two different kind injuries there. We're talking about brain and facial. One if neurological, one cosmetic. I don't know that a child restraint can do much about the limbs.

MR. DECINA: Abdomen was mentioned, but was not brought up by anybody else.

MR. YOGANANDA: Abdominal injuries including the spine because the lap belt, in other words, you don't get a lot of abdominal injuries.

MS. WEBER: They're virtually always just in belts, not child restraints.

MS. WALKER: What about the restraints that we're looking at.

MS. WEBER: It could be in a seat belt alone or in a poorly designed booster.

MR. YOGANANDA: Put the abdomen there.

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MS. WEBER: It has to be with consequences. It's the kind of thing that if it's easy to fix, it ought to be addressed.

MR. DECINA: Something about liver injuries from the harness?

MR. YOGANANDA: Those are abdominal injuries.

MS. FERGUSON: Do you see those from harnesses?

MR. DECINA: No.

MS. WALKER: There was cited a case where the harness straps were over the shoulders. I've seen this where they were not over the shoulders but attached under the child's arms with a chest clip.

MS. FERGUSON: And no buckle?

MS. WALKER: And no buckle, and that ended up with severe internal injuries.

MS. FERGUSON: That's a really rare situation.

MS. WALKER: It's not all that rare, but it doesn't occur with a crash, but we have seen that in our inspection points.

MR. HALL: People have all sorts of innovative ways to harness children.

MS. FERGUSON: Maybe the kid slides his shoulders out. You get one shoulder out and the second shoulder out

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and the rest is cake. We have to keep in mind that that is the job of a 2-year old to get out of it. That is their job.

MS. MC CRAY: The job of the parent is to do the disciplining to get them out of that houdini act, whatever it takes.

MS. WALKER: It's a significant task.

MS. WEBER: We're talking about misuse. It seems to me that misuse is typically something that somebody did on purpose or allowed to remain in purpose. If a child gets out a harness and they happen to get in a crash, I don't know that that is called misuse or escaping from the restraint system.

MR. DECINA: I also don't think misuse is on purpose.

MS. WEBER: They thought it was okay. Like the partner that did this thought that the chest clip was the thing that held the strap together and putting it around the child's middle was just fine.

MS. WALKER: The harness was so loose that the child could extract himself quite easily.

MR. HALL: I guess this is kind of situational in terms of a situation like that if when it happens and it's

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not intentional and you can't blame the parent for that. However, when they're at the clinic and you're talking to them, oh, yeah, he always gets out of it. He did this 30 minutes ago.

MS. WEBER: That's excuse.

MR. HALL: It's the same thing like the direction of the seat and the air bag are also situational. The air bags only -- and direction of the seat, it may not be as vertical in some situations.

MS. FELDMAN: There were some suggestions on some of the research with intestinal damage.

MR. YOGANANDA: From the seat belt.

MS. FELDMAN: There was a question about improper use in terms of the child seat, lap belt or improper use of booster seat, not using it correctly having the shoulder strap behind the child.

MS. FERGUSON: That's what we're talking about here.

MR. BUTLER: Are you including children just in seat belts>/

MR. DECINA: We can talk about that a little later in the last study. Let's take a five-minute break.

(Short break at 11:30pm)

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Agenda Item: Types of CPS Misuse - Implications for Injury Severity

MR. DECINA: We talked about the types of injuries that are out there and the major three are the head, the face and the spine and we mentioned the gross misuse that we see out there, no restraint, no harness, no seat belt holder seat, seat direction, the rear facing and the air bags, the loose harness and the loose vehicle seat belt. This is the gross stuff that we see out there and the types of injuries.

MR. HALL: Did we agree that a loose harness and loose vehicle seat belt is gross misuse?

MS. FERGUSON: I guess it depends on the degree to which it's loose.

MR. DECINA: Let's work backwards. If you know I'm going to go out there and look at 4,000 vehicles, would you like me to capture that data?

MR. HALL: Yes.

MR. DECINA: Whether we define it as gross or semi-gross.

MR. KHAUAJI: It also depends on how loose, right?

MR. DECINA: We're going to talk about that. That will be fun part of today defining the definition of the

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best practices and then the misuse out in the field. Keep in mind I won't have the luxury of having a little chat and they fix the seat. I'm only going to have less than 10 minutes to do that.

What I would like to accomplish before everyone starts looking at the food over there...

MR. HALL: Point of clarification. Is that 10 minutes per vehicle or 10 minutes per child?

MR. DECINA: Per vehicle.

MR. HALL: If you have two kids, you've got 5 minutes each.

MR. DECINA: In the last study, it was and I have the report here, it was something like ----

MR. HALL: 3 minutes, 12 seconds.

MR. DECINA: More than 50 percent with one kid and lie, 80 percent with two kids. It's only like 15 percent with three kids. I want to cover two areas. Let's talk about misuse and let's start with the child seat placed properly in the vehicle, things that we need to look at when we do the observation studies.

One is a no-brainer. That's a definite. We've got to determine what direction the seat is. We are going to get age and weight estimates from the people and not taking

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the kid out of the car and weighing the kid. We should talk about height.

The problem with height is seat manufacturers have height based on the seating position and if you take the kid outside and measure that he's 4'8.5", that doesn't necessarily mean he's going to be either appropriate or inappropriate for that seat, right?

MS. WEBER: You could just use height relative to the child restraint back.

MR. DECINA: We are going to address that. Let's first go through the list of installing the seat in the vehicle, what I need to measure out there in the field. I need to receive direction. We need to know the material. We need to know if the seat is near an air bag. That is for rear facing, but let's talk about the side air bags. Do you want to get that information from the vehicles that they have a side air bag?

MR. CAMPBELL: We have an advisory though. There is one that says put the kids in the back and keep them away, don't let them lean against the door or something that.

MS. WEBER: What if there is that back seat air bag?

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MR. BUTLER: If they're in a child restraint and next to a rear seat air bag, that should not be a problem. You're probably safer with that air bag there.

MS. WEBER: I don't think it's an issue.

MS. WALKER: Get it out of the instructions.

MS. WEBER: Maybe the study will help do that.

MR. DECINA: The way we've done this in the past and the way I want to do it again is to have an interviewer who we haven't determined yet the number of questions we're going to ask the people, but the interviewer handles the driver asking questions and the observer, a certified technician or instructor, will be collecting the misuse data. Should I have the observer identify if there are side air bags on the vehicle? Is it worth collecting that data for purposes of summarizing the data?

MR. BUTLER: I think you're going to find very few and I don't think it's worth getting that information.

MR. DECINA: You don't think so.

MS. WEBER: How much information are you getting about the car itself? Would you be able to go back and pull that data out again?

MR. DECINA: That's a good point.

MS. WEBER: I would get it in if you possibly can.

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MR. YOGANANDA: If you get the VIN number, you will know how many side air bags it has. You don't need anything else.

MR. DECINA: In years past, I was told that manufacturers switched gears in the midstream of the year and do something different with seat belts.

MR. YOGANANDA: But the VIN will tell you that.

MS. FERGUSON: They'll tell you on side air bags if it's optional. It depends on manufacturer. A lot of the time it does, but you've got to know how to translate it.

MR. YOGANANDA: The manual won't have it if it's optional because the manuals are not made for the particular model. You need somebody who is knowledgeable to look and see whether it's a side door bag or seat bag or head cushion or whatever.

MR. DECINA: She's helping me tremendously. She's telling me the VIN number won't necessarily indicate if there are side air bags; is that true?

MS. FERGUSON: Not for everybody, but for many manufacturers.

MR. YOGANANDA: You won't be able to collect that data at all unless you have a person who is really knowledgeable about where the bags are.

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MR. DECINA: Okay. So a knowledgeable person couldn't just see that symbol?

MS. WALKER: The symbols are so well hidden.

MR. DECINA: In the Volvo study that we just completed in November, we had one person saying they had a side air bag.

MS. WALKER: They don't know they have them.

MR. DECINA: Very good. Not everyone, but you're right. There was a relationship between having air bags with the Latino population.

MS. MC CRAY: What does it hurt to go ahead and get the VIN even if somebody goes back, it's not like they're in abundance right now. If someone comes five years from now

MS. FERGUSON: The manufacturer would be able to tell you.

MS. WEBER: If you're there and can get the VIN, you ought to do it.

MR. CAMPBELL: There's a privacy implication for getting the VIN. If you're assuring people of anonymity and then taking the VIN, you violated that assurance.

MR. DECINA: The VIN number isn't necessarily going to always say the right story on the car, right?

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MS. FERGUSON: The manufacturer will always know. We have a program where there is no digit right now where the manufacture with frontal air bags in this digit and this digit means this. With side air bags, you can figure it out, but sometimes it's optional.

MS. FELDMAN: I would suggest not to go through the VIN because of the privacy. You want to make this as least intrusive as possible in terms of their privacy. I would suggest we don't have information the impact of the air bags or the curtains in the back seat. We don't have a whole lot of data on that. I would suggest as a question, do you have it? Make note of it if that seat is next to it, but see it jut as not a critical part of this, but as an exploratory part of this study.

MR. DECINA: Let me back track one more thing that Laurie was saying. You can't always see if they're there. You can't tell.

MR. YOGANANDA: No, you cannot unless you are trained.

MS. WALKER: We used to make the data from the VIN not from the report to anything related to vehicle features when we do our analyses.

MR. DECINA: Your VIN is collected because they're

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State Farm insurance people. Let me start with the last project, we did not collect the VIN number. We did collect the license number, the last study because to make sure the person wasn't coming back in another shopping center and collecting the data twice.

MR. YOGANANDA: Then you got the VIN number automatically.

MR. DECINA: I did not tell the public I was collecting the license number. I collected it was just so if the person showed up again, I was not collecting it twice.

MR. YOGANANDA: But if you collect the license number, you automatically have access to the VIN number.

MS. FERGUSON: It's tricky. If you want the VIN, just take the VIN.

MR. YOGANANDA: It's illegal to take the VIN.

MS. WEBER: No, it's not, not if you leave off the last 4-5 numbers.

MR. HALL: If I may interject, I think the bigger issue here is just can you get the VIN and get it accurately.

MR. SINCLAIR: And is it worth the time that it takes in a 7-10 minute interaction.

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MR. DECINA: That's a lot of effort from me. I only have 7 minutes.

MR. HALL: The VIN is supposed to be on that little plate up there where you can look in. Maybe you can see, maybe you can't. Other than that, you're going to have to open the door and look on the tags.

MR. DECINA: The intrusion issue is a problem.

MR. HALL: I could argue that it wouldn't violate privacy issues because you have to be able to get the information from the VIN and decode it to get to who that person is. One question I have is are you getting make/model of the vehicle itself?

MR. DECINA: I did do that last study.

MR. HALL: I think that would be close enough.

MR. DECINA: I take that back. We did not collect make/model.

MR. HALL: I would suggest that you try at least getting make/model if it's possible. That way if you are interested in types of seat belts that are there, the manufacturers could probably tell you.

MR. DECINA: Don't they change midstream sometimes when they make a car, the vehicle seats change? That's why we didn't do it the last time. I was told you can't

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necessarily say a seat belt system is so and so based on the make/model.

MR. HALL: I just think that you will be more likely to capture that than you would a VIN accurately.

MR. SINCLAIR: I was thinking too we may see higher rates of misuse with certain types of makes/models. I don't mean to cast aspersions on Saturn, but I recall in the early years they were reputed to be highly difficult to correctly install child restraints because of seat configurations and such. That would be another reason to track make/model. It may not be a problem.

MS. WALKER: That was very useful because Saturn went back and redesigned a lot of things and now it's one of the easier vehicles to do a child restraint installation.

MR. DECINA: It could be based on our earlier discussions that we get the seat position whether it's semi-reclined or upright out in the field?

MR. CAMPBELL: That's more of a rear facing versus forward facing, isn't it?

MR. DECINA: With the convertible seats, you still have two ways of reclining the seat.

MR. CAMPBELL: Right. Rear facing should be reclined and forward facing upright.

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MS. WALKER: Some models have four reclines. Most have three.

MR. CAMPBELL: From the standpoint of injury protection in the survey.

MR. DECINA: I want that in mind in terms of injury, is it worth collecting that data?

MR. HALL: Yes.

MS. FERGUSON: If you had an infant who was all the way upright, wouldn't that be a problem?

MS. WEBER: Not from a crash point of view. It might be a problem from an airway point of view. It's better for crash protection.

MR. HALL: If you were trying to measure in accordance with manufacturer's instructions, I think the difficulty is nowhere is that reclined position allowed by that manufacturer in that front facing position.

MR. CAMPBELL: Rear facing fully reclined position use forward facing, you say. Could be a misuse, but what's the injury potential? We're trying to get the most out of the survey that we can get. I don't know that I've seen a lot of injuries coming from that. I agree it's an issue.

MS. CORNEJO: The recline is one of the most difficult things for us and I'm not sure that crash

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investigations ever reveal that being.

MS. WEBER: If you recline forward facing, you're going to have probably different results with a dummy. You're going to have lower chest accelerations for one. You're going to potentially have a little bit of spinal load, but, in fact, what happens, the very first thing is that the child restraint becomes almost as upright as an upright restraint as soon as you go into the crash. You're looking at little noisy details here. Maybe the dummy can pick it up, but I really don't think it makes any difference in the field.

MR. DECINA: Okay. The question worked out.

MR. SINCLAIR: The question of whether or not the child is in the back seat which is what we've been promoting for years now, 12 and under. I was just flipping through the other pages and didn't see it. Wouldn't we want to know? It isn't just a question if the seat is installed correctly, but we prefer it be in the back.

MR. DECINA: I am collecting as I did in past studies, position of where the kid is in the car. I should have made that clear.

MS. WALKER: Will it be one form if there is more than one child per vehicle or will each child have their own

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form?

MR. DECINA: The way we did it last time is that it is one child, one form, but we actually had positions for two and I have that form with me. You could get two kids on one form and in the back of the form there are two others. One 8.5 X 14 sheet could handle four kids in a vehicle. Each kid has an entire separate form.

One thing we haven't been real clear with yet from the beginning is what ages do we stop at, 0-12 or do I stop 0-8 or what? In the last study, anyone who looked under 10/11, we just collected that data. Today, towards the end of the day, we can talk about if you all had your wish list and I was able to stop people coming down a shopping center and we have to guess a little bit about ages of the kids when we see them in the car, should I get everyone 12 and under and check out whether they're in a seat belt or a car seat? I know in the meeting we had in November when we were talking about teenagers too in that?

MR. HALL: I think you ought to target like less than 16.

MR. DECINA: We should talk about that a little later.

MR. HALL: If you target less than 16, you'd be a

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little more likely to pick up the 12 year olds.

MR. DECINA: Okay.

MR. HALL: I have a question, did we comment to a great length about the reclining position? With forward facing, it does not make a difference other than it may not be in accordance with manufacturer's instructions.

MS. WEBER: He'll come back to manufacturer's instruction, what's best practice, and what does the manufacturer say. Sometimes those are different.

MR. HALL: I'm also assuming that we're concerned for the rear facing.

MS. FERGUSON: Not for crash.

MR. HALL: What if it's reclined too far?

MS. WEBER: I'm sorry. That's true. It could be reclined too far. I guess you can do that with those little adjustable feet.

MR. HALL: Noodles under it.

MS. WEBER: You can adjust it with propping devices and make it too reclined. That's true.

MS. WALKER: Would you agree that it's too upright because there's no space in the back seat. It's usually a smaller vehicle. A lot of these seats are very large so to try and get them to be the correct recline even with the

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noodles, often they're still too upright.

MS. WEBER: The correct recline, are you defining that as it must be at 45 degrees or can it be anywhere up to 45 degrees from vertical? I don't think 35 degrees is a misuse, but some technicians have been trained that that is.

MR. HALL: It's very difficult to define what is a correct or incorrect recline angle, rear facing.

MR. BUTLER: Especially it's one thing for an infant that's a month old and an infant a year old can sit much more upright.

MS. FELDMAN: I think the reclines also back to the relationship to the shape of the seat in that the bucket seats tend to be a little more upright. Trying to fit that in or a bucket seat if you don't have the noodles in there, they tend to be too upright. You might want to look at the age in relationship to the recline up to 6 months. If they have good head control.

MR. SINCLAIR: Do we have injury data that suggests it's a problem with the under 1 year olds in the rear facing seats?

MS. WEBER: What's a problem?

MR. SINCLAIR: The incline.

MS. WEBER: Too flat or too upright?

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DR. SEDDON: Either way. Is there any indication?

MS. WEBER: I've been to crashes where kids were too flat and their heads hit the seat back in front. It's a rare event, but they do happen. It comes up in litigation.

MS. WALKER: They're too upright in a non-crash.

MS. WEBER: They're documented too where children stop breathing.

MS. WALKER: A breathing issue where a child dies in a non-crash.

MS. WEBER: The answer is yes. The rear facing is better documented. The forward facing --

MR. HALL: I'm not worried about the forward facing.

MR. DECINA: They use rear facing in the certification course. They talk about a case in Pennsylvania. I don't know how common it is as far as all the injuries out there.

MS. WEBER: The same thing could happen sitting at home too. It's a positional problem. It's not specifically related to a child restraint, but it is something.

MR. DECINA: Let's move down the list and then we'll break for lunch. Vehicle seat belt routing and the connection. Any one could collect that data. We need to

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deal with the next one. Let's talk about the lock.

MR. HALL: When you say connection, what do you mean? It is connected and buckled?

MR. DECINA: It is and we will talk about how tight and loose a little later in the day, but it needs to be buckled and we need to check that out there and we need to make sure the belt is through the right end of the seat. The seats aren't totally dummied out to where it's obvious where the seat belt goes, is it? Is there one path and everybody can figure that out? No? That's what I want to hear.

MR. BUTLER: I don't know if this is an issue, but on some infant carriers, there is a question should the shoulder belt be going along with the lap belt across the child restraint and then up to the retractor or should it go straight across? Some manufacturers have changed their instructions about that.

MS. WEBER: Don't you think that the effect is in the noise? It isn't something that's really critical for injury prevention. Do you think it is? This is one thing where the manufacturer may say, for my product, I want it done this way, but relative to the global situation of use, gross misuse, do you think it makes any difference in the

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field?

MR. BUTLER: I don't know. I think it makes a difference in crash testing, but whether in the real world, I'm not sure I can see it.

MR. CAMPBELL: I've not heard of any injuries relative to that particular issue at all in the real world.

MS. WEBER: I think it's something that can be ignored.

MR. DECINA: I'm going to put a question mark. I don't want to totally ---

MS. WEBER: It's only the issue of where you put the shoulder belt in a rear facing infant seat. It's probably not significant.

MR. CAMPBELL: I think it is important in terms of just routing because about positioning booster seats now and belts routed over the shoulder as opposed to under the arm. Belt routing in general, I think it's still something to look at.

MS. FERGUSON: Absolutely. That's a problem here. We're often talking about different types of restraints.

MS. WALKER: It's another issue too when you're talking about the shield booster that has the child who's using the shield booster with a lap shoulder belt whether

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the shoulder belt goes behind the child as the manufacturer recommends or across the front as a lot of parents use it because they want to be sure that their kid has the extra protection. Is that a misuse? The manufacturer has pictures on there telling you how they want it used which is putting the shoulder belt behind the child. It's an issue.

MS. WEBER: You just take that shield away.

MR. DECINA: Locking clip for vehicle seat belts.

MS. WALKER: I would like to amend my comments from before. We've had some discussion. The misuse is the fact that the belt is loose. Whether or not you use the locking clip is not a misuse. You can use a locking clip and come up with a lot more slack than you would have without the locking clip. You can also put it on the wrong side. The focus you should put on this study which will focus parents on the actual issue is whether the belt is tight. Using a locking clip is one of many means to make that belt tight, but using a locking clip alone clearly could also be a misuse.

MR. DECINA: In the last study, we came up with three inches.

MS. WEBER: It's not where you're putting the locking clip on the belt. But you can also fix in four

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inches of slack if you pull the belt through and haven't really pulled it tight. It's got hung up. You put the locking clip on.

MR. DECINA: The tightness of the belt?

MS. WEBER: The tightness of the belt is the misuse item you want to focus people on.

MR. DECINA: Maybe we won't have a locking clip category.

MS. MC CRAY: Would you be able to note if the belt was loose that a locking clip was in use?

MS. WEBER: That's a misuse of a locking clip because they have fixed the belt in a way that makes it loose with that locking clip. The other thing that people do all the time is put the locking clip on the wrong side and that will come apart. That would again be a misuse which will result in slack once you get in the crash because the thing is going to pull apart.

MS. MC CRAY: You're saying more globally to look at the tightness of the belt.

MS. WEBER: The tightness of the belt is the significant item and that's where we should focus attention. Is the belt tight? If it's not tight, maybe they should have used the locking clip to make it tight or some other

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means. Some belts that actually officially need locking clips because it's a free sliding latch, because of the friction and the way that the belt path routes and because of the interface between the child restraint and the seat and the tightness of the retractor, potentially it's got a real sensitive ELR.

That shouldn't go down as a misuse if the belt is tight. That is what concerns me. In the past, too many times we've said this free sliding latch plate should have had a locking clip even though it's okay and that goes down as a misuse and that isn't a misuse because the belt is tight.

MS. MC CRAY: If the belt is loose, what I did after is to go back and identify the belt is loose. It was a result that the locking clip was misused and caused that.

MS. WEBER: That would be a good thing to note.

MS. MC CRAY: To point out that we're having some issues here. We need to educate people more in using these locking clips properly.

MS. WEBER: That's true and that could be a misuse relative to a locking clip, but the fact that they used or didn't use a locking clip with a particular kind of belt is not the issue that should be addressed.

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MR. SINCLAIR: It's no question we're going to record whether the belt was snug.

MR. SINCLAIR: Subcategory, why was it loose?

MS. WEBER: Was there anything added to the belt or something.

MR. SINCLAIR: I think you want to record whether a clip was used or not.

MS. WEBER: But that's not the main item.

MR. HALL: It's not whether or not we're defining or recording whether it's the locking clip is needed or used, you get to the end with the categorization and analysis is where a lot of this would come in. I still having difficulty differentiating between the misuse and also what's actually dangerous.

To me, if the vehicle manufacturer says use a locking clip and if the child restraint manufacturer says use the locking clip and the locking clip is not used, then that is incorrect. It's not in accord with the manufacturer's instructions. That's the only thing that we, in terms of advising the parents, have to go on is follow the manufacturer's instructions, not you may or may not need to use a locking clip.

We can find out that a lot of people aren't using

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the locking clip and technically it's misuse not in accord with directions. However, as it turns out, it's not that critical.

MS. WEBER: Aren't we trying to focus on the misuses, incorrect uses, whatever we're talking about here. Non best practices. Aren't we trying to focus on those things that make a difference?

MR. HALL: Yes.

MS. WEBER: If the belt is tight and sufficiently snug and stays that way without the use of a locking clip, doesn't make any difference, does it? If somebody has decided, I must use this locking clip because both sets of instructions or one set of instructions say so, I'm going to put that on.

MS. WALKER: Ford is going to tell me that I must use a locking clip on my seat belt. Ford tells me. I've got a label right there.

MS. WEBER: It's not wrong to do it. I'm just saying that it shouldn't be collected as misuse information that's going to make any difference.

MS. WALKER: It would be. If that manufacturer has told me on his label. Ford thinks it's significant.

MR. HALL: I see in the end, the analysis will

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be out of these 4,000 child restraints, children we looked at, 90 percent were incorrect when you're very strictly technical according to manufacturers instructions or whatever.

However, out of these children, only 10 percent were at risk of severe injury because the misuses or the incorrect use of the child restraints were mainly due to things that didn't have that much to do with putting the children at risk.

Whether or not you use a locking clip may not matter in most crash situations. It may not matter, but in terms of is this incorrect use, is it misuse? Yes, it is because it is not according to manufacturer's instructions.

MS. WEBER: If only 10 percent of these things that we collect as misuse really make any difference, why are we worried about the other 80.

MS. WALKER: We all agree.

MR. BUTLER: How did you hold the belt tight if you didn't use a locking clip?

MR. CAMPBELL: You're doing a survey and you got 8 minutes to do this. If you reach in and that child restraint is secure, then it ought to be the guide that you look for. If the belt locking isn't there and it's needed,

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it's probably going to move. We have to come up with that criteria, but if it moves, you can look at it and say it moved because the locking clip was misused because it wasn't tightened securely or the locking clip wasn't used. If it's not secure, you could then record why. Is it because a locking clip wasn't used or the locking clip was too loose?

MS. MILLER: As long as you record a locking clip on a seat belt ---

MR. CAMPBELL: I don't care. The child restraint is secure. Do I really care? What injury am I going to have?

MS. WEBER: That's a critical item. Is the child restraint tight?

MS. MILLER: What if there is a locking clip and it doesn't even need to be there and it's on the wrong side?

MS. WEBER: Then that is a misuse. It won't be secure in a crash and we know that because we've done that crash test.

MS. WALKER: But for your people in the field, you're saying if they reach in and feel the seat and it's tight ---

MS. WEBER: No, they have to understand more about it than that. Sometimes you have to give people enough

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information to be able to make a reasonable decision. One of the things that is bad is if the latching hook is on the wrong side and you've introduced slack that will develop once the thing pulls apart in a crash and you just have to know that.

MR. DECINA: So, from an observation standpoint, it looks like you really have to deal with both issues, one is the looseness, but then to see if there are locking clips floating around.

MS. WEBER: That are making it look tight, but it's not going to be in effect.

MS. WALKER: As a manufacturer, would you consider it a misuse when your label says you must use a locking clip on this restraint and you do it in two languages which tells people that this must be pretty important and it's not being used? Would that be a misuse according to Ford?

MR. BUTLER: I think it would be, yes. We don't see another way to keep the child restraint really tight without using a locking clip.

MR. CAMPBELL: But you would find out at the test?

MR. DECINA: All right. Let's move on to the last one. There really is no answer other than collect both sets of data.

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MR. KHAUAJI: Are you going to get information about seat belt, what kind is it in the car?

MR. DECINA: You mean like an ELR? We need to discuss that.

MR. KHAUAJI: You have to unbuckle that child. I hope the people who have this information will have something about our training.

MR. CAMPBELL: We talk about all this and Kathy made the point that fundamentally, first your check, is it secure? If it is secure in the vehicle, then you can go on and do whatever else you need to do. You've got more time to do that. If it's not secure, then you need to start looking at why and recording why isn't it secure? Didn't they use a locking clip? You then go on to a series, but you can skip all that if it's secure and then go on and start looking at the other aspects that you want to evaluate.

MS. MC CRAY: But can you really skip that? Just because it's secure like the one example she gave, if the locking clip is on the other side, that seat could be in there ---

MR. CAMPBELL: Recognizing that as a particular issue, you can ask that as another question below that.

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It's secure. Now, is the locking clip where it should be? You can add that as another question because it's very sensitive to the time that Larry's got.

MS. FELDMAN: You have to look at what needs to be secure. When you do that observation, you have to take into account any improper use of the clipping for example because it may not be secure in a crash. You have two different types. So you do have to have those follow up questions regarding if the clip was used on the wrong side, for example, because you have two types. I could knot the harness straps in the back. I could knot it and I go in there and can get it real tight. Those harness straps could be real tight ---

MS. WEBER: I'm just wondering how you're going to be able to take out that restraint and look at the back to see how the straps have been tied off.

MS. FELDMAN: I'm using that as an example that --- In that situation, obviously, you're not going to have time to take the seat out. I'm not saying that in that case. What I'm saying is analogous to the fact that the seat belt with the clip can, just like you were saying, be secure in terms of observation. You want to make note of whether the clipping moved or not and the type of seat belt it was. You

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want to make it real easy for the person doing the observation. You want to have a check-off.

MS. WEBER: I agree with all that. I guess the next level that some others are alluding to though is do you want to, then even if it is securely belted, do you then want to go beyond that and find out that, in fact, the locking clip was required even though it was securely belted? That seems for the purpose of this survey, a waste of time.

MR. DECINA: Okay. Let's move on to the last thing before we break for lunch. Do we worry about the seat tether?

MS. WEBER: Yes.

MS. MC CRAY: That was one of the questions I had about this study, whether they had a latch system, whether or not he was induced, was there a latch available in the vehicle? Would I be able to extract that information?

MR. DECINA: I'm going to say yes.

MS. FERGUSON: You want to know whether there is a tether and whether it's used.

MR. DECINA: Everyone is telling you from the very beginning that the tether would help with a head excursion.

MR. SINCLAIR: You want to add the latch

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consideration to it. If we know the make and model for them, are we going to know whether or not it had latch?

MR. BUTLER: Latch is not an option for probably about 99 percent of the people. There will be a few cases where latches will be introduced during the model year to meet the percentage requirements, but that's pretty rare.

MS. MILLER: If you don't take the seat out, you can never tell if there is a tether attached.

MR. DECINA: That's right. We have to talk about that a little bit this afternoon. Remember how we're not trying to take kids out and trying to take seats out. Some of the things we're talking about may determine whether the seat is in semi-recline or upright condition on a convertible seat. I may not be able to do that because I can't let the seat up to see what that one direction is.

MR. BUTLER: When you say correct use, I think it would be good to say correct routing too. For example, is the tether strap routed under or over the head restraint.

MS. WALKER: Is it buckled into a cargo hold as opposed to the actual tether? That's a big misuse that we find. People just find the first thing that looks like a hook and they attach it and that's considered to be the tether.

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MR. BUTLER: On the other hand ---

MS. WALKER: It's a cargo tie down. It could be just something that you open the spare tire with, just a little hook.

MR. DECINA: So observers have to not only get in the car, but they got to duck their head behind the seat.

MS. FELDMAN: Maybe the roof too because of the SUVs.

MS. MC CRAY: You're saying to see that it's properly or what it's attached to.

MR. DECINA: Let's take a lunch break.

(Lunch break at 12:25pm.)

A F T E R N O O N S E S S I O N

MR. DECINA: Let me back track a little bit. One of the slides is we're talking about what types of misuse we need to deal with and the implication for injury severity. I need to collect information on the type of seat, whether it's booster or convertible and the direction of that seat as well as the age. That's a given. Everybody agree with that?

A little later on, we'll talk about it later, but

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the seat has to be properly installed in the vehicle. We talked about that with the seat belts. That's a given. Another no-brainer is securing a --- from the individual. That involves harnesses.

MR. CAMPBELL: You mean in the seat, don't you?

MS. WEBER: Properly in the child restraint.

MR. DECINA: Right. I do feel that I will collect safety belt band. There are children in seat belts, regular adult safety belts. I'm going to collect that data. One of things I want to discuss before the end of the day is, okay, I have the example of a 9-year old in an adult safety belt. I will check to see if he's in the belt correctly.

MS. MC CRAY: Are you going to categorize misuse? If you start talking about the safety belt and how it's fitting in that specific vehicle with that 9-year old, are you going to rate that person, that child in the restraint?

MR. DECINA: I think I do want to look at the example of a 9-year old if he/she is in a safety belt, a vehicle seat belt. I think I will want to see if it's behind the back.

MS. MC CRAY: Okay. What about fits because it affects the outcome in the crash if the belt, for example, is riding naturally the way the belts come out of the seat

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packs or whatever if it's over the abdomen?

MR. DECINA: Right. We need to discuss that issue. We need to determine if that's something I can reasonably collect out in the field.

MS. MC CRAY: Basically, the fit. Are you going to rate the fit?

MR. DECINA: We'll collect the data to see if how loose it is and if it is over the abdomen if we can do it. I think we can. We need to discuss that.

MS. WALKER: One last thing. When you talk about fitting the child properly in the child restraint, is this just an observation or will it be from actually looking to be sure that the harness straps are attached to the splitter plate or whatever? Is the seat going to be removed in any way?

MR. DECINA: No.

MS. WALKER: Okay. So if we've gone and tied a know behind the back of the seat.

MR. DECINA: I will not know that. We'll talk about that a little later. What are the important misuses, what I can actually collect, and then the definition of what is misuse for each of the components. Do the seats meet appropriate motor vehicle safety standards? The only way to

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collect that data is I need the make/model for the seat, right?

MS. WALKER: Label.

MR. DECINA: Do I need to read a label to determine that?

MS. WALKER: Sometimes that's behind the seat.

MR. DECINA: I may not be able to collect that information.

MR. SINCLAIR: It's a lot of seats that don't have them. It might say Century, but you don't know what kind of Century it is.

MS. WEBER: I don't know that this is a terribly relevant issue anymore.

MR. HALL: I would just say that if the label is there and you are able to capture the make/model information, it would be good to have.

MS. WEBER: Not whether or not it meets 215.

MR. HALL: I think the only time you may run into something like that would be if you ran into a baby in a household infant seat or some kid in a restaurant booster seat.

MR. CAMPBELL: Which means you're finding somebody that's not in an approved seat. That's the exception as

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opposed to looking to make sure it is certified. It's sort of the opposite.

MR. DECINA: So I don't need to find the label for the make/model.

MR. CAMPBELL: I said if you can get it.

MS. WALKER: Most times, you're not going to. If you see something that Graco, Century, Evenflo, Cosco, you know you've got a seat that's okay.

MR. CAMPBELL: Bill is saying he'd like to see the model number.

MR. HALL: If it's readily apparent realizing that in most cases you will not be able to get it.

MR. DECINA: The last time we did the study, we tried to get make/model and we were only able to get it for about one-third of the situation because people were in a hurry. We can ask the people, right? Are they really going to know that? I guess they would.

MR. CAMPBELL: It's a yes or no.

MS. WEBER: It's okay if it's their seat, but not if it's used maybe.

MR. CAMPBELL: You're getting to get a yes if they're using the seat. I'm not sure there's a lot of value to that question.

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MS. WEBER: I don't think there is either. Why would they say, oh, yes, we had a crash yesterday?

MS. WALKER: You laugh, but we had that happen where people have said it performed great the first time. I'm sticking with this seat. Seriously.

MS. FERGUSON: The whole issue of durability is another issue.

MS. WALKER: I was going to say it probably worked the second time too.

MS. FERGUSON: It would work at two high-speed crashes.

MS. WALKER: Some people are quite proud that they survived that first crash and they're willing to tell you.

MR. DECINA: Do we have all the observers check that all the parts of the seat are working and see if there is an instruction manual at all?

MS. WALKER: How can they?

MR. SINCLAIR: What about noting if something is obviously missing, is that covered somewhere else? I've seen seats come through where they didn't have the guides for the harness slides.

MS. WEBER: It doesn't matter.

MR. CAMPBELL: I've seen where people have made an

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overhead shield, a three-point harness. They've taken the shield off and are just using the belts, but you'd have to be really trained in that to be able to discern the difference or look at the instruction booklet.

MR. DECINA: Continuation of before lunch we were talking about the types of things we need to worry about. Now, we want to talk about the definite types of misuses in getting the child in the seat.

MS. WALKER: Can we go back just one second? Is there any value to looking at the space that's allocated in the back seat between the back of the front seat and the actual back seat?

MR. DECINA: Get a tape measure or something?

MS. WALKER: I don't know. Is there any value to that, to measuring exactly how much space the child has within that location?

MR. YOGANANDA: It depends on who's going to sit in the front.

MS. FERGUSON: It would be interesting to have, but isn't that a different study?

MS. WALKER: Isn't it outcomes and injuries?

MR. YOGANANDA: That depends on who's going to sit in the front. If you push the seat back and you'll have

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less space.

MS. WALKER: For that particular vehicle, could you take the measurement for that particular vehicle as it came into the site?

MR. HALL: You're assessing everything else based on at that time.

MS. WEBER: It takes extra time to do it. Is that really the focus of this study?

MS. FERGUSON: I think from the point of view, it is another study, but from the point of view of having cross section vehicles, do we really have any data out in the field what that looks like? We have had excursion measures.

MS. WEBER: It's based on the Ford did in 1979.

MS. FERGUSON: So if it doesn't take very long, it would be useful.

MS. WEBER: But it takes away from something else you may be able to collect.

MS. FERGUSON: It would be a disposable option item.

MR. DECINA: Is that measured in the inspection clinics?

MS. WALKER: I don't think it is, but we're looking at head stripes as being --- Gary Whitman and I did a

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little bit of it a number of years ago, but we ended up not knowing where we were going to use it. The head stripes seem to be the number one cause of injury. It would be interesting to know or at least have some kind of number of how many vehicles have less than 28 inches of head excursion, 14 inches?

MS. WEBER: It's not always forward though. Head strikes also happen on window sills and all sorts of other things.

MS. MC CRAY: When you say as far as impact and you have to determine your relative point of measure, what you're measuring as your 14 inches is where this child's forehead is? Is he in the seat closest to the back of the front seat?

MS. WALKER: You'd have to determine what that is. I'm just throwing it out. As long as you have an opportunity to do it and head strikes are a considerable interest.

MR. DECINA: Let me leave it as a question mark. Let us talk about, we have a seat in the vehicle. Now, let's talk about securing the child properly in the child restraint system. Do we care about harness in the appropriate slots?

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MS. MURIN: Oh, definitely.

MR. CAMPBELL: That varies depending upon child restraint. Some you can only use forward facing in the top slots, some you can be in the middle and the top, again without looking at an instruction booklet, you may not be able to discern whether it's right or wrong.

MR. DECINA: The age and weight of the child, size of the child.

MR. CAMPBELL: If it's at or below rear facing or at or above forward facing, is the only ---

MS. WALKER: All you can do. That's all you can do.

MR. DECINA: But that's important. If the harness is threaded properly in the back ---

MS. WALKER: You won't know that.

MS. DI CAPO: You're saying you aren't going to be able to tell that. It's either at of above so they can see that it needs to be at the tops of slot and you're saying it's okay if it's in the second.

MS. WEBER: In order to determine that, somebody has to have the actual instructions to see what it says. You don't have that kind of time.

MS. DI CAPO: You need checkers that know the

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different seats and know which ones are reinforced.

MR. HALL: How many of the convertible seats actually give any of the lower slots as an option in the forward facing position?

MS. WEBER: All the Graco, some of the Century. Increasingly, they're doing it.

MR. HALL: It's going to be brands.

MS. WEBER: All of the combination seats.

MR. HALL: Rule of thumb is unless told differently, it goes immediately up to the top slot. If you know that it's a Bratex and you know that all Bratex can allow it in any slot, then ---

MS. WEBER: So you're saying that they could have an added little piece of information that if this kind of model, then it's okay or something?

MS. DI CAPO: Do you risk having deep fether in a spot that's not reinforced and saying that's not a misuse as opposed to risking that you have it set in the top that could have been? The majority of them need it in the top.

MR. HALL: Based on what is out there that you do need to assume that it needs to be in the top slots if it's forward facing.

MR. CAMPBELL: You can record whether it's the top

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slots or the next set down, top slots or middle slots or first down. If it's at the top, it's being used correctly, otherwise, you could not say. That percentage you know and if 20 percent are being used in the second slot down, that's all you need to know.

MS. WEBER: This is why you at least need to know the manufacturer of the child restraint. Even if you don't get the model, you've got to try to get the manufacture.

MS. WALKER: Dave and I were just saying the Century as some seats, but it is reinforced.

MS. WEBER: Some of them are 30 pounds, it's okay.

MR. DECINA: Let's not mess up the harness. That's a definite, right? Let's talk about that. What quantitative measure could I use?

MS. WEBER: Kathy's pinch measure is a good one.

MS. FERGUSON: If you can pinch it, it's too loose.

MR. CAMPBELL: Isn't that what we're now teaching as well.

MS. WEBER: How do you do that, if you can pinch it at all? It's probably a better measure than the two-finger measure.

MR. YOGANANDA: How long have we been giving this message?

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MS. WALKER: The curriculum says it has to lay flat on the child's chest which would mean that if you could pinch it, it wouldn't have been laying flat because there is something to grab onto. So the curriculum basically says it must lay flat against the child's body.

MR. HALL: Be as snug as possible without being uncomfortable on the child.

MR. CAMPBELL: I still like the one-finger rule. You can slide it up in there and can gauge that pinching. I've not tried it. It's the first time I've heard it. It depends on how aggressive you are at trying to do it.

MS. WEBER: If you have to struggle to pinch it, it's probably okay.

MR. CAMPBELL: I know.

MR. DECINA: So we're not using the put the finger in? We're touching the seat?

MS. WALKER: Touching the child actually.

MR. DECINA: Touching the child and the seat.

MR. HALL: The only other way to do it without touching is to ask the child if they can lean up and if their shoulders come away from the back of the seat, it's too loose.

MS. WEBER: Maybe you have to try it out and get

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used to the pinching method and see what that entails in terms of other methods that you've used. You're going to have a training session. If this works for you.

MR. HALL: Get a graduated stick like they measure ring sizes and stick it in there.

SPEAKER: What do you do when the kids in the winter come with the down jackets on and it appears fine.

MR. DECINA: We're not collecting data in the winter. We've done it spring, summer, or early fall. Is anybody properly in a child safety seat properly when they're wearing their snow suit?

MS. WALKER: Give it your one-finger pinch?

MS. WEBER: I'm not going to do it.

MS. FELDMAN: You have a major liability problem where we're talking about people volunteering and do you want to have any kind of touching of the child? You might want to ask the parent to do that.

MR. DECINA: That's a very good point. In past projects, we told the parents is we're going in the back seat and we are going to touch the seat and harness, but we're not going to touch the child. We ask them to turn around and take a look at what we're doing. It's on the edge of being a problem. I'm aware of all those issues.

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You have to get your fingers under and do this.

MR. CAMPBELL: It will allow a little bit looser harness than the one finger, but it's an easier to discern what's more of a concern for risk.

MS. FERGUSON: I'm not sure this is that loose.

MS. WEBER: The other thing would be nice if you could get that chest clip out there because it's putting some slack in too.

MR. KHAUAJI: This is not going to pass a pinch test.

MS. FERGUSON: This would pass a pinch test.

MR. CAMPBELL: And it's looser than one finger.

MS. FERGUSON: It's not that loose. It's not going to fall off the shoulder.

MR. DECINA: The crotch straps have to be buckled, right?

MR. SINCLAIR: It's customary. Shield snugness. Do you want to strike the word shield there.

MR. DECINA: chest clip. Now we're talking about this chest clip? What do we do with this? Do we collect this chest clip data? I think I'd collect it. Whether it's considered important.

MS. WEBER: What are you going to collect, whether

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it's there?

MR. DECINA: If the strap is not there or it's not the ones that are buckled, it's not buckled properly? It's not at the arm pit?

MS. WEBER: How far from the arm pit?

MR. DECINA: I'm asking everybody. Do I collect this data?

MS. WALKER: It's on every seat. Why not?

MR. CAMPBELL: I think you collect it because it is there to be used. Whether it's a significant risk of injury or not, we've had discussion over that, but as long as you're in there, you record it and qualify it in terms of potential risk that it brings to the performance of the child restraint.

MR. HALL: You collect every bit of information you possibly can. How it's analyzed and used ---

MS. MURIN: Right. How it's qualified later is up to somebody.

MR. DECINA: The chest clip may not be one of those significant misuses that we include.

MS. WEBER: You know how much tighter than harness looks when you pull that chest clip up.

MS. WALKER: One of these is tighter than the

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other. If it's like this, misuse?

MS. WEBER: No, and I don't know why that started out being this horrible misuse. It does the same thing.

MS. WALKER: All it does is make it easier for the kid to get his arm out, but it has nothing to do with crash components. What are we talking about here?

MR. KHAUAJI: If the kid is out of that strap ---

MS. WEBER: If it's sitting like that on the child, he obviously hasn't taken it off and it has no effect on crash performance whatsoever.

MR. CAMPBELL: Is it being used correctly, no. But the contribution of that to risk of injury is nil. It's not an important misuse.

MR. KHAUAJI: It's worth collecting the information and once we will come to the education part, then that may not be very significant.

MR. CAMPBELL: Collecting the data is something you still to.

MR. HALL: I think the value of collect the data is by collecting all the data that's normally collected, you'll be able to compare it to other estimates of misuse, 80-90 percent and then be able to say, well, our data was comparable to these other studies. However, in the 90

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percent misuse, we found x percent were really relevant or really mattered in terms of increased risk of injury.

MS. WEBER: That's a very good point to be able to compare it with other studies that come up with these astronomical misuse figures.

MR. HALL: I think there's 99 percent misuse.

MR. DECINA: The inspection clinics only have 30 yes/no categories.

MR. CAMPBELL: You're not going to get to that total because the seat is not coming out of the car. So you're not going to know some of those misuses. I still think collecting the data is very worthwhile while you're there. If you recognize the fact that that's threaded in correctly. We can recognize the fact that it's not a significant risk of increased injury.

However, people are still doing it that way. That's what we also communicate to the world that this is not being used right, but you almost probably forget that and focus on things that are increasing the risk of injury and communicate those items. Once you've solved all them, you come down and talk about this.

MS. DI CAPO: I think there are a lot of advocacy groups that need to hear this because these things didn't

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just come out of nowhere. We started collected the data even within this group right now. We're changing because we know more now.

MS. WALKER: It needs to go back the manufacturers that maybe we need to get rid of the chest clip, but it's there and it's been there forever, but maybe it doesn't need to be there in the future.

MS. WEBER: Or maybe we don't have to have an instruction that says you must use it threaded a certain way. In fact, it makes no difference. You can have an advisory. Your child may be less likely to get out of the chest clip if you thread it this way, but it has absolutely no effect on performance.

MR. DECINA: So chest clip misuse that we might be able to collect.

MS. WEBER: How far below is too low? I don't know that anybody knows that either. We've given people a guideline, approximately arm pit level so that they don't put it up here and don't put it down at the buckle. But there's a pretty wide range in the middle there, probably four inches.

MS. WALKER: So when you do the training of the people that would be doing the observation, you would give

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them that range.

MR. DECINA: The armpit level or the chest level?

MS. WEBER: I think you might remark that it's all the way down at the buckle or that it's all the way up under their neck as far as it can go and probably most places in between in the range that a child's torso is, is going to be okay.

MR. CAMPBELL: I'd say the upper half is okay and the lower half is too low.

MR. SINCLAIR: If it's in the middle third, it's okay.

MR. HALL: Draw a line across the armpit.

MR. DECINA: All right. Booster seats. How snug should the shoulder belt be?

MS. WALKER: That's always a big issue today because parents want to make it rock tight.

MR. CAMPBELL: More important is the position because the vehicle is going to put 2-4 pounds of retention force on the shoulder belt. If you have a belt guide like that to run it through, you can make it tighter, but position is more important than getting it tighter than the 2-4 pounds.

MS. FERGUSON: Can you also introduce slack with

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those things? That's the real problem. I would like to capture, if the booster seat introduces slack, that's an issue, isn't it?

MS. FELDMAN: Are you talking about this as a booster seat right now? That's only a guide.

MS. MURIN: A shoulder belt can get snagged in there sometimes. I think that's what she's saying.

MS. FERGUSON: It depends on the kind of guide. Some guides like free movement and that one doesn't.

MS. FELDMAN: That would be the seat.

MS. WEBER: What is the issue here?

MR. DECINA: How much looseness should the shoulder belt be across the booster seat?

MS. WEBER: It should be retracted as far as the vehicle retractor should normally do it.

MS. FERGUSON: Especially if it's free flowing. It's not going to be an issue in most cases. Unfortunately, this is more common than the free sliding.

MR. HALL: I think you have to capture whether or not it's too loose.

MS. WEBER: If the clip is holding the retractor from doing its proper work, that's a problem.

MR. CAMPBELL: What's too loose?

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MR. BUTLER: Any time you have it being used, it's going to do that.

MS. WEBER: It's going to divert the path, but I'm talking about if given that it can take that same path. If it's keeping it from retracting, not that it's keeping it from being a straight line.

MR. BUTLER: It won't retract through that. Is there too much slack in the belt as a result of that?

MR. HALL: They use them in position with the shoulder belt too low.

MS. WEBER: The problem is most of those clips are too low.

MR. HALL: Most of them, if you use it, it will put the shoulder belt too low. I think you have to look at both the position of the shoulder belt and also if there is excess slack in the shoulder belt.

MS. WALKER: We were trying to figure out what you would use as a measure. Is it a fist? Is it a hand? What kind of measure would tell you that you have too much slack in this belt? From the point of the belt to the guide, can you pinch it?

MR. HALL: I think if there is obvious slack that makes it.

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MS. WALKER: You're back to obvious slack which is not measurable. What's measurable?

MS. WEBER: Can you use a pinch here too? I've never tried it, but are our seat belts a little too stiff? Remember too that shoulder belts don't, they used to tell people to have a fist between the shoulder belt and your chest anyway because they want your body to go forward a little bit on top so that you don't submarine.

MR. BUTLER: I don't think that's an issue here using that guide. It will put a couple of inches of slack in the belt anyway.

MS. WEBER: That's true because of the deflection.

MS. WALKER: How loose can it be?

MS. FERGUSON: Stop them from rolling out and not having protection of the shoulder strap.

MS. WALKER: So, make it a little tighter, Larry. Now pinch.

MS. WEBER: It's a consistent test. The lap belt really needs to be tight, tight.

MR. BUTLER: It's not likely to be.

MS. WEBER: You ought not be able to get anything under the lap belt.

MR. BUTLER: But in this situation, you

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automatically have the same tension in both. That's why you don't want to introduce the slider.

MS. WALKER: Is it going to be a misuse if the child is in this type of shield booster and shoulder belts are available? It's definite misuse. If you have lap shoulder belts in the vehicle seated position where the child is located and they're using the shield as opposed to using the lap and shoulder belt ---

MR. SINCLAIR: Between 30 and 40 pounds.

MS. WALKER: Between 30 and 40, the manufacturer says it's fine, but if they have a lap and shoulder belt, that's proper use, right?

MR. CAMPBELL: If you have an older booster seat and they're over 40 pounds, the instructions say you can use the shield.

MS. WEBER: You just have to start modifying what the manufacturer's instruction say.

MR. HALL: It does not meet best practice, but it's still be used in accord with manufacturer's instruction.

MS. WEBER: Old manufacturer's instruction, obsolete instructions.

MR. DECINA: The correct use of the shoulder and the lap.

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MS. WALKER: Well, if you look at the picture on the side, see what it tells you to do with the shoulder belt? It tells you to put it behind the child.

MS. FERGUSON: You don't need that, do you?

MS. WALKER: You're talking to parents who are getting rid of that shield where the perception of safety is, they see that that is safer than using the lap and shoulder belt. It says to put the shoulder belt behind the child just using the shield and the lap belt. It's not best practice, but it is according to manufacturer's instructions.

MS. FELDMAN: I would suggest that anything with such low use as booster seat in general, it would be important to differentiate between the first such as that and the other booster seat, making that point. Secondly, how the shoulder and that is used with that and with the other. I think we want to get some detailed information about booster seat use.

MR. DECINA: We will identify what type of booster seat and we will identify the type of shoulder and lap belt and how it fits in the seat.

MS. FELDMAN: I think that would be important to get.

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MS. WEBER: You've got to say how it was done.
Maybe later you have to decide ---

MS. FELDMAN: That will be easier to, in some way,
easier to quickly help someone out with a booster seat.

MS. WEBER: Isn't the whole issue of whether you're
following manufacturer's instructions precisely really more
of a liability issue and not necessarily a misuse or best
practice issue. What are we doing here in this project?
Are we trying to identify the consensus best way to restrain
the children that you come upon in your survey or are we
trying to protect from liability?

MR. CAMPBELL: Trying to measure what's out there.
If you're measuring this particular product that's being
used as a lap belt, but there's a lap shoulder available,
maybe you want to know that, but I don't think you want to
judge whether that's appropriate use or best practice.

MS. WEBER: At some point, he has to judge whether
it's best practice or misuse or however it's being defined.

MR. CAMPBELL: But it's not an issue. I think the
manufacturer's instructions still have to go because when
you communicate to parents, if you start saying don't follow
the manufacturer's instructions, they don't know what to do.

MS. WALKER: You can't interject that. You could

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because you've seen the test and you know what you can get away with.

MS. WEBER: We're talking about specifically this project. Are we trying to protect people from liability or are we trying to put people in what is consensus, the best way to do it?

MR. HALL: I think we are measuring different levels of misuse and at the same time trying to determine how many of the children are really at increased risk of injury.

MS. WALKER: We're really measuring use and determining whether there's misuse within that use.

MR. CAMPBELL: In this condition, if you've got a lap shoulder belt available, but it's being used with a shield, you could ask the question, was a lap/shoulder belt available so that it could have been used in the best practice, but it was being used properly? You'd know what level of improvement ---

MS. WEBER: Let's figure out something that says according to manufacturer's instructions because these instructions have changed over time.

MR. CAMPBELL: Ask the question was the lap/shoulder available for this type of product, would be a

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measurable piece of information to have. You can make judgments after that, but trying to judge proper use, non proper, it seems to me it gets very confusing very quickly.

MR. COMPTON: You're observing what's being used and how. That's number one and then we'll have a little flexibility of interpreting what that means later.

MR. BUTLER: I'm going to need some vehicles where if the manufacturer's instructions say you do not use this child restraint, but I don't think that you can be expected to know all those. I don't think you can find that out while you're doing this study.

MR. HALL: I think we'll be better off if we can limit the number of judgement that have to be made. They don't determine that it's misuse per se. They collect the information.

MR. DECINA: The way we did the last study was I didn't let them make misuse of proper use out in the field. They collected quantitative data on each part and when we got back to the office, we did analysis and it would chunk out whether it was proper or improper.

MS. WALKER: How logical or how likely would it be that if a photo were taken of that. That's what they're training the NAS people to do is to not make a judgement

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right then and there whether this was improper or proper, but merely write down what you've seen and take a picture.

MR. DECINA: In the NAS, parents aren't there live with the kids.

MS. MURIN: Why can't you still take a photo?

MR. HALL: You have the parent's permission to take the photo, then you can take the photo.

MS. WALKER: You would be doing your survey form, but you could also have the less subjective analysis you have at the field, the better the data might be. Somebody else is actually analyzing that data.

MR. HALL: I have the photos to go back to references if there is a question. It would be better to have it and not need it than to not have it and need it.

MR. DECINA: How many photos do you take per seat? Five?

MS. MURIN: If you took a funnel shot.

MR. DECINA: There is a privacy issue.

MS. WALKER: They're going to sign a waiver when you climb in their car?

MS. MC CRAY: Okay. Take the shot now.

MS. WALKER: That would really give you some information on how loose those harnesses are and where those

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harness squats are and where the clip is where it's adjusting the shoulder harness and rear facing.

MR. SINCLAIR: For teaching purposes it's well to have real world examples like this of some of the hilarious things parents concoct to try to imitate correct views.

MR. DECINA: I strongly believe that the observers will be certified technicians or instructors. In addition to our training, they really can make quantitative decisions in the field to collect the data. You have your qualified person point blank out there looking instead of photos with various shading and lighting.

MS. WALKER: I think a photo would be great.

MR. DECINA: No question a photo would be great. Permission rate of people has gone down about 3 percent.

MR. HALL: You'll be surprised. You can get these parents and ask them anything, the most incriminating things in the world if you want to.

MR. DECINA: We have a high success when we do this.

MR. HALL: As far as privacy goes, researchers routinely collect very private, very detailed intimate information and it's not whether you collect it. It's how do you guard that information. That is the privacy issue

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and as long as you as researcher can guarantee confidentiality and maintain the confidentiality of your data, then there's no privacy concern.

MR. DECINA: My other main problem is having to deal with the reviews and the OMB clearance and completing the study within the time line of the study.

MR. HALL: We're talking about this is what would be good.

MR. DECINA: You guys can say anything. I'm the one.

MR. HALL: We can say exactly what we want.

MR. KHAUAJI: How many people, is it going to be just one person to two?

MR. DECINA: There are two person teams and the way we have done it in the past and the way I envision it is we have teams in shopping centers and they go to smaller shopping centers with very limited exit and entrance ramps. We quarantine off a certain area of the parking lot or we have the interviewer going over the where people are about to park.

The interviewer comes up to them and says hi, we're doing a community safety check of the seats and seat belts in the car. It will take a few minutes, can I do it? You

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can also look as we look at your kids in the back. We introduce the observer and in the past, the interviewer has asked questions to the driver and a lot of times, the interviewer is asking all these questions to the driver and the driver doesn't have time to look to see what the observer is doing.

What happened in the past is the observer in 90 percent of the time has done the observation and collected the data before the interviewer finished the questions. We asked about 10 questions last month.

MS. WALKER: Once we did stick our fingers under the kids seats.

MS. MC CRAY: Larry, I wanted to get clarity on what you're going to collect on the booster seat and lap belt. I heard a lot on tightness and determining what tightness is. First of all, we're talking about risk of injuries and with lap shoulder belt systems, you see the domino soft tissue injury or the belt not going in the right place.

Even if there is a belt position in booster, we would want to know if you're actually getting those belts where they should be. Like the photos they were talking about, it would show not having the shoulder belt adjuster.

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I have seen some of them where they will have the kid in there where it doesn't have a shoulder belt adjustment and that belt is going along the neck as opposed to the mid-range of the shoulder.

My thing is it's not just tightness. Are we going to be able to capture the path, how that belt is actually fitting? If it's over the abdomen, we don't have the data as far as booster seats, but if you get them in this survey, you may get limited numbers. We want to collect as much information as we can on those belt positions in boosters. Are they really positioning the belt properly as we think they should crossing the boney structure as opposed to the softer tissue area?

MR. DECINA: I think we are definitely collecting the position of the shoulder and/or the belt across the booster seats.

MS. FERGUSON: What's the criteria for single lap belt fit buckling?

MR. BUTLER: I think that's a real serious problem for this.

MS. WEBER: Unless the lap belt touches the thighs.

MS. FERGUSON: It has to touch the thighs.

MS. WEBER: The lower edge has to touch the thighs

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and if it doesn't, it's some degree of bad.

MS. FERGUSON: I would agree with that.

MS. MC CRAY: If it is on the thighs, lower down, that's fine. So you're not as interested in the shoulder belt if it's going across.

MS. WEBER: The shoulder belt needs to be between the neck and arm not on the edge of the shoulder, but between the neck and arm.

MS. MURIN: Where did we end up with this photo?

MR. DECINA: I think you need to do more than one photo. You need to do a series of photos.

MS. WEBER: I can't imagine you would be able to do it without a third person.

MS. MURIN: Especially if we're interested as part of this research study to find out what kind of seats are really out there because 9 times out of 10, there's not going to be even a name on that seat. I'm just going by what we're seeing new in NAS this year with the new interview form and the photos.

Of the 10 interview forms that have come back, if I wouldn't have had photos, in 7 of the 10, I would not have had a clue. There was no label. The interviewee didn't know how to explain the seat. One was supposed to be a

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Cosco booster, but it was an infant seat.

MR. DECINA: If my data collectors are certified technicians and we give them proper training, do we really need to take a photo?

MS. MURIN: If that's the extent that we need to know, you may get seat type. They would discern just looking at the seat what type it is.

MR. DECINA: They're not in the car.

MS. MURIN: It doesn't matter. If there's no name, it can be the best certified person. If there is no name with the label on it, they're going to guess. They're not going to know.

MR. KHAUAJI: Who supplements that information? If it's not an issue, why not for privacy?

MS. WALKER: I've been in so many cars where I've said to the parent, would you mind if I take a picture of this? I have yet to have a parent tell me no. I've not had anybody say oh, no, it's a privacy issue.

MS. MURIN: Fine. If they don't let, that one they don't let you.

MR. DECINA: How many photos have you taken?

MS. MURIN: Where it's buckled and a frontal.

MS. WALKER: There are ways to get it and people

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are so good about wanting to advance this field. You've been in cars. People have yelled at you, get out of my car? Most of the time, they want to know.

MR. HALL: The value of the photos would be for validation or verification of the information that comes in on the form and perhaps adding some information. Realizing the value of the certification, just because someone is certified doesn't mean they will be familiar with all the seats and be able to identify them and to know it's convertible versus forward facing only seat.

That's something that only comes with lots of longstanding experience and dealing with a lot of different models of seats. If it is possible to get the photos, you would find that it would be very valuable. Would it be necessary and could you do it without them? Yes. Would you get better data with them, more useful data? Yes, you would.

MR. DECINA: You have somebody back in the lab scrutinizing the picture to see if they can get extra information.

MR. CAMPBELL: Or it's interpreting the form as you're looking at the form.

MR. COMPTON: Just try it once. Have somebody look

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at the photo who wasn't there. Look at the form and see if they can see anything that wasn't on the form.

MR. DECINA: Absolutely. It's worth using in pilot study to see what's up.

MS. WEBER: We have a class next week going on.

MR. DECINA: They're coming from Boca Raton.

MS. WEBER: I don't know if you need to have a digital. At that site, you could probably do a cheap Polaroid and staple it right onto the form.

MS. MILLER: Is your class at the fire hall?

MS. WALKER: Yes, we have some of the fire fighters on the calendar this year.

MS. FERGUSON: Could we expense them?

MS. WALKER: Forget about the pay.

MS. DI CAPO: Is there somewhere you can mark a laptop? You may want another category on there.

MS. WALKER: Could be the owner of a lap top.

MR. DECINA: Let's go over the lap top real quickly.

MS. WALKER: It's a belt positioned.

MS. WEBER: It's a backless child restraint is what it is.

MS. WALKER: Similar theory to Ford that the kid

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seats on the seat of the vehicle.

MS. WEBER: That isn't defined in the regulation.

MS. WALKER: It has a very skinny belt pack and it has a shield across the front and the seat belt comes up and under that shield and it lays on the child.

MS. WEBER: It's a low shield.

MS. WALKER: It's all one piece and it doesn't lift the child.

MR. DECINA: It's a separate category. What type of misuses do you see with that?

MR. HALL: We don't see it.

MS. WEBER: We don't see it. It's new. Not only do you not see the restraint, you don't see any misuse.

MR. HALL: I haven't seen any misuse of the laptop.

MR. SINCLAIR: Children can lift it with their hands. It's an untried product.

MS. MILLER: My son didn't like it at all at first. You use them at checkpoint, you end up getting them out because they're so different. He hated it and whined and cried. He didn't want to sit in it. He's 36 pounds, but he's 42 inches tall. He's used to it and now I like it.

MS. MURIN: He can't see out the window.

MS. MILLER: He's in the middle. He didn't have a

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window anyway. It's going to move. When I first put him in, I put him it too tight.

MS. WALKER: We live in a high-end community. They get the latest of everything. We're seeing them on school buses and they don't work on school buses because of the buckles.

MS. MILLER: People are probably buying them not realizing that they're for lap belts only. They're probably just buying them to use them.

MR. DECINA: Let's talk about the 8-12 year old range. What do we define as issues for children in the 8-12 range?

MR. BUTLER: The child's seated position is very important and they should be all the way back in the seat and not slouching.

MR. DECINA: The knees have to be past the edge of the seat, right?

MR. BUTLER: That's ideal, but as long as they're seated all the way back, where their knees are is a factor on how long they're going to stay in that position, but if the child is seated all the way back, I don't think it's a misuse situation. That's the way they should be seated.

MR. DECINA: No shoulder belt behind the back? I

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do want to collect this data.

MS. FERGUSON: The question I have with the sample size is if you go into the kid, that's going to limit the number of the other things that you'll see presumably, right? I'm trying to anticipate how many you want. If you're collecting more and more ages, then that's going to limit how many in each category you're going to get.

MR. DECINA: The way I'm going to do it is the end is 4,000 or 6,000 kids. We're not going to not collect data on every kid on the car.

MS. FERGUSON: My concern is what if you end up getting a lot of kids who are in the older age groups and not many in the younger age groups, are you going to say I want this many in each group minimum?

MR. COMPTON: Maybe the way you handle that is the criterion for stopping a vehicle.

MS. FERGUSON: What if you're in a neighborhood where you're getting a load of kids between the age of 6-12 and not many infants and forward facing. You're going to have some kind of limit on it?

MR. DECINA: The field managers go out and check their sites. They actually do count who's going into the shopping center and what is that type of combination before

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they even begin collecting their data. That's the way it was done in the past.

MS. FERGUSON: I just wanted to throw it out because you can get a skew.

MS. FELDMAN: That's important in terms of the younger shifting from the child restraint to regular seats with seat belts. You get quite a shift by 3 and by 5, you have a real shift. So you may want to oversample younger groups because you want to look at more differentiation. Oversample the younger.

MS. FERGUSON: You have to keep an eye on what you're taking in.

MR. DECINA: We've said to ourselves, anyone who looks under 11, see what the data looks like.

MS. FELDMAN: Looking at the policy and the implication, the cut off is being made as 8 years of age. It's critical to get 8 and under and then pick up some of the other.

MR. DECINA: I can't tell data collectors cut at 8. They're not really going to be able to say this person is 8.

MS. FELDMAN: Once you reach your criteria between 8 and 12, you're going to stop, but you would have reached your minimum number that you want in that sample and then

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you say thank you. I want to give you this information and make it a pleasant stop.

MR. DECINA: I'll have to show you the break out of age categories from the last study and how that worked out. There were not a lot of kids older than 12 with a lot of kids at all 6 and under. We'll look at that.

MR. CAMPBELL: Where did you end up with the knees at the edge of the seat versus slouching down? It's more important that the child's back is against the vehicle seat back. Are they back into the seat? It's measuring the wrong point.

MR. DECINA: Okay.

MR. HALL: The knees could be.

MS. WALKER: Aren't they both necessary? You want the vehicle seat to be where the child's back is and you also want the knees bent at the edge of the seat?

MR. HALL: Not necessary for proper fit.

MS. FERGUSON: You only need the first one and if they've been driving for a while and their legs are straight out and they're still up against the seat, we won't be too concerned.

MS. WALKER: You can sit there with your knees straight out for quite a while, but eventually, you're gong

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to slouch some in order to accommodate the bend of the knees.

MS. FERGUSON: You do get to see that the back is up against the seat. That's the point.

MR. HALL: That's part of the test for it. Does it fit?

MS. WEBER: It's not a specific fit thing at the moment.

Agenda Item: Identification of Most Important CPS Misuse Measures for the Observational Study

MR. DECINA: Okay. I think just to summarize, we are looking at the appropriate seat, location in the vehicle and direction of the seat. PPositionof the straps, whether the harness is buckled or not. We are going to make a ddecisionon the retainer clip, the chest clip, and we didn't really talk about the tightness of the tether strap. Let's talk about that issue. Should there be no movement at all with the seat up and down with the tether so tight connected to the vehicle itself and to the anchor underneath?

MS. WEBER: Pinch test again.

MR. BUTLER: I think that's too loose.

MS. WEBER: The ghost test showed that it didn't make a difference if it was a little bit loose.

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MR. BUTLER: You could argue that, but it should be tighter. I don't think that you can expect that it will be tight enough so that you can't move it. That's expecting too much, but I would like to have it tighter than pinching.

MR. DECINA: Does the observer grab the top of the seat and rock it to determine how loose the anchor needs to be?

MS. WEBER: You can't really do that because when the tethers comes from below the seat back level, it's gong to be some slack in there anyway because the seat cushion compresses. If you've gotten the tether strap snug---

MR. BUTLER: This child restraint has a low tether strap mounting. We've sometimes said you should use a high mounted tether strap because this isn't as effective in most vehicles. A lot of child restraints are made this way and you cannot get the top of the child restraint tight.

MS. WEBER: It's not directly connected. All you can do is measure something with a strap. That's why I say if you can't pinch it, it's probably okay for the purposes of this study. It's not optional, but it's probably good enough.

MR. DECINA: Top and bottom. It's connected under

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the seat too.

MR. BUTLER: You will find very few seats with latch attachments, but you will find a lot that have tethers for the last two years. They've been built with the tethers installed, but they're almost no child restraints out in the market now that have the latch attachments.

MR. HALL: You still won't see all that many tethers. You see a lot of the restraints that have tethers.

MR. DECINA: Back to the make and model of the seat to know if there is a tether attachment.

MS. WALKER: You won't even see it. If it's not attached, you won't see it.

MR. DECINA: I would have to know the make/model to know if that seat has that.

MS. WEBER: Can you get your hand behind the child restraint to feel things like the splitter plate and the tether if it's there.

MR. SINCLAIR: You can't see it though.

MS. WALKER: You wouldn't want your hand back there. I'm just asking. I don't know.

MR. DECINA: We've reached a threshold of what we can touch and what we can't touch. We can touch in the front and we can pinch the lap, but we're definitely not

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putting our hand behind the seat.

MR. KHAUAJI: You're not touching the child. You may not be able to because some cars simply won't let you. Some car seats have shape in a way that you couldn't feel.

MR. DECINA: Is it important enough from an intrusion standpoint to put your hand behind the seat and see if there is a tether?

MS. FERGUSON: It would be nice to know if there was a tether and if it was used, yes.

MS. WALKER: We can ask people too. Is there a strap hanging from the back of the seat and you don't know what it is?

MS. WEBER: You've got to feel back there.

MR. CAMPBELL: If it's not tethered, you should be able to pull it forward and see.

MS. MURIN: It should be in there tight. You know it's not going to be tight.

MR. DECINA: There are a lot new seats that they're not using the tether.

MS. WEBER: It's extremely important that you collect tether usage. You've got to verify that there's a tether on there. The only way to do it is to either pull it forward or put your hand behind there.

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MS. DI CAPO: If the looseness is directly associated with the type of tether that there is---

MR. DECINA: I have to invent a jimmy thing.

MS. WALKER: A mirror that you can slide down the back.

MR. DECINA: They would have to wear gloves. I think we are collecting that data.

MR. HALL: There are some new seats that when you open the box there is the tether kit in there separately and you actually have to attach it. You wouldn't know that.

MR. DECINA: I'm really afraid to ask.

MR. BUTLER: You can find the manufacturer's date on the child restraint, you will know if the tether was supplied. A lot of times it's embossed on the back.

MR. DECINA: The good news is some issues never change. We had that same discussion. So tether.

MR. CAMPBELL: Is it there? Does it have an adjustment like a tilt lock or a push button adjustment rather than the double three bar slides?

MS. WEBER: I think there is only one manufacturer.

MR. DECINA: Am I missing anything with this list?

MS. WEBER: You also have to collect whether there's a vehicle tether anchor in plain view if it's not

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attached? I think that's real important.

MR. BUTLER: That's something you could find from the vehicle year. It may be easier to do that.

MR. DECINA: Than to sit on the seat next and see it from the back? Let's talk about that after we completely get done with this. Should we observe whether the vehicle has this?

MR. BUTLER: With extensive training, you can teach people how to find them, but some of them are going to be loose on the back of the seat.

MS. FERGUSON: Use the VIN. I can't see how you can do all this and not get the VIN.

MR. DECINA: Can I crawl in? Say the kid's in the middle, can I crawl into the car and look behind the seat?

MS. FERGUSON: They're in different places.

MR. BUTLER: Sedan is a piece of cake.

MS. FELDMAN: Vans are on the bottom of the seat backs.

MR. BUTLER: Some pick ups have them behind the seat, a little loop on the back edge of the seat. If you're not in a sedan, it's complicated.

MS. FELDMAN: Then, there's also the issue with using tether. I don't think either of those non-use would

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be considered misuse in this.

MR. DECINA: This last hour I want to spend with data collection.

MR. CAMPBELL: Are we going to talk about snugness of the car seat and how that's evaluated. We talked before about the one inch. What will you use?

MR. DECINA: How much rocking the seat has?

MS. WEBER: I thought you were using just a pinch test on the belt and we were abandoning.

MR. DECINA: Can the observer go in the car and do this and say, too loose/

MR. CAMPBELL: The curriculum teaches grab the belt path and move it an inch.

MR. HALL: When you're testing that and doing that, that's without the child in it.

MR. DECINA: The child is in there. We're not taking the kid out.

MR. KHAUAJI: You can see feel with both hands.

MS. WEBER: You have to figure out a way to measure belt slack with the child in there.

MR. DECINA: Which we have, right?

MR. BUTLER: That's not acceptable.

MS. WEBER: Given that the child is sitting in the

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child restraint, it's all buckled in, how would you measure?

MR. BUTLER: A tension gauge.

MR. HALL: Can you grab the seat belt web where it goes through the belt path?

MS. WEBER: Paul's got a good point that you could use this on a lot of them. There are these seat belt tension gauge measuring devices that have three little fingers and they squeeze on the belt and you can actually measure the tension on the belt and you could give one to each of your folks and let them measure other belts that way.

MR. DECINA: There's an angleometer thing.

MS. WEBER: You'd have to set what was considered, but at least it's measurable.

MS. FERGUSON: You'd have to decide what it was.

MS. WEBER: The tension for installation in 213 is 12 pounds. You could set it at 10.

MR. BUTLER: Basically what all those gauges do is they pull laterally on the belt. You could say there's six inches of belt there, you shouldn't be able to pull it and move it more than .5 inch.

MS. WEBER: Then you'd have to have something to pull to measure against.

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MR. BUTLER: They're expensive. \$500.

MR. DECINA: For a measurement of a seat belt slacker thing?

MR. BUTLER: Yeah.

MS. WEBER: You're talking about buying digital cameras. Throw one of these in too.

MS. DI CAPO: There is a curriculum out there that has been recommended with about 20,000 technicians that are basically evaluating tightness on this 1 inch thing and now we're doing our own kind of how we're going to evaluate it. I think we should follow those guidelines.

MR. DECINA: This is a different piece than the child safety inspection.

MS. MILLER: They used that to try and get a measure.

MR. BUTLER: You can just use a fish scale where you pull it to the side and see how far it moves when you pull with 30 pounds.

MR. DECINA: Without any instruments, an observer with just hands and maybe gloves, is there a way to do this without taking the kid out?

MS. WEBER: Every time I do an inspection. You inspect it first before the child comes out of the seat.

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MR. DECINA: We won't have that luxury. We can't have the kid out.

MS. WALKER: She didn't ask that.

MS. FERGUSON: But you do?

MS. WALKER: It's a relative measure. It's not all that scientific, but if I can pull that seat that's coming out of the car, I have a belt that's pretty loose. You can feel how tight the belt is.

MR. DECINA: I'm okay with doing an estimated guess of looseness. If the set move three inches?

MR. SINCLAIR: We teach an inch side to side or front to back.

MS. WEBER: That bothers me because the child restraint can actually slide along the belt and you can't get that belt any higher. There's a relative movement here.

MR. DECINA: If the belt is real tight, that seat can still slide?

MS. WEBER: Maybe not with the kid in it.

MR. BUTLER: We found that if you got the thing really tight the way they wanted them, there was enough friction against the seat back that you couldn't move it an eighth of an inch.

MS. WEBER: Is that realistic?

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MR. BUTLER: No, it's not realistic.

MR. HALL: Is that with cloth seats or leather?

MR. DECINA: With the observer checking if the seat belt is tight, they use that in their consideration once they start yanking it. If the seat belt is loose, the seat's going to be moving anyway.

MS. WEBER: Maybe you shouldn't be able to move the seat belt at all. It should be in as straight a line as it possibly can be.

MR. DECINA: You're telling me if it's taut, you can still go in there.

MS. FELDMAN: You want to have something that's going to be useful to the parent. You want to have three categories and based upon that, you have 5-7 minutes. I think we'll get our information in the three categories of tightening of the vehicle seat belt. That will be helpful to us. What is it we want parents to do? They're not going to have this measuring device.

MS. MILLER: This isn't a thing about educating parents.

MR. HALL: What are the three categories?

MS. FELDMAN: You do it from the bottom and you're going to have trained people and if they can move it more

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than an inch with the child in the seat, I would put that in the category of misuse.

MR. DECINA: This is the seat belt.

MR. BUTLER: How hard to you pull?

MS. WEBER: If you can pull it like a string on a violin or a guitar. It's very tight. If you don't get that sort of plink when you pull on it, you know it's too loose and it's not very scientific, but it works for parents.

MS. DI CAPO: It may be easier than just trying to move the kid and the seat.

MR. HALL: Does it have to be a middle C?

MS. DI CAPO: You laugh, but I do that for people to show them is the belt tight enough.

MR. DECINA: We're not going to deal with rocking the seat at all. We're just going to deal with the seat.

MS. FERGUSON: My question is, if it doesn't pass the plink test, is it really dangerous?

MS. WALKER: It means that you can get the belt tighter.

MS. FERGUSON: Is it dangerous?

MS. WALKER: I don't know.

MR. HALL: You can have the belt tight and the child restraint still move.

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MS. WALKER: If it passes the plink test, it's not moving.

MS. FERGUSON: If it doesn't pass the plink test, is that a problem?

MS. WALKER: The manufacturers will give you an inch side to side.

MS. FERGUSON: We're looking at gross misuse here.

MR. BUTLER: The answer to your question is it depends on the vehicle. That's why measuring the space would be of interest. But how do you know if there is enough slack in there to move it one inch?

MR. DECINA: That will resurface in the last hour. Let me get the after market devices and talk about that a little bit and then in the last hour, we will do collection form stuff. The people who know all these after market devices, tell me what's out there? What's the most common things you use?

MR. SINCLAIR: Little bears you Velcro onto the belt and they put them on and they're soft.

MR. DECINA: That device has actually caused injuries, right?

MS. ORZKCHOWSKI: We have two cases. One is where the kid is paralyzed, but that was the deal too where you

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have to be careful. It wasn't an after market product that was designed to lower the shoulder belt. It was actually a comfort conditioner that the parents took and they velcroed it around the lap belt.

MR. DECINA: After market devices need to be recorded on the form?

MR. HALL: Yes.

MS. WEBER: The picture that you're going to take is going to tell us.

MR. DECINA: I know where you're coming from.

SPEAKER: If it's a lap belt, record it.

MR. DECINA: So the lap belt record the after market. And all the other things like fluffy things.

MR. CAMPBELL: Pillows are used, but we tell people not to use them. Those are after market devices.

MR. DECINA: Those are acceptable because of the angles of the seats. Do you want me to record things that are behind the seat?

MS. WALKER: If it's a forward facing seat, if it's outside the realm of ---

MR. SINCLAIR: Anything that would reduce the effectiveness.

MS. FELDMAN: The after market, there's a lot. I

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think there is use of the after market.

MR. HALL: Shoulder belt position is definitely and anything else that could create an unsafe situation such as using a 2x4 or brick rather than a noodle. That's not too uncommon. The use of duck tape.

MR. SINCLAIR: I think you have to have a place to annotate for any of this stuff.

MR. BUTLER: What about the seat belt position like a lot of the GM vehicles have now that pull the comfort clips away from the neck.

MS. WEBER: If those are in use, it would be very nice to note them.

MR. BUTLER: I don't know that there is a big difference in performance, but it would be nice to know if those are being used.

MR. DECINA: Is there a list of after market devices that you group has pulled together for me?

MS. DI CAPO: You can get it from the group.

MS. WALKER: The's new stuff cropping up all the time.

MR. DECINA: Let's take a break and then the last hour, let's talk about data collection.

(Short break at 2:48pm.)

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**Agenda Item: Definitions of CPS Misuse Measures
Per Data Collection/Recording Purposes**

MR. DECINA: Joanne has brought up an interesting thing that these people, all this misuse, just after you collect the data, just go away and not do anything. What do I say? Do I do anything?

MS. WEBER: You have to.

MS. WALKER: I would like to have a fitting station that's operational very close by or even on the same parking lot, but at a different angle so that it doesn't impact that study where we could send people, immediately you need to have this checked and there's the place to go.

MS. WEBER: But it couldn't be done in the open or they would get it checked first.

MS. WALKER: You have to figure out logistics.

MS. WEBER: They couldn't go to them second.

MR. DECINA: No, it's not publicized.

MS. WALKER: I don't want people leaving that parking lot if they've got something very severely wrong with their seat. We've gotten all the data we want.

MR. KHAUAJI: It's part of any ethnic research or any study, right? You cannot just see gross misuse and let them leave without giving them the proper advice.

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MR. DECINA: I agree.

MS. DI CAPO: Like the use/non-use study.

MR. DECINA: The thing you did in November when you solicited people to collect data?

MS. DI CAPO: We ended up having our coalition give written information, our brochure and then they followed up.

MR. DECINA: Okay. All six states that we are listing as our candidates and it has not been approved yet by CITR, all the states are primarily comprehensive highway safety 402 programs. They do their own public information and intervention. I was basically letting them do what they want to do after they've collected my data. I think everyone will follow what Laurie is saying. I know Kathy Cruger will in Washington. And the Arizona State, Missouri, Mississippi, and Pennsylvania. So, yes, we will do something.

MR. KHAUAJI: If we could have a list of technicians in that particular state so you can refer to those people.

MS. MURIN: It's too general. Just see if you can't have something that day. You could see some bad stuff going on here.

MR. DECINA: In the proposal, we did mention that

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we would do some intervention after the fact and that will happen.

MR. HALL: If this vehicle was to go down here and get the problem corrected, then they can pull the seat out and get the make/model and date of manufacture?

MS. WALKER: It would be interesting on your data form to have a check box where you say family referred to so that there's documentation that the misuse was seen and the family was referred to a greater service or more in depth, one more check box, but at least it's covering those people doing inspections. I hate to keep going back to liability, but we all know that all it takes is one time when a certified somebody doesn't do what they're supposed to do, you close down a lot of programs in a lot of states. The states are just waiting for something awful to happen. Liability is something you have to look at. Put on there that you referred them, protects those people doing this service.

MR. DECINA: I'm leaving intervention up to each state, the people we are using to these programs. These aren't people right off the street and giving them a certification course. They are coming into the project with more child inspection clinic knowledge than I have.

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MS. LEVTAS: I've been in this project since the beginning, but don't remember all the details. As the states are selected and when they are okayed, how is it going to be determined at what shopping center the people are going to be?

I'm asking because my office has an Hispanic, her name is Carmen and is translating the CPS manual into Spanish. Her question that I know that she would ask would be are you going into areas where there would be diversity of population rather than Boca Raton areas.

MS. WALKER: When you have a wealthy community, you have a diverse population. People that are waiting on the rich people are generally the diverse populations.

MS. LEVTAN: But the thing is what happens in whatever area you are with any diverse population, if you have people coming in that are not English speaking? Is there going to be someone who is bilingual to translate and ask these questions of these people? Are you going to ignore them? You're going to get a different count when you go to Hispanic people, lower income, and diverse groups.

MR. DECINA: The game plan is to go into diverse socio economic areas. These areas will have shopping centers to go into to get people from that population. Two

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of the six states we're thinking it's a given to use bilingual interviewers, not necessarily observers.

In Tucson, that's one candidate site, Nancy Avery, and they have a Mexican population. The State of Washington, I don't think Kathy and I have talked about their foreign language population in the area. Gloria and I have talked about in Florida, the potential because of some of the areas we want to go into.

MS. WALKER: Not just Hispanic, but Creole, the Caribbean population is significant. They're waiting on the rich people, working in their gardens. These are the people we see at check up events.

MR. DECINA: In the last two weeks, I've called all the states and at least two of six, we'll be going into areas that we will need bilingual interviewers. I can get away with the interviewers not having to be CPS certified. The observers definitely have to be CPS certified. Like we did in this Latino project in Bethlehem in November.

We hired a bilingual outreach coordinator to put some ads in parish papers and Spanish newspapers and got bilingual marketing research people to be our interviewers. It worked out very well. They would start the conversation with, would you like me to speak Spanish, but the observers

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were not.

I'm not going into neighborhoods where data collectors are at risk. A lot of time those neighborhoods don't really have shopping centers. They might have these corner grocery stores, but shopping centers don't last long there. A lot of the states have figured out, we're going to use the Wal-Mart in so and so area because it's low to medium range and all the parent with little kids go there.

I have not ruled out fast food restaurants. I will use them and other locations that my state site coordinators feel are appropriate where they have witnessed and seen a lot of parents with small kids especially where they do their child's inspection clinic. We can hold them at the shopping centers that have them, we're just not announcing that this is happening. That's all. If Laurie wants a booth in the corner of the shopping center, that's great. But after I collect my data. Does that help?

MS. WALKER: Would be useful to ask if they've ever been to a car seat check up event?

MR. DECINA: I would love to get into the questions with the project.

MS. WALKER: It would be useful to know if they've been to a check up and they're coming through and they've

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still got a misuse.

MR. DECINA: What was the percentage of the Latino group that had actually been to a checkpoint. We did the shopping centers.

KATHY: There were some.

MR. DECINA: South Bethlehem is basically all Latino and there were no shopping center so we had to go to the neighborhood malls and shopping centers that they went to. They weren't in the Latino community directly. They were in the near neighborhoods and only 5/500 had gone to a clinic.

That was good information and others. We need to have more of these clinics. Bethlehem Health Department and --- are doing intervention programs. What kind of situations do we want to ask these people and how it relates to misuse?

MS. DI CAPO: How did they select the child restraint they're using? Who told you about this, friend, radio ad, Internet?

MR. DECINA: How you got that seat?

MS. DI CAPO: How did you happen to pick this one.

MR. DECINA: How many seats were picked? Like 90 percent of the seats out of 500 vehicles were brand new

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seats. This is an area that's 20 percent Latino.

MR. HALL: Couple different questions, is new or used? How did you select it?

MS. DI CAPO: Why did you choose this seat?

MR. HALL: It was the best seller.

MS. DI CAPO: When they don't have a seat ---

MS. WALKER: I'd like to know what age they move their child from a convertible seat either into the seat belt or what was their criteria for moving a child from one seat to another.

MR. DECINA: Like 17-20 percent actually move the seat and the rest left the seat in the same car.

MS. WALKER: I don't mean move it out of the car. I'm saying when did you move your child from one infant position to a convertible position? It could be that there was another baby coming along.

MS. FERGUSON: We actually had some questions.

MR. CAMPBELL: Larry, in your last study you asked people how they got the information on installation. Most of them said from the carton and the labels. They didn't read the instructions. It would be interesting to see if that stays the same.

MR. DECINA: Okay. Where did they get their

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instructions?

MR. CAMPBELL: How do they judge a good set?

MR. DECINA: You're talking about a car seat manufacturer attitude?

MR. CAMPBELL: How are they judging a secure fit when they put it in?

MR. DECINA: There was a difference between the percentage of Latinos who said they went to the instructions on the seat and not the instruction booklet. The non-Latinos were more the booklet.

MS. MILLER: Why are they using a restraint, the law?

MS. WALKER: I'd like to know about the adult seat belt use too.

MR. DECINA: I'm assuming I will be collecting it all, do you want me to get all the occupants? Not just the driver information?

MR. HALL: If you can. I think it's important that they do have some indication if within the car, how many positions are filled by what age, whether it's an adult or not. Whether the child is in the rear or not may be dependent on if there are more kids and another adult back there and just not room for the child to be in the middle

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and it's on the side.

MR. DECINA: We did that in the past and in the current one. I did plan on getting that information for this one, the age and weight, seat type and all that.

MR. YOGANANDA: Maybe this has been covered, how often would you take this seat out and put it in spouse's car?

MR. DECINA: We collected that recently and I'll think about that one for this one.

MS. FELDMAN: I'd like to see a couple of questions that go out with the telephone survey. Some people don't use the booster seat because they think it's unsafe. If we could have a little bit of overlap with that. We're getting some similar feedback in terms of what that's showing us.

MR. DECINA: When is that data being collected?

MS. FELDMAN: October/November?

MR. CAMPBELL: We can get you the question.

MR. HALL: Who installed it?

MR. DECINA: We asked that and there are more grandparents in the Latino community that were involved with the kids and more young males.

MR. HALL: You want to find the relationship of the children to the drivers.

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MR. DECINA: We asked that in the last one. Anything else? I want it all out and we'll see what we can do. I have to deal with Perp reviews.

MS. FERGUSON: One thing we talked about here is whether the children attempt to get themselves out of the seat, have problems keeping them in the seat. And some questions related to that. The misuse may be that the child is doing it himself.

MR. DECINA: That's a good question that we have never asked.

MS. CORNEJO: Along those lines, we're going to be asking questions like what would make it easier, harder, what do you see as disadvantages. That gets at whether or not parents are going to actually use the seat. If it's too hard or their kid complains too much or whether or not it's tested and they think it's safe or unsafe, we need to address.

MS. MURIN: Are the features on the seat?

MS. MILLER: That illusion of comfort too, is your child comfortable in the seat? I found that if the parent thought the child was the least bit uncomfortable, they're much more eager to let the child come out of the seat if they're uncomfortable.

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MS. FERGUSON: If the child is trying to get of it, the parent is eventually going to give up.

MR. DECINA: I used a roll of duct tape. I never had problems.

MS. WALKER: We hear a lot of questions on the rear facing infant with their legs and I ask does he cry? Oh, no. But he looks uncomfortable. They're more willing to turn it forward because of that.

MR. DECINA: When the child restraint inspection clinics, do you not ask these questions?

MS. WALKER: Not usually.

MR. HALL: They tend to ask if they did send in the registration card and if they did not, why not?

MR. DECINA: You want to ask if they sent in the registration card. That's easy. Yes or no.

MR. BUTLER: For the children in boosters, do the children buckle themselves in the seat?

MR. DECINA: That's a good point.

MR. BUTLER: My daughter liked that she was able to buckle and unbuckle.

SPEAKER: Four year olds, they know.

MS. FERGUSON: That makes them feel like they're part of it.

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MR. HALL: Or it could be an older sibling buckling the child.

MR. DECINA: That's why we said in the last project, who buckles the kid in. That's 10 minutes. When am I going to do my observation?

MS. WALKER: Your interviewer can be asking questions while the observer is checking.

MR. DECINA: I'm checking to see if you're awake.

MR. HALL: That keeps the driver's attention while they're back there touching the child.

MS. FERGUSON: Strike that from the record, sir.

MR. DECINA: This was the last form I used in November. With the remaining time left, let's see if I'm okay with these. This is what we collected. This is for one child whether it's a child in a rear facing or forward facing or booster, lap shoulder or seat belt. The first thing we ask is what type of restraint the kid was in.

We asked that the driver was an air bag with the driver? We tried to figure out if the driver was 10 inches or more away from the steering wheel. Same thing with the passenger side.

MS. FERGUSON: We have that paper you gave us.

MR. DECINA: Actually, there is a 10 inch device,.

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MS. WALKER: All you really need to do is a piece of 8.5 x 11.

MR. DECINA: We did the clipboard. Whether we saw air bags and then we put the position of the child in the seat and found out the belt. For rear facing, it sounds like I will try to get whether the seat is semi reclined, you want me to get the angle?

MS. WEBER: Go back to your first column at the very bottom, you have circled. You're talking driver position? So it should be D2, 3,4,5,6 and I would actually put another row in there because with vans, you're going to see the third row of seating.

MR. DECINA: This is ---

MS. WALKER: Just for the side air bags. Okay.

MR. DECINA: This was to determine if there were side air bags.

MS. WALKER: I thought you were asking for the seating.

MS. WEBER: Is it possible to measure the back angle.

MR. BUTLER: The child is in it. It will be difficult to do.

MR. DECINA: I thought we were not sure I was going

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to get the angle information.

MS. WEBER: For forward facing it doesn't make that much difference, but for rear facing, it could be critical and would be interesting to know what angle parents are ending up at because of the noodles it can vary. It's quite variable depending on what you stuff in there. Some have a rounded bottom and you can set them at any angle.

MR. DECINA: If it's perfect, it's 45 degrees?

MS. WEBER: No, it has to be 45 or less. It has to be no more than 45 from vertical. It would be interesting if you had an angle measuring device to say what it is. Maybe we're overkilling it by putting the emphasis on 45 and maybe we're putting children too low.

MS. WALKER: I'd like to also see if we're seeing rear facing seats tethered. I've been seeing that more frequently. We have one manufacturer that allows for it. One has the rear facing tether. We're finding that other people are using their seats, seeing a tether and using it rear facing because it's there.

SPEAKER: I saw one yesterday.

MS. WALKER: We're starting to see more of it. As each seat comes out with tethers on it, it may be more likely that we would see that. It was in an outboard

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position, but it was anchored to the leg of the driver's seat.

MR. DECINA: In last November's project, we did not have the tether. If we can get the information about the carrier handle, I'll collect it. It's not something we run across. We're talking about the infant seat and the carrier handle. It can be off. We talked about the seat belt and the harness straps. Can seat belt be twisted and how much can it be twisted. Let's talk about twisted belts and harnesses.

MS. FELDMAN: It's a non issue.

MR. CAMPBELL: A lot of our owners don't twist the belt because if they're twisted going through the belt path, it's hard to tighten. You want to have them straight going through the belt path because they're easier to tighten. If it's in there and tight, that's the important thing.

MR. DECINA: The integrity of the strength of seat belt is not. That is a change from '95. In '95, we allowed two twists in the seat belt.

MS. WEBER: The actual testing was done at Indiana Mills with twisted belts and it was a non-issue.

MR. DECINA: Okay.

MS. WALKER: It's in manufacturer's instructions

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not to twist in the Subaru's and Toyota's for use with people, but it didn't differentiate between people and car seats. It's written in the book, don't twist the belt.

SPEAKER: It should be collected anyway. We're trying to match up this year's numbers with previous values.

MR. BUTLER: I don't think that's been significant.

MR. DECINA: We don't worry about if there's a kid 10 years old and we're looking at his adult seat belt, do we worry about that?

MR. BUTLER: Then you worry about it.

MR. DECINA: How many twists?

MS. WEBER: You don't want the belt twisted because it narrows the belt.

MR. BUTLER: The harness in a child restraint should not be twisted. I don't know if there's any rule.

MS. WEBER: You want to spread the force across as wide a surface area and if you twist the belt it's narrow.

MS. WALKER: It's a comfort issue too.

MS. WEBER: Okay. From a performance point of view.

MR. HALL: Unfortunately, most of the harnesses are going to get twisted unless the parents take care to keep it straight.

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MS. WEBER: They should do that. It's not significant for real world injury.

MR. DECINA: We talked all about the chest clips. Going to a forward facing seat, we're not worried about the angle, right?

MR. HALL: No, it's not important.

MS. WEBER: They all have to pass the standards.

MS. WALKER: Just upright or fully upright?

MR. DECINA: Not doing it at all. I don't need to collect that data at all.

MS. WEBER: The only time when you don't use the fully reclined position is when there are three positions and typically the most upright and semi upright are allowed and the most reclined is only for rear facing. On the seats with two positions where you have a kickstand and it's up or down, then both are allowed and both are tested. There is a gray area there, but I don't know how common it is. That would probably not be good. It's not tested that way.

MS. FERGUSON: You see this?

MS. WALKER: You see where the kickstand is not down.

MS. WEBER: I don't mean that. They have a kickstand, it's okay in both positions. If you have the

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Bravo with four positions and the most reclined is not allowed rear facing.

MR. CAMPBELL: Only with the kickstand up in SUVs.

MS. WEBER: I didn't realize that.

MS. WALKER: People do like their kid to recline. That's a typical orientation that they use is the reclined forward facing so they sleep.

MS. WEBER: It may not really matter in the real world, but different manufacturers have different rules.

MR. DECINA: We don't care about that, do we?

MR. CAMPBELL: There's no injury known.

MR. HALL: We have to care about it.

MS. WEBER: That does come to be a problem because it might slide off in a crash and the seat belt can.

MR. DECINA: Have I missed anything with the booster type seats?

MS. WALKER: We don't really show if that shoulder belt is behind the child on the shield booster.

MR. HALL: In the instance in your booster, if the child's head comes above the vehicle seat.

MS. WEBER: We never did talk about head height.

MR. HALL: The instructions with the booster seat will say if the child's head is above the vehicle seat back,

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then discontinue its use.

MS. FERGUSON: Then do they --- It has to be above the head rest.

MR. DECINA: What else?

MR. BUTLER: Are we agreed whether the booster is tethered or untethered, it doesn't make a difference?

MS. WEBER: Let's agree on that.

MR. HALL: I think we ought to discuss that.

MS. WEBER: That's over margaritas.

MR. DECINA: It needs to be tethered.

MR. BUTLER: Some manufacturers say you shouldn't and it's an issue that the child restraint manufacturers are not in agreement, but I don't think it makes a significant difference.

MS. WALKER: Would you want to record it if it was tethered, if it had been?

MS. FELDMAN: Do we need vehicle built-in?

MR. DECINA: I have to collect that. In the last study, we had 16 built-in seats. Are they more common now? I haven't seen them.

MS. WALKER: If there were 16, look for 10.

MS. FELDMAN: Is the vehicle type on it?

MR. DECINA: I can show you the form.

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MS. WALKER: Are we asking if there are low anchors?

MS. FERGUSON: There's nowhere to show that that's there.

MS. WALKER: Maybe in the first column where you're asking about air bags and vehicle information, on the vehicle and car seat.

MS. FERGUSON: If they're being used, will we know that.

MR. HALL: These observations going to be done this summer.

MR. DECINA: Spring/summer.

MR. HALL: The child restraint's are going to have to have low anchors by the end of September. You may be seeing a few more.

MR. DECINA: This is what we asked in '95. We did not ask the type of vehicle. You wanted us to ask vehicle type?

MS. FELDMAN: I'm interested in pick up trucks.

MR. DECINA: I would collect if it was a pick up truck. I did collect that in '95. If there's a compartment between the back seat.

MS. FERGUSON: Are we interested in compact versus

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extended?

MS. WALKER: I want to know the space. I'm going to nag on that one. I want to know how much space there is in that back seat. You can overrule me, but I think it's important. It tells me when I have a kid's knees right up against that seat cushion. There is no room for a kid to even have his knees bent and he's in his car seat. That happens a lot.

MS. WEBER: You're not going to get that from a head to headrest measurement. Maybe you can extrapolate it.

MR. DECINA: You want me to collect the distance in a pick up truck.

MS. WALKER: If it's not useful, but ---

MS. CORNEJO: Compact pick up.

MS. WALKER: There are cars that have the exact same space.

MS. WEBER: There are side facing seats is the bigger problem.

MR. BUTLER: I don't think there are any cars that have that little space as compact except like Porsche 911.

MS. WEBER: Let's look at a Neon where the parents are tall people and have their seats pushed all the way back and I have this much room in that back seat for a car seat.

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That's common. They bought cars when they didn't have kids, they don't lose the car. They just buy a car seat and make it fit. There's not much space in that back seat. Particularly in low income communities. Those vehicles are very small, sub compacts in a lot of instances.

MS. WEBER: What would you use this for?

MR. SINCLAIR: You might determine some cars are not suitable for transporting children in the back seat.

MS. FERGUSON: Is it like --- measures.

MS. WEBER: There are more things to hit than what's straight forward.

MS. FERGUSON: I understand that.

MS. WALKER: I guess I don't know how it relates to this project.

MR. DECINA: Perhaps somebody comes down in a pick up truck, we're going to collect the data.

MR. HALL: Talking about the vehicle make/model and I think I remember there being consensus that we need some VIN or make/model as well as vehicle type.

MR. DECINA: Okay. We did vehicle type in the last project. It's close to 4:00 o'clock and I have to wind up here. I'm going to get the recording of what we did on cassette so you can have a copy on disk or transcript

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itself. I have to prepare a memo summarizing today's event and what we are saying. I can get you copies of that after I get a copy in the next couple of weeks.

You can welcome me with any sorts of ideas of things we forgot to talk about. Did we miss something? This is a lot of stuff here and my job is to go out and collect this data in under 10 minutes. There is a lot to collect. Some things will get cut.

MR. COMPTON: I appreciate everybody coming. It's been useful because of your input and it will markedly improve this study. I want to thank all of you that participated.

MR. KHAUAJI: Larry, thanks for the great job.

MR. DECINA: Thank you very much. Send expense reports to me and I'll work with that. Thank you very much for coming.

(Meeting adjourned at 4:00pm.)