Table 2: Likely Addressability of Fatalities by Mesh Liners or Vertical/Mini Bumpers.

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Contact Outside Crib **(3)**									
Record # 17			x	Insufficient information			x	Insufficient information	IDI narrative - A five-year-old boy, with developmental delays, died of positional asphyxia after he pushed himself into the corner of his toddler bed with his face between the bumper pads
Record # 29		x		Continuous mesh bumper presents same strangulation/hanging hazard as a continuous traditional bumper		x		Scenario does not apply: vertical bumpers cannot be attached to "a gap in the side of the bed frame" of a toddler bed described as a daybed bed because such products do not have slats similar to those in a crib.	An 11 month-old girl, who was able to walk and climb out of a crib, was put to sleep in a toddler bed in which a crib bumper was being misused. She died when her lower body slid below the bumper, through a gap in the side of a toddler bedframe (near foot of bed), and her neck got caught by the top edge of crib bumper. She was reportedly found sitting on the floor, in a forward leaning position, between the toddler bed and the top edge of the crib bumper. The DCRT notes the ME ruled the death an accident due to "mechanical asphyxiation" caused by her becoming "entangled with crib bumper." Staff considers that misuse of a crib bumper outside of a crib clearly caused a mechanical asphyxiation death specifically involving the partial hanging strangulation of an older child. NOTE: Although the EPIR narratives, IDI and IPII describe refer to a daybed product, this should not be interpreted as an adult daybed. The IDI photographs and reported product dimensions (frame = 48"x24") clearly show that this cases involved a metal framed toddler bed, used with a standard crib sized mattress.

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Record # 48		x		Continuous mesh bumper presents same strangulation/hanging hazard as a continuous traditional bumper		x		Scenario does not apply: vertical bumpers cannot be attached to "a gap in the side of the bed frame" of a toddler bed	IDI narrative - not summarized by HS in 2013- a 21-month-old male victim died of asphyxia due to compression of the neck when he became entrapped and suspended in the ties to a bumper pad that was affixed to his bed in his home. The victim was in a convertible crib that had been set up as a toddler bed. The bumper pad was tied at the top to the side slats of the bed. The victim had been put to bed by his mother at night and was found partially hanging out of the bed and unresponsive by his mother the next morning
Entrapment/ Wedging in Perimeter of Crib **(2)**									
Record # 11		X		Continuous mesh bumper presents same strangulation/hanging hazard as a continuous traditional bumper			X	The outcome depends on the size of the gap created by the missing crib slats and the age/size of the child. Either, the entire child can pass through the gap and fall to the floor, or the body can pass through the gap, while the head gets stuck between the slats resulting in a strangulation death.	The mom put healthy 9 month-old girl down for nap at noon. She was found unresponsive ~4 hr. later, with her body hanging through a 7" gap between the crib slats (1 or 2 were missing) and neck caught in bumper. The mom tried CPR, got neighbor to drive to ER, and flagged down a police vehicle to rush them to the ER. No signs of life were apparent and the baby was pronounced dead at 17:40h. An investigation was prompted by the attending MD's concern of possible abuse due to visible marks on her buttocks/anus. Autopsy found no signs of abuse with lesions due to chronic diaper rash. In a police interview at the ER, the mom said the crib was missing 2 side slats so was pushed against a wall. This was confirmed by an on-site scene reconstruction the next day (photos in IDI pdf are not viewable). The autopsy ME opined this death was an accidental "suffocation due to being trapped between a crib mattress and the crib railing". The bumper guard around the crib was around the neck of the victim. The crib railing was defective in that two missing slats formed a gap wide enough for the infant's body to slip through. The infant was found "suspended between the crib and the wall." Staff considers this death was clearly due to the recognized hazard of a broken crib with missing slats, which resulted in fatal hanging strangulation; this death would have occurred in this scenario regardless of the presence of the bumper pad. (note In EPIR, the DCRT is not linked to this IDI but is associated with a second IDI assignment number which has no record)

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Record # 36		x		Continuous mesh bumper presents same strangulation/hanging hazard as a continuous traditional bumper		x		It is unlikely that a vertical bumper will stop a child falling through a broken crib frame gap. Depending on the size of the broken frame gap either, the entire child can pass through the gap and fall to the floor, or the body can pass through the gap, while the head gets stuck between the crib frame components resulting in a strangulation death. (examples)	Limited details: the 1 page DCRT indicates this 12 month-old girl fell out her crib and died from hanging asphyxiation (strangulation) caused by the crib bumper. There are no specific details on the involved crib's integrity, but staff considers it near to impossible for a child to hang in this scenario unless the child's neck gets entangled while falling through the crib structure rather than falling over the top of the side rail. Staff considers the hanging strangulation death reported here can only occur in a broken crib in which an excessive gap exists (specific location and cause of gap cause unclear). (Staff notes the DCRT appears to be signed by local police officer, not an MD). Information in the IDI clearly supports staff's speculation that this atypical bumper strangulation death of an older 12m baby clearly occurred when the baby fell through a gap of a broken crib. The policeman responding to the scene wrote "I noted that the rear guard rail of the crib, which is supposed to be fixed in place, was broken or had been taken apart. The upper right and rear corner of the crib side and the guardrail were not connected. The lower portion of this corner was still affixed. I observed that the crib bumper pad was hanging down in the middle and the ties had been broken away from the bumper itself."
Contact without Entrapment/ Wedging (4)									
Record # 35	X			If the developmentally delayed baby (8 week preemie) placed in prone position to co-sleep with her twin, somehow become trapped in the crib corner, with her face against the bumper, a mesh bumper would likely have prevented a suffocation.	X			If the developmentally delayed baby (8 week preemie) placed in prone position to co-sleep with her twin, somehow become trapped in the crib corner, with her face against the bumper, a vertical bumper would likely have prevented a suffocation.	Limited information. The official document for this case appears to be a death certificate which is not fully legible (there is no indication of a related IDI assignment). Staff has to rely on the limited summary narrative found in the EPIR DTHS narrative which reports the death of a 2 month-old girl due to "Suffocation - accidental, in the corner of the crib against the bumper pad". Staff cannot determine whether any other relevant factors were involved in this case, but presumably the girl was lying prone. Based on the limited information staff believes the bumper likely played secondary role in this death but is unclear as to whether the crib bumper is relevant as the primary cause of death. Supplemental information included a very detailed child death review which notes multiple confounders involved in this case ruled suffocation, accidental. Staff cannot rule out bumper involvement but consider it is not likely the primary cause in this confounded case involving multiple confounders: CSS (vulnerable preemie (born 2m early) co-sleeping in same crib with twin, with much soft bedding present

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Record # 37	X			If a child was found in the position depicted by a mannequin in the reenactment photos, a mesh bumper might likely have prevented a suffocation. However, staff emphasizes that the broken crib missing most of its hardware would still present a hazardous gap regardless of bumper presence.	X			If a child was found in the position depicted by a mannequin in the reenactment photos, a mesh bumper might likely have prevented a suffocation. However, staff emphasizes that the broken crib missing most of its hardware would still present a hazardous gap regardless of bumper presence.	The limited IPII-MECAP reports that a mother found her 2 month-old boy, who reportedly had a history of sleep apnea, unresponsive in his crib with his face against a bumper pad. It also notes that his second-hand wooden crib had been purchased at a garage sale and "had most of its hardware missing". No police investigation is noted on the MECAP report and there is no record of a follow-up CPSC IDI. The DCRT was received by CPSC a year later and notes the death was ruled as "positional asphyxia, accident, face obstructed by bumper pad". Although details are limited, in all probability, the second-hand crib missing most of its hardware lacked structural integrity. Staff considers that structural failure consequent to missing hardware likely explains why the death was ruled positional asphyxia, not just suffocation. Structurally unsafe cribs are recognized to present a risk of positional asphyxia (and mechanical asphyxia or hanging strangulation), regardless of the presence of a crib bumper. Staff notes supplemental version of MECAP report is the same as original IPII MECAP but without ME handwritten notes stating the broken secondhand crib was missing hardware. Although the ME's autopsy opinion appears to implicate suffocation in the crib bumper as the immediate cause of death, the recreation photos and photos of the incident crib clearly show crib structural failure with a hazardous gap in one corner where the doll's head is located (p12/12), which supports (possibly confirms?) HS staff's opinion of a primary crib structural integrity issue related to missing hardware.

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Record # 44		X		Continuous mesh bumper presents same strangulation hazard as a continuous traditional bumper. Staff notes the victim in this case had multiple serious health issues (a preemie twin with cerebral palsy, meningitis at 2 months, hydrocephalus, seizures, and at 3.5 years weighed only 17 lb., equivalent to an average 7 month old baby). Furthermore, the ME regarded her death as suspicious and her caregivers were subsequently charged with criminal child endangerment.	X			vertical bumpers cannot present the same strangulation hazard as a continuous traditional bumper. Staff notes the victim in this case had multiple serious health issues (a preemie twin with cerebral palsy, meningitis at 2 months, hydrocephalus, seizures, and at 3.5 years weighed only 17 lb., equivalent to an average 7 month old baby). Furthermore, the ME regarded her death as suspicious and her caregivers were subsequently charged with criminal child endangerment.	This suspicious crib death of 3.5 year-old girl with serious preexisting medical issues (the emaciated girl [17lb] was a preemie twin with cerebral palsy, who had spinal meningitis at 2 months, hydrocephalus with brain shunts, and was on prescription barbiturates for seizure control). The mother and her boyfriend, both with a history of drug use, were charged 3 months after her death with criminal child endangerment /illegal drug use/manufacture/ distribution. The Sheriff's report says the mom reported putting the girl in a crib at ~9pm; she was not checked again until ~11am the next day (>14h later!). The boyfriend reported finding her lifeless, prone, "dark and cold" with the crib bumper wrapped around her neck (he said he had had to unwrap the bumper from her neck of a previous occasion). Police found a "good amount" of blood on the crib bumper near the contact position with her face and feet, and on the crib railing. The EPIR DTHS record, signed a day after death, noted the immediate cause of death as "Favor suffocation - crib bumper guard about decedent's head" with manner of death marked as pending. The ME reported the death as suspicious, and in the autopsy case discussion, noted the victim did "succumb secondary to changes consistent with suffocation" rather than strangulation, as reported by the boyfriend. The autopsy report also noted dried blood in the victim's mouth, multiple acute traumatic abrasions on her scalp, head face and on hand, but intact fingernails with no debris beneath them. Positive blood levels of prescribed barbiturates were in the therapeutic range for control of victim's seizures. Based on the extreme circumstances of this older child's suspicious death, and the subsequent criminal charges filed against the victim's mother and boyfriend, staff does not consider the death to be accidental and discounts the bumper as having any primary role.

	Mesh Bumper Addressable?			Explanation	Vertical/Mini Bumper Addressable?			Explanation	
Cases Likely Addressable by Bumper Removal/Category	***Likely***	***Unlikely***	***Unknown***		***Likely***	***Unlikely***	***Unknown***		***HS Case Summary***
Record # 49	X			If a child was found in the position depicted by a mannequin in the reenactment photos, a mesh bumper might likely have prevented suffocation.	X			If a child was found in the position depicted by a mannequin in the reenactment photos, a vertical bumper might likely have prevented suffocation.	A 5 month-old boy was found unresponsive in crib by his aunt ~2h after drinking 4oz formula. She said he was cold and blue, lying prone, with his face buried as if "snuggling" into the thick soft crib bumper padding in the corner of the crib. He was pronounced dead at the scene and a death scene investigation was conducted by the Sheriff and State Police. The baby was on a prescription Nystatin for treatment of oral thrush. The autopsy reported a red mark (superficial half inch diameter circular impression) on left side of his head, pulmonary congestion and edema, but no obvious signs of trauma. The ME ruled the death to be "Accidental: Positional asphyxia while laying face down in crib bumper". Reconstruction photos suggest the baby's chin face might have become caught in the improperly secured corner area of crib bumper. However, as shown in death scene photos, other thick bedding items were reported to be in the crib, including a comforter, heavy and light blankets, 2 plush toys (medium size), and a large stuffed toy keyboard that stretched nearly the width of the crib. They are not shown in the reconstruction photo and their potential role in any suffocation-type incident is not addressed by the coroner or police. Staff considers the death to be confounded by the baby's prone position, and presence of thick bedding and stuffed toys in the crib, plus an improperly tied crib bumper. Staff notes that while it is likely addressable, it is difficult to determine the exact role of the bumper in the death because of multiple confounding factors