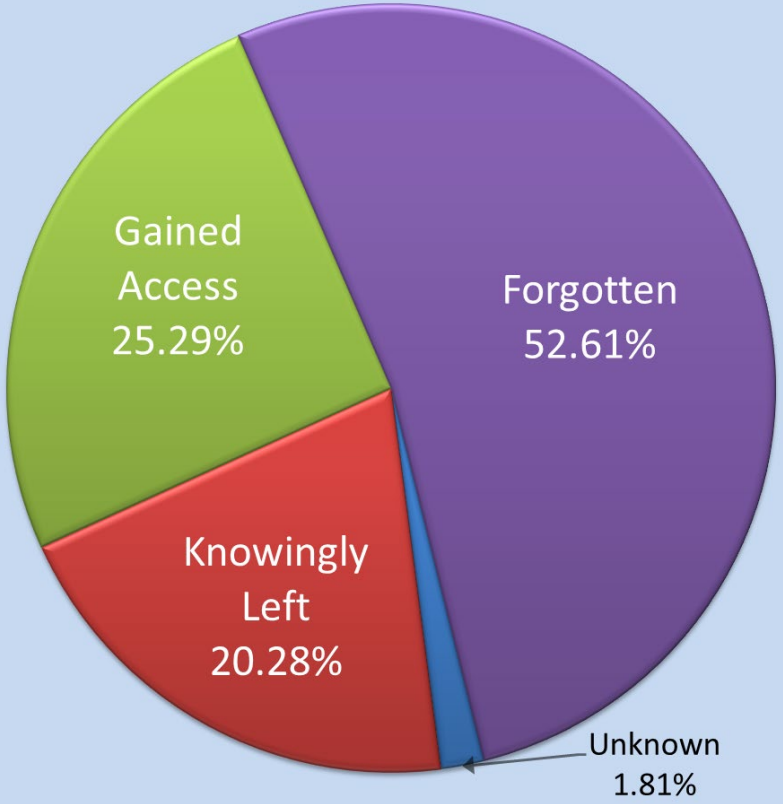
Pediatric Vehicular Heatstroke Deaths: By the Numbers (1998-2022)



Jan Null, CCM
Department of Meteorology and Climate Science
San Jose State University
January 2023

On average, 37 children die from heatstroke inside hot vehicles each year. During the period of 1998 through 2022 that's a total of 937 Pediatric Vehicular Heatstroke (PVH) deaths that have been documented in the United States.

Data Collection

The statistics presented here were primarily gathered with customized online news searches of electronic media using tools such as Google News but are supplemented with a deep dive into archived sources. These include newspaper archives, correspondence with reporters, court records, law enforcement officials, district attorneys, medical examiner/coroner offices, and child death review teams. Occasionally, a death is brought to the attention of the author from a third party that has verifiable information never caught by local media, happened in a locale without electronic media or were suppressed by the families or local authorities. It is also clear, that there are other additional cases that go "under the radar" for some of the reasons above, thus the numbers presented here are conservative.

Using electronic news sources yields nearly twice as many reported heatstroke deaths of children in vehicles as more formal methodologies by official agencies using public records. For example, the latest (March 2015) National Highway Traffic Safety Administration (NHTSA) Not-in-Traffic Surveillance (NiTS): Non-Crash Fatalities and Injuries report, based on death certificates from the special mortality files of the National Vital Statistics System (NVSS), estimated an annual average of only 19 fatalities of children (i.e., <14 years) due to heatstroke in vehicles. By tracking deaths via media reports there were 112 deaths documented in that same 3-year period.

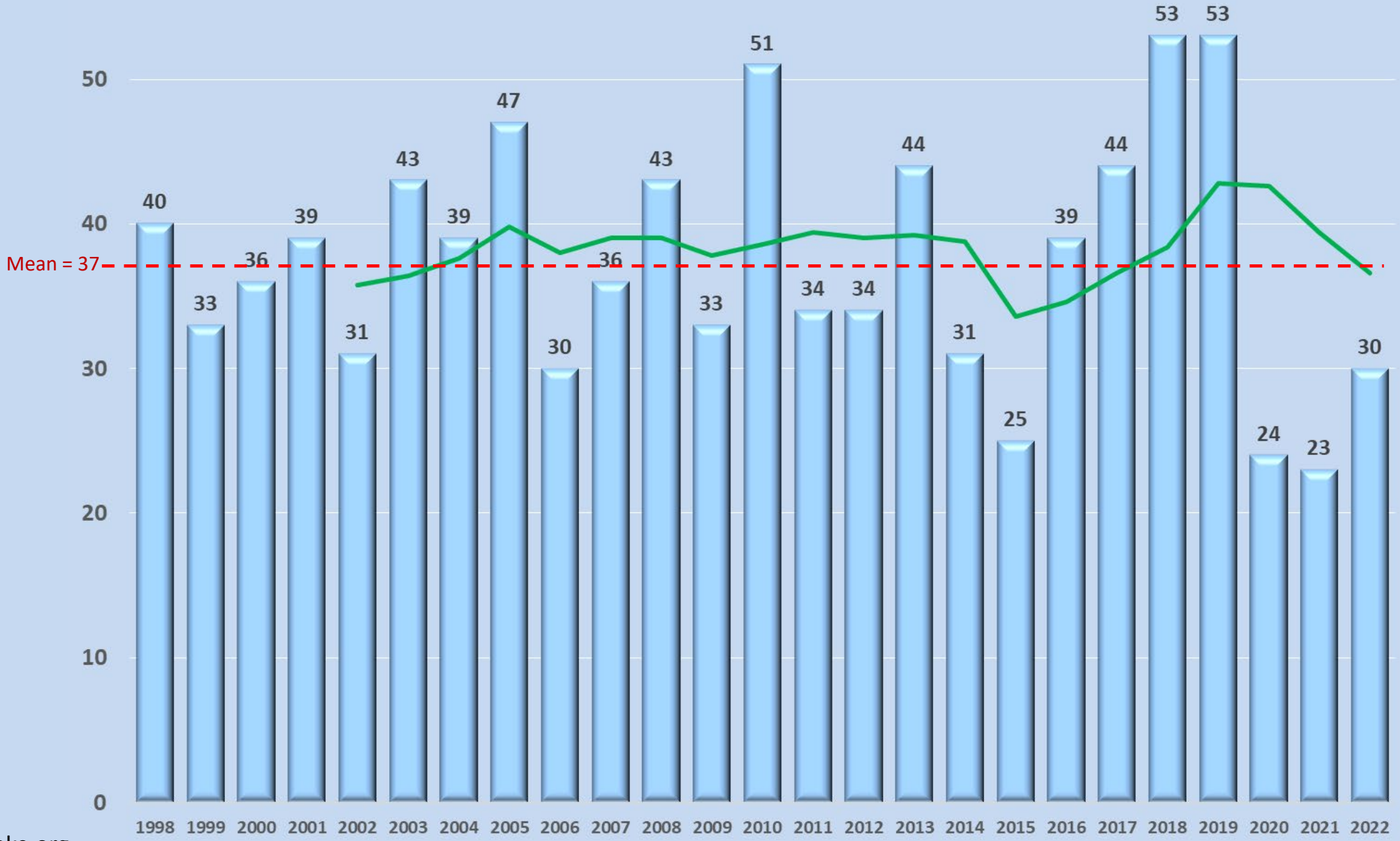
The data presented in this document is an amalgamation of material from the Noheatstroke.org website and its underlying database of the over 937 PVH deaths which have occurred in the United State since 1998. Permission is granted to use these materials, with full attribution as: "Source: Jan Null, CCM, Department of Meteorology and Climate Science, San Jose State University, http://noheatstroke.org" . A live link back to http://noheatstroke.org is preferred as data on the site changes frequently and this ensures that end users can gain access to the most accurate and up-to-date information.

Please direct all correspondence to: jan.null@sjsu.edu

Contents - Pediatric Vehicular Heatstroke Deaths (1998-2022)

Pediatric Vehicular Heatstroke Deaths: Annual Distribution

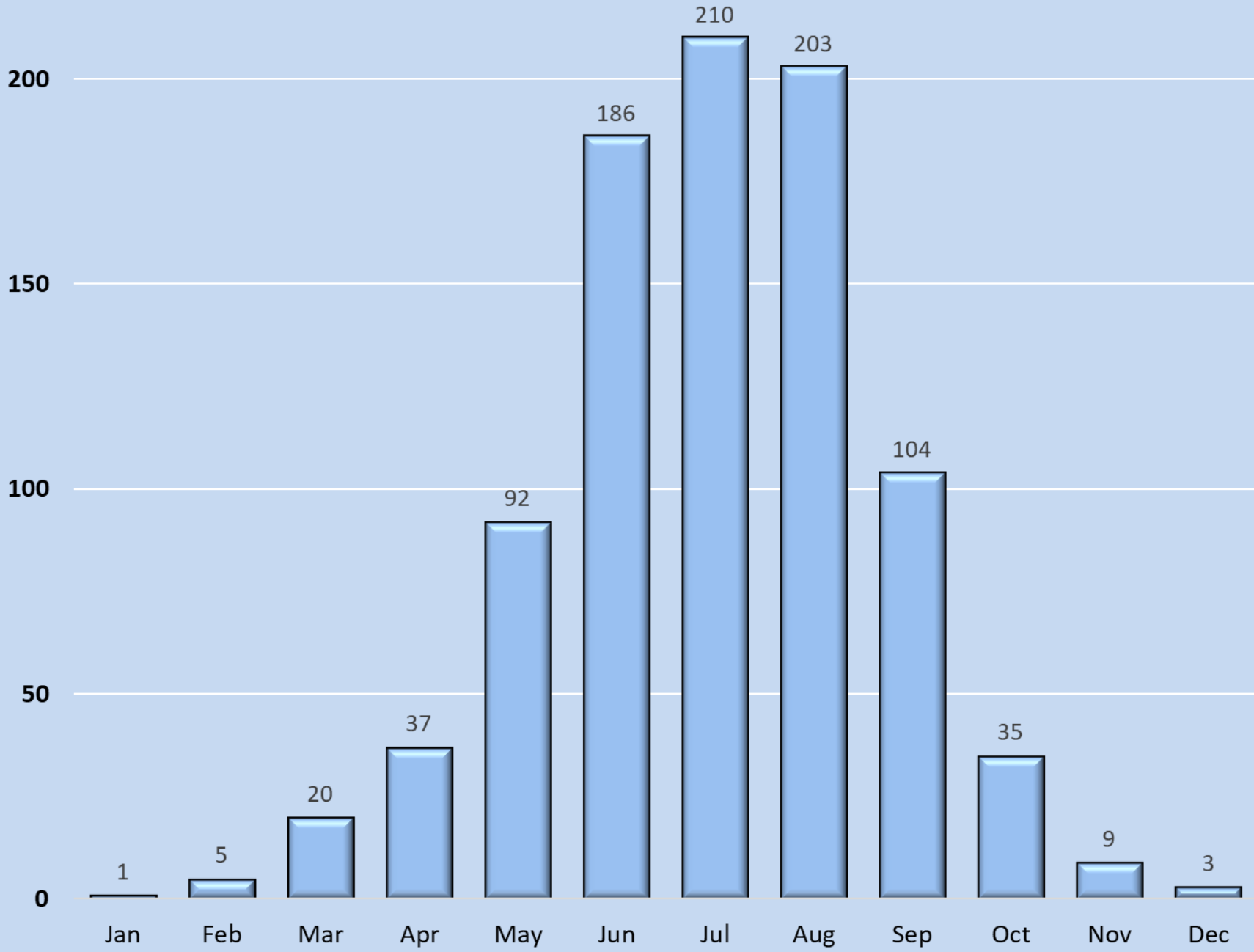
Figure 1.



Source:
NoHeatstroke.org

Pediatric Vehicular Heatstroke Deaths: Monthly Distribution

Figure 2.



Source:
NoHeatstroke.org

Pediatric Vehicular Heatstroke Deaths: Monthly Totals

Figure 3.

	Monthly Totals													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	Total
1998				2	4	9	10	11	3				1	40
1999			1	1	2	8	16	4	1					33
2000			1		8	6	7	10	3	1				36
2001			2	1	4	8	10	10	2	1	1			39
2002			1		1	7	10	7	4	2				32
2003				2	4	10	10	12	2	3				43
2004		1	2	5	4	4	9	7	6	1				39
2005					3	9	12	11	10	2				47
2006				2	2	6	7	10			3			30
2007			2		3	6	9	7	8	1				36
2008		1	2	2	2	6	11	12	3	4				43
2009			1	2	3	11	7	6	2			1		33
2010			1	3	6	10	8	15	7	1				51
2011			2		6	10	8	3	3	2				34
2012					4	6	6	12	2		3	1		34
2013					8	9	9	8	9	1				44
2014				4	4	8	7	3	2	3				31
2015				1	1	6	3	8	5		1			25
2016	1		1	3	4	7	9	4	6	4				39
2017		2	2	3	3	10	13	7	2	2				44
2018		1	2	1	8	12	10	9	9				1	53
2019				3	7	8	8	14	7	5	1			53
2020				1	1	4	8	6	3	1		1		25
2021				1		6	3	7	5	1				23
2022					3	6	5	9	7					30
											Total 1998-2020 >			**937**
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Unk**	**Total**
Avg.	< 1	< 1	2	2	4	8	9	8	5	2	< 1	< 1	< 1	38
Max.	1	2	2	5	8	12	16	15	10	5	3	1	1	53
Min.	0	0	0	0	4	3	3	1	0	0	0	0	0	23

Source:
NoHeatstroke.org

Running Total at the End of the Month

Figure 4.

Running Totals through end of each month:													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Final
1998	0	0	0	2	6	15	25	36	39	39	39	39	40
1999	0	0	1	2	4	12	28	32	33	33	33	33	33
2000	0	0	1	1	9	15	22	32	35	36	36	36	36
2001	0	0	2	3	7	15	25	35	37	38	39	39	39
2002	0	0	1	1	2	9	19	26	30	32	32	32	32
2003	0	0	0	2	6	16	26	38	40	43	43	43	43
2004	0	1	3	8	12	16	25	32	38	39	39	39	39
2005	0	0	0	0	3	12	24	35	45	47	47	47	47
2006	0	0	0	2	4	10	17	27	27	27	30	30	30
2007	0	0	2	2	5	11	20	27	35	36	36	36	36
2008	0	1	3	5	7	13	24	36	39	43	43	43	43
2009	0	0	1	3	6	17	24	30	32	32	32	33	33
2010	0	0	1	4	10	20	28	43	50	51	51	51	51
2011	0	0	2	2	8	18	26	29	32	34	34	34	34
2012	0	0	0	0	4	10	16	28	30	30	33	34	34
2013	0	0	0	0	8	17	26	34	43	44	44	44	44
2014	0	0	0	4	8	16	23	26	28	31	31	31	31
2015	0	0	0	1	2	8	11	19	24	24	25	25	25
2016	1	1	2	5	9	16	25	29	35	39	39	39	39
2017	0	2	4	7	10	20	33	40	42	44	44	44	44
2018	0	1	3	4	12	24	34	43	52	52	52	52	53
2019	0	0	0	3	10	18	26	40	47	52	53	53	53
2020	0	0	0	1	2	6	14	20	23	24	24	25	25
2021	0	0	0	1	1	7	10	17	22	23	23	23	23
2022	0	0	0	0	3	9	14	23	30	30	30	30	30
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Final
Avg.	0	0	1	3	6	14	23	31	36	37	37	37	37
Max.	1	2	4	8	12	24	34	43	52	52	53	53	53
Min.	0	0	0	0	1	6	10	17	22	23	23	23	23

Source:
NoHeatstroke.org

Pediatric Vehicular Heatstroke Deaths: First of Year

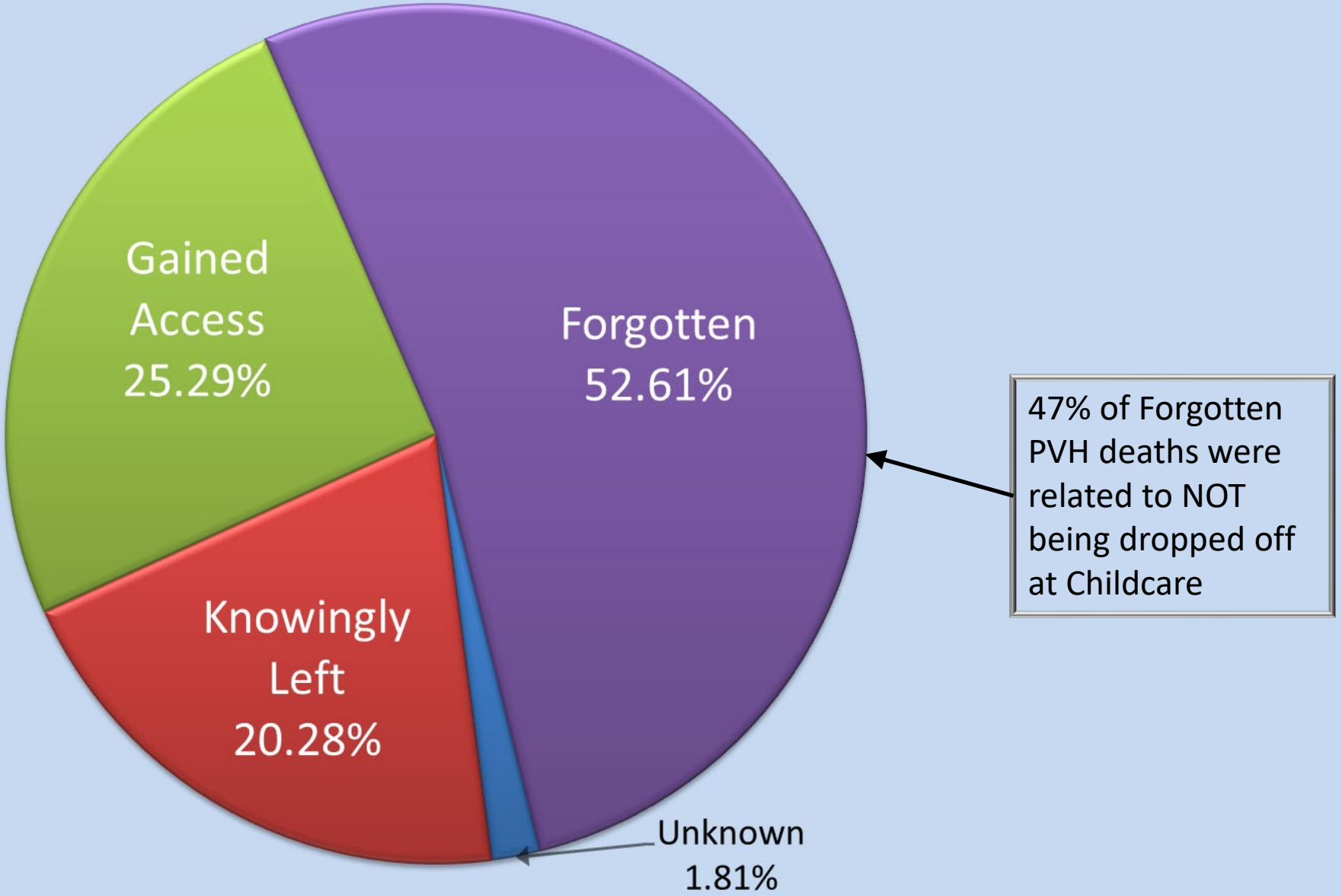
Figure 5.

Date & Location of 1st Death		
Year	**Date**	**State**
1998	24-Apr	AR
1999	16-Mar	OH
2000	6-Mar	FL
2001	21-Mar	TX
2002	14-Mar	OH
2003	6-Apr	FL
2004	5-Feb	HI
2005	13-May	NJ
2006	4-Apr	SC
2007	17-Mar	HI
2008	15-Feb	WI
2009	9-Mar	NC
2010	8-Mar	FL
2011	8-Mar	TX
2012	12-May	TX
2013	10-May	TX
2014	16-Apr	CA
2015	20-Apr	AZ
2016	12-Jan	GA
2017	6-Feb	FL
2018	28-Feb	FL
2019	4-Apr	FL
2020	25-Apr	TX
2021	26-Apr	NC
2022	3-May	GA
Average	**25-Mar**	

Source:
NoHeatstroke.org

Figure 6.

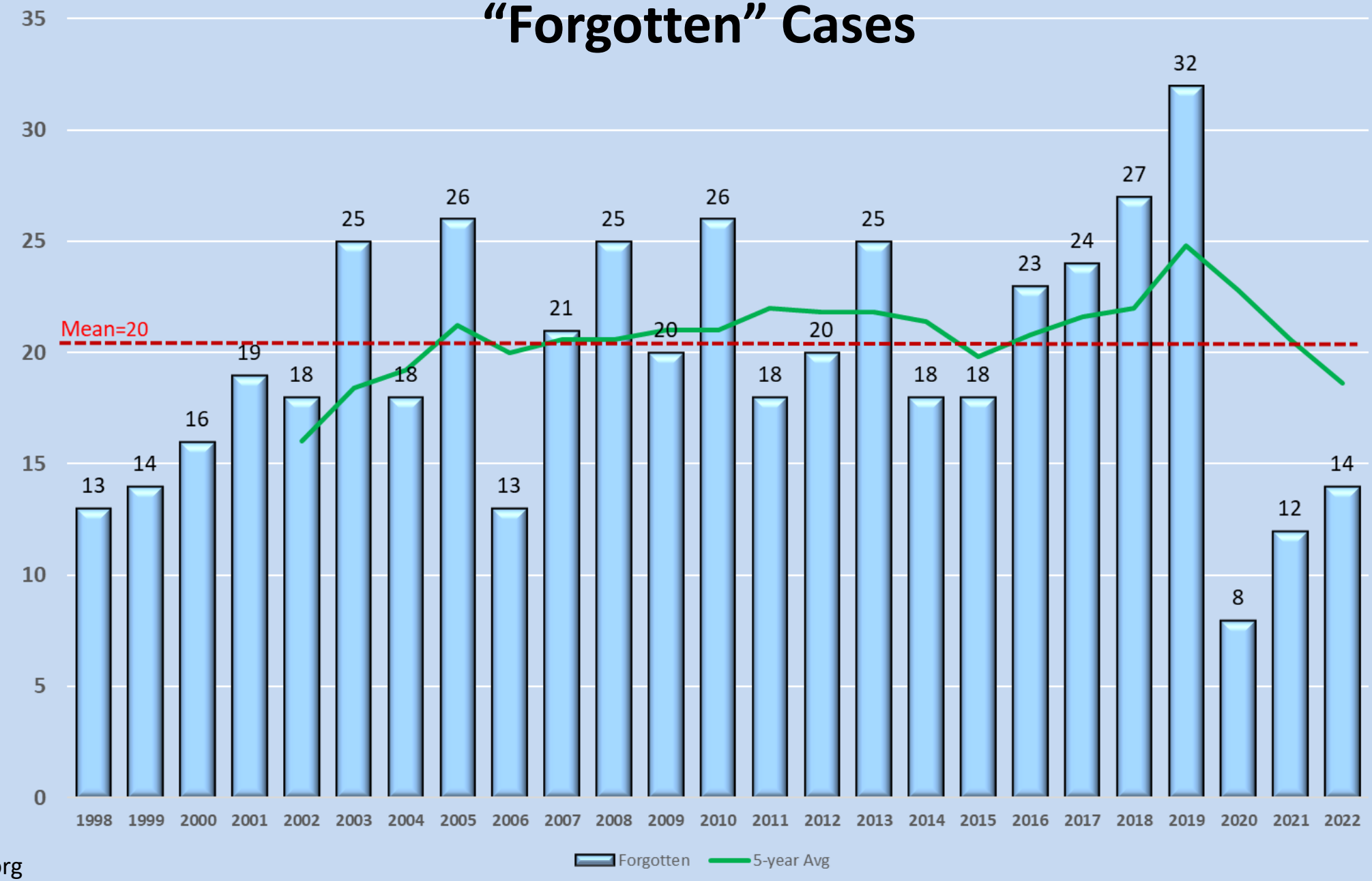
Pediatric Vehicular Heatstroke Deaths: Circumstances (1998-2022)



Source:
NoHeatstroke.org

Figure 7a.

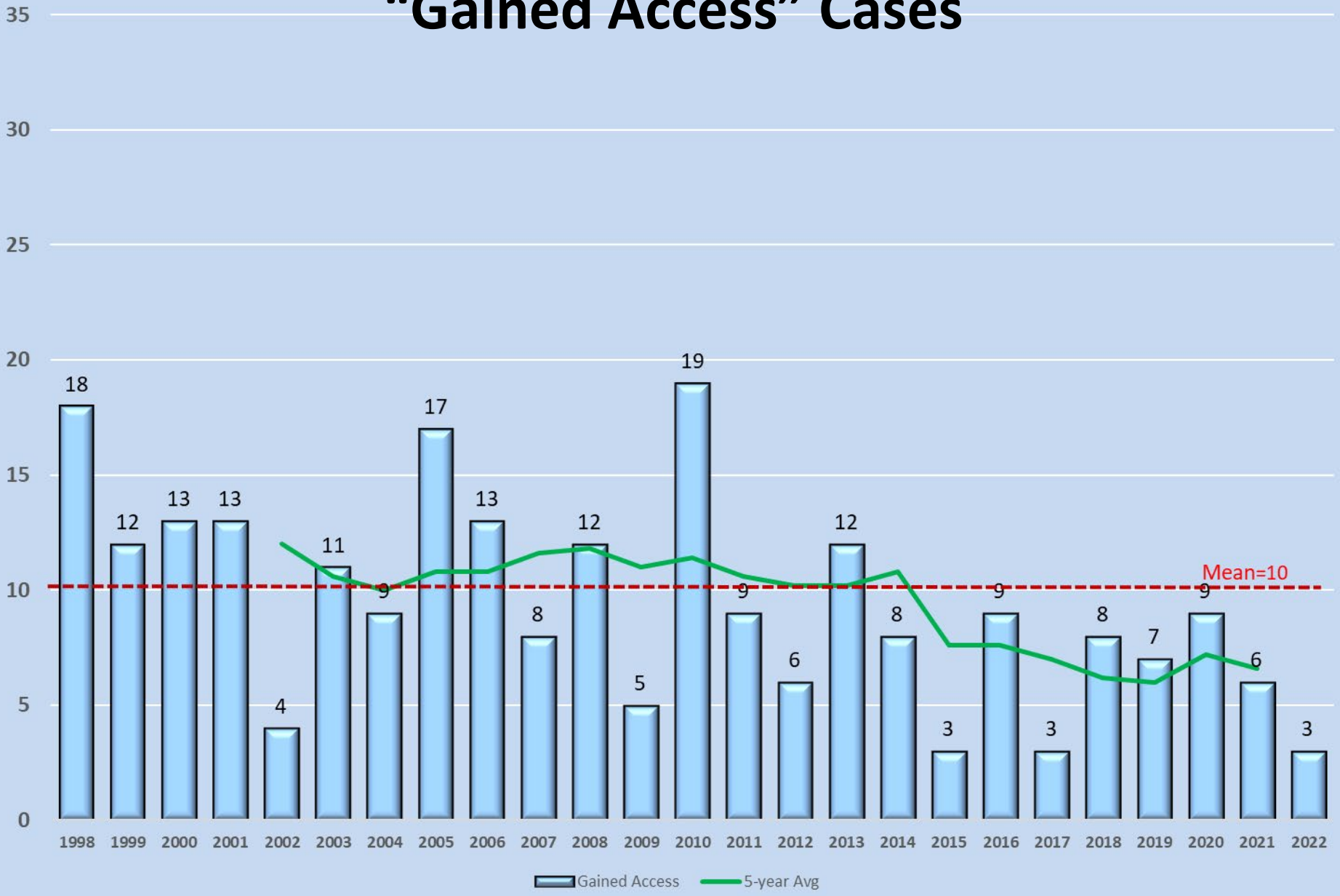
Pediatric Vehicular Heatstroke Deaths: Circumstances
"Forgotten" Cases



Source:
NoHeatstroke.org

Figure 7b.

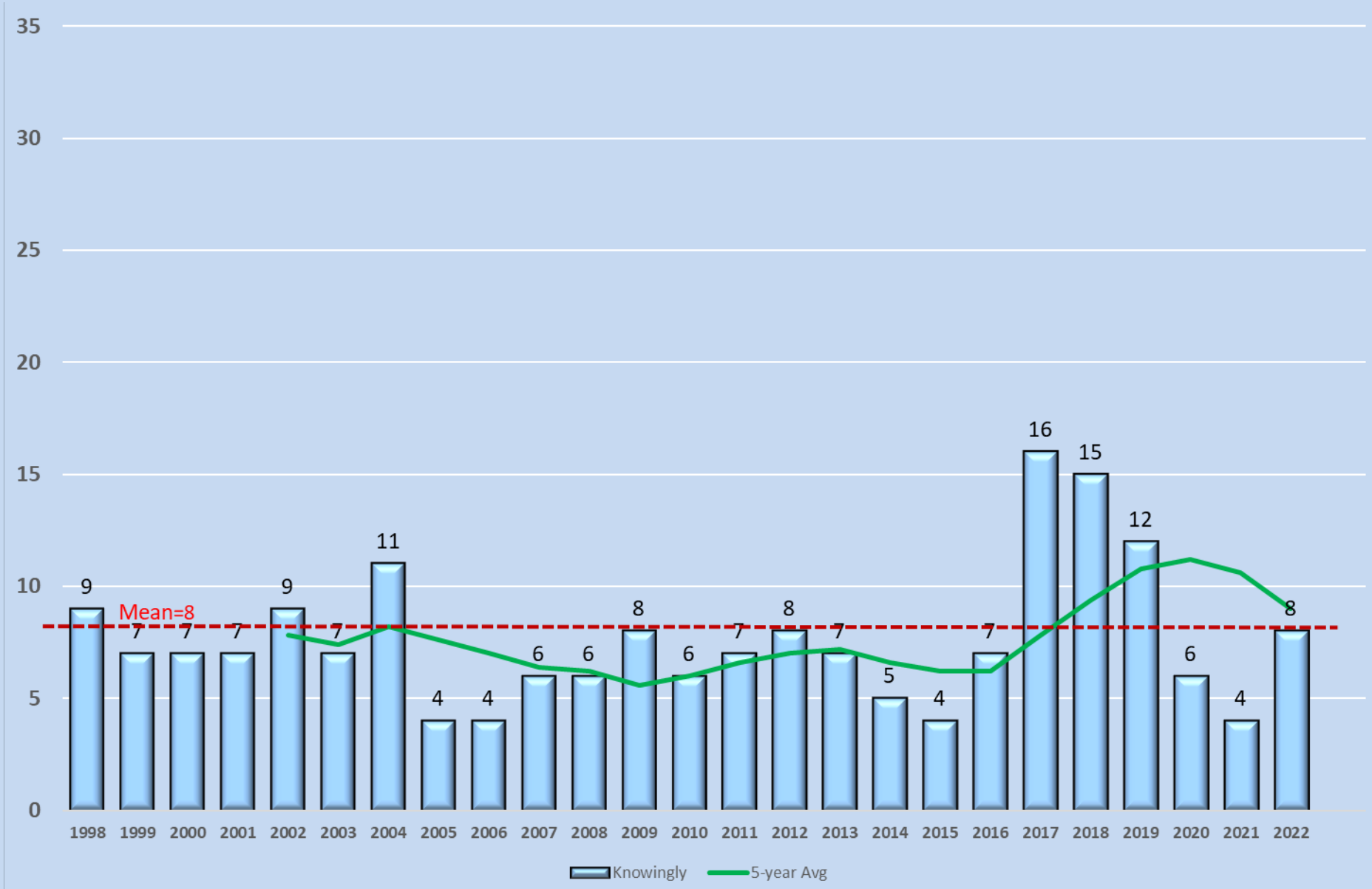
Pediatric Vehicular Heatstroke Deaths: Circumstances
"Gained Access" Cases



Source:
NoHeatstroke.org

Figure 7c.

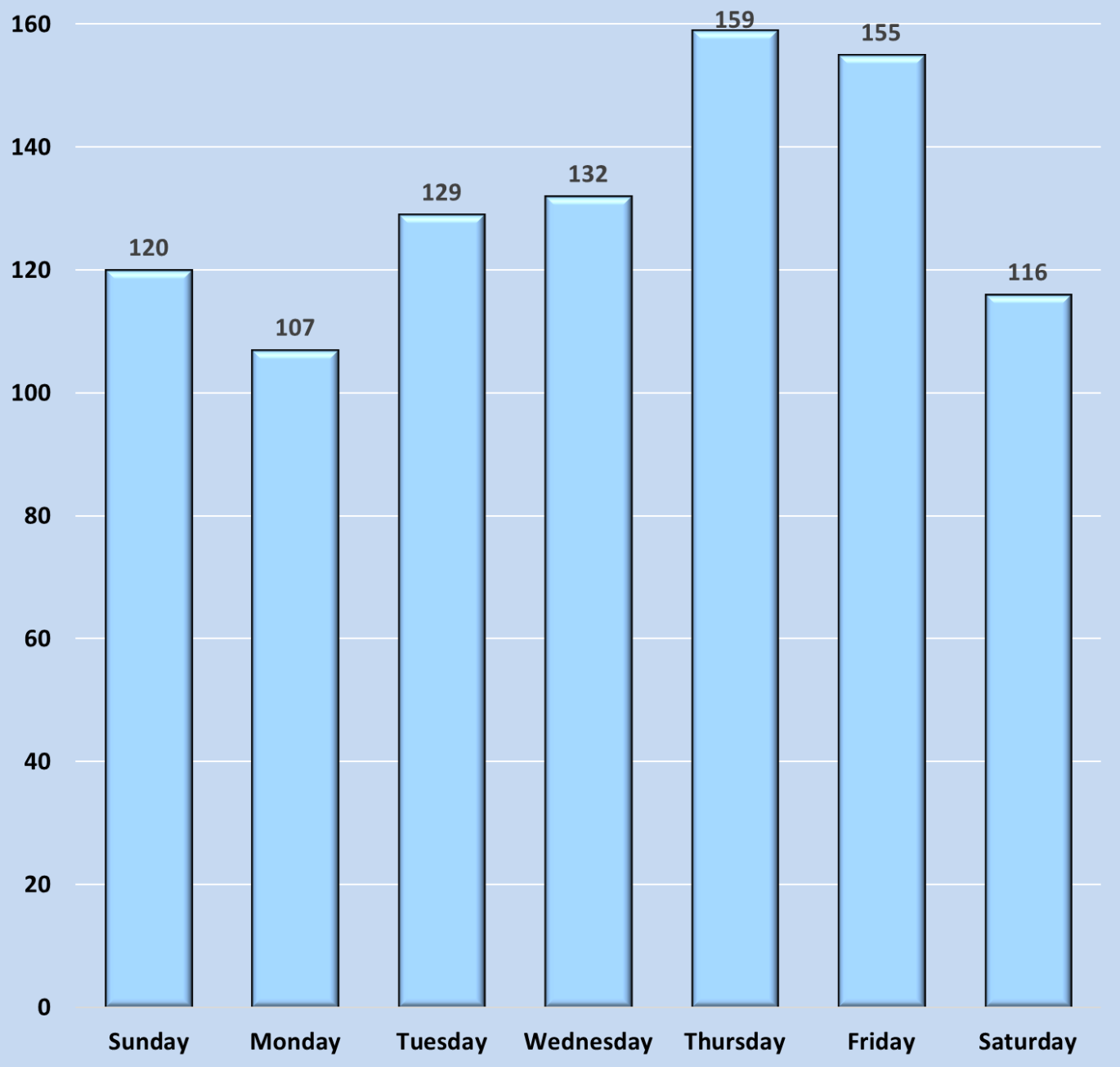
Pediatric Vehicular Heatstroke Deaths: Circumstances
"Knowingly Left" Cases



Source:
NoHeatstroke.org

Pediatric Vehicular Heatstroke Deaths: Day of the Week

Figure 8.

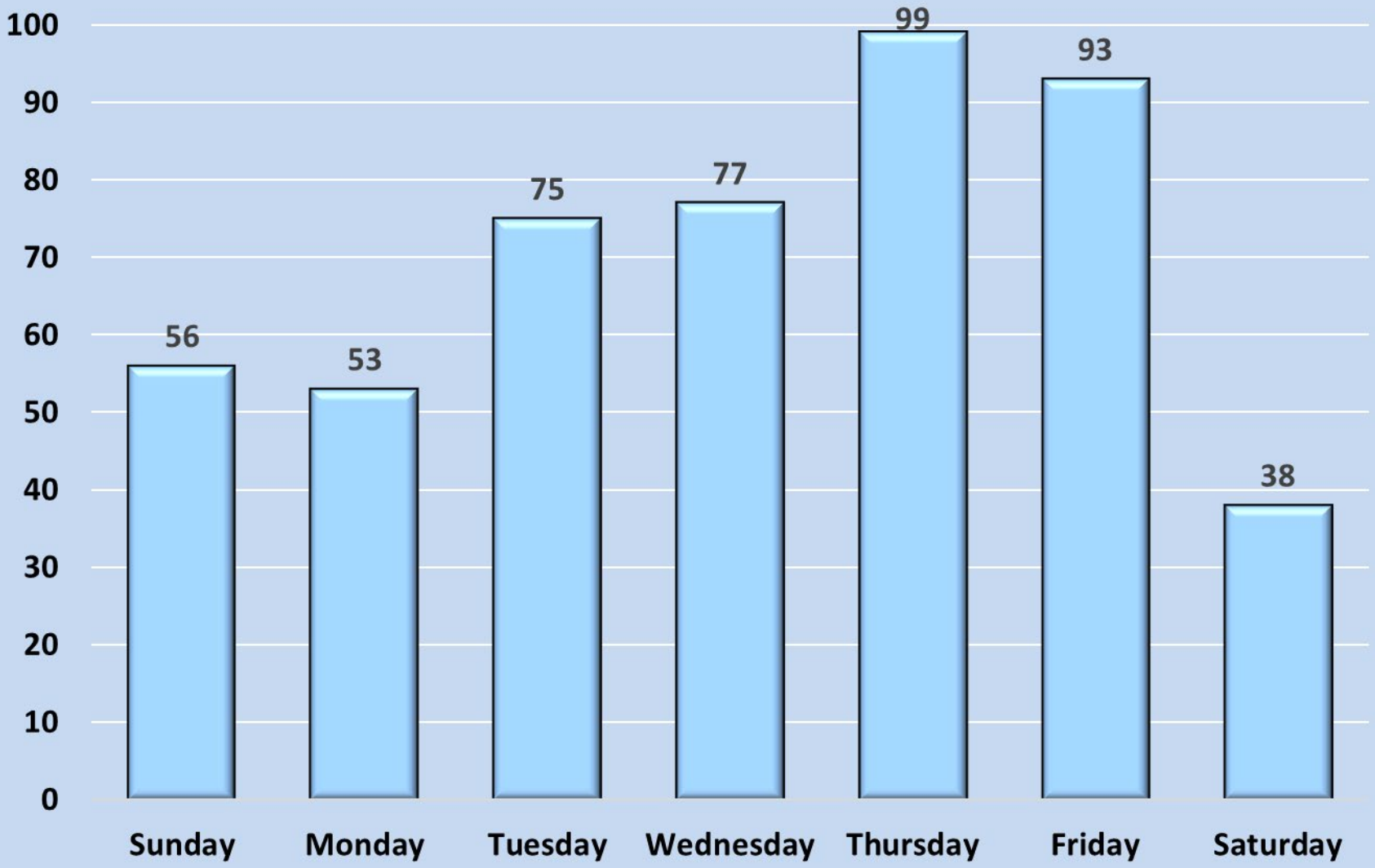


Source:
NoHeatstroke.org

Figure 8a.

Pediatric Vehicular Heatstroke Deaths: Day of the Week

"Forgotten"

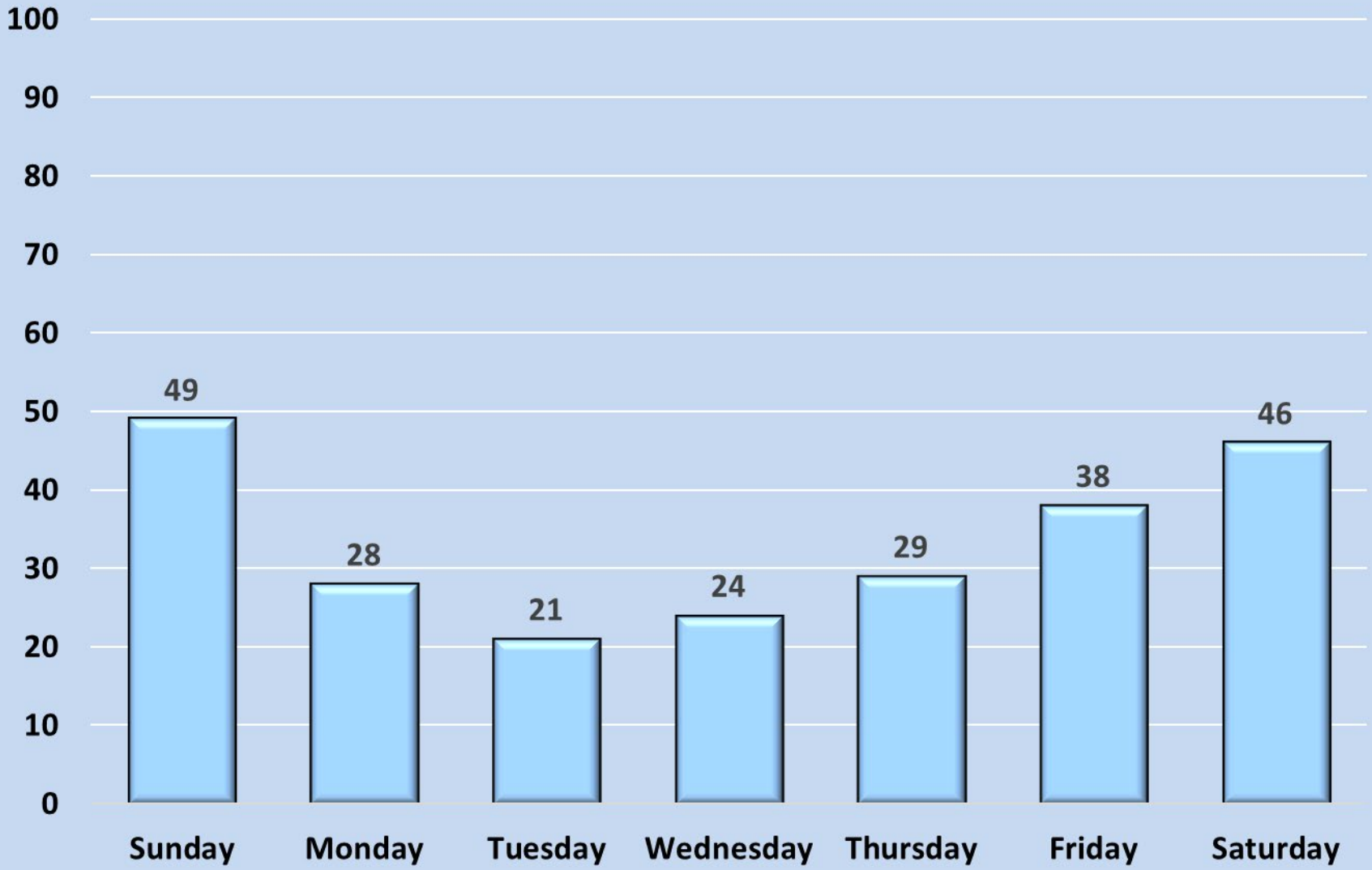


Source:
NoHeatstroke.org

Figure 8b.

Pediatric Vehicular Heatstroke Deaths: Day of the Week

"Gained Access"

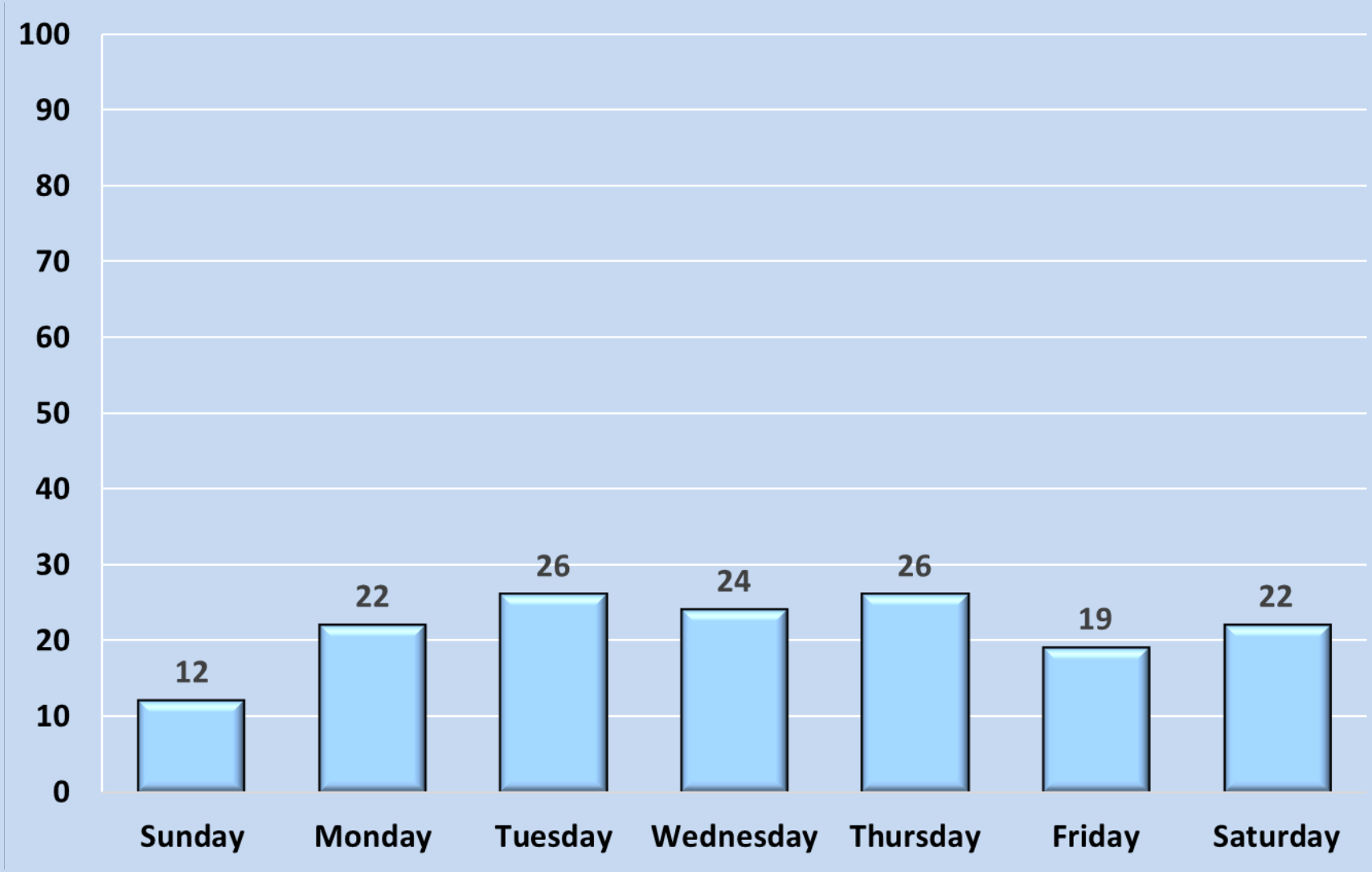


Source:
NoHeatstroke.org

Figure 8c.

Pediatric Vehicular Heatstroke Deaths: Day of the Week

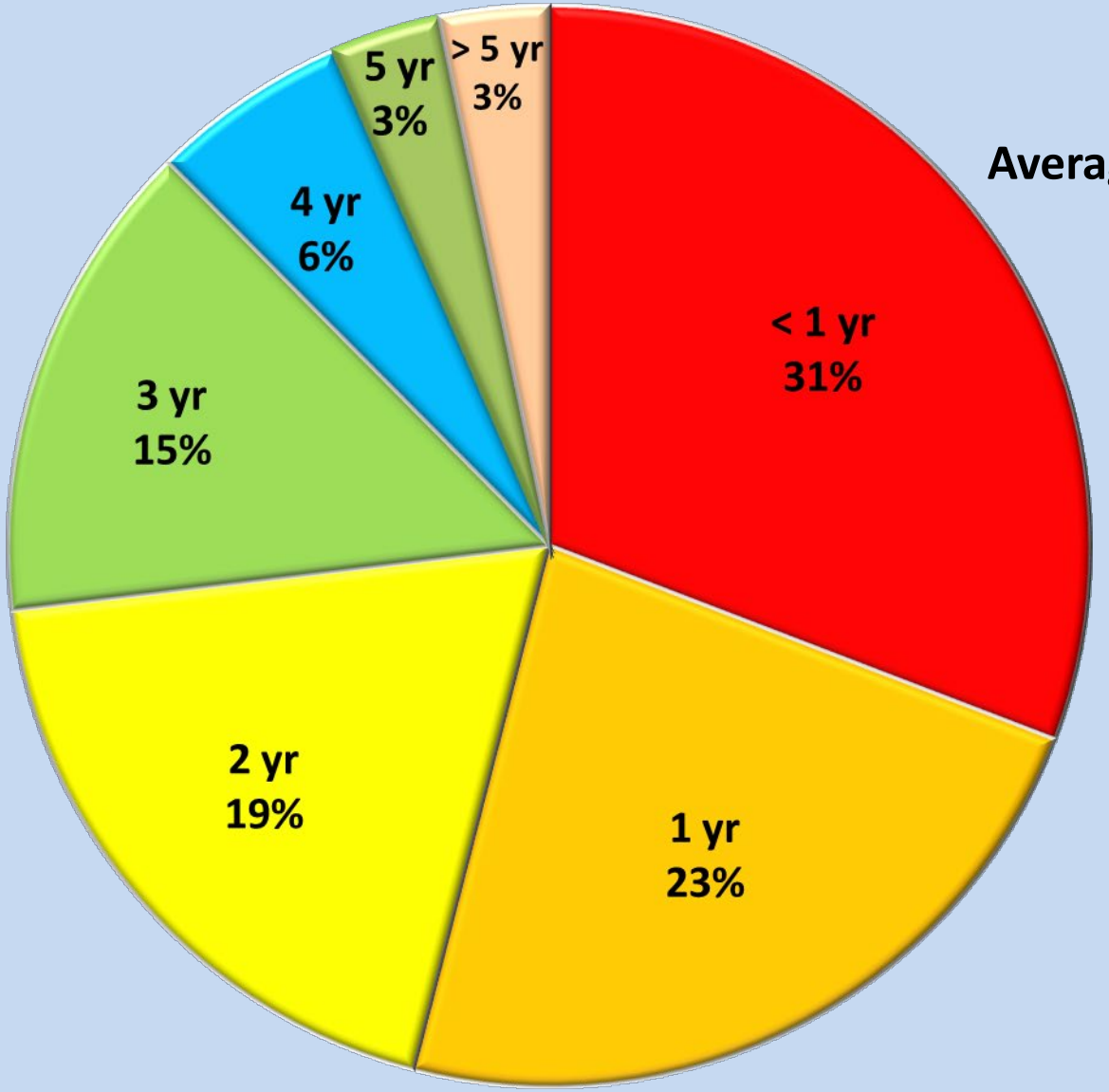
"Knowingly Left"



Source:
NoHeatstroke.org

Figure 9.

Pediatric Vehicular Heatstroke Deaths: Age



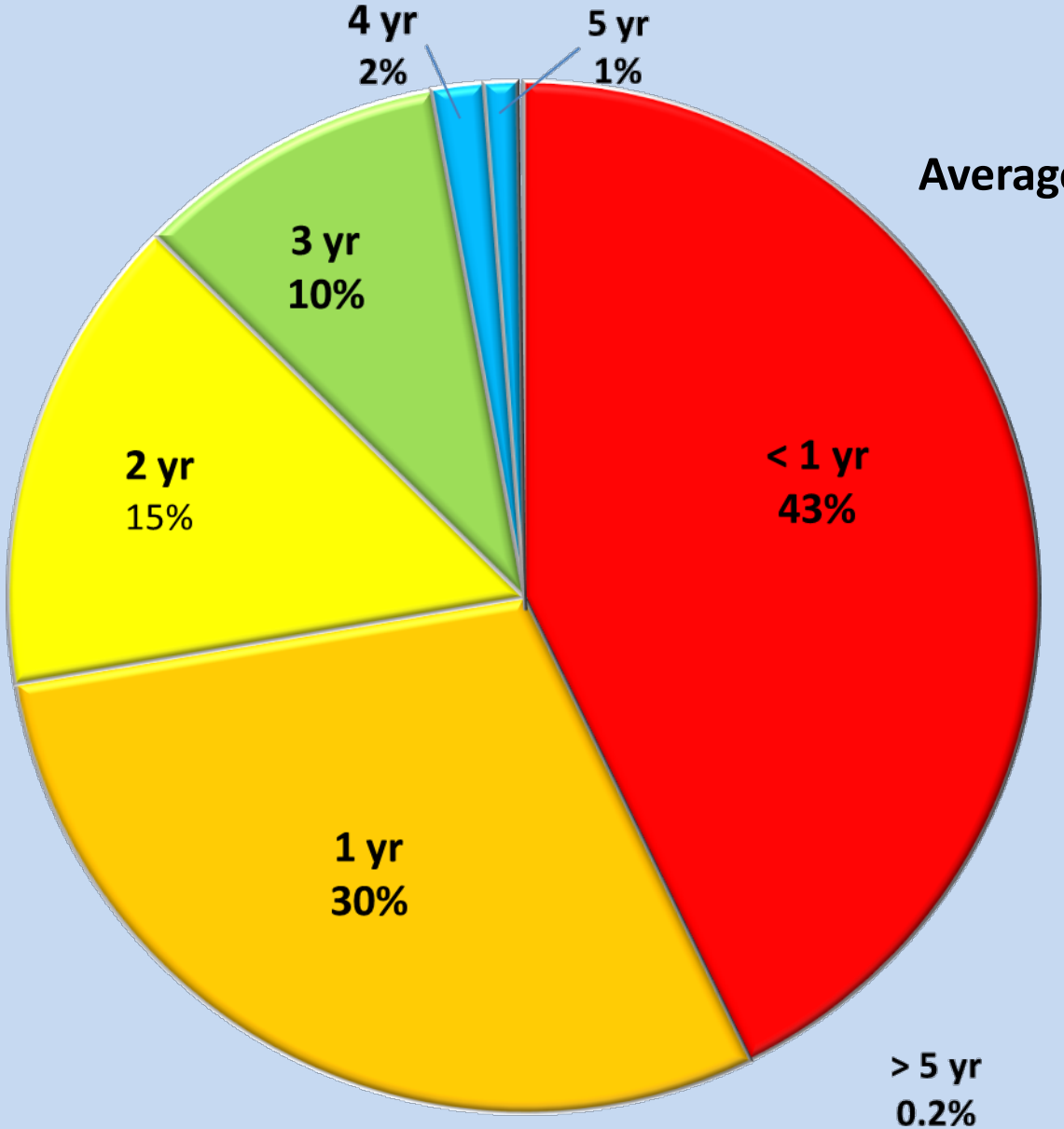
Average Age: 27.2 months

Source:
NoHeatstroke.org

Figure 9a.

Pediatric Vehicular Heatstroke Deaths: Age

"Forgotten"



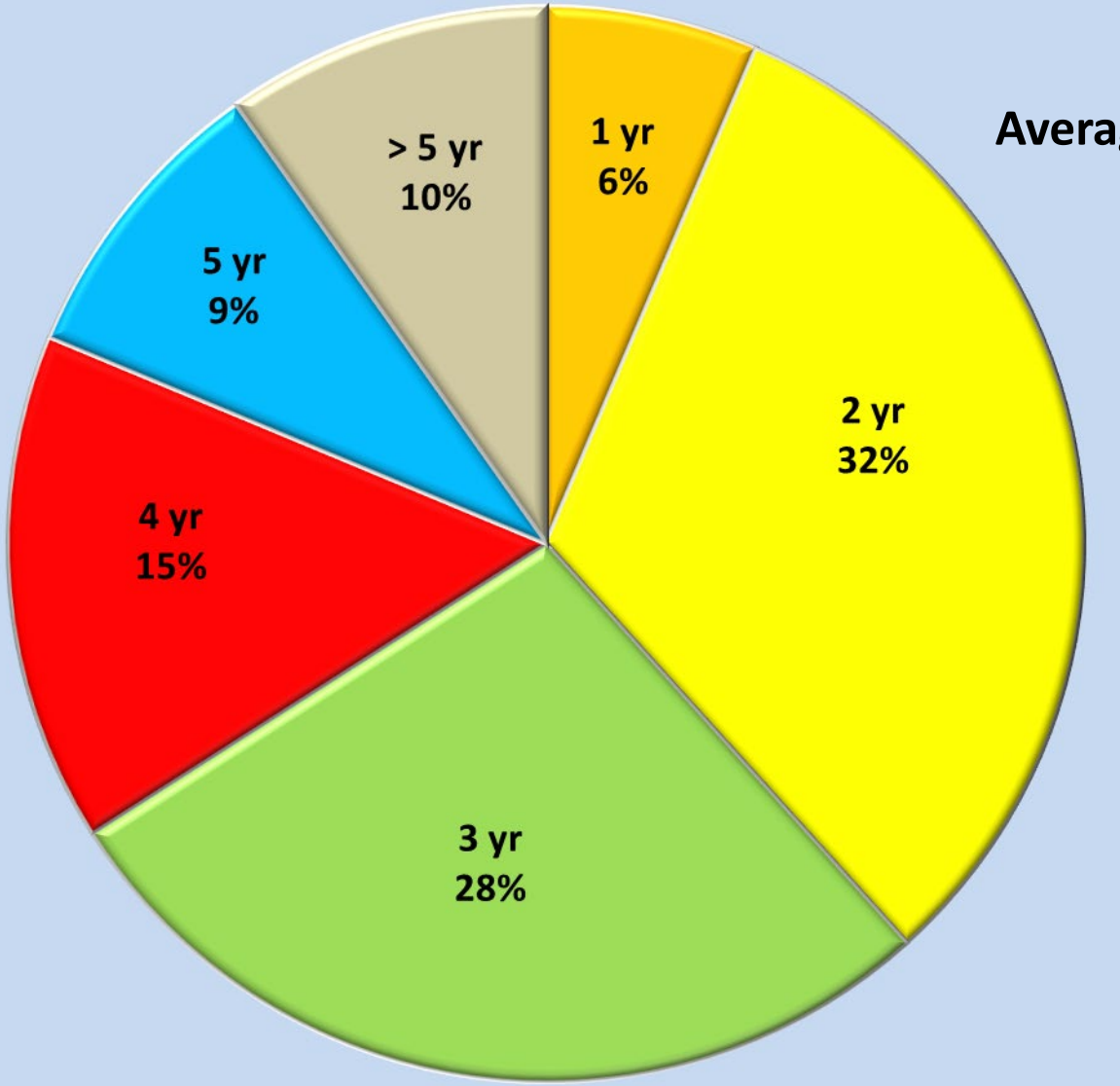
Average Age: 18.4 months

Source:
NoHeatstroke.org

Figure 9b.

Pediatric Vehicular Heatstroke Deaths: Age

"Gained Access"



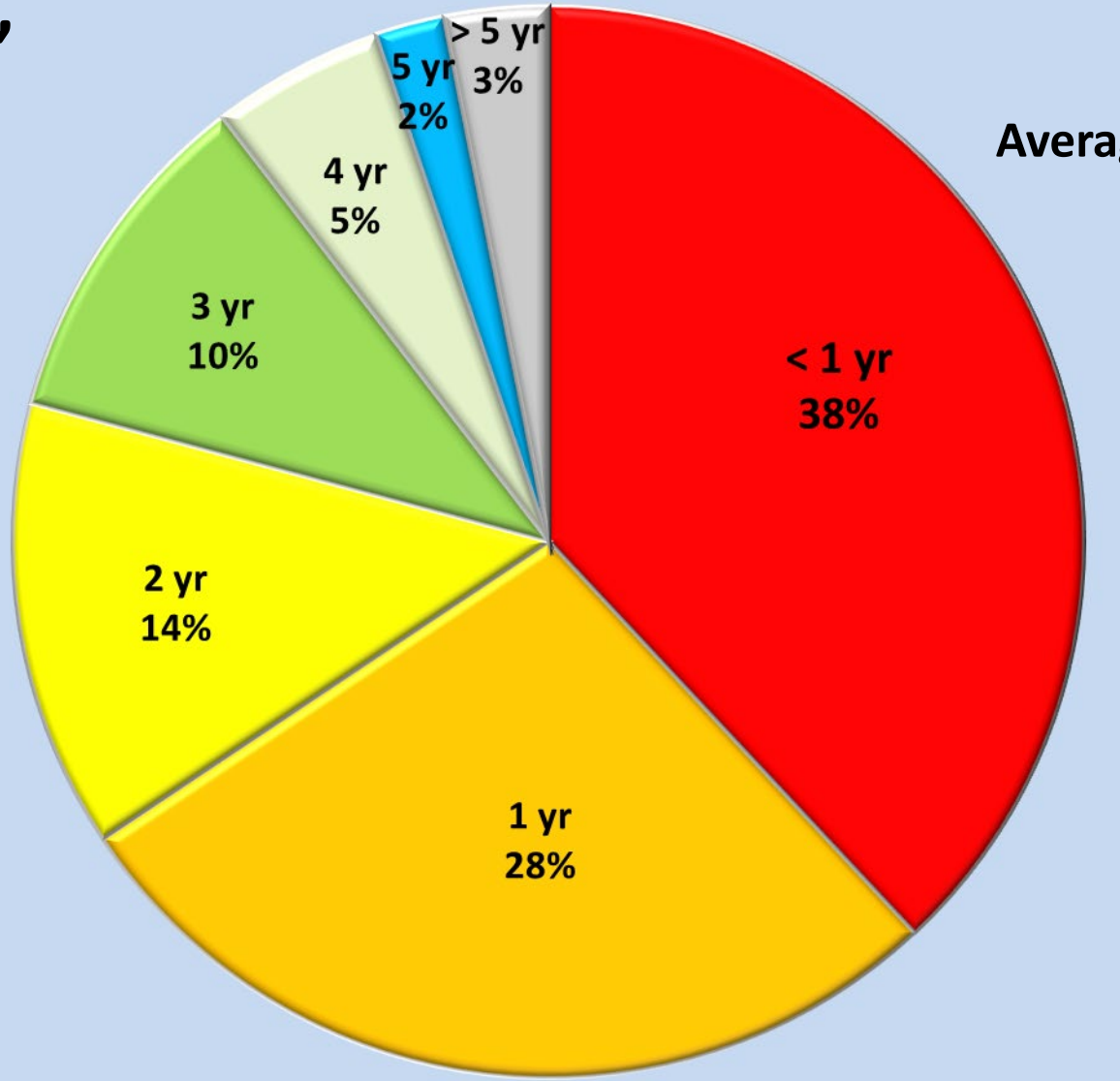
Average Age: 47.0 months

Source:
NoHeatstroke.org

Figure 9c.

Pediatric Vehicular Heatstroke Deaths: Age

"Knowingly Left"

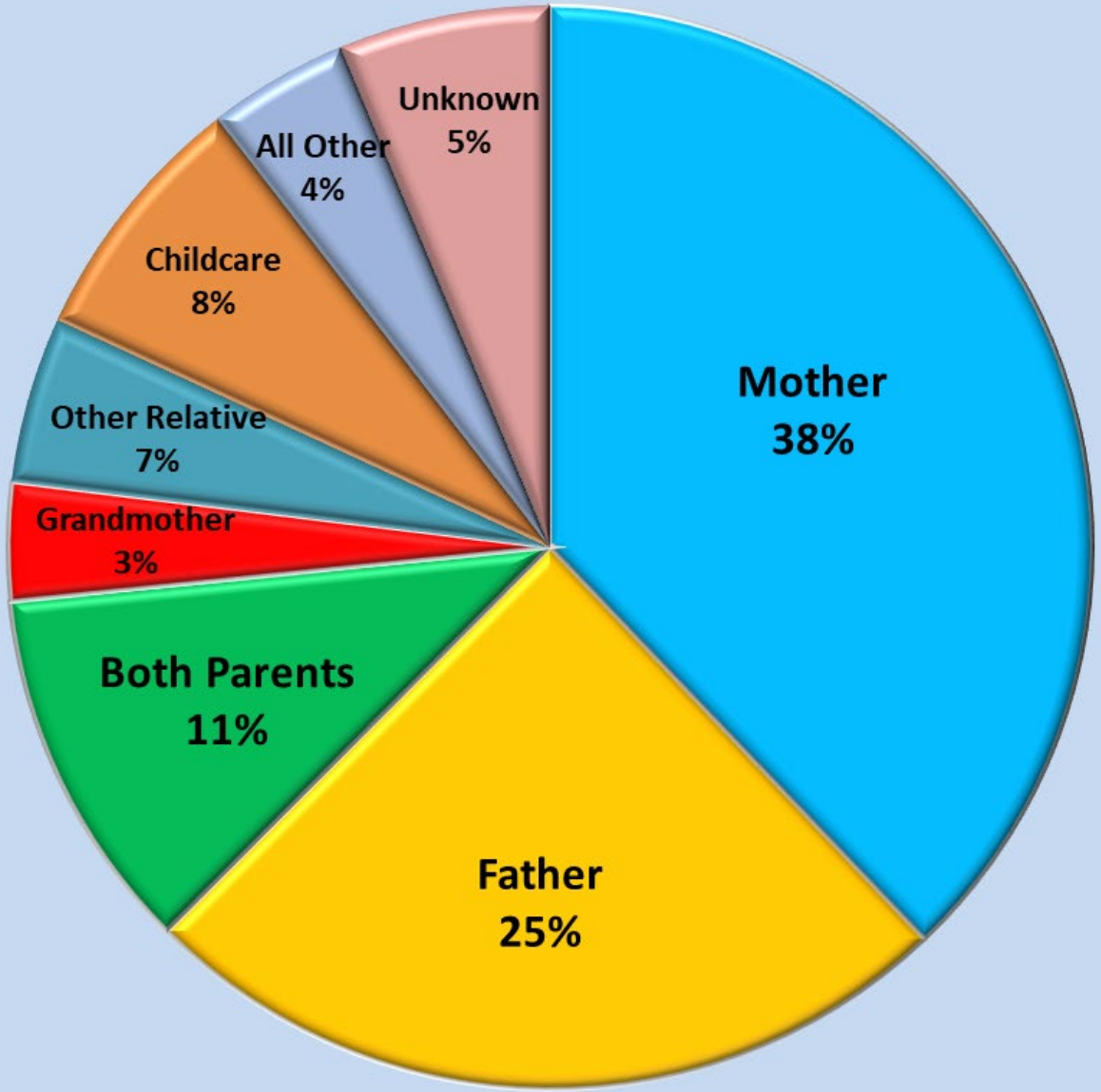


Average Age: 24.9 months

Source:
NoHeatstroke.org

Figure 10.

Responsible Person for Pediatric Vehicular Heatstroke Deaths

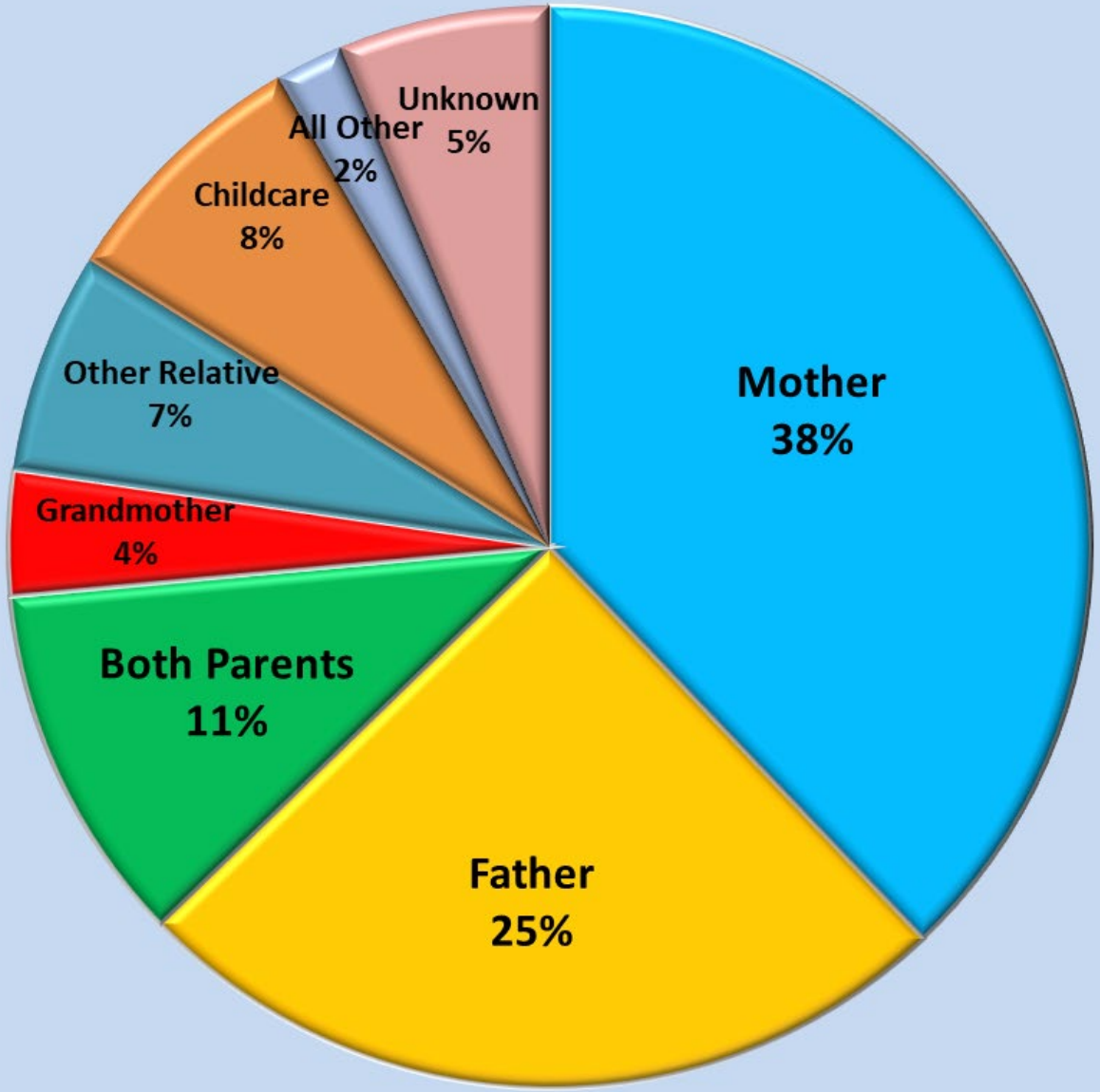


Source:
NoHeatstroke.org

Figure 10a.

Responsible Person for Pediatric Vehicular Heatstroke Deaths:

"Forgotten"

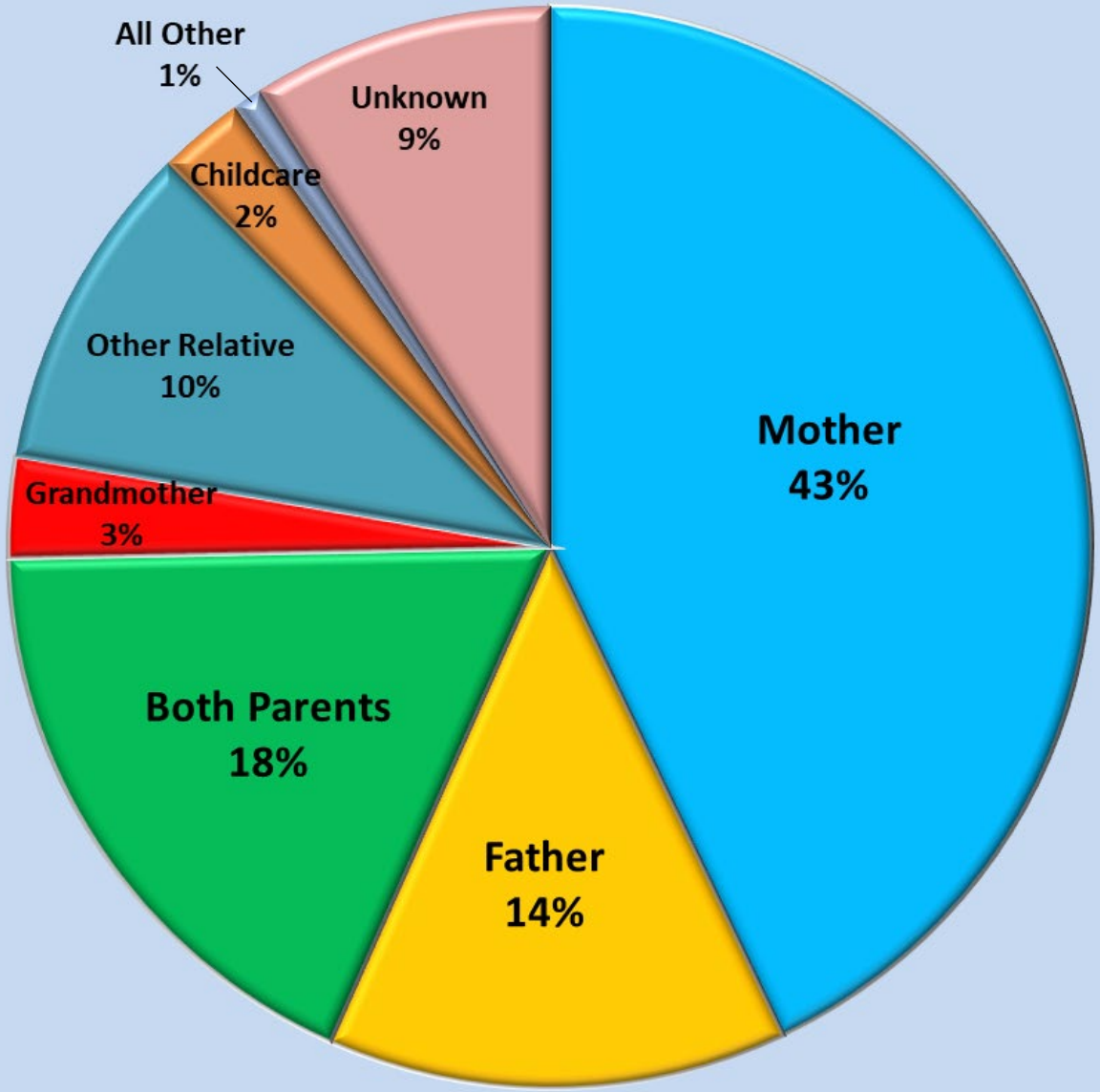


Source:
NoHeatstroke.org

Figure 10b.

Responsible Person for Pediatric Vehicular Heatstroke Deaths:

"Gained Access"

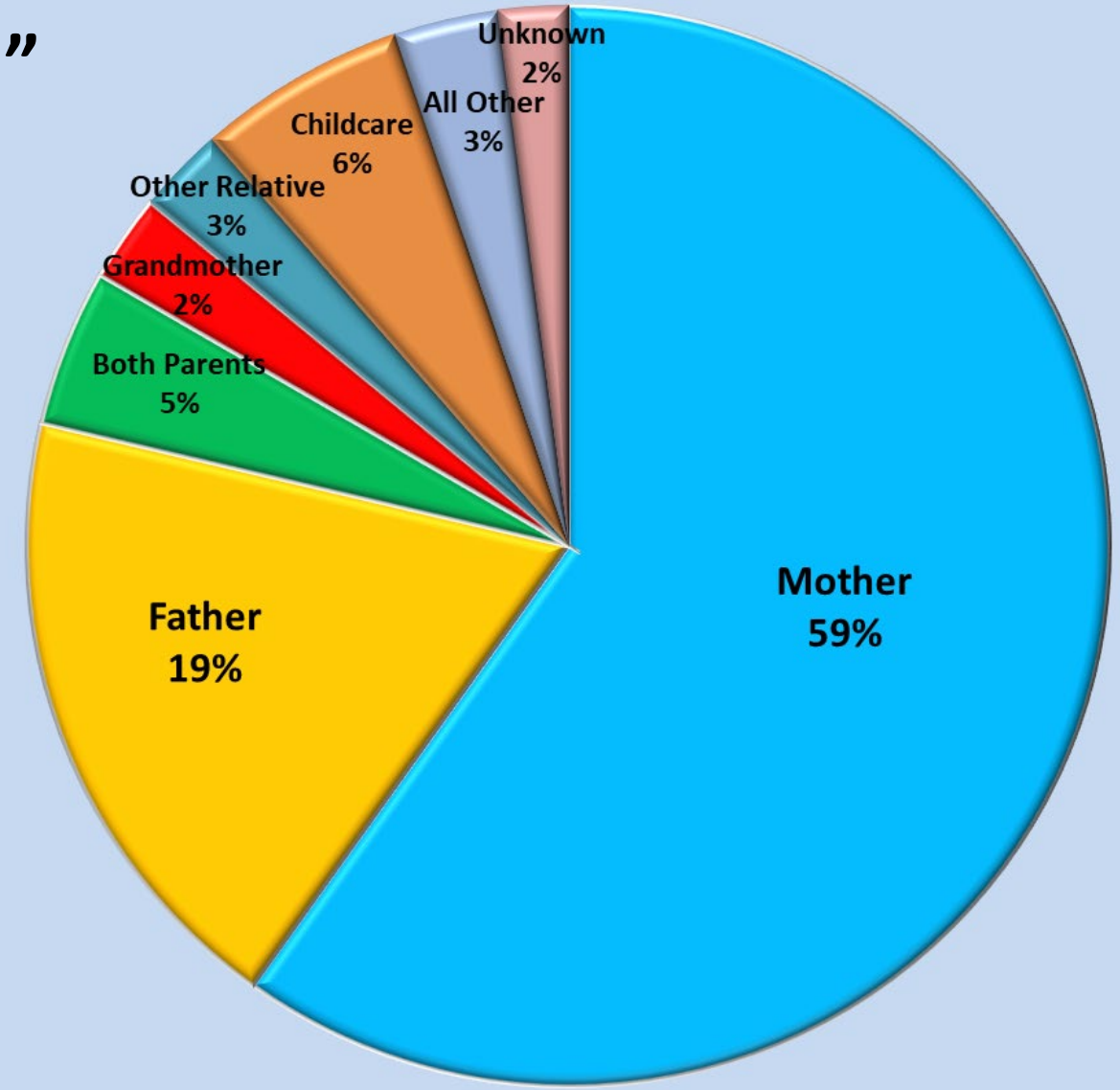


Source:
NoHeatstroke.org

Figure 10c.

Responsible Person for Pediatric Vehicular Heatstroke Deaths:

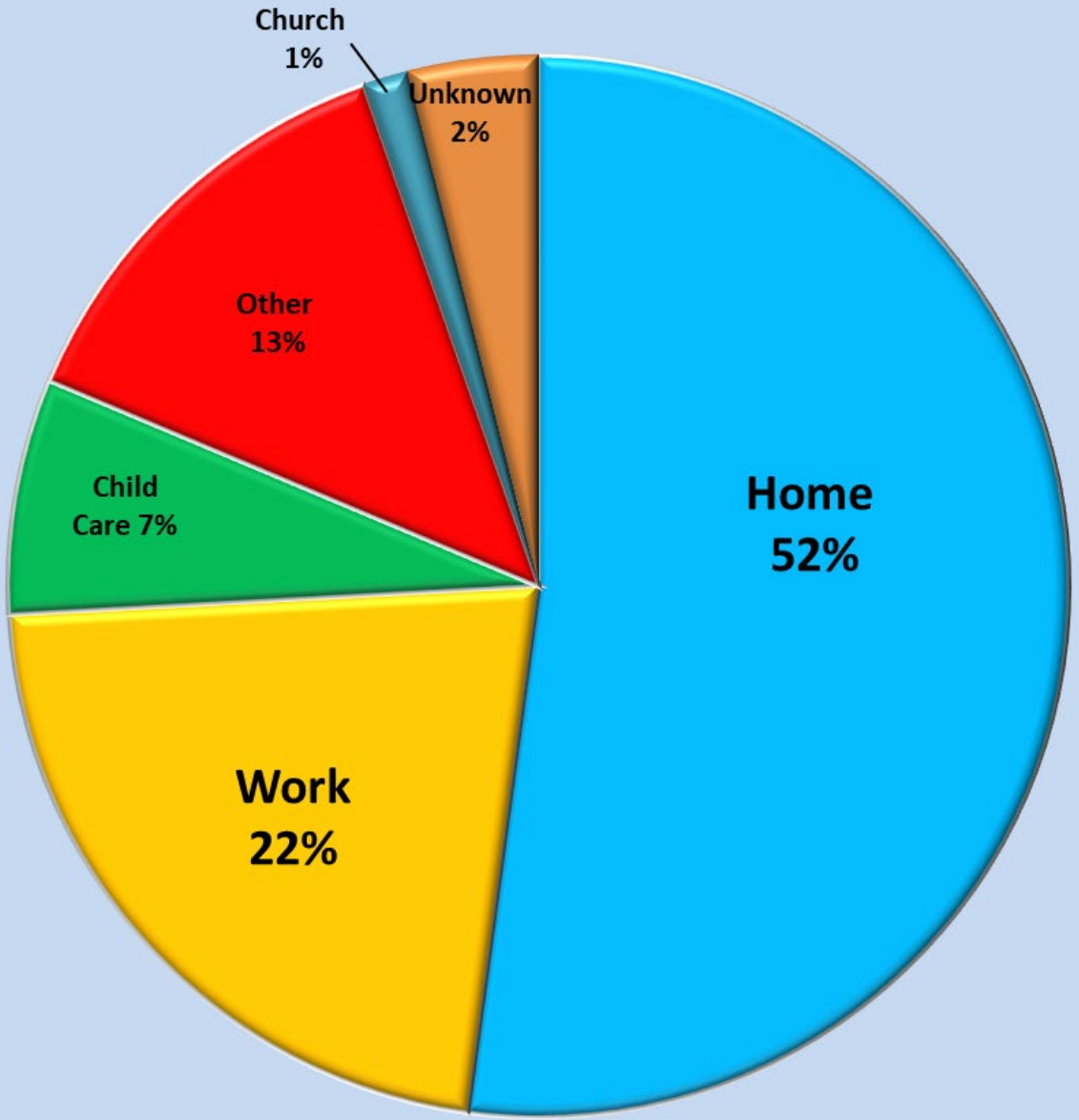
"Knowingly Left"



Source:
NoHeatstroke.org

Figure 11.

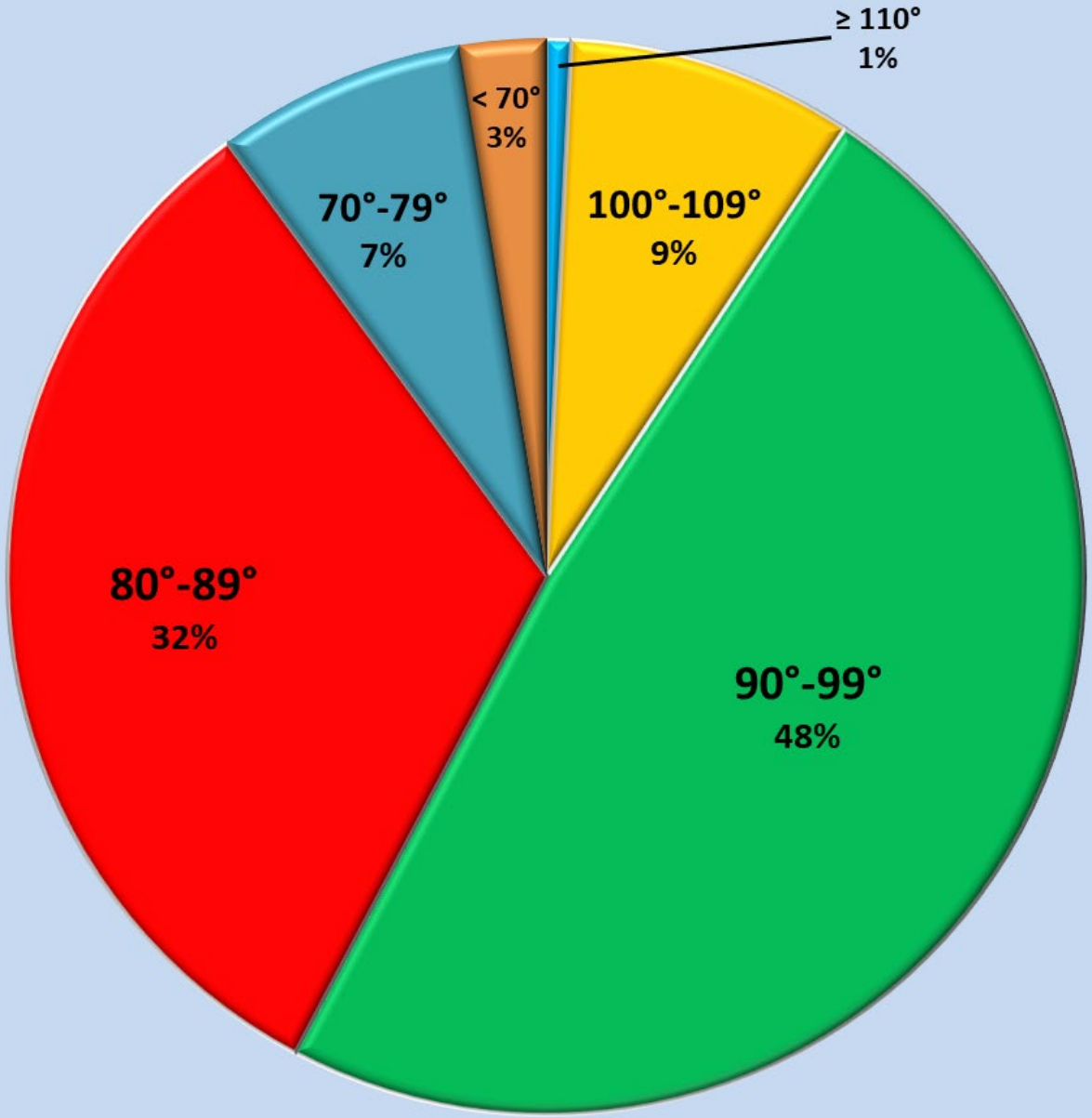
Location of Pediatric Vehicular Heatstroke Deaths



Source:
NoHeatstroke.org

Figure 12.

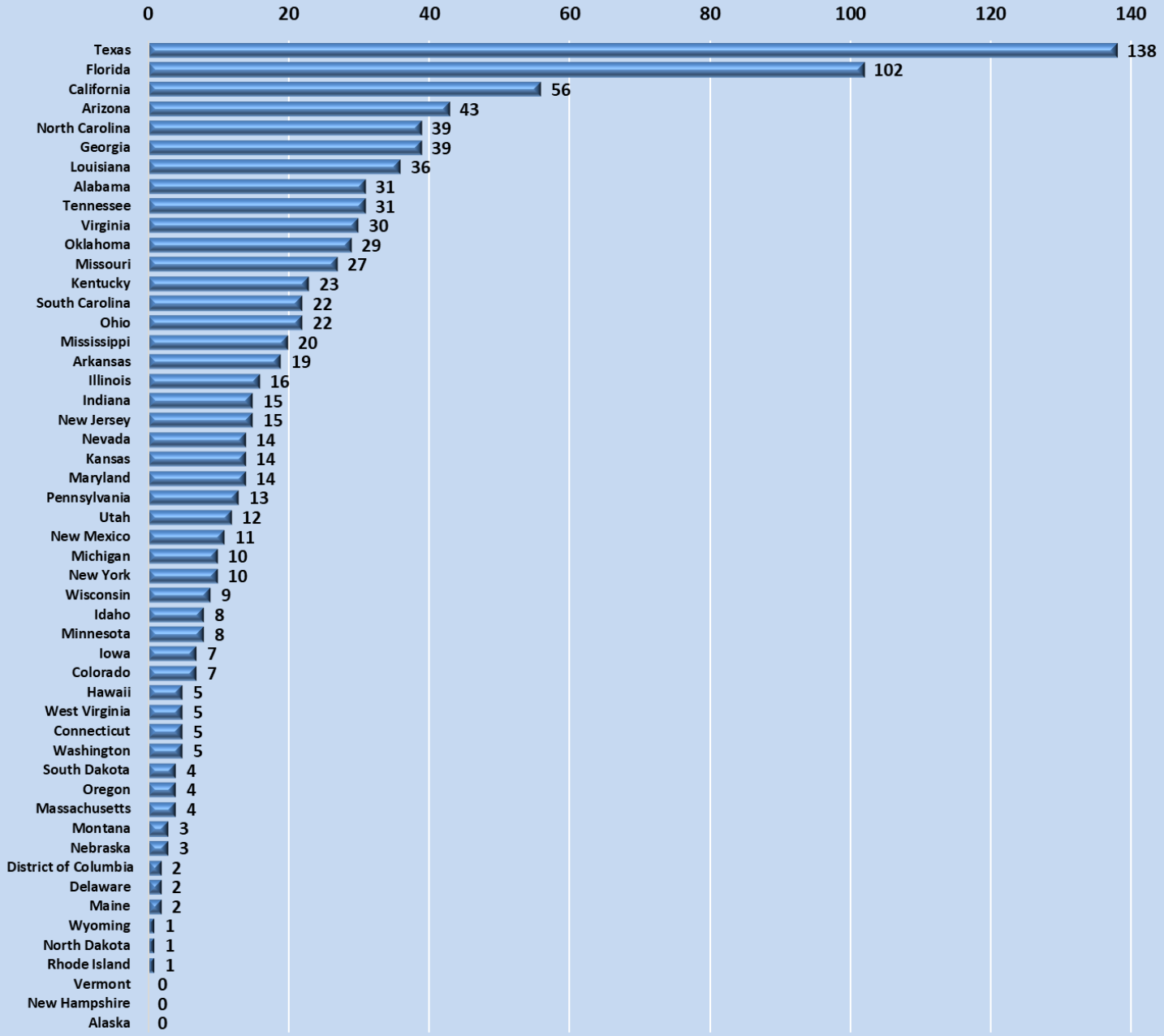
Ambient Temperatures for Pediatric Vehicular Heatstroke Deaths



Source:
NoHeatstroke.org

Figure 13.

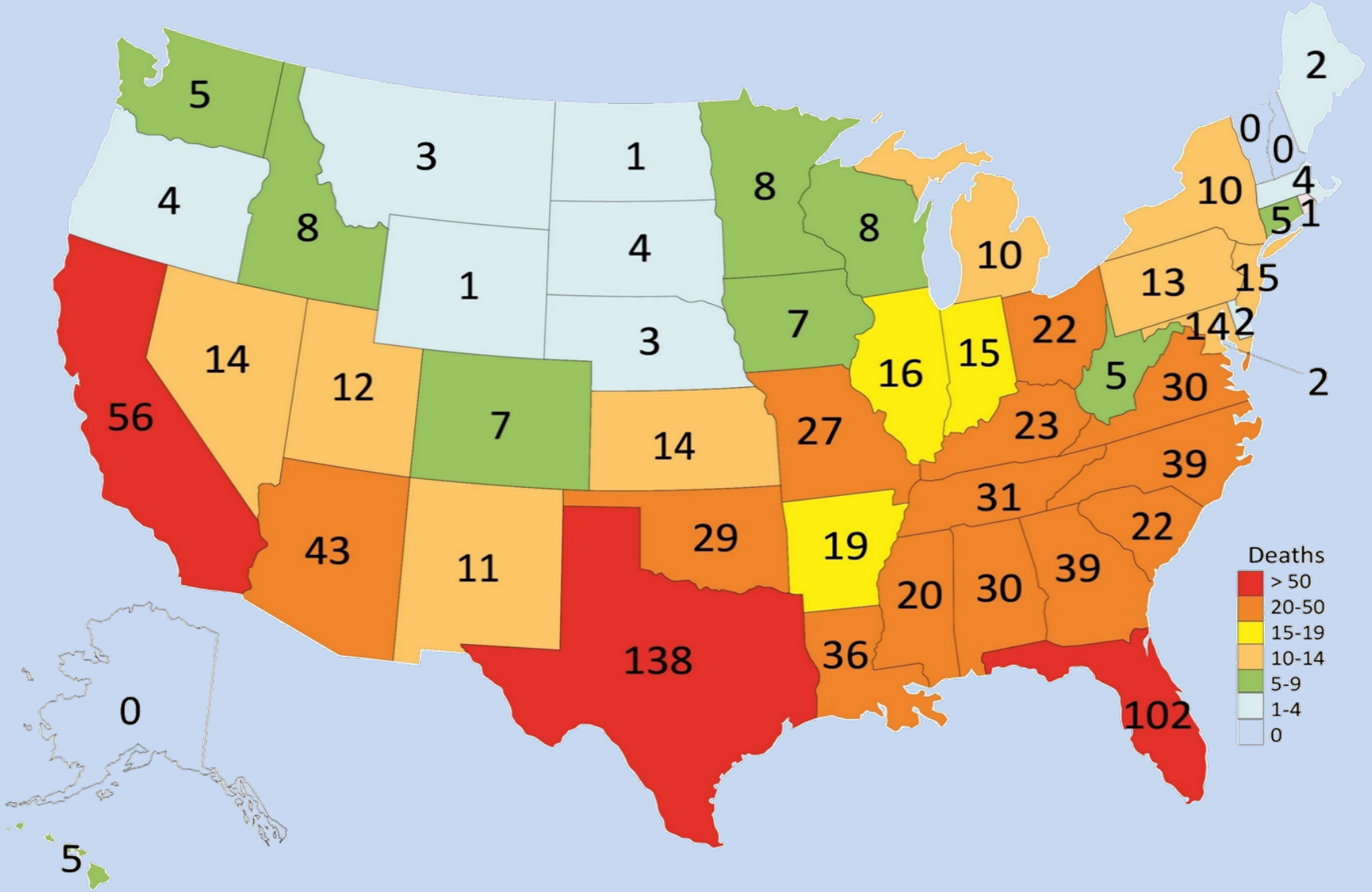
Pediatric Vehicular Heatstroke Deaths by State



Source:
NoHeatstroke.org

Figure 14.

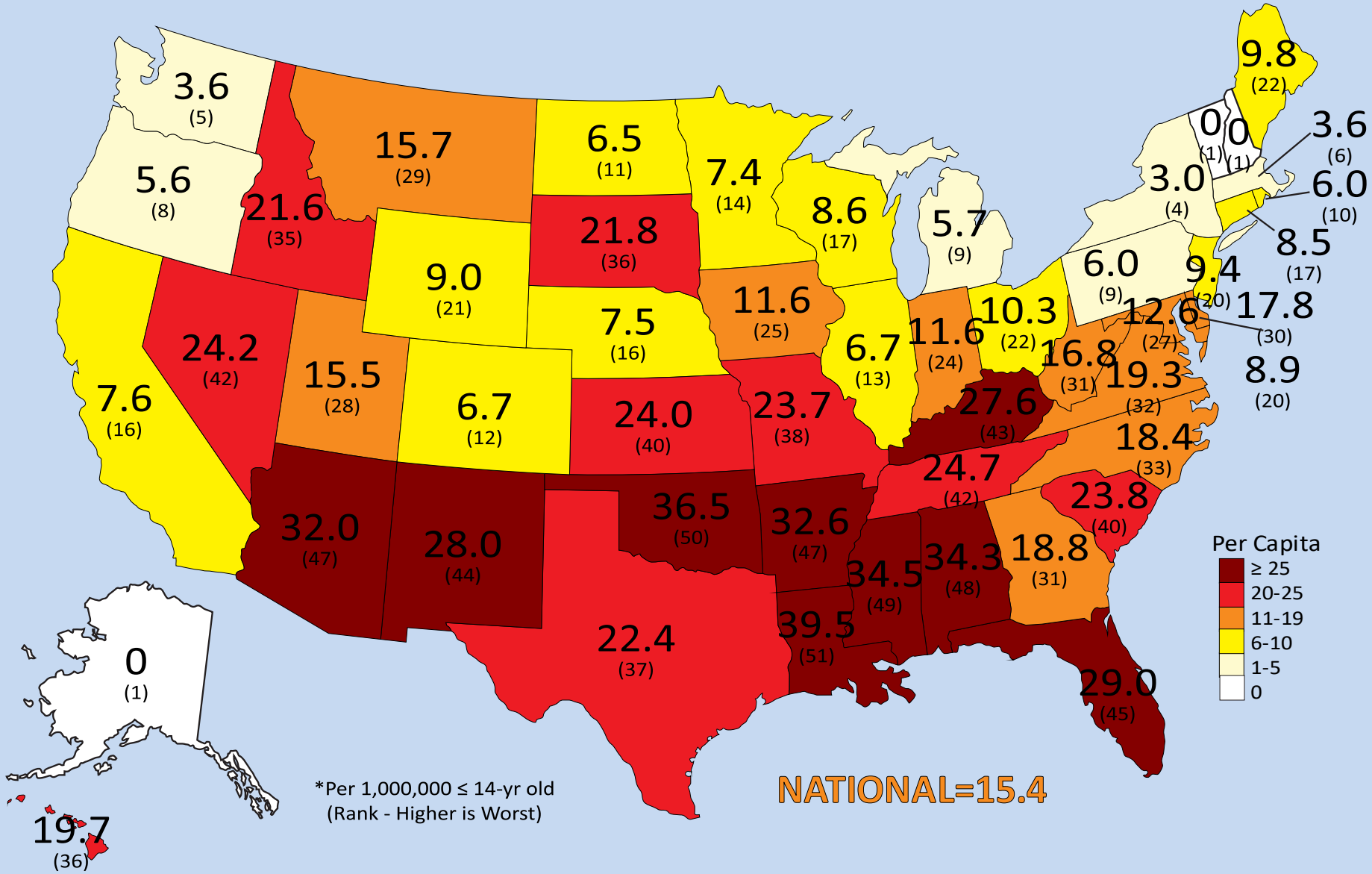
Pediatric Vehicular Heatstroke Deaths by State



Source:
NoHeatstroke.org

Figure 15.

Per Capita Pediatric Vehicular Heatstroke Deaths by State



Source:
NoHeatstroke.org

Figure 16.

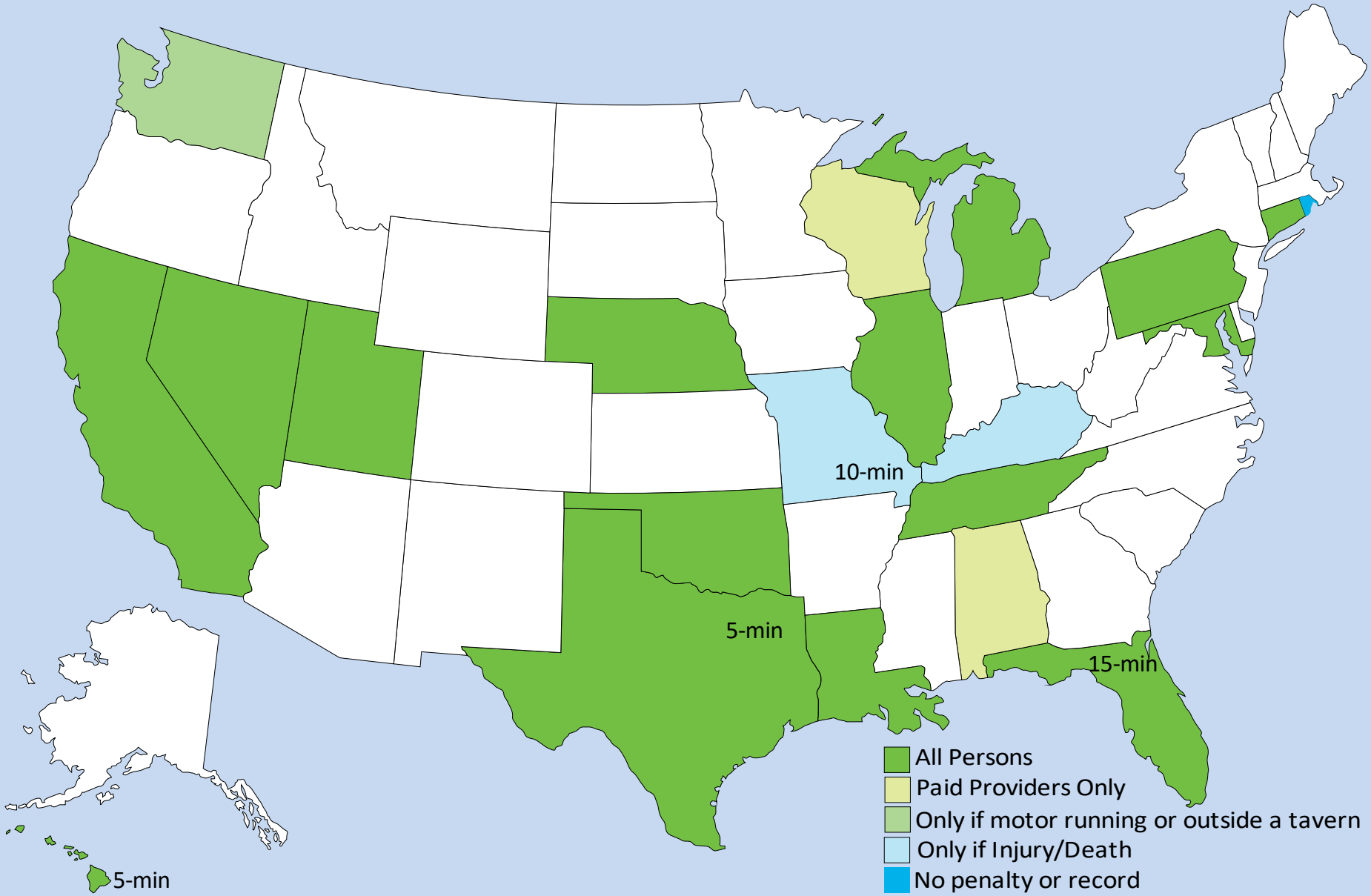
Pediatric Vehicular Heatstroke Circumstances by State

National Averages		Forgotten	Accessed	Left	Unk
		54%	26%	21%	2%
1998-2022 Totals	Highlighted **red** is ≥5% above National Average; highhlighted **blue** is ≤5% below.				
	State	Forgotten	Accessed	Left	Unk
138	Texas	62%	22%	14%	2%
102	Florida	69%	17%	14%	1%
56	California	46%	21%	30%	2%
43	Arizona	53%	26%	21%	0%
39	Georgia	46%	13%	36%	5%
39	North Carolina	49%	26%	23%	3%
36	Louisiana	53%	25%	22%	0%
31	Alabama	55%	29%	16%	0%
31	Tennessee	39%	29%	32%	0%
29	Oklahoma	45%	34%	21%	0%
29	Virginia	76%	3%	21%	0%
27	Missouri	30%	33%	26%	11%
23	Kentucky	43%	43%	13%	0%
22	Ohio	45%	32%	23%	0%
22	South Carolina	50%	18%	32%	0%
20	Mississippi	60%	25%	15%	0%
19	Arkansas	47%	32%	16%	5%
16	Illinois	44%	38%	19%	0%
15	Indiana	53%	33%	13%	0%
15	New Jersey	67%	27%	7%	0%
14	Kansas	50%	36%	7%	7%
14	Maryland	50%	14%	36%	0%
14	Nevada	64%	21%	14%	0%

Source:
NoHeatstroke.org

Figure 17.

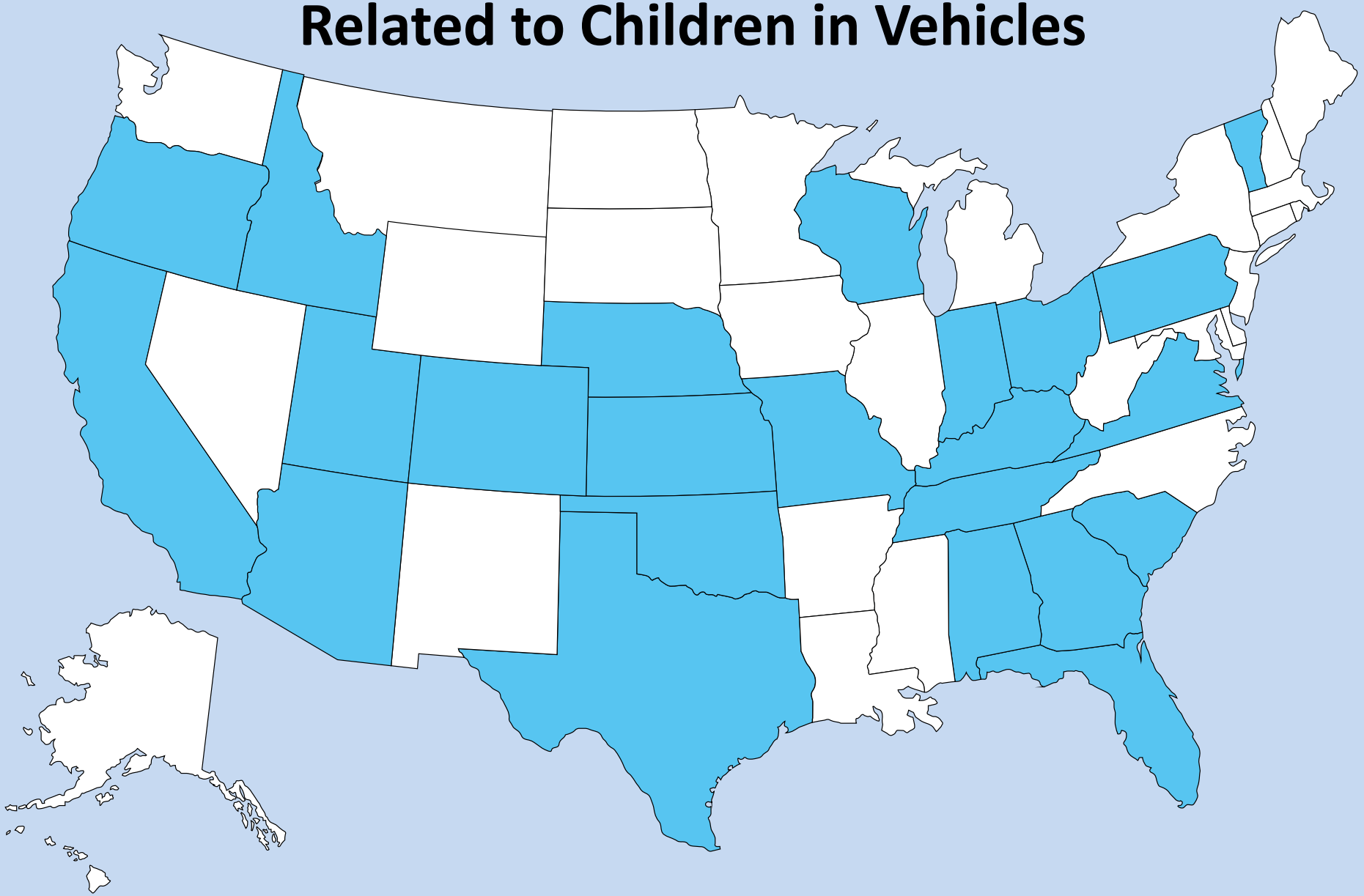
21 States with Unattended Child in Vehicle Laws



Source:
NoHeatstroke.org

Figure 18.

23 States with Good Samaritan Laws Related to Children in Vehicles



Source:
NoHeatstroke.org