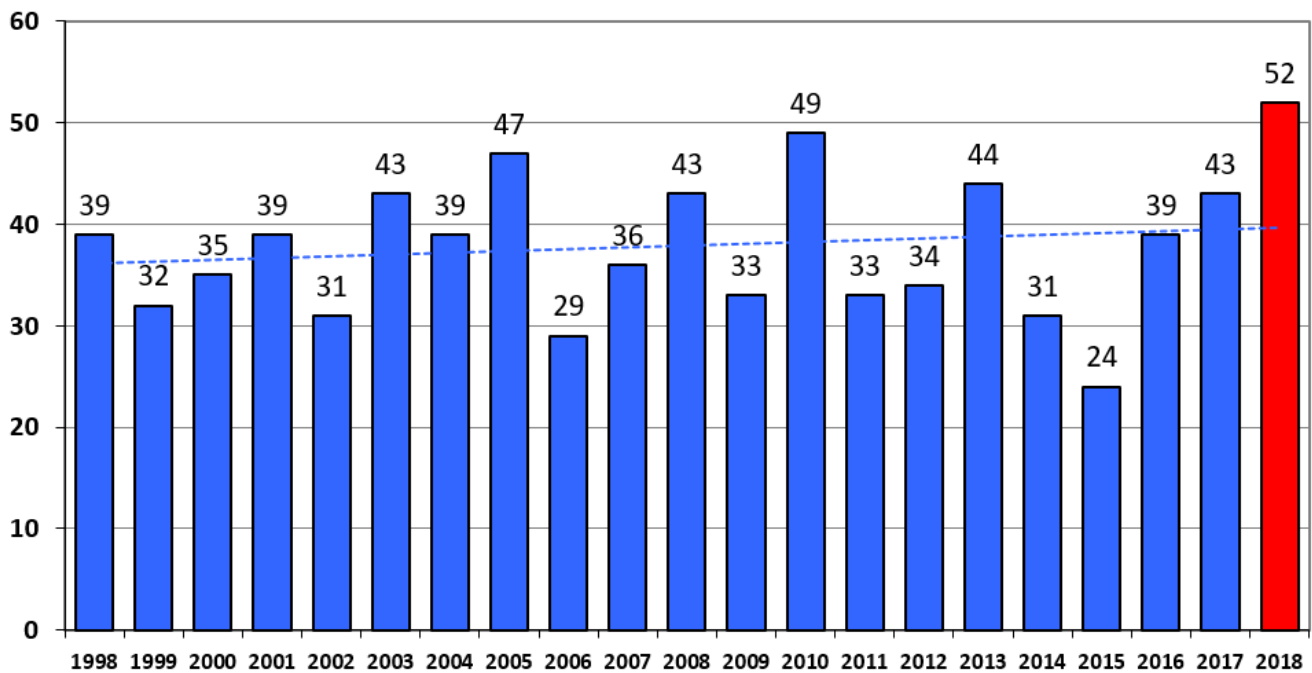


# Trends and Patterns in Pediatric Vehicular Heatstroke Deaths, 1998-2018

## U.S. Child Vehicular Heatstroke Deaths



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On average, 38 children die from heatstroke inside hot vehicles each year. During the period of 1998 through 2018 that's a total of 792 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 and Lexis-Nexus. 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](http://noheatstroke.org) website and its underlying database of the over 795 pediatric vehicular heatstroke 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 users can gain access to the most accurate and up-to-date information.

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## **Contents – Pediatric Vehicular Heatstroke Deaths (1998-2018)**

Fig. 1. Annual Distribution

Fig. 1a-c. Annual Distribution by Circumstances

Fig. 2. Monthly Distribution

Fig. 3. Average Date of First Death

Fig. 4. Monthly Time Line

Fig. 5. Running Total at the end of each Month

Fig. 6. Day of the Week

Fig. 6a-c. Day of the Week by Circumstances

Fig. 7. Age Distribution

Fig. 8. Relationship of Responsible Party

Fig. 9. Distribution of Circumstances

Fig. 10a. Responsible Person in “Forgotten” Circumstances

Fig. 10b. Responsible Person in “Gained Access” Circumstances

Fig. 10c. Responsible Person in “Knowingly Left” Circumstances

Fig. 11. Location of the Vehicle

Fig. 12. Percentage of Deaths by Temperature Range (1998-2018)

Fig. 13. Distribution by State

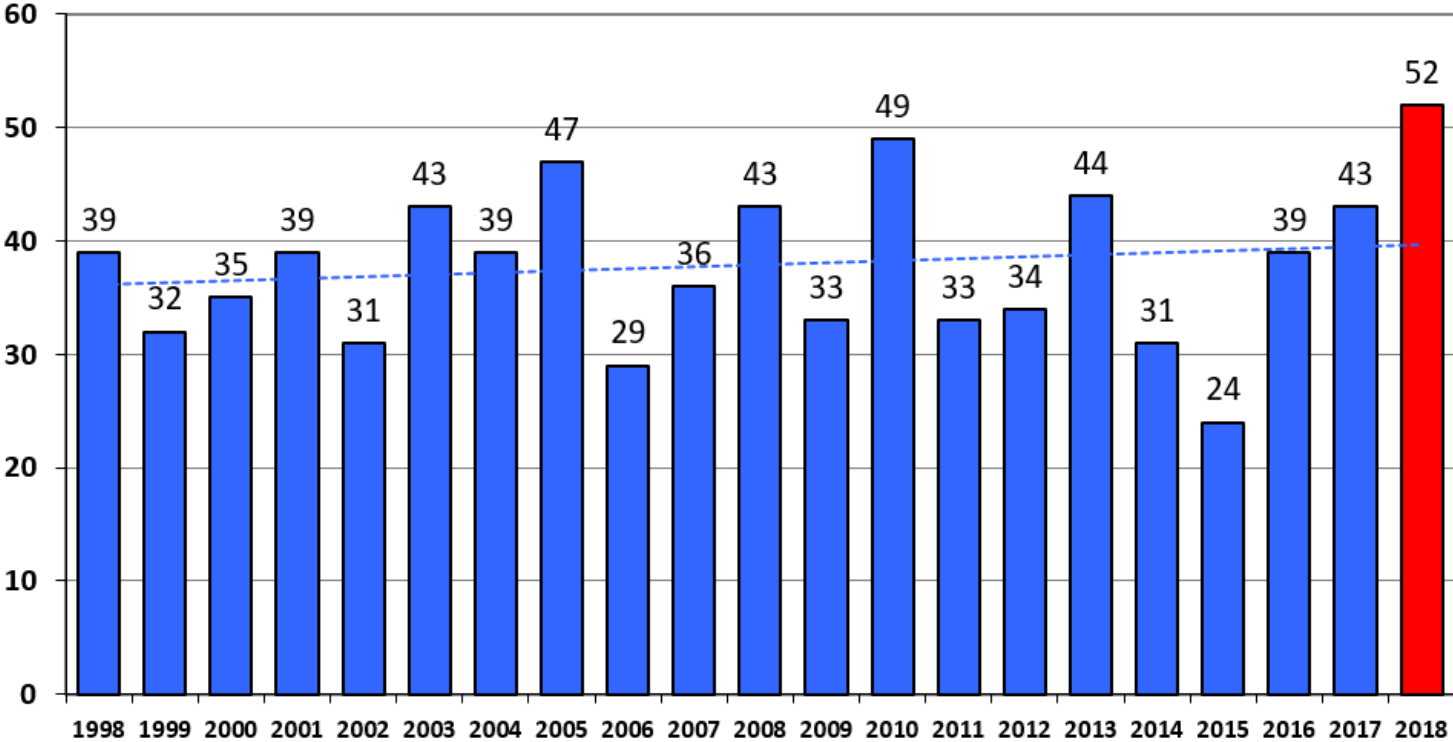
Fig. 14. Per Capita State Distribution

Fig. 15. States with Unattended Child in Vehicle Laws (2018)

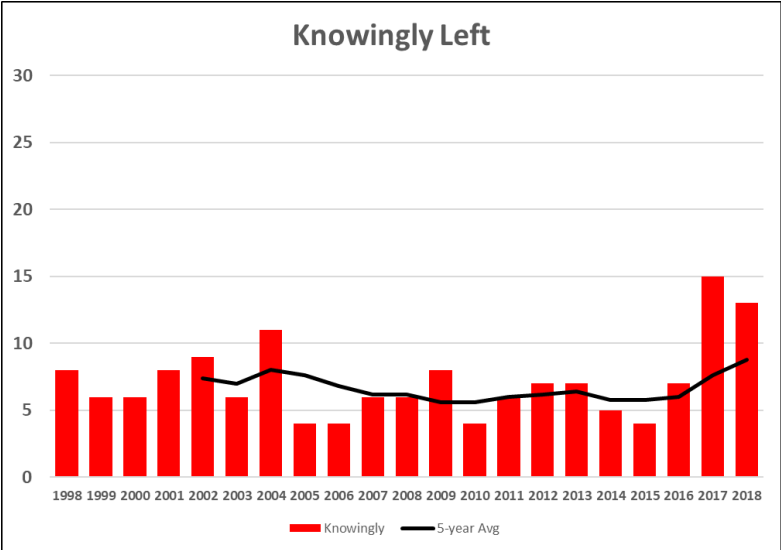
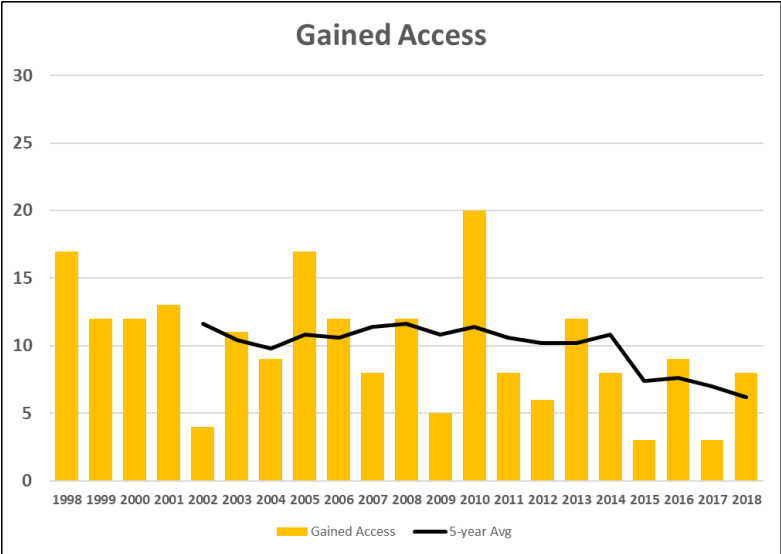
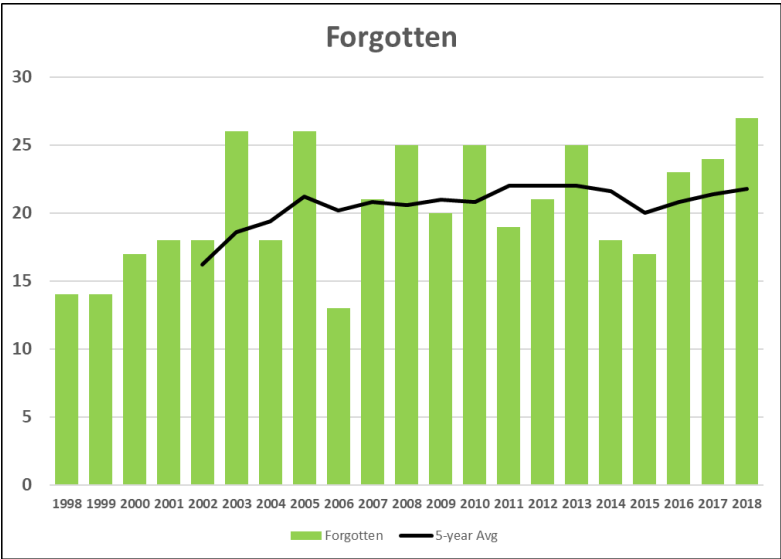
Fig. 16. States with “Good Samaritan” Child in Vehicle Laws (2018)

Fig. 1. Annual Distribution of Pediatric Vehicular Heatstroke Deaths (1998-2018)

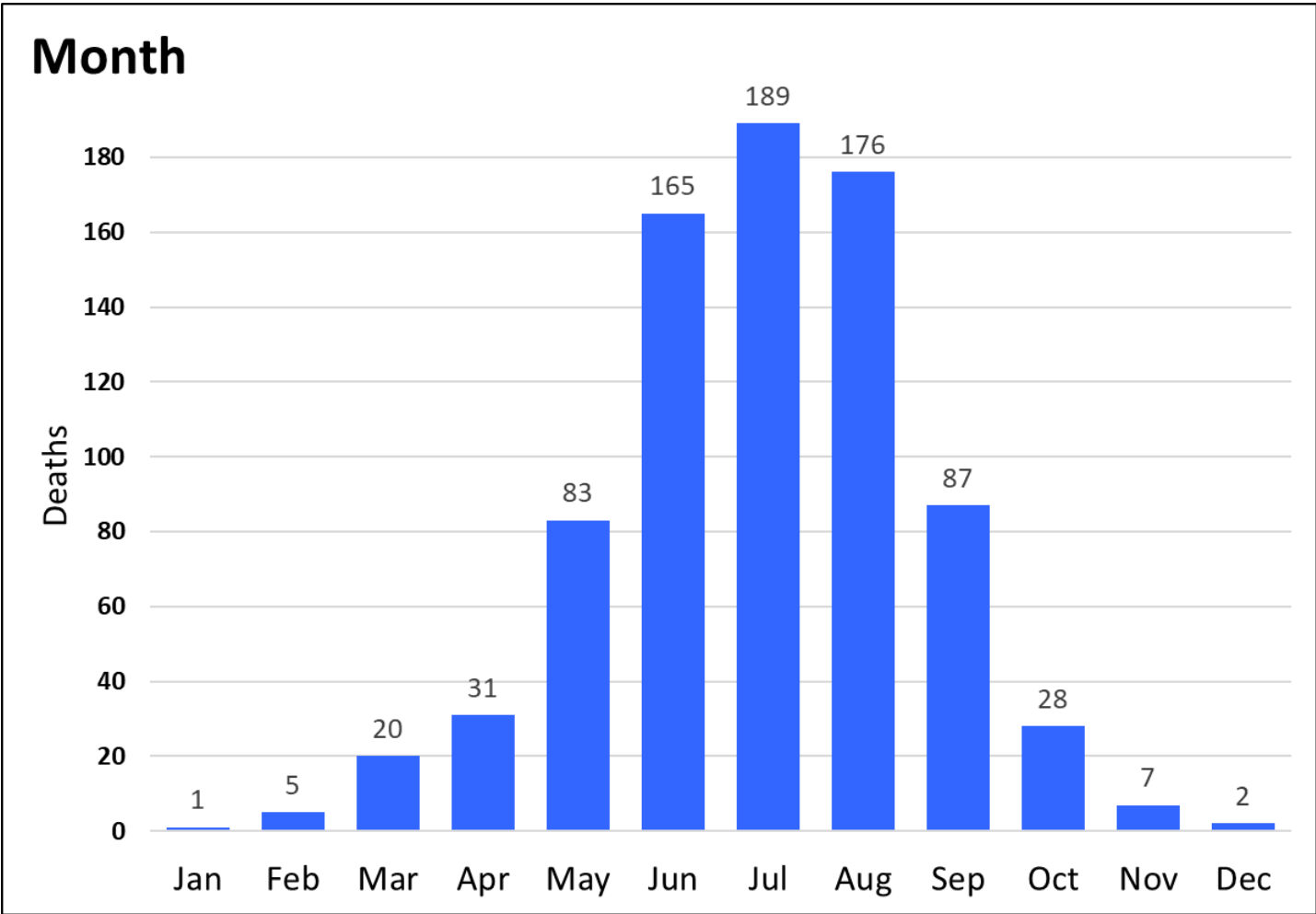
## U.S. Child Vehicular Heatstroke Deaths



**Fig. 1a, 1b, 1c. Annual Distribution of Pediatric Vehicular Heatstroke Death by Circumstance; with 5-year running average (1998-2018)**



**Fig. 2. Monthly Distribution of Pediatric Vehicular Heatstroke Death (1998-2018)**



**Fig. 3. Date of First US Pediatric Vehicular Heatstroke Death (1998-2018)**

<b>Date of 1st Death</b>	
<b>Year</b>	<b>Date</b>
1998	24-Apr
1999	16-Mar
2000	6-Mar
2001	21-Mar
2002	14-Mar
2003	6-Apr
2004	5-Feb
2005	13-May
2006	4-Apr
2007	17-Mar
2008	15-Feb
2009	9-Mar
2010	8-Mar
2011	8-Mar
2012	12-May
2013	10-May
2014	16-Apr
2015	20-Apr
2016	12-Jan
2017	6-Feb
2018	28-Feb
<b>Average</b>	<b>19-Mar</b>

**Fig. 4. Monthly Timeline of Pediatric Vehicular Heatstroke Deaths (1998-2018)**

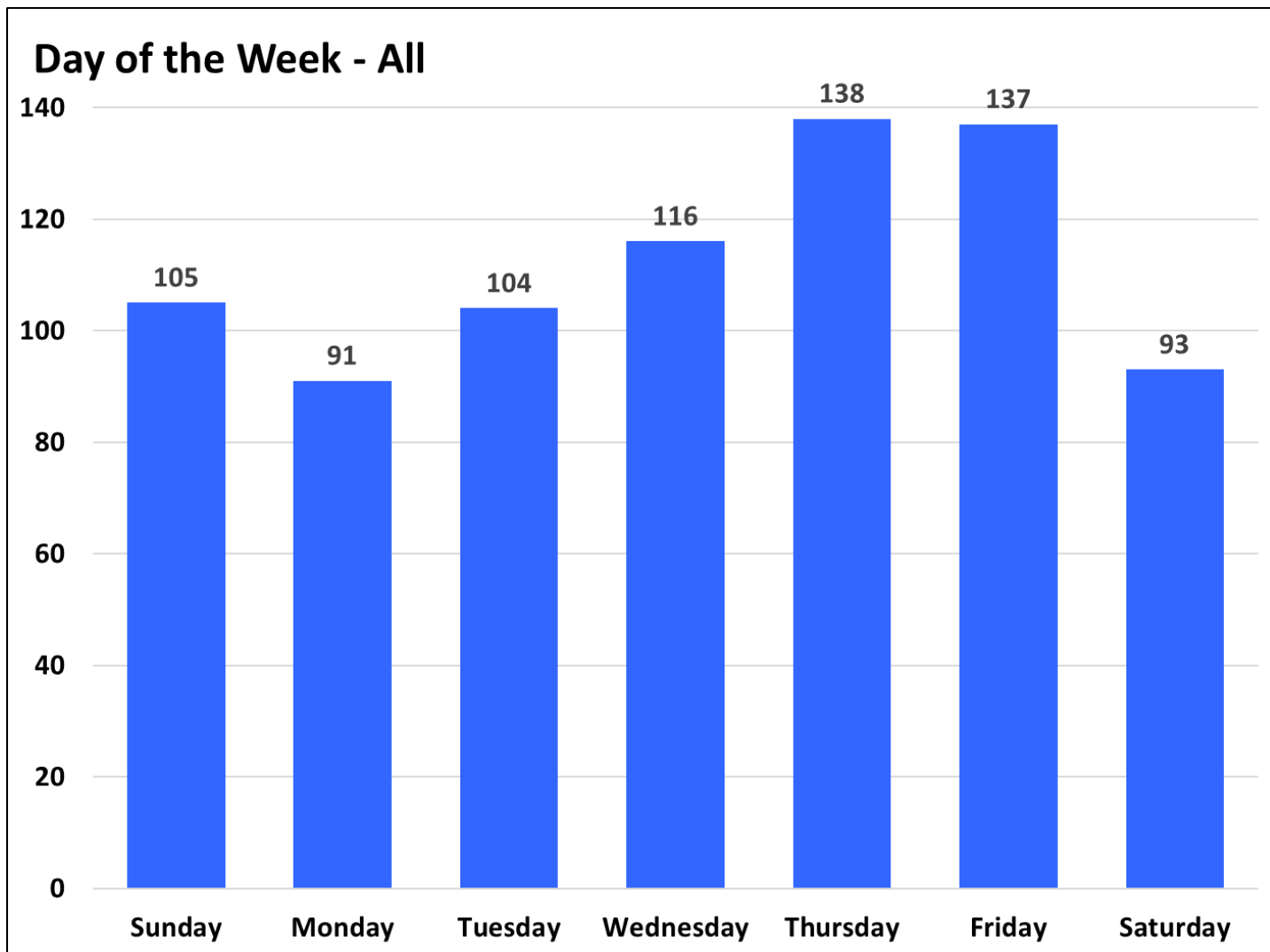
	Monthly Totals													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	
1998				2	4	9	9	11	3				1	39
1999			1		2	8	16	4	1					32
2000			1		7	6	7	10	3	1				35
2001			2	1	4	8	10	10	2	1	1			39
2002			1		1	7	9	7	4	2				31
2003				2	4	10	10	12	2	3				43
2004		1	2	5	4	4	9	7	6	1				39
2005					3	9	12	11	10	2				47
2006				2	2	6	6	10			3			29
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	5	1				49
2011			2		6	9	8	3	3	2				33
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					24
2016	1		1	3	4	7	9	4	6	4				39
2017		2	2	3	3	9	13	7	2	2				43
2018		1	2	1	8	11	11	9	9					52
														<b>Total 1998-2018 &gt; 795</b>
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk	Unk
<b>Avg.</b>	0	0	1	1	4	8	9	8	4	1	0	0	0	38
<b>Max.</b>	1	2	2	5	8	11	16	15	10	4	3	1	1	49
<b>Min.</b>	0	0	0	0	1	4	3	3	1	1	1	1	1	24



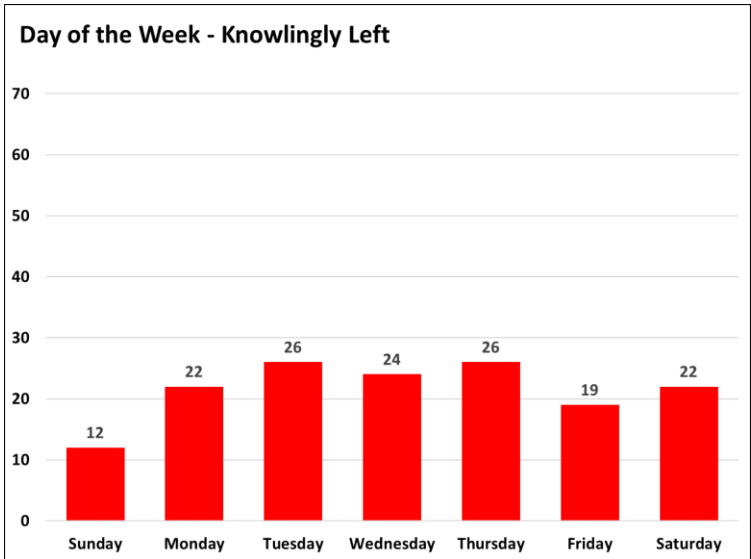
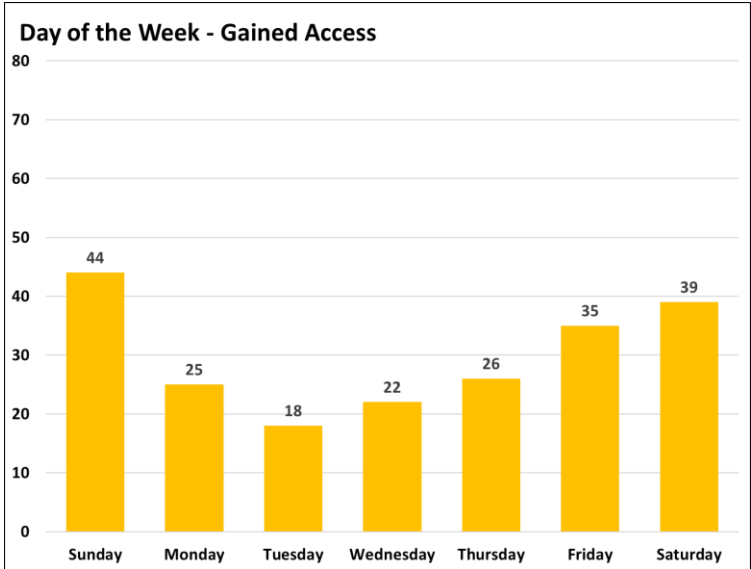
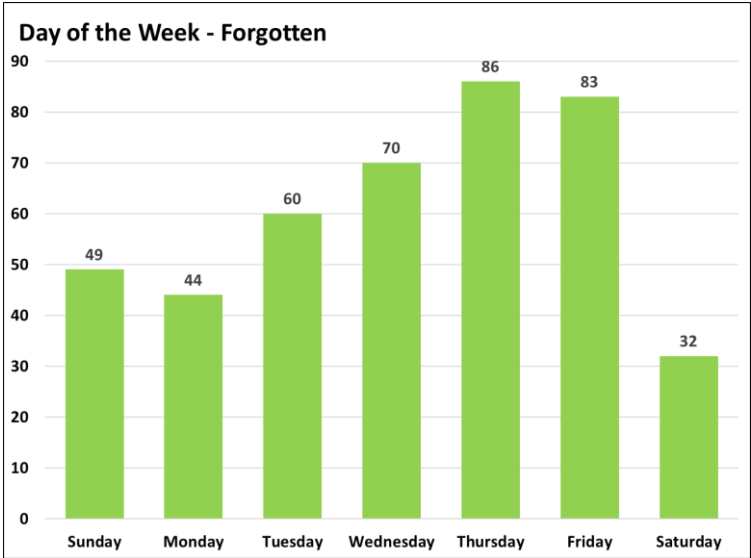
**Fig. 5. Pediatric Vehicular Heatstroke Deaths, Running Total at the end of each Month (1998-2018)**

	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	24	35	38	38	38	38	39
1999	0	0	1	1	3	11	27	31	32	32	32	32	32
2000	0	0	1	1	8	14	21	31	34	35	35	35	35
2001	0	0	2	3	7	15	25	35	37	38	39	39	39
2002	0	0	1	1	2	9	18	25	29	31	31	31	31
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	16	26	26	26	29	29	29
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	48	49	49	49	49
2011	0	0	2	2	8	17	25	28	31	33	33	33	33
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	24	24	24
2016	1	1	2	5	9	16	25	29	35	39	39	39	39
2017	0	2	4	7	10	19	32	39	41	43	43	43	43
2018	0	1	3	4	12	23	34	43	52	52	52	52	52
<b>Avg.</b>	0	0	1	3	7	15	24	32	36	37	38	38	38
<b>Max.</b>	1	2	4	8	12	23	34	43	52	52	52	52	52
<b>Min.</b>	0	0	0	0	2	8	11	19	24	24	24	24	24

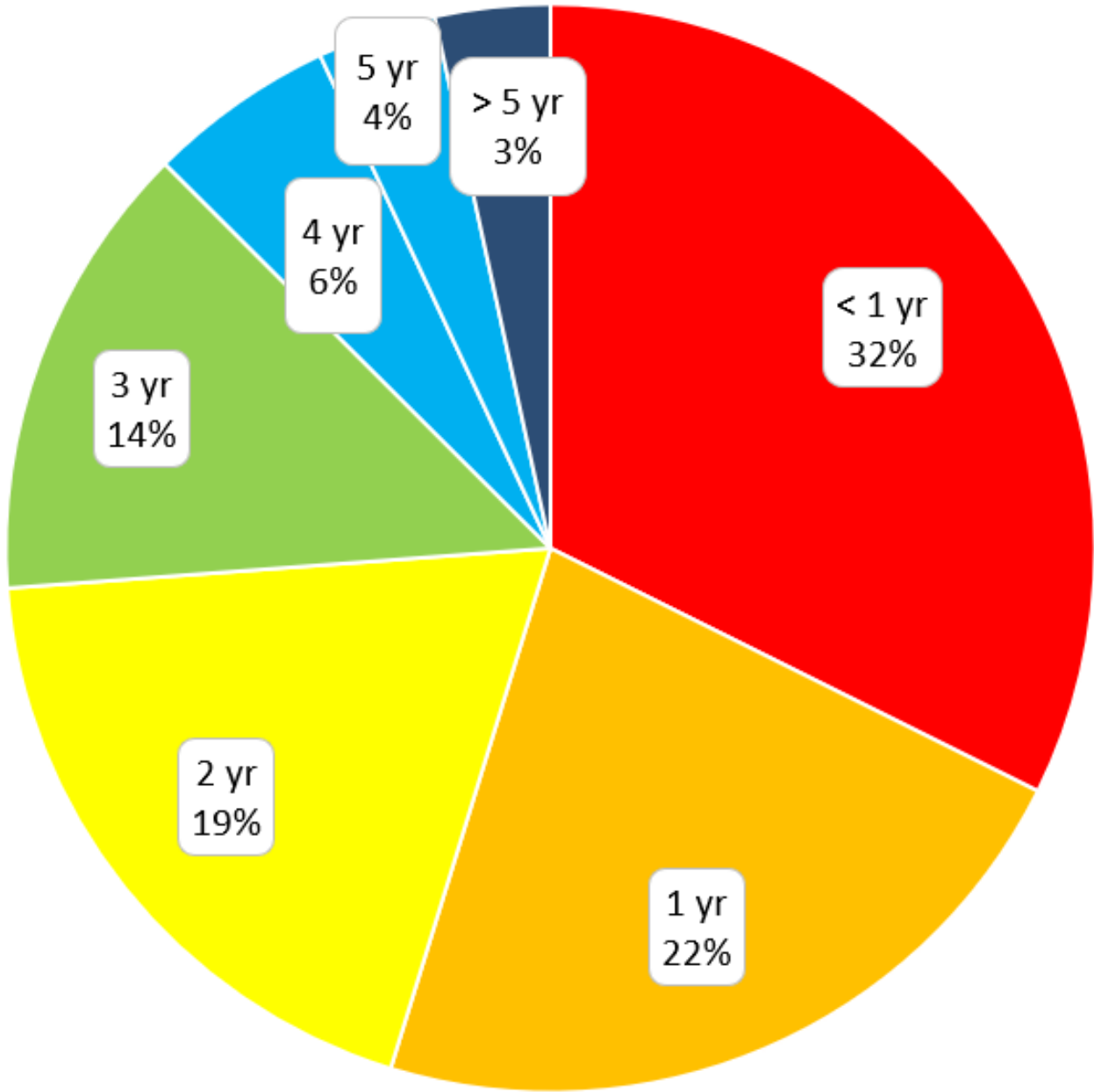
**Fig. 6. Day of the Week Distribution of Pediatric Vehicular Heatstroke Deaths (1998-2018)**



**Fig. 6a, 6b, 6c. Day of the Week Distribution of Pediatric Vehicular Heatstroke Death by Circumstance (1998-2018)**

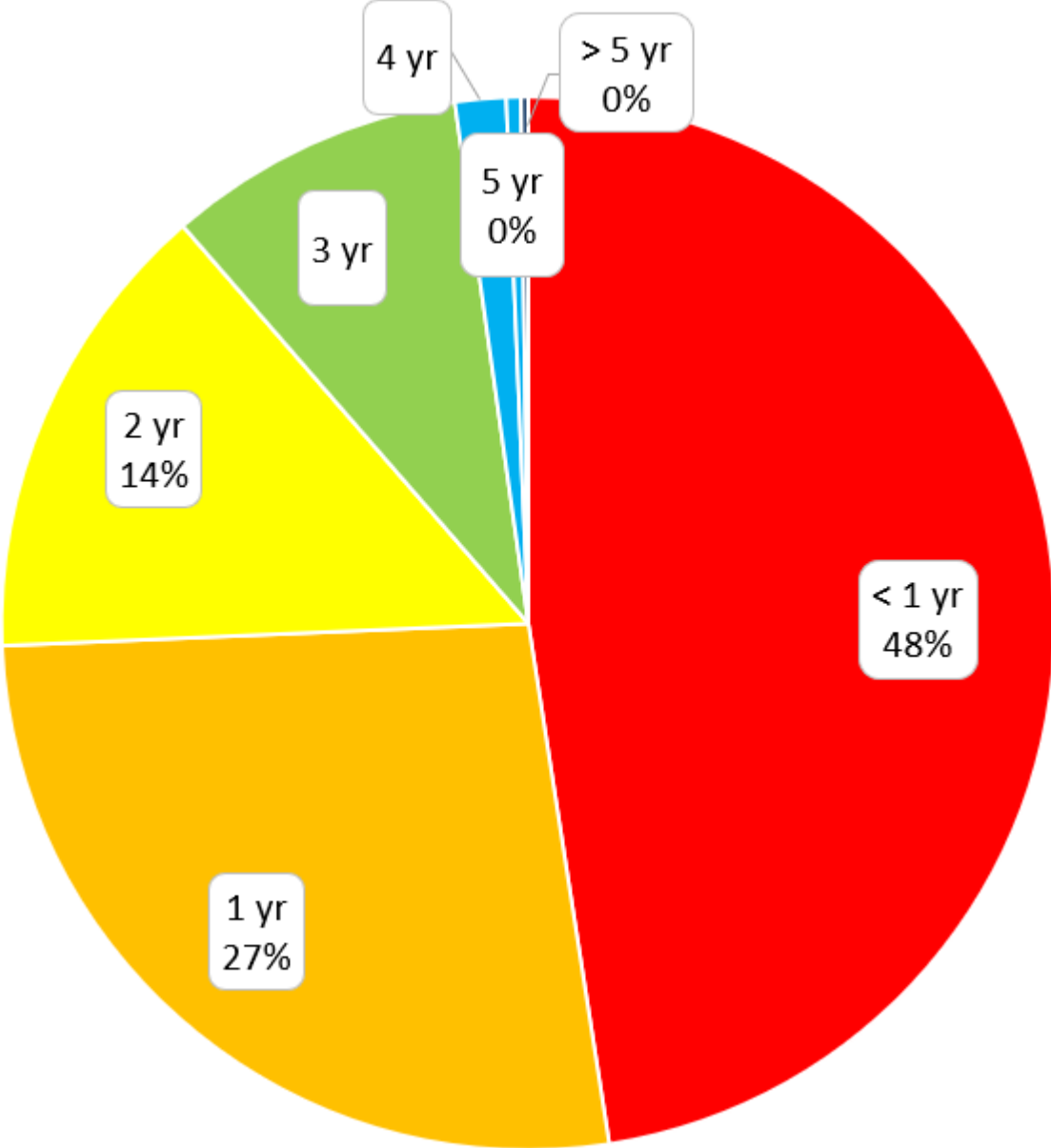


**Fig. 7. Age Distribution of Pediatric Vehicular Heatstroke Deaths (1998-2018)**

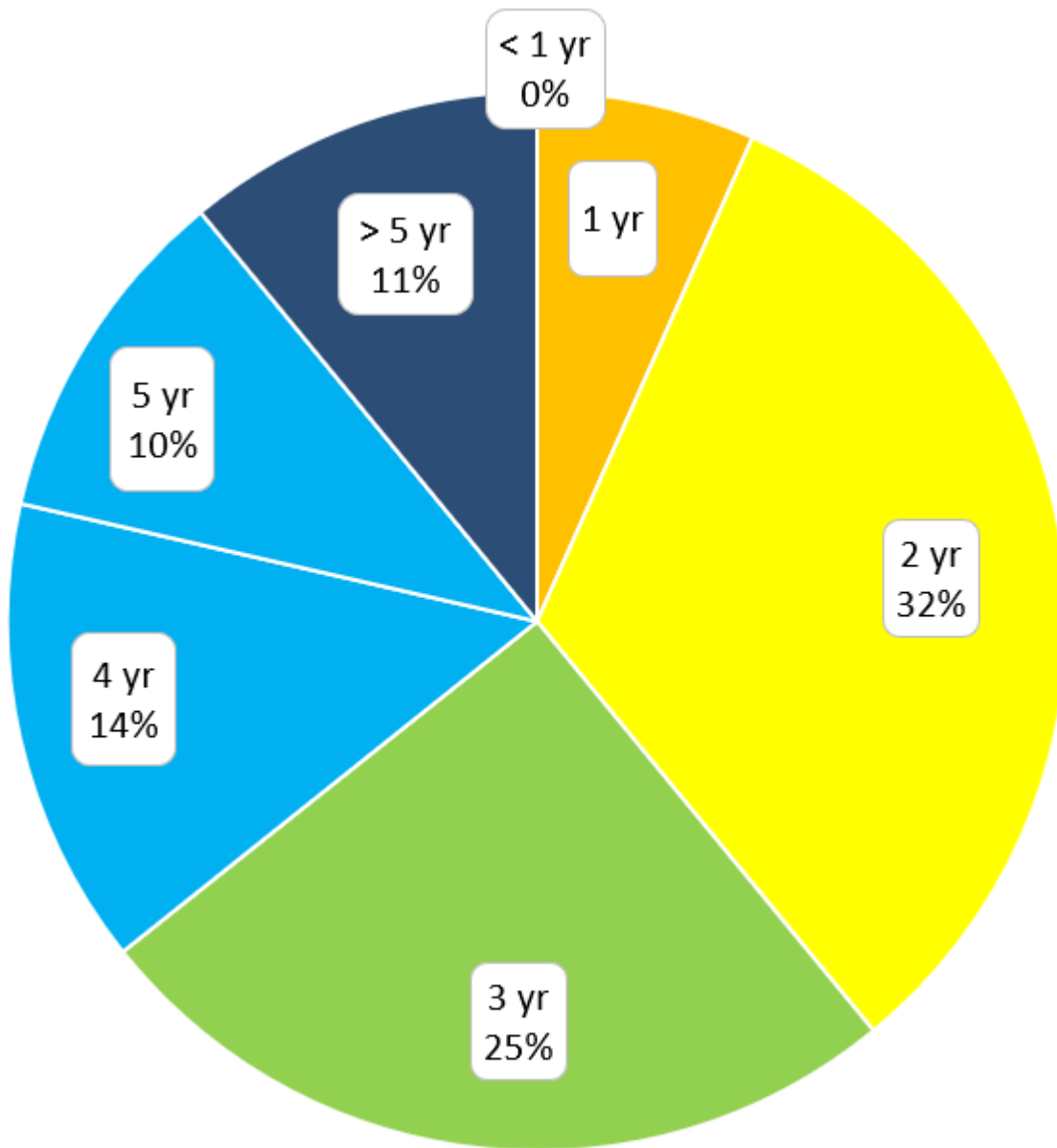


**Average Age: 21 months**

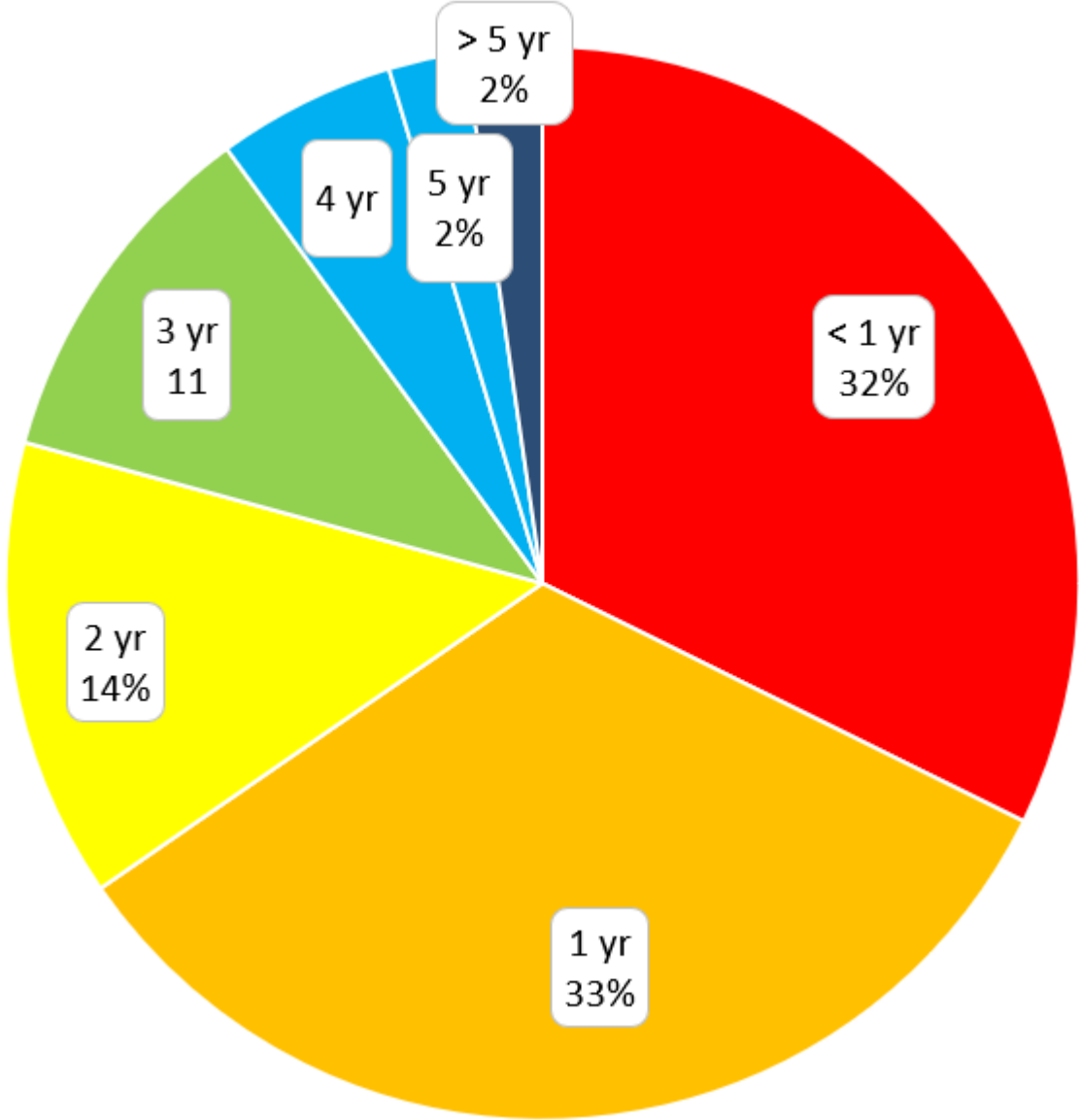
**Fig. 7a. Age Distribution of “Forgotten” Pediatric Vehicular Heatstroke Deaths (1998-2018)**



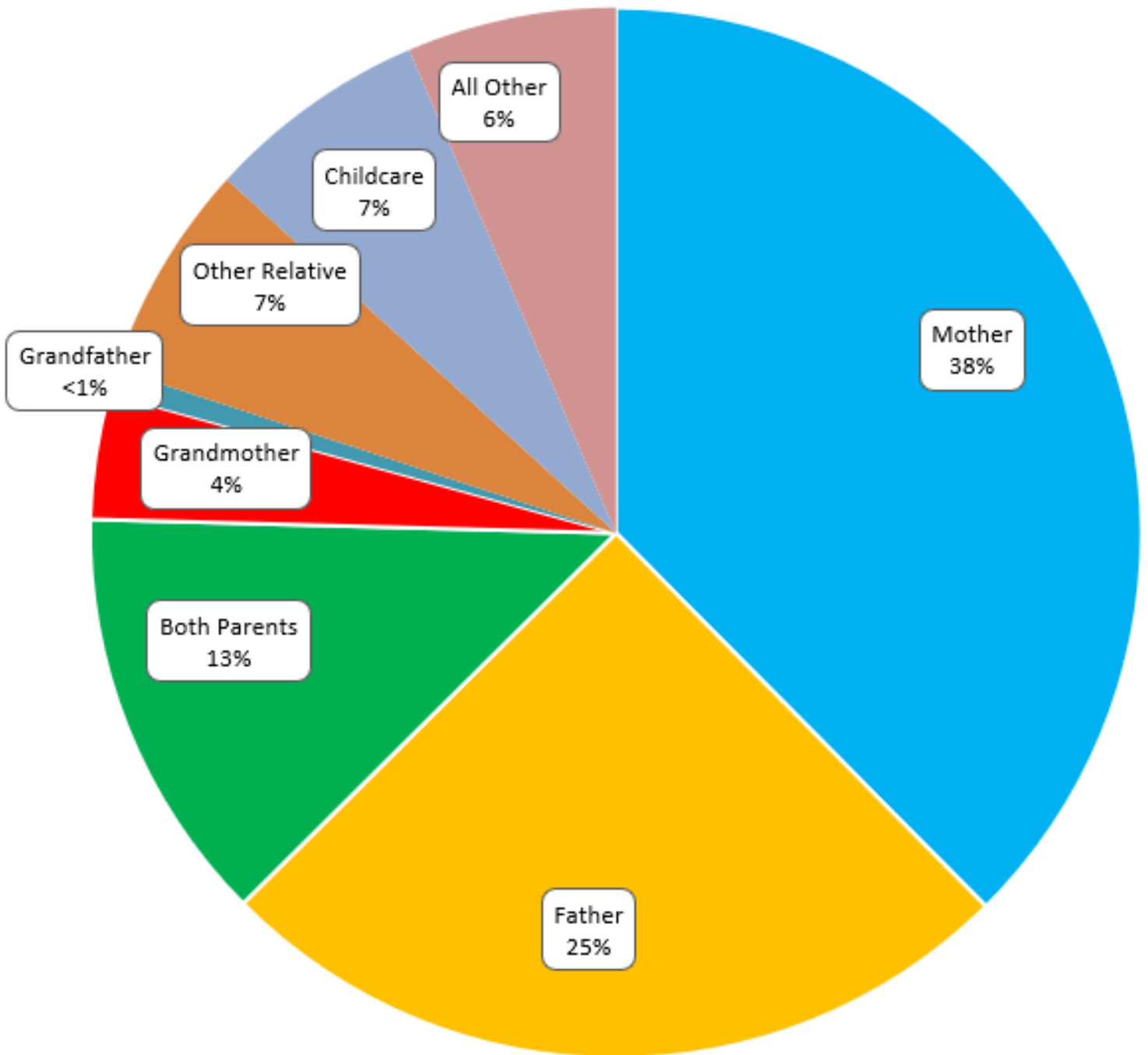
**Fig. 7b. Age Distribution of “Gained Access” Pediatric Vehicular Heatstroke Deaths (1998-2018)**



**Fig. 7c. Age Distribution of “Knowingly Left” Pediatric Vehicular Heatstroke Deaths (1998-2018)**



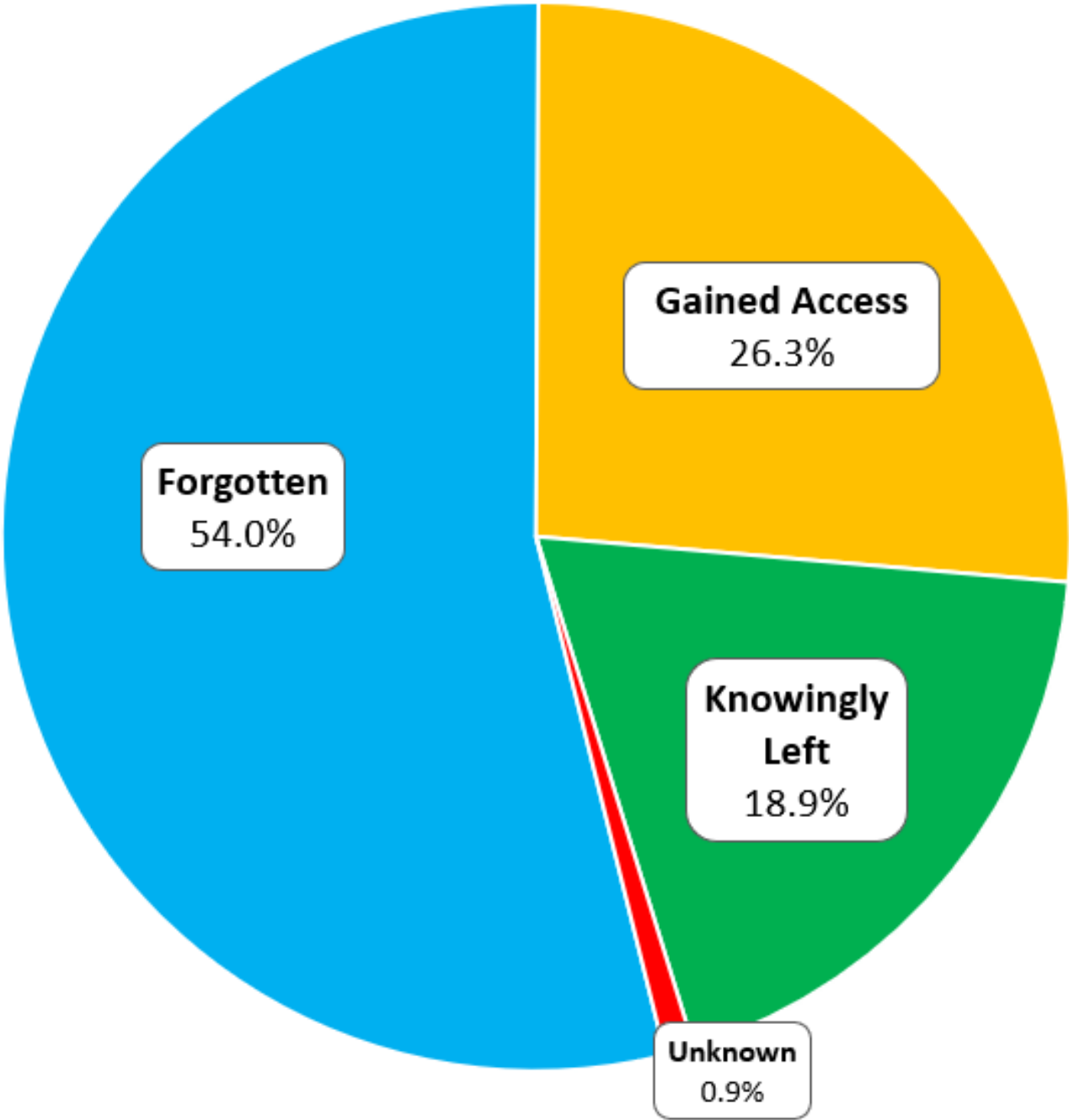
**Fig. 8. Relationship of Responsible Party of Pediatric Vehicular Heatstroke Deaths (1998-2018)**



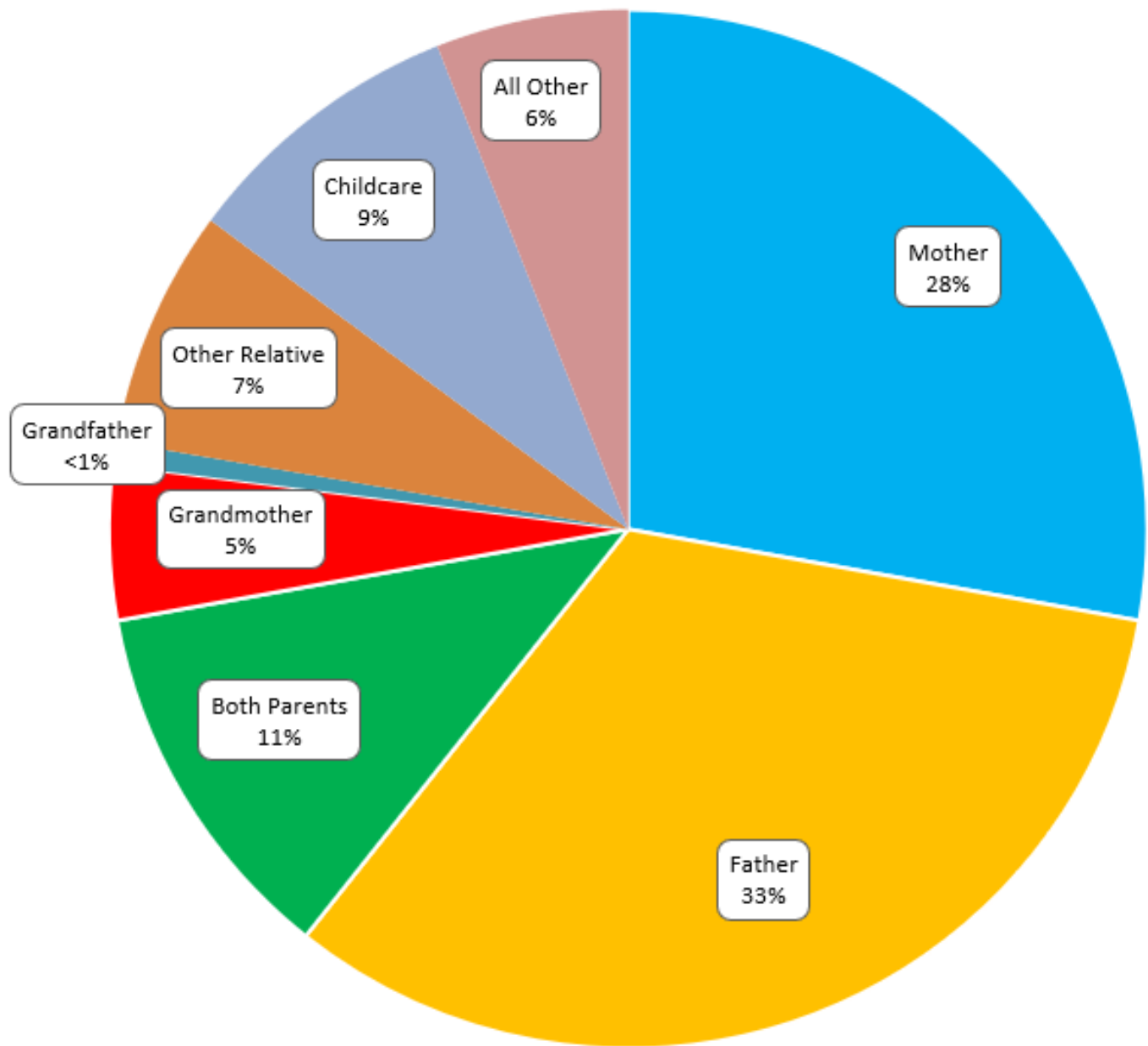


**Fig. 9. Circumstances Resulting in Pediatric Vehicular Heatstroke Deaths (1998-2018)**

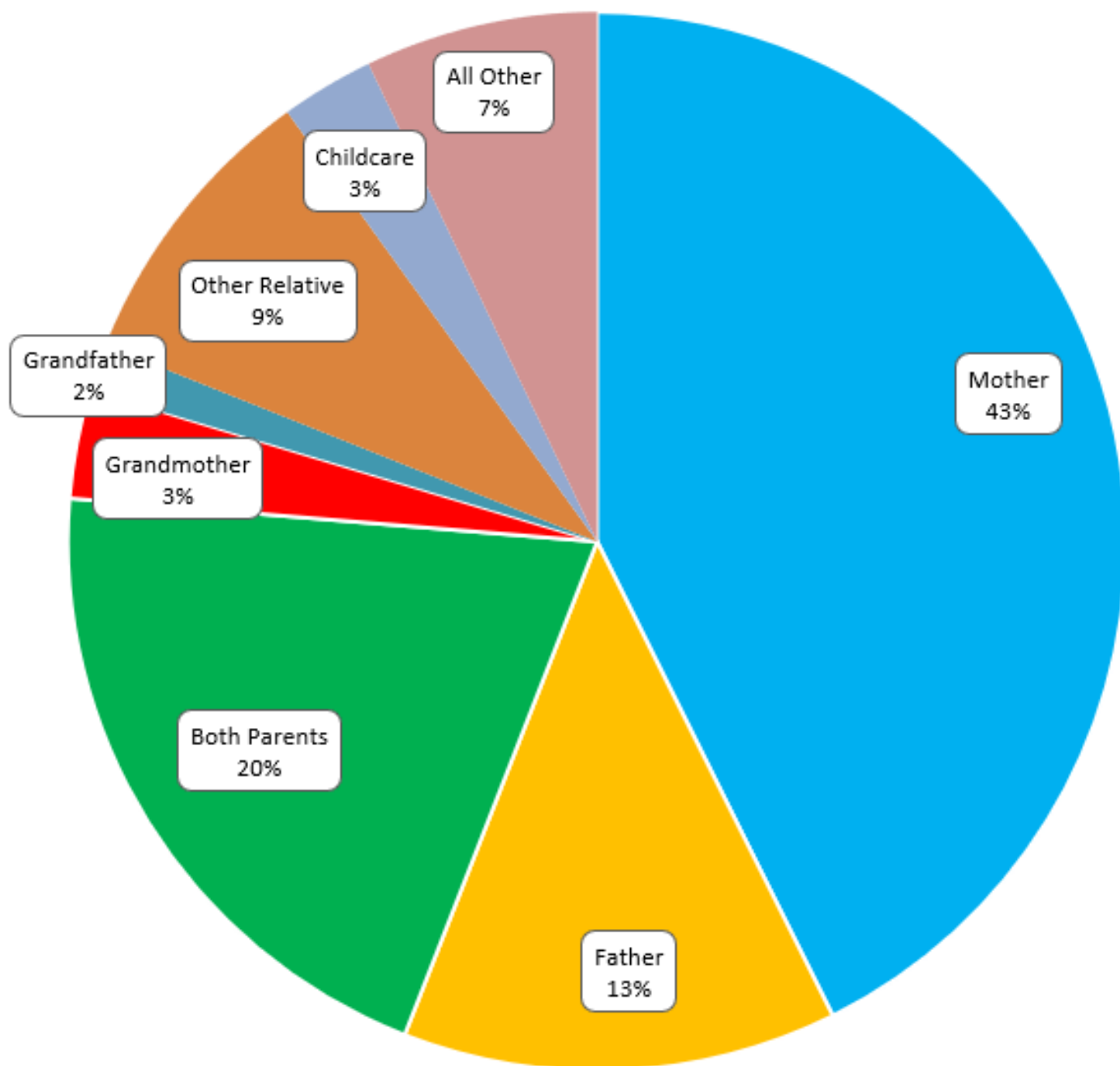
Note: 44% of the deaths in the “Forgotten” category were on their way to Childcare/Preschool.



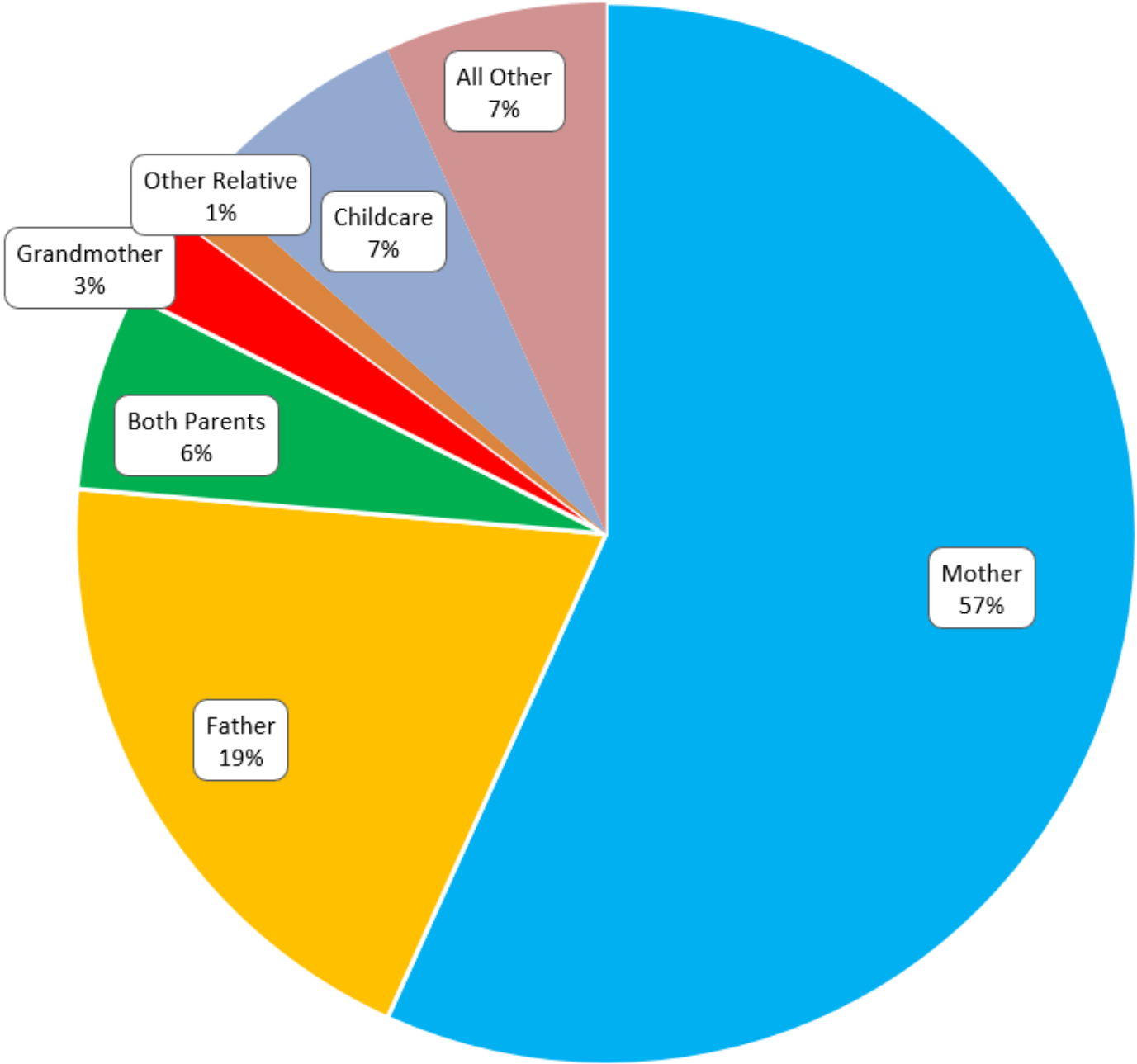
**Fig. 10a. Responsible Person in “Forgotten” Circumstances of Pediatric Vehicular Heatstroke Deaths (1998-2018)**



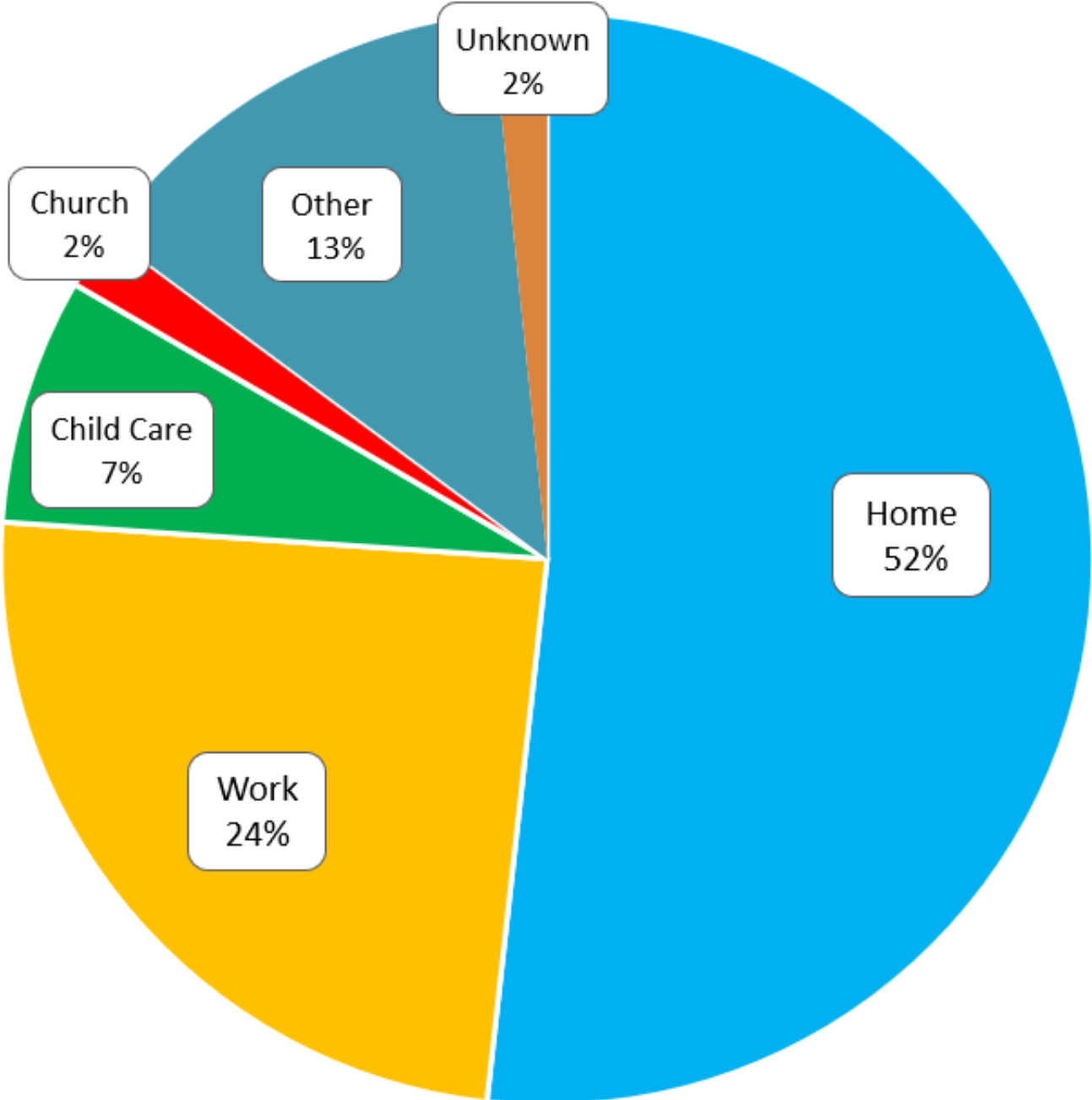
**Fig. 10b. Responsible Person in “Gained Access” Circumstances of Pediatric Vehicular Heatstroke Deaths (1998-2018)**



**Fig. 10c. Responsible Person in “Knowingly Left” Circumstances of Pediatric Vehicular Heatstroke Deaths (1998-2018)**



**Fig. 11. Location of Vehicle in Pediatric Vehicular Heatstroke Deaths (1998-2018)**



**Fig. 12. Percentage of Pediatric Vehicular Heatstroke Deaths by Temperature Range (1998-2018)**

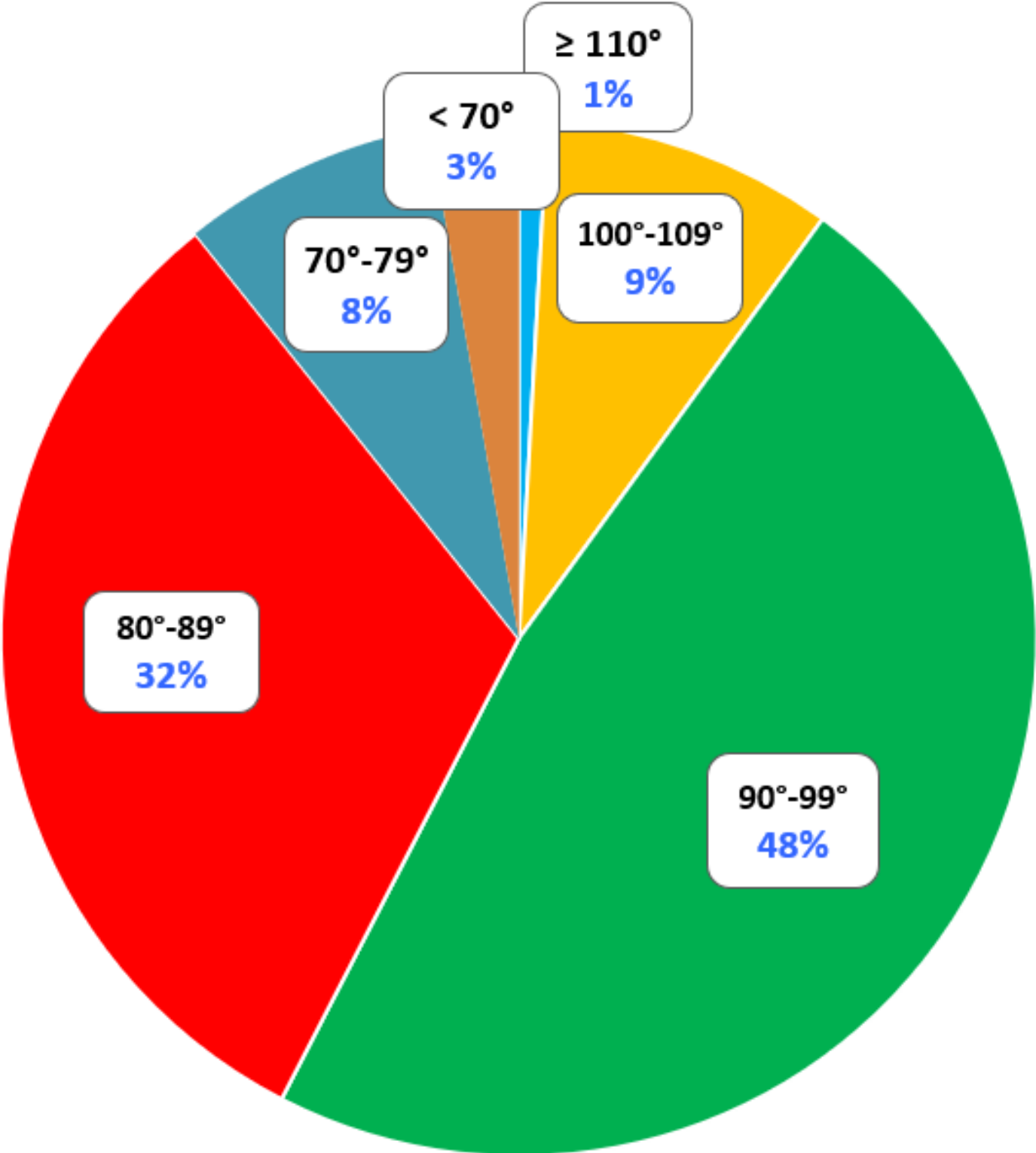


Fig. 13. State Distribution of Pediatric Vehicular Heatstroke Deaths (1998-2018)

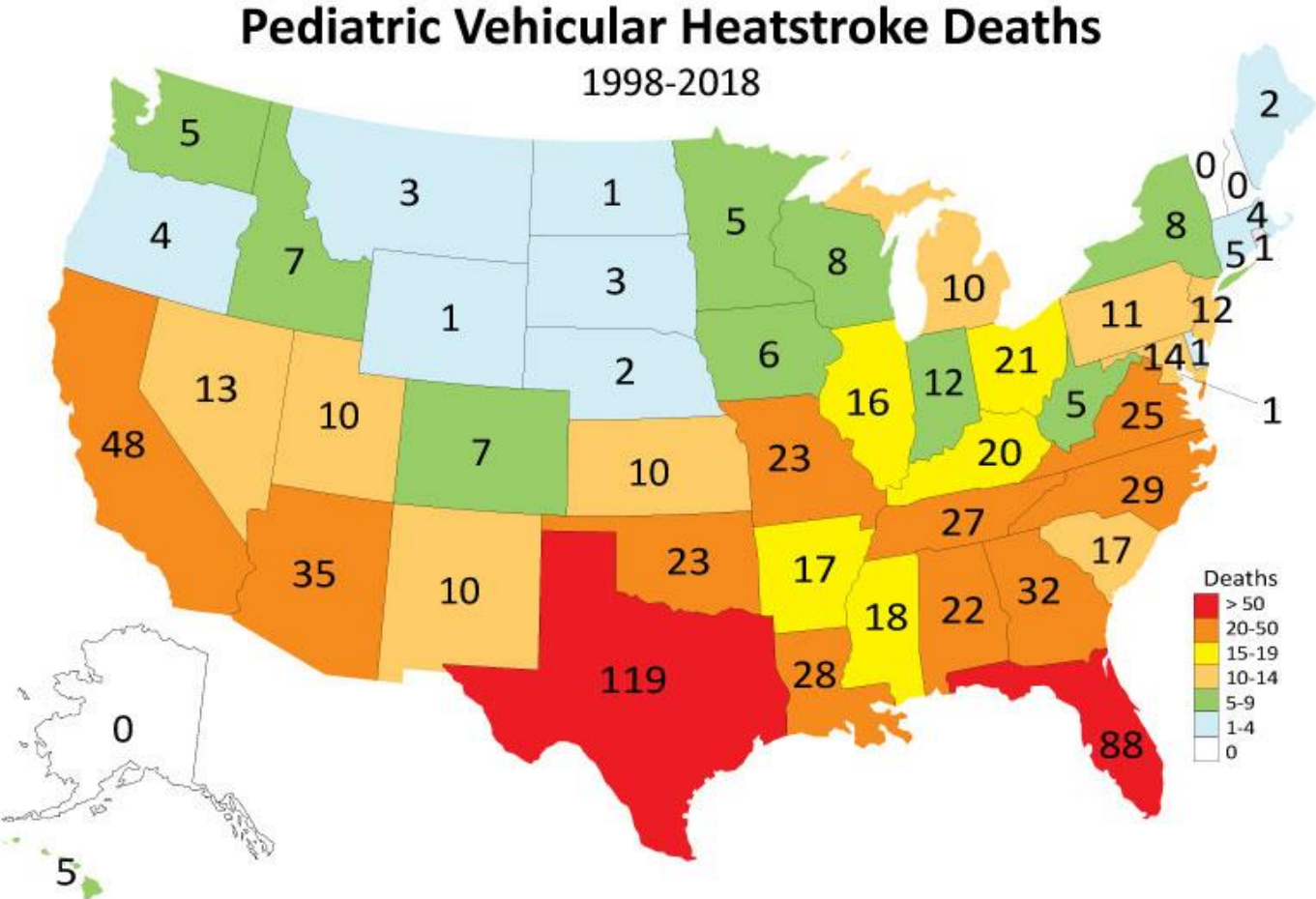
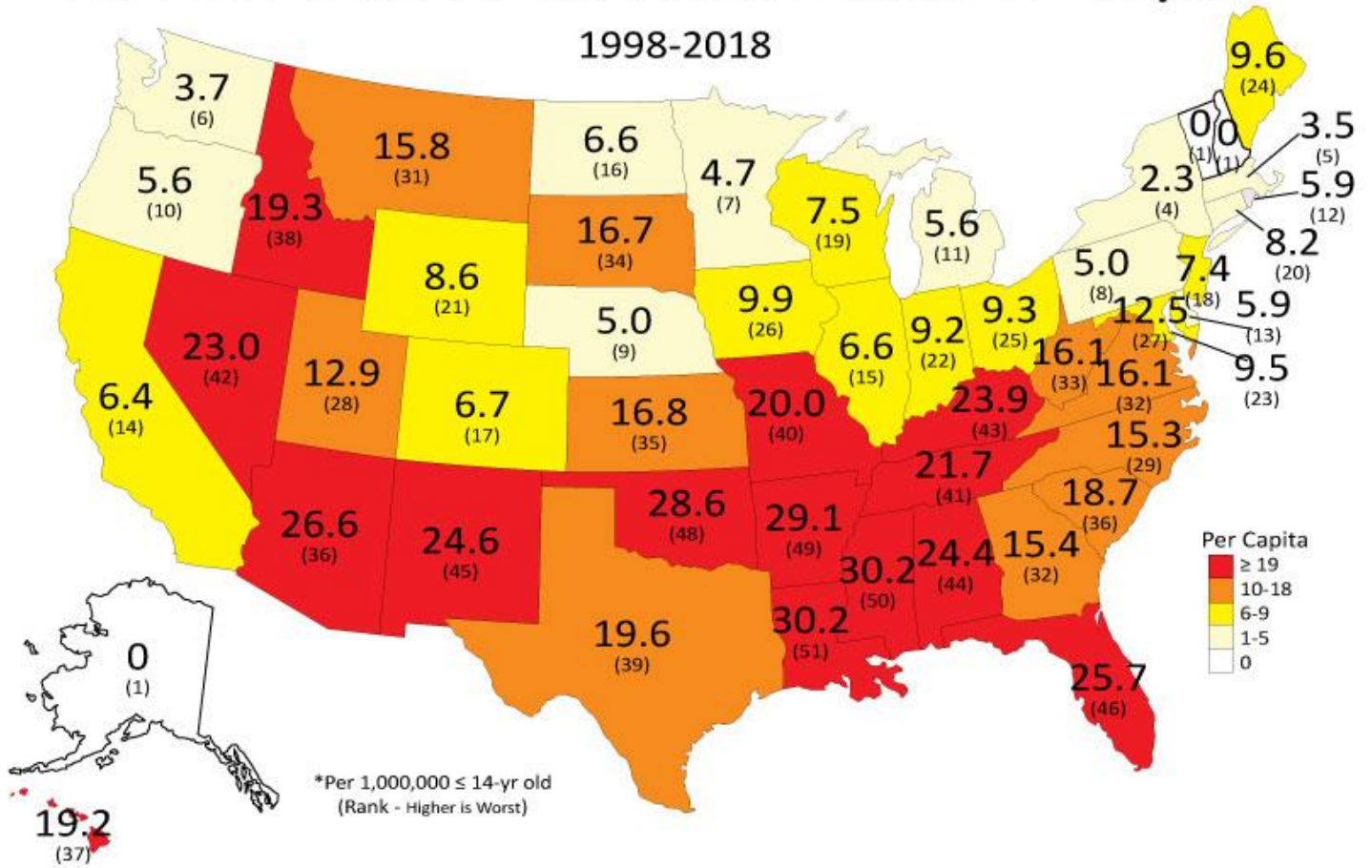


Fig. 14. State Per Capita Distribution and Rank of Pediatric Vehicular Heatstroke

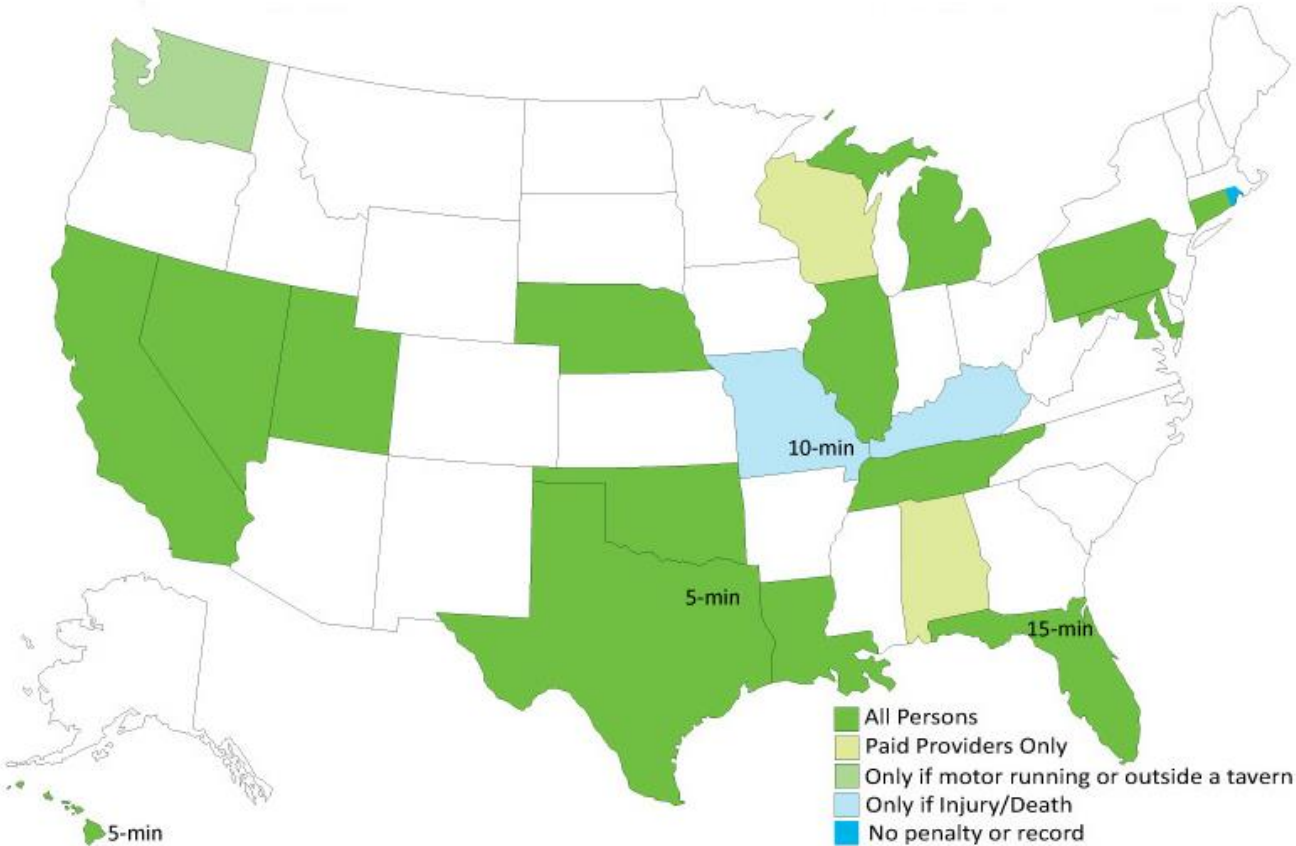
## Pediatric Vehicular Heatstroke Deaths Per Capita\*



Deaths (1998-2018)



**Fig. 15. States with Unattended Child in Vehicle Laws (2018)**



**Fig. 16. States with “Good Samaritan” Child in Vehicle Laws (2018)**

