

Heat-Caused & Heat-Related Deaths in Arizona by Year (2009-2019)

Deaths from Exposure to Excessive Natural Heat		
Year	Heat – Caused Deaths	Heat – Related Deaths
2009	120	154
2010	137	186
2011	123	177
2012	97	157
2013	103	149
2014	48	91
2015	83	132
2016	146	219
2017	132	264
2018	129	251
2019 [‡]	160	283

Heat-caused deaths are deaths where the primary cause of death is listed as exposure to excessive natural heat. **Heat-related** deaths are deaths where exposure to excessive natural heat is listed anywhere on the death record and include those that were heat-caused.

[‡]2019 data is preliminary.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Caused Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [†]
State or Country of Residence	Arizona Resident	740	38	50	57	53	56	32	42	98	105	92	117
	Non-Arizona Resident	538	82	87	66	44	47	16	41	48	27	37	43
Geographic Region of Occurrence	Central Counties	639	51	48	61	55	45	27	39	69	67	76	101
	Northern Counties	120 [†]	*	6	7	0	13	*	*	12	33	19	23
	Southern Counties	503	64	81	55	41	45	18	39	60	32	34	34
	Western Counties	10 [†]	*	*	0	*	0	0	*	*	0	0	*
Race/Ethnicity	American Indian/ Alaskan Native	50 [†]	*	*	*	*	*	0	0	0	11	6	6
	Asian or Pacific Islander	10 [†]	*	0	0	*	0	0	*	*	*	*	*
	African American/Black	50 [†]	*	6	6	*	6	*	*	*	*	7	9
	Hispanic/Latino	488	69	70	59	43	43	16	32	52	28	35	41
	White Non-Hispanic	623	43	59	53	46	48	28	44	81	77	70	74
	Unknown	60 [†]	0	0	0	0	0	*	*	10	12	10	26

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.

Classification of geographic regions: Central = Gila, Graham, Maricopa, Pinal, and Yavapai; Eastern = Greenlee; Northern = Apache, Coconino, Mohave, and Navajo; Southern = Cochise, Pima, Santa Cruz, and Yuma; Western = La Paz.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Related Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [†]
State or Country of Residence	Arizona Resident	1438	68	96	108	109	96	74	88	165	227	187	220
	Non-Arizona Resident	625	86	90	69	48	53	17	44	54	37	64	63
Geographic Region of Occurrence	Central Counties	1357	79	91	108	106	86	66	86	135	193	193	214
	Northern Counties	150 [†]	*	7	10	*	16	7	*	17	34	20	25
	Southern Counties	540	69	85	57	47	47	18	40	62	36	38	41
	Western Counties	20 [†]	*	*	*	*	0	0	*	*	*	0	*
Race/Ethnicity	American Indian/ Alaskan Native	80 [†]	8	*	8	8	9	0	0	0	16	11	11
	Asian or Pacific Islander	30 [†]	*	0	*	*	0	*	*	*	6	*	*
	African American/Black	100 [†]	*	10	9	*	12	6	*	7	11	16	20
	Hispanic/Latino	607	75	78	68	54	51	20	36	62	44	56	63
	White Non-Hispanic	1132	65	94	91	88	77	57	82	134	160	140	144
	Unknown	121	0	0	0	0	0	7	6	14	27	27	40

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.

Classification of geographic regions: Central = Gila, Graham, Maricopa, Pinal, and Yavapai; Eastern = Greenlee; Northern = Apache, Coconino, Mohave, and Navajo; Southern = Cochise, Pima, Santa Cruz, and Yuma; Western = La Paz.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Caused Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Age Group (years)	Less than 1	10 [†]	0	*	0	*	*	*	*	*	*	0	*
	1 – 4	10 [†]	0	*	0	0	0	0	*	0	*	0	*
	5 -14	10 [†]	*	*	0	0	0	0	*	*	0	*	*
	15 - 24	120 [†]	17	22	12	*	17	*	11	11	*	7	10
	25 - 34	188	25	22	26	14	9	6	9	22	19	19	17
	35 – 44	176	21	23	22	18	12	7	14	18	9	16	16
	45 – 54	170 [†]	18	21	17	17	19	*	10	14	20	16	17
	55 – 64	173	7	8	16	14	10	7	14	31	19	19	28
	65 – 74	160 [†]	6	7	*	12	6	8	14	16	24	32	25
	75 – 84	130 [†]	8	7	8	10	11	*	*	14	23	16	24
	85+	70 [†]	*	*	10	*	6	*	*	12	7	*	14
	Missing Age	80 [†]	14	19	7	*	12	*	*	*	*	0	*
	Gender	Female	297	22	26	26	23	20	16	18	43	41	25
Male		980	97	111	97	74	83	32	65	103	91	123	123
Unknown		0 [†]	*	0	0	0	0	0	0	0	0	0	0

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Related Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Age Group (years)	Less than 1	10 [†]	0	*	0	*	*	*	*	*	*	0	*
	1 – 4	10 [†]	0	*	0	*	0	0	*	0	*	0	*
	5 -14	10 [†]	*	*	*	0	0	0	*	*	0	*	*
	15 - 24	130 [†]	18	23	13	*	17	*	13	11	6	8	13
	25 - 34	238	27	26	27	18	9	9	15	24	31	26	26
	35 – 44	261	24	30	25	20	20	11	19	27	23	31	31
	45 – 54	322	21	35	28	26	25	14	15	25	44	40	49
	55 – 64	358	13	13	29	27	23	14	27	54	48	53	57
	65 – 74	294	17	12	15	23	17	14	24	30	42	57	43
	75 – 84	233	11	16	20	21	14	9	8	25	45	28	36
	85+	120 [†]	7	8	12	13	10	10	*	15	17	7	18
	Missing Age	80 [†]	14	19	7	*	13	*	*	*	*	0	*
Gender	Female	500	35	41	41	46	27	21	35	58	77	53	66
	Male	1562	118	145	136	111	122	70	97	161	187	198	217
	Unknown	0 [†]	*	0	0	0	0	0	0	0	0	0	0

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Caused Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Substance Use	Alcohol Use	90 [†]	*	6	*	10	8	*	*	16	12	13	13
	Drug Use	90 [†]	6	*	*	*	*	6	*	7	8	12	30
	Combined Alcohol and Drug Use	10 [†]	*	*	*	*	0	0	*	0	*	*	0
	No Substance Use	1088	110	125	114	83	92	39	74	123	110	101	117
Years in Arizona	<3 years	120 [†]	10	14	15	8	10	6	12	20	*	12	11
	3-9 years	80 [†]	*	7	6	6	8	*	*	12	*	16	14
	10-19 years	90 [†]	6	6	15	9	8	*	6	13	*	7	13
	+20 years	310	16	25	30	27	24	18	22	49	16	44	39
	Unknown/None	673	85	85	57	47	53	14	39	52	108	50	83

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Related Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Substance Use	Alcohol Use	209	7	16	16	18	18	10	12	28	29	25	30
	Drug Use	341	10	16	11	13	12	18	15	33	57	65	91
	Combined Alcohol and Drug Use	40 [†]	*	*	*	*	*	*	8	*	*	9	*
	No Substance Use	1470	136	152	148	123	117	59	97	155	174	152	157
Years in Arizona	<3 years	182	12	17	19	12	15	9	15	26	14	23	20
	3-9 years	150 [†]	7	12	9	10	12	10	11	25	*	22	27
	10-19 years	168	9	15	17	20	13	12	7	18	11	20	26
	+20 years	673	32	48	64	66	49	43	52	82	47	96	94
	Unknown/None	891	94	94	68	49	60	17	47	68	188	90	116

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Caused Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [†]
County of Occurrence	Apache	0 [†]	0	0	*	0	*	0	0	0	0	*	0
	Cochise	10 [†]	*	*	0	0	*	0	*	*	*	*	*
	Coconino	30 [†]	*	*	*	0	*	*	*	0	8	*	*
	Gila	10 [†]	0	0	*	0	*	0	0	*	*	*	*
	Graham	0 [†]	0	0	0	*	0	0	0	0	0	0	0
	La Paz	10 [†]	*	*	0	*	0	0	*	*	0	0	*
	Maricopa	554	43	40	54	50	35	21	32	64	59	68	88
	Mohave	90 [†]	0	*	*	0	7	*	*	11	25	15	21
	Navajo	0 [†]	0	0	0	0	0	0	0	*	0	0	0
	Pima	408	50	74	49	35	38	13	28	45	26	25	25
	Pinal	60 [†]	6	6	6	*	*	*	*	*	*	*	12
	Santa Cruz	20 [†]	9	*	*	0	*	*	*	*	0	*	0
	Yavapai	20 [†]	*	*	0	*	*	*	*	*	*	*	0
	Yuma	60 [†]	*	*	*	6	*	*	7	12	*	*	8

Notes: [†] 2019 data is preliminary; † Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Related Deaths Summary 2009-2019

		Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [†]
County of Occurrence	Apache	0 [†]	0	0	*	0	*	0	0	0	0	*	0
	Cochise	20 [†]	*	*	0	0	*	0	*	*	*	*	*
	Coconino	40 [†]	*	*	*	*	*	*	*	0	9	*	*
	Gila	10 [†]	0	0	*	0	*	0	*	*	*	*	*
	Graham	0 [†]	0	0	0	*	0	0	0	0	*	0	0
	La Paz	20 [†]	*	*	*	*	0	0	*	*	*	0	*
	Maricopa	1221	69	79	98	100	75	60	77	127	171	175	190
	Mohave	100 [†]	*	*	*	0	8	*	*	14	25	16	21
	Navajo	10 [†]	0	*	*	*	*	*	0	*	0	0	0
	Pima	434	54	78	50	37	39	13	29	46	28	28	32
	Pinal	100 [†]	8	10	9	*	6	*	*	*	17	15	22
	Santa Cruz	20 [†]	9	*	*	0	*	*	*	*	0	*	0
	Yavapai	20 [†]	*	*	0	*	*	*	*	*	*	*	*
	Yuma	70 [†]	*	*	6	10	*	*	7	13	7	*	8

Notes: [†] 2019 data is preliminary; † Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Caused Deaths Summary 2008-2018

	Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Month of Occurrence												
January	0 [†]	0	0	*	0	0	0	0	0	0	0	*
February	0 [†]	0	0	0	0	0	0	0	0	0	0	0
March	10 [†]	*	0	*	0	*	0	0	*	*	0	0
April	30 [†]	*	*	*	*	*	*	*	*	*	*	*
May	70 [†]	12	8	*	9	9	*	*	*	*	11	*
June	333	10	23	27	24	30	12	32	52	49	16	20
July	459	53	71	30	28	39	17	9	51	34	50	53
August	306	29	18	39	26	14	7	34	26	22	28	53
September	120 [†]	9	12	15	6	6	*	*	8	9	20	19
October	20 [†]	*	*	*	*	*	*	*	*	*	*	*
November	10 [†]	0	*	*	*	*	*	*	*	*	*	0
December	0 [†]	*	0	0	0	0	0	0	0	*	0	0

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of deaths related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Heat-Related Deaths Summary 2009-2019

	Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 [‡]
Month of Occurrence												
January	0 [†]	0	0	*	0	0	0	0	0	0	0	*
February	0 [†]	0	0	*	0	0	0	0	0	0	0	*
March	10 [†]	*	0	*	0	*	*	*	*	*	0	0
April	30 [†]	*	*	*	*	*	*	*	*	*	*	*
May	100 [†]	18	10	*	13	10	*	*	*	9	17	7
June	448	13	37	37	32	41	20	42	80	83	28	35
July	755	70	90	48	43	67	35	27	76	92	97	110
August	494	36	25	58	52	18	17	48	42	45	68	85
September	175	10	15	20	11	8	10	7	10	17	35	32
October	30 [†]	*	*	*	*	*	*	*	*	*	*	6
November	20 [†]	0	*	*	*	*	*	*	*	*	*	*
December	10 [†]	*	*	0	*	0	0	0	0	*	0	0

Notes: [‡] 2019 data is preliminary; [†] Sum rounded to nearest tens unit due to non-zero addend less than 6; * Number of visits related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Methods

ICD-10 Codes	Description
T67.0	Heat stroke and sunstroke
T67.1	Heat syncope
T67.2	Heat cramps
T67.3	Heat exhaustion from water depletion
T67.4	Heat exhaustion from salt depletion
T67.5	Heat exhaustion, unspecified
T67.6	Heat fatigue, transient
T67.7	Heat edema
T67.8	Other specified heat effects
T67.9	Unspecified effects of heat and light
X30	Exposure to excessive natural heat

- Criteria adapted from Council of State & Territorial Epidemiologists (CSTE)
- Methods search entire death record for ICD-10 codes
- ICD codes related to man-made sources of heat were excluded
- Substance use codes (ICD-9 and ICD-10) for alcohol-and drug-related deaths are defined by [ADHS Population Health and Vital Statistics Diagnostics Categories](#)

