

Heat-Caused & Heat-Related Deaths in Arizona by Year (2012-2022)

Deaths from Exposure to Excessive Natural Heat		
Year	Heat – Caused Deaths	Heat – Related Deaths
2012	97	157
2013	103	149
2014	48	91
2015	83	132
2016	146	219
2017	132	264
2018	129	251
2019	160	283
2020	313	522
2021	302	552
2022	359	671

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.



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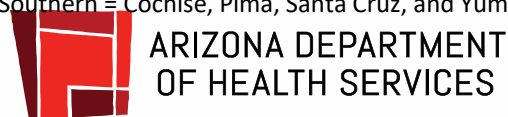
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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
State or Country of Residence	Arizona Resident	1228	53	56	32	42	98	105	92	117	207	185	241
	Non-Arizona Resident	644	44	47	16	41	48	27	37	43	106	117	118
Geographic Region of Occurrence	Central Counties	923	55	45	27	39	69	67	76	101	161	128	155
	Northern Counties	300†	0	13	*	*	12	33	19	23	54	66	74
	Southern Counties	625	41	45	18	39	60	32	34	34	95	105	122
	Western Counties	20†	*	0	0	*	*	0	0	*	*	*	8
Race/Ethnicity	American Indian/ Alaskan Native	80†	*	6	0	0	0	11	6	6	11	13	23
	Asian or Pacific Islander	20†	*	0	0	*	*	*	*	*	*	*	*
	African American/Black	100†	*	6	*	*	*	*	7	9	20	21	27
	Hispanic/Latino	608	43	43	16	32	52	28	35	41	90	109	119
	White Non-Hispanic	948	46	48	28	44	81	77	70	74	152	149	179
	Unknown	120†	0	0	*	*	10	12	10	26	37	7	8

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
State or Country of Residence	Arizona Resident	2483	109	96	74	88	165	227	187	220	378	414	525
	Non-Arizona Resident	808	48	53	17	44	54	37	64	63	144	138	146
Geographic Region of Occurrence	Central Counties	2260	106	86	66	86	135	193	193	214	357	365	459
	Northern Counties	330†	*	16	7	*	17	34	20	25	58	69	77
	Southern Counties	672	47	47	18	40	62	36	38	41	102	114	127
	Western Counties	30†	*	0	0	*	*	*	0	*	*	*	8
Race/Ethnicity	American Indian/ Alaskan Native	166	8	9	0	0	0	16	11	11	28	32	51
	Asian or Pacific Islander	40†	*	0	*	*	*	6	*	*	*	*	8
	African American/Black	240†	*	12	6	*	7	11	16	20	38	55	61
	Hispanic/Latino	844	54	51	20	36	62	44	56	63	126	152	180
	White Non-Hispanic	1787	88	77	57	82	134	160	140	144	251	296	358
	Unknown	220	0	0	7	6	14	27	27	40	74	12	13

Notes: † 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.



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Heat-Caused & Heat-Related Deaths in Arizona Residents by Year (2012-2022)

Deaths from Exposure to Excessive Natural Heat

Year	Heat – Caused Deaths		Heat – Related Deaths	
	Count	Rate (per 100,000)	Count	Rate (per 100,000)
2012	53	0.8	109	1.7
2013	56	0.8	96	1.4
2014	32	0.5	74	1.1
2015	42	0.6	88	1.3
2016	98	1.4	165	2.4
2017	105	1.5	227	3.2
2018	92	1.3	187	2.6
2019	117	1.6	220	3.0
2020	207	2.9	378	5.3
2021	185	2.5	414	5.8
2022	241	3.2	525	7.1

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. Rates calculated here use the [2020 Vintage estimates from US Census](#) for 2011-2019; [Vintage 2021 estimates from US Census](#) were used to calculate rates for 2020-2021. Rate calculations for 2022 utilize the official population estimates from the [Arizona Office of Economic Opportunity](#) per Executive Order 2011-04.



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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Age Group (years)	Less than 1	10†	*	*	*	*	*	*	0	*	*	*	0
	1 – 4	10†	0	0	0	*	0	*	0	*	*	0	0
	5 -14	10†	0	0	0	*	*	0	*	*	*	*	0
	15 - 24	150†	*	17	*	11	11	*	7	10	24	26	30
	25 - 34	227	14	9	6	9	22	19	19	17	31	46	35
	35 – 44	236	18	12	7	14	18	9	16	16	39	41	46
	45 – 54	250†	17	19	*	10	14	20	16	17	48	38	48
	55 – 64	305	14	10	7	14	31	19	19	28	61	42	60
	65 – 74	310†	12	*	8	14	16	24	32	25	47	51	69
	75 – 84	260†	10	11	*	*	14	23	16	24	44	40	68
	85+	100†	*	6	*	*	12	7	*	14	14	16	12
	Missing Age	40†	*	12	*	*	*	*	0	*	0	0	*
	Gender	Female	467	23	20	16	18	43	41	25	37	74	76
Male		1405	74	83	32	65	103	91	104	123	239	226	265
Unknown		0	0	0	0	0	0	0	0	0	0	0	0

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Age Group (years)	Less than 1	10†	*	*	*	*	*	*	0	*	*	*	0
	1 – 4	10†	*	0	0	*	0	*	0	*	*	*	0
	5 -14	10†	0	0	0	*	*	0	*	*	*	*	0
	15 - 24	180†	*	17	*	13	11	6	8	13	28	32	39
	25 - 34	363	18	9	9	15	24	31	26	26	50	82	73
	35 – 44	457	20	20	11	19	27	23	31	31	80	77	118
	45 – 54	519	26	25	14	15	25	44	40	49	88	73	110
	55 – 64	638	27	23	14	27	54	48	53	57	118	104	113
	65 – 74	511	23	17	14	24	30	42	57	43	67	87	107
	75 – 84	404	21	14	9	8	25	45	28	36	64	62	92
	85+	150†	13	10	10	*	15	17	7	18	22	20	17
	Missing Age	40†	*	13	*	*	*	*	0	*	0	*	*
	Gender	Female	759	46	27	21	35	58	77	53	66	116	121
Male		2532	111	122	70	97	161	187	198	217	406	431	532
Unknown		0	0	0	0	0	0	0	0	0	0	0	0

Notes: † 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.



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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Substance Use	Alcohol Use	150†	10	8	*	*	16	12	13	13	22	19	31
	Drug Use	200†	*	*	6	*	7	8	12	30	54	33	34
	Combined Alcohol and Drug Use	20†	*	0	0	*	0	*	*	0	*	*	*
	No Substance Use	1513	83	92	39	74	123	110	101	117	234	248	292
Years in Arizona	<3 years	140†	8	10	6	12	20	*	12	11	27	23	*
	3-9 years	100†	6	8	*	*	12	*	16	14	21	10	*
	10-19 years	110†	9	8	*	6	13	*	7	13	16	12	*
	+20 years	408	27	24	18	22	49	16	44	39	78	60	31
	Unknown/ None	1127	47	53	14	39	52	108	50	83	171	197	314

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Substance Use	Alcohol Use	310	18	18	10	12	28	29	25	30	38	49	53
	Drug Use	880	13	12	18	15	33	57	65	91	176	164	236
	Combined Alcohol and Drug Use	80†	*	*	*	8	*	*	9	*	9	19	16
	No Substance Use	2019	123	117	59	97	155	174	152	157	299	320	366
Years in Arizona	<3 years	213	12	15	9	15	26	14	23	20	35	35	9
	3-9 years	200†	10	12	10	11	25	*	22	27	39	25	8
	10-19 years	203	20	13	12	7	18	11	20	26	34	28	14
	+20 years	933	66	49	43	52	82	47	96	94	151	166	87
	Unknown/ None	1744	49	60	17	47	68	188	90	116	263	298	551

Notes: † 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.



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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
County of Occurrence	Apache	0†	0	*	0	0	0	0	*	0	0	0	*
	Cochise	40†	0	*	0	*	*	*	*	*	8	9	10
	Coconino	30†	0	*	*	*	0	8	*	*	*	*	*
	Gila	10†	0	*	0	0	*	*	*	*	*	0	*
	Graham	0†	*	0	0	0	0	0	0	0	*	*	*
	Greenlee	0	0	0	0	0	0	0	0	0	0	0	0
	La Paz	20†	*	0	0	*	*	0	0	*	*	*	8
	Maricopa	813	50	35	21	32	64	59	68	88	143	115	138
	Mohave	260†	0	7	*	*	11	25	15	21	49	59	66
	Navajo	10†	0	0	0	0	*	0	0	0	*	*	*
	Pima	386	35	38	13	28	45	26	25	25	44	53	54
	Pinal	70†	*	*	*	*	*	*	*	12	11	8	12
	Santa Cruz	40†	0	*	*	*	*	0	*	0	7	12	8
	Yavapai	30†	*	*	*	*	*	*	*	0	*	*	*
	Yuma	170†	6	*	*	7	12	*	*	8	36	31	50

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
County of Occurrence	Apache	10†	0	*	0	0	0	0	*	0	0	*	*
	Cochise	40†	0	*	0	*	*	*	*	*	8	9	10
	Coconino	40†	*	*	*	*	0	9	*	*	6	*	*
	Gila	20†	0	*	0	*	*	*	*	*	*	*	*
	Graham	10†	*	0	0	0	0	*	0	0	*	*	*
	Greenlee	0	0	0	0	0	0	0	0	0	0	0	0
	La Paz	30†	*	0	0	*	*	*	0	*	*	*	8
	Maricopa	2050	100	75	60	77	127	171	175	190	322	336	417
	Mohave	270†	0	8	*	*	14	25	16	21	51	60	67
	Navajo	20†	*	*	*	0	*	0	0	0	*	*	*
	Pima	419	37	39	13	29	46	28	28	32	50	59	58
	Pinal	160†	*	6	*	*	*	17	15	22	27	20	33
	Santa Cruz	40†	0	*	*	*	*	0	*	0	7	12	8
	Yavapai	30†	*	*	*	*	*	*	*	*	*	*	*
	Yuma	180†	10	*	*	7	13	7	*	8	37	34	51

Notes: † 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.



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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
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	*
	March	10†	0	*	0	0	*	*	0	0	0	*	*
	April	30†	*	*	*	*	*	*	*	*	*	*	7
	May	90†	9	9	*	*	*	*	11	*	9	14	25
	June	453	24	30	12	32	52	49	16	20	30	100	88
	July	614	28	39	17	9	51	34	50	53	115	79	139
	August	427	26	14	7	34	26	22	28	53	122	53	42
	September	190†	6	6	*	*	8	9	20	19	26	41	46
	October	40†	*	*	*	*	*	*	*	*	9	8	*
	November	10†	*	*	*	*	*	*	*	0	0	*	*
	December	0†	0	0	0	0	0	*	0	0	*	*	0

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

	Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
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	40†	*	*	*	*	*	*	*	*	*	*	10
May	150†	13	10	*	*	*	9	17	7	21	25	35
June	719	32	41	20	42	80	83	28	35	46	173	139
July	1242	43	67	35	27	76	92	97	110	225	154	316
August	756	52	18	17	48	42	45	68	85	178	115	88
September	300	11	8	10	7	10	17	35	32	36	67	67
October	50†	*	*	*	*	*	*	*	6	12	9	*
November	20†	*	*	*	*	*	*	*	*	0	*	*
December	10†	*	0	0	0	0	*	0	0	*	*	0

Notes: † 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.



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Heat-Caused Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Place of Injury	Home	526	21	20	8	9	37	44	39	45	91	88	124
	Other Specified	1165	63	78	31	65	96	75	75	99	193	186	204
	Residential Institution	10†	0	0	0	0	*	*	*	*	0	*	*
	Street/Highway	60†	*	*	*	*	*	*	6	8	10	9	19
	Trade & Service Area	10†	0	0	0	0	0	*	*	0	*	*	0
	Unknown	100†	10	*	7	7	9	10	7	7	17	15	11

Notes: † 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.



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Heat-Related Deaths Summary 2012-2022

		Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Place of Injury	Home	948	42	35	18	20	69	88	71	84	144	170	207
	Other Specified	1935	87	96	63	88	130	131	142	173	313	324	388
	Residential Institution	10†	0	0	0	0	*	*	*	*	0	*	*
	Street/Highway	160†	*	*	*	*	*	6	13	13	32	26	48
	Trade & Service Area	10†	0	0	0	0	0	*	*	0	*	*	*
	Unknown	231	25	15	8	20	14	36	22	12	29	24	26

Notes: † 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.



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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-10) for alcohol-and drug-related deaths are defined by [ADHS Population Health and Vital Statistics Diagnostics Categories](#)

