

Heat-Related Illness Emergency Department & Inpatient Admissions (Hospitalizations) 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Year		
Year	Emergency Department Visit	Inpatient Admission (Hospitalization)
2015	2423	572
	Of those, 1472 were heat-caused [†] (60.8%)	Of those, 199 were heat-caused [†] (34.8%)
2016	2915	594
	Of those, 1812 were heat-caused [†] (62.2%)	Of those, 240 were heat-caused [†] (40.4%)
2017	3053	749
	Of those, 1969 were heat-caused [†] (64.5%)	Of those, 283 were heat-caused [†] (37.8%)
2018	3013	753
	Of those, 1917 were heat-caused [†] (63.6%)	Of those, 250 were heat-caused [†] (33.2%)
2019	2944	761
	Of those, 1903 were heat-caused [†] (64.6%)	Of those, 299 were heat-caused [†] (39.2%)

[†]Heat-caused emergency department and inpatient visits (hospitalizations) are visits where the primary diagnosis is listed as exposure to excessive natural heat. Heat-related visits are where exposure to excessive natural heat is listed anywhere in the diagnoses and include those that were heat-caused.



2015-2019, Arizona Residents and Non-Residents

Heat-Related Emergency Department Visits and Inpatient Admissions (Hospitalizations) by Resident Status					
Resident Status	2015	2016	2017	2018	2019
AZ Resident Emergency Department Visit	2169	2606	2695	2660	2649
Non-Resident Emergency Department Visit	254	309	358	353	295
AZ Resident Inpatient Admission (Hospitalization)	512	539	655	668	648
Non-Resident Inpatient Admission (Hospitalization)	60	55	94	85	113



Emergency Department Visits 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Sex and Age Group					
Sex	2015	2016	2017	2018	2019
Female	819	988	982	967	931
Male	1604	1927	2071	2046	2013

Age Group	2015	2016	2017	2018	2019
Infants <1	16	10	6	10	8
Children 1 - 14	135	151	151	137	140
Adolescents 15-19	184	195	168	196	167
Young Adults 20-44	1113	1334	1414	1353	1354
Middle-Aged Adults 45 - 64	638	806	837	869	846
Elderly 65+	337	419	477	448	429



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Inpatient Admissions (Hospitalizations) 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Sex and Age Group					
Sex	2015	2016	2017	2018	2019
Female	134	139	166	168	195
Male	438	455	583	585	566

Age Group	2015	2016	2017	2018	2019
Infants <1	<6*	0	0	0	<6*
Children 1 - 14	<6*	<6*	<6*	<6*	<6*
Adolescents 15-19	12	11	12	15	8
Young Adults 20-44	151	182	229	218	227
Middle-Aged Adults 45 - 64	239	220	285	281	289
Elderly 65+	164	178	221	234	233

*Number of visits related to exposure to excessive natural heat were suppressed due to non-zero count less than 6.



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Emergency Department Visits 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Race/Ethnicity					
Race/Ethnicity	2015	2016	2017	2018	2019
American Indian/Alaskan Native	93	124	116	99	108
Asian or Pacific Islander	29	35	39	34	40
Black or African American	140	205	231	212	213
Hispanic	633	721	768	814	765
White	1514	1804	1868	1821	1788
Other	14	26	31	33	30



Inpatient Admissions (Hospitalizations) 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Race/Ethnicity					
Race/Ethnicity	2015	2016	2017	2018	2019
American Indian/Alaskan Native	24	26	20	28	19
Asian or Pacific Islander	6	<6*	6	10	12
Black or African American	41	49	64	67	70
Hispanic	126	122	172	161	159
White	369	378	471	466	485
Other	6	14	16	21	16

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Emergency Department Visits 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Month					
Month	2015	2016	2017	2018	2019
January	<6*	<6*	<6*	6	<6*
February	17	36	7	9	<6*
March	86	51	100	28	32
April	69	62	94	115	105
May	92	144	226	237	96
June	685	1014	1037	594	518
July	520	882	797	941	968
August	651	498	499	710	859
September	243	134	222	325	306
October	48	72	51	37	40
November	<6*	14	12	6	15
December	<6*	<6*	<6*	<6*	<6*

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Heat-Related Illness by Month					
Month	2015	2016	2017	2018	2019
January	<6*	0	<6*	<6*	0
February	<6*	<6*	<6*	<6*	0
March	8	6	14	<6*	6
April	6	12	9	23	17
May	15	19	45	47	16
June	175	221	246	124	128
July	135	204	222	271	270
August	177	84	134	193	221
September	42	29	65	80	94
October	8	13	6	<6*	8
November	<6*	<6*	<6*	<6*	<6*
December	0	0	<6*	0	0

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Emergency Department Visits 2015-2019, Arizona Residents

Heat-Related Illness by County					
County Residence	2015	2016	2017	2018	2019
Apache	8	7	8	7	10
Cochise	25	36	52	31	47
Coconino	18	28	14	27	20
Gila	17	22	15	20	31
Graham	11	19	14	14	14
Greenlee	<6*	<6*	<6*	<6*	<6*
La Paz	23	28	20	25	10
Maricopa	1268	1498	1595	1492	1545
Mohave	177	190	174	173	136
Navajo	11	23	17	13	12
Pima	209	305	332	340	307
Pinal	157	196	189	232	224
Santa Cruz	7	<6*	6	6	13
Yavapai	51	55	26	50	46
Yuma	183	192	229	227	231

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Inpatient Admissions (Hospitalizations) 2015-2019, Arizona Residents

Heat-Related Illness by County					
County Residence	2015	2016	2017	2018	2019
Apache	<6*	<6*	<6*	<6*	<6*
Cochise	8	<6*	7	7	<6*
Coconino	<6*	<6*	0	<6*	<6*
Gila	<6*	<6*	<6*	<6*	<6*
Graham	<6*	<6*	<6*	<6*	<6*
Greenlee	0	0	0	0	<6*
La Paz	<6*	6	<6*	<6*	<6*
Maricopa	325	357	462	443	433
Mohave	24	31	36	27	28
Navajo	<6*	<6*	<6*	<6*	<6*
Pima	59	52	63	78	83
Pinal	33	35	43	54	51
Santa Cruz	0	<6*	<6*	<6*	<6*
Yavapai	<6*	7	<6*	<6*	9
Yuma	45	36	25	39	24

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Emergency Department Visits 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Comorbidity and Substance Use

Comorbidity[†]	2015	2016	2017	2018	2019
Obese/Overweight	33	53	43	53	53
Mental Disorders	777	877	921	892	956
Circulatory Disease	531	726	767	731	719
Respiratory Disease	216	267	251	243	239
No Comorbidity	1253	1474	1556	1570	1472
Substance Use	2015	2016	2017	2018	2019
Alcohol Use	9	67	66	64	56
Drug Use	485	517	579	545	610
Alcohol and Drug Use	62	44	38	44	49
No Substance Use	1867	2287	2370	2360	2229

[†] More than 1 comorbidity may be listed in the visit record. All comorbidities identified in a record are represented in these yearly totals.



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Heat-Related Illness by Comorbidity and Substance Use					
Comorbidity[†]	2015	2016	2017	2018	2019
Obese/Overweight	49	56	60	55	64
Mental Disorders	361	373	490	474	496
Circulatory Disease	367	381	463	467	468
Respiratory Disease	201	208	284	266	284
No Comorbidity	54	52	59	74	69
Substance Use	2015	2016	2017	2018	2019
Alcohol Use	14	29	36	38	53
Drug Use	190	220	293	280	293
Alcohol and Drug Use	77	61	76	62	78
No Substance Use	291	284	344	373	337

[†] More than 1 comorbidity may be listed in the visit record. All comorbidities identified in a record are represented in these yearly totals.



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Emergency Department Visits 2015-2019, Arizona Residents and Non-Residents

Heat-Related Illness by Place of Injury and Preceding Activity					
Place of Injury	2015	2016	2017	2018	2019
Industrial Site	213	453	430	407	442
Private Residence	520	767	908	1053	1005
Public Building	108	77	89	82	94
Recreational Site	265	145	119	128	88
Residential Institution	14	26	30	29	21
Street/Highway	274	519	576	515	518
Not Listed	1029	928	901	799	776
Preceding Activity	2015	2016	2017	2018	2019
Exercise	6	16	7	11	<6*
Household Activities	13	27	24	28	27
Occupational	82	179	158	148	129
Recreational	198	332	337	318	323
Sports/Athletics	70	138	119	127	100
Not Listed	2054	2223	2408	2381	2360

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Heat-Related Illness by Place of Injury and Preceding Activity					
Place of Injury	2015	2016	2017	2018	2019
Industrial Site	21	67	67	81	79
Private Residence	160	195	254	249	238
Public Building	23	16	21	27	25
Recreational Site	20	11	10	18	7
Residential Institution	9	<6*	9	8	<6*
Street/Highway	80	139	198	208	226
Not Listed	259	161	190	162	182
Preceding Activity	2015	2016	2017	2018	2019
Exercise	<6*	<6*	<6*	<6*	0
Household Activities	<6*	<6*	<6*	<6*	<6*
Occupational	25	31	44	32	22
Recreational	37	31	34	31	28
Sports/Athletics	<6*	11	10	12	6
Not Listed	502	516	654	673	702

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Methods

ICD Code		Description
992.0	T67.0	Heat stroke and sunstroke
992.1	T67.1	Heat syncope
992.2	T67.2	Heat cramps
992.3	T67.3	Heat exhaustion from water depletion
992.4	T67.4	Heat exhaustion from salt depletion
992.5	T67.5	Heat exhaustion, unspecified
992.6	T67.6	Heat fatigue, transient
992.7	T67.7	Heat edema
992.8	T67.8	Other specified heat effects
992.9	T67.9	Unspecified effects of heat and light
E900.0		Health effect caused by excessive heat due to weather
E900.9		Effect from unknown cause of excessive heat
	X30	Exposure to excessive natural heat

- Criteria adapted from Council of State & Territorial Epidemiologists (CSTE)
- Methods search entire record for ICD-9 and ICD-10 codes
- The ICD-9 to ICD-10 conversion occurred October 2015
- ICD codes related to man-made sources of heat were excluded



Methods

ICD Code		Description
278.X	E66	Overweight and obesity
290-319	FXX	Mental, behavioral, and neurodevelopmental disorders
390-459	IXX	Diseases of the circulatory system
460-519	JXX	Diseases of the respiratory system

- ICD codes related to selected comorbidities are listed here
- Methods search entire record for ICD-9 and ICD-10 codes
- The ICD-9 to ICD-10 conversion occurred October 2015
- 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](#)

