Heat-Related Illness v2
Definition Factsheet & Technical Brief

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Definition Purpose: To assist state, local, tribal, territorial, and federal public health practitioners in monitoring emergency department (ED) visits for heat-related illness.

New or Revised Definition: Revision of Heat-Related Illness v1

Added to ESSENCE: April 2019

Definition Description: The Heat-Related Illness v2 definition was designed to identify ED visits for heat-related illness. It is primarily based on Heat-Related Illness v1, developed by the Council of State and Territorial Epidemiologists (CSTE) Heat Syndrome Workgroup in 2017, with small edits to terms and syntax. The guide, *Heat-Related Illness Syndrome Query: A Guidance Document for Implementing Heat-Related Illness Syndromic Surveillance in Public Health Practice*, provides further insight into the development and validation of the foundational v1 definition.

Use-Cases for Definition:
☒ Trend monitoring

Version Enhancements: Compared with the Heat-Related Illness v1 definition, this definition expands the use of ICD-9-CM; refines usage, includes or negates some specific codes; removes extraneous spaces around comma and "or" statements, and modifies chief complaint terms for inclusion and negation:
- No longer excludes the discharge diagnosis codes 1992, 6992 (misclassification related to 992 ICD-9-CM code), E900.1, E9001 (accidents due to excessive heat of man-made origin), T50.992A (misclassification related to 992 ICD9 code)
- Increases specificity of E900 codes to also include E900.1 and E900.9 and removes negation for E900.1
- Increases specificity of code X30 to X30.X
- Adds the inclusion term ,^HEAT[-/\.;:]^,), to account for punctuation possibilities
- Excludes mentions of "apply" or "applying" in reference to therapeutic uses of heat or cold, the terms "heat condition", "heat failure", "wheat", "ETOH", "heat condition", "heat of the moment", and "contact with other heat and hot".
- Includes additional variations of sun stroke ("sun stroke" or "sun-str").

Definition Fields and Structure: The Chief Complaint Discharge Diagnosis (CCDD) field is used to query discharge diagnosis codes and chief complaint term free text. The definition identifies visits with codes or terms indicating visits associated with heat-related illness (see Table 1, inclusions) while excluding visits that contain certain codes or terms (see Table 1, exclusions). The full query syntax (see Table 2) is also applied to the fields of Chief Complaint History, Admit Reason Combo, and Discharge Diagnosis.

Detailed Definition Components

Table 1. Inclusion and exclusion discharge diagnosis codes and chief complaint terms for Heat-Related Illness v2.

Variable Type	Terms	Description
Inclusions		
Discharge Diagnosis: ICD-10-CM	X30.X	Exposure to excessive natural heat
	X30.XXXA	Exposure to excessive natural heat, initial encounter
	X30.XXXD	Exposure to excessive natural heat, subsequent encounter
	X30.XXXS	Exposure to excessive natural heat, sequela
	T67	Effects of heat and light
Discharge Diagnosis: ICD-9-CM	E900	Accident caused by excessive heat
	E900.0	Accident caused by excessive heat due to weather conditions
	E900.9	Accidents due to excessive heat of unspecified origin
	992	Effects of heat and light
	992.0	Heat stroke and sunstroke
	992.1	Heat syncope
	992.2	Heat cramps
	992.3	Heat exhaustion, anhydrotic
	992.4	Heat exhaustion due to salt depletion
	992.5	Heat exhaustion, unspecified
	992.6	Heat fatigue, transient
	992.7	Heat edema
	992.8	Other specified heat effects
	992.9	Unspecified effects of heat and light
Chief Complaint Terms	HEAT, or HEAT followed by any of the following characters: space,-/.;:	
	HEATCRAMP	
	HEATEX	
	HEATST	
	HYPERTHERM	
	SUNSTR	
	SUN STROKE	
	SUN-STR	
	TO HOT	
	TOO HOT	
	(HEET or HOT) and (EXCESSIVE or EXHAUST or EXPOS or FATIGUE or CRAMP or STRESS or IN CAR or OUTSIDE or PROSTRATION)	
Exclusions		
Discharge Diagnosis: ICD-10-CM	W92	Exposure to excessive heat of man-made origin
Chief Complaint Terms	ALLERG	
Feeling heat, swelling, redness, and/or pain	FEELING HOT or FEELS HOT or FELT HOT	
	HOT and SENSATION	
	HEAT SENSATION	
	INFLAM	
	PAIN and (LIMB or ARM or SHOULDER or ELBOW or WRIST or HAND or LEG or HIP or GROIN or THIGH or KNEE or ANKLE or FOOT or FEET or BACK or NECK or FLANK or RED or JAW or MOUTH or TEETH or TOOTH)	
	RADIAT	
	REDNESS	
	SWELL	
	SWOLLEN	
	SURG	
	POST OP	

Therapeutic uses	IBUPROFEN
	IBUPROPHEN
	ALEVE
	MOTRIN
	TYLENOL
	INJUR
	TRAUMA
	(HEAT OR HEAT[-/.;:]) and (ICE or APPLIED or APPLY or APPLYING or TRIED or USED or USING or COLD or RASH)
	HEAT PACK
	HEATING PAD
	LUMBAGO
	RELIEF
	RESOLVE
	RELIEVE
	RELEIVE
Dental pain, sensitivity to hot/cold temperatures	DENTAL
	HOT and (COLD or COFF or SHOWER)
	ORAL and SURG
	SENSITIV and (HEAT or HOT)
Hot food/liquid	HOT DOG
	HOT GREASE
	HOT PEPPERS
	HOT TEA
Misspellings related to "heart", or "health"	HEAT ACHE
	HEAT CONDITION
	HEATACHE
	HEAT ATTACK
	HEAT BEAT
	HEATBEAT
	HEAT FAILURE
	HEAT BURN
	HEATBURN
	HEAT FLUTTER
	HEAT RACING
	HEAT RATE
	HEATRATE
	HEATLH
	HEATH
	HEATTH
	HITTING HEAT
	PALPITATION
Includes the letters "heat", "heet", "hot", or "sun"	CHEAT
	WHEAT
	HEATER
	HEATHER
	HEATING
	HOTEL
	LITHOTR
	METHOTR
	PHOTO
	PSYCHOTIC
	SHEATH
	SHEET
	SHOT

	SUNDAY	
	THEAT	
	WHEAT	
Miscellaneous	ACCIDEN	
	ALCOHOL	
	ETOH	
	BURN and MOUTH	
	DISTRESS	
	FEVER	
	GETS HOT	
	HEAT FLASH	
	HOT FLASH	
	HIVES	
	HOT TUB	
	NO HEAT	
	OVEN	
	SUICID	
	HEAT OF THE MOMENT	
	CONTACT WITH OTHER HEAT AND HOT	

Table 2. ESSENCE syntax, Heat-Related Illness v2

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(,^[;/ ]992[0-9];^,or,^[;/ ]992.[0-9]^,OR,^[;/ ]E900;^,OR,^[;/ ]E900.[09];^,OR,^[;/ ]E900[09];^,OR,^[;/ ]T67^,OR,^[;/
]X30.X^,OR,^[;/ ]X30X^,),OR,
(,(,(,^HEAT,OR,^HEAT[ -
/\.;:]^,OR,^HEATCRAMP^,OR,^HEATEX^,OR,^HEATST^,OR,^HYPERTHERM^,OR,^SUNSTR^,OR,^SUN
STROKE^,OR,^SUN-STR^,OR,^ TO HOT^,OR,^ TOO
HOT^,OR,(,(,(^HEET^,OR,^HOT^,),AND,(,^EXCESSIVE^,OR,^EXHAUST^,OR,^EXPOS^,OR,^FATIGUE^,OR,^C
RAMP^,OR,^STRESS^,OR,^IN
CAR^,OR,^OUTSIDE^,OR,^PROSTRATION^,),),),**ANDNOT**,(,^ALLERG^,OR,^FEELING HOT^,OR,^FEELS
HOT^,OR,^FELT HOT^,OR,(,^HOT^,AND,^SENSATION^,),OR,^HEAT SENSATION^,OR,^ INFLAM^
,OR,(,^PAIN^,
AND,(,^LIMB^,OR,^ARM^,OR,^SHOULDER^,OR,^ELBOW^,OR,^WRIST^,OR,^HAND^,OR,^LEG^,OR,^HIP^,O
R,^GROIN^,OR,^THIGH^,OR,^KNEE^,OR,^ANKLE^,OR,^FOOT^,OR,^FEET^,OR,^BACK^,OR,^NECK^,OR,^FL
ANK^,OR,^RED^,OR,^JAW^,OR,^MOUTH^,OR,^TEETH^,OR,^TOOTH^,),),OR,^RADIAT^,OR,^REDNESS^,OR,
^SWELL^,OR,^SWOLLEN^,OR,^SURG^,OR,^POST
OP^,OR,^IBUPROFEN^,OR,^IBUPROPHEN^,OR,^ALIEVE^,OR,^MOTRIN^,OR,^TYLENOL^,OR,^INJUR^,OR,^
TRAUMA^,OR,(,(,(^HEAT,OR,^HEAT[ -/\.;:]^,),AND,(,^
ICE^,OR,^APPLIED^,OR,^APPLY^,OR,^APPLYING^,OR,^TRIED^,OR,^USED^,OR,^USING^,OR,^COLD^,OR,^
RASH^,),),OR,^HEAT PACK^,OR,^HEATING
PAD^,OR,^LUMBAGO^,OR,^RELIEF^,OR,^RESOLVE^,OR,^RELIEVE^,OR,^RELEIVE^,OR,^DENTAL^,OR,(,^H
OT^,AND,(,^COLD^,OR,^COFF^,OR,^SHOWER^,),),OR,(,^ORAL^,AND,^SURG^,),OR,(,^SENSITIV^,AND,(,^HE
AT^,OR,^HOT^,),),OR,^HOT DOG^,OR,^HOT GREASE^,OR,^HOT EPPERS^,OR,^HOT TEA^,OR,^HEAT
ACHE^,OR,^HEAT CONDITION^,OR,^HEATACHE^,OR,^HEAT ATTACK^,OR,^HEAT
BEAT^,OR,^HEATBEAT^,OR,^HEAT FAILURE^,OR,^HEAT BURN^,OR,^HEATBURN^,OR,^HEAT
FLUTTER^,OR,^HEAT RACING^,OR,^HEAT
RATE^,OR,^HEATRATE^,OR,^HEATLH^,OR,^HEATH^,OR,^HEATTH^,OR,^HITTING
HEAT^,OR,^PALPITATION^,OR,^CHEAT^,OR,^WHEAT^,OR,^HEATER^,OR,^HEATHER^,OR,^HEATING^,OR,
^HOTEL^,OR,^LITHOTR^,OR,^METHOTR^,OR,^PHOTO^,OR,^PSYCHOTIC^,OR,^SHEATH^,OR,^SHEET^,OR
,^SHOT^,OR,^SUNDAY^,OR,^THEAT^,OR,^WHEAT^,OR,^ACCIDENT^,OR,^ALCOHOL^,OR,^ETOH^,OR,(,^B
URN^,AND,^MOUTH^,),OR,^DISTRESS^,OR,^FEVER^,OR,^GETS HOT^,OR,^HEAT FLASH^,OR,^HOT
FLASH^,OR,^HIVES^,OR,^HOT TUB^,OR,^NO HEAT^,OR,^OVEN^,OR,^SUICID^,OR,^HEAT OF THE
MOMENT^,OR,^CONTACT WITH OTHER HEAT AND HOT^,OR,^W92^,),)
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