



25th
Anniversary



EMS ODYSSEY CONFERENCE

June 12, 2025

“Heat Stroke”
EMS Odyssey
June 2025



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HYPERTHERMIA

HEAT STROKE

The body can no longer control its temperature

Core body temp rises rapidly,
the sweating mechanism fails and
the body is unable to cool down.

Temp can rise to $>106\text{ F}^\circ$ within 10-15 min



Did You Know?

RECORD TEMPS

! JUNE 2024

Average 97°F: The previous record was 95°F in 2021

! JULY 8, 2024

118°F: First time AZ has hit this temp in July



RECORD TEMPS

! 2023

55 days > 110°F. This year we have already had 23 days....

! 2024

Downtown Phoenix average temp is > 102°F by Noon....

**AVERAGE PHX
SURFACE TEMP**

**165[°]
F**

**According to NASA's Jet Propulsion Laboratory collecting data using
a thermal radiometer tool aboard the International Space Station**

(June 2024)



94%

**of Hyperthermia pts
found down outside**

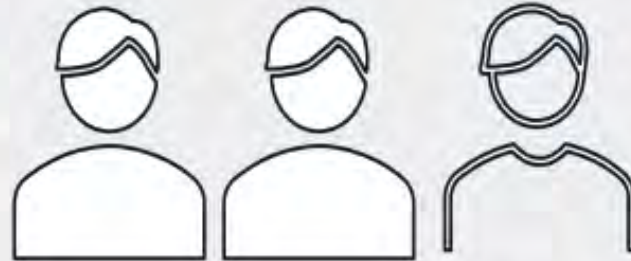
2023 Heat Related Deaths



645 heat related deaths occurred in Maricopa County during 2023.



More than **3 out of 4** heat related deaths were **male**.

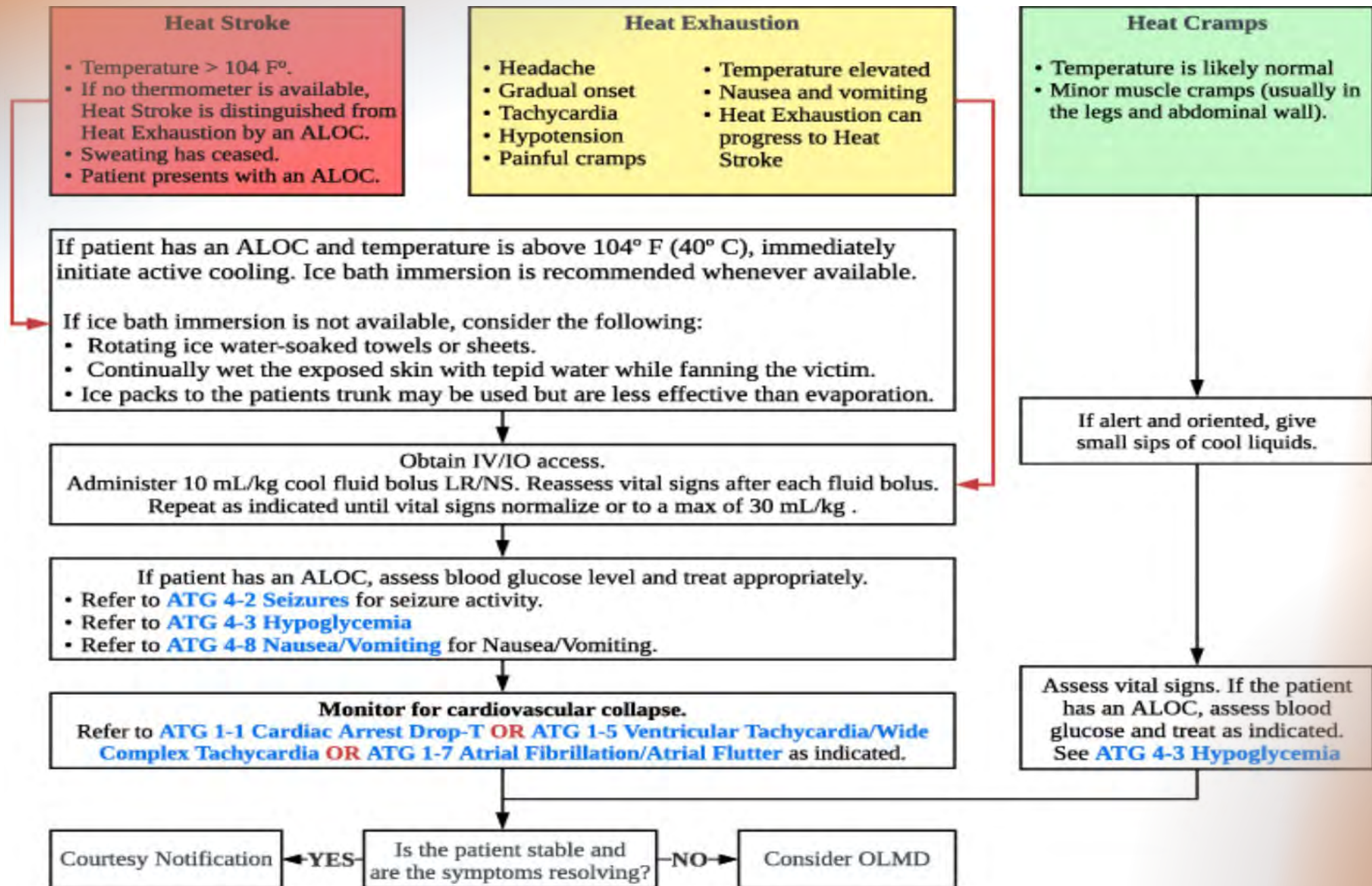


Almost **2 out of 3** heat related deaths were **age 50 years or older**.

2023 Ice Immersion

Inspired by EMT's and Paramedics recognizing the impact of Heat Stroke on patients.





»PTI* # 24329205
AGE: 40S__ SEX: M INFEC: UNK_____
HAVING POSS HEAT STROKE, SKIN HOT DRY,
Last Update: 073124 1115 By: VD4587«

CC: CALLER REPORTING PT
NO LONGER SWEATING, AWAKE/RESP, WORKIN_

Loc 5933 E EXETER BL ,PHX
Src E ARCADIA LN/N ARCADIA LN,PHX
Nature HEAT ILL PERSON (HEAT)

Desc HSE
Desc

Phn 6025736790
Phn 6025736790

EMD Information for: HEAT PHX

KEY QUESTIONS:

- 1) Is the patient's skin hot & dry to the touch?.....YES R/ALS
- 2) Has the patient ever lost consciousness.....YES R/ALS

SEND CALL.....SEND CALL

- 3) Anyone in the residence have any contagious diseases?

PRE-ARRIVAL INSTRUCTIONS:

Reassure help is on the way.
Remove patient from heat.
Lay down and elevate feet.

Begin cooling measures, rags in cool water-under armpits, neck, groin & head.
Gather all medications patient takes and have ready for paramedics.
Any changes before we get there, call back.

2024 Rapid Cooling Bag

- Ice & Cold-Water Immersion
- All members in operations trained and equipment carried on every response unit.



Residence

Car

Most (66%) outdoor heat-related deaths occurred in an urban area in 2024.

Desert
Area

Park

Urban Area

Other

Rapid Cooling Bag / Ice & Cold-Water Immersion Updates

[SJE] ST JOES HOSPITAL ER ADULT	78
[GSE] BANNER UNIV MED PHX EMER	69
[CHEA] VALLEYWISE HEALTH MEDICAL CENTER	45
[JCE] HONOR JCL MED CTR EMERGENCY	27
[ES] BANNER ESTRELLA HOSPITAL	22
[BP] ABRAZO CENTRAL CAMPUS	17
[GBE] HONOR DEER VALLEY EMER	15
[DV] ABRAZO SCT CAMPUS	9
[MS] MARYVALE HOSPITAL	6
[AG] AZ GENERAL HOSPITAL	4
[TSE] BANNER THUNDERBIRD	4
[CCE] CHA REGIONAL HOSP EMER	2

Overall					
Heat Related Calls *(as of 05.01.24)					1,347
Cold Water Immersion Uses (first use documented 05.22.24)					304
Monthly	May	June	July	Aug.	Sept.
Heat Related Calls *(as of 05.01.24)	60	341	539	279	100
Cold Water Immersion Uses	5	66	151	70	12
Heat Exhaustion	17	73	110	46	18

Preliminary Results



304 ice water immersion patients transported to valley hospitals
175 transported to our research partners

Total reported: 164 (11 excluded for field GCS = 15)



Banner: 43 (26.2%)
St. Joseph's: 73 (44.5%)
Valleywise: 48 (29.3%)

Note: we are continuing to add data. These numbers are our best estimate of the current state; however, they will change as we obtain more data from each hospital. The contents of this presentation should not be published nor shared.

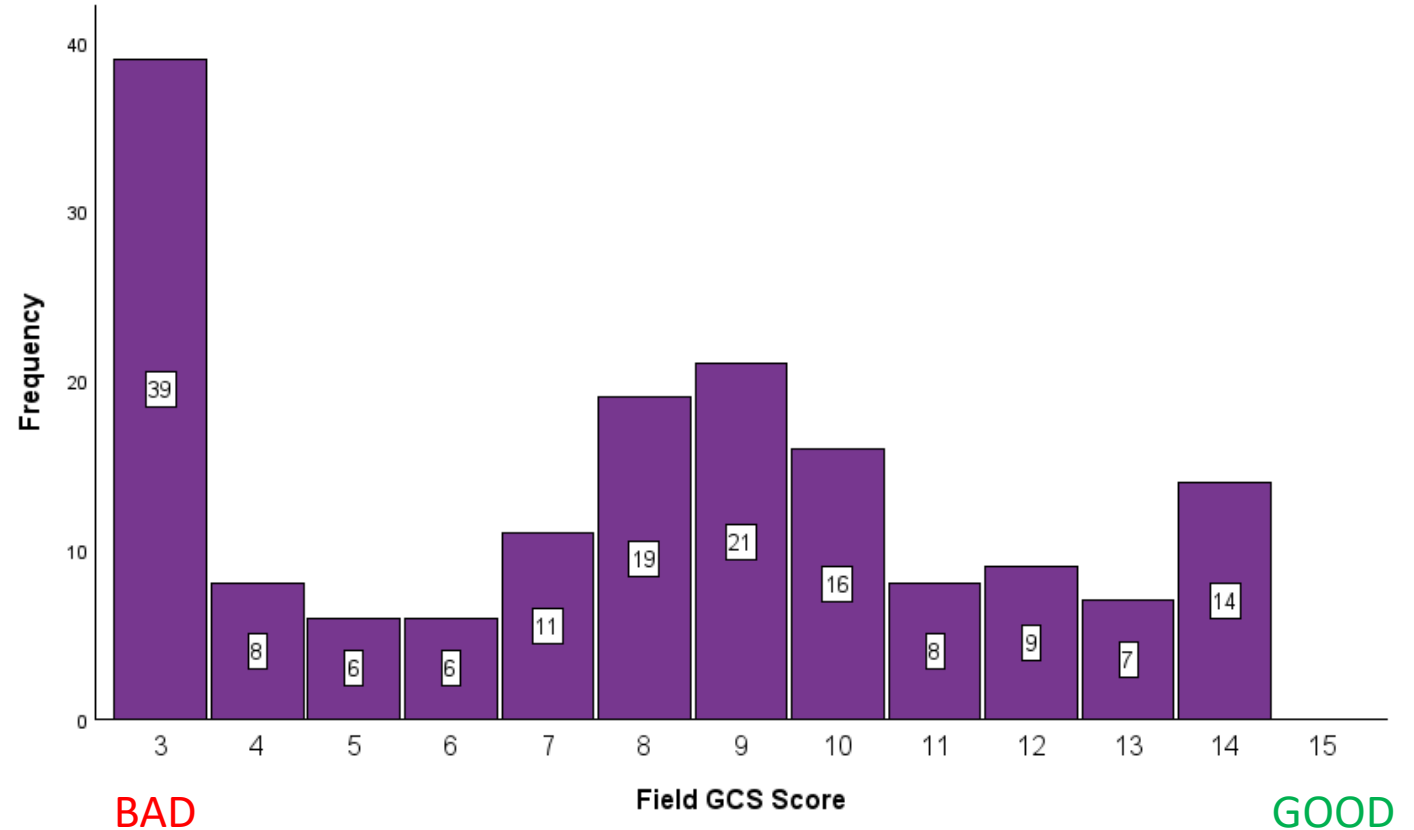
Field GCS Score

GCS \leq 8: 89 (54.3%)

GCS $>$ 8: 75 (45.7%)

Median GCS: 8 (4 -10) (49%)

GCS 3: 39 (23.8%)



GCS Over Time

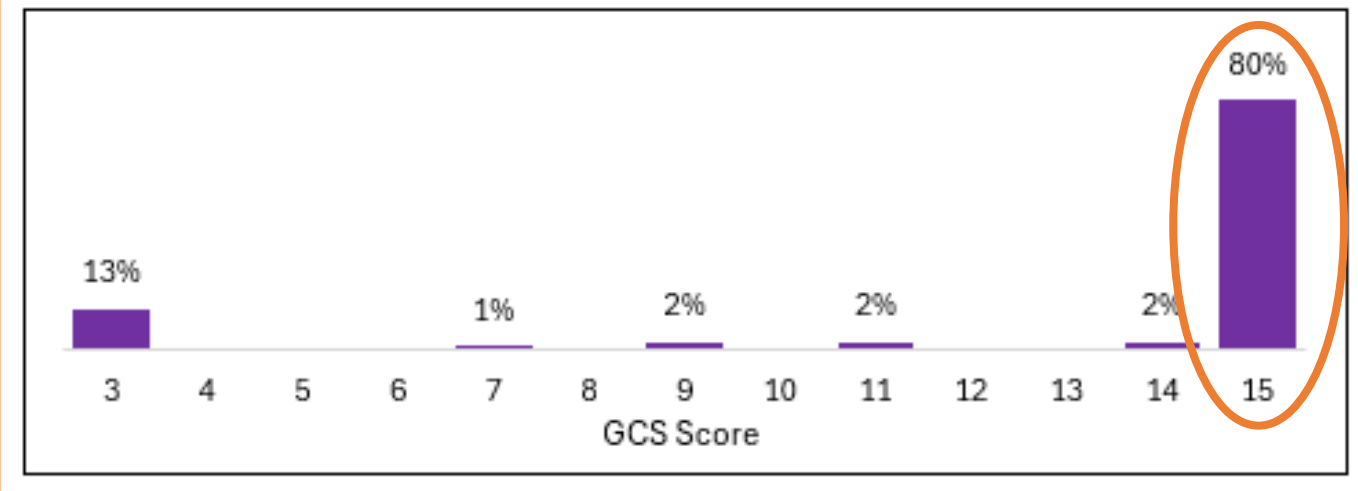
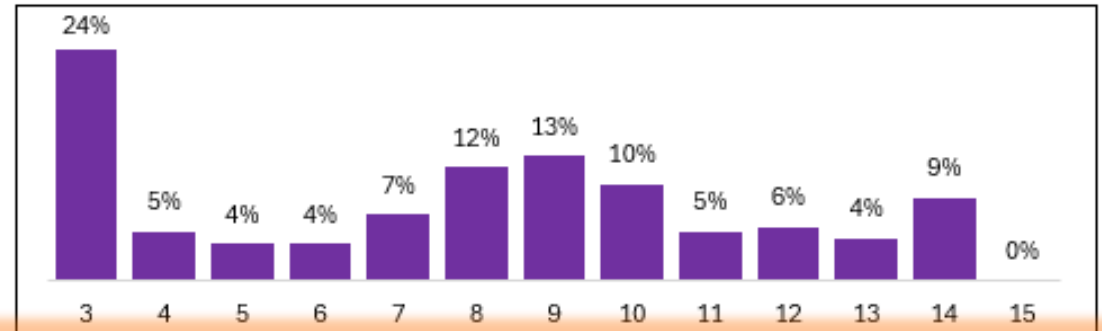
Scores shift to the right reflecting improvement

80% Discharge with a GCS of 15

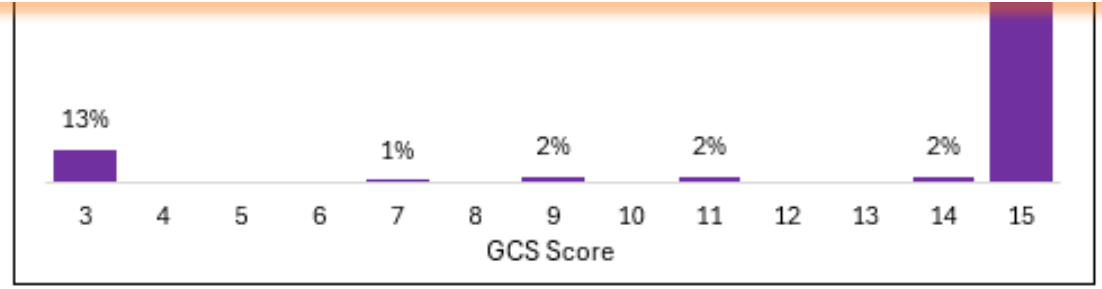
POOR GCS

GOOD GCS

Field



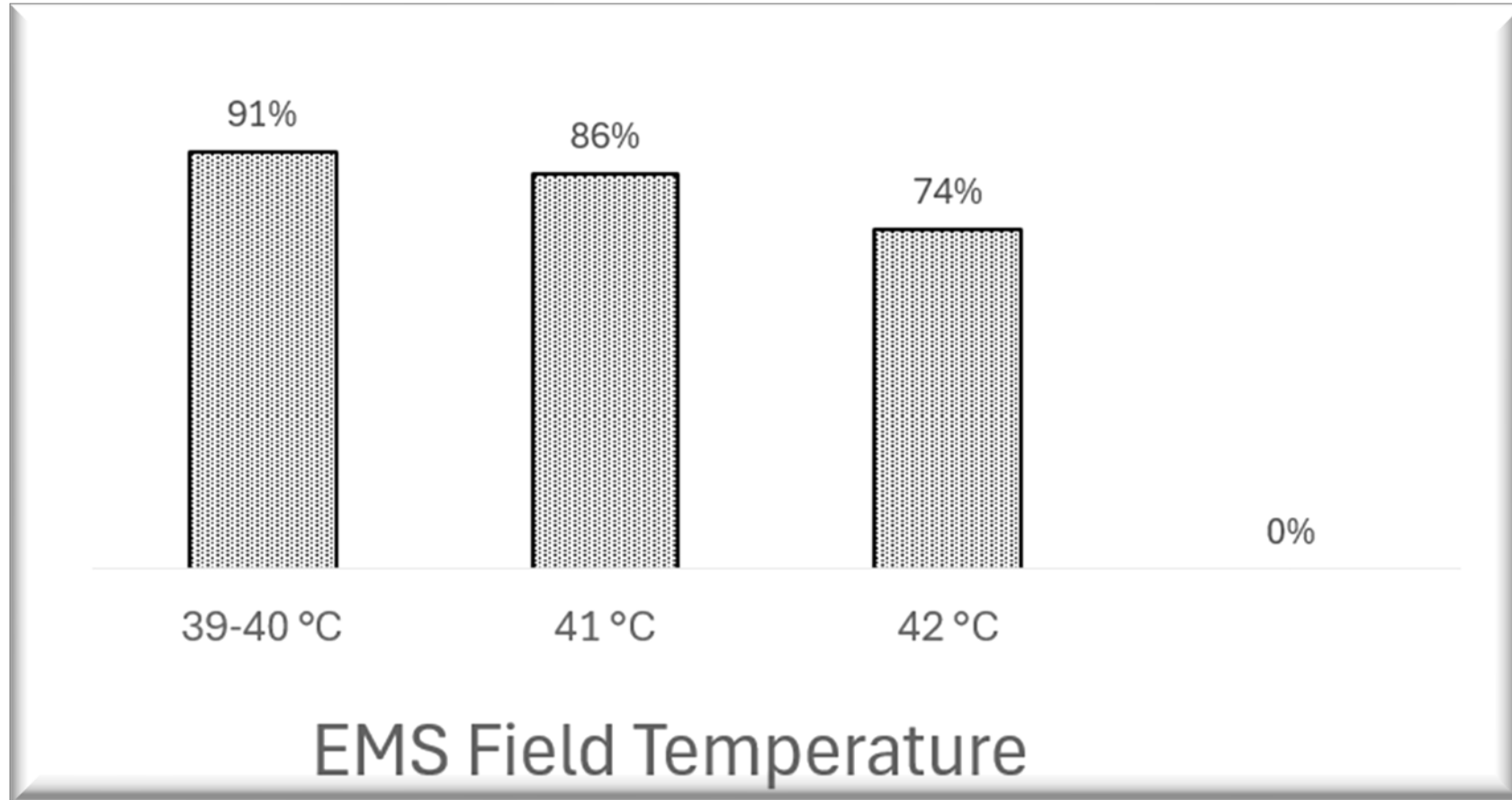
Discharge



POOR GCS

GOOD GCS

Field Temperature for Good Outcomes

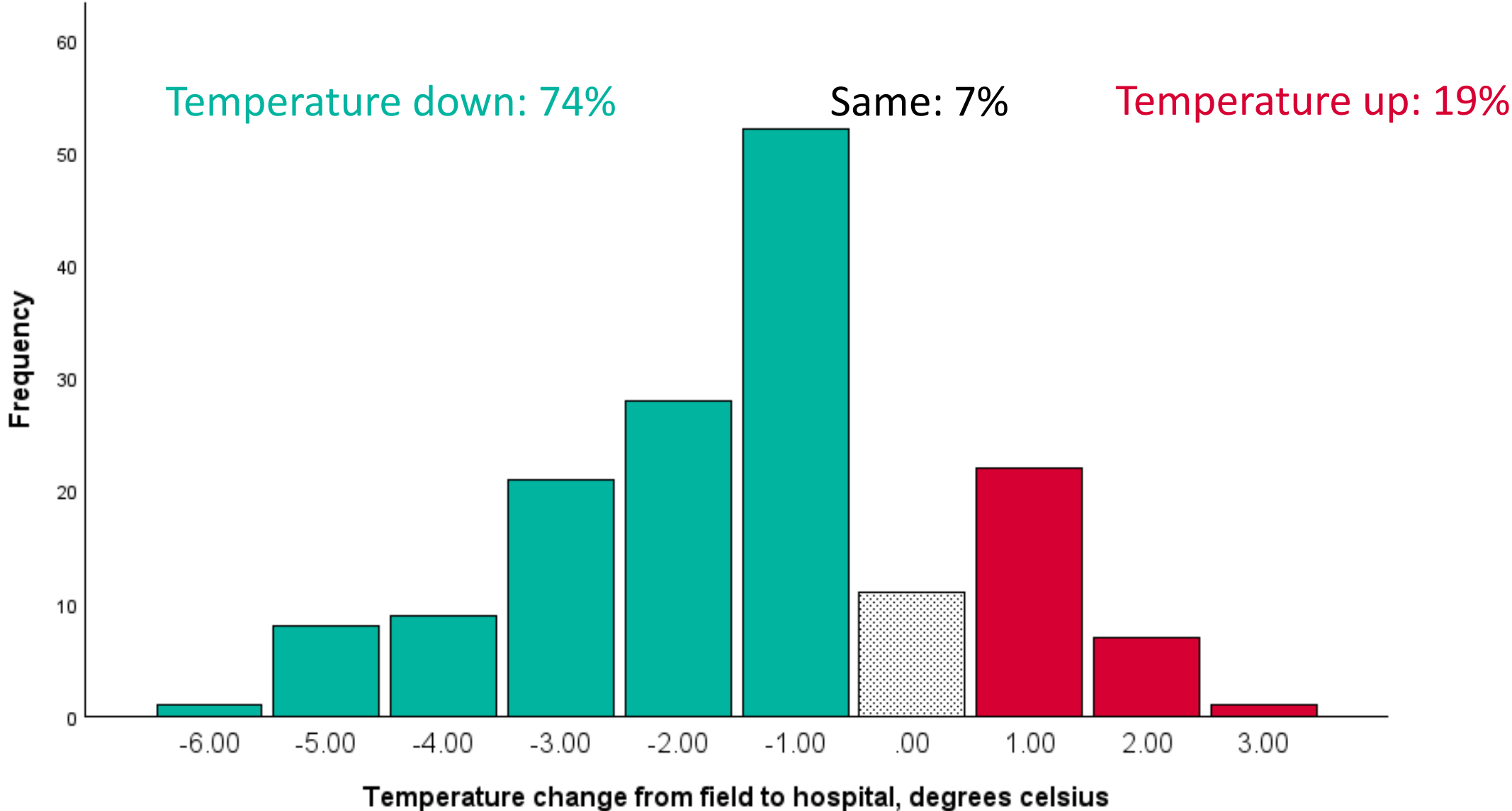


Largely 80% discharge with GCS 15

Risk of impairment increased with field temperature

Temperature Conversion: 39 °C = 102.2 °F, 40 °C = 104 °F, 41 °C = 105.8 °F & 42 °C = 107.6 °F

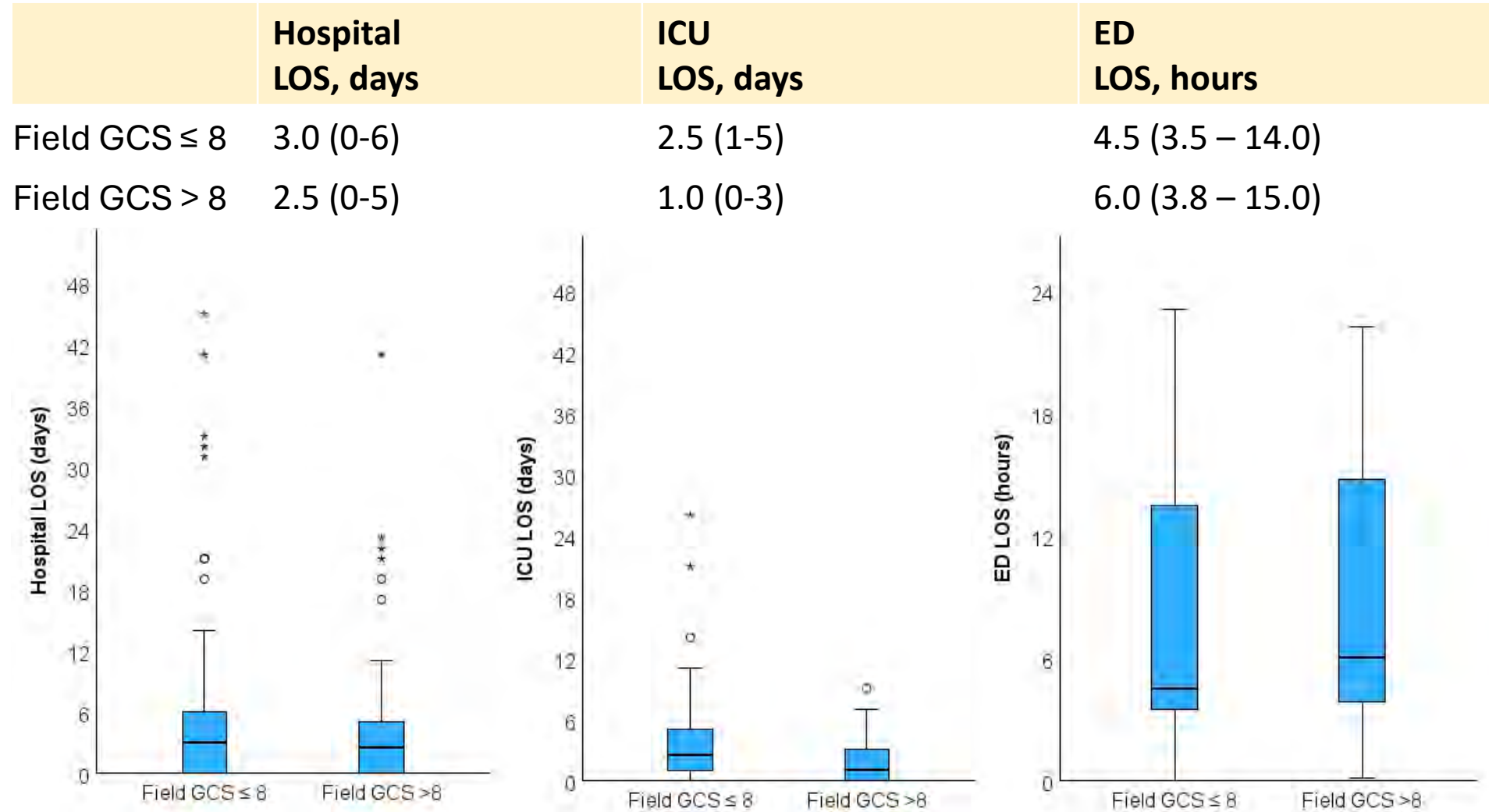
Hospital Arrival Temperature



Length of Stay

Reported as Medians with (25th – 75th Percentiles)

Distributions show consistency rather than much variability in hospital, ICU, and ED length of stay





Why does it matter?



Bi Weekly Report Range

Ice & Cold Water Immersion Bag:	Heat Related Calls:
5	144

Running Totals (May 1, 2025 to September 30, 2025)

Ice & Cold Water Immersion Bag :	5
Heat Related Calls:	144

2025 Point-In-Time (PIT) Count Report

- Each year, hundreds of volunteers and staff help count people experiencing homelessness
- Held one day in January throughout Maricopa County
- Part of a nationwide effort to assess homelessness

Total PIT Count, 2019-2025

Unsheltered Sheltered

Safe Outdoor Space**

Phoenix data includes 220 people who were staying at the Safe Outdoor Space, a structured outdoor shelter that provides meals, laundry, shower facilities, and onsite case management.



2019 2020 2021* 2022 2023 2024 2025

Source: Maricopa Regional Continuum of Care PIT Count, 2019-2025

*The PIT Count was not conducted in 2021 due to the pandemic

**The City of Phoenix Safe Outdoor Space is included in the unsheltered count.



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