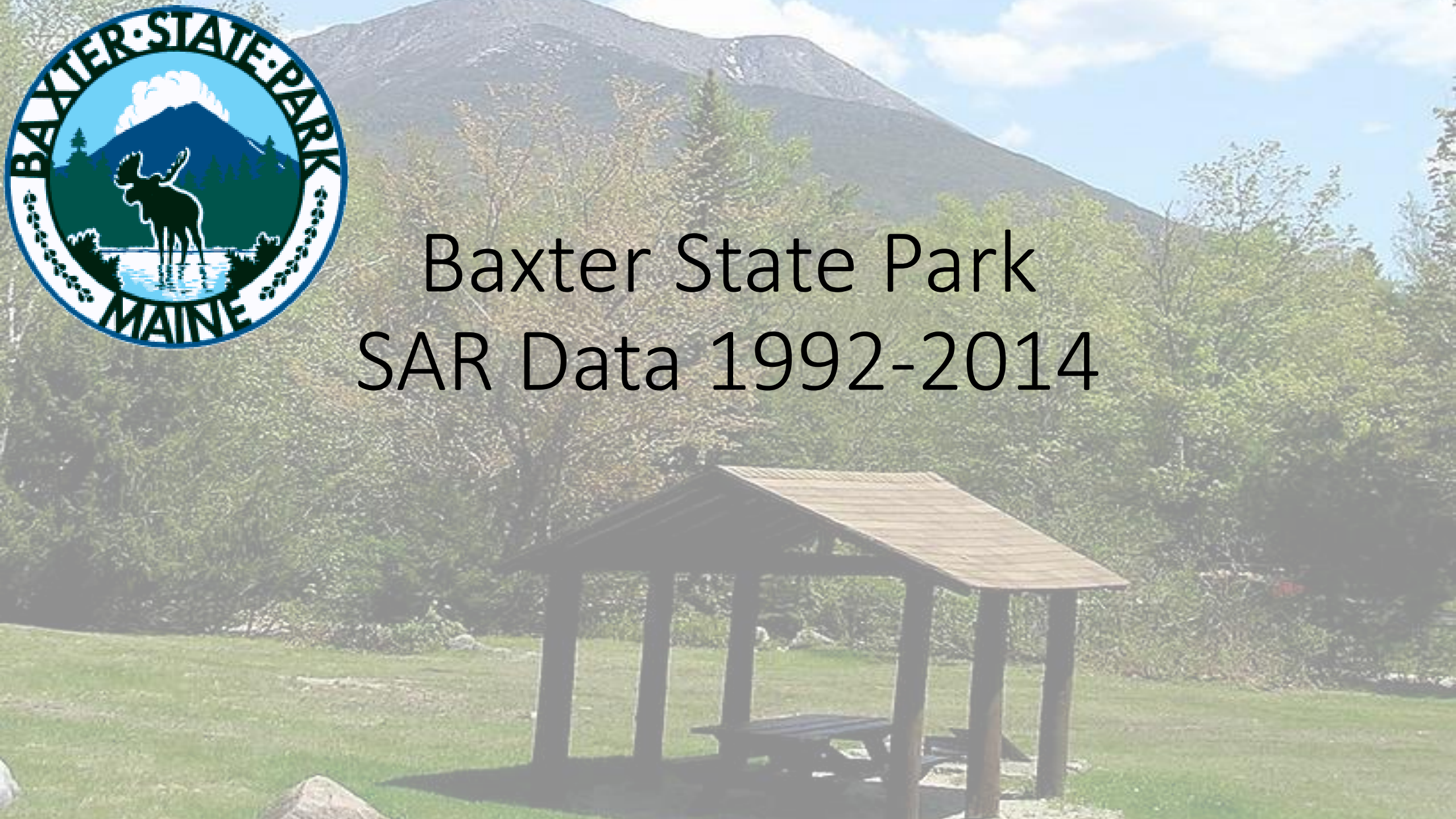




# Baxter State Park

## SAR Data 1992-2014







# Chris Welter

Tufts University School of Medicine

**BSP Medical Directors**

**Dr. Steve Diaz**

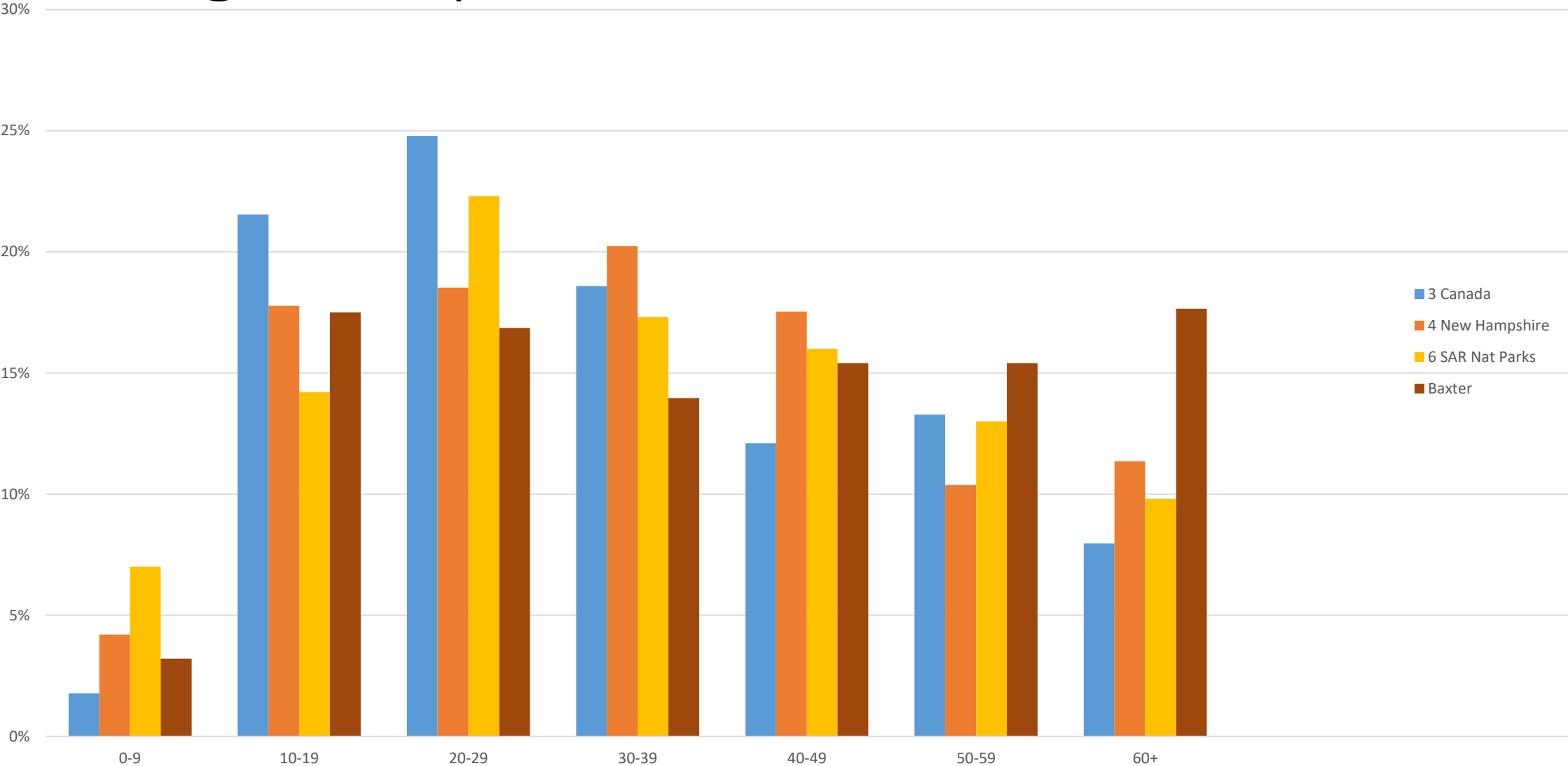
**Dr. Matt Scholl**

**Chief Ranger Ben Woodard**

...Many recreation areas include both areas that are easily accessible by car and areas that are remote, without easy vehicular access. These sites attract visitors with a wide range of health statuses, ranging from those with high levels of fitness to those with multiple chronic health conditions. In addition, many of the recreational activities that park visitors engage in are associated with some degree of risk of injury. For example, hiking is an activity not typically associated with a high degree of risk; however, it is the wilderness activity most commonly associated with a need for a search and rescue (SAR) event.

When coupled with poor cellular service coverage, a lack of essential supplies, the increasing burden of chronic disease and no access to definitive care, hiking-related injuries can become serious threats to health and survival.”

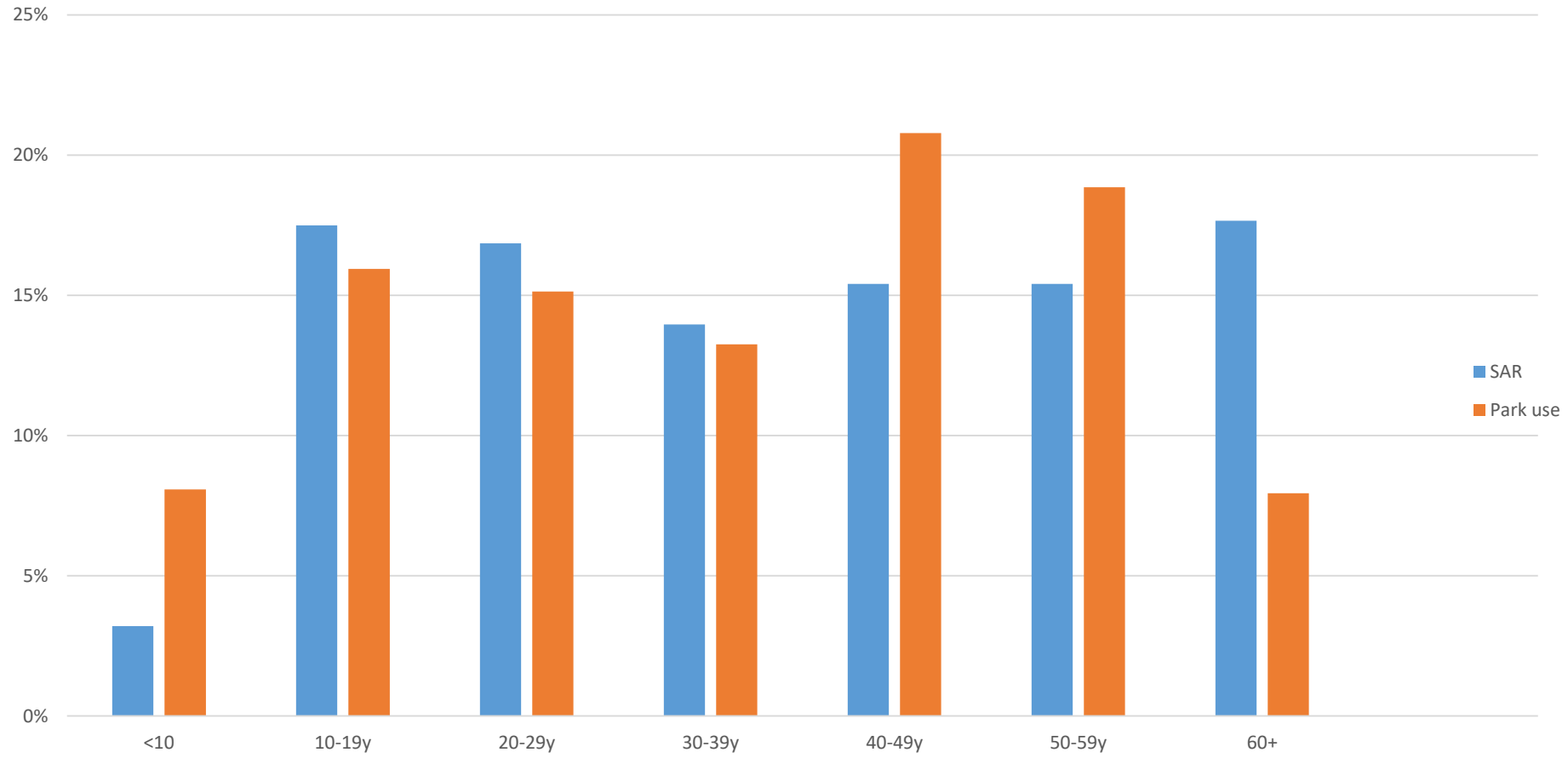
# Age Comparison to other Literature



Mean Age BSP SAR Incidents: 39 years

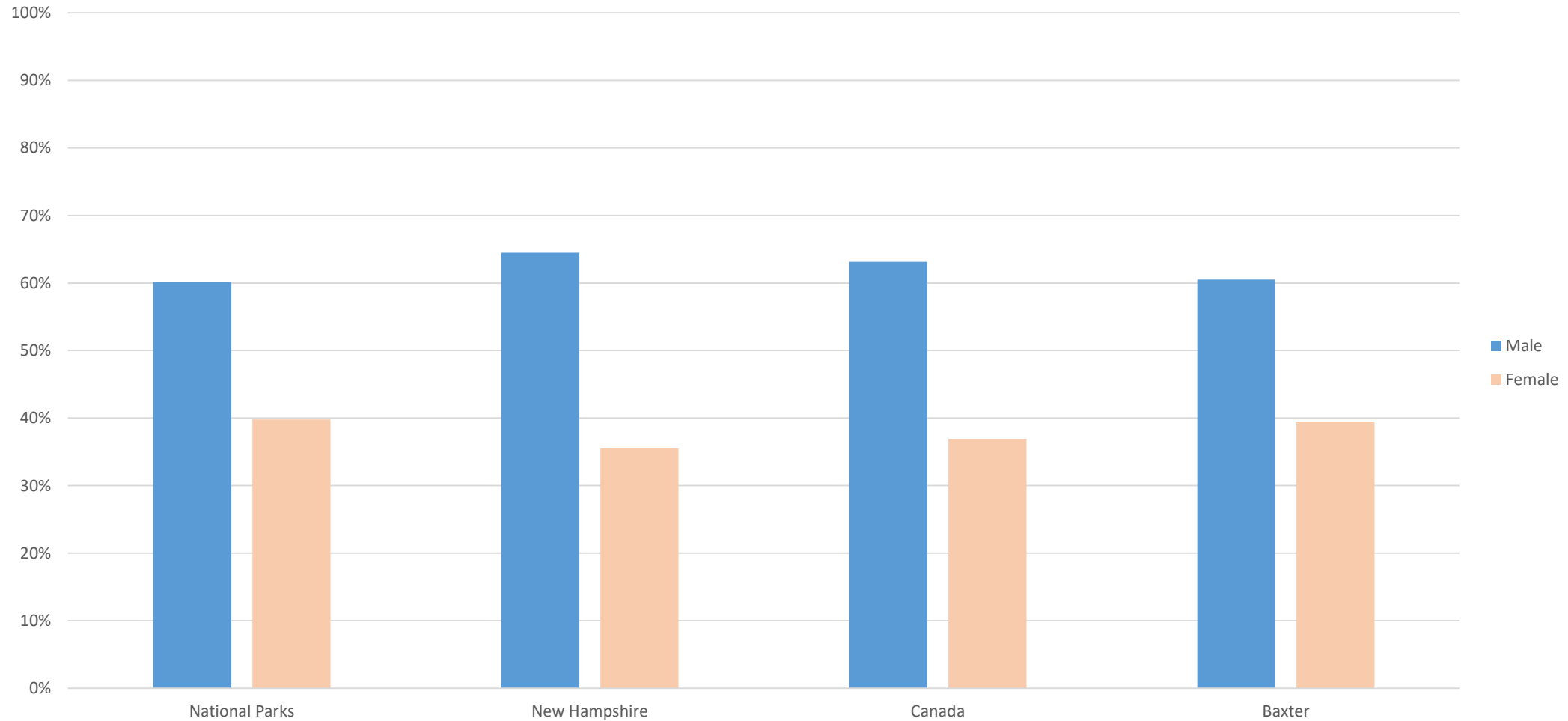
# Age vs. Baxter Park Use Demographics

(SAR data 1992-2014, Park Use from Spring, 2006)

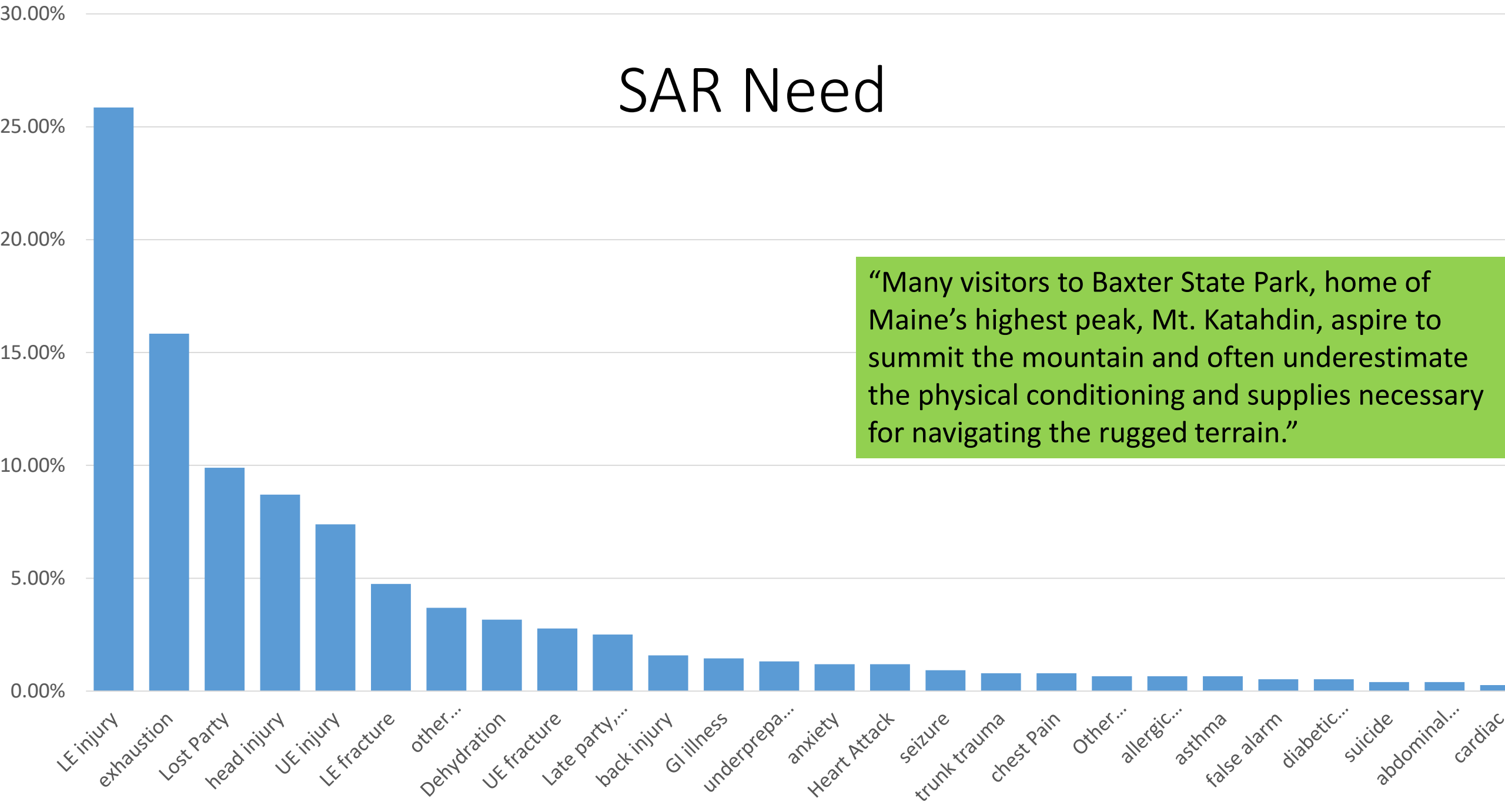


# Demographics

SAR Victims by sex compared to other Literature

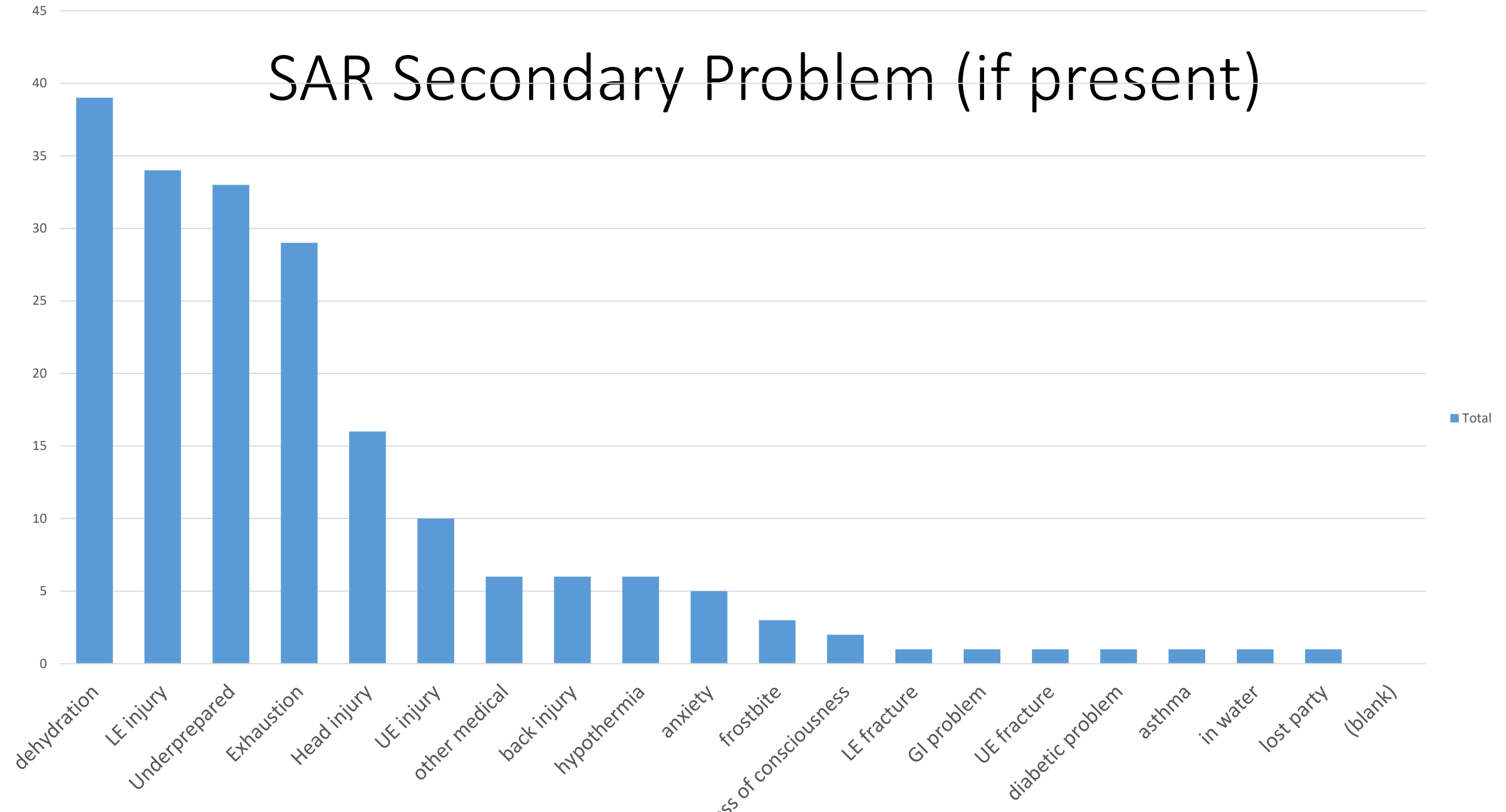


# SAR Need



Total

# SAR Secondary Problem (if present)





“Fatigue emerged as an important precipitant to search and rescue events within Baxter State Park.

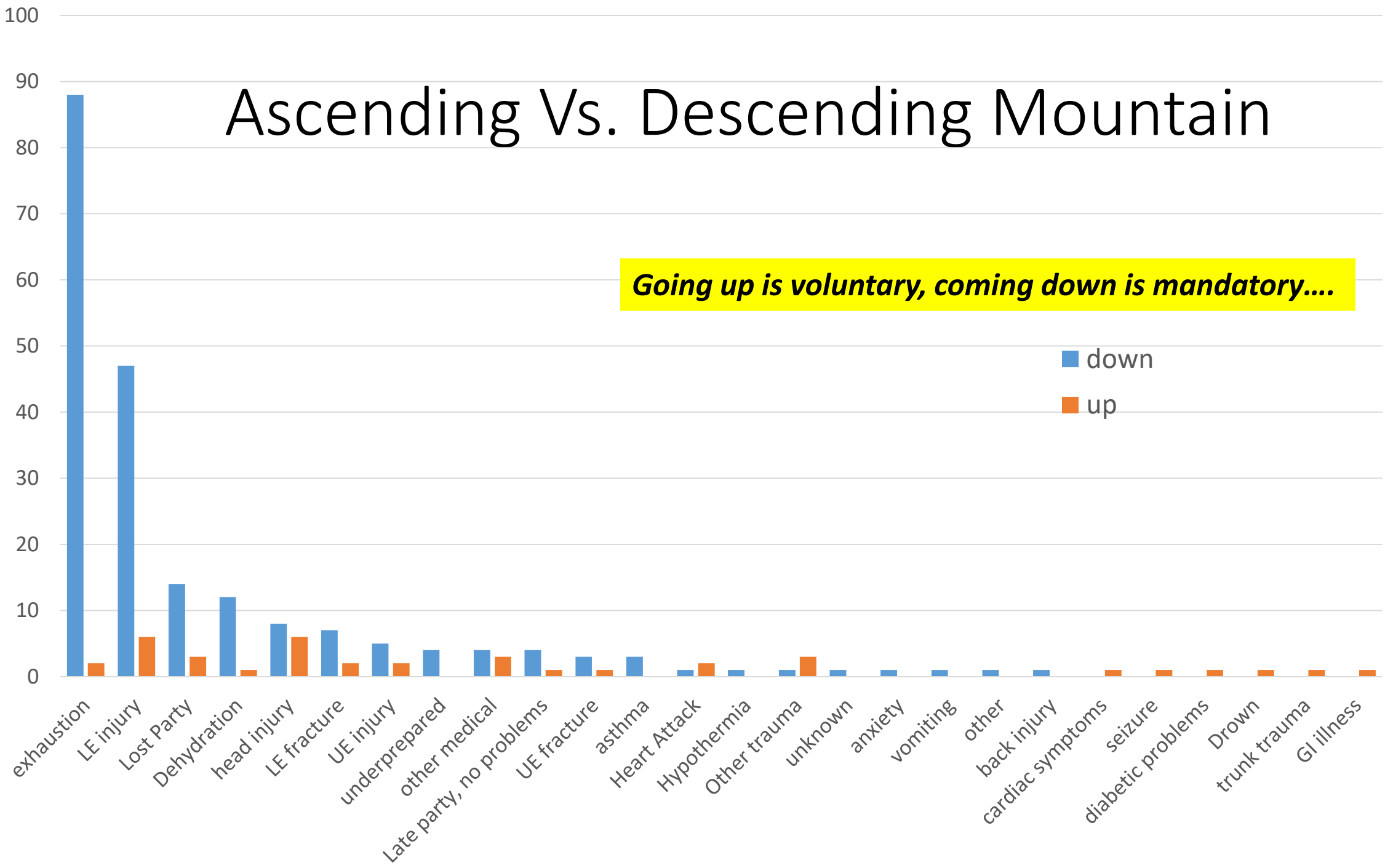
Approximately 20% of all search and rescue responses, a full 66% of responses for medical issues, were due to visitor fatigue.”

“While we anticipated that visitors experiencing fatigue would be of older age than those who did not experience fatigue, we were surprised by how much older – approximately 9 years – fatigued visitors were.”

“This information may help to target educational interventions regarding the physical stamina, adequate nutrition and hydration, rest periods, and other preparation necessary for older hikers to successfully navigate Baxter’s mountainous terrain.”

# Ascending Vs. Descending Mountain

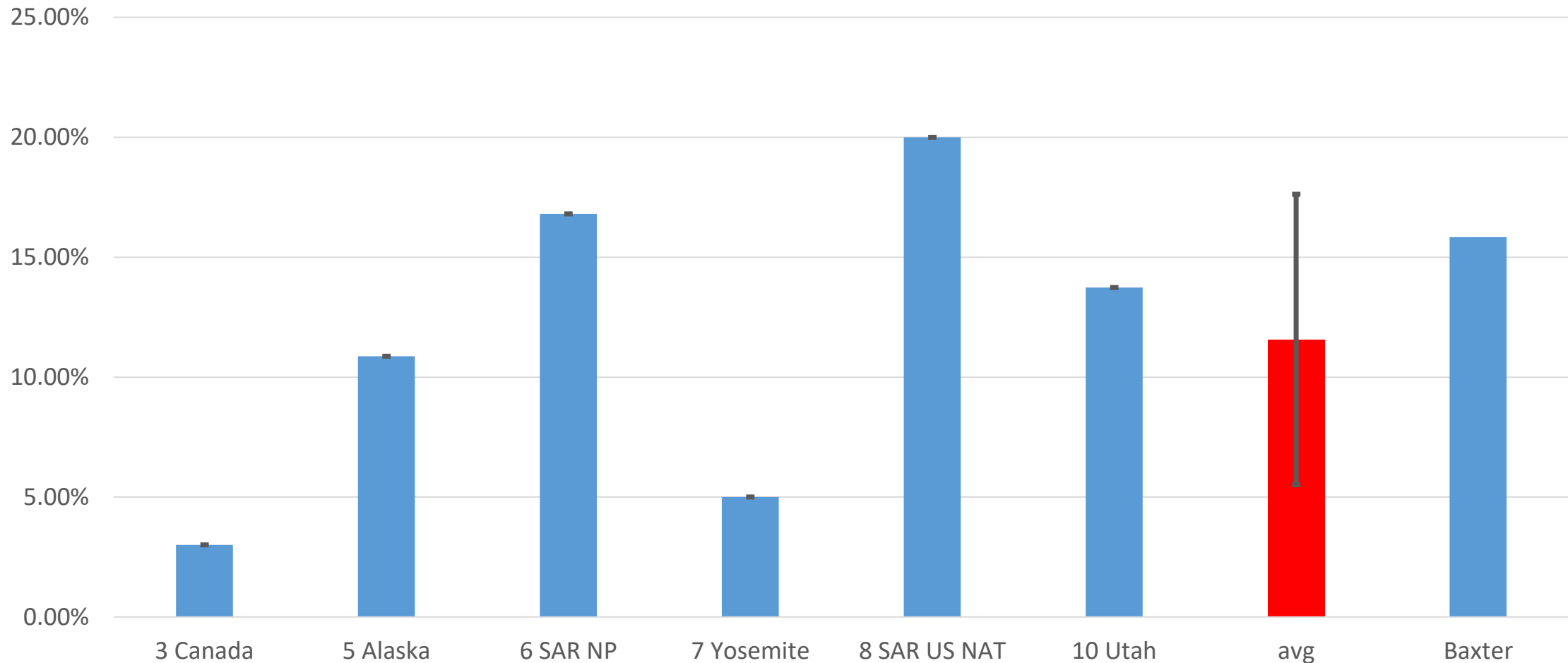
***Going up is voluntary, coming down is mandatory....***



# Fatigue compared to other Literature

Fatigue etiology of all SAR events \*  
(\* imperfect comparison criteria)

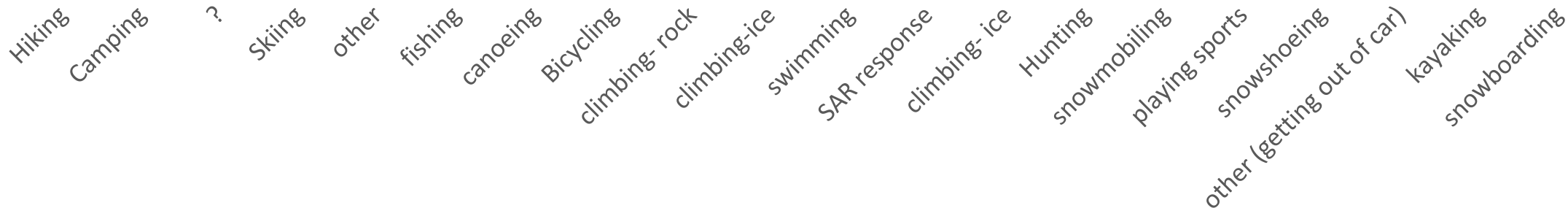
***Rough, rooty, rocky and steep...***



Total

# Activity when SAR became Needed

600  
500  
400  
300  
200  
100  
0



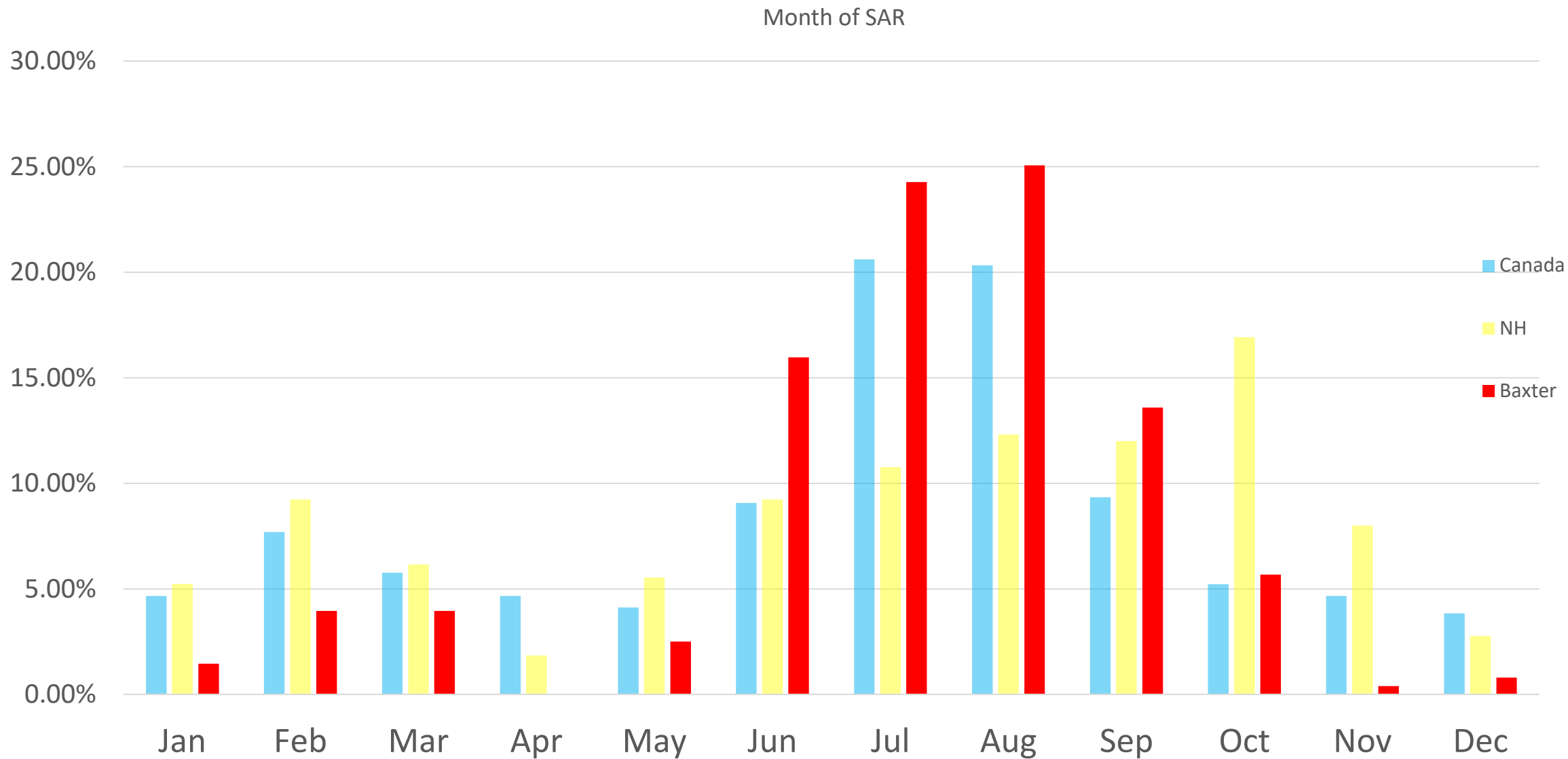
## “FATALITIES

During the study period, 19 fatalities (19/754, 2.5% of all search and rescue responses) occurred in the park. Of those, 11 (57.8%) were due to medical emergencies 3 (15.8%) were suicides, 2 (10.5%) were the result of traumatic injuries sustained by visitors, 2 persons drowned (10.5%), and one visitor died following a lightning strike (5.2%).

Myocardial infarction was the most common cause of death (n=9, 47.3%). The mean age of those who died in the park was 45.3 years while the mean age for those who survived was 38.7 years.”

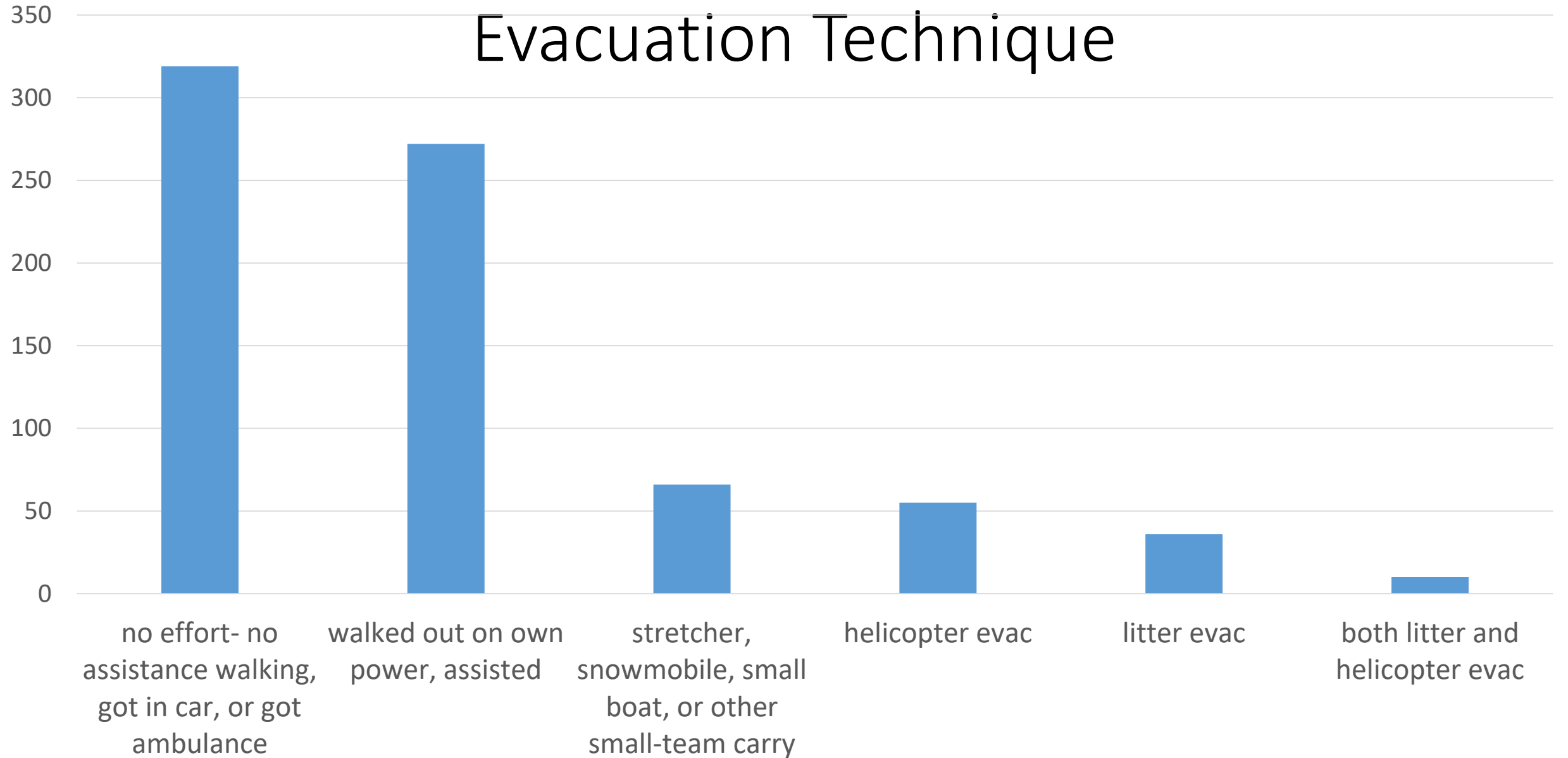


# Month of Incident

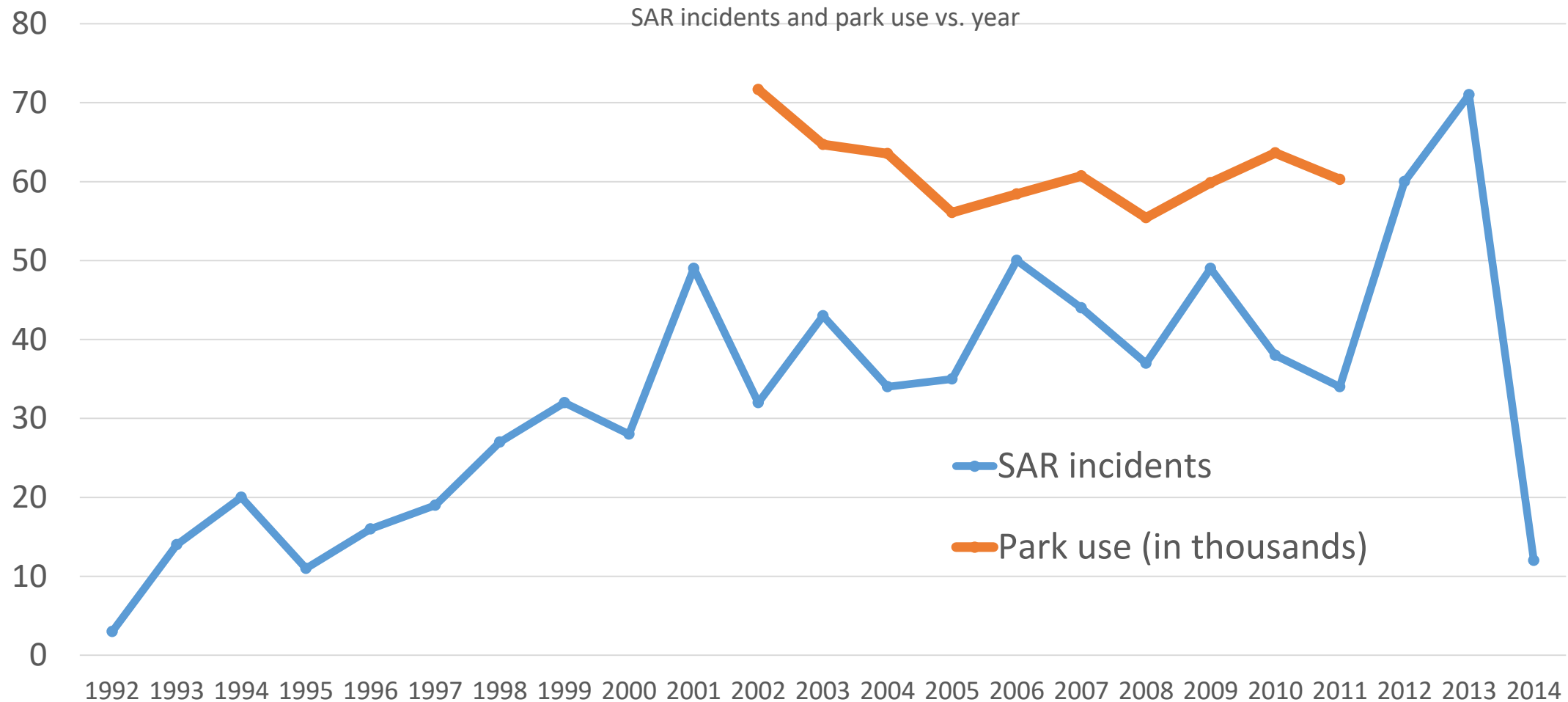


Total

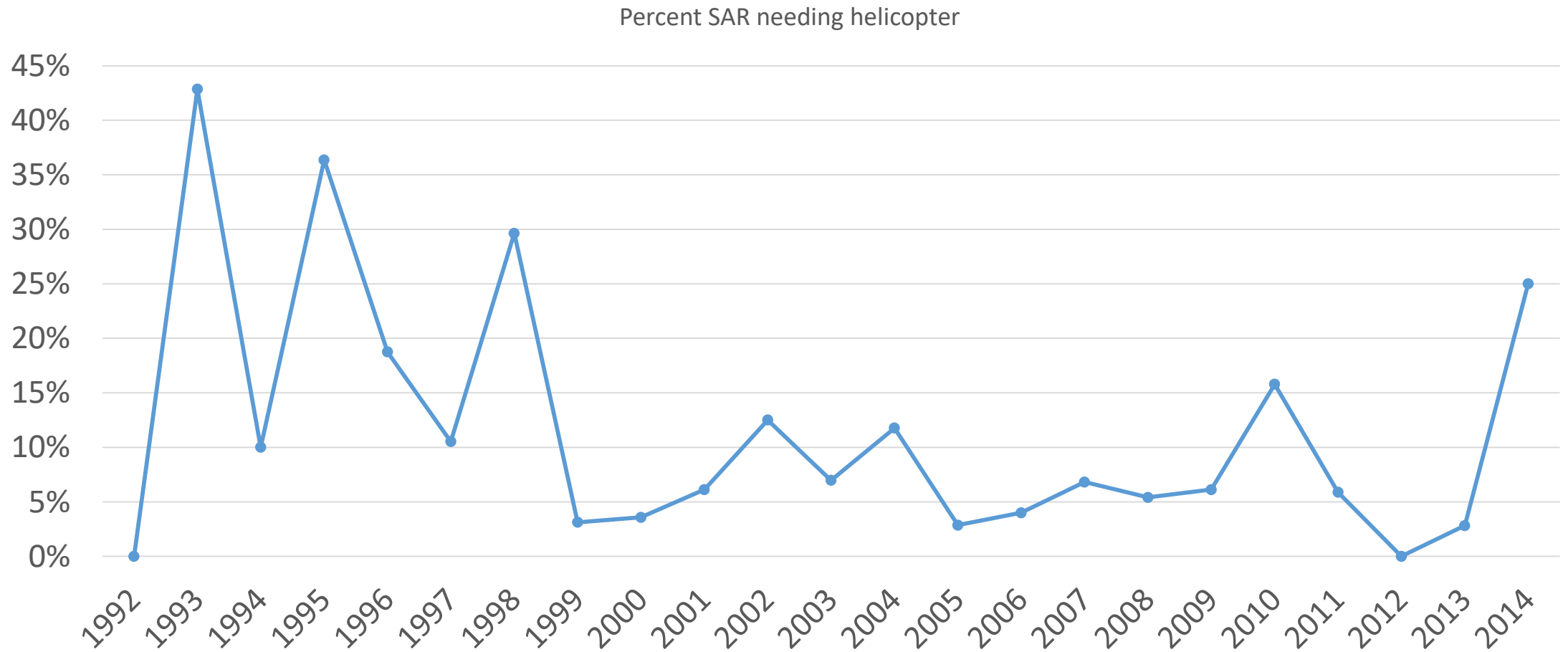
# Evacuation Technique



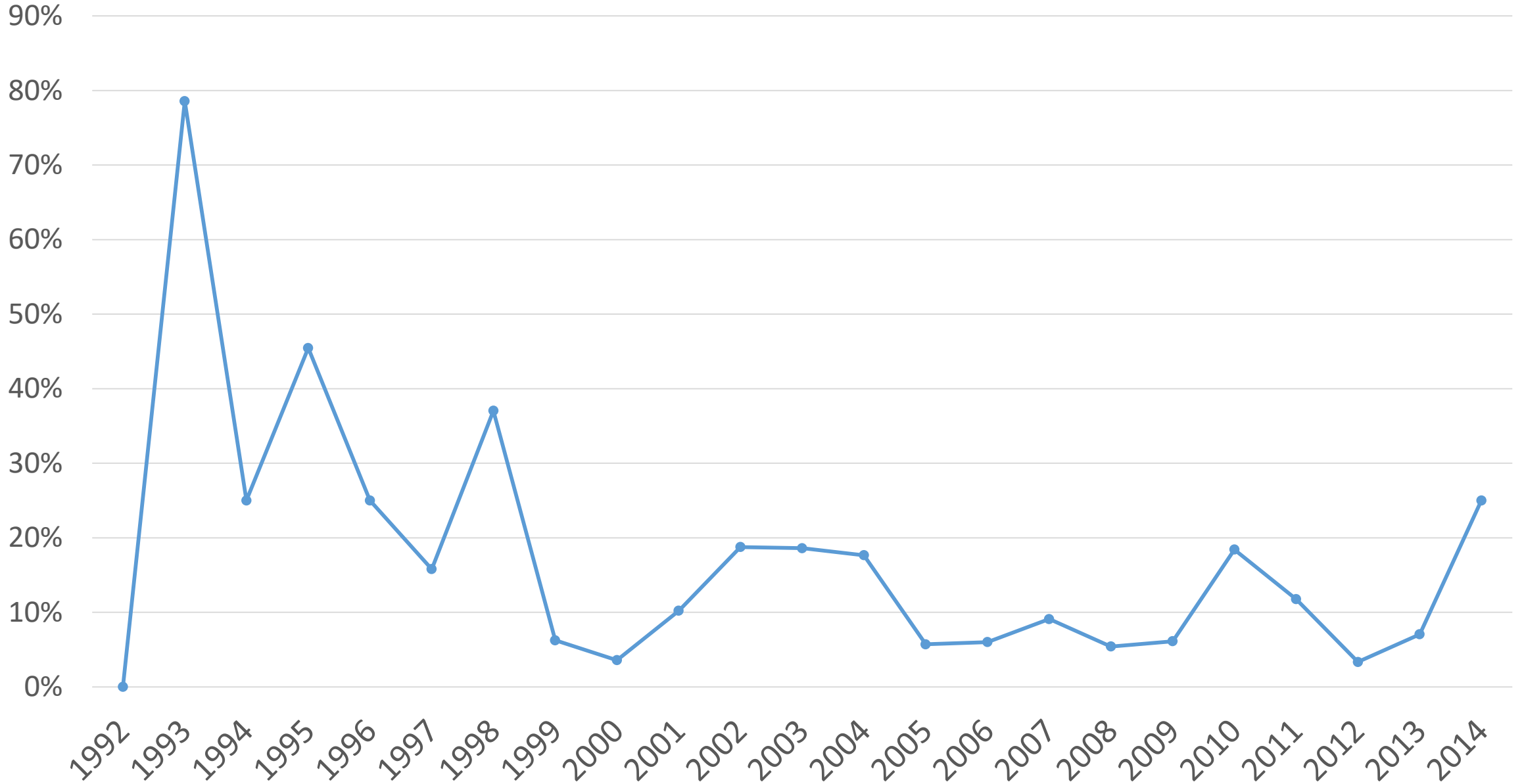
# SAR events and park use per year (1992 and 2014 are incomplete years)



# Percentage of SAR needing helicopter



## Percent SAR needing litter, heli, or both





<b><u>SAR Summary</u></b>	<b><u>- What are the chances???</u></b>	<b><u>% per 100,000</u></b>
Visitor days requiring Litter, heli, or both	0.004%	3.6
Total People requiring litter, heli, or both	0.007%	6.8
Visitor days requiring stretcher, snowmobile, boat, or other small team carry	0.002%	2.3
Total people requiring stretcher, snowmobile, boat, or other small team carry	0.004%	4.4
Visitor days requiring little to no evac effort	0.021%	21.4
Total people requiring litter, heli, or both	0.040%	40.1
Visitor days requiring SAR in any form	0.027%	27.4
Total people requiring SAR in any form	0.051%	51.2

# Take Home Points:

## Train and Communicate for Prevention:

- Older demographic
- Fatigue *“One of the most strenuous day hikes in New England”*
- Suicide Potentials – recognition/response

## Train for Treatment:

- Fatigue
- Lower extremity injuries
- Myocardial infarctions

## Train for Consistent Reporting

