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## Introduction

Emergency Action Plans (EAP) are required by the Occupational Safety and Health Administration (OSHA) to keep employees safe in the event of an emergency. EAPs at universities are meant for students, faculty and staff to use as a guide to prepare them for before, and during, an emergency. The minimum requirements are outlined in Regulations (Standards 29 CFR) Subpart E PART 1910.38. 1910.38(c) include procedures:

- (1) for reporting a fire or other emergency;
- (2) for emergency evacuation, including type of evacuation and exit route assignments;
- (3) to be followed by employees who remain to operate critical plant operations before they evacuate;
- (4) to account for all employees after evacuation;
- (5) to be followed by employees performing rescue or medical duties; and
- (6) the name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of duties under the plan.

OSHA also makes recommendations to expand the scope for what an EAP should cover. Some examples of the recommended protocols include floods, hurricanes, tornadoes, fires, toxic gas releases, chemical spills, radiological accidents, explosions, civil disturbances, and workplace violence resulting in bodily harm and trauma. More specialized protocols may be in place for regional or functional necessity such as train derailment and localized weather.

## Methods

A systematic review of EAPs was conducted with 32 universities selected based on similar student enrollment. While 50 universities were originally selected, 18 were removed due to inaccessibility of the EAP on the university web page, password protected information, or ambiguity of the document. Each of the 32 university EAPs were assessed for adherence to the OSHA requirements. Universities were determined to have met the minimum requirements if they followed OSHA regulations as listed in Regulations (Standards 29 CFR) Subpart E PART 1910.38. Protocols had to be clear and elaborative to count. Variables were determined by using the emergencies listed on the OSHA EAP guide as well as elements included in the University of Kentucky EAP for comparison.

Elements of a EAP that were searched for were protocols for fire, severe weather, hazardous materials, utility outages, earthquakes, active shooters, bomb threats, medical emergencies, psychological emergencies/civil disturbance, evacuation of disabled individuals as well as features such as list of emergency numbers (Other than 911), evacuation routes/floor plans, shelter locations, and bomb threat checklists.

## Results

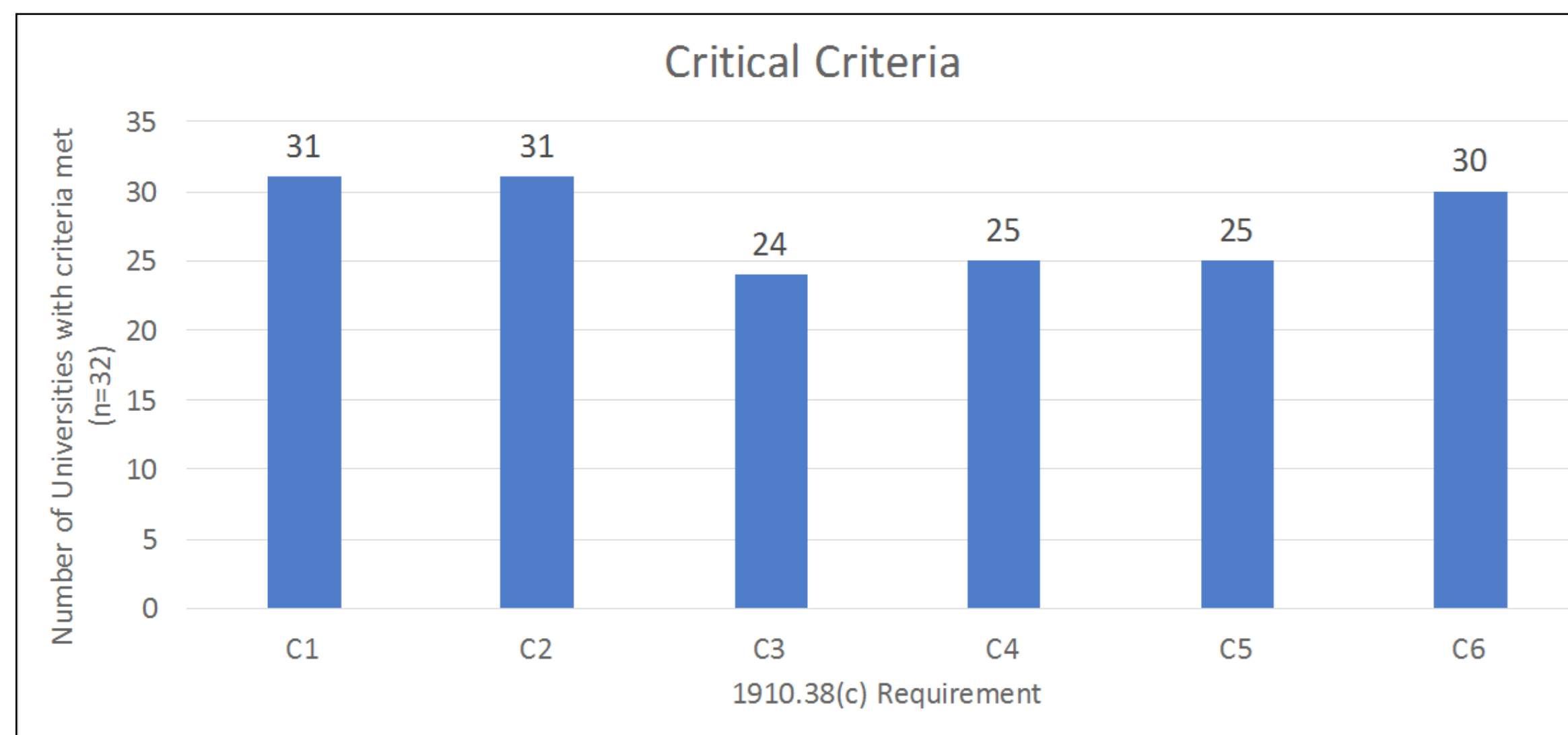


Figure 1: Shows how many universities were compliant with each respective 1910.38(c) requirement

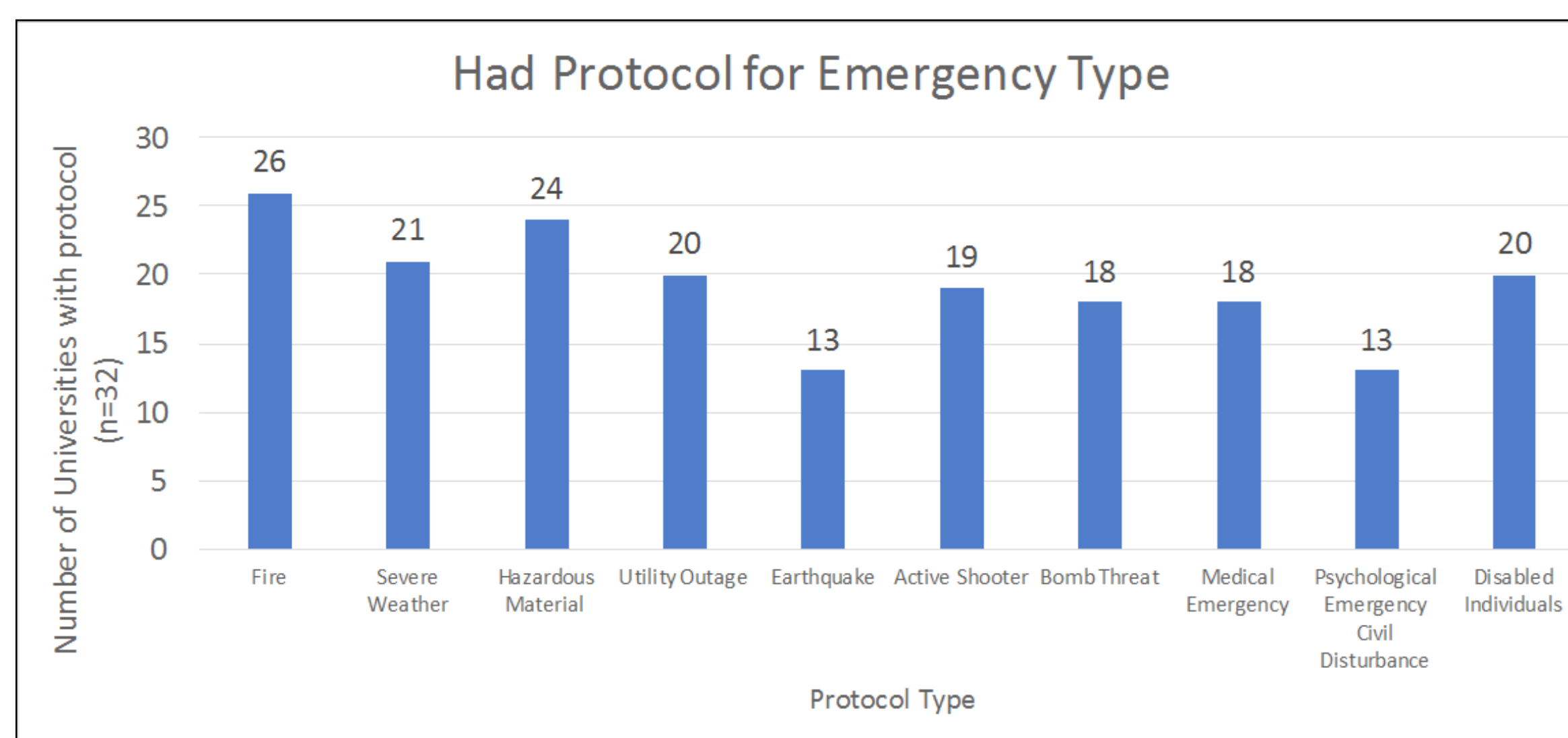


Figure 2: Shows how many universities had a protocol for an emergency type

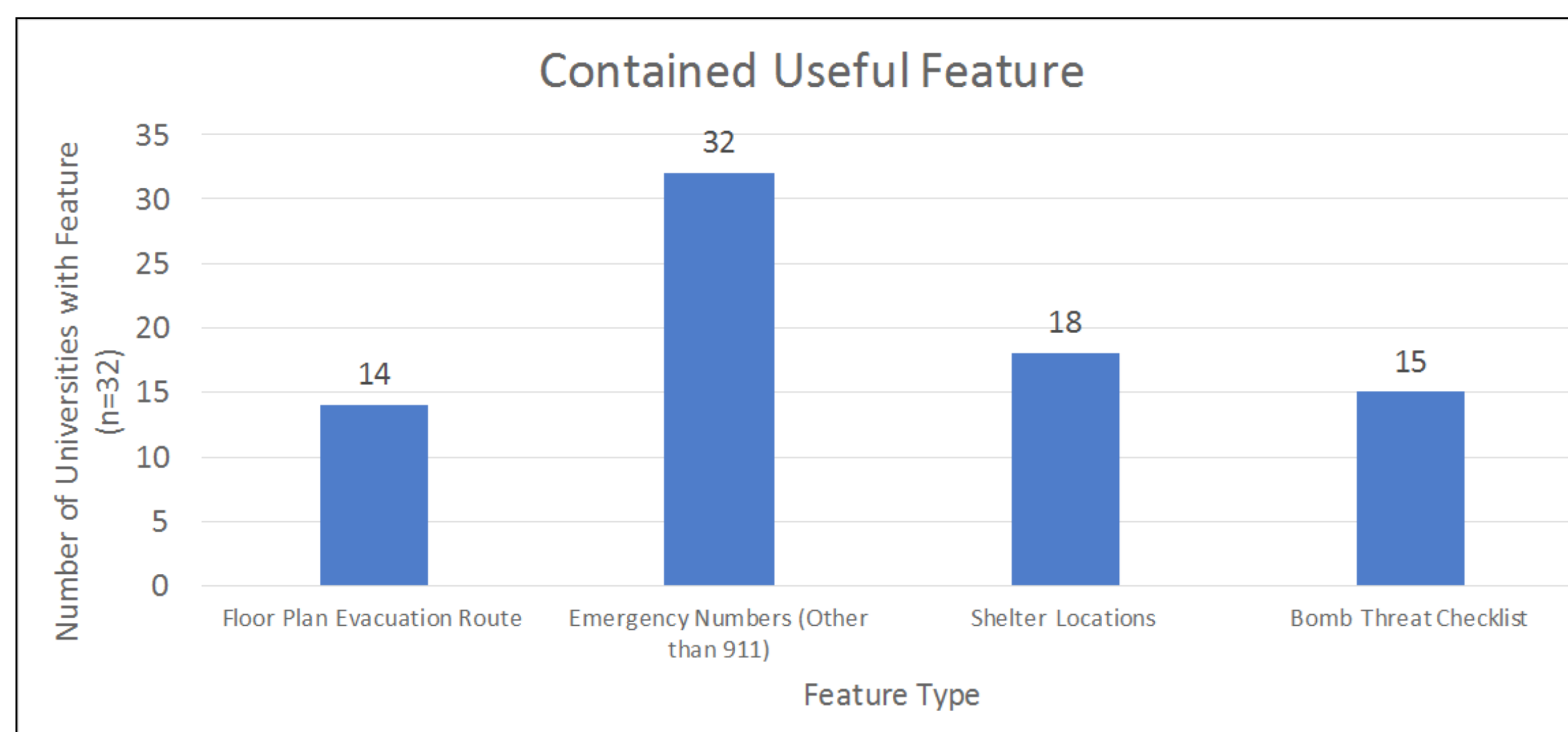


Figure 3: Shows how many universities included a useful feature in their EAP

## Sample

Boise State University	University of Arkansas	University of Nebraska Lincoln
Brigham Young University	University of California Los Angeles	University of Nevada Las Vegas
Indiana University Bloomington	University of Central Florida	University of New Hampshire
Louisiana State University Baton Rouge	University of Colorado Boulder	University of North Dakota
Michigan State University	University of Georgia	University of Oklahoma
New York University	University of Illinois	University of South Carolina
Rutgers University	University of Iowa	University of Tennessee
South Dakota State University	University of Kansas	University of Wisconsin Madison
Texas A&M	University of Kentucky	University of Wyoming
The Ohio State University	University of Maryland	
University of Alaska Anchorage	University of Minnesota	
	University of Missouri	

## Summary and Conclusion

Our findings revealed that 66% (n=21) universities met all 6 critical criteria. We also found that 81% (n=26) of EAPs had protocol for fires, 66% (n=21) for severe weather, 75% (n=24) for hazardous materials, 63% (n=20) for utility outages, 41% (n=13) for earthquakes, 59% (n=19) for active shooters, 56% (n=18) for bomb threats, 56% (n=18) for medical emergencies, 41% (n=13) for psychological emergency/civil disturbances and 63% (n=20) for evacuation of disabled individuals. Additionally, 56% (n=18) of EAPs had shelter locations, 44% (n=14) had floor plans, 47% (n=15) had bomb threat checklists, and 100% (n=32) had emergency numbers other than 911. Implications of this study can help guide universities to create more effectual and encompassing EAPs. Future research should examine whether the presence of a protocol in an EAP is likely to improve the outcome of an emergency.