Burn injuries are a leading cause of morbidity and mortality accounting for 180,000 deaths per year. The management of burn patients includes accurate estimation of total body surface area burned (%TBSA). %TBSA dictates level of care and fluid resuscitation as well as predicts mortality.

The aim of this study is to characterize the functional utility of the Surface Area Graphic Evaluation (SAGE) diagram. The primary measure of interest was SAGE diagram documentation with secondary focus on associated outcomes.

This is a retrospective chart review of 320 burn patients from 2014-2018 at the University of New Mexico Burn Center. Only patients undergoing surgical management were included. We recorded if patients had a SAGE diagram documented and compared complications between the groups. We also compared SAGE diagram %TBSA to clinical estimates.

SAGE diagrams were completed for 40% of our patient population. After comparing patients in SAGE group vs. No SAGE group, we found no differences regarding demographics, burn characteristics, and complications. There was no statistical difference between SAGE diagram %TBSA and clinical estimates.

The American Burn Association burn center accreditation process requires all burn patients to have %TBSA documented.

There is need for future prospective studies to validate the utility of SAGE diagrams in burn care.

Future directions to improve documentation of SAGE diagrams may include:

- Ensure every computer is capable of running the SAGE software
- Designate personnel to upload SAGE diagrams to patient charts
- Explore newer technology (3D %TBSA computer programs)