



# Addressing Elderly Falls with the Implementation of a Statewide Trauma System Initiative

Regina Creech, MS, CHES<sup>1</sup>; Nichole K. Spivey, MBA<sup>2</sup>; Keely Muertos, MPH<sup>3</sup>;  
TASC Injury Prevention Subcommittee

<sup>1</sup>Medical University of South Carolina, <sup>2</sup>Palmetto Health, <sup>3</sup>Grand Strand Medical Center



## BACKGROUND

The American College of Surgeons requires trauma centers to have organized and effective approaches to injury prevention (IP), prioritizing efforts involving local registry and epidemiologic data. However, only Level I trauma centers are required to have an IP Coordinator separate from the Trauma Program Manager (TPM). Furthermore, IP initiatives often lack the funding and resource support provided for other preventable diseases.

## PURPOSE

Recognizing this as a challenge, the Trauma Association of South Carolina (TASC) created an IP subcommittee in 2013 to coordinate efforts and collectively reduce traumatic injuries, alleviating the burden placed on an already demanding TPM position.

## STUDY DESIGN, SETTING, & SAMPLE

**DESIGN:** Meta-analysis of descriptive data from the South Carolina state registry was completed to identify the need and prospective collection of data evaluating the IP initiative.

**SETTING:** Available to all Trauma Centers in the state, as a multi-center IP initiative.

**SAMPLE:** Baseline data included 3,816 elderly trauma patients, ages 65 years and older, presenting to designated trauma centers for fall-related incidents in 2011.

## METHODS

A baseline retrospective review of state trauma registry data was used to evaluate trauma patterns and identify the top mechanism of injury (MOI) and mortality. With 3,816 total admissions leading to 116 deaths in 2011, fall-related traumatic injuries among adults ages 65+ were identified as the leading MOI and mortality in the state.

In 2013, during the first year of implementation, a work plan outlining goals, objectives and measurable outcomes was created by the IP subcommittee. With a primary goal of reducing the number of adults 65+ trauma admitted falls, the first objective was to heighten awareness of the impact of falls, and increase participation of fall prevention programs.

## METHODS CONTINUED

Utilizing 2016 state registry data, an outcome evaluation was conducted to track initiative effectiveness. Recommendations were derived from a 2016 summary analysis, making adjustments within the work plan as appropriate.

## RESULTS

Since 2013, there has been an 11.7% increase in community members reached with initiative funded, evidence-based (EB) fall prevention seminars, a 266.1% increase in those reached with National Fall Prevention Awareness Day (NFPAD) activities, and a 126.7% increase in the number of community members reached with other fall prevention measures throughout the state. Overall, the rate of fall-related hospital deaths has decreased 6.6% since 2013 (*Chart 1*).

2016 trauma registry data revealed that compared to other ages, falls among adults 65+ are primarily female (63.8%;  $p < 0.05$ ) and are more likely to occur at home (65.8%; OR: 2.19, 95% CI [1.98 – 2.42];  $p < 0.05$ ). This population has a higher Injury Severity Score ( $p < 0.05$ ) and is more likely to be admitted to the ICU (20.8%; OR: 1.2; 95% CI [1.02 – 1.31];  $p < 0.05$ ). Furthermore, adults 65+ are less likely to be discharged home after a fall (26.2%; OR: 0.21, 95% CI [0.19 – 0.23] and are 2.6 times more likely to expire as a result (4.0%; OR: 2.6, 95% CI [1.86 – 3.63];  $p < 0.05$ ). (*Table 1*).

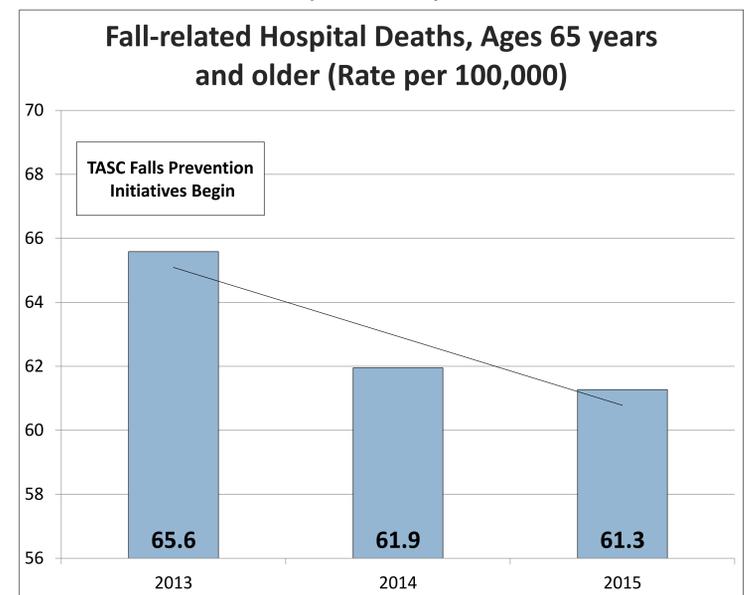
Table 1. Elderly Adult Demographics and Injury Outcomes

	Adults 65+	Population excluding Adults 65+	p-value
Male, n (%)	1,276 (36.2)	1,785 (59.9)	< 0.001
Age, mean ± SD (range) years	79.7 ± 8.5 (65-104)	38.6 ± 21.4 (0-64)	-
Home / Residence, n (%)	2,322 (65.8)	1,395 (46.8)	< 0.001
ISS, mean ± SD (range)	8.7 ± 5.9 (1-75)	7.9 ± 6.0 (1-75)	< 0.001
ICU Admit, n (%)	734 (20.8)	551 (18.5)	0.019
Ventilator required, n (%)	217 (6.1)	216 (7.2)	0.077
<b>Discharge Disposition</b>			
Home, n (%)	926 (26.2)	1,876 (62.9)	< 0.001
Expired, n (%)	141 (4.0)	47 (1.6)	< 0.001

## DISCUSSION

Every 11 seconds an elderly adult is treated in an Emergency Department for a fall, the leading cause of fatal and non-fatal injuries among those ages 65+. By collaborating efforts across South Carolina, the TASC IP subcommittee has been able to raise awareness on the severity of falls, the importance of fall prevention measures and increase the availability of evidence-based programs and state resources.

Chart 1. Rate of Fall-related Hospital Deaths by Year



## DISCUSSION CONTINUED

Since its implementation, a brochure including a home safety checklist and tips to reduce the chance of falling or returning to a hospital was developed. An up-to-date state resource list for community members was created with the Lieutenant Governor's Office on Aging. In preparation for NFPAD, a toolkit was constructed and shared with all trauma centers in the state. Beginning in 2015, this toolkit included a NFPAD State Governor's Proclamation.

Each year, new goals are created and recommendations are made to further advance the statewide initiative. Many centers are now offering EB programs such as Tai Chi and Stay Active and Independent for Life on a regular basis. Moving forward, the IP subcommittee plans to build stakeholder partnerships, secure sustainable funding, and increase the availability of EB programs offered throughout South Carolina.



## Contacts

Regina Creech, MS, CHES  
Trauma Injury Prevention Coordinator  
Medical University of South Carolina  
Email: [creec@muscc.edu](mailto:creec@muscc.edu)  
Website:  
Phone: 843.792.5906

Nichole Kent Spivey, MBA  
Trauma Injury Prevention Coordinator  
Palmetto Health Richland Trauma Services  
Email: [nichole.spivey@palmettohealth.org](mailto:nichole.spivey@palmettohealth.org)  
Website: [www.palmettohealth.org/trauma](http://www.palmettohealth.org/trauma)  
Phone: 803.434.6231

Keely Muertos, MPH  
Trauma Injury Prevention & Research Specialist  
Grand Strand Medical Center  
Email: [keely.muertos@hcahealthcare.com](mailto:keely.muertos@hcahealthcare.com)  
Website: [grandstrandmed.com/service/trauma-center](http://grandstrandmed.com/service/trauma-center)  
Phone: 330.354.9981

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