

## Review of 2018 EMS Data from Scottsdale Fire Department

*The Scottsdale Fire Department provided its 2018 EMS dispatch data for all fall calls at licensed senior care facilities to Morrison Institute for Public Policy in order to better understand these types of first responder events and identify areas for further study.*

### Fall Calls from Licensed Senior Care Facilities in Scottsdale

The Scottsdale Fire Department (SFD) responded to 1,179 calls to assist residents who fell at licensed senior care facilities in 2018. According to SFD, the department's protocol ensures that each individual receives an advanced patient assessment by SFD's Advanced Life Support crews.

After the assessment, a fall call has the following potential outcomes:

- The resident is treated and transported to the hospital for additional care.
- The resident is not transported to the hospital because:
  - they did not sustain a serious injury;
  - they refused to go to the hospital for additional treatment; or
  - they refused medical evaluation.

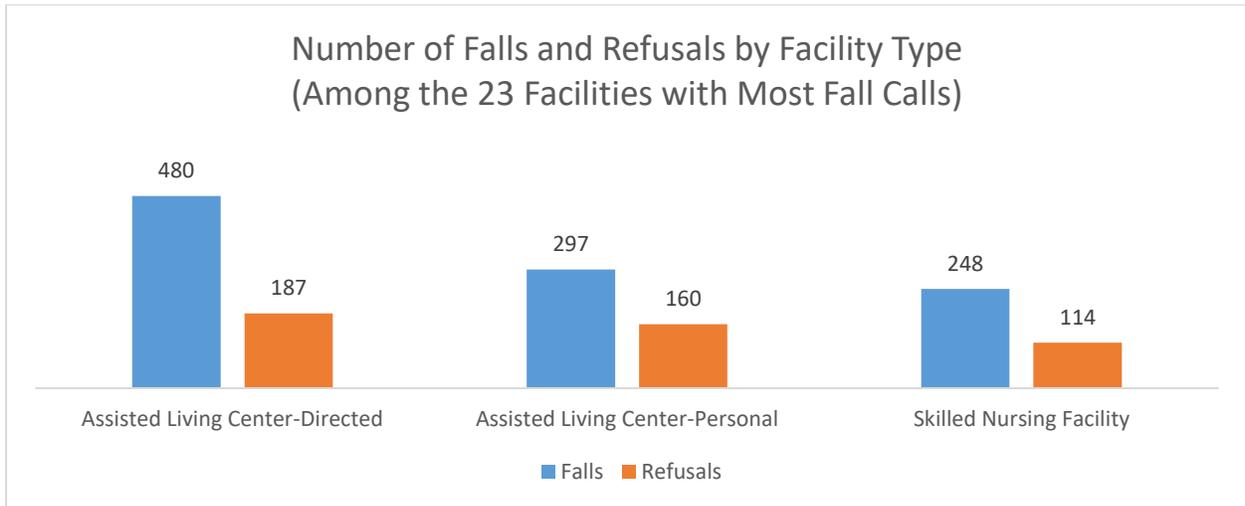
On every EMS dispatch for a fall, individuals are initially classified as a patient. When a patient is not transported to the hospital, these incidents are categorized as patient refusals. Of the 1,179 fall dispatches, 543 became patient refusals. Fall dispatches that did not result in transport to a hospital cost Scottsdale approximately \$1.4 million in 2018 and may impact firefighters' response time to other requests for assistance.<sup>1</sup> Approximately, 30% to 40% of the non-transportations at licensed care facilities result in a non-emergent lift-assist.<sup>2</sup>

### A Few Facilities Account for Nearly All Incidents and Refusals

In 2018, 117 facilities made at least one 911 call.<sup>3</sup> Of those, 23 facilities (20%) accounted for 93% of all falls and 91% of all non-transported patients. These facilities account for 59% of Scottsdale's total licensed care bed capacity.

Chart 1 shows the number of fall calls and refusals by these 23 facilities, organized by facility type. Directed-care assisted living facilities had the most non-transportations (187) and skilled nursing facilities the least (114).

Chart 1

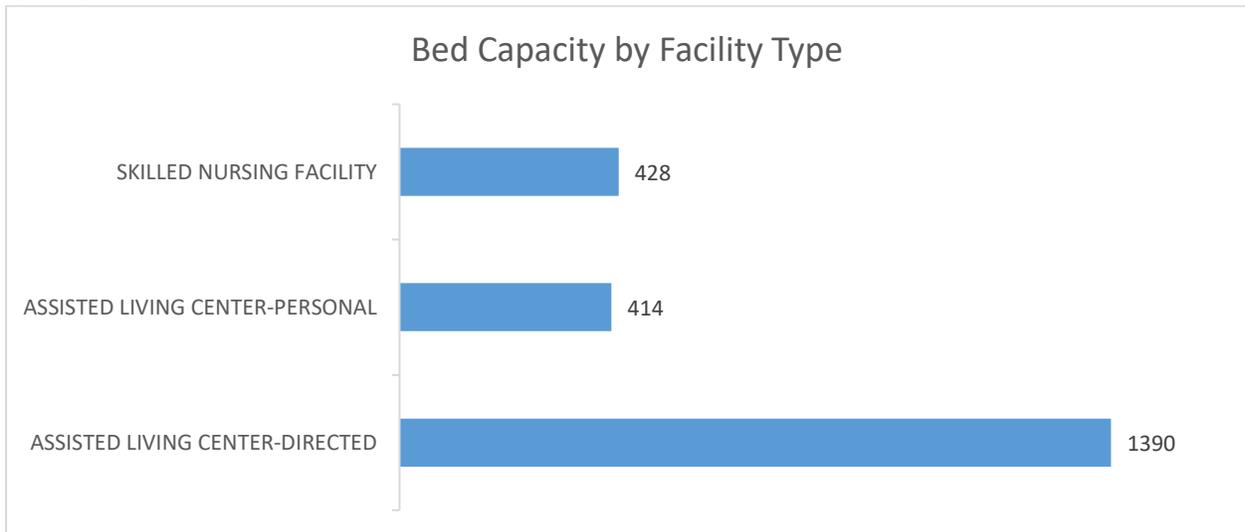


Scottsdale Fire Department, 2018, n=23

These 23 facilities fall into three facility type categories. Thirteen are assisted living center-directed, five are assisted living center-personal, and five are skilled nursing facilities.<sup>4</sup>

Although assisted living center-directed facilities account for the most incidents and refusals, they also have the capacity to house the most seniors (Chart 2).<sup>5</sup> The size of a licensed care facility (measured by bed capacity) is moderately correlated with the number of falls and patient refusals.<sup>6</sup>

Chart 2

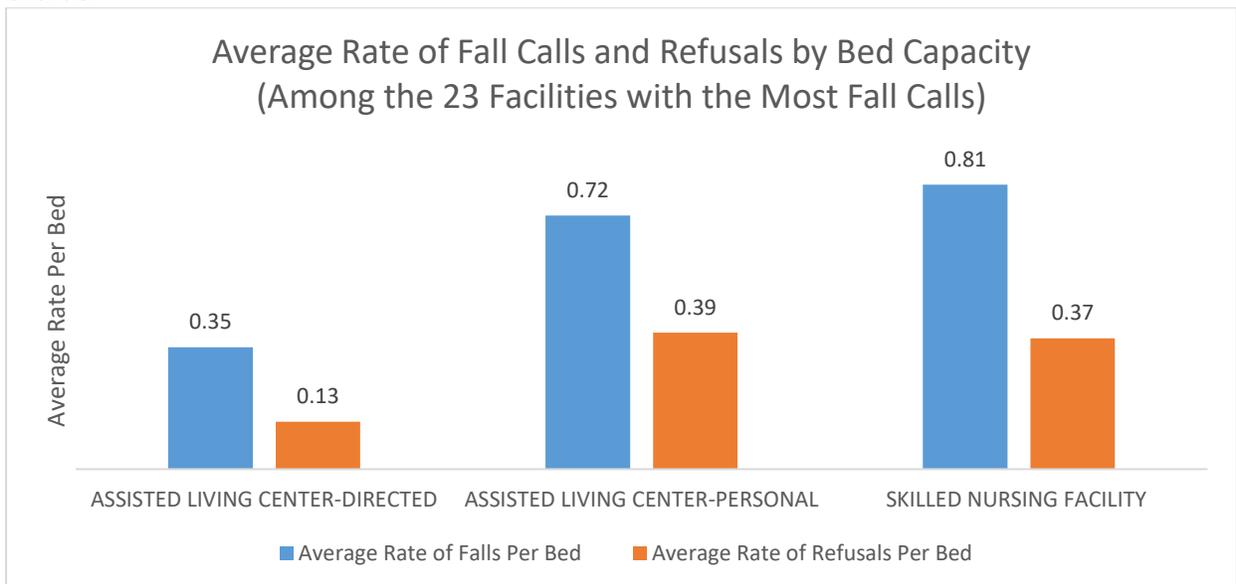


Scottsdale Fire Department, 2018, n=23

Chart 3 shows the average rates of fall calls and refusals for these 23 facilities by bed capacity, grouped by facility type. For example, assisted living centers experience 35 fall calls and 13 refusals per year for every 100 beds. The average rate of refusals per bed in

personal assisted living centers is triple that of the average rate of refusals per bed in directed-care assisted living centers (0.39 refusals per bed compared to 0.13).

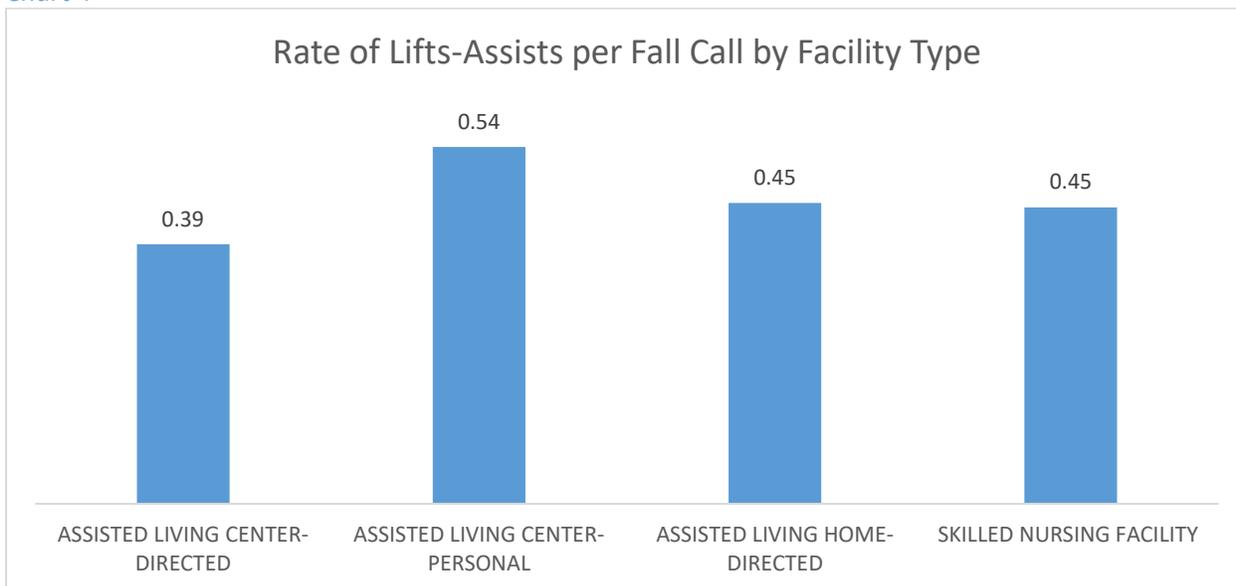
Chart 3



Scottsdale Fire Department, 2018, n=23

Of all the facilities that had at least one fall call in 2018, some facility types had higher rates of refusals per fall (Chart 4). Assisted living center-personal facilities had the highest rate of refusals per fall call (0.54 refusals per fall), whereas center-directed assisted living facilities had the lowest rate of refusals per fall call (.39).

Chart 4



Total licensed care facilities with at least one fall call in 2018, n=67

The data show that not one senior care facility size or type can be characterized as the main driver of the 543 non-transports that Scottsdale Fire Department experienced in 2018. Rather, it suggests that there are a few senior care facilities within each facility type that disproportionality call for fall assistance that does not result in transport to a hospital.

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<sup>1</sup> There were 1,179 fall calls from licensed senior care facilities in 2018. Of these calls, 636 resulted in a transport. That means there were 543 calls that did not result in transport to a hospital.

There were 2,025 units (trucks) dispatched for these calls, with an average of 1.72 units per call. The approximate cost for one unit to respond to an incident is \$1,502, according to figures from Scottsdale’s EMS department. Therefore, the formula for calculating the cost of senior care facility fall calls that did not result in transport to a hospital in Scottsdale in 2018 is:  
 $543 \text{ refusals/non-transports} * 1.72 \text{ units per call} * \$1,502 = \$1,402,808.$

These refusal/non-transports account make up almost 3% of the total SFD budget.

The average travel time, including dispatch to a fall call, not counting the time that fire firefighters spend at the facility, was six minutes and 37 seconds in 2018. The EMS department measures its ability to respond to emergencies based on its utilization rate, which increases with additional calls.

<sup>2</sup> This data was obtained from SFD’s internal Quality Assurance Analysis.

<sup>3</sup> For an Emergency Medical Service (EMS), Basic Life Support (BLS) or Advanced Life Support (ALS) call.

Sixty-seven licensed care facilities in Scottsdale called 911 for a fall in 2018; 72% of these facilities had at least one patient refusal. There were 70 facilities in Scottsdale’s database, but when matched with the Arizona Department of Health Services’ licensed care facility database, there were only 67 matches. There were two facilities that had N/A in the fall category. These were dropped from both the numerator and the denominator:  $47/65=72.3\%$

<sup>4</sup> Types of Arizona Department of Health Services licensed senior care providers:

| <u>Service</u> | <u>Independent Living</u> | <u>Senior Apts</u> | <u>AL HOMES<br/>11 and Under</u> | <u>AL CENTERS<br/>Over 11 Beds</u> | <u>Skilled Nursing Centers</u> | <u>Post Acute Ctr</u> |
|----------------|---------------------------|--------------------|----------------------------------|------------------------------------|--------------------------------|-----------------------|
| ADHS Licensed  | No                        | No                 | Yes                              | Yes                                | Yes and CMS (Fed)              | Yes & CMS (Fed)       |

<sup>5</sup> Bed capacity is used as a proxy for the number of individuals living in each facility type.

<sup>6</sup> The Pearson correlation coefficient for bed capacity to falls is: 0.60  
The Pearson correlation coefficient for bed capacity to patient refusals is: 0.52