



Northern Virginia EMS Council
Trauma and Performance Improvement Committee
Meeting held virtually via Zoom
March 10, 2021 Meeting Minutes

Those present were (All attendees were present via Zoom):

Beth Adams, Fairfax County Fire & Rescue, beth.adamsroemmelt@fairfaxcounty.gov
Stephanie Boese, GWU Hospital, stephanie.boese@gwu-hospital.com
April Brown, Inova Health System, April.brown@inova.org
Alistair Capewell, Virginia Hospital Center, acapewell@virginiahospitalcenter.org
Mindy Carter, Virginia Hospital Center, mecarter@virginiahospitalcenter.org
Rick Cohen, PHI Aircare, rcohen@phiairmedical.com
Christopher Cook, Northern VA Hospital Alliance, chris.cook@novaha.org
Valentina Daly, Fairfax County Fire & Rescue, valentina.daly@fairfaxcounty.gov
Craig Evans, Northern Virginia EMS Council, craig@vaems.org
Elizabeth Franco, MD, Inova Fairfax Hospital, Elizabeth.franco@inova.org
Craig French, Inova Loudoun Hospital, craig.french@inova.org
Mark Guditus, Inova Fairfax Hospital, Mark.Guditus@inova.org
Lindsay Jacobs, Loudoun County Fire & Rescue, Lindsay.jacobs@loudoun.gov
Nathan Kee, Inova Loudoun Hospital, Nathan.kee@inova.org
Micah Kiger, Loudoun County Fire & Rescue, micah.kiger@loudoun.gov
Kim Klein, Inova Loudoun Hospital, kim.klein@inova.org
Kate Kramer, Arlington County Fire & Rescue, kkramer@arlingtonva.us
Tracy Lane, Loudoun County Fire & Rescue, tracy.lane@loudoun.gov
Anne Marsh, Arlington County Fire Department, amarsh1@arlingtonva.us
Michelle Ludeman, Northern Virginia EMS Council, Michelle@vaems.org
John Morgan, MD, Loudoun County Fire & Rescue, john.morgan@loudoun.gov
Chip Morrison, Prince William County Fire & Rescue, cmorrison@pwcgov.org
Chris Myer, City of Fairfax FD, Christopher.myer@fairfaxva.gov
Melinda Myers, Inova Fairfax Hospital, Melinda.myers@inova.org
Justin Nelson, Virginia Hospital Center, jnelson@virginiahospitalcenter.org
Brian Orndoff, City of Fairfax Fire Department, brian.orndoff@fairfaxva.gov
Kate Passow, Physicians Transport Service, kate.passow@gmr.net
Dynette Rombough, Sentara NV Medical Center, dxrombou@sentara.com
Babak Sarani, MD, GWU Hospital, bsarani@mfa.gwu.edu
Alex Stephenson, Prince William County Fire & Rescue, astephenson@pwcgov.org
Robert Stout, City of Fairfax FD, Robert.stoud@fairfaxva.gov
Nathan Strong, Prince William County Fire & Rescue, nstrong@pwcgov.org
Neha Sullivan, MD, Prince William County Fire & Rescue, nsullivan@pwcgov.org
Dallas Taylor, HCA Reston Hospital Center, dallas.taylor@hcahealthcare.com
Scott Weir, MD, Fairfax County Fire & Rescue OMD, scott.weir@fairfaxcountygov.org

The PI and Trauma Committee meeting was called to order at 9:05 a.m. by Dr. Elizabeth Franco.

Meeting minutes from December 9, 2020, meeting were distributed via email before this

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meeting and unanimously approved with no changes.

News: Dr. Sarani advised Virginia Hospital Center recently completed their site visit for their Level II Trauma Center designation and based on the comments during the exit interview, it appears they should receive their provision designation in the next month or two.

Trauma Topic – Falls greater than 20 feet (Q1 2020 – Q4 2020)

Stephanie Boese from GWU presented the following data:

- 29 total patients
 - 3 fatalities
- Method of arrival
 - DC FEMS 52%
 - Arlington FD 17%
 - VA & MD Hospitals (non-trauma hospitals) 14%
 - Alexandria FD 7%
 - POV 3%
- Gender
 - 17% female
 - 83% male
- Age
 - 5 patients 15-21
 - 8 patients 21-30
 - 6 patients 31-40
 - 5 patients 41-50
 - 2 patients 51-60
 - 3 patients 60+
- Accidental vs. Intentional
 - 59% Accidental
 - 41% Intentional
 - 3 patients were work-related
- ED Disposition
 - 8 = ICU
 - 9 = Floor Unit
 - 2 = Morgue
 - 2 = OR
 - 6 = Home
 - 1 = Acute Care Facility
 - 1 = Mental Health Facility
- Mean ISS 13.4
 - Head/Neck injury 7 patients

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- Face 7 patients
- Check 7 patients
- Abdomen 10 patients
- Extremities and pelvis 12 patients
- External 16 patients
- OR within 6 hours of arrival
 - 5 out of 29 patients
 - Tib/Fib External Fixator
 - Exploratory Laparotomy
 - Tarsal External Fixator
- Hospital discharge location
 - 7 home
 - 3 home with services
 - 3 acute rehab
 - 1 SNF
 - 3 mental health facility
 - 1 morgue
 - 1 correctional facility
- Comparison to total numbers in 2019
 - 2019 = 30 patients
 - 2020 = 29 patients

Dallas Taylor from HCA Reston Hospital Center provided their data. A copy of the presentation is attached to these minutes.

Kim Klein from Inova Loudoun Hospital provided the following data:

- 14 total patients
 - Q1 = 2
 - Q2 = 4
 - Q3 = 4
 - Q4 = 4
- Trauma Activation
 - Full 7%
 - Modified 93%
- Gender
 - Male 86%
 - Female 14%
- Age
 - 0-14 7%
 - 15-45 86%
 - 46-64 7%
 - >65 20%

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- Method of arrival
 - 1 transfer in
 - 3 POV
 - 10 LCFR EMS
- Accidental vs. Intentional
 - Accidental 79%
 - Intentional 21%
 - 2 jumped from window
 - 1 jumped from a tree into the river
- Mechanism of Injury
 - 3 fall from room
 - 2 fall from balcony
 - 2 fall from a tree
 - 2 fall from a ladder
 - 2 fall while rock climbing
 - 2 jump from a window
 - 1 fall from a wall
- ISS Score
 - 1 = not injured
 - 11 = 0-9
 - 2 = 16-24
- AIS Distribution
 - Face
 - AIS 1 = 4
 - AIS 2 = 0
 - AIS 3 = 0
 - Head
 - AIS 1 = 4
 - AIS 2 = 1
 - AIS 3 = 1
 - Lower Extremity
 - AIS 1 = 1
 - AIS 2 = 1
 - AIS 3 = 0
 - Spine
 - AIS 1 = 2
 - AIS 2 = 14
 - AIS 3 = 4
 - Thorax
 - AIS 1 = 2
 - AIS 2 = 1
 - AIS 3 = 0

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- Upper Extremity
 - AIS 1 = 2
 - AIS 2 = 8
 - AIS 3 = 0
- ED Disposition
 - 4 Home
 - 3 Adult Floor Unit
 - 1 Transferred to Fairfax
 - 1 Transferred to Children's
 - 1 ICU
 - 1 Immediate Care
 - 1 Observation
 - 1 OR
 - 1 Pediatric Floor
- Final Disposition
 - 8 Home
 - 2 Home with Home Health
 - 1 Transferred to Fairfax
 - 1 Transferred to Children's
 - 1 Acute Rehab
 - 1 Left AMA

Dynette Rombough from Sentara Northern VA Medical Center provided a report, which is attached to these minutes

Justin Nelson from Virginia Hospital Center provided a report, which is attached to these minutes

Dr. Elizabeth Franco from Inova Fairfax presented the following data:

- 2134 total patients sustained falls
 - 45 sustained falls > 20 feet
- Reference point: ISS greater than or equal to 16 = significant injury
 - 17 patients sustained a significant injury
- Age
 - 0-14 = 3
 - Significant injury 0
 - 15-30 = 16
 - Significant injury 7
 - 31-45 = 18
 - Significant injury 6
 - 46-64 = 7
 - Significant injury 3
 - 65+ = 1

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- Significant injury 1
- Gender
 - 6 female
 - 39 male
- Work-Related?
 - 13 yes
 - Occupation
 - Construction 9
 - Tree cutting 3
 - Window washing 1
 - 32 no
- Incident location
 - 19 Home
 - SI 8
 - 7 Construction Site
 - SI 2
 - 6 other work site
 - SI 1
 - 1 Hotel
 - SI 0
 - 2 Parking Garage
 - SI 2
 - 1 Other public building
 - SI 0
 - 5 Recreational
 - SI 1
 - 3 Bridge/Overpass
 - SI 2
 - 1 Cliff
 - SI 1
- Method of arrival
 - 25 = Ground EMS
 - 12 = HEMS
 - 3 = POV
- Drug or alcohol positive?
 - Illegal Drugs = 12
 - ETOH = 7
- Fall height
 - 21-30 feet = 22
 - SI 7
 - 31-40 feet = 9
 - SI 4

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- 41-50 feet = 10
 - SI 3
- 51-60 feet = 1
 - SI 1
- 61-70 feet = 1
 - SI 1
- 71+ = 2
 - SI 1
 - Fall from greatest heights MOI
 - Jump with self-harm intent
 - Tree cutting
- Trauma Activations
 - 13 full
 - 20 modified
 - 10 trauma consult
 - 1 trauma CPR
- ED Disposition
 - 4 OR/IR
 - 14 TICU
 - 3 TIMC
 - 12 Ward
 - 2 PICU
 - 5 Pediatric
 - 2 Expired
 - 3 Home
- Injuries by body region
 - 15 head
 - 8 face
 - 18 spine
 - 18 thorax
 - 3 abdomen
 - 16 upper extremity
 - 29 lower extremity
 - 31 skin
- Multi-system trauma
 - 40 of 45 patients (89%) had multisystem trauma
 - 42 alive
 - 3 dead
- Blood products in first 4 hours
 - 40 = no
 - 5 = yes
 - 1 expired in the bay

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- 2 required operative intervention with first 6 hours
- Operative intervention in first 6 hours
 - 39 = no
 - 6 = yes
 - All patients survived
- Hospital Disposition
 - 30 home
 - 2 SNF
 - 6 Rehab
 - 4 Psych
 - 3 Expired
- Total numbers compared to 2019
 - 2019
 - Falls = 2471
 - Greater than 20 feet = 57
 - Significant Injury = 12
 - Self-harm = 5
 - Work-related = 18
 - Expired = 3
 - 2020
 - Falls = 2134
 - Greater than 20 feet = 45
 - Significant Injury = 17
 - Self-harm = 8
 - Work-related = 13
 - Expired - 3

Kate Kramer from Arlington County Fire Department presented the following data:

- 15 patients in total
- Gender
 - Male 10
 - Female 5
- Age ranges
 - Pediatric 5
 - 25-50 7
 - Geriatric 2
- Location of incident
 - Many were noted to have been at a Metro escalator
- Destination
 - Trauma Center 10
 - DOA 1
 - Inova Fairfax Pediatrics Trauma 1

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- Patient Refusal 1

Brian Orndoff from the City of Fairfax Fire Department provided the following data:

- 349 incidents and ~10% of call volume by dispatch type
 - 56% of all trauma incidents.
 - 135 of falls were >age 65
- They are working on fall prevention as a priority for CRR efforts to help improve call amounts.
- For falls >20 feet = 2

Valentina Daly from Fairfax County Fire & Rescue presented the following data:

- They had difficulty collecting accurate data due to multiple call types, primary impressions, etc., so they were unable to determine actual numbers of falls from greater than 20 feet.
- More patients in 2019 than 2020
- Most falls were located at a single-family residence instead of an apartment building or public place
- There were more males than females
- Most patients transported to Fairfax
- DOA
 - 3 in 2020
 - 1 in 2019

Nate Strong from Prince William County Fire & Rescue presented the following data:

- 9 total patients in 2020
 - 10 in 2019
- Ages
 - Under 20 = 4
 - 30 – 41 = 5
- Gender
 - Male 7
 - Female 2
- Largest fall was 40 feet
- Accidental vs. Intentional
 - Work related = 4
 - Unintentional = 2
 - Suicide attempt = 2
 - Overdose = 1
- Extent of injury
 - Fatality = 1
 - Extremity Injury = 3
 - Head Injury = 2
 - Multi-system trauma = 3

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- Transport Destination
 - Fairfax = 5
 - Sentara = 3
 - Patient refusal against medical advice = 1

Kate Passow from PTS provided the following data:

- 8 total patients
 - 5 were transfers to higher-level trauma facilities
 - 3 were discharged to SNF or rehab
- Gender
 - Male 6
 - Female 2
- There were 13 patients in 2019

Medical Topic – Carbon Monoxide Incidents

Kate Kramer from Arlington County Fire Department provided the following data:

- 18 total patents
 - 11 were investigations
 - 4 were incidents
 - 3 were canceled en route
- Call disposition
 - CO detected = 5
 - Most were not detected
- EMS disposition
 - Most were standby, check vitals
 - Transports = 2
 - Deceased = 1
- Unable to determine if Cyanokit was used on any patients

Brian Orndoff from the City of Fairfax Fire Department provided the following data:

- Runs by dispatch indicate 24 calls for CO last year

Beth Adams advised they had no data to present.

Micah Kiger from Loudoun County Fire & Rescue provided the following data:

- They implemented passive CO monitoring several years ago and tend to find they get more calls that turn into CO events versus actual calls for possible CO leaks, etc., and those incidents are where most of their data come from
- 36 incidents in 2019 & 2020
 - 11 transported

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- Many due to the elderly population leaving a vehicle running in the garage
- Several incidents were upgraded to CO incidents from another type such as an unconscious person, etc.
- Two significant incidents
 - Incident One – woman cooking on large propane-fueled stoves in her garage
 - Two patients were transported locally and then transferred to Baltimore Shock Trauma for hyperbaric treatment
 - Both made two dives and experienced marked troponin and lactate levels and made significant improvements and both were later discharged home
 - They did notice a lack of EKG and 12-lead monitoring and supplemental oxygen treatment for both of these patients and a lack of consideration for transporting directly to a hyperbaric chamber
 - Incident Two - One of the more significant cases, which had 5 patients transported from one home. The father was reportedly simmering soup on a gas range overnight
 - One or more of the patients went to hyperbaric treatment
 - A child in the residence woke up, noticed something wasn't right, called 911, and likely saved many lives with that call. He was nominated for a Valor Award
- Dr. Morgan advised they have gone back to the field providers for increased education on the importance of EKGs, high flow oxygen or CPAP, and consideration of transporting directly to a hyperbaric facility.
 - Due to the proximity of the Baltimore Shock Trauma Center, they typically transport to the closest facility and allow them to transfer
 - Dr. Sarani advised against transport directly to Shock Trauma due to lacking data on the efficacy of hyperbaric on CO poisoning

Nate Strong from Prince William County Fire & Rescue provided the following data:

- They found their data is skewed in trying to drill down to actual CO calls so they are working with their IT department to determine what they can do to get better data
- 6 patient total in 2020
 - 2 transported to a local hospital for minor CO reading of 5
 - 1 transported to Mount Vernon
- They also carry CO monitors on their First-In Bags

Kate Passow from PTS provided the following:

- 4 patients transported in 2020
 - All originally from Loudoun County
 - 2 transported to Maryland

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Systems Topic – Body Armor/Vests in the Prehospital Setting
Protocols, what agencies are currently using, for what call types, etc.

Brian Orndoff from the City of Fairfax Fire Department advised of the following:

- All medic units carry ballistic vests for the crew.
 - They are currently looking at options to implement an across-the-board program/policy.
 - Still evaluating costs, approach, and “when” crews wear.
 - Lt. Chris Myer is heading up the proposal on the project and will speak more on the topic.
 - They’re looking at policies from around the region and state and found there is little clear indication on exactly when the most appropriate time is to don a ballistic vest
 - AFG only gives medium priority to RTS funding for things like ballistic vests so it’s difficult to get those

Chip Morrison from Prince William County Fire & Rescue provided the following information:

- Prince William medic units carry two vests along with the engines carrying two and safety officers carrying one.
 - Used for active shooter events, hostage situations, high-risk warrants, civil disturbances, or anything involving a correctional facility
- Evaluating costs to finish outfitting specialty pieces along with adding two more to each engine and battalion chiefs.
- They have SWAT medics that work in conjunction with PWCPD for civil disturbances or high-risk warrants

Beth Adams from Fairfax County Fire & Rescue provided the following information:

- They have updated their responses for shootings and stabbings to include the closest unit with ballistic gear in dispatch
- Currently, they have completed the distribution of ballistic equipment with 4 full sets of gear on Trucks, Towers, Tillers, Rescues and FE403, RE433, and T433, as well as Battalion Chiefs, EMS Supervisors, and Safety Officers carry ballistic gear as well.

Micah Kiger from Loudoun County Fire & Rescue advised of the following:

- All first out units in the County carry 2 ballistic vests
- They just secured funding to get an additional 248 vests in the system
 - Over the last year they’ve seen gaps in available equipment, for example, if a second out unit was staffed and called out, they would not have vests so they wrote up a justification for additional equipment
 - They have ordered them and they should be received in the next month or two

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- They follow the Regional Hostile Threat policy as well as a local policy for Loudoun County for a unified methodology
 - They only engage with law enforcement cover and never engage in a hot incident
- Dr. Morgan added that they utilized this process back in January when a Loudoun County Deputy was shot at an incident at Walmart.
 - Their first in suppression unit geared up and was able to extract the Deputy and get him to the medic unit where he was given whole blood in the field, all in 9 minutes from their arrival.
 - While this is a small scale incident compared to an active shooter situation, it was a good test of the system in action and it worked well

Kate Kramer from Arlington County Fire Department provided the following:

- They carry level 3 vests
 - 2 on each piece of front line apparatus as well as BC, EMS Supervisors, Safety Officers
 - Same as what ACPD uses
 - SOP says to use on all active violence call types or any call they feel has increased risk such as assault, assault with weapon, unknown but violent situation, etc.

Andy Carver from the City of Manassas provided the following information in his absence:

- They are looking at protocols for donning vests while staging for incidents and utilization of bests for routine wellness checks, entering a residence without the person's knowledge, etc.

Review Needed for Trauma Triage Plan

Craig Evans has asked that there be a committee created to review the Trauma Triage Plan and make any revisions needed. This group would ideally be from each position here such as EMS leaders, physicians, trauma managers, etc.

The committee will consist of the following members:

- Dr. John Morgan
- Dr. Elizabeth Franco
- Stephanie Boese
- Anne Marsh

Future Meetings and Topics

As a reminder, the meetings for the committee will take place on the second Wednesday of the first month of each quarter as to not conflict with the Trauma Manager's meetings and allow them to attend both. At this time, there has been no decision on whether the meeting will remain virtual or in-person. Please see any updates via email as they are available. The Regional Trauma/PI meetings dates are as follows for 2021:

- Wednesday, June 8, 2021
- Wednesday, September 8, 2021
- Wednesday, December 8, 2021

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The topics for the June meeting are:

- Trauma – Burns
 - Request representative from MedStar Burn Center for presentation
- Medical/Systems – Stroke
- For EMS – Gather data points you'd like agencies to review and provide data for the June meeting and send those to Michelle in the next 14 days

The meeting was adjourned at 11:20 am

CERTIFICATION OF PERFORMANCE IMPROVEMENT AND TRAUMA MEETING

Northern Virginia EMS Council
7250 Heritage Village Plaza, Ste. 102
Gainesville, VA 20155

I, Craig Evans, Executive Director of the Northern Virginia EMS Council certify that the above minutes are a true and correct transcript of the minutes of the Performance Improvement and Trauma Meeting of the Northern Virginia EMS Council on March 10, 2021. The minutes were officially approved on June 8, 2021, at the meeting of the Committee.

Craig Evans
Northern Virginia EMS Council

Date

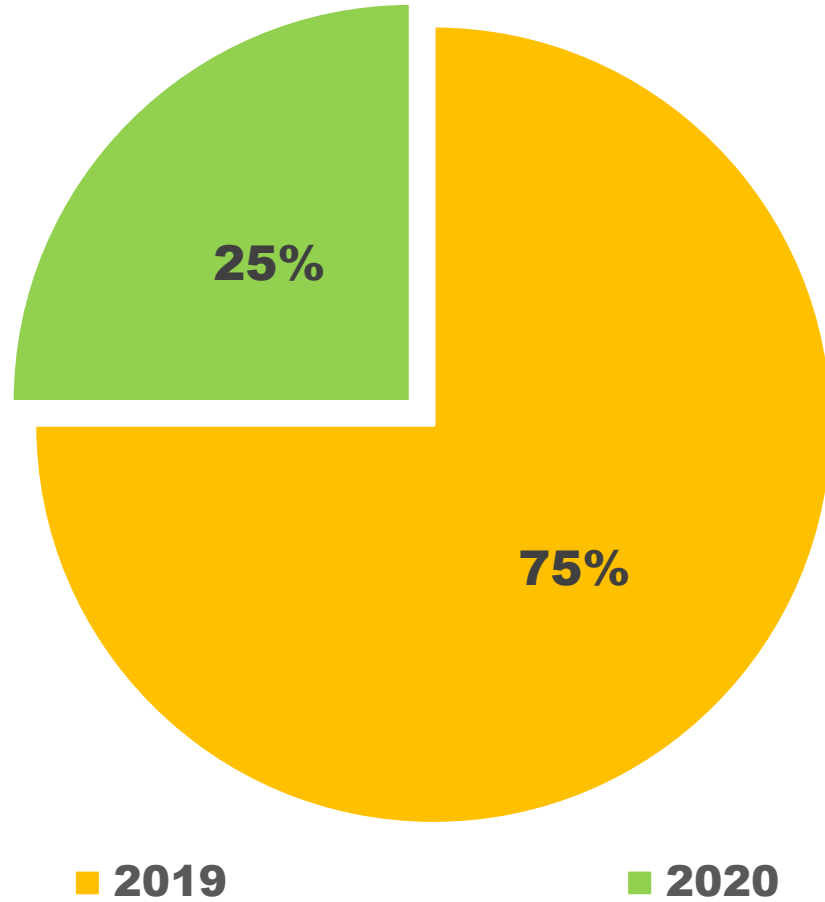
Reston Hospital Center

FALLS GREATER THAN 20 FEET MECHANISM OF
INJURY

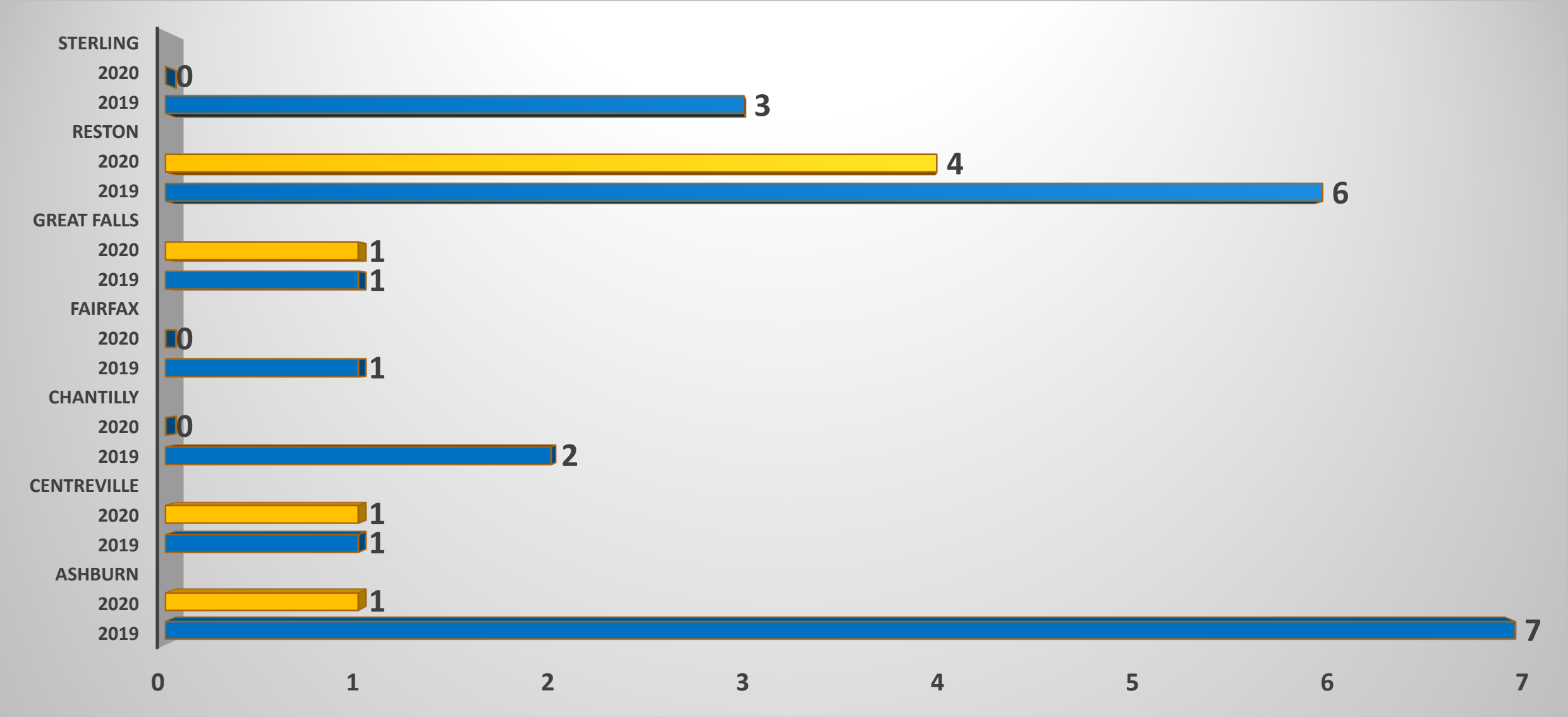
Falls of greater than 20 feet Mechanism of Injury at Reston Hospital

- Date range: Compared 2019 Calendar Year to 2020 Calendar Year
- 28 total trauma patients sustained falls 20 feet or greater
- 1 patient had an outcome of expired – Arrived to ED with GCS 3, and was resuscitated for 13 minutes, until TOD was called.

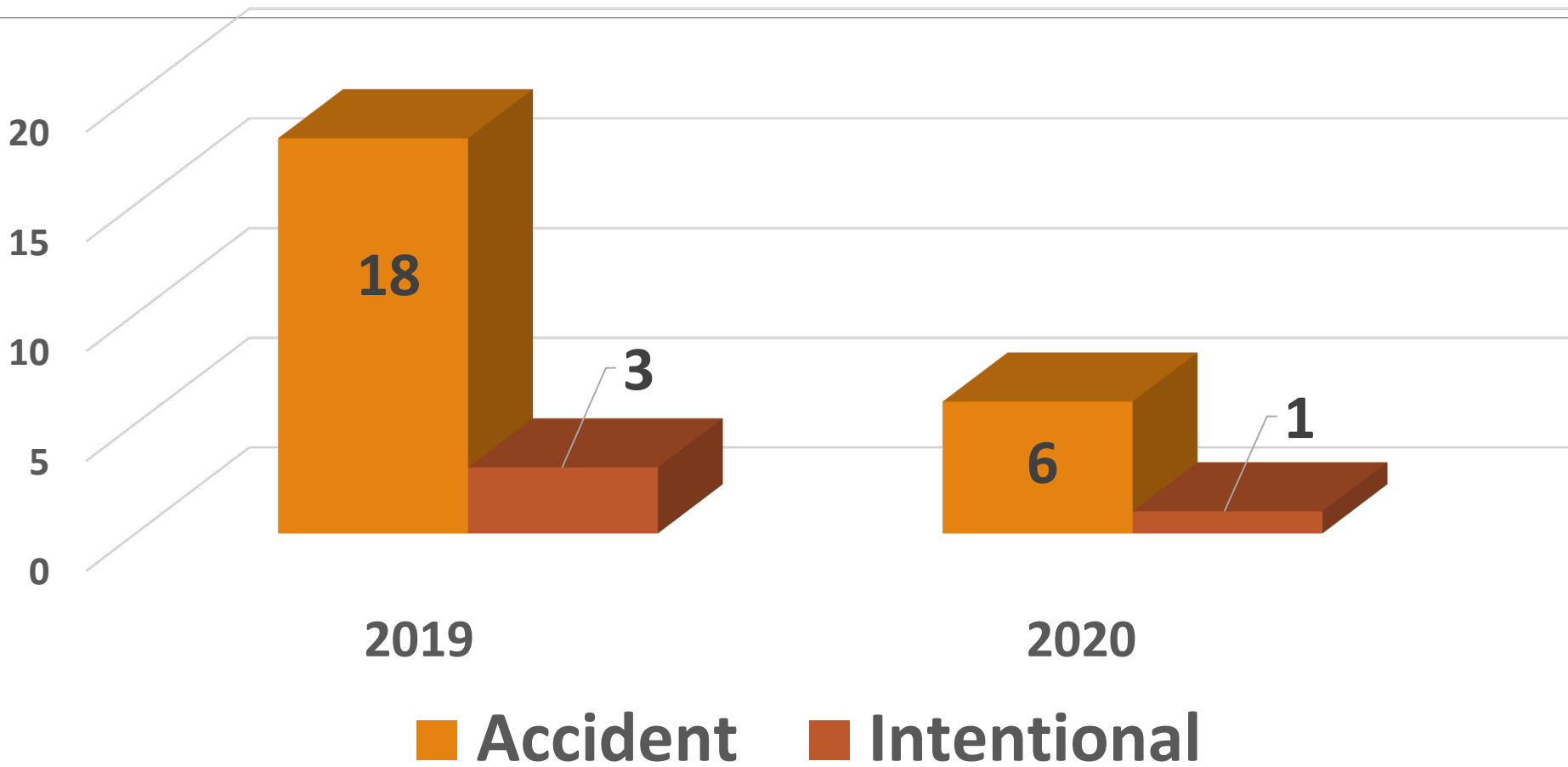
Falls Greater than 20 Feet by Calendar Year



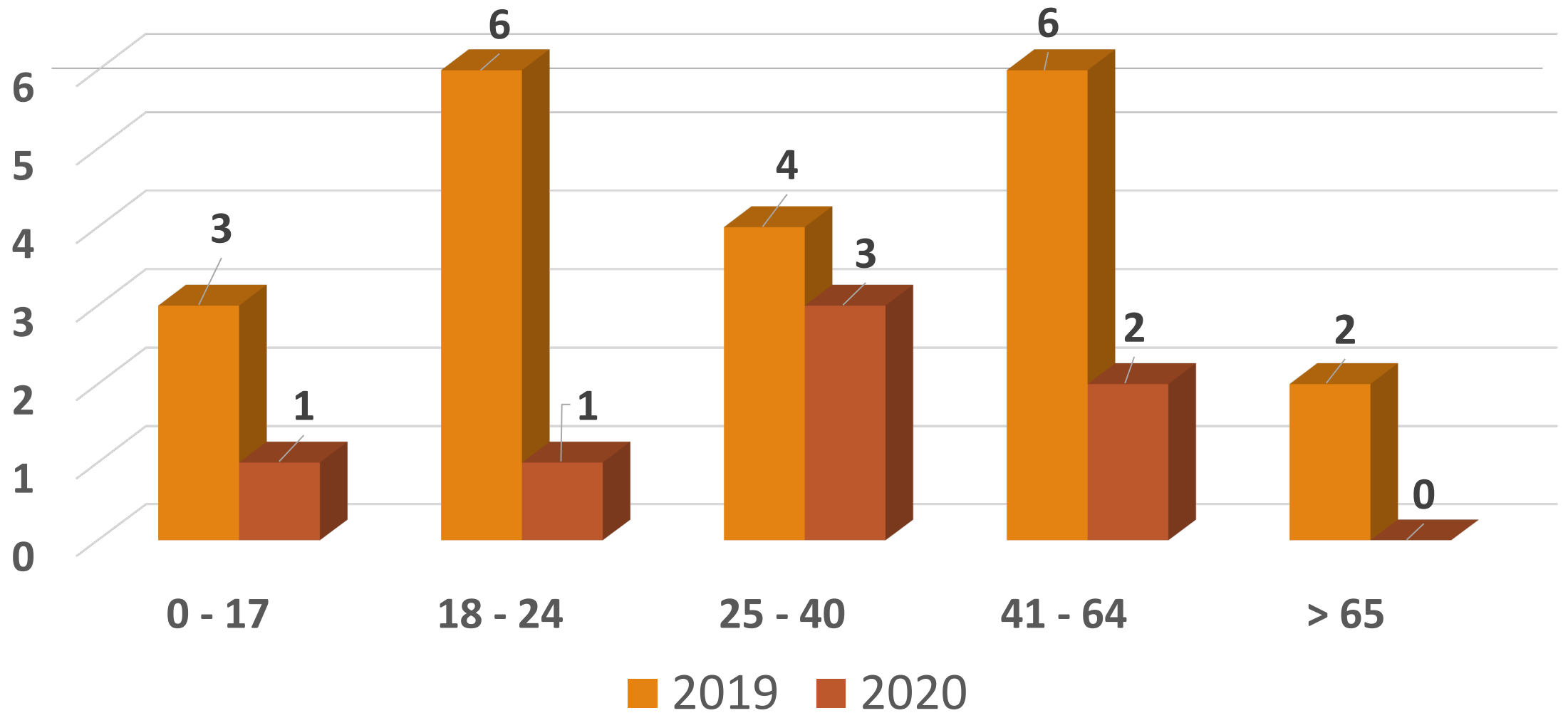
Falls Greater than 20 Feet by County Location



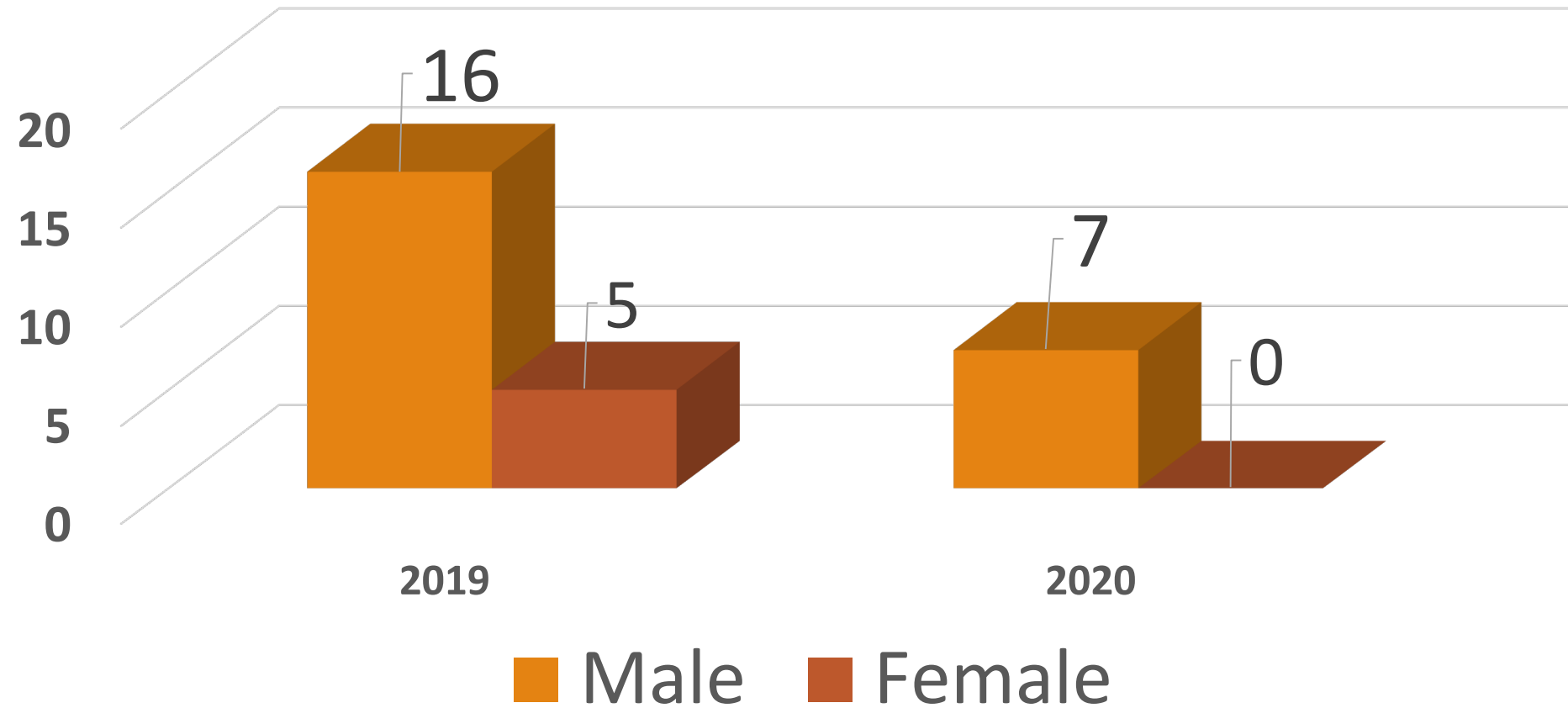
Intentional vs. Accident Intent for Falls Greater than 20 Feet



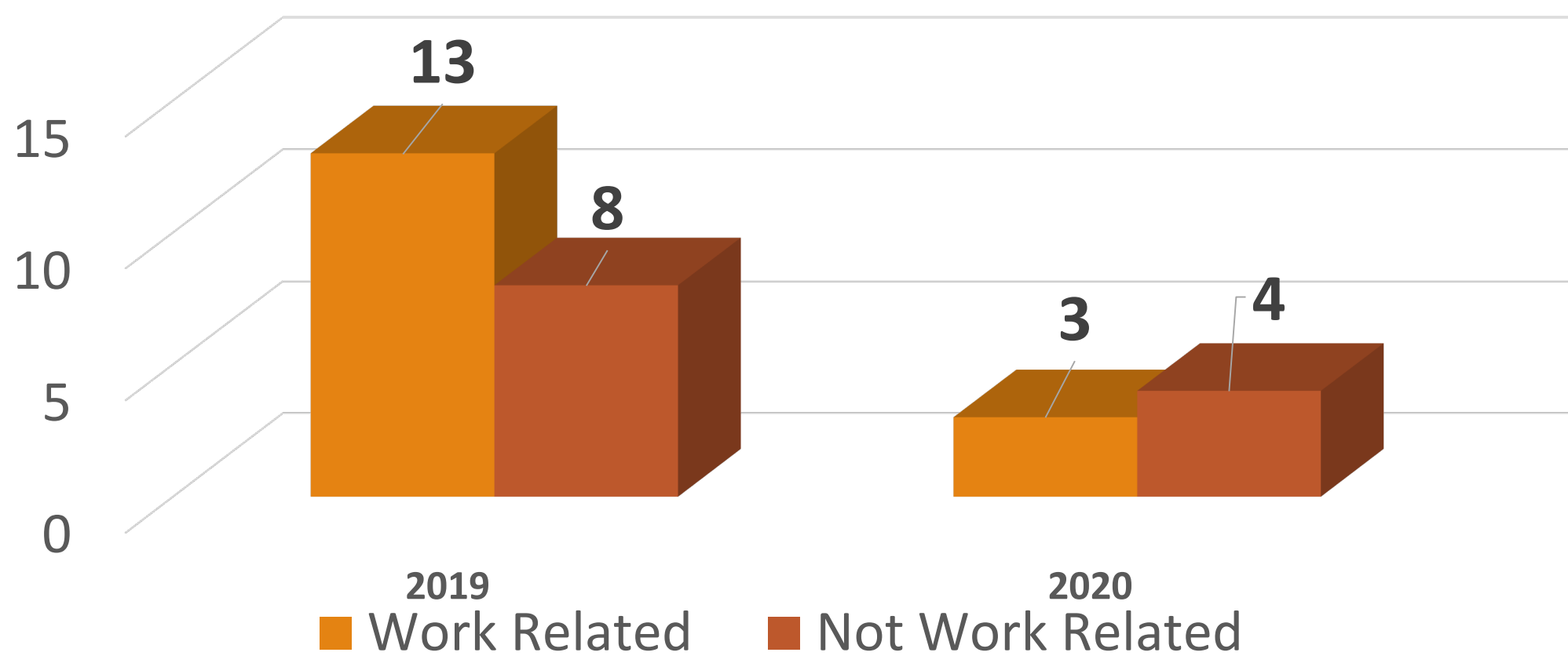
Patient Age Groups



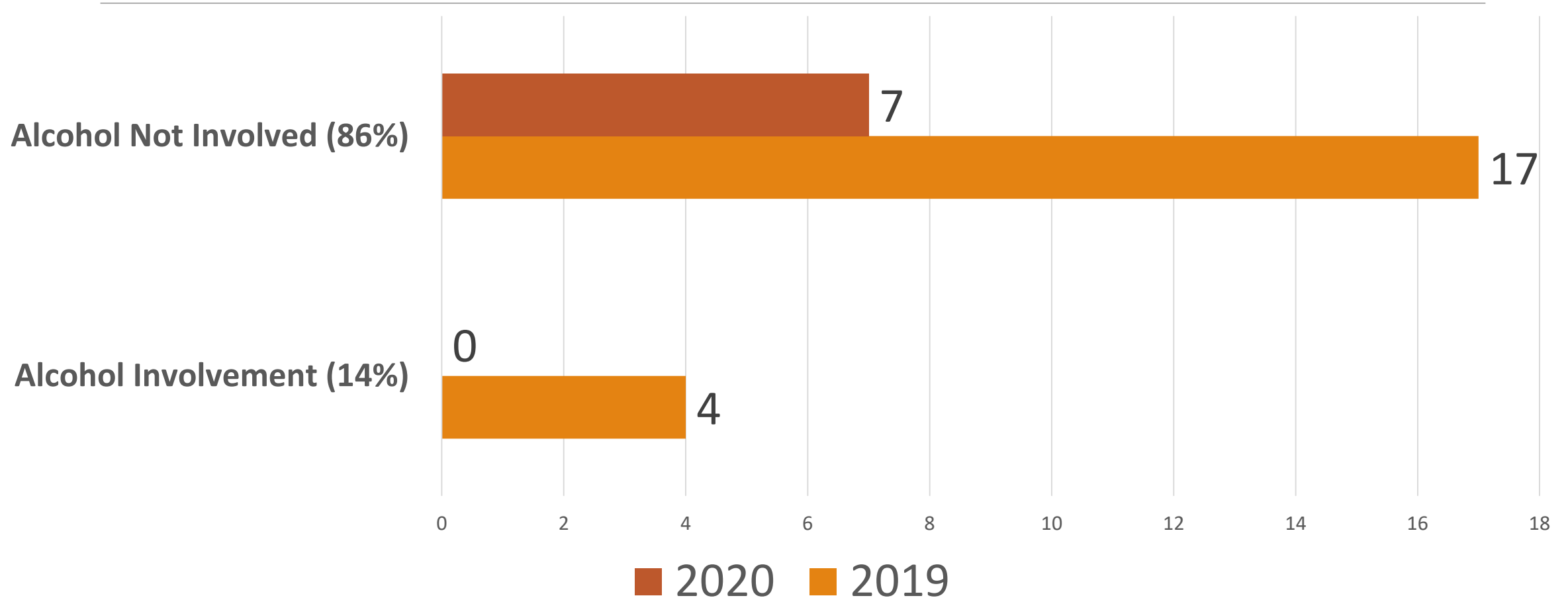
Falls Greater than 20 Feet by Patient Gender



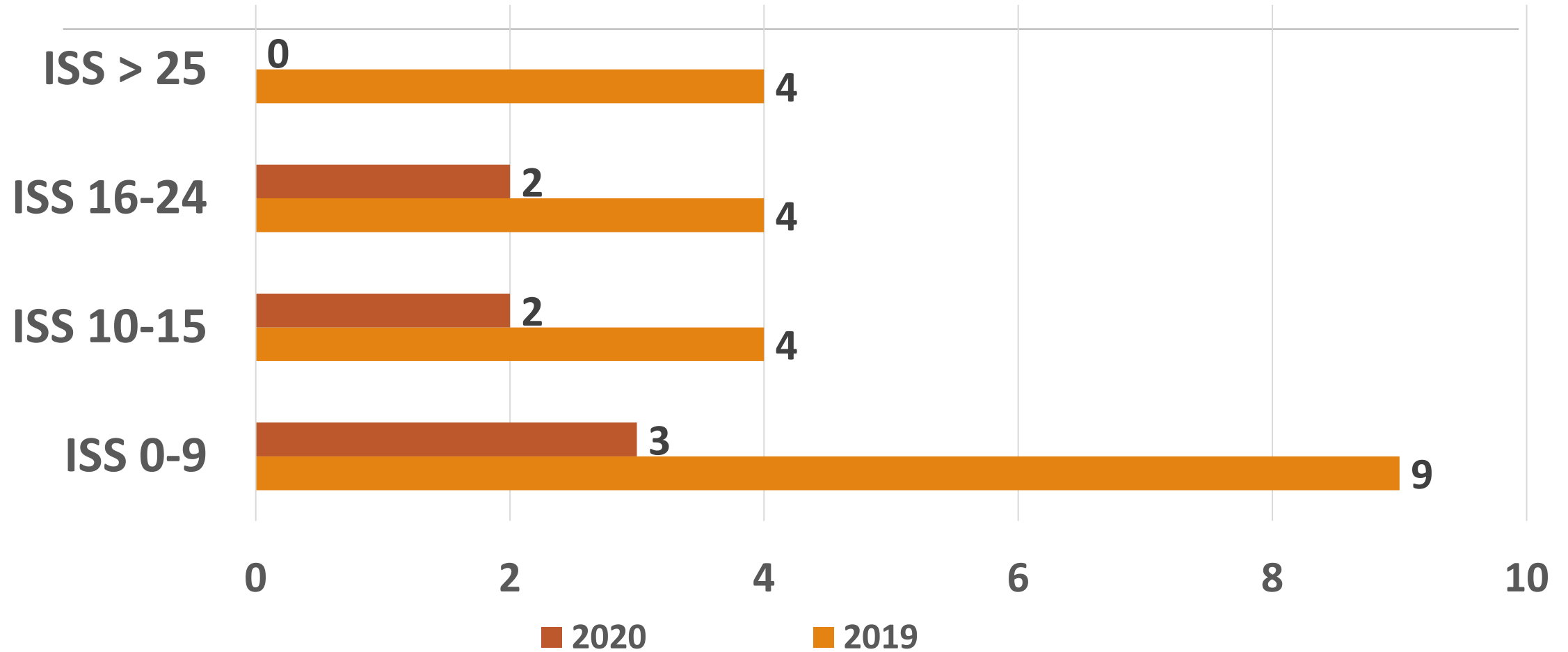
Work Related vs. Not Work Related



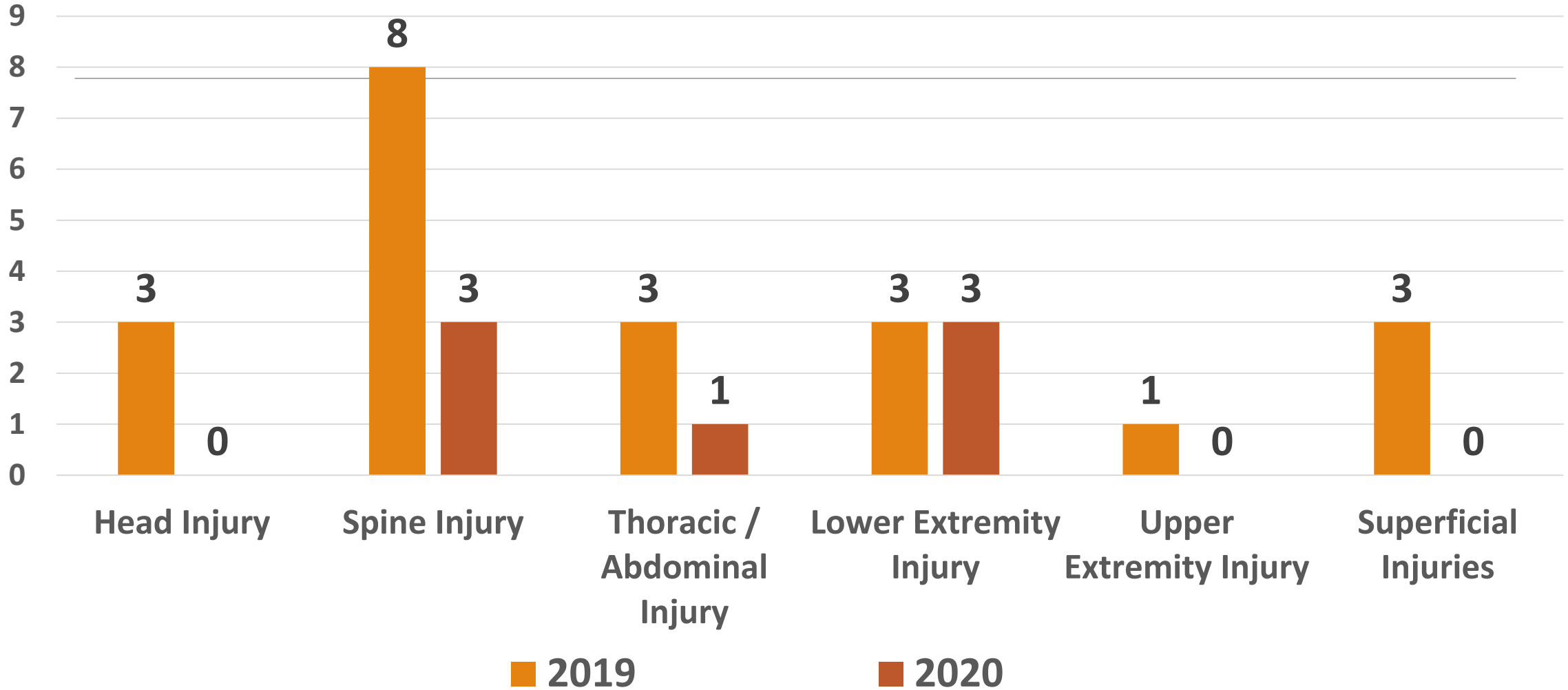
Alcohol Involvement with Falls Greater than 20 Feet



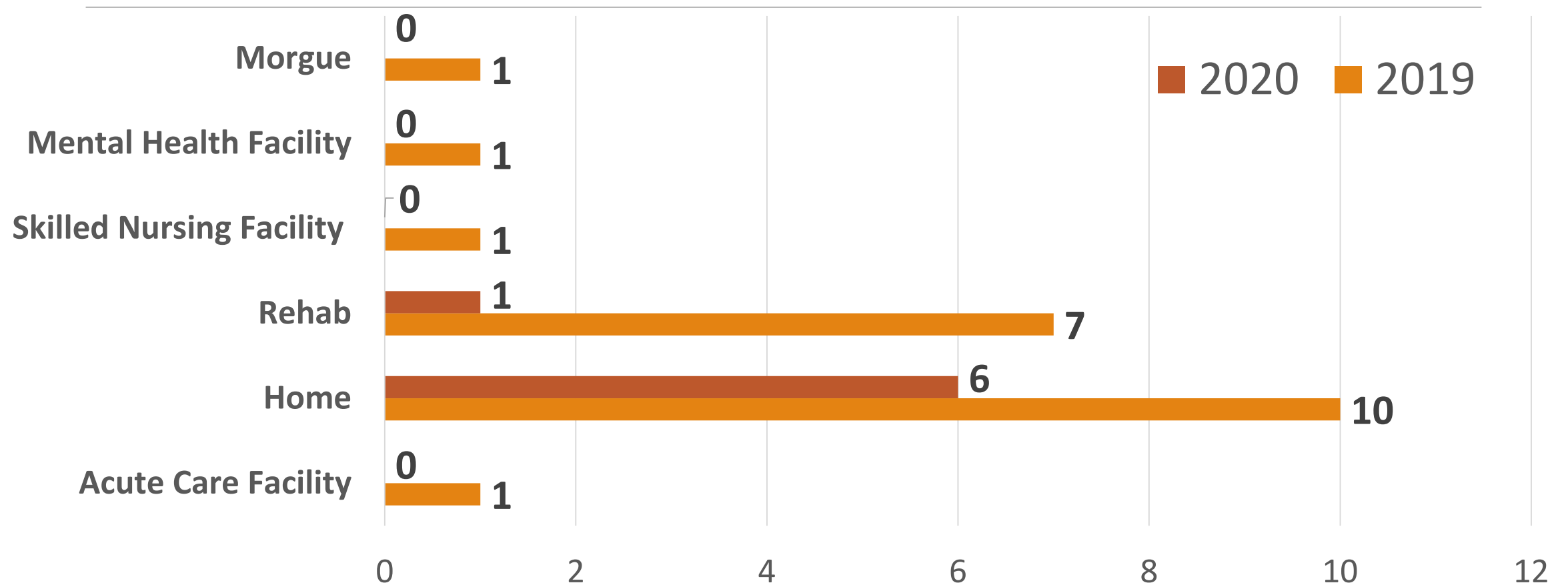
Injury Severity Score (ISS) Categories for Falls Greater than 20 Feet



Injuries Sustained for Falls Greater than 20 Feet



Hospital Disposition for Falls Greater than 20 Feet



Questions?



 **Reston Hospital Center**
Trauma Services
HCA Virginia Health System

AN HCA AFFILIATE

SNVMC Trauma Alert Criteria - Bravo

Falls > 20 ft – Total 3 pts

Q1 - 37 y/o Male

Arrived: EMS **Alpha**

Intentional

Jumped out of an 2-story building + cocaine use stated he was being chased.
Lethargic enroute and on ED arrival

Open Pilon Fx

ISS 9

Transferred

Q1 – 11 y/o Female

Arrived: EMS **Bravo**

Accidental

Leaning out a window and fell from second story

Grade II Liver Lac/Left PNX

ISS 8

Transferred

Q4 59 y/o Male

Arrived: POV **Bravo**

Accidental

Fell off a ladder removing debris from second story roof

Right Fibular Fx

ISS 5

Discharged

Proprietary and confidential

NVEMS Council PI and Trauma Meeting March 10th 2021

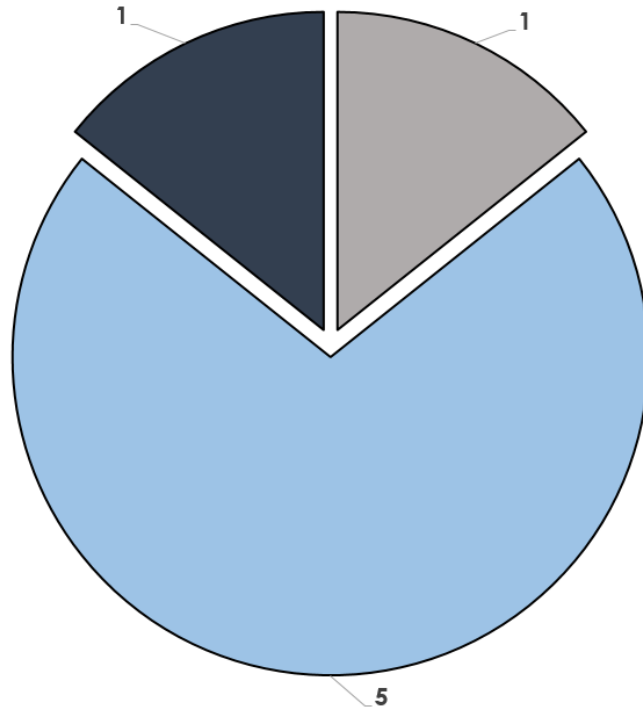
Falls > 20 feet – 01/01/2020 thru 12/31/2020

Virginia Hospital Center- Arlington, VA

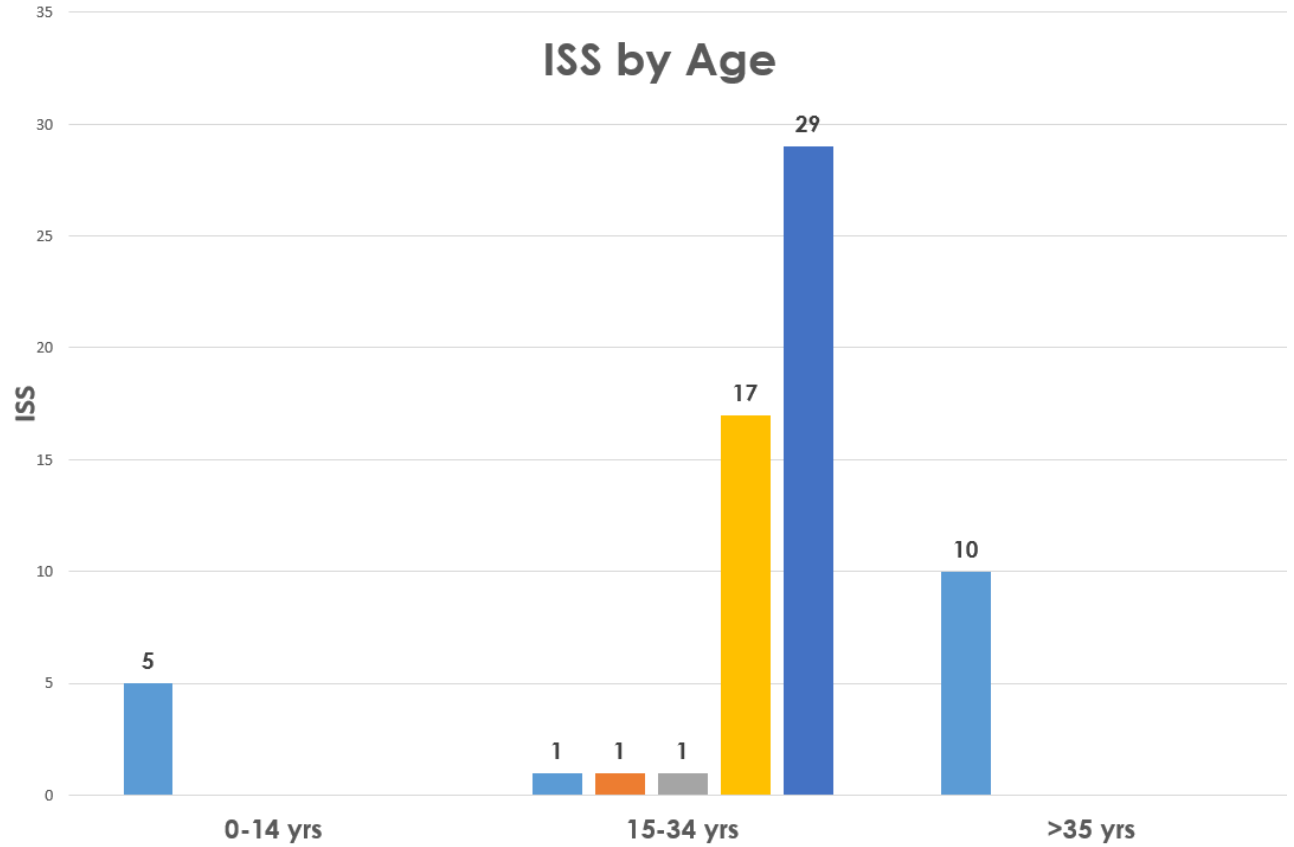


BETTER together.

Age Distribution:



- 0-14
- 15-34
- >35



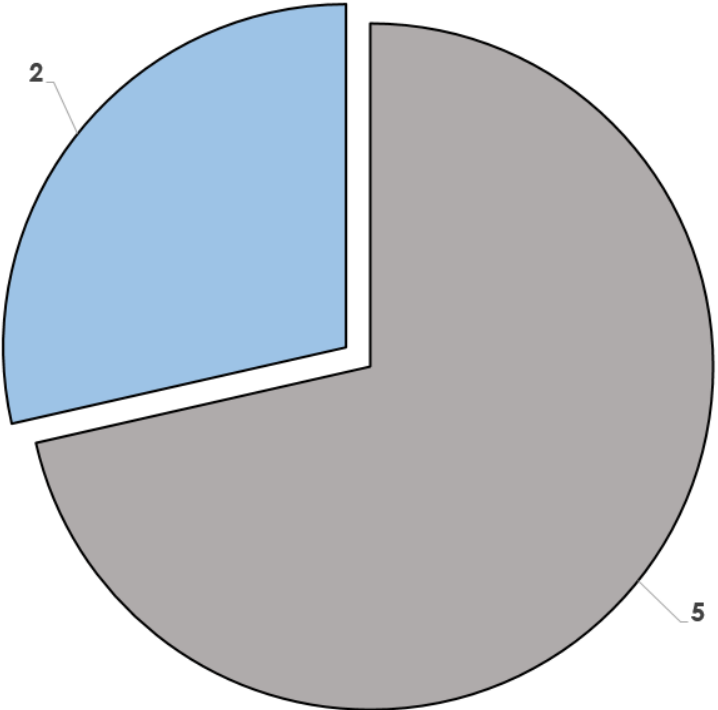
VIRGINIA HOSPITAL CENTER

MFA The GW Medical Faculty Associates

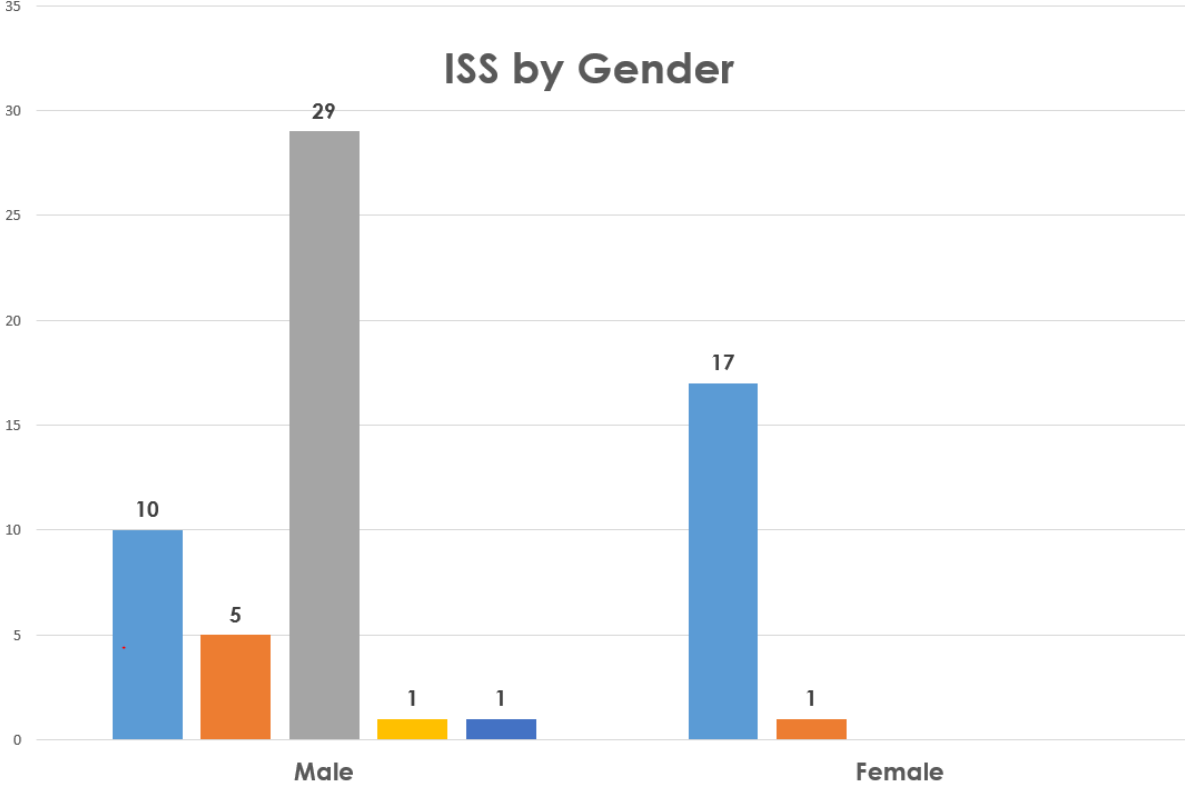
Trauma Services

BETTER together.

Gender Distribution:



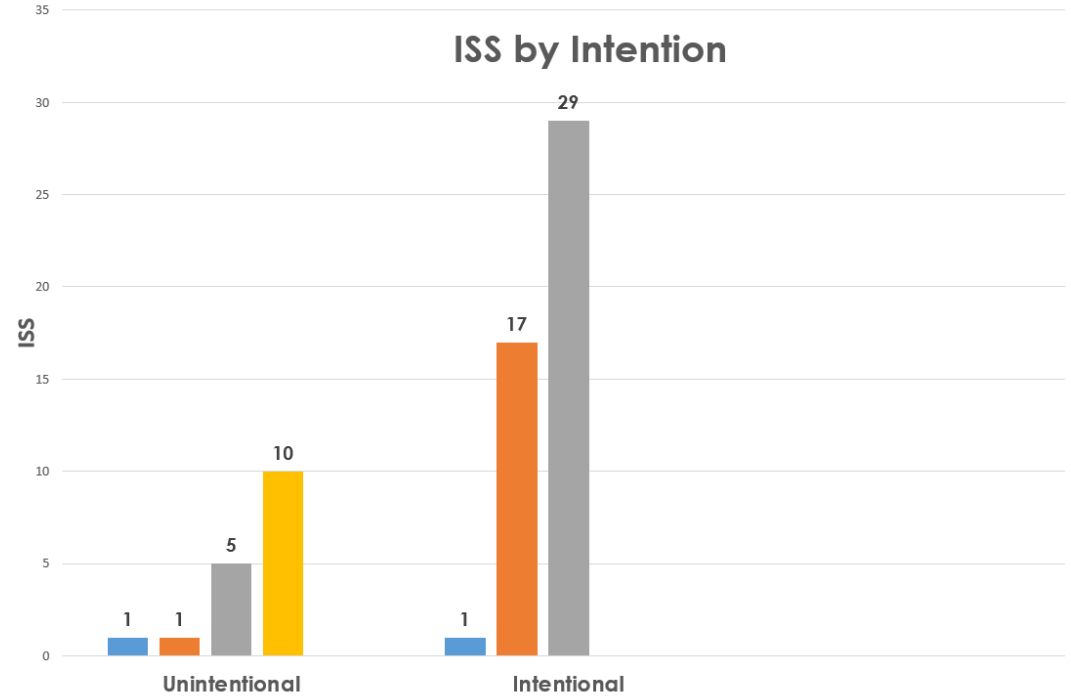
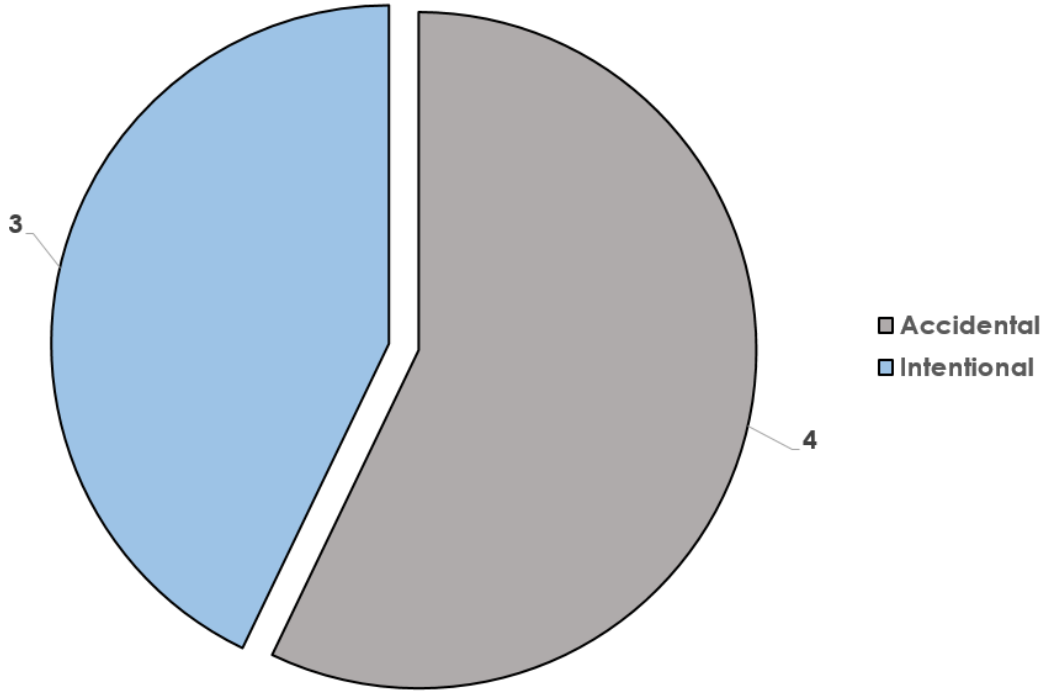
■ Male
■ Female



Trauma Services

BETTER together.

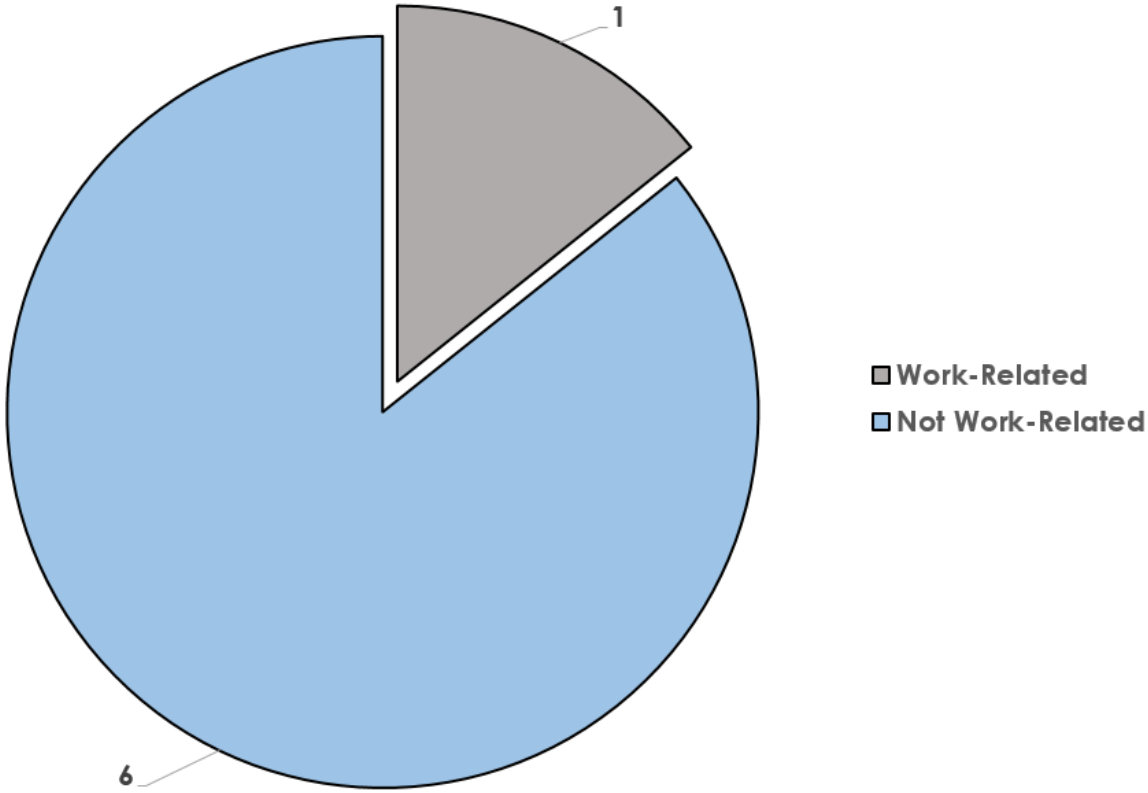
Accidental vs. Intentional:



Trauma Services

BETTER together.

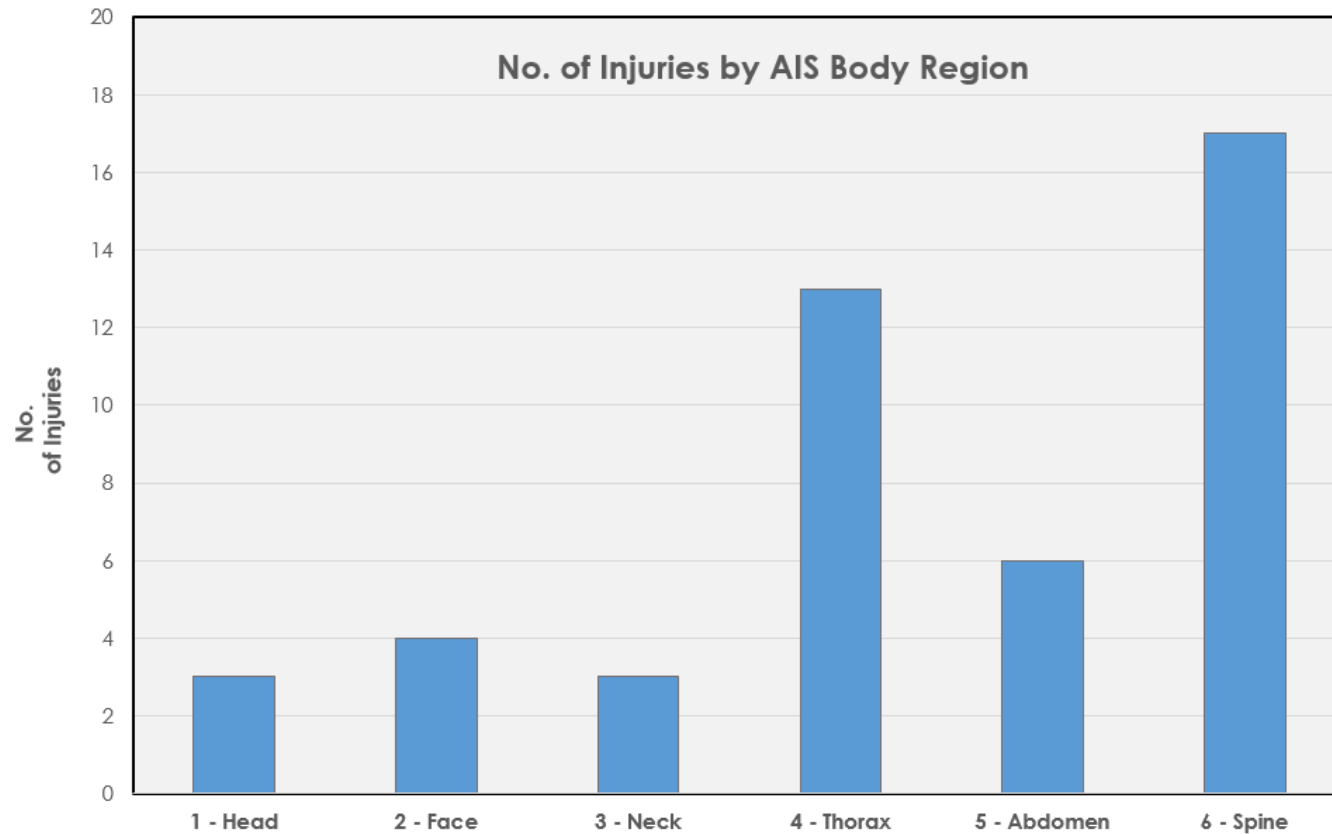
Work-Related vs. Not Work-Related:



Trauma Services

BETTER together.

Injuries by AIS Body Region:



Notable Injuries:

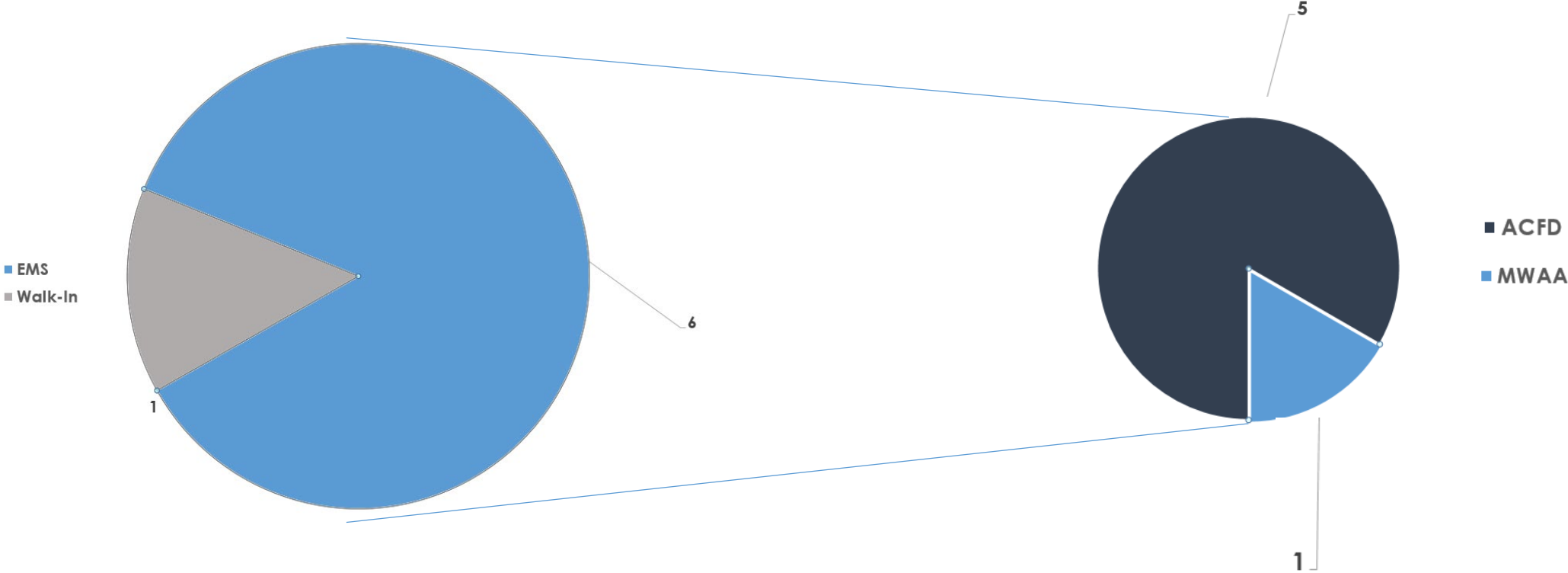
- Grade II Tear of the Thoracic Aorta
- Splenic Lac
- Grade 2 Liver Lac
- Pneumothorax



Trauma
Services

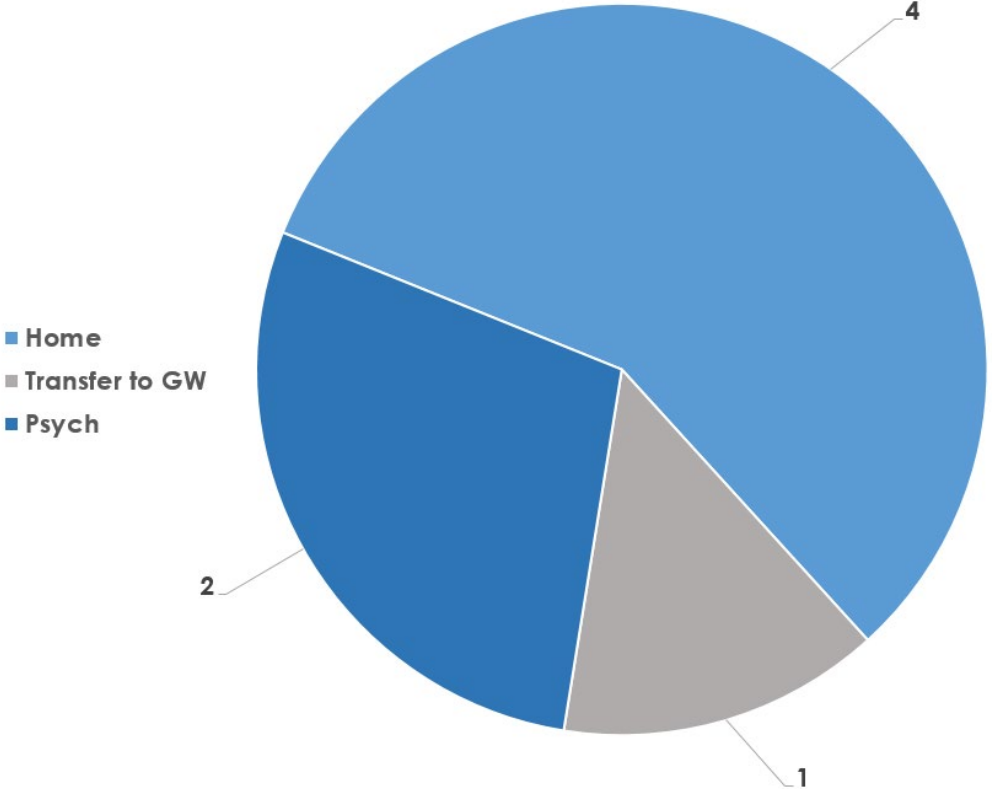
BETTER together.

Arrival Method:



BETTER together.

Work-Related vs. Not Work-Related:



Trauma Services

BETTER together.