



Northern Virginia EMS Council
Trauma and Performance Improvement Committee
Meeting held virtually via Zoom
June 8, 2022 Meeting Minutes

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

Alex Stephenson	astephenson@pwcgov.org
Alistair Capewell	acapewell@virginiahospitalcenter.com
Anne Marsh	amarsh1@arlingtonva.us
Babak Sarani	bsarani@mfa.gwu.edu
Beth Adams	beth.adams@fairfaxcounty.gov
Brian Hricik	brian.hricik@alexandriava.gov
Brian Orndoff	brian.orndoff@fairfaxva.gov
Chip Morrison	cmorrison@pwcgov.org
Cindy Parise	cjparise@sentara.com
Courtney Caton	ccaton@virginiahospitalcenter.com
Craig French	craigfrench@comcast.net
Dan Avstreich	avstreich@gmail.com
Dawnielle Feucht	dawnielle.feucht@inova.org
Dynette Rombough	dxrombou@sentara.com
Elizabeth Franco	elizabeth.franco@inova.org
John Bowers	jbowers@manassasva.gov
John Morgan	john.morgan@loudoun.gov
Justin Nelson	jnelson@virginiahospitalcenter.com
Dr. Scantlebury	Dr.bury@gmail.com
Kim Klein	kim.klein@inova.org
Laura Vandegrift	laura@vaems.org
Lindsay Jacobs	lindsay.jacobs@loudoun.gov
Melinda Myers	melinda.myers@inova.org
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Nathan Kee	nathan.kee@inova.org
Neha Sullivan	nsullivan@pwcgov.org
Shirley Riggsbee	shirley.riggsbee@inova.org
Stephanie Boese	stephanie.boese@gwu-hospital.com
Tom Arnoto	tarnoto@pwcgov.org
Tracy Lane	tracy.lane@loudoun.gov

The PI and Trauma Committee meeting was called to order at 9:03 a.m. by Dr. Babak Sarani.

Approval of the Minutes

Beth Adams advised she was not listed as attending and was present at the meeting. Her name will be added to the minutes

- **Motion to approve the minutes with the addition of Beth Adams' name**
 - **Motion Beth Adams**
 - **Seconded by Brian Hricik**

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- ***The Motion was unanimously approved***

Discussion of the committee

Falls, age range 55+, gender, type of falls, stairs, ground-level falls, outside, hospital length of stay, discharge destination, mortality

- Beth Adams presented data which is included at the end of the minutes
 - Dr. Avstreich added that there is a call type for lift assist public service and since there was no injury reported, they are not included in this data
- Dr. Morgan presented data which is included at the end of the minutes
 - He added that there are no structured education programs for fall prevention. He is working on tailoring a program similar to the smoke detector program to include fall risk, trip hazards, etc., and there will be no age restriction to that education (not just for the elderly)
- Brian Hricik presented data which is included at the end of the minutes
 - He added that they are also using fire outreach/smoke detector programs and using that to include fall risk, slip and trip risk, etc.
 - When they canvass an area there is no age consideration. They talk about access to bathrooms, stairway access, obstructions (rugs, etc.)
- Alex Stephenson presented data which is included at the end of the minutes
- Dr. Sarani asked about outreach and prevention programs
 - He suggested taking an at-risk cohort and giving them a list of optometrists to do a vision check
 - Loudoun Hospital has a pilot that has done this for repeat fallers with injury.
 - Kim Klein will provide further information during her presentation as this will be presented at ENA this fall and the second piece of this falls to include EMS to include a formal first look in houses so they can get a jumpstart in the ED
- Brian Orndoff provided the following data:
 - They average 200 calls for falls annually, but they only have 2600 transports per year total for all call types
 - 63% are older adults
 - They are launching The Village Model to help build ramps and rails, and they also have a Community Fall Intervention Team to be launched and anytime they have a patient with a fall, they will do a follow-up call and offer to evaluate the home and prevent future falls (rugs, lamps, furniture)
 - They will also hone in on lift assists because they don't get a detailed home assessment like vitals, etc., so they're working on changing that and making sure they don't get missed in the assessment
- Dr. Elizabeth Franco presented the following data:
 - Data reviewed was calendar year 2021
 - 4114 total falls age 55+
 - 2383 falls

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- 1634 elderly patients
- Male = 685
- Female = 949
- Most are from home, with GLF being 75%
 - Stairs or steps = 232
 - bed = 60
 - ladder = 50
- 900 from EMS
- 500 transfers from outside hospitals
 - 197 with TBI
 - 71 femur fracture
 - 70 3+ ribs or flail chest
 - 37 pelvic/acetabular fracture
 - Median time at outside hospital 3h 49m
 - 189 were walk-ins
- ED dispo
 - 51 OR
 - 345 ICU
 - 160 IMC
 - 956 ward
- Mean LOS
 - 3 days
 - Hospital LOS 0-3 days, ICU 3 days
- Dispo equal for SNF or home with Home health
- ISS
 - 237 or 15% sustained an anatomic injury
 - 171 or 72% were ground levels
- Mortality increased in patients over 91-100 age group
- Community prevention
 - They offer a few fall prevention initiatives
 - A Matter of Balance (injury prevention coordination)
 - Stay Active and Independent for Life (SAIL)
- Kim Klein from Inova Loudoun presented data which is included at the end of the minutes
 - They just completed a pilot program in April
 - They had multiple repeat falls in the same patients
 - This is a multidisciplinary intervention based on clinical practice guidelines for the prevention of falls in older persons per the American & British Geriatrics Societies
 - Patients age 65+ are enrolled upon admission to Trauma Services after sustaining a GLF with injury
 - It is a 4-pronged approach and there is an order set built for them in EPIC and they just check boxes and things are ordered

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- Vitamin D
- Referral to optometry
- Podiatry
- PM&R consult for all patients, a recommendation from a physiatrist
- There is a lot of family education including checklists for every room for the family to review
 - With the end of this pilot in April, they had a 77% decrease in the number of patients with return falls
 - The next piece is to take it to EMS and the ED, so an educator will go to EMS to get a starting assessment on why the patient fell and what to do to prevent this in the future.
 - Working with ED partners to identify these cases and what to do with those that are not admitted but get them the same education and referrals
- Justin Nelson from VHC provided the following data:
 - Falls over 55 over the last year
 - 1072 patients 55+, the majority are females
 - 884 injuries from a fall or 81%
 - 33 Discharged to the morgue or 3.7%
 - 41 involved alcohol
 - Highest ISS 75; lowest 1
 - Hospital stay related to ISS
 - ISS of 9 stays the longest
 - 224 of 1072 patients
 - Average of 4.6 days
 - Falls types
 - 80% indoors
 - 20% outside
 - 80% from standing
 - 17% stairs
 - 3 greater than 19 feet
 - 2 from the roof and 1 from window
 - For falls prevention, they have a Health Promotions Department and many efforts go to senior living communities and health fairs and they have one coming up in two weeks for fall risk and prevention
 - They also have a Safe Transitions Program for patients that come in with a fall and are discharged, they are given an option to get a Medical Alert program for free for 2 months and then can opt to pay the monthly fee after the two months is up
 - This is through Phillips Lifeline

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- Beth Adams advised there is a non-profit group in NOVA whose mission is fall prevention, and education and they build ramps and railings, etc. It is called Northern VA Fall Prevention Alliance
 - www.novafallsprevention.com is their website for more info
- Cindy Parise from Sentara NVMC presented data which is included at the end of the minutes

Discussion of the Committee

What are our next steps for education and fall prevention?

- Dr. Sarani stated that it seems most EMS agencies are doing the same thing for prevention and education, and most EMS agencies identified that most fall patients are female and most from standing and this is a good way to see outcomes
 - Have some level of education and prevention but are not all doing the same things
 - Is there a way to pull all the information together so everyone can be on the same page?
 - Dr. Sarani said we have the advantage that we're all together and we can share information such as just a name and DOB to see if patients are going to other facilities across the trauma system in Northern VA
 - Beth Adams advised challenges are trying to get data from across hospitals and agencies
 - She suggested that maybe Kim Klein can share her EPIC checklist and then we can have other agencies start to track the same information across the board
 - Per Dr. Sarani, according to ACS, this also meets the collaboration standard/requirement in Chapter 1 or 2
- Topics for future meetings
 - Dr. Scantlebury suggested pediatric c-spine issues, RHCC notifications for MCI criteria, under/over triage, penetrating trauma
 - Dr. Sarani stated that DCFEMS has had issues with MCI lately, or had some MCIs that didn't go down well from a triage perspective. If that's not a NoVA issue, that's ok
 - When they wrote DC Mass, Trauma Plan they asked the city what the definition of mass trauma and the answer was 9 reds is a mass trauma under their definition, so every trauma center can do 3 reds at once on a weekend
 - This was mistranslated to dispatch and they were sending 3 to each trauma center together at one time instead of allocating them to each trauma center one at a time.
 - Do we need to talk about this in NOVA?
 - Dr. Scantlebury stated that she thinks we need to pull RHCC into this discussion for MCI and the idea is that we still need to determine what criteria for MCI/definition for MCI for our region

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and how we relay that information from the scene to RHCC and hospitals

- Lack of good communication with MCI in those scenarios and integrating RHCC as not a go-between but into the discussion is a better idea
- Dr. Franco advised Mass Casualty Awareness Month is in September and it would be a good idea to do it then
- Beth Adams stated that in the past, they have used 10 patients total as an MCI but the incident yesterday at Oakton HS could be considered one as well based on the impact
 - ACS has released new Trauma Triage Guidelines, that have not been adopted by OEMS for the VA State Trauma Triage Plan, so it can't go into local protocols but needs to be looked at
- Trauma Medical Directors need to know what their capabilities are to receive multiple casualty patients based on supplies (gloves, scalpel, equipment, exploratory laparotomy kits, etc)
 - You may have room to take 10 patients but if you only have supplies for 3, it isn't worth it to take them all if you only have beds and not surgical equipment, supplies, etc
 - Dr. Dan stated that when you have overwhelmed the trauma centers with 20 traumas, what happens to patient 21 that needs an emergency procedure? Is EMS better getting them to a non-trauma center immediately or waiting at a trauma center behind 20 other patients to be triaged only to find they've run out of supplies?
 - Beth Adams stated that at a number of the large events (Las Vegas, night club) many of them are coming by POV and not EMS so you'll have walk-in red tags and EMS that are separate and have to account for them also
 - Unfortunately, this is a timely discussion in our world
 - Of note, all 3 yesterday from the Oakton HS incident went to Fairfax Hospital
- Dr. Scantlebury suggested we should have the discussion when we can include RHCC and have their input
- Dr. Dan suggested pedestrian/bicycle vs. car
 - Can we get presentations from DOT or Vision Zero?
- Dr. Sullivan suggested pediatrics, pediatric c-spine, and pediatric trauma
- Dr. Sullivan asked how we are incorporating any of the ideas or suggestions and do we have a measure of progress or action items for the topics?
 - What have we done differently?
 - Do we go back to two meetings ago as old business and discuss what we have done?



Data Analytics Strategy Management Division
Fairfax County Fire and Rescue Department
Falls



Purpose: To identify patients aged 55 and older from January 1, 2021 – June 5, 2022, with a complaint of 'fall'.

Requestor: Beth Adams, EMS Quality Manager

Summary: Between January 1, 2021, and June 5, 2022, the Fire & Rescue Department encountered 9,000 patients aged 55 and older with a cause of injury of 'fall'. Of those, 8,390 (93.2%) were transported.

Patients by Age and Gender, Disposition

Age Range	Female	Male	Other	Tr F>M	Tr M>F	Total
55-64	658	652	0	2	1	1,313
65-74	1,129	813	0	1	0	1,943
75-84	1,563	1,110	1	6	0	2,680
85-94	1,553	938	0	6	0	2,497
95+	414	152	0	1	0	567
Total	5,317	3,665	1	16	1	9,000

Tr F>M refers to Trans, Female to Male; Tr M>F is Trans, Male to Female.

Patient Disposition	Total Patients	%
Treated & Transported	8,390	93.22%
Patient Refusal (AMA)	555	6.17%
Treated, Transferred Care	40	0.44%
Patient Dead at Scene (No EMS CPR)	9	0.10%
Patient Dead at Scene (EMS CPR Attempted)	4	0.04%
EMS Assist (Other Agency)	1	0.01%
No Treatment/Transport Required	1	0.01%

Falls

Cause of Injury

Cause of Injury	Total Patients
Fall ground level	5,509
Fall from chair/bed	1,075
Fall other slipping, tripping and stumbling	1,075
Fall on/down stairs and steps	443
Slipping, tripping and stumbling without falling	263
Fall due to ice or snow	119
Fall from wheelchair/scooter	111
Fall from toilet (or off of)	110
Fall from ladder	74
Fall from other furniture	58
Animal - dog related injury by (bite, scratch, fall)	46
Fall in shower or bathtub	40
Fall from high place	25
Struck by thrown, projected or falling object	23
Falling into moving object (or lying or running)- intent not known	8
Fall from building	5
Fall from playground equipment	3
Fall from window (or out of)	2
Fall while being carried by another person	2
Fall from scaffolding	2
Fall from cliff, Fall due to ice or snow	1
Fall from diving/jumping into water	1
Other mechanical force injury not listed,Slipping, tripping and stumbling without falling	1
Fall from wheelchair/scooter,Fall from other furniture	1
Fall from roof (or through)	1
Fall from ladder, Fall from roof (or through)	1
Fall from scaffolding, Fall on/down stairs and steps	1
Total	9,000

Falls

Methodology: The data warehouse was queried to identify patients with a cause of injury description containing 'fall' and who were 55 years or older. There are several ways a provider can indicate a patient had a fall. If the provider did not indicate so in the cause of injury description, then that patient would not appear in the dataset. Cause of injury was grouped by most used descriptions.

```
case when injury.Injury_Cause_Of_Injury_Description_List like '%Fall ground level%' then 'Fall ground level'
when injury.Injury_Cause_Of_Injury_Description_List like '%Fall other%' then 'Fall other slipping, tripping and
stumbling'
when injury.Injury_Cause_Of_Injury_Description_List like '%Fall from bed%' or
injury.Injury_Cause_Of_Injury_Description_List like '%Fall from chair%' then 'Fall from chair/bed'
when injury.Injury_Cause_Of_Injury_Description_List like '%Fall from high%' then 'Fall from high place'
else Injury_Cause_Of_Injury_Description_List end InjuryCause

FROM DwEms.Fact_Incident AS fact
LEFT JOIN DwEms.Dim_Incident AS inc ON fact.Dim_Incident_FK = inc.Dim_Incident_PK
LEFT JOIN DwEms.Dim_Patient AS ptt ON fact.Dim_Patient_FK = ptt.Dim_Patient_PK
LEFT JOIN DwEms.Dim_Disposition AS disp ON fact.Dim_Disposition_FK = disp.Dim_Disposition_PK
LEFT JOIN DwEms.Dim_Incident_One_To_One AS inc121 ON fact.Dim_Incident_One_To_One_PK =
inc121.Dim_Incident_One_To_One_PK
LEFT JOIN DwEMS.Dim_InjuryDetails AS injury ON fact.Dim_InjuryDetails_FK = injury.Dim_Injury_Details_PK
LEFT JOIN DW_Dept_Data.dbo.v_ePCR_Patient_Demographics as Dems on ptt.Patient_ID_Internal =
dems.Patient_ID_Internal
WHERE (fact.Dim_Agency_FK = 5)
AND (inc121.Response_Incident_Number IS NOT NULL)
and (inc.Incident_PSAP_Call_Date_Time >= '1/1/2021' and inc.Incident_PSAP_Call_Date_Time < '6/6/2022')
and fact.Patient_Age_In_Years >= 55
and injury.Injury_Cause_Of_Injury_Description_List like '%fall%'
```

Loudoun County Fire & Rescue

PITI - Fall Data – Age ≥ 55

Jan 1, 21 through Dec 31, 21

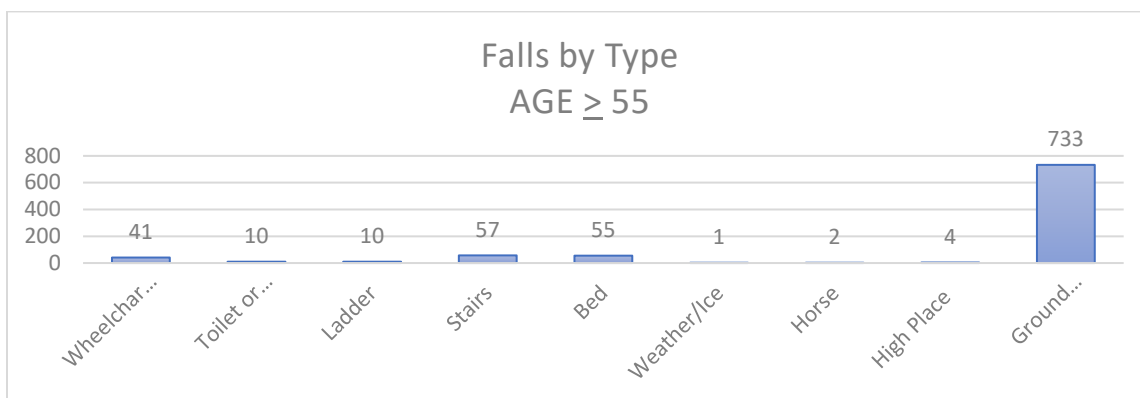
Data from Jan 1, 2021, through December 31, 2021, was pulled from the Imagetrend Elite Records Management system and includes any “Fall” incident where the patient’s age was ≥ 55 , and the patient was transported. Of the nine hundred thirteen (913) incidents, 60% of these were female.

Inclusion criteria:

- All incidents where the disposition was = “Transported”
- Patient Age ≥ 55
- Cause of Injury contains “Fall”

Categories of Fall types included:

- Fall from Wheelchair or Chair
- Fall from Ladder
- Fall from Toilet or Shower
- Fall from Stairs
- Fall from Bed
- Fall due to weather/ice
- Fall from Horse
- Fall from High Place
- Fall Ground Level: **451/733 women – 62% women**



General Notes

Ground Level falls include trips, slips, stumbles, and general falls from a standing height. Two of the 4 incidents “High Place” were suspected to be suicide attempts. One from a 3rd story building and one from the 2nd story at the local jail.

Alexandria Fire Department Falls Data

Jan 1, 2021 – June 6, 2022

Based on the CAD complaint and Cause of Injury Description we had a total of 1665 calls related to falls for people over 55 years old.

- Ground level falls accounted for 772 or 46% of our falls.
- Nursing homes and assisted living facilities accounted for 274 or 16% of our falls.
- Medical reasons related to weakness, vertigo, syncope, infection, ETOH, and mobility reduced accounted for 220 or 13% of our falls.
- Elderly high-rises accounted for 49 or 2% of our falls.
- Falls from Bed accounted for 68 or 4% of our falls. 51% of those calls occurred in nursing homes or elderly high-rises.
- Falls from a chair accounted for 44 or 2% of our falls. 8 or 18% of those calls occurred in nursing homes or elderly high-rises.
- Falls going up or down stairs accounted for 45 or nearly 3% of our falls.
- Slip, trip, and falls accounted for 94 or 5% of our falls.

Transport Destinations

- Alexandria Hospital – 985 or 59%
- Documented as Assist Public or Refusal – 549 or 33%
- Fairfax Hospital – 50 or 3%
- George Washington Hospital – 32 or 2%
- Mt. Vernon – 24 or 1.5%
- Virginia Hospital Center – 20 or 1.2%
- Health Plex and Ft Belvoir – 2

Falls by Age

- 55-64 years old – 246 or 17.5%
- 65-74 - 368 or 26%
- 75-84 – 415 or 30%
- 85-84 – 295 or 21%
- >94 – 79 or 5%

Most common injuries

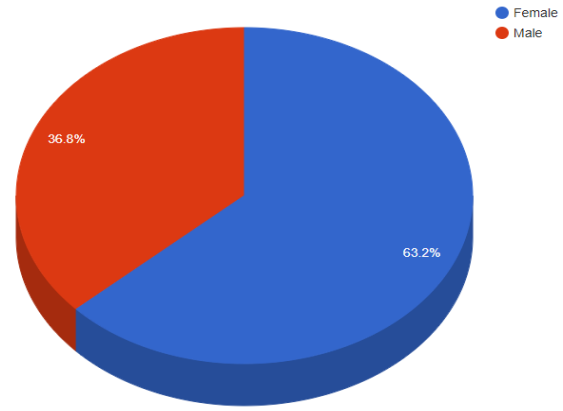
- Head without LOC – 334
- Face – 104
- Hip – 101
- Leg or knee – 92
- Shoulder/upper arm – 70
- Pelvis – 54
- Lower back – 66
- Wrist/hand - 46

Prince William County Fire & Rescue

Age	Total
56-65	75
66-75	75
76-85	113
86-102	83
Total Falls	345

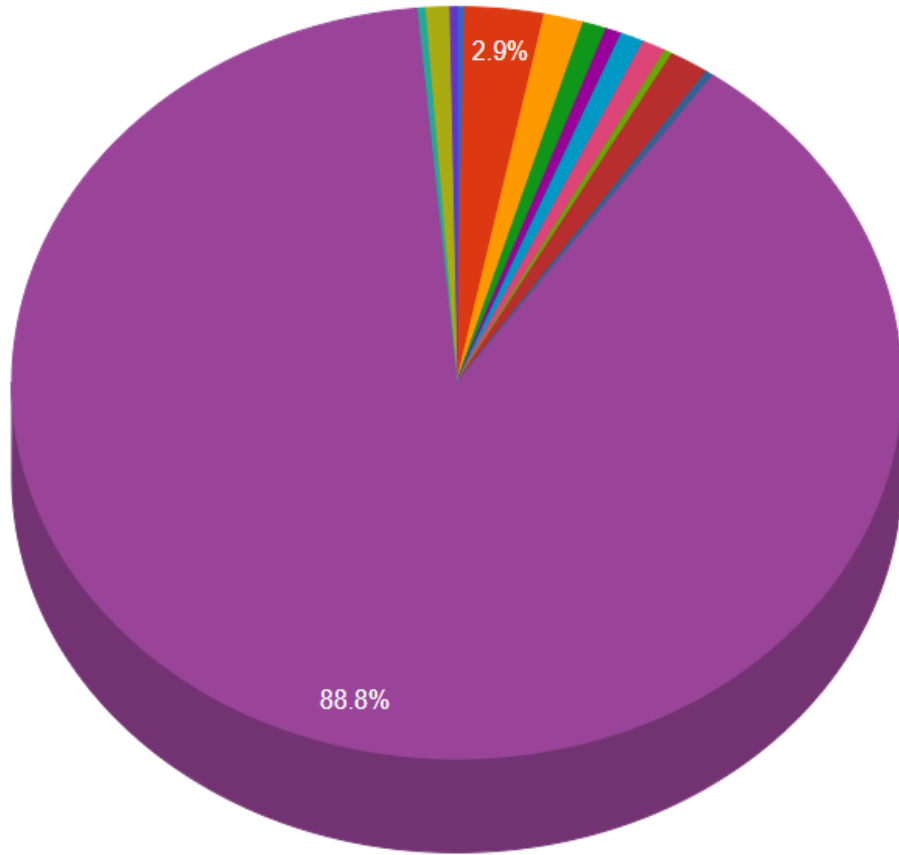
Gender	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	
Female	10	19	16	15	19	22	21	17	23	17	14	25	218
Male	10	11	9	8	7	14	12	17	10	8	9	12	127

Falls Jan 1, 2021 - Dec 31, 2021



Causes

Assault by unspecified sharp object	1
Fall (on) (from) unspecified stairs and steps	10
Fall from bed	5
Fall from chair	3
Fall from non-moving wheelchair, nonmotorized scooter and motorized mobility scooter	2
Fall from or off toilet	3
Fall from other furniture	3
Fall from, out of or through window	1
Fall in (into) shower or empty bathtub	5
Fall on and from ladder	1
Fall on same level from slipping, tripping and stumbling	309
Fall while being carried or supported by other persons	1
Falling, lying or running before or into moving object, undetermined intent	3
Other slipping, tripping and stumbling and falls	1

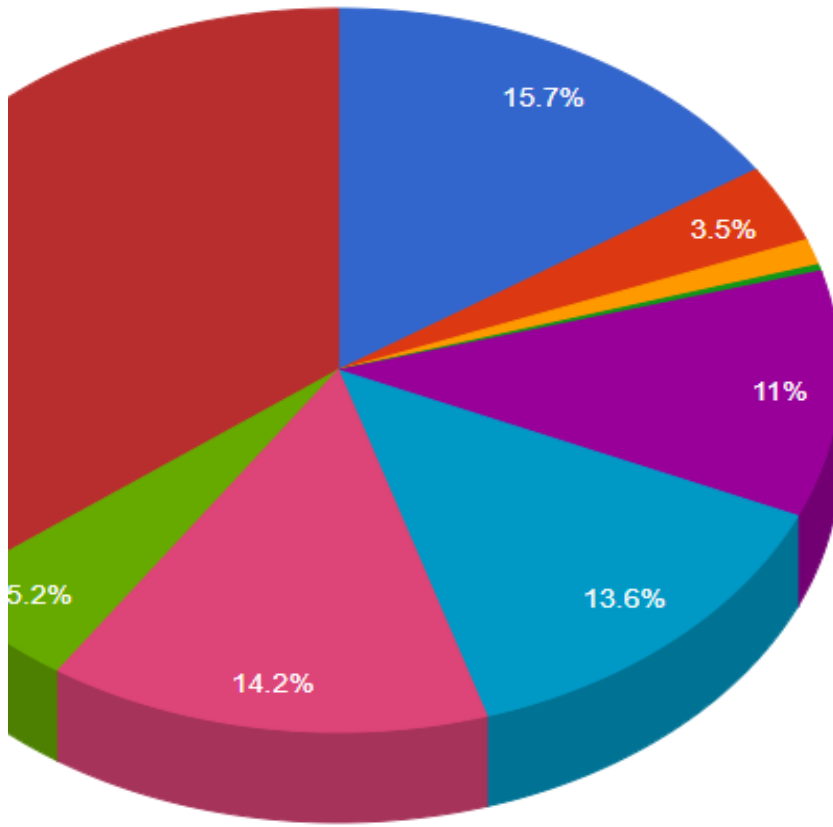


- Assault by unspecified sharp object
- Fall (on) (from) unspecified stairs and steps
- Fall from bed
- Fall from chair
- Fall from non-moving wheelchair, nonmotorized scooter and motorized mobility scooter
- Fall from or off toilet
- Fall from other furniture
- Fall from, out of or through window
- Fall in (into) shower or empty bathtub
- Fall on and from ladder
- Fall on same level from slipping, tripping and stumbling
- Fall while being carried or supported by other persons
- Falling, lying or running before or into moving object, undetermined intent
- Other slipping, tripping and stumbling and falls

Falls Jan 1



, 2021 - Dec 31, 2021



- N/A
- Haymarket Medical Center
- Inova Fair Oaks Hospital
- Inova Fairfax Hospital
- Northern Virginia Medical Center
- Novant Health UVA Haymarket Medical Center
- Novant Health UVA Prince William Medical Center
- Prince William Medical Center
- Sentara Northern Virginia Medical Center

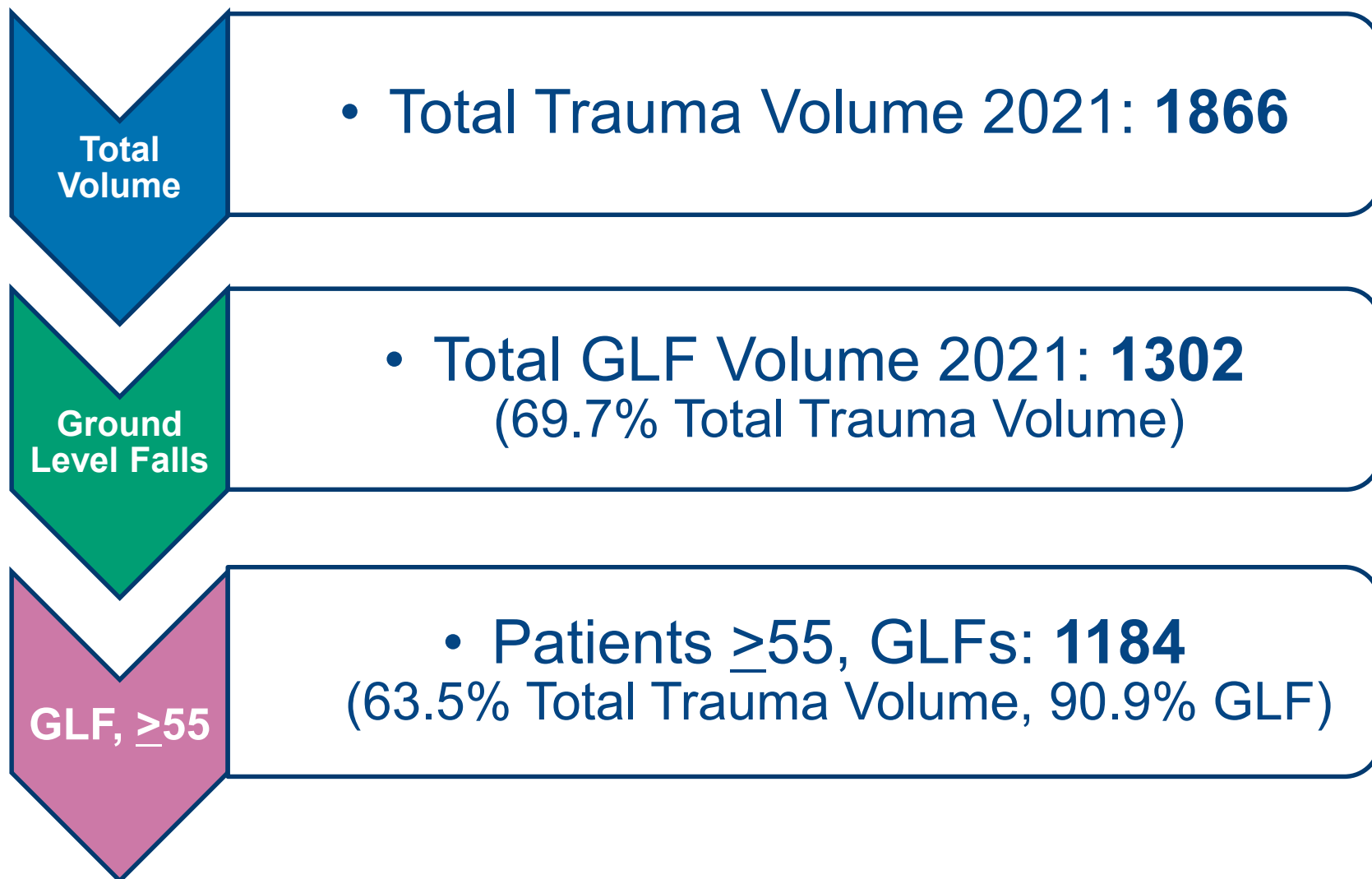


MOI: Ground Level Falls

Inova Loudoun Hospital

Trauma Services

Q1-Q4, 2021



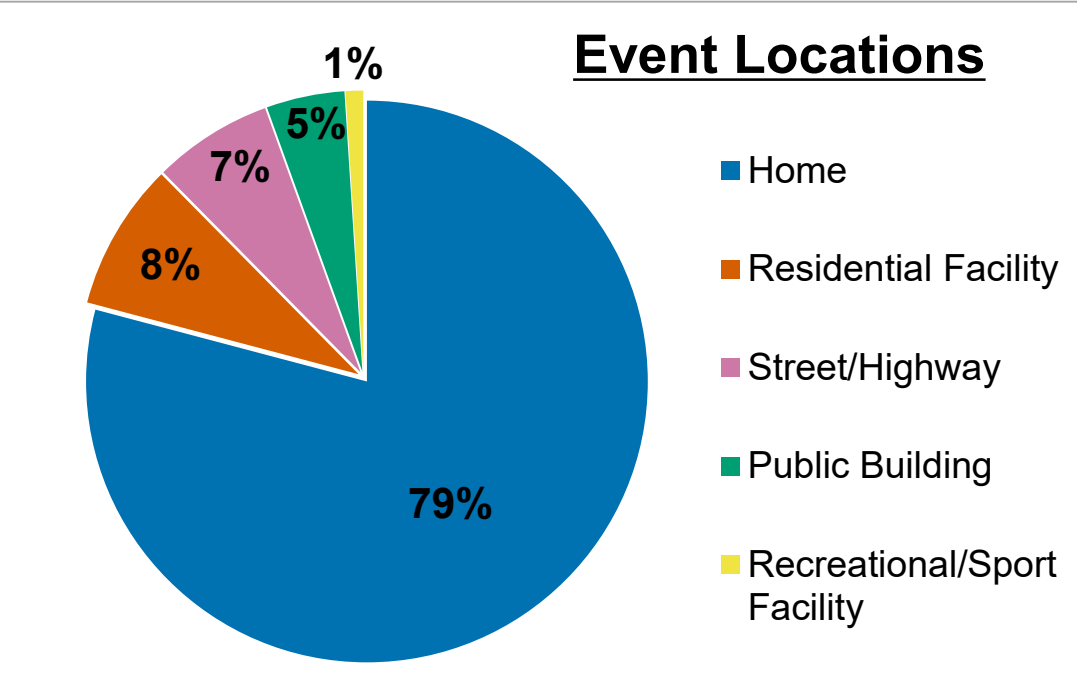
Patient Overview

❖ Total Number of Patients: 1184

- ❖ Q1 2021 – 268
- ❖ Q2 2021 – 258
- ❖ Q3 2021 – 335
- ❖ Q4 2021 – 323

❖ Patient Sex

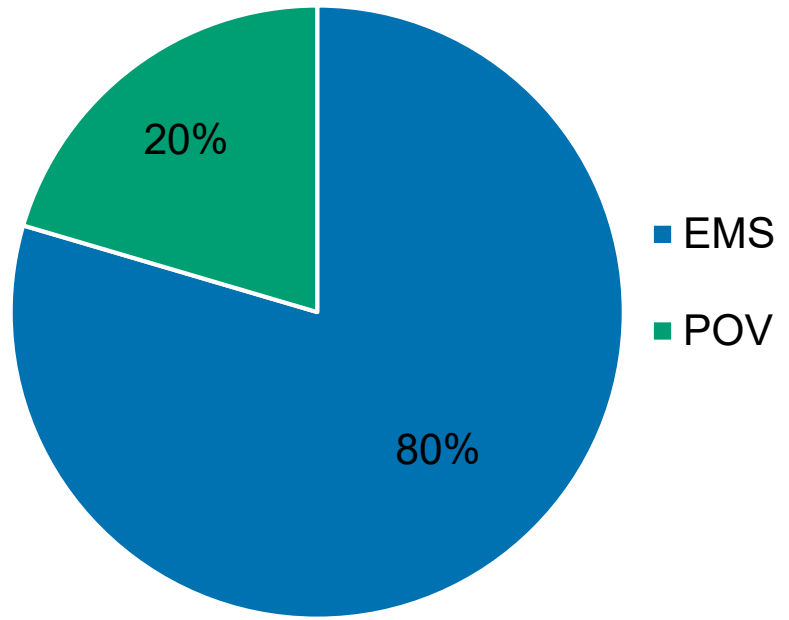
- ❖ Female: 55.9%
- ❖ Male: 44.1%



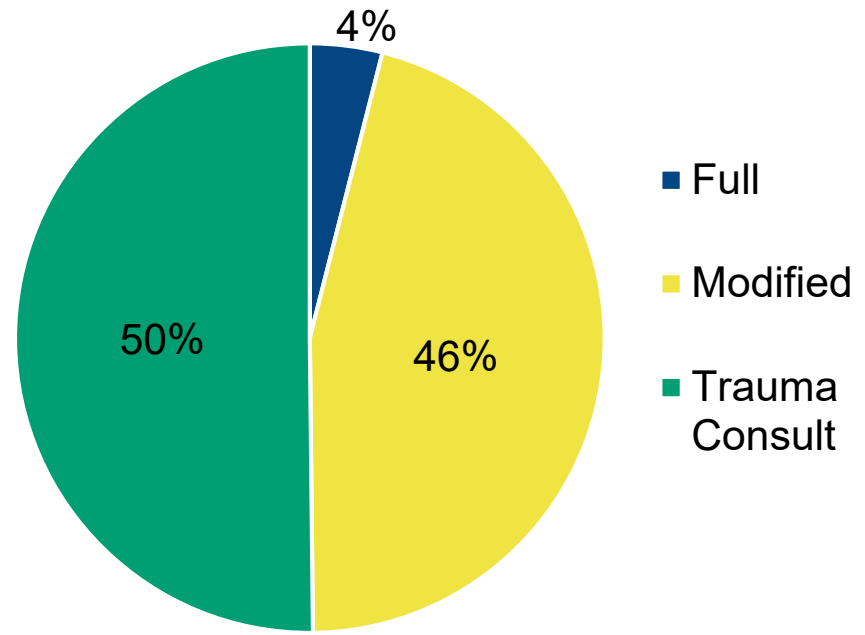
Event Description	Patients
Fall on same level from slipping, tripping, or stumbling	895
Fall from bed, chair, other furniture	141
Fall from toilet	47
Fall from curb	44
Fall in (into) shower or bathtub	39
Fall on same level due to ice and snow	18

Patient Arrival

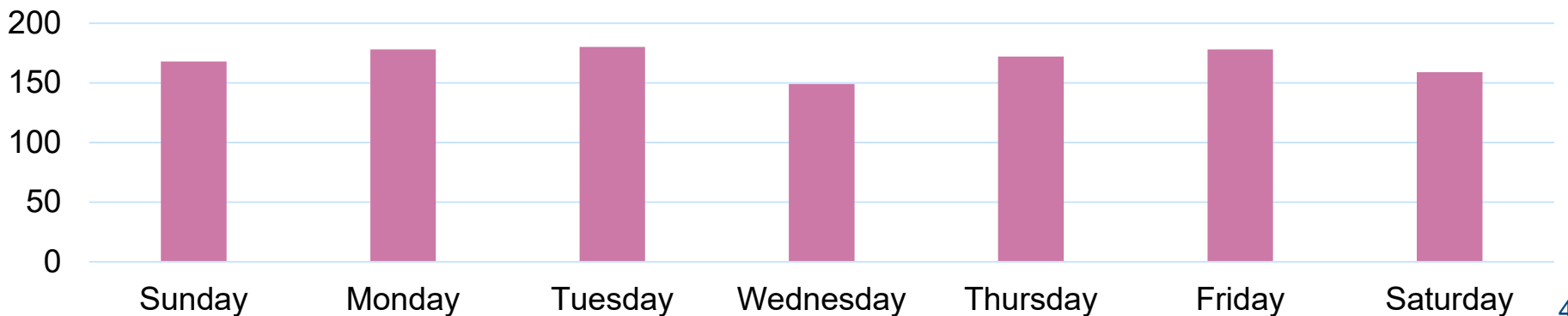
Patient Arrival Method



Trauma Activation Level

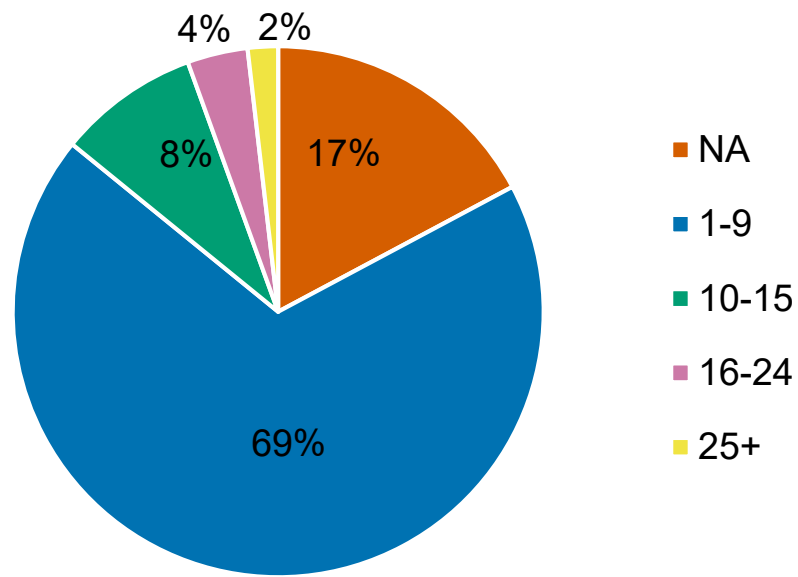


Patient Arrival by Day

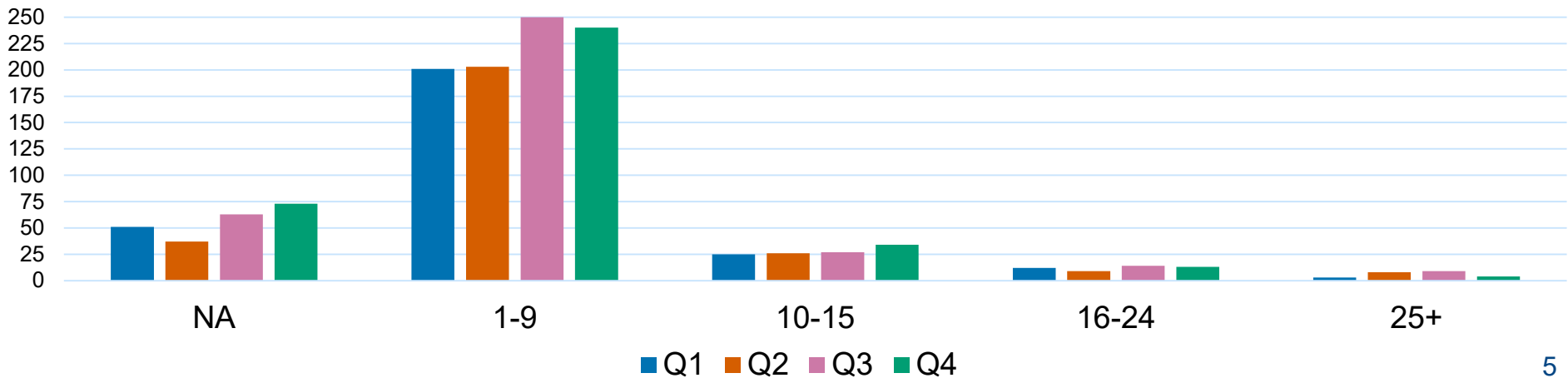


Injury Severity Score Overview

ISS – Total Patient Volume



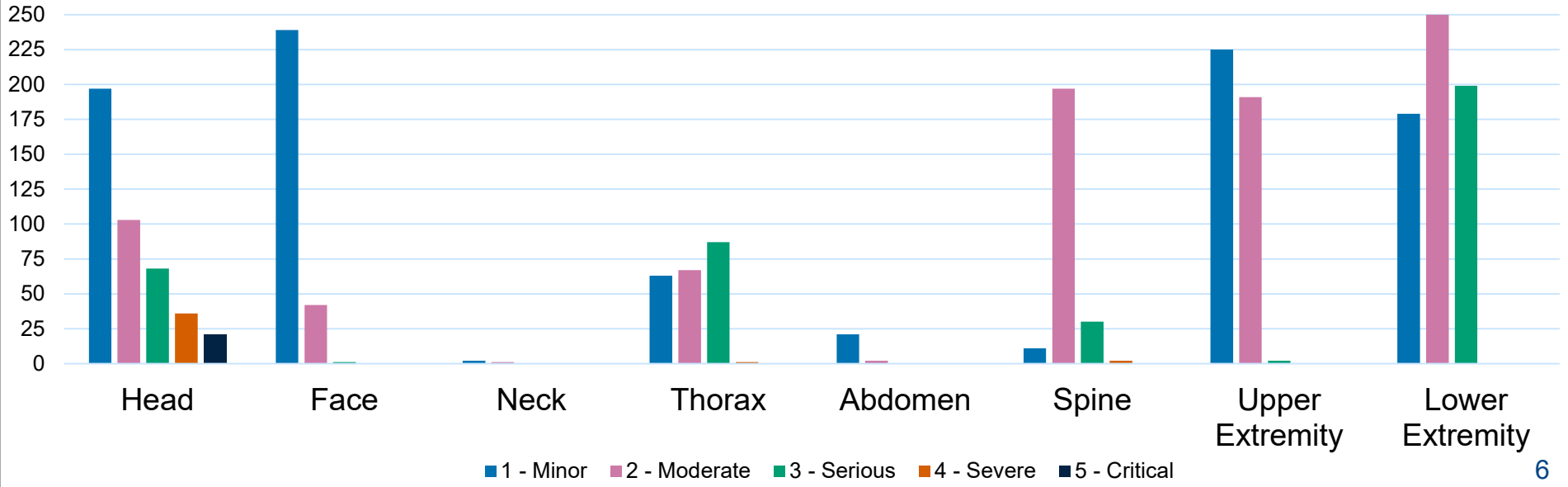
ISS – Quarterly Patient Volume



Injuries / AIS Distribution

Most Common Injuries	Patients
Femoral Fractures	173
Multiple (2+) Rib Fractures	135
Vertebral, Lumbar Spine, Fractures	101
Pelvic Ring Fractures	79
Vertebral, Thoracic Spine, Fractures	64
Subdural Hemorrhage	50
Subarachnoid Hemorrhage	34

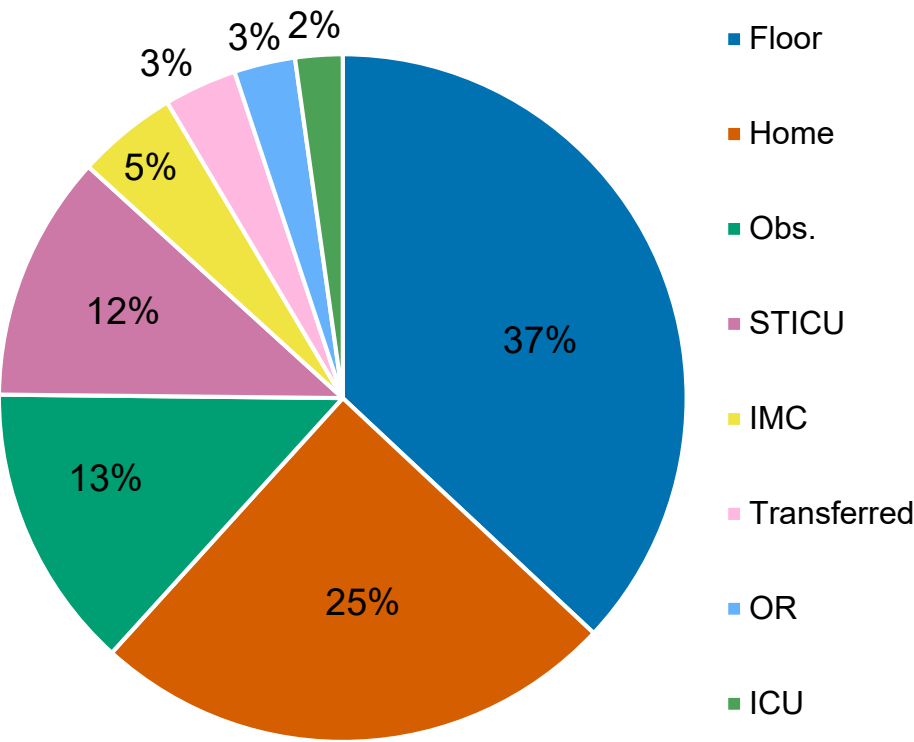
AIS Distribution



Patient Outcomes

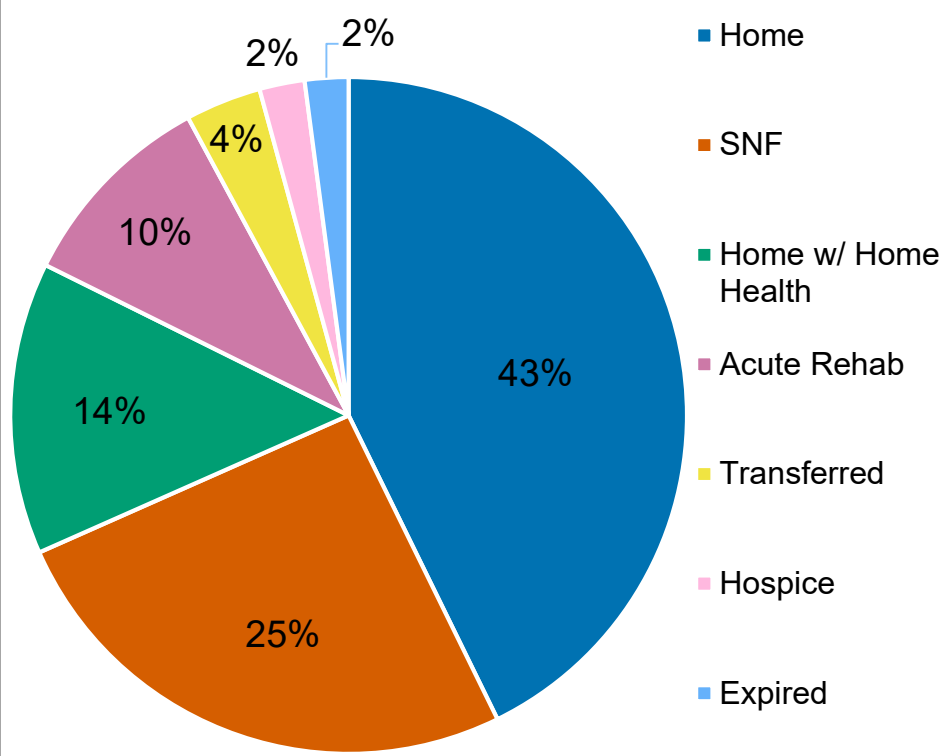
❖ Average LOS: 3.14 days

ED Dispositions



Dispositions <20 Patients: Pediatric Floor, Morgue, Left AMA, L&D, Hospice

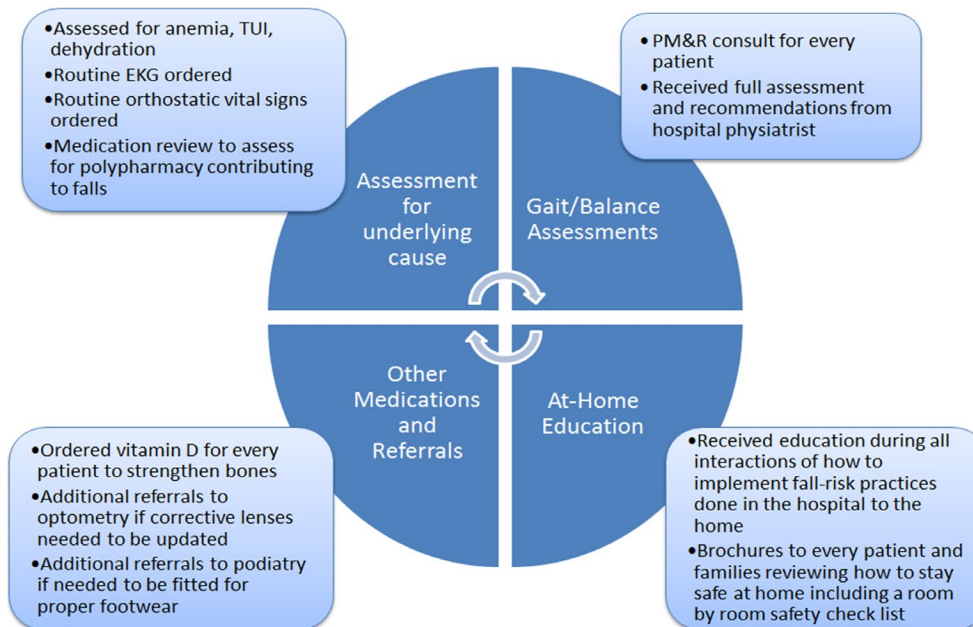
Final Dispositions



Disposition <20 Patients: Left AMA, Long Term Care Facility

Fall Prevention Program

- ❖ Multidisciplinary intervention based on the Clinical Practice Guidelines for Prevention of Falls in Older Persons from the American & British Geriatrics Societies.
- ❖ Patients (Age: 65+) are enrolled upon admission to Trauma Service after sustaining ground level fall with injury.



- ❖ Impact: 77% decrease in repeat admissions to the ILH Trauma Service for falls with injury over a 1 year period.

Questions?



SNVMC

A Review of Falls in Patients
55 and Older

Falls in Patients 55 and Older

491 total patients for the year
5/1/2021- 4/31/2022

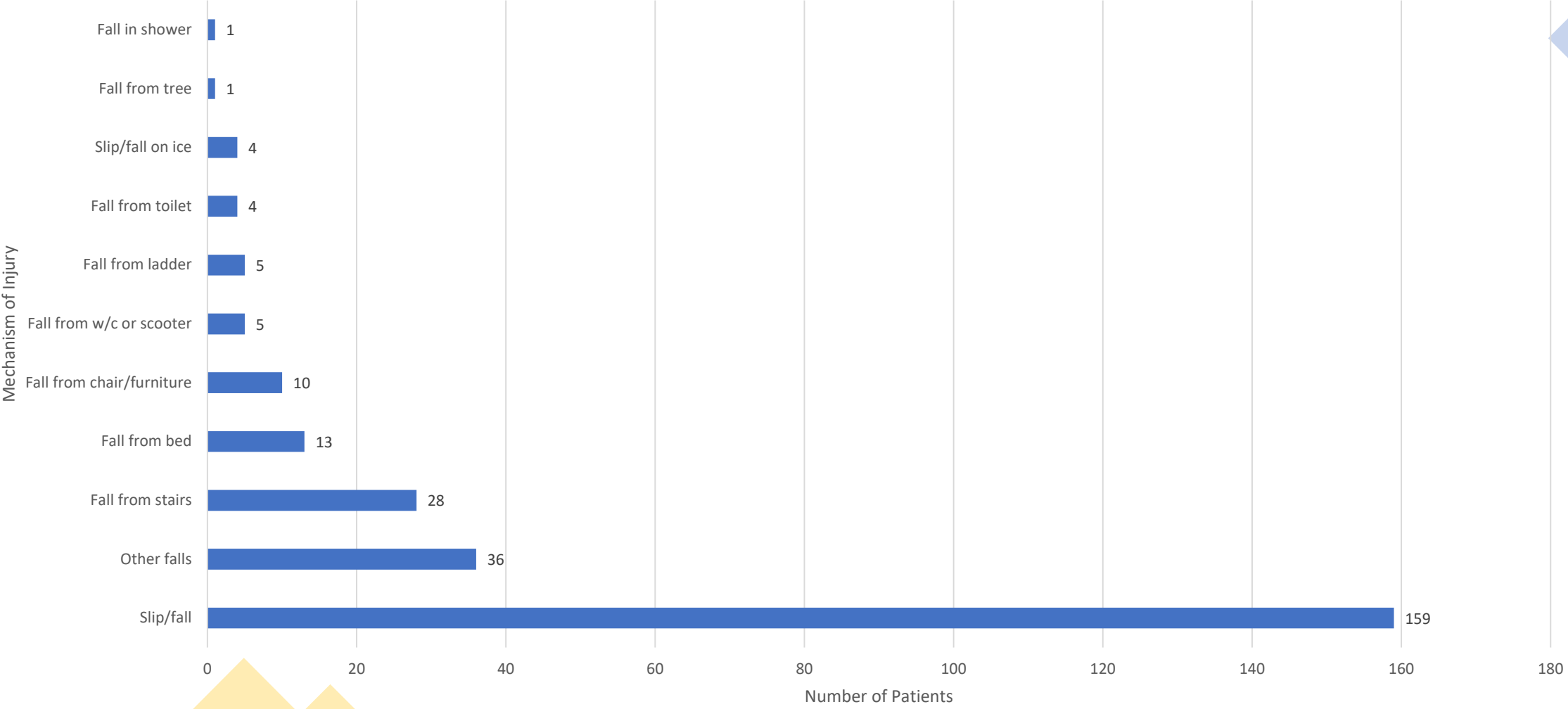
54% of patients met this criteria = 266

64% female

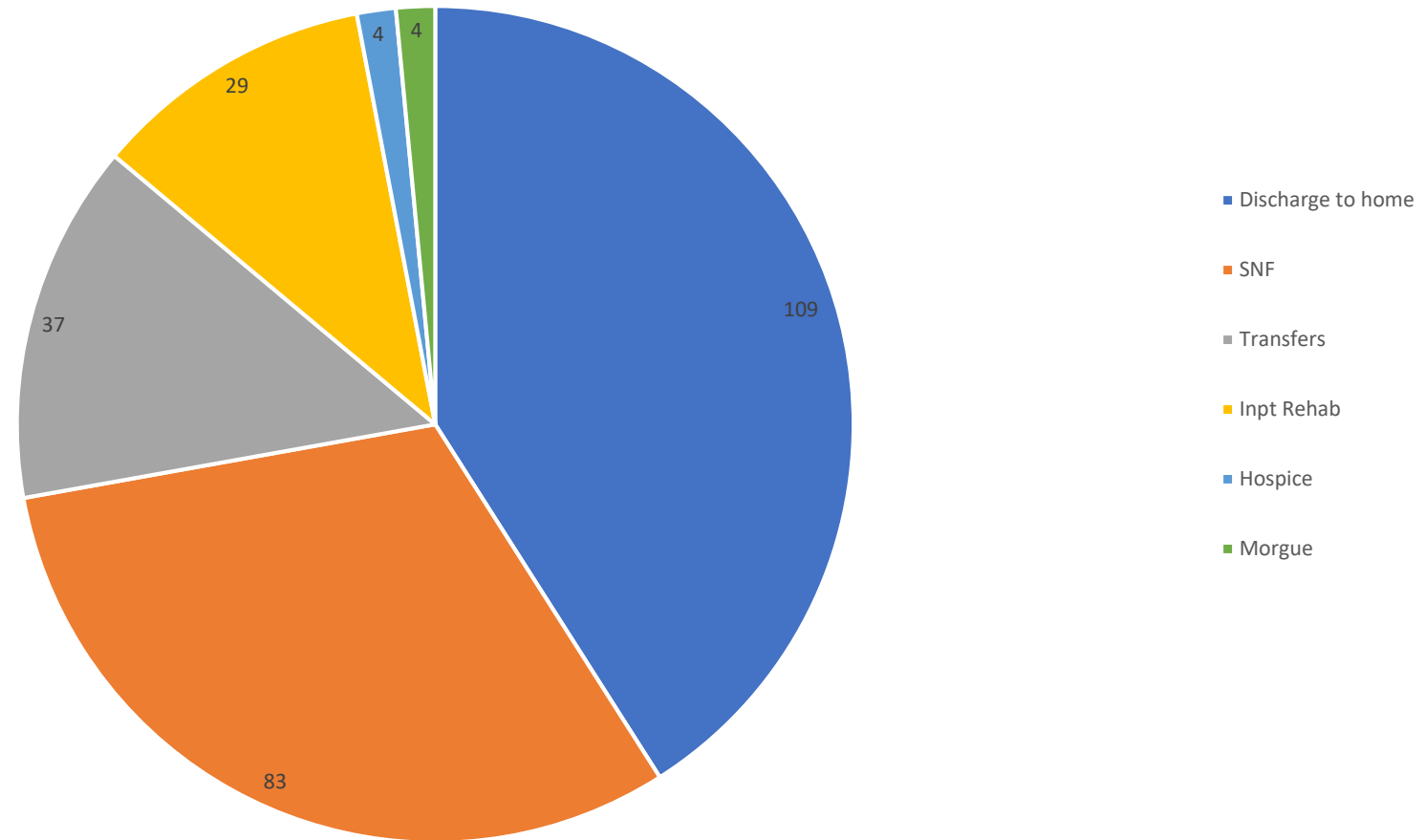
36% male

4 mortalities (2 females, 2 males)

Types of Falls in Patients 55 and Older



Disposition of Falls in Patients 55 and Older



Fall Prevention Activities:

- **Sentara Community Nurses trained in “Matter of Balance”**
- **Bingocize for Fall Prevention**
- **Regularly addressed by physical and occupational therapy**
- **Regularly addressed as point of discharge from the ED**

