Falls Among Older Adults in Marin County

Marin County Public Health

Epidemiology

September 2026

Fall prevention for older adults is a public health priority



- Falls are a leading cause of injury in older adults.
- A fall can prompt a cascade of events that result in loss of independence and decline in quality of life and physical and cognitive function.
- Residents 60+ are one of the largest demographic groups in Marin County – and that group is growing.

From Community Health Assessment to Action

- Healthy Marin Partnership's **2025 Community Health Assessment (CHA)** prioritized Chronic Disease & Disability
- Marin's **2026–28 Community Health Improvement Plan (CHIP)** Strategy
  - Establish Cross-System coordination between EMS and Aging & Adult Services for **Fall Prevention and Recovery**

HEALTHY MARIN PARTNERSHIP

A cross-sector partnership improving health outcomes across Marin County

BUILT ON DATA
2025 CHA identifies Chronic Disease & Disability as the top priority

→

SHARED ROADMAP
2026–28 CHIP coordinates action across Marin's health partners

→

DRIVEN BY COMMUNITY
EMS + Aging & Adult Services unite on Fall Prevention and Recovery

Falls Data – Who, What, When, Where?

Falls are the leading cause of injury among older adults nationwide



1 in 4

Adults age 65+ report a fall each year according to the CDC.

Falls injure Californians age 65+ each day

870
fall-related ED visits each day



313
fall-related hospitalizations each day

7
fall-related deaths each day

California adults 65+;
California Department of Public Health (CDPH), Falls Prevention, 2023 data

How do we measure falls in Marin?

- **911 data:** Ground-level falls among adults 60+
- **Death data:** Ground- or low-level falls listed as the final cause of death*
- **Emergency department data:** Includes all types of falls, including same-level falls and falls from height.
- Deaths and 911 calls **involving stairs or other falls from heights** are relatively rare compared to ground and low-level falls and were excluded from the main analysis.

***Important limitation:** Some deaths that occur after complications from a fall may not ultimately be recorded as a fall death.

Falls are common for older adults age 60+ in Marin



2,400 +
average fall-related 911 calls per year

6.5
average fall-related 911 calls per day

28
average fall-related deaths each year

Marin adults 60+;
911 calls: 2023–2025;
Deaths: annual average, 2016–2025.

After accounting for age, Marin's fall-related ED visit rate is very similar to California's

California fall-related ED visit rate :

4,267 per 100,000

Marin fall-related ED visit rate :

4,293 per 100,000

Age-standardized to California's 2024 age distribution among adults 60+

Adults 60+
California Department of Health Care Access and Information (HCAI), Emergency Department Data, 2024.
Marin County Public Health Analysis

Most fall-related injuries in Marin residents 60+ occur in those 80+ years of age

59%

of fall-related 911 calls were among adults 80+

78%

of fall-related deaths were among adults 80+

This is consistent with national trends.

Marin adults 60+;
911 calls: 2023–2025;
Deaths: annual average, 2016–2025.

Most falls occur where people live

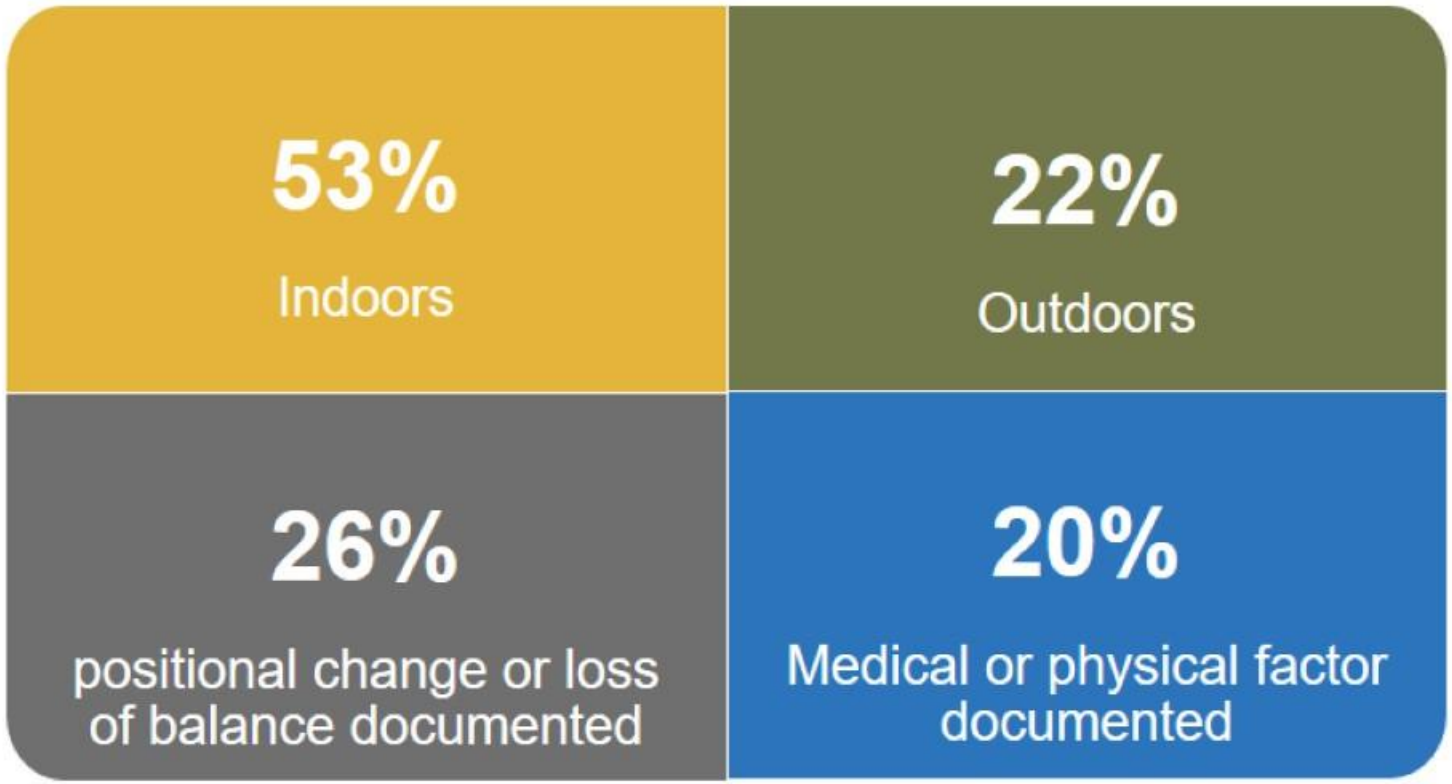


- Approximately 70% of fall-related 911 calls and deaths occur in private homes.
- Another 23% of fall-related 911 calls happen at residential care or senior group living facilities.
- The remaining falls occur at commercial or recreational locations.

Marin adults 60+;
911 calls: 2023–2025;
Deaths: annual average, 2016–2025.

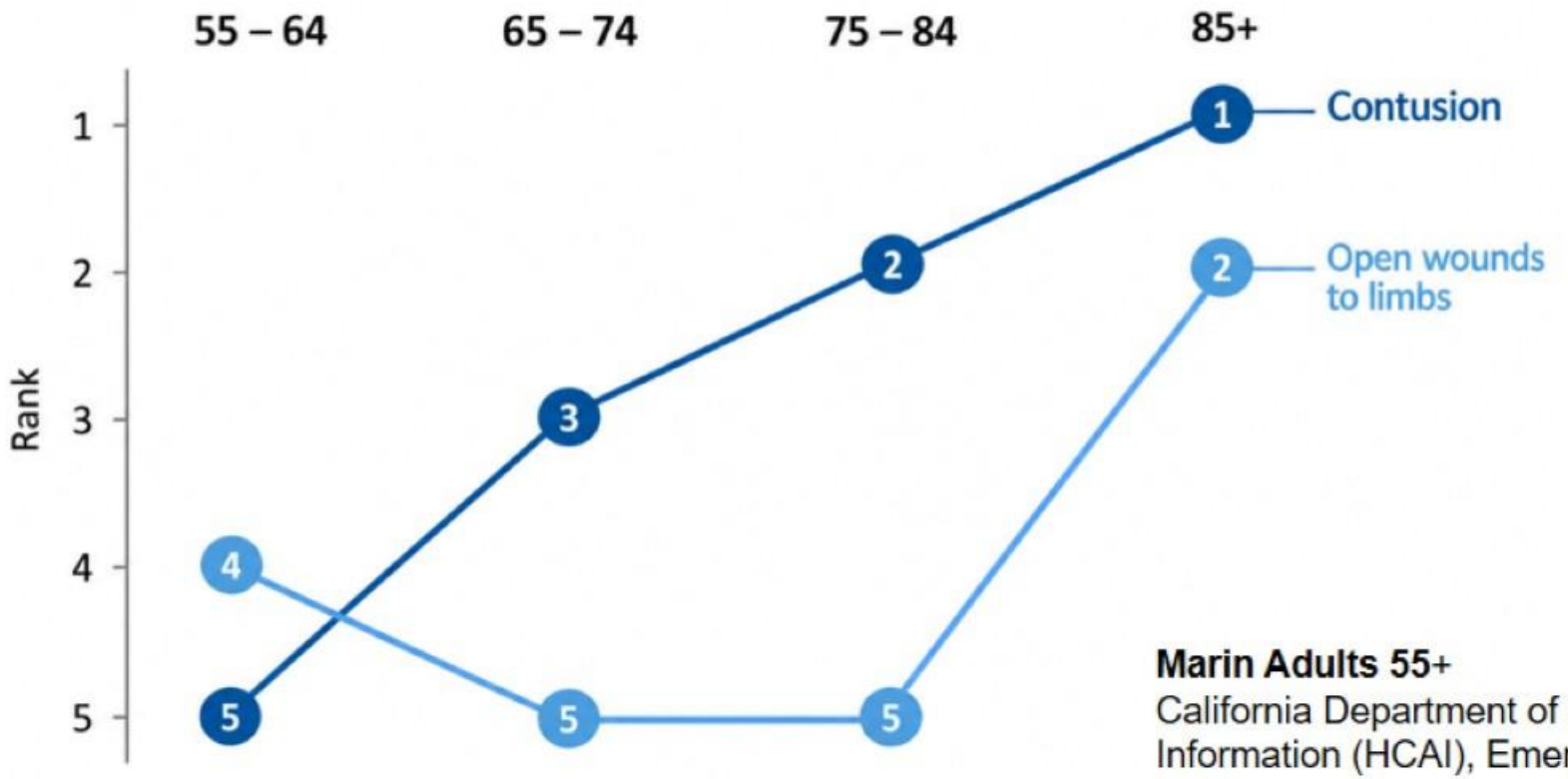
A closer look at EMS narratives tells us more about where and how falls happen

Manual review of a random sample of 500 Marin EMS ground-level fall records



Marin adults 60+;
911 calls: 2023–2025

Injuries become #1 and 2 ranked leading Emergency Department diagnoses by age 85+ in Marin



Marin Adults 55+
California Department of Health Care Access and Information (HCAI), Emergency Department Data, 2023–2024

Falls can have devastating consequences

- Accidental injury deaths among Marin residents 60+ are most often due to falls
- **About 1 in 5 older U.S. adults die within one year after a hip fracture***

*U.S. data, 2008–2017; summarized in Johannesdottir et al., JAMA 2026

75%

of accidental injury deaths due to falls among Marin residents 60+ involve head or hip injuries.





PREVENTION & COMMUNITY SUPPORT

Data to Action

Falls can be prevented - and their impact can be reduced



Evidence-based prevention can include strength and balance work, medication/health review, vision/footwear, and safer home environments.

Marin County is acting on fall prevention and recovery

- Establish an EMS–Aging and Adult Services fall prevention and referral protocol.
- Pilot a referral pathway from emergency medical responders to Aging and Adult Services to connect older adults with community-based services that support independent living and reduce unmet non-emergency needs.
- Expand outreach for fall prevention in priority communities (Marin City, West Marin, low-income senior housing).

HEALTHY MARIN PARTNERSHIP

KEY TAKEAWAYS

Key Takeaways

Falls have big impacts, but prevention is possible

- Falls among older adults are common.
- Falls have serious impacts on individuals and contribute substantially to older adults' use of emergency care.
- Falls can be prevented and their impacts mitigated.
- Community collaboration is key for falls prevention.

Bria Larson, MPH

Marin County Department
of Health and Human Services
Bria.Larson@marincounty.gov

Thank You

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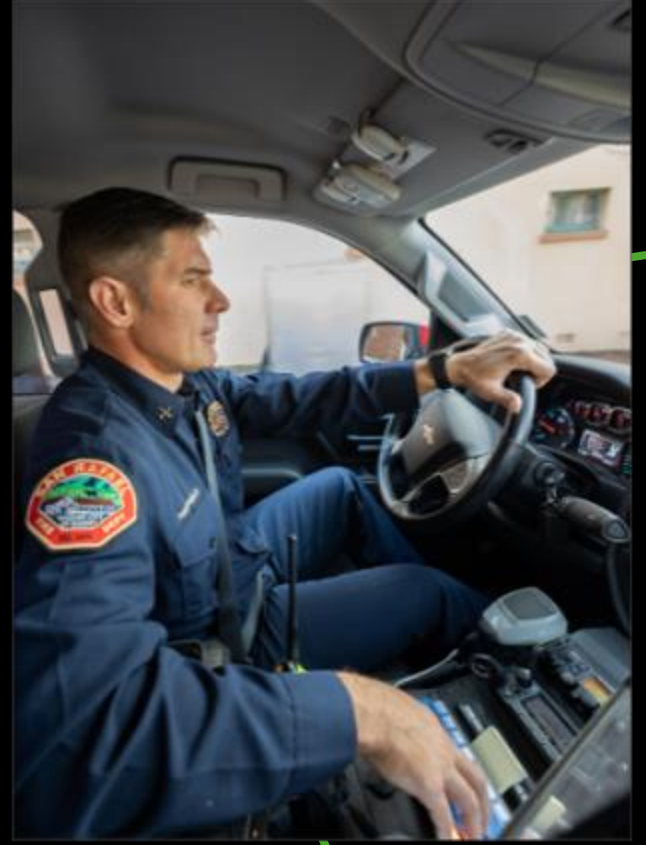
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San Rafael Fire Department
FALL PREVENTION WEEK
2026

OUR MISSION IS…
TO HELP

www.srfd.org






INTRODUCTION

- Began my career with the SRFD in 2002.
- Served in the ranks of Firefighter/Paramedic, Engineer, Captain, Battalion Chief, and Training Officer
- Currently the Battalion Chief of Emergency Medical Services

ABOUT THE DEPARTMENT

- The San Rafael Fire Department was established in **1874.**

- Today, the department is an organization with over **110 professional men and women** who provide compassionate, capable, and predictable fire, paramedic, and emergency services to the greater San Rafael Community.






EMERGENCY
BULANCE
SAN RAFAEL

DEPARTMENT OVERVIEW

WWW.SRFD.ORG

6

There are **6 fire stations** Serving San Rafael, the Marin County seat.

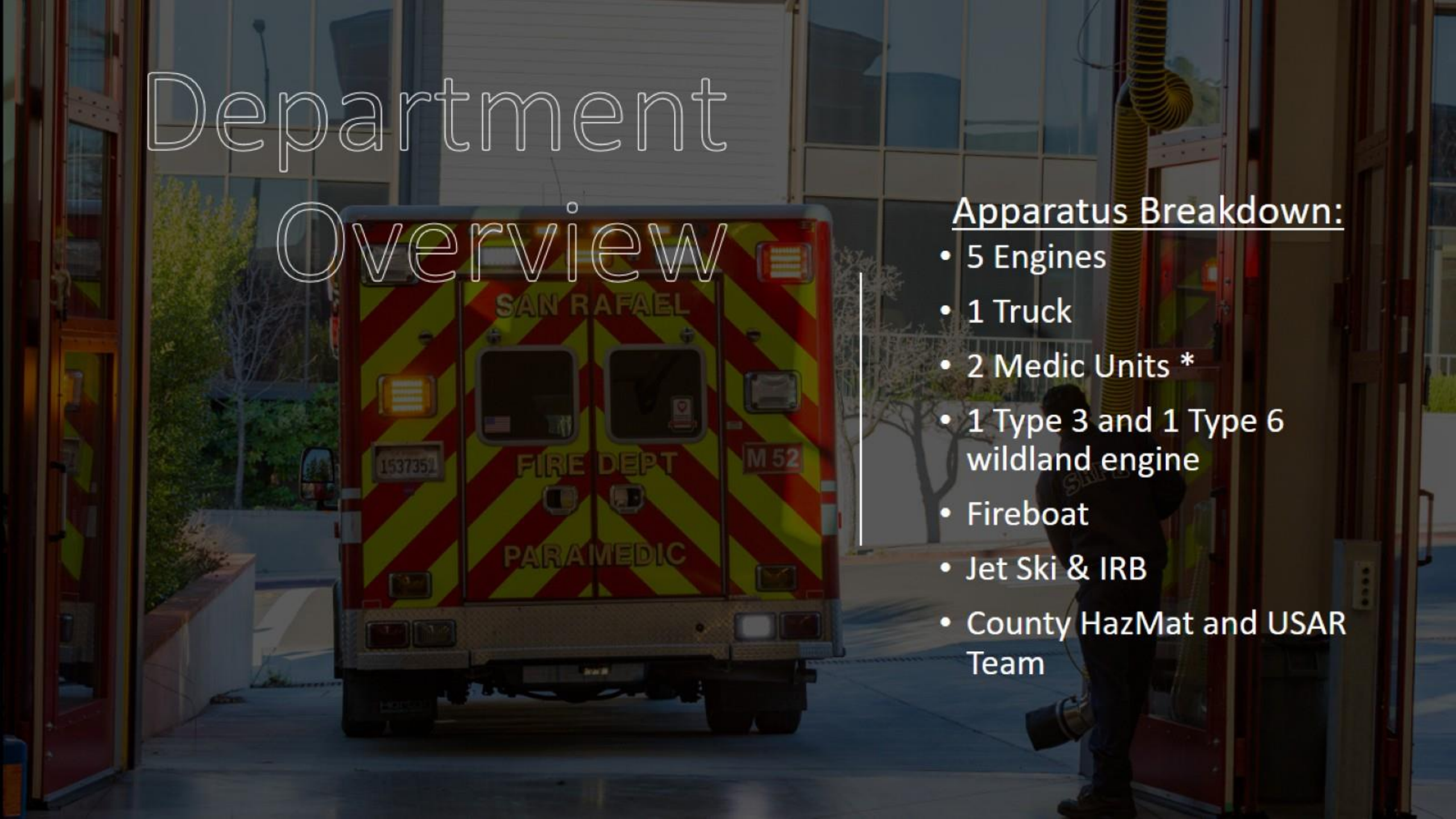
23

There are **23 on-duty personnel 24/7**, providing these services within the city limits and other areas defined through agreements with bordering areas.

Department Overview



Department Overview



Apparatus Breakdown:

- 5 Engines
- 1 Truck
- 2 Medic Units *
- 1 Type 3 and 1 Type 6 wildland engine
- Fireboat
- Jet Ski & IRB
- County HazMat and USAR Team



STATION 51

Station 51 serves the downtown district of San Rafael. The station consists of Engine 51 & temporarily houses Medic 52. Station 51 is also the home station for the on-duty Battalion Chief. Additionally, Station 51 is the the headquarters to Fire Chief Darin White(Chief 50), Deputy Chiefs Abraham Roman(Chief 51) & Robert Sinnott(Chief 52), fire administration staff & fire prevention personnel.

Address: 1375 Fifth Ave, San Rafael, CA 94901



STATION 52

Station 52 serves the outer downtown area & also responds to Dominican College. The Station houses Engine 52 & temporarily houses Truck 54 which cross staffs Engine 652, our type 3 apparatus. Station 52 normally houses Medic 52 which is temporarily at Station 51 during Station 54's remodel.

Address: 52 Union St, San Rafael, CA 94901



STATION 54

Station 54 (construction underway) is responsible for "The Canal" district which consists of multiple low rise apartments & multiple businesses. Station 54 is currently being remodeled & is under construction. The station is normally home to Truck 54 & Engine 652 which are temporarily at Station 52 during construction.

Address: 46 Castro Ave, San Rafael, CA 94901



STATION 55

Station 55 (Construction complete in 2023) responds to a highly populated residential district, parts of China Camp State Park & additionally, the district consists of multiple harbors. Station 55 is currently being remodeled & is under construction but still an active fire station. Engine 55 is stationed here & personnel cross staff Medic 55.

Address: 955 Point San Pedro Rd, San Rafael, CA 94901



STATION 56

Station 56 responds to The Terra Linda Community. The district consists of The Northgate Mall, Kaiser Hospital, local schools & independent living facilities. Engine 56 is the primary apparatus & personnel cross staff Medic 56.

Address: 650 Del Ganado Rd, San Rafael, CA 94903



STATION 57

Station 57 is responsible for The Santa Venetia district which includes multiple retirement homes & skilled nursing facilities. Engine 57 & Medic 57 serve the district. Additionally, Engine 57 crews cross staff Engine 751 which is a type 6 apparatus.

Address: 3530 Civic Center Dr, San Rafael, CA 94903



PUBLIC SAFETY CENTER & FIRE STATION 51
OPENED FALL 2020



FIRE STATION 52 & TRAINING CENTER OPENED APRIL 2019



FIRE STATION 57 OPENED JULY 2019


SAN RAFAEL
SERVING SINCE 1874
51
PARAMEDIC
CLASS 1


SAN RAFAEL
FIRE DEPT


DELENA
BOMBARDIER
RESCUE
RESCUE


SAN RAFAEL
FIRE
BOAT
FIRE
CITY OF SAN RAFAEL
CALIFORNIA
DEPT.


M 52
SAN RAFAEL
FIRE DEPARTMENT
PARAMEDIC
SAN RAFAEL

FIREFIGHTER/ PARAMEDIC

- Provides “Advanced Life Support”
- Cardiac Care
  - 12 lead EKG
  - Medications
  - IV Fluids
  - Advanced Airways
- Trauma Care
  - IV Fluids
  - Advanced Airways
  - Pain Management





5800 NORTHGATE DRIVE

5800 NORTHGATE DRIVE

Redevelopment of Northgate Mall

1,422 apartments and for-sale townhomes

138 below market rate units

STATUS: UNDER REVIEW

ANTICIPATED COMPLETION: 2028-2040 (TWO PHASES)



LOS GAMOS

LOS GAMOS

192 apartments

20 below market rate units

STATUS: APPROVED FOR CONSTRUCTION



703 THIRD STREET

703 THIRD STREET

33 studio apartments

44 one-bedroom apartments

43 two-bedroom apartments

9 below market rate apartments

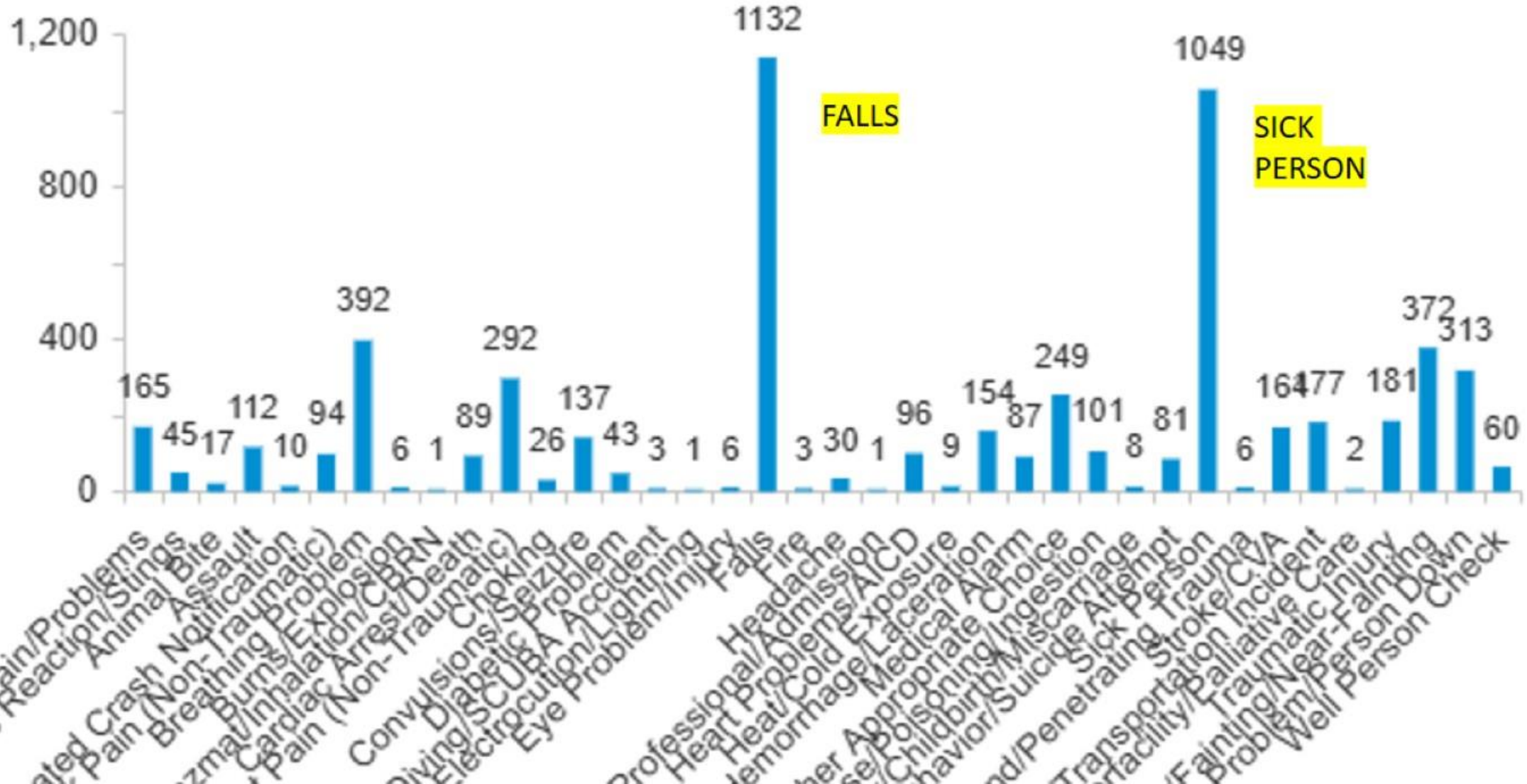
STATUS: APPROVED FOR CONSTRUCTION

ANTICIPATED DATE OF COMPLETION: 2025

BURGEONING GROWTH

San Rafael will be adding 6,000 homes by 2030 – 200 sites are pre-identified and already in building process.

INCIDENTS by COMPLAINT REPORTED



EMT

- Provides “Basic Life Support”
- Monitors vital signs
  - Blood Pressure
  - Pulse rate
  - Respirations
- Can help administer basic medications
  - Aspirin
  - Glucose




What Happens
When You Call 911?


5:54


5:54
Thursday, September 27

Fall Related Injuries


Head
Injuries

EQUIPMENT





EQUIPMENT



Injuries



EQUIPMENT



FALL PREVENTION

Common Causes of Falls

MEDICAL FACTORS

- Syncope / sudden dizziness
- Muscle weakness & balance deficits
- Vision impairment
- Neurological conditions
- Medication side effects (polypharmacy)
- Hypotension / orthostatic changes
- Cognitive impairment

MECHANICAL FACTORS

- Loose rugs & clutter on floors
- Inadequate lighting
- Uneven or slippery surfaces
- Missing grab bars / handrails
- Unsafe footwear
- Wet or recently cleaned floors
- Pets

Fall Prevention: Environmental Controls

Remove Hazards

Clear rugs, cords, clutter from walkways

Improve Lighting

Nightlights in hallways, bathrooms, stairs

Grab Bars

Install beside toilets, tubs & shower areas

Handrails

Both sides of all stairways, secured firmly

Safe Footwear

Non-slip, well-fitting shoes — no socks alone

Floor Surfaces

Secure loose tiles; use non-slip mats

Fall Prevention: Medical & Behavioral Factors

Interventions

- Maintain adequate hydration & nutrition
- Regular strength, balance & flexibility exercises
- Vision & hearing checks — corrective devices
- Orthostatic hypotension awareness
- Frequent follow-up for high-risk individuals
- Assistive devices: canes, walkers, braces

PATIENT RISK LEVELS

LOW RISK

Healthy, active, no meds

MODERATE RISK

1–2 risk factors present

HIGH RISK

3+ factors, prior falls, frail

OUR MISSION IS TO HELP





PRESENTERS

Battalion Chief/
Paramedic

JASON HATFIELD

Jason.Hatfield@cityofsanrafael.org

WWW.SRFD.ORG

www.sanrafaelfiredepartment.org

After the Fall

What happens at the hospital trauma center

A Community Conversation on Fall Risks, Recovery & Prevention

Jessica Lacanlale, MSN, RN, PHN
Trauma Program Manager, MarinHealth

Vivalon Falls Prevention Week | September 22



The hospital journey after a fall

The same event can lead to very different levels of care

1

Arrival

EMS report and rapid handoff

2

Evaluation

Injuries and cause of the fall

3

Treatment

Pain control, procedures, surgery

4

Next setting

Home, hospital, rehab, or transfer

Every decision balances injury severity, health history, mobility, support, and the person's goals.

Falls at MarinHealth: January – December 2025

1,855 out of 2,009

patients age 65+ treated after a fall

92%

Of older trauma patients who arrived after a fall

Femur Fracture
Rib Fracture
Pelvic Fracture

Most common serious injury

~ 45% of patients that fell were admitted
~ Length of Stay 5.5 days

Arrival and trauma team response



The EMS handoff gives the hospital a head start

01	**What happened?**	Height, surface, head strike, loss of consciousness
02	**Is the person stable?**	Airway, breathing, circulation, neurologic status
03	**Could there be a hidden injury?**	Blood thinners, pain, tenderness, change from baseline
04	**Why did the fall happen?**	Trip or slip, fainting, infection, medication effect

The first minutes

A structured assessment helps the team find urgent problems quickly

A	**Airway and neck**	Can the person speak and protect the airway? Does the neck need support?
B	**Breathing**	Are the lungs moving air? Could rib injuries affect breathing?
C	**Circulation**	Is there bleeding or poor blood flow? What are the pulse and blood pressure?
D	**Neurologic status**	Is there confusion, weakness, a head injury, or a change from baseline?
E	**Full examination**	The team checks from head to toe while protecting warmth and dignity.

Injuries the team cannot afford to miss

Symptoms, examination, medications, and the fall story guide the workup

Head and brain

Bleeding can develop even without an obvious wound. Blood thinners raise concern.

Hip and pelvis

Pain, shortening, or inability to bear weight may signal fracture.

Spine

Neck or back pain, tenderness, weakness, or numbness changes the plan.

Chest and ribs

Rib fractures can make breathing and coughing painful and less effective.

Testing answers two questions

What was injured, and what contributed to the fall?

INJURY

Imaging and examination

CT or X-ray when indicated
Repeat neurologic checks
Blood count and other targeted labs
Specialty consultation

CAUSE

Medical contributors

Heart rhythm and blood pressure
Medication review
Hydration, infection, or glucose concerns
Vision, balance, and mobility history

Four possible paths after evaluation

The safest next setting depends on more than the scan result

Home	Symptoms controlled, mobility safe, support and follow-up in place
Hospital admission	Monitoring, pain control, treatment, therapy assessment
Surgery or procedure	Fracture repair, bleeding control, or other specialty care
Transfer	A higher level or specialized service is needed



Mobility and support can change the disposition even when the injury seems small.

A safe discharge plan

Leaving the hospital starts the next phase of recovery

1	**Understand the diagnosis**	Know what the team found and what remains uncertain.
2	**Know the warning signs**	Worsening headache, confusion, weakness, breathing trouble, fainting, or uncontrolled pain need prompt attention.
3	**Use medicines safely**	Follow the updated list and clarify blood thinner, pain medicine, and sedating medicine instructions.
4	**Plan movement and help**	Confirm equipment, supervision, transportation, and follow-up.
5	**Address the next fall**	Share the fall with primary care and complete recommended vision, medication, balance, or home-safety follow-up.

How family and caregivers can help

A familiar voice often supplies the information the team needs most



Baseline	How did they walk, think, and manage daily life before the fall?
Medications	What do they take, and when was the last dose?
Fall details	Was there dizziness, fainting, weakness, or a head strike?
Home support	Do they live alone? Are there stairs or limited support?
Goals	What matters most during treatment and recovery?

The fall is an event. Recovery is a process.

At the trauma center, we treat the injury, look for the cause, protect function, and connect the patient to the safest next step.

Hospital care and community prevention meet at discharge.

