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SafelyYou

Technology to Enable Safer Memory Care

Webinar March 24, 2020

Top Causes of Severe Falls Resulting in Injury
& Hospitalization





Agenda

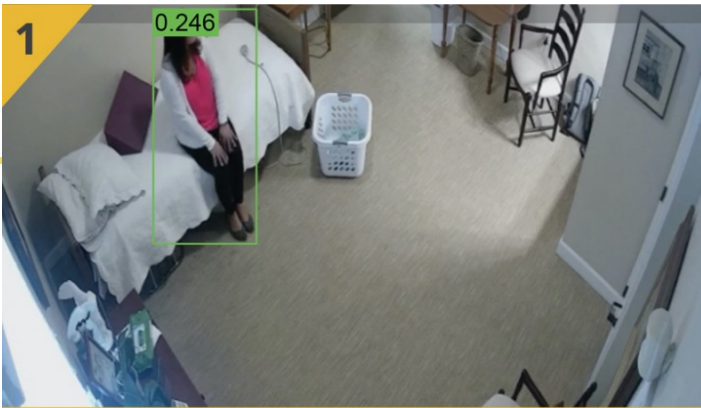
- SafelyYou Background
- Contributing factors of severe falls
- Methods to preventing severe falls
- Resident success stories

Disclaimer: The purpose of this webinar is to share insights and data gathered through extensive video review in assisted living memory care communities and promote thoughtful examination of their current risks around falls.. Content should be reviewed by internal clinical staff for suitability.



01

SafelyYou Background



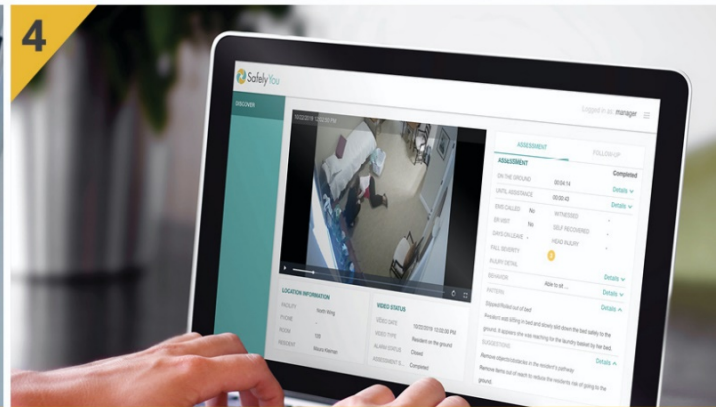
Artificial intelligence registers this resident is not on the ground. No video is being uploaded.



Artificial intelligence registers this resident is on the ground and the system alerts the care staff while uploading the previous 30min of video.



The care staff check on the resident to assess for severe injuries.



When the resident is stable and comfortable, the care staff reviews the video of the fall to determine how they fell.

SafelyYou Fall Severity Breakdown

Fall Severity	% of Falls
Intentional w/ Recovery	30%
Intentional w/o Recovery	28%
1	3%
2	3%
3	26%
4	9%
5	1%

Fall: Any **unintentional** change in position where the individual ends up on the floor, ground, or other lower level. Severity levels defined:

- 1 – Near Fall: Resident almost goes to the ground with no injuries.
- 2 – Self-Recovery: Resident is on the ground but self-recovers. “Silent falls”
- 3 – Minor: Resident is on the ground and unable to self recover with no injuries.
- 4 – Moderate: Resident is on the ground and unable to self recover with possible injuries.
- 5 – Severe: Resident is on the ground and unable to self recover with traumatic injury to head or other body part.

87% of detections are without injury



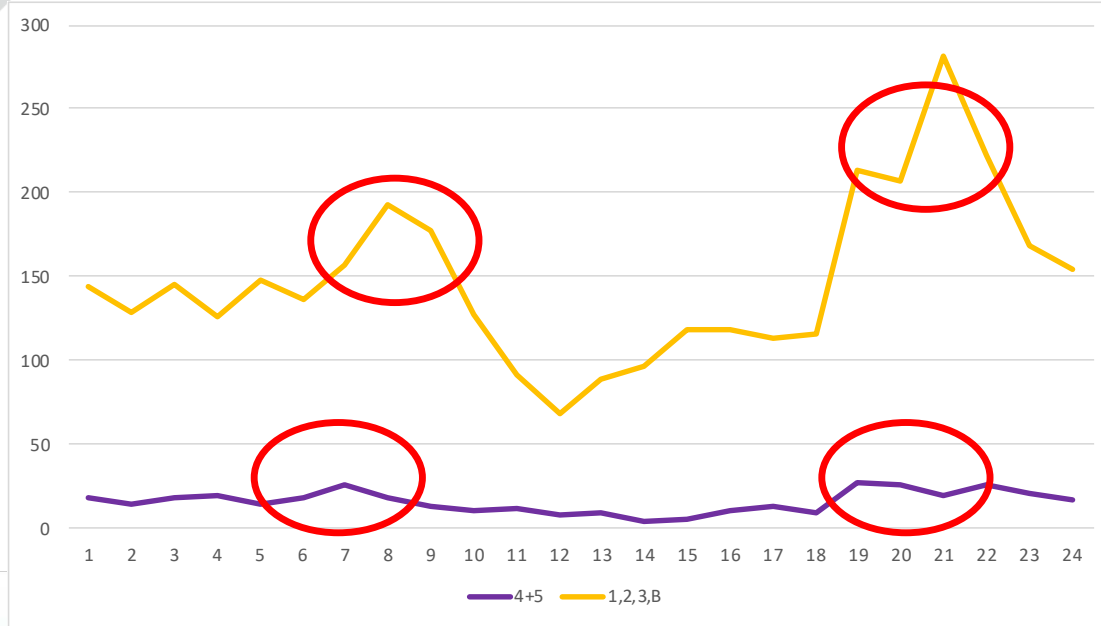
Actual Fall Event



02

Contributing Factors to Severe Falls

Contributing Factor | Time of Day



- Most falls occur between 5-8am and 6-9pm (Shift change)
- Least amount of falls occur in the middle of the day when residents are not in their room
- Opportunity to adjust shifts, get residents up earlier, add evening activities

Note: Data includes over 1800 falls across 25 communities over 14 months



Contributing Factor | Activity Before Fall

Walking or dynamic reaching → 67%

Roll out or transfer to/from bed → 28%

Chair transfers, caregiver transfer → 4%

Doesn't use available mobility aid → 66%



Note: Data includes over 800 falls across 25 communities over 4 months



Contributing Factor | Prior Falls

10% of falls are considered moderate to severe

49% of those that fall will have a severe fall

88% of those with a severe fall have more than 1 fall



Although severe falls are rare, learning from prior falls is critical avoid such future events

Note: Data includes over 1800 falls across 25 communities over 14 months



Contributing Factor | Medications

Review of high-risk medications

- Meds that increase confusing (Opioids, antihistamines, hypnotics, etc.)
- Blood pressure pills (alpha blockers, ?beta-blockers, all others).
- Is blood pressure too low?
- Psychotropic medications (antidepressants, antipsychotics, benzo's, mood stabilizers)

Medication reconciliation

- Eliminate duplicate medications (multiple bottles of same Rx)
- Review new meds from the hospital (against current supply)

Medication resource: <https://itctoolkit.rnao.ca/sites/default/files/resources/Medication%20Resources%20%E2%80%93%20Appendix%20I%20Nov%202017.pdf>



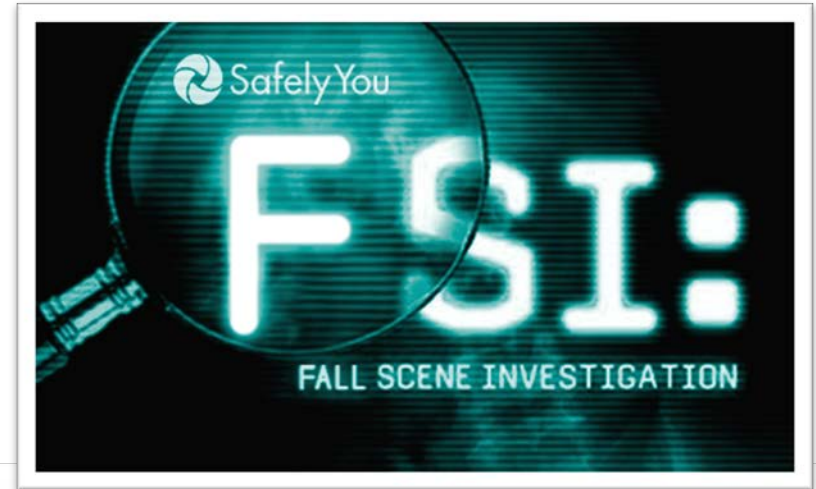
04

Prevention

Step 1: Fall Scene Investigation

How can we prevent another severe fall?

- Where is the mobility aid?
- What is the position of the bed?
- What is the resident wearing?
- Environmental triggers?
- Is the furniture hazardous?
- Was the door propped open?



Step 2: Incident Reporting

- In-depth data gathering for severe falls
 - ☐ Time of fall
 - ☐ Room lighting
 - ☐ Mobility aid
 - ☐ Environment condition
 - ☐ Activity b/f fall
- Interview and gather info from the team
 - ☐ Who was with the resident last?
 - ☐ Did they have a visitor?
- Track fall pattern over time, what trends can be identified?



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Are items accessible?

Is the chair appropriate and accessible?

Are mobility aids stored appropriately?

Is the bed appropriate?

Have environmental triggers been removed?

DELETE

Step 4: Care Plan Updates

- Review current medications and risk factors post hospitalization
- Examine ADL support and timing of care
- Consult rehab on appropriate mobility aid proper placement when resident is left alone
- Incorporate strength/balance training



Step 5: Education & Cultural Change

- Educate caregivers on importance of fall prevention
 - Standing for ADL's, actively participating in transfers
 - Monitor overuse of wheelchairs for ambulatory residents
- Promote fall scene investigation and problem solving within actual fall environment
- Encourage collaboration and highlight fall reduction



05

Success Stories

Resident Success Story

Before



After



Success Stories

Resident 1: Frequent fall before SY pilot. 6 falls during pilot period 3 of which were moderately severe. Falls involved resident attempting to self toilet during the night and early morning hour. Walker is now left at bedside and a transfer pole was installed to prevent resident from pulling on curtains for support. **No falls for 4 weeks**

Resident 2: Frequent faller with 2 severe falls one resulting in head injury over a 7 week period. Community used video review to see resident was falling when attempting to dress himself during the morning/evening. Additional ADL support was added, **no falls for 4 weeks.**

Resident 3: Resident was getting out of bed frequently during the night. 5 moderately severe falls over 3 months. Staff determined she was uncomfortable in both her wheelchair and her bed. Resident provided a more supportive wheelchair and a high quality hospital bed, **no falls for 8 weeks.**



06

Summary

Summary

- Analyze role of time of day, prior falls, medications, and resident behavior in falls
- Enhance FSI and incident reporting for frequent, severe fallers
- Closely examine personal environment and modify
- Engage family and multi-disciplinary team in the fall prevention process



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Questions?



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Current Solutions | Don't Address the 7 of 10 with Alzheimer's



Bed exit sensors



Periodic
Staff checks



Wearable
sensors

2013 Study on Bed Alarms: “There was **no difference** in fall rates or in the number of patients who fell, injurious fall rates, or the number of patients physically restrained”

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3549269/>

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SafelyYou Fall Solution

1



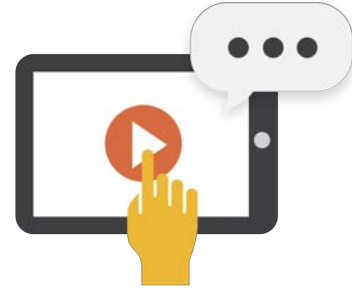
Cameras
installed in rooms

2



Real-time fall detection
via artificial intelligence

3



Human review with
personalized
recommendations

94% fall detection accuracy compared to 57% wearable device



Stemmed from UC Berkeley's AI
Research Lab – one of the top 5

AI research groups in the world.

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SafelyYou Security & Privacy

Security & Privacy



Adherence to strict
privacy standards



NO
live video streaming



Non-fall video is
automatically deleted
within minutes



NO
audio recording

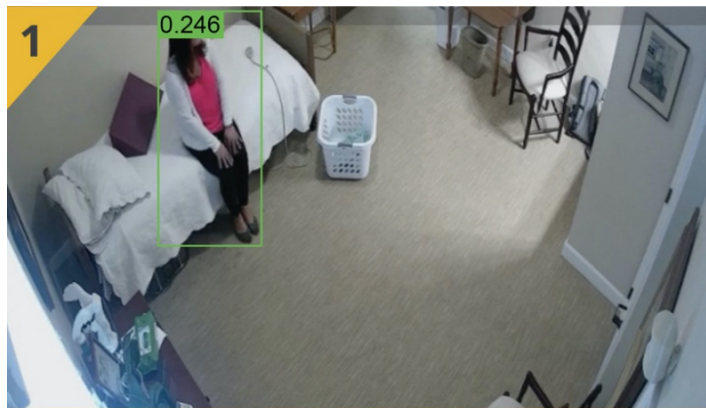


Only video of falls
is saved for review



NO
wearable devices

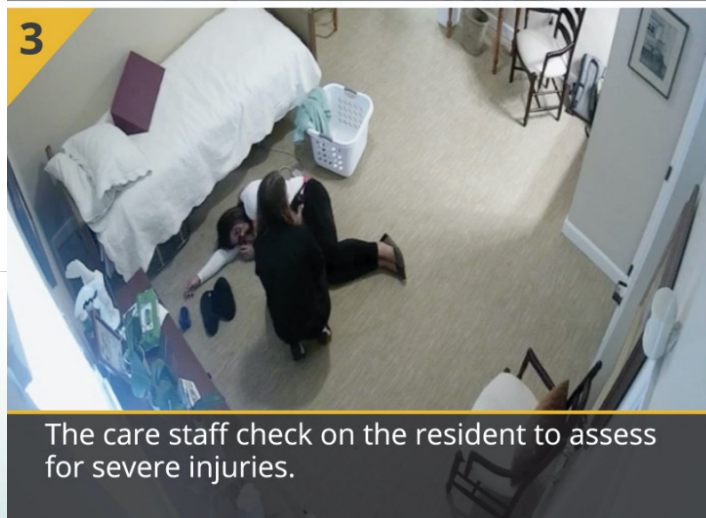




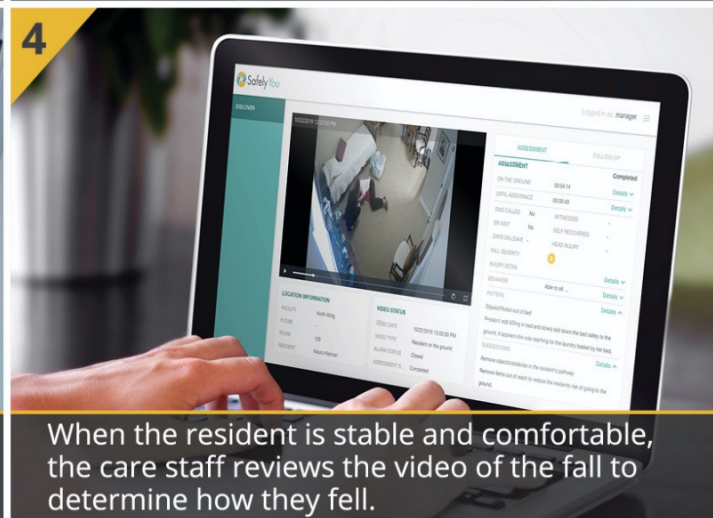
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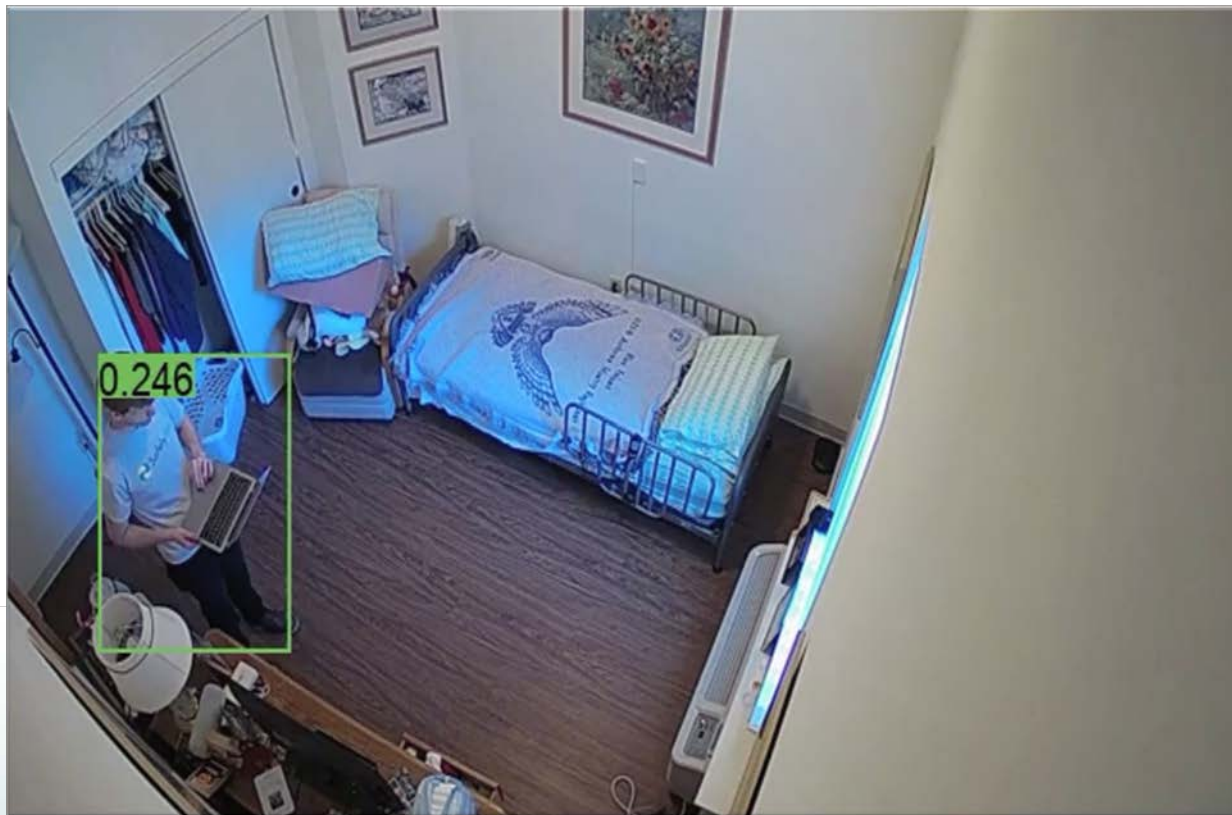


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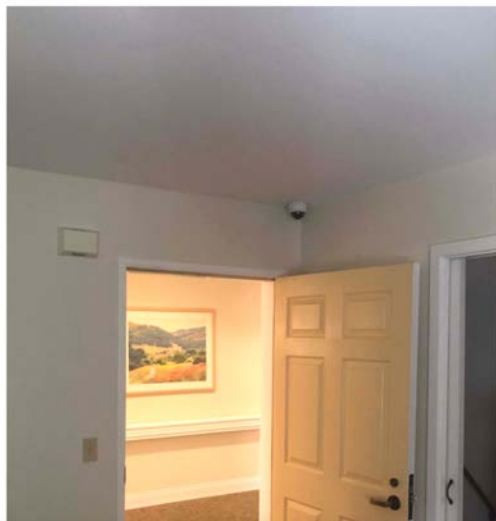
Applying AI to Memory Care



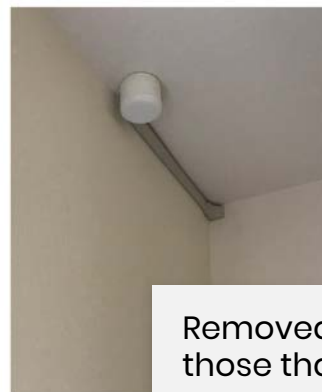
Installation



Signage displayed



POE camera mounted in the corner of the private room



Removeable cover for those that opt-out



SafelyYou-*Guardian* wall mounted on-site includes:

- Computer
- Router
- Switch

SafelyYou-*Guardian* can also be rack mounted

