Slips, Trips, and Falls: A Multidisciplinary Countywide Fall Prevention Program

June 29, 2017

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• No Disclosures
Objectives

- Enlighten you about our program
- Hazards of slips, trips, and falls
- Bring awareness to our community
- Prevent Falls!
- Prevent Falls!!
- Prevent Falls!!!
Reasons for Falls in Elderly

HOME
- Alcohol or Drugs
- Improper extension cords
- Wrinkled rugs
- Clutter
- Falling out of bed
- Shower/wet floors
- Small pets
- Improper footwear

MEDICAL CONDITIONS
- Poor vision/lighting
- Dizziness (vertigo)
- Polypharmacy
- Mini strokes (TIA)
- Poor Strength
- Dementia
Consequences of Falls

- Change in quality of life
- Decreased mobility
- Depression
- Isolation
Recipe for Disaster!
Background

- Falls are a leading cause of death & ED visits in > 65 years
- > 30% of elderly fall once per year
- 20 – 30% elderly falls limits mobility, QOL, premature death
- US (2013): 2.5 million elderly treated for non fatal falls in EDs
- > 800,000 older adults are hospitalized per year, due to falls
- Unintentional elderly falls are responsible for 25,000 annual deaths
- Average cost for a fall: > $30,000; 2013: Direct medical costs: $34 billion
Background

- EMS are often first responders for elderly fall victims
- 11 – 56% of EMS treated older fall adults are not transported
- To date, no guidelines exist for pre-hospital personnel counseling for non transported patients
- Cochrane review: Multifactorial interventions reduce falls
- NHS: EBEP - mainstay of falls prevention & rehabilitation strategies
• 42 states; 2012; data from national EMS information system

• Unique insight into fall circumstances & EMS transport

• EMS personnel are in a prime position to provide interventions that prevent future falls, or referral to community-based fall prevention programs & services
Conditional recommendation:
Vit D and Calcium supplementation for frail elderly
Hip protectors
Evidence-based exercise programs
Physical environment modification
Frailty screening

Strongly recommend:
Risk stratification with targeted comprehensive risk-reduction strategies tailored to high risk groups
Goal

• To evaluate our efforts in reducing fall injuries for high-risk groups

• Describe EMS providers as initiators in a comprehensive multidisciplinary fall treatment and prevention program

• Describe efforts in collaboration with EBEP in decreasing repeated falls
• YOLO and YODO, so……
• LLAP for OGK when the inevitable moment will happen.
• So TTL for everyday, but for heaven’s sake……
• Protect thyself from Falling!
Methods

- Multidisciplinary elderly fall prevention coalition formed in 2012
- Result of injury prevention effort
- Involves > 35 organizations
- IRB approved elderly fall prevention program started in July 2014
- All EMS providers (153) in pilot area trained; 16 Fire & Paramedic stations
Ventura County Elderly Fall Prevention Coalition

EMS

Hospitals

Public and Private Agencies
Table Invitees

- Ventura County Medical Center
- Ventura County Board of Supervisors
- Ventura County Emergency Medical Services Agency
- Ventura County Public Health
- Ventura County Fire Department
- Ventura City Fire Department
- Oxnard Fire Department
- Camarillo Healthcare District
- Community Memorial Hospital/Ojai Valley Hospital
- American Medical Response/Gold Coast Ambulance
- Habitat For Humanity
- Lifeline Medical Transport
- Ventura County Area Agency on Aging (VCAAA)
- Dignity Health – St. John’s Hospitals
- Assisted Home Health
- Livingston Memorial Visiting Nurses Association
- Scan Health
- Healthy Ventura County
- HealthWise Homecare Solutions, Inc
- Kaiser
VCAAA’s ROLE: COORDINATE and TRACK SERVICES

Senior experiences a fall

Emergency Department (VCMC, CMH, OVH)

VCAAA Fall Prevention Coordinator

Home modifications
Evidence-based classes
HomeHealth agencies
Public Health nurses
Other community resources
VCePCR Fall Prevention Worksheet

• Required When
  • Age $\geq 65$ years
  • Complaint reported by dispatch = Falls, Public Service, or Lift Assist
  • Incident zip code within established pilot area

• Worksheet Contains 12 Questions, Divided Into 4 Categories:
  • Qualifying Information
  • Patient History
  • Fall Risk Mitigation
  • Patient / Family / Representative Consent
VCePCR Fall Prevention Worksheet

Qualifying Information

1. Is this incident related to a fall?
   - Yes
   - No
   - Unknown

2. Is the victim at high risk for a fall in the near future (next 6 months)?
   - Yes
   - No
   - Unknown

3. Is the patient 65 years of age or older?
   - Yes
   - No

4. Is the site of this incident the patient’s primary residence?
   - Yes
   - No
   - Unknown
## VCePCR Fall Prevention Worksheet

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Has the patient fallen before or needed assistance up from the floor in the recent past (6 months)?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>6. Is the patient currently taking 5 or more prescribed or over-the-counter medications?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>7. Was this incident the result of a medical condition (weakness, dizziness, syncope, stroke, etc.)?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>8. Was this incident the result of a mechanical issue (trip/slip and fall, roll out of bed, etc.)?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
VCEPCR Fall Prevention Worksheet

<table>
<thead>
<tr>
<th>Qualifying Information</th>
<th>Fall Risk Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>9. Was information on fall prevention provided? [Yes, No]</td>
</tr>
<tr>
<td>Fall Risk Mitigation</td>
<td>10. Were any immediate hazards mitigated by personnel on scene? [Yes, No]</td>
</tr>
<tr>
<td>Consent</td>
<td>11. Does the patient, or authorized representative, consent to a follow-up interview by a home healthcare nurse/professional regarding fall prevention? [Yes, No]</td>
</tr>
<tr>
<td></td>
<td>12. What is the consenting individual’s first and last name and best phone number at which he/she can be reached? [Enter]</td>
</tr>
</tbody>
</table>
FALL FACTS:
- One out of three older adults (those aged 65 or older) falls each year, but less than half talk to their healthcare providers about it.
- Every half hour an older adult dies as the result of a fall.
- Most falls occur at home.

WE ARE HERE TO HELP YOU STAY SAFE IN YOUR HOME!

RISK FACTORS:
- Over 65 years of age
- Poor balance and strength
- Taking 5 or more prescription medications
- Vision impairments
- Environmental hazards

Please call 805-477-7343 or email fall.prevention.program@ventura.org for more information on how we can help you.

HOW CAN THE FALL PREVENTION PROGRAM HELP?
- Home Safety Assessments
- Information, Resources and Referrals
- Education
  - Workshops and Presentations
  - Advocacy

What can you do?

TO MAKE YOUR HOME SAFER:
- Remove tripping hazards (i.e. shoes, papers, pet toys)
- Home modifications (i.e. grab bars)
- Use non-slip rubber mats in tub or shower.
- Remove throw rugs or tape them in place.
- Move furniture and clutter to create clear pathways.
- Increase lighting.

TO HELP YOURSELF PREVENT FALLING:
- Stay as physically active as you can – build your balance, strength and flexibility
- Review your medications with your healthcare provider
- Keep your healthcare providers informed of any falls or hospital visits
- Get your vision checked regularly and update your eyeglasses when needed
- Keep your family and friends informed – ask for help when you need it

If you check off these items, you will make yourself and your home safer right away!
Evidence-Based Exercise Programs

• Tai Juan Chi: Moving for better balance
• A Matter of Balance
• Stepping On
• Walk with Ease
• Otago
Outreach

• Annual fall prevention forums – 4 English; 3 Bilingual
• 350 Fairs (2016)
Goals

• # of falls – primary endpoint, with focus on recurrent falling
• Evaluation of those that fell enrolled in EBEP compared to...
• Those that fell who did not enroll in EBEP
• Data of those that fell evaluated by EMS pre-institution of EFPC compared to...
• Data post-institution of EFPC
Statistical Analyses

• Descriptive and comparative analyses performed using SAS version 9.2 (SAS Institute, Cary NC)
# of patients transported to hospital 2013 – 2014 (pre-program implementation)

![Pie chart showing transport numbers to different hospitals.]

- Hospital 1: 586 (69%)
- Hospital 2: 153 (18%)
- Hospital 3: 110 (13%)

**FIGURE 2: Repeat Falls Descriptive (N= 849)**

<table>
<thead>
<tr>
<th>REPEAT FALLS DESCRIPTIVES</th>
<th></th>
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<tbody>
<tr>
<td>Mean</td>
<td>1.48409894</td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.033584253</td>
</tr>
<tr>
<td>Median</td>
<td>1</td>
</tr>
<tr>
<td>Mode</td>
<td>1</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.978564683</td>
</tr>
<tr>
<td>Sample Variance</td>
<td>0.957588839</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>7.047585704</td>
</tr>
<tr>
<td>Skewness</td>
<td>2.34544085</td>
</tr>
<tr>
<td>Range</td>
<td>8</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>8</td>
</tr>
<tr>
<td>Sum</td>
<td>1260</td>
</tr>
<tr>
<td>Count</td>
<td>849</td>
</tr>
<tr>
<td>Largest(1)</td>
<td>8</td>
</tr>
<tr>
<td>Smallest(1)</td>
<td>0</td>
</tr>
<tr>
<td>Confidence Level (95.0%)</td>
<td>0.06591801</td>
</tr>
</tbody>
</table>
# Evidence Based Exercise Program Classes

<table>
<thead>
<tr>
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<tbody>
<tr>
<td># Of Falls in pilot area</td>
<td>1198</td>
<td>1337</td>
</tr>
<tr>
<td># Of participants in the EBEP</td>
<td>195</td>
<td>683</td>
</tr>
<tr>
<td># Of non-participants</td>
<td>1003</td>
<td>654</td>
</tr>
</tbody>
</table>

## Interventions: EBEP

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>A Matter of Balance</td>
<td>195</td>
<td>538</td>
</tr>
<tr>
<td>Stepping On</td>
<td>0</td>
<td>38</td>
</tr>
<tr>
<td>Tai Juan Chi</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>Walk with ease</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>195</strong></td>
<td><strong>683</strong></td>
</tr>
</tbody>
</table>

## Compliance

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A Matter balance</td>
<td>69.25%</td>
<td>79%</td>
</tr>
<tr>
<td>Stepping On</td>
<td>0</td>
<td>76%</td>
</tr>
<tr>
<td>Tai Juan Chi</td>
<td>0</td>
<td>33%</td>
</tr>
<tr>
<td>Walk with ease</td>
<td>0</td>
<td>75%</td>
</tr>
</tbody>
</table>
Fall incidents recorded: 2014 – 2015; 2015 - 2016
EMS Calls for Falls Transported to Hospital (2013 – 2015)

<table>
<thead>
<tr>
<th></th>
<th>Total County</th>
<th>West County</th>
<th>East County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total - Pre</td>
<td>5136</td>
<td>3021</td>
<td>2115</td>
</tr>
<tr>
<td>Total - Post</td>
<td>4224</td>
<td>2620</td>
<td>1604</td>
</tr>
</tbody>
</table>

![Bar Chart](chart.png)
% EMS Calls for Falls Transported to Hospital (2013 – 2015)

<table>
<thead>
<tr>
<th></th>
<th>Total County</th>
<th>West County</th>
<th>East County</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Trans - Pre</td>
<td>66.2%</td>
<td>62.9%</td>
<td>71.5%</td>
</tr>
<tr>
<td>% Trans - Post</td>
<td>49.8%</td>
<td>51.9%</td>
<td>46.7%</td>
</tr>
</tbody>
</table>
Recidivist Falls as % of Total Falls

Recidivist Falls as a % of Total Falls:

Participants | Non-Participants
Recidivist Falls as a % of Total Falls

Recidivist Falls as a % of Total Falls
FY 2014-2015 to FY 2015-2016

Non-Participants: 18%
Participants: 6%

0% 5% 10% 15% 20% 25%
Flaws/Limitations

• Initial small sample size
• Non comparison of EBEP to each other
• Matching data sets from three separate sources
• Initial hesitancy of some pre-hospital providers to participate
Conclusion

• Validate that EMS are in a prime position to provide interventions that can prevent future falls

• EBEP are beneficial to decreasing fall risks in seniors

• Brought awareness about dangers of falls to our community

• A comprehensive Elderly Fall Prevention Program is worth the time and effort
Future Goals

• Include fall prevention strategies as billable source
• Increase # of fall prevention coordinators
• Expand program to rest of county
Acknowledgement

- Ken Waxman, MD and Graal Diaz, RN, PhDc
- Chris Rosa, Katy Hadduck (and rest of EMS)
- Victoria Jump, Monique Nowlin, Karen Howard, Dina Ontiveras (VCAAA)
- Elena Gutierrez (VCMC injury prevention coordinator)
- Barbara Spratkes-Wilkins, Erin Slack (VC Public Health)
- Blair Cradock (Camarillo Health Care District)
- Amit Karmur, DO (Community Memorial Hospital)
2015 n4a Aging Achievement Award

presented to

Fall Prevention Program
of
Ventura County Area Agency on Aging
as a successful program that improves
the lives of older adults and caregivers

Joe Ruby, President
Sandy Markwood, CEO

National Association of Area Agencies on Aging (n4a)
Leadership
Quotes from Prominent Voices in Fall Prevention

"An ounce of fall prevention, is worth a pound of costly, painful, and life altering cure."

Thomas K. Duncan, DO, FACS | Diplomate of American Board of Surgery, Trauma Medical Co-Director, Chief of Staff Elect (July 2016 - June 2018), Ventura County Medical Center

Partners & Affiliates
• FOMO
• We all have **FOMO**....but the most important aspect of life is **QOL**

• To maintain great **QOL**, it behooves us to enroll in **EBC** to acquire strength and balance, so that a **GLF** is prevented, and good **QOL** is achieved
The ultimate goal is.....

To reduce the number of preventable elderly injuries in Ventura County, and raise awareness regarding the need for County wide elderly injury prevention programs, thereby maintaining a good quality of life for our cherished citizens.
Thank You!