Promoting Mobility in the Hospital: the Case of STRIDE

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Outline

• Hospitalization-Associated Disability
• STRIDE: Supervised Walking Program for Hospitalized Older Adults
• Implementing Hospital Mobility Programs

Supported by:
VA Office of Geriatrics and Extended Care (NLTC 558-3 and NLTC 558-4);
VA HSR&D (RCD 06-019, CIN 13-410); VA HSR&D QUERI (IP1 HX002258-01)
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Hospitalization-Associated Disability

- Loss of ability to complete 1 or more ADLs
- ADLs = Bathing, dressing, rising from bed or a chair, using the toilet, eating, or walking across a room
- 30-35% of patients ≥ 70 discharged with new ADL disability

Boyd et al. JAGS 2008
Gill et al. JAMA 2004

Functional Trajectories Across a Hospitalization

Baseline | Admission | Discharge
--- | --- | ---
Stable function 45% | Hospital recovery 20%
Hospital decline 12% | Failed to recover 18%
Pre- and hospital decline 5%
Adverse Events Associated with HAD

**Hospital**
- Falls
- Delirium
- Aspiration
- Longer length of stay
- Discharge to skilled nursing facilities

**Post-Discharge**
- Readmission
- Falls
- Institutionalization
- Death

30-50% recover to pre-illness function within 1 year


Post-Acute Care 65+

![Graph: Trend in Discharges to Post-Acute Care Settings](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Home</th>
<th>Home Health Services</th>
<th>SNF</th>
<th>Expired</th>
<th>IRF</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>51%</td>
<td>17.9%</td>
<td>19.5%</td>
<td>4%</td>
<td>3%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Medicare spending on SNF care ➔ $30 billion

Risk Factors for Hospital-Associated Disability

**Low Functional Reserve**
- Advanced age
- Depression
- Cognitive dysfunction
- Difficulty walking
- ADL dependence

**Illness/Hospital Factors**
- Severity of acute illness
- Poor nutrition
- Polypharmacy
- Delirium
- Low mobility

- Hospitalized older adults spend 3-4% of their time standing or walking
- <5% have physician orders for bed rest

Zuberg JAGS 2011; Covinsky et al. JAMA 2011; Pihler et al. JAGS 2011; Brown et al. JAGS 2009
Culture of immobility  
Negative physical effects  
Adverse outcomes

Not a Newly Recognized Problem

THE EVIL SEQUELAE OF COMPLETE BED REST
WILLIAM DOCK, M.D.
JAMA 1944; 125 (16), 1083-1085

agent of disaster. The physician must always consider complete bed rest as a highly unphysiologic and definitely hazardous form of therapy, to be ordered only for specific indications and discontinued as early as possible.

Toward a Solution

- Walking can mitigate functional decline in hospitalized adults
- In RCT of 458 patients in 3 hospitals, 20 minutes of daily supervised walking reduced length of stay by 1 day (3.8 vs. 4.8 days)
- No VA system-wide approaches to address this important gap in hospital care

Murphy et al. Chest. 2003
STRIDE: Supervised Walking Program for Hospitalized Older Adults
To optimize the physical function of older Veterans by increasing the amount of time spent walking during their hospitalization

Key Program Elements
1. Proactive, no baseline functional deficits required
2. Early enrollment, ideally within 24 hours of admission
3. Supervised walking, up to 20 minutes daily until discharge

Durham STRIDE

Target Population
Hospitalized Older Adults

Targeted gait and balance assessment (PT)

STRIDE Program
1-2 daily walks for duration of hospitalization (Mobility Assistant)

NOT ELIGIBLE
- Bedrest order
- Unable to follow 1 step command
- Non-ambulatory

Staff Roles

Physical Therapist
- Screens consults
- Performs baseline balance and gait assessment
- Recommends assistive devices and/or gait belt if needed
- Identifies activity goals with patients

Mobility Assistant
- Works with Nursing to plan timing of daily walks
- Supervises walks for safety
- Reviews activity goals
- Provides motivation and encouragement
## Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>STRIDE participants, n=92</th>
<th>Usual Care, n=35</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median (IQR), y</td>
<td>74 (66-80)</td>
<td>76 (67-83)</td>
<td>0.62</td>
</tr>
<tr>
<td>Sex, % male</td>
<td>89 (96.7)</td>
<td>35 (100)</td>
<td>0.96</td>
</tr>
<tr>
<td>Heart failure, %</td>
<td>20.7</td>
<td>14.3</td>
<td>0.41</td>
</tr>
<tr>
<td>Kidney failure, %</td>
<td>18.5</td>
<td>28.6</td>
<td>0.21</td>
</tr>
<tr>
<td>Urinary tract infection, %</td>
<td>14.3</td>
<td>14.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Pneumonia, %</td>
<td>8.7</td>
<td>5.7</td>
<td>0.55</td>
</tr>
<tr>
<td>Calculated Probability of Readmission Risk Score, % mean (SD)</td>
<td>21.7 (8.6)</td>
<td>18.9 (6.1)</td>
<td>0.1</td>
</tr>
</tbody>
</table>

1 Usual care – referred by provider and eligible but program at capacity
2 Calculates risk of 30 day readmission based on risk factors including: patient demographics, hospitalization information, previous admissions and readmissions, co-morbidities, and primary or secondary diagnoses
**Length of Stay**


**Outcomes**

<table>
<thead>
<tr>
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<th>STRIDE, N=92</th>
<th>Usual Care, n=35</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge home, %</td>
<td>92.3</td>
<td>74.3</td>
<td>0.007</td>
</tr>
<tr>
<td>Inpatient falls, %</td>
<td>1.1</td>
<td>2.9</td>
<td>0.48</td>
</tr>
<tr>
<td>30-day ED visits, %</td>
<td>23.1</td>
<td>20</td>
<td>0.71</td>
</tr>
<tr>
<td>30-day readmissions,%</td>
<td>17.6</td>
<td>14.3</td>
<td>0.66</td>
</tr>
<tr>
<td>Deaths, %</td>
<td>4.4</td>
<td>5.7</td>
<td>0.67</td>
</tr>
</tbody>
</table>

* 90% of STRIDE participants reported feeling better immediately after their walk


"I think it’s helped tremendously as far as keeping the blood flow going, keeping me active while I’m in the hospital. I think that’s the goal, is to keep you active while you’re here, especially when you stay for a while ‘cause you could lose sight of being active really quick. So the STRIDE program really helps that, staying active."

- STRIDE Patient
“Everybody should use [STRIDE] that’s here for an extended stay. I think that’s gonna benefit everybody...the way it works [is] to keep you moving while you’re here. That way it has less impact when you go home. And that’s the goal...to go home.”
- STRIDE Patient

Financial Summary

Costs
- Personnel (1.0 FTE PT, 1.0 FTE Recreation Assistant salary and benefits): $154,652

Costs avoided
- Anticipating reduced LOS by 1 day for 500 patients annually and using average cost of 1 day of care for this population: $2,226 – 500*1*2226 = $1,113,000 reduced costs for Inpatient Bed Days of Care Annually

Overall annual cost savings = $958,348
- Based on reduced inpatient BDOC alone
- Anticipated additional cost savings based on reduced LTC bed days

Next Steps for STRIDE
- Permanent clinical program at Durham VA
  - 3000+ participants
- New data
  - Participants in a walking program maintained community mobility 30 days after discharge Brown et al. JAMA Intern Med. 2016
- Hospitals interested in starting mobility programs
  - Mid-Atlantic Health Care Network decided to implement STRIDE in all VA hospitals in NC and VA
Implementing STRIDE Across a Regional Health Care System

Aims: 1) actionable findings for VISN leadership about experiences with the mandate and 2) locally-initiated implementation strategies

Methods
• Rapid qualitative analysis; framework matrix for cross-site comparisons
• Mapped approaches to published implementation strategies Expert Recommendations for Implementing Change (ERIC) project

Challenges & Facilitators

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<tr>
<th>Challenges &amp; Facilitators</th>
<th>Strategies</th>
</tr>
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<tbody>
<tr>
<td>Staffing limitations</td>
<td>Promoting adaptability</td>
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<tr>
<td></td>
<td>Identifying ways a clinical innovation can be tailored to meet local needs and clarify which elements must be maintained to preserve fidelity.</td>
</tr>
<tr>
<td>Strength from nursing and PT communication</td>
<td>Promoting network weaving</td>
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<tr>
<td></td>
<td>Building on existing relationships to promote information sharing, problem solving</td>
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<tr>
<td>Need for stakeholder engagement and training</td>
<td>Exchanging Educational Materials</td>
</tr>
<tr>
<td></td>
<td>Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically</td>
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<td></td>
<td>Organizing Clinician Team Meetings. Develop and support teams of clinicians who are implementing the innovation and give them protected time to reflect on the implementation effort, share lessons learned, and support one another’s learning.</td>
</tr>
</tbody>
</table>

Function QUERI STRIDE

• Stepped wedge CRT, 8 sites

• Function QUERI will:
  – Evaluate implementation of STRIDE
  – Examine the impact of STRIDE on
    • Independence: discharge from the hospital to skilled nursing facility, hospital length of stay
    • Physical Function: Function and Disability Instrument, and health-related quality of life

Replicating Effective Programs

REP serves as a framework for program implementation, tailoring clinical programs to achieve balance between fidelity and adaptation for local conditions.

Key REP Activities to Implement STRIDE

Pre-Conditions
- Define core vs. modifiable elements
- Develop clinical program guide
- Identify champions

Pre-implementation
- Convene local, multidisciplinary stakeholder group
- Facilitate adaptation for local delivery

Implementation
- Implement STRIDE
- Technical assistance and consultation

Maintenance and Evolution
- Data Collection/Feedback
- Modify clinical program guide

Examples of STRIDE Adaptations

<table>
<thead>
<tr>
<th>Referral model</th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical providers, PTs</td>
<td>Medical providers, PTs</td>
<td>ACE team, medical providers</td>
<td>Medical providers, nurses</td>
<td>PTs</td>
<td></td>
</tr>
<tr>
<td>Assessment: PT</td>
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Hastings et al. Geriatrics 2018, 3(4), 61
Function QUERI STRIDE Sites

STRIDE Network is Growing

Courtesy Denise Duan-Porter
Implementing Mobility Programs

• Leadership buy-in and front-line clinical champions
  – Definition of success
• Interdisciplinary communication is critical
  – Physical Therapy – Nursing
  – Falls committee, Safe Patient Handling Mobility Coordinators
• Provide tools
  – Competency checklists, EHR templates
  – Mobility Change Packet and Toolkit
  – STRIDE SharePoint site with information and resources

Implementing Mobility Programs

• How-To of practice change – implementation strategies
  – Identify core and modifiable elements
  – Tailor for context
  – Frameworks can help: Replicating Effective Programs
• Cross-system collaboration
  – Creative solutions to common barriers, e.g. competing demands on staff time
  – Flexibility around staffing model

Implementing Mobility Programs

• Platform for broader culture change around mobility
• Identify and address barriers to ambulation
  • Overly restrictive activity orders
  • Urinary catheters, IV poles
  • Pain, Nutritional compromise, Dehydration
  • Adverse effects of medications, Delirium
  • Lack of goals for independent walking
  • Staff knowledge and education
• Consistent messaging to patients and families
  • Encourage patients to walk and be as independent with self-care as possible
  • Ambulatory assistive devices from home
We are the Champions, my friends

—Queen

Questions?

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Resources

STRIDE SharePoint
- Access directly on VA intranet
- Or contact STRIDE team for electronic copy of toolkit: Ashley Choate, Ashley.choate@va.gov

Mobility Change Packet and Toolkit