The Coordinated-Transitional Care (C-TraC) Program

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30 Day Rehospitalizations: A Major US Health System Problem

- Affect 1 in 5 hospitalized patients over 65y
- Account for over $30 billion annually
- Major target in health reform

Neighborhood Socioeconomic Disadvantage Increases Rehospitalization Risk


ADI = area deprivation index; AMI = acute myocardial infarction; CHF = congestive heart failure; PNA = pneumonia.

* On the ADI percentile range shown, 0 is the least socioeconomically disadvantaged group of neighborhoods ranging sequentially by equally sized neighborhood groupings up to 100 as the most disadvantaged group of neighborhoods. Mean lines represent the mean relationship over each ADI percentile.
Transitional Care

- Broadly, a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care in the same location*

- Post-hospital transitional care is becoming standard practice in non-VA hospitals
  - Evidence-based, effective programs can reduce rehospitalizations by 1/3

* Coleman. JAGS. 2003
Components of Effective Transitional Care

- Multi-component, multi-disciplinary, team-based care
- Clear integration with both inpatient and outpatient sites of care
- Reinforced messages over time
- Patient-centered
  ✓ Post-hospital support needs vary; transitional care must be tailored to these needs
Concept for Comprehensive Post-Hospital Transitional Care

Hospitalized Population

All Hospitalized Patients

Strong Discharge Practices
- Medication Reconciliation
- Discharge Teaching/Materials
- Medical Follow-Up Plans
- Quality Discharge Documentation

* Programs are additive. They are not mutually-exclusive.

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Concept for Comprehensive Post-Hospital Transitional Care

**Home-Visit Based Transitional Care Program**

**Strong Discharge Practices**
- Medication Reconciliation
- Discharge Teaching/Materials
- Medical Follow-Up Plans
- Quality Discharge Documentation

**Hospitalized Population**

- **Highest-Risk Patients**
  *Patient must be geographically close & agreeable to a home-visit*

- **All Hospitalized Patients**
  *Examples: cognitively impaired, lives-alone, or prior hospitalization or medically complex*

* Programs are additive. They are not mutually-exclusive.

Unpublished figure, © Amy JH Kind, MD, PhD
**Concept for Comprehensive Post-Hospital Transitional Care**

**Hospitalized Population**

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Unmet Need

- Many of the patients who need transitional care cannot access such services
  - Socioeconomically disadvantaged populations
  - Areas with poor health care access

- Need transitional care programs that adapt, succeed and sustain in underserved and disadvantaged areas
Concept for Comprehensive Post-Hospital Transitional Care

Hospitalized Population

- Highest-Risk Patients
  * Patient must be geographically close & agreeable to a home-visit
  * Could be identified by C-TraC nurses in addition to pre-defined patient characteristics

- All Higher-Risk Patients
  * Examples: cognitively impaired or lives-alone or prior hospitalization or medically complex

- All Hospitalized Patients

Home-Visit Based Transitional Care Program

Coordinated-Transitional Care Program (C-TraC)
- Hospital-Based C-TraC Nurses
- Outpatient Integration

Strong Discharge Practices
- Medication Reconciliation
- Discharge Teaching/Materials
- Medical Follow-Up Plans
- Quality Discharge Documentation

* Programs are additive. They are not mutually-exclusive.

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VA Coordinated-Transitional Care Program (C-TraC)

- Phone-based program
- Specially-trained RN nurse case manager
- Protocolized encounters
- Teachings based on theory of Spaced Retrieval*
  - Method of learning information by practicing recalling that information over increasingly longer periods of time
  - Applicable in early stages of dementia
- Caregivers involved, activated at each step

C-TraC Goals

1. Educate and empower the veteran/caregiver in medication management
2. Ensure the veteran/caregiver has medical follow-up
3. Educate the veteran/caregiver regarding red flags
4. Ensure the veteran/caregiver knows whom to contact if questions arise

* Kind, Health Affairs, 2012.
Veteran Eligibility

- Hospitalized on non-psychiatric acute-care ward
- Discharged to community

AND one or more of the following:

1. Have documentation of dementia, delirium or cognitive impairment
2. 65 years or older AND
   - lives alone OR
   - had a previous hospitalization in past 12 months

* Kind, Health Affairs, 2012.
Coordinated-Transitional Care (C-TraC) Program

* Kind et al, JAGS, 2016
C-TraC: Telephone Follow-up

- Initial call is 48-72 hours after discharge with caregiver/veteran to reinforce
  - Medication management
  - Medical follow-up
  - 3 Red flags
  - C-TraC Nurse case manager contact information

- Average 36 min per call
  - Patient led medication reconciliation
  - 1 in 3 have medication discrepancies
  - Active coordination with outpatient providers
C-TraC Cut Rehospitalizations

- 30-day readmissions cut by 1/3 when compared to baseline group

<table>
<thead>
<tr>
<th>C-TraC Group (N = 500)</th>
<th>30 Day Rehospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted** Odds Ratio</td>
</tr>
<tr>
<td>Establishment period (Months 1-6), n = 103</td>
<td>1.00</td>
</tr>
<tr>
<td>Intervention period (Months 7-18), n= 397</td>
<td>0.56</td>
</tr>
</tbody>
</table>

**Multivariate logistic regression model adjusted for veteran age, gender, race, Medicaid status, education level, VA service connected status; whether veteran lives alone; presence of dementia/other cognitive impairment/delirium; Charlson comorbidity score; needing more help with bathing, dressing, transferring and toileting in 2 weeks prior to hospitalization; decline in ability to stand or walk in 2 weeks prior to hospitalization; and whether veteran manages own medications

* Kind, Health Affairs, 2012.
The Coordinated-Transitional Care (C-TraC) Program

- Net cost avoidance of over $1,200 per Veteran served
- Veterans and caregivers reported high satisfaction with intervention, decreased caregiver stress; Providers loved the program
- C-TraC successfully sustained (and expanded) at multiple VA and non-VA launch sites
C-TraC Continues to Disseminate

- Mentored C-TraC launches at a range of VA and private hospitals throughout US
  - Boston VA Hospital newest C-TraC site
  - Mentored implementations, free on-line toolkit (>500 downloads) and grassroots program growth

- 5-year NIH-funded RCT to evaluate C-TraC’s impact in a non-VA dementia-specific population (results in 2020)
Initial Dissemination Results

* Kind et al, JAGS, 2016
Goal: Engineer Sustainable Programs for the Most Socioeconomically Disadvantaged Areas

Urban block groups or neighborhoods must be viewed at greater magnification because they are composed of smaller geographic areas than their rural counterparts. Enlargements of sample urban areas are offered to demonstrate. ADI = area deprivation index.

*Kind et al, Annals, Dec 2014
Medicare-funded 2-year C-TraC Pilot
Dissemination to Rural Colorado

- Implementation science to engineer a platform for sustainment at the microsystem level
  - Replicate, adapt, “succeed” & sustain
- Protocolized adaptation in dissemination
- Completion: 2017

* Kind et al, JAGS 2016
Implementation Mentoring* for C-TraC
18-24 months for full process

Pre-Conditions
- Identification of need
- Review existing interventions

1. Document existing local discharge processes
2. Provide a comprehensive overview of C-TraC

Pre-Implementation
- Core elements
- Customize delivery
- Logistics/training

1. Convene local multidisciplinary key-stakeholder group
2. Coach local key-stakeholders to define local high-impact outcomes, goals
3. Detailed discussion of core C-TraC elements, processes
4. Formally adapt C-TraC operations to accommodate local VA system
5. Ensure integration with (not duplication of) existing processes
6. Train newly hired C-TraC local staff in clinical program delivery, and provide on-going coaching of program leadership in program assessment, reporting and administrative barrier reduction

Implementation
- Process evaluation
- Feedback/protocol refinement

1. Coach local C-TraC staff to ensure they achieve widespread local stakeholder engagement prior to launch
2. Coach local C-TraC leadership through iterative phased protocol refinement post-launch
3. Mentor local teams to perform continuous process monitoring, documentation
4. Mentor local C-TraC teams to perform key outcome monitoring and reporting to ensure strongest chances of post-grant sustainability

Maintenance and Evolution
- Sustain
- Disseminate

1. Mentor local C-TraC teams in final results feedback to health system leadership and stakeholders
2. Achieve local C-TraC program sustainment

* Adapted from CDC’s Replicating Effective Programs Implementation Theory Model

* Kind et al, JAGS, 2016
Coordinated-Transitional Care (C-TraC) Program

HOSPITAL

Core Step 1: Identification of Eligible Patients
Core Step 2: Multi-Disciplinary Rounds (Inpatient Team Integration)
Core Step 3: Inpatient Visit
Core Step 4: 48 Hour Phone Call
Core Step 5: Subsequent Phone Calls
Core Step 6: Discharge from Program

COMMUNITY

Outpatient Team Contact
Urgent Actions

* Kind at al, JAGS, 2016
Acknowledgements

**Dissemination Team/Collaborators**

- Alan Bridges
- Becky Kordahl
- Sanjay Asthana
- Laury Jensen
- Ken Shay
- Karen Massey
- VISN 12 Leadership
- Madison VA Hospital Leadership
- VACO Leadership
- UWHC Leadership
- Beth Houlahan
- Maria Brenny-Fitzpatrick
- UWHC C-TraC Team
- Madison VA C-TraC Team
- Andrea Gilmore-Bykovskyi
- Korey Kennelty
- Jane Brock
- Steve Jencks

**Funding**

- NIA 2P50AG033514-06 (Asthana PI; Kind Project 3 PI)
- NIMHD R01MD010243-01 (Kind PI)
- NIA Beeson Career Development Award (1K23AG034551)
- Madison VA GRECC
- VA T-21 GEC: Innovative Patient Centered Alternatives to Institutional Care
- VA Office of Rural Health
- Wisconsin Partnership Program New Investigator Award
- Centers for Medicare and Medicaid Services

**Thank you!**

C-TraC patients and families