A Pragmatic Trial for COMprehensive Post-Acute Stroke Services (COMPASS)

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Acknowledgement

Funding

• This research was supported through a Patient-Centered Outcomes Research Institute (PCORI) Project Program Award (PCS-1403-14532)

Disclaimer

• All statements in this presentation, including its findings and conclusions, are solely those of the authors and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute (PCORI), its Board of Governors or Methodology Committee
Introduction: The Team

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  – Professor of Neurology and Director,
    Wake Forest Baptist Comprehensive Stroke Center

• Co-PI: Wayne Rosamond, PhD, MS, FAHA
  – Professor of Epidemiology,
    UNC Gillings School of Global Public Health
  – Director,
    North Carolina Stroke Care Collaborative
Introduction: The Team

- Co-I: Sabina Gesell, PhD
  - Assistant Professor, Social Sciences and Health Policy
  - Public Health Sciences, Wake Forest School of Medicine
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Betsy Vetter
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Ken Wilson
David Yoshikawa
Rachel Zimmer
PCORI:
Lauren Azar
Steve Clauser
Michelle Johnston-Fleece
Carly Parry
WHY A TRIAL OF COMPREHENSIVE POST-ACUTE STROKE SERVICES?

Cheryl Bushnell, MD, MHS
Leading Causes of Death in North Carolina
2013 Update

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
<th>Number</th>
<th>%</th>
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<tbody>
<tr>
<td>1</td>
<td>Cancer</td>
<td>18615</td>
<td>22.3</td>
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<tr>
<td>2</td>
<td>Diseases of heart</td>
<td>17812</td>
<td>21.4</td>
</tr>
<tr>
<td>3</td>
<td>Chronic lower respiratory diseases</td>
<td>4989</td>
<td>6</td>
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<tr>
<td>4</td>
<td>Cerebrovascular diseases</td>
<td>4472</td>
<td>5.4</td>
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<tr>
<td>5</td>
<td>All other unintentional injuries</td>
<td>2948</td>
<td>3.5</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer's disease</td>
<td>2874</td>
<td>3.4</td>
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<tr>
<td>7</td>
<td>Diabetes mellitus</td>
<td>2400</td>
<td>2.9</td>
</tr>
<tr>
<td>8</td>
<td>Influenza and pneumonia</td>
<td>1930</td>
<td>2.3</td>
</tr>
<tr>
<td>9</td>
<td>Nephritis, nephrotic syndrome and nephrosis</td>
<td>1780</td>
<td>2.1</td>
</tr>
<tr>
<td>10</td>
<td>Septicemia</td>
<td>1484</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>All other causes (Residual)</td>
<td>24013</td>
<td>28.9</td>
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<tr>
<td><strong>Total Deaths -- All Causes</strong></td>
<td>83317</td>
<td>100</td>
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</table>

Source: State Center for Health Statistics, North Carolina
Stroke Health Disparities in NC

- 40% of stroke deaths in African American men occur before age 65 vs 17% of white men
- 24% of stroke deaths in African American women before age 65 vs 8% of white women
Stroke Care: Many gaps remain

- 42% of stroke patients were not referred to any post-acute care (Gage, et al. U.S. DHHS 2009)
- 65% of patients under age 65 discharged without post-acute services (Bettger, et al. J Am Heart Assoc 2015)
- No performance indicators for processes of care after discharge
Patient’s Discharged-

• 24% readmission rates in 90 days for those dc home more than those who go to IRF or SNF
• 75% Fall in 6 months and if Fall 4 times as likely to break a hip
• Maybe less than 30% of Stroke Survivors Have Their BP controlled 75% of the time Controlled – Twofighi A – Stroke
• Acute Deficit Free Care 76% but Post Acute 44%- BP Control, Lipids, Hg AIC, Depression Management – Ross et al Stroke, 2011, 2265-2279
• Poor Medication – Adherence
Evidence for Interventions that Improve Post-acute Care

• Transitional care management
  – Only covers the first 30 days
  – *Naylor, et al. Health Affairs 2011;30:45-54*

• Early supported discharge
  – Hospital-based stroke team provides coordinated care (rehab, prevention, support) in the home
  – Standard of care in U.K. and Canada
  – Never been implemented in the U.S.
  – *Fearon, et al Cochrane Database Syst Rev 2012*
The Challenges

• Can an intervention to improve care for stroke patients regardless of the settings and providers be adapted to the U.S. health care system?

Stroke Recovery

Secondary Prevention

Comprehensive Coordinated Services
COMPASS Objectives

• Address the needs of stroke survivors and their caregivers for optimal outcomes
• Connect hospitals, community providers, and community agencies for improved chronic disease management
• Develop an individualized care plan for each patient
THE CARE MODEL

Cheryl Bushnell, MD, MHS
Pragmatic = **Implementable & Sustainable**

- Real World
- Real Practice
- Current Reimbursement
- Real Partners Across the Continuum
- Meaningful Patient Outcomes
COMPASS: Processes for a Multidimensional Intervention

• Care Model that creates processes for post-acute care
  – 2-day call and medication reconciliation
  – 7- to 14-day comprehensive post-acute medical & functional assessment; caregiver assessment
  – Individualized E-care plan for each patient
  – Referrals and systematic communication
  – Collaborations and workforce development for implementation of evidence-based interventions for secondary prevention, recovery, and improved health

• Quality Performance Indicators

Use of current reimbursement models
– Transitional Care Management
– Chronic Care Management

• Quality Performance Indicators to measure processes of care

Early Supported Discharge as evidence-based model for post-acute care
COMPASS Team Intervention

• Post-acute Coordinator (RN)
  – Perform the 2-day follow-up phone call
  – Provide education prior to discharge
  – Coordinate appointments with NP and PCP
  – Provide community referrals (e.g. stroke survivor support group) and other support during the intervention
  – Follow-up calls at 30 and 60 days
COMPASS Team Intervention

• Nurse Practitioner/Physician Assistant
  – See patients within 7 to 14 days in clinic for TCM billing
  – Establish an individualized care plan with the patients and the families
  – Provide referrals to home health, outpatient therapy, falls prevention, neurological assessment, cognitive and depression screen, medication management, secondary prevention, community services
  – Support PCP, provide notes and communications related to post-acute care
Stroke Patient Voices

60 year old, white male, living in urban NC, member of the business community

“A follow-up phone call has got to be the prime piece that has to happen in stroke recovery.”

“After the stroke I had new prescriptions…I couldn’t dispense my medications into daily doses. This math deficit was not recognized until I got home. I lived alone and I had to take care of myself and I was unable to cope.”
Finding The Way Forward

**NUMBERS**
Know your numbers: BP; A1C; Cholesterol etc.

**ENGAGE**
Be active: Engage your mind, your hands, your arms and your feet

**SUPPORT**
Take advantage of Support systems/resources: Community, Family and caregivers

**WILLINGNESS**
What medication are you on? Why are you on them? When do you take them?
E-care Planning – Integrating Health Systems with COMPASS

• Comprehensive post-acute assessment for patient’s ability to manage care and recovery, and their preferences, and goals
• The e-care plan follows the patient across providers and settings
• Consistent with CMS initiatives to incorporate social determinants of health
• Possible use of Chronic Care Management Codes
Quality Improvement and Web-based Feedback

• Candidate measures are:
  – Percent of patients called within 2 days
  – Percent of patients seen by NP/PA within 7 to 14 days
  – Percent of eligible patients referred to rehabilitation or community services
COMprehensive Post-Acute Stroke Service (COMPASS) Aims

Primary aim
• Determine the comparative effectiveness of COMprehensive Post-Acute Stroke Service model vs usual care on stroke survivor functional status at 90 days post-stroke

Secondary aims
• Assess caregiver strain at 90 days
• All-cause readmissions at 30 and 90 days
• Mortality, health care utilization, use of TCM billing codes using claims data at 1 year
COMPASS: Target Population

• Inclusion criteria
  – Patients who are discharged home from participating hospitals

• Exclusion criteria
  – Patients discharged to skilled nursing or inpatient rehab facility
  – Patients that do not speak English or Spanish
  – Age < 18 years
COMPASS Design

- Cluster-randomized pragmatic trial
- Stratification by hospital characteristics: stroke volume (<100, 100-299, and >300) and primary stroke center status (6 strata)
- Primary outcome: Stroke Impact Scale-16 at 90 days (patient-reported outcome)
- Secondary outcomes: Modified Caregiver Strain index at 90 days
  - All-cause readmissions at 30 and 90 days
  - Mortality, health care utilization, use of TCM billing codes using claims data
Study Design

Hospitals Assessed for Eligibility & Interest

Randomization

COMPASS Intervention

Phase 1 Allocation

Usual Care

Phase 2 Allocation

Sustain COMPASS Intervention

1 Year

1 Year

1 Year

1 Year
Before COMPASS Study

Focus Groups:
- to identify modifiable barriers and facilitate implementation

Focus Groups:
Are proposed COMPASS training modules consistent with
- your hospital operations?
- your community?

Bi-weekly calls with all PACS:
-- to identify modifiable barriers and facilitate implementation

Quarterly calls with all PACs and Engagement Committee
-- to review study progress and give feedback to Steering Committee

During COMPASS study
COMPASS Training and Start-Up

• Regional NCSCC workshops and AHEC
• Focus groups with hospitals and patients/caregivers
• Hospital surveys to assess usual care
• Workforce development for sustainable and collaborative management with home health agencies, outpatient therapies and community agencies
• NC Primary Care Research Network and CCNC pharmacy network
HOSPITAL RECRUITMENT

Wayne D. Rosamond, PhD
COMPASS Team Support to Hospitals

- Award support for per-case enrollment that offsets the salary of the PAC, and pays for training
- Training for APP to perform the comprehensive assessments
- Training for billing TCM, and additional reimbursement codes
- Provide stroke and primary care expertise on demand
- Help build community coalitions
Benefits of Participation

• Post-discharge follow-up of acute stroke patients
  – Potential for improved functional status and patient outcomes, patient satisfaction with care, and reduced readmission rates
  – Use of a new care plan that will accompany the patient across various post-acute providers
Benefits of Participation For Health Systems

• Prepare for Population Health Management
  – Facilitation of health systems to implement CMS Transitional and Chronic Management Payments
  – Facilitation of community-clinical connections for sustainable chronic disease management

• Enhance existing QI efforts
  – Grant-supported post-acute coordinator for duration of intervention
  – Systematic framework for coordination and integration of post-acute care services
Funding for Participation in COMPASS

- **Intervention Hospitals**
  - $50 per enrolled case
  - $14,000 for training on the intervention processes
  - $105 for 2-day call and visit
  - APP’s time will be billed through TCM or other method

- **Usual Care Hospitals**
  - $50 per enrolled case
  - Receive reimbursements as an Intervention Hospital in Phase 2

* An ‘average’ hospital has 220 total strokes per year
# Predicted Median Reimbursement

<table>
<thead>
<tr>
<th>Annual Stroke Volume</th>
<th>COMPASS Intervention</th>
<th>Usual Care</th>
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<tbody>
<tr>
<td></td>
<td>COMPASS</td>
<td>Billing Revenue</td>
</tr>
<tr>
<td>&lt; 100</td>
<td>$18,573</td>
<td>$7,375</td>
</tr>
<tr>
<td>100-299</td>
<td>$31,670</td>
<td>$28,500</td>
</tr>
<tr>
<td>300+</td>
<td>$71,815</td>
<td>$93,250</td>
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</table>

- Annual stroke volume reflects the total number of stroke and TIA cases.
- Reimbursement calculations assume ~50% of all patients are eligible and enrolled in the study.
- Billing revenue calculations assume utilization of TCM code with ‘high complexity’ at $250 per case.
# Recruitment Process & Timeline

## COMPASS Hospital Recruitment Plan

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<tr>
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<tbody>
<tr>
<td>▪ Develop recruitment materials</td>
<td>▪ NCSCC Hospitals:</td>
<td>▪ NCSCC Hospitals:</td>
<td>▪ Obtain signed LOA</td>
</tr>
<tr>
<td>▪ Introductory letter</td>
<td>▪ Mail intro letter with brochure and webinar invite</td>
<td>▪ Telephone follow-up to ascertain willingness and capability</td>
<td>▪ COMPASS survey completion by stroke care coordinator</td>
</tr>
<tr>
<td>▪ Brochure</td>
<td>▪ Webinars on September 10 and 14</td>
<td>▪ In-person follow-up for non-responders</td>
<td>▪ IRB</td>
</tr>
<tr>
<td>▪ Website</td>
<td>▪ Other Hospitals:</td>
<td>▪ Respond to hospital queries / address barriers to participation</td>
<td></td>
</tr>
<tr>
<td>▪ Slide set</td>
<td>▪ Contact as needed based on NCSCC responses</td>
<td>▪ Other Hospitals:</td>
<td></td>
</tr>
<tr>
<td>▪ Statement of Work</td>
<td>▪ Mail letter and brochure</td>
<td>▪ Repeat NCSCC recruitment protocol as needed</td>
<td></td>
</tr>
<tr>
<td>▪ Letter of Agreement</td>
<td>▪ Host webinar</td>
<td></td>
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</tr>
</tbody>
</table>

**Recruitment Team Members:**
Wayne Rosamond  
Anna Kucharska-Newton  
Sara Jones  
Laurie Mettam  
Anna Johnson  
Sylvia Coleman  
Mysha Sissine  
Cheryl Bushnell

*Updated 17-AUG-2015*
Summary of COMPASS

• NCSCC quality improvement programs have significantly increased the proportion of patients receiving defect-free care in NC

• There is tremendous variability in stroke discharge planning processes and access to rehabilitation and community services for stroke patients

• We now have opportunity to expand success from acute care to post-acute care and chronic management to improve the functional status of stroke patients and caregivers
Thank You to Our Partners in Improving Stroke Care in NC!
Q & A

For more information you may also visit our website
https://www.nccompass-study.org