



COMPASS

COMPREHENSIVE POST-ACUTE STROKE SERVICES

COMPASS Study Update

NC Stroke Advisory Council Meeting

Tuesday, May 1, 2018

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Acknowledgements and Disclosures

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DISCLAIMER: All statements are solely those of the presenters and do not necessarily represent the views of PCORI or its Board of Governors or Methodology Committee.

NCT Number for ClinicalTrials.gov: NCT02588664

OUTLINE



- Implementation Update
- Pilot Projects:
 - Area Agency on Aging (AAA) Integration into Vanguard Pilot
 - Mission Hospital Rehabilitation Pilot
- Publications Update
- COMPASS CP Update



Leadership Team



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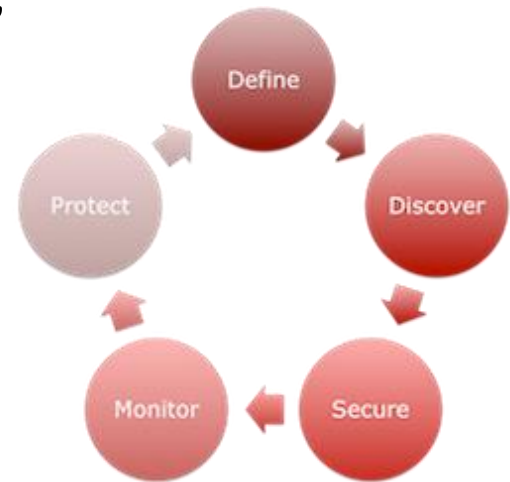
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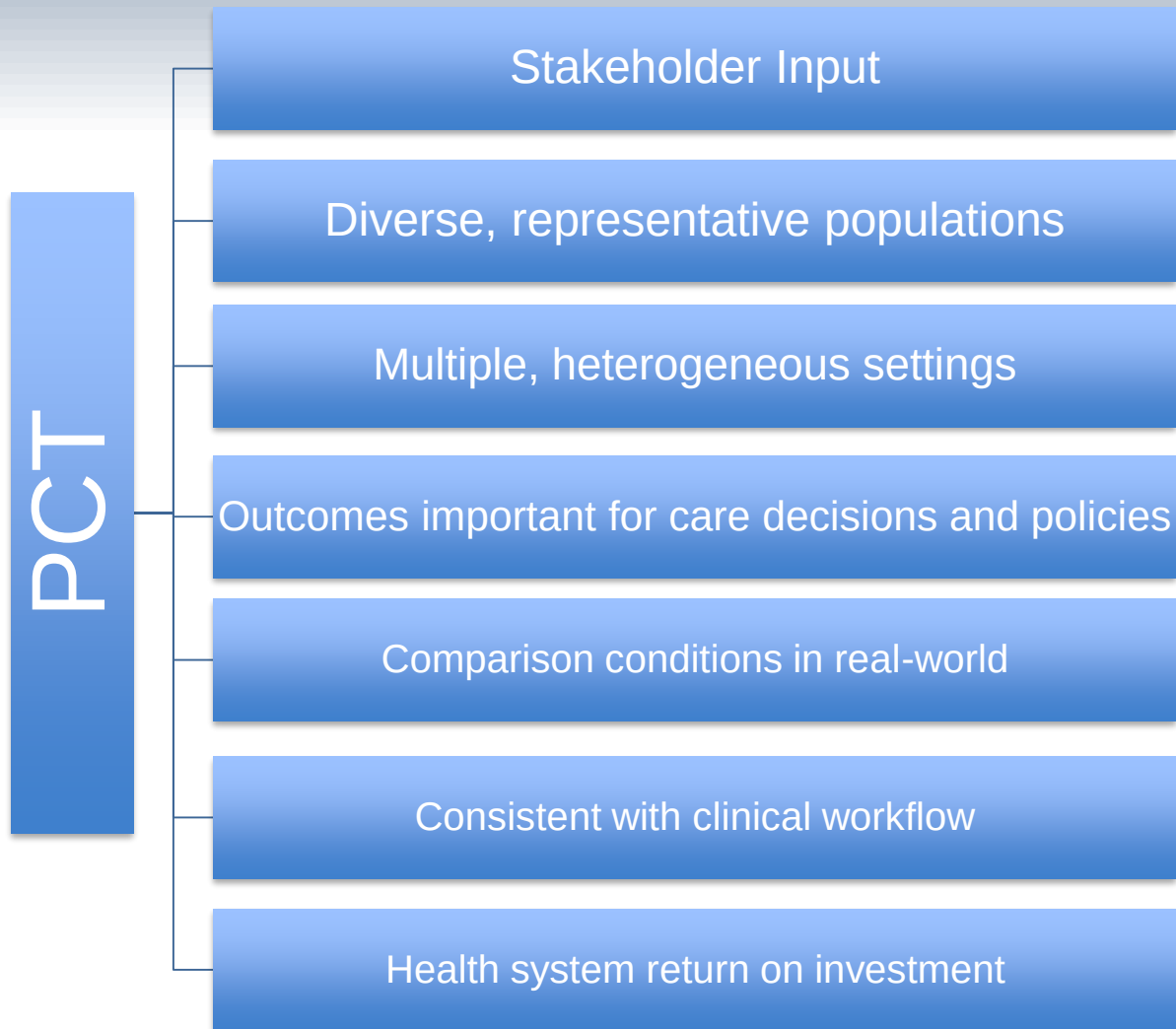
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Pragmatic Trial

“The cornerstone of a pragmatic trial is the ability to evaluate an intervention’s effectiveness in ‘real life’ and achieve maximum external validity, i.e., to generalize results to many settings.”



Pragmatic Research



Pragmatic Research



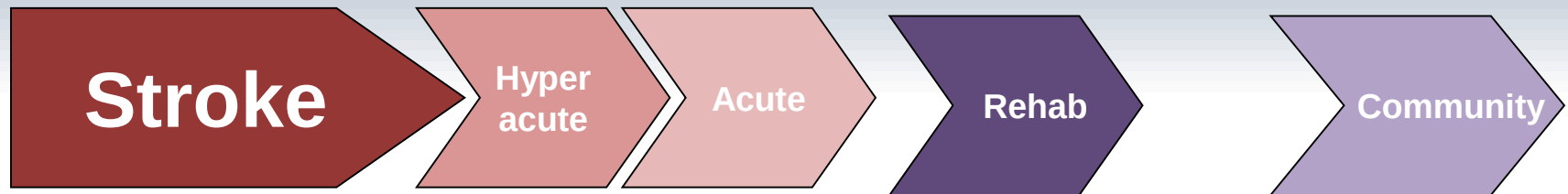
Involves patients with complex, comorbid conditions.

Addresses questions important to multiple stakeholders.

Takes place in typical clinical setting so results feasible for real-work uptake.

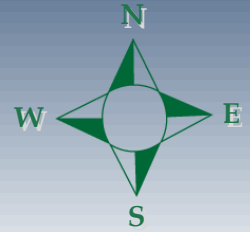
Pragmatic = Implementable + Sustainable

Stroke Care: Where are the gaps?



- 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

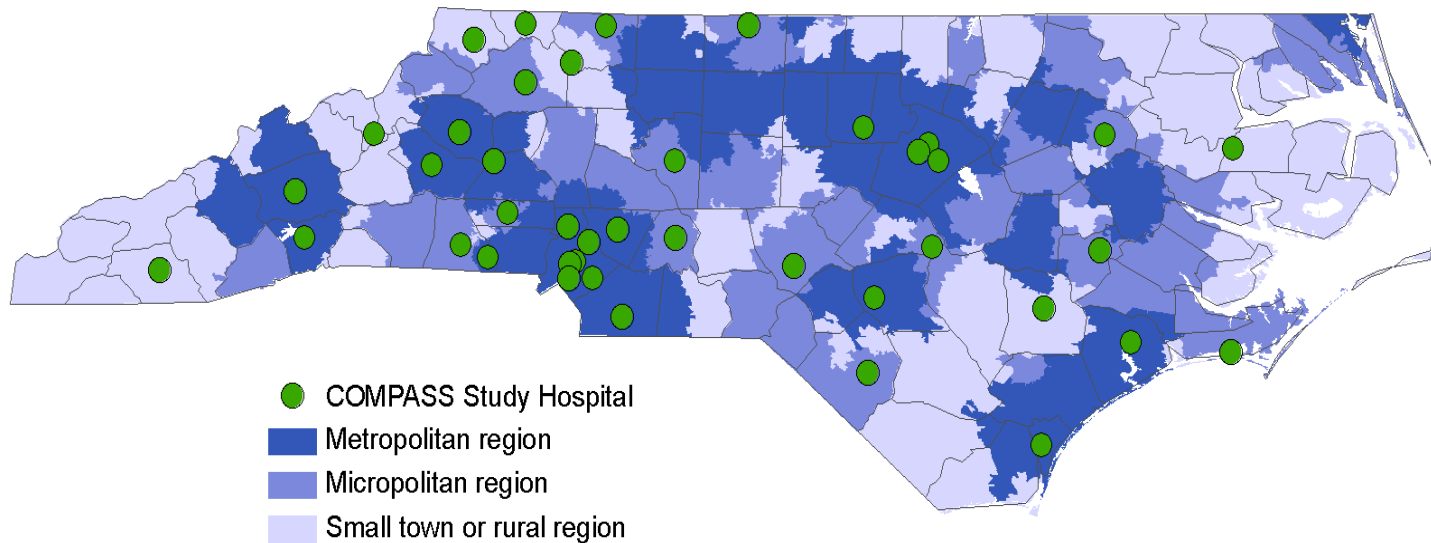
COMprehensive Post-Acute Stroke Services (COMPASS)



- Addresses the gaps that occur after hospital discharge with comprehensive assessments.
- Post-acute pathway for recovery and prevention.
- Structure and process that is comprehensive, systematic, and patient-centered.
- Provides an individualized care plan that can be shared with the patient and all providers.

A Pragmatic Trial in North Carolina

Diverse health systems, **all patients discharged home**, clinical workflow, and CMS billing



6,022 patients enrolled

COMPASS Care Model

2-day
Phone call

7-14 day
Clinic Visit

30-day
Phone call

60-day
Phone call

- **Model:** Early supported discharge
- **Care Team:** Stroke-trained advanced practice provider (APP), NP, PA, or MD, and Post-acute Coordinator (PAC), RN, for care coordination
- **COMPASS-CP:**
 - **Chronic disease management:** Connects hospitals, community providers, and community agencies
 - **Billable** with Transitional Care Management (TCM) or Complex Clinical Management (CCM), consistent with MACRA requirements
 - **Individualized care plan** addresses the needs of stroke survivors and their caregivers



Implementation Updates



- All Phase 1 Intervention Hospitals:
 - Are now in the Sustainability Phase as of March 16, 2018
 - Will sustain the intervention for at least one year
- All Phase 1 Control/Usual Care Hospitals:
 - Are now in the Intervention Phase as of April 30, 2018
 - Will cross over into the Sustainability Phase in one year and will sustain the intervention in that phase for at least one year



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Lessons Learned, Helpful Hints, and Tips for Successful Implementation

Top 10 Lessons Learned

from the pioneering clinicians who have implemented COMPASS over the last year...



What It Takes To Be Successful

- A champion
- Vision
- Organizational buy-in
- Consistency in staff
- Backups
- Inclusion in discharge orders
- Clinic location/specialty
- Education and inclusion of other medical providers
- Engagement of community resource network
- Considered standard of care



Pilot Projects

- Community Connections – AAA/Vanguard Pilot Project
- Mission Hospital Rehabilitation Project



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Community Connections – AAA/Vanguard Pilot Project



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Needs/Goals Identified

- Strengthen the Community Resource Network (CRN) and explore additional resources
- Improve the efficiency of referrals to community-based services and/or perceived limitations with the service
- Determine solutions to low patient follow-through on services presented



Baseline Statement Highlights

- No formal screening protocol to identify social barriers
- Commonly identified needs include: transportation, nutrition, financial/job assistance, medication adherence and caregiver needs
- Cumbersome paperwork meant many patients did not follow through with referrals



Screening Tool

Screening Tool for Community Resources

Did you know there are several different services and resources in your community that you can use to assist in your stroke recovery and prevention of a future stroke? I am going to be asking you a couple of questions to see if you need different resources that may be available in your community.

	Question	Response (please circle one)
	Have you ever missed a doctor's appointment or other event because you didn't have a way to get there?	YES NO
	Have you ever skipped taking a medication or not filled a prescription because of the cost?	YES NO
	Have you ever skipped meals or not eaten because you didn't have the money to pay for food or you were too tired to fix a meal?	YES NO
	Have you fallen in the past 3 months? Do you sometimes feel unsteady? Do you feel like you need anything (i.e. walker, cane, etc.) to help with your balance?	YES NO
	In the past two weeks, have you felt down, depressed or stressed? If yes, has it been more than usual?	YES NO
	Do you have a place that you could go to for recreation or social support, if needed?	YES NO
	Do you have someone in your life that can help you if you needed it?	YES NO

If smoker, provide programs to help smoking cessation.

Provide for all:

- Stroke support group
- Chronic disease self-management programs to promote healthy living – Age Well Programs in Piedmont Triad
- Exercises classes in their area that are open to the general public/low cost



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Recommendations for Vanguard and COMPASS Study

Recommendations for Vanguard:



- Recognizing high vs. low social needs
- Forming relationships/partnerships with highly utilized community-based organizations (CBOs)
- Continue to focus on community resources for patients, even when clinic is busy
- Determine best workflow for timing of outreach about CBOs

Recommendations (continued)

Recommendations for COMPASS Study:



- E-Care Plan to CBOs/referral system to help with tracking service utilization
- Stronger focus on CBOs during training
- Screening earlier for social needs
- 90-day survey, Question K:
 - Only yes or no option about community resources – no N/A
 - Community resource uptake could seem lower than reality



Recommendations (continued)

Suggested Area to Study More:



- Tying patient's motivation/readiness for change to the services:
 - Including the Transtheoretical Model (Stages of Change) to determine readiness for community resources and behavior change
 - Motivational Interviewing Training for clinic staff

Take-Aways



- While community support is a component of the COMPASS Study, emphasis is only apparent when a high needs case arises:
 - Needs may not be completely screened.
 - Eliminating future risk factors can reduce chance of recurring stroke.
- Open the dialogue between CBOs and healthcare of what are the top needs of patients versus what community resources exist, and work to fill gaps.

How Could This Be Replicated?

- PAC forms relationship with AAA representative from their region.
- Use key take-aways from the pilot project.
- CRN for their region is reviewed again to ensure comprehensive list is available.
- PAC reaches out to AAA contact for challenging cases and referral assistance.

KEY POINTS

Mission Hospital Rehabilitation Project

- Implementation of the COMPASS Model intervention for patients discharged home from inpatient rehabilitation services:
 - Case Study – Robin Jones, Stroke Program Manager, Mission Hospital



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Manuscripts



1. Condon C; Lycan S; Duncan PW; et al. (2016). Reducing Readmissions After Stroke With a Structured Nurse Practitioner/Registered Nurse Transitional Stroke Program. *Stroke*. 47: 1599-1604.
2. Gesell SB; Klein KP; Halladay J; et al. COMPASS Study Investigators. Methods Guiding Stakeholder Engagement in Planning a Pragmatic Study on Changing Stroke Systems of Care. *Journal of Clinical and Translational Science*. February 27, 2017.
3. Duncan PW; Bushnell CD; Rosamond W; et al. The Comprehensive Post-Acute Stroke Services (COMPASS) Study: Design and methods for a cluster-randomized pragmatic trial. *BMC Neurology*. 2017. 17(133).
4. Johnson AM; Jones SA; Duncan PW; et al. Hospital Recruitment for a Pragmatic Cluster-Randomized Clinical Trial: Lessons Learned from the COMPASS Study. *Trials*. 2018. (19)74.
5. Bushnell CD; Duncan PW; Lycan S; et al. A Person-Centered Approach to Post-Acute Stroke Care: The Comprehensive Post-Acute Stroke Services Model. *Journal American Geriatrics Society*. 2018.
6. Andrews J; Moore B; Weinberg R; et al. Low Risk – High Stakes: Ensuring respect for persons in the COMPASS Study, a large, cluster-randomized pragmatic clinical trial. *Journal of Medical Ethics*. **In Press**
7. Duncan PW; Abbott RM; Rushing S; et al. COMPASS-CP: An electronic application to capture patient-reported outcome measures to develop actionable stroke care plans. *Circ Cardiovasc Qual*. **(submitted; awaiting decision)**
8. Prvu Bettger, Jones SB, Kucharska-Newton A, et al. Association of external factors with hospital's implementation of transitional care for stroke **(submitted to Neurology, under review)**

Last updated: April 2018

COMPASS Care model methods paper

MODELS OF GERIATRIC CARE,
QUALITY IMPROVEMENT, AND
PROGRAM DISSEMINATION

A Person-Centered Approach to Poststroke Care: The COMprehensive Post-Acute Stroke Services Model

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Wayne D. Rosamond, MS, PhD,^g and on behalf of the COMPASS Trial.*



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COMPASS methods paper

Duncan *et al. BMC Neurology* (2017) 17:133
DOI 10.1186/s12883-017-0907-1

BMC Neurology

STUDY PROTOCOL

Open Access



The Comprehensive Post-Acute Stroke Services (COMPASS) study: design and methods for a cluster-randomized pragmatic trial

Pamela W. Duncan¹, Cheryl D. Bushnell¹, Wayne D. Rosamond², Sara B. Jones Berkeley^{2*}, Sabina B. Gesell³, Ralph B. D'Agostino Jr⁴, Walter T. Ambrosius⁴, Blair Barton-Percival⁵, Janet Prvu Bettger⁶, Sylvia W. Coleman¹, Doyle M. Cummings⁷, Janet K. Freburger⁸, Jacqueline Halladay⁹, Anna M. Johnson², Anna M. Kucharska-Newton², Gladys Lundy-Lamm¹⁰, Barbara J. Lutz¹¹, Laurie H. Mettam², Amy M. Pastva¹², Mysha E. Sissine¹ and Betsy Vetter¹³



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IMPLEMENTATION, POLICY AND COMMUNITY ENGAGEMENT
RESEARCH ARTICLE

Methods guiding stakeholder engagement in planning a pragmatic study on changing stroke systems of care

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Hospital recruitment paper

Johnson *et al. Trials* (2018) 19:74
DOI 10.1186/s13063-017-2434-1

Trials

RESEARCH

Open Access



Hospital recruitment for a pragmatic cluster-randomized clinical trial: Lessons learned from the COMPASS study

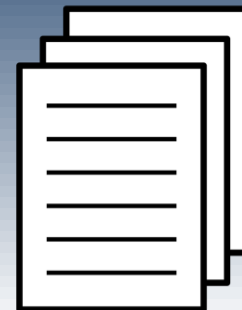
Anna M. Johnson^{1*}, Sara B. Jones¹, Pamela W. Duncan², Cheryl D. Bushnell², Sylvia W. Coleman², Laurie H. Mettam¹, Anna M. Kucharska-Newton¹, Mysha E. Sissine² and Wayne D. Rosamond¹



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Abstracts



1. Bushnell C; Condon C, Lycan S. **ISC 2016**. Feb 2016.
2. Bushnell C. **ISC 2016**. Feb 2016.
3. Pastva, A. **2016 NCPTA Fall Conference**. Greensboro, NC. October 2016.
4. Pastva, A, Freburger, J, Duncan, PW. **CSM 2017**. Educational Session, 2 Hours. San Antonio, TX. February 16, 2017.
5. Condon, C.. **ISC 2017**. Houston, TX. Feb 21-24, 2017.
6. Duncan P; Lutz B; Lycan S; et al. **ISC 2017**. Houston, TX. Feb 21-24, 2017.
7. Duncan PW; Bushnell C; Rosamond W; et al. **ISC 2017**. Houston, TX. Feb 21-24, 2017.
8. Bushnell C. **ISC 2017**. Houston, TX. Feb 21-24, 2017.
9. Duncan PW, Rushing S, Abbott R. **NC HIMSS**. Raleigh, NC. May 3-4, 2017.
10. Duncan PW. **ICTMC and SCT Combined Meeting**. Liverpool, England. May 7-10, 2017.
11. Duncan PW. Moleac Singapore Pte. Ltd., Dinner Symposium, **European Stroke Organisation Conference**. May 16-18, 2017.
12. Bushnell C. eCOMPASS © Care Plan. **European Stroke Organisation Conference**. Prague, Czech Republic. May 16-18, 2017.
13. Lutz B; Duncan PW. **IAGG World Congress of Gerontology and Geriatrics**. San Francisco, CA. July 23-27, 2017.
14. Guo J; Cummings D; Halladay J; et al. **Wake Forest Medical Student Research Day**, Oct 4, 2017.
15. Duncan PW; Bushnell C; Rushing S; et al. Chicago, IL. **Health Measures User Conference**. September 27-28, 2017.
16. Duncan P; Bushnell C; Condon C; et al. Nursing Symposium, **ISC 2018**.
17. Lutz B; Gesell S; Duncan PW; et al. **ISC 2018**.
18. Guo J; Cummings DM; Halladay J; et al. **ISC 2018**.
19. Duncan; Abbott; Rushing; et al. Clinician-user Satisfaction with COMPASS-CP for Stroke. **ISC 2018**.
20. Penland K; Bushnell C; Pastva A; et al. Preliminary findings from the COMprehensive Post-Acute Stroke Services Study. **ISC 2018**.
21. Lutz B, Coleman, S, Bushnell B; Duncan P, Gesell S. Panel Presentation: **American Academy of Neurology**. April 21-27, 2018.
22. Duncan PW, Panel: **Mid-Atlantic Heart & Stroke Quality Summit**. April 26, 2018.



Next Phase of COMPASS: COMPASS CP Update

- Piloting Phase:
 - Vanguard site is piloting in EPIC
 - Mission Hospital is piloting in Cerner





Thank you!

<https://www.nccompass-study.org/>