

# Meeting Medicare requirements for transitional care

## Do stroke care and policy align?

Janet Prvu Bettger, ScD, Sara B. Jones, PhD, Anna M. Kucharska-Newton, PhD, Janet K. Freburger, PhD, PT, Sylvia W. Coleman, MPH, BSN, Laurie H. Mettam, MEd, Mysha E. Sissine, MSPH, Sabina B. Gesell, PhD, Cheryl D. Bushnell, MD, MHS, Pamela W. Duncan, PhD, PT, and Wayne D. Rosamond, PhD

### Correspondence

Dr. Bettger  
janet.bettger@duke.edu

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## Abstract

### Objective

This study (1) describes transitional care for stroke patients discharged home from hospitals, (2) compares hospitals' standards of transitional care with core transitional care management (TCM) components recognized by Medicare, and (3) examines the association of policy and hospital specialty designations with TCM implementation.

### Methods

Hospitals participating in the Comprehensive Post-Acute Stroke Services (COMPASS) Study provided data on their hospital, stroke patient population, and standards of transitional care. Hospital-reported transitional care strategies were compared with the federal TCM definition (2-day follow-up, 14-day visit, non-face-to-face services). We examined the associations of TCM billing, stroke center certification, and Magnet nursing excellence designation with TCM implementation.

### Results

Transitional care varied widely among 41 hospitals in North Carolina and no one strategy was universally applied or provided across hospitals. One third of hospitals met the TCM definition (37% provided telephone follow-up, 76% provided face-to-face provider follow-up, all provided a type of non-face-to-face support). There were no differences between groups (TCM met/not met) in hospital characteristics or transitional care resources and processes. Stroke center certification, Magnet designation, and use of TCM billing codes were not different for hospitals that did and did not meet the TCM definition.

### Conclusions

There was substantial variation in the provision of strategies supporting stroke patients' transition home from the hospital. Supportive stroke care transitions are essential when more than 50% of stroke patients are discharged home and more than half experience moderate to severe strokes. More research is needed to identify drivers of TCM uptake.

### Clinicaltrials.gov identifier

NCT02588664.

## Glossary

**CMS** = Centers for Medicare & Medicaid Services; **COMPASS** = Comprehensive Post-Acute Stroke Services; **IRB** = institutional review board; **PCORI** = Patient-Centered Outcomes Research Institute; **TCM** = transitional care management.

Transitional care services are at the forefront of health care research, policy, and practice. These services coordinate a set of strategies that support continuity of care as patients move from one health care setting or provider to another.<sup>1</sup> Decades of research demonstrating the harmful effects of discontinuous care, particularly after hospital discharge, led to policy change.<sup>2,3</sup> Theoretically, the shift in payment models and investment in research on the implementation and effectiveness of transitional care models should accelerate the translation of research into practice. However, the state of transitional care for stroke patients in the United States—especially what is provided, for whom, and when—is unclear.<sup>4</sup>

Although stroke is experienced as an acute event, stroke survivors live with long-term consequences, limitations, and continuing care needs.<sup>5</sup> The average acute care length of stay is 4 days, after which 60.4% of stroke survivors younger than 65 years and 37.5% of those 65 years and older are discharged home from the hospital without postacute services despite residual impairment.<sup>6</sup> Although some hospitals may move forward with establishing their own models for transitional care or extending them from other patient populations, the current state of stroke standards of transitional care and the key factors that lead to care redesign are unclear. The objectives of this study were to (1) describe uptake of transitional care strategies for stroke patients discharged home from the hospital, (2) compare hospitals' standards of transitional care with the federally recognized core transitional care management (TCM) components, and (3) examine the association of policy and hospital specialty designations on implementation.

## Methods

### Parent study

Using stakeholder input, and evidence on effective stroke early supported discharge strategies and beneficial TCM models for other populations,<sup>4,7,8</sup> we designed a stroke TCM model. The Comprehensive Post-Acute Stroke Services (COMPASS) Study is a Patient-Centered Outcomes Research Institute (PCORI)-funded cluster-randomized pragmatic trial designed to compare the effectiveness of the COMPASS TCM model against usual care for stroke and TIA patients discharged home from a diverse group of hospitals in North Carolina.<sup>9</sup>

### Standard protocol approvals, registrations, and patient consents

COMPASS was reviewed and approved by the Wake Forest University Health Sciences institutional review board (IRB),

which acts as a central IRB for 36 participating hospitals. Local IRB approval was granted for the additional individual participating hospitals or hospital systems. The University of North Carolina at Chapel Hill IRB reviewed all data management and outcomes-related activities. Data for this paper were collected at baseline, prior to hospitals' randomization, in the COMPASS Study. The US registration number for this clinical trial is NCT02588664.

### Hospital sample

Recruitment of hospitals into the COMPASS study continued for 1 year (2016–2017). Hospital eligibility for the COMPASS study included hospitals that (1) were located in North Carolina; (2) had an emergency department; (3) treated stroke patients; and (4) had a system in place that allowed support staff to identify patients diagnosed with stroke or TIA during their inpatient stay. The availability of posthospital rehabilitative services such as home health or outpatient therapy were not considerations for recruitment. Of the 110 hospitals in North Carolina, 95 were eligible and invited to participate in the COMPASS study. Forty-one hospitals agreed to participate. Participating hospitals are geographically distributed across North Carolina. Hospital characteristics and recruitment are published in more detail elsewhere.<sup>9,10</sup> Excluded from this study (and the parent study) were inpatient rehabilitation and skilled nursing facilities as the transition of interest was acute hospital to home and not inpatient postacute care to home.

### Procedures for data collection

Data were obtained from public data files, hospital records, and a survey completed by personnel at each COMPASS participating hospital. The survey provided a baseline for standards of practice for transitional care. Survey items were informed by the COMPASS investigators, the clinical, community, caregiver, and patient stakeholders for the COMPASS Study, and questionnaires used with hospitals participating in the 9 funded states of the Centers for Disease Control and Prevention Paul Coverdell National Acute Stroke Registry.<sup>11,12</sup> The COMPASS hospital survey was pilot tested with stroke team representatives at 3 hospitals, which led to minor revisions for clarity. The final COMPASS hospital survey had 4 sections (acute stroke care, discharge planning for patients going home, postdischarge patient management and follow-up, and descriptive data), and was structured and administered as an online REDCap survey.<sup>13</sup> After a hospital completed study enrollment materials and prior to randomization or any study activities, an email was sent to the hospital's primary contact with a letter and web link to the online survey. The letter indicated that input may be needed from multiple individuals involved in care for

stroke patients at the hospital and to coordinate internally to ensure complete and accurate responses. Surveys completed on paper by hospital personnel were entered into REDCap by COMPASS team members. This occurred when a hospital had multiple people contributing information and responding to different sections or items. Hospitals were contacted to complete any missing data. The final response rate was 100%.

### TCM core components

In lieu of a stroke-specific evidence-based core set of strategies to support hospital-to-home care transitions, we compared hospitals' reported strategies with the 3 core components of TCM recognized and required by Medicare<sup>14</sup>: (1) 2-day follow-up: interactive contact by phone, email, or in person with the patient or caregiver within 2 business days following the patient's discharge to the community; (2) 14-day visit: a face-to-face visit within 7–14 days depending on the patient's medical decision complexity; and (3) non-face-to-face services: if medically indicated or needed, any of the following non-face-to-face services: patient/caregiver education related to the care transition, interaction with health care professionals who will assume or resume care of the patient, shared and reviewed discharge summaries, follow-up on pending tests and treatments, establish or reestablish referrals for community-based services, or schedule follow-up with community-based provider.

### Hypothesized external factors related to care redesign for transitional care

Medicare's Hospital Readmission Reduction program was a nationwide catalyst for transitional care. Stroke is not a measured cohort for that program<sup>15</sup> despite the public reporting of 30-day readmissions and death for hospitalized stroke patients. In an effort to improve posthospital outcomes, we examined 3 alternative external factors that may encourage health systems to provide transitional care services for stroke patients: potential for TCM reimbursement, stroke center designation, and recognition of excellence for nursing practice and patient care.

#### Reimbursement

The opportunity for payment or reimbursement of the core elements of TCM may be an important motivator for care providers and an assurance that required service elements are implemented by some hospitals. Billing Medicare for TCM became possible with the introduction of 2 specific procedure codes: Current Procedural Terminology codes 99495 and 99496.<sup>3,14</sup> These 2 codes, first described in the Federal Register in November 2012, are classified as medicine services and procedures and can be used by physicians and nonphysician practitioners as specified. Billing became possible in 2014 but hospitals and community-based providers had to be coordinated to provide the required service components in the specified time frame from hospital discharge. Empirical research on use of these billing codes is sparse and nonexistent for stroke. Policy analysts report that a third of eligible North Carolina Medicare beneficiaries had TCM services billed.<sup>16</sup>

For this study, we examined hospitals' reported use of these codes for stroke patients.

#### Stroke center designation

Current evidence suggests that certified stroke centers provide higher quality of acute stroke care and have better outcomes than hospitals without external stroke specialty certification.<sup>17</sup> Stroke specialty center designation and the more recent requirement for hospitals to have protocols for discharge planning and care transitions may have influenced some stroke programs to develop transitional care strategies independent of or in addition to strategies organized at the hospital level.<sup>18</sup> The Joint Commission began stroke hospital certification in 2003 and is most prominent in North Carolina. Other national organizations, including Healthcare Facilities Accreditation Program and Det Norske Veritas, began later. Several states also passed legislation to designate hospitals as stroke centers (not available in North Carolina). The basic standards for each level of certification (e.g., primary and comprehensive) are similar for each organization. However, no study has examined the association of certification with the provision of TCM strategies. Certification status was obtained from publicly available data sources immediately prior to randomization.

#### Nursing excellence

There is substantial evidence suggesting that hospitals that attain Magnet recognition for nursing excellence from the American Nurses Credentialing Center have better patient outcomes.<sup>19,20</sup> Similar to stroke center designation, the documentation and evaluation are rigorous, the program is voluntary, and there is a fee. Although in existence since 1994, there are far fewer hospitals with Magnet recognition than with stroke center certification. Where the most common transitional care models position nurses as the lead health care provider, hospitals recognized for nursing excellence may have established transitional care champions.<sup>4</sup> No study has examined the association of Magnet recognition with TCM strategies for stroke patients.

#### Statistical analysis

Survey results describing hospital-reported infrastructure and processes were exported from REDCap, organized by hospital identification number, and integrated with data on hospital characteristics. Individual services that met the Centers for Medicare & Medicaid Services (CMS) definition of TCM were analyzed individually and then categorized by the 3 core TCM components (2-day follow-up, 14-day visit, non-face-to-face services). Hospitals were subsequently categorized as having met the definition for TCM if all 3 components were utilized in the transition of their stroke patients. Because health care quality is known to be associated with structures and processes, descriptive statistics for structural characteristics (hospital type, structure of stroke care, resources for TCM) and supporting processes were reported for all hospitals and for TCM vs non-TCM hospitals. The median and interquartile range was reported for annual stroke volume in

the most recent calendar year and frequency distributions were reported for all other variables. Fisher exact tests were used for categorical variables and Wilcoxon-Mann-Whitney test for continuous variables to examine the bivariate association of hospital characteristics and TCM status. This was repeated for the 3 external influences of care (use of TCM billing codes, stroke center certification, and Magnet recognition). Despite the differences between groups, the sample size of participating hospitals is small and we therefore did not estimate the associations of external factors with TCM services adjusting for hospital characteristics.

### Data availability

At the conclusion of the COMPASS trial and after analysis by the study team, the data, analytic methods, and study materials will be made available to other researchers for purposes of reproducing results or replicating procedures, upon reasonable request to the corresponding author and in accordance with PCORI's Policy for Data Access and Data Sharing.

## Results

Among 41 hospitals in North Carolina, 13 (32%) reported transitional care strategies for all 3 components considered to meet the Medicare definition of TCM (table 1). Individual components were met by more hospitals. Telephone follow-up within 48–72 hours was provided by 37% of hospitals. An additional 24% provided early telephone follow-up 3–14 days after hospital discharge but this was outside the time window defined by Medicare. A third of the hospitals used stroke service personnel (coordinators, nursing, clinical educator, navigators) to provide telephone follow-up, a third had designated transitional care coordinators, and other hospitals reported staff involvement from telehealth, case management, and resource centers. The second key component of TCM for the provision of face-to-face provider follow-up within 14 days was provided by 76% of hospitals. In-person provider follow-up included visits within 14 days of hospital discharge with any primary care, specialist, or advanced practice provider. The objectives of in-person visit were reported to be review of medication use, access, and adherence, and reconciliation as needed (59%), a thorough neurologic examination (44%), risk factor assessment (41%), and coordination with home health or therapy (32%), community services (32%), and primary care (27%). Although not all non-face-to-face services were surveyed (see table 1 footnote), all hospitals reported at least one qualifying additional service. More than 80% of hospitals reported assessing patient and family understanding of transitional care needs (88%), making an appointment with a primary care provider prior to hospital discharge (83%), and sharing electronic medical record information with post-hospital health care providers (81%).

Three types of structural characteristics were examined including hospital type, stroke care, and resources supporting transitional care and were compared between hospitals that

met the definition of TCM services and those that did not. There were no statistically significant structural differences between groups for any characteristic (table 2). Only 3 hospitals in COMPASS are academic medical centers and none met the service definition for TCM. Of the 5 critical access hospitals, 2 met the TCM definition and 3 did not. Half of the COMPASS hospitals were in urban areas, 46% of TCM hospitals and 57% of non-TCM hospitals.

Hospitals that met the TCM definition reported a larger annual stroke volume (median 294 vs 174 for non-TCM hospitals,  $p = 0.6$ ). The proportion of hospitals with stroke units or dedicated stroke beds, dedicated stroke teams, and more than 50% of patients discharged home were similar between groups ( $p > 0.05$ ; table 2). Although more non-TCM hospitals had dedicated stroke teams, it was more common for the TCM vs non-TCM hospitals to have a multidisciplinary discharge planning team (92% vs 75%), a stroke patient navigator for posthospital care (23% vs 18%), and transitional care programs in other parts of the hospital for nonstroke populations (62% vs 43%). TCM and non-TCM hospitals similarly assessed stroke patient care transition needs and made the care plan for postacute management electronically available to patients. It was more common for TCM hospitals to include a plan for care transitions in the discharge summary for patients and family, to measure the quality of care transitions beyond rehospitalizations, and to assess posthospital outcomes. Other traditional and nontraditional strategies reported to be in support of stroke patient transitions but outside of the TCM definition included readmissions review committees, chronic disease and depression management programs, population health care coordination, and community paramedic programs.

More than half of the COMPASS participating hospitals (58.5%) had stroke center designation at either the primary or comprehensive levels and only 20% had Magnet designation for nursing excellence. Fewer stroke center or Magnet designated hospitals met the TCM definition than non-stroke or Magnet designated hospitals (table 3). A higher proportion of hospitals that reported they or their affiliated providers used the TCM billing codes met the TCM definition than those that did not bill for TCM but the difference was not statistically significant between groups (difference 0.31, 95% confidence interval  $-0.09$  to  $0.71$ ).

## Discussion

Transitional care services as federally legislated are intended to improve the quality of care and outcomes for patients who transition from one care setting to the next. This study found one third of stroke treating hospitals met the CMS definition of TCM. The 3 external factors we thought would influence hospitals and health systems to implement TCM—stroke center designation, Magnet nursing designation, and TCM reimbursement—were not associated with the provision of

**Table 1** Transitional care management (TCM) for stroke patients reported by 41 participating hospitals

TCM components <sup>a</sup>	TCM qualifying services of all 41 hospitals, n (%) <sup>b</sup>	Hospitals with 1 TCM component, n (%)	TCM definition met (all 3 components), n (%)
<b>1. Telephone follow-up within 48–72 hours</b>		15 (36.6)	13 (31.7)
<b>2. Face-to-face provider follow-up within 14 days</b>		31 (75.6)	
>80% of patients with a primary care appointment within 14 days	15 (36.6)		
Stroke follow-up visit with neurology within 14 days	4 (9.8)		
Follow-up visit within 14 days with any primary care, specialist, or advanced practice provider	26 (63.4)		
<b>3. Allowable non-face-to-face services</b>		41 (100)	
Assesses patient's/family's understanding of needs	36 (87.8)		
Appointment made with primary care physician prior to discharge	34 (82.9)		
Transition of care plan sent to primary care or rehabilitation	8 (19.5)		
Discharge summary sent to primary care	26 (63.4)		
Electronic medical record information shared with posthospital health care providers	33 (80.5)		
Electronic medical record information shared with posthospital community services (e.g., support groups, senior programs)	3 (7.3)		
Electronic patient care plan for postacute management accessible to at least some posthospital health care providers	17 (41.5)		
Integrated care plans with nonhospital providers	13 (31.7)		

<sup>a</sup> The following items differed slightly from Centers for Medicare & Medicaid Services guidance for defining TCM services: (1) follow-up call within 48–72 hours vs requirement within 2 days; (2) face-to-face visits within 7 days were not surveyed; (3) we did not ask about direct hospital-to-community provider interaction, follow-up on tests and procedures incomplete at hospital discharge, or specific referral to community-based services. We asked about facilitators of these via sharing and access to information.

<sup>b</sup> Items missing responses or marked as “not sure” were coded as no (not met).

services that met the TCM definition. Based on hospitals' descriptions of care infrastructure and processes, we found meaningful variation in the provision of transitional care strategies for stroke patients.

In this study, we determined whether a hospital met the definition for TCM based on information they shared with us. Although self-reported, these data are the best available for assessing the non-face-to-face services considered essential for TCM as most of the suggested activities do not have associated billing codes for reimbursement.<sup>14</sup> Of particular importance are the activities associated with informational continuity. Continuity of information includes making relevant information available to support ongoing appropriate care.<sup>21</sup> This can include sharing information on medical history, clinical health status, test results, and medications, reducing the burden of redundant data collection, and supporting health care encounters with up-to-date information.

Our findings suggest an opportunity to improve the continuity of information and shared care management between hospital and posthospital providers. A minority of hospitals reported to share the transition of care plan with primary care

or rehabilitation providers and electronic accessibility was usually restricted to those in their health system network. There is tremendous opportunity for continued innovation in health technology to support data sharing across the continuum of care. This is especially true for patient and family engagement in care; electronic access for patients to their care plan for postacute management was limited.

Our findings also highlight the opportunity to develop and invest in a broader conceptualization of posthospital services and supports for stroke patients. In this era of accountable health communities, and considering the challenges in addressing social determinants of health beyond clinical care, including community and social services in the ecosystem of care is imperative.<sup>22</sup> Unmet health-related needs, such as food insecurity, economic instability, and societal isolation, may detract from the ability to manage cardiovascular risks and stroke disability. Shared information from the electronic medical record with community services was uncommon in this study. There are currently 32 organizations across 24 states participating in the Accountable Health Communities model funded by

**Table 2** Hospital type, structural characteristics, resources, and processes for hospitals that met or did not meet the definition of transitional care management (TCM)<sup>a</sup>

Hospital characteristics	Of all 41 hospitals, n (%)	TCM service definition not met (n = 28), n (%)	TCM definition met (n = 13), n (%)
<b>Structure: hospital type</b>			
Teaching hospital (vs non)	3 (7.3)	3 (10.7)	0
Urban metropolitan hospital (vs rural, small town, or micropolitan)	22 (53.7)	16 (57.1)	6 (46.2)
Critical access hospital (vs not)	5 (12.2)	3 (10.7)	2 (15.4)
<b>Structure: stroke-specific</b>			
Stroke volume (last annual), median (interquartile range)	215 (100–607)	174 (114–562)	294 (99–690)
≥50% of stroke patients discharged home	25 (67.6)	18 (69.2)	7 (63.6)
Dedicated stroke unit/beds	24 (58.5)	17 (60.7)	7 (53.9)
Dedicated stroke team	25 (61.0)	18 (64.3)	7 (53.9)
<b>Structure: resources for transitional care</b>			
Multidisciplinary discharge planning team	33 (80.5)	21 (75.0)	12 (92.3)
Stroke patient navigator for afterhospital discharge	8 (19.5)	5 (17.9)	3 (23.1)
Records patient and caregiver contact information	34 (82.9)	23 (82.1)	11 (84.6)
Transitional care programs for nonstroke patients	20 (48.8)	12 (42.9)	8 (61.5)
<b>Processes supporting transitional care</b>			
Assesses care transition needs	36 (87.8)	25 (89.3)	11 (84.6)
Transition of care plan in discharge summary for patients/family	13 (31.7)	7 (25.0)	6 (46.2)
Electronic patient care plan for postacute management accessible by patients	8 (20.0)	6 (22.2)	2 (15.4)
Measures quality of care transition	6 (14.6)	3 (10.7)	3 (23.1)
Assesses outcomes 30 or more days after hospital discharge	14 (34.2)	8 (28.6)	6 (46.2)
Other strategies, programs, or efforts to improve stroke care transitions or reduce readmissions	12 (30.0)	9 (33.3)	3 (23.1)

<sup>a</sup> All *p* values > 0.05.

CMS.<sup>23</sup> Although no Accountable Health Communities are currently funded in North Carolina, several health systems–community partnerships are evolving to increase their ability to address population health issues and expand on existing service models.<sup>24</sup>

With half of stroke patients discharged home from the hospital, we hypothesized reimbursement for TCM would motivate TCM implementation. National analysis of the TCM billing codes found transitional care was provided to 12.3% of eligible discharges in 2016 (IQR 5.6%–22.9%).<sup>16</sup> North Carolina is reportedly billing for 29% of eligible patients; most study hospitals that met the TCM definition were not billing for the services. Awareness of the opportunity to bill may explain some of this gap. Barriers and facilitators to use are important to explore. In future analysis, we plan to examine use of TCM codes in Medicare claims for patients participating in the trial and will compare COMPASS intervention

hospitals with hospitals in the control group on the use of TCM billing for stroke patients.

There was a higher proportion of North Carolina COMPASS hospitals with Magnet designation for nursing excellence than are designated nationwide.<sup>25</sup> Nursing plays an essential role in discharge planning and for posthospital stroke care. Nursing clinical guidelines and in the United States and Canada both acknowledge the role of nurses in transitional care and do so with more specification than any other discipline’s guidelines.<sup>26,27</sup> Further, in an evaluation of transitional care for stroke patients and supporting national health policy reform, more than 50% of care models included a nurse as the central provider of care.<sup>4</sup> The inclusion of nursing excellence indicated by Magnet designation as an external influence on TCM implementation was similar (but slightly more common) among hospitals that did not meet the TCM service definition than those that did. We approached stroke center

**Table 3** External drivers of transitional care management (TCM) service model

External factors	Of all 41 hospitals	TCM definition met (n = 13), n (%)	Difference in proportion meeting TCM for each factor (95% confidence interval)
<b>Stroke center</b>			
Primary or comprehensive certification	24	6 (25.0)	-0.16 (-0.45 to 0.15)
No certification	17	7 (41.2)	0
<b>Magnet recognition</b>			
Magnet-designated hospital	8	2 (25.0)	-0.08 (-0.46 to 0.31)
No Magnet designation	33	11 (33.3)	0
<b>Hospital or affiliated providers use of TCM billing codes</b>			
Reported use	7	4 (57.1)	0.31 (-0.09 to 0.71)
Reported not billing for TCM	34	9 (26.5)	0

designation similarly and hypothesized that hospitals certified as primary or comprehensive stroke centers would be more likely to meet the definition of transitional care. Despite the requirement of certified hospitals to have protocols that address transitional care, we found fewer stroke-certified hospitals met the TCM definition than those that did. The Joint Commission, in particular, as a certifying organization, is deeply invested in transitional care with many available resources for certified hospitals. There is an opportunity for further research into the provision of TCM as part of stroke care among stroke-certified hospitals.

There are limitations to this study. Foremost is the size and representativeness of the hospital sample. Our survey results include nearly half of all eligible hospitals in NC, restricted to those that agreed to participate in the COMPASS trial. Motivation to participation in the trial—TCM initiation support or committed leadership with established TCM infrastructure—was not examined. Surveying all North Carolina hospitals may have been more representative but could also have reduced the response rate. Self-report of key TCM components allowed us to slightly expand the limits for defining TCM but was less accurate than obtaining billing data for telephone and in-person follow-up. Finally, this survey was limited to the perspectives and reports of hospital staff. It is possible that specific strategies are underreported or overreported, such as TCM billing, for example, which could be underreported by hospitals due to accounting practices by community-based primary and specialty care providers.

This study found that one third of hospitals that agreed to participate in the COMPASS trial met the CMS definition of TCM prior to study initiation. There was substantial variation in the provision of strategies supporting stroke patients' care transition home from the hospital. Supportive stroke care transitions are essential, when more than 50% of stroke patients are discharged home from the hospital and more than half experience moderate to severe strokes.

Poorly executed care transitions or discontinuous care increases the risk of medical and medication errors, underuse and overuse of health care services and procedures, and patient and caregiver stress. Future research should examine the individual TCM strategies, particularly the 3 core components—2-day follow-up, 7- or 14-day visit, non-face-to-face services—and their association with outcomes for stroke patients. Research that identifies a positive association for these core strategies with patient outcomes is important for structuring care in both fee-for-service and value-based accountable care models.

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## Appendix Authors

	Concept/ design	Data acquisition	Data analysis	Data interpretation	Manuscript drafts	Obtained funding	Administrative, technical, material support	Final approval
Janet Prvu Bettger	X		X	X	X			X
Sara B. Jones	X	X	X	X	X		X	X
Anna M. Kucharska-Newton	X	X	X	X	X		X	X
Janet K. Freburger	X			X	X			X
Sylvia W. Coleman	X	X		X	X			X
Laurie H. Mettam	X	X		X	X		X	X
Mysha E. Sissine	X			X	X		X	X
Sabina B. Gesell	X			X	X			X
Cheryl D. Bushnell	X			X	X	X		X
Pamela W. Duncan	X			X	X	X		X
Wayne D. Rosamond	X			X	X	X		X

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