A qualitative study of clinical champions in context: Clinical champions across three levels of acute care

Mindy E Flanagan[1] (iD), Laurie Plue[1,2], Kristine K Miller[1,3],
Arlene A Schmid[1,4], Laura Myers[2], Glenn Graham[1,5],
Edward J Miech[1,2,6,7,8] (iD), Linda S Williams[1,2,6,9]
and Teresa M Damush[1,2,6,8,10]

Abstract

Objectives: To compare activities and field descriptions of clinical champions across three levels of stroke centers.
Methods: A cross-sectional qualitative study using quota sampling was conducted. The setting for this study was 38 acute stroke centers based in US Veterans Affairs Medical Centers with 8 designated as Primary, 24 as Limited Hours, and 6 as Stroke Support Centers. Key informants involved in stroke care were interviewed using a semi-structured approach. A cross-case synthesis approach was used to conduct a qualitative analysis of clinical champions' behaviors and characteristics. Clinical champion behaviors were described and categorized across three dimensions: enthusiasm, persistence, and involving the right people.
Results: Clinical champions at Primary Stroke Centers represented diverse medical disciplines and departments (education, quality management); directed implementation of acute stroke care processes; coordinated processes across service lines; and benefited from supportive contexts for implementation. Clinical champions at Limited Hours Stroke Centers varied in steering implementation efforts, building collaboration across disciplines, and engaging in other clinical champion activities. Clinical champions at Stroke Support Centers were implementing limited changes to stroke care and exhibited few behaviors fitting the three clinical champion dimensions. Other clinical champion behaviors included educating colleagues, problem-solving, implementing new care pathways, monitoring progress, and standardizing processes.
Conclusion: These data demonstrate clinical champion behaviors for implementing changes to complex care processes such as acute stroke care. Changes to complex care processes involved coordination among clinicians from multiple services lines, persistence facing obstacles to change, and enthusiasm for targeted practice changes.

[1]HSRD VA PRISM QUERI Center, Roudebush VAMC, Indianapolis, IN, USA
[2]Center for Health Information and Communication (CHIC), Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development Service, Indianapolis, IN, USA
[3]Department of Physical Therapy, Indiana University School of Health and Rehabilitation Sciences, Indianapolis, IN, USA
[4]Department of Occupational Therapy, Colorado State University, Fort Collins, CO, USA
[5]Office of Specialty Care Services, San Francisco VAMC, San Francisco, CA, USA
[6]Regenstrief Institute, Inc., Indianapolis, IN, USA

[7]Department of Emergency Medicine, Indiana University, Indianapolis, IN, USA
[8]Department of General Internal Medicine, Indiana University, Indianapolis, IN, USA
[9]Department of Neurology, Indiana University, Indianapolis, IN, USA
[10]Department of Geriatrics, Indiana University, Indianapolis, IN, USA

Corresponding author:
Teresa M Damush, HSRD VA PRISM QUERI Center, Roudebush VAMC, 1481 W 10th St., HSRD 11H, Indianapolis, IN 46256, USA.
Email: Teresa.Damush@va.gov

Ischemic stroke is a common health concern yet is complex in its care delivery. Among Veterans Health Administration (VHA) facilities, about 6000 admissions and 60,000 annual outpatient visits involve patients with ischemic stroke.[1] The VHA, the largest integrated US healthcare system and a division of the United States Veterans Administration, operates hospitals (Veterans Affairs Medical Centers, VAMC), ambulatory outpatient clinics, and nursing homes for separated military personnel. A recent VHA national evaluation of quality of care for ischemic stroke established that inpatient stroke care processes were being performed with inconsistent quality, such that processes in early phases of care needed improvement.[2–4] As a result, the VHA Acute Ischemic Stroke (AIS) Directive released in November 2011 mandated each VHA facility director to develop a written policy for managing patients with AIS, including self-designation of level of acute stroke care services provided. Implementation of these policies and corresponding clinical protocols was due by June 2012.[1] The AIS Directive aimed to ensure timely and standardized care for AIS. In addition, although funding did not accompany implementation, data capture of quality indicators related to AIS and education program for patients and staff were required.

In response to the AIS Directive, we conducted a formative developmental evaluation across three levels of stroke centers (Primary, Limited Hours, and Support). The VHA defines a Primary Stroke Center as a facility "with the necessary personnel, infrastructure, expertise, and programs to diagnose and treat stroke patients emergently 24 hours a day, 7 days a week (24/7), 365 days a year in the Emergency Department or in the medical facility" and "must have a stroke unit, or other designated location within the medical facility where stroke patients are admitted, staffed by medical personnel who have additional training and expertise in stroke care." In contrast, a Limited Hours facility has these capabilities and can administer recombinant tissue plasminogen activator (r-tPA) during "normal business hours," whereas a Supporting Stroke Facility has reduced capabilities for acute stroke care, requiring transfer policies for in-hospital stroke and diversion for incoming stroke patients to other facilities. The primary aim was to understand how VHA facilities self-determined appropriate level of stroke care and identify facilitators and barriers faced when implementing new policies and protocols, including evaluating the role of clinical champions.[2] This study took the opportunity afforded by a natural experiment to study activities of clinical champions in context as they engaged in reorganization of acute stroke services.

Clinical champions are typically described as possessing passion, enthusiasm, and drive to create change.[5,6] Their self-motivation may develop experientially, witnessing failings or fortuitous situations that highlight proper practice for providing safe care.[7] In addition to their intrinsic reasons and vision for change, clinical champions are typically skillful at developing relationships, in part due to being effective communicators and well respected within their organization.[8] An understanding of organizational structure and culture allows a clinical champion to leverage appropriate relationships for implementing change and underscores why clinical champions are typically internal to an organization.[8,9]

Clinical champions are also defined by what they do. They are committed throughout the implementation process and engage in a broad range of activities. A clinical champion might analyze a process and make recommendations for change or educate colleagues and administrators about improvement in an effort to persuade them to adopt the change.[6,8] Clinical champions are typically involved in problem-solving when barriers are encountered for implementing a change.[10] Moreover, clinical champions tend to be undaunted by setbacks and persevere through problems that arise during implementation processes. Persuading others to adopt a change, gaining administrative support for a change, and enabling colleagues to make changes to a practice is complemented by a clinical champion's abilities to communicate and build relationships throughout the organization.[8]

One validated measure operationalizes prototypical clinical champion behaviors as fitting in three overall domains: (1) conveying enthusiasm and confidence in the innovation, (2) overcoming barriers and difficulties, and (3) involving appropriate people for implementing changes.[11] Clinical champions express optimism and confidence in an innovation, along with explaining how the innovation will succeed. Clinical champions tend to persist when faced with barriers to implementing innovations and remain involved in implementation. Finally, clinical champions navigate the organization to identify individuals to promote innovation and solve ensuing problems.[5,6,12,13]

Given the complex nature of acute stroke care services, multidisciplinary service lines involved, and lack of knowledge on effective clinical champions, this study evaluates and compares activities and roles of clinical champions as identified by field clinicians from VAMCs across three levels of stroke centers. We applied these three validated dimensions of clinical champion behavior to understand activities such as persuading coworkers to implement changes, obtaining resources, and coordinating efforts.

Methods

This research study employed a cross-sectional observational design. Semi-structured interviews assessed response and implementation of the VHA AIS Directive. Specific to this project, clinicians and leadership staff were asked about the presence of clinical champions for acute stroke care services at their respective facilities.

Study sites and stroke team interview participants

VAMCs self-designated their stroke care as fitting a Primary Stroke Center, Limited Hours Stroke Center, or Stroke Support Center.[1] Using quota sampling, Limited Hours

Stroke Centers were oversampled given that they were prevalent and operated as both a Primary Stroke Center (weekdays) and Stroke Support Center (evenings and weekends). To obtain a representative sample of the VHA healthcare system, the sample size target was 36 VAMCs (stratified by the three levels of stroke centers) with a goal of four interviews per facility. In order to minimize bias and conflicts, facilities were excluded if they were already participating in a Veterans Affairs (VA) Stroke QUERI (Quality Enhancement Research Initiative) project to improve inpatient management of stroke to reduce related mortality and morbidity. The VA QUERI program focuses on translating evidence into practice and implementation science.[14] Of 122 possible VAMCs that responded to the AIS Directive, 96 (21 Primary, 29 Limited Hours, 46 Stroke Support) facilities met criteria. To achieve sample size targets, 45 stroke centers were invited to participate based on their annual volume of stroke patients (more than 40 acute stroke admissions annually) and self-designated level of stroke center. Due to the specificity of the study aims, participant knowledge about stroke care, and interview questions, we reached content saturation with 107 individuals across 38 facilities and determined it was a sufficient sample size.[15]

Initially, the VA Stroke QUERI Center and the directors of Emergency Medicine and Specialty Care Services invited VHA clinical leadership and clinicians by email, followed by telephone calls, to participate in semi-structured interviews. Chiefs of Neurology and Emergency Departments (ED) identified administrative and clinical stroke service leaders involved with each facility's response to the AIS Directive. A purposive sample was drawn: clinical leaders identified three to five persons for subsequent interviews at their facility, seeking staff members most involved in managing acute stroke care and response to the AIS Directive including administrators, physician providers, and nurses from the ED, neurology, and internal medicine services.

Research design

We employed semi-structured interviews to address our specific aims. While the same core questions were asked during each interview, the semi-structured nature permitted flexibility to elaborate upon or cover important topics that would not have otherwise surfaced. The research team developed interview questions to directly correspond to criteria contained in the newly implemented AIS Directive disseminated in the VHA. Specific for this project, questions related to clinical champions were "Is there a stroke clinical champion at your facility?" "What role did you personally serve in the facility's response?" "In which ways, if any, has the Acute **Ischemic** Stroke Directive impacted your facility?" Interviewers defined a clinical champion as someone who believes in an idea; will NOT take no for an answer; is undaunted by insults and rebuff; and above all, persists. In addition, semi-structured interviews included questions about implementing early acute stroke services with follow-up probes asking who

initiated or conducted implementation actions. A copy of the interview guide is available in a previous publication.[2]

The interview guide was pilot tested among local clinicians and research staff to assess the relevance and comprehension of the questions. As such, four individuals completed open-ended pilot interviews, during which they were queried about the clarity and relevance of the questions. Based on these pilot interviews, revisions to three questions were made by adding skip patterns for instances in which the question was not relevant to the local practice and by adding probes (i.e. additional follow-up questions) to enhance question clarity.

Data collection

Based on available funding, on-site interviews were conducted at 22 facilities (7 Primary, 11 Limited Hours, and 4 Stroke Support Centers) and telephone interviews at 16 facilities (2 Primary, 13 Limited Hours, and 1 Stroke Support Centers). All facilities were invited simultaneously; the first 22 to respond had a site visit. Participants were initially contacted by study investigators (T.M.D., L.S.W.) via email. Prior to interviews, participants provided verbal informed consent and written consent to audio record interviews. On-site interviews were conducted in a private location at a convenient time to the participant. Participants knew that the researcher was interested in understanding acute stroke care and were informed that the research was tracking response to the AIS Directive. Interview length ranged from ½ to 1 h with single interviewees and a maximum of 2 h with multiple interviewees. Participants were interviewed only once for this study. Interviews were conducted from August 2012 to May 2013.

All on-site and telephone interviews were audio recorded and conducted by trained, experienced study personnel. Interviewers (L.P., A.A.S., L.S.W., T.M.D., K.K.M.) had prior experience conducting semi-structured interviews regarding acute stroke care. Interviewers were all female and included a program manager (MA), psychologist (PhD), occupational therapist (PhD, OTR), physical therapist (PhD, PT), and neurologist (MD). Interviewers did not have a prior relationship with participants. Interviewers made handwritten notes during interviews and notes were discussed among the research team. An approved contractor transcribed all interviews verbatim and removed identifiable information. The VA Central Institutional Review Board (IRB) required local IRB review only. The Indiana University IRB and the Roudebush VAMC Research and Development Committee approved this project.[2]

Analysis

Analysis focused on behaviors and descriptors of clinical champions, along with contextual dimensions that could influence implementation of new practices. A cross-case synthesis approach was used to describe and identify

Table 1. Mean (standard deviation) respondent years of professional experience and Veterans Affairs (VA) employment by level of stroke center.

Experience	Primary Stroke Center (N = 9)	Limited Hours Stroke Center (N = 24)	Stroke Support Center (N = 5)
Professional experience	21.54 (11.70)	22.03 (9.82)	22.71 (10.67)
VA employment	10.22 (7.86)	12.56 (9.73)	9.95 (9.96)

patterns as they emerged across three levels of stroke care.[16] Using grounded theory, we permitted a concentrated examination into the themes associated with clinical champions. For each transcript, the presence or absence of a clinical champion was recorded. If a clinical champion was identified, other information about clinical champion activities and role related to providing stroke care and responding to the AIS Directive was coded and analyzed. In addition, contextual information relevant to barriers or facilitators for providing stroke care was coded. The coded qualitative data were organized by self-designated level of stroke care. Similarities and differences for clinical champions across level of stroke center were summarized. Two coders independently read each transcript and attached the relevant codes to selected sections of text. In addition, one coder applied the following three-dimensional structure as a means to categorize clinical champion behavior: (1) conveying enthusiasm and confidence in the innovation, (2) overcoming barriers and difficulties, and (3) involving appropriate people for implementing changes. We utilized NVivo 10 software to manage and organize qualitative data across facilities and analyze unstructured data by assigning codes to text strings within transcripts and to create hierarchical codes denoting stroke designation level across facilities.[17]

Results

Of 45 invited VAMCs, 38 (84%) facilities participated. The final sample included 8 Primary Stroke Centers, 24 Limited Hours Stroke Centers, and 6 Stroke Support Centers. The final sample included 107 persons across participating facilities. Of respondents, 23 participated in interviews with 1–2 other respondents and the remaining participated singly. The median number of respondents per facility was 3 (median number of respondents was 2 for Limited Hours, 3 for Primary, and 4 for Stroke Support Centers). Participant total years of professional experience and years of VA employment were similar across the centers with the most experience reported in Limited Hours Centers (see Table 1).

In total, 78 (73%) respondents identified one or more clinical champions at their facility. Of all 107 respondents, about a third (n = 29) self-identified as a clinical champion at their facility. At 32 (84%) VAMCs, at least one clinical champion for stroke care was identified. The six facilities that did not identify any clinical champion included five Limited Hours Stroke Centers and one Stroke Support Center.

Primary Stroke Centers

Clinical champions at Primary Stroke Centers demonstrated behaviors fitting the three-dimensional model. First, these clinical champions expressed enthusiasm and confidence for improving acute stroke care. For example, one clinical champion stated, "I wanted to get into it and make a difference …" Second, in an effort to reduce adversity toward the upcoming changes, one clinical champion was educating physicians during grand rounds about the stroke alert process. This clinical champion stated, "it's a fight because … physicians are like, well, you're wasting our time …" This strategy to preempt resistance by attending grand rounds afforded the clinical champion a wide audience and time to educate physicians about changes to acute stroke care procedures. Third, to build collaborations, a clinical champion met face-to-face with directors from each service included in the planned multidisciplinary stroke team. About these interactions, the clinical champion stated, "I mean, everyone was very supportive and if there was a barrier, like, they were ready to help me …" One clinical champion made a presentation to leadership about requirements and resources for moving from Limited Hours to Primary Stroke Center. Garnering support from leadership was critical to hiring two full-time stroke neurologists and a stroke coordinator.

For nearly all Primary Stroke Centers, clinical champions were involved in multiple aspects of implementation and at the forefront of those activities persisting through the process of change. Clinical champions included physicians and nurses primarily from neurology and emergency medicine but also other services like pharmacy or radiology (see Table 2). The typical approach to implementation at Primary Stroke Centers included establishing a multidisciplinary team to develop a protocol and implement changes which were facilitated by clinical champions. Clinical champions led activities that included writing a formal response to the AIS Directive; developing order sets which required considerable time and collaboration with informatics personnel, gaining appropriate approvals, testing and editing; educating staff; developing protocols to deliver thrombolytics; establishing stroke teams (e.g. adapting rapid response teams for stroke care); formalizing alert systems; and tracking quality indicators. Other characteristics and skills of clinical champions at Primary Stroke Centers included experience in adapting the stroke process, hard-working, knowledgeable about acute stroke care, collaborative, and resourceful.

The context in which clinical champions operated was supportive to implementing change to acute stroke care

Table 2. Count of clinical champion's role by level of stroke center.

Role of clinical champion	Primary Stroke Center (N = 9)	Limited Hours Stroke Center (N = 24)	Stroke Support Center (N = 5)
Stroke neurologist	5	3	0
Neurologist—General	4	13	4
Physician—Emergency Department	3	6	2
Physician—Other	2	5	0
Nurse—Emergency Department	1	2	2
Stroke coordinator	1	1	0
Nurse—Other	3	2	0
Other	3	0	1

Facilities could report more than one clinical champion; "Physician—Other" included internal medicine physician, Chief of Medicine, and intensive care unit physician; "Nurse—Other" included nurse educator, clinical nurse specialist, chief of nursing; "Other" roles included pharmacist, quality manager, and Chief of Staff.

procedures. Clinical champions successfully negotiated resources from their local administration, such as dedicated time to implement changes for acute stroke care, mandated change to stroke care, required education related to stroke care with protected time to complete, administrative involvement on stroke committees, designated full-time positions for quality data tracking, and funding for information technology needs. Primary Stroke Centers typically had active stroke teams and committees that met regularly to discuss quality indicators and process improvement. However, two Primary Stroke Centers struggled without active clinical champions. In one case, the clinical champion retired without a replacement for driving this practice change and, in the other, the clinical champion was overcommitted and short on time for clinical champion activities.

Limited Hours Stroke Center

Compared to Primary Stroke Centers, clinical champions at Limited Hours Centers varied in the extent to which they expressed enthusiasm and confidence for improving acute stroke care. At some facilities, clinical champions displayed enthusiasm and were "very passionate about the management of stroke" and "worked lots of hours on trying to get going." At other facilities, clinicians assigned to the clinical champion role lacked enthusiasm and stated, "I don't know why it got dumped in my lap," "got pinned with the responsibility," and "appointed person to deal with it here." Similarly, for the second dimension, clinical champions were split in the extent to which they displayed persistence when faced with adversity. For example, two clinical champions were described as "won't say no, must succeed" and "resource limitation is playing into [implementing the program] but I don't think he is just going to let it go." In contrast, other clinical champions described their experience facing adversity in the following ways: "I take the body shots if I can," "I've taken beatings," and "I'm the sacrificial lamb in this regard." In many instances, the amount of time

and effort required as a clinical champion and in responding to the AIS Directive was mentioned. One clinical champion stated that the clinical champion role was "only one small sliver" of his responsibilities. Related to the third dimension, some clinical champions valued communicating and building relationships across services to improve stroke care. In one instance, conversations between services resulted in an organized patient pathway across services. Another clinical champion was described as "pulling people together." These diverse range of clinical champions across Limited Hours Centers reflect their hybrid nature in that they operate their level of service differently across the week with varied levels of commitments and resources.

Similar to Primary Stroke Centers, clinical champion's activities at Limited Hours Centers included writing a formal response to the AIS Directive, educating staff, securing buy-in from stakeholders, leading a multi-service stroke team, coordinating stroke care across services, tracking quality indicators, requesting meetings, handling resistance, developing a protocol to deliver thrombolytics, developing order sets, and formalizing alert systems. Clinical champions were identified from key services. However, fewer stroke neurologists were clinical champions at Limited Hours Centers compared with Primary Centers. The implementation process had wide variation among Limited Hours Stroke Centers. At active facilities, clinical champions were involved in interdisciplinary, coordinated efforts to implement multiple components of the AIS Directive. At one facility, a clinical champion took the charge to obtain buy-in and educate staff from multiple disciplines about changes to acute stroke care. In contrast, other facilities did not make any major changes to acute stroke care processes. Rather, stroke care protocols underwent formalization and were communicated to those involved. At one facility, a respondent replied that "I don't think any changes had to be made." Among Limited Hours Centers, some had a designated stroke team and others relied on ED physicians to respond and to notify neurology about strokes.

In addition, Limited Hours Center clinical champions were operating in contexts with variable support for implementing changes to acute stroke care. In some cases, facilities with an annual low volume of acute stroke patients corresponded to a low priority for implementing changes to stroke care. However, in another facility with a low volume of stroke patients, simulated stroke codes allowed staff to practice skills for complex care. Second, lack of additional resources was a challenge to implementing changes for acute stroke care. One respondent suggested that the facility needed more radiology support, but the AIS Directive did not arrive with extra support nor did the respondent attempt to pursue changes within the organization. In contrast, another facility had successfully designated time for a stroke neurologist toward implementing a stroke protocol. Third, resistance to changing stroke care processes was expressed as questioning the evidence for acute stroke practices and as stating that the facility was already providing the best stroke care. At one facility, changes to acute stroke care was a "nursing driven initiative" that lacked physician buy-in, demonstrating why boundary-spanning clinical champions can be important for a complex process of care. Fourth, facilities that were in close proximity to a primary stroke center and had the practice of transferring patients did not express motivation to change. Also, in some facilities, neurology was a consult service so admitting patients to a designated area with focused, organized stroke care was a barrier for establishing stroke care processes.

Stroke Support Center

Clinical champions at Stroke Support Centers demonstrated fewer behaviors fitting into the three-dimensional model compared to Primary and Limited Hours Stroke Centers. Some clinical champions at Stroke Support Centers displayed enthusiasm and confidence for improving acute stroke care. One clinical champion was described as, "she does this kind of as her own agenda, her own mission." However, this clinical champion was on medical leave and changes for stroke care had "taken the back burner." In contrast, others did not express enthusiasm or certainty about being a clinical champion. One clinical champion responded "theoretically, me" to the question of whom is the clinical champion. Only in two instances were clinical champion's activities described as persisting under adversity or as collaborative. Specifically, one clinical champion managed physician resistance to responding to the stroke alert and another coordinated meetings across services to discuss acute stroke care.

Clinical champion activities were more limited at Stroke Support Centers compared to other types of stroke centers. These activities included writing the AIS Directive response, drafting a transfer policy, facilitating informal stroke discussions, developing stroke protocols, and developing ED algorithms for stroke care. These clinical champions included individuals from only a few services and often lacked a multidisciplinary stroke team. Clinical champions at Stroke Support Centers tended not to be focused on implementing changes for acute stroke care and most likely reported that just one or two persons at the facility wrote the protocols.

The context of Stroke Support Centers did not facilitate implementing changes to acute stroke care procedures. Rather, respondents were content to transfer patients to nearby non-VA primary centers and expressed reluctance to change their acute stroke care procedures. At one facility, the clinical champion stated that it "felt like we took a step back" because they were no longer administering thrombolytics in the ED. In addition, this facility was missing a clinical champion from the inpatient service area that would allow coordinated stroke care. At another facility, the context did not support implementing changes for stroke due to the low volume of acute strokes. Specifically, this participant stated, "We don't need a clinical champion. We need to recognize what we are and are not—stroke volume is too low." Multiple barriers to change from a Support Stroke Center to a higher level were noted. Clinical champions mentioned needing resources for additional staff (stroke coordinator, imaging staff), information technology support for order sets and tracking quality indicators, a dedicated neurologist for stroke care, staffing modifications, staff training, buy-in for changes to stroke care, and coordination across services. Thus, clinical champions often did not persist in the face of these barriers, did not find the right persons for the right positions, and were often less enthusiastic toward the targeted practice change.

Discussion

Stroke care is complex in that it requires urgent diagnostics and treatment across multiple medical services. Any change to stroke care procedures entails coordination across medical services. Clinical champions are critical to implementing change for stroke care.[18] In this study, clinical champions were described as displaying three types of champion behaviors.[11] First, clinical champions self-reported strong interest in improving acute stroke care, which has been related to implementation success.[6] Second, when faced with adversity such as resource shortages, some clinical champions used the AIS Directive to obtain resources for organizational change. Others provided education to justify more resources or to obtain buy-in for upcoming changes to acute stroke care. Third, the AIS Directive required establishment of stroke teams which showcases a clinical champion's ability to involve the right people and build relationships. Working across services to provide quality acute stroke care requires clinical champions to have organizational knowledge and effective communication skills.[8]

Clinical champion behaviors beyond the three dimensions were also noted. They worked to improve acute stroke care by educating colleagues, problem-solving, implementing new care pathways, monitoring progress, building order sets,

formalizing an alert system, and creating documentation for stroke care. Moreover, clinical champions adapted existing rapid response teams to serve as stroke teams that are mobilized simultaneously to either stroke in the ED or inpatient wards. These clinical champion behaviors coincide with other research on champion behaviors and skills. Rossman et al.[19] reported clinical champions can counter resistance to change by building collaboration across disciplines, educating coworkers about benefits of a protocol, and adapting implementation to the local organization. Similarly, Soo et al.[8] identified that clinical champions engage in a range of activities, such as education, advocacy, relationship building, and boundary navigation.

Although behaviors fitting the three dimensions spanned all levels of stroke centers, Primary Centers reported more clinical champion behaviors compared with Support Stroke Centers. The Limited Hours Centers were mixed in the extent to which these behaviors were present. The organizational setting might have influenced clinical champion efforts: clinical champions at Primary Stroke Centers and some Limited Hours Centers appeared to have the most support for creating change. For example, clinical champions were allotted time, resources, leadership endorsement, and committed colleagues to assist in implementing changes to meet AIS Directive criteria. In addition, efforts at most Primary Stroke Centers and some Limited Hours Centers encompassed a wider group of medical specialties than at Stroke Support Centers. Support was likely the result of alignment with organizational goals for providing stroke care, resulting in more resources and prioritization for improving stroke care. In addition, organizations in which relationships span hierarchical levels promote relationship building, serving as a facilitative context for clinical champions.[6] Low volume of stroke patients and resource shortages were barriers to implementing changes or moving to a higher level of stroke center. Regardless of patient volume or resources on site, the AIS Directive delineated reorganization of care either using on-site systems or a combination of on-site and community resources. Facilities at which organizational change or adaptation is rare (perhaps due to an organizational culture that does not promote acceptance of change) remain entrenched in practices.[13] Future research may evaluate whether similar clinical champion behaviors are essential ingredients in other clinical areas of complex care (e.g. cancer care). Another research priority is how the skills of clinical champions can be developed based on these identified effective clinical champion behaviors. Prospective interventions would enable such an evaluation.

The primary goal of the interviews was to ascertain facility-level changes implemented in response to the AIS Directive. Although information about clinical champions was contained in interviews, a study limitation is that questions were not asked about specific activities of each clinical champion. Another limitation is that the majority of interviews were conducted at Limited Hours Centers as this level

was purposefully targeted. Hence, Limited Hours Centers are overrepresented. Due to interview priorities, six respondents were not asked about clinical champions at their facility. However, multiple respondents from each facility were queried to understand the AIS Directive response; therefore, clinical champion data were available from each facility. In addition, transcripts and findings were not returned to participants for member checking and validation of results. Finally, some unintentional differences in responding could have been evoked due to different data collection methods (face-to-face vs phone interviews).

Conclusion

These data reveal clinical champion behaviors for complex care processes such as acute stroke care. This complex care involved coordination among clinicians from multiple services lines, persistence in the face of obstacles to change, and enthusiasm for targeted practice changes.

ORCID iDs

Mindy E Flanagan https://orcid.org/0000-0002-7146-5628
Edward J Miech https://orcid.org/0000-0002-7187-1570

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