

Research Article

Chronic Respiratory Failure: Utilization of a Pediatric Specialty Integrated Care Program

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Abstract

Objective: Describe utilization and family satisfaction in a specialty integrated care program for children with severe, chronic respiratory insufficiency.

Subjects: Enrollees of the Critical Care, Anesthesia, Perioperative Extension (CAPE) and Home Ventilation Program at Boston Children's Hospital

Methods: Participating families were enrolled in a program that provides scheduled and requested home visits, care coordination, and 24/7 access to physician services. Three years of program activity and clinical outcomes were recorded using an adapted version of the Care Coordination Measurement Tool© (CCMT). A subset of parents reported their utilization and satisfaction with CAPE using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey. Patient characteristics, program activity, clinical outcomes, utilization, and satisfaction were summarized using descriptive statistics.

Results: CAPE provided care for 320 patients over the three-year period (2012-2014). Neuromuscular conditions (n=132, 41%), chronic lung disease (n=37, 12%), and congenital heart disease (n=13, 4%) represented the majority of underlying conditions. Scheduled and requested services included 905 home visits, 504 clinic visits, and 3,633 telephone or telemedicine encounters, of which 43.6% included a care coordination activity. Patients had a median of seven encounters per year. According to parent report on the CAHPS (n=102), 92.1% (n=93) of children had at least one non-urgent (i.e., routine) visit with a clinician and nearly two-thirds (64.7%, n=66) of parents reported the need for urgent or emergency care. Overall, parents were highly satisfied with CAPE services, with a mean satisfaction rating of 9.3 (±1.3) out of 10. Most parents reported that the CAPE team understood the child's (96.0%, n=95) and family's day-to-day life (86.9%, n=86).

Conclusions: When given open access to physicians and care coordinators in a program that meets their needs, children in our highly complex population required a median of seven encounters per year. We believe that this experience is scalable and may inform other organizations contemplating similar services.

ABBREVIATIONS

CAHPS: Consumer Assessment of Healthcare Providers and Systems survey; CAPE: Critical Care Anesthesia Perioperative Extension and Home Ventilation Program; CCMT: Care Coordination Measurement Tool; CRI: Chronic Respiratory Insufficiency; ED: Emergency Department; SD: Standard Deviation; SE: Standard Error; VACHP: The Pennsylvania Ventilator Assisted Children's Home Program

INTRODUCTION

Chronic respiratory insufficiency (CRI) requiring assisted ventilation is one of the most serious health-related complications faced by children with physical and developmental disabilities. Historically, these children were cared for in hospitals or long-

term care facilities and separated from their families. Technologic innovation, coupled with a growing appreciation of the broader social contributions of children and adults with disabilities, have allowed children with CRI to remain at home and to be integrated into their communities with life-sustaining mechanical support and complex medical follow up [1].

The need for intensive supports reflects a range of underlying conditions, including neuromuscular disorders, spinal cord injuries, parenchymal pulmonary diseases, and respiratory dysfunction (e.g., central hypoventilation), as well as a burgeoning population of children with complex congenital heart disease [2]. Approximately 6/100,000 US children require transtracheal mechanical ventilator assistance, [3] and an estimated 4,000-6,000 children receive ventilator support at

home. This number represents a threefold increase within the past decade [4]. Despite complex needs, affected children may experience better developmental outcomes if cared for in a home setting² and home-based care can be appreciably less expensive than institutional care [5-7].

Efforts to support children with ventilator dependence at home are extensive, but coordination for this vulnerable group of children remains suboptimal [8,9]. Most often, the home care team is led by parent caregivers [10,11] with virtual intensive care units (ICUs) constructed at home and parents "on-duty" all of the time. As a result, Herculean efforts are required to maintain this care and any semblance of normal family life [1,5,12]. Predictably, such demands result in parental emotional distress and diminished global health-related quality of life (HRQL) for both child and parent [2,6,-11].

Meanwhile, a fragmented system, organized around episodic care, gives inconsistent and inadequate support in critical areas such as home nursing, respite care, psychosocial support, health education, and marital counseling. In addition, parents frequently experience poor community acceptance with diminished social and employment opportunities [10]. It is not surprising, then, that professional perspectives on children's true needs and HRQL often differ from those of their families [3,4,8,9,13-17]. For children with CRI, this discrepancy is potentiated and demands a more family-centered approach [7-27].

Even the medical support of this vulnerable group of children remains suboptimal. When left to hospital-based acute care providers, there are extensive costs related to preventable hospital-based care [28-30]. Nationally, children with any degree of technology dependence have a nearly 400-fold greater risk of requiring an ICU admission during the course of a year compared to a previously healthy child [31]. A study of critical care admissions between 1997-2006 found an increasing proportion of children with comorbid conditions (35% to 41% of all ICU admissions) and a consistent two-fold increase in charges when compared to children without prior conditions [32]. Studies of clinical follow-up compliance after pediatric emergency visits and critical care admissions demonstrate poor continuity [33]. Higher illness severity, longer ICU stays, and longer hospital admissions are predictive of decreased adherence to outpatient appointments independent of socioeconomic or demographic risk factors [34].

An opportunity exists, therefore, simultaneously to improve HRQL, while decreasing total medical expenses. Traditional models of care separate routine health maintenance in the community and acute, episodic care for life-threatening processes in the hospital. More recent models of integrated care or "enhanced medical homes" that merge services for children with a range of chronic illness have reduced serious illnesses and costs [35]. Neither model fully empowers families to access the services they need whenever they need it. We developed a program, therefore, to test the feasibility of an open access provision of "on demand" care coordination and specialty physician services for families of children with complex medical needs. Here we report our three-year experience with that program and family perception of the program.

METHODS

Program and patient cohort description

The Critical Care, Anesthesia, and Perioperative Extension (CAPE) Program was established in June 2007 at Boston Children's Hospital (BCH) to care for children with respiratory technology dependence. Program objectives were to provide comprehensive, longitudinal service through individually tailored care with home visits, and to liaise with acute care inpatient services, rehabilitation programs and outpatient clinics, school programs, and community services, including home care nursing, early intervention programs, and therapists. A critical feature of the program was provision of continuous (24-hours per day/7-days per week), family-driven access to critical care physicians and other professionals. Patient selection was via referrals generated from inpatient critical care services, primary care providers, family self-referral, and specialized care teams (e.g., cardiology/cardiac transplant, pulmonary/pulmonary transplant, neuro/neuromuscular). There were no exclusions. All patients identified a primary care pediatrician; the objective of the CAPE Program was to partner with community providers for routine health maintenance as well as address gaps in comprehensive care related to the child's underlying complex condition and needs. The CAPE Program was provided in lieu of a traditional, hospital-based pulmonary or respiratory clinic program.

Once enrolled in the CAPE Program, scheduled home and clinic visits were arranged at regular intervals, but there was no restriction on additional, family-driven program utilization. Routine immunizations and evaluations were provided through the primary care office, except for rare instances where seasonal Influenza vaccination was provided in the home. It was at the families' discretion to engage the primary care or CAPE providers for acute, sub-acute, or care coordination issues, although the primary care could also contact CAPE directly and partnership was bidirectional. The original CAPE Program was staffed by a part-time critical care physician and full-time respiratory therapist (RT). In 2011, BCH internal grant support permitted expansion to include a nurse practitioner (NP), social worker (SW), and a full-time program administrator/coordinator. The experience reported here is that of the full-service multidisciplinary program. As part of the 2011 program expansion, parents of age-eligible children (30 days-22 years) were invited to participate in a formal evaluation of the CAPE Program, which included serial assessment of patient-and family-centered outcomes, including parent satisfaction with CAPE care. Results of HRQL assessments are reported elsewhere [6].

Demographic and clinical characteristics

Demographic and clinical information was extracted from the medical chart by trained clinical staff or directly from the provider on all patients enrolled in the CAPE Program. This included the following: child age and gender, clinical severity [36] (1=least severe, 10=most severe), respiratory support needs, primary and secondary insurance type, driving distance from BCH, and diagnostic category. Diagnostic categories included acquired injury, congenital anomalies, chronic lung disease, congenital heart disease, muscular dystrophies and spinal muscular atrophy

(i.e., congenital neuromuscular), and other, which is consistent with categorization schema used in previous studies for children with tracheotomy [32,37,38]. Patients who received only a single consultative service were excluded from the reporting and analysis. Enrolled patients were retrospectively identified as residential (living at a long-term care facility), respiratory (primarily involving management of ventilation, pulmonary, and aero-digestive issues), and specialty (comprehensive care and care coordination).

Specialty integrated care program utilization and evaluation

The Care Coordination Measurement Tool[®] (CCMT) is among a limited panel of validated quality metrics for healthcare delivery [39-41]. Developed for pediatric primary care practices, it serves to 1) quantify and characterize care-coordination activities, 2) assess the relationship between this activity and outcomes related to resource utilization, and 3) inform resource allocation and personnel needs [41]. The CCMT was modified to track CAPE Program-specific activity, encounter characteristics, and outcomes (see Appendix 1). All staff were formally trained in its use.

From October 1, 2011 through September 30, 2014, all patient-related encounters with physicians, nurse practitioners, respiratory therapists, and social workers were recorded in real time using the adapted CCMT. All outcomes recorded with the CCMT were verified in follow-up or, in the case of averted ED and hospital visits, resulted from the mutual assessment of families and providers. All documentation was entered into a secure Research Electronic Data Capture database (RED Cap Software - Version 5.5.3 - © 2013 Vanderbilt University) and records were randomly sampled for data entry accuracy at regular intervals.

Parent-reported experience

One component of CAPE evaluation was patient satisfaction, as measured by a modified version of the Consumer Assessment Healthcare Providers and Systems survey (CAHPS). The CAHPS has been used extensively in English and Spanish-speaking populations [42,43]. Questions related to healthcare utilization over the previous 6 months included urgent and non-urgent care. After enrollment of at least six months, satisfaction ratings (0-10, with 10 highest) were solicited to assess overall experiences with the Program and its providers. Although the CAHPS was collected every 6 months at up to four times, only the first available assessment was used. Parents also reported demographic information on themselves and their family.

Analysis

Patient demographics, clinical characteristics, and CCMT-recorded activities are reported overall and separately by year. Parent-reported utilization and satisfaction from the CAHPS was reported at one time period only. Means and standard deviations (SD) are reported for normally distributed continuous data, medians, 25th-75th percentiles for non-normal continuous data, and frequencies and percentages for categorical data.

RESULTS

Patient characterization

Over the three-year period, 320 children and young adults

were enrolled in the program. Fifty-three (17%) died during the period. The overall median age was 6 years (25th to 75th percentile: 1 to 16) and 58.4% were male. Mean clinical severity was 6.0 (± 2.2). Congenital diagnoses constituted 80.3% (n=257) of the underlying conditions, with a predominance of neuromuscular conditions and secondary respiratory insufficiency (e.g., spinal muscular atrophy, muscular dystrophies, spinal cord injury and complex conditions related to hypoxic ischemic encephalopathy or epilepsy syndromes) [38]. The most common types of respiratory support were artificial and ventilator support (130, 40.6%) and non-invasive support (87, 27.2%). Many patients maintained public and private co-insurance (141, 44.1%) and many were covered by public insurance alone (123, 38.4%). Participants were geographically distributed throughout New England but most were close to Boston with a median driving distance to BCH of 33.4 miles (25th to 75th percentile: 16.7, 52.9). Table 1 reflects demographic and patient characteristics by fiscal year, while Table 2 reflects characteristics of only newly enrolled patients each year in the period from October 2011 through September 2014.

CAPE program utilization

A total of 8,434 encounters were captured using the adapted CCMT in the three-year evaluation. The median annual number of encounters per patient was seven during that period with quartile distributions provided in Table 1. When clinical severity was split at its median of 7, those in the low severity group (n=146) had a mean of 20.0 (± 24.7) encounters over three years, while those in high severity group (n=174) had a mean of 31.7 (± 30.5) encounters, $p < 0.001$. The majority of encounters occurred in the outpatient setting with phone encounters responsible for nearly half (Table 2). Most encounters were clinically focused, but ~44% involved some care coordination. From a clinical man power perspective, while the average number of annual encounters per patient increased from 9.5 to 14.5 over the three-year period, most of this growth was in asynchronous E-mail (60%) and telephone (20%) communication. Meanwhile, the necessary number of more labor-intensive clinic and home visits declined. Telemedicine, although available to all, was used infrequently. There was no association between insurance status and the type or quantity of services used.

Parent-reported experience

Of the 196 parents who were eligible to participate in the formal evaluation of CAPE, 76% (n=102) completed the CAHPS. Patient and family characteristics are reported elsewhere.⁴ Briefly, parent respondents had a mean age of 40.6 (± 8.9), 82.4% were female, and 73.7% were non-Hispanic/White. Most parents (84.7%) were married or living together. Half had at least a college education and nearly half (49.5%) reported a household income $> \$80,000$ (2009 National and Massachusetts median incomes being \$44,389 and \$64,081, respectively). More than half of CAPE families reported that their child's insurance "always" (52.5%) or "usually" (9.1%) covered their necessary services. More than one-third (38.4%) did not know the details of their coverage but half (50.5%) reported that their child's health condition had caused financial hardship for their family.

Self-reported resource utilization for the six months prior to

Table 1: Characteristics of CAPE Patients by Year.

	FY2012	FY2013	FY2014	FY2012-2014 Total
Patients with encounters, n	218	236	240	320
Encounters per patient, median (q1, q3)	5 (2, 12)	7 (3, 17)	9 (3, 22)	17 (5, 37)
Child age at CAPE enrollment, median (q1, q3)	9 (2, 18)	8.5 (2, 17)	6 (1, 16)	6 (1, 16)
Child male, n(%)	124 (56.9%)	144 (61%)	147 (61.3%)	187 (58.4%)
Baseline severity at enrollment ^a , mean (SD) median (25 th -75 th percentile)	6.2 (2.1) 7 (5, 8)	5.9 (2.2) 7 (4, 8)	6 (2) 7 (5, 7)	6 (2.2) 7 (4, 8)
Patients by Service Type, n(%)				
Residential	18 (8.3%)	13 (5.5%)	10 (4.2%)	21 (6.6%)
Respiratory	91 (41.7%)	105 (44.5%)	99 (41.3%)	148 (46.3%)
Specialty	109 (50%)	118 (50%)	131 (54.6%)	151 (47.2%)
Diagnosis, n(%)				
Acquired injury	34 (15.6%)	31 (13.1%)	30 (12.5%)	42 (13.1%)
Anomalies (All)	32 (14.7%)	38 (16.1%)	42 (17.5%)	53 (16.6%)
Chronic lung disease	22 (10.1%)	28 (11.9%)	27 (11.3%)	37 (11.6%)
Congenital heart disease	9 (4.1%)	8 (3.4%)	8 (3.3%)	13 (4.1%)
Dystrophies	31 (14.2%)	34 (14.4%)	33 (13.8%)	45 (14.1%)
SMA Types I, II, III	56 (25.7%)	63 (26.7%)	66 (27.5%)	87 (27.2%)
Other	34 (15.6%)	34 (14.4%)	34 (14.2%)	43 (13.4%)
Acquired/Congenital Diagnosis, n(%)				
Acquired	46 (21.1%)	47 (19.9%)	47 (19.6%)	63 (19.7%)
Congenital	172 (78.9%)	189 (80.1%)	193 (80.4%)	257 (80.3%)
Respiratory support, n(%)				
Artificial	18 (8.3%)	17 (7.2%)	17 (7.1%)	28 (8.8%)
Artificial + Ventilator	94 (43.1%)	100 (42.4%)	107 (44.6%)	130 (40.6%)
Non-invasive	67 (30.7%)	67 (28.4%)	68 (28.3%)	87 (27.2%)
None	39 (17.9%)	52 (22%)	48 (20%)	75 (23.4%)
Insurance status from medical chart ^b , n (%)				
Private and Public	103 (47.3%)	109 (46.2%)	112 (46.7%)	141 (44.1%)
Private Only	25 (11.5%)	37 (15.7%)	34 (14.2%)	53 (16.6%)
Public Only	90 (41.3%)	89 (37.7%)	91 (37.9%)	123 (38.4%)
Other	0 (0%)	1 (0.4%)	3 (1.3%)	3 (0.9%)
Driving distance from BCH, median (25 th -75 th percentile)	32.5 (15.9, 50.3)	31.8 (16.8, 52.7)	32.8 (16.5, 55)	33.4 (16.7, 52.9)

Analyses include specialty, respiratory, and residential patients

^aBaseline severity reported in 2/2012 for patients enrolled in CAPE prior to that date and collected at date of enrollment into CAPE for subsequent patients.

^bInsurance status may not all be up-to-date because it was taken from the medical chart

Table 2: CCMT Activity and Encounters by Year.

	FY2012	FY2013	FY2014
	218	236	240
Number of encounters	2069	2893	3472
Average number of encounters per patient	9.5	12.3	14.5
Encounters by type			
Clinic	171	187	146
per patient	0.8	0.8	0.6
% total	8.3%	6.5%	4.2%
E-mail	130	606	870

	per patient	0.6	2.6	3.6
	% total	6.3%	20.9%	25.1%
Home Visit		300	283	322
	per patient	1.4	1.2	1.3
	% total	14.5%	9.8%	9.3%
Inpatient		434	576	676
	per patient	2.0	2.4	2.8
	% total	21.0%	19.9%	19.5%
Telemedicine		7	32	18
	per patient	0.03	0.14	0.08
	% total	0.3%	1.1%	0.5%
Telephone		1026	1193	1357
	per patient	4.7	5.1	5.7
	% total	49.6%	41.2%	39.1%
Encounters by service				
Residential		42	50	23
	% total	2.0%	1.7%	0.7%
Respiratory		401	662	547
	% total	19.4%	22.9%	15.8%
Specialty		1626	2181	2902
	% total	78.6%	75.4%	83.6%
Any care coordination		911	1224	1539
	per patient	4.2	5.2	6.4
	% total	44.0%	42.3%	44.3%

CAHPS administration revealed that 92.1% (n=93) of children had at least one non-urgent (i.e., routine) visit with a clinician, while nearly half (44.6%, n=45) had at least five non-urgent visits. Nearly two-thirds (64.7%, n=66) of parents reported the need for urgent or emergency care. Thirty-five percent of respondents (n=35) reported that their child had had at least five interactions with the CAPE team over the past 6 months. Overall, parents were highly satisfied with CAPE services, with a mean satisfaction rating of 9.3 (± 1.3) out of 10. Most parents reported that the CAPE team understood the child's (96.0%, n=95) and family's day-to-day life (86.9%, n=86).

DISCUSSION

Here we describe our experience with a model of care wherein families of children with extremely complex medical conditions are given open access to medical specialty and care coordination services. Under this paradigm, we found utilization to be high, but relatively stable, and not excessive. Over three years, the primary growth of service consumption was in telephone and email communication, some of that offset by declines in face-to-face visits. Just less than half of all requested services involved care coordination. The vast majority of families was extremely satisfied with the service they received and believed that providers were in touch with their needs.

Program utilization appeared to be independent of payer status, likely reflecting the uniform nature of need in this population. Although parental education and income levels

among CAHPS respondents were substantially above median, the perception of the adequacy of their insurance coverage was mixed and the majority of families experienced financial problems related to their child's health, despite their socio-economic status. This underscores the need for programs offering more supports that are comprehensive. Augmenting social work, case management, parental counseling, sibling support, and advocacy could benefit all families. Further efforts are required to identify subpopulations with heightened challenges, whether related to access, employment, education, transportation, or other social stressors. Motivation and interest of individual medical providers, families, and other invested parties to support children with reliance on home mechanical respiratory and other complex needs remain high. Our findings, however, coupled with our previously reported evaluation of HRQL [7,44], impact surveys by Quint et al., [45], and high resource utilization, suggests that care coordination for this vulnerable group of children remains formidable [28]. Trends in the "open access" period highlighted increased telephone and electronic encounters with the need for care coordination, highlighting gaps in current systems.

Comprehensive programs for children with complex needs offer a mechanism for supporting families while pursuing the Triple Aim of improving the patient experience, improving the health of this population, and reducing overall cost [35,46]. Alternative, collaborative hospital and community-based care models are required to optimize resource utilization and health outcomes [47,48]. The Pennsylvania Ventilator Assisted

Children's Home Program (VACHP), founded at the Children's Hospital of Philadelphia in 1979, established standards of care, demonstrated cost savings, and found decreased mortality amongst enrolled patients with a rate of 25% versus 12% between 1979-1900 and 1991-1999, respectively [49,50]. A limited pediatric critical care phone follow-up pilot demonstrated increased parent satisfaction and highlighted parents' "anger and frustration over the difficulties they experienced with regards to communication and the coordination of services." [51] Alternative care models, such as these, buttress the resources and supports for primary physicians, homecare nurses, therapists, and other community providers, which also impacts the child and family. Hence, the high levels of satisfaction reported in the current study likely reflect parental appreciation of the nature and quality of care as well as the continuous accessibility.

In this project, the modified CCMT was an invaluable tool for tracking all encounters and care coordination activities. Documentation of clinical activity and the nature of encounters permits accurate evaluation of staffing demands and tracking of care patterns that may not be apparent in the medical record. The frequency of care-coordination activities captured in the CCMT here also highlights the need for programs that link patients to services and resources [52]. This is a hallmark of *specialty integrated care programs*, which operate with the understanding that medical care can be ineffective unless social service, mental health, health-education, and case management needs are met [53-55]. Indeed, it is now widely accepted that care-coordination is imperative for children and young adults with special healthcare needs to optimize their HRQL and outcomes for them and their families [52,56]. The majority of the CAPE Program home visits and clinic evaluations were multidisciplinary; more granular assessment of encounter and care coordination activity is needed in the future to assess program efficiency and cost as well as to further refine the care model.

In a fee-for-service environment, host institutions, government subsidies, or limited private grant support usually underwrites programs, such as CAPE. This is not only a significant barrier to patient access, but seriously limits program evolution in response to patient and family needs, scalability, sustainability, and replication. Ultimately, program sustainability will require alternative payment models, but experimentation with those models requires some reassurance that costs are controllable. Experience here suggests that programs such as this are feasible and that giving families a "blank check" does not "break the bank". Future studies will need to evaluate the nature (i.e., routine, acute, and follow-up), staffing (i.e., sole or combination MD, RT, NP, social work, or administrative), timing (i.e., evenings, weekends, and holidays vs. "office hours"), and outcomes of encounters to help estimate program costs, drive care models, and approximate global healthcare savings.

While this experience is that of a single-center, it represents a very large cohort of children with chronic, mechanical respiratory support needs. Based upon population data, the CAPE Program likely captures a majority of such patients in New Engl and [38,50,57] and the 76% survey completion rate is high, given the stressors faced by participating families. Longitudinal assessment will be necessary to determine if the positive perception of this

program translates to hard outcome measures. In addition, the CAHPS represents a minimally burdensome screen for providers to gauge satisfaction with all aspects of their child's healthcare, but more evaluation that is detailed is warranted with attention to siblings, family financial encumbrance, school impact, work place productivity [58] and other family-centered outcomes. There is also additional need for broad-reaching assessment of resource availability and utilization, including school and community services, primary care, home nursing or personal care assistance, mental health, emergency and tertiary care, and durable medical equipment services. Finally, regional variability, such as distance considerations in rural areas or public transportation in dense urban areas, primary care and subspecialty availability, and institutional capacity may require program modifications, integration of tele-health programs, and alternative staffing. Most importantly, a rigorous evaluation of healthcare cost implications is required.

CONCLUSIONS

The CAPE and Home Ventilation Program, as a specialty-augmented medical home for children with CRI was well utilized by families. It has the potential to improve child and family-centered outcomes. The program both acknowledges and demonstrates an important partnership with families and community-based services for acute care practitioners in transitions of care and for high-risk children and young adults [59]. Ongoing needs assessment and follow-up will allow providers to improve access, standardize care, identify potential interventions and promote program evolution. As we continue in an era of active healthcare reform, exploring accountable care models and alternative payment schemas with public and private insurer engagement, patient-reported measures, condition-specific metrics, resource utilization/cost data, and other metrics will need to be utilized in conjunction with tools, such as a modified CCMT, to delineate the complexity of care and its impact. Measurement of care provision is crucial for determining efficacy, gauging efficiency, and guiding the expansion and refinement of care programs, including the CAPE Program.

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Contributor's statement

Robert J. Graham: Dr. Graham conceptualized and designed the study, reviewed all data analysis for interpretation, drafted the initial manuscript, and approved the final manuscript as submitted.

Michael L. McManus: Dr. McManus conceptualized and

designed the study, reviewed all data analysis for interpretation, critically reviewed the manuscript, and approved the final manuscript as submitted.

Angie Mae Rodday: Ms. Rodday was engaged in the initial study design, carried out the initial analyses, reviewed and revised the manuscript, and approved the final manuscript as submitted.

Ruth Ann Weidner: Ms. Weidner was engaged in the initial study design, coordinated the data collection and initial analysis, reviewed and revised the manuscript, and approved the final manuscript as submitted.

Susan K. Parsons: Dr. Parsons conceptualized and designed the study, coordinated and supervised data collection, reviewed all data analysis for interpretation, critically reviewed the manuscript, and approved the final manuscript as submitted.

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