Service Line Director Appraisal: Evaluating Impact on Provider Satisfaction in a Rural-Based Clinic

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ABSTRACT

Introduction: Rural-based health care systems face unique concerns, including the struggle to recruit and retain quality clinicians. We evaluated health care providers' perceptions of their service line directors (SLDs) in the Marshfield Clinic Health System to understand how these perceptions affect job satisfaction in a rural health care setting.

Methods: Utilizing quantitative and qualitative methods, we reached out to providers within the health system, excluding SLDs to prevent bias. The survey, with a 43% response rate, encompassed 14 questions focusing on 8 domains of engagement. Data analyses included chi-squared tests, *t* tests, analysis of variance, and correlation matrices. To delve deeper into perceptions, a qualitative approach was employed, analyzing open-ended feedback.

Results: Of the 457 respondents, 70% reported satisfaction with their SLDs. High meeting frequencies with SLDs were positively correlated with satisfaction. The majority acknowledged the positive attributes of SLDs in domains like availability, recognition, and feedback. However, significant variations in perceptions arose between physicians and advanced practice clinicians and between surgeon and non-surgeon SLDs. Qualitative feedback elucidated themes including engagement, communication, and advocacy. Positive attributes, such as competence and proactivity, were mentioned frequently, while negatives highlighted disconnectedness and being uninformed.

Conclusions: The quality of interactions with SLDs significantly influences clinician satisfaction. Regular, meaningful interactions – especially recognizing and providing feedback – enhance satisfaction. However, certain groups like advanced practice clinicians under surgeon SLDs felt less engaged. Our findings underscore the importance of tailored leadership training for SLDs and suggest organizational strategies to boost satisfaction, potentially affecting recruitment and retention in rural health care settings.

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INTRODUCTION

Rural-based health care systems face unique challenges: vast service areas, variable regional health care needs, and the struggle to provide uniform access to services.[1,2] These health care systems also can struggle to recruit and retain the quality health care providers who are crucial for aligning services with organizational mission and vision.[3,4] To balance patient and provider satisfaction with a range of services, rurally based health care systems must reckon with many impacting factors.[3,5]

Service line directors (SLDs) have emerged as a significant solution in navigating these challenges.[4,6-9] First introduced in the 1980s, the concept of service line management is not monolithic, and various leadership structures exist.[8] In complex regional health care settings, where each specialty service line can have distinct demands, SLDs provide strategic oversight and leadership.[7,9,10] Evidence suggests that SLD effectiveness significantly affects the satisfaction and retention of service line providers, which in turn improves patient satisfaction and overall health care delivery.[4,5,11] For clarity, "service line providers" generally refer to professionals delivering patient care specific to a certain medical specialty or department within the health care system; the term encompasses physicians, surgeons, and other advanced practice clinicians (APCs).[6] The SLD model

centralizes the role of service line leadership within the health system infrastructure, providing agility in a dynamic rural health care landscape.[4,5,7,12]

One survey found various models for service line leadership structures in health care organizations, over 75% of which implemented a dyad structure.[13] By comparison, our institution, Marshfield Clinic Health System (MCHS), utilizes a single SLD, implemented in approximately 10% of organizations surveyed.[13] Notably, that survey reported inconclusive results with respect to the dyad model; ours identified both positive and negative characteristics of the single SLD model. Considering MCHS's expansive regional footprint and diverse service offerings, our study can offer some perspectives for similar institutions navigating the challenges of rural health care delivery.

METHODS

Clinical Environment

MCHS ranks among the largest, private, multidisciplinary, multispecialty private group practices in the United States. It covers a largely rural service area in central, northern, and western Wisconsin, spanning more than 45 000 square miles and including multiple regional settings designated as health professional shortage areas. Recent studies have provided a more detailed description of MCHS.[14-16] Leadership includes the chief medical officer (CMO) and the credentialing and privileging officer. Collaborative discussions between MCHS's CME, chief operating officer, and service line representatives envisioned an operational model integrating regional operations with service and support lines to improve operational and provider functions. Appendix 1 shows areas of emphasis under each focus area. Appendix 2 shows service line/support infrastructure involving physician and administrative leadership, stratified by the 6 organizational constructs.

Study Design and Measures

Using a retrospective cross-sectional design, a survey approach was applied to query the service line provider population and test the validity of 3 hypotheses posited by the MCHS leadership. Our study aimed to validate these hypotheses: (1) physicians who perceive heightened engagement from their SLDs are more likely to report elevated job satisfaction levels; (2) a positive experience with the leadership qualities of SLDs across 8 pivotal performance domains is positively linked to job satisfaction; and (3) the duration of SLDs' service and their experience at MCHS are directly proportional to the perceived level of SLD engagement in their service line. Our hypotheses were rooted in both the existing literature and the unique organizational priorities of MCHS.

The CMO designed a survey tool comprising 14 questions to gather perspectives from service line providers about their experiences (Appendix 3). To ensure survey content validity, we engaged in informal iterative discussions and collected feedback from domain experts. A pilot test was carried out involving select service line providers not included in the final study, leading to refinements in the survey. For distribution, the survey was sent via Survey Monkey to identify participants using their official MCHS email addresses. The survey was emailed in September 2020 to 1143 physicians and APCs. All service line providers within MCHS formed our sampling frame. However, to eliminate potential bias and conflicts of interest, SLDs were deliberately excluded from the survey, aligning with best practices in survey research to avoid potential bias.[7-9] Responses were collected through October 2020. To boost the response rate, we sent weekly reminder emails after the initial distribution. We had a 43% response rate, as determined by American Association for Public Opinion Research definitions.[17] Participation was voluntary and anonymous. The study received an Institutional Review Board exemption.

To articulate service line provider perspectives, we defined 8 domains of SLD engagement that corresponded to specific questions (questions 5-12) in our survey tool. These questions captured sentiments about the availability of the SLD to the provider, the degree of respect experienced, recognition of work, provision of feedback, awareness of policy changes, fostering a conducive work environment, fairness in policy application, and support towards professional development. Each of these domains was evaluated with a binary yes/no format. A pivotal differentiation was made between "physician" and "non-physician/APCs." Dentists were included under the "physician" category. The "non-physician" or APCs included certified registered nurse anesthetists (CRNA), certified nurse midwife, nurse practitioners, and physician assistants. We segmented our participants based on their tenure length at MCHS: providers with 1 to 4 years were categorized under "early career," those who had been with MCHS for 5 to 15 years fell into the "mid-career" bracket, and those with more than 15 years of service were labeled "mature career." We separated the professional background of the SLDs themselves into "surgeon" and "non-surgeon" SLDs. Surgeon SLDs belonged to specialties such as otolaryngology, gynecology, anesthesia, general surgery, dentistry, cardiology, and orthopedics. Non-surgeon SLDs originated from diverse service lines such as primary care, core support services, and regional support services. We categorized the frequency of meetings between providers and their SLDs as a measure of engagement. Over the preceding year, meetings that occurred 0 to 1 time were labeled as "low," those that happened 2 to 3 times were termed "intermediate," and sessions that convened 4 or more times were defined as "high." For satisfaction metrics, we employed a 3-tier system: "satisfied" combined responses of "extremely satisfied" and "satisfied," the "neutral" designation remained consistent, and "unsatisfied" combined "extremely unsatisfied" and "unsatisfied." We delved into the correlations between meeting frequency, the 8 domains, and reported satisfaction.

Analyses

We adopted a mixed-methods approach. Quantitatively, we utilized descriptive statistics, chi-squared tests, *t* tests, analysis of variance, and correlation matrices, among others, consisting of 457 individuals. Using SAS version 9.4 (SAS Institute Inc), we conducted chi-squared tests for categorical data to compare responses based on different classification criteria. We employed *t* tests or analysis of variance to assess the 8 domains of engagement and the frequency of SLD meetings. For deeper exploration, we transformed the levels of satisfaction numerically, allowing us to carry out correlation testing. Using the correlation matrix, we investigated associations among the number of meetings, the 8 domains of engagement, and the overall satisfaction level. All the analyses set a statistical significance threshold of ≤0.05.

Also, we embarked on a comprehensive qualitative analysis using Word Cloud Generator,[18] similar to previous studies.[19,20] Among 491 respondents, 212 provided open-ended feedback to question 14. Comments of respondents (N = 16) who worked at MCHS for less than 1 year were excluded, because comments generally were limited to statements pointing to the short duration of their employment. Thus, of the 457 respondents who have been working at MCHS 1 year or more, 196 provided feedback in the open-ended question. However, commentary by some providers (N = 16) contributed no relevant insights into SLD characteristics and were not analyzed further. Hence, qualitative analysis was achievable on comments from 180 of 196 of respondents. Of the respondents, 212 provided feedback on an open-ended question; 180 of these were analyzed thoroughly. A thematic analysis of these responses identified central themes and subthemes related to dissatisfaction/satisfaction with SLDs. Two of our team members initially reviewed a subset of the comments independently to pin down emergent themes. We then

Table 1. Characteristics and Survey Responses Study Participants (N = 457)

Variables	Descriptive Statistics N (%)	Bivariate Analysis APCs,[a] n (%)	Physician, n (%)	*P* value
Job title				
Certified registered nurse anesthetist	14 (3)			
Certified nurse midwife	4 (1)			
Nurse practitioner	73 (16)			
Physician assistant	41 (9)			
Physician	304 (67)			
Dentist	21 (5)			
Service line directors				
Chief medical officer	13 (3)			
Core support lines	99 (22)			
Credentialing and privileging	21 (5)			
Primary care service lines	164 (26)			
Regional support lines	3 (1)			
Specialty service lines	147 (32)			
I am not sure	10 (2)			
Frequency of meeting in past year				
Low (0–1 time)	182 (40)	75 (57)	107 (33)	<0.0001
Intermediate (2–3 times)	123 (27)	36 (27)	87 (27)	
High (4 and more)	152 (33)	21 (16)	131 (40)	
Years of working at MCHS				
1–4 years (early career)	122 (27)	37 (28)	85 (26)	0.0008
5–15 years (mid-career)	187 (41)	69 (52)	118 (37)	
>15 years (mature career)	145 (33)	26 (20)	119 (37)	
Level of satisfaction				
Satisfied	319 (70)	79 (60)	240 (74)	0.0002
Neutral	71 (16)	35 (26)	36 (11)	
Unsatisfied	67 (15)	18 (14)	49 (15)	
Q5 – Available: my SLD is available to me when I have suggestions or concerns to address				
No	37 (8)	17 (13)	20 (6)	0.0157
Yes	412 (92)	116 (87)	300 (94)	
Q6 – Respectful: my SLD treats me with respect				
No	27 (6)	11 (9)	16 (5)	0.1624
Yes	419 (94)	118 (91)	301 (95)	
Q7 – Recognition: my SLD recognizes me for a job well done				
No	83 (19)	39 (30)	44 (14)	<0.0001
Yes	360 (81)	90 (70)	270 (86)	
Q8 – Feedback: my SLD provides me with constructive advice/feedback				
No	104 (23)	46 (36)	58 (18)	<0.0001
Yes	339 (77)	81 (64)	258 (82)	
Q9 – New policy: my SLD keeps me informed of MCHS policy changes and initiatives				
No	70 (16)	31 (24)	39 (12)	0.0015
Yes	379 (84)	97 (76)	282 (88)	
Q10 – Environment: my SLD works to provide an environment promoting success				
No	86 (20)	30 (24)	56 (18)	0.1487
Yes	355 (80)	96 (76)	259 (82)	
Q11 – Unbiasedness: my SLD applies policy and directives fairly				
No	54 (12)	23 (18)	31 (10)	0.0146
Yes	384 (88)	102 (82)	282 (90)	
Q12 – Supportive: my SLD supports my development as a professional				
No	81 (18)	29 (23)	52 (17)	0.1024
Yes	359 (82)	96 (77)	263 (83)	

Abbreviations: APC, advanced practice clinician; MCHS, Marshfield Clinic Health System; SLD, service line director; Q, question.

[a]APCs include certified registered nurse anesthetist, certified nurse midwife, nurse practitioner, physician assistant, dentist.

Table 2. Classification by the Level of Satisfaction: Satisfied, Neutral, and Unsatisfied

Variables	Satisfied n (%)	Neutral n (%)	Unsatisfied n (%)	*P* value
Frequency and number of meetings in past year				
Low (0–1 time)	92 (29)	52 (73)	38 (57)	<0.0001
Intermediate (2–3 times)	100 (31)	8 (11)	15 (22)	
High (4 and more)	127 (40)	11 (16)	14 (21)	
Years of working at MCHS				
1–4 years (early career)	88 (28)	25 (35)	9 (14)	0.0399
5–15 years (mid-career)	124 (39)	29 (41)	34 (52)	
>15 years (mature career)	106 (33)	17 (24)	22 (34)	
Q5 – Available: my SLD is available to me when I have suggestions or concerns to address				
No	1 (0)	11 (17)	25 (38)	<0.0001
Yes	317 (100)	55 (83)	40 (62)	
Q6 – Respectful: my SLD treats me with respect				
No	1 (0)	6 (9)	20 (31)	<0.0001
Yes	314 (100)	61 (91)	44 (69)	
Q7 – Recognition: my SLD recognizes me for a job well done				
No	13 (4)	35 (54)	35 (54)	<0.0001
Yes	300 (96)	30 (46)	30 (46)	
Q8 – Feedback: my SLD provides me with constructive advice/feedback				
No	19 (6)	40 (63)	45 (69)	<0.0001
Yes	295 (94)	24 (37)	20 (31)	
Q9 – New policy: my SLD keeps me informed of MCHS policy changes and initiatives				
No	12 (4)	29 (45)	29 (43)	<0.0001
Yes	306 (96)	35 (55)	38 (57)	
Q10 – Environment: my SLD works to provide an environment promoting success				
No	8 (3)	29 (48)	49 (73)	<0.0001
Yes	305 (97)	32 (52)	18 (27)	
Q11 – Unbiasedness: my SLD applies policy and directives fairly				
No	5 (2)	16 (26)	33 (53)	<0.0001
Yes	309 (98)	46 (74)	29 (47)	
Q12 – Supportive: my SLD supports my development as a professional				
No	10 (3)	27 (44)	44 (68)	<0.0001
Yes	303 (97)	35 (56)	21 (32)	

Abbreviations: MCHS, Marshfield Clinic Health System; Q, question; SLD, service line director.

Table 3. Classification by the Years of Working at Marshfield Clinic Health System: Early, Mid and Mature Careers

Variables	Early Career[a] n (%)	Mid Career[b] n (%)	Mature Career[c] n (%)	*P* value
Frequency of meeting in past year				
Low (0–1 time)	40 (33)	73 (39)	67 (46)	0.0165
Intermediate (2–3 times)	46 (38)	49 (26)	28 (19)	
High (4 and more)	36 (29)	65 (35)	50 (35)	
Q5 – Available: my SLD is available to me when I have suggestions or concerns to address				
No	7 (6)	17 (9)	11 (8)	0.5675
Yes	112 (94)	167 (91)	132 (92)	
Q6 – Respectful: my SLD treats me with respect				
No	3 (3)	13 (7)	10 (7)	0.2077
Yes	114 (97)	171 (93)	132 (93)	
Q7 – Recognition: my SLD recognizes me for a job well done				
No	17 (14)	37 (21)	28 (20)	0.3567
Yes	102 (86)	143 (79)	113 (80)	
Q8 – Feedback: my SLD provides me with constructive advice/feedback				
No	23 (19)	43 (24)	25 (26)	0.5033
Yes	95 (81)	138 (76)	105 (74)	
Q9 – New policy: my SLD keeps me informed of MCHS policy changes and initiatives				
No	17 (14)	31 (17)	22 (15)	0.8139
Yes	102 (86)	152 (83)	122 (85)	
Q10 – Environment: my SLD works to provide an environment promoting success				
No	17 (14)	36 (20)	32 (23)	0.2404
Yes	101 (86)	142 (80)	110 (77)	
Q11 – Unbiasedness: my SLD applies policy and directives fairly				
No	10 (9)	28 (15)	16 (12)	0.2045
Yes	106 (91)	153 (85)	122 (88)	
Q12 – Supportive: my SLD supports my development as a professional				
No	16 (14)	38 (21)	26 (19)	0.2683
Yes	101 (86)	142 (79)	114 (81)	
Level of satisfaction				
Unsatisfied	9 (7)	34 (18)	22 (15)	0.0399
Neutral	25 (21)	29 (16)	17 (12)	
Satisfied	88 (72)	124 (66)	106 (73)	

Abbreviations: MCHS, Marshfield Clinic Health System; Q, question; SLD, service line director.
[a]Early career: 1–4 years, N = 122, 26.9%.
[b]Mid-career: 5–15 years, N = 187, 41.2%.
[c]Mature career: >15 years, N = 45, 31.9%.

proceeded to align the remaining comments under these themes with follow-up discussions and consensus-building. The comments provided insights into what leadership qualities providers value. After streamlining synonyms and similar concepts and arriving at a list of positive and negative leadership attributes, we generated word clouds that allowed stakeholders to quickly identify and understand the most valued leadership traits and areas for improvement.

RESULTS

Quantitative Analysis

As shown in Table 1, respondents included 304 physicians (67%), 73 nurse practitioners (16%), 41 physician assistants (9%), and 14 CRNAs (3%). Satisfaction was reported by 70% of respondents, with 16% neutral and 15% unsatisfied. Most respondents noted SLD availability (92%) and respectful treatment (94%), with 81% feeling recognized and 77% receiving constructive feedback. Most respondents also reported awareness of new policies (84%), fairness (88%), and feeling supported (82%). Meeting frequency varied, with 40% reporting low, 27% intermediate, and 33% high meeting frequency. Significant differences were observed in meeting frequency between APCs and physicians. Low meeting frequency was reported by 57% of APCs versus 33% of physicians, while 40% of physicians reported high meeting frequency compared to 16% of APCs ($P < 0.0001$). APCs also reported lower recognition (70% vs 86%; $P < 0.0001$) and feedback (64% vs 82%; $P < 0.0001$). Satisfaction levels differed, with 60% of APCs satisfied compared to 74% of physicians ($P = 0.0002$). APCs were less likely to feel informed about

new policies (76% vs 88%; $P = 0.0015$) and perceived lower fairness (82% vs 90%; $P = 0.0146$).

Satisfaction levels were significantly associated with meeting frequency (Table 2), with 40% of respondents in the high-frequency group expressing satisfaction compared to 29% in the low-frequency group ($P < 0.0001$). Satisfaction also varied across career stages, with 28% of early-career, 39% of mid-career, and 33% of mature-career providers reporting satisfaction ($P = 0.0399$). Respondents who felt recognized (96%) or informed about policies (96%) were significantly more likely to be satisfied ($P < 0.0001$). Respectfulness (100% satisfaction; $P < 0.0001$) and feedback (94% satisfaction; $P < 0.0001$) were also strongly associated with satisfaction.

As shown in Table 3, meeting frequency differed significantly across career stages, with 46% of mature-career providers reporting low frequency compared to 33% of early-career providers ($P = 0.0165$). Perceptions of availability (94% early, 91% mid, 92% mature) and respectfulness (97% early, 93% mid, 93% mature) did not vary significantly. Recognition rates were slightly higher for early-career respondents (86%) compared to mid-career (79%) and mature-career (80%), though not statistically significant.

Table 4 demonstrates that perceptions of non-surgeon SLDs were generally more favorable than those of surgeon SLDs. Non-surgeon SLDs were reported as available by 95% of respondents compared to 89% for surgeon SLDs ($P = 0.0289$). Recognition was also higher under non-surgeon SLDs (86% vs 74%; $P = 0.0017$), as was feedback (81% vs 70%; $P = 0.0093$). Satisfaction levels were significantly higher under non-surgeon SLDs, with 42% extremely satisfied compared to 32% under surgeon SLDs ($P = 0.0227$). Surgeon SLDs were perceived as less effective in keeping respondents informed about new policies (78% vs 90%; $P = 0.0005$).

Table 5 highlights correlation analysis findings, which revealed significant positive relationships between meeting frequency and recognition ($r = 0.48$, $P < 0.0001$) and feedback ($r = 0.48$, $P < 0.0001$). Satisfaction was moderately correlated with meeting frequency ($r = 0.35$, $P < 0.0001$) and feedback ($r = 0.57$, $P < 0.0001$). Strong correlations were observed between feedback and recognition ($r = 0.71$, $P < 0.0001$), emphasizing the interdependence of these domains. Respectfulness had a lower correlation with satisfaction ($r = 0.39$, $P < 0.0001$), suggesting it is less predictive of satisfaction than other domains.

Table 3. Classification by Surgeon Versus Non-surgeon Service Line Directors (SLDs)

Variables	Non-Surgeon SLDs n (%)	Surgeon SLDs n (%)	*P* value
Job Title			
Advanced practice clinicians	73 (26)	55 (32)	0.1940
Physician	203 (74)	116 (68)	
Frequency and numbers of meeting in past year			
Low (0–1 time)	104 (37)	70 (41)	0.7088
Intermediate (2–3 times)	75 (27)	47 (27)	
High (4 and more)	97 (38)	54 (32)	
Years of Working at MCHS			
1–4 years (early career)	69 (25)	50 (29)	0.5647
5–15 years (mid-career)	116 (43)	65 (38)	
>15 years (mature career)	88 (32)	56 (33)	
Q5 – Available: my SLD is available to me when I have suggestions or concerns to address			
No	14 (5)	18 (11)	0.0289
Yes	258 (95)	150 (89)	
Q6 – Respectful: my SLD treats me with respect			
No	17 (6)	9 (5)	0.7402
Yes	256 (94)	156 (95)	
Q7 – Recognition: my SLD recognizes me for a job well done			
No	37 (14)	42 (26)	0.0017
Yes	234 (86)	122 (74)	
Q8 – Feedback: my SLD provides me with constructive advice/feedback			
No	51 (19)	49 (30)	0.0093
Yes	219 (81)	116 (70)	
Q9 – New policy: my SLD keeps me informed of MCHS policy changes and initiatives			
No	28 (10)	38 (22)	0.0005
Yes	244 (90)	131 (78)	
Q10 – Environment: my SLD works to provide an environment promoting success			
No	41 (15)	42 (26)	0.0057
Yes	230 (85)	120 (74)	
Q11 – Unbiasedness: my SLD applies policy and directives fairly			
No	23 (9)	27 (17)	0.0126
Yes	244 (91)	136 (83)	
Q12 – Supportive: my SLD supports my development as a professional			
No	40 (15)	38 (23)	0.0270
Yes	229 (85)	125 (77)	
Level of satisfaction			
Extremely satisfied	115 (42)	54 (32)	0.0227
Satisfied	91 (33)	56 (33)	
Neutral	37 (13)	30 (18)	
Unsatisfied	15 (5)	22 (12)	
Extremely unsatisfied	18 (7)	9 (5)	

Abbreviations: MCHS, Marshfield Clinic Health System; Q, question.
Sample size: surgeon SLDs (N = 171, 39.0%); non-surgeon SLDs (N = 276, 63.0%).

Qualitative Analysis

The qualitative analysis identified key themes of leadership qualities, engagement, communication efficacy, advocacy, and supportiveness, while highlighting systems issues that challenge SLDs. As shown in Appendix 4, among the 6 main service lines, leaders under "specialty service lines" had the lowest satisfaction; leaders under "regional support lines" had the highest. Word clouds depicted in Appendix 5A (positive) and Appendix 5B (negative) illustrate the prominence of these qualities, with terms like "competent" and "receptive" dominating positive feedback, while "disconnected" and "ineffective" were central to negative perceptions. Physicians and non-physicians attributed 199 and 59 positive qualities, respectively, with physicians noting more negative attributes (Appendix 6). Surgeons described fewer positive qualities (41 citations) compared to non-surgeons (151 citations), while negative attributes like "disconnected" and "uninformed" were more

Table 5. Correlations Among Numbers of Meeting, Eight Domains of Engagement, and Level of Satisfaction

	Meeting No.	Available	Respectful	Recognition	Feedback	New Policy	Environment	Unbiasedness	Supportive	Satisfaction
Meeting No.	1									
Available	0.28	1								
Respectful	0.23	0.51	1							
Recognition	0.48	0.48	0.43	1						
Feedback	0.48	0.51	0.42	0.71	1					
New Policy	0.35	0.57	0.33	0.46	0.58	1				
Environment	0.39	0.51	0.47	0.63	0.64	0.64	1			
Unbiasedness	0.34	0.56	0.50	0.50	0.59	0.60	0.64	1		
Supportive	0.35	0.51	0.50	0.64	0.65	0.57	0.67	0.63	1	
Satisfaction	0.35	0.46	0.39	0.50	0.57	0.45	0.60	0.52	0.57	1

prevalent among surgeon-led SLDs (Appendix 7). Word clouds stratified by professional experience showed "competent" as a universally valued quality, while terms like "disconnected" and "ineffective" appeared frequently among mid- and late-career groups, reflecting detailed perceptions across tenure (Appendix 8). Positive leadership qualities, including "competent" (97 mentions), "receptive" (26 mentions), and "proactive" (16 mentions) were cited frequently, alongside negative attributes such as "disconnected" (28 mentions) and "uninformed" (21 mentions) (Appendix 9).

DISCUSSION

Our evaluation of service line providers' perceptions of their SLDs in MCHS's rural health care setting uncovered several significant findings. First, a substantial 70% of respondents expressed satisfaction with their SLDs. Many reasons for this contentment may exist, as provided in our second finding: that regular, meaningful interactions from SLDs (ie, recognizing and providing feedback) significantly boost provider satisfaction levels. This finding was corroborated by a positive correlation between meeting frequencies and increased satisfaction. Third, while most respondents acknowledged SLDs for positive attributes (availability, feedback, etc), our analysis exposed distinct variations in perceptions--particularly between physicians and APCs. This divergence was more pronounced between surgeon and non-surgeon SLDs. Certain groups—especially APCs under surgeon SLD—reported less engagement. These results accentuate a need for tailored SLD leadership training. Strategic organizational shifts might enhance satisfaction, ultimately influencing provider recruitment and retention for rural health care settings.

Regarding the 3 hypotheses, our exploration also unearthed useful outcomes. The first hypothesis receives support from the 70% respondent satisfaction. In terms of the second hypothesis, we found that while most domains associated with leadership qualities of SLDs were positively tied to job satisfaction, nuances existed. For instance, consistent recognition and constructive feedback from SLDs were strong determinants of satisfaction, but respectful treatment—though significant—correlated relatively lower with overall satisfaction. The frequency of meetings with SLDs was only moderately correlated with satisfaction, suggesting that meeting quality mattered more than sheer frequency. Our third hypothesis postulated a direct correlation between the tenure of SLDs at MCHS and their perceived engagement levels, but such an association was not found. This insight challenges the presumption that tenure of leadership serves as a proxy measure of effectiveness.

Our findings both resonate with the existing medical leadership literature and contribute novel insights. Our results showed that effective SLDs were seen as credible experts by service line members; a systematic review of medical leadership in hospital settings likewise found lower levels of satisfaction correlated with a perceived lack of credibility.[21] Our study reinforces findings around the struggle for rural health care institutions to provide uniform access, and the role leadership plays navigating such struggles.[1,2] Our observed 70% satisfaction rate with MCHS SLDs also emphasizes their recognized role in aligning service delivery with organizational objectives and effective communication.[4,6,8] Other research has found that leadership roles and competencies impact the service line management approach or that such leadership impacts quality of health care service provided, while others have examined various service line models, including the dyad.[5,8,15] To these insights we add that the frequency and quality of SLD interactions deeply impact provider satisfaction. In analyzing the single SLD model, we find that the social nature of leadership itself manifests in meeting quality and perceived positive SLD characteristics. Thus, we emphasize the importance of continuous leadership development irrespective of tenure, challenging preexisting notions about the nature of leadership and encouraging a much-needed shift in leadership training.[22]

Conducting surveys among health care professionals poses intrinsic challenges in fast-paced settings like ours. Among providers, a survey's length and its perceived relevance significantly affect participation rate. Our moderate response rate (43%), then, suggests the importance of the SLD to their service line. Previous

research has revealed a median response rate of approximately 54% in physician surveys,[23] indicating that surveys in analogous settings could register below-median response rates. Thus, we characterize our 43% response rate as "moderate" based on the literature and our sense of achievement in response uptake from extraordinarily busy professionals.

Study Limitations

We acknowledge several study limitations. Response rates across service lines differed, and whether those who responded represent the whole is unknown. Service line size (which varies considerably) could impact these rates, but so could service line functions, as some represent support services and others deliver patient care. Any of these factors may affect the perception of an SLD's relative capabilities.

Our qualitative approach also had limitations. Though we found our survey tool effective, more delicate tools such as a Likert scale might capture the intensity of perceptions. The word clouds we generated only represent the frequency of words for leadership attributes and do not include themes that could be identified by other qualitative analyses. Usage of synonyms, umbrella terms, and other conflations might erase some nuance or overrepresent certain terms. More granular methods of presenting such data may emerge in future research.

We note that certain groups may have been over- or underrepresented in our subgroups. In the "job title" category, "physicians" were notably overrepresented, making up 67% of the responses. This representational imbalance may influence generalizability. Additionally, this study involves a single center, encompassing employees from 1 distinct geographic region and entailing limited generalizability.

We also note the potential for selection bias. Respondents might predominantly consist of the more engaged portion of the workforce. Those with stronger feelings—positive or negative—about the SLDs could have been more inclined to respond. This limitation should be considered when interpreting our study or comparing it with others.

CONCLUSIONS

Our evaluation of service line providers' perceptions of their SLDs within MCHS, set against the backdrop of a rurally based health care environment, made several discoveries. An overwhelming 70% of our participants expressed satisfaction with their SLDs. Crucially, the frequency and quality of interactions—especially those emphasizing recognition and constructive feedback—stood out as primary drivers. Conversely, disparities emerged, particularly between physicians and APCs. APCs under surgeon-led SLDs reported notably less engagement. This divergence underscores a pressing need for personalized leadership training catered to specific provider groups. Our findings suggest implications for policy and practice: tailored leadership development for SLDs (irrespective of tenure) and informed organizational strategies could markedly elevate provider satisfaction levels. These evidence-backed strategies can help rural health care institutions improve provider recruitment and retention.

Compliance with Ethical Standards: The Institutional Review Board (IRB) deemed the study did not meet the definition of research and was not subject to IRB oversight.

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