

Financial Impact of Telehealth: Rural Chief Financial Officer Perspectives

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Telehealth is promoted as a solution to the financial challenges facing rural hospitals and a means of preventing hospital closure.¹ For example, a Health Resources and Services Administration–sponsored Toolkit for Critical Access Hospitals asserted that telehealth decreases staffing costs and increases hospital revenue by reducing transfers to other hospitals.² Despite these potential advantages, adoption of different telehealth services (eg, telestroke, tele-intensive care unit [tele-ICU], telehealth for outpatient specialty consults) varies significantly across rural hospitals. A 2019 study from prior to the COVID-19 pandemic showed that 46% of rural emergency departments (EDs) did not have telehealth services and that cost was the biggest barrier to implementation.³

A hospital's decision to invest in new medical technologies is a complex one; adoption decisions are typically made by hospital leadership including clinicians and chief financial officers (CFOs). The more costly a proposed innovation, the more scrutiny it will receive,⁴ as hospital leaders weigh a variety of factors, including the likely return on investment.

Despite the critical role of perceived financial impact on the decision to implement telehealth, no prior research has explored the perspectives of rural hospital administrators on the business case for telehealth. Research on telehealth has historically focused on the experiences and attitudes of clinicians and patients,⁵⁻⁹ and although these stakeholders are critical, these parties do not typically have insight on the financial impacts or sustainability of telehealth programs in rural areas. Understanding how CFOs think about the return on investment of telehealth can inform efforts to promote telehealth utilization and to develop policy solutions to make telehealth more sustainable. We conducted interviews with rural hospital CFOs to understand the perceived impacts of a variety of telehealth services on hospital finances and how hospital administrators make decisions about adopting telehealth programs.

ABSTRACT

OBJECTIVES: To explore the perceived impacts of a variety of telehealth services on hospital finances and assess how hospital administrators make decisions about adopting telehealth programs.

STUDY DESIGN: From October 2021 to January 2022, we conducted semistructured interviews with chief financial officers (CFOs) of rural hospitals.

METHODS: Recruitment occurred in collaboration with 6 rural health collaboratives and hospital associations that facilitated CFO peer-learning groups. We used inductive and deductive approaches informed by a health care innovation adoption model to identify themes in the qualitative data.

RESULTS: Twenty rural hospital CFOs and other hospital administrators from 10 states participated in interviews. Seventeen (85%) represented critical access hospitals and 3 (15%) represented short-term acute care hospitals. Although CFOs believed telehealth has some financial advantages (eg, can help to avoid patient transfers), they did not believe that telehealth improved their hospitals' financial situations. CFOs, rather, seem motivated to implement telehealth services to improve quality of care and address patients' needs. CFOs reported that limited reimbursement, low volumes, preference for in-person care, and insufficient broadband were key challenges to telehealth's financial viability.

CONCLUSIONS: Understanding how CFOs think about the return on investment of telehealth can inform efforts to promote telehealth utilization in rural communities and to develop policy solutions to make telehealth more sustainable. CFOs may benefit from guidance on promising practices and cost-effective implementation strategies. Policy makers could take steps to improve telehealth's financial attractiveness (eg, through payment parity, subsidies to improve technology infrastructure).

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METHODS

Conceptual Framework

Our approach to data collection and analysis was informed by Flessa and Huebner's health care innovation adoption model.¹⁰ In this framework, we assume that a hospital CFO is in a position to be an administrative promoter of telehealth adoption. CFO support for a new telehealth service is influenced by many factors including the inclination to innovate (which depends in part on tolerance for risk) and the perceived financial impacts, including impact on revenue and costs. Further, the model suggests that CFOs will support an innovation only if they perceive system deficiencies. Because many rural hospitals face continued financial losses, we argue that many rural hospital CFOs will agree that change is necessary, and this will increase their support of telehealth. However, rural hospitals also have a number of characteristics that decrease the likelihood that they will embrace new innovations. For example, literature suggests that hospitals with less competition and fewer patients with private insurance are less likely to implement innovations.⁴

Study Sample

From October 2021 to January 2022, we conducted semistructured interviews with CFOs of rural hospitals. To recruit, we contacted 16 state-level organizations (rural health collaboratives and hospital associations) that hosted peer-learning networks in which CFOs met regularly to share resources. Six agreed to share recruitment materials and background on the study with participating CFOs via email and in standing meetings. CFOs were asked to contact the study team if they were interested in participating. Some organizations advertised the study to all CFOs in their networks, whereas others selected a subset. The organizations that selected a subset were asked to advertise the study to CFOs who varied with respect to rural location (rural vs frontier), hospital type (critical access hospital vs short-term acute care hospital), financial health, and types of telehealth programs. This instruction helped to support maximum diversity sampling. The only inclusion criterion was that each CFO represented a rural hospital.

We invited every CFO who contacted the study team to participate, and we continued to recruit until we reached thematic saturation, defined as the point at which new interviews did not uncover new themes.

Data Collection

Interviews were conducted via videoconference and followed a semistructured protocol. Topics included (1) basic hospital information (eg, location, payer mix); (2) existing telehealth programs in the ED, inpatient, and outpatient settings; (3) perceptions about the financial impact of each program; (4) drivers of financial impacts; (5) the role of telehealth in strategic planning efforts; and (6) policy and other

TAKEAWAY POINTS

Telehealth has been promoted as a solution to the financial challenges facing rural hospitals; however, interviews with chief financial officers (CFOs) did not support that assertion.

- ▶ Although CFOs believed telehealth has some financial advantages, they did not believe that telehealth improved their hospitals' financial situations.
- ▶ CFOs may benefit from guidance on promising practices and cost-effective implementation strategies.
- ▶ Policy makers who are interested in expanding telehealth to increase access to care could take steps to improve its financial attractiveness (eg, through payment parity, subsidies to improve technology infrastructure).

barriers to the financial sustainability of telehealth. Two members of the study team (L.U.-P. and J.L.S.) trained in qualitative research conducted the 60-minute interviews, and study staff recorded and transcribed the interviews. Each participant received a \$150 gift card for their time, and they provided verbal informed consent to participate. The RAND Institutional Review Board approved this study.

Analysis

We coded interview transcripts using qualitative research software (Dedoose version 9.0.17 [SocioCultural Research Consultants LLC]). We developed a hierarchically organized codebook to summarize themes and identify patterns. We used standard qualitative analysis techniques consisting of both inductive and deductive approaches to identify and characterize instances of themes arising from the domains in the conceptual framework interview guide, as well as unanticipated themes that emerged. The lead author (L.U.-P.) coded all transcripts, refining the codebook as she worked and adding relevant probes to interviews in progress.

We defined a theme as a concept noted by at least 2 participants. When identifying themes, we not only considered cohesiveness and prevalence across participant responses, but also incorporated perspectives that were inconsistent (ie, negative case analysis). We achieved consensus regarding the characterization of themes through interactive discussions among the research team.

To improve internal validity and transferability, we conducted respondent validation. We presented preliminary findings to 14 CFOs in a group meeting hosted by one of the participating organizations. Respondents largely affirmed the findings and provided additional context for certain points.

RESULTS

Twenty CFOs and other hospital administrators from rural hospitals in 10 states participated in interviews. Seventeen (85%) represented critical access hospitals and 3 (15%) represented short-term acute care hospitals. Sixteen (80%) represented hospitals with 25 or fewer beds, and 10 (50%) represented hospitals that operated at a financial loss in the prior 3 years (Table 1¹¹).

Most CFOs reported having multiple telehealth programs at their hospitals including inpatient services, ED-based services, and

TABLE 1. Participant Characteristics¹¹

Characteristic	n	%
Role		
CFO	17	85.0
CEO or COO	1	5.0
Other	2	10.0
Hospital type		
CAH	17	85.0
STACH	3	15.0
Geographic region		
Midwest	7	35.0
West	6	30.0
South	4	20.0
Northeast	3	15.0
Patient beds in 2019		
≤ 25	16	80.0
26-50	2	10.0
51-75	0	0.0
76-100	2	10.0
> 100	0	0.0
Total margin (average 3-year) ^a		
Total operating gain	10	50.0
Total operating loss	10	50.0
Current telehealth programs in place		
Telestroke	11	55.0
eICU	6	30.0
Primary care telehealth in RHC	5	25.0
Specialty outpatient	11	55.0
Urgent care	4	20.0
e-Hospitalist	4	20.0
Telepsychiatry (ED or inpatient)	6	30.0
Other (eg, e-pharmacy, school-based teleBH)	8	40.0

CAH, critical access hospital; CFO, chief financial officer; COO, chief operating officer; ED, emergency department; eICU, electronic intensive care unit; RHC, rural health clinic; STACH, short-term acute care hospital; teleBH, tele-behavioral health.

^aTotal margin = (total revenue – total cost) / total revenue. The total margin is negative if the facility has a total operating loss. Calculations are based on an average of the 3 most recent years for which CMS Provider of Services and Hospital Cost Report files are available, either 2018-2020 or 2017-2019.¹¹

outpatient services. The most common inpatient or ED program was telestroke and the most common outpatient service was tele-behavioral health. For inpatient or ED telehealth, the rural hospital generally served as the hosting site and connected patients to remotely located specialties. For outpatient telehealth, the hospitals sometimes served as the hosting site and at other times as the distant site (eg, rural health clinic providers employed by the hospital delivered telehealth visits to patients in their homes).

Most CFOs believed that telehealth was a loss leader or had a neutral impact on hospital finances. All but 1 hospital in the sample operated multiple telehealth programs; however, CFOs reported

that they were more motivated to implement telehealth to improve quality, and in some cases to keep up with competitors, rather than to improve their financial position. Although participants provided a few examples of select telehealth services that resulted in direct financial advantages, they provided more examples of telehealth programs that did not. Further, although participants felt that some specific services could have benefits, when reflecting on telehealth more broadly across multiple inpatient and outpatient services, CFOs were not enthusiastic about telehealth's direct financial advantages. **Table 2** features relevant quotes. According to a CFO from Iowa, "All these telehealth models that we're talking about are just new expenses brought on to the hospital without any kind of return on investment at all.... Now, all those things are a little harder... to get your arms around the exact dollar amount. But [telehealth results in] major, major improvements in the quality of our care, the safety of our care." A CFO from Oregon stated, "[Telehealth] is probably a little bit of a loss leader, but I think that we are a community health care provider that is really honestly more concerned about offering services."

Further, telehealth was not featured prominently in strategic planning. Only a handful of CFOs discussed their long-term plans for telehealth. A CFO from Washington stated, "We have not specifically discussed telemedicine as part of our strategy plan moving forward.... We're trying to remodel our hospital. So, a lot of our thought process is going toward that right now." A CFO from West Virginia said, "[Telehealth] is not a big focus. I don't see specific initiatives for next year for that, but... one of our [priorities], of course, is lowering the cost of health care." A CFO from Wisconsin explained, "In our last strategic planning cycle, we weren't focused at all on telemedicine...; we were still really focused on getting [more patients and providers]." When telehealth was discussed as part of a strategic plan, the focus was on increasing specialties via telehealth and growing remote patient monitoring programs.

Despite this general belief that telehealth was not profitable, CFOs did identify several direct and indirect financial benefits of select services. **Table 3** lists financial benefits and illustrative quotes. Just under half of interview participants reported that inpatient and ED-based telehealth programs help avoid patient transfers, allowing the hospital to retain more patients. Given that hospitalizations bring in a lot of revenue, some hospitals used telehealth as a strategy to increase inpatient volume and, by extension, their financial position. The next most commonly cited financial benefit applied to outpatient telehealth. Here, several CFOs believed that telehealth visits for primary care and specialty care may not generate much revenue on their own, but they can drive more profitable ancillary services (eg, laboratory testing). A handful of participants identified additional benefits. First, if a hospital can prevent transfers through inpatient telehealth and offer more complete services through outpatient telehealth, it can reduce the risk that it will permanently lose patients to competitors. Second, starting an inpatient telehealth program (eg, telehospitalist) is less expensive than having a full-time, in-person provider and can reduce

both direct labor costs and costs of recruitment. Third, during the pandemic, telehealth helped to sustain some outpatient practices because in-person visit volume dramatically declined.

CFOs were asked to explain the disconnect between a general belief that telehealth is a loss leader and these positive financial impacts. First, they clarified that telehealth requires substantial initial investments in the technology, and the downstream financial benefits are hard to quantify and are not always realized. A CFO from Iowa explained that some benefits “do not show up on a spreadsheet.” Further, CFOs pointed out that the utilization of the telehealth service is often not high enough to have significant downstream impact. Lastly, a belief that in-person care is generally superior to telehealth and should be provided when possible may have influenced their perceptions about financial advantages. The same CFO from Iowa explained, “That personal connection has been a cornerstone of how care is provided [in rural communities]...[it involves] actually touching [the] patient.”

CFOs mentioned several factors that prevented telehealth from being more profitable, including low reimbursement, the fact that services are often low volume, and lack of broadband. Several participants pointed out that reimbursement was too low for telehealth, particularly for outpatient rural health clinic visits. A few mentioned that with telehealth services, non-critical access hospitals may forgo the facility fee (ie, a fee that health care organizations can bill for a patient’s use of hospital facilities and equipment). Further, within rural health clinics, telehealth visits have extra technology costs and are reimbursed less. According to a CFO from Maine, “The rate that we get for a telemedicine visit is a quarter to a third of what we get paid for an in-person visit...But we still have to have all the staff, we still have to bill...[and] register the patient [and]...do everything just like the patient was coming in the building. So, there’s really not a lot of cost savings, but they don’t allow us reimbursed cost on those visits. We only get fee schedule reimbursement. And the way that the cost reporting works, it actually pulls cost away from our other functions for those visits.”

Cost-based reimbursement from Medicare for critical access hospitals reduces some

TABLE 2. Telehealth Has No Impact or a Negative Impact on Hospital Finances

Participant	Quote
CFO from Wisconsin	Economically, I would tell you that it’s more of an investment at this point than it is a steady revenue stream. I’m sure we spend more on the technology and having the technology available than what we’re billing and collecting for that infrastructure that we’ve had to put in place.
CFO from Oregon	It’s between a net neutral and a disadvantage only because of those [reimbursement] concerns that I brought up, and I don’t know what direction they’re going to go.
CFO from West Virginia	I think that [outpatient telecardiology] program will also just lend itself more to quality [than profit]. Obviously, cardiology services are probably one of the largest services provided in the area and our patients leave here for that service because we don’t provide that. And if those patients don’t have to travel 3 hours...That service, they normally travel 3 hours for. If they can stay here and get a lot of their follow-up appointments, that certainly helps them.
CFO from Illinois	I would say that we really haven’t changed our cost structure that much on the clinic side, meaning the staffing in the clinics is still pretty much about the same level as pre-COVID-19...so we still carry that expense. And now we’ve layered on the expense of the technology. So, today, not a profitable business line for us.
CFO from Iowa	All these telehealth models that we’re talking about are just new expenses brought on to the hospital without any kind of return on investment at all...Now, [it’s] a little harder...to get your arms around the exact dollar amount of all those things. But [telehealth results in] major, major improvements in the quality [and] safety of our care.
CFO from Oregon	[Telehealth] is probably a little bit of a loss leader, but I think that we are a community health care provider that is really honestly more concerned about offering services.
CFO from Florida	I’ll call it a loss leader for us right now.
CFO from California	We’re losing money on [telehealth]. That’s the big problem. Some of these licensed health care workers or psychologists or psychiatrists [who deliver telehealth services] are paid \$200 an hour, but we’re not getting paid that on some of these patients. [Still], it’s a service that we’re willing to provide, even if we’re not making money on it, because it’s such an important part of what the community needs right now: mental health.
CFO from West Virginia	[Outpatient telehealth] is not going to be a primary service line that will be profitable for us. It’ll be like a normal physician visit. And we don’t have high increase, expected growth or anything at this time.
CFO from Wisconsin	I would call it neutral. I don’t think that you make money off of that because the reimbursement is...It’s not bad for the professional piece of it. It’s not good, but it’s not bad.
CFO from California	We are responding to the community needs that we know we’re not going to make money on, but it’s just that careful balance, being a rural hospital, to keep the doors open and provide as many services as possible....[Telehealth is] a great service but it’s not anything that we’re going to hang our hat on. We’re not going to rely on the telemedicine to bring in a lot of revenue....There are some positive aspects, but it’s never been something that—without grants or something to support it—[has] been really a service that would stand on its own.
CFO from Oregon	In general, telemedicine, honestly, doesn’t pay over the long haul. It really doesn’t pay. It does help provide excellent patient care.
CFO from Wisconsin	From a financial standpoint, [telehealth for urgent care] wasn’t a huge loss, but we were probably talking in the tens of thousands of dollars a year that we were losing on the service at that time.
CFO from Maine	I don’t know of any examples of telehealth having a direct financial benefit....I don’t know that there’s been enough utilization to make a huge impact.

CFO, chief financial officer.

TABLE 3. Direct Financial Advantages

Quote	Setting to which the quote applies	
	Inpatient and/or ED	Outpatient
Help hospitals retain patients/avoid transfers		
I think, as we look more into the opportunity to provide telehealth services in the hospital, the opportunity to actually keep more patients here locally [will be a financial benefit for the hospital].	x	
As a rural hospital, [eICU has] helped us to retain patients...because we don't have 24/7 intensivist coverage in the ICU. With the eICU, we are able to retain the patients and prevent from transferring them.	x	
As we expand our stroke program [to inpatient from the ED], we can keep them, because now we can monitor the patient upstairs, and so the neurologist can keep an eye on them with the hospitalist. From a Medicare standpoint for us, our inpatient payment from Medicare is roughly...\$8000 a visit, and so it's a chunk of change for us.	x	
And [tele-ED] also allows us to keep some of the patients in house, whereas [without it], we may have had to send them out to another hospital....If we can keep these patients in the ED and treat them and then keep them in the hospital as an inpatient... that helps us immensely financially.	x	
We are reliant on [telehealth] at this point, to allow us to have a robust inpatient program...[because] part of the issue with the decline of rural health is that the inpatient service is being relocated out. It's difficult for a small hospital in a rural geography to employ physicians who are comfortable with such a vast range of diseases and illness....So then you start to move all of that inpatient volume out...even if you are building a large outpatient service, ultimately patients [will] go where their physicians are. So, if you don't have any specialties in your area, then you just become kind of an urgent care. So, I feel like adding the telemedicine and that specialty service to our hospital is actually why we're growing. And it's kind of contradictory to the thought process with rural hospitals right now, but I think we're proof that that needs to change. We've tripled in size in 4 years from a gross revenue perspective related to these [telehealth] programs. And I really feel like the telemedicine is what has allowed us to build it, especially from the inpatient side.	x	
I don't think any of us expected the virtual ICU to have the impact [on volume] on the inpatient side that it had for us. So I think that watching the financials change from that volume, I just didn't anticipate that we'd ever go from 2 or 3 [patients] per day to full [occupancy]. And we were shooting for double digits. We were shooting for 10 to 12....Yeah, I had to actually do it to be convinced.	x	
Drive ancillary services		
[Tele-]behavioral health does make some profit, but primary care, not as much. It does help get labs and other services demanded. Our primary care type services, that's a little bit more challenging. But we get revenue through referrals back to the hospital for labs and imaging and additional, say, surgeries, and that's what primary care clinics really drive. Primary care clinics on their own, if you just look only at that, really are not moneymakers. It's about...an entry point for your patients to support the rest of the hospital.		x
Of course, initially, [the direct financial benefit of telehealth] would be the grant funding to help us provide that service, but then we're looking at [whether patients] receive other services. So if they have the one visit, that visit may result in...other ancillary services. And we want to be their provider of choice. In this community, we're the only hospital, obviously, being a critical access hospital... But also it's just that patient relationship with their providers: They've come in, they've had a service, and then they need some type of follow-up care or they're referred to another specialty. Well, we want them to stay within our system. So rather than them receiving that same visit from another provider, we're keeping it within.		x
The one thing telehealth could do is if [patients] stay in the [hospital] community, there should be some downstream revenue from that. For example, with telecardiology, you'll have [echocardiograms], you'll have other labs, that kind of thing.		x
We're not going to rely on the telemedicine to bring in a lot of revenue. It's a great community service. There are some ancillary benefits...some of the providers or labs or some different items that they can do here, which is great.		x
Reduce the risk of permanently losing patients to competitors		
These are patients [who] are in our community, and they do have a primary care physician, but not an intensivist...and it is reality that sometimes when you transfer those patients out of your community, you don't just lose them for that visit, you potentially can lose them permanently. Because now all of a sudden, they're establishing a relationship with a different hospital provider and potentially [other] new physician relationships. And so that becomes a very challenging situation for us, because we're not growing [with respect to] demographics. So, each patient we lose, there's not somebody that's ready to fill that spot in there.	x	
If [we] don't provide telehealth for specialty and we refer out, we may never get them back.		x
I think as the program grows more and more, there will be more ancillary revenue created by telemedicine, but it's a lot of those specialty services that, hey, it's amazing that they can access it here and, hey, maybe those people will actually come here more often...and will utilize the services and not leave.		x

(continued)

TABLE 3. (Continued) Direct Financial Advantages

Quote	Setting to which the quote applies	
	Inpatient and/or ED	Outpatient
Reduce labor and provider recruiting costs		
Yeah. It's positive, because again, I don't think we'll be able to recruit and retain psychiatry [providers] here. So, I think it's a very viable method for us.	x	
This [teleshospitalist] program has big financial benefit because it is cheaper than in-person staff. And honestly, with our model, we get into some wonky things where we did lose some reimbursement along the way, but it made up for itself with, again, not having someone here [in person]....It also helps with finding people; doctors are hard to find these days.	x	
The other area where this whole idea of telehealth really made an impact...[was in] the ability for us to [recruit and] maintain a good physician workforce....We began to see that physicians...coming out of training [were] less and less inclined to do everything....[So, now] at 6:00 PM the [telehealth internal medicine physicians], via the e-hospitalist [program], take it over for the night. So again, these [telehealth services] are things that I'm not being paid to do. It's a fairly significant expense. I'm being paid for the inpatient care, but I don't get extra because I brought on e-docs, right? It just doesn't work that way. So, it was another expense brought on to the hospital [to start this program]. But it really helped us with our physician recruiting.	x	
Help sustain practices during the pandemic		
The only thing I will say is the telehealth visits during COVID-19, while we were shut down, did help sustain our physician practices, but that would be about the only financial impact.		x
Telehealth is a positive because it allowed us to keep up volume—I think it's a positive, ultimately. It gives us another way to see patients that we didn't really have reliably before.		x

ED, emergency department; eICU, electronic intensive care unit.

of the financial risk associated with implementing telehealth because most costs are supported; however, not all costs related to telehealth implementation are allowable. A CFO from Maine explained, "Certain things with telemedicine are allowable. [With our] e-hospitalist [program], one of [the] most expensive telehealth services that we're doing...we don't receive any support for that as it relates to cost-based reimbursement."

Further, CFOs pointed out that frequently, the low rate at which telehealth services are utilized means they cannot be profitable. This is the case because of both the fixed, limited demand for services in a small community and rural culture, in which in-person connection is valued.

Finally, limited broadband in rural communities has discouraged hospitals from growing outpatient telehealth programs that serve patients in their homes. Also, limited broadband requires that hospitals invest more in infrastructure when establishing inpatient programs. A CFO from West Virginia explained, "I think [outpatient telehealth is] an opportunity for us to expand, but I do feel like we're going to be limited because of the location. We're at the mercy of someone having internet or having the capability. We're not projecting increased volumes because of those limitations." A CFO from Wisconsin explained how broadband can be challenging for inpatient programs as well: "If you're going to provide a tele-ICU solution, you're going to have to make sure that you have some significant redundancies in your [information technology] infrastructure...[and] anytime you're putting in fiber infrastructure, it is a really expensive venture for a small critical access hospital....I guess that's one major risk that I see in rural telemedicine, especially when you're talking [about] more critical

levels of care: You just can't afford to have it go down. Having significant downtime is just not an option. That part is a little scary, because you don't have your specialists here on site."

Participants also expressed a variety of views about how competition posed challenges for their telehealth offerings. One CFO from West Virginia pointed out that her hospital was concerned that if it aggressively pursued telehealth for outpatient specialty care, patients who prefer in-person care would go elsewhere for care. A CFO from Oregon echoed a similar concern: "If you're doing telemedicine [for outpatient specialty care], you don't have to go to our hospital. You can go to those tertiary facilities that are offering the telemedicine."

CFOs identified several policy barriers that affected telehealth financial viability, including lack of payment parity, uncertainty about the reimbursement environment, and the requirement that critical access hospitals maintain an average length of stay of less than 96 hours. Several CFOs mentioned that lack of payment parity for telehealth and in-person visits, especially for rural health clinic visits, was a barrier to the growth of telehealth programs. As stated earlier, Medicare reimburses less for rural health clinic telehealth visits, and as an additional challenge, telehealth visits are carved out of cost-based reimbursement, so they involve additional accounting challenges. An important reason why lack of parity is a concern is that there is fixed demand for outpatient visits in many rural communities. As such, replacing an in-person visit that generates more revenue with a telehealth visit that generates less revenue is problematic. A CFO from Washington state explained, "[Telehealth] was a glaring concern, because [the reimbursement for] it was approximately \$110 less than what we normally get reimbursed for an in-person visit. And since we are kind of volume based, the

providers...can do quite a few more telehealth visits, if that's what they're doing. But we have such a small volume in general that they're replacing all the in-person visits...[and] there's not enough [patients] to have [providers] double up on total visits." Several CFOs also pointed out that uncertainty about the reimbursement environment and how reimbursement will change as the pandemic evolves has prevented them from optimizing telehealth services and making them as efficient as possible. A CFO from Illinois stated, "We just haven't felt comfortable enough to aggressively look at that service optimization."

Finally, a few CFOs mentioned that the requirement that critical access hospitals maintain an average length of stay of less than 96 hours was a barrier to the growth of their inpatient and ED-based telehealth programs. The concern was that with a program like tele-ICU, hospitals would keep higher-acuity patients with longer inpatient stays. However, there was not universal agreement on whether this rule posed a significant threat to the growth of telehealth. A CFO from California explained, "At the critical access hospital, the average length of stay has to be less than 96 hours...So, if we're doing telehealth, we are able to treat things that are going to [increase] their length of stay....Ordinarily, if you didn't have telehealth, you would discharge them." In contrast, a CFO from Maine pointed out, "It's the overall average for your entire population. But I don't think the one rare [telehealth] patient here or there would impact my average length of stay."

When asked about lessons learned and advice to other rural hospitals, several CFOs suggested that rural hospitals pursue grants to cover technology costs, choose a distant site that is not in a position to cannibalize your business (ie, don't partner with a local organization that could be a source of competition for patients), and consider hidden costs when starting programs (eg, ensure that whatever system you implement captures data elements required for external reporting so that additional funds are not needed to develop solutions after the fact).

DISCUSSION

Telehealth has been promoted as a solution to the financial challenges facing rural hospitals; however, discussions with CFOs in our study did not support that assertion. Although CFOs believed that some select telehealth services had financial advantages, they did not believe that telehealth overall improved their hospitals' financial situations. CFOs, rather, seem motivated to implement telehealth services to improve quality of care and address patients' needs. Limited reimbursement, low volumes, preference for in-person care, and insufficient broadband are key challenges to telehealth's financial viability. Given CFOs' lack of enthusiasm for the direct financial benefits of telehealth, we were surprised that so many hospitals in our sample had multiple, robust telehealth programs.

CFOs in our sample identified many of the same financial advantages that other literature has discussed, including increased local revenue for ancillary services, reduced labor costs (eg, from

sharing distant site personnel with other facilities), and fewer transfers.^{1,2,12,13} Our results are consistent with those of a study by Haque et al, which also identified somewhat negative views about the financial impact of telehealth. Similar to our findings, hospital staff from frontier critical access hospitals reported that the high upfront costs for equipment combined with low use would likely lead to a negative impact on financial performance.¹⁴

Limitations

A key limitation is that CFOs who agreed to participate in this study may have more interest in telehealth and/or more extreme views of (both in support of and against) telehealth.

CONCLUSIONS

Our study findings imply that CFO perceptions regarding financial impacts will be a barrier to the continued growth of rural telehealth. Although we explored perceptions of the financial impact rather than quantitative data on actual impacts, we argue that CFO attitudes are highly relevant to decisions to invest in telehealth.

It is possible that telehealth does have financial advantages that CFOs have not yet observed directly. If so, they could benefit from guidance on promising practices and examples of successful programs that could in turn influence their perceptions and increase their support for telehealth. This might include a focus on more cost-effective implementation strategies. A 2015 study by MacKinney et al showed that a tele-emergency program can generate a \$187,614 profit in a high-revenue/low-expense scenario and a \$69,588 loss in a low-revenue/high-expense scenario.¹⁵

Another possibility is that the financial benefits of telehealth to rural hospitals are exaggerated. If telehealth really "doesn't pay" in the majority of cases, then policy makers who are interested in expanding telehealth to increase access to care should take steps to improve its financial attractiveness (eg, through payment parity, subsidies to improve technology infrastructure). Further, policy makers can work to finalize permanent, postpandemic telehealth policy. CFOs may be reluctant to optimize telehealth services and thus achieve these services' true potential until there is a clear signal as to what reimbursement for different telehealth services will look like in coming years. ■

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