Background
Telehealth includes a broad spectrum of health care including clinical services that utilize telemedicine as well as automated services, electronic systems or information resources. Telehealth and telemedicine have been used interchangeably in literature and terminologies differ across agencies and departments of the U.S. Government. Telehealth applications include live videoconferencing, mobile devices, apps, remote patient monitoring and store-and-forward (asynchronous).

Although there have been many studies assessing the cost-effectiveness and patient acceptance of telehealth as well as perspectives from physicians, psychologists and nurses, the perspective of PAs as service providers has received little attention.

It is not known the number of PAs who are currently providing services using telehealth. However, David Mittman, PA, DFAAPA, the president of the American Academy of PAs recently announced the appointment of a virtual health care/telemedicine committee to examine the roles of PAs in the evolving environment.

In order to better understand perceived barriers and effective usage of telehealth for PAs, HTRC launched a survey in July 2019. The survey was designed to inform development of tools and resources made available to PAs through the Heartland Telehealth Resource Center (HTRC).

PA Demographics
In their annual, 2018 report, the National Commission on Certification of Physician Assistants (NCCPA) found that there were 131,152 certified PAs in the US. Females comprised the majority of PAs with 68.8% and the median age was 38 (2018 Statistical Profile of Certified Physician Assistants). Currently, there are 1,177 PAs in Missouri, 1,129 in Kansas, 1,542 in Oklahoma registered with NCCPA.

Methods
A survey on the use and perception of telehealth was sent via LISTSERV to 2523 PAs residing in Oklahoma, Kansas and Missouri. The email addresses of the PAs were purchased through a vendor. Of the 2523 email addresses, 183 were found to be invalid and nine unsubscribed from the list. Three of the 95 were screened out because they were not certified PAs. After being contacted by a participant who alerted us that we might encounter PAs who were not currently certified but planned to continue
working as PAs, we added an option to the question allowing respondents to choose “formerly certified.” Three participants chose this designation after it was added.

One reminder email was sent out about a week after the original invitation. The survey was open for a period of nine days.

To increase response rate, PAs were offered the opportunity to win one of six $50 Amazon gift cards if they opted to be included in the drawing.

The survey consisted of 28 questions with a comment section. Questions addressed demographics, type of health care facility, field of practice, knowledge and use of telehealth applications. One question was directed at only physician assistants who had used telemedicine in their practice.

The survey questions were partially adapted from the Perspectives of Nurses toward Telehealth Efficacy and Quality of Health Care survey (Bashir & Bastola, 2018) and a Missouri Telehealth Network survey of providers (Becevic et al., 2015).

Results
Out of a sample size of 95, 92 reported being currently or formerly certified as PAs. Fifty-seven females and 38 males responded to the survey. The median age of the respondents was 47 years. Twenty-eight of the respondents reported being from Kansas; 30 from Missouri and 41 from Oklahoma.

<table>
<thead>
<tr>
<th>In which state(s) do you practice? (n=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oklahoma</td>
</tr>
<tr>
<td>Missouri</td>
</tr>
<tr>
<td>Kansas</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

When asked to self-report the type of community where their practice is located, urban and rural were nearly tied at 27% and 25% respectively. Twenty-three percent reported working in a suburban setting. Five percent used text entry to specify other venues, including a military base.
Facility type
Thirty-six percent of respondents reported clinics as their primary workplace and 26% as hospitals or health systems. The remaining PAs reported 17% in private practice, 9% in government agencies and 5% in academic settings.

Practice specialty
In response to practice specialty, PAs were asked to mark all that applied. Forty-one percent of the responses were in primary care, followed by surgical subspecialty at 16%. The NCCPA 2018 statistical profile found that 25.8% of PAs worked in primary care (family medicine/general practice, general internal medicine, and general pediatrics) and 18.5% in surgical subspecialties. In this response group, 41% of PAs worked in primary care (internal medicine, primary care, and pediatrics).
Funding

As a HRSA grantee, HTRC is encouraged to work with other HRSA grantees, therefore, we asked whether the organizations where the respondents worked received HRSA funding. A majority, 50% of the PAs surveyed did not know whether their facility received HRSA funding. Only 7.5% of the PAs indicated that they do receive funds from HRSA, however, a number of PAs who were unsure indicated that they worked at facilities such as public clinics, that probably receive some HRSA funding.

Telehealth usage

In response to whether their organization used telehealth, forty-three percent responded “yes” and fifty-seven percent responded “no.” In those organizations that had telehealth capacity, only 19 PAs had used the service.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care</td>
<td>41.3%</td>
</tr>
<tr>
<td>Surgical subspecialty</td>
<td>16.3%</td>
</tr>
<tr>
<td>Other</td>
<td>13.0%</td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>12.0%</td>
</tr>
<tr>
<td>Urgent care</td>
<td>7.6%</td>
</tr>
<tr>
<td>Dermatology</td>
<td>3.3%</td>
</tr>
<tr>
<td>Cardiology</td>
<td>3.3%</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>3.3%</td>
</tr>
<tr>
<td>Behavioral health</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

In what specialty do you practice? (n=92)

Does your organization use any telehealth services? (n=92)

<table>
<thead>
<tr>
<th>Use Telehealth</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>43.5%</td>
</tr>
<tr>
<td>No</td>
<td>56.5%</td>
</tr>
</tbody>
</table>
PAs were also asked to indicate frequency of telehealth use. Seventy-eight percent said that they had never used telehealth. 6.4% answered once a year; and 7.5% answered about once a month. Among the 22% of PAs who had used telehealth, only 35% of those could be described as frequent users, once a week or more.

![Telehealth use by PAs](chart)

Although only 19 PAs reported using telehealth, 40 reported that their facility had telehealth services, so more than half of PAs who reported that their organization is using telehealth are not using it themselves.

**Types of telehealth**

Videoconferencing was reported as the most common type of telehealth service that facilities had, with 27% of PAs responding that their facility used videoconferencing. Mobile devices and remote patient monitoring were the second most common with 13% reporting use of mobile devices and 12% use of remote patient monitoring. Store-and-forward was the least utilized type with only 10% of PAs reporting use.
When asked about what percentage of patients receive services via telehealth at their facility, answers ranged from 0% to 60%. A PA at a primary care tribal health clinic responded that videoconferencing was used with 60% of patients.

**Characteristics of PAs who had used telehealth**

PAs who reported having used telehealth were less likely to practice in an urban area and less likely to work in a clinic. They were more likely to practice in a rural area, work at a hospital and have a primary care practice. However, the only statistically significant differences were a lower likelihood of working in an urban area and a higher likelihood of working in primary care.

**What services are available via telehealth at your organization? (n=92)**

<table>
<thead>
<tr>
<th>Service</th>
<th>Used (n=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videoconferencing</td>
<td>27.2%</td>
</tr>
<tr>
<td>Mobile device</td>
<td>13.0%</td>
</tr>
<tr>
<td>Remote patient monitoring</td>
<td>12.0%</td>
</tr>
<tr>
<td>Apps</td>
<td>10.9%</td>
</tr>
<tr>
<td>Store-and-forward</td>
<td>9.8%</td>
</tr>
<tr>
<td>Other</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

**Characteristics of people who have used telehealth vs. those who have not**

<table>
<thead>
<tr>
<th>Location</th>
<th>Had NOT used telehealth (n=72)</th>
<th>Have used telehealth (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care*</td>
<td>36.1%</td>
<td>63.2%</td>
</tr>
<tr>
<td>Hospital</td>
<td>20.8%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Clinic</td>
<td>21.1%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Rural</td>
<td>20.8%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Urban*</td>
<td>5.3%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

*Statistically significant difference between those who have and have not used telehealth
Not surprisingly, PAs who had used telehealth were more likely to work at organizations that used telehealth. What is surprising is that less than half of the PAs working in organizations that used telehealth had personally used telehealth.

<table>
<thead>
<tr>
<th></th>
<th>PA has used telehealth</th>
<th>PA has NOT used telehealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization has telehealth</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>Organization does NOT have telehealth</td>
<td>1</td>
<td>51</td>
</tr>
</tbody>
</table>

**Perceptions of PAs**

Perceptions of PAs about telehealth were gauged using two questions with a five-point Likert scale.

Both groups of PAs, those who had used telehealth and those who had not, were asked about their perception of telehealth. Most previous research related to clinician acceptance of telehealth surveyed only clinicians who had used telehealth. However, since one of the main goals of this research was to understand barriers to telehealth use, it was important to include PAs, whether or not they had used telehealth. Therefore, all participants were asked to respond with their level of agreement to each of the following statements:

- Telehealth allows PAs to see more patients.
- I have received sufficient training to provide telehealth.
- Telehealth is not relevant to the jobs of most PAs.
- My patients want to use telehealth.
- Telehealth could expand my scope of practice.

The most robust agreement was with the statement that telehealth could help expand scope of practice, registering at 58.7%. Nearly half also agreed that telehealth allows PAs to see more patients, though those who had used telehealth were less likely to agree with this statement. Thirty-six percent of respondents agreed that their patients want to use telehealth. Agreement with this statement was similar for PAs who had and had not used telehealth.

Those who had used telehealth were significantly more likely to say that they had received sufficient training to provide telehealth than those who had not used it (42.1% compared to 12.5%).
Chose agree or strongly agree in 5 pt. Likert scale

*Statistically significant difference between those who have and have not used telehealth

Only one Likert-scale statement was phrased in the negative: “Telehealth is not relevant to the jobs of most PAs.” Only 7.6% of respondents agreed with this statement, while 68.5% disagreed with this statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>ALL respondents</th>
<th>Have NOT used telehealth (n=72)</th>
<th>Have used telehealth (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telehealth allows PAs to see more patients.</td>
<td>48.9%</td>
<td>54.2%</td>
<td></td>
</tr>
<tr>
<td>I have received sufficient training to provide telehealth.*</td>
<td>31.6%</td>
<td>12.5%</td>
<td>42.1%</td>
</tr>
<tr>
<td>My patients want to use telehealth.</td>
<td>35.9%</td>
<td>36.1%</td>
<td>36.8%</td>
</tr>
<tr>
<td>Telehealth could help expand my scope of practice.</td>
<td>58.7%</td>
<td>55.6%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Perceptions of PAs who had used telehealth were measured in another set of Likert-scale statements:
- For the most part, I am satisfied with the work I have done through telehealth.
- I can easily communicate with my patients via telehealth.
- The technology or equipment I use for telehealth is easy to use.
• I am able to treat my patients well via telehealth.
• Telehealth equipment consistently functions as designed.
• I feel confident using technology to provide telehealth.

All of the statements were phrased positively and a majority agreed with each.

A Chi-squared test was used to measure whether there was a relationship among several of the variables. There was a significant relationship between the statements “telehealth could help expand my scope of practice” and “I can easily communicate with my patients via telehealth,” with a P-value of .012. Also, there was a positive, statistically significant relationship between “I have received sufficient training to provide telehealth” and how often the PA used telehealth with a P-value of .03. There was a positive, statistically significant relationship between “I have received sufficient training to provide telehealth” and “I am able to treat my patients well via telehealth.”

<table>
<thead>
<tr>
<th>Percetage of PAs who have used telehealth and agree with the following statements (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the most part, I am satisfied with the work I have done through telehealth.</td>
</tr>
<tr>
<td>I can easily communicate with my patients via telehealth.</td>
</tr>
<tr>
<td>The technology or equipment I use for telehealth is easy to use.</td>
</tr>
<tr>
<td>I am able to treat my patients well via telehealth.</td>
</tr>
<tr>
<td>Telehealth equipment consistently functions as designed.</td>
</tr>
<tr>
<td>I feel confident using technology to provide telehealth.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>63.2%</td>
</tr>
<tr>
<td>57.9%</td>
</tr>
<tr>
<td>68.4%</td>
</tr>
<tr>
<td>52.6%</td>
</tr>
<tr>
<td>52.6%</td>
</tr>
<tr>
<td>68.4%</td>
</tr>
</tbody>
</table>

Chose agree or strongly agree in 5 pt. Likert scale

**Barriers to telehealth**

In a question about barriers to telehealth, all respondents were asked to mark all that apply. Lack of equipment and lack of provider training were seen as the major barriers to telehealth, with 51% and 49%, respectively, agreeing that these were barriers. Reimbursement and “patients are not comfortable with telehealth” were next with 41% and 39% respectively.

Both PAs who had used telehealth and those who had not noted lack of equipment as a barrier. This was the number one barrier chosen by those who had not used telehealth. PAs who had not used telehealth were also concerned with lack of training (52.8%).

HTRC
Interestingly, PAs who *had* used telehealth were significantly *more* likely to say that a barrier was patients not being comfortable with telehealth. At 68%, this barrier was by far the most prominent among PAs who had used telehealth, while the second most common answer, lack of equipment, registered at 47%.

### Perceived barriers among PAs

- **Lack of equipment**
  - Have NOT used telehealth (n=72): 52.8%
  - Have used telehealth (n=19): 47.4%
  - ALL respondents: 51.1%

- **Lack of provider training**
  - Have NOT used telehealth (n=72): 36.8%
  - Have used telehealth (n=19): 48.9%
  - ALL respondents: 52.8%

- **Reimbursement**
  - Have NOT used telehealth (n=72): 26.3%
  - Have used telehealth (n=19): 41.3%
  - ALL respondents: 45.8%

- **Patients are not comfortable with telehealth**
  - Have NOT used telehealth (n=72): 34.7%
  - Have used telehealth (n=19): 39.1%
  - ALL respondents: 31.9%

- **Unable to fit into workflow**
  - Have NOT used telehealth (n=72): 36.8%
  - Have used telehealth (n=19): 34.7%
  - ALL respondents: 34.8%

- **Competing clinical priorities**
  - Have NOT used telehealth (n=72): 29.2%
  - Have used telehealth (n=19): 29.3%
  - ALL respondents: 31.6%

- **Lack of support from leadership**
  - Have NOT used telehealth (n=72): 21.1%
  - Have used telehealth (n=19): 26.4%
  - ALL respondents: 25.0%

- **No barriers**
  - Have NOT used telehealth (n=72): 4.2%
  - Have used telehealth (n=19): 4.3%
  - ALL respondents: 0.0%

- **Other**
  - Have NOT used telehealth (n=72): 11.1%
  - Have used telehealth (n=19): 5.3%
  - ALL respondents: 13.0%

*Statistically significant difference between those who have and have not used telehealth

**Age**

Conventional wisdom is that younger clinicians are more comfortable with telehealth than older clinicians but that is not the case according to the survey data. To test this, respondents were divided into two groups based on the median age of the sample - 47 years. There were no statistically significant differences between the older and younger group for any of the following:

- Having ever used telehealth
• Agreement with any of the following statements:
  • Telehealth allows PAs to see more patients.
  • I have received sufficient training to provide telehealth.
  • My patients want to use telehealth.
  • Telehealth could expand my scope of practice.

However, there was a significant difference between the two groups on the question of relevance. The younger group was significantly less likely to agree that telehealth is NOT relevant to the jobs of most PAs. However, that significance disappeared when the two age groups were compared on whether they disagreed that telehealth is not relevant to the jobs of most PAs.

The mean age of respondents who had used telehealth was slightly older (49.7) than those who had not (47.9), though it was a statistical tie.

Legal Landscape of PAs in telehealth

Medicare
Currently, PAs are the only health professionals who cannot bill Medicare directly. Several pieces of legislation including the Physician Assistant Direct Payment Act, H.R. 1052, were introduced in the U.S. House in 2019.

Kansas
Kansas state law has a provision for indirect, direct and off-site supervision. With the enactment of HB 2028, the Kansas Telemedicine Act, private insurers are now mandated to reimburse for services delivered via telemedicine by PAs.

Oklahoma
In Oklahoma, constant physical presence by the physician is not required if the PA and physician can easily maintain contact via telecommunication.

Missouri
Missouri removed language listing eligible providers to avoid a piecemeal approach where the law would have to be amended to add new provider types. Instead, the law states that "any licensed health care provider shall be authorized to provide telehealth service if such services are within the scope of practice for which the health care provider is licensed." However, Missouri supervision laws require that the PA work in the same physical location as the supervising physician for at least four hours every 14 days.

When PAs were asked about laws impacting their use of telehealth, they indicated that they would be more likely to use telehealth if policies are changed to allow direct pay and make it easier for PAs to be licensed in multiple states. Fifty percent responded that they would be more likely to use telehealth if the Physician Assistant Direct Payment Act, H.R. 1052 (Medicare) passed, allowing direct payment to PAs (37% answered maybe). Sixty-seven percent said that if multi-state licensure were easier they would be more likely to use telehealth.
To a Kansas-specific question, 54% of Kansas PAs indicated that they would be more likely to use telehealth because of the enactment of the Kansas Telemedicine Act. This legislation mandates payer coverage of Kansas patients who receive health care services from PAs via telemedicine.

![Are you more likely to use telehealth if federal policy is changed? (n=92)](chart)

Open-ends
Three open-ended questions were asked to ascertain PAs’ perspectives on how telehealth will influence the practice of PAs, what would make it easier for them to use telehealth, and their predictions for the future of telehealth in their field.

In what ways do you think telehealth will affect the roles or practices of PAs? (62 responses)
Sixty-two participants responded to the open-ended question “In what ways do you think telehealth will affect the roles or practices of PAs?” Of those responses, 89% commented positively about the impact of telehealth on PA roles.

The top themes represented were:
- Increasing access to services for patients/coverage (30)
• Improving efficiency by making it easier to see more patients (9)
• Increasing employment opportunities for PAs (8)
• Expanding the scope of practice or roles of PAs (7)

Other positive themes mentioned were:
• Increased PA autonomy
• Elevating the profession
• Ability to work from home
• Increase provider collaboration with specialists
• Improving communication with patients
• Making it easier to refill medications
• Decreasing utilization of ERs

Though less frequent, several PAs expressed concerns:
• “The providers still need to see the patients and do a physical exam.”
• “Employers may try to shift more work through telehealth toward PAs”
• “May draw PAs away from what they are currently doing to transition to telemed”

Increasing coverage for rural communities was also cited by respondents. One PA noted
“I think telehealth enables providers to consult specialists from their clinics, which is helpful. But patients resist it unless I am in the room with that patient. Education about the potential benefits of telemedicine to the patient without the requirement of travel would help open up the minds of rural Kansans to the possibilities of telehealth.”

What could be done to make it easier for you to use telehealth? (54 responses)
Nearly half of PAs cited training, education and support as the main facilitators (24). Seventeen respondents mentioned equipment or technology as a facilitator. Several specific needs PAs mentioned were access to telemedicine systems from all exam rooms, standardization of the system and simplification of the EMR system. Five respondents mentioned policy change, with two of those five specifying the need for licensure compacts. Three more respondents brought up reimbursement. Two mentioned scheduling challenges, including this quote:
“[It is] easier if you have blocks of time reserved. I have telemedicine thrown in off and on all day and other people use the equipment so I [can’t] run late at all. Sometimes I am running my office patient out in order to get to the telemedicine patient.”

What do you think the future of telehealth will be? (56 responses)
As expected, expansion was the most common prediction for the future of telehealth. Three respondents commented that telemedicine was expanding but lack of in-person interaction with a provider was concerning. Several respondents also commented that they believed telehealth will become integrated into the “mainstream health system.” Development of team-based care was also mentioned by two respondents, though one said there will need to be a break from the fee-for-service
model if this is to come to fruition. Two respondents specifically commented on the potential for using telehealth with older patients:

“This could be helpful in performing Medicare Wellness exams as well as doing evaluations on patients who have a high fall risk or cannot drive.”

 “[Telehealth] is already innovatively being utilized in our facility in a variety of ways - nocturnal hospitalist coverage most recently. Many of our area nursing homes utilize telehealth for their resident psychiatric care. That was one factor that led to the closing of our facility's inpatient geropsych unit. Telehealth is a functional, convenient delivery of that care - why send a patient to another facility when you can address their issues without transfer AND the home facility is able to bill for their own reimbursement? It's not complicated to understand why the clinicians and institutions who are ahead of the telehealth curve will win with this evolving model of care.”

Project ECHO and PAs
Project ECHO is a telementoring model used to promote collaborative learning. Primary care providers can join topical ECHOs with teams of experts, usually for a specific condition, such as HIV, at-risk pregnancies or asthma. The ECHOs meet periodically via videoconference and providers have an opportunity to present de-identified patient cases. ECHO programs are active across Kansas, Missouri and Oklahoma.

The survey made it clear that Project ECHO promotion has mostly missed the mark with PAs. Ninety-three percent had not heard of Project ECHO and of the six who had heard of it, none had participated in an ECHO. The Missouri Telehealth Network's ECHO program is branded “Show-Me ECHO”, so it is possible that there would have been more name recognition if the state moniker had been used in the question.

When asked whether they would like to be contacted for more information about Project ECHO, 38% responded affirmatively.

Limitations
This research is pilot study on PA perception and use of telehealth. Due to limitation in time and resources, other PA organizations (AAPA, NCCPA, state academies of PAs) were not contacted; the sample was restricted to 2523 emails addresses purchased from a vendor. The median age of PAs who responded to the survey was 47 year, which was higher than the NCCPA median age of 38 years. Only nineteen of the ninety-five respondents had used telehealth.

Discussion
Though the sample size was modest, this survey advances the understanding of PA use of telehealth in the HTRC region and provides guidance for future work to increase PA comfort with telehealth. It is clear that there is a mostly positive response among PAs to telehealth, as evidenced by the response to the open-ended question, “In what ways do you think telehealth will affect the roles or practices of
PAs?” We expected to have a more even mix of positive remarks and concerns to this neutral question, but a content analysis revealed that 89% of the comments were positive.

Another unexpected result was how few PAs were using telehealth. Among the sample, only 78.3% had ever used telehealth and only 7.6% of the sample could be described as frequent users - once a week or more. Less than half of the respondents who worked at a facility that was using telehealth were themselves using telehealth. This finding merits more exploration to understand whether this is due to PA discomfort with telehealth or whether there are other barriers.

Certainly, the finding that only 18.5% of respondents agreed that they had sufficient training for telehealth is concerning and telehealth resource centers (TRC) have a role to play in educating PAs. The AAPA ad hoc committee on Virtual Medicine and Telemedicine is expected to make recommendations on training and curriculum, which will add to the conversation.

Another finding that merits further action is that only six respondents had heard of Project ECHO, a collaborative, team-based telementoring model that is well-suited for PAs. In addition to the value of having more PAs participating in ECHOs, Project ECHO has been a successful introduction to telehealth for those who may not have participated in videoconferences before. Thirty-eight percent of respondents said they were interested in being contacted with more information about Project ECHO. Lack of equipment was the number one barrier identified by people who had not used telehealth. This perceived barrier could be somewhat ameliorated through further outreach and education. When providing TA, HTRC has often found that organizations and clinicians overestimate their need for equipment and low-cost solutions may be readily available.

It was not surprising that age appeared to have a limited relationship to comfort with telehealth. When two age groups were compared (those above the median sample age and those below) only one indicator had a statistically significant difference. Those who had used telehealth were also slightly older than those who had not.

It is edifying to understand differences between PAs who are using telehealth and those who are not. There were a few positive correlations including working at a facility that used telehealth and working in primary care. Also, PAs who worked in urban settings were significantly less likely to use telehealth. These differences in primary care and geographical setting are likely due in part to lingering policy barriers. However, TRCs should encourage innovation in telehealth use. PAs are known for thinking outside the box and should be encouraged to find novel uses for telehealth that go beyond “traditional” telehealth in rural primary care.

The finding that PAs who have used telehealth are significantly more likely to see patient comfort with telehealth as a barrier was unexpected and merits further exploration. In the open-ended answers, one PA said “Patients resist it unless I am in the room with that patient. Education about the potential benefits of telemedicine to the patient without the requirement of travel would help open
up the minds of rural Kansans to the possibilities of telehealth.” This implies a further role for TRCs and for organizations to market telehealth to consumers.

It is appropriate to close with a statement from one of the respondents who nicely summarized the prevailing sentiment. “Telehealth will affect ALL clinicians. If PAs aren’t on the front line of this changing delivery model, we will be excluded from future participation. We must be a part of the conversation.”
References


Appendix
Physician Assistant Telehealth Survey
This survey is to better understand your views and perceptions on the use of telehealth as a PA. We would appreciate your participation, whether you use telehealth or not. The survey will take about 7 minutes to complete and you will be entered into a drawing for one of six $50 Amazon gift cards for your participation.

Your participation is voluntary and you may discontinue at any time. Your responses are confidential and your answers will be used only for research purposes. Your contribution to this project will enable your regional, HRSA-funded telehealth resource center, Heartland Telehealth, to better understand motivation and impediments for health care providers in utilizing telehealth. The goal of Heartland Telehealth Resource Center, which serves Kansas, Missouri and Oklahoma, is to increase access to health care through telehealth.

Q2 In which state(s) do you practice?

☐ Kansas (1)

☐ Missouri (2)

☐ Oklahoma (3)

☐ Other (4)

How would you best describe the area in which you practice?

☐ Rural (1)

☐ Urban (2)

☐ Suburban (3)

☐ Small city (7)

☐ Tribal homeland (8)

☐ Other (Please specify) (6) _________________________________
Are you a certified PA?

- Yes (1)
- Formerly certified PA (4)
- Student PA (2)
- No (3)

What is your gender?

- Male (1)
- Female (2)
- (3) ____________________________

What is your age?

________________________________________________________________

What type of facility do you work in?

- Hospital/Health system (1)
- Clinic (including FQHC/RHC) (2)
- Private practice (3)
- Academic institution/School (4)
- Government agency (such as a VA) (5)
- Other (Please specify) (6) __________________________________________
Does your facility receive funding from HRSA (Health Resources and Services Administration)?

- Yes (1)
- No (2)
- Not sure (3)

In what specialty do you practice?

- Primary care (1)
- Surgical subspecialty (2)
- Emergency medicine (3)
- Internal medicine (4)
- Behavioral health (5)
- Other (Please specify) (6) ________________________________

Telehealth is “the use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health and health administration” (HRSA definition) and employs various means including videoconferencing, internet, store-and-forward imaging, streaming media, apps and digital devices.

Does your organization currently offer any services using telehealth?

- Yes (1)
- No (2)
How often do you use telehealth?

- I have never used telehealth (1)
- About once a year (2)
- About once a month (3)
- About once a week (4)
- More than once a week (5)

What services are available via telehealth at your organization? Check all that apply.

- Videoconferencing (1)
- Mobile device (2)
- Apps (3)
- Remote patient monitoring (4)
- Store-and-forward (clinical information, such as images, that are then sent to and evaluated by another site at a later time) (5)
- Other (Please specify) (6) __________________________ __________________________

How strongly do you agree or disagree with each of the following statements?
<table>
<thead>
<tr>
<th>Strongly disagree (1)</th>
<th>Somewhat disagree (2)</th>
<th>Neither agree nor disagree (3)</th>
<th>Somewhat agree (4)</th>
<th>Strongly agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telehealth could help expand my scope of practice. (5)</td>
<td></td>
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<tr>
<td>My patients want to use telehealth. (6)</td>
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<tr>
<td>Telehealth is not relevant to the jobs of most PAs. (8)</td>
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<tr>
<td>I have received sufficient training to provide telehealth. (11)</td>
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<tr>
<td>Telehealth allows PAs to see more patients. (9)</td>
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</tr>
<tr>
<td>I feel confident using technology to provide telehealth. (10)</td>
<td></td>
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</tbody>
</table>
How strongly do you agree or disagree with each of the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree (1)</th>
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<th>Neither agree nor disagree (3)</th>
<th>Somewhat agree (4)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Telehealth equipment consistently functions as designed. (3)</td>
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<tr>
<td>I am able to treat my patients well via telehealth. (4)</td>
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<tr>
<td>The technology or equipment I use for telehealth is easy to use. (9)</td>
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<tr>
<td>I can easily communicate with my patients via telehealth. (10)</td>
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<tr>
<td>For the most part, I am satisfied with the work I have done through telehealth. (14)</td>
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</tr>
</tbody>
</table>
Which of the following do you see as barriers to using telehealth in your practice? Select all that apply.

- [ ] Competing clinical priorities (1)
- [ ] Lack of support from leadership (9)
- [ ] Lack of equipment (2)
- [ ] Unable to fit into workflow (10)
- [ ] Lack of provider training (4)
- [ ] Patients are not comfortable with telehealth (5)
- [ ] Reimbursement (6)
- [ ] No barriers (7)
- [ ] Other (Please specify) (8) ______________________________

Currently, PAs are the only health professionals who are authorized to bill Medicare for their services but are not able to receive direct payment. If the Physician Assistant Direct Payment Act, H.R. 1052, a bill to allow PAs to direct bill under Medicare was passed, would you be more likely to use telehealth?

- [ ] Yes (1)
- [ ] No (2)
- [ ] Maybe (3)

If it were easier to obtain licensure in multiple states, would you be more likely to use telehealth?

- [ ] Yes (1)
- [ ] No (2)
- [ ] Maybe (3)
With the enactment of H.B. 2028, Kansas patients who receive health care services from PAs via telemedicine will be covered by insurers. Does this change make you more likely to use telehealth?

- Yes (1)
- No (2)
- Maybe (3)

If PAs were included in the state of Missouri’s list of providers who are eligible for reimbursement would you be more likely to use telehealth?

- Yes (1)
- No (2)
- Maybe (3)

In what ways do you think telehealth will affect the roles or practices of PAs?

________________________________________________________________
________________________________________________________________

What could be done to make it easier for you to use telehealth?

________________________________________________________________
________________________________________________________________

What do you think the future of telehealth will be?

________________________________________________________________
________________________________________________________________

Have you heard of Project ECHO?

- Yes (1)
- No (2)
Have you participated in an ECHO?

- Yes (1)
- No (2)

Would you like to be contacted to learn more about Project ECHO, a telementoring model to teach specialty skills to primary care providers?

- Yes (1)
- No (2)

Would you like to be contacted by a representative from Heartland Telehealth Resource Center, your regional telehealth resource center, for any questions you have about telehealth?

- Yes (1)
- No (2)