Comparing patient experience survey scores between telehealth and in-person ambulatory pediatric subspecialty visits

Sean T. Bomher
Stanford Children's Health

Matthew Wood
Stanford Children's Health

Elizabeth Uhlhorn
Stanford Children's Health

Sandro Marques
Stanford University

Lee Kwiatkowski
Stanford Children's Health

See next page for additional authors

Follow this and additional works at: https://pxjournal.org/journal

Part of the Health Policy Commons, Health Services Administration Commons, Health Services Research Commons, and the Quality Improvement Commons

Recommended Citation

Comparing patient experience survey scores between telehealth and in-person ambulatory pediatric subspecialty visits

Authors

Sean T. Bomher, Matthew Wood, Elizabeth Uhlhorn, Sandro Marques, Lee Kwiatkowski, Natasa Tekic, Cameron D'Alpe, Natalie M. Pageler, and Lane F. Donnelly

Comparing patient experience survey scores between telehealth and in-person ambulatory pediatric subspecialty visits

Sean T. Bomher, *Stanford Children's Health, SBomher@stanfordchildrens.org*
Matthew Wood, *Stanford Children's Health, MWood@stanfordchildrens.org*
Elizabeth Uhlhorn, *Stanford Children's Health, EUhlhorn@stanfordchildrens.org*
Sandro Marques, *Stanford University, smarques@stanford.edu*
Lee Kwiatkowski, *Stanford Children's Health, LKwiatkowski@stanfordchildrens.org*
Natasa Tekic, *Stanford Children's Health, NTekic@stanfordchildrens.org*
Cameron D'Alpe, *Stanford Children's Health, CDAlpe@stanfordchildrens.org*
Natalie M. Pageler, *Stanford University, nPageler@stanfordchildrens.org*
Lane F. Donnelly, *Stanford University, lane.donnelly@stanford.edu*

Abstract

To determine the effect of encounter methods on patient experience, we evaluated patient experience survey data comparing scores between telehealth and in-person visits and pre-COVID-19 and COVID-19 time periods. Pediatric subspecialty visits were either in-person or via telehealth and received the same 16-question patient experience survey. Top box (5/5) scores were compared between in-person and telehealth visits for pre-COVID-19 and COVID-19 periods as well as between periods for in-person and telehealth visits. In addition, for both time periods and encounter methods, correlation analysis was performed to evaluate best correlation between *likelihood to recommend practice* and the 15 other survey questions. Comparing the COVID-19 period data, there was a statistically significant difference in the top box likelihood to recommend practice score comparing in-person to telehealth numbers (81.01% vs 87.13%, p = 0.0003). Comparing pre-COVID-19 with COVID-19, this was not true for in-person scores (79.97% vs 81.01%, p = 0.4060) or telehealth scores (82.50% vs 87.13%, p = 0.2084). The question with the highest correlation coefficient to *likelihood to recommend practice* was *how well staff worked together* in both time periods and visit methods. We conclude that *Likelihood to recommend* experience scores were statistically significantly higher for telehealth as compared to in-person pediatric subspecialty ambulatory visits during the COVID-19 pandemic. There were no such differences in *likelihood to recommend* comparing pre- vs COVID-19 time periods for either in-person or telehealth visits so the change in scoring seems to be related to the mode of care delivery.

Keywords

Patient experience, telehealth, pediatrics, ambulatory care

Introduction

Many pediatric organizations have experienced sudden and significant increases in the use of telehealth visits during the COVID-19 pandemic. As a result, there have been a number of recent publications related to various aspects of telehealth including reviews of the literature,[1] national surveys of pediatric providers and use of telehealth,[2] use of telehealth in specific pediatric diseases,[3-5] use of asynchronous E-consults,[6] and use of medical photography.[7] We evaluated patient experience survey data using the same survey questions, comparing scores between both telehealth and in-person visits as well as between pre-COVID-19 and COVID-19 time periods. This allowed differentiation in contributions to survey differences in patient experience between visit mode (in-person vs telehealth) as well as the effect of the COVID-19 pandemic itself.

Methods

As part of our institutional oversight of quality, safety, and service – patient experience survey scores are monitored to determine where we are improving and what targeted actions may need to be taken. Because of the rise in the number of telehealth visits in response to the pandemic, focus on data difference between telehealth and in-person visit modes was evaluated. Following our institutional guidelines, this project met criteria as quality improvement activity, was not considered human subjects research, and as a result did not require approval by our Institutional Review Board. The project consisted of retrospective review of de-identified patient experience survey data.

This project was carried out at a pediatric health system which includes quaternary services in both pediatrics and obstetrics, primary and subspecialty pediatric ambulatory services, and is associated with a large university.

We compared patient experience survey results from patients and families who had a pediatric subspecialty ambulatory appointment between pre-COVID-19 and COVID-19 time periods. The pre-COVID-19 period was defined as 9/1/2018-3/16/2020 and the COVID-19 period was defined as 3/17/2020-6/13/2020. During both periods, patients and families who underwent pediatric subspecialty visits either in-person or via telehealth received the same 16-question patient experience survey. The survey is a tailored version of an ambulatory survey created in cooperation with a vendor (Press Ganey, South Bend, IN), validated and used at multiple healthcare systems throughout the United States. Telehealth visits were performed as virtual video visits. Those sixteen questions included:

1. Care provider's discussion of any proposed treatment (options, risks, benefits, etc.)
2. Care provider's efforts to include you in decisions about your treatment
3. Concern the care provider showed for your questions or worries
4. Concern the nurse/assistant showed for your problem
5. Courtesy of staff in the registration area
6. Degree to which you were informed about any delays
7. Ease of contacting (e.g., email, phone, web portal) the clinic
8. Ease of scheduling your appointment
9. Explanations the care provider gave you about your problem or condition
10. How well staff protected your safety (by washing hands, wearing gloves, etc.)
11. How well staff worked together to care for you
12. How well the nurse/assistant listened to you
13. Likelihood of your recommending our practice to others
14. Likelihood of your recommending this care provider to others
15. Our concern for your privacy
16. Wait time at clinic (from arriving to leaving)

Patients and families were surveyed by the same means (electronic or by paper mail) during both time periods. Each question was graded from 1 to 5 with 5/5 considered to be a top box score. As our organization uses top box scores (5/5) for *likelihood to recommend practice* in institutional goal setting, the focus on our analysis was on this metric.

Top box (5/5) scores for all questions were compared between in-person and telehealth visits for the COVID-19 period with a 2-sample test of proportion and confidence

intervals calculated in R (R, R Core Team, Vienna, Austria) using 95% confidence intervals and 2-sided alternatives. Top box (5/5) scores for all 16 questions were also compared between pre-COVID-19 and COVID-19 periods for in-person as well as telehealth visits with a 2-sample test of proportion and confidence intervals calculated in R using 95% confidence intervals and 2-sided alternatives. In addition, for both time periods and encounter methods, correlation analysis was performed to evaluate best correlation between *likelihood to recommend practice* and the 15 other survey questions using the Pearson correlation coefficient.

All of this data was obtained prior to our organization switching to a tailored telehealth oriented patient experience survey, which has occurred since the collection of this data.

Results

During the pre-COVID-19 period, there were 12,287 surveys from in-person visits and 123 surveys from telehealth visits. During the COVID-19 period, there were 1091 surveys from in-person visits and 938 surveys from telehealth visits.

Comparing the COVID-19 period data, there was a statistically significant difference in the top box *likelihood to recommend practice* score comparing in-person to telehealth numbers (81.01% vs 87.13%, p = 0.0003) as well as *likelihood to recommend provider* (82.63% vs 87.13%, p = 0.0022) (Table 1, Appendix). Seven other survey questions also showed statistically different results with telehealth outperforming in person encounter types, including: *care provider's discussion of any proposed treatment, care provider's effort to include you in decisions about your treatment, concern the care provider showed for your questions and worries, explanations the care provider gave you about your problem or condition, and wait time at clinic.*

Comparing pre-COVID-19 with COVID-19 in-person scores, there was not a difference in scores for *likelihood to recommend practice* (79.97% vs 81.01%, p = 0.4060) or *likelihood to recommend provider* (81.16% vs 82.63%, p = 0.2527) (Table 2, Appendix). Six questions had statistically significant differences in scores with the COVID-19 period scores outperforming pre-COVID-19 scores: *courtesy of staff in the registration area , degree to which you were informed about delays, ease of scheduling your appointment, how well the staff protected your safety, how well the nurse / assistant listened to you, and wait time in clinic.*

Comparing the pre-COVID-19 with COVID-19 telehealth scores, there was not a difference in scores for *likelihood to recommend our practice* (82.50% vs 87.13%, p = 0.2084) or *likelihood to recommend our provider* (83.74% vs 87.63%, p = 0.2843) (Table 3, Appendix). Only 3 questions showed

statistically significant differences in scores with the COVID-19 period scores outperforming pre-COVID-19 scores: *how well staff protected your safety, our concern for your privacy*, and *wait time in clinic*.

Correlation coefficients comparing *likelihood to recommend practice* with other survey questions for both visit type (in-person, telehealth) and for time period (Pre-COVID, COVID) are summarized in Table 4, Appendix.. Patterns of which questions were most related to *likelihood to recommend practice* varied between both visit type and time period. However, the question "*how well staff worked together to care for you*" was most closely correlated with *likelihood to recommend practice* through all visit types and time periods. This was followed by *likelihood to recommend provider* and *explanations the care provider gave you about your problem or condition*. Survey questions that correlated more closely with *likelihood to recommend practice* for telehealth than in-person visits included *wait time at clinic* and *ease of contacting the clinic*.

Discussion

There have been a number of previous studies with small patient numbers that have shown that there is a high level of patient satisfaction with telehealth visits.[1-19] In our review of patient experience survey data related to pediatric subspecialty visits, we found that during the COVID-19 period, there was a statistically significantly higher *likelihood to recommend* rating when patients seen via telehealth as opposed to in-person visits. As there were not statistically significant differences in *likelihood to recommend* comparing telehealth during the pre-COVID-19 vs COVID-19 time periods nor in-person visits comparing the pre-COVID-19 vs COVID-19 time periods, the change in survey results appears to be related to the visit methodology as telehealth rather than to any changes specific to the COVID-19 pandemic.

For the COVID-19 time period, there were a number of survey questions in addition to *likelihood to recommend practice* or *likelihood to recommend provider* that had a statistically significantly higher score for telehealth as opposed to in-person visits. Some of these, such as *wait time at clinic* are not surprising as there was not a wait time at clinic for virtual visits. The reason behind the difference in responses to other questions such as *care provider's discussion of any proposed treatment, care provider's effort to include you in decisions about your treatment, concern the care provider showed for your questions and worries, explanations the care provider gave you about your problem or condition* are less clearly explained by visit type.

Although for the comparison of responses for in-person visits comparing between pre-COVID-19 and COVID-19 time periods did not demonstrate statistically significant differences for *likelihood to recommend practice* or *likelihood to recommend provider*, there were a number of survey questions

that did show statistically significant differences. Some of these - such as *wait time in clinic, ease of scheduling your appointment, how well the nurse / assistant listened to you, courtesy of staff in the registration area* , and *degree to which you were informed about delays* – are likely related to the ambulatory volumes being much lower during the COVID-19 period as compared to the pre-COVID-19 time period. The difference in *how well the staff protected your safety* is likely related to the extensive degree of infection prevention and control measures put in place during the COVID-19 period.

Similarly, although for the comparison of responses for telehealth visits comparing between pre-COVID-19 and COVID-19 time periods did not demonstrate statistically significant differences for *likelihood to recommend practice* or *likelihood to recommend provider*, there were three survey questions that did show statistically significant differences. These three - *how well staff protected your safety, our concern for your privacy, and wait time in clinic* – are also likely to be related to a combination of changes made related to COVID-19 and the lack of business during the COVID-19 time period.

We have also compared the correlations between the other survey questions and the *likelihood to recommend practice* metric to better understand the elements of the care experience that affect the patients' rating of the encounter. Across both time periods and both visit methods, the survey question *staff worked together to care for you* is the question most highly correlated with *likelihood to recommend*. This question has a broad scope. At the surface it explores teamwork within the clinic and reflects strengths or weaknesses in care coordination, even when that coordination occurs behind the scenes from the patient's perspective. Patients likely have a higher level of confidence and satisfaction when information flows smoothly between team members within the clinic. The other two parameters that correlated closely with *likelihood to recommend practice* across both time periods and both visit methods were *explanations the care provider gave you about your problem or condition* and *likelihood to recommend provider*.

A key difference between in-person and telehealth settings was found in the correlation of the question *ease of contacting the clinic* with *likelihood to recommend practice*. The correlation is much stronger in the telehealth setting. We believe this is due to the lack of in-person interaction. Patients expect it to be easy to communicate with their provider – this goes beyond just scheduling an appointment and includes how easily they are able to make contact, how quickly they receive a response, and how well their concerns were addressed. In the in-person setting, a patient may be more likely to "save" questions for their in-person appointment. However, in the telehealth setting, all communication is facilitated by technology whether it is the audio-visual telehealth appointment itself, a phone call to the clinic, or

web or app based. Because there is no in-person touchpoint, being able to easily contact the clinic and promptly receive a satisfactory response takes on an even greater level of importance.

Despite a rapid implementation occurring against a backdrop of an international health crisis, the telehealth modality has been well received by patients. Telehealth expands the array of methods for patient-provider interaction. Our data shows that during the severe portion of the pandemic, patients and families rate telehealth encounters higher than in-person encounters, and we will continue to study which elements of care most strongly affect patients' perceptions in this new care setting. *Wait time at clinic* was also more closely associated with *likelihood to recommend practice* for telehealth visits as compared to in-person visits. This is likely related to the greater efficiency for parents and families of having a telehealth as compared to an in-person visit.

This data review has several limitations. Although much bigger in number of participants than previous reviews of patient experience survey data on telehealth, this data review includes a relatively small number. The study is also of pediatric subspecialty visits in general and there may be differences in the satisfaction with telehealth visits between certain subspecialties or diseases. The COVID-19 study period also only includes a time period where the combination of in person and telehealth clinic volumes were decreased as compared to pre and anticipated post pandemic levels. Therefore, the trends seen during this period may not hold true regarding the perception of telehealth visits when clinic volumes return to normal and when the family's pandemic mindset has changed. One benefit of this study for comparing between visit modes is that all of the patients and families received the same survey. However, this survey was not tailored to telehealth visits as future surveys are likely to be.

This data review was done as part of our continuous efforts to improve our patient experience. With the rapid growth of telehealth during operational responses to the pandemic in our healthcare system, we needed to better understand the implications of telehealth for patient experience. This data ensured us that at least during the heat of the pandemic, patients appreciated the experience of telehealth visits and preferred the experience at that time compared to in person visits and that our efforts should be to continue to promote and increasing offerings in telehealth. Further analysis will need to be done when the pandemic has ceased to see if the data regarding experience surveys around telehealth and in person remain the same or not. There will also need to be evaluation of data produced by surveys tailored to telehealth visits.

Conclusion

In conclusion, we demonstrate that for pediatric subspecialty ambulatory visits, there are statistically significant higher scores for *likelihood to recommend practice* and *likelihood to recommend provider* for telehealth as compared to in-person visits during the COVID-19 pandemic. As there were not differences in these questions when comparing either telehealth or in-person visits between the pre-COVID-19 and COVID-19 periods, the differences are likely truly related to the telehealth visit mode. Better understanding which other survey questions most closely correlate with *likelihood to recommend practice* will also help with better design of future telehealth oriented patient experience surveys.

References

1. Ning AY, Cabrera CI, D'Anza B. Telemedicine in otolaryngology: a systemic review of image quality, diagnostic concordance, and patient and provider satisfaction. Ann Otol Rhinol Laryngol 2020; Jul 13:3489420939590. doi: 10.1177/0003489420939590. Online ahead of print.
2. Sisk B, Alexander J Bodnar C, Curfman A, Garber K, McSwain SD, Perrin JM. Pediatrican attitudes toward and experiences with telehealth use: results from a national survey. Acad Pediatr. 2020;20(5):628-635.
3. Fogel JL, Raymond JK. Implementing Telehealth in Pediatric Type 1 Diabetes Mellitus. Pediatr Clin North Am. 2020;67(4):661-664.
4. Rametta SC, Fridinger SE, Gonzalez AK, Xian J, Galer PD, Kaufman M, Prelack MS, Sharif U, Fitzgerald MP, Melamed SE, Malcolm MP, Kessler SK, Stephenson DJ, Banwell BL, Abend NS, Helbig I. Analyzing 2,589 child neurology telehealth encounters necessitated by the COVID-19 pandemic. Neurology. 2020 Jun 9:10.1212/WNL.0000000000010010. doi: 10.1212/WNL.0000000000010010. Online ahead of print.
5. Perry TT, Margiotta CA. Implementing Telehealth in Pediatric Asthma. Pediatr Clin North Am. 2020;67(4):623-627.
6. Rea CJ, Samuels RC, Shah S, Rosen M, Toomey SL. Electronic Consultation: Latest Evidence Regarding the Impact on Referral Patterns, Patient Experience, Cost, and Quality. Acad Pediatr. 2020 Jun 12:S1876-2859(20)30244-8. doi: 10.1016/j.acap.2020.06.006. Online ahead of print.
7. Wyatt KD, Finley A, Uribe R, Pallagi P, Willaert B, Ommen S, Yiannias J, Hellmich T. Patients' Experiences and Attitudes of Using a Secure Mobile Phone App for Medical Photography: Qualitative Survey Study. J Med Internet Res. 2020;12;22(5):e14412
8. Triantafillou V, Layfield E, Prasad A, Deng J, Shanti RM, Newman JG, Rajasekaran K. Patient Perceptions

of Head and Neck Ambulatory Telemedicine Visits: A Qualitative Study. Otolaryngol Head Neck Surg. 2020 Jul 14:194599820943523. doi: 10.1177/0194599820943523. Online ahead of print.PMID: 32662749

9. Taylor L, Waller M, Portnoy JM. Telemedicine for allergy services to rural communities. J Allergy Clin Immunol Pract 2019;7(8):2554-2559

10. Utidjian L, Abramson E. Pediatric telehealth: opportunities and challenges. Pediatr Clin North Am 2016;63:367-378

11. Wood CL, Clements SA, McFann K, et al. Use of telemedicine to improve adherence to American diabetes association standards in pediatric type 1 diabetics. Diabetes Technol Ther 2016;18(1):7-14

12. Reid MW, Krishnan S, Berget C, et al. CoYoT1 clinic: home telemedicine increases young adult engagement in diabetes care. Diabetes Technol Ther 2018;20(5):370-379

13. Raymond JK, Berget CL, Driscoll KA, et al. CoYoT1 clinic: innovative telemedicine care model for young adults with type 1 diabetes. Diabetes Technol Ther 2016;18(6):385-390

14. Crossen SS, Marcin JP, Qi L, et al. Home visits for children and adolescents with uncontrolled type 1 diabetes. Diabetes Technol Ther 2020;22(1):34041

15. Seim NB, Philips RHW, Matrka LA, et al. Developing synchronous otolaryngology telemedicine clinic: prospective study to assess fidelity and diagnostic concordance. Laryngoscope 2018;128(5):1068-1074

16. Rimmer RA, Christopher V, Falck A, et al. Telemedicine in otolaryngology outpatient setting- single Center Head and Neck Surgery experience. Laryngoscope 2018:128(9):2072-2075

17. Burns CL, Ward EC, Hill AJ, et al. A pilot trial of a speech pathology telehealth service for head and neck cancer patients. J Telemed Telecare 2012;18(8):443-446

18. Mirshra A, Kappor L, Mishra SK. Post-operative care through tele-follow up visits in patients undergoing thyroidectomy and parathyroidectomy in a resource-constrained envrironment. J Telemed Telecare 2009;15(2):73-76

19. Stalfors J, Holm-Sjogren L, Schwieler A, Tornqvist H, Westin T. Satisfaction with telemedicine presentation at a multidisciplinary tumour meeting among patient swith head and neck cancer J Telemed Telecare 2003:9(3):150-155

Appendix

Table 1. Comparison of Top Box Scores between In-Person and Telehealth Visits during the COVID-19 Pandemic Time Period

Survey Question	In Person Top Box %	In Person N	Telehealth Top Box %	Telehealth N	95% Confidence Interval for Difference	p-Value
Likelihood of your recommending our practice to others	81.01%	1090	87.13%	917	(0.028, 0.094)	0.0003
Likelihood of your recommending this care provider to others	82.63%	1071	87.63%	930	(0.018, 0.082)	0.0022
Care provider's discussion of any proposed treatment (options, risks, benefits, etc.)	80.27%	1054	85.11%	927	(0.014, 0.083)	0.0055
Care provider's efforts to include you in decisions about your treatment	81.20%	1069	86.25%	931	(0.017, 0.084)	0.0029
Concern the care provider showed for your questions or worries	82.64%	1083	86.78%	938	(0.009, 0.074)	0.0122
Concern the nurse/assistant showed for your problem	77.45%	1042	76.84%	760	(-0.046, 0.034)	0.8061
Courtesy of staff in the registration area	80.66%	1096	79.00%	84	(-0.054, 0.021)	0.3986
Degree to which you were informed about any delays	69.50%	1013	72.20%	820	(-0.016, 0.070)	0.2260
Ease of contacting (e.g., email, phone, web portal) the clinic	64.64%	1069	68.61%	924	(-0.003, 0.082)	0.0677
Ease of scheduling your appointment	67.09%	1094	67.38%	929	(-0.039, 0.045)	0.9271
Explanations the care provider gave you about your problem or condition	81.26%	1078	86.13%	937	(0.016, 0.082)	0.0040
How well staff protected your safety (by washing hands, wearing gloves, etc.)	82.97%	1086	85.89%	737	(-0.006, 0.064)	0.1070
How well staff worked together to care for you	80.59%	1092	83.81%	883	(-0.003, 0.067)	0.0729
How well the nurse/assistant listened to you	80.89%	1057	80.57%	772	(-0.041, 0.035)	0.9116
Our concern for your privacy	79.78%	1073	82.98%	887	(-0.004, 0.068)	0.0805
Wait time at clinic (from arriving to leaving)	65.72%	1091	73.90%	816	(0.039, 0.124)	0.0002

Gray rows designate statistically significant difference.

Appendix (cont'd.)

Table 2. Comparison of Top Box Scores for In-Person Visits Comparing the Pre vs COVID-19 Pandemic Time Periods

Survey Question	Pre Top Box %	Pre N	COVID Top Box %	COVID N	95% Confidence Interval for Difference	p-Value
Likelihood of your recommending our practice to others	79.91%	12239	81.01%	1090	(-0.036, 0.014)	0.4060
Likelihood of your recommending this care provider to others	81.16%	12219	82.63%	1071	(-0.039, 0.010)	0.2527
Care provider's discussion of any proposed treatment (options, risks, benefits, etc.)	80.01%	4277	80.27%	1054	(-0.030, 0.025)	0.8859
Care provider's efforts to include you in decisions about your treatment	81.23%	12276	82.64%	1083	(-0.037, 0.011)	0.3093
Concern the care provider showed for your questions or worries	75.32%	11843	77.45%	1042	(-0.048, 0.006)	0.1352
Concern the nurse/assistant showed for your problem	75.32%	11843	77.45%	1042	(-0.048, 0.006)	0.1352
Courtesy of staff in the registration area	78.03%	12345	80.66%	1096	(-0.051, -0.001)	0.0476
Degree to which you were informed about any delays	65.19%	11165	69.50%	1013	(-0.073, -0.013)	0.0064
Ease of contacting (e.g., email, phone, web portal) the clinic	61.88%	4258	64.64%	1069	(-0.060, 0.005)	0.1034
Ease of scheduling your appointment	58.64%	12262	67.09%	1094	(-0.114, -0.055)	0.00001
Explanations the care provider gave you about your problem or condition	81.17%	12267	81.26%	1078	(-0.026, 0.024)	0.9729
How well staff protected your safety (by washing hands, wearing gloves, etc.)	78.41%	11826	82.97%	1086	(-0.070, -0.021)	0.0005
How well staff worked together to care for you	78.39%	12184	80.59%	1092	(-0.047, 0.003)	0.0977
How well the nurse/assistant listened to you	76.91%	4236	80.89%	1057	(-0.067, -0.012)	0.0062
Our concern for your privacy	78.44%	11867	79.78%	1073	(-0.039, 0.012)	0.3244
Wait time at clinic (from arriving to leaving)	60.00%	12287	65.72%	1091	(-0.087, -0.027)	0.0002

Gray rows designate statistically significant difference.

Appendix (cont'd.)

Table 3. Comparison of Top Box Scores for Telehealth Visits Comparing the Pre vs COVID-19 Pandemic Time Periods

Survey Question	Pre Top Box %	Pre N	COVID Top Box %	COVID N	95% Confidence Interval for Difference	p-Value
Likelihood of your recommending our practice to others	82.50%	120	87.13%	917	(-0.122, 0.030)	0.2084
Likelihood of your recommending this care provider to others	83.74%	123	87.63%	930	(-0.112, 0.034)	0.2843
Care provider's discussion of any proposed treatment (options, risks, benefits, etc.)	79.17%	48	85.11%	927	(-0.188, 0.069)	0.3611
Care provider's efforts to include you in decisions about your treatment	83.76%	117	86.25%	931	(-0.100, 0.050)	0.5552
Concern the care provider showed for your questions or worries	83.61%	122	86.78%	938	(-0.106, 0.042)	0.4111
Concern the nurse/assistant showed for your problem	72.45%	98	76.84%	760	(-0.143, 0.055)	0.4027
Courtesy of staff in the registration area	72.32%	112	79.00%	843	(-0.159, 0.026)	0.1368
Degree to which you were informed about any delays	62.96%	108	72.20%	820	(-0.194, 0.009)	0.0605
Ease of contacting (e.g., email, phone, web portal) the clinic	66.00%	50	68.61%	924	(-0.171, 0.119)	0.8170
Ease of scheduling your appointment	58.54%	123	67.38%	929	(-0.185, 0.008)	0.0643
Explanations the care provider gave you about your problem or condition	82.64%	121	86.13%	937	(-0.110, 0.041)	0.3723
How well staff protected your safety (by washing hands, wearing gloves, etc.)	72.63%	95	85.89%	737	(-0.232, -0.034)	0.0014
How well staff worked together to care for you	76.52%	115	83.81%	883	(-0.159, 0.013)	0.0684
How well the nurse/assistant listened to you	69.44%	36	80.57%	772	(-0.279, 0.056)	0.1556
Our concern for your privacy	70.91%	110	82.98%	887	(-0.214, -0.027)	0.0031
Wait time at clinic (from arriving to leaving)	58.18%	110	73.90	816	(-0.259, -0.055)	0.0009

Gray rows designate statistically significant difference.

Table 4. Correlation Coefficients Comparing *Likelihood to Recommend Practice* with other Survey Questions for both In-Person and Telehealth Visits During both Pre and COVID Time Periods

	Pre In-Person		COVID In-Person		Pre Telehealth		COVID Telehealth	
	Correlation	Conf Int.	Correlation	Conf Int.	Correlation	Conf Int.	Correlation	Conf Int.
Care provider's discussion of any proposed treatment (options, risks, benefits, etc.)	0.733	(0.719, 0.746)	0.698	(0.668, 0.726)	0.933	(0.882, 0.962)	0.637	(0.599, 0.672)
Care provider's efforts to include you in decisions about your treatment	0.721	(0.713, 0.729)	0.707	(0.678, 0.734)	0.818	(0.748, 0.870)	0.636	(0.597, 0.671)
Concern the care provider showed for your questions or worries	0.713	(0.704, 0.721)	0.702	(0.672, 0.729)	0.851	(0.794, 0.894)	0.625	(0.586, 0.661)
Concern the nurse/assistant showed for your problem	0.563	(0.552, 0.575)	0.657	(0.623, 0.688)	0.688	(0.569, 0.779)	0.542	(0.492, 0.588)
Courtesy of staff in the registration area	0.451	(0.438, 0.464)	0.488	(0.444, 0.529)	0.571	(0.430, 0.684)	0.403	(0.348, 0.456)
Degree to which you were informed about any delays	0.515	(0.502, 0.528)	0.456	(0.408, 0.500)	0.627	(0.497, 0.730)	0.458	(0.405, 0.509)
Ease of contacting (e.g., email, phone, web portal) the clinic	0.487	(0.464, 0.509)	0.374	(0.324, 0.422)	0.713	(0.537, 0.829)	0.456	(0.406, 0.504)
Ease of scheduling your appointment	0.458	(0.445, 0.471)	0.385	(0.336, 0.431)	0.631	(0.510, 0.727)	0.387	(0.334, 0.439)
Explanations the care provider gave you about your problem or condition	0.718	(0.710, 0.726)	0.699	(0.669, 0.727)	0.843	(0.782, 0.888)	0.673	(0.638, 0.705)
How well staff protected your safety (by washing hands, wearing gloves, etc.)	0.542	(0.530, 0.554)	0.566	(0.526, 0.603)	0.643	(0.509, 0.747)	0.488	(0.434, 0.539)
How well staff worked together to care for you	0.827	(0.822, 0.833)	0.837	(0.819, 0.853)	0.892	(0.847, 0.924)	0.808	(0.785, 0.828)
How well the nurse/assistant listened to you	0.589	(0.570, 0.608)	0.653	(0.620, 0.685)	0.863	(0.748, 0.928)	0.563	(0.515, 0.607)
Likelihood of your recommending this care provider to others	0.821	(0.815, 0.826)	0.791	(0.769, 0.811)	0.88	(0.833, 0.915)	0.778	(0.753, 0.802)
Our concern for your privacy	0.588	(0.576, 0.599)	0.542	(0.501, 0.580)	0.693	(0.582, 0.779)	0.467	(0.416, 0.515)
Wait time at clinic (from arriving to leaving)	0.487	(0.475, 0.500)	0.367	(0.317, 0.414)	0.575	(0.434, 0.689)	0.442	(0.387, 0.493)

Dark green – highest correlation to dark red – lowest correlation with likelihood to recommend