



A Comparison of Home Infusion Patient Satisfaction Telehealth Visits Versus Home Visits

Research Protocol

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Introduction

The COVID-19 outbreak has caused an even greater need to prevent and control the spread of healthcare-acquired infections (HAIs). Telehealth has transformed healthcare delivery during the pandemic by limiting the amount of person-to-person contact and assisting patients and healthcare workers to adhere to “stay-at-home” recommendations and guidelines related to the pandemic. Telehealth refers to the entire spectrum of activities used to deliver healthcare at a distance, without direct physical contact with the patient.¹ According to HealthIT.gov, telehealth is the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration.² There are several different mediums utilized for this purpose, including phone, video conferencing, mobile apps, remote patient monitoring devices, and electronic exchange of health information. In addition to sustaining the continuity of outpatient care during the pandemic while limiting the patient’s contact with others there are additional advantages to telehealth.³ According to a meta-analysis of 54 studies, the most benefits are reported when telehealth is used for communication and counseling or remote monitoring in chronic conditions.⁴ Additionally, improvements in outcomes such as mortality, quality of life, and reductions in hospital admissions were noted.⁴

Within the home and specialty infusion industry, which involves the intravenous administration of drugs to an individual at home, a majority of the patient care is provided by physicians, pharmacists, and nurses, with the nurses providing most of the home visits. Nurses typically train the patient or caregiver to self-administer the drug, educate on side effects and goals of the therapy, and visit the patient to assess the catheter and home environment. Due to the rapid spread of COVID-19, with transmission primarily through respiratory droplets, patients and healthcare professionals are investigating alternative ways to service the home and specialty infusion patient while limiting the risk of exposure.

In response to the pandemic, Medicare has temporarily expanded its coverage of telehealth services. According to the Medicare website, during the pandemic, patients will be able to receive a specific set of services through telehealth including evaluation and management visits, mental health counseling and preventive health screenings without a copayment if they have Original Medicare.⁵

Recently, the National Home Infusion Foundation became aware of home and specialty infusion providers who were using telehealth as an alternative to home visits in an effort to limit patient and provider exposure to HAI’s. With the recent addition of home and specialty infusion telehealth comes a need to investigate the patient’s satisfaction with this approach to care. A meta-analysis conducted in 2000 provided a systematic review of studies of patient satisfaction with telemedicine.⁴ Thirty-two studies were deemed acceptable for the review, none that focused on home infusion, and concluded that teleconsultation is acceptable to patients in a variety of settings, but issues relating to patient satisfaction require further exploration from the perspective of both patients and providers.⁶ It was also noted that the generalizability of the study results was a limiting factor. As suspected, a review of the literature shows a void in research specific to telemedicine and home and specialty infusion patient satisfaction.

Patient satisfaction as one measure of provider quality has existed in the home and specialty infusion industry for many years, driven in part by accreditation standards and by the value derived from regularly assessing one’s company service from the patient’s perspective. In an effort to monitor telehealth in the home and specialty infusion setting, there is need to determine if there is a significant difference in home and specialty home infusion patient satisfaction when comparing traditional home

care visits with telehealth visits. The results from this study will assist in determining if telehealth is a viable alternative to the traditional home healthcare visit for home and specialty infusion patients.

Research Objectives

1. To describe the telehealth home and specialty infusion patient using the following demographic variables; therapy type, gender, and age.
2. To determine the telehealth patient's understanding of five basic instructions: how to wash hands, how to give the home infusion medication(s), how to care for the IV catheter, how to store the home infusion medication(s), and how to use the home infusion pump.
3. To determine if there is a significant difference in home and specialty infusion patient satisfaction when comparing telehealth with the traditional home healthcare visit and/or consultation with a pharmacist regarding drug therapy

Methodology

This study will describe the telehealth home and specialty infusion patient and determine if patients that received telehealth services have significantly different satisfaction ratings than those receiving traditional home and specialty home infusion services. The NHIF has annual (2019) benchmark patient satisfaction data (n = 6,353) from patients who experienced traditional home and specialty infusion.

This ex post facto investigation will employ a static group comparison. This research design compares a group which has already experienced X, such as the telehealth patients, with a group that has not, such as the patients who experienced traditional home and specialty infusion.

Patient Satisfaction Survey Development

This study will use the *Uniform Patient Satisfaction Survey for Home Infusion Providers* (Patient Satisfaction Survey) developed by the NHIF in 2017.⁷ The development of this instrument followed a rigorous process. Using Delphi methodology, survey questions and response options were written using a 15-member home infusion expert panel to validate and establish consensus for the questions. The panel was asked to rate, modify, and add patient satisfaction questions during three iterations and reviews. A seven-point Likert scale was used to rate each of the survey questions according to its importance. Consensus was defined as achieving a mean score of 5.0 or greater, and standard deviation of less than 1.40 for each question. The validated survey questions were pilot tested and included a phone interview with patients who completed the survey. This determined the clarity of the questions and subsequent internal validity. Modifications were made based on feedback from the patients. Finally, test-retest methodology was used to determine survey reliability. A correlation coefficient of 0.90 was produced indicating a strong relationship between the first and second administration of the survey, thus supporting the reliability of the survey.

The final survey includes 12 questions with 22 data points (See Appendix A). Questions with a Yes, No, or NA response option were 1, 2, 4, 6, 7, and 10. Questions using a 5-point Always-Never scale were 3, 5, 8, and 9. A 5-point Strongly Agree – Strongly Disagree scale was used for questions 11 and 12. In 2019, NHIF establishing quarterly and annual benchmarks (See Appendix B). For this study, the traditional home and specialty infusion patient satisfaction annual (2019) benchmarks will be compared to the telehealth home and specialty infusion patient satisfaction data.

Telehealth Home and Specialty Infusion Patients

A convenience sample greater than or equal to 120 home and specialty infusion patients who received patient care via telehealth, that included both an audio and visual component by either pharmacists or nurses or both, and completed the Patient Satisfaction Survey will be included in the study. The NHIF will recruit home and specialty infusion provider locations that use telehealth and currently measure their patient satisfaction using the *Uniform Patient Satisfaction Survey for Home Infusion Providers*. Currently, the NHIF uses a standardized Excel® file for Patient Satisfaction Survey data entry. This file contains no patient identifier columns. The providers will upload their completed Excel® data file with the telehealth patient satisfaction data to nhiadata@nhia.org. The data file will be forwarded to the NHIA/NHIF Research Consultant who will check the data for entry errors and conduct the data analysis.

IRB (Institutional Review Board)

This study is exempt from IRB review since there is no change in patient care, no patient identifiers are used, and the patients are not randomized. The provider locations that are recruited for this study currently measure patient satisfaction and use telehealth. The provider locations will only supply the NHIF with the patient satisfaction Excel® data file that includes no patient identifiers.

Analysis

Using IBM® SPSS to analyze the data, a one-sample t-test will be used to determine if a significant difference ($p = .05$) exists between the telehealth patient satisfaction scores and the 2019 benchmarks on each of the scaled patient satisfaction survey questions. Additionally, top box percentages and descriptive statistics (means and standard deviations) will be determined for all survey questions.

References

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Appendix A
Uniform Patient Satisfaction Survey Questions for Home Infusion Providers

1.	The home infusion pump was clean when it was delivered. (Yes, No, NA)
2.	The home infusion pump worked properly. (Yes, No, NA)
3.	The home infusion medications and supplies arrived before I needed them. (Never – Always Scale)
4.	I knew who to call if I needed help with my home infusion therapy. (Yes, No, NA)
5.	The response I received to phone calls for help on weekends or during evening hours met my needs. (Never – Always Scale)
6.	The home infusion nurse or pharmacist informed me of the possible side effects of the home infusion medication. (Yes, No)
7.	I understood the explanation of my financial responsibilities for home infusion therapy. (Yes, No)
8a.	The delivery staff was always courteous. (Always – Never Scale)
8b.	The billing staff was always courteous. (Always – Never Scale)
8c.	The pharmacy staff was always courteous. (Always – Never Scale)
8d.	The nursing staff was always courteous. (Always – Never Scale)
9a.	The delivery staff was always helpful. (Always – Never Scale)
9b.	The billing staff was always helpful. (Always – Never Scale)
9c.	The pharmacy staff was always helpful. (Always – Never Scale)
9d.	The nursing staff was always helpful. (Always – Never Scale)
10a.	I understood the instructions provided for how to wash my hands. (Yes, No)
10b.	I understood the instructions provided for how to give home infusion medication(s). (Yes, No)
10c.	I understood the instructions provided for how to care for the IV catheter. (Yes, No)
10d.	I understood the instructions provided for how to store the home infusion medication(s). (Yes, No)
10e.	I understood the instructions provided for how to use the home infusion pump. (Yes, No)
11.	I was satisfied with the overall quality of the services provided. (Disagree – Agree Scale)
12.	I would recommend this home infusion company to my family and friends. (Disagree – Agree Scale)

Appendix B
Uniform Patient Satisfaction Survey for Home Infusion Providers
Annual Results (2019 Benchmarks) n = 6,353

Means and Standard Deviations for Survey Questions Utilizing a 5-Point Likert Scale

Survey Question	Mean	Std. Deviation
Q3. The home infusion medications and supplies arrived before I needed them.	4.84	.556
Q5. The response I received to phone calls for help on weekends or during evening hours met my needs.	4.76	.665
Q8a. The delivery staff was courteous.	4.92	.341
Q8b. The billing staff was courteous.	4.83	.580
Q8c. The pharmacy staff was courteous.	4.91	.384
Q8d. The nursing staff was courteous.	4.93	.355
Q9a. The delivery staff was helpful.	4.89	.415
Q9b. The billing staff was helpful.	4.80	.618
Q9c. The pharmacy staff was helpful.	4.90	.399
Q9d. The nursing staff was helpful.	4.91	.406
Q11. I was satisfied with the overall quality of the services provided.	4.78	.551
Q12. I would recommend this home infusion company to my family and friends.	4.73	.600

Top Box Percent for All Survey Questions

Survey Questions	2019 Annual Results (Benchmarks)
Q1. The home infusion pump was clean when it was delivered.	99.15
Q2. The home infusion pump worked properly.	96.92
Q3. The home infusion medications and supplies arrived before I needed them.	89.78
Q4. I knew who to call if I needed help with my home infusion therapy.	97.85
Q5. The response I received to phone calls for help on weekends or during evening hours met my needs.	85.05
Q6. The home infusion nurse or pharmacist informed me of the possible side effects of the home infusion medication.	85.03
Q7. I understood the explanation of my financial responsibilities for home infusion therapy.	90.10
Q8a. The delivery staff was always courteous.	93.89
Q8b. The billing staff was always courteous.	88.78
Q8c. The pharmacy staff was always courteous.	93.26
Q8d. The nursing staff was always courteous.	94.43
Q9a. The delivery staff was always helpful.	91.78
Q9b. The billing staff was always helpful.	87.67
Q9c. The pharmacy staff was always helpful.	92.95
Q9d. The nursing staff was always helpful.	93.50
Q10a. I understood the instructions provided for how to wash my hands.	98.41
Q10b. I understood the instructions provided for how to give home infusion medication(s).	98.76
Q10c. I understood the instructions provided for how to care for the IV catheter.	97.99
Q10d. I understood the instructions provided for how to store the home infusion medication(s).	98.95
Q10e. I understood the instructions provided for how to use the home infusion pump.	97.69
Q11. I was satisfied with the overall quality of the services provided.	81.77
Q12. I would recommend this home infusion company to my family and friends.	79.06