Assessment of Home Infusion Patient Satisfaction

2019 NHIF Benchmarking Program Results

National Home Infusion Foundation

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ABSTRACT

Background

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 the provider's services from the patient's perspective. A review indicated a void in home and specialty infusion patient satisfaction questions that generate accurate results with less potential for measurement error and misinterpretation. Overall, there was a need for standardization among the patient satisfaction survey questions so that industry-wide analysis and comparisons could be conducted. To meet this need, the National Home Infusion Foundation (NHIF) took the lead in the development of the Uniform Patient Satisfaction Survey for Home Infusion Providers.

Methods

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. Home infusion companies using the survey volunteered to participate in a nationwide benchmarking program. With four quarters of Patient Satisfaction Survey data analyzed and reported quarterly, the next step in the process was to provide annual results. This objective was met by pooling and analyzing the data. The large data set (n = 6,353) allowed for a robust multivariable analysis of the data.

Results

The sample size of administered Patient Satisfaction Surveys in 2019 was 32,921 with 6,353 of the surveys completed and returned. The mean age of the responding patient was 62.07 (SD=16.86) while the percentage of males and females was 55.32% and 44.68% respectively. Overall, patients gave high marks to each aspect of their home infusion service with "patient instructions" receiving the highest ratings and includes how to wash hands, self-administer medications, and care for the IV catheter. The average top box score for these questions was 98.36%. This score provides evidence that patients do understand home and specialty infusion instructions. Much of the success of home and specialty infusion hinges on this patient understanding. The all-encompassing survey question, "I was satisfied with the overall quality of the services provided" received a mean score of 4.78 (SD=.55) on a five-point Agree/Disagree scale. This score indicates a high degree of patient satisfaction with home infusion services. The most common therapy type administered was anti-infectives which accounted for 69.66% of the patients followed by biologics (6.83%). Chi-square analysis of "Overall quality of services provided" by "Therapy Category" reveals a significant difference among the therapy types (p = .039). Patients receiving biologics are the most satisfied of the therapy categories with a mean score of 4.82 (SD=.52).

Discussion

The survey data answers questions about the home and specialty infusion industry through the eyes of the patient. High rates of patient satisfaction are likely a contributing factor for the increased utilization of home infusion over the last decade, in addition to other benefits such as, convenience and lower costs for health plans. Having validated data to understand how patients perceive home infusion services will benefit providers, prescribers, payers, and regulators as they evaluate how to apply home-based services.

Background

Prior to the 2020 COVID-19 pandemic, patients in need of infused medications were selecting the home setting over other sites of care citing improved quality of life, convenience, and less risk of healthcare-acquired infections (HAIs).[1,2] These health care advantages are just a few of the reasons why the home infusion industry has experienced significant growth in the past decade, evident by a jump from 829,000 patients serviced in 2010 to 3.2 million in 2019.[3] Anti-infective therapies account for 49.4% of all home infusion patients and have seen the most dramatic growth in patient numbers in addition to specialty therapies, such as biologics, immune globulin (IV and SC), and bleeding disorder medications.[3] The home and specialty industry has grown rapidly and evolved in the last decade warranting even a greater need to understand the patient's level of satisfaction with the services provided. This understanding will be of particular interest to patients and physicians considering home infusion for the first time due to the COVID-19 outbreak and need to reduce the risk of exposure. Furthermore, data from this survey can be used to support and advance home and specialty infusion services, determine best practices, and identify performance gaps.[4]

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. Unfortunately, the patient satisfaction questions used by the industry were not validated or reliability tested. Overall, there was a void in home and specialty infusion patient satisfaction questions that generate accurate results with less potential for measurement error and misinterpretation. Additionally, there was a need for standardization among the survey questions used by the home and specialty infusion provider locations so that industry-wide analysis and comparisons could be conducted. To meet this need, the National Home Infusion Foundation (NHIF) took the lead in the development of the *Uniform Patient Satisfaction Survey for Home Infusion Providers* (Patient Satisfaction Survey).[5] The rigorous process used to develop the survey and subsequent analysis of survey data can be replicated by other health care agencies needing a validated Patient Satisfaction Survey and a data analysis plan.

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, as shown in Table 3. 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. The survey was made available to the home and specialty infusion industry in 2017 with NHIF establishing quarterly benchmark results starting in Quarter 1 (January – March) of 2019.

Methodology

Patient Satisfaction Survey data was provided by individual home and specialty infusion providers. To participate, the providers were required to use the NHIF validated and standardized *Uniform Home Infusion Patient Satisfaction Survey* tool to collect data. Additionally, providers were also required to validate their sample populations, which ensured that survey data was only collected for a defined population of patients who received infused therapies at home. This was necessary because most providers sample a much broader mix of patients, such as patients who use self-injectable or enteral products, who may not meet the home infusion patient criteria. Patients represented in the analysis were either: 1) discharged patients who were active to the home infusion provider for seven or more days and received at least one infusion treatment at home, or 2) active home infusion patients who had been on service for at least six months.

To ensure that provider data was deidentified and confidentiality was maintained, NHIF partnered with Strategic Healthcare Programs (SHP) to serve as a data intermediary and recipient of returned surveys and/or survey data files. The Patient Satisfaction Survey was either administered by mail by SHP, or by the individual home and specialty provider via mail, phone, or electronically. Upon receiving the completed survey, SHP entered the data into an Excel file with no attached patient identifiers. SHP chose mail surveys over electronic surveys because a meta-analysis comparing response rates in e-mail and paper surveys shows that paper surveys generally have a higher return rate.[6]

With four quarters of Patient Satisfaction Survey data analyzed and reported quarterly, the next step in the process was to provide annual results. This objective was met by pooling and analyzing the data. The large data set (n = 6,353) allowed for a more robust multivariable analysis of the data and more accurate results. To determine the generalizability of the annual Patient Satisfaction Survey data, home infusion provider demographic data (geographical location, organizational structure, and net revenue) of those who contributed Patient Satisfaction Survey data was extrapolated from the *NHIF Provider Profile Survey* data set.

Data Analysis

Most of the Patient Satisfaction Survey data analysis involved top box scoring which is the percentage of respondents who selected the highest-rated option for the given survey question. For example, if the survey response option included Strongly Agree, Agree, Uncertain, Disagree, and Strongly Disagree, the top box would be Strongly Agree and the presented score would be the percentage of patients who chose this option. Since top box scores do not take into account all response options, means and standard deviations were calculated for all questions that utilized a scaled response.

To assist in summarizing the data, seven composite categories were formed from the survey's 22 data points. This involved combining data from questions that have similar themes. For composite categories that include more than one survey question, the percentage of patients selecting the top box score

TABLE 1

2019 Patient Satisfaction Survey Return Rates

Quarter	Sample Size	Returned Surveys	Survey Return Rate
1	6,958	1,369	19.68%
2	8,615	1,679	19.49%
3	8,884	1,338	15.06%
4	8,464	1,967	23.24%
TOTAL	**32,921**	**6,353**	**19.30%**

for each survey question was totaled and divided by the number of survey questions in the composite. Composite scores assisted in determining overall industry strengths and weaknesses.

Cross tabulation analysis was conducted to show relationships within the data that might not be readily apparent when analyzing total survey responses. The most consistently used patient satisfaction rating question used in healthcare surveys is "I was satisfied with the overall quality of the services provided." Accordingly, this survey question (Question 11) was used in the cross-tabulation analysis along with the following patient demographic variables; gender, therapy category, age grouped into five categories, age grouped into two categories (0-64 and 65+), and active versus discharged patient status. Age grouped into two categories was used to delineate Medicare-aged patients. To determine if a significant difference existed between the overall quality of the services provided and the patient demographics, a two-tailed Chi-square test was used with significance set at $p \leq .05$.

Results

Return Rate

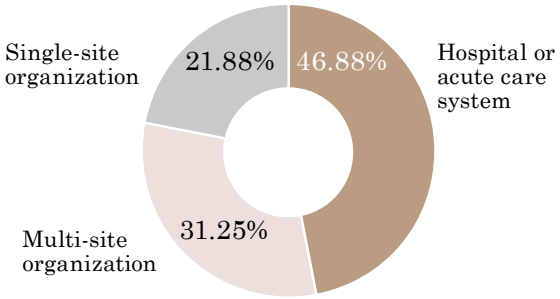
Fifty-three home and specialty infusion providers contributed Patient Satisfaction Survey data during 2019. As shown in Table 1, the sample size of administered Patient Satisfaction Surveys in 2019 was 32,921 with 6,353 of the surveys completed and returned. This accounts for an annual 19.30% return rate with a quarterly range of 15.06% to 23.24%. According to research, mailed survey response rates may only approximate 25% to 30% without follow-up and enticements.[7] Due to the low but adequate survey response rate, the representativeness of the providers who contributed survey data was also investigated.

Data Generalizability

Of the 53 provider locations that contributed Patient Satisfaction Survey data, 32 (60.37%) also completed the *Provider Profile Survey* that provided the data used in the *NHIF Industry Trends Report*.[3] The 32 *Provider Profile Surveys* were analyzed to determine the demographics and representativeness of those who provided patient satisfaction survey data.

EXHIBIT 2

Provider Organizational Structure (n=32)



As shown in Exhibit 1, all four regions of the United States were represented by providers who contributed Patient Satisfaction Survey data. Exhibit 2 shows that all three types of provider organizational structures were represented

EXHIBIT 1

Region Where Home Infusion Provider is Located (n=32)

Region	Frequency	Percent
A - Northeast	11	34.38%
B - Midwest	9	28.13%
C - South	9	28.13%
D - West	3	9.38%
TOTAL	32	100.00%

*Data from 32 of 53 providers.

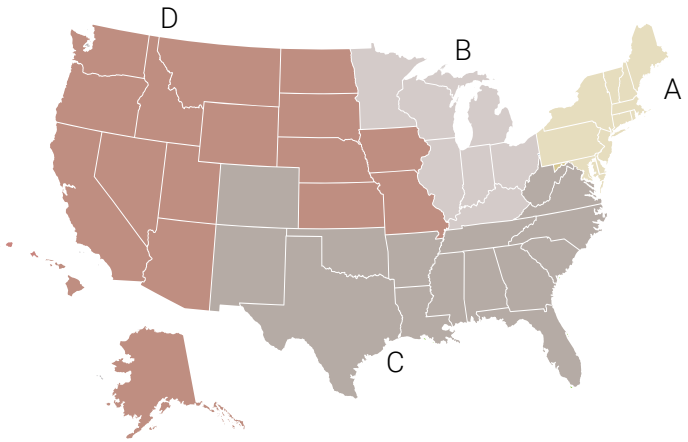
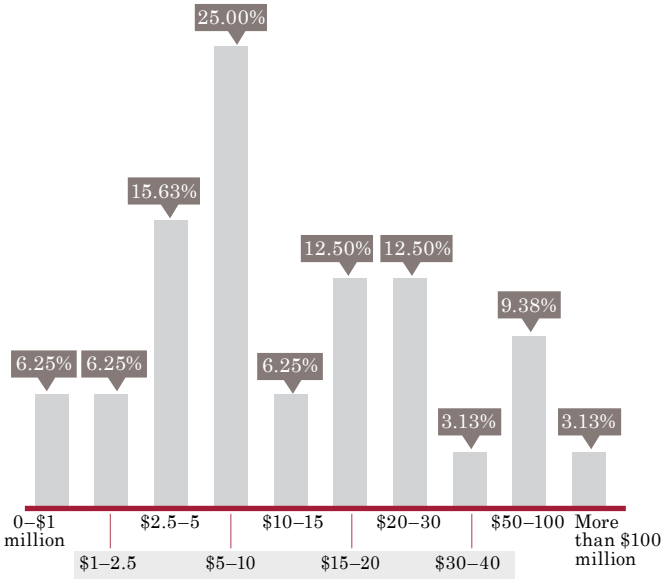


EXHIBIT 3

Provider Net Revenue Category (n=32)



with almost half of the providers affiliated with a hospital or acute care system, while 31.25% were a multi-site organization, and 21.88% a single site organization. The category that best represents the provider's net revenue for all pharmacy-based services was $5 to $10 million which accounted for one-fourth of the providers. As shown in Exhibit 3, all net revenue categories were represented by at least one provider.

From the representativeness shown in the home and specialty infusion provider demographic data; US region, organizational structure, and net revenue category, it is surmised that the 53 provider locations who contributed Patient Satisfaction Survey data are representative of the population of home and specialty infusion providers. This is important to note because it is suggested in the literature that response representativeness is more important than response rate in survey research.[8] Even so, future administrations of the survey will focus on achieving a higher survey return rate.

Patient Demographics

The mean age of the responding home and specialty infusion patient was 62.07 (SD=16.86) with the oldest respondents being 102 years of age. The percentage of males and females was 55.32% and 44.68% respectively and the active versus discharged patient status was relatively even with 48.10 and 51.90%. The most common therapy type administered was anti-infectives which accounted for 69.66% of the patients followed by biologics (6.83%).

Composite Results

Overall, all composite scores are high with most in the 90% range, as shown in Table 2. The top composite score was "Patient Instructions" which included the patient's understanding of home infusion instructions, such as how to wash hands, self-administer medications, care for the IV catheter, and more. This composite received the highest average percent of top box scores with 98.36%. This score provides evidence that patients do understand home and specialty infusion instructions. Much of the success of home and specialty infusion hinges on this patient understanding. This data supports that home infusion clinicians are highly skilled at providing quality education and training to the patients they serve.

The annual composite scores below 90% included "General Communication," which included phone calls for help, communication about medication side effects, and explanation of financial responsibilities. This composite received 89.51% of the top box scores which is still a good rating, but provides insight into an area where providers can have focused action plans to improve.

TABLE 2

2019 Composite Scores: Patient Satisfaction Benchmarking Results (n = 6,353)

	Composite Category	Q1, 2019	Q2, 2019	Q3, 2019	Q4, 2019	2019 Annual Results
1	Equipment and Supplies, *Questions 1-3*	95.70	95.45	95.10	94.98	**95.28**
2	General Communication, *Questions 4-7*	89.67	89.53	87.94	90.13	**89.51**
3	Staff Courtesy, *Questions 8a, b, c, d*	92.17	93.23	91.10	93.28	**92.59**
4	Staff Helpfulness, *Questions 9a, b, c, d*	92.92	92.18	90.14	92.50	**91.48**
5	Patient Instruction, *Questions 10a, b, c, d, e*	98.64	98.21	98.06	98.49	**98.36**
6	Overall Satisfaction, *Question 11*	79.96	81.94	81.71	82.94	**81.77**
7	Would Recommend, *Question 12*	77.73	79.47	78.42	80.07	**79.06**

Two patient satisfaction questions most often asked and benchmarked in health care are Question 11 (Composite 6), "I was satisfied with the overall quality of the services provided." and Question 12 (Composite 7), "I would recommend this home infusion company to my family and friends." The annual results for Composite 6 are 81.77% and 79.06% for Composite 7, as shown in Table 2. It can be inferred from these scores that home infusion patients are satisfied with their overall patient experience which encompasses intake and patient service representatives, interdisciplinary clinical teams, delivery personnel, and other ancillary staff.

Survey Questions Results

As shown in Table 3, all 22 data points in the Patient Satisfaction Survey received its own quarterly and annual analysis. Within each survey question, the quarterly top box percent scores are consistent, which supports the reliability of the survey instrument. Overall, patients gave high marks to each aspect of their home infusion service. According to analysis, home infusion providers perform exceptionally well at providing instructions, ensuring that the infusion pump works and is clean when delivered, and informing patients who to call when needing help. Areas that were

TABLE 3
2019 NHIF Uniform Patient Satisfaction Survey Questions Benchmarking Results (n = 6,353)

	Survey Questions	Benchmark Top Box % Q1, 2019	Benchmark Top Box % Q2, 2019	Benchmark Top Box % Q3, 2019	Benchmark Top Box % Q4, 2019	2019 Annual Results
Q1	The home infusion pump was clean when it was delivered.	99.48	99.05	99.16	99.04	**99.15**
2	The home infusion pump worked properly.	97.74	97.23	96.43	96.46	**96.92**
3	The home infusion medications and supplies arrived before I needed them.	89.94	90.08	89.71	89.45	**89.78**
4	I knew who to call if I needed help with my home infusion therapy.	97.82	97.92	97.64	97.97	**97.85**
5	The response I received to phone calls for help on weekends or during evening hours met my needs.	84.94	85.08	83.27	86.31	**85.05**
6	The home infusion nurse or pharmacist informed me of the possible side effects of the home infusion medication.	86.33	85.48	82.34	85.59	**85.03**
7	I understood the explanation of my financial responsibilities for home infusion therapy.	91.42	89.65	88.50	90.66	**90.10**
8a	The delivery staff was always courteous.	93.44	94.33	93.18	94.30	**93.89**
8b	The billing staff was always courteous.	88.54	89.46	85.46	90.42	**88.78**
8c	The pharmacy staff was always courteous.	92.21	94.14	92.47	93.75	**93.26**
8d	The nursing staff was always courteous.	94.59	95.00	93.27	94.64	**94.43**
9a	The delivery staff was always helpful.	90.37	92.55	90.91	92.72	**91.78**
9b	The billing staff was always helpful.	86.05	88.73	85.46	89.50	**87.67**
9c	The pharmacy staff was always helpful.	91.71	93.74	92.02	93.78	**92.95**
9d	The nursing staff was always helpful.	93.63	93.69	92.43	93.98	**93.50**
10a	I understood the instructions provided for how to wash my hands.	98.76	98.40	98.25	98.27	**98.41**
10b	I understood the instructions provided for how to give home infusion medication(s).	99.06	98.43	98.49	99.01	**98.76**
10c	I understood the instructions provided for how to care for the IV catheter.	98.32	97.70	97.51	98.34	**97.99**
10d	I understood the instructions provided for how to store the home infusion medication(s).	99.03	99.20	98.69	98.84	**98.95**
10e	I understood the instructions provided for how to use the home infusion pump.	98.00	97.33	97.37	98.00	**97.69**
11	I was satisfied with the overall quality of the services provided.	79.96	81.94	81.71	82.94	**81.77**
12	I would recommend this home infusion company to my family and friends.	77.73	79.47	78.42	80.07	**79.06**

TABLE 4

2019 Results: Means and Standard Deviations for Survey Questions Utilizing a 5-Point Scale (n = 6,353)

	Survey Question	Mean	Std. Deviation
Q3	The home infusion medications and supplies arrived before I needed them.	4.84	.556
5	The response I received to phone calls for help on weekends or during evening hours met my needs.	4.76	.665
8a	The delivery staff was courteous.	4.92	.341
8b	The billing staff was courteous.	4.83	.580
8c	The pharmacy staff was courteous.	4.91	.384
8d	The nursing staff was courteous.	4.93	.355
9a	The delivery staff was helpful.	4.89	.415
9b	The billing staff was helpful.	4.80	.618
9c	The pharmacy staff was helpful.	4.90	.399
9d	The nursing staff was helpful.	4.91	.406
11	I was satisfied with the overall quality of the services provided.	4.78	.551
12	I would recommend this home infusion company to my family and friends.	4.73	.600

rated lower than most, but still very respectable, included medications and supplies arriving before the patient needed them, the response the patient received to phone calls for help on weekends or during evening hours, and being informed by the nurse or pharmacist of the possible side effects of the home infusion medication. All of these scores were in the mid-80's range. Even though the scores are good, these areas might be considered for a continuous quality improvement plan.

The mean scores and standard deviations for survey questions utilizing a 5-point scale instead of a Yes/No/NA response are shown in Table 4. All mean scores are above 4.72 out of 5 which confirms the positive perception that patients have for their home and specialty infusion services. One of the lowest mean scores was Question 5, "The response I received to phone calls for help on weekends or during the evening hours met my needs." This question also had the highest standard deviation, indicating the most variance in responses. Overall, it is interesting to note that survey questions specific to operations or personnel were highly rated. Question 11, an all-encompassing question, "I was satisfied with the overall quality of the services provided received one of the lowest mean scores (4.78). Even so, this score is very good and can be interpreted as a compliment to the home and specialty infusion industry.

TABLE 5.

Cross Tabulation: Gender by Overall Quality of Services Provided (n = 4,433)

Gender		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	
Male	Count	9	20	29	412	1,987	2,457
	% within Patient Gender	0.37%	0.81%	1.18%	16.77%	80.87%	100%
Female	Count	9	18	20	303	1,626	1,976
	% within Patient Gender	0.46%	0.91%	1.01%	15.33%	82.29%	100%
TOTAL	Count	18	38	49	715	3,613	4,433
	%	**0.41%**	**0.86%**	**1.11%**	**16.13%**	**81.50%**	**100%**

TABLE 6.

Cross Tabulation: Gender by Overall Quality of Services Provided (Mean/SD)

Patient Gender	Mean	n	Std. Deviation
Male	4.77	2,457	.542
Female	4.78	1,976	.548
TOTAL	**4.77**	**4,433**	**.545**

Cross Tabulations

When question 11 "I was satisfied by the overall quality of services provided" was examined by gender (Table 5), little difference is observed when "strongly agree" and "agree" responses are combined (male = 97.64%, female = 97.62%). As expected, the same similarity is observed when comparing the mean scores, as shown in Table 6. Chi-square analysis of "Quality of Services

TABLE 7.

Cross Tabulation: Therapy Category by Overall Quality of Services Provided (n = 2,655)

Gender		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total
Therapy Category	Count	4	12	18	280	1,536	1,850
	%	0.22%	0.65%	0.97%	15.14%	83.03%	100%
Parenteral nutrition	Count	0	0	3	15	73	91
	%	0.00%	0.00%	3.30%	16.48%	80.22%	100%
Hydration, Inotropic, Anti-neoplastic chemotherapy, Catheter care, Other (non biologic)	Count	4	3	4	94	363	468
	%	0.85%	0.64%	0.85%	20.09%	77.56%	100%
Biologics, Immune globulin IV & SC	Count	2	0	3	31	210	246
	%	0.81%	0.00%	1.22%	12.60%	85.37%	100%
TOTAL	Count	10	15	28	420	2,182	2,655
	%	**0.38%**	**0.56%**	**1.05%**	**15.82%**	**82.18%**	**100%**

Provided" by "Therapy Category" reveals a significant difference among the therapy types (p = .039). As shown in Table 7, patients receiving biologics are the most satisfied of the therapy categories with a top box score of 85.37% and mean score of 4.82 (SD=.52) (Table 8). When "Quality of Services Provided" is analyzed by five "Age Groups," as shown in Table 9, little difference is observed in the results. This is especially evident when the "strongly agree" and "agree" percentage of responses for each category are combined; the range for the five age categories is 97.32%

TABLE 8.

Cross Tabulation: Therapy Category by Overall Quality of Services Provided (Mean/SD)

Therapy Category	Mean	n	Std. Deviation
Anti-infective	4.80	1,850	.494
Parenteral nutrition	4.77	91	.496
Hydration, Inotropic, Anti-neoplastic chemotherapy, Catheter care, Other (non-biologic)	4.73	468	.597
Biologics, Immune globulin IV & SC, Bleeding Disorders	4.82	246	.522
TOTAL	**4.79**	**2,655**	**.517**

TABLE 9.

Cross Tabulation: Age Group by Quality of Services Provided (n = 5,783)

Age Group		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total
0 - 19	Count	1	1	3	31	165	201
	% within Age Group	0.50%	0.50%	1.49%	15.42%	82.09%	100%
20 - 34	Count	3	3	2	40	230	278
	% within Age Group	1.08%	1.08%	0.72%	14.39%	82.73%	100%
35 - 49	Count	2	6	5	62	410	485
	% within Age Group	0.41%	1.24%	1.03%	12.78%	84.54%	100%
50 - 64	Count	9	14	19	289	1,594	1,925
	% within Age Group	0.47%	0.73%	0.99%	15.01%	82.81%	100%
65+	Count	10	22	39	505	2,318	2,894
	% within Age Group	0.35%	0.76%	1.35%	17.45%	80.10%	100%
TOTAL	Count	25	46	68	927	4,717	5,783
	%	**0.43%**	**0.80%**	**1.18%**	**16.03%**	**81.57%**	**100%**

TABLE 10.

Tabulation: Age Group by Overall Quality of Services Provided (Mean/SD)

Age Group	Mean	n	Std. Deviation
0 - 19	4.78	201	.540
20 - 34	4.77	278	.624
35 - 49	4.80	485	.553
50 - 64	4.79	1,925	.535
65+	4.76	2,894	.544
TOTAL	**4.78**	**5,783**	**.545**

to 97.82%. This small difference is also observed when the mean/SD scores are compared in Table 10.

Chi-square analysis of "Quality of Services Provided" by "Age Groups (0-64 and 65+)" reveals a significant difference (p = .023). Even though both age groups are very satisfied with the overall quality of services provided, patients 0 – 64 years of age are more satisfied than those who are 65+, as shown in Table 11 and 12. Finally, when "active" and "discharged" patients are compared according to "Quality of Services Provided," very little difference is observed as shown in Tables 13 and 14.

Cross tabulation analysis was conducted to show relationships within the data that might not be readily apparent when analyzing total survey responses. The results indicate a relationship between the "Quality of Services Provided" and "Therapy Type" (Table 7) and "Quality of Services Provided" and "Age Groups (0-64 and 65+)" (Table 11). Knowing this, future patient satisfaction research can be targeted to patient therapy type and patient age group (0-64 and 65+). An understanding of why there is a difference in patient satisfaction within these subgroups will assist in customizing home and specialty infusion patient services.

TABLE 11.

Cross Tabulation: Age Group by Overall Quality of Services Provided (n = 5,783)

Age Group		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total
0 - 64	Count	15	24	29	422	2,399	2,889
	% within Age Group	0.52%	0.83%	1.00%	14.61%	83.04%	100%
65+	Count	10	22	39	505	2,318	2,894
	% within Age Group	0.35%	0.76%	1.35%	17.45%	80.10%	100%
TOTAL	Count	25	46	68	927	4,717	5,783
	%	**0.43%**	**0.80%**	**1.18%**	**16.03%**	**81.57%**	**100%**

TABLE 12.

Cross Tabulation: Age Group by Overall Quality of Services Provided (Mean/SD)

Two Age Groups	Mean	n	Std. Deviation
0 - 64	4.79	2,889	.547
65+	4.76	2,894	.544
TOTAL	**4.78**	**5,783**	**.545**

TABLE 14.

Cross Tabulation: Patient Status (Active/Discharged) by Overall Quality of Services Provided (Mean/SD)

Patient Status	Mean	n	Std. Deviation
Active Patient	4.77	2,862	.562
Discharged Patient	4.78	3,097	.544
TOTAL	**4.78**	**5,959**	**.553**

TABLE 13.

Cross Tabulation: Patient Status (Active/Discharged) by Overall Quality of Services Provided (n = 5,959)

Patient Status		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree	Total
Active Patient	Count	12	30	39	434	2,347	2,862
	% within Patient Status	0.42%	1.05%	1.36%	15.16%	82.01%	100%
Discharged Patient	Count	15	22	34	495	2,531	3,097
	% within Patient Status	0.48%	0.71%	1.10%	15.98%	81.72%	100%
TOTAL	Count	**27**	**52**	**73**	**929**	**4,878**	**5,959**
	%	**0.45%**	**0.87%**	**1.23%**	**15.59%**	**81.86%**	**100%**

Project Limitations

Even though the Uniform Patient Satisfaction Survey for Home Infusion Providers is proven to be a valid and reliable instrument there are limitations to survey methodology. First, due to a response rate of 19.30% there is the possibility of non-response error. Specifically, it is not known if the respondent's results would be similar to the non-respondents. Furthermore, respondents may not be 100% truthful with their answers for a variety of reasons. Even so, survey methodology is the most commonly used method to measure patient satisfaction. Even though the response rate was low, the data can be generalized to the population of home and specialty infusion providers, as determined by the representativeness of the providers who contributed Patient Satisfaction Survey data.

Discussion

The National Home Infusion Association (NHIA) is proud that the foundation has developed and implemented the first national, standardized database of home infusion Patient Satisfaction Survey data. The annual data answers many questions about the industry through the eyes of the patient. To begin, the home and specialty infusion industry wanted to know how they were performing so they could learn and improve. Quality describes the patient experience, from the instructions that are given to the patients by nurses and pharmacists to the helpfulness and courteousness of the staff. When overall quality of services was cross tabulated by therapy type, it was interesting to note that patients receiving specialty therapies, such as biologics and immune globulins rated the services the highest. These therapies are relatively new to the industry therefore the rating provides a much-needed assessment. Overall, the annual data shows an industry-wide commitment to serving the home infusion patient and creates the first national benchmarks for home and specialty infusion services.

NHIF would be remiss if they did not learn and make suggestions for improvement based on the data. Five survey questions that lend themselves to areas of improvement, with top box annual averages below 90%, include the following:

- The home infusion medications and supplies arrived before I needed them (89.78% top box score).
- The response I received to phone calls for help on the weekends or during the evening hours met my needs (85.05% top box score).
- The home infusion nurse or pharmacist informed me of the possible side effects of the home infusion medication (85.03% top box score).
- The billing staff was courteous (88.78% top box score).
- The billing staff was helpful (87.67% top box scores).

Even though a top box score of 89.78% is respectable for the "timeliness of the arrival of medications and supplies" question, it can be improved. The Infusion Industry Trends 2020 report did show that providers were moving from providing their own delivery service to accessing Federal Express and United Postal Service.3 Additional research needs to be conducted that investigates the reliability of delivery services.

At the national level, it is not practical to implement interventions that will improve scores in these four areas. Fortunately, providers who submitted at least 15 surveys in a quarter received individualized Provider Patient Satisfaction Survey Reports showing their top box percent, top box ranges, and composite scores. Each participating provider is aware of their company's strengths and possible weaknesses.

Conclusion

Home and specialty infusion providers need to continue to create a culture that fosters a high-quality patient experience. Every person involved in the home and specialty infusion process needs to understand the important role they have in making a difference in the life of a home and specialty infusion patient; from their behavior to their performance, it all makes a difference. Survey results show that home and specialty infusion staff are helpful and courteous and the equipment they receive is clean and works. The survey findings provide over-whelming support for quality of the services the industry provides and the way care is delivered to patients.

The home and specialty infusion industry has experienced significant growth over the last decade. High rates of patient satisfaction are likely a contributing factor for the increased utilization of home infusion, in addition to other benefits such as, convenience and lower costs for health plans. It is common knowledge that COVID-19 has impacted healthcare. It is surmised that substantial growth in the home site of care will be one of the outcomes of the pandemic. As healthcare trends toward services that emphasize reduced health care-associated infections, value, convenience, and flexibility for both the patient and provider, the use of home infusion is likely to continue to expand. Having validated data to understand how patients perceive home infusion services will benefit providers, prescribers, payers, and regulators as they evaluate how to expand home-based services.

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