Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Telehealth During the COVID-19 Pandemic: A Cross-Sectional Survey of Registered Dietitian Nutritionists

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ABSTRACT

During the current coronavirus disease 2019 (COVID-19) pandemic, health care practices have shifted to minimize virus transmission, with unprecedented expansion of telehealth. This study describes self-reported changes in registered dietitian nutritionist (RDN) practice related to delivery of nutrition care via telehealth shortly after the onset of the COVID-19 pandemic in the United States. This cross-sectional, anonymous online survey was administered from mid-April to mid-May 2020 to RDNs in the United States providing face-to-face nutrition care prior to the COVID-19 pandemic. This survey included 54 questions about practitioner demographics and experience and current practices providing nutrition care via telehealth, including billing procedures, and was completed by 2016 RDNs with a median (interquartile range) of 15 (6-27) years of experience in dietetics practice. Although 37% of respondents reported that they provided nutrition care via telehealth prior to the COVID-19 pandemic, this proportion was 78% at the time of the survey. Respondents reported spending a median (interquartile range) of 30 (20-45) minutes in direct contact with the individual/group per telehealth session. The most frequently reported barriers to delivering nutrition care via telehealth were lack of client interest (29%) and Internet access (26%) and inability to conduct or evaluate typical nutrition assessment or monitoring/evaluation activities (28%). Frequently reported benefits included promoting compliance with social distancing (66%) and scheduling flexibility (50%). About half of RDNs or their employers sometimes or always bill for telehealth services, and of those, 61% are sometimes or always reimbursed. Based on RDN needs, the Academy of Nutrition and Dietetics continues to advocate and provide resources for providing effective telehealth and receiving reimbursement via appropriate coding and billing. Moving forward, it will be important for RDNs to participate fully in health care delivered by telehealth and telehealth research both during and after the COVID-19 public health emergency.
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With the onset of the 2019 coronavirus disease (COVID-19) public health emergency in the United States in early 2020, telehealth suddenly rose to prominence as essential to maintaining patient access to health care. Telehealth, or the "use of electronic information and telecommunications technologies to support long-distance clinical health care [and patient education],"[1] allows providers to care for patients while reducing potentially risky in-person contact and preserving personal protective equipment.[2] In the midst of these nationwide changes in health care delivery, some registered dietitian nutritionists (RDNs) continue to deliver in-person care, and others have shifted to providing nutrition care via telehealth. Telenutrition is a form of telehealth that "involves the interactive use, by an RDN, of electronic information and telecommunications technologies to implement the Nutrition Care Process . . . with patients or clients at a remote location."[1]

On January 27, 2020, the US secretary of Health and Human Services declared the COVID-19 pandemic a public health emergency,[3] and on March 13, the president of the United States declared the COVID-19 outbreak to be a national emergency.[4] To rapidly expand telehealth access, the US Congress passed the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 on March 6, which gave the Centers for Medicare & Medicaid Services (CMS) the authority to waive or modify Medicare telehealth requirements during the emergency period.[5] CMS subsequently issued a series of waivers starting March 31, 2020, to allow flexibility in how health care providers deliver patient care via telehealth.[6,7] Among other benefits, these waivers allowed services to be delivered irrespective of patient or provider location; online assessment of new, in addition to established, patients; and the option for audio-only telehealth services (as opposed to requiring audiovisual contact) when needed by the beneficiary. Many other health care payers (ie, state Medicaid programs, commercial insurers) issued their own temporary telehealth flexibilities.[8-10] The Academy of Nutrition and Dietetics (Academy) has supported these waivers[11-14] and has provided its members with a variety of tools to assist with delivering nutrition care via telehealth.[15-18] However, many questions remain about the logistics of implementation, billing, and reimbursement for RDNs providing telenutrition. To describe changing RDN roles and practices and identify areas of need, the Academy conducted a survey of RDNs using telehealth in the United

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States early during the COVID-19 pandemic.

SURVEY

This cross-sectional, anonymous online survey was administered to RDNs and aimed to measure changes in RDN use of telehealth to deliver nutrition care shortly after the onset of the COVID-19 pandemic in the United States. The study protocol was reviewed and approved by the University of New Mexico Human Research Protections Office (#20-187). All respondents reviewed an informed consent document and agreed to participate.

Survey Development and Design

Survey questions were developed by the Academy's Research, International and Scientific Affairs team, and then jointly reviewed and revised by the Nutrition Services Coverage, Quality Management, Lifelong Learning, and Policy Initiatives and Advocacy teams.

The survey included 54 questions, including demographic questions, such as the RDN's highest completed degree and number of years of practice in the field. It also included questions about experience with providing nutrition care via telehealth and current practices related to telehealth, including billing practices.

Survey Administration

Survey distribution began on April 16, 2020, and closed on May 15, 2020. The Academy used Informz,[19] a cloud-based e-mail marketing platform, to facilitate the distribution of a survey recruitment text and link via e-mail to all RDNs living in the United States and registered with the Commission on Dietetic Registration, and also to members of specific dietetic practice groups (Diabetes, Medical Nutrition Therapy, Oncology Nutrition, Renal Dietitians, Sports Cardiovascular and Wellness Nutrition, Weight Management). A reminder e-mail was sent approximately 2 weeks after the initial e-mail. Additionally, the survey recruitment text and link were posted to the Academy's social media channels (Facebook, Twitter, and LinkedIn) and promoted though online communities.

Eligible respondents consented to participate, were RDNs located in the United States or in US territories, and provided face-to-face nutrition care prior to the COVID-19 pandemic. Survey respondents were asked if they had previously completed the survey, and those who indicated that they had done so were omitted.

Data Management and Analysis

Survey data were collected and managed using Research Electronic Data Capture (REDCap) tools hosted at the University of New Mexico.[20] REDCap is a secure, web-based application designed to support data capture for research studies. Survey data were descriptively analyzed using RStudio.[21] Categorical variables were described as n (%) and continuous variables were described as median (interquartile range [IQR]). Respondents had the option to skip questions, and sample sizes were described for each question. Data were not imputed for missing variables. RDN responses to open-ended questions were reviewed and organized into themes manually based on common perspectives in the responses and investigator consensus.

FINDINGS

Respondent Characteristics

There were 2198 eligible responses to the COVID-19 telehealth survey. Only the first response was included from individuals who indicated that they completed the survey multiple times during the period that the survey was open. Responses from 2016 individuals were included in this baseline analysis. Responding RDNs had a median (IQR) of 15 (6-27) years of experience in dietetics practice. Approximately two-thirds of respondents were Academy members, and slightly more than half had graduate degrees. Most respondents (67%) identified clinical nutrition as their primary practice area, and the most frequently identified focus areas were renal nutrition (20%), diabetes care (16%), and gerontological nutrition (12%). Although respondents worked with populations in a variety of life stages, they most often reported working with adults ages 22 to 64 (85%) and older adults (84%) (Table 1).

Telehealth Experience

Although 37% of respondents reported that they provided nutrition care via telehealth prior to the COVID-19 pandemic, this proportion increased to 78% at the time the survey was completed. Those who utilized telehealth before the pandemic had a median (IQR) of 3 (1-7) years of experience doing so (Table 2).

At the time of the survey, the greatest proportion of respondents (49%) reported that they used both telephone (audio-only) and audiovisual modalities to provide telehealth services. Audiovisual options used were heterogeneous across respondents, with the greatest proportion of respondents using Zoom (14%), audiovisual options provided through the electronic health record (9%), and Zoom for Healthcare (8%). Respondents reported spending a median (IQR) of 30 (20-45) minutes in direct contact with the individual/group per telehealth session. The greatest proportion of respondents (62%) reported documenting telehealth results in an electronic health record, followed by sending an e-mail (15%) or fax (14%) to the referring medical provider (Table 2).

Although the majority of respondents indicated performing typical aspects of nutrition assessment and monitoring, such as collecting information on food and nutrition-related history (70%), knowledge/beliefs/attitudes (60%), and client history and behavior (59%), only 39% reported assessing anthropometric measures and only 18% utilized a form of nutrition-focused physical findings (Table 2).

Billing, Coding, and Reimbursement

On average, respondents estimated that approximately 50% of their clients were covered by Medicare, 25% were covered by Medicaid, 25% were covered by commercial insurance, and <1% were self-pay. Prior to the COVID-19 pandemic, 47% of respondents reported that they were Medicare provider, and 40% were not, and 13% were not sure (Table 3). Among those who were not Medicare providers already, 2% had become Medicare providers since the COVID-19 pandemic began. Although half of RDNs said that they or their employer sometimes or always

Table 1. Characteristics of RDNs[a] respondents living in the United States or in US territories who provided face-to-face care prior to the COVID-19[b] pandemic (N = 2016)

Characteristic	Responses[c]
Member of Academy of Nutrition and Dietetics (n = 1862)	*n (%)*
Yes	1212 (65.1)
No	650 (34.9)
Highest degree earned (n = 2008)	
Bachelor's	910 (45.3)
Master's	1052 (52.4)
Doctorate	46 (2.3)
	median (IQR[d])
Years of experience as RDN (n = 1997)	15 (6-27)
Hours per week providing face-to-face nutrition care prior to COVID-19 pandemic (n = 1991)	24 (15-32)
Practice area in which most time is spent (n = 1898)	
Clinical nutrition	1269 (66.9)
Community and public health nutrition	146 (7.7)
Consultant	131 (6.9)
Education	79 (4.2)
Entrepreneurial	64 (3.4)
Other[e]	209 (11.0)
Settings where at least 20% of time is spent (n = 2038)[f]	
Ambulatory/outpatient care facility (eg, clinic, physician's office, primary care)	824 (40.9)
Acute-care—outpatient	299 (14.8)
Long-term care	293 (14.5)
Private practice	262 (13.0)
Acute-care—inpatient	198 (9.8)
Office	154 (7.6)
Other[g]	576 (28.3)
Focus area in which most time is spent (n = 1969)	
Renal nutrition	388 (19.7)
Diabetes care	322 (16.4)
Gerontological nutrition	230 (11.7)
Weight management	176 (8.9)
Disordered eating	105 (5.3)
Oncology	95 (4.8)
Pediatric nutrition	85 (4.3)
Food and nutrition consultation	79 (4.0)
Generalist	78 (4.0)
Other[h]	411 (20.8)
Life stages of populations worked with (n = 2038)[i]	
Adults (ages 22-64)	1721 (85.3)
Older adults (age 65+)	1691 (83.9)
Teenagers and young adults (ages 13-21)	842 (41.8)
Children (ages 6-12)	513 (25.4)

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Table 1. Characteristics of RDNs[a] respondents living in the United States or in US territories who provided face-to-face care prior to the COVID-19[b] pandemic (N = 2016) (*continued*)

Characteristic	Responses[c]
Pregnant/postpartum women	482 (23.9)
Young children (ages 1-5)	357 (17.7)
Infants	229 (11.3)

[a]RDN = registered dietitian nutritionist.
[b]COVID-19 = coronavirus disease 2019.
[c]Does not include missing responses.
[d]IQR = interquartile range.
[e]Includes, but is not limited to, business and industry, executive leadership, management, research, and communications.
[f]Respondents were able to select up to 5 options.
[g]Other responses include, but are not limited to, assisted living home or group home; college or university dining; college, university, or academic medical center; contract food management company; correctional facility; food or equipment manufacturer, distributor, or retailer; health or fitness facility; home health; hospice or palliative care; nongovernmental organization; pharmaceutical or nutrition products manufacturer, distributor, or retailer; post—acute care or rehab facility; restaurant; retail; school nutrition; social services organizations, sports medicine facility; surgery center; and trade or professional organization.
[h]Other responses included, but were not limited to, agriculture; allergy/immunology; bariatrics; cardiovascular; college or university dining; community nutrition/public health; communications/journalism; digital or mobile health; food safety; gastroenterological nutrition; integrative and functional medicine; malnutrition; management; maternal and child health; media and public relations; nutrition support; preventive care/wellness; quality management; school nutrition services; and sports nutrition.
[i]Respondents were able to select all options that applied.

billed for telehealth services, 34% did not bill, and 17% were unsure of billing practices. Among the respondents that billed, the most frequently used Current Procedural Terminology codes were for medical nutrition therapy: 97802 (21%) and 97803 (20%). Among those that billed, 38% reported that they or their employers were always reimbursed for their telehealth services and 23% reported that they were sometimes reimbursed (Table 3).

When asked what resources from the Academy would be the most helpful for delivering nutrition care during the COVID-19 pandemic and what respondents would like the Academy to know, most RDN responses were focused on billing support, information on copays, how to become a Medicare or other insurance provider, and proper coding and documentation. Example quotes include:

- "[I would like] assistance in navigating insurance claims and pushing for reimbursement during this time."
- "[I would like information on how] to become a Medicare provider/insurance provider if working from home."
- "I am very thankful for the telehealth guidance on the Academy webpage. Our outpatient dietitian group was able to share info from this with our hospital billing group to help us determine how moving to telephone and telehealth altered our billing/coding."
- "[I would like more] clarity on proper billing codes and differentiating between audio only and audiovisual. A quick tip sheet would be awesome."
- "[I would like information on specific] coding and modifiers depending on [the hospital system] or provider billing."
- "[I would like information on] coding specific resources. All the insurance companies were accepting different [Place of Service] and modifiers. It would be nice for [the Academy] to provide that information."

In addition, several respondents described that it would be helpful to have advocacy for reimbursement of telehealth services provided by RDNs, both during and beyond the COVID-19 pandemic.

- "[I would like the Academy to advocate] for us. Medicare issued a % of previous billing check to help cover lost wages. Those of us that are with private insurers and have lost income do not have this option—and most of us are having trouble applying for [the Small Business Administration's Paycheck Protection Program or Economic Injury Disaster Loans]."
- "[Outside] of the COVID-19 pandemic, advocacy for expanded coverage by insurance companies for all nutrition care (not just diabetes or weight-related diagnoses and especially for disordered eating/eating disorders) [would be helpful]."
- I would also love if the academy pushed telehealth coverage for dietitians ongoing outside of this pandemic. While I prefer to meet in-person most of the time, there are some instances where telehealth would be preferred."
- "[I would like the Academy to . . . advocate] for the profession/telehealth coverage during this time and moving forward."

Barriers and Facilitators to Providing Telehealth

The most frequently reported barriers to delivering nutrition care via telehealth were (1) clients are not interested in receiving nutrition services via telehealth (29%), (2) not being able to conduct or evaluate some typical nutrition assessment or monitoring/evaluation activities (28%), and (3) clients not having Internet access (26%) (Table 4). The most frequently reported benefits of delivering nutrition care via

Table 2. RDN[a] respondents' experiences providing telehealth prior to and during the COVID-19[b] pandemic (N = 2016)

Survey question	Responses[c]
Provided nutrition care via telehealth prior to COVID-19 pandemic (n = 2008)	*n (%)*
Yes	751 (37.4)
No	1259 (62.6)
Years of experience providing nutrition care via telehealth prior to COVID-19 pandemic (n = 732)[e]	*median (IQR[d])* 3 (1-7)
Currently providing nutrition care via telehealth (n = 2000)	*n (%)*
Yes	1564 (78.2)
No	436 (21.8)
Targets of current nutrition care via telehealth (n = 1574)	
Individuals	1308 (83.1)
Groups	21 (1.3)
Both individuals and groups	245 (15.6)
Current modalities used to provide nutrition care via telehealth (n = 1578)	
Telephone (audio only)	554 (35.1)
Audiovisual	256 (16.2)
Both	768 (48.7)
Audiovisual options used to provide nutrition care via telehealth[fg] (n = 1024)	
Zoom	273 (13.5)
Audiovisual capability built into the electronic health record	187 (9.3)
Zoom for Healthcare	171 (8.4)
Doxy.me	156 (7.7)
Apple FaceTime	147 (7.3)
Cisco WebEx Meetings/WebEx Teams	120 (5.9)
Other[h]	450 (22.1)
Currently providing nutrition care via telehealth outside state where licensed to practice (n = 1595)	
Yes	228 (14.4)
No	1311 (83.1)
Not sure	39 (2.5)
	median (IQR)
Average minutes spent having direct client(s) contact during telehealth sessions (n = 1509)	30 (20-45)
Types of nutrition assessment[i] and/or monitoring and evaluation[j] conducted via telehealth (n = 2038)[g]	*n (%)*
Food and nutrition related history	1414 (70.1)
Knowledge/beliefs/attitudes	1219 (60.4)
Client history	1188 (58.9)
Behavior	1182 (58.7)
Assessment/monitoring/evaluation tools	1132 (56.1)
Physical activity and function	1108 (55.0)
Factors affecting access to food and food/nutrition related supplies	1059 (51.7)
Biochemical data, medical tests, and procedures	940 (46.6)
Medication and complementary/alternative medicine use	928 (46.0)
Anthropometric measurements	785 (38.9)
Food and nutrient administration	621 (30.8)

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Table 2. RDN[a] respondents' experiences providing telehealth prior to and during the COVID-19[b] pandemic (N = 2016) (*continued*)

Survey question	Responses[c]
Nutrition-focused physical findings	363 (18.0)
Types of nutrition interventions[k] provided via telehealth (n = 2038)[g]	
Nutrition counseling	1459 (72.4)
Nutrition education	1388 (68.9)
Nutrition prescription	920 (45.6)
Nutrition supplement therapy	688 (34.1)
Coordination of nutrition care by a nutrition professional	624 (31.0)
Food and/or nutrient delivery	527 (26.1)
Enteral and parenteral nutrition	326 (16.2)
Population-based nutrition action	127 (6.3)
Method of communicating results of telehealth back to referring medical provider[g]	
I document the interaction through an electronic medical record	1249 (62.0)
I send an e-mail to the medical provider	293 (14.5)
I send a fax to the medical provider	285 (14.1)
I call the medical provider's office	220 (10.9)
I do not communicate the interaction	115 (5.7)
Other (open text)[l]	216 (10.7)

[a]RDN = registered dietitian nutritionist.
[b]COVID-19 = coronavirus disease 2019.
[c]Does not include missing responses.
[d]IQR = interquartile range.
[e]For respondents who indicated they provided nutrition care via telehealth prior to the COVID-19 pandemic.
[f]For respondents who indicated they provided nutrition care via telehealth using audiovisual.
[g]Respondents were able to select all options that applied.
[h]Other responses included, but were not limited to, audiovisual as a component of Healthie; audiovisual as a component of Practice Better; audiovisual as a component of Kalix; audiovisual as a component of Simple Practice; audiovisual as a component of other practice management software; Facebook Messenger video chat; Google G Suite Hangouts Meet; Google Hangouts video; GoToMeeting; Skype for Business; Skype; Spruce Health Care Messenger; Updox; and VSee.
[i]Nutrition assessment, the first step of the nutrition care process, is a systematic approach to collect, classify, and synthesize important and relevant data needed to identify nutrition-related problems and their causes.
[j]Nutrition monitoring and evaluation follows nutrition intervention in the nutrition care process and identifies outcomes/indicators relevant to the diagnosis and nutrition intervention plans and goals.
[k]A nutrition intervention follows nutrition diagnosis in the nutrition care process and is a purposefully planned action(s) designed with the intent of changing a nutrition-related behavior, risk factor, environmental condition, or aspect of health status to resolve or improve the identified nutrition diagnosis(es) or nutrition problem(s).
[l]Open text responses primarily described verbal reports during telehealth conferences, face-to-face meetings or individual telephone calls, as well as texts, e-mails, and written reports.

telehealth were (1) promoting compliance with social distancing measures recommended due to the pandemic (66%) and (2) scheduling flexibility (50%) (Table 4).

In open text responses, respondents described additional telehealth-related issues or barriers. Some of example quotes were:

- "Technology doesn't always work correctly and sometimes we won't get a second chance to make contact [with the client]."
- "Medicare requiring video is a big hardship for my older clients. [They don't have] access, . . . [and are also] afraid of scams so [are] resistant to engage sometimes."
- "It is . . . [challenging to] obtain weights for pediatrics and assessments may not be so accurate."

Resources and Best Practices for Providing High-Quality Telehealth

Of the participating respondents, 45% did not consult any specific guidance about how to provide nutrition care via telehealth during the COVID-19 pandemic. Among those that did, the primary source of that guidance was their employer (62%), followed by the Academy's guidance (22%). Respondents using the Academy's telehealth resources generally found them valuable and rated them a 7.8 out of 10 (where 0 is not at all valuable and 10 is extremely valuable) (Table 4).

In addition to the billing, coding, and reimbursement requests described previously, when asked what resources from the Academy would be the most helpful for delivering nutrition care during the COVID-19 pandemic, RDNs also wanted resources related to best practices for delivering nutrition care

Table 3. RDN[a] respondents' experiences with billing, coding, and reimbursement for telehealth services (N = 2016)

Survey question	Responses[b]
Estimated % of patient population covered by Medicare	*median (IQR[c])*
Estimate of percentage covered (n = 1239)	50 (15-80)
Unsure (n = 791)	
Estimated % of patient population covered by Medicaid	
Estimate of percentage covered (n = 1146)	24.5 (5-50)
Unsure (n = 862)	
Estimated % of patient population covered by commercial insurance	
Estimate of percentage covered (n = 1202)	25 (10-50)
Unsure (n = 793)	
Estimated % of patient population that is self-pay	*n (%)*
Estimate of percentage covered (n = 1203)	1 (0.5)
Unsure (n = 777)	
Medicare provider prior to COVID-19[d] pandemic (n = 2008)	
Yes	943 (47.0)
No	797 (39.7)
Not sure	268 (13.3)
Became a Medicare provider since the COVID-19 pandemic (n = 1567)	
Yes	27 (1.7)
No	708 (45.2)
Unsure	120 (7.7)
Not applicable—already a Medicare provider prior to pandemic	712 (45.4)
RDN/employer is billing for services provided via telehealth (n = 1566)	
Yes, always	611 (39.0)
Yes, sometimes	169 (10.8)
No	524 (33.5)
Not sure	262 (16.7)
CPT[e] codes that RDN/employer is using to bill for services provided via telehealth (n = 2038)[fg]	
97802	423 (21.0)
97803	419 (20.8)
97804	54 (2.7)
99441	19 (0.9)
99442	18 (0.9)
99443	20 (1.0)
99444	10 (0.5)
Other (specify)[h]	145 (7.2)
Not sure	289 (14.3)
RDN/employer is being reimbursed for services provided via telehealth (n = 776)[g]	

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Table 3. RDN[a] respondents' experiences with billing, coding, and reimbursement for telehealth services (N = 2016) (*continued*)

Survey question	Responses[b]
Yes, always	292 (37.6)
Yes, sometimes	177 (22.8)
No	21 (2.7)
Not sure	286 (36.9)

[a]RDN = registered dietitian nutritionist.
[b]Does not include missing responses.
[c]IQR = interquartile range.
[d]COVID-19 = coronavirus disease 2019.
[e]CPT = Current Procedural Terminology.
[f]Respondents were able to select all options that applied.
[g]For respondents who indicated that they or their employer billed for services provided via telehealth
[h]Other CPT/Healthcare Common Procedure Coding System codes included, but were not limited to, 98966, 98967, 98968, 98972, 99241, 99242, 99243, 99244, 0403T, G0270, G0108, G0109, G9001, G9002.

via telehealth, including telehealth counseling tips, resources to get the most out of telehealth sessions, resources for conducting nutrition assessment and the nutrition-focused physical examination via telehealth, and nutrition guidelines for patients with or recovering from COVID-19. Some example quotes include:

- "[I'd like information on] best practices for being most effective in telephone consultations with patients."
- "[I'd like to know how to conduct the nutrition-] focused physical exam via telehealth, . . . [and measure] anthropometrics of patients who do not have scales or tape measures."
- "While I am comfortable working with individuals for telehealth, I am not comfortable working with groups. My groups are currently on hold. Info about groups would be helpful (rapport, crowd control)."
- "[I would like educational] materials that are updated to include COVID[-19] nutrition therapy (eating behaviors, immunity-related supplements/nutrition)."
- "[I would like tips] for building rapport via phone/video."

RDNs also wanted resources related to Health Insurance Portability and Accountability Act considerations when implementing telehealth. Specifically, respondents wanted guidance on Health Insurance Portability and Accountability Act–compliant platforms, what technologies can be used or not used, and patient confidentiality.

IMPLICATIONS FOR PRACTICE

Telehealth can be an effective way to provide nutrition care for individuals who are unable to or prefer not to receive in-person care.[22-24] During the COVID-19 pandemic, a large share of health care shifted rapidly to a telehealth delivery model to minimize transmission of COVID-19. This survey, conducted from mid-April to mid-May 2020, aimed to describe changing RDN roles and practices and identify areas of need related to telehealth. The percentage of RDNs who reported providing care via telehealth increased by nearly 41 percentage points from prior to the COVID-19 pandemic, when rates were already increasing in private practice and ambulatory care settings.[25] RDNs clearly adapted rapidly to the changing care delivery landscape, using multiple modalities to deliver nutrition care via telehealth according to the Nutrition Care Process, billing for telehealth care about 50% of the time and being reimbursed about 60% of the time when telehealth care was billed. At the time of the survey, the most utilized telehealth resources were offered by respondents' employer, although the Academy telehealth resources were rated highly by the RDNs that had used them.

RDNs reported some barriers to providing telehealth, and they wanted more resources related to best practices, billing, and health insurance coverage. Concerns related to RDN knowledge about coding, billing, and reimbursement for nutrition services are not new. Previous Academy surveys have documented that RDNs, and especially those not in a supervisory role, are not as aware of billing practices as they should be for successful billing and reimbursement for their services or to advocate for expanded coverage and payment by public and private payers.[25] There was clearly substantial interest among responding RDNs in this topic area. Because it is likely that telehealth will continue to be an important mode of service delivery, now is a good time for RDNs to use Academy resources to learn how to best code and bill for telenutrition services.[1]

The onset of the COVID-19 pandemic provided a natural experiment on the necessary and rapid expansion of telehealth services provided by RDNs that will continue to be studied for years to come. RDNs and other health care providers have adapted to using telehealth to deliver care, including establishing infrastructure and implementing processes and tools for delivering telehealth across practice settings. Although the use of telehealth is not expected to stay as pervasive as it has been during the COVID-19 pandemic, it is unlikely that rates of telehealth use will ever drop back to where they were prior to the pandemic, since many more health care practices now have the experience and tools to deliver telehealth and patients are more receptive to receiving care in this manner. With the increase in training resources available, it is an

Table 4. RDN[a] respondents' reported barriers, facilitators, and resources for providing telehealth (N = 2016)

Barriers and facilitators to providing telehealth	Responses[b]
Barriers to providing nutrition care via telehealth[c] (n = 1409)	*n (%)*
Clients not interested in receiving nutrition services via telehealth	581 (28.8)
Not being able to conduct or evaluate some typical assessment or monitoring/evaluation activities	567 (28.1)
Clients not having access to the Internet	521 (25.6)
Clients not interested in receiving any nutrition services at this time	510 (25.3)
Difficulty with establishing relationships/therapeutic alliance via telehealth	335 (16.6)
Lack of client referrals from medical providers	331 (16.4)
Not being able to deliver some routine nutrition interventions	265 (13.1)
Discomfort with delivering nutrition care via telehealth	183 (9.1)
Payer(s) do not include nutrition services in their telehealth policies	180 (8.9)
Clients not having a telephone (landline or cell phone)	160 (7.9)
Not having remote access to the electronic health record at my home	153 (7.6)
Not having equipment to deliver telehealth at my home	151 (7.5)
Payer(s) do not include RDNs in their provider networks	145 (7.2)
Not having equipment to deliver telehealth at my worksite	140 (6.9)
Lack of employer support	116 (5.7)
Not having access to my institution's scheduling system at my home	84 (4.2)
I am not part of and cannot get added to a commercial/private payer's contracted telehealth network	63 (3.1)
Other[d]	187 (9.3)
Benefits experienced by delivering nutrition care via telehealth[e] (n = 1513)	
Promoting compliance with social distancing measures recommended due to COVID-19[f] pandemic	1323 (65.6)
Scheduling flexibility	1012 (50.2)
Reduced transportation costs for clients	853 (42.3)
Improved patient access	698 (34.6)
Other[d]	171 (8.4)
Telehealth resources	
Consulted specific guidance about how to provide nutrition care via telehealth during the COVID-19 pandemic (n = 1588)	
Yes	765 (48.7)
No	702 (44.7)
Not sure	104 (6.6)
Primary source of guidance (n = 770)[e]	
Employer	473 (62.2)
Academy of Nutrition and Dietetics	165 (21.7)
Another organization	122 (16.1)
How valuable were the resources/information provided by the Academy of Nutrition and Dietetics on telehealth during the COVID-19 pandemic (scale of 0-10 with 10 indicating extremely valuable) (n = 151)[g]	*mean (IQR)* 7.8 (6.6-9.2)

[h]IQR = interquartile range.
[a]RDN = registered dietitian nutritionist.
[b]Does not include missing responses.
[c]Respondents were able to select all options that applied.
[d]Open-ended answers were analyzed and are described in the text.
[e]For respondents who selected that they did consult specific guidance.
[f]COVID-19 = coronavirus disease 2019.
[g]For respondents who indicated they consulted the Academy of Nutrition and Dietetics for telehealth guidance.

opportune time for RDNs to educate themselves on the policies that govern telehealth and methods to provide high-quality, secure services via telehealth to patients and clients.

Academy Telehealth Resources and Advocacy Activities

The Academy has multiple resources to facilitate understanding and adoption of telehealth for RDNs. The Academy's "Telehealth Quick Guide for RDNs"[16] can serve as a primer for practitioners new to providing nutrition care via telehealth specific to the COVID-19 public health emergency. The Academy also provides telehealth resources applicable outside a public health emergency.[1] There are a number of excellent resources available for Academy members and nonmembers at the "Professional Resource Hub" on eatrightpro.org,[18] including professional resources addressing preparedness, patient care guidelines, food safety and access, cross-border practice and licensure considerations, quick guides/toolkits, webinars series addressing topics pertinent to COVID-19, and a question-and-answer section including an "Ask a Question" feature. These resources have expanded since completion of this survey. Academy staff are also available to handle inquiries (reimburse@eatright.org, licensure@eatright.org, quality@eatright.org).

The Academy has been advocating for many years for expanded access to nutrition services provided by RDNs via telehealth and for modernization of Medicare's telehealth policies. Efforts aimed at both legislative and regulatory changes have ramped up during the COVID-19 public health emergency. Starting in March 2020, the Academy reacted swiftly and sent letters calling for expanded access to nutrition care via telehealth by all private payers and state Medicaid programs to America's Health Insurance Plans,[26] Blue Cross Blue Shield Association,[27] and the National Governors Association.[28] As Congress took a series of actions via the COVID-19 relief bills to grant CMS temporary yet broad flexibilities to modify Medicare telehealth policies, the Academy sent letters to Secretary of Health Alex Azar and CMS Administrator Seema Verma advocating for specific flexibilities to improve access to medical nutrition therapy provided by RDNs.[12-14] In collaboration with the Center for Telehealth and e-Health Law, the Academy has met with spokespeople from the White House, the US Department of Health and Human Services, CMS, and congressional offices to speak on the benefits of telehealth as a means for delivering nutrition care to individuals during and outside the COVID-19 pandemic. Finally, the Academy has supported public policy leaders across the nation in their efforts to affect positive change in telehealth laws and regulations at the state level.

The Legislative and Public Policy Committee of the Academy has also convened a new Telehealth Task Force composed of Academy members with expertise in telehealth practice, rural and underserved areas, food and nutrition laws and regulations, and consumer behavior. The task force has been charged with advising on policy issues related to telehealth and proposing telehealth policy stances for the Academy. The findings from this survey, along with many other resources identified through an environmental scan, will inform the task force, which will complete its work in 2021.

Strengths and Limitations

This survey was developed using cross-team collaboration within the Academy and was distributed widely to members and nonmembers shortly after the onset of the COVID-19 pandemic in the United States. Because the survey was widely distributed, it is difficult to determine the response rate of this survey and, thus, generalizability to the greater RDN population. The 3 most frequent focus areas reported by RDNs aligned with Medicare Part B medical nutrition therapy benefit population, and, thus, RDNs serving the Medicare population may have been overrepresented in this survey. In addition, there is the potential for self-selection bias, in that RDNs with a particular interest in telehealth may have been more likely to respond, and for nonresponse bias. Social desirability bias may have also impacted RDNs' responses. For example, RDNs answering care delivery or billing questions may have felt compelled to select answers that reflected what they thought were ideal practices versus what they regularly experienced when delivering telehealth. Thus, results should be interpreted accounting for these potential biases. RDNs practicing telehealth are encouraged to participate in future iterations of the COVID-19 telehealth survey.

CONCLUSIONS

The proportion of participating RDNs who deliver the Nutrition Care Process via telehealth has increased considerably during the COVID-19 pandemic as a result of social distancing measures and provision of waivers to increase access to telehealth by some health care payers, including Medicare. However, questions remain about optimal telehealth coding and billing practices, and RDNs report difficulties in delivering some aspects of the nutrition care process remotely. The Academy has made available a growing number of telehealth resources and has advocated for increased coverage of nutrition services delivered via telehealth. However, further guidance may be needed regarding best practices for conducting nutrition assessment via telehealth and to support successful billing for services delivered via telehealth. Moving forward, it will be important for RDNs to utilize telehealth resources, evidence-based guidance, and clinical expertise to ensure they are able to deliver high-quality, efficient, and secure services via telehealth. Subsequent periods of data collection are planned to track successes and barriers for RDNs providing telehealth during the COVID-19 public health emergency.

References

1. Academy of Nutrition and Dietetics. Practicing telehealth. eatrightPRO.org. Published 2020. Accessed August 26, 2020, https://www.eatrightpro.org/practice/practice-resources/telehealth/practicing-telehealth.
2. Centers for Disease Control and Prevention. Using telehealth to expand access to essential health services during the COVID-19 pandemic. Updated June 10, 2020. Accessed September 4, 2020, https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html.
3. US Department of Health and Human Services. Secretary Azar declares public health emergency for United States for 2019 novel coronavirus. Published January 31, 2020. Accessed September 9, 2020, https://www.hhs.gov/about/news/2020/01/31/secretary-azar-declares-public-health-emergency-us-2019-novel-coronavirus.html.

4. Trump DJ. Proclamation on declaring a national emergency concerning the novel coronavirus disease (COVID-19) outbreak. Updated March 13, 2020. Accessed September 29, 2020, https://www.federalregister.gov/documents/2020/03/18/2020-05794/declaring-a-national-emergency-concerning-the-novel-coronavirus-disease-covid-19-outbreak.
5. CONGRESS.GOV. H.R.6074—Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020. Updated March 6, 2020. Accessed September 29, 2020, https://www.congress.gov/bill/116th-congress/house-bill/6074.
6. Centers for Medicare & Medicaid Services. Coronavirus waivers & flexibilities. Last updated September 24, 2020. Accessed August 26, 2020, https://www.cms.gov/about-cms/emergency-preparedness-response-operations/current-emergencies/coronavirus-waivers.
7. Verma S. Early impact of CMS expansion of Medicare telehealth during COVID-19. Updated July 15, 2020. Accessed September 29, 2020, https://www.healthaffairs.org/do/10.1377/hblog20200715.454789/full/.
8. America's Health Insurance Plans. Health insurance providers respond to coronavirus (COVID-19). Updated September 28, 2020. Accessed September 29, 2020, https://www.ahip.org/health-insurance-providers-respond-to-coronavirus-covid-19/.
9. BlueCross BlueShield. Coronavirus (COVID-19) updates. Accessed September 4, 2020, https://www.bcbs.com/coronavirus-updates.
10. Center for Connected Health Policy. Quick glance state telehealth actions in response to COVID-19. Updated March 30, 2020. Accessed September 29, 2020, https://www.cchpca.org/sites/default/files/2020-03/STATE%20TELEHEALTH%20ACTIONS%20IN%20RESPONSE%20TO%20COVID%20OVERVIEW%203.29.2020.pdf.
11. Academy of Nutrition and Dietetics. Providing MNT services during the COVID-19 public health emergency. Published March 16, 2020. Accessed August 26, 2020, https://www.eatrightpro.org/news-center/member-updates/coronavirus-updates/providing-mnt-services-during-the-covid-19-public-health-emergency.
12. Blankenship J, Schofield M. Letter to Centers for Medicare and Medicaid Services June 2020. Published June 1, 2020. Accessed September 15, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/on-the-pulse/regulatorycomments/academy-letter-re-cms-1744.pdf?la=en&hash=B7A1FE56F69A0F54171AA02842BC844779FB86B2.
13. Blankenship J, Schofield M. Letter to U.S. Department of Health and Human Services. Published March 16, 2020. Accessed September 15, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/on-the-pulse/regulatorycomments/academyletter tohhsretelehealthandcovid19.pdf?la=en&hash=AA50AF5B4F73F3C944551F6F9733365060DF89A7.
14. Blankenship J, Schofield M. Letter to Centers for Medicare and Medicaid Services. Published July 7, 2020. Accessed September 15, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/on-the-pulse/regulatorycomments/feedback-to-regulatory-revisions-in-response-to-the-covid-19-public-health-emergency.pdf?la=en&hash=1C3F5C335061EC8AF9E209D766B760BE81908B4E.
15. Nutrition Entrepreneurs. Ventures. Published Fall 2016. Accessed August 26, 2020, https://drive.google.com/file/d/171BchdzI0djBvun5iIE2qD-5zHYZ5yl9/view.
16. Academy of Nutrition and Dietetics. Telehealth. Updated August 25, 2020. Accessed September 29, 2020, https://www.eatrightpro.org/practice/practice-resources/telehealth#quickGuide.
17. Nutrition Entrepreneurs. TeleHealth: Expanding options for providing nutrition care and education. Published January 26, 2017. Accessed August 26, 2020, https://www.nedpg.org/courses/telehealth-expanding-options-for-providing-nutrition-care-and-education/.
18. Academy of Nutrition and Dietetics. Coronavirus (COVID-19). Professional resource hub. Published 2020. Accessed August 26, 2020, https://www.eatrightpro.org/coronavirus-resources#limelight_player.
19. *Informz* [computer program]. Version 1999. Arlington, VA: Higher Logic; 1999.
20. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-381.
21. *RStudio: Integrated Development for R*. [computer program]. Boston, MA.
22. Maurice AP, Punnasseril JEJ, King SE, Dodd BR. Improving access to bariatric surgery for rural and remote patients: Experiences from a state-wide bariatric telehealth service in Australia. *Obes Surg*. 2020;30(11):4401-4410.
23. Verhoeven F, Tanja-Dijkstra K, Nijland N, Eysenbach G, van Gemert-Pijnen L. Asynchronous and synchronous teleconsultation for diabetes care: A systematic literature review. *J Diabetes Sci Technol*. 2010;4(3):666-684.
24. Mehta P, Stahl MG, Germone MM, et al. Telehealth and nutrition support during the COVID-19 pandemic. *J Acad Nutr Diet*. 2020;120(12):1953-1957.
25. Jortberg BT, Parrott JS, Schofield M, et al. Trends in registered dietitian nutritionists' knowledge and patterns of coding, billing, and payment. *J Acad Nutr Diet*. 2020;120(1):134-145.e133.
26. Babjak P. Letter to America's health insurance plans. Published March 24, 2020. Accessed September 15, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/member-updates/academy-of-nutrition-and-dietetics-letter-to-ahip-re-telehealth-in-national-emergency-(1).pdf?la=en&hash=1C722E5737C54A4E7934961318C0281B9B5A8CE6.
27. Babjak P. Letter to Blue Cross Blue Shield Association. Published March 24, 2020. Accessed September 15, 2020, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/member-updates/academy-of-nutrition-and-dietetics-letter-to-bcbsa-re-telehealth-in-national-emergency.pdf?la=en&hash=B56132FE554380BDE0D322446E6A716773858AC3.
28. Blankenship J, Tuma P. Letter to National Governors Association. Published March 19, 2020. Accessed September 15, 2020, https://www.eatrightpro.org/-/media/eatrightpro-files/news-center/on-the-pulse/regulatorycomments/academy-of-nutrition-and-dietetics-letter-to-national-governors-association-re-telehealth-in-nationa.pdf?la=en&hash=F40F9FCB4B29AE50CA6663A0878A42D4E7649FF0.

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STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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K. Kelley and E. Y. Jimenez led the design and distribution of the survey, with contributions from A. Steiber. M. Schofield and H. Martin were content experts on telehealth. M. Rozga conducted data analysis and M. Rozga, D. Handu, K. Kelley, E. Y. Jimenez, H. Martin, and M. Schofield drafted the initial manuscript. All authors reviewed, edited, and approved the final manuscript.