

Telehealth Visits Unlikely to Require In-Person Follow-Up Within 90 Days

Team A: Jackie Gerhart, MD; Alex Piff

Team B: Kersten Bartelt, RN; Eric Barkley

Last updated 13 December 2022 • Check for updates at EpicResearch.org

Key Findings:

- In nearly every specialty studied, most patients who had a telehealth visit did not require an in-person follow-up appointment in that specialty in the next three months.
- For specialties that required follow-up, the additional visits were likely related to needing additional care, not duplicative care (for example, obstetrics, geriatrics).
- Mental health and psychiatry had the largest volumes of telehealth utilization and some of the lowest rates of needing in-person follow-up. Only 15% of the time did a patient who had a psychiatry or mental health telehealth visit need an in-person follow-up visit in the next three months.
- In specialties that could be consultations (for example, genetics, nutrition), telehealth visits might even replace the need for in-person visits. Genetics telehealth visits required in-person follow-up 4% of the time. Nutrition telehealth visits required in-person follow-up only 10% of the time.

Recommended Actions:

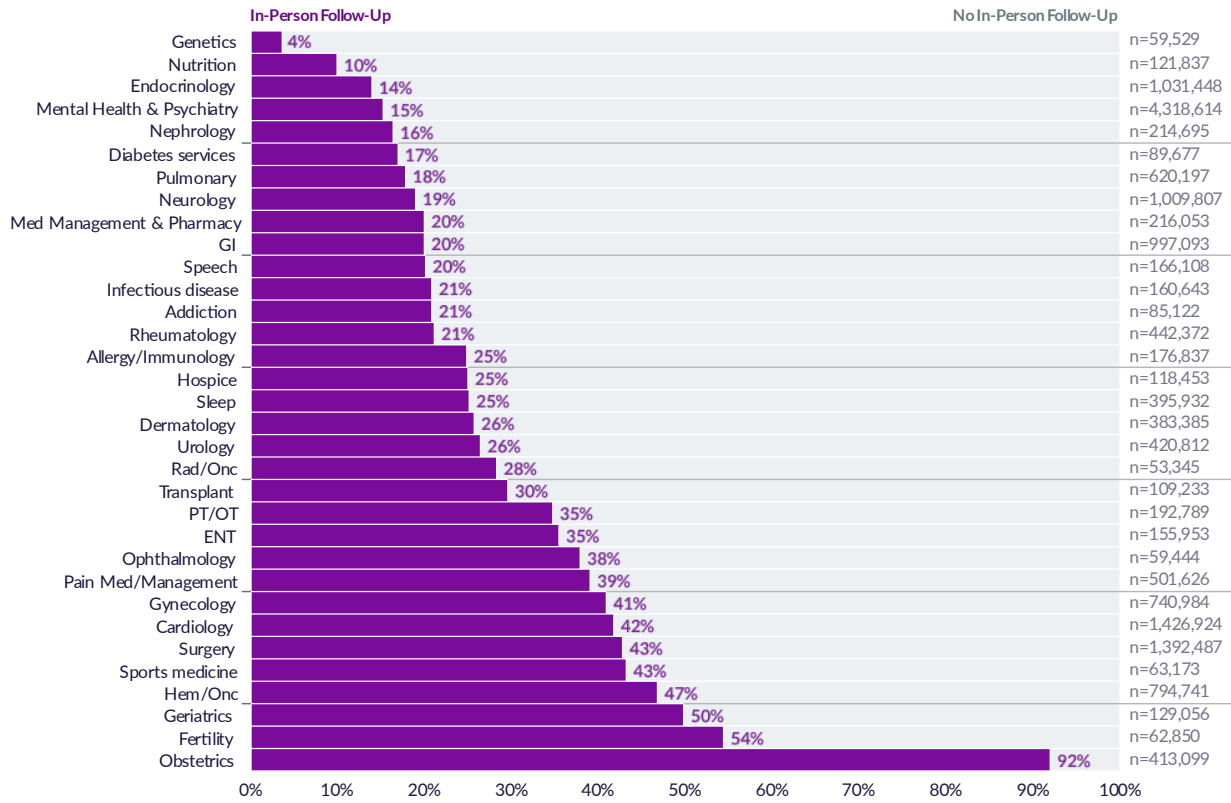
- Healthcare providers should continue to educate policymakers and administrators on the function telehealth plays as an alternative, rather than duplicative, encounter.
- Healthcare payers should extend telehealth visit coverage beyond the current waiver to support this method of care delivery and increased healthcare access.

Health care resources can be scarce, especially for rural communities, and information on the effectiveness of different methods for delivering care is important to guide decisions about how to allocate resources most effectively. While telehealth use increased during the COVID-19 pandemic, some previous studies¹ have suggested that telehealth might be a less efficient method of care than in-person visits for acute conditions. We sought to determine which specialties were able to fulfill patient needs using telehealth and which required in-person follow-up visits more often.

We examined more than 35 million telehealth visits conducted between March 1, 2020, and May 31, 2022, to determine the overall rates of telehealth visits by specialty and to identify how often these visits require in-person follow-up within the same specialty. We found that high follow-up rates were present only in specialties that unavoidably require regular visits with an in-person component for hands-on care, such as obstetrics and surgery.

Genetics and nutrition were the specialties that made the most efficient use of telehealth visits. Their rates of needing in-person follow-up care in the three months after the telehealth visit were 4% and 10%, respectively. Other specialties that made heavy use of telehealth had slightly higher rates of in-person follow-up, but many of these follow-ups may be additional appointments that are not duplicative but rather part of a regular cadence of care, such as monthly mental health visits.

In-Person Same Specialty Follow-Up Rates



"In-Person Same Specialty Follow-Up Rates," 2022. EpicResearch.org

Figure 1. The dark bars show the percentage of telehealth visits for each specialty that had an in-person follow-up visit in that specialty in the next 90 days, and the lighter gray bars show the percentage of telehealth visits that did not have an in-person follow-up visit in that specialty in that timeframe.

These findings suggest that, for many specialties, telehealth visits are typically an efficient use of resources and are unlikely to require in-person follow-up care. If telehealth is not duplicative of in-person visits for those specialties, it can be an effective tool to help expand access to care².

These data come from Cosmos, a HIPAA-defined Limited Data Set of more than 170 million patients from 180 Epic organizations including 1,063 hospitals and more than 22,500 clinics, serving patients in all 50 states and Lebanon. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions.

References

1. Hatef E, Lans D, Bandeian S, Lasser EC, Goldsack J, Weiner JP. Outcomes of In-Person and Telehealth Ambulatory Encounters During COVID-19 Within a Large Commercially Insured Cohort. JAMA Netw Open. 2022;5(4):e228954. doi:10.1001/jamanetworkopen.2022.8954
2. Barbosa W, Zhou K, Waddell E, Myers, TE, Dorsey R. Improving Access to Care: Telemedicine Across Medical Domains. Annual Review of Public Health 2021 42:1, 463-481 doi: <https://www.annualreviews.org/doi/10.1146/annurev-publhealth-090519-093711>

Data Definitions

Term	Definition
Telehealth Encounter	<p>Any encounters of types: Telemedicine, E-Consult, E-Visit, Telephone with a CPT billing code, or Office Visit with a CPT billing code of 99441, 99442, or 99443.</p> <p>These encounters are categorized by the specialty of the department in which they occurred.</p>
90 Day In-Person Follow-Up	<p>Any encounter in the 90 days following the Remote Care Encounter with an encounter type of Allied Health, Ancillary procedure, Anticoagulation visit, Appointment, Audiology, Case management, Clinical support, Confidential, Diagnostic services, Education, Emergency, Fetal care consult, Follow-up, Genetics, Home care visit, Hospice F2F visit, Hospital, Hospital encounter, Immunization, Induction, Infusion, Initial prenatal, Injection, Lactation consult, Lactation encounter, Multidisciplinary visit, NST, Nurse only, Nursing home, Nutrition, Office visit, Oncology survivorship, Ophth exam, Occupational/Physical therapy, Postpartum visit, Procedural consult, Procedure visit, Radiology appointment, REI, Research encounter, Routine prenatal, Sleep study, Social work, Speech therapy, Surgery, Surgical consult, Transplant evaluation, Transplant follow-up, Treatment, Urgent care, Walk-in, or Well child.</p> <p>These encounters are categorized by the specialty of the department in which they occurred.</p>
Medicaid Encounter	An encounter with linked Medicaid coverage
Medicare Encounter	An encounter with linked Medicare coverage and no linked Medicaid coverage
Department Specialty Group	<p>Categories of department specialties were:</p> <ul style="list-style-type: none"> Addiction: Additction Medicine, Addiction Psychiatry, Addiction Support Services, Chemical Dependency Allergy/Immunology: Allergy, Allergy and Immunology, Immunology, Pediatric Allergy, Pediatric Allergy/Immunology, Pediatric Immunology Audiology: Audiology, Pediatric Audiology Cardiology: Adult Congenital Heart Disease, Advanced HeartFailure and Transplant Cardiology, Cardiac Electrophysiology, Cardiac Rehabilitation, Cardiology, Cardiovascular Disease, Clinical Cardiac Electrophysiology, Electrophysiology, Interventional Cardiology, Pediatric Cardiology, Pediatric Cardiology Center Case Management: Case Management Dental: Dental, Dental General Practice, Dental Public Health, Dentistry, Orthodontics, Pediatric Dentistry, Pedodontics, Periodontics, Prosthodontics

Dermatology: Dermatology, Dermatopathology, Pediatric Dermatology
Diabetes Services: Diabetes Educator, Diabetes Services
Emergency Medicine: Emergency Medicine, Pediatric Emergency Medicine
Endocrinology: Endocrinology, Endocrinology, Diabetes & Metabolism, Pediatric Endocrinology
ENT: Otolaryngology, Otolaryngology/Facial Plastic Surgery, Pediatric Otolaryngology
Fertility: Ambulatory Family Planning Facility, Infertility, Reproductive Endocrinology, Reproductive Endocrinology and Infertility, Reproductive Endocrinology/Infertility
Genetics: Clinical Genetics (M.D.), Genetics, Medical Genetics, Pediatric Genetics
Geriatrics: Elder Care Services, Geriatric Medicine, Gerontology
GI: Gastroenterology, Hepatology, Pediatric Gastroenterology
Gynecology: Gynecology, Maternal & Fetal Medicine, Maternal and Fetal Medicine, Midwifery, Obstetrics, Obstetrics & Gynecology, Obstetrics and Gynecology, Urogynecology, Women's Health, Women's Health Care, Ambulatory
Hem/Onc: Hematology, Hematology and Oncology, Hematology-Oncology Clinic, Hematology-Oncology Specialty Care Area, Medical Oncology, Oncology, Pediatric Hematology, Pediatric Hematology and Oncology, Pediatric Hematology-Oncology, Pediatric Oncology
Home Health: Home Care, Home Health Services, Home Therapy Services, In-Home Clinical Assessments
Hospice: Home Hospice, Hospice, Hospice and Palliative Medicine, Hospice Services, Palliative Medicine, Pastoral Care, Pediatric Palliative Medicine, Respite Care
Infectious Disease: Infection Control, Infectious Disease, Infectious Diseases, Pediatric Infectious Disease
Lactation: Lactation Consultant, Lactation Services
Medication Management: Anticoagulation
Mental Health: Behavioral Health, Behavioral Health Clinic, Counseling, Developmental – Behavioral Pediatrics, Domestic Abuse Support Services, Marriage and Family Therapy, Mental Health, Neuropsychology, Pediatric Psychology, Post-Trauma Therapy and Support, Psychology, Psychotherapy, Social and Spiritual Support
Nephrology: Dialysis Clinic, Nephrology, Outpatient Hemodialysis Clinic, Pediatric Nephrology
Neurology: Clinical Neurophysiology, Neurology, Neurology Clinic, Neurophysiology, Pediatric Neurology, Spinal Cord Injury Medicine

Nutrition: Dietician, Family Nutrition Services, Nutrition, Nutrition Support, Nutrition, Pediatric

Obstetrics: Same categories as Gynecology if the woman is pregnant

Occupational Medicine: Occupational Medicine, Preventative Medicine/ Occupational Environmental Medicine

Ophthalmology: Cornea Ophthalmology, Glaucoma Ophthalmology, Glaucoma Specialist, Neuro- Ophthalmology, Ophthalmology, Ophthalmology Clinic, Pediatric Ophthalmology, Pediatric Ophthalmology and Strabismus Specialist, Retina Ophthalmology, Retina Specialist

Orthopaedics: Adult Reconstructive Orthopaedic Surgery, Foot & Ankle Surgery, Foot and Ankle Surgery, Hand Surgery, Joint Surgery, Orthopaedic Surgery of the Spine, Orthopaedic Trauma, Orthopedic, Orthopedic Surgery, Pediatric Orthopaedic Surgery, Pediatric Orthopedic Surgery

Pain Medicine: Interventional Pain Medicine, Pain, Pain Clinic, Pain Management, Pain Medicine

Pathology: Pathology

Perinatology: Neonatal-Perinatal Medicine, Neonatology, Perinatology

Perioperative: Perioperative

Pharmacy: Pharmacy

PM and R: Outpatient Rehabilitation Clinic, Physical Medicine and Rehabilitation, Rehabilitation

Podiatry: Orthotics, Pediatric Podiatry, Podiatric, Podiatry

Primary Care: Adolescent Medicine, Adult Health, Adult Medicine, Ambulatory Care, Chronic Care, Clinical Child & Adolescent, Developmental, Developmental and Behavioral Pediatrics, Family Medicine, Federally Qualified Health Center (FQHC), General Care, General Internal Medicine, General Practice, Internal Medicine, Internist, Medical, Medical Clinic, Pediatric Internal Medicine, Pediatrics, Physician's Office, Preventative Medicine, Primary Care

Psychiatry: Child and Adolescent Psychiatry, Geriatric Psychiatry, Neuropsychiatry, Pediatric Psychiatry, Psychiatric/Mental Health, Psychiatry

PT/OT: Occupational Therapy, Osteopathic Medicine, Pediatric Occupational Therapy, Pediatric Physical Medicine and Rehabilitation, Pediatric Physical Therapy, Pediatric Rehabilitation, Pediatric Rehabilitation Medicine, Physical Rehabilitation, Physical Therapy

Public Health: Community Health, Community Health/Public Health, Housing Assistance and Shelter Services, Pediatric Social Services, Psychiatric/Mental Health, Community, Public Health, Public Medicine, Social Care, Social Services, Youth Community Services

Pulmonary: Pediatric Pulmonology, Pulmonary Clinic, Pulmonary Disease, Pulmonology, Thoracic Diseases
 Rad/Onc: Pediatric Radiation Oncology, Radiation Oncology
 Rheumatology: Pediatric Rheumatology, Rheumatology
 Sleep: Sleep Center, Sleep Medicine
 SNF: Assisted Living Facility, Long Term Acute Care, Long Term Care Facility, Long Term Care Facility General Nursing Unit, Long Term Care Facility Skilled Nursing-Short Term Rehabilitation Unit, Long-Term Care, Memory Care, Skilled Nursing Facility
 Speech: Hearing and Speech, Pediatric Speech Therapy, Speech and Language, Speech Pathology, Speech Therapy
 Sports Medicine: Exercise & Sports, Pediatric Sports Medicine, Sports Medicine
 Surgery: Ambulatory Surgery Center, Bariatrics, Breast Surgery, Burn Surgery, Cardiothoracic Surgery, Colon and Rectal Surgery, Female Pelvic Medicine and Reconstructive Surgery, General Surgery, Maxillofacial Surgery, Oral Surgery, Orthopaedic Surgery, Pediatric Cardiothoracic Surgery, Pediatric Neurosurgery, Pediatric Plastic Surgery, Pediatric Surgery, Pediatric Trauma Surgery, Plastic and Reconstructive Surgery, Plastic Surgery, Plastic Surgery within the Head & Neck, Spine Surgery, Surgical, Surgical Oncology, Surgical Services Clinic, Thoracic Surgery, Transplant Surgery, Trauma Surgery, Vascular Surgery
 Transplant: Abdominal Transplant, Blood and Marrow Transplant, Pediatric Transplant Hepatology, Transplant, Transplant Hepatology, Transplantation
 Travel Medicine: Travel Medicine
 Urgent Care: Urgent Care, Urgent Care Center
 Urology: Pediatric Urology, Proctology, Urology
 Vascular: Vascular Neurology, Vascular Specialist
 Wound Care: Wound Care

Table 1: Telehealth Encounter Volumes by Type

Initial Encounter Type	Encounters
Telemedicine	25,364,789
E-Visit	7,078,005
Telephone	1,344,483
Office Visit	1,251,279
E-Consult	205,149

Table 2: In-Person Same Specialty Follow-Up Rates with 50,000 or More Encounters

Encounter Department Specialty Group	Encounters	Non-Telehealth 90-Day Follow-Up	Same Specialty	Medicare (Any specialty)	Medicaid (Any specialty)
Genetics	59,529	59%	4%	72%	58%
Nutrition	121,837	68%	10%	81%	67%
Endocrinology	1,031,448	59%	14%	70%	60%
Mental Health / Psychiatry	4,318,614	55%	15%	67%	64%
Nephrology	214,695	68%	16%	73%	70%
Diabetes services	89,677	70%	17%	72%	73%
Pulmonary	620,197	69%	18%	74%	69%
Neurology	1,009,807	59%	19%	62%	60%
Pharmacy / Medication Management	213,053	81%	20%	86%	82%
GI	997,093	69%	20%	76%	69%
Speech	166,108	54%	20%	78%	57%
Infectious disease	160,643	68%	21%	78%	70%
Addiction	85,122	58%	21%	68%	65%
Rheumatology	442,372	66%	21%	71%	69%
Allergy/Immunology	176,837	62%	25%	75%	61%
Hospice	118,453	82%	25%	82%	84%
Sleep	395,932	67%	25%	71%	74%
Dermatology	383,385	58%	26%	75%	59%
Urology	420,812	65%	26%	69%	67%
Rad/Onc	53,345	77%	28%	76%	80%
Transplant	109,233	69%	30%	72%	71%
PT/OT	192,789	71%	35%	82%	73%
ENT	155,953	68%	35%	74%	70%
Ophthalmology	59,444	67%	38%	74%	64%
PM and R / Pain Medicine	501,626	75%	39%	80%	74%
Gynecology	740,984	67%	41%	76%	69%
Cardiology	1,426,924	68%	42%	70%	70%
Surgery	1,392,487	72%	43%	76%	73%
Sports medicine	63,173	72%	43%	84%	75%
Hem/Onc	794,741	78%	47%	79%	79%
Geriatrics	129,056	75%	50%	71%	70%
Fertility	62,850	76%	54%	61%	65%
OB	413,099	96%	92%	96%	95%