

# Fewer In-Person Follow-Ups Associated with Telehealth Visits Than Office Visits

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Last updated 29 June 2023 • Check for updates at [EpicResearch.org](https://EpicResearch.org)

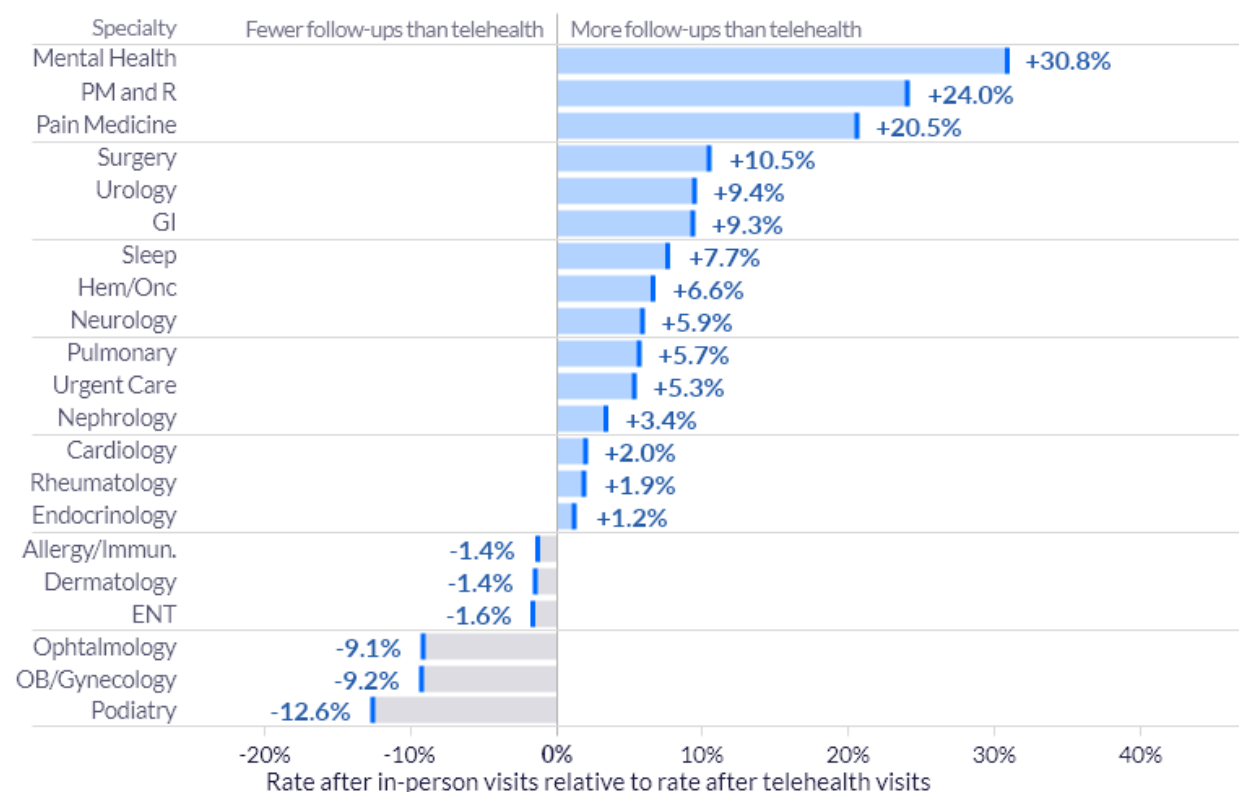
## Key Findings:

- Most specialties have greater rates of same-specialty in-person follow-up in the 90 days after in-person office visits than after telehealth visits.
- Mental health had the greatest difference in follow-up rates between telehealth and in-person visits, with 10% of telehealth visits and 40% of in-person visits having in-person follow-up within 90 days.

We previously published two studies that showed that most telehealth appointments didn't require an in-person follow-up appointment in the next 90 days.<sup>1,2</sup> For this study, we compared how follow-up rates differ for in-person visits versus telehealth visits.

We studied 40,689,760 specialty and 32,146,821 primary care encounters from January 2022 to March 2023 to determine in-person follow-up rates after a telehealth visit versus an office visit. We excluded specialties with fewer than 400,000 encounters during the study period. Of the 24 specialties we evaluated, we found that 16 specialties had in-person follow-up after an office visit more often than after a telehealth visit.

## Follow-Up Rates After In-Person Visits Relative to Rates After Telehealth Visits by Specialty



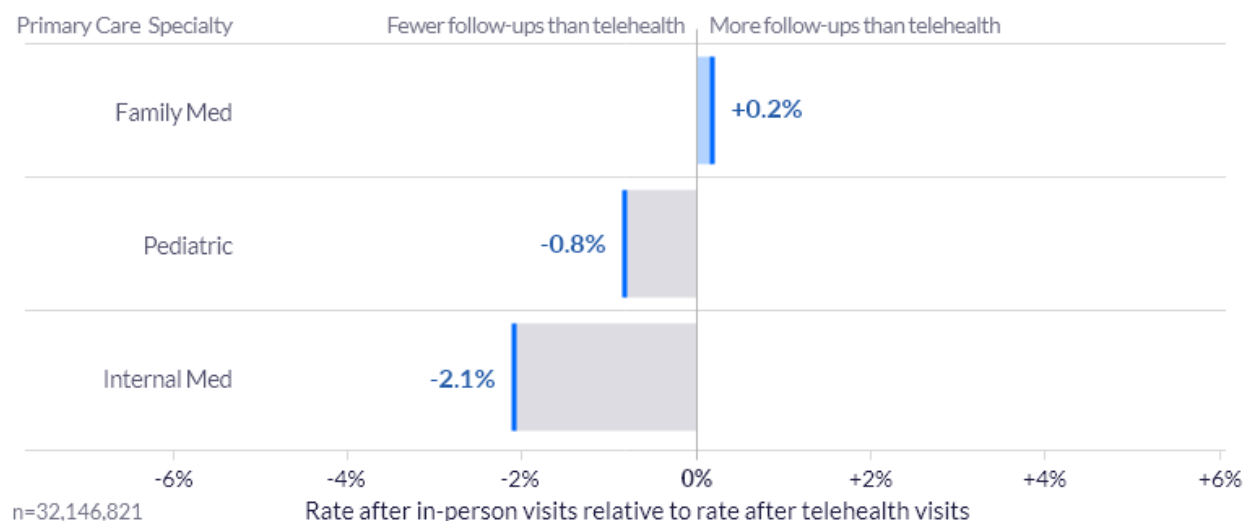
n=40,689,760 "Follow-Up Rates After In-Person Visits Relative to Rates After Telehealth Visits by Specialty," 2023. EpicResearch.org

Figure 1. The difference in rate of same-specialty in-person follow-up after telehealth and office visits.

Mental health, physical medicine and rehabilitation, and pain medicine had at least a 20% higher follow-up rate after an office visit than a telehealth visit. Conversely, podiatry telehealth visits had an in-person follow-up rate 13% more than office visits. Of note, telehealth use in 2022 and early 2023 was infrequent for most specialties, with only sleep medicine and mental health specialties conducting at least 20% of encounters using telehealth.

Follow-up rates for telehealth and office visits in primary care were within two percentage points of each other with pediatrics and internal medicine slightly more likely to have follow-up after telehealth. Family medicine saw nearly equivalent follow-up rates between telehealth and office visits that have in-person follow-up within 90 days.

## Follow-Up Rates After In-Person Visits Relative to Rates After Telehealth Visits by Primary Care Specialty



"Follow-Up Rates After In-Person Visits Relative to Rates After Telehealth Visits by Primary Care Specialty," 2023. EpicResearch.org

Figure 2. The difference in rate of same-specialty in-person follow-up after telehealth and office visits for primary care.

Expanding the analysis to include any type of follow-up (telehealth or in-person) showed greater rates of follow-up after office visits for most specialties. However, all types of primary care have a slightly higher follow-up rate after telehealth when including both telehealth and in-person visits in the next 90 days.

These findings suggest that telehealth can continue to play an important role in care delivery across specialties without requiring additional visits for many patients. Of note, there may be differences in the patient populations that seek care through telehealth and in-person visits, such as age, acuity of their condition, and other potential confounders that may influence the likelihood of follow-up care required.

*These data come from Cosmos, a HIPAA-defined Limited Data Set of more than 190 million patients from 208 Epic organizations including 1,197 hospitals and more than 25,400 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. Gerhart J, Piff A, Bartelt K, Barkley E. Telehealth Visits Unlikely to Require In-Person Follow-Up Within 90 Days. *Epic Research*. Dec 13, 2022. [Telehealth Visits Unlikely to Require In-Person Follow-Up Within 90 Days \(epicresearch.org\)](https://www.epicresearch.org/telehealth-visits-unlikely-to-require-in-person-follow-up-within-90-days) Accessed June 19, 2023.
2. Gerhart J, Piff A, Bartelt K, Barkley E. Most Primary Care Telehealth Visits Unlikely to Need In-Person Follow-Up. *Epic Research*. Feb 24, 2023. [Most Primary Care Telehealth Visits Unlikely to Need In-Person Follow-Up \(epicresearch.org\)](https://www.epicresearch.org/most-primary-care-telehealth-visits-unlikely-to-need-in-person-follow-up) Accessed June 19, 2023.

## Data Definitions

Term	Definition
Study period	1/1/2022–3/30/2023
Study population	Patients aged 0–99 with an onset encounter within the study period
Telehealth encounter	Any encounters of types: <ul style="list-style-type: none"> <li>• Telemedicine</li> <li>• E-Visit</li> </ul>

	<ul style="list-style-type: none"> <li>• E-Consult</li> <li>• Telephone with a CPT billing code</li> <li>• Office Visit with a CPT billing code of 99441, 99442, or 99443</li> </ul> Appointment with a CPT billing code of 99441, 99442, or 99443
<b>Office visit encounter</b>	Encounters with a type of Office Visit or Appointment unless the encounter has a CPT billing code 99441, 99442, or 99443
<b>In-Person care encounter</b>	Encounters with a 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 that are not <b>Telehealth encounters</b>
<b>Onset encounter</b>	A <b>Telehealth encounter</b> or <b>Office visit encounter</b> with no <b>In-Person care encounter</b> with a matching primary specialty group in the prior 90 days
<b>Follow-up encounter</b>	An <b>In-Person care encounter</b> within 90 days after an <b>Onset encounter</b> with a matching primary department specialty group
<b>Primary department specialty group</b>	Categories of department specialties were: <u>Allergy/Immunology</u> : Allergy, Allergy and Immunology, Immunology, Pediatric Allergy, Pediatric Allergy/Immunology, Pediatric Immunology <u>Cardiology</u> : Adult Congenital Heart Disease, Advanced Heart Failure and Transplant Cardiology, Cardiac Electrophysiology, Cardiac Rehabilitation, Cardiology, Cardiovascular Disease, Clinical Cardiac Electrophysiology, Electrophysiology, Interventional Cardiology, Pediatric Cardiology, Pediatric Cardiology Center <u>Dermatology</u> : Dermatology, Dermatopathology, Pediatric Dermatology <u>Endocrinology</u> : Endocrinology, Endocrinology, Diabetes & Metabolism, Pediatric Endocrinology <u>ENT</u> : Otolaryngology, Otolaryngology/Facial Plastic Surgery, Pediatric Otolaryngology <u>Family Medicine</u> : Family Medicine <u>General Internal Medicine</u> : Adult Health, Adult Medicine, Ambulatory Care, Chronic Care, Preventative Medicine, Primary Care, Internal Medicine, General Internal Medicine, General Care, General Practice, Internist, Medical, Medical Clinic, Physician's Office <u>GI</u> : Gastroenterology, Hepatology, Pediatric Gastroenterology <u>OB/Gynecology</u> : Gynecology, Maternal & Fetal Medicine, Maternal and Fetal Medicine, Midwifery, Obstetrics, Obstetrics & Gynecology, Obstetrics and Gynecology, Urogynecology, Women's Health, "Women's Health Care, Ambulatory" <u>Hem/Onc</u> : 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 <u>Mental Health</u> : Behavioral Health, Behavioral Health Clinic, Child and Adolescent Psychiatry, Counseling, Developmental – Behavioral Pediatrics, Domestic Abuse Support Services, Geriatric Psychiatry, Marriage and

Family Therapy, Mental Health, Neuropsychology, Neuropsychiatry, Pediatric Psychiatry, Pediatric Psychology, Post-Trauma Therapy and Support, Psychiatric/Mental Health, Psychiatry, 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

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

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

Pediatric Primary Care: Adolescent Medicine, Pediatric Internal Medicine, Pediatrics, Developmental and Behavioral Pediatrics, Chronic Care, Clinical Child & Adolescent, Developmental

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

Podiatry: Orthotics, Pediatric Podiatry, Podiatric, Podiatry

Pulmonary: Pediatric Pulmonology, Pulmonary Clinic, Pulmonary Disease, Pulmonology, Thoracic Diseases

Rheumatology: Pediatric Rheumatology, Rheumatology

Sleep: Sleep Center, Sleep 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

Urgent Care: Urgent Care, Urgent Care Center

Urology: Pediatric Urology, Proctology, Urology

**Table 1: Follow-Up Rates After Telehealth and In-Person Office Visits – Specialty Care**

Specialty Group	Encounters	Telehealth Encounters	Telehealth with In-Person Follow up	Telehealth Rate	In Person Encounters	In-Person with In-Person Follow up	In-Person Rate
<b>Mental Health</b>	827,972	313,801	29,892	9.53%	514,171	207,117	40.28%
<b>Endocrinology</b>	1,925,778	216,432	20,682	9.56%	1,709,346	183,672	10.75%
<b>Nephrology</b>	436,861	31,390	3,201	10.20%	405,471	55,159	13.60%
<b>Neurology</b>	1,970,373	200,276	23,759	11.86%	1,770,097	313,967	17.74%
<b>Pulmonary</b>	1,486,295	118,427	15,832	13.37%	1,367,868	260,362	19.03%

Rheumatology	878,380	63,182	8,684	13.74%	815,198	127,626	15.66%
Urgent care	6,680,446	244,038	34,242	14.03%	6,436,408	1,243,135	19.31%
GI	1,733,643	187,647	29,733	15.85%	1,545,996	389,072	25.17%
Urology	1,733,161	85,132	14,062	16.52%	1,648,029	427,719	25.95%
Sleep	437,607	84,419	15,710	18.61%	353,188	92,867	26.29%
Hem/Onc	1,649,051	103,543	19,324	18.66%	1,545,508	390,567	25.27%
PM and R	505,934	19,084	3,916	20.52%	486,850	216,904	44.55%
Pain medicine	401,253	28,953	6,439	22.24%	372,300	159,305	42.79%
Cardiology	4,467,973	110,762	32,162	29.04%	4,357,211	1,351,075	31.01%
Surgery	6,585,009	172,797	52,988	30.66%	6,412,212	2,638,502	41.15%
Allergy/Immun.	340,265	36,253	6,975	19.24%	304,012	54,353	17.88%
Dermatology	1,648,756	66,648	13,487	20.24%	1,582,108	297,555	18.81%
Ophthalmology	1,445,994	6,308	1,925	30.52%	1,439,686	307,632	21.37%
OB/Gynecology	3,160,468	98,287	30,687	31.22%	3,062,181	674,109	22.01%
ENT	1,635,752	15,401	4,007	26.02%	1,620,351	395,112	24.38%
Podiatry	738,789	2,290	947	41.35%	736,499	211,913	28.77%

**Table 2: Follow-Up Rates After Telehealth and In-Person Office Visits – Primary Care**

Specialty Group	Encounters	Telehealth Encounters	Telehealth with In-Person Follow up	Telehealth Rate	In Person Encounters	In-Person with In-Person Follow up	In-Person Rate
Family Med	17,256,916	1,278,445	386,841	30.26%	15,978,471	4,864,011	30.44%
Pediatric	4,685,558	166,863	57,094	34.22%	4,518,695	1,509,364	33.40%
Internal Med	10,204,347	714,276	216,501	30.31%	9,490,071	2,677,341	28.21%