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## Patterns of Telehealth Usage at a Medical School Ambulatory Practice Before and During the COVID-19 Pandemic

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# Patterns of Telehealth Usage at a Medical School Ambulatory Practice Before and During the COVID-19 Pandemic

Ali Shammout MS-3, Peter Ziemkowski MD, Philip J Kroth, MD

## Background

- Although Telehealth usage showed modest adoption prior to the COVID-19 pandemic, the rate of adoption significantly increased with the progression of the crisis (1)
- Despite the increase in adoption, inequities in access to health care using Telehealth began to emerge, with elderly, rural, and lower socioeconomic status patients showing significantly less utilization (2)

## Objective

- With Kalamazoo County experiencing 58K+ COVID-19 cases (3), the objective of this study is to describe how patient access patterns changed during the COVID-19 pandemic

## Methods

- Setting: WMed Health ambulatory clinic
- Study Design: retrospective, cross-sectional study of clinic EHR (Epic) data with the following criteria:
  - Seen at least once during 1/2/20—12/30/21
  - In-Person, video + audio, or audio-only visits
- Microsoft Excel and Python utilized for data management and analysis using descriptive statistics

## Results

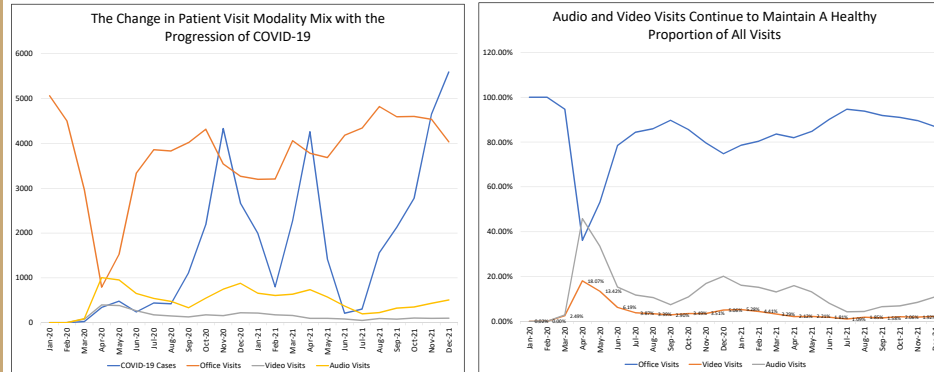


Figure 1: WMed visit modality mix fluctuated with Kalamazoo County COVID-19 case numbers and consistently included alternative modalities.

Figure 2: After the initial overtaking of Audio visits over Office visits in April 2020, Audio and Video visits have become achieved a steady state in the patient visit modality mix.

Audio		Office		Video	
Primary Diagnosis, 18+	Count	Primary Diagnosis, 18+	Count	Primary Diagnosis, 18+	Count
Exposure to COVID-19 Virus	924	Diabetes	1472	Generalized Anxiety Disorder	248
Generalized Anxiety Disorder	642	Essential Hypertension	1433	Depression	148
Persistent Depressive Disorder	596	Generalized Anxiety Disorder	1408	Bipolar Disorder	81
Cough	217	Annual Physical Exam	1321	Attention deficit hyperactivity disorder (ADHD)	67
PTSD (pst-traumatic stress disorder)	131	Postop check	1049	Asthma	34
Sore Throat	121	HIV	920	Idiopathic Urticaria	33
Essential Hypertension	96	Need for Vaccination	709	PTSD (post-traumatic stress disorder)	32
Primary Diagnosis, <18	Count	Primary Diagnosis, <18	Count	Primary Diagnosis, <18	Count
Exposure to COVID-19 Virus	710	Routine Child Health Exam without Abnormal Findings	6377	Attention deficit hyperactivity disorder (ADHD)	178
ADHD (attention deficit hyperactivity disorder)	449	Attention deficit hyperactivity disorder (ADHD)	1632	Asthma	164
Cough	252	Diabetes	1230	Autism Spectrum Disorder	125
Asthma	183	Routine Child Health Exam with Abnormal Findings	1031	Developmental Delay	65
Generalized Anxiety Disorder	151	Asthma	836	Anxiety	66
Fever, unspecified fever cause	131	Immunization	731	Dermatitis	46
Sore Throat	90	Anxiety	704	Eczema	33

Figure 3: Primary Diagnoses split by visit modality and pediatric/non-pediatric patient populations.

Audio			Office			Video		
Race	Count	%	Race	Count	%	Race	Count	%
White or Caucasian	7889	66.7%	White or Caucasian	56025	62.2%	White or Caucasian	2570	73.7%
Black or African American	2412	20.4%	Black or African American	19831	22.0%	Black or African American	411	11.8%
Other	854	7.2%	Other	8853	9.8%	Other	294	8.4%
Mixed	452	3.8%	Mixed	3909	4.3%	Mixed	153	4.4%
Asian	190	1.6%	Asian	1038	1.2%	Asian	33	0.9%
American Indian or Alaska Native	27	0.2%	American Indian or Alaska Native	207	0.2%	American Indian or Alaska Native	18	0.5%
Arab	7	0.1%	Arab	140	0.2%	Arab	5	0.1%
Native Hawaiian or Other Pacific Islander	1	0.0%	Native Hawaiian or Other Pacific Islander	27	0.0%	Native Hawaiian or Other Pacific Islander	4	0.1%

Figure 4: Racial demographics of patient visit modalities and overall proportion mixes.

## Discussion

- As COVID-19 cases rose and fell, so too did the usage of alternative visit modalities such as Audio and Video.
- At the pandemic's onset, Audio overtook Office visits, yet slowly as precautions were instituted visit modality mix reverted to a state similar to its prior form.
- Audio and Video have continued to maintain a steady usage previously unseen prior to the pandemic.
- Regarding primary diagnostics, Audio visits continue to pertain to COVID-19 and mental health issues. Video primarily pertains to mental health issues. Office visits showcase expected diagnosis distributions, i.e. DM and HTN.
- Pediatric Patients with Autism spectrum disorder, developmental delay, and dermatitis heavily relied on Video visits.
- There was a 12% proportional increase of Video usage amongst White Americans with a corresponding 10% decrease of Video usage in African Americans.

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