Title: **Not Telehealth: What Primary Care Visits Need In-Person Care?**

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The COVID 19 pandemic has resulted in a rapid shift to telehealth and many services that need in-person care have been avoided. Yet, as practices and payment policies return to a new normal, there will be many questions about what proportion of visits should be done in-person vs telehealth. Using the 2016 National Ambulatory Medical Survey we estimated what proportion of visits were amenable to telehealth prior to COVID-19 as a guide. We divided services into those that needed in-person care and those that could be done via telehealth. Any visit that included at least one service where in-person care was needed was counted as an in-person only visit. We then calculated what proportion of reported visits and services in 2016 could have been provided via telehealth, as well as what proportion of in-person only services were done by primary care. We found that 66% of all primary care visits reported in NAMCS in 2016 required an in-person service. 90% of all wellness visits and immunizations were done in primary care offices, as were a quarter of all pap smears. As practices reopen, patient will need to catch up on many of the in-person only visits that were postponed such as pap smears and wellness visits. At the same time, patients and clinicians now accustomed to telehealth, may have reservations about returning to in-person only visits. Our estimates may provide a guide to practices as they navigate how to deliver care in a post COVID-19 environment.

Not Telehealth: What Primary Care Visits Need In-Person Care?

Introduction:

A recent shift from in-person visits to telehealth throughout the country has patients and clinicians questioning whether a return to medicine as we know it is possible. Many patients find telehealth more convenient and many clinicians and healthcare systems see the benefit of being able to treat patient while keeping them safe at home.[1,2,3] At the same time, this conversion to telehealth has been a financial burden for offices without the infrastructure or capability to quickly transform to telehealth, and the drop in in-person visits has been devastating for these practices and their communities. [4,5] While it is still unknown whether telehealth will remain widespread as stay at home orders are lifted, it is certain that medicine as we know it will have changed.

As communities begin reopening, practices need a guide or benchmark as to what proportion of visits should be done via telehealth and what proportion need in-person care. The answer to this question is elusive and will require a combination of evidence on the effectiveness of telehealth versus in-person visits and data on patient preferences and office capabilities. Literature on telehealth efficacy for certain conditions exists, as does literature of patient and provider preferences regarding telehealth.[6,7,8,9,10] Yet, to our knowledge, no nationally representative estimate exists of the proportion of outpatient visits that require in-office care. Using the National Ambulatory Medical Care Survey (NAMCS) we estimate the proportion of outpatient visits that needed in-person care before COVID-19. This analysis provides an estimate

of in-person visit need for practices as they begin to adjust care delivery post COVID-19.

Study Data and Methods:

Data Source

NAMCS is an annual survey that provides nationally representative estimates of the utilization and provision of ambulatory care services. The primary sampling unit is the patient-physician encounter in an ambulatory care setting. The physician reports data on all the ambulatory care visits that may have occurred during a week of reporting period. The response rate was 39.3% for physicians who provided data for at least one encounter. The survey methodology including sampling design, data instruments, and data collection procedures are described elsewhere.[11]

Analyses

We used 2016 NAMCS data to estimate the proportion of patient-physician encounters that require physical presence of the physician. Primary care specialty included general practice, family medicine, internal medicine, and pediatrics. We did not count any visits done by non-physicians such as Nurse Practitioners (NP) or Physician Assistants (PA). NP's and PA's make up only 2% of the total outpatient visits in the NAMCS data. All services provided by the physician in an office-based visit were classified by NAMCS into (1) examinations/screening, (2) lab tests, (3) imaging, (4) procedures, (5) treatment, and (6) health education/counseling.

We determined whether physician physical presence was required to conduct at least one service in the visit. For many of these services, determining whether physical

presence was required was straightforward because it required a physician to be present to “do” something, such as casting or pap smear. For other services, such as behavioral health counseling or ordering of lab tests this was less straight forward. To determine whether these services could be done via telehealth we used evidence from an environmental scan of the peer-reviewed literature and created a list of services that were appropriate for telehealth. Our list was then confirmed by a group of primary care physicians who either had used telehealth modalities in the past, or were currently using video enabled or telephone only telehealth during the COVID pandemic. Of note, when considering whether a service was amenable to telehealth, we considered all modalities, such as telephonic only as well as video enabled. We coded visits that needed to be in-person as '1' and others as ‘0’. We calculated the total number and proportion of in-person visits to all the physician specialties and for those provided by primary care physicians. Each of the services provided by the physician at a visit were recoded as binary measures and total number and proportion for each of the services was calculated as well. Finally, we calculated the proportion provided by primary care physicians for each of the services.

Distribution of patient socio-demographic characteristics of those requiring in-person visits was also examined. We used patient weights and survey design variables to obtain nationally representative estimates of the patient-physician encounters.

The study was approved by the Institution Review Board, American Academy of Family Medicine. We used Stata 16.0 for data analysis. (Stata Corp, Texas Instruments)

Results

Of the 850 million patient-physician encounters represented in NAMCS (all specialties), 69% required the physical presence of the physician. Of all the ambulatory primary care visits, 66% required the patient to visit the office in-person. (Table 1).

A detailed look at in-person services provided by primary care demonstrates that most in-person need is driven by wellness visits, though treatment of certain acute and chronic conditions also require in-person visits. Nearly 95% of immunizations and annual wellness visits occurred in primary care offices. A quarter of pelvic exams, and a third of pap tests are provided in primary care offices. Overall about 400,000 (0.1%) sigmoidoscopies were performed and primary care physicians provided a large percentage (84%). Presumably for chronic conditions such as diabetes, primary care physicians provide nearly 70% of foot exams, and just over 50% of neurological exams and retinal exams. In terms of acute needs, more than 90% of all rapid strep tests and throat cultures were provided by primary care in office-based settings. Similarly, primary care physicians provided two-thirds of PPD testing. One in four casts/splints/wraps were carried out in primary care offices.

Patients 65 years and older, non-Hispanic Blacks, those with hypertension or a diagnosis of coronary artery disease had a lower likelihood of having a visit amenable to telehealth. Whereas patients diagnosed with depression were more likely to receive services that were amenable to telehealth. (Table 2)

Discussion:

Prior to the COVID-19 pandemic, an estimated 69% of office visits required an in-person encounter. Much of this was being driven by immunizations and wellness visits,

although a majority of acute care and chronic condition management required in-person care as well. Currently, visits for preventive needs and chronic care have decreased as the need for triaging patients with influenza-like illness via telehealth has increased.[12,13] Many of the visits that have been avoided during the first phase of the pandemic such as wellness visits, pap smears, adult and pediatric immunizations and chronic disease management will need to be prioritized during the next phase of COVID-19 recovery. Our data suggests that as this happens, in-person encounters will increase but it may be possible to prepare patients and practices for both in-person and telehealth visits. Combining all the elements that require in-person components into one visit may make it possible to provide more visits via telehealth. Wellness visits, which were deemed telehealth reimbursable by CMS during the COVID-19 outbreak, may continue to be done for some populations via telehealth.[14] Innovative models for delivery of in-person care outside a traditional clinical setting may also emerge creating a hybrid model of telehealth and in-person wellness visits. Immunizations, for example, require limited physical presence and may be a service that practices continue to provide with very little physical presence in curbside drive-thru clinics or mobile immunization units.[15] As practices evolve, so will the healthcare team and considering the role of other team members such as the medical assistant and RN in these hybrid models will also need to be a future area of study.

Finally, the need for in-person visits may differ based on patient demographics and comorbidities. As we saw from 2016, patients with chronic disease such as hypertension and coronary artery disease were less likely to have visits amenable to telehealth modalities, as were older patients and non-Hispanic Black patients. Past

studies have cited multiple reasons for demographic differences in telehealth use including mistrust of the use of technology for healthcare, poor health literacy, or poor technology literacy[16],[17]. Yet differences in access to technology also play a large role. National level data confirms that Black and Hispanic patients are less likely to own a smart phone or have home broadband access than non-Hispanic whites.[18] And a survey on the use of telehealth in the Kaiser Permanente system showed that older patients (>75) and Black, Latino/a and Philipino/a patients were less likely to own digital devices, use the Internet and email, and be able and willing to use digital technology to perform health care-related tasks.[19] This is particularly concerning given that COVID-19 disproportionately affects older American and Black Americans. If we continue a telehealth only system of medicine in the post COVID-19 pandemic we have the potential to exacerbate the already present inequities in healthcare. Understanding the impact of telehealth on health equity will be crucial as virtual visits may improve access to care or marginalize more vulnerable patients with less access to the technology required for high quality video visits.

Limitations:

The major limitation to our study is the NAMCS data categories services provided during the visit. It is not possible to identify within categories every element of an individual visit that might necessitate an in-person encounter. Along the same lines, there is currently no set guideline for which services must be done in-person and which can be safely done via telehealth. Obvious examples such as a pelvic exam or casting were easier to categorize than less straightforward services such as wellness visits. While some education and counseling may be amenable to telehealth, it may be better

to deliver some education in-person. Furthermore, our definition of telehealth included any modality (i.e telephone only, video enabled, e consults) which was in line with the existing literature. It may be argued that video-enabled visits provide more diagnostic accuracy or that telephone only visits reduce the digital divide. We used the extant literature on telehealthto determine which visits in the NAMCS data needed to be in-person and confirmed this list with primary care physicians who were practicing telehealth, though our study points out the fact that more research is needed on the comparative effectiveness of telehealth visits. Second, we did not include NPs or PAs in our study sample. Yet, given that NPs and PAs account for only 2% of the visits in NAMCS, this likely did not have a major effect on our results. Finally, NAMCS is a survey of physicians and is therefore subject to bias of the respondents. This bias is minimized through a sophisticated data collection process that allows for validation from multiple sources.

Conclusion:

Although telehealth is appropriate for certain visits and likely will be integrated into practice post COVID-19, it cannot replace traditional care for all primary care sensitive issues. As patients emerge from their homes, so will the need for in-person visits. We need to be ready to recalibrate to the new normal. Using data from telehealth providers pre-COVID 19 may help us understand what that should be. Our estimates are not meant to be absolute metrics for practices to follow as they adjust their methods of care delivery, but they can serve as a guide. Certainly, rapid innovation in telehealth may allow some visits that we categorized as needing in-patient care to be done virtually. On the other hand, concerns regarding the security of telehealth visits and patient

desires for in-person, face-to-face contact may mean that some of the visits we deemed amenable to telehealth will be done in-person. Currently we are in a state of emergency, and as such we are appropriately shifting our care virtually when possible. Healthcare providers, health systems and policy makers should not confuse our current state of “telehealth whenever possible” with good evidence-based medicine.

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