CALIFORNIA
HEALTH BENEFITS REVIEW PROGRAM

Background Brief

Telehealth: Current state of the evidence

Prepared by
California Health Benefits Review Program
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SUMMARY

The California Assembly Committee on Health requested that the California Health Benefits Review Program (CHBRP) summarize the state of the evidence on telehealth in advance of an Information Hearing held on February 16, 2021. Specifically, CHBRP has been asked to summarize:

- Whether services delivered via telehealth are equivalent to in-person services;
- Whether use of telehealth services affects the use of other services;
- How utilization of and type of telehealth has changed over time and during the COVID-19 pandemic;
- Whether providing telehealth services is cost-effective; and
- Information about existing disparities in access to and use of telehealth.

For this brief, CHBRP focuses on the following common types of telehealth modalities and services: live video, telephone, and eConsult.[1]

Telehealth Use During the Pandemic

The COVID-19 pandemic forced many providers to begin using telehealth services or to increase the share of services provided via telehealth. While some providers were well equipped to handle this shift, others struggled to adapt to not only using the technology, but deciding which services were most appropriate to provide over video or telephone.

Within California, two health systems have made information about their experiences and comfort with telehealth available. One Bay Area health center that provides primary health care found that telehealth visits were most appropriate for stable patients with limited comorbidities and good compliance; in-person care was most useful for patients with multiple comorbidities with a high risk of re-hospitalization. UCLA Health system primary care physicians identified the following complaints as the least appropriate for a telehealth visit: chest pain, shortness of breath, ear pain or hearing changes, abdominal pain, and leg swelling. Services that were more appropriate for telehealth included depression or anxiety, cough and/or nasal congestion, diabetes management, and skin disorders such as dermatitis or rash. It is important to note that while these two examples identified which conditions were most and least appropriate for telehealth, specialists may make a different determination based on patient relationship and history and specific medical condition.

Medical Effectiveness of Telehealth

CHBRP found that evidence regarding whether telehealth modalities and services result in equal or better outcomes than care delivered in person is not consistent across the types of outcomes that have been studied.[2]

Equivalent to In-Person Services

Health outcomes. CHBRP found the strength of evidence regarding whether telehealth results in equal or better health outcomes varied across telehealth modalities as indicated below.

- Live video conferencing: *clear and convincing* evidence that telephone results in equal or better health outcomes than care delivered in person.
- Telephone: *Preponderance of* evidence that telephone results in equal or better health outcomes than care delivered in person.
- eConsult; *Insufficient* evidence whether eConsult results in equal or better health outcomes than care delivered in person for health outcomes.

[1] Certain types of telehealth services, such as eConsults and remote patient monitoring, may employ one or more telehealth modalities, but they are not in themselves a modality.

[2] Refer to CHBRP's full brief below for full citations and references.

Processes of care (i.e., delivery of recommended care). CHBRP found the strength of evidence regarding whether telehealth results in equal or better process of care outcomes varied across telehealth modalities as indicated below.

- Live video conferencing: *Clear and convincing* evidence that live video results in equal or better processes of care than care delivered in person.
- Telephone: *Inconclusive* evidence whether telephone results in equal or better processes of care than care delivered in person.
- eConsult; *Insufficient* evidence whether eConsult results in equal or better processes of care than care delivered in person for processes of care.

Use of Other Services

CHBRP found the strength of evidence regarding whether telehealth reduces the use of other services varied across telehealth modalities as indicated below.

- Live video conferencing: A *preponderance of* evidence that live video **does not** reduce use of in-person health care services compared to care delivered in person.
- Telephone: *Inconclusive* evidence whether telephone affects the use of other health care services compared to care delivered in person.
- eConsult; A *preponderance of* evidence that eConsult results in equal or better access to care and utilization than care delivered in person.

Utilization of Telehealth

Utilization of telehealth services grew slowly during the decade leading up to the COVID-19 pandemic. The pandemic required providers and patients to quickly adapt how health care is delivered and provided. Many states, including California, implemented shelter-in-place orders that limited whether residents were able to leave their homes except for essential reasons, such as a medical emergency. Providers and health care delivery systems stopped providing routine care in person to reduce the chance of spreading and contracting the virus. As a result, utilization of telehealth services increased substantially between February and April of 2020. While utilization as of October 2020 was lower than in the spring of 2020, use of telehealth was still much higher than in the months preceding the pandemic.

Among surveyed providers in California, the share of visits they provided using telehealth increased from 30% before the pandemic to 79% in September 2020.

Nationally, the number of office visits decreased in March and April 2020, but telehealth visits only offset approximately 40% of office visits. At the peak of telehealth utilization, approximately 48% of healthcare visits were delivered via telehealth in April 2020. By June 2020, telehealth visits comprised about 20% of total healthcare visits.

Use of telephone was the predominant modality in 2013, but its use decreased while use of other modalities such as email and live video doubled by 2016. During the COVID-19 pandemic, use of telephone increased dramatically in March and April of 2020. As the government loosened restrictions around use of telehealth technology, video use began increasing and soon overtook telephone.

Telehealth use is highest among behavioral health providers, radiologists, pathologists, and emergency medicine physicians. While telehealth use among all provider types increased during the COVID-19 pandemic, these trends have held, especially as utilization of telehealth decreased during the summer of 2020.

Cost-Effectiveness of Telehealth

There is limited evidence that telehealth services are often substitutes for more expensive in-person services (rather than complements or supplements) and thus telehealth services *may* be associated with overall reductions in patient and health system costs. Generally, telehealth was associated with overall cost savings or was cost neutral; except for one direct-to-consumer telehealth study, no recent studies were

identified that found increased overall costs with telehealth services. CHBRP was unable to locate any recent telehealth cost analyses that reported data during the COVID-19 pandemic; the major changes in health system and consumer behavior associated with the pandemic may have led to overall cost increases rather than the cost savings identified in earlier studies. Furthermore, the cost savings reported were largely attributable to reductions in hospital transfers or reduced patient transportation; the imprecision of estimates and poor external generalizability in these studies limit the strength of and confidence in these findings.

Disparities and Social Determinants of Health

Health Status and Geography. Patients must travel to obtain in-person health care services, which can be a burden both for rural and urban residents and especially for those who have limited transportation options or who have complex conditions that make travel difficult. Telehealth may improve access to health care services, but disparities in telehealth utilization persist. An examination of rural Californians based on 2015 survey data found that individuals who reported better health status were more likely to report telehealth use than individuals who reported poorer health status. In the context of the current COVID-19 pandemic, researchers have noted that individuals with poorer health are most likely to benefit from telehealth services but these individuals are also less likely to use telehealth than healthier individuals. Similarly, telehealth may improve access for Californians living in rural areas, but rural residents are less likely than urban residents to use telehealth.

Technology. The disparities in rural telehealth utilization may be partially explained by disparities in infrastructure and technology access. Compared to urban hospitals, rural hospitals are significantly less likely to have telehealth systems in place. Reliable broadband internet access is necessary for full-featured synchronous video telehealth, however 33% of rural Americans lack access to high-speed broadband. Data also show that California geographic disparities remain in the availability and quality of cellular and broadband connectivity.

Language, Demographics, and Income. Historically, telehealth access and utilization has varied significantly across population groups, with non-English speakers, people of color, older Americans, and lower-income households all reporting greater technology barriers, lower telehealth utilization, and higher likelihood of using telephone/audio-only rather than video telehealth. However, a recent survey of Californians who received care during the COVID-19 pandemic found that people of color reported higher telehealth utilization and were more likely to use video telehealth than white individuals. Telehealth disparities likely persist but racial/ethnic disparities may have narrowed as a result of COVID-19 pandemic–facilitated health system changes.

Conclusion

Use of telehealth has changed substantially in the last year, both in terms of volume and in delivery. While literature has been published detailing the experience of providing telehealth during the COVID-19 pandemic, literature evaluating the effectiveness is forthcoming. Additionally, although utilization of telehealth has decreased from the peak in April 2020, it is likely that utilization of telehealth will remain higher than pre-pandemic levels, although the magnitude of increase is unclear.

INTRODUCTION

The California Assembly Committee on Health requested that the California Health Benefits Review Program (CHBRP) summarize the state of the evidence on telehealth in advance of an Information Hearing to be held on February 16, 2021. Specifically, CHBRP has been asked to summarize:

- Whether services delivered via telehealth are equivalent to in-person services;
- Whether use of telehealth services affects the use of other services;
- How utilization of and type of telehealth has changed over time and during the COVID-19 pandemic;
- Whether providing telehealth services is cost-effective; and
- Information about existing disparities in access to and use of telehealth.

Telehealth Terminology

Telehealth is defined in statute as "the mode of delivering health care services and public health via information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient's health care. Telehealth facilitates patient self-management and caregiver support for patients and includes synchronous interactions and asynchronous store and forward transfers."[3] However, current California law does not define which modalities[4] are classified as telehealth. Therefore, CHBRP focuses on the following common telehealth modalities and services for this brief: live video, telephone, and eConsult. Detailed definitions in Appendix A (Table 3) provide an orientation to the relationships between modalities, services, and telehealth users, many of which intersect or overlap.

Telehealth Use During the Pandemic

The COVID-19 pandemic forced many providers to begin using telehealth services or to increase the share of services provided via telehealth. While some providers were well equipped to handle this shift, others struggled to adapt to not only using the technology, but deciding which services were most appropriate to provide over video or telephone. A plethora of telehealth-related articles have been published as a result of experiences during the COVID-19 pandemic. Many articles review the rapid implementation of telehealth and what worked for individual clinics or health centers and what did not work.

Some professional associations and clinics have developed and published guidance documents for providers to help guide what services to provide via telehealth and what to provide in person or delay. The American Telemedicine Association[5] has published guidelines (pre-pandemic) for a variety of medical specialties when providing telehealth services, including for telemental health and teledermatology.

Within California, two health systems have made information about their experiences and comfort with telehealth available. Note that these experiences and guidance may not be representative of all providers in California. Both examples provided here focus on care provided by primary care providers, and experiences and comfort with telehealth may be different with specialists.

The Native American Health Center, a collection of 15 sites in the San Francisco Bay Area, found that telehealth visits for the populations they serve were most appropriate for stable patients with limited comorbidities and good compliance; in-person care was most useful for patients with multiple

[3] Business and Professions Code 2290.5(a)(6)
[4] Modality refers to the mechanism or technology by which telehealth services are delivered.
[5] More information about the American Telemedicine Association and published guidelines is available at https://www.americantelemed.org/.

comorbidities with a high risk of re-hospitalization (Garret and Jenkins, 2020). The Center also provided the following guidance to providers to help decide which types of services could be provided via telehealth (Table 1):

Table 1. Clinic-Specific Guidance for Use of Telehealth and In-Person Visits

Telehealth	In Person
When the physician-patient relationship is well established	For new patients/re-establish care with new PCPs
For stable patients with minimal complaints (e.g., URI or UTI symptoms, rash)	For complex symptoms, especially those needing physical exam (e.g., chest pain, neurological symptoms)
For patients with symptoms suggestive of COVID-19	For visits needing exams (e.g., diabetes eye exam and foot exam)
For routine medication refills and management of stable chronic disease	Uncontrolled chronic diseases (e.g., diabetes type 2, hypertension)
Behavioral health conditions (e.g., depression, anxiety)	Preventive care services (e.g., cancer screenings, vaccinations)
	Well child and well adolescent visits
	Perinatal services
	Flu clinic

Source: Adapted from Garrett and Jenkins, 2020.
Key: PCP = primary care physician; URI = urinary incontinence; UTI = urinary tract infection.

The University of California, Los Angeles Health system (UCLA Health) surveyed primary care physicians (PCPs) early during the COVID-19 pandemic to determine whether care could continue to be provided via telehealth instead of in person. PCPs responded that about half of the care they routinely provide could be conducted via telehealth without compromising quality (Croymans et al., 2020). However, it became clear to UCLA Health that as telehealth use increased, more guidance would be needed to help determine whether a patient's symptoms or concerns required an in-person visit instead of telehealth. The authors conducted a subsequent survey of PCPs at UCLA Health that investigated the appropriateness of telehealth in common patient scenarios. PCPs identified the following complaints as the least appropriate for a telehealth visit: chest pain, shortness of breath, ear pain or hearing changes, abdominal pain, and leg swelling. Services that were more appropriate for telehealth included depression or anxiety, cough and/or nasal congestion, diabetes management, and skin disorders such as dermatitis or rash. It is important to note that while these PCPs identified which conditions were most and least appropriate for telehealth, specialists may make a different determination based on patient relationship and history and specific medical condition.

A national survey of health care providers, including physicians and non-physician providers, conducted by the COVID-19 Healthcare Coalition Telehealth Workgroup[6] during the summer of 2020 asked respondents which types of services would they like to continue offering to patients via telehealth after COVID-19 (2020). A majority of respondents said chronic disease management (72.9%), medical management (64.3%), care coordination (59.9%) and preventive care (52.6%) were services they would like to continue offering via telehealth. Among behavioral and mental health providers, almost all (94.1%) said they would like to continue offering mental and behavioral health services via telehealth. These answers varied by the medical specialty of the respondent.

[6] COVID-19 Healthcare Coalition Telehealth Workgroup: American Medical Association (AMA), American Telemedicine Association (ATA), Digital Medical Society (DiMe), Massachusetts Health Quality Partners, MassChallenge HealthTech, Mayo Clinic, and MITRE Corporation. The AMA, while a part of the Coalition Telehealth Workgroup, is not a formal member of the COVID-19 Healthcare Coalition.

MEDICAL EFFECTIVENESS OF TELEHEALTH

Research Approach and Methods

The conclusions below are based on CHBRP's review of the best available evidence from peer-reviewed and grey literature.[7] More information about CHBRP's research approach and methods is included in Appendix B.

Key Questions

1. Does the evidence indicate whether services delivered via telehealth (and specifically telephone) are equivalent to in-person services?

2. Does the evidence indicate whether the use of telehealth services (and specifically telephone services) affects the use of other services?

Methodological Considerations

Most studies pertinent to this report examine the use of telehealth modalities as a substitute for in-person care. In these cases, the relevant studies evaluated whether care provided via these technologies results in equal or better outcomes and processes of care than care delivered in person and whether use of these technologies improves access to care. Some studies assess the effects of telehealth as a supplement to in-person care; these studies evaluate whether adding these technologies improves processes of care and health outcomes relative to receiving in-person care alone.

A major methodological limitation of the literature is that the pace at which studies of telehealth are published does not keep pace with the rate of change in telehealth technology. Another important limitation of the studies is the inability to disaggregate the telehealth services from other interventions, such as an integrated web portal that includes e-mails as well as information about self-care, access to test results, and ability to refill prescriptions.

The literature search for this report used general terms for telehealth services, which may have missed peer-reviewed literature that was indexed using terms associated with particular diseases or conditions.

Outcomes Assessed

To examine whether services delivered via telehealth are equivalent to in-person services, CHBRP examined the following outcomes: (1) health outcomes, including both physiological measures and patient-reported outcomes and (2) process of care outcomes, including treatment adherence, accuracy of diagnoses, and alignment of treatment plans with clinical practice guidelines. To assess whether the use of telehealth services (and specifically telephone services) affects the use of other services, CHBRP examined effects of telehealth on use of other health care services, such as wait time for specialty care, or number of outpatient visits, emergency department visits and hospitalizations.

[7] Grey literature consists of material that is not published commercially or indexed systematically in bibliographic databases. For more information on CHBRP's use of grey literature, visit http://chbrp.com/analysis_methodology/medical_effectiveness_analysis.php .

Study Findings

Does the Evidence Indicate Whether Services Delivered via Telehealth (and Specifically Telephone) Are Equivalent to In-Person Services?

Health outcomes

Evidence regarding whether telehealth results in equal or better health outcomes than care delivered in person is mixed, depending on the healthcare service being delivered and the telehealth modality. CHBRP found clear and convincing evidence that live video results in equal or better health outcomes than care delivered in person, preponderance of evidence that telephone results in equal or better health outcomes than care delivered in person, and insufficient evidence that eConsult results in equal or better health outcomes than care delivered in person.

Live videoconferencing. Literature reviews that CHBRP conducted for its previous reports on SB 289, AB 2507, and AB 744 identified a large number of studies that compared the effects of live videoconferencing and in-person care on health outcomes (Ferrer-Roca et al., 2010; Fortney et al., 2015; Garcia-Lizana and Munoz-Mayorga, 2010; Harrison et al., 1999; Kairy et al., 2009; Morland et al., 2010, 2014; Myers et al., 2015; Wallace et al., 2004). These studies report that quality of life and clinical outcomes, such as severity of depression symptoms, are similar between people who participate in live videoconferencing and people who receive in-person care.

Additionally, CHBRP found a recent large systematic review (Burnham et al., 2020; 18 studies) on the clinical effectiveness of live videoconferencing for infectious diseases consultations, which reported that people who receive consultations via telehealth had shorter hospital length of stay and similar rates of readmission as people who receive in-person care. This systematic review reported mixed findings for mortality, with higher mortality in the group receiving care through live videoconferencing in two studies reporting on this outcome and lower in two studies reporting this outcome (range, 0%–22%).

Two recent systematic reviews found that telepsychiatry delivered via live videoconferencing is similar to in-person care for the management of mental health care in terms of quality of care and quality of doctor-patient relationship (Coustasse et al., 2019; Sunjaya et al., 2020). A systematic review reported that patients with post-traumatic stress disorder in programs that included live videoconferencing were associated with shorter total therapeutic hours than patients receiving face-to-face therapy (Sunjaya et al., 2020).

A 2019 retrospective cohort study (5,952 patients: 738 telemedicine visits, 5,214 standard visits) comparing medication abortion with a live videoconference to a standard in person visit for medication abortion (Kohn et al., 2019) reported that health outcomes for medication abortion provided via live videoconferencing are similar to standard medication. The study reported that ongoing pregnancy was less common among telemedicine patients (2/445, 0.5%) than standard patients (71/4,011, 1.8%) (adjusted odds ratio [OR] 0.23; 95% CI 0.14–0.39) and that aspiration procedures were less common among telemedicine patients (6/445, 1.4%) than standard patients (182/4,011, 4.5%) (adjusted OR 0.28; 95% CI 0.17–0.46). In both groups, fewer than 1% of patients reported clinically significant adverse events.

Telephone. CHBRP did not find any recent studies on the use of telephone consultations compared to in-person consultations on health outcomes.

The 2016 report for AB 2507 found telephone consultations result in equal or better health outcomes as in-person consultations based on three studies (Akobeng et al., 2015; Fann et al., 2015; Kotb et al., 2015). The CHBRP report for AB 744 reported that a meta-analysis (11 RCTs; 1,104 subjects), found moderately better scores on a measure of depression for patients with multiple sclerosis who received telephone psychotherapy interventions and small to moderately better short-term scores on measures of

fatigue, quality of life, multiple sclerosis symptoms, physical activity, and medication adherence compared with patients in control groups and patients who received other interventions (Proctor et al., 2018).

eConsult. CHBRP did not identify any studies of the impact of eConsult on health outcomes.

Process of care[8]

Evidence regarding the effectiveness of telehealth on processes of care is mixed, depending on the modality. CHBRP found clear and convincing evidence that live video results in equal or better processes of care than care delivered in person, inconclusive evidence that telephone results in equal or better processes of care than care delivered in-person, and insufficient evidence that eConsult results in equal or better processes of care than care delivered in person.

Live videoconferencing. CHBRP's previous reports on telehealth found no difference in processes of care between patients who received care via live video and patients who received in-person care. These studies include three systematic reviews and one randomized controlled trial (RCT) (Brearly et al., 2017: 12 studies, 497 participants; Fortney et al., 2015: 265 subjects; Simpson and Reid, 2014: 23 studies; Warshaw et al., 2011: 10 studies, 1,290 subjects).

Two recent studies found no difference between processes of care for patients treated via live videoconference and in-person visits (Bradley et al., 2020; Yao et al., 2020). Bradley et al. (2020) found no significant difference (62 patients; P = .98) in the overall diagnostic reliability of a telehealth videoconference clinical examination compared to a traditional shoulder clinical examination (with an MRI as reference) for patients with shoulder rotator cuff tears. It is important to note that the study found that the diagnostic effectiveness of both tests without an MRI was poor regardless of the group. A retrospective cohort study (Yao et al., 2020; 260 subjects) found no statistically significant difference in the rates at which patients seen via live videoconferencing and patients seen in an emergency department were prescribed antibiotics for acute respiratory infections (29% of telemedicine visits and 28% of in-person visits; OR 1.038; 95% CI 0.71–1.52; p=0.846).

Additionally, CHBRP found a recent large systematic review (Burnham et al., 2020; 18 studies) on the clinical effectiveness of live videoconferencing for infectious diseases consultations, which reported that people who receive consultations via telehealth had similar rates adherence to treatment as people who receive in-person care.

However, a 2019 retrospective cohort study using claims data (528,213 total pediatric visits), Ray et al. (2019), compared the quality of antibiotic prescribing for acute respiratory infections among children in three different health care settings: live videoconferencing telehealth consultations, urgent care, and primary care provider offices. The study reported that clinicians who cared for children via live videoconferencing were less likely to prescribe antibiotics in a manner that was consistent with clinical practice guidelines (59% of telemedicine visits versus 67% urgent care and 78% primary care provider visits). For visits with a diagnosis of streptococcal pharyngitis (strep throat), live videoconferencing providers were less likely to order a streptococcal test to confirm the diagnosis (4% of telemedicine visits versus 75% urgent care and 68% primary care provider visits), which could have led live videoconferencing providers to prescribe antibiotics unnecessarily because some children who they suspected had strep throat may not have had it and, thus, did not need antibiotics.

Telephone. A systematic review comparing telehealth to in-person care in primary care settings (Han et al., 2020) included three retrospective cohort studies that compared antibiotic prescribing in telephone consultations and in-person consultations (Ewen et al., 2015; Penza et al., 2019; Murray et al., 2019). These studies reported mixed results. Ewen et al. (2015) and Penza et al. (2019) reported lower rates of

[8] Processes of care concern the manner in which care is provided. Examples of process of care outcomes include accuracy of diagnoses, alignment of treatment plans with clinical practice guidelines, and patient adherence to treatment plans.

antibiotic prescriptions during telephone consultations compared to in-person visits. In contrast, Murray et al. (2019) reported no significant differences in antibiotic prescribing rates between telephone and in-person visits for urinary tract infections (81% vs. 83%; *P*=.76).

eConsult. CHBRP did not identify any studies of the impact of eConsult on processes of care.

Does the Evidence Indicate Whether the Use of Telehealth Services (and Specifically Telephone Services) Affects the Use of Other Services?

Evidence regarding the effectiveness of telehealth on use of other health care services is mixed, depending on the modality. CHBRP found a preponderance of evidence that live video conferencing does not reduce use of in-person health care services compared to care delivered in person and that eConsult results in shorter wait times for treatment and greater likelihood of receiving treatment than care delivered in person. There is inconclusive evidence that telephone affects the use of in-person health care services.

Live videoconferencing. Studies have found that live videoconferencing increases access to care, decreases follow up visits, and increases treatment adherence (Andino et al., 2020; Legha et al., 2019; Wood et al., 2019).

Wood et al. (2019; 85 subjects) reported that substituting live videoconferencing for in-person visits with a specialist was associated with a substantial and statistically significant reduction in the distance that rural veterans with inflammatory arthritis traveled to obtain care ($p<0.01$).

In a retrospective study of 600 video visits among established patients completed by 13 urology providers, Andino et al. (2020) found that for new or persistent medical concerns, the 30-day revisit rates — defined as an in-person evaluation within 30 days of the patient's initial visit by any urologist or urology advanced practice provider in the clinic, emergency room, or inpatient hospital — were similar across both groups (0.5% vs. 0.67%; p=0.60).

Legha et al. (2019) studied telepsychiatric care provided via live videoconferencing within a rural Alaska native psychiatric program and reported that, compared to patients who received usual care, patients in the telepsychiatry group remained engaged in treatment longer and were more likely to complete treatment. The odds of treatment completion was 99% greater in the telepsychiatry group than in the usual care group.

A 2019 retrospective cohort study (5,952 patients: 738 telemedicine visits; 5,214 standard visits) comparing medication abortion with a live videoconference to a standard in-person visit for medication abortion (Kohn et al., 2019) reported that medication abortion provided via live videoconferencing significantly improves access to earlier abortion and abortion care services. The study reported that ongoing pregnancy was less common among telemedicine patients (2/445, 0.5%) than standard patients (71/4,011, 1.8%) (adjusted OR 0.23; 95% CI 0.14–0.39) and that aspiration procedures were less common among telemedicine patients (6/445, 1.4%) than standard patients (182/4,011, 4.5%) (adjusted OR 0.28; 95% CI 0.17–0.46).

Telephone. CHBRP found no studies published since 2015 that examined the effect of telephone-based telehealth on use of other health services. The 2015 CHBRP report for SB 289 found inconclusive evidence from RCTs and time-series studies of the effect of telephone consultation services on access to care and utilization, with studies showing different effects for use of the same type of service (e.g., emergency department, hospitalization, or primary care) (Bunn et al., 2004; Flores-Mateo et al., 2012).

eConsult. In the previous report for AB 744, CHBRP found three systematic reviews and seven observational studies that addressed the effects of eConsult on access to care and utilization across multiple specialties, including otolaryngology-head and neck surgery, rheumatology, dermatology, orthopedics, and psychiatry (Archibald et al., 2018; Baig et al., 2016; Bauer et al., 2019; Gleason et al., 2017; Kohlert et al., 2018; Lai et al., 2018; Liddy et al., 2018, 2019; Lowenstein et al., 2017; Naka et al.,

2018; Rea et al., 2018; Rostom et al., 2018; Schettini et al., 2017; Ulloa et al., 2017; Vimalananda et al., 2015). The studies consistently found that eConsult was associated with shorter time to treatment, shorter wait time for specialist input, and fewer avoidable specialist visits. CHBRP also identified one recent study (Anderson et al., 2020) that found that implementation of eConsult among Medicaid beneficiaries increased the percentage of referrals to an endocrinologist that were completed, either by an in-person visit or an eConsult. Completion of a higher percentage of referrals indicates that more patients whose primary care provider believed they would benefit from a consultation with an endocrinologist received one.

Summary of Medical Effectiveness Findings

CHBRP found that evidence regarding whether telehealth modalities and services result in equal or better outcomes than care delivered in person is mixed depending on the type of outcome studied: health outcomes, process of care, or use of other services (Table 2).

Table 2. Summary of Medical Effectiveness Findings: Telehealth

	Equivalent to In-Person Services		Reduces Use of Other Services
	Health Outcomes	**Process of Care**	
Live Video	Clear and convincing – yes	Clear and convincing – yes	Preponderance – no
Telephone	Preponderance – yes	Inconclusive	Inconclusive
eConsult	Insufficient	Insufficient	Preponderance - yes

Source: California Health Benefits Review Program, 2021.

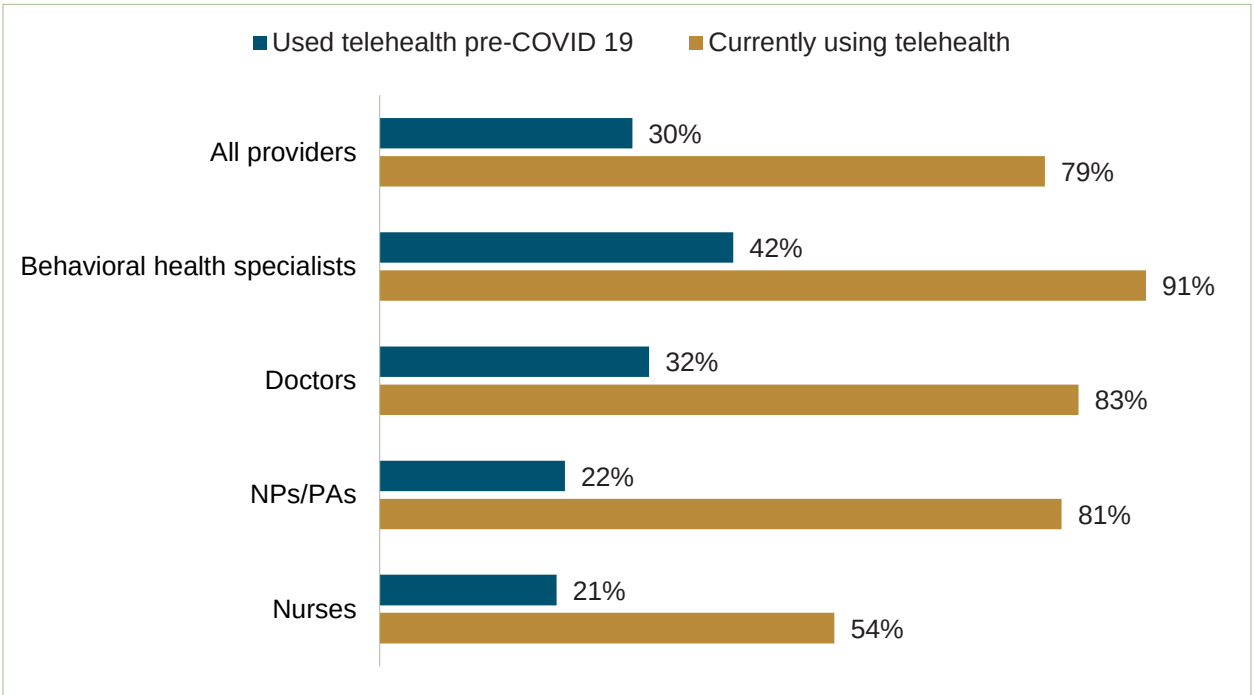
UTILIZATION OF TELEHEALTH

Utilization of telehealth services grew slowly during the decade leading up to the COVID-19 pandemic (Park et al., 2018). The pandemic required providers and patients to quickly adapt how health care is delivered and provided. Many states, including California, implemented shelter-in-place orders that limited whether residents were able to leave their homes except for essential reasons, such as a medical emergency. Providers and health care delivery systems stopped providing routine care in person to reduce the chance of spreading and contracting the virus. As a result, utilization of telehealth services increased substantially between February and April of 2020. While utilization as of October 2020 was lower than in the spring of 2020, use of telehealth was still much higher than in the months preceding the pandemic (Mehrotra et al., 2020).

Among surveyed providers in California, the share of visits they provided using telehealth increased from 30% before the pandemic to 79% in September 2020 (CHCF, 2020a).[9] Behavioral health specialists said they provided more visits via telehealth both before the pandemic and in September of 2020 (Figure 1). Doctors and nurse practitioners/physician assistants also provided most of their services via telehealth as of September 2020.

[9] Answers provided are based on individual providers' experiences and are not based on claims data; therefore, answers may be subject to recall bias.

Figure 1. Use of Telehealth Among Providers in California, Before and During the COVID-19 Pandemic, 2020

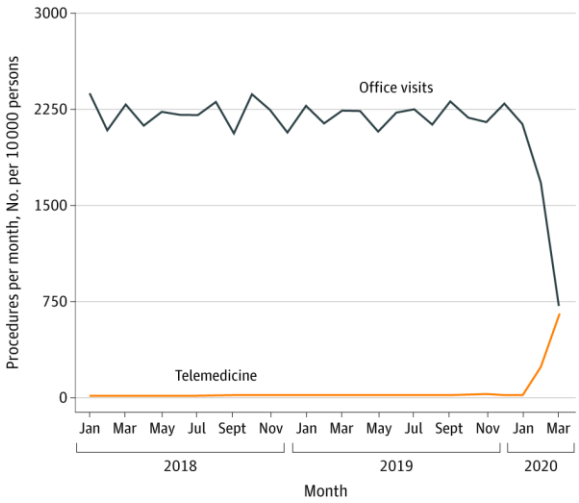


Source: California Health Benefits Review Program, 2021. Adapted from CHCF, 2020a.

Key: NP = nurse practitioner; PA = physician assistant.

Nationally, among commercially insured enrollees, claims data indicates the number of telehealth visits in March of 2019 hovered around 17.4 visits per 10,000 persons and had been relatively stable since early 2018 (Figure 2) (Whaley et al., 2020). Telehealth visits increased to 239.1 visits per 10,000 persons in March of 2020 and to almost 650 visits per 10,000 persons in April of 2020, an increase of more than 4000% from 2019. Office visits decreased during March and April 2020 as well, but telehealth visits only offset approximately 40% of office visits. At the peak of telehealth utilization, approximately 48% of healthcare visits were delivered via telehealth in April 2020.

Figure 2. Trends in Use of Office Visits and Telemedicine among Commercially Insured US Population, 2018-2020

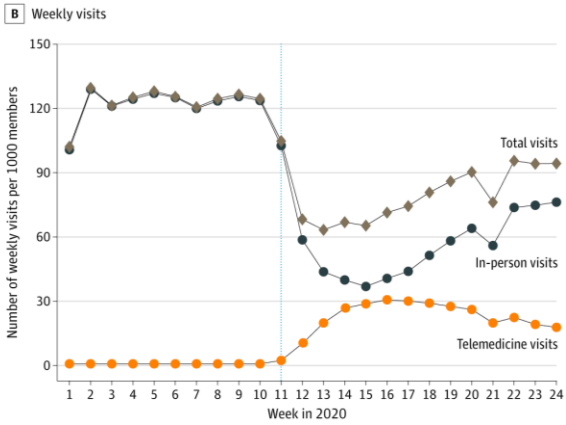


Source: Whaley et al., 2020.

Note: Per 10,000 persons.

Patel et al. (2020) examined national claims data for utilization of in-person and telehealth visits since the beginning of 2020 among commercially insured enrollees. The authors similarly found that telehealth visits increased substantially between March and April 2020, followed by a decrease through June 2020 (Figure 3). Use of office visits fell sharply in March and April, followed by an increase through June 2020. Here as well, the authors found that telehealth did not fully substitute for office visits and in June comprised about 20% of total healthcare visits. Similar trends in utilization of telehealth and in-office visits were presented in an analysis of national commercial and Medicaid claims data by Mehrotra et al. (2020).

Figure 3. Trends in In-Person, Telehealth, and Total Visits per Week, January 1, 2020-June 16, 2020



Source: Patel et al., 2020.

Note: The dotted vertical line indicates the week of March 17, 2020 (week 11), when Medicare expanded reimbursement for telemedicine visits due to the COVID-19 pandemic. Week 21 (May 20-May 26, 2020) includes Memorial Day, a federal holiday in the US. The work week was likely 4 days for many practices resulting in a decrease in visit volume.

Utilization by modality

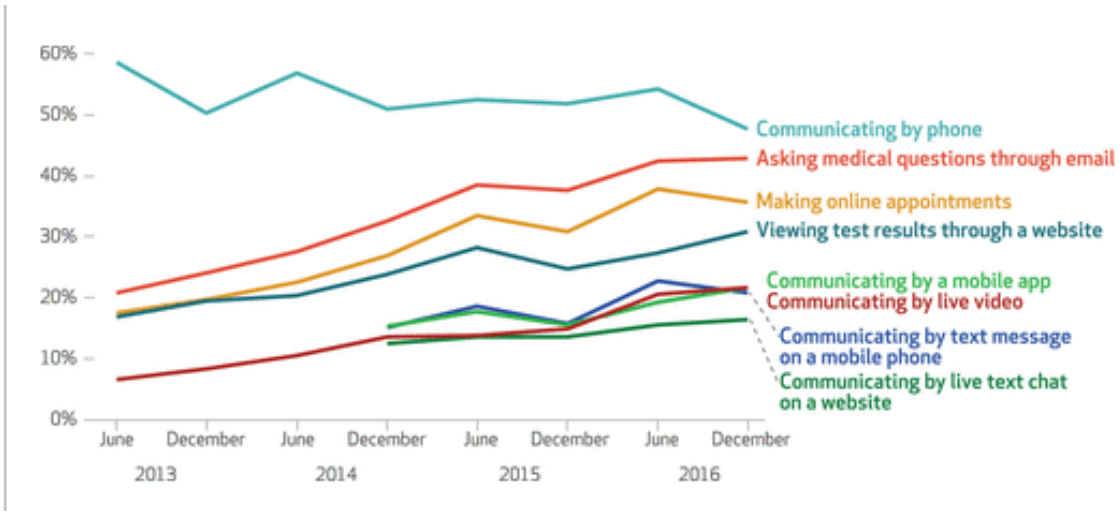
As technology has changed, the modalities used during telehealth encounters have shifted. While use of telephone was the predominant modality in 2013, its use decreased while use of other modalities such as email and live video doubled by 2016 (Figure 4). As mentioned above, utilization of all telehealth modalities has increased substantially since the start of the COVID-19 pandemic.

Almost two-thirds (62%) of California residents who recently received medical care and responded to a California Health Care Foundation survey reported using telehealth (CHCF, 2020b). Approximately half of respondents used phone and the other half used video. While more respondents with incomes below 200% of the federal poverty level used phone, there was no statistically significant difference in the use of video between respondents with incomes below 200% of the federal poverty level and respondents with incomes above this level. Conversely, use of either telehealth modality (telephone or live video) was significantly greater among people of color (76%) compared to white respondents (48%).

California providers report that providing telehealth services via video is more common than before the pandemic began, with almost half (46%) of providers surveyed saying they use video for more than half of the telehealth visits provided (CHCF, 2020a). Before the pandemic, about one-quarter (26%) of providers said they used video for more than half of their telehealth visits. Almost all providers currently use video (80%) and/or phone (90%) for at least one patient visit.

Phone utilization increased substantially in March and early April. As the federal government loosened restrictions around use of telehealth technology, video use began increasing and soon overtook telephone (Contreras et al., 2020; Rizzi et al., 2020).

Figure 4. Rates of Consumers' Use of Telehealth, by Type of Use, 2013-2016



Source: Park et al., 2018.

Note: "Communicating" means communicating with a provider.

Utilization by Service Type

The American Medical Association (AMA) surveyed physicians in 2016 about current telehealth practices. They found that approximately 15% of physicians used telehealth during patient interactions and 11% of physicians used telehealth during interactions with other health care professionals (Kane et al., 2018). Telehealth use with patients was highest among radiologists (39.5%), psychiatrists (27.8%), pathologists (23%), and emergency medicine physicians (22.3%). Telehealth use with patients was lowest among internal medicine subspecialties (15.3%), primary care physicians (12.7%), and surgery (11.4%). Telehealth use with other health care professionals was highest among radiologists (25.5%), pathologists (30.4%), and emergency medicine physicians (38.8%). Telehealth use was higher among physicians who worked with larger practices or health centers compared to smaller or independent practices.

The 2020 California Health Care Foundation survey of providers in California found telehealth use was highest among behavioral health providers (CHCF, 2020b).

COST-EFFECTIVENESS OF TELEHEALTH SERVICES

CHBRP's review of pre-COVID-19 pandemic literature found limited evidence that telehealth services are often substitutes for more expensive in-person services (rather than complements or supplements) and thus telehealth services may be associated with overall reductions in patient and health system costs. CHBRP was unable to locate any recent telehealth cost analyses that reported data during the COVID-19 pandemic; the major changes in health system and consumer behavior associated with the pandemic may have led to overall cost increases rather than the cost savings identified in earlier studies. Furthermore, the cost savings reported in these earlier studies were largely attributable to reductions in hospital transfers or reduced patient transportation; the imprecision of estimates and poor external generalizability in these studies limit the strength of and confidence in this section's evidence (Totten et al., 2019; Trotten et al., 2020).

Several studies examined the extent to which telehealth services are a complement or substitute for in-person services. A recent multi-state analysis found that state-level telehealth reimbursement parity

insurance requirements are associated with an increase in lower-cost ambulatory care services (such as primary care) but a decrease in higher-cost secondary care (such as inpatient hospitalization); the study concluded that telehealth is generally a substitute instead of a complement (Grecu and Sharma, 2019). A study within a large Midwestern regional health system compared telehealth (on-demand, direct-to-consumer synchronous video visit), urgent, primary, and emergency care for low-acuity conditions and found that telehealth was associated with the lowest visit cost and lowest overall 21-day care cost among the four settings (Lovell et al., 2019). A Pennsylvania-based examination of on-demand synchronous video telehealth found that 74% of care concerns were resolved during the visit and only 16% of telehealth users would have had no health encounters in place of telehealth; the authors ultimately concluded that net cost savings from telehealth ranged from $19-$121 per visit (Nord et al., 2019). A national comparison of telemental health users to in-person–only mental health users found significantly higher mental health utilization and mental health costs among telehealth users but no overall difference in total health costs, suggesting that increased telemental health utilization is associated with reduced utilization of other health services (Zhao et al., 2020).

CHBRP did not find any recent literature discussing commercial third-party direct-to-consumer (such as Teladoc, American Well, and Doctor on Demand) telehealth costs, and this modality was largely outside the scope of this brief. However, an earlier study found that only 12% of direct-to-consumer telehealth visits for acute respiratory infection substituted for other visits, with 88% of these visits representing new, complementary utilization; the substantial increase in overall utilization resulted in a net $45 per person increase in spending even though direct-to-consumer visits were less expensive than physician office or emergency department alternatives (Ashwood et al., 2017).

CHBRP's 2019 analysis of AB 744 found that telehealth use in rural areas may be associated with an overall decrease in cost of care due to reduced rural patient travel and reductions in unnecessary office visits, emergency department visits, or hospitalizations (Marcin et al., 2016).

CHBRP's updated literature review also found detailed cost analyses, but all of these were limited to specific telehealth service specialties. Generally, telehealth was associated with overall cost savings or was cost neutral; except for the previously discussed direct-to-consumer telehealth study no recent studies were identified that found increased overall costs with telehealth services. The following studies were the most recent and generalizable examples available in the published literature. An examination of synchronous video rheumatology visits among rural veterans found that each telehealth visit was associated with reduced costs (-$113.80 per visit) as compared to in-person rheumatology (Wood and Caplan, 2019). In amyotrophic lateral sclerosis (ALS) patients, synchronous video specialty care was associated with cost savings of $997 (patient-level) and $327 (institution-level) per visit (Paganoni et al., 2019).

DISPARITIES[10] AND SOCIAL DETERMINANTS OF HEALTH[11]

As discussed in the Introduction section, CHBRP was asked to summarize the impact that providing telehealth services has on disparities and social determinants of health. Social determinants of health (SDoH) include factors outside of the traditional medical care system that influence health status and health outcomes. Where evidence is available, CHBRP presents the range of SDoH and related disparities (e.g., income, education, and social construct around age, race/ethnicity, gender, and gender identity/sexual orientation) that are relevant to telehealth.

[10] Several competing definitions of "health disparities" exist. CHBRP relies on the following definition: Health disparity is defined as the differences, whether unjust or not, in health status or outcomes within a population (Wyatt et al., 2016).

[11] CHBRP defines social determinants of health as conditions in which people are born, grow, live, work, learn, and age. These social determinants of health (economic factors, social factors, education, physical environment) are shaped by the distribution of money, power, and resources and impacted by policy (adapted from: CDC, 2014; Healthy People 2020, 2019). See CHBRP's SDoH white paper for further information: http://chbrp.com/analysis_methodology/public_health_impact_analysis.php.

Disparities in Telehealth Access by Health Status, Geography, Technology, Language, Demographics, and Income

Health Status and Geography

As explained in CHBRP's 2019 analysis of AB 744, patients must travel to obtain in-person health care services, which can be a burden both for rural and urban residents and especially for those who have limited transportation options or who have complex conditions that make travel difficult. Telehealth may improve access to health care services, but disparities in telehealth utilization persist. An examination of rural Californians based on 2015 survey data found that individuals who reported excellent, very good, or good health status were more likely to report telehealth use than individuals who reported poorer health status (Lee et al., 2019). In the context of the current COVID-19 pandemic, researchers have noted that individuals with poorer health are most likely to benefit from telehealth services but these individuals are also less likely to use telehealth than healthier individuals (Crawford and Serhal, 2020).

Telehealth may improve health care access for rural Americans, including Californians who live in rural areas.[12] However, rural Americans are less likely than Americans who live in urban areas to use telehealth services, as explained in CHBRP's 2019 analysis of AB 744. A recent study found that urban Americans had 54% increased odds of utilizing telehealth, as compared to rural Americans (Jaffe et al., 2020). Other studies using data collected during the COVID-19 pandemic presented similar findings of lower telehealth utilization among individuals in rural areas than individuals residing in urban areas (Patel et al., 2021; Pierce, 2020).

Technology

The disparities in rural telehealth utilization may be partially explained by disparities in infrastructure and technology access. Compared to urban hospitals, rural hospitals are significantly less likely to have telehealth systems in place (Chen et al., 2020). Reliable broadband internet access is necessary for full-featured synchronous video telehealth; however, 33% of rural Americans lack access to high-speed broadband (Cortelyou-Ward et al., 2020; Hirko et al., 2020). Data also show that California geographic disparities remain regarding the availability and quality of cellular and broadband connectivity (Lopez, 2019).

Language

CHBRP found that telehealth access and utilization were lower for non-English speakers. Non-English speakers are less likely to have internet access, an email address, and a smartphone or computer capable of video (Blundell et al., 2020). Several studies that examined data during the COVID-19 pandemic found that non-English speakers were less likely to utilize any form of telehealth services (Blundell et al., 2020; Eberly et al., 2020; Schifeling et al., 2020).

Demographics and Income

CHBRP identified racial and ethnic telehealth utilization disparities in the 2019 analysis of AB 744, yet some of these disparities may have narrowed during the COVID-19 pandemic. These earlier studies found that people of color were less likely to use online services or e-mail for health care advice and treatment (Baldassare et al., 2013; Dudas and Crocetti, 2013; Mitchell et al., 2014). People of color were also less likely to have access to broadband Internet (Baldassare et al., 2013) and an e-mail account (Gibbons, 2008).

[12] As there is no consistent definition of rural areas, CHBRP found various estimates of California's rural population ranging from 837,000 (2%) to 5.2 million (14%). For further information, see: https://www.ruralhealthinfo.org/states/california and https://med.stanford.edu/ruralhealth/health-pros/factsheets.html.

A recent California Health Care Foundation report surveyed Californians who received health care during the COVID-19 pandemic about their telehealth utilization. This study did not find any significant disparities in telehealth utilization by income and found that people of color reported significantly higher telehealth utilization (76%) than white individuals (48%) (CHCF, 2020b). An analysis of ambulatory care visits in one Southern California academic health system found that Asian and Latino individuals were less likely to use telehealth during the COVID-19 pandemic compared to white individuals, whereas no difference was found between Black and white individuals (Kakani et al., 2021). The results from these studies may not be generalizable as they are self-reported from patients who received health care or limited to a single urban academic health system.

CHBRP also identified age disparities in the 2019 analysis of AB 744, and these disparities did not appear to abate during the COVID-19 pandemic. Three earlier observational studies considered use of telephone and electronic health care in California and found disparities by age, with technology users generally younger than Californians who did not use various computer and smartphone technologies (Pearl, 2014; Uscher-Pines and Mehrotra, 2013). The more recent studies examining telehealth utilization during the COVID-19 pandemic consistently found that older Americans were less likely to use telehealth services as compared to younger populations (Darrat et al., 2020; Eberly et al., 2020; Patel et al., 2021).

CHBRP found conflicting evidence about disparities in telehealth utilization by gender. Whereas one recent study indicated that females were less likely to utilize telehealth, another study found that females were more likely to utilize telehealth (Eberly et al., 2020; Pierce et al., 2020). CHBRP was unable to identify any literature examining whether sexual orientation disparities occur in telehealth utilization.

Disparities in Use of Telehealth Services by Modality

As explained earlier in this brief, a variety of telehealth services exist. Though telehealth may be available to increasing numbers of Californians, disparities persist in the utilization of full-featured synchronous video and audio communication. CHBRP identified a number of recent, national studies that found disparities in utilization of synchronous video and audio compared to telephone or synchronous audio-only. A recent California-based survey found that people of color reported higher video telehealth utilization (47%) than white individuals (27%) (CHCF, 2020b). National studies reported that Black and non-white patients were less likely to use synchronous video and were more likely to use telephone or synchronous audio-only, as compared to non-minority patients (Pierce et al., 2020; Schifeling et al., 2020). Older patients were less likely to use video as compared to younger patients (Eberly et al., 2020; Jaffe et al., 2020). Finally, rural individuals were less likely to use asynchronous video and were more likely to use telephone or synchronous audio-only as compared to urban populations (Jaffe et al., 2020; Schifeling et al., 2020). In the California population served by a network of Bay Area community health centers, only 29% of patients had access to video chat whereas 91% had access to audio calling (Garret and Jenkins, 2020).

CONCLUSION

Use of telehealth has changed substantially in the last year, both in terms of volume and in delivery. While literature has been published detailing the experience of providing telehealth during the COVID-19 pandemic, literature evaluating the effectiveness is forthcoming. Additionally, although utilization of telehealth has decreased from the peak in April 2020, it is likely that utilization of telehealth will remain higher than pre-pandemic levels, although the magnitude of increase is unclear.

APPENDIX A ADDITIONAL INFORMATION

Table 3. Common Telehealth Terminology

Modality/Service	Service Description	Example
Live video	Uses two-way, interactive video to connect users. Occurs provider-to-provider at a distant site or between a patient and a provider.	Patients receive counseling sessions via live video (telepsychiatry); or local provider contacts distant specialist (with or without a patient present) for consultation or treatment.
Store and forward	Provider captures medical information (e.g., photo, recording) and transmits information to a remote provider for later review.	X-rays or CT scans sent to a distant radiologist to perform a diagnostic review.
E-mail, synchronous text and chat conferencing	Health system portals provide email, chat, or text options for patients to contact provider.	Patient emails provider describing rash symptoms (with or without a picture). Provider responds via email with prescription for topical antibiotic.
Telephone	Landline, cell phone	Patient telephones the provider for diagnosis and receives prescription for urinary tract infection.
e-Consultation (eConsult)	A form of store and forward: Referring provider requests uses webportal or EHR for clinical input from specialists, who answer the question, request more information/tests, or schedule an office visit.	PCPs refer patients with A1c levels >9% for diabetes team e-consult. Hematology and endocrinology are consistently among the top five specialties receiving these e-consults across systems.
mHealth (mobile health)	A general term for the use of mobile phones and other wireless technology in medical care.	The most common application of mHealth is the use of mobile devices to educate consumers about preventive healthcare services. However, mHealth is also used for disease surveillance, treatment support, epidemic outbreak tracking and chronic disease management.
Remote patient monitoring	Medical devices measure physiologic data, which is uploaded to provider site or communicated by patient to provider.	Patient or device automatically uploads glucose or blood pressure readings for review by provider. Provider–patient consultation for abnormal readings may follow.

Source: California Health Benefits Review Program, 2021. Based on information from NCTRC, 2018; Player et al., 2018; Vimalananda et al., 2015; Wicklund, 2018.

Key: CT = computed tomography; EHR = electronic health record; PCP = primary care physician.

APPENDIX B LITERATURE REVIEW SPECIFICATIONS

This appendix describes methods used in the literature review conducted for this report. A discussion of CHBRP's system for medical effectiveness grading evidence, as well as lists of MeSH Terms, publication types, and keywords, follows.

Studies of the effects of telehealth were identified through searches of Ovid MEDLINE, TRIP Database, Scopus, and Embase. The search was limited to abstracts of studies published in English. The search was limited to studies published from 2019 to present, because CHBRP had previously reviewed this literature using the same search terms in 2019 for the AB 744 analysis.

Reviewers screened the title and abstract of each citation retrieved by the literature search to determine eligibility for inclusion. The reviewers acquired the full text of articles that were deemed eligible for inclusion in the review and reapplied the initial eligibility criteria.

Medical Effectiveness Review

The medical effectiveness literature review returned abstracts for 1364 articles, of which 56 were reviewed for inclusion in this report. A total of 13 new studies since 2019 were included in the medical effectiveness review for this report.

Medical Effectiveness Evidence Grading System

In making a "call" for each outcome measure, the medical effectiveness lead and the content expert consider the number of studies as well the strength of the evidence. Further information about the criteria CHBRP uses to evaluate evidence of medical effectiveness can be found in CHBRP's *Medical Effectiveness Analysis Research Approach*.[13] To grade the evidence for each outcome measured, the team uses a grading system that has the following categories:

- Research design;
- Statistical significance;
- Direction of effect;
- Size of effect; and
- Generalizability of findings.

The grading system also contains an overall conclusion that encompasses findings in these five domains. The conclusion is a statement that captures the strength and consistency of the evidence of an intervention's effect on an outcome. The following terms are used to characterize the body of evidence regarding an outcome:

- *Clear and convincing evidence;*
- *Preponderance of evidence;*
- *Limited evidence;*
- *Inconclusive evidence;* and
- *Insufficient evidence.*

A grade of *clear and convincing evidence* indicates that there are multiple studies of a treatment and that the large majority of studies are of high quality and consistently find that the treatment is either effective or not effective.

[13] Available at: http://chbrp.com/analysis_methodology/medical_effectiveness_analysis.php.

A grade of *preponderance of evidence* indicates that the majority of the studies reviewed are consistent in their findings that treatment is either effective or not effective.

A grade of *limited evidence* indicates that the studies had limited generalizability to the population of interest and/or the studies had a fatal flaw in research design or implementation.

A grade of *inconclusive evidence* indicates that although some studies included in the medical effectiveness review find that a treatment is effective, a similar number of studies of equal quality suggest the treatment is not effective.

A grade of *insufficient evidence* indicates that there is not enough evidence available to know whether or not a treatment is effective, either because there are too few studies of the treatment or because the available studies are not of high quality. It does not indicate that a treatment is not effective.

Search Terms (* indicates truncation of word stem)

- Coronavirus
- COVID-19
- DEVICE TELEMEDICINE ROBOTIC
- Facilities and Services Utilization
- Facilities Utilization
- Health care utilization
- Health insurance
- Information Systems Telemedicine
- Information Systems Telemedicine Ophthalmology
- Information Systems Telemedicine Pathology
- Information Systems Telemedicine Radiology
- Information Systems Telemedicine Videoconferencing
- Insurance, Health, Reimbursement
- Pandemic
- Procedure Utilization
- Reimbursement
- Reimbursement Mechanisms
- Reimbursement, Incentive
- Review, Utilization
- SARS cov-2
- Software Information System Telemedicine
- Software Information System Telemedicine Diagnostic Image
- Technique Utilization
- Techniques Utilization
- Telehealth
- Telemammography Systems
- Telemedicine

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ABOUT CHBRP

The California Health Benefits Review Program (CHBRP) was established in 2002. As per its authorizing statute, CHBRP provides the California Legislature with independent analysis of the medical, financial, and public health impacts of proposed health insurance benefit-related legislation. The state funds CHBRP through an annual assessment on health plans and insurers in California.

A group of faculty, researchers, and staff complete the analysis that informs California Health Benefits Review Program (CHBRP) reports. The CHBRP **Faculty Task Force** comprises rotating senior faculty from University of California (UC) campuses. In addition to these representatives, there are other ongoing researchers and analysts who are **Task Force Contributors** to CHBRP from UC that conduct much of the analysis. The **CHBRP staff** works with Task Force members in preparing parts of the analysis, and manages external communications, including those with the California Legislature. As required by CHBRP's authorizing legislation, UC contracts with a certified actuary, **Milliman**, to assist in assessing the financial impact of each legislative proposal mandating or repealing a health insurance benefit. The **National Advisory Council** provides expert reviews of draft analyses and offers general guidance on the program to CHBRP staff and the Faculty Task Force. Information on CHBRP's analysis methodology, authorizing statute, as well as all CHBRP reports and other publications, are available at www.chbrp.org.

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CHBRP assumes full responsibility for the report and the accuracy of its contents. All CHBRP bill analyses and other publications are available at www.chbrp.org.

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