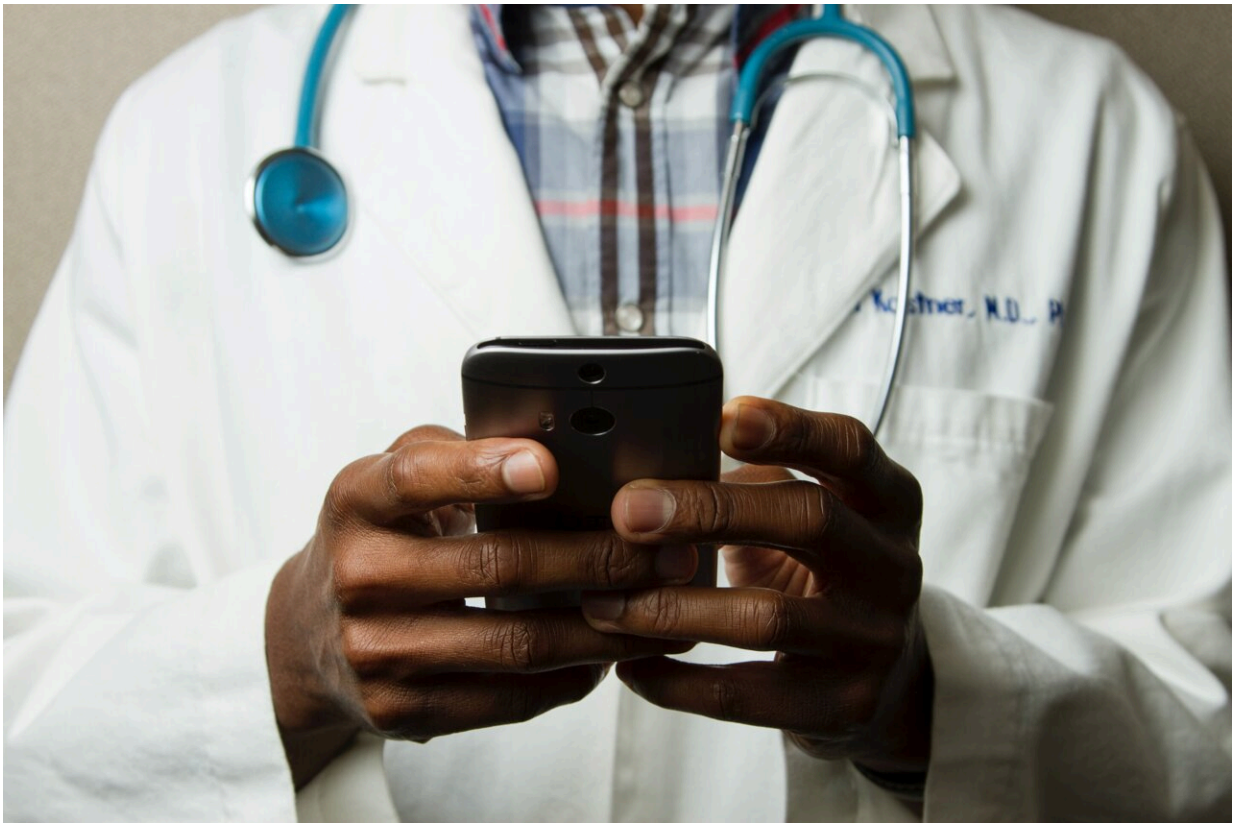


# Telehealth cut health care's carbon footprint and patients' costs during the pandemic

January 10 2023, by Nadine A Yehya

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A study by UC Davis Health researchers assessed telehealth visits' carbon footprint and their potential savings in lives, costs and time compared to in-person visits. It included data from five University of

California health care systems over the pandemic's first two years.

The study found substantial savings for patients and the environment, including eliminating the need to commute 53,664,391 miles—that's 113 round trips from Earth to the moon. Telehealth also saved an estimated 204 years of [travel time](#), \$33,540,244 travel-related costs and 42.4 injuries and 0.7 fatalities.

"Our study documented the many benefits of utilizing telehealth for ambulatory visits," said Sristi Sharma, a UC Davis preventive medicine physician and lead author of the study. "It is the first, large-scale study to evaluate the round-trip distance, time, and cost-saving, and greenhouse gas emissions prevented from telehealth use during the pandemic."

## **Climate change, the pandemic and telehealth**

The pandemic forced health care institutions to adopt telehealth for medical appointments. While the technology has been around for many years, it had been underutilized by medical organizations.

"The world is currently in a climate crisis. Being one of the largest contributors to greenhouse gas emissions, the [health care industry](#) should be taking serious steps to decrease its [carbon footprint](#) and telehealth is one of them," Sharma said.

The team looked at data from five UC health systems: UC Davis, UC San Francisco, UC Los Angeles, UC Irvine and UC San Diego. They calculated the round-trip distance, travel time, travel costs, injuries and fatalities avoided, and greenhouse gas emissions that patients would have generated had they gone for in-person ambulatory services instead of telehealth services. They included visits only during the first two years of the COVID-19 pandemic.

The statewide university system serves close to 40 million people. Between January 2020 and December 2021, UC health systems' clinics had close to 16.8 million outpatient visits. Approximately 18% of these visits were telehealth visits.

## **Telehealth is good for patients, health care organizations and the environment**

The study showed that telehealth can be a safe, efficient and cost-effective method to address climate change. It recommended telehealth ambulatory services as a patient-friendly mode of care, even when the pandemic is over.

During the two years of telehealth use studied, the university health systems alone saved the need to travel close to 53.7 million miles. On average, telehealth allowed the patient to avoid:

- traveling 17.6 miles
- spending around 35 minutes traveling to the visit
- paying the estimate of \$11 for travel to their appointments

The researchers also estimated the reduced greenhouse gas emissions due to fewer vehicle trips. They found the CO<sub>2</sub> emission savings alone were close to 21,466 metric tons over the two years. This is equivalent to a year's worth of CO<sub>2</sub> emissions from the electricity use of 4,177 U.S. homes.

The team is hoping that [health care facilities](#) can build on the momentum created by the COVID-19 safety measures and hold on to telehealth, even after the pandemic is over.

"Even if only 25% of ambulatory visits were conducted via [telehealth](#),

there would still be substantial cost savings and reduction in [greenhouse gas emissions](#)," said James Marcin, director of the UC Davis Center for Health and Technology, professor of pediatrics, and senior author of the study.

The study was published in the *Journal of Telemedicine and e-Health*.

**More information:** Sristi Sharma et al, Environmental Impact of Ambulatory Telehealth Use by a Statewide University Health System During COVID-19, *Telemedicine and e-Health* (2022). [DOI: 10.1089/tmj.2022.0396](#)

Provided by UC Davis

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