OCHIN

ECONOMIC IMPACT ASSESSMENT OF THE COVID-19 VACCINATION RESPONSE BY OCHIN MEMBERS

DECEMBER 2020 - JULY 2023

ABSTRACT

Partnering with OCHIN empowers health centers to make a positive impact on the health and economic well-being of the communities they serve. It provides access to a superior electronic health record (EHR) system, Epic, that most health centers could not access on their own due to their size or financial constraints.

Additionally, OCHIN provides technical support from a team of specialized Epic analysts that health centers could not feasibly employ on their own. The response to the COVID-19 pandemic by OCHIN members demonstrates the collective impact of this network in the face of a public health emergency. By equipping its members with superior EHR and interoperability functions, OCHIN enabled an effective, efficient vaccination response to the COVID-19 pandemic that minimized waste of a scarce vaccine and facilitated appropriate timing between doses.

The result was saved lives and prevented COVID-19 related hospitalizations and lost workdays with an estimated combined economic value of $31 billion. Vaccination outreach extended beyond regular OCHIN patients with a total of 347,517 vaccines administered by OCHIN members to non-regular patients.

TERMINOLOGY

TERM	DEFINITION
Regular patient	Anyone seen at an OCHIN member clinic within the last three years for any reason except for COVID-19 testing or vaccination
Non-regular patient	Anyone seen at an OCHIN member clinic for COVID-19 vaccination only
Full vaccination status	Receiving both doses of the Pfizer or Moderna two-dose COVID-19 vaccine or one dose of the Johnson and Johnson vaccine
Quality-adjusted life year	A measure of health outcomes that combines quality and length of life

METHODS

01

Accessed data from OCHIN Epic Clarity to find the number of fully vaccinated patients among regular OCHIN patients and outside patients receiving at least one dose from an OCHIN member clinic between March 1, 2020, and July 12, 2023.

02

Among the OCHIN fully vaccinated population, we estimated the numbers of: COVID-19 cases, prevented COVID-19 cases, prevented COVID-related hospitalizations, and prevented COVID-related deaths. We used CDC data on vaccine efficacy in preventing cases, hospitalizations, and deaths[1] and data from Johns Hopkins University on COVID-19 case fatality rate to make our estimates.[2]

03

We accessed a report from McKinsey & Company on average days of lost productive work per COVID-19 case.[3]

04

We multiplied prevented workdays lost and prevented hospitalizations by appropriate cost figures accessed from the Bureau of Labor Statistics[4] and Kaiser Family Foundation[5] to estimate savings from avoided COVID-related lost workdays and hospitalizations.

METHODS

05 We calculated average life years lost per COVID death using COVID death counts by age from the CDC[6] and life expectancy by age from the Social Security Administration.[7]

06 We multiplied avoided COVID deaths by average quality-adjusted life year (QALY) loss per COVID death and $100,000 value of a QALY to calculate savings in prevented COVID deaths.

07 We adjusted all costs for inflation to 2023 dollars.[8,9]

This analysis is based on estimates of what COVID-19 outcomes would have been in the absence of the vaccination efforts of OCHIN's members and necessarily involves modeling of health and economic outcomes based on the best available data sources.

Among health economists and policymakers, there are many accepted methods of calculating the statistical value of a human life that yield different results. We employed a quality adjusted life year (QALY) with no discounting method that yielded a value of $1.4 million per averted COVID-19 death. This is mid-range of values compiled by Christopher Conover of Duke University who calculated values between $0.6 million and $4.6 million per averted COVID-19 death using various accepted methods of calculation.[10]

FINDINGS

We found the collective public health impact of OCHIN members during the COVID-19 pandemic to be substantial. Associated economic savings were substantial as well, especially from prevented hospitalizations and prevented deaths.

Between December 12, 2020 and July 28, 2023, the vaccination effort of OCHIN's members played a key role in **2,683,140 regular and non-regular OCHIN member patients reaching full vaccination status** necessary for maximum protective effects of the vaccine.

This outcome was achieved efficiently, with minimal waste of a scarce vaccine, and effectively, with proper timing between doses, due to OCHIN-enabled data exchange between health care providers both inside and outside the OCHIN network.

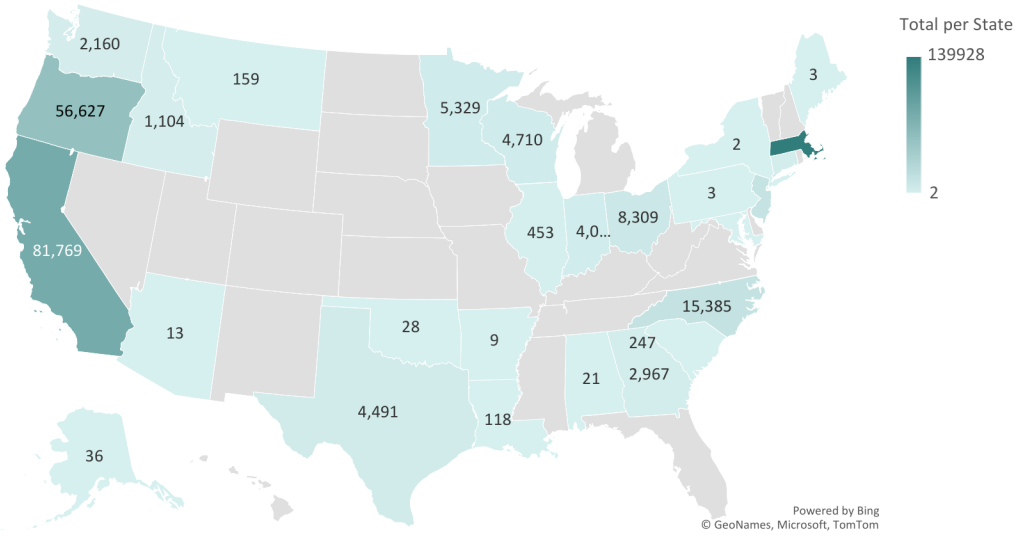
This level of interoperability enabled regular and non-regular patients to receive vaccine doses at locations that best served their needs, creating a patient-centered approach to preventive care even amid a public health crisis. The estimated impacts of this vaccination effort are summarized in Table 1.

Table 1. Estimated community health and economic impact of OCHIN member COVID-19 vaccination effort

COVID-19 vaccinaton outcomes	Community health impact	Economic impact, billion dollars
Prevented COVID-19 cases (total impact)	661,514	$31.3
Prevented deaths	19,925	$27.9
Prevented hospitalizations	72,268	$3.2
Prevented lost workdays	826,893	$0.3

We found that the COVID-19 response of OCHIN's members extended well beyond their regular patient population. During the pandemic, OCHIN members provided a total of 347,517 vaccination doses to non-regular patients in 27 states as represented in Figure 1.

Figure 1. COVID-19 vaccination doses administered to *non-regular* OCHIN patients by OCHIN members by state, December 12, 2020, to May 31, 2023



CONCLUSIONS

The superior EHR functionality and interoperability that OCHIN provides to its members serves a vital role in providing effective, efficient care to patients at public health clinics. This was recently evidenced by the COVID-19 vaccination effort of 215 OCHIN Epic ambulatory members.

By enabling patients both inside and outside the OCHIN network to be vaccinated at the most convenient location for them, OCHIN supported a massive vaccination effort that minimized waste of a scarce vaccine, saved lives, prevented costly hospitalizations, and minimized productive workdays lost during the pandemic. Most importantly, OCHIN supported its members in vaccinating patients who may have faced barriers in accessing COVID-19 vaccination.

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