

Game Changer: Paxlovid Reduces Hospitalizations and Saves Lives

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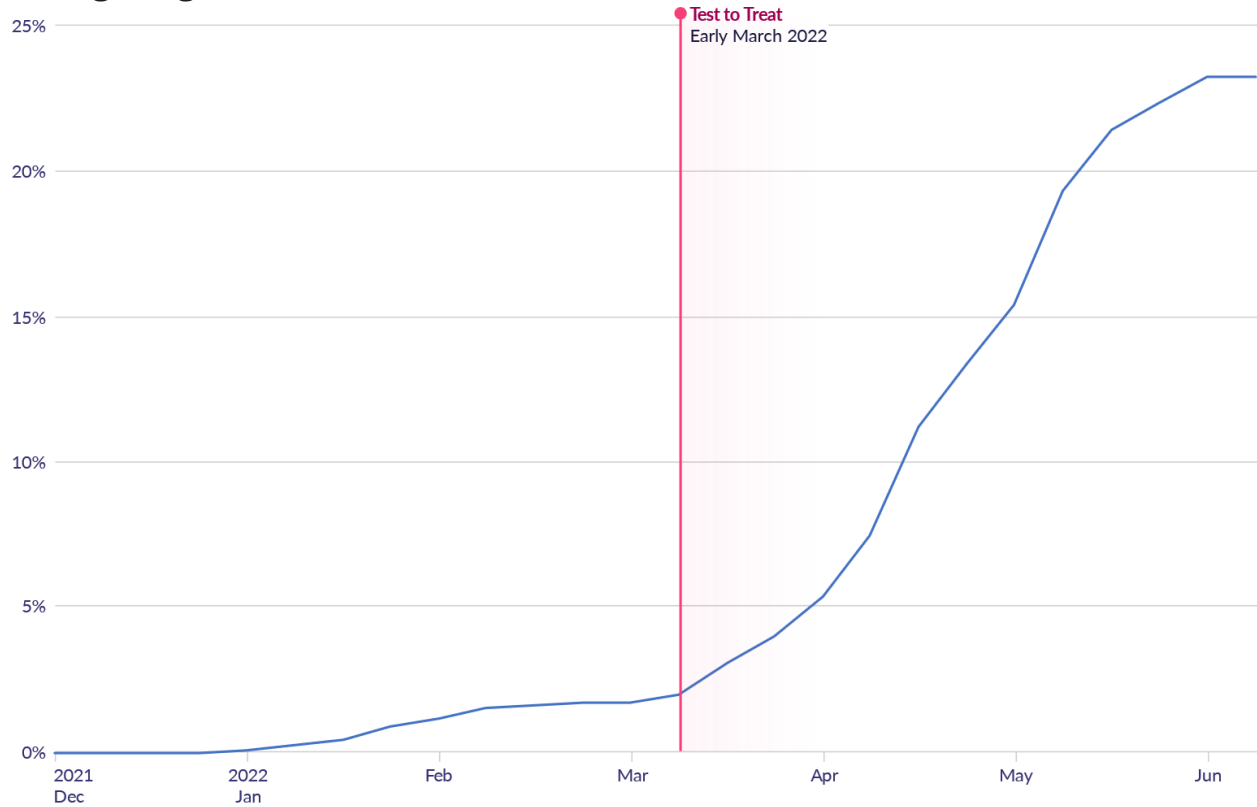
Key Findings:

- Prescriptions for the Paxlovid antiviral treatment have increased throughout 2022, with a notable increase following the federal Test to Treat announcement in March 2022.
- Patients prescribed Paxlovid are roughly 5 times less likely to be hospitalized and 10 times less likely to die than patients with COVID-19 who are not prescribed Paxlovid.

In early March 2022, the U.S. federal government launched the Test to Treat initiative as part of the national COVID-19 preparedness plan. Through this program, people who test positive for COVID-19 can be prescribed treatment, including Paxlovid, which is an outpatient oral antiviral therapy for COVID-19.¹ The FDA issued an Emergency Use Authorization for Paxlovid in December 2021.²

We found that Paxlovid prescribing started in earnest in the beginning of 2022 and rose rapidly after the Test to Treat initiative was announced in March. Paxlovid prescribing continued to increase through late May 2022, peaking when just over 23% of patients with COVID-19 were prescribed Paxlovid.

Rising Usage Rate of Paxlovid



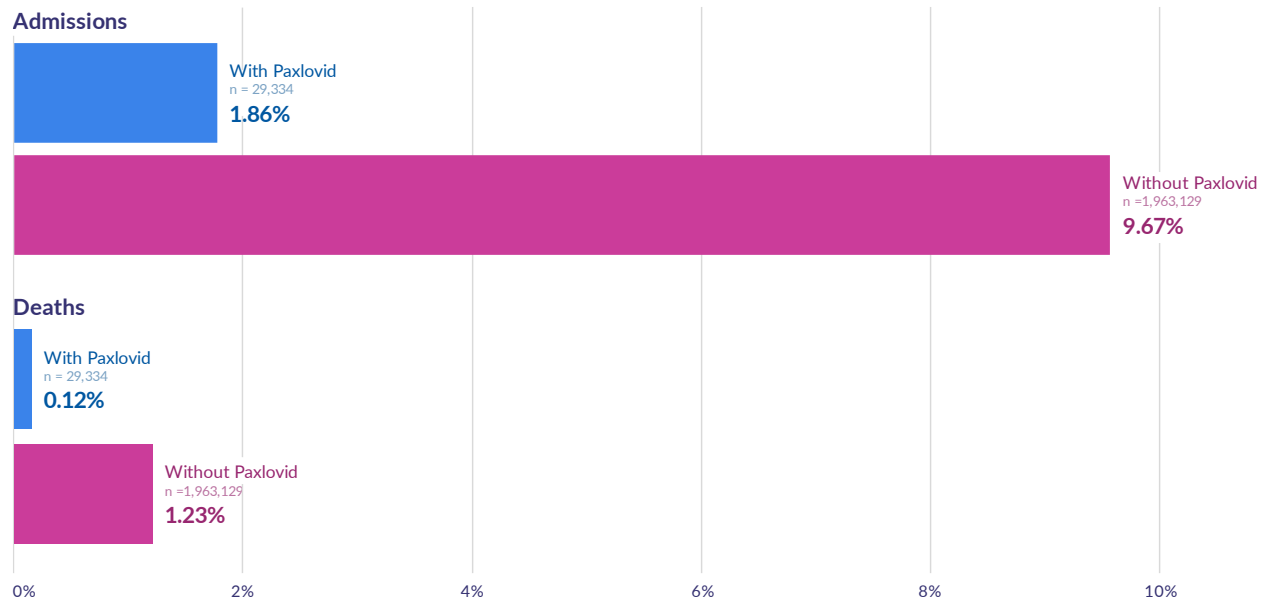
"Rising Usage Rate of Paxlovid," 2022. EpicResearch.org

Figure 1. Paxlovid usage rate over time, showing the introduction of Test to Treat in March 2022.

Hospitalization and death rates for COVID-19 patients who were not prescribed Paxlovid were 9.67% and 1.23% respectively. Hospitalization and death rates for patients prescribed Paxlovid were 1.86% and 0.12% respectively, meaning patients prescribed Paxlovid were nearly 5 times less likely to be admitted and 10 times less likely to die after their COVID-19 infection.

Lower Admission Rate and Death Rate with Paxlovid Treatment

December 2021 - June 2022



"Lower Admission Rate and Death Rate with Paxlovid Treatment," 2022. EpicResearch.org

Figure 2. Admissions and deaths due to COVID-19 were much lower across all patients who were prescribed Paxlovid than those who were not.

When looking at the demographic breakdown of outcomes across different age groups, the rates of hospitalization and death for patients prescribed Paxlovid were consistently lower than the non-Paxlovid patients across all age groups 18 and older. Patients aged 45 and over were much more likely to be prescribed Paxlovid. According to the CDC, age is considered the strongest risk factor for severe COVID-19 outcomes, so this finding is consistent with the recommendation that Paxlovid be used with patients who are at high risk for progression to severe COVID-19.³

These data support the findings of previous clinical trials that Paxlovid use is associated with reduced risk of severe COVID-19 resulting in hospitalization or death.⁴

These data come from Cosmos, a HIPAA-defined Limited Data Set of more than 149 million patients from 172 Epic organizations including 1,041 hospitals and more than 21,000 clinics, serving patients in all 50 states. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions.

References

1. Fact Sheet: Biden Administration Launches Nationwide Test-to-Treat Initiative Ensuring Rapid 'On the Spot' Access to Lifesaving COVID Treatments. HHS.gov. March 2022. <https://www.hhs.gov/about/news/2022/03/08/fact-sheet-biden-administration-launches-nationwide-test-treat-initiative-ensuring-rapid-on-spot-access-lifesaving-covid-treatments.html#:~:text=Which%20treatments%20will%20participating%20Test,7%2C%202022.> Accessed June 20, 2022.

2. Emergency use authorization. Paxlovid EUA | HHS/ASPR. <https://aspr.hhs.gov/COVID-19/Therapeutics/Products/Paxlovid/Pages/emergency-use-authorization.aspx>. Accessed June 20, 2022.
3. Underlying medical conditions associated with higher risk for severe COVID-19: Information for Healthcare professionals. Centers for Disease Control and Prevention. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/underlyingconditions.html>. Accessed June 20, 2022.
4. Coronavirus (COVID-19) update: FDA authorizes first oral antiviral for treatment of covid-19. U.S. Food and Drug Administration. <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-first-oral-antiviral-treatment-covid-19>. Accessed July 15, 2022.

Data Definitions

Term	Definition
Paxlovid prescription	Medication order with RxNorm code of 2587898 or 2587899.
Adjusted COVID start date	Earlier of initial COVID diagnosis or Paxlovid prescription.
Outcomes: Hospital admission for COVID-19	Hospital admission within 14 days of adjusted COVID start date, with an encounter diagnosis of ICD-10-CM U07.1 or SNOMED CT 840539006 (COVID-19). Does not include patients already hospitalized
Outcomes: Death	Death within 30 days of adjusted COVID start date after being admitted to the hospital for COVID-19, or a discharge disposition containing "Expired."