How EHR Patient Portals Prevented 21 million Missed Appointments and What This Means for Clinicians and Healthcare Systems - A Commentary

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ABSTRACT

Data from Epic, a widely used electronic health record (EHR) system, revealed that patient portal use was associated with approximately 21 million fewer missed appointments across the United States in 2024. Converting these findings to rates, patients with activated portal accounts experienced roughly 1,700 fewer no-shows per 100,000 scheduled visits compared to non-users. The greatest benefit was observed among middle-aged patients. This commentary examines the implications of such findings for clinicians and health systems, exploring possible mechanisms such as appointment reminders, rapid rescheduling, and direct communication with care teams. While the evidence suggests that portals can improve adherence and support stronger doctor-patient relationships, the findings derive from observational data and may reflect underlying patient engagement differences. Equity considerations are critical, as portal adoption can exacerbate disparities for populations with limited broadband access, device availability, or digital literacy. Recommendations are provided for both practitioners and developers to enhance portal usability, integrate sign-up into every patient touch point, link cancellations to automated rebooking systems, and monitor scheduling efficiency. By translating these insights into practice, healthcare systems can maximize the operational and access benefits of patient portals while ensuring inclusive adoption.

Key words: Patient Portals; Patient Compliance; Electronic Health Records; Telemedicine; Patient Engagement; Healthcare Access; Health Literacy; Health Equity; Ambulatory Care; Practice Management; Healthcare Utilization

INTRODUCTION

Maria was a busy 52-year-old juggling a demanding job, caring for her elderly mother, and managing her own diabetes. She missed her last endocrinology appointment, not because she didn't care, but because between work deadlines and home responsibilities, the reminder card got buried under a stack of mail. At her next visit, the clinic staff helped her sign up for the patient portal. A week before her follow-up, she received an email reminder. Two days before, she got a text notification. The morning of the appointment, a push alert popped up on her phone with directions to the clinic. She made it to the visit, on time, with her latest glucose readings already uploaded through the portal.

Maria's story isn't unique, and the data now confirms what many of clinicians have seen in practice. A new Epic research analysis looked at more than 1.6 billion outpatient face-to-face visits in 2024, and found that patients with an active MyChart (Epic's patient portal) account at scheduling were 21.5% less likely to miss appointments.[1] The study compared no-show rates for patients with and without an established patient portal account at the time the appointment was scheduled.[1] To emphasize, the difference adds up to more than 21 million fewer no-shows in a single year across the 1.26 billion scheduled visits among patient-portal users in 2024.[1] In practical terms, this equates to about 1,700 fewer no-shows per 100,000 scheduled visits among patients with active portal accounts,[1] and even more compelling, the finding held true after adjusting for demographic factors, social vulnerability, appointment lead time, insurance type, and prior visit history.

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The study found the largest improvement among middle-aged patients. For ages 50 to 64, portal users had a 6.2% no-show rate compared to 8.7% for non-users, a 2.5 percentage point reduction. Patients aged 35 to 49 showed a 7.8% vs. 9.9% rate (2.1-point decline), and those 18 to 34 had a 9.3% vs. 10.9% rate (1.6-point decline). The numbers suggest that patient portal engagement is especially effective for older working age adults.

Why this matters to Clinical Practices and Health Systems

In 2024, more than 1.6 billion outpatient visits took place across the United States, yet, millions of scheduled appointments were never completed because patients simply did not show up.[1] In a healthcare environment already strained by staffing shortages, tighter budgets, and growing patient demand, clinical slots cannot afford to be wasted. No-shows don't just inconvenience the clinics, but they also delay care for others and disproportionately affect communities where access is already limited.

Operational Efficiency and Access

Reducing no-shows by over 21 million encounters in one year likely improved clinic throughput, improved time management, and freed up valuable appointment slots where capacity is constrained.

Higher Return On Investment for Digital Patient Engagement

Evidence suggests that patient portal activation, already implemented in many systems, can meaningfully improve patient adherence and even doctor-patient relationship.[2] This underscores the importance of enhancing portal usability, sending timely reminders, and providing patient education.

Tailored Engagement by Age Demographics

The greatest benefit in no-show reduction was observed in middle-aged patients (those ages 50 to 64)[1] possibly due to higher portal adoption and engagement among this group. Conversely, younger adults showed smaller or less significant improvement,[1] signalling an opportunity for more age-targeted outreach strategies.

Robustness Across Demographics

The study's sensitivity analysis supports the portal's beneficial effect across a range of socio-demographic and system variables. This suggests that it is a broadly applicable strategy to improve adherence.

Alignment with Health Equity Goals

While existing data provide some insight, a more granular analysis is essential to identify differential impacts and tailor interventions to specific, often overlooked, subgroups, ultimately fostering more equitable deployment of digital health tools.

Global Relevance and Adaptability

While the findings are based on data from the United States, the challenges of missed appointments and the potential of digital health tools are universal. Healthcare systems worldwide, from high-income nations with advanced digital infrastructures to developing countries with rapidly expanding mobile connectivity, face the dual pressures of improving patient access and operational efficiency. The mechanisms through which patient portals work such as automated reminders, simplified communication, and empowering patients with information, are not unique to a single country. Therefore, these insights can be a valuable blueprint for global health policymakers, clinicians, and health technology developers. Future research should explore the specific impact of patient portals in diverse healthcare settings, considering differences in national health policies, cultural attitudes toward technology, and varying levels of digital literacy to ensure these tools are adapted effectively and equitably on a global scale.

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Points for Consideration

While encouraging, these results should not be over-interpreted. Portal users may already be more engaged, so the portal may not be the sole factor driving better attendance. Moreover, the report only briefly addresses equity, and as we know, digital tools can exacerbate disparities if certain populations lack access to health technology tools or health literacy. Targeted strategies are essential to ensure portal benefits reach all patients.

Causation vs Correlation

While the study establishes a strong association between patient portal use and reduced no-show rates, it acknowledges that portal users may be inherently more engaged in their healthcare. Future research should aim to establish a more direct causal link, providing stronger evidence of the portal's direct impact on no-shows. Such studies include Randomized Controlled Trials (RCTs) where patients are randomly assigned to a group that receives standard care versus a group that receives standard care plus a mandatory, guided patient portal activation and onboarding.

Feature Utilization and Behaviour Change

The analysis does not distinguish which portal features (e.g., scheduling, reminders, messaging) most influence adherence. Evaluating feature-level engagement could guide investments. It could be beneficial to investigate which specific features of patient portals are most effective in reducing no-shows. Is it the appointment reminders via text, email or phone call? Is it the ability to directly message the care team? Or is it the ease of rescheduling? A study could track feature-level utilization data to correlate specific actions (e.g., number of reminders clicked and number of messages sent) with appointment adherence. This would help healthcare systems prioritize the development and promotion of the most impactful features.

Equity and Access Gaps

The data suggest disparities by race, insurance, and other social determinants, though the report does not fully explore them. For example, Black patients had a higher baseline no-show rate. Understanding how portal activation affects this group is crucial for addressing equity gaps.

In addition, the article briefly mentions that digital tools can exacerbate disparities but does not fully explore this. A deeper look is necessary to ensure patient portals are a tool for equity, not a source of further division. A more granular analysis by race, ethnicity, and socioeconomic status to understand how patient portal activation and use affect no-show rates among specific racial and ethnic groups, as well as those with different socioeconomic statuses could yield meaningful insights for both developers and providers.

Other areas for meaningful exploration include digital literacy and technology access on vulnerable populations. Research could explore how access to technology (e.g., smartphones, computers, reliable internet) and digital literacy acts as barriers to patient portal adoption and use. A comparison of no-show rates in communities with varying levels of broadband infrastructure could be done to quantify the impact on access. Furthermore, the effectiveness of in-person assistance could also affect portal use. Evaluating the effectiveness of different in-person strategies such as dedicated staff to assist with sign-up, on-site kiosks, and multilingual instructions on portal adoption and subsequent no-show rates among vulnerable populations, could add a new dimension to the study.

Operational and System-Level Impacts

The article suggests that reducing no-shows automatically improves access, but this assumption needs to be tested at a systems level. While portals can lead to fewer no-shows, a cancelled slot is only valuable if it is filled. Future research should examine the efficiency of automated rebooking systems and how quickly cancelled slots are filled by other patients. This would provide a more complete picture of the portal's true impact on clinic capacity and patient access. The impact of these system dynamics on staff workload could also be an area for consideration.

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Strategies for practitioners and developers to further enhance the numbers

To translate the potential of patient portals into measurable improvements in attendance, practitioners and developers can adopt approaches that optimize portal use, engagement, and accessibility. The following methods outline actionable steps to further reduce missed appointments and maximize the impact of digital health tools.

Integrate portal sign-up into every patient touch point

Make enrolment automatic during phone scheduling, front-desk check-in, or post-visit follow-up. Ensure staff walk patients through the activation process rather than leaving it optional. A smooth, guided on boarding experience increases adoption and engagement.

Don't just tell patients why and how it helps - show them

Staff should walk patients through the portal features during the visit or registration process. Demonstrate appointment reminders, quick rescheduling, direct messaging with the care team, access to lab results, and educational resources. Show them how notifications work on their phone or email and let them try practice tasks such as confirming an appointment. Patients are far more likely to engage with tools they can see in action and understand first-hand.

Design engagement strategies for different age groups

Older adults may value reminders, access to lab results, and messaging with providers. Younger adults might respond better to mobile-first notifications, push alerts, and integration with wearable devices. Tailoring communication and training based on patient demographics improves both adoption and effectiveness.[3]

Monitor and close equity gaps

Monitor portal adoption and no-show reductions across race, socioeconomic status, and geography. Offer multilingual instructions, in-person assistance, and on-site kiosks or tablets for patients with limited device access. Proactively addressing barriers ensures that portal benefits reach all populations equitably.

Pair portals with rapid rescheduling systems

Reducing no-shows is only part of the equation. A saved appointment slot only delivers value if it is promptly filled. Integrating portal notifications with waitlists or automated rescheduling systems can ensure that cancellations are quickly offered to other patients. Regular monitoring of appointment reallocation efficiency would help maximize access, minimize wasted clinical capacity, and maintain smooth clinic operations.

Provide ongoing support and reinforcement

Encourage patients to revisit and explore the portal beyond their first use. Send tips, short tutorials, or highlight features they may not have tried yet. Continuous engagement reinforces the portal as a useful tool, not just a one-time enrolment task.

CONCLUSION

Patient portals alone won't eliminate no-show problem, but they are one of the few interventions that improve efficiency, access, and engagement without adding to clinician workload. The challenge isn't whether they work, it's whether we are ready to make them work for everyone.

Investing in thoughtful, inclusive design and implementation of patient portals is a strategic tool for enhancing patient engagement and operational resilience. The report suggests that implementing and promoting patient portals can be a highly effective strategy for healthcare organizations to improve operational efficiency and patient care.[1] The findings further support the idea that digital tools can enhance patient engagement and

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communication, leading to better appointment adherence. Targeted promotion is key. Given the varying impact across age groups, healthcare providers should tailor their patient portal promotion strategies to different demographics, particularly focusing on the 50 to 64 age group where the impact on no-shows is most pronounced,[1] including those in groups such as the 18 to 34 age group that showed the smallest difference. Digital health solutions are a critical component of modern healthcare, and their benefits can be quantitatively measured in terms of improved patient behaviour and operational outcomes.[4]

Moreover, this study provides strong evidence that digital health interventions such as patient portals, can significantly reduce the problem of missed appointments, benefiting both patients and healthcare systems. Another study reiterated that patient portals generally have favourable effects on health outcomes, fostering stronger doctor-patient relationships, increasing health awareness, and improving therapy adherence.[2] However, their impact on overall healthcare utilization and operational efficiency remains uncertain.

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