

# Socioeconomic Disparities in Adoption of Personal Health Records Over Time

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Giving patients access to their medical data through personal health records (PHRs) and electronic patient portals has been promoted as a way to engage them in healthcare decisions and health promotion.<sup>1,2</sup> An electronic patient portal is a Web-based account provided by a healthcare organization that allows patients to view their medical records, correspond securely with healthcare providers, and perform other health-related tasks, such as requesting medication refills. Portals are sometimes called “tethered PHRs” because of their close link to a single healthcare organization. Portals have become more common in the United States<sup>3</sup> as a result of the Federal Electronic Health Record (EHR) Incentive Program (informally known as the “Meaningful Use” program).

Since 2010, this program has been incentivizing healthcare providers and hospitals to adopt EHRs, and when they do, they are required to make the electronic data available to patients.<sup>4</sup> However, early studies of these consumer types of information technology (IT) showed that patients in disadvantaged socioeconomic groups were less likely to use them, leading to concern that the “digital divide” might prevent some of the neediest patients from benefiting.<sup>5-8</sup> Additionally, patients with less education may also have less confidence in the benefits of health IT.<sup>9</sup> To investigate the rate of public adoption of health IT over time, we asked about portal/PHR use in random-digit-dial telephone polls for 4 consecutive years in the state of New York.

## METHODS

The Empire State Poll is a survey of adult New York state residents ( $n = 800$ ) conducted by the Survey Research Institute of Cornell University.<sup>10</sup> Each year, samples are drawn from random-digit-dial lists covering cell and land lines. Response rates (the number of completed surveys divided by total eligible sample) have been 22% to 33% each year, with cooperation rates (the number of completed surveys divided by eligible individuals contacted) between 66% and 70%.

## TAKE-AWAY POINTS

- ▶ More patients are using personal health records (PHRs) than ever before.
- ▶ Current data suggest blacks and other races are equally likely to use PHRs; however, Hispanics and patients with Medicaid are still less likely to use PHRs.
- ▶ Additional outreach may still be necessary to ensure disadvantaged groups are using available technologies.

Since 2011, we have included questions to assess public attitudes and perceptions of health IT.<sup>11</sup> From 2012 through 2015, we included the following question: “Some hospitals, doctor’s offices, health plans, and different organizations are offering websites where you can get, keep, and update your health information online. This information could be lab test results, medicines, doctor visits, or other information. You would get a user name and password so that only you could see your information on this website. These websites are sometimes called personal health records (PHRs) or patient portals. Have you ever used one of these websites where you can get, keep, or update your health information?”

Chi-squared tests and Cochran-Armitage tests for trend were performed using survey weights to account for the sampling design and produce statewide estimates. The study was approved by the Cornell University Institutional Review Board.

## RESULTS

The weighted proportion of New Yorkers who reported using a PHR rose from 11% in 2012 to 27.1% in 2015 ( $P < .01$  for 4-year trend) (Figure). Black individuals were initially substantially less likely to use portals/PHRs than whites, but the proportion of black respondents using these technologies rose sharply (4.3% in 2012, 7.5% in 2013, 14.3% in 2014, and 23.9% in 2015;  $P < .001$  for trend). By 2015, the proportion of blacks who used portals/PHRs was not significantly different from the proportion of other races (23.9% vs 28.1%;  $P = .25$ ).

## TRENDS FROM THE FIELD

A different trend was seen among individuals of Hispanic ethnicity. In 2012, the PHR adoption rate among Hispanics was not significantly lower than the rate among non-Hispanics (9% vs 11.1%;  $P = .52$ ). By 2015, despite an increase, the adoption rate lagged significantly behind the rate for non-Hispanics (15.8% vs 29.3%;  $P = .001$ ). Also, the portal/PHR adoption rate among low-income respondents (household income <\$50,000) also rose, but remained about half the rate reported by higher-income respondents (7.2% vs 13.5% in 2012,  $P = .007$ ; 18.2% vs 32.6% in 2015,  $P < .001$ ).

As previously reported, the use of portals/PHRs was also more common among patients who used the Internet more frequently, those with higher education, and those using prescription medications.<sup>9</sup>

## DISCUSSION

During a 4-year period in which federal policies incentivized medical organizations to give medical record access to patients through PHRs and electronic portals, the proportion of New Yorkers who used these technologies more than doubled. Racial disparities in technology adoption largely disappeared during this time. However, disparities on the basis of income and Hispanic ethnicity did not narrow. Despite large and rapid across-the-board increases in the use of consumer health IT, a digital divide remains evident, linked to lower income and Hispanic origin rather than race.

## CONCLUSIONS

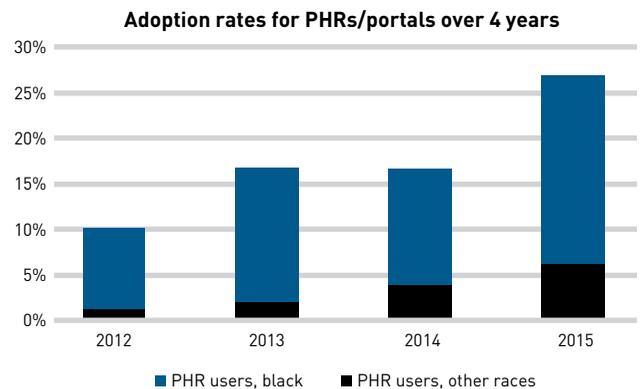
Electronic patient portals and PHRs are anticipated to be an important tool for patient engagement in healthcare, and it is therefore important to determine whether they are reaching all patient populations. Our analysis of statewide polling data shows that the use of portals and PHRs has increased sharply in recent years. Although both black and white patients are now equally likely to use the technology overall, low-income and Hispanic patients remain somewhat less likely to use it. Healthcare organizations seeking to use these tools to engage patients should examine their efforts to reach all patient groups. Measures that should be investigated include making these technologies accessible in multiple languages, designing for usability by individuals with low levels of computer expertise, and ensuring access via mobile phone and Web browsers.

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**FIGURE. APHR Adoption in New York State Over 4 Years<sup>a,b</sup>**



<sup>a</sup>Weighted percentages are shown.

<sup>b</sup>The proportion of respondents who reported using a personal health record (PHR) or patient portal rose from 11% to 27% over 4 years ( $P < .001$  for trend), while disparities between black and nonblack respondents disappeared.

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