

A Cost-Benefit Model for PHRs

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Healthcare is badly in need of some cost-savings. A new study suggests that a change in the way we keep health records could save billions. Last week the industry got a look at a cost-benefit model for personal health records. According to the report, widespread use of PHRs could save the US healthcare industry between \$13 and \$21 billion a year.

The [Center for Information Technology Leadership](#) (CITL), a nonprofit IT research center based at Partners HealthCare System in Boston, offers the projections in the study [“The Value of Personal Health Records.”](#) The study describes an evidence-based model that estimates the industry costs and benefits of four different PHR architectures. The study is the first of its kind to examine the different PHR architectures and show their direct cost savings to healthcare providers and payers, CITL officials say.

PHRs provide patients with greater access to their health information and, depending on the individual product, give them an opportunity to add their own information. Many PHRs put patients in control of who can access their records, allowing them to share their information with providers, payers, and caregivers.

A PHR is different from a provider or payer’s record, which the organization controls for business and legal purposes. PHRs have the potential to improve care by sharing patient information among authorized providers. They can also increase a consumer’s awareness of his or her health and help in making informed health decisions.

Savings Vary by Type

Blackford Middleton, MD, MPH, MSs, is chairman of CITL and director of clinical informatics research and development for Partners Healthcare. He says that CITL believes electronic health record systems—implemented and maintained by providers—are a part of improving care and lowering cost; however, “we believe that the PHR is perhaps an equally important or maybe even more important part of the solution as well.”

Published November 12 and presented at the [American Medical Informatics Association](#) annual symposium, the CITL cost-benefit model assumes 80 percent of the US population actively uses one of four emerging PHR architectures: payer-tethered PHRs, provider-tethered PHRs, third-party PHRs, and interoperable PHRs. A panel of healthcare experts organized by CITL synthesized hundreds of articles on healthcare and PHRs to build the model.

Provider-tethered PHRs are tied to a healthcare organization's internal record system. Payer-tethered systems are tied to a given payer's system. Consumers use third-party PHRs to aggregate data from different, unconnected sources.

Interoperable PHRs represent a "future type" of record "populated with data from all regional data sources via standards-based automated data exchange. The connections with these sources would create a record that is more complete than any individual repository (e.g., [electronic health records], other PHRs, payer claims databases)," according to the report.

While the implementation and steady use of each of the four PHR architectures would result in vast cost savings, some architectures produce greater savings than others, according to the study.

The model projects that mass use of the interoperable PHR architecture could lead to the highest savings by streamlining healthcare operations and decreasing administrative and clinical costs, such as preventing duplicate medical tests and reducing adverse drug interactions.

The projected annual savings by model are:

- Interoperable PHRs: \$21 billion
- Third-party PHR: \$16 billion
- Provider-tethered PHR: up to \$14 billion
- Payer-tethered PHR: \$13 billion

Highlighting the Value of Data Sharing

The model assumes that PHRs in each category have certain functionality, including the ability to share test results and medication information. Other, more specialized functions include electronic appointment scheduling and e-visits. Middleton hopes the study will help policy makers and the general healthcare industry understand which PHR models can best improve healthcare and reduce costs.

"The PHR architecture and what data is accessible—and to what degree data is interoperable—that really defines the value of a PHR," Middleton says. "Our intent is to model a what-if scenario; [for example,] what if everyone had a provider-tethered PHR or an interoperable PHR. And the goal is then to highlight the differences so that we can inform policy makers and the industry about what is valuable."

Though interoperable PHRs presents the highest potential savings in cost, they are still a work in progress. But CITL's cost-benefit model indicates that PHR development should lean toward an interoperable architecture, Middleton says. Interoperable PHRs act as a hub for patient information, connecting multiple payers and providers to each other through a patient-controlled record.

While PHR use does offer savings, establishing the products and the networks takes money. The cost-benefit model also adjusts to reflect the savings after deducting the cost of implementing each PHR architecture. Providing interoperable PHRs for 80 percent of the US population could cost an estimated \$3.7 billion to acquire and \$1.9 billion annually to maintain, the study estimates. After cost, and based on a 10-year roll-out of infrastructure, the interoperable PHR could still save \$19 billion annually in healthcare costs.

CITL hopes several things come as the result of this model, Middleton says. Third-party PHR companies like Google Health and Microsoft HealthVault can use the study to recognize the value of standards that will make their products more interoperable. Providers and payers can recognize the value of PHRs and pledge their support for PHR adoption. Finally, policymakers can recognize the value of PHRs and address issues that will allow nationwide health IT adoption, Middleton says.