



2013 Desktop Virtualization Trends in Healthcare

Imprivata, Inc.

10 Maguire Road

Lexington, MA 02421

Executive Summary

Imprivata®, a leading global provider of healthcare IT security solutions, recently conducted its third-annual Desktop Virtualization Trends in Healthcare survey to identify adoption rates and benefits of desktop virtualization in healthcare.

Last year's survey found that adoption of desktop virtualization was on the rise in the healthcare industry, as 40 percent of respondents said their organization used Server Hosted Virtual Desktops (SHVD) and 60 percent said they used Server Based Computing (SBC). For the 2013 survey, Imprivata made several modifications to garner additional insight into desktop virtualization trends, including:

1. Respondents were asked to identify the primary benefit to IT and to end users for both SBC and SHVD.
2. Respondents were asked to quantify how much time they were saving per user, per day by using SHVD combined with single sign-on (SSO) and/or authentication management.
3. Respondents were asked about current and planned adoption of cloud computing, including the types of cloud-based applications and services organizations are considering as well as the importance of HIPAA Business Associate Agreements (BAAs) with cloud vendors.

Key findings from the 2013 survey include:

- Desktop virtualization remains prevalent in healthcare, with 75 percent of respondents using SBC today and 57 percent using SHVD today. Compared to last year's survey, SBC usage increased 23 percent and SHVD usage increased 39 percent, which is in-line with the 12-month forecast from the 2012 survey.
- A mixed use of both SBC and SHVD is becoming more commonplace, with 49 percent of respondents indicating that they are using both technologies today (compared with 23 percent from the 2012 survey).
- Organizations are using a variety of different endpoint devices for SBC and SHVD, with adoption rates of thin and zero clients increasing rapidly and tablets and smartphones emerging as endpoint devices in virtual desktop environments.
- For organizations that have no plans to adopt SHVD, the most common reason given is that "SBC satisfies their needs" for desktop virtualization, which is a significant shift from the 2012 survey when the primary barrier to SHVD adoption was cost.
- While the use of SSO and strong authentication remained relatively flat in both SBC and SHVD environments year-over-year, the number of organizations using a combination of the two increased for both SBC and SHVD.
- Of those respondents able to quantify the time savings of using SSO and/or strong authentication in their SHVD environments, 31 percent said each end user saves more than 15 minutes per day.
- Adoption of cloud-based applications and services in healthcare is increasing more quickly than expected, with 30 percent of respondents indicating that they are using cloud computing today (up from nine percent from the 2012 survey).
- In particular, storing protected health information (PHI) in the cloud is becoming more commonplace, with 40 percent of respondents that use cloud services indicating that they store PHI in the cloud today (up from nine percent from the 2012 survey).
- While the use of cloud-based services and applications in healthcare is increasing, 71 percent of healthcare organizations currently using cloud computing work with just one or two vendors.
- Despite working with a limited number of vendors, 16 percent of healthcare respondents using cloud computing today do not have HIPAA BAAs in place with all of their vendors.
- For healthcare organizations that have no plans to adopt cloud computing, security remains the primary barrier, but 17 percent cite the top reason as "cloud services vendors do not offer HIPAA Business Associate Agreements."

Methodology

A total of 211 IT decision makers in the U.S. healthcare industry were surveyed to understand their adoption rates and reasons for deploying desktop virtualization as well as cloud-based services and applications. Responses were collected from a mix of different types of healthcare organizations (Figure 1) as well as different size organizations, based on number of beds (where applicable) (Figure 2). Respondents are also using a variety of different electronic medical records (EMR) systems (Figure 3).

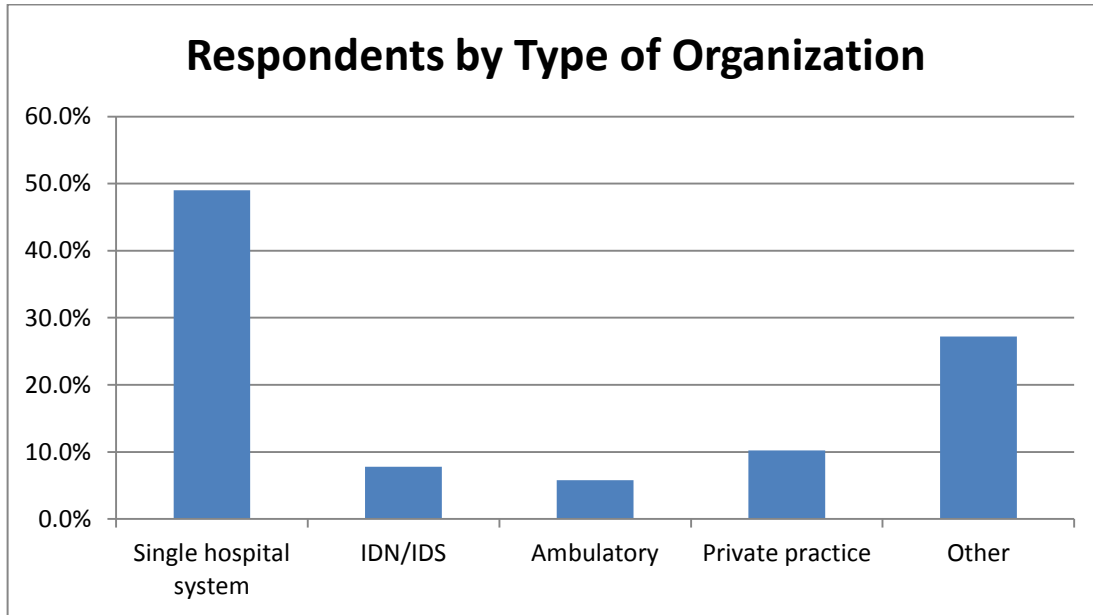


Figure 1: Survey respondents by type of healthcare organization

| Beds | 1-99 | 100-299 | 300-499 | 500-999 | 1,000+ |
|---------------------------|--------|---------|---------|---------|--------|
| Percentage of respondents | 30.64% | 16.76% | 14.45% | 16.76% | 21.97% |

Figure 2: Healthcare respondents by number of beds (if applicable)

What EMR are you Using?

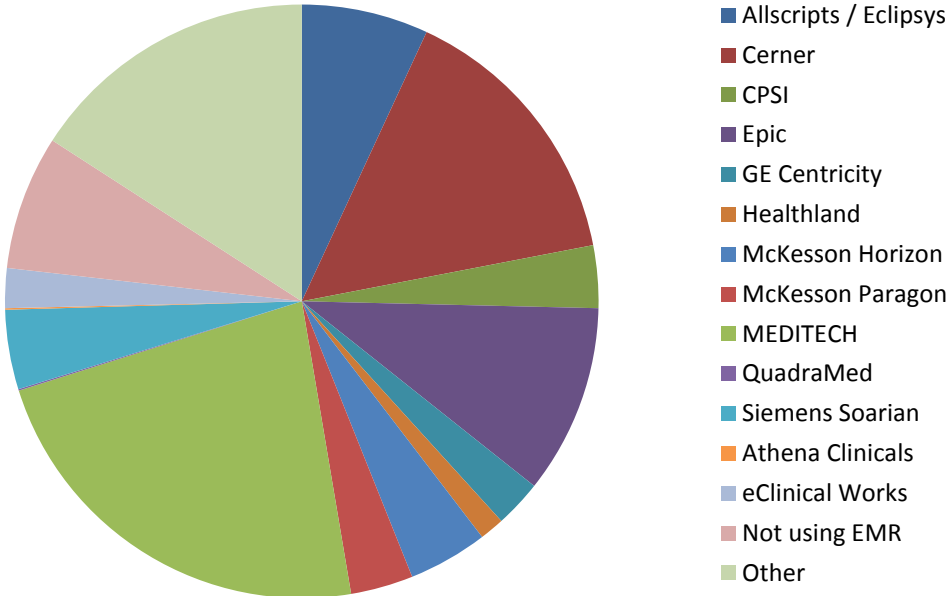


Figure 3: EMRs used by survey respondents

Key Findings

Adoption of desktop virtualization continues to be prevalent in healthcare, with 75 percent of respondents using SBC today and 57 percent using SHVD today. Adoption of both technologies is expected to continue to increase based on respondents' 12- and 24-month forecasts (Figure 4).

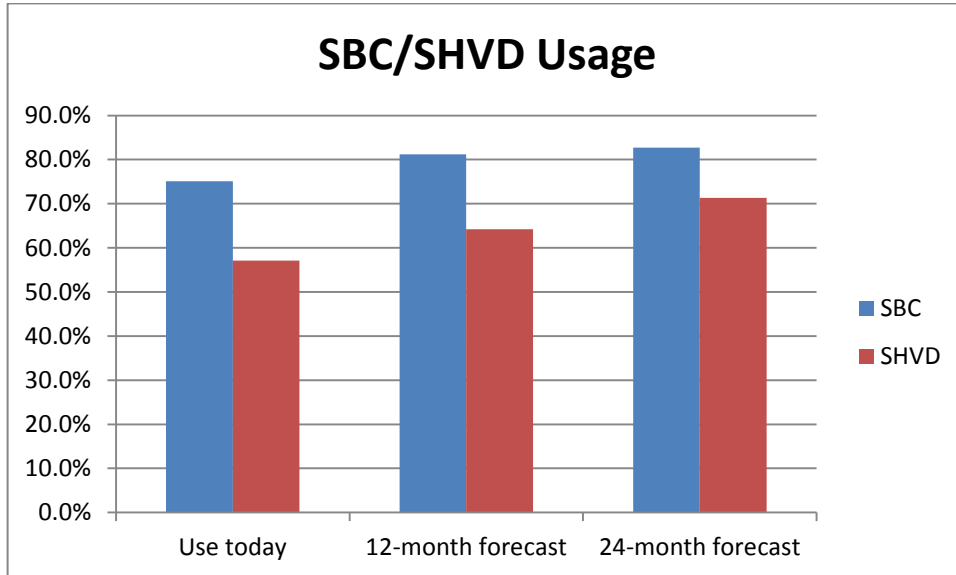


Figure 4: SBC and SHVD usage and forecast

Compared to last year's survey, SBC usage increased 23 percent, which was 53 percent more than expected based on the 2012 12-month forecast (Figure 5).

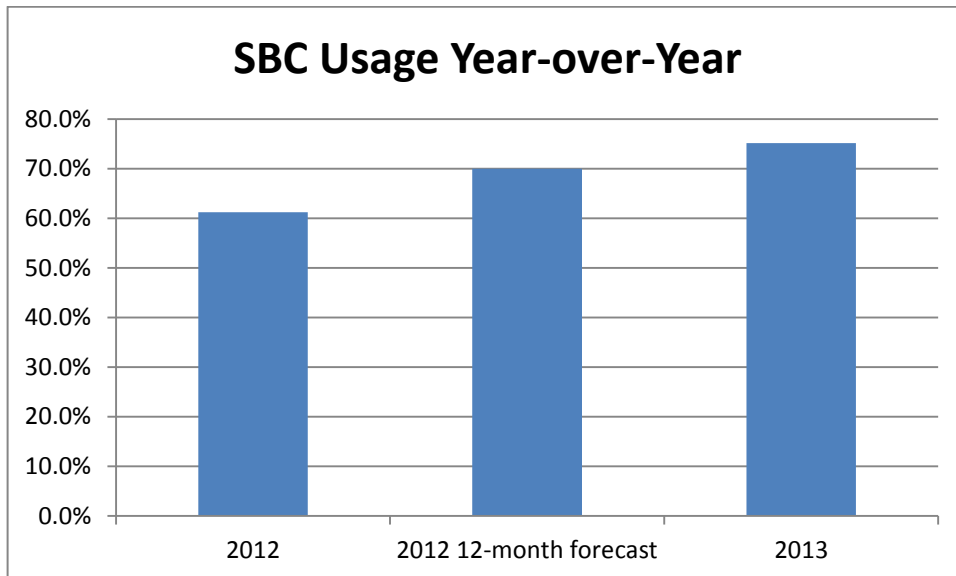


Figure 5: SBC usage year-over-year comparison

SHVD usage is also up, increasing 39 percent, which is in-line with the 12-month forecast from the 2012 survey (Figure 6).

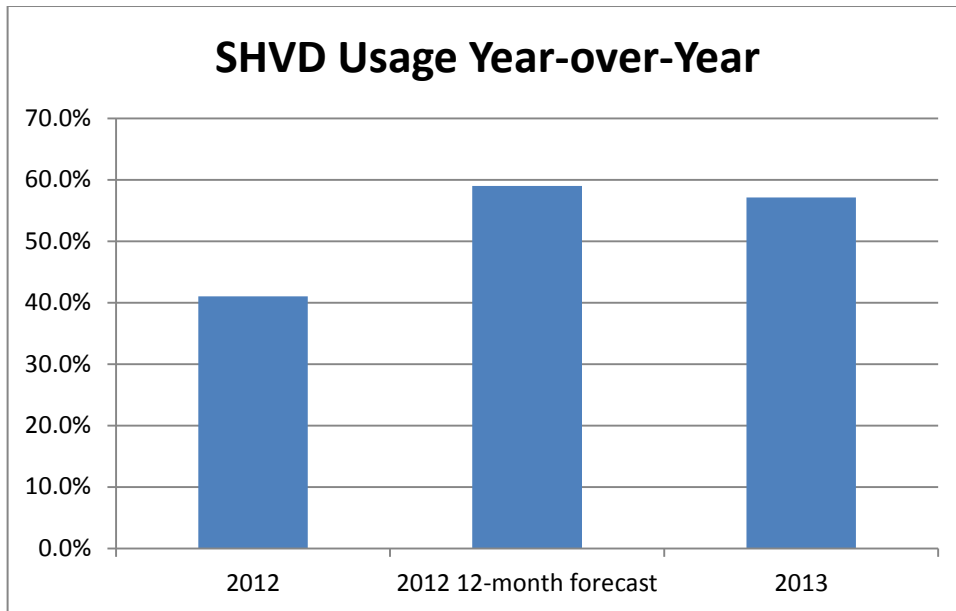


Figure 6: SHVD usage year-over-year comparison

A mixed usage of both SBC and SHVD is increasing in healthcare, with 49 percent of respondents indicating that they are using both technologies today (compared with 23 percent from last year's survey). This trend is expected to continue, with 59 percent of organizations forecasting that they will be using a mix of both SBC and SHVD within the next 24 months (Figure 7).

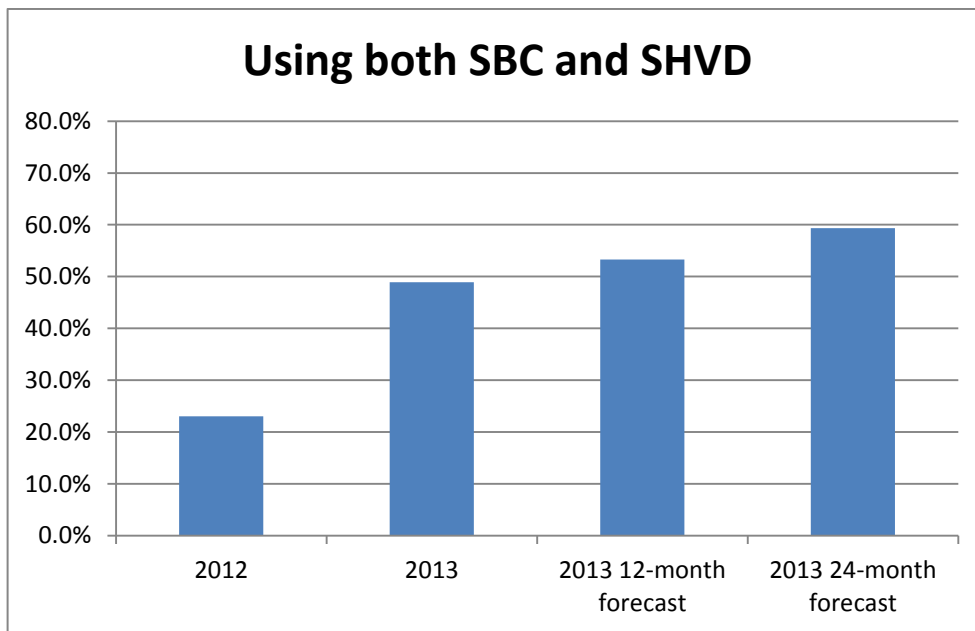


Figure 7: Healthcare organizations using both SBC and SHVD technologies

SBC is widely used across the healthcare industry in organizations of all sizes (based on the number of beds). In particular, the use of SBC is most common in facilities with 100 or more beds, where an average of 87 percent of organizations use SBC today (Figure 8).

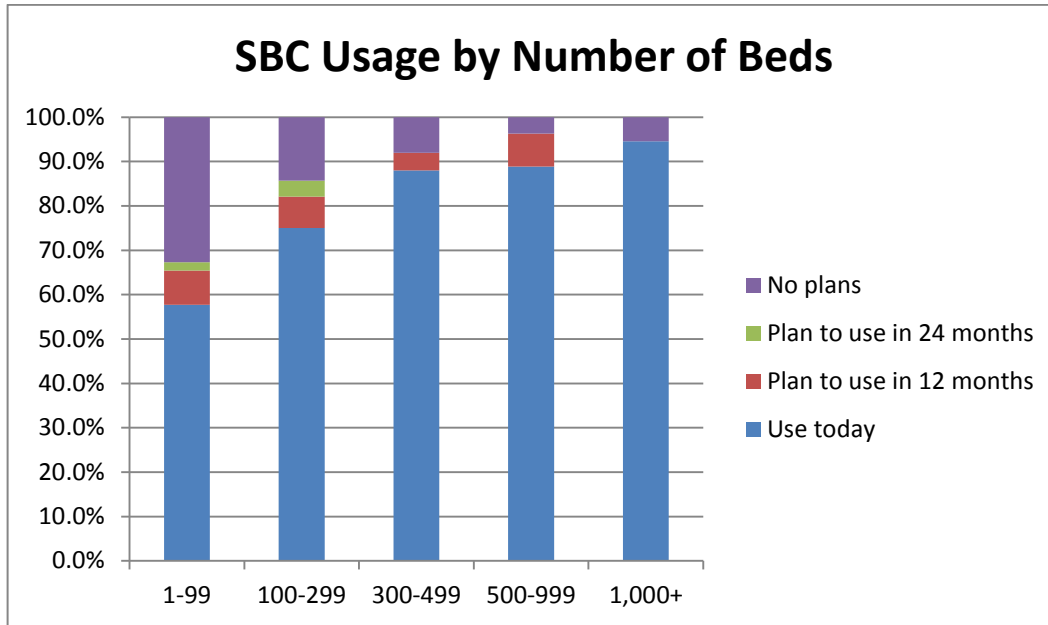


Figure 8: SBC usage by size of organization (number of beds)

Similarly, the use of SHVD is most prevalent in healthcare organizations with 300 or more beds, where 69 percent of respondents use SHVD today and an additional nine percent plan to implement SHVD within the next 12 months. For organizations with fewer than 300 beds, 50 percent indicate that they use SHVD today and another five percent say they plan to deploy SHVD within the next 12 months (Figure 9).

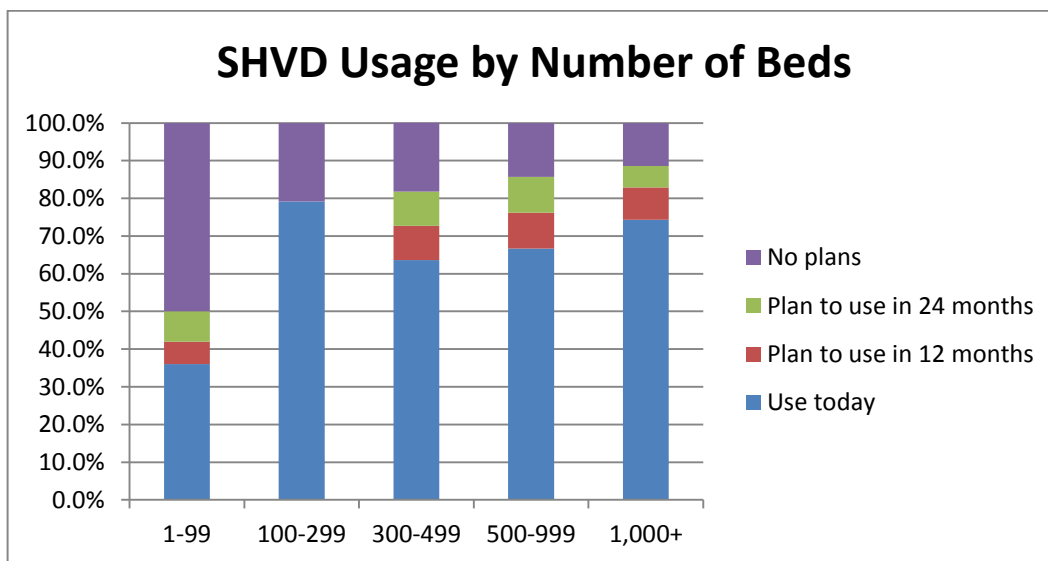


Figure 9: SHVD usage in healthcare by size of organization (number of beds)

Although the overall usage of SBC in has increased since last year, the percentage of employees using SBC at healthcare organizations has remained relatively flat. In this year’s survey, 45 percent of respondents indicated that more than half their employees use SBC today (as compared to 42 percent from 2012). (Figure 10).

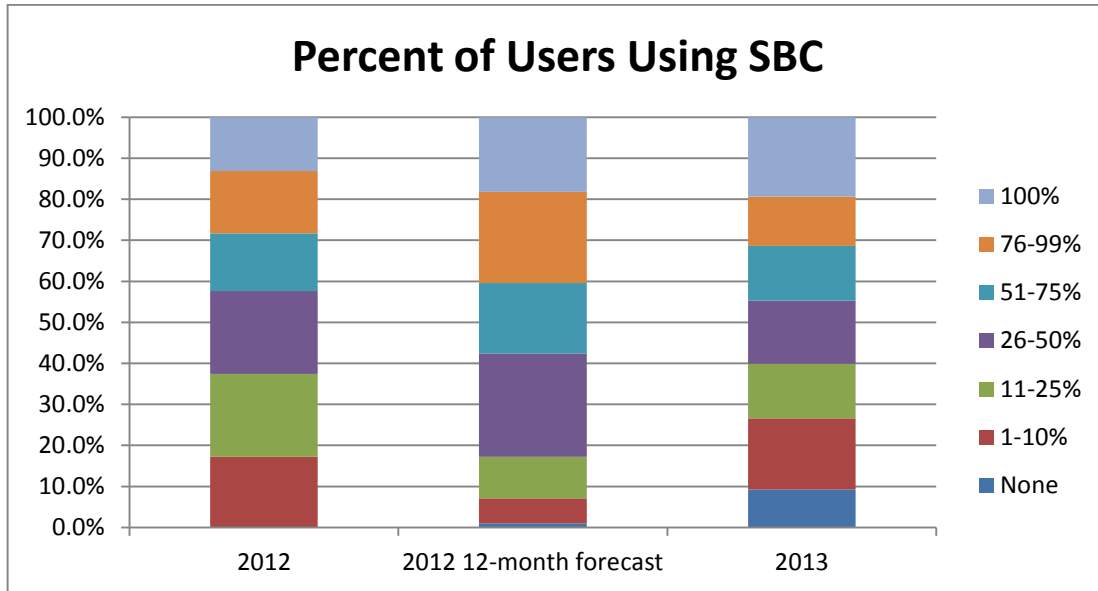


Figure 10: Percent of users using SBC (year-over-year comparison)

Similarly, the percentage of employees using SHVD at healthcare organization has also remained relatively flat as compared with last year. Twenty-four percent of respondents this year indicated that more than half their users are using SHVD today (as compared to 22 percent from last year). (Figure 11).

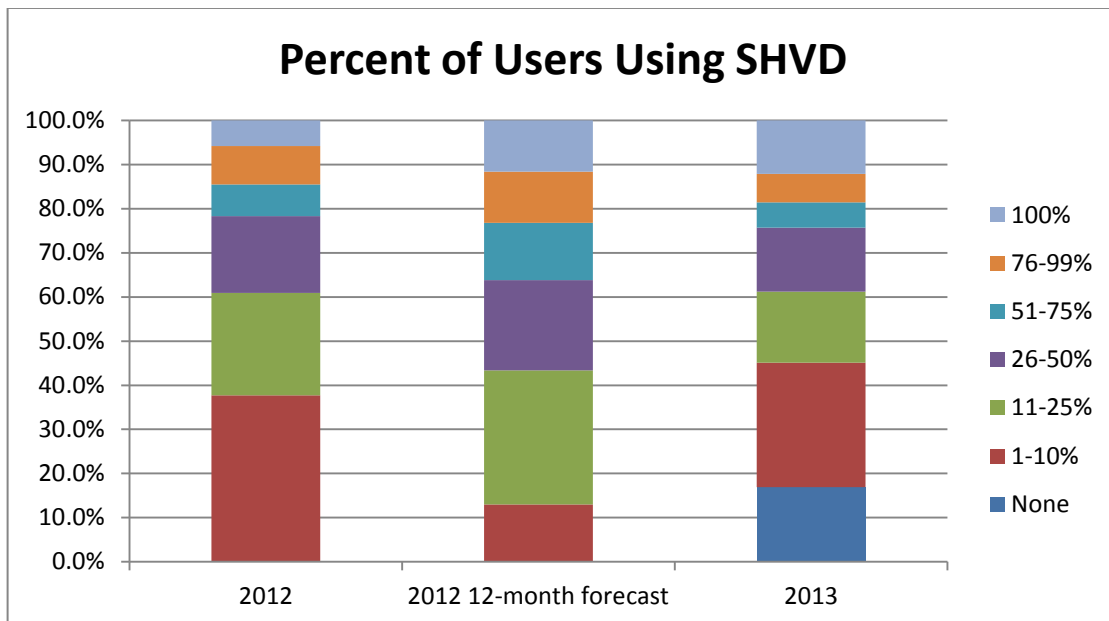


Figure 11: Percent of users using SHVD (year-over-year comparison)

Healthcare organizations are using a variety of different endpoints for SBC (Figure 13) and SHVD (Figure 14). This is a trend expected to continue over the next 24 months, with adoption rates of thin and zero clients increasing rapidly. Tablets and smartphones are also emerging as endpoint devices used within both SBC and SHVD virtual desktop infrastructure.

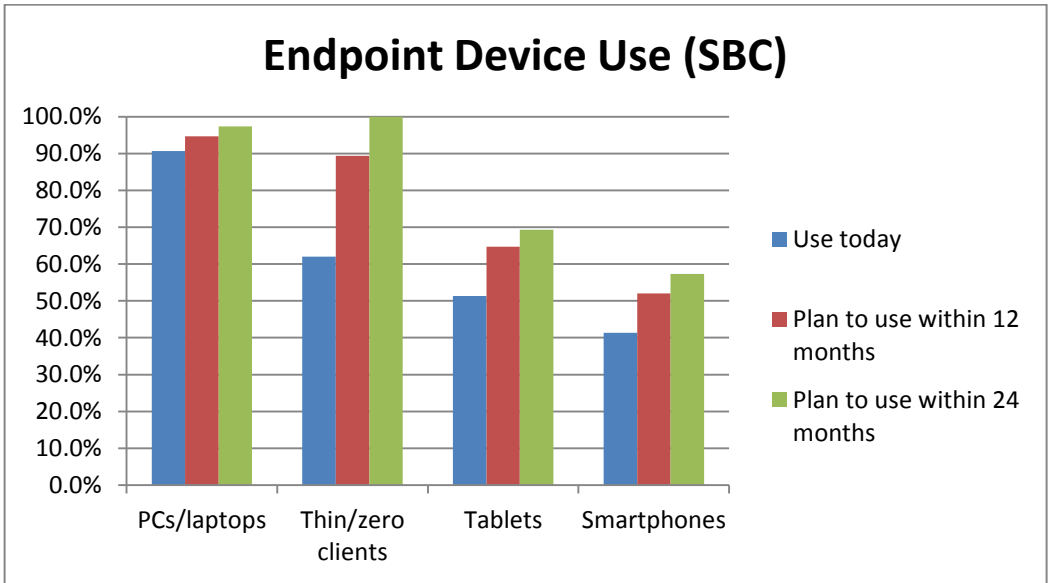


Figure 13: Endpoint device use in healthcare for SBC

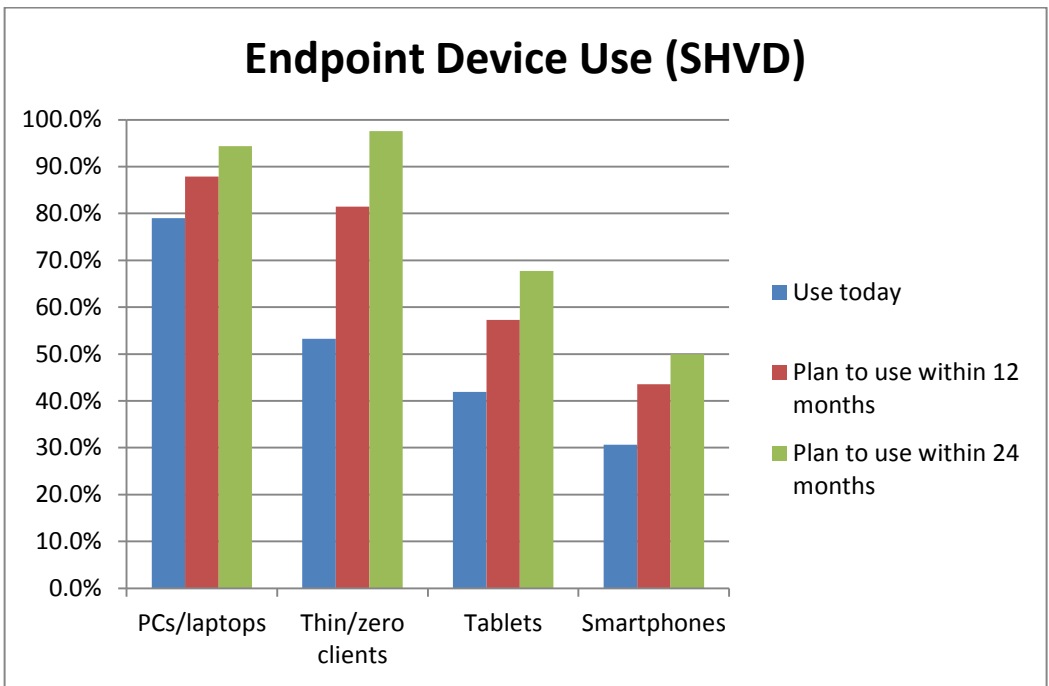


Figure 14: Endpoint device use in healthcare for SHVD

For the overall healthcare industry, the primary benefit of SBC to end users is “increased productivity” (according to 29 percent of respondents). However, for larger organizations (500 or more beds), the primary reason shifts to “improved mobility” (Figure 15).

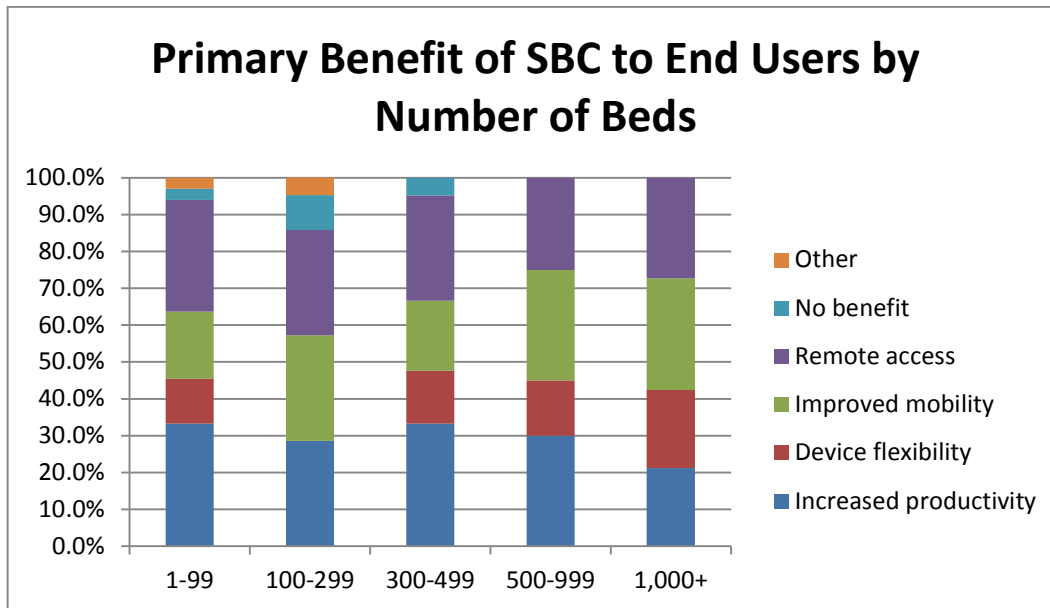


Figure 15: Primary benefit of SBC to end users by size of organization (number of beds)

For organizations of all sizes, the primary benefit of SBC to IT is “ease of application deployment” (according to 42 percent of respondents). This is especially true for larger organizations (500 or more beds), at which 57 percent of respondents cite “ease of application deployment” as the primary benefit of SBC to IT (Figure 16).

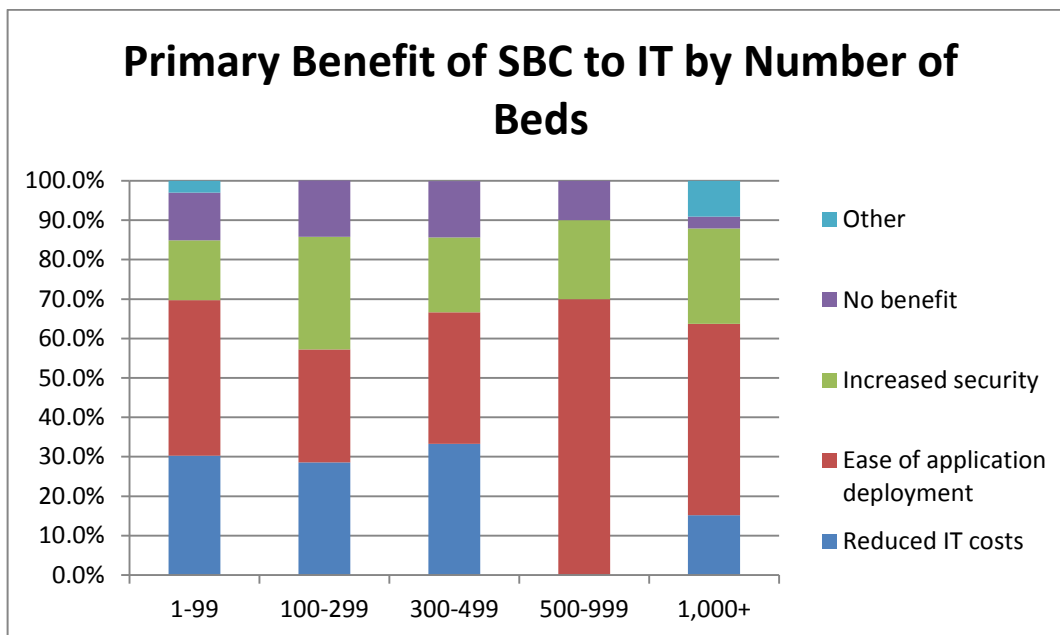


Figure 16: Primary benefit of SBC to IT by size of organization (number of beds)

The primary benefit of SHVD for end users is “increased productivity,” as cited by 35 percent of respondents. This remains consistent across organizations of all sizes (Figure 17).

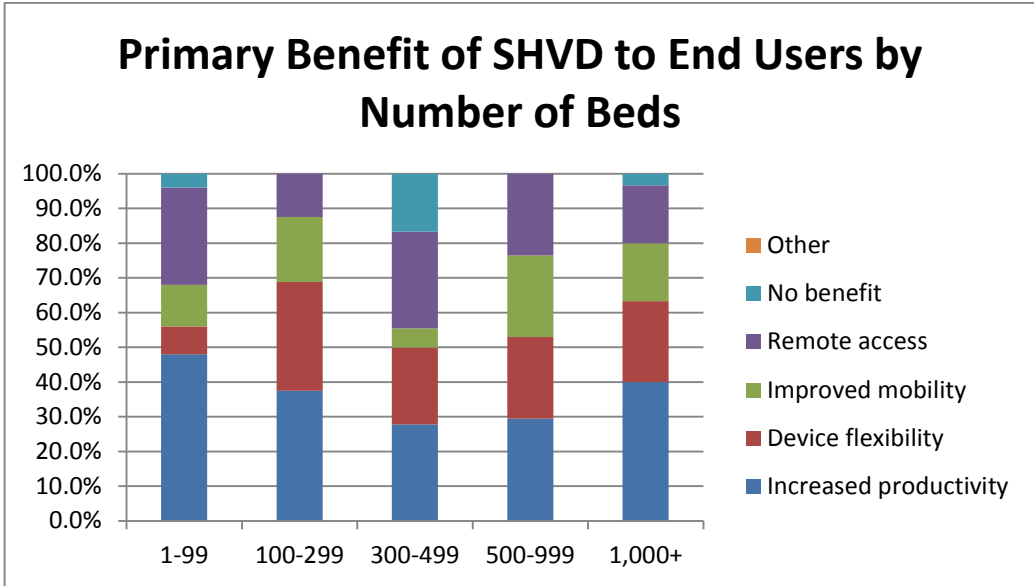


Figure 17: Primary benefit of SHVD to end users by size of organization (number of beds)

Overall, the primary benefit of SHVD for IT is “reduced IT costs,” as cited by 37 percent of respondents. For organizations with 300 or more beds, however, the primary reason shifts to “ease of application deployment” (Figure 18).

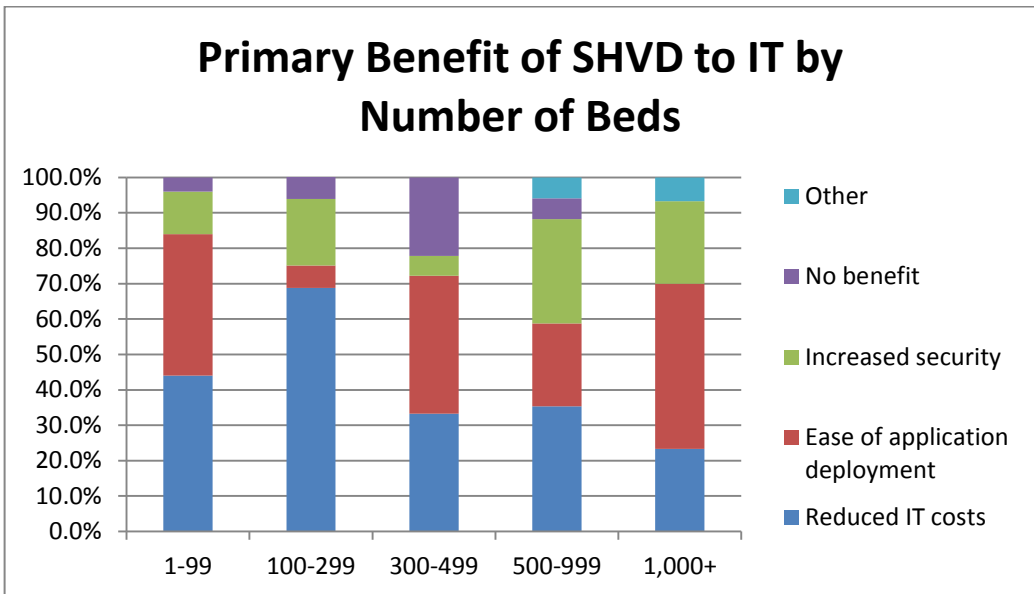


Figure 18: Primary benefit of SHVD to IT by size of organization (number of beds)

For healthcare organizations that have no plans to adopt SHVD, the most common reason given is that “SBC satisfies their needs” for desktop virtualization (as cited by 27 percent of respondents). This is a significant shift from the 2012 survey when the primary barrier to SHVD adoption was cost (according to 45 percent of respondents). This year, 17 percent of respondents cited cost as the primary reason they do not plan to adopt SHVD (Figure 19).

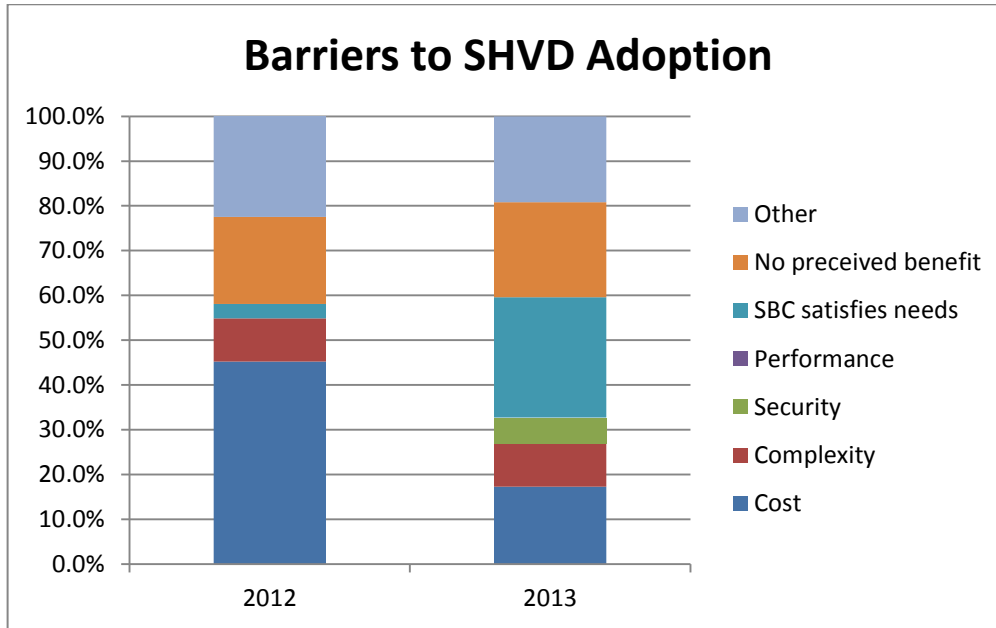


Figure 19: Barriers to SHVD adoption (year-over-year comparison)

The integration of single sign-on (SSO) into SBC and SHVD environments remained relatively flat as compared with last year’s survey. However, the use of SSO within virtual desktop environments is expected to increase significantly over the next 12 months (Figure 20).

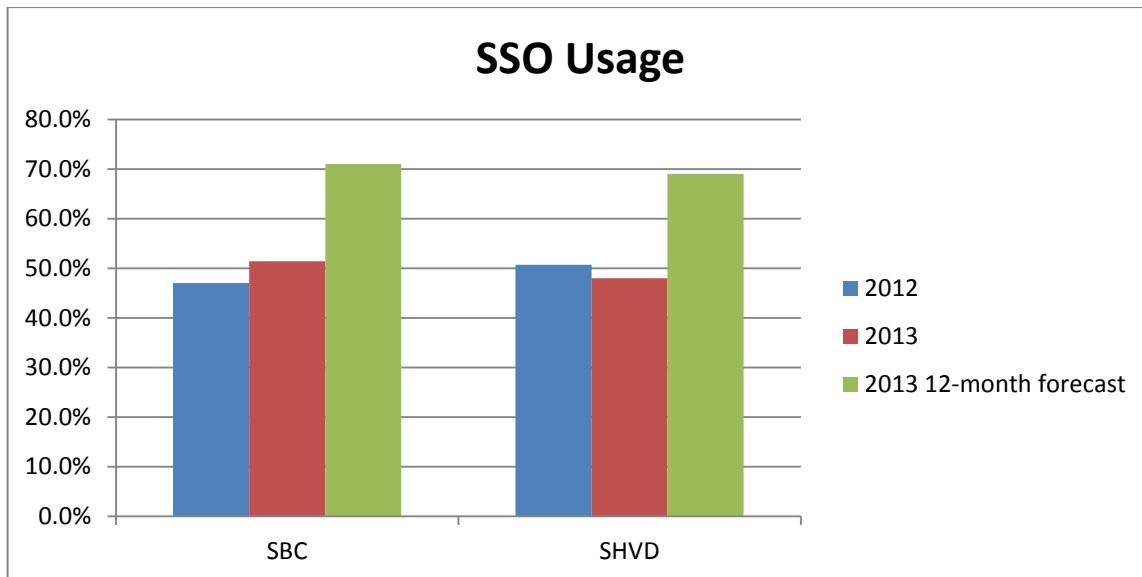


Figure 20: SSO usage in SBC and SHVD environments

Similarly, the use of strong authentication in SHVD environments remained relatively flat as compared to last year. However, in SBC deployments, the use of strong authentication increased 13 percent year-over-year (Figure 21).

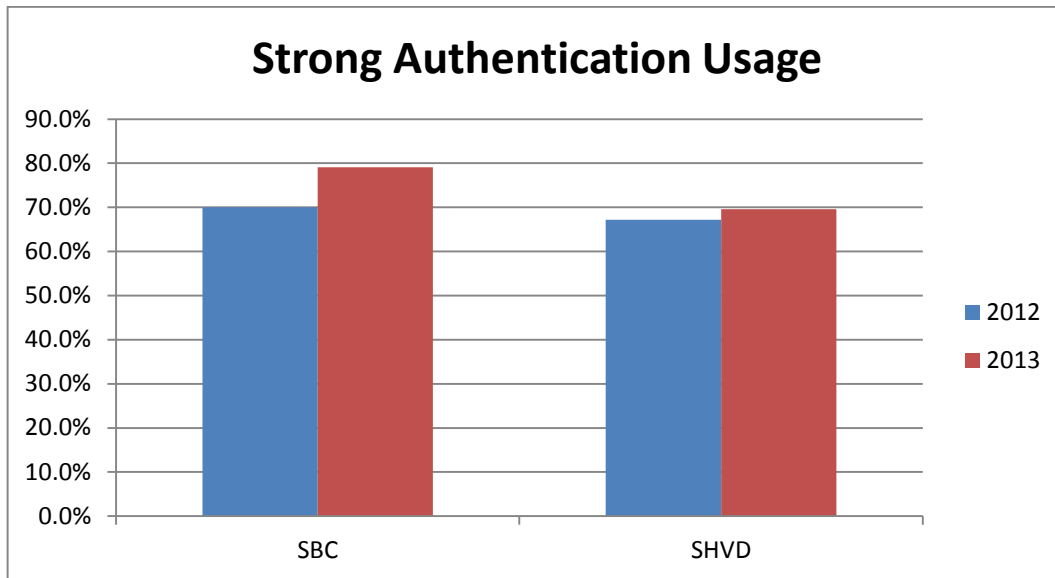


Figure 21: Strong authentication usage in SBC and SHVD environments

The use of both SSO and strong authentication increased for organizations using SBC as well as for those using SHVD, as 45 percent of respondents using SBC today indicated that they use both SSO and strong authentication while 48 percent of organizations using SHVD today said they use both technologies. (Figure 22).

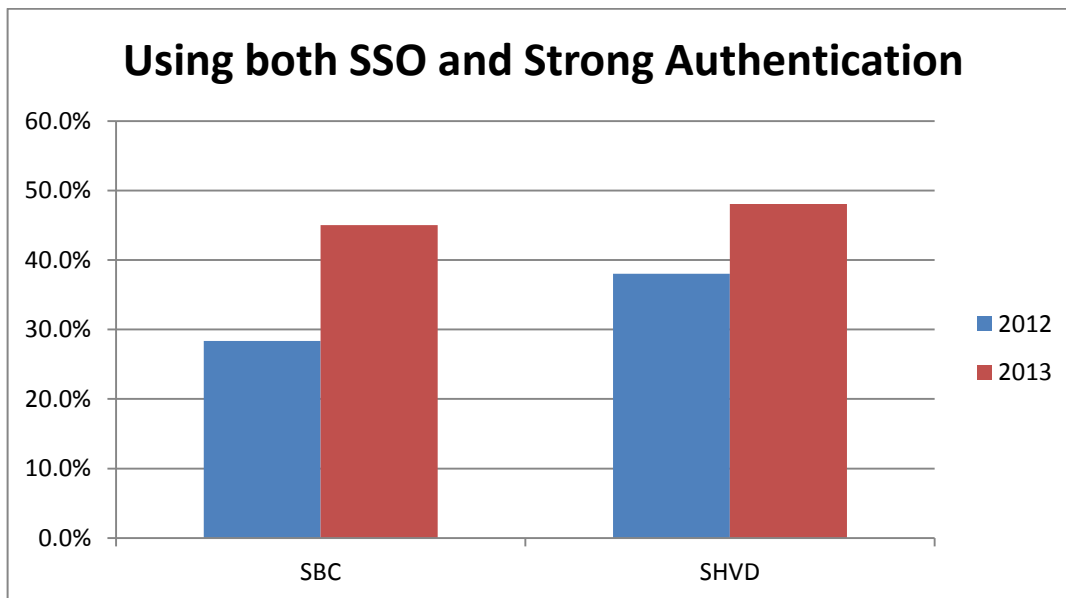


Figure 22: Usage of both SSO and strong authentication technologies in SBC and SHVD environments

Organizations using SHVD as well as SSO and/or strong authentication were asked how much time this combination of technologies saves their users. Of those respondents able to quantify, 31 percent said their users are saving more than 15 minutes per day, which remains consistent across organizations of all sizes (Figure 23).

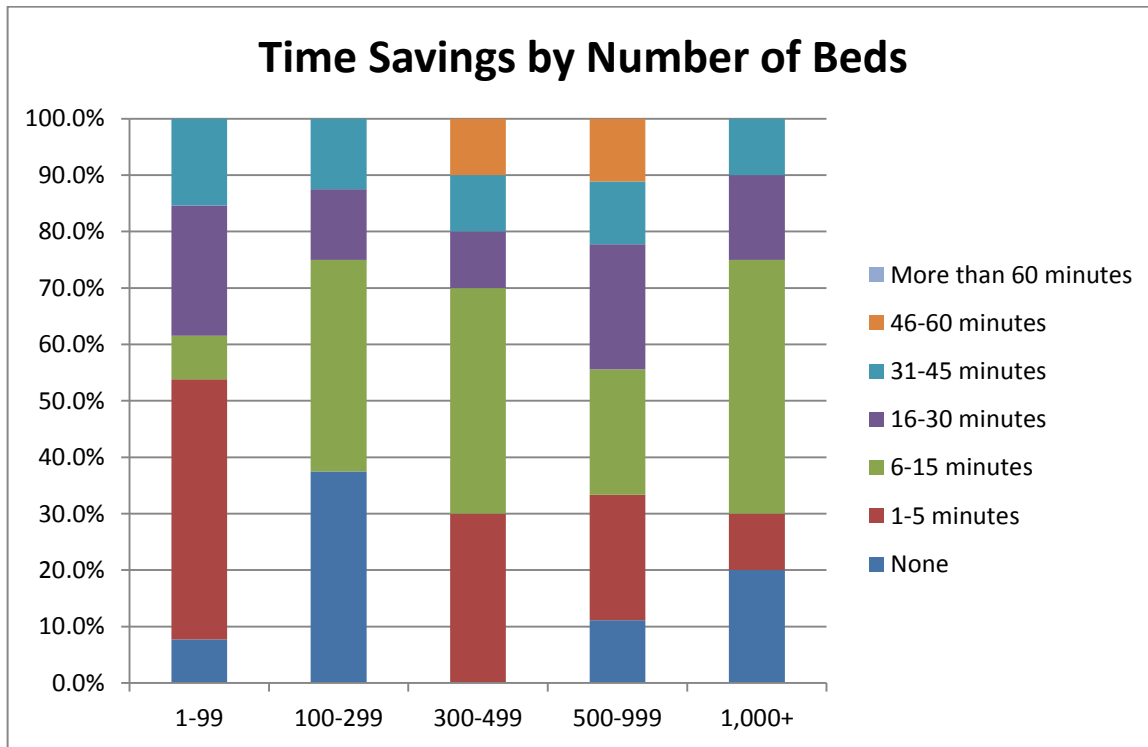


Figure 23: Time savings per user, per day using SSO and/or two-factor authentication in SHVD environments by size of organization (number of beds)

Healthcare in the Cloud

Adoption of cloud-based applications and services in healthcare is increasing more quickly than expected, with 30 percent of respondents indicating that they are using cloud computing today (up from just nine percent from the 2012 survey), which constitutes a 35 percent increase over the 12-month forecast from 2012. This trend is expected to continue, with 40 percent of respondents indicating that they expect to be using cloud-based applications and services within the next 12 months (Figure 24).

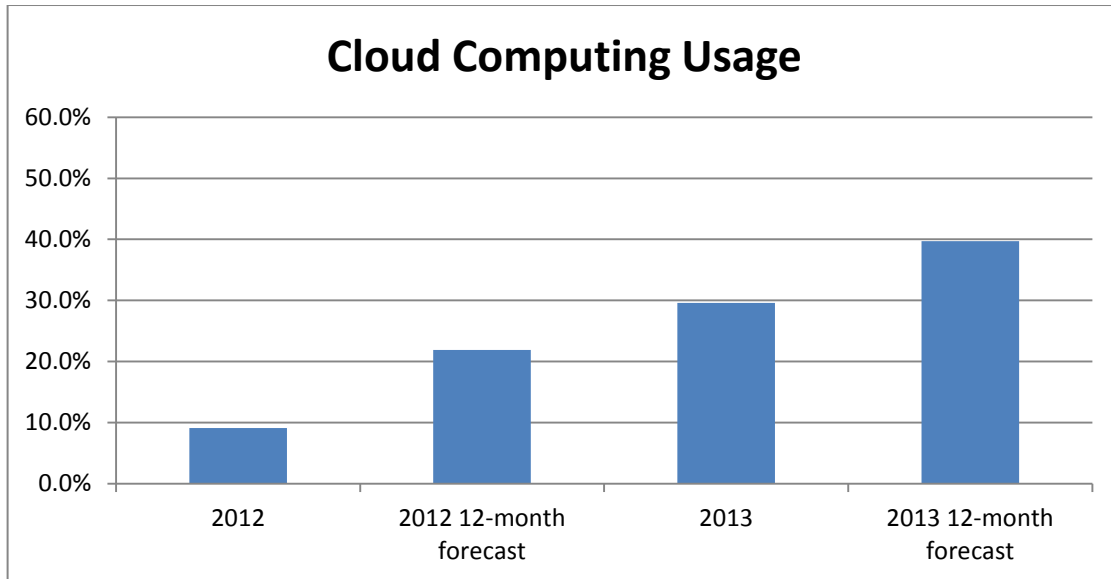


Figure 24: Cloud computing usage

In particular, storing protected health information (PHI) in the cloud is becoming more commonplace, with 40 percent of respondents that use cloud services today indicating that they store PHI in the cloud (up from nine percent from the 2012 survey). This trend is expected to continue, as 67 percent of healthcare organizations using cloud services expect to be storing PHI in the cloud within 12 months (Figure 25).

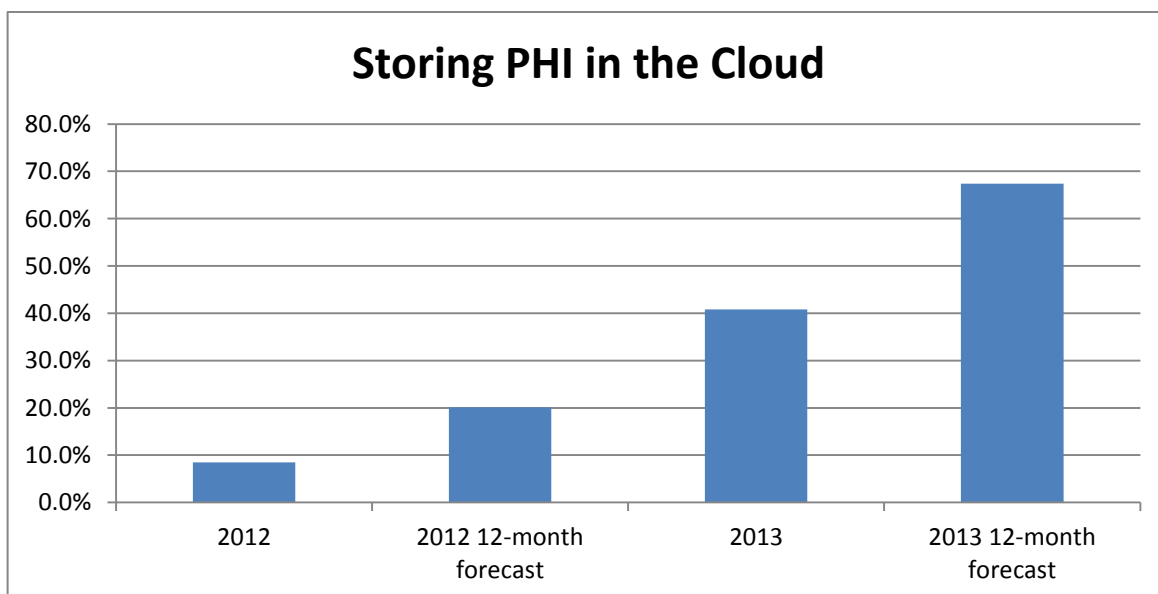


Figure 25: Healthcare organizations storing PHI in the cloud

Today, the most common cloud application used in healthcare is the electronic medical records (EMR) system, with 52 percent of respondents using cloud services indicating that they use a cloud-based EMR today. This is followed by application access (46 percent) and picture archiving and communication system (PACS) storage (44 percent). Within the next 24 months, however, organizations expect to be using a mix of cloud-based services and applications, including electronic prescribing (according to 73 percent of respondents) and secure text messaging (65 percent) (Figure 26).

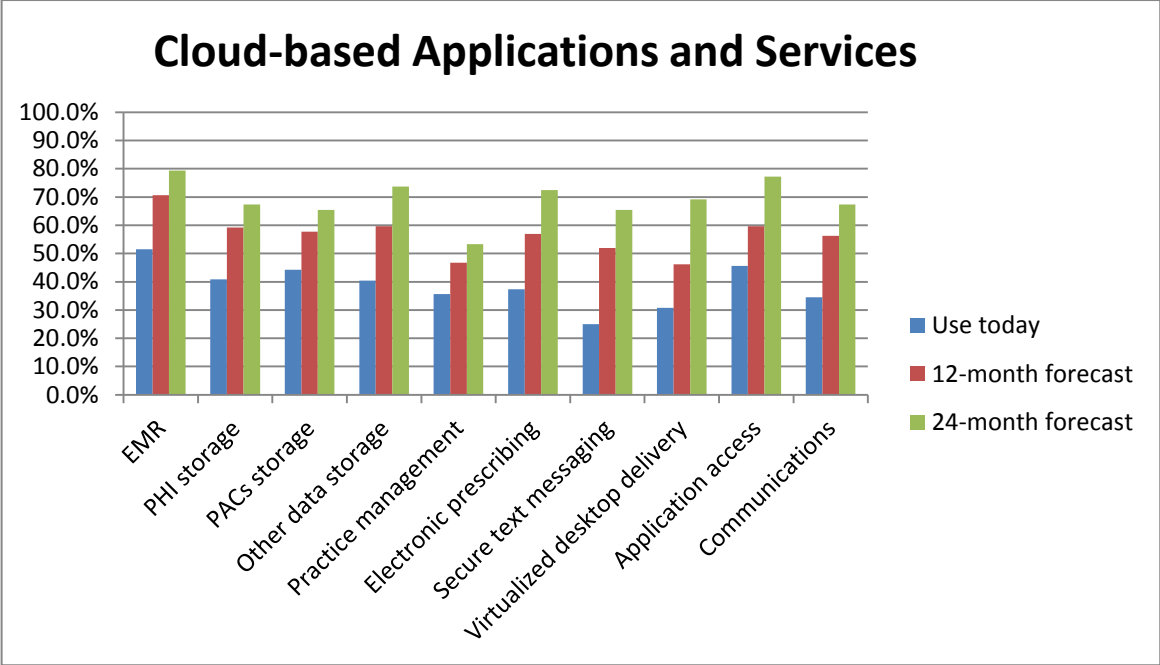


Figure 26: Forecast for usage of cloud-based applications and services

While the use of cloud-based services and applications in healthcare is increasing, 71 percent of healthcare organizations currently using cloud computing work with only one or two vendors, and 85 percent work with three or fewer vendors (Figure 27).

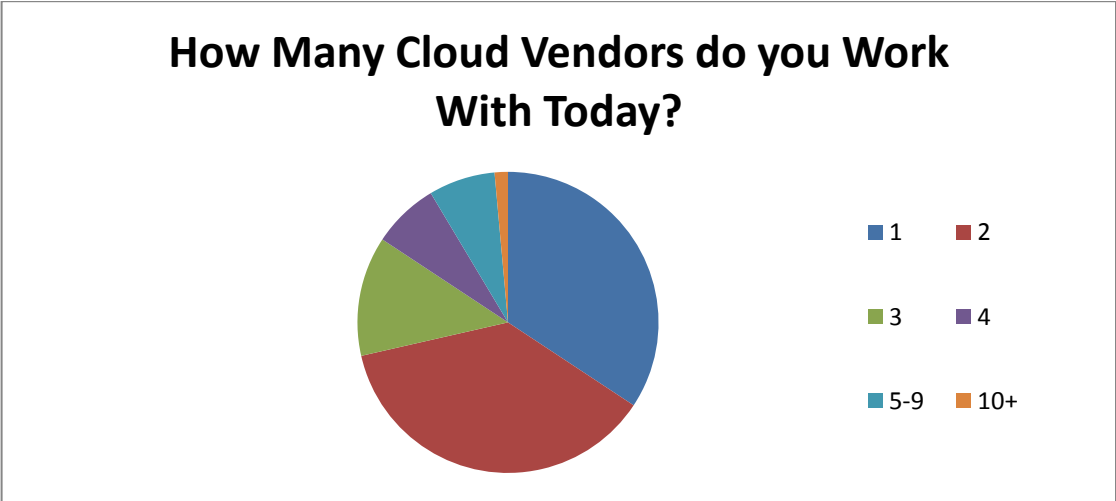


Figure 27: Number of cloud vendors that healthcare organizations work with today

Despite working with a limited number of vendors, 16 percent of healthcare respondents using cloud computing services today do not have HIPAA BAAs in place with all of their vendors, and five percent indicate that they do not have BAAs in place with any of their cloud vendors (Figure 28).

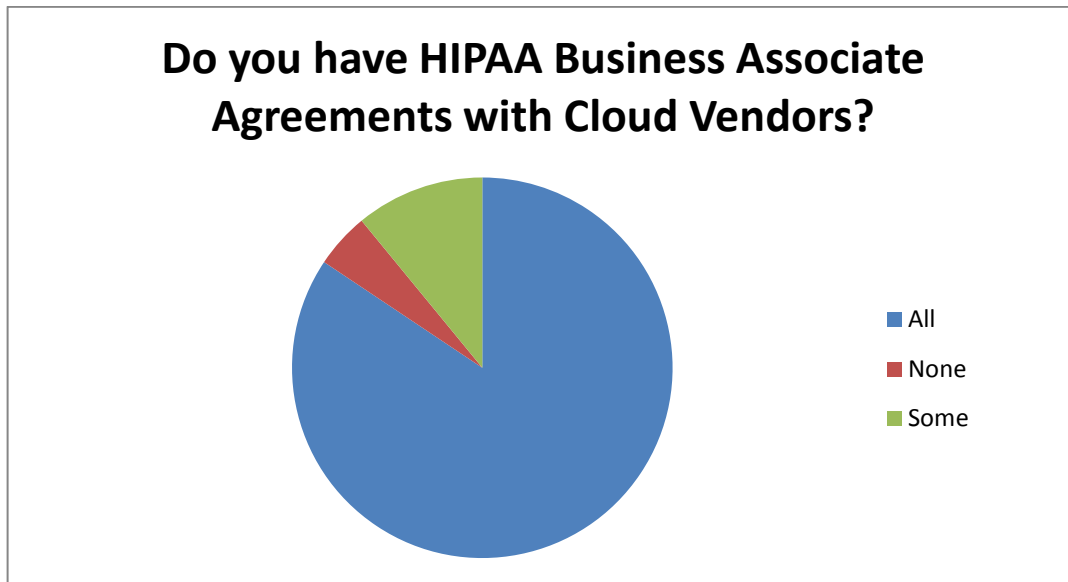


Figure 28: Healthcare organizations with HIPAA BAAs in place with cloud vendors.

For healthcare organizations that have no plans to adopt cloud computing, security remains the primary reason (according to 33 percent of respondents). However, indicating the importance of HIPAA BAAs, 17 percent of healthcare respondents that have no plans to adopt cloud computing cite the primary reason as “cloud services vendors do not offer HIPAA Business Associate Agreements” (Figure 29).

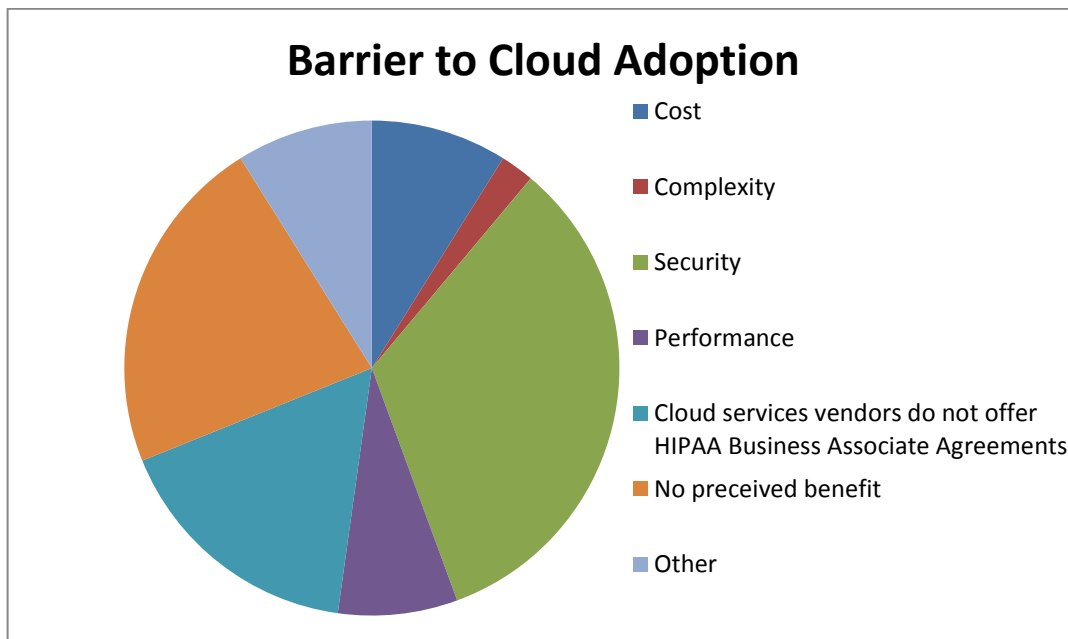


Figure 29: Primary barriers to adopting cloud-based services in healthcare