COVID-19 Crisis Highlights the Value of a Hybrid Cloud Strategy

Greg Caressi
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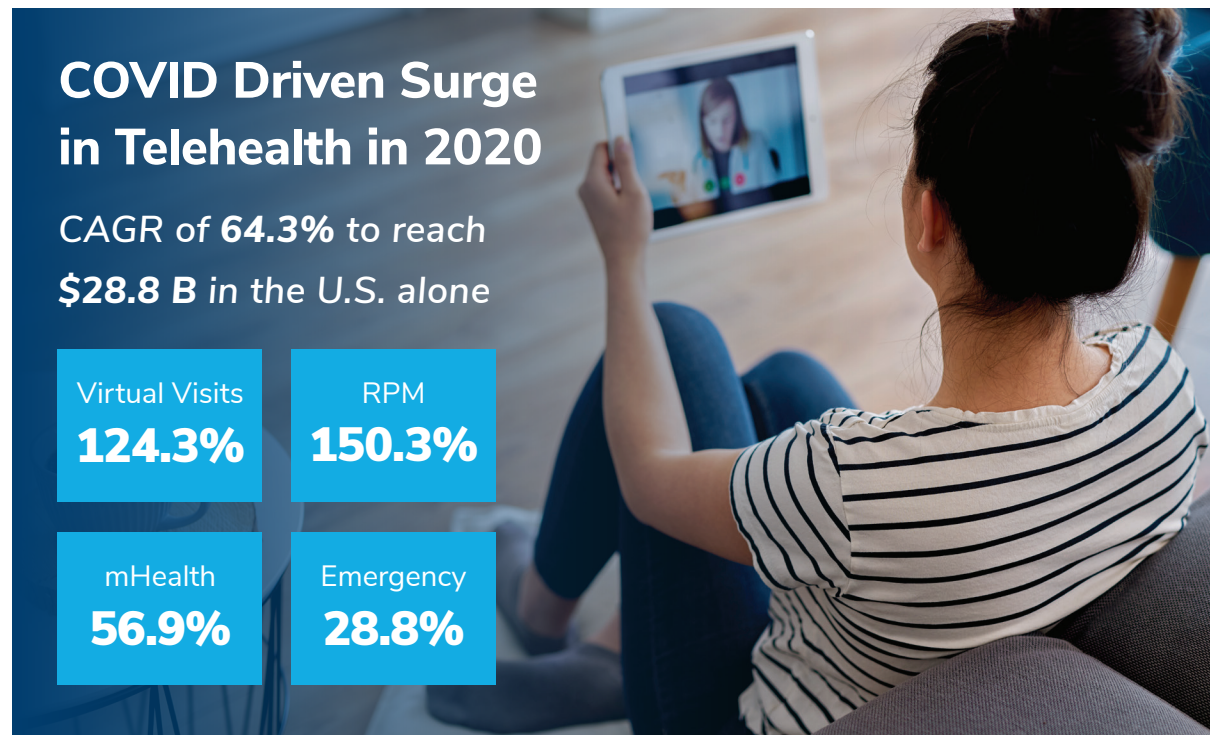
As with many industries, the healthcare sector was disrupted by the COVID-19 crisis, with the impact on hospitals and health systems even more acute, given the frontline role these organizations have in addressing the illness and treatment. Despite the crucial role they play, healthcare organizations have not been immune to the same disruptions in operations and exposure of business continuity challenges that other sectors have faced.

The current crisis has shown us that we need to more rapidly accelerate some of the ongoing trends in healthcare data management to support fluid data movement, flexible access, interoperability and swift scale-up of innovative applications to support patient interactions. The shift from on-premise data centers to cloud-based solutions enables many of the capabilities needed to address these ongoing trends and the challenges healthcare organizations face during the COVID-19 crisis.

Prior to the COVID-19 crisis, a change was already underway in terms of how cloud is evaluated, moving beyond viewing cloud as just another pathway for storage of data and a way to shift CAPEX to OPEX. While the crisis has shown the value of cloud in business continuity and disaster recovery, in 2020, the view was already shifting to cloud as a technology enabler to drive healthcare transformation. This was further demonstrated by the rapid ramp-up in telehealth solutions in recent months to enable provider organizations to maintain continuity of care.

According to Frost & Sullivan's updated market analysis, telehealth adoption overall has been accelerated by approximately two years due to the COVID-19 crisis, and virtual visits market revenue will more than double for solution vendors in 2020 and nearly double again in 2021, with provider organizations continuing to use these tools once the crisis subsides. It is expected that remote patient monitoring (RPM) solution revenues will surge even more rapidly in 2020, with these tools used to monitor both coronavirus risks as well as chronic-condition patients not coming in to see their doctors.

COVID Driven Surge in Telehealth in 2020

CAGR of **64.3%** to reach **$28.8 B** in the U.S. alone

Virtual Visits	RPM
124.3%	**150.3%**

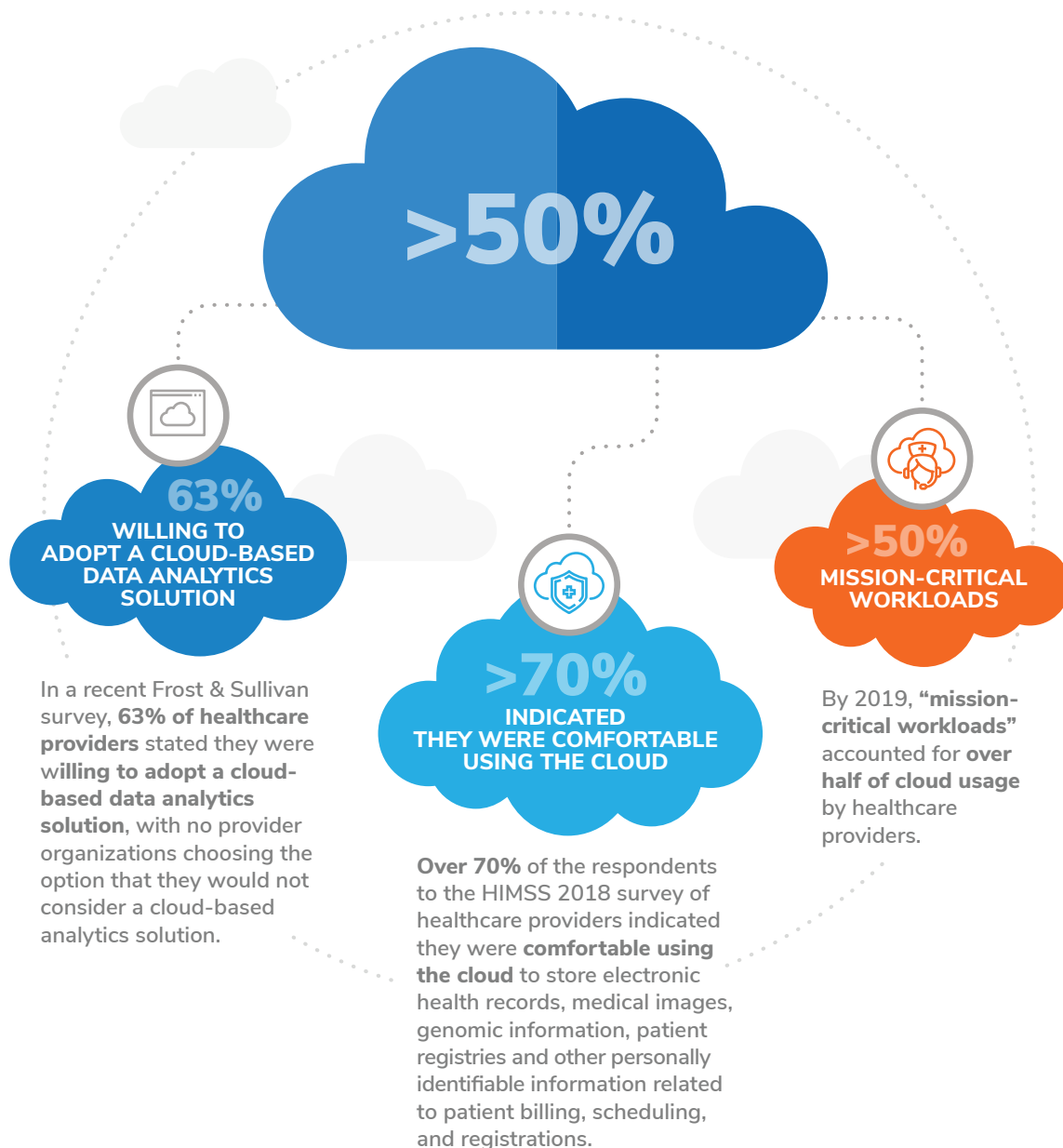| mHealth	Emergency
56.9%	**28.8%**

Source: Frost & Sullivan

Solutions enabling virtual visits and RPM are almost exclusively cloud based, enabling the rapid scale-up needed to meet skyrocketing demand during the crisis. Conversely, users can scale down capacity demand as needed, as some patients return to office visits. Cloud platforms for virtual visits and home monitoring are cost-effective, easy to deploy, and can often leverage consumer devices like mobile phones, allowing virtual care to break the adoption barrier.

Mobile health solutions are also heavily cloud-based platforms and include a wide range of medical-grade and consumer applications, wearables, services, etc., connected to or with interactions delivered via mobile devices. Personal Emergency Response Systems often have a cloud component to drive alerts, though these are predominantly consumer-facing applications and have not seen as big a surge from the COVID-19 crisis as other telehealth sectors.

CLOUD ADOPTION IS ALREADY IN PLACE

While the COVID-19 crisis has shown how cloud can enable rapid business transformation, moving critical health data to the cloud is not a new phenomenon. According to HIMSS surveys and Frost & Sullivan analysis, over 50% of health IT workloads are deployed in the cloud, and the level of comfort of health IT leaders in placing crucial data and analytics in the cloud is high:

Over 50% of Health IT Workloads are Deployed in the Cloud

>50%

63%
WILLING TO ADOPT A CLOUD-BASED DATA ANALYTICS SOLUTION

>50%
MISSION-CRITICAL WORKLOADS

>70%
INDICATED THEY WERE COMFORTABLE USING THE CLOUD

In a recent Frost & Sullivan survey, **63% of healthcare providers** stated they were w**illing to adopt a cloud-based data analytics solution**, with no provider organizations choosing the option that they would not consider a cloud-based analytics solution.

By 2019, **"mission-critical workloads"** accounted for **over half of cloud usage** by healthcare providers.

Over 70% of the respondents to the HIMSS 2018 survey of healthcare providers indicated they were **comfortable using the cloud** to store electronic health records, medical images, genomic information, patient registries and other personally identifiable information related to patient billing, scheduling, and registrations.

Source: Frost & Sullivan

CLOUD PROVIDER SUPPORT FOR DATA STRATEGY IS CRUCIAL TO SUCCESS

As the COVID-19 crisis demonstrated, healthcare organizations need to solidify their cloud versus on-premise strategy, leveraging cloud for disaster recovery and business continuity, but also to rapidly deploy new applications and innovations. This, of course, does not mean every application should be moved to the cloud, but rather a strategic plan should be developed to best leverage cloud enablement, based on specific organizational infrastructure, facilities, and needs. Ideally, a cloud infrastructure vendor can be a strategic partner in both planning and execution to maximize efficiency.

Healthcare organizations should determine the best place for each application—on-prem versus cloud—and enable a staged shift of priority applications. They need to set a plan for data migration with the flexibility for on-demand cloud capacity as data is moved to the cloud. They also need to set and manage performance and cost expectations so cloud applications match or exceed on-prem performance and do so cost-efficiently.

> **In a 2019 survey of healthcare organizations, hybrid cloud was a close second to private cloud among the healthcare providers surveyed, while hybrid cloud deployments were the preferred choice among both payors and digital health solution providers.**

As in the COVID-19 crisis, Frost & Sullivan expects healthcare providers to continue to employ a hybrid cloud strategy, utilizing cloud when workflows or compute requirements require it, with the ability to pull back to on-prem to allow financial flexibility. Utilizing hybrid cloud capability can save both money and time when scaled-up demand requires larger compute or storage capacity. Given the increasing acceptance of public cloud by healthcare IT leaders, hybrid cloud solutions are growing rapidly among healthcare users. In a 2019 survey of healthcare organizations, hybrid cloud was a close second to private cloud among the healthcare providers surveyed, while hybrid cloud deployments were the preferred choice among both payors and digital health solution providers (many of the latter are offering services to provider organizations).

When placing data in the cloud, clinical and non-clinical data needs to be separated given the specific security and privacy needs of healthcare providers. Due to this requirement, and to enable maximum flexibility in partner selection, maintain current cloud deployments and meet price-performance needs, the cloud infrastructure partner needs to support multi-cloud requirements today and in the future.

Of course, the details of whether an application is cloud-based and which cloud provider is utilized should be invisible to the clinical or administrative user, and mostly invisible to IT, at least in terms of its need to manage the day-to-day data management and flow of information.

EXPERIENCED CLOUD VENDORS GO BEYOND BASIC DATA SECURITY AND REGULATORY COMPLIANCE

Given that security is commonly the number one concern in the healthcare world in selecting a cloud partner, it is important to select a partner with solutions built for handling protected health information (PHI). While no one can guarantee data will never be compromised, leading cloud partners are equipped to address the next generation of cybersecurity risks. Beyond security software, cloud partners employ strategies like microsegmentation of applications hosted in the cloud to contain and limit the impact of any intrusion.
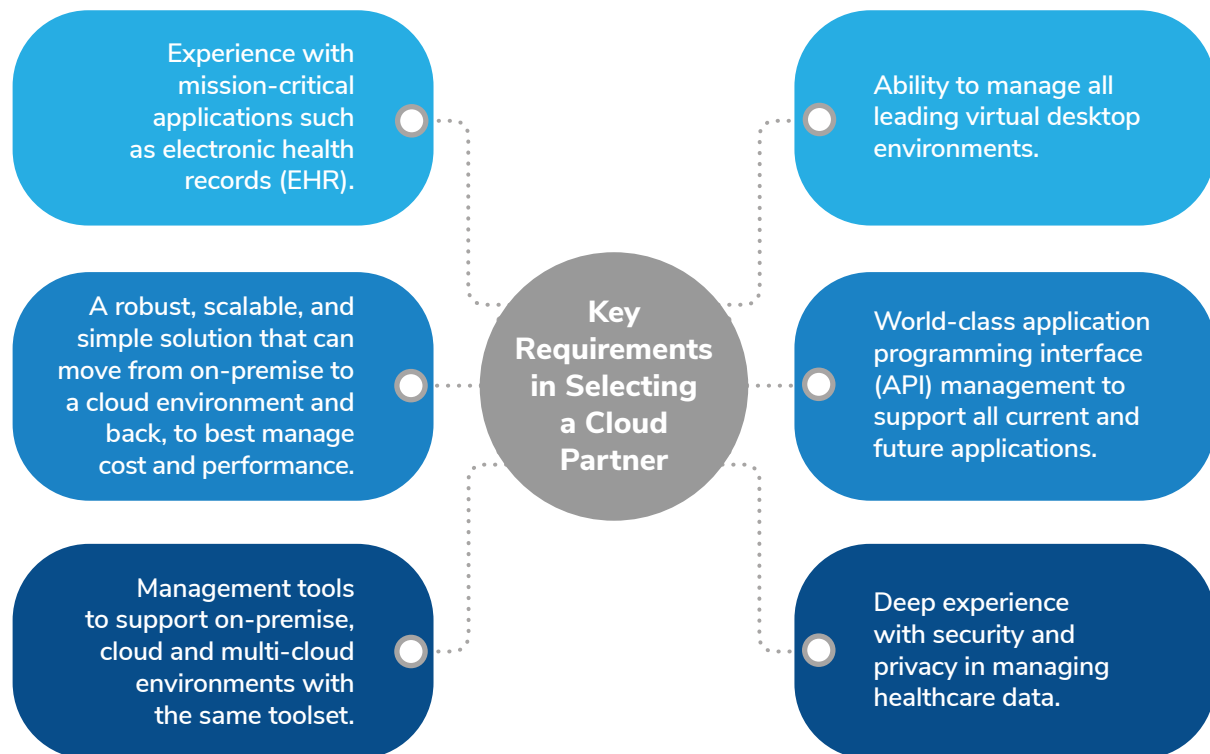
This experience in managing PHI is crucial, even in the current environment where some security requirements have been relaxed to enable the ramp up of telehealth interactions with patients and to enable a wider range of COVID-19 testing sites. Encryption of telehealth encounters and transfer of diagnostic test data is a requirement for sustainable application use. Frost & Sullivan doesn't expect the current HIPAA waivers to remain in place after the immediate crisis, and in every case, even if fines are avoided, data breaches and the accompanying negative public relations have long-term impacts.

One of the biggest security concerns identified by HIMSS surveys and Frost & Sullivan's discussions with CIOs/CISOs is the "lack of consistent controls to secure multi-cloud and on-premise" environments. To enable the healthcare provider's IT team to monitor security, access logs, etc., cloud data access and security management tools need to be integrated with other enterprise data and security management toolsets, and the cloud infrastructure partner needs to provide this capability across a multi-cloud environment.

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WHAT ARE THE KEY REQUIREMENTS IN SELECTING A CLOUD PARTNER?

The COVID-19 crisis created a call to action that healthcare providers need to address to develop a near-term cloud strategy that prepares them for current and future data management needs. In developing and executing this strategy, it is important to work with a partner that has the following:

Experience with mission-critical applications such as electronic health records (EHR).

Ability to manage all leading virtual desktop environments.

A robust, scalable, and simple solution that can move from on-premise to a cloud environment and back, to best manage cost and performance.

Key Requirements in Selecting a Cloud Partner

World-class application programming interface (API) management to support all current and future applications.

Management tools to support on-premise, cloud and multi-cloud environments with the same toolset.

Deep experience with security and privacy in managing healthcare data.

Source: Frost & Sullivan

With cloud in healthcare, provider organizations need to be prepared for not only business continuity and disaster recovery, but also remaining competitive by enabling rapid provisioning of new applications and innovation in digital care delivery, data and analytics. Healthcare organizations that don't have a viable strategy to address these key business imperatives will be left behind as we move forward in a world where data accessibility, data movement and data-driven insights drive success.

ABOUT NUTANIX

Healthcare organizations around the world use Nutanix cloud software and hyperconverged infrastructure solutions to bring one-click application management and mobility across public, private and hybrid clouds, thereby improving clinical and IT workflows throughout the continuum of care. This simplicity and freedom to build the preferred cloud deployment allow customers to run any applications such as EHR, PACS, and Big Data that help improve the quality of patient care and lower the total cost of ownership.

For more information, visit nutanix.com/healthcare.

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Silicon Valley
3211 Scott Blvd
Santa Clara, CA 95054
Tel 650.475.4500
Fax 650.475.1571

San Antonio
7550 West Interstate 10
Suite 400
San Antonio, TX 78229
Tel 210.348.1000
Fax 210.348.1003

London
Floor 3 - Building 5,
Chiswick Business Park
566 Chiswick High Road
London W4 5YF
Tel +44 (0)20 8996 8500
Fax +44 (0)20 8994 1389

✉ myfrost@frost.com   ☎ 877.GoFrost   🌐 http://www.frost.com

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For information regarding permission, write:

Frost & Sullivan

331 E. Evelyn Ave., Suite 100

Mountain View, CA 94041

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