## Connected Care:

# Creating a Foundation for Collaborative Health Teams

Seven essentials for engineering your IT platform to support the evolution of healthcare.

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## What is Connected Care?

Canadians are more proactive than ever about their healthcare. They expect more options to manage their care plans and have high-value interactions with their care providers.

**87%**

value communication among their entire circle of care

**88%**

want more meaningful interactions with healthcare providers

**51%**

use virtual care and 49% want to continue post-pandemic

**53%**

take medication for more than one condition

**43%**

find the healthcare system difficult to navigate

*Source: Calian Care Index, 2021. National online survey conducted with 1,520 Canadians who are members of the Angus Reid Forum.*

## A more personalized healthcare experience

The fast pivot to digital healthcare has offered new tools and models to safely care for patients and provide essential services. Integrating digital services can come at a high cost—often doubling the time and effort—as care teams struggle to fit virtual interactions into their clinical workflows.

Shortages and burnout among healthcare workers have underlined the need to rethink the way we leverage valuable medical resources. At the same time, people want more self-serve and virtual options to manage their care plans and connect with care providers. Research firm Frost & Sullivan estimates that more than 35 per cent of interactions will be virtual this year, and the Calian Care Index shows that almost half of people surveyed want to continue with some form of virtual care.

### Healthcare IT wired for change

While the pandemic created new opportunities for innovation, it also revealed gaps in a healthcare system based on institutional models. Shifting to a personalized experience requires IT systems that can connect the patient journey, support care team collaboration and adapt to the changing needs of the community.

In this guide, you will find a checklist with seven essential characteristics of healthcare IT systems that are wired for change.

# #1: Data interoperability

Healthcare organizations moving towards integrated, collaborative care models often face significant challenges from a lack of integration between electronic health records (EHRs) and scheduling systems, as well as barriers to data and application interoperability. Consider that the average healthcare portfolio includes hundreds of applications. Ripping and replacing those components costs too much in time, effort, licensing fees and clinician productivity. Hospital IT innovators are looking for high levels of data integration and interoperability as critical considerations for the adoption of any new technology.

## Sustainable and affordable

Building a sustainable healthcare system requires a platform that can integrate existing applications, ingest and use data from a variety of sources, and build on established processes.

A smart iPaaS foundation can ensure cost-containment and sustainability.

- Support legacy and emerging healthcare standards: HL7, FHIR, XML, JSON, CDA, C-CDA and others.
- Service-oriented architecture: create and run integration logic based on multiple applications, accessed via APIs, respond to events such as patient and resource context, operational intelligence and longitudinal activity, and incorporate graphical tools for defining workflow logic to enable rapid implementation.
- Messaging: enable applications and integration technologies to communicate in a loosely coupled way. Queues hold messages until they can be picked up by the receiver. This lets applications and integration software communicate asynchronously, even across diverse technology platforms.

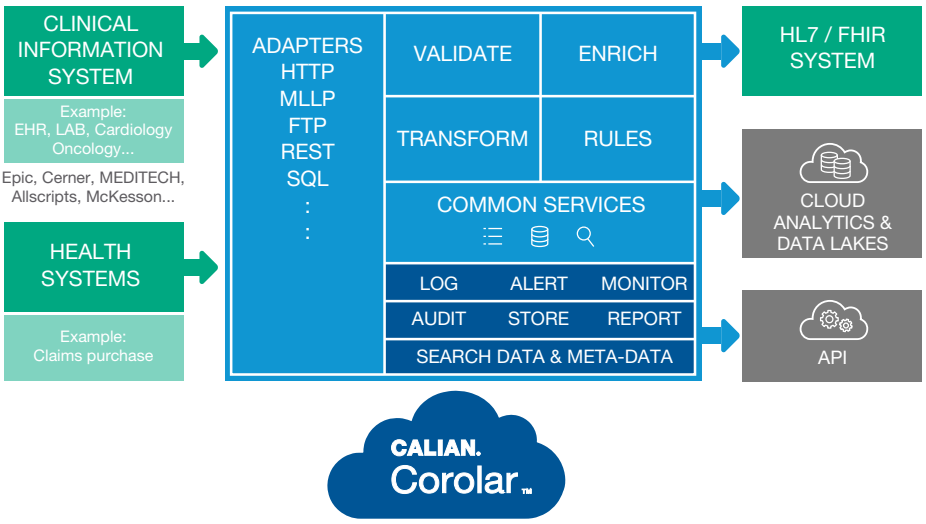


***Figure 1:*** *Smart iPaaS foundations make it easier to integrate systems and processes into a single, unified environment.*

# #2: Open APIs

Software as a Service (SaaS) models are a driving force behind the shift to value-based care by speeding innovation and reducing costs for healthcare organizations. Using a cloud architecture with open application programming interfaces (APIs) for interoperability breaks the old model of data silos and closed systems that limit innovation.

According to Gartner Research, "by 2026, 75% of healthcare providers will reduce their reliance on EHR-native applications to deliver better experiences and outcomes, and improve efficiencies." (*Gartner, Innovation Insight for Digital Health Platform, July 2021*)

## Ecosystem for value-based care

Creating a value-based healthcare model directs IT spending toward outcomes that matter most to patients. A smart iPaaS platform enables:

- Easier scalability—add new services in a secure environment to scale or adapt as the care continuum expands with new services and partners.
- Best of breed—open APIs connected to a trusted environment make it faster to connect new features, such as remote monitoring tools and secure communications.
- Lower cost—per-user subscription models are more affordable and flexible.

| Decision factor | Advantage | Considerations |
|---|---|---|
| **TCO (total cost of ownership)** | Lower cost: pay per use, OPEX vs. CAPEX | Variable costs vs. fixed |
| **Scalability & reliability** | Elastic scale and highly reliable: spin up or down, micro-services vs. monolith | Reliance on others<br>Confidence in scalability |
| **Time to market** | Agile: cloud native, deploy in days/weeks vs. months/years | Too fast, support rapid change |
| **Compliance & data privacy** | Outsource complexity: infrastructure, cloud hosting, and data privacy | Reliance on others |
| **Cyber security & life cycle management** | Proactively threat-hunt: be ready for the inevitable breach | Reliance on others |
| **Ecosystems & integration** | Move from closed-proprietary to open systems: POCs and ecosystems | Trust of new partners<br>Data privacy breach |

***Figure 2:*** *Embracing the healthcare SaaS model requires consideration of the cost and scale benefits with change management factors.*

# #3: Agile service architecture

A critical component of personalized care is the ability to monitor and respond to evolving needs from the community. Tracking service usage, gathering patient and clinician feedback, and utilizing analytics data are examples of inputs that can drive a responsive, agile system.

For example, consider a diabetes clinic that offers consultation, education and follow-up services for patients living with Type 1 and Type 2 diabetes. Clients filled in a survey about their experiences and indicated a high interest in anxiety management programs. Clinicians who are signed up to deliver the service require role-based access to scheduled appointments and the ability to review notes from other practitioners in the patient's circle of care.

## Responsive and real time

An agile iPaaS system makes it possible to rapidly spin up new clinics and services with features that are unique and customizable.

To enable real-time service agility, the iPaaS foundation needs to support:

- Customizable workflows: adjust in real time to respond to patient demand and feedback, tailor intake forms, offer online and kiosk-based check-in, schedule virtual and in-person appointments and design care pathways that are unique to each service and user population.
- Real-time configuration: modify service features and implement on the fly without affecting other services, adding complexity to the system or increasing the operational costs.
- Data connector: ingest clinical and operational health data for service awareness, use role-based access control.
- Analytics: add on clinician dashboards for daily monitoring and predictive analytics to improve services and patient outcomes.

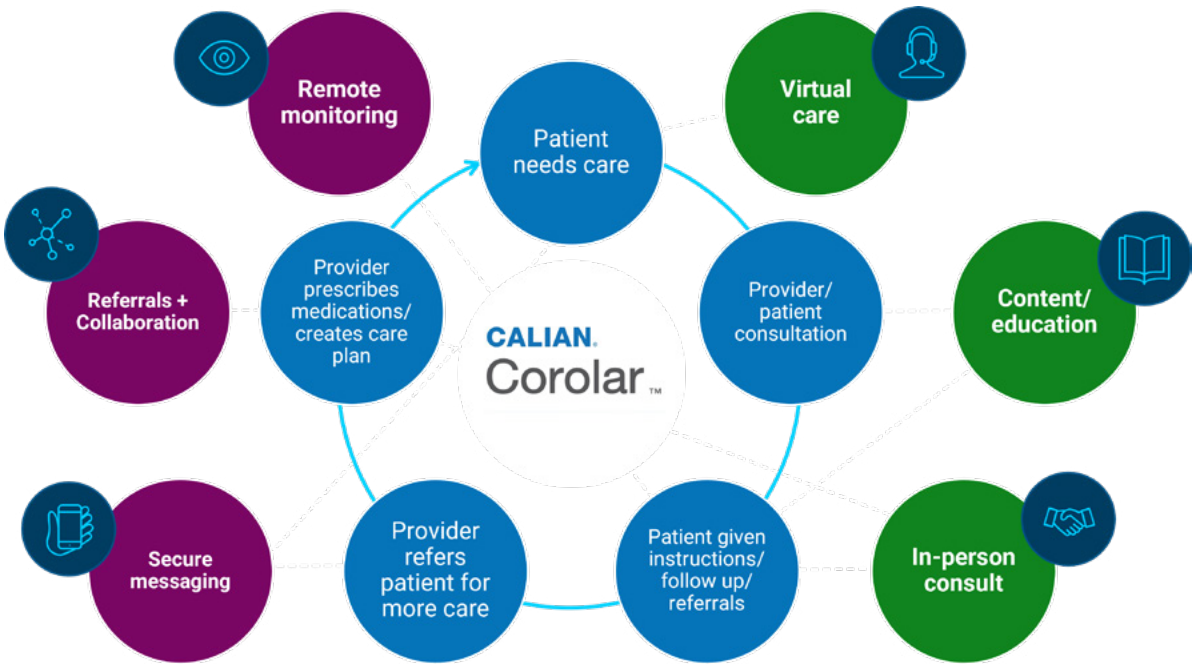


***Figure 3**: Create customizable workflows and add functionality to meet your community's needs.*

# #4: Care team collaboration

Health networks are rapidly evolving to incorporate partnerships beyond the traditional hospital setting and share resources across extended care teams. Multiservice health hubs and virtual care teams can bring together medical, family and wellness programs under one shared space with a broad range of allied providers tailoring services from infancy to end of life. The underlying vision is a healthy community at the local level contributing to overall population health management—improving the patient experience and outcomes while maximizing access to specialty care. The model creates a collaborative ecosystem for knowledge and resource sharing that enriches the experience for both patients and clinicians.

## Breaking silos

When health data is scattered across multiple silos, all we can see is an isolated "snapshot" of a person's health. Achieving sustainable care collaboration means redesigning both the processes behind the healthcare delivery model and shattering the silos that get in the way of true collaboration.

An intelligent iPaaS foundation can service multiple partners in a single environment. Capabilities include:

- Data and system integration: A service-sharing digital platform breaks silos from disparate systems using common APIs and enables the seamless transfer of data in a secure environment.
- Shared licensing models: Many of the allied services are smaller organizations that benefit from both a shared physical space and common tools that would otherwise be out of reach.
  A cloud-based, multi-tenant platform lets allied care providers share services at a lower cost.
- Service customization: Modular, easily customized applications and workflows help to quickly expand new service offerings with features that support each program.
- Rapid onboarding: The use of common tools, user-friendly interfaces and a robust training program get practitioners up and running quickly and increase adoption across the ecosystem.


***Figure 4:*** *Multiservice health hubs can offer a range of value-added services on a shared platform.*

# #5: Patient-centred experiences

Research has shown that health improves when people are actively engaged in it. A patient-centred ecosystem facilitates collaboration on the clinician side to open the door to more personalized services. For patients, the best experience incorporates the preferences of each individual and increases access to both the desired services and choice in the modality of delivery.

Many Canadian healthcare organizations are working to expand their ability to support face-to-face and virtual services as part of a connected care pathway. Matching the needs of the individual and the community requires the ability to capture, analyze and build responsiveness into the system.

## Choice and access

A lack of interoperability and common systems along with limited budgets and resources create significant barriers for organizations trying to move to a connected care model.

To drive patient-centred services, the platform needs to enable:

- Digital and in-person interactions: manage the full range of the care experience in a single environment for both patients and clinicians. Virtual and in-person options, mobile and kiosk intake forms, coordinated scheduling, virtual queuing and mobile appointment reminders.
- Multi-provider access: book virtual or in-person appointments with multiple practitioners in one session for the convenience of the patient; enable coordinated care using data dashboards and clinic management tools that capture the visit history for each patient.
- Personalized education: provide patient-centred access to information for disease prevention, understanding health risks and learning about outcomes for patients who have followed similar treatments.

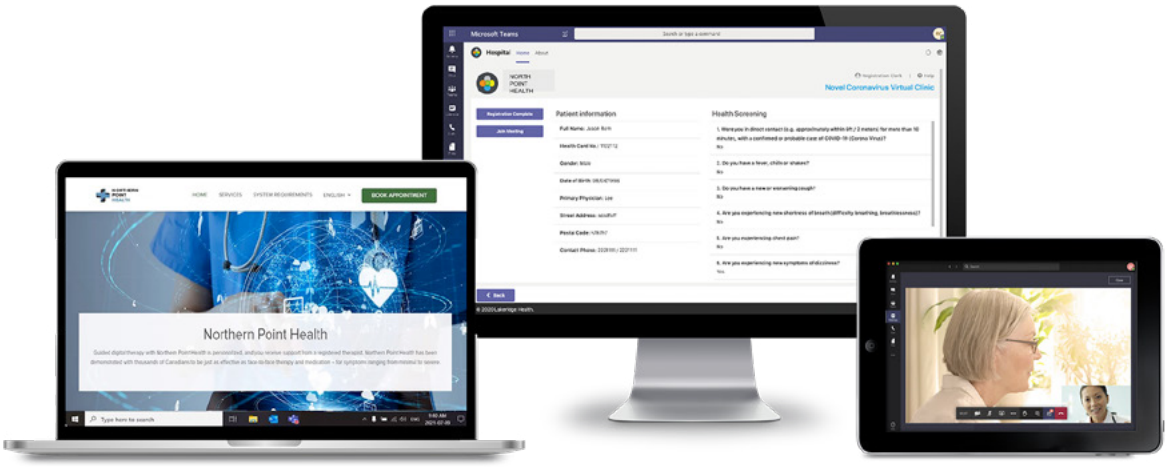


***Figure 5:*** *Patient-centred systems offer convenience, choice and care continuity.*

# #6: Security and privacy

Providing a seamless flow of information and interaction within a healthcare system increases patient engagement, improves access to services and has the potential to dramatically improve health outcomes. Disparate, disconnected applications and outdated systems have a negative effect on productivity and can significantly increase the risk of data breaches from using an ad hoc approach.

For example, a hospital that has six different video calling tools in use by clinicians has to support all of them and ensure that the security certification is up to date and compliant with the hospital policies.

## Productivity and quality

Moving towards a common platform that enables collaboration and seamless access helps to reduce costs, streamline operations and manage security risks. Capabilities for secure iPaaS systems include:

- Secure data: store and process data in secure data lakes, generate analytics across platforms and languages; standardize on highly secure cloud platforms such as Azure.
- Role-based access: assign clinicians to specific patients, clinics or appointments and assign care teams that can share data and assign new providers in a secure environment.
- Enriched video: leverage user-friendly, secure tools such as Microsoft Teams for video consultations that can increase engagement and accuracy while allowing multiple care providers and family members to participate in appointments.
- Care collaboration: manage clinic attributes, share case histories and forward referral information using secure mobile and online tools; update case records and attach care plans to clinician and patient communications.


***Figure 6:*** *Clinicians and patients benefit from using familiar tools in a secure environment.*

# #7: Digital playbook

Health authorities are scaling up to embrace collaboration and combine expertise to provide a more personalized, holistic healthcare experience for patients and their communities. Smart IT decisions can help organizations deliver value-based care models that fit existing workflows and create new ones based on analytics. The overarching goal is to improve the experience for patients and providers, such as reduced wait times, more efficient triage, flexible options to improve convenience and access.

Maximizing the use of existing data, systems and tools while safely adopting new technologies lays the foundation for a robust and agile health system. Piloting new applications and tools improves adoption and creates a repeatable playbook for your organization, including:

- Well-defined goals and KPIs
- Optimized workflows and repeatable processes
- Creation of local best practices
- Internal champions to share best practices
- Feedback process for constant improvement

### Connected Care at Fraser Health Authority

Almost two million people in 20 municipalities and 32 Indigenous communities rely on Fraser Health Authority (FHA) in British Columbia for healthcare and community services. FHA is the first health authority in BC to successfully implement a fully integrated virtual solution into their mental health and substance abuse programs.

**Situation:** FHA adopted a "digital first" strategy but observed that uptake among care teams was lower than expected. Virtual visits doubled the administrative burden for extra tasks that were not part of clinical workflows. FHA decided to pilot the adoption of an integrated virtual care platform, using a consultative approach to understand the business and process issues.

**Solution:** FHA selected Calian Corolar Virtual Care and Microsoft Teams for a three-month pilot. The FHA and Calian project team identified areas to streamline workflows in Teams, such as configuring intake forms by program, sharing clinician notes, and automatically attaching form data to patient records in the MEDITECH EHR.

**Results:** FHA increased virtual visits and secured patient satisfaction rates of more than 90 per cent. The system is now live in five clinics, and expanding.

# Summary

Using an intelligent iPaaS foundation enables IT teams to align with their organizations' vision for greater integration and collaboration across the healthcare network. As siloed services give way to personalized care and a broader array of allied partners under one umbrella, an agile iPaaS infrastructure can provide a flexible, sustainable and cost-effective approach to creating a truly integrated and responsive system.

## Unified and adaptive

Interoperability and data integration are the basis for creating dynamic healthcare systems that can easily scale out and spin up for real-time service agility. The evolution of 5G and Internet of Things (IoT) networks will require even greater data integration, while artificial intelligence (AI) will help to realize the promise of precision medicine and predictive analytics that can prevent disease and tailor treatments for each individual.

An extensible and adaptive iPaaS foundation is a key capability for designing highly integrated, real-time systems that can support the development of healthy communities today and into the future.

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