How to Create Real-Time Insights for Healthcare Organizations

Key Elements for deploying Qlik Cloud®

Qlik**Q**

As healthcare organizations digitally mature and seek to be data-driven, **adopting a "platform mentality" becomes increasingly essential in order to deliver the full potential of analytics.** Healthcare organizations face challenges around managing end-to-end data lifecycles, interoperability, data fragmentation, and most importantly – end user and patient trust.
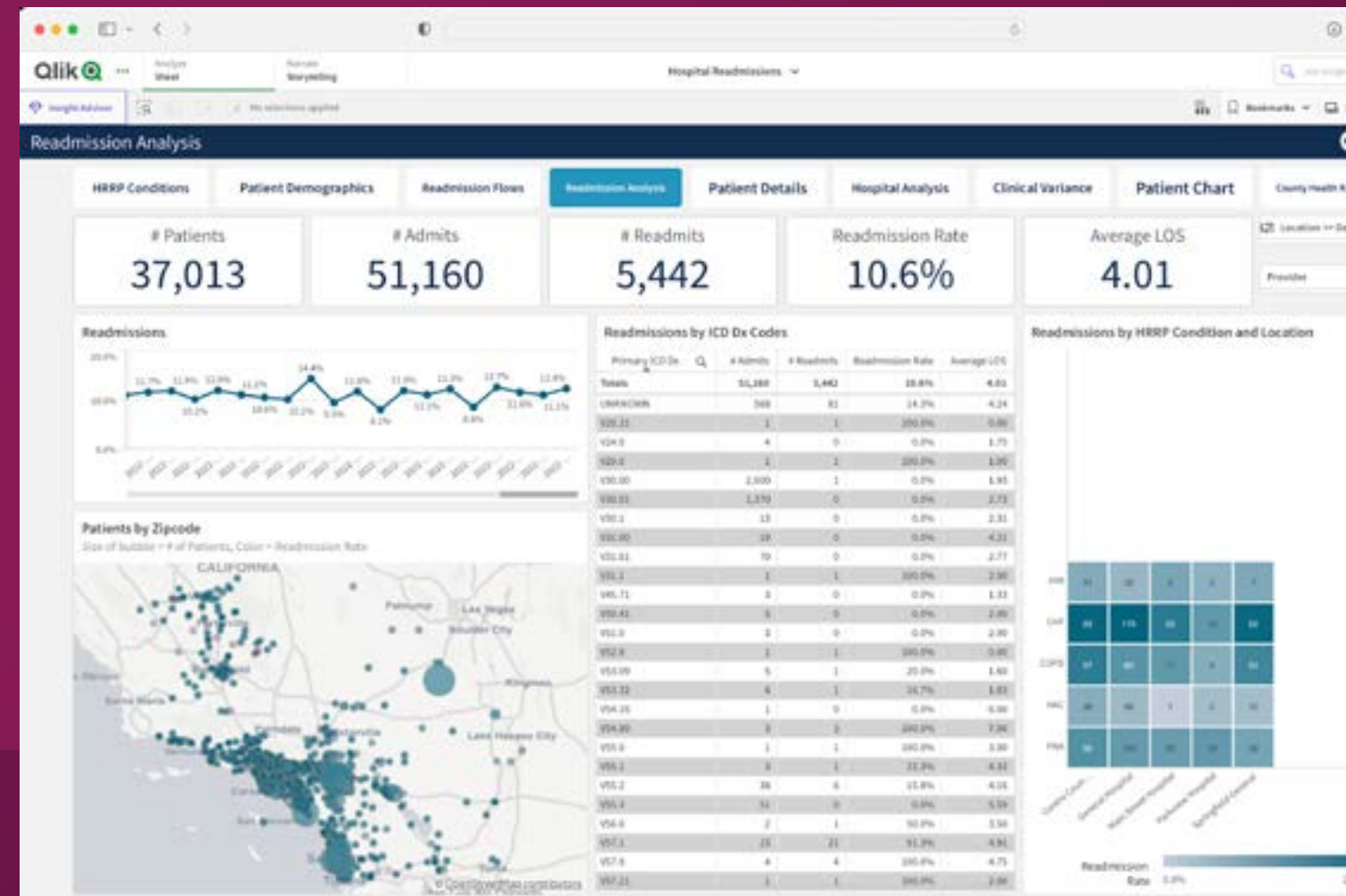
Qlik Cloud

Qlik Cloud has been purpose-built to support your end-to-end data lifecycles and help you shift from a passive form of business intelligence into an active analytical environment that delivers real-time information and drives immediate action. By uniting enterprise control on data pipelines, analytics, automation, and AI/ML into a single platform, Qlik Cloud empowers organizations and users of all levels to make data-driven decisions when it matters most. Leveraging Qlik Cloud makes it easy to use data to seize every business moment.

Qlik is committed to supporting our Healthcare customers with solutions they can trust. We have invested into the security capabilities of the platform to meet HIPAA regulatory requirements for protecting patient and sensitive information. Qlik can host Protected Health Information (PHI)*, with enhanced data encryption and an executed Business Associate Agreement between the customer and Qlik.

*Prior to loading any Protected Health Information (PHI) into Qlik Cloud, Qlik requires advanced encryption with Customer Managed Keys to be deployed and a Business Associate Agreement executed between Qlik and the customer to preserve HIPAA requirements.

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This eBook has been designed to educate new users on the main elements of Qlik Cloud and how to utilize the platform specific to Healthcare use cases.

What can you learn from this eBook?

1

How to leverage Qlik Cloud for data lifecycles specific to Healthcare

2

Key elements to consider when designing solutions/ planning deployment(s)

3

How Qlik Cloud drives action from data

*Prior to loading any Protected Health Information (PHI) into Qlik Cloud, Qlik requires advanced encryption with Customer Managed Keys to be deployed and a Business Associate Agreement executed with between Qlik and the customer to preserve HIPAA requirements.

What's inside Qlik Cloud?

End-to-end empowerment across the analytics lifecycle with data integration, analytics, AI/ML, and automation – all consolidated into a single platform!

How do I move data into Qlik Cloud and other databases and zones?

Qlik Cloud® Data Integration builds the essential data fabric that accelerates the discovery and availability of analytics-ready data through automating real-time data pipelines, ETL/ELT, cataloging, and publishing.

- Real-time Data Movement
- Change Data Capture and Streaming
- Data Transformation
- Data Warehouse Automation
- Data Lake Creation
- Catalog and Lineage

How do I analyze data and share insights within Qlik Cloud?

Qlik Cloud Analytics delivers best-in-class analytics that help people of all skill levels to make data-driven decisions and take action. Engineered to augment human intuition with AI (artificial intelligence) and AutoML (automated machine learning) to deepen insight.

- Governed and Self-Service Analytics
- Prescriptive Analytics and ML
- Generative AI and NLG
- Collaboration and Storytelling
- Alerting and Reporting
- Embedded Analytics and APIs

How do I automate data analytics operations and business processes?

Native to Qlik Cloud, Qlik Application Automation® helps users easily create workflows that streamline and optimize data and analytics processes. Its visual approach lets you quickly drag-and-drop to assemble workflows with connectivity across market-leading SaaS applications, like Salesforce and ServiceNow, to trigger alerts and invoke downstream actions that reacts your business.

- No-code Development
- Business Process Automation
- Enhanced DevOps
- Data-Driven Actions
- Unify SaaS Silos
- 50+ connectors

Qlik Cloud

Data Integration

Data Movement & Streaming	Data Warehouse Automation	Data Transformation	Application Automation

Analytics

Visualization & Dashboards	Augmented Analytics & AutoML	Embedded Analytics	Alerting & Action

Foundational Services

Catalog & Lineage	Artificial Intelligence	Associative Engine
Orchestration	Governance & Security	Reporting & Collaboration

Developer & API

Hybrid Cloud

UNIVERSAL CONNECTIVITY

RDBMS Data Warehouse Data Lake SAP SaaS Apps Mainframe Stream Files
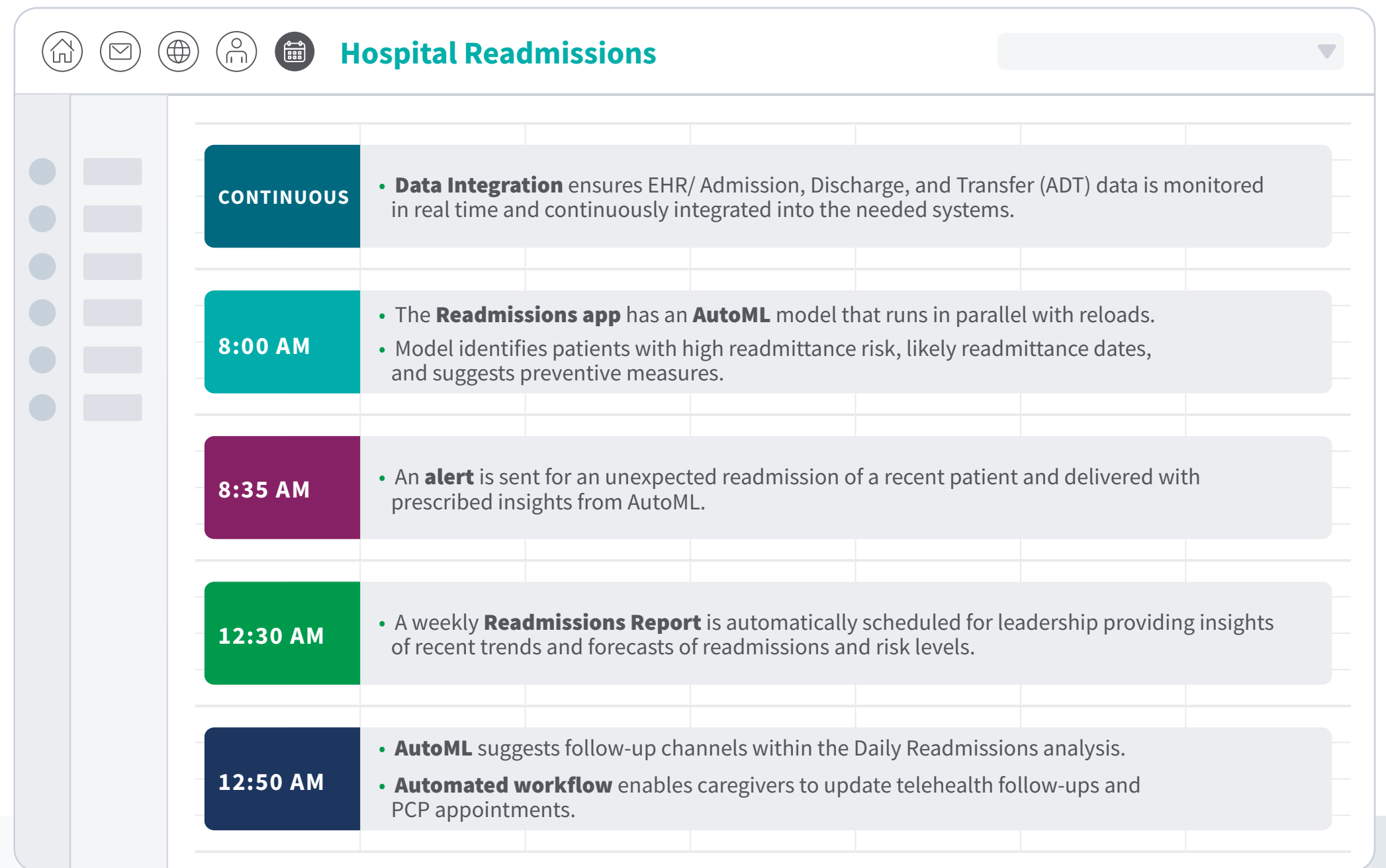
aws Microsoft Azure Google Cloud ON PREMISES

What does that look like?

Let's look at a day in the life of a Qlik Cloud user group

Qlik Cloud has been specifically designed to move in stride with your business and user groups. By combining data integration, analytics, and automation into a singular platform, our customers can reach a level of data utilization and value creation not possible before.

Let's look at an application around Hospital Readmissions and get a glimpse of how a team uses Qlik Cloud in fluidity to handle a outliers across multiple teams.

Hospital Readmissions

CONTINUOUS	• **Data Integration** ensures EHR/ Admission, Discharge, and Transfer (ADT) data is monitored in real time and continuously integrated into the needed systems.
8:00 AM	• The **Readmissions app** has an **AutoML** model that runs in parallel with reloads. • Model identifies patients with high readmittance risk, likely readmittance dates, and suggests preventive measures.
8:35 AM	• An **alert** is sent for an unexpected readmission of a recent patient and delivered with prescribed insights from AutoML.
12:30 AM	• A weekly **Readmissions Report** is automatically scheduled for leadership providing insights of recent trends and forecasts of readmissions and risk levels.
12:50 AM	• **AutoML** suggests follow-up channels within the Daily Readmissions analysis. • **Automated workflow** enables caregivers to update telehealth follow-ups and PCP appointments.

Business Outcomes

- ↑ Quality of Care
- ↑ Revenue Saved
- ↑ Agility
- ↓ Readmissions
- ↓ Cost-of-Care
- ↓ Risk

1. Security

HOW DO I SECURE MY DATA?

Security By Design at Qlik is an embedded function across the company and it is an integral part of how we develop technology. Qlik provides underlying security and governance controls that support US HIPAA regulatory requirements.

- Customer Managed Keys allows you to bring your own encryption keys and retain control of data encryption (mandatory for hosting PHI in Qlik Cloud). ▶

- Single Sign-On securely authenticates users with your existing, internal security user roles and groups. 🔗

- Field-level security and dynamic data reduction ensures access is seamless across different user groups (i.e. so only DRs can see patient data). ▶

Healthcare Example:

Leverage security roles from other systems like Epic across data sets – even at the field/column level.

2. Data Movement

HOW DO I MOVE DATA FROM SOURCES TO TARGETS?

Data integration in Qlik Cloud makes it simple for building data pipelines from raw sources to target systems.

- Manage enterprise data pipelines across the entire org and democratize your data. ▶

- Migrate different analytics elements, like existing QVDs, at the pace that fits your business.

- Utilize Change Data Capture in real time across sources for a reliable stream of data. 🔗

Healthcare Example:

Manage your enterprise data pipelines across multiple sources (e.g. EMR, Lab, and HR) and move into targeted data analytics environments.

3. Data Connectivity

HOW DO I SAFELY CONNECT TO DATA SOURCES FOR ANALYTICS?

Qlik Cloud comes with a large library of connectors across a variety of load techniques for both cloud and on-premises data sources.

- Analytics Engine – purpose-built for enhanced, intuitive data discovery, and primary ingestion technique. ▶

- Direct Query – enables apps to directly query databases for big data and near real-time use cases.

- Direct Access via Data Gateway provides encrypted connections to Qlik Cloud for securely accessing data residing behind your organization's firewall or VPC. ▶

Healthcare Example:

Many healthcare organizations use Epic to manage highly sensitive patient data. With Qlik Data Gateway, you can securely access that Epic data behind your firewall from Qlik Cloud!

4. Data Management

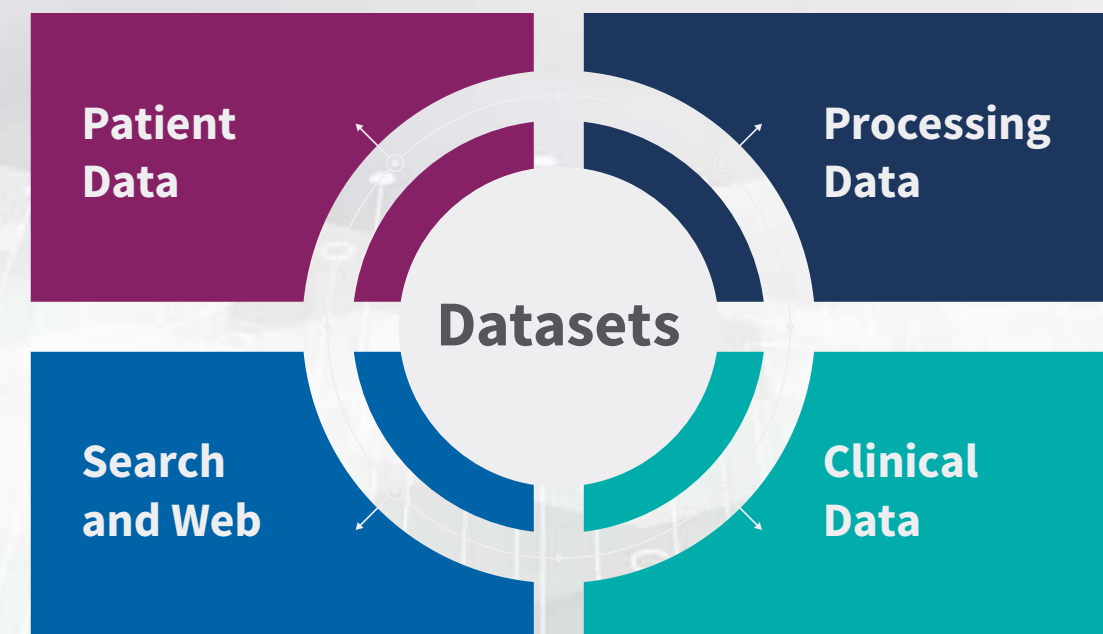## HOW DO I DEMOCRATIZE DATA SETS THAT ACT AS LIBRARIES FOR USERS WITH GOVERNANCE?

Qlik Catalog centralizes datasets from all diverse sources into a single, easy-to-access collection.

- Business Glossary enforces organizational definitions, increasing governance and reducing uncertainty. ▶

- Tagging offers data specific to PHI (Personal Health Information) data for transparency.

- Field Level Lineage illustrates data between sources and end-user apps. ▶

- Impact Analysis provides visibility into a data element's dependencies — which databases, apps, or files would be impacted if changed. ▶

- Data Usage offers metrics across content viewing and adoption levels across datasets and applications in the tenant.

Healthcare Example:

Centralize data silos into governed data libraries for users, ranging from developers, stewards and caregivers, to safely access and analyze data – ensuring all PHI data is managed appropriately.

Patient Data

Processing Data

Datasets

Search and Web

Clinical Data

5. Analytics

HOW DO I CREATE ACTIONABLE INSIGHTS WITH ANALYTICS APPLICATIONS?

Qlik Cloud Analytics empowers people of all skill levels to make data-driven decisions and take action in the moment when it matters most. ▶

- Insight Advisor, Qlik Cloud's built-in AI, supports users to ask questions and discover relevant answers with auto-generated visualizations and narrative insights. ▶

- Application building is easy, low-code, drag-and-drop dev with fully interactive visualizations.

- Easily deploy org-wide dashboards and rich self-service environments.

- Trigger actions and analysis at the object level like chart monitoring, subscriptions, and alerting. ▶

Healthcare Example:

Qlik Cloud can power analytics across the whole organization and enable all lines of business to become data-driven. From Finance and Accounting to Clinical and Lab to HR and Customer Service, Qlik Cloud has been designed to support the entire healthcare enterprise.

6. AutoML

HOW DO I USE MACHINE LEARNING FOR PRESCRIPTIVE ANALYTICS?

Qlik AutoML is no-code, automated machine learning designed for analytics users and teams. ▶

- Auto-generate and train machine learning models

- Create predictive analytics with explainability ▶

- Integrate AutoML results into decision planning

- Connect to other data science /ML tools

Healthcare Example:

- Appointment Cancellations
- Length of Stay by Diagnosis
- Readmittance
- Budget Planning for Finance

- Workforce Planning
- Employee Retention
- What-if Scenarios
- Revenue Forecasting

7. Alerts, Reporting, & Mobile

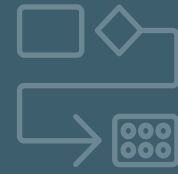**HOW DO I COMMUNICATE INSIGHTS AND ENABLE INTERNAL/EXTERNAL USERS?**

- Alerts for both organizational awareness and individual self-service needs. ▶

- Reporting delivers burst reporting with custom, multi-sheet reports for internal users and anyone in your ecosystem. ▶

- Mobile users can access insights no matter where – even offline! ▶

Healthcare Example:

- Communicating analytics results at their time and place
- Physician Performance
- Room Management
- Reload Failures
- Patient Care
- Reduce Risk
- LOS

8. Automation

HOW DO I ORCHESTRATE DATA OPS AND LEVERAGE AUTOMATIONS?

Application Automation offers a no-code, drag-and-drop approach to building automations with pre-built workflows and 50+ Connectors. **Examples of Ways to Use Automations:**

Data & Analytics Ops ▶

• Change Control and Tenant Management
• Back-Office Workflows and Onboarding

Communications and Event Triggering

• Alerting and Burst PDF Reporting ▶
• Multi-channel (Slack, Teams, and more)

Business Processes Integrations

• Submit ServiceNow or Jira Tickets
• Update Patient or Customer accounts ▶

Healthcare Example:

Automations enables healthcare professionals and business users to initiate actions directly from dashboards or autonomously through condition settings.

• Caregiver can create follow-up for a readmitted patient.

• A/R workflows automated on schedule or in the press of a button!

• Automate alerts to help manage chronic patients in your Population Health program.

9. Embedding Analytics

HOW DO I EMBED ANALYTICS INTO SYSTEMS LIKE EPIC, CERNER, OR SALESFORCE?

Easily integrate analytics assets and content into business applications, products, websites or portals – putting the analytics where decisions are made.

- Insert visualizations or sheets into systems like Epic, Cerner, or Salesforce. ▶

- Seamless user access across systems (ex. keep Epic roles)

Example Use Cases

- Public-facing Websites
  Example: FDA Adverse Event Dashboard 🔗

- Internal and External Portal 🔗

- Business Applications and Processes

Healthcare Example:

Embed visualizations right into your EMR/CRM/Population Health portal(s) so healthcare professionals can access and analyze patient data. This makes it easier to have real-time insights in order to deliver data-based quality care, accurate diagnosis, and personalized treatments.
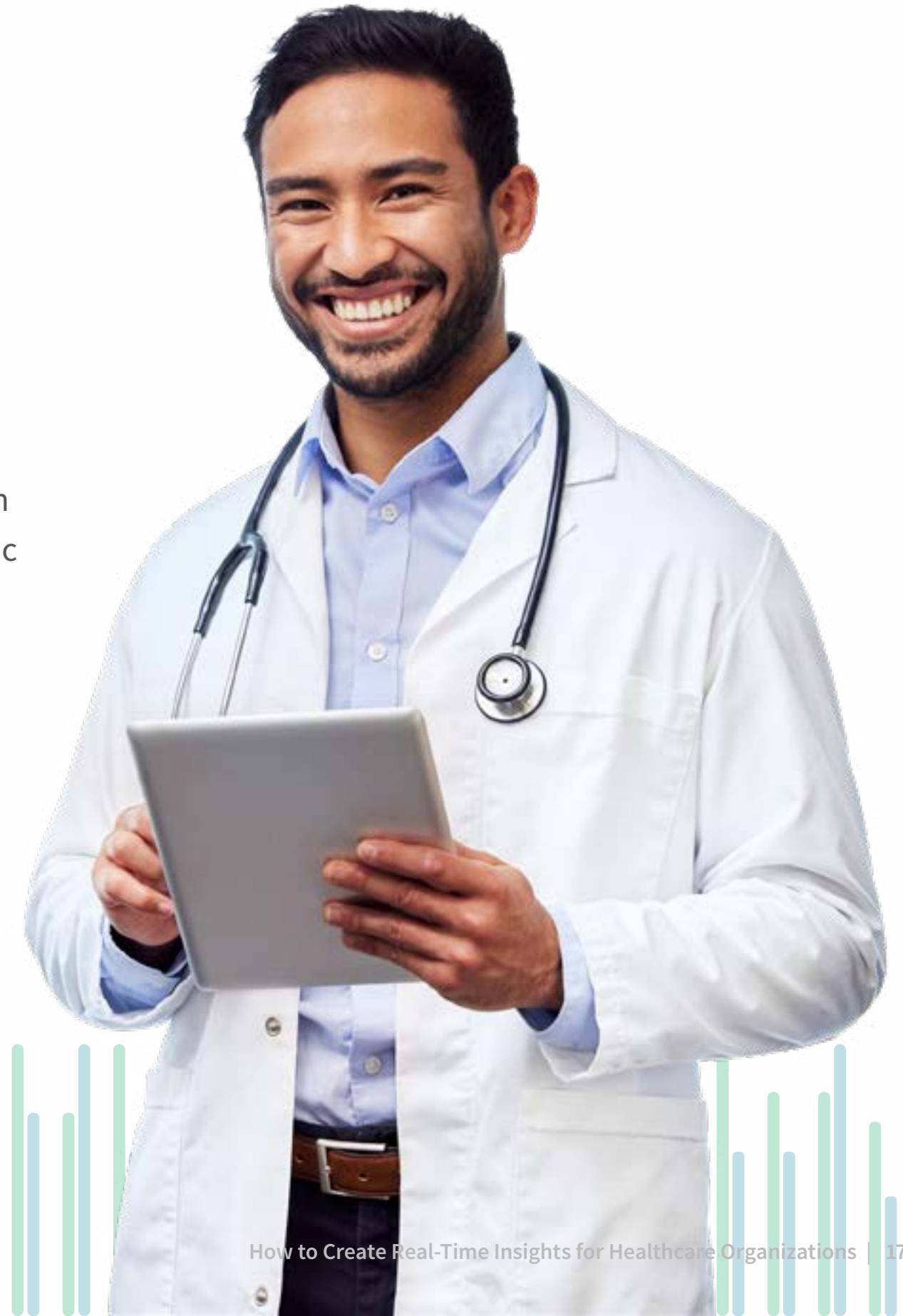
Summary

US healthcare organizations can now take full advantage of Qlik Cloud to enhance patient outcomes, improve service delivery, and close the gaps between data, insights, and action. Qlik Cloud delivers enterprise data integration, analytics, machine learning, and automation into a single, unified platform that enables users of all types. You can also feel comfortable knowing your sensitive data is safe in Qlik Cloud with enhanced encryption and security controls that support HIPAA compliance requirements.

Qlik is committed in empowering healthcare leaders across the globe to build new business capabilities centered around data. In this eBook, we presented key elements to consider when managing data lifecycles, planning a deployment, or designing a solution in Qlik Cloud specific to healthcare. Most importantly, this document should help illustrate how to create real-time insights in Qlik Cloud that truly drive action from your data.

Ready to see for yourself?

Explore Qlik Sense

Try Qlik Sense Free

Qlik's vision is a data-literate world, where everyone can use data and analytics to improve decision making and solve their most challenging problems. Qlik offers real-time data integration and analytics solutions, powered by Qlik Cloud, to close the gaps between data, insights, and action. By transforming data into Active Intelligence, businesses can drive better decisions, improve revenue and profitability, and optimize customer relationships. Qlik serves more than 38,000 active customers in over 100 countries.