

ANALYTICS

# Appalachian Regional Healthcare

Machine Learning with Qlik AutoML™ on Qlik Cloud® Drives  
Rapid Reduction of Appointment Cancellations



## CUSTOMER STORY



“We realize that to make headway in serving a disparate population, we have to make the best use of data that we can.”

Brent Styer, Chief Data Scientist at Appalachian Regional Healthcare (ARH)

### Making MORE Difference with Qlik AutoML on Qlik Cloud

With a mission of, “improving health and promoting the well-being of all the people in Central Appalachia in partnership with our communities,” ARH has evolved into an integrated healthcare delivery system tackling the multitude of health and economic problems facing this region.

The combination of poverty and health challenges are tremendous deterrents for many Appalachian people seeking preventive healthcare. Among those who do seek care, appointment cancellations and no-shows are common outcomes.

The business challenge for Qlik AutoML on Qlik Cloud and Appalachian Regional Healthcare is to recognize at-risk patients and to encourage them to keep appointments. The challenge would require navigating the small margins and areas where many residents do not carry traditional health insurance.

### Navigating Challenges in Appalachia through Data

There are many economic and health challenges faced by Appalachian Regional Healthcare’s rural population. Unemployment rates are substantially higher than state and national averages, and approximately one third of these areas’ residents live below the national poverty level. The region is fraught with some of the nation’s highest chronic health prevalence rates for lung cancer, diabetes, and heart disease; an aging population; escalating opioid epidemic; lack of knowledge regarding basic healthcare needs and availability of services; low literacy levels, and limited access to care.

The impact of regional poverty can be further amplified by missed appointments, and ultimately reducing margins for providers in the area. Medicare and Medicaid are ARH’s primary payors; whereas, in some wealthier regions many or even most citizens carry traditional health insurance.

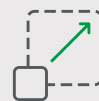
### About Appalachian Regional Healthcare

Appalachian Regional Healthcare (ARH) is a not-for-profit healthcare system committed to improving the health and well-being of residents in the Appalachian regions of eastern Kentucky and southern West Virginia. Its origins date back to the 1950s as a part of the Miners Memorial Hospital Association. Today, the ARH system has grown to 13 hospitals, 87 clinics, retail pharmacies, home health agencies and home durable medical equipment stores.

### Appalachian Regional Healthcare improves three core value pillars through Qlik AutoML:



People-first approach



Scalable, affordable predictive analytics



Intuitive analytics that integrate into an organization-wide routine

Utilizing machine learning, Appalachian Regional Healthcare is able to determine which patients are most at-risk for missing or cancelling their appointments. Data is used to analyze a variety of barriers such as transportation, distance or local weather. With this information, nurses or support staff are able to reach out to the highest-risk patients with reminders and reassurances. In so doing, ARH is able to improve the health of the patients under its care; promote well-being, and evolve the local paradigm into one that is friendlier toward and trusting of modern medicine. These opportunities allow ARH to provide more effective patient communication. Ultimately, ARH recoups revenue that would have otherwise been lost to abandoned appointments.

As a not-for-profit organization, the ability to make more efficient and cost-effective use of ARH time and talent means greater opportunities for initiatives that further benefit the health and wellbeing of its local residents.

“[The data] empowers them to make a change. But [Qlik AutoML] points them to where exactly that change needs to take place.”

### Regional Talent Meets Educational Opportunities

Machine learning and predictive analytics are no longer confined to Data Scientists with specialized university degrees. User-friendly, automated machine learning tools like Qlik AutoML put the power of predictive analytics in the hands of your business analysts and analytics teams, allowing them to apply these techniques to a wide variety of use cases. In addition, online education is tailored to specifically meet organizational needs and then quickly deploy analytics teams to effectively use the tools.

**What ARH loves about Qlik AutoML**

- Expert, Supportive Onboarding**  
“The strategy deployed by Qlik to engage ARH from the start and to lead the project in a way ensured ARH understood it, that was key. That is what made this a must-have for us.”
- Ease of Use**  
“The ability to spin up and use the product with virtually no experience with ML or AI tools in a short period of time.”
- Affordable Cost**  
“[Qlik AutoML has a] reasonable entry point. We wouldn’t be having this conversation if it had been \$200k.”

The ARH data science team consists of mixed skill sets from finance/accounting decision support to SQL developers. Prior to Qlik AutoML on Qlik Cloud, no one had much experience in the newer Artificial Intelligence, ML, or Predictive Analytics space.

Through the “grow-your-own-talent” approach, ARH realized significant opportunity because of the skill set-based training and certifications. **Case and point: by supporting someone’s education-at-work, someone with no prior Machine Learning or Artificial Intelligence experience at all was able to produce results within a couple months.**

## On The Fast Track

ARH’s choice between Qlik AutoML on Qlik Cloud or other ML solutions was based on price point. The entry point was low enough that they could give it a shot without a big pinch to its small budget.

ARH was able to show value and build momentum with Qlik AutoML. Key stakeholders’ buy-in and support staff engagement lead to excitement.

With help from Qlik®, ARH began to see the advantages of the onboarding process and weekly or bi-weekly meetings. The ARH team gained insight and advice from data experts as they began to maneuver through the stages by the small, but very experienced, team from Qlik. Above all, Qlik took the time to fully understand the organizational needs of ARH.

**Consistently over a three-month period, ARH was able to reduce cancellation and no-show rates at their pilot clinic significantly. Over the span of two years this translated into gains in a group of 15 clinics to an estimated \$6m and most importantly, ARH was convinced of valued within two months.** ARH will expand this strategy to other clinics in its network. Friendly, competitive incentives will be offered to boost engagement.

“If you’re developing from scratch, [...] you need a workforce very well-versed in tech. Qlik AutoML gets you in the game sooner and gives you the building blocks to create something bigger, faster.”

Brent Styer, Chief Data Scientist at Appalachian Regional Healthcare (ARH)



### About Qlik®

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.

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