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COMMONWEALTH  
PRIMARY CARE ACO



A White Paper for  
Healthcare Providers

# Using Actionable Insights Management™ To Improve Collaboration and Outcomes in Healthcare



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## Executive Summary

Coordinated care is the basis for any accountable care organization (ACO). Commonwealth ACO is a group of primary care doctors who came together voluntarily to give coordinated high-quality care to their Medicare patients. The goal of coordinated care is to ensure that patients get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.

ACO success requires current and relevant data access. Data in healthcare is often siloed, challenging to aggregate, and difficult to act on. In order to be effective in this new healthcare landscape, Sonora Quest Laboratories (SQL) and Commonwealth Primary Care ACO (Commonwealth) worked together to analyze information from their respective patient databases in order to assist Commonwealth in serving their patients.

This paper demonstrates how the strategic partnership between Commonwealth and SQL resulted in actionable patient data, improved communications with providers, and also led to the development of data-focused care models utilizing SQL's Actionable Insights Management™ (AIM™) analytics platform.



## Commonwealth Primary Care Accountable Care Organization

Established in 2012, Commonwealth is a collaborative partnership of independent physicians operating in the Phoenix metro area and throughout

Arizona. Commonwealth is one of the nation's few physician founded, owned, operated, and governed ACOs participating in the Medicare Shared Savings Program (MSSP). The purpose of an ACO is to afford its participants with the opportunity to develop the competencies and capabilities needed to effectively manage quality and cost.

Commonwealth evolved from the mutual interest of participants to promote thorough, quality healthcare and engage patients in coordinated care. The participants of the ACO consist of more than 45 independent primary care offices with more than 150 total primary care providers who seek to enhance the quality of healthcare while decreasing costs and improving patient outcomes for Medicare patients in Arizona. To do this, Commonwealth is working to improve the quality of care patients receive by expanding usefulness of data, coordinating care delivery, and enhancing communications among its healthcare providers.

## Sonora Quest Laboratories

As part of the nation's largest integrated laboratory system, SQL is a joint venture between Banner Health and Quest Diagnostics. Serving more than 23,000 patients every day, they are the market leader for diagnostic laboratory services in Arizona.

SQL is also at the forefront of providing significant value beyond traditional lab test results through the analysis, interpretation, and visualization of clinical laboratory data. Analytics and information technology teams successfully built a proprietary suite of population health analytics, AIM, which assists its clients in the oversight of population health management and potential risk factors.

Integrating laboratory data with other clinical, operational, and financial information enhances the efficiency and quality of services offered to patients. The amount of aggregated data accessible to AIM as well as expertise in laboratory diagnostics uniquely positions SQL in the healthcare market.

**70 percent** of all electronic healthcare information consists of clinical laboratory data.<sup>1</sup>

## Longitudinal Patient Record Challenges

One of the biggest challenges facing coordinated care today are the silos in the healthcare delivery system that impede the creation of longitudinal patient records.<sup>2</sup> For example, when Commonwealth was established, primary care providers who were part of the ACO all had individual patient health record systems. Disparate systems and limited data from specialty providers meant that Commonwealth providers were not able to see longitudinal patient records. They only had patient records that were kept in their own system. To solve for this, SQL and Commonwealth partnered together by using near real-time and historical laboratory data, (provided through AIM) to aggregate valuable information to providers, ACOs and other healthcare organizations.

***The American healthcare system is now, more than ever, placing value on quality patient care and cost reduction.<sup>3</sup>***

## Improving Patient Outcomes with Actionable Insights Management

In September 2014, Congress passed the Improving Medicare and Post-Acute Transformation Act of 2014 (the IMPACT Act). The IMPACT Act requires the submission of standardized data by long-term care hospitals, skilled nursing facilities, home health agencies, and inpatient rehabilitation facilities with regard to quality measures and patient assessment instrument categories.<sup>4</sup> One year later, the Final Rule Provisions for Accountable Care Organizations under the MSSP were put into place. These provisions further reward ACOs that lower their costs while still delivering a high quality of care.<sup>5</sup>

In addition to working toward longitudinal patient records, Commonwealth and SQL teamed up to meet these new standards by tracking specific quantitative measures not easily found in claims or billing data. The partnership focused on aggregating near real-time data to assist with achieving higher scores for laboratory data-related quality measures and closing gaps in care through the AIM analytics platform.

The following areas are the focus of this report:

- Strategic partnership development
- Data delivery
- Discoveries and benefits
  - o Quantitative measures
  - o Ancillary benefits
  - o Undiagnosed and under-diagnosed patients

## Patient Data Challenges

### Disparate data

When identifying results for a specific patient or population prior to AIM, Commonwealth had difficulty coordinating patient history with the many different healthcare providers and all subsequent data sources linked to an individual patient. These limitations created a less than optimal profile of a patient's true medical history. Access to a comprehensive view of an individual patient's health is instrumental to improving quality measures and offering better care.

Prior to AIM implementation, SQL would provide data to Commonwealth on an ad-hoc basis by reporting results for a specific patient attribution or searching for specific laboratory result values. This process, while yielding significant results, was time consuming and inefficient.

### Lag in claims data

Utilizing claims data for quality metrics reporting was also challenging. Commonwealth had limited success extracting patient results to a data warehouse for analysis or Group Practice Reporting Option (GPRO) reporting. For example, basic testing could be extracted for compliance reporting; however, it was unlikely that a specific quantitative result could be obtained. Commonwealth noted that the average lookup for patient data was 20 minutes per audit. Furthermore, the lag in claims data accessibility was often three to six months from the date of service.

## Collaborative Process

Establishing a formalized and mutually beneficial process for data sharing, analytics development, and feedback were critical to implement actionable information for Commonwealth. SQL developed several analytics tools for population health and

chronic disease management. Commonwealth was already successful in reporting quality measure data at an enterprise level, but needed to gain deeper understanding and insights into individual patients within the population.

A collaborative process of engagement was developed among Commonwealth and SQL, including key stakeholders across cross-functional areas. Some key improvements noted during the process were the ability to analyze performance at a provider and practice level, development of care plans for patients based on laboratory result data, and best practices for utilization management to ensure the right tests are ordered at the right time.

## Actionable Insights Management Data Delivery

SQL launched AIM in 2016, after identifying an increased need to provide data and custom reports to its clients. AIM tackles large quantities of data using an algorithmic process across disparate systems allowing SQL to create and support a longitudinal health record for each patient. This information was critically important to Commonwealth because data can be aggregated regardless of provider, client, or payer. AIM located an average of 41 percent of additional orders based on the Commonwealth population described below:

Table 1. Additional orders found using EMPI. Commonwealth, 2017

Payor	Orders within ACO	Additional Orders Found	Total # of Orders	% of Additional Orders Found
Payor 1	2,229	1,540	3,769	40.86%
Payor 2	13,812	9,153	22,965	39.86%
Payor 3	5,353	4,334	9,687	44.74%



Information within the dashboards can be easily shared with individual practices and providers within the ACO, assessed by the Care Management Team, and utilized for Quality Management reporting through GPRO.

Figure 1. AIM Diabetes Executive Dashboard. © 2018 by Sonora Quest Laboratories.

## Actionable Insights Management Methodology

AIM requires verification of patient eligibility on a regular basis to run the analytics tool. Using the described patient identification algorithms, a search across databases, time frames, ordering providers, facilities, and payers is completed to identify all relevant result values. Data is then aggregated in AIM for disease state monitoring, provider performance, and identification of at-risk patients within patient populations. AIM also allows for patient identification and evaluation to extend beyond an individual to the population health level. The SQL Cloud analytics server delivers near real-time data to Commonwealth, including a series of dynamic visualizations focused on chronic condition management, analysis of undiagnosed patients, and historical result trends. The ability to display meta-data analysis gives healthcare stakeholders a holistic understanding of patient health metrics throughout an organization.

***“AIM provides a powerful, comprehensive, and enabling platform that leverages patient-centric information and the application of clinical guidelines to transform data into useful and actionable intelligence.”***  
*~ Sonny Varadan, Chief Information Officer, SQL*

## Improved Quality Measures

The partnership between SQL and Commonwealth shows that integration and analysis of clinical laboratory data through AIM allows for improved utilization of diagnostic testing results as well as an increased alignment of clinical priorities across the ACO. Using AIM, Commonwealth and its providers are able to identify:

- Additional data elements for quality measure consideration using SQL EMPI (Enterprise Master Patient Index).

- Warning signs in the data for additional clinical assessment by Commonwealth Care Management teams.
- Provider performance by disease state benchmarks.

## Quality measures

AIM has the ability to focus exclusively on those patients identified for quality measure reporting. SQL developed a process to proactively monitor quality metrics throughout the plan year. AIM was used to analyze patients who had a laboratory test performed that met quality measure requirements as set by each specified payer. Preventing the need for individual EMR searches, the population was analyzed during the annual quality audit process.

AIM afforded Commonwealth a significantly expanded view to analyze the individual performance metrics and opportunities to close gaps in care within the measurement year. In cases where Commonwealth was not able to find a match in the primary care physician’s EMR, AIM provided the necessary clinical data points to update the patient record in the healthcare provider’s EMR, and therefore, satisfy the quality requirement.

## Risk analysis

Finding patients for screening even before the payer identifies them in a particular diabetes risk group, provides substantial opportunity to improve patient outcomes. From one consolidated report, the analysis allowed Commonwealth Care Management teams to 1) *monitor* a large population of patients with chronic conditions and 2) *intervene* for further action in a timely manner.

## Ancillary Benefits

### Continuity of patient data

AIM allowed Commonwealth to take a robust look at preceding data as well as help them better manage their patients. ACOs have limited access to claims data and can only view results that are attributed to a specific payer. Since the source of the data is SQL, AIM carries an unprecedented historical view of the patient not dependent upon any change in insurance. In the first year of using AIM, Commonwealth significantly increased healthcare providers’ insight into patient data points:

Table 2. Lab Data Points Available through AIM 2017-2018. Commonwealth, 2018.

Lab Data Points Available through AIM			
Lab Order Records by ACO Payor	As of May 2017 All Prior Data Points	As of April 2018	1 Yr Increase in Data Points
Payor 1	4,818	8,186	70%
Payor 2	30,042	53,012	76%
Payor 3	12,452	21,911	76%

***“AIM not only provides complete visibility into lab results, but more importantly, additional detail on patients supporting better coordination of care irrespectively of time or the ordering provider.”***  
 ~ Lance Donkerbrook, Chief Operating Officer, Commonwealth

## Identification of additional providers and diagnosis

When reviewing the lab results for continuity of care, Commonwealth noted other conditions and visits to physicians that were not previously indicated in patient medical history. By incorporating AIM into care management, patients at risk for conditions such as diabetes were identified, even when the patient had not been previously diagnosed within or outside of the ACO. Through the report of the fecal occult blood test (FOBT), AIM was able to include the lab results from specialists’ offices, something that Commonwealth could not capture. Seeing these results from one simple report allowed providers’ insights from care at specialists’ offices that translated to their individual patients. Results assisted the primary care provider with actionable information in order to follow up with the patient and others providing care.

When reviewing the lab results for continuity of care, Commonwealth noted other conditions and visits to physicians that were not previously indicated in patient’s medical history due to providers using different ICD-10 codes in patient charts. By incorporating AIM into care management, patients at risk for conditions such as diabetes were identified, even when the patient had not been previously diagnosed within or outside of the ACO. This means

that providers were able to identify the quality metric for a diabetic patient by confirming diagnosis of diabetes and then confirming if their A1C level was in or out of range. Commonwealth used A1C results to assist in the identification of patients with potential co-morbidities, including obesity or heart failure. Results assisted the primary care provider with actionable information in order to follow up with the patient and others providing care.

## Identification of additional testing performed or needed

At the onset of using AIM, Commonwealth unexpectedly found results for additional relevant quality metrics. For example, when searching for a patient's hemoglobin A1C result, data was found indicating that a colorectal screen (FIT [fecal immunochemical test] or FOBT [fecal occult blood test]) had been performed. With this in mind, Commonwealth began using AIM to seek additional lab testing results. Even when the tests do not match to a specific quality metric, they provide insights to the Commonwealth Care Management team for the patient's overall well-being and help decrease ordering duplicative tests.

## Care management and coordination

By using AIM, Commonwealth's care management team has access to an additional data source that thoroughly identifies and assesses patients for potential enrollment into chronic care management programs. Prior to the availability of diagnosis and test results presented by AIM, the ability to identify multiple conditions through the claims data sets was limited.

The AIM analytics platform includes algorithms based on current clinical guidelines to determine if patients are at risk for developing chronic conditions. Using the *Kidney Disease: Improving Global Outcomes (KDIGO) Clinical Practice Guidelines*<sup>3</sup>, AIM analyzes the available data elements for glomerular filtration rate and microalbumin test results to predict prognosis of chronic kidney disease (CKD) among the patient population.

		Persistent Albuminuria Categories					
		Description and Range					
		A1	A2	A3			
		Normal to mildly increased	Moderately increased	Severely increased			
		<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol			
GFR Categories (mL/min/1.73 m <sup>2</sup> )	Description and Range	G1	Normal or high	≥90			
		G2	Mildly decreased	60-89			
		G3a	Mildly to moderately decreased	45-59			
		G3b	Moderately to severely decreased	30-44			
		G4	Severely decreased	15-29			
		G5	Kidney failure	<15			

Figure 2. Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012.

Patient lists, including all available and pertinent laboratory data, were further refined for clinical assessment by the Commonwealth Care Management team to verify CKD diagnosis. Undiagnosed patients with medium to high risk were then contacted to follow up with their healthcare provider to obtain a referral to a nephrologist. The advanced algorithmic capabilities, specificity, and near real-time results offered by AIM provided immediate action for Commonwealth's care management team, as opposed to reacting to outdated claims data.

## Physician score cards

AIM also provides Commonwealth with a comprehensive look at how well its healthcare providers are managing their patients. Ordering providers are held accountable for their performance through balanced scorecards. As noted by a recent report from Tableau, *Five Trends in Healthcare Analytics for 2018*, self-service visual dashboards are increasing transparency and collaboration across healthcare organizations and stakeholders.<sup>6</sup> Such scorecards provide a detailed look at the quantity of patients being managed, quantity of orders and overall patient status. The scorecards are useful to identify areas of improvement, spurring healthy competition among providers, and tracking clinical outcomes.

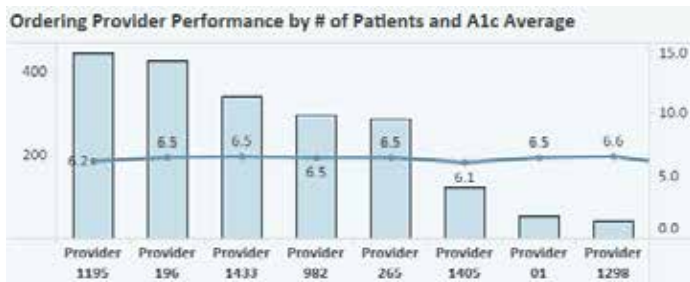


Figure 3. AIM Physician Scorecards. © 2018 by Sonora Quest Laboratories.

## CASE STUDY

78 year-old, diabetic female hospitalized for episodes of hyperglycemia. Seen post-discharge in the Commonwealth Chronic Care Management program, the Chronic Care Coordinator (CCC) utilized AIM during patient assessment. Results indicated that two separate endocrinologists ordered lab work for patient. AIM guided CCC in identifying ordering physicians and time frames for requested lab orders. In reviewing case with patient and PCP, hyperglycemic episodes were due to over-prescription of diabetic medication. CCC guided patient through process of choosing one endocrinologist for follow up. As a result, the endocrinologist, PCP, and pharmacy were able to complete a thorough medication reconciliation, eliminating multiple prescribers of her diabetic medications. CCC followed up with patient to ensure she was taking medications as prescribed. AIM facilitation Commonwealth Care Management team with necessary clinical laboratory data for determination of appropriate test ordering and improvement of patient's health.

## Conclusion

There is a critical need for organizations to consider trends in laboratory data when managing their patients. Through AIM, Commonwealth was able to look at multiple dimensions of a patient's care, rather than a single data point in order to provide a more longitudinal approach to each individual patient care plan. The strategic partnership between Commonwealth and SQL allowed for actionable insights through lab data that lead to providing better quality care and outcomes for patients. Within the first year of using AIM, SQL increased the volume and value of clinical data accessible to Commonwealth and assisted in the reduction of lag time associated with data access, thereby improving various metrics and clinical initiatives for the ACO.

Additional work is in development to further integrate data sources for Commonwealth, including claims data, a critical component used in quality measures for ACOs. The updates will provide the ability to aggregate near real-time SQL data with Commonwealth's population health management platforms. The enhancements will allow for improved delivery of relevant clinical data to Commonwealth Care Management and providers within the ACO.

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