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## BUSINESS SUCCESS STORY

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# Boosting Mammography Quality

How a large Alberta diagnostic imaging practice used Volpara®Analytics™ software to improve mammography quality across its business  
2018

**Julian Marshall**  
Chief Knowledge Officer

# Boosting Mammography Quality

## Introduction

**When Mayfair Diagnostics decided to implement Volpara Analytics in its Calgary mammography facilities, they had a vision for how analytics would drive improvement. What they didn't know was the broad impact the software would have, or how quickly they would start to see benefits.**

Each of Mayfair's 10 breast imaging facilities has one digital mammography machine that is used for both screening and diagnostic practice. Mayfair typically schedules between 20 and 40 patients per day at each location, but the actual total depends on demand and staff availability (many of Mayfair's techs work in more than one facility on a regular basis).

## Mark Sevcik

### Vice President, Infrastructure

Several years ago, Mark Sevcik was introduced to the concept of breast imaging analytics. He quickly realized that he could use Volpara Analytics to lead Mayfair Diagnostics into the world of mammographic quality using big data analytics.

Since the adoption of Volpara Analytics, Mayfair has realized multiple benefits across their network, from improvement in very specific mammography positioning metrics to analysis of referring physician trends by breast density category. "Many of these benefits would not have been possible without the automation provided by Volpara Analytics," Mark recounts.

Mark saw the software's focus on technologist performance as a means to further advance Mayfair as the leading mammography provider in the region. By purchasing Volpara Analytics, he enabled his program managers, Katie Kaminski and Michelle Benoit, to drive improvements in performance and mammographic image quality.

## Business Outreach and Growth

That internal focus on quality extends to referring physician outreach. "The Business Development Team at Mayfair is now delivering the news of our success with Volpara Analytics to our referring physician base, and that helps cement our position as an innovator and premier provider in our market, driving more patients to our facilities," Mark explains.

Mark adds: "One type of data that we get from Volpara Analytics relates to breast density in our population. We have used that data to justify installation of additional automated breast ultrasound systems (ABUS), growing our supplemental screening program. Analytics helps us plan where to deploy this capability by analyzing which of our facilities have the largest population of high-breast density patients."

## Shamir Patel, MD

### Executive Chair

The drive to establish Mayfair Diagnostics as the preeminent quality imaging practice in Alberta starts at the very top of the organization. Dr. Patel shares that "the addition of Volpara Analytics supports our ability to provide the highest-quality breast screening available in Alberta by improving both the quality and efficiency of our exams." He also points out that "not only does this ensure we can detect breast cancer as early as possible, it also offers peace of mind to the thousands of women we serve."

## Quality Control in Alberta

The Alberta Society of Radiologists (ASR) mandates that technologists self-audit 10 of their cases, twice per year, scoring each case on a range of factors, including nipple in profile, posterior nipple line (PNL) lengths, no skin folds, and medial tissue present on craniocaudal (CC) views.



Mayfair Diagnostics is a busy, multi-modality imaging practice. Offering mammography services to women throughout the system, the team at Mayfair prides itself in “improving people’s lives, one focused image and one caring compassionate human touch at a time.”

## Facts & Figures

10

Breast imaging locations in Calgary, Alberta, Canada

54,000

Mammograms annually

44

Technologists



Centralized quality control

10

FFDM systems offering screening and diagnostic imaging

2017

Volpara Analytics in use since February 2017

## Mayfair Diagnostics Locations



## Katie Kaminski

### Mammography Coordinator

Katie is responsible for managing technologist services at Mayfair's 10 mammography facilities. Her responsibilities include training a staff of 44 technologists and reviewing their performance. She also spends four days each week conducting mammograms herself.

### Manual Performance Audits

ASR sets local standards for mammography quality control, which drives part of Katie's workload. The self-assessments from each Mayfair technologist are sent to Katie, who reviews each case and repeats the scoring. Katie compares the technologist's scores to her own scores and looks for patterns that help her identify ways in which technologists can strengthen their skills.

Katie witnesses the shortcomings of this type of auditing:

- As six months can pass between imaging and audit, the circumstances at the time of imaging are likely to be forgotten
- The technologists do not get immediate feedback on their performance
- The technologists must be self-critical

### Performance Audits with Volpara Analytics

Katie anticipates that Mayfair's use of Volpara Analytics will lead to improvements in the current self-assessment process. "The fact that a tech can log in to Volpara Analytics and so easily see how she can improve her skills and image quality means that she can proactively focus on getting even better," says Katie. "And Analytics doesn't have the problem of sampling just a few cases. Every single image is evaluated."

According to Katie, Volpara Analytics often confirms what she already knew from the technologist self-assessments. However, she believes that Volpara Analytics is a better method for maintaining quality when compared to a periodic, manual quality audit.

"We are working with ASR to make Volpara Analytics an alternative to self-audit," says Katie. "We think Analytics provides a better process for quality assessment and improvement, and it dramatically reduces my workload."

### Employee Reviews with Volpara Analytics

Katie loves the fact that using Volpara Analytics to monitor performance means that the technologists know it isn't just Katie and Quality Assurance reviewing their performance.

Katie lists the advantages that Volpara Analytics provides her team members:

- Objective evidence of performance
- Detailed analysis of many basic image positioning skills, including examples
- Concrete suggestions on correcting issues
- Compression analysis not available by any other method

"Essentially, Volpara Analytics puts our technologists in control of their own performance, which is something they have really embraced," says Katie.

## Team Engagement

At first, Katie used the analytical power of the Lead Technologist role in Volpara Analytics to monitor technologist performance. Katie quickly had concrete, objective evidence that several technologists were outside the “acceptable range”. She used the data to constructively educate the technologists and improve their performance to comply with Mayfair’s standards.

A few months later, Katie assigned Technologist roles in Volpara Analytics to each team member, allowing them to log in and see their own performance. While most technologists log in every day to look at their overall performance scores, a few technologists log in several times a day—to really try to stay on top of things.

Katie sees this as very positive. “It is great to see the technologists so engaged in their own quality of work,” says Katie. “Our team at Mayfair really cares about our patients; every one of us is trying to do a great job, and Volpara Analytics lets us stay focused on delivering quality mammography services.”

Katie now reviews performance with each technologist monthly, rather than only during a biannual assessment, and focuses on specific areas for improvement. With this change, Katie suggests, the emails to her technologists don’t come across as negative, but rather as a simple explanation of objective evidence that makes staff management much simpler. In addition, Katie sends out quarterly emails to the whole team, summarizing the changes in performance.

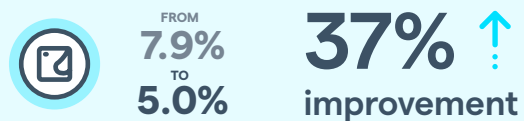
## Mayfair by the Numbers\*

### Searching for Cases



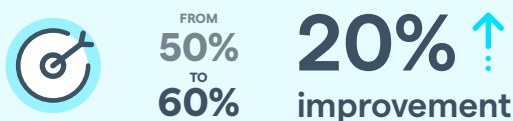
Jan.–June 2017 compared to July–Dec. 2017

### Inadequate Images



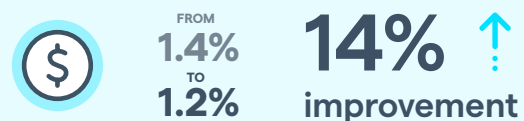
Jan.–June 2017 compared to July–Dec. 2017

### Target Compression



Jan.–June 2017 compared to July–Dec. 2017

### Technical Recalls



Jan.–June 2017 compared to July–Dec. 2017

\* Measures were calculated using PGMI prior to the May 2018 adoption of the new Volpara® TruPGMI™ method of evaluating the clinical image quality of mammograms. Actual percentage improvement may vary with the new standard.

## Personal Experience Benefits

Katie has one key advantage over other lead technologists because she still images patients four days a week: she can also log in and view her own work. That gives her a deep and personal understanding of how her technologists may feel about Volpara Analytics.

"There is something comforting about having the quality assessed on every mammogram I take," Katie adds. "It gives me constant and very specific reminders about what I can do to improve and provides me with a rewarding feeling when I'm doing a good job. I can't imagine doing mammography without Volpara Analytics."

## Michelle Benoit

### Infrastructure Specialist

Michelle works very closely with Katie to ensure that the technologists at Mayfair Diagnostics are doing their best work every day. Like Katie, Michelle has taken mammograms for many years, a richness of experience that lets her help Mayfair technologists really improve.

## Accreditation

One of Michelle's primary responsibilities is to ensure that Mayfair's 10 mammography systems are properly accredited via the triennial accreditation process required by the Canadian Association of Radiologists. As part of that process, two cases (one dense and one fatty) must be submitted for review by specially trained, expert radiologist reviewers.

In the past, Michelle would spend six to eight hours per machine, scouring their PACS for images while considering positioning and compression, and evaluating breast density. But now, much of that effort is automated by Volpara Analytics. Michelle explains: "Analytics has significantly reduced the time I spend looking for cases. I simply set the date range that I'm looking for, filter by the machine, by perfect or good positioning, and then by breast density category. The software then gives me a short list of cases that I can review to look for the best examples of our work."

## Technologist Benchmarks

With Volpara Analytics providing a wealth of metrics, Michelle and Katie decided to first focus their team on two important performance factors for finding good images for accreditation: inframammary fold (IMF) and PNL length. By targeting these specific areas, Michelle and Katie were able to demonstrate and track measurable improvement over time.

## Real, Positive Change

The Mayfair team has already used Volpara Analytics to significantly improve performance in breast compression, which is important since it correlates both to patient experience (too much compression can cause discomfort) and clinical performance (too much or too little compression can reduce the cancer detection rate).

Not every image will be perfect, as some patients are very difficult to position because of body habitus or other circumstances. Yet, Mayfair has also seen a marked reduction in the percentage of images deemed inadequate by Volpara Analytics. That is a very positive change.

## Proof of Improvement: Saving Money

The focus on quality improvement has also had financial benefits for Mayfair; they measured a reduction in the number of technical recalls, which directly influences cost savings in rescheduling patients, the use of x-ray equipment time, and technologist and radiologist labor.

### Contact

info@volparahealth.com  
support@volparahealth.com  
volparahealth.com

US +1 855 607 0478  
AUS 1800 370 623  
NZ 0800 444 148

Europe +44 203 051 1029  
Global +64 4 499 6029

### Connect

 @VolparaHealth

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