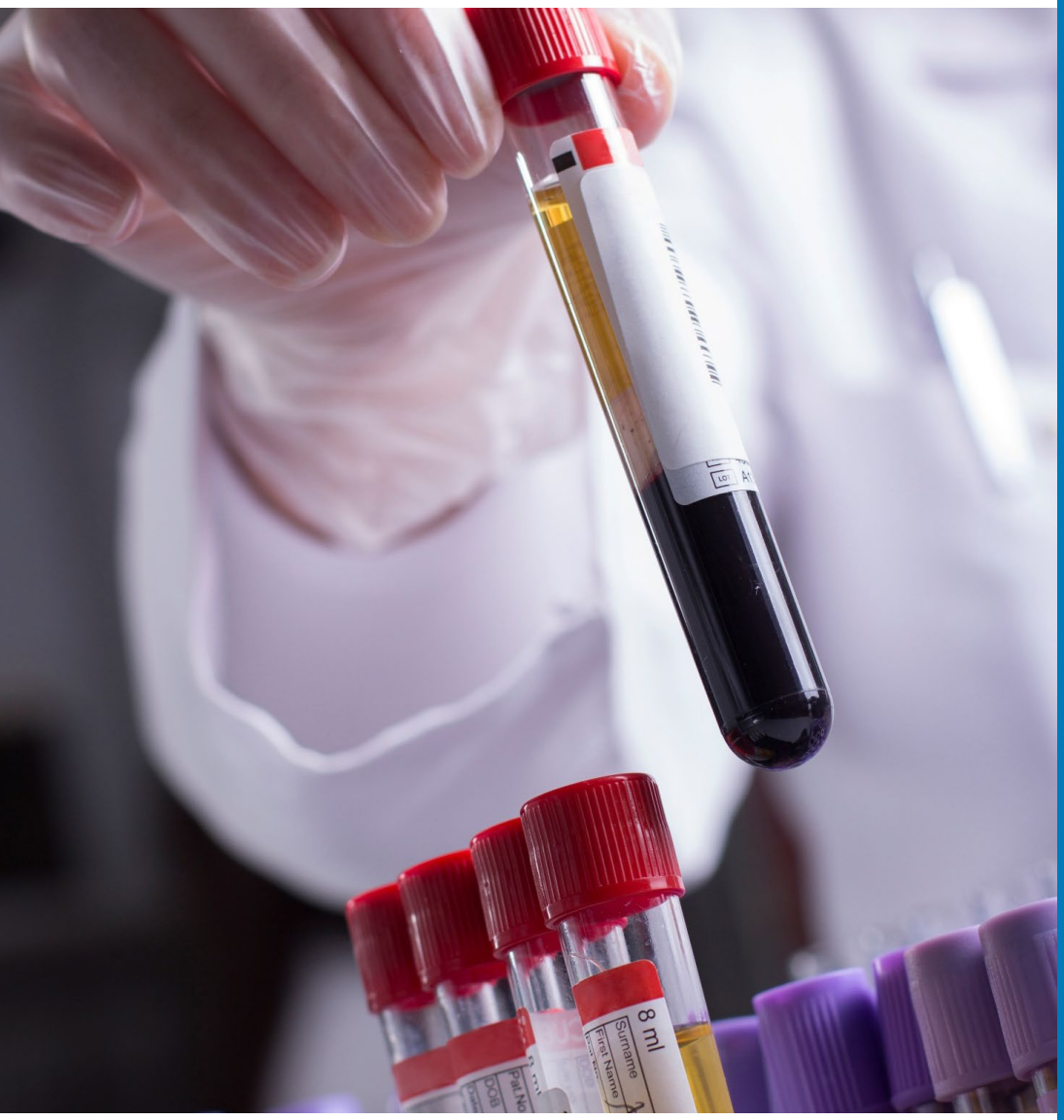
Leveraging Data and Phlebotomy Swarm to Improve Patient Care



Utilizing data to drive change

A group of community-based, acute-care hospitals in Colorado and Montana partnered with Accumen for a multi-year engagement with Laboratory Excellence in early 2019. As part of their agreement, Accumen provided targeted Quality and Service, Labor, and Productivity analytics through the Accumen Performance Suite (APS). The APS interacts with the Laboratory Information System (LIS) to track and trend improvements within the lab and blood management processes. In addition to quality and service benchmarking, the APS combines laboratory performance data with labor and productivity data to give lab leaders a 360-degree view of their lab.

Client Profile

- Community-based, acute-care health system
- Colorado and Montana

Accumen Products

- Accumen Performance Suite (APS)
- Lab Excellence

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Each month, the Accumen quality and service dashboard was reviewed at the health system's lab executive council. During these meetings, it became clear that one hospital was not meeting the performance goals and was scoring lower than others on Inpatient Morning Run (IPMR) targets. Hospital leaders knew they had an excellent phlebotomy team and wanted scores to appropriately reflect staff's efforts – they just weren't sure how to get there. Leadership turned to Accumen and the APS, which showed morning collections were completed by 8am about 80% of the time – the goal was to be above 90%.

Introducing swarm

The lab team agreed to try something different – the swarm method. This is an agile phlebotomy technique that encourages a team approach to morning run collections. The goal is to increase efficiency and productivity by working together to collect specimens as a unit, or swarm. The swarm process was led by Silka Clark, Director of Lab Excellence at Accumen. "Swarm is different because the workload focus is shifted away from the individual, and towards the team as a whole," explains Clark.

Accumen's APS, revealed morning collections were completed by 8am around 80% of the time – **the goal was to be above 90%.**

In most hospital settings, physicians begin rounding on patients at 8am every morning. For this reason, the patients' blood needs to be collected prior to 7am to give the laboratory enough time to process blood draws and report the test results before rounds. The phlebotomy team needs to start the drawing process at 5am or earlier to have the draws completed by 7am. Most often the draws are divided equally among the available phlebotomists, and they would disperse across the hospital to collect the hospital floor or section they were assigned.

This approach creates a myriad of problems. First, while the workload appears to be equally divided, often the reality is that more senior phlebotomists may choose which floors or departments they prefer, and those may be the easier draws. Less senior phlebotomists may have a harder time collecting the same number of draws, especially if they are assigned to a higher acuity patient floor such as ICU. Only measuring the number of draws a phlebotomist completes is not going to reflect the difficulty of the draws they were assigned. This approach also doesn't enable phlebotomists to develop skills and have a diverse experience because they are confined to one department or patient area, and do not have their colleagues to lean on for help or additional training. This can result in lower morale among the newer members of the team and creates a negative culture where team members don't rely on each other.

Another downside is that this approach encourages each phlebotomist to gather the specimens they've collected as they go and deliver them to the laboratory when they are finished. When this happens, all the draws hit the lab at one time versus arriving at the lab in steady, manageable batches.

IMPROVED delivery

EQUALIZED Draw selection

ENHANCED Teamwork

STAT/timed draws

REDUCTION rework

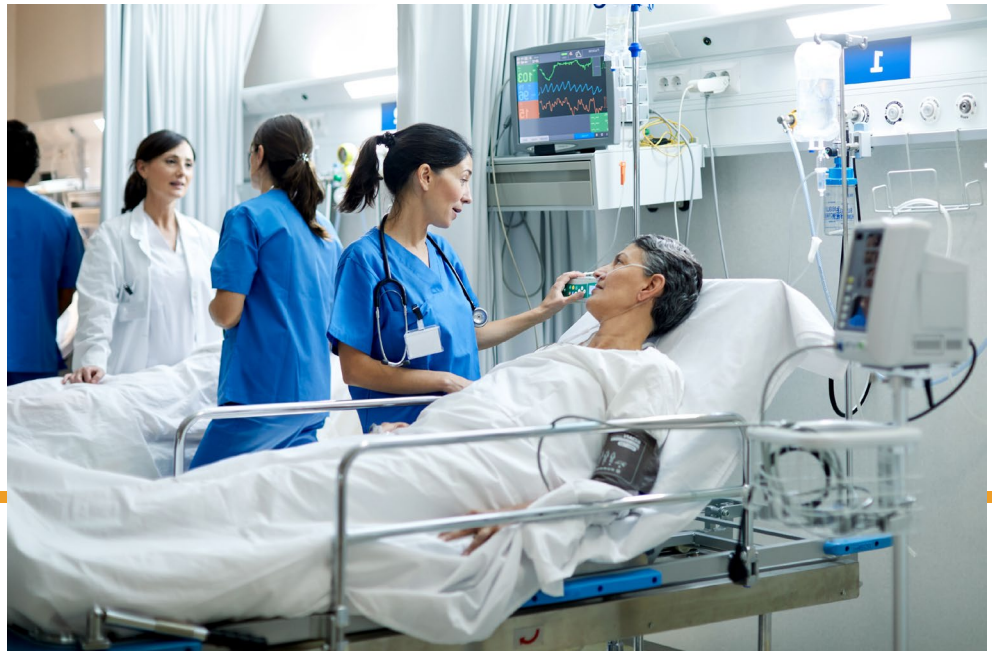
ADVANCED Communication

How swarm is different

A swarm approach is the exact opposite of what was just described. While physicians still need the draws completed by 8am, the approach to gather the blood is vastly different. Before swarm can be implemented, a collaboration with hospital department leaders should be initiated by Lab Leadership with a goal of creating an agreed upon list of hospital units and the order in which they should be collected. Considerations can be made for the layout of the hospital, the earliest time that it is acceptable to wake the patients on that unit, and the areas where lab values may be needed sooner than 8am. This helps the phlebotomists to know which departments to collect first, such as patients that are scheduled for discharge, or patients that need to be drawn last, such as new mothers and newborns.

Secondly, phlebotomists complete the draws in groups instead of alone. By going in small groups, they can complete the draws faster, develop additional skills because they work on all patient types, and learn from each other. If they can't complete a draw a more experienced staff member can provide support and guidance in the moment. This leads to improved patient care and patient experience, as missed draws no longer wait until the morning run is complete when another phlebotomist is right there able to collect the specimen before the team leaves the unit.

This approach is beneficial to the central laboratory as well. When the draws are performed as a team, there is more visibility to the number of specimens that have been collected by everyone, rather than just one person. With a team there is capacity for one team member to deliver specimens at a regular cadence, typically every 15 minutes or every 3-5 patients, without stopping the flow of collections. Specimens arrive in the lab in manageable batches throughout the morning, versus receiving hundreds of samples at one time. The swarm method can create an opportunity for specimens to be processed in a steady and reasonable manner that also results in quicker turnaround times and fewer calls to the lab inquiring about results.



Hospital leadership engagement is key

Engagement of hospital leadership is imperative to directing the lab in the priority of specimen collections by floor or unit. Accumen worked with both lab and hospital leadership to develop a process for implementation:

Step 1: Hospital administration prioritizes the order of lab draws by floor/unit.

Step 2: Determine hospital logistics and delegate teams. Sometimes there is only one hospital with multiple floors but often there are multiple towers or multiple locations. Then, determine the size of your team and how many groups should go to each location.

Step 3: Deem an owner of the process. This person is often referred to as the "beekeeper" of the swarm. This person project manages the swarm process and keeps everyone on task. (The lab may even make this a different person each day to give everyone the opportunity to lead the effort.) Clark explains that an owner to the process ensures there is consistency and fairness.

Step 4: Ensure consistent specimen flow. This means there is a process for how specimens get to the lab for processing and testing. If there is a pneumatic transport system, determine where the nearest tube stations are located by the hospital department, and designate a specimen "runner" from each team to ensure specimens are sent to the lab at the desired frequency.

Often, hospital leadership staff and laboratory staff are resistant to implementing this process, which is a normal response. "Change is always hard to process whether in a professional or personal setting," shares Clark. That's why she recommended that they start with a pilot which includes a three-night trial. The first night, nine phlebotomists swarmed together. But they quickly learned it was just too many in a group. Therefore, the second night, they broke into groups of four and five, which was much better.

In addition, the team also held 30-second huddles prior to collecting each floor to strategize. This provided a plan of action and direction for each team member prior to starting their lab draw process.

Clark explains that many health systems she worked with in the past have tried swarm and not been successful. She says that is often due to the lack of a neutral party to facilitate change management and communication across all stakeholders. Accumen provides the neutral party needed to create the process. Once the team sees success, they will continue to implement. Then, the new process becomes the process. In addition, the proven swarm method has shown increases in accountability and increase job satisfaction.

"Initially some of the phlebotomists were reluctant to participate in the process. But by the third night they were sharing how much better they worked as a team and how much faster they were completing the draws," explains Clark.

Improved real time education about changes to the draw process or tips and pointers for new team members.
Minimized backtracks for phlebotomists as they can see when a teammate is in the room with a patient.
Improved patient experience when the best suited phlebotomist is assigned for difficult sticks.

Conclusion

As mentioned, the laboratory IPMR was below 80% prior to implementing swarm. After implementation, the results shot up to 95.4%.

The lab was able to use the APS to trend improvements over time and were excited to see they were back in the green in no time. In addition to the IPMR increases, this hospital also had the following outcomes:

Specimen delivery

Improved TAT with more frequent specimen delivery to the lab
Improved specimen flow in the lab and fewer bottlenecks in specimen processing

Draw selection

Improved division of labor as all team members complete a similar number of draws on a similar subset of patients.
Improved patient and physician satisfaction as difficult or missed draws can be re-drawn while the team is still there on the unit.

Teamwork

Improved support of new phlebotomists who are no longer sent out on their own after a short training period – training on difficult sticks can take place in the moment.
Improved team communication across the board as more frequent huddles allows for information to be shared with the group quickly at the start of each patient floor.

STAT/timed draws

Improved service for STAT/Timed draws by assigning these collections to one or two phlebotomists to collect as needed, then rejoin the swarm when finished.

Processing/receiving

Reduction of rework caused by deferred and missed draws, as the team can manage those while swarming.
Specimen receiving can manage add-ons in real time without waiting for specimens to arrive in the lab that were previously held on the phlebotomist cart.

Communication

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Learn more about Accumen Performance Suite

Your laboratory is a strategic asset to your overall health system and strategy. That's why it is vitally important to have a long-term vision for lab assets. Accumen Performance Suite enables you to improve patient safety, reduce costs, and increase performance within your health system. Accumen provides expert guidance in all these areas, including lab operations and lab IT. Accumen offers skillful and professional planning, along with the knowledge needed to enable your teams to work through a complex, daunting process to achieve a smooth and successful result.

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