

Case Study: Future-Proofing Health Care Delivery and Facility Design

The goal: Disrupt the status quo to better serve the community

For many years, Virginia Mason Bainbridge Island Regional Medical Center has been a familiar and trusted member of the community. Established in the 1940s, Virginia Mason purchased it in the 1980s and has since provided primary care and some specialty services including cardiology, orthopedics, dermatology and neurology.

Built over 70 years ago, the 18,000 square-foot facility was not designed with modern health care delivery in mind, which made it difficult to optimize the performance potential of the providers and staff who worked there. Services offered were limited, and patients often had to travel in order to receive additional specialty care. The medical center wanted to broaden the scope of care it provided and increase productivity, but the existing layout of the space didn't allow for a new flow, and there was no room to expand. Something dramatic was needed.

The challenge: Eliminate waste, optimize performance

The population of Bainbridge Island has exploded from just under 2,200 in 1980 to over 23,000 in recent years and still growing, but the medical center could not keep pace at its current location. This led to a number of issues, including financial ones. “If you'd asked us three or four years ago, we'd have said we had no room to add providers to see more patients because of the model that we were practicing under — the traditional model,” says Somer Shields, Director of Virginia Mason Bainbridge Island Medical Center. Offices and exam rooms were assigned to each provider and medical assistant, which was typical but far from optimal. A redesign of process and space would be an opportunity to gain more efficiency. As Shields puts it, “We knew we had to use our facility more intelligently.”

The community's growth provided a clear opportunity to increase the reach of service delivery — which could bring greater revenue — but the current processes and space were barriers. In designing a new care delivery model and facility, the team considered how the three elements of space, time and flow could work in concert. The design should enable better use of time and resources by reducing wait times and unnecessary clinic-based visits. The medical center would need to use its space to provide care much more flexibly.

Solution: An innovative process from the ground up

In order to develop truly new and innovative designs — whether starting from scratch or evolving an existing facility — the Virginia Mason team used proven 3P methodology. 3P (production, preparation,

process) is about going beyond optimizing or iterating on the status quo. It's a way to unlock big, untapped opportunities, services and value streams by fundamentally rethinking everything. This would be a process to create an entirely new space that enabled the best flow for providers and patients for the highest quality of care while increasing revenue.

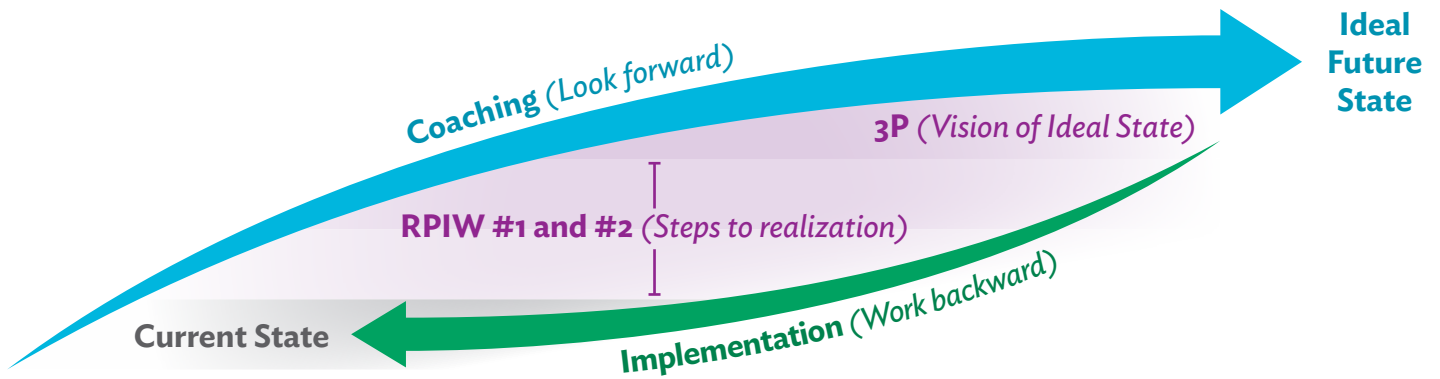


Figure 1: 3P Overview

The Virginia Mason team started with a six-week deep dive to gather data and document the current state of care delivery, followed by a five-day workshop to examine the current space and processes. They then moved on to envisioning the ideal future state. The team collected over 1,200 pieces of input and feedback from community members, patients and staff, and conducted rapid prototyping design events with their architects, each dedicated to developing a different area of the new facility. It was an intensive process of eliminating waste and seeking the richest avenues for disruptive, innovative change. “The big, overarching goals were taking advantage of modern technology and keeping up with the future of medicine,” says Shields. “We wanted a facility that would flex and adapt to what the future looks like, and had to get a little bit out of our comfort zone, away from the typical notion that more health care meant more space and more rooms.”

Another critical piece of this methodology for designing new health care spaces is that the project leads included internal leaders, in addition to builders and designers, who all worked closely with the Virginia Mason 3P Workshop team to consult on, test and refine a variety of designs. Together, they explored mockups, rapid prototyping and real-life simulation before construction began. As the plans developed over the next two-and-a-half years, it became clear that the new facility design would need the flexibility to meet the new and growing needs of the community. This would result not only in better community health, but also improved revenues.

The 3P vision for the new facility prioritized improved experiences for both patients and the care team. To keep the process focused, the team agreed on several guiding principles to serve as directional beacons during the design process. These included teamwork, flexibility and nurture through nature. A continuing awareness of the initial vision and guiding principles proved to be particularly important when unexpected changes to the project were required due to new business needs.



Solutions across space, time and flow

Once the vision was set using the 3P methodology, teams conducted rapid process improvement workshops (RPIW) to support changing processes to better achieve the vision. The RPIW leaders defined baseline utilization for the space and, more importantly, helped make it visible and tangible to the team. “Starting with visual tools that made it clear our exam rooms were empty the majority of the time was key to our team’s engagement,” says Catherine Edwards, MD, Section Head, Primary Care, Virginia Mason Bainbridge Island Medical Center. “Once we had a shared understanding of where we were starting with our exam room use, our Virginia Mason Production System methods helped us see specific opportunities to improve and stay aligned during hard changes.”

The RPIW teams used innovation exercises to think differently about physical space, patient and staff scheduling, and clinical flow processes. Over time, they found that when they made strides in one domain, there were often additional opportunities that emerged as a result. One example of this was the culture of private offices and exam rooms assigned to just one provider team. It was the traditional model, but limited the use of any given part of the facility. Even conference rooms could be made more flexible to make better use of every square foot. What came from these observations was a pod model of offices throughout the clinic, with more open workspaces. The open arrangement creates more natural interaction and collaboration among the staff, with separate team rooms set aside to allow for more confidential and smaller meetings.

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—Somers Shields, Director of the Bainbridge Island Medical Center

The team kept patient interactions and flow in mind as they rethought exam room design. Each exam room now has two entrances for a greater feeling of movement and privacy, with standardized supplies and equipment for more agile scheduling. Large-screen monitors make it easier for patients to see what their provider is doing with their records. And conference rooms can be used flexibly for everything from physical therapy to pop-up seasonal clinics like flu prevention.

This philosophy of flexibility extends beyond the physical space to hours of operation and work hours for providers and staff. The RPIW team discovered that there were particularly busy periods during the morning and mid-afternoon when everyone seemed to need an exam room. This created unnecessary stress on staff. By leveling the schedules across the week and across each day, staff eliminated these bottlenecks, improved utilization into extended hours and reduced scheduling stress.

As they looked more closely at the patient experience, the RPIW team uncovered unexpected challenges as well as insights. For instance, fully 25 percent of an average patient’s visit consisted of waiting time, redundancies and unnecessary forms. However, as that wasted time was eliminated, exam room utilization actually seemed to worsen on the visual tools the team used to measure it. But that wasn’t really the case.



In fact, the problem was the way they had been defining utilization. As a result of the redesign, utilization isn't the same thing it was before. Now it's defined in terms of quality time and potential capacity, not just a room being occupied as the old chart showed. Not only is the new way of measuring more accurate to the actual use of the room, the results are better, too.

It all adds up to dramatically improved flow and efficiency in an open and bright facility that is showing benefits in financial performance as well.

Impact: Future-proofed transformation

Though the two-year process was intense, it resulted in far more than a brand-new facility with a larger footprint. At 32,000 square feet, the new medical center uses its space more efficiently and is designed to adapt to whatever the future of health care brings.

- Even with one less exam room (down from 33 to 32 in the new design), the new facility will comfortably **accommodate an increase in patient visits from 37,607 in 2016 to a budgeted 52,261 for 2019.**
- The new space **reduces the number of exam rooms per provider from 2.14 to 1.5 and allows for an increase in patient volume** within the same footprint. But that hasn't resulted in provider dissatisfaction. On the contrary, it has improved the performance of the space without inconveniencing those who use it.
- Patient visit **wait times for team visits have been reduced by 15 minutes on average, with 60 percent less time spent waiting.** The average total wait time per team visit is less than 10 minutes.
- The flexible design helps the medical center adapt to future changes by allowing for relocation of services without the need to remodel or expand the footprint.
- The philosophy of flexibility extends to hours of operation and even work hours for providers and staff. Schedules are determined by patient demand and providers have a more flexible work week, which supports a better work-life balance.

No one knows what medical breakthroughs the coming decades will bring, but the Virginia Mason Bainbridge Island Medical Center redesign has resulted in a space that is ready to more efficiently provide excellent care.

Learn more about 3P. Contact us:

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Company Overview

Name: Virginia Mason Bainbridge Island Medical Center

Opened: June 2018

Location: Bainbridge Island, WA

Number of patients: 53,261 visits budgeted for 2019

Number of staff:

- FTE providers: 22
- FTE support staff: 48.4

Core services:

- Primary care for adults and children
- Specialties in cardiology, orthopedics, dermatology and neurology, podiatry, nutrition, endocrinology, physical therapy, integrated medicine, sleep medicine, clinical pharmacy, concierge medicine, rheumatology and behavioral health