Collapsing organisational silos in health system operations

Received (in revised form): 2nd May, 2020

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Abstract 'Coordinated care' is a growing concept in healthcare, with practices like electronic health records (EHR) helping disparate providers and specialists break out of silos to complement each other's care for a given patient. But de-siloing is also beneficial — and sorely needed — in the way health systems organise their management teams, both in clinical and business operations. Virginia Mason Institute has helped medical centres minimise errors, reduce workloads and improve morale at all levels, from front-line staff to directors, through a series of reforms focused on cross-functional collaboration. These reforms may serve as a template for other systems to follow as they seek to conserve costs, engage staff and instil a culture of teamwork and shared goals. This paper describes how Virginia Mason applied VMPS in two scenarios. These scenarios showcase how combining two broad strategies and five specific tactics can diminish silos and improve efficiency, morale and financial performance.

KEYWORDS: lean management, efficiency, revenue cycle, waste reduction, staff engagement

INTRODUCTION

Silos are a well-known bogeyman in the business world. Teams perform better when you break down the barriers between departments and specialties and require them to share information and vision, which also leads them to share responsibility for the outcomes of their work. A recent paper in Inc. notes that although the idea of breaking down silos has been around for at least 30 years, 'unlike many other trendy management terms, this is one issue that has not disappeared over the years'.[1]

Silos, and discussions of breaking them down, certainly exist in healthcare. The discussion often centres on cooperation (or lack thereof) among clinical providers, giving rise to the ever-popular concept of care coordination.[2] But there are countless other functions and relationships across a health system that would also benefit from coordination, when instead they are traditionally cordoned off from each other. These silos exist not in the clinical context of providing direct care to patients, but rather in the operational context of staff scheduling,

room availability, billing, admitting and other system functions.

For example, the urology department in a regional clinic may have three medical assistants (MAs) scheduled on what ends up being a slow day for urology patients, while rheumatology is slammed and shorthanded. But the organisational lines between the two departments are so thick that the surplus MAs in urology cannot cross over and lend a hand. Each department has its own budget, its own way of doing things that are unknown to other teams, and a manager who does not like loaning out 'their people' to anyone else.

Health systems around the world have called on Virginia Mason Institute (VMI) to help resolve issues such as this. VMI is a non-profit education and training organisation that helps organisations worldwide create cultures of continuous improvement. We provide experience-based learning in the Virginia Mason Production System (VMPS), a management method for healthcare organisations to dramatically elevate quality patient experience, boost quality and safety, eliminate waste and sustain excellence long-term. Founded on the principles of the Toyota Production System, VMPS is integrated and overseen throughout the Virginia Mason Health System by its senior leaders. The system has proven so effective in embedding a culture of continuous improvement for Virginia Mason that we wanted to extend its impact to other organisations — and that is where the Institute comes in.

In this paper, we describe how Virginia Mason applied VMPS in two scenarios. These scenarios showcase how combining two broad strategies (standard work and daily management) and five specific tactics (aligning teams under common goals, breaking down geographic barriers, cross-training managers and staff, making information visible and conducting standardised daily huddles) can diminish silos and improve efficiency, morale and financial performance.

THE COST OF OPERATIONAL SILOS IN HEALTHCARE

Just because they are not medical in nature does not mean operational silos do not affect patients. For example, it inconveniences a patient to be delayed visit because 'no rooms are available', when, in fact, there are vacant exam rooms — they just happen to be assigned to departments other than the one administering this patient's care. There are very good reasons to reserve rooms for specific departments, such as the need for specialised equipment. But often room allotments are based on budgets, internal politics and/or expectations of usage that are outdated or out of step with day-to-day reality. And leaders have not considered the benefit of overriding departmental boundaries and legacy paradigms on behalf of delivering efficient, patient-first service.

Silos also incur cultural costs. Staff feel loyal to their team and suspicious of other teams. For example, people in the billing office might feel that their problems are caused by the people who work in arrivals. The people in arrivals might feel like they are always dealing with errors created by people who work in scheduling. And so blame and disunity spread through an organisation, each team rallying around itself rather than the system as a whole.

Finally, silos cost health systems financially. Writers at Health Affairs estimate that administrative and operational waste in the US health care system reached US$700bn in 2016.[3] Not all of that can be attributed to silos, but surely enough to say that increasing coordination in administrative and operational contexts is worth it.

THE BIRTH OF VMPS

Virginia Mason Health System is a private, non-profit organisation encompassing a number of integrated health services, including a flagship hospital in the city of Seattle, a network of nine outpatient clinics in the greater Seattle area and a research institute. We created the VMPS in 2002, in

part because we recognised that silos in our organisation were thwarting our aims to put the patient first, lead with quality and remain economically viable. VMPS draws heavily on elements of the Toyota Production System (TPS) and concepts of lean management.

The lean concept was first applied to manufacturing and was itself derived from TPS and other methods practised by Japanese manufacturers. Both TPS and lean are focused on reducing waste as defined by the customer by optimising processes and workflow, while TPS also emphasises principles of continuous improvement and teamwork. Though not targeting silos specifically, in our experience silos are a common root cause of the problems that lean and TPS are designed to solve. By now their principles have been applied in every industry and scenario, from call centres to software development.

Virginia Mason was one of the first health systems to bring these principles into the field of healthcare.[4] And we remain one of the only health systems in the United States that applies them on a system-wide basis. A 2017 survey by the American Hospital Association found that nearly 70 per cent of short-term acute general medical/surgical and paediatric hospitals in the United States have adopted lean in some form, but less than 13 per cent have done so at scale.[5] The majority apply the concept to only one or a few projects or departments — a sign that silos maintain a fierce presence, even in health systems that invest in organisational reform.

Since VMPS began to be implemented, teams and facilities across the Virginia Mason Health System have made a number of outstanding improvements. Nurses in one department reduced their daily walking distance by 750 miles. This freed up more than 250 hours across the team, translating into a 60 per cent increase in the time they spent on bedside care. Another team dramatically reduced the set-up time for one surgical procedure from 19 minutes down to just 10 seconds. While a third team now turns over an operating room in 10 minutes — almost an hour less than it took them previously.

These gains in efficiency have translated into better care. In eight years under VMPS, the likelihood that patients of Virginia Mason Hospital in Seattle would recommend Virginia Mason to others increased by more than 300 per cent. VMPS supports standards of quality of safety that have won the hospital numerous awards, including being rated as a Top Hospital by The Leapfrog Group for 13 consecutive years.

ESSENTIAL COMPONENTS OF VMPS

In addition to the TPS principles of waste reduction, continuous improvement and teamwork, VMPS emphasises the TPS practices of standard work and daily management.

Standard work

Standard work is a prescribed set of steps for how a task or sequence of tasks is performed. It is the current best practice for doing the work, and everyone who does that work as part of their job must know and follow the steps consistently. On the factory floor, this could mean the steps you follow to prepare a car door for the window pane to be installed. In a hospital, it could mean the steps you follow in scheduling a patient for a particular type of appointment.

Standard work can resolve the issue we mentioned earlier about vacant exam rooms. At Virginia Mason, many teams have a standard kit on a mobile cart that they wheel into whatever room their patient is in. When dermatology uses the room, we set it up with the dermatology cart. When ophthalmology uses the room, we set it up with a different cart. This allows us to be flexible with scheduling rooms, which means patients do not have to wait as long to be seen. It also helps teams be prepared and precise:

Instead of taking stock of various cupboards throughout a room — or worse, assuming what they need is on hand, without checking — they have their discreet kit and a clear checklist for what needs to be in it.

A standard work practice can, and should, change over time as teams identify room for improvement. But what does not change is the premise behind the standard: there is an ideal way to perform each activity, and all people who do that activity should adhere to the current ideal. Universal adherence is essential for maximising efficiency, as well as for allowing silo walls to come down. As we explain later, one of the ways to break down silos is to cross-train staff, and a cross-trained staff member depends on standard work — already knowing how to do some of the additional job's tasks, without needing special training. If all the work of their additional job is specialised, they are much more likely to get confused, forget particulars and make errors.

Daily management

Daily management requires leaders to have a regular presence in the space where the work they are managing is actually done — the *genba*, as such space is known in Japan. In healthcare, this means managers and directors cannot rely on a 'command and control' model, meeting with staff and making decisions in the manager's office somewhere away from the work site. They must 'walk the genba' and see staff on the floor, at the nurses' station, in the accounting office or wherever their team is active.

It also means that management happens in the moment. This contrasts with the common practice of evaluating staff once a month or quarter, when conversations about needs or performance are inevitably general and abstract — 'Your team is discharging patients more slowly than the hospital average. You need to pick up the pace.' While that kind of management may communicate a point, it does not point to a solution.

With daily management, the manager will discuss with the team leader *why* their discharge rate is slow, and together they identify the root cause of the problem. It could be that their standard work is outdated, but no one ever told them and relieved them of the unnecessary steps. Or it could be a case of low morale — but rather than prod the team to cheer up and get with the programme, the manager again has to ask 'why?' 'What is causing the lack of motivation?' 'What is the root cause?' Managers must commit to understanding where their teams are coming from and empowering them to solve their own problems, rather than imposing changes on their teams based on superficial judgments of what is happening and why it is not working.

In terms of silos, daily management is about creating vertical cohesion. 'Command and control' translates into an 'us versus them' feeling between managers and staff. Daily management literally brings managers and staff together on the genba, creating a culture of cooperation and mutual commitment to doing and improving the work.

THE NEED FOR CONTINUOUS IMPROVEMENT: TWO EXAMPLES

VMPS was instituted in 2002 and, over time, Virginia Mason continued to discover inefficiencies, identify silos and find ways to improve. Earlier in this paper, we summarised some of the day-to-day problems caused by silos, including distrust between teams and patient inconvenience. To illustrate these problems in more detail, and illuminate the specific tactics that resolved them, let us look at two specific scenarios.

Revenue cycle

The revenue cycle at Virginia Mason includes several different teams within Patient Financial Services (PFS). Together, these teams handle the journey from scheduling patients for appointments

to collecting payments for those visits. For example, the team in arrival enters information about patients as they arrive for their appointments, including information about the patient's insurance coverage. Another team bills for services after the appointment occurs. And a third team is responsible for collecting payments.

With a simple description like that, it is easy to see how each team relies on the other. But in practice, they functioned largely in isolation, with little knowledge of what the teams upstream and downstream from them had to contend with.

For example, an employee in arrival would enter an incoming patient's insurance provider, but instead of choosing the correct insurance *plan* from the list of 30 different plans offered by that carrier, the employee would save time by simply choosing the first one on the list. This would cause a huge headache for the employee in billing, who would not realise the information was incorrect until after they had sent the bill to the insurance company and the insurance company denied payment. Even though the billing team did not cause the problem, they had to solve it, by identifying the correct insurance plan and re-billing the insurance company. Across all the patients and payments that PFS dealt with, the time wasted doing rework and delays in collecting revenue added up quickly, along with some bitter feelings.

And yet this was not a problem of negligence. It was a problem of silos. The arrival team was measured by how quickly they got patients through the arrival process, which means they were motivated to take shortcuts. Any errors they produced as a result of their haste never came back to haunt them — it was people in billing who felt the pain and resolved the mistakes. As far as anyone in arrivals knew, it did not actually matter whether they selected the patient's true insurance plan or whether they selected the first plan that came up on their screen. Their job did not get any harder when they took the shortcut. In fact, it got easier. It helped them meet their target for checking in patients quickly. By that measure — which was the only one they were accountable for, thanks to the silo they operated in — entering the wrong information was actually the 'right' thing to do.

Outpatient care

The second scenario comes from the Virginia Mason Federal Way Medical Center, one of the system's nine outpatient clinics. The clinic offers access to 22 specialties, ranging from cardiology to gastroenterology, and each specialty originally had its own leader and support staff. With each team in its own silo, they had no visibility into each other's capacity or needs. If one specialty was staring down an especially busy week while missing two MAs owing to vacation, none of the other teams would know. And even if they did, there was no training or policy to allow for an MA from another specialty to pitch in. This led to longer wait times for patients — including patients who were calling in to schedule appointments or ask questions, since the team that staffed the phone lines also occupied their own silo apart from the 22 specialties.

Work was inefficient within individual specialties as well. Teams would huddle in the morning, led by a manager, but without a set structure. The manager would cover general announcements rather than actionable information such as who was out sick and how to plan for the day. As a result, the team spent the first hour after the meeting figuring out what needed to be done and scrambling to do it. In the words of specialty leader Latrice Bowles-Reynolds, 'From the very beginning of the day, it went downhill. And there was no getting out of it.'

FIVE TACTICS FOR COLLAPSING SILOS

All senior leaders in the Virginia Mason system are required to lead at least one event

every year to seek out improvements in their teams and processes. It was events like these, conducted by senior leaders in PFS and Federal Way, that led to bringing down the silos described previously.

These improvement events — known as Rapid Process Improvement Workshops (RPIWs) or 'kaizen' events, after the Japanese word for continuous incremental improvement — range in length from one to five days, covering a series of steps that empower the people who do the work to find better ways of working. For PFS, the RPIWs focused on the managers of the teams involved in the revenue cycle, and in Federal Way they focused on the managers of the 22 specialties and the phone team. Although waste, errors and tribalism were very *evident* among floor and cubicle staff, the root causes lay at the level of management. So when it came to devising a solution, managers were the ones who had to come together.

As it happened, they did not devise a single solution, but rather a number of complementary tactics. And in the case of PFS, it took multiple RPIWs over multiple years to arrive at and implement all the reforms.

Looking at the two scenarios together, we identify five tactics that we believe can help address the silo problems that many health systems experience today.

Align teams under common goals

The problem with separate teams pursuing separate goals is abundantly clear in the PFS scenario. The emphasis on team-specific metrics, such as how fast you get a patient through the arrival process, was one reason that the entire PFS department was performing poorly in one of its main metrics: days revenue outstanding (DRO). Team-specific goals are important, but they should not be paramount. Teams should work towards one or more shared goals, above all, with metrics attached to that vision if possible.

For PFS, teams are now aligned under the goal of having a strong bottom line. Meeting that goal depends on high performance from all teams, and all teams are now managed in such a way as to feel accountable to it. If the PFS has a good month, that is everyone's victory. If it has a bad month, it is everyone's responsibility. Rather than finding a person or team to blame, managers work together to find the root cause or causes of the slipping numbers. And all teams stand ready to flex as needed, even if the root cause is associated with a particular team or area.

In terms of measurement, teams still have local metrics, but the DRO now reigns supreme. Managers agreed to measure their teams against that number first and foremost, and by doing so PFS managed to lower the DRO from 29.7 to 28.6 — a new department record.

Break down geographical barriers

There is an obvious logic to placing one team in one space and another team in another. But there is an obvious downside as well, namely that physical distance inhibits collaboration and reinforces the notion that each team is an independent unit rather than an interdependent part of a bigger group.

This was certainly the case with different teams within PFS. Thus, one important reform was to place the managers of these teams in the same physical space — a large open cubicle space shared by the managers and dubbed the Nexus. Grouping managers together physically enabled them to work together dynamically throughout the day, communicate in real time and create transparency around roles, skills, goals and responsibilities.

Soon after implementing the Nexus and these new work habits, managers were spending 15 per cent more time on their unique managerial duties as opposed to

correcting errors and resolving breakdowns in their teams' workflows. The collaboration among managers was so effective that an entire full-time manager role — an unfilled job posting at that time — was eliminated, saving the hospital from paying an additional manager salary.

Cross-train managers and staff

We have mentioned the notion of cross-training already. Simply put, when teams are in silos, they can have days or weeks where they are overworked and understaffed and there is nothing anyone can do to help. A day in the life of any healthcare professional is a game of 'what curveball do I have to respond to next?' The ability to call on someone from another team when you need help allows all teams to perform at their best. Under VMPS, managers are groomed so they can be employed in any department and still be effective.

In PFS, managers were cross-trained prior to moving into the Nexus together. Even without a shared space, they quickly learned how to use their new shared skills and help each other out as needed. Their flexibility paid enormous dividends — eliminating the need for three full-time manager positions, reducing overall manager hours by 19 per cent, and reducing negative/neutral feelings about their jobs by 41 per cent (as shown in an internal survey of manager morale).

Cross-training was also instrumental in improving work in Federal Way. Everyone below the manager level is now required to be trained in at least one additional area, as well as learning how to work the phones. The latter requirement proved especially helpful in 2019: although the department suffered staffing vacancies as high as 50 per cent at different points in the year, cross-trained staff from other teams kept them on target for patient wait time and other metrics.

Make information visible

To take advantage of the information you share between teams, you need to publish it. In a setting as fast-paced and information dependent as healthcare, you almost need to *enshrine* it — on a big board in a central place where everyone knows to look for reference.

Displays like this communicate to everyone on the team what supply and demand look like for the day and make it clear where needs are normal and where they are exceptional. In lean systems these are known variously as production boards, staffing boards or huddle boards.

The boards now used by teams in Federal Way and PFS account for all information specific to the current day, such as who is working and when they are taking their breaks. They also account for information that applies to every workday, such as which areas each staff member has been trained in, as well as status reports on things like team performance metrics and staff requests that the manager has agreed to follow through on. It is a lot of information, but everyone quickly learns where on the board to find what they need to know.

Production boards are powerful for a number of reasons. They break down vertical silos, taking knowledge that was previously known only to the manager and sharing it with everyone. This transparency makes it impossible for problems to hide, which raises the urgency of solving them and reduces the mistakes and confusion that would otherwise emerge from them. At the same time, it creates a safe environment for people to speak up, ask for help or offer ideas.

Other benefits include saving time, because people know exactly where to find the answers to their questions. In turn, we have found this often makes the work environment calmer and quieter. Production boards maintain the peace, by visualising in one place what used to be scattered across

Figure 1 A production board used by a team at the Virginia Mason Federal Way Medical Center (staff names are blurred for privacy)

memos, trapped in people's heads and communicated unevenly.

Conduct standardised daily huddles

As we described in Federal Way, there is a difference between having a daily huddle and having an effective daily huddle. An effective huddle follows a standard agenda based on what the team needs to know in order to do their job that day: who is out sick, which provider has a heavy load, who is covering phones during lunch, and so on. (This information is also displayed — and updated throughout the day — on the board for teams to refer to.)

Now that the clinic in Federal Way has reformed its huddles with a set agenda and focus on action, teams are accomplishing together in 5 attentive minutes what used to cost them an hour of running around alone. Even better, the team lead, rather than the manager, runs the huddle. This frees the manager to focus on other work and elevates engagement among staff, who feel more control over their day and how they are approaching it — because, in a very real sense, they have more control. The huddle and the information board create opportunities for members to identify and volunteer the right choices for their team without being asked.

INSIGHTS AND NUANCES REGARDING THIS APPROACH

It may seem counter-intuitive that an intense focus on standard work and efficient process could improve staff engagement and autonomy. But it does. Team members know by what goals they are being measured. They know that the process is designed to help them meet their goals. And they know that their own team, as well as other teams with cross-trained members, have their back if need be.

They also know that if anything breaks down, they can expect to be included in the process of understanding and addressing

why, rather than being berated for dropping the ball. And because of the emphasis on continuous improvement, they know they are always welcome to make requests and propose changes. No one is closer to the work than them, so no one is better suited to report on whether it is still working. In all these ways, rather than depriving staff of a voice, applying a rigid structure to the work actually strengthens their voice.

That is, as long as daily management is practised thoroughly and correctly. If managers want their teams to be engaged — as every manager should — then they must listen to their ideas and requests. If managers agree to make a change, they have to follow through. They should put it on the board with all the other information so that everyone can see the status and the manager cannot afford to let it slip through the cracks. This kind of bottom-up accountability is another contrast to the 'command and control' model, showing teams they are not functional cogs in a machine but valued contributors to the organisation's success.

The responsibility of managers goes beyond just that. In fact, managers are the most decisive factor in whether silos expire or remain, because they have to change the most. Instead of running their own show according to their own goals, they have to plug into the bigger effort. They have to let go of notions about 'my people' and 'who's going to pay for that?' and replace them with 'how can I help?'

Genba walks and root-cause analysis can seem burdensome at first. It can seem a lot easier to manage from behind the desk. Certainly, some managers simply do not fit into a de-siloed organisation.

But we have found that most of them not only fit eventually, but also thrive. They work less overtime, feel more supported, have more meaningful opportunities to coach staff and foster growth, and can enjoy more credit for contributing to the organisation's larger goals.

It all adds up to a reversal of Peter Drucker's famous quote, 'Culture eats strategy for breakfast'.[6] Standard work, daily management and meticulous dismantling of literal and mental silos is all done for the sake of removing waste and improving results. But it also nets a more positive environment — process eating culture for lunch.

Just ask Latrice, the specialty director at Federal Way. She found the transition difficult at first and was not sure it would work. Now she feels differently. 'Honestly, it's amazing,' she says. 'It empowers me as a leader to make a difference in the departments that I manage. And it empowers the team. There is structure and engagement that we never dreamed we would have.'

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