



Institute of Lean Healthcare

Single Patient Flow within Primary and Secondary Clinic Settings

INSTITUTE OF LEAN HEALTHCARE

NEAL WENDT

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Executive Summary

By implementing the elements of Single Patient Flow adapted from the manufacturing concept, Single Piece Flow, one provider yielded increased profits, revenues, and new patients seen. The goals of Single Patient Flow were to improve clinician and administrator communication, create clinic flow transparency, increase accountability, reduced cost, and improve patient information efficiency. The means of reducing clinician movement were realized by redesigning exam rooms and reducing the overall number of rooms, as well as providing up-front clinical information for physician to make a diagnosis. This paper is meant to demonstrate that the tools and principles are not direct transfers from the manufacturing origins, but with time, focus and creativity a clinic can realize significant gains in many different areas.

Multi-Tasking

There is no such thing as multi-tasking. I know many people in the world pride themselves on being able to do not only two things at once, but multiple things at once. They are wrong. The human brain is not a machine, only machines have the processing capacity as well as process integrity to be able to complete two tasks simultaneously. The misnomer of multi-tasking should be reclassified as switch-tasking¹. The ability to switch from one task to the next is what these people are claiming is multitasking.

The human brain cannot focus on more than one thing at a time, it has to switch its cognitive and motor functions from one activity to the next activity and then back to the original activity. The problem with claiming and practicing multitasking is the misunderstanding that when a person is focused on one task, they are not focused on the previous tasks. Think texting and driving. If the brain is incapable of handling multiples of issues or problems at the same time, why do we try to see multiples of patients at the same time?

More Rooms

During the due diligence portion of a consultation in a Gemba Walk, a go and see the process type activity, the following was a noted interaction:

“if you had a magic wand and could fix anything in you job what would it be?”

“I would create more rooms in this building.”

“Why?”

“So that way we can help more patients.”

The staff wanted the absolute wrong thing, for the absolute right reason.

It is another division of the healthcare sector that is working on the cloning technology. Until that division is successful the provider cannot be in two places at once. There can be more providers yes, but even with 5 providers or 50, there can only be one-on-one consultation. There is no way HIPAA is going to

¹ Multitasking: Switching costs Subtle "switching" costs cut efficiency, raise risk. American Psychological Association, March 20, 2006

allow for joint consultations, so let's cross that off the list. If providers cannot see multiple patients simultaneously why are primary and secondary care clinics calling back so many patients at one time?

Single Patient Flow

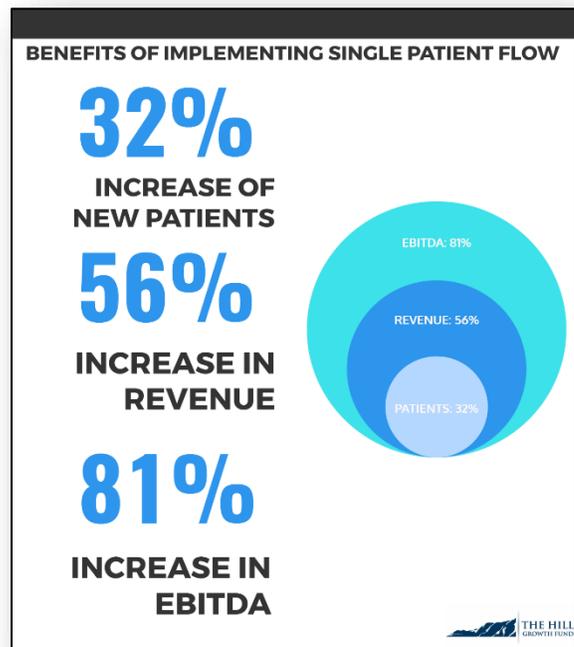
Single Patient Flow (SPF) is an adaptation of the Lean Manufacturing Single Piece Flow. Single Piece Flow is the goal of any Lean operation. Single Piece Flow reduces inventory levels, reduces manufacturing lead time, and allows Quality at the Source for each assembly part of the production process. When a production system produces in batches mistakes are not easily caught and when they are caught, it is only after the batch is complete. Therefore, leading to an even greater and costlier amount of rework on the defective parts. With Single Piece Flow the errors are seen in real time and the part of the system flow that produced the defect can be remediated immediately and does not cause further damage or rework.

SPF was born around streamlining the delivery of healthcare and transforming the waiting in the exam room model. The transformation team took the provider and stuck them in a comfortable consultation room and built the clinic process to deliver patients prepared to be diagnosed. The goals of SPF were: improve clinician and administrator communication, create clinic flow transparency, increase accountability, reduced cost, and improve patient information efficiency. The methods of reducing clinician movement, particularly physician, were realized by redesigning exam rooms and reducing their number and by providing all clinical information for physician to make diagnosis as the patient is being seen by the provider.

Results in an implementation at one provider yielded increased profits, revenues, and new patients seen. Over a seven-month implementation, there was a year-to-year comparison of 56% Revenue increase, 81% EBITDA increase, and an increase of 32% New Patients year-to-year. The main driver for the EBITDA increase was patient wait time reduction of 51%, from an average of 85 min to 42 min.

Visit to Solution Ratio

The implementation team also developed a *Visit to Solution* ratio metric of 1.34. There was a positive reaction to the low Visit to Solution ratio, because of the reduction in on site visits that patients were required to make to the clinic. This allowed for an increase in revenue and EBITDA without a significant new patient presence. The clinical team was able to do more at the time of service. It is counterintuitive that a clinic would want to decrease the overall number of patient visits needed, and therefore decreasing the number of co-pay and office visit revenue, however the least amount of time a clinic sees the same patient for the same diagnosis code, the more profitable the organization. Two contributors to the overall increase in revenue production combined with a low visit-to-solution ratio are that new diagnosis code net a higher billing rate, but most important a



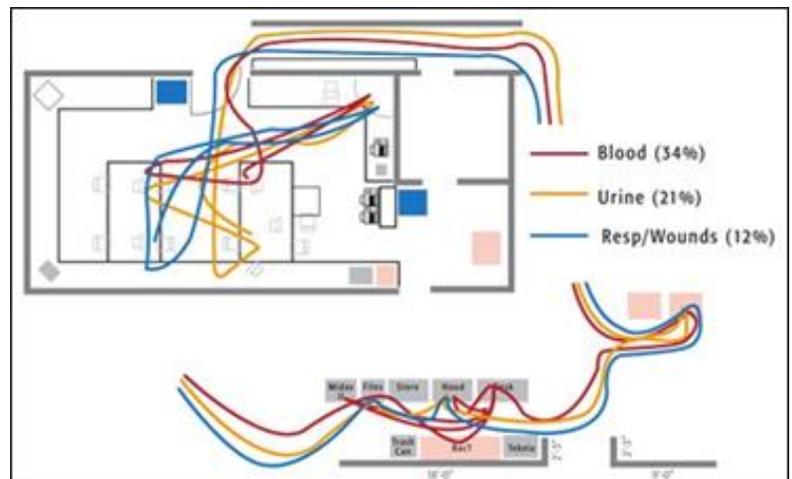
streamlined clinic enables for more throughput of customers. Each patient seen in a clinic has a fixed invariable cost assigned to it, each clinic is different to the exact costs but all have them.

The SPF took the traditional healthcare system and put the patient first. The transformation team had the realization that in a healthcare setting the customer buy decision happens the moment a patient agrees to an appointment and maximized the patient experience based from this realization. The team then added empathy for the patient and put it at the center of everything they did, this empathy was understanding process delivery from the eyes of the customer as opposed to that of the provider. The transformation team focused on the customer experience and altered the setting of how they received care. The team took an outside frame of reference to ask questions that contradict the traditional medical delivery model.

SPF is the part of the clinic transformation that has the most direct linkage to Lean and its history in manufacturing environments². The only thing the patient is willing to separate themselves from their money for, or the only value-added thing, in the entire clinical process is the diagnosis. Everything else is simply non-value added, or non-value added but necessary. The physician is the only person that can provide that diagnosis, therefore the intent should be to maximize the value-added exposure to patients. The current state of the physician hopping from room to room repeatedly wastes time, time that could be better spent diagnosing new patients.

By eliminating that movement time from room to room a clinic can see an increase in physician availability, but that is not all that is lost with a doctor hoping from patient to patient. There are repeated mistakes of patient identification, paperwork, patient readiness status, and even physician location that lead to lost time and elevated staff stress.

By looking at the diagnosis requirements as the Bill of Materials for a healthy patient the transformation team slashed the number of visits that each patient required to get diagnosed to the proper treatment plan. This reduction in visit requirements was previously noted in the *Visit to Solution* ratio. This was a revolutionary idea to treat the patient as the widget that was being manufactured to diagnosis and implement the Lean philosophies established in manufacturing environments into the clinic.



Another benefit of SPF is that it made the physician utilization rate more efficient. There was always a patient waiting to be seen by the patient, and it was always clear which patient needed to be seen next. Simply from eliminating the confusion of whom was next and where in the building the physician was, the overall clinic efficiency saw an drastic increase across the board.

Quality at the Source

SPF allows for quality at the source³, the system can focus on the individual patient and commit to their care. SPF allows for clarity of clinical flow, by funneling the patients to a set location and placing the

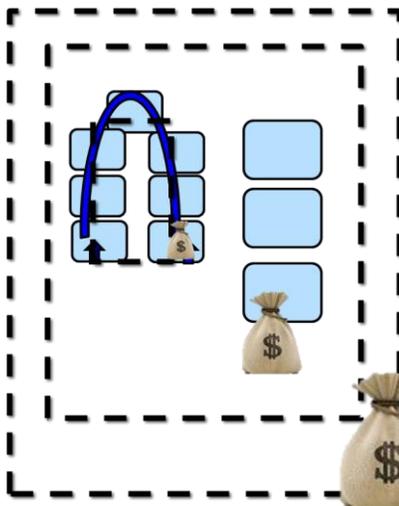
² adapted from the “Lean Thinking” by J. Womack,

³ Quality at the Source: QATS Can Produce Dramatic Quality Improvements January 3, 2017 Jim L. Smith

doctor in that set location. With this patient funneling there is drastic reduction in confusion of where the doctor is located. This stress reduction for the entire staff warrants a switch to Single Patient Flow by itself. The current state of time lost for clinical staff in the confusion of where the doctor is located leads to quite a bit of down time, and its correlated costs.

Not every room inside the clinic needs a sink and a bed. Most consultations at the primary and secondary level do not require the patient to lie down for an examination. Many examinations are done standing up or seated in a standard chair. In many primary and secondary care clinics, there only needs to be one room with a table; the rest can be reconfigured to enhance the customer experience within the clinic to maximize the interactions between the patient and the physician.

Removing the table is the first step in SPF as it demonstrates a transformation of the clinic environment from the current day standard. The actual benefits of rightsizing may vary depending on the type of Lean project as well as the type of organization, but some basic benefits that every organization can hope to derive by rightsizing include the following:⁴



- Improved communications amongst implementers, management officials and other entities associated with the Lean project
- Better accountability on part of the team members since decisions and actions taken by the team can be traced back to individual members
- Reduced cost of operations because the lesser the numbers, the less will be the amount of resources used for performing the same tasks and duties
- Increased efficiency in solving complex problems and issues since employees would know the exact person to contact if they encounter problems during the implementation phase
- Less chance of conflicts and ego issues since the small size will prevent the formation of sub-groups within the team

Information Gathering

There is no legal requirement that the doctor must ask the diagnostic questions, only that they have the information needed to make the diagnosis. The mantra of a doctor has morphed and needs to continue to change, “You have to experience the information yourself, has changed to you have to order the test yourself. If you set this up right then you shouldn’t need a physician for everything.”⁵

The goal of a SPF is to have the majority of the information gathering happen as far away from the doctor’s office as possible. This means moving up the supply chain, or the clinical process, and completing information gathering ahead of the appointment time. The clinic does not have control of the patient until they walk through the glass doors, as much as they want to suggest times to show up, or threaten with punitive damages for missed appointment times, they cannot control the patient until the patient

⁴ <http://www.sixsigmaonline.org/six-sigma-training-certification-information/rightsizing-lean-six-sigma-teams/>

⁵ Bill Sage, M.D., J.D.; Panel Discussion; Ethics in the Era of Rapid Innovation and Entrepreneurship in Healthcare, McCombs Healthcare Symposium, Spring 2017

enters their system. With that a system can be designed to have the patient actively engaged until they sit down in the doctor's chair.

Perfect Patient

The Perfect Patient is a valuable tool in the implementation SPF, with it an organization can streamline the patient experience and eliminate multiple visits related to the same pre-diagnosis condition. A Perfect Patient is not a patient that is never sick and can run through walls without injury. A Perfect Patient is one that has all Minimum Required Diagnostic Information (MRDI) necessary to make a diagnosis as they are being delivered to the provider.

Conclusion

There has never been a more important time in the United States for an overhaul on productivity and efficiency of the healthcare industry than there is today. Lean does not exist in the Healthcare industry in the primary and secondary care levels in the United States. This has led to numerous issues within the current US healthcare system, and an overall negative connotation with attending a doctor: the long-extended waiting, the repeating of issues, the lack of upfront information, getting sick at the doctor, lack of eye contact in conversation with the physician. This anguish has led to an increasing habit of missing out or skipping much needed medical care.

Implementing Single Patient Flow has merits in increasing overall patient throughput, as well as contributions to the top and bottom lines. There is a drastic increase in patient confidentiality as well as clinical Quality at the Source. The tools and principles are not direct transfers from the manufacturing origins, but with time, focus and creativity a clinic can realize significant gains in many different areas.