Abstract 23 Table 1 Sample coaching roles/interventions

	Year 1	Year 2	Year 3	Year 4
	Continuing activities: monthly coaching calls, monthly webinars, annual learning sessions, on-site consultation visits, ad-hoc affinity group calls, and ad-hoc individualized technical assistance			
QI Development and Instruction	Collaborative-wide introduction to QI methods and tools •Model for Improvement •AIM and charter •PDSA •Introduction to measures •Data collection & display (run charts) •System mapping •Root cause analysis (pareto, fishbone, force field analysis)	•PDSA & tracking •Measure refinement •Data collection tool development •Using data for improvement •Observational walks •Process mapping •Change management & addressing resistance •Incorporating sustainability into project planning	•Data workbook development for improved measure display •Run chart use & instruction •Spread strategies •Equity principles and QI •Responsive TA to meet additional state team requests	•Sustainability & dissemination focus •Using QI principles for final year planning •Using your data to tell your story •Responsive TA to meet additional state team requests
Team Development and Dynamics	•Stage awareness & activities •Change Management •Roles & responsibilities •Project lead guidance •Team meeting structure	•Onboarding family leaders onto clinical teams •Data collection tips & tools •Individualized coaching activities for yearly consult visits per team	•Adapting to COVID19 •Continued stakeholder engagement •Communication plans •Family team member engagement activities (FESAT and action plan guidance)	•Planning for adjourning •Celebrating learnings and successes •Developing final project deliverables, including learning session presentations, product pitches, impact statements, and final team chapters
Collaborative-Level Planning	•Planning & co-faculty for learning sessions and monthly webinars (all years) •Building collaborative relationships with project partners	•Bi-monthly contacts with collaborative leads: report out on team progress and needs •Data discussions on team and aggregate level	•Sustainability & spread planning •Bi-monthly contact with project collaborative partners •Co-planning individual state team consultation visits (years 3-4) •Co-led affinity groups by project role (years 3-4)	•Sustainability and spread activities •Data use and evaluation •Product dissemination plans •Capturing areas for publication •Final chapter guidance for teams

24 100,000 REASONS QI WORKS: A VACCINE STORY

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Background In late 2020, in the midst of a surge of COVID-19 in Minnesota, the Pfizer/BioNTech vaccine was granted emergency use authorization. HealthPartners CEO Andrea Walsh challenged our organization to provide a plan for

administering 10,000 COVID-19 vaccines a day, and Park Nicollet Methodist Hospital leveraged our history of quality improvement to rapidly plan, execute, and scale vaccine administration.

Objectives

- Timely vaccination of multiple populations (healthcare workers, high-risk patient populations, and general public)
- Operate efficiently under several constraints (space, staffing, and vaccine supply)

Methodist POD Covid-19 Vaccination | VSM Current State January 2021

Abstract 24 Figure 1 Initial value stream map of clinic operations. Scaled to predict staffing needs in order to achieve 10,000 vaccines a day using the same model

Abstracts

- Maximize capacity to fluctuating vaccine allotments

Methods Our work leveraged several QI tools such as value stream mapping (figure 1), weighted average cycle times (figures 2 and 3), visual management (figure 4), and standard work. We utilized the Model for Improvement and sequential PDSA cycles (figure 5):

- Space required ongoing adjustments in roles, staffing, and flow. We cross-trained to allow for multi-skilled operation, and to accommodate social distancing through the entire process.
- To reflect our community's needs, we continuously adjusted to provide a mixed model of first/second dose, delivering

	600 patients, 12 hours.	600 patients, 10 hours.	800 patients, 12 hours.	800 patients, 10 hours.	1000 patients, 12 hours.	1000 patients, 10 hours.
Lead Time (min)	25.5	25.5	25.5	25.5	25.5	25.5
Demand	600	600	800	800	1000	1000
Length of Operation (min)	720	600	720	600	720	600
Takt Time (min)	1.2	1.0	0.9	0.75	0.72	0.6
SWIP (Lead Time / Takt Time)	21.3	25.5	28.3	34.0	35.4	42.5
How many chairs are needed? (SWIP: Cycle Time of Waiting (15min) / Takt Time).	12.5	15.0	16.7	20.0	20.8	25.0

Abstract 24 Figure 2 Due to space constraints in post-vaccination waiting room to accommodate social distancing, calculations were needed to understand how many chairs would be needed with different volume/flow through the clinic (and ultimately was the rate limiting step in the total capacity of the clinic)

Pre Set Up	Vaccine Administration & Documentation CALCULATED Cycle Time (minutes)	Vaccines per hour (per vaccinator)	# of Vaccinators	# of vaccines per hour	# of vaccines per day (10 hours)	# of vaccines per day (12 hours)
	8.3	7.2	6	43.4	434	520
	8.3	7.2	9	65.1	651	781

After Observation (3 min Ambulatory Patient)	Vaccine Administration & Documentation ACTUAL Cycle Time (minutes)	Vaccines per hour (per vaccinator)	# of Vaccinators	# of vaccines per hour	# of vaccines per day (10 hours)	# of vaccines per day (12 hours)
3	20	6	120	1200	1440	
5	12	6	72	720	864	
6	10	6	60	600	720	
7	8.6	6	51	514	617	
8	20.0	9	180	1800	2160	
5	12.0	9	108	1080	1296	
6	10.0	9	90	900	1080	
7	8.6	9	77	771	926	

Abstract 24 Figure 3 Understanding cycle times and staffing needs at different rates of vaccinations per hour. Weighted average cycle times were used to accommodate differing complexity of patients (based on demographics of currently eligible populations). Based on the efficiency of cycle times achieved, different numbers of vaccinators and hours of operation would be needed to achieve volume goals

Abstract 24 Figure 4 Space planning: optimize flow, maximize capacity

Abstract 24 Figure 5 Results, demonstrating rapid cycles of PDSA and frequent adjustments due to changing patient populations, vaccine supply, efficiencies achieved.

service in multiple languages, serving adult and pediatric populations, and ambulatory and non-ambulatory patients.

- We used predictive modeling to anticipate number of vials needed, standardized drawing process to maximize doses from each vial, and instituted a standby process to eliminate end-of-day waste.

Results In total, during a 6-month operation we administered nearly 100,000 doses.

Conclusions Our legacy as an organization with a mature culture of improvement contributed to trust of rapid cycles of PDSA, which allowed us to deliver on the Triple Aim:

- Reducing cost by using existing employees and volunteers
- Addressing health of the population by targeting multiple patient tiers to optimize supply
- Delivering experience from invite to injection with sensitivity to patient needs

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GETTING RID OF STUPID STUFF: ADDRESSING SYSTEM INEFFICIENCY THROUGH END USER FEEDBACK

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Background Studies show that system inefficiency and processes that take away from the joy of medicine contribute to burnout. Using the Hawaii Pacific Health model, a program was established to allow for end user feedback concerning processes that contribute to workload.

Objectives Identify system processes and policies that increase work burden, produce redundancies, affect patient-safety, reduce satisfaction, or could be performed more efficiently by eliciting end user feedback. Provide evaluation of identified processes to then produce meaningful system change reducing workload where possible.

Methods Submissions were received by email or by entry using the Service Now platform from end users. Initial scope was for providers only with expansion to clinical administrators after 6 months. Requests were categorized by project team and variables assigned based on patient safety, provider burn-out, similar prior requests, and whether the request could be completed quickly. Evaluation of each request was then directed by the project team with involvement from subject matter experts and other resources when necessary. Upon