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An Innovative “Patient First” Vaccination Clinic Design



Host: Mark Graban
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About Dr. Joy Dobson

- Lives and works in Saskatchewan
- Former anesthesiologist and critical care physician
- Now practices “health system care”
- Has held a variety of leadership and large-scale transformation roles
- Part of the team tasked with optimizing the vaccine rollout to 1.2M citizens in the province





An Innovative “Patient First” Vaccination Clinic Design

KaiNexus Webinar May 18, 2021

Joy Dobson, MD, FRCP, CCPE

Regina, Saskatchewan, Canada

Saskatchewan – the birthplace of Medicare and Canada's breadbasket

Cradle to grave care
for 1.2M citizens

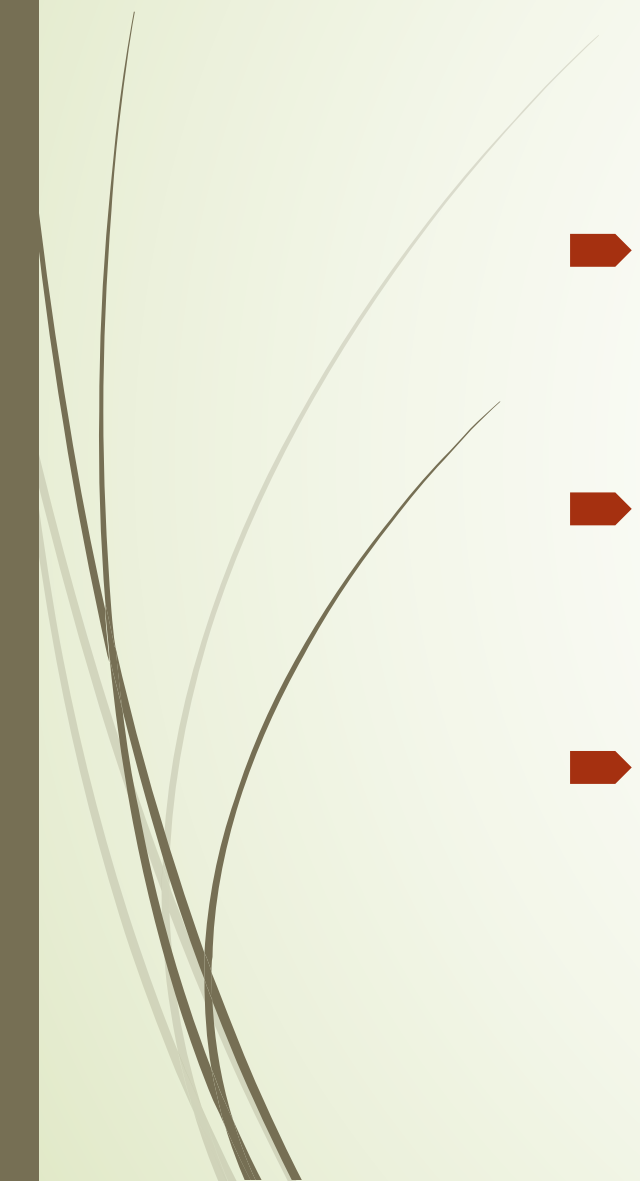
Single system covers the
entire province

Publicly funded






Saskatchewan Health Authority

- ➡ 44,000 employees
 - ➡ Responsible for all aspects of COVID care
 - ➡ Using pictures and information with permission
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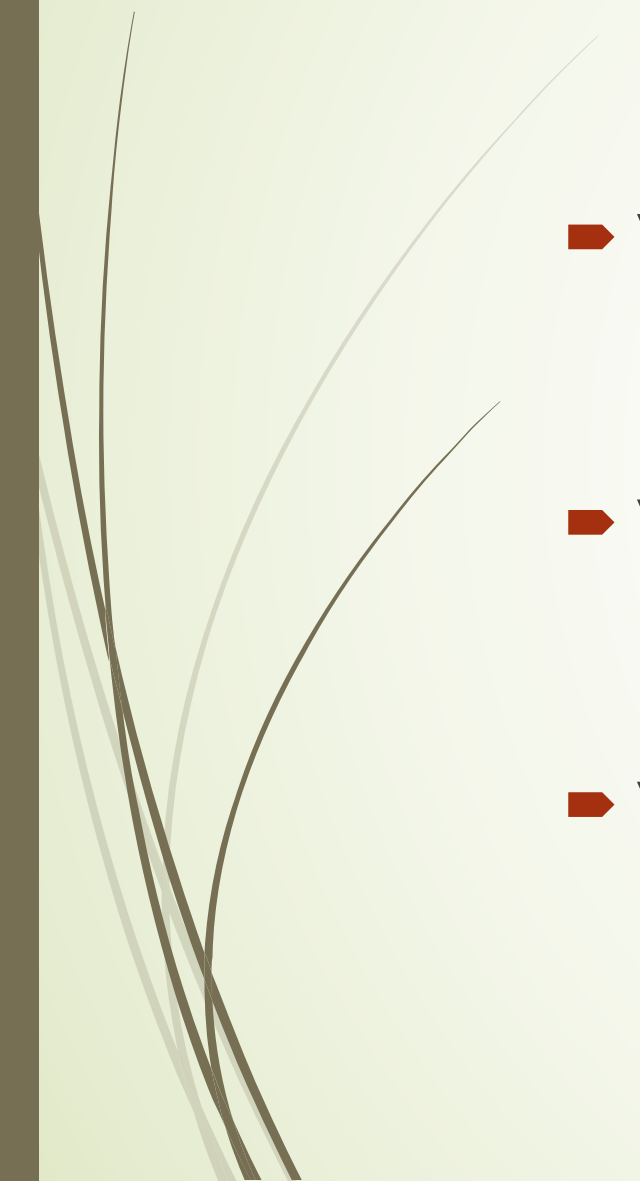


As of May 16, still in Wave 3

- Vaccine supply increasing
 - Over 50% of adults with first dose
 - 5% of adults with second doses
 - Another 1M needles into arms to “Finish the Fight”
- 



The three voices of Lean

- ▶ Voice of the customer
(want a great outcome and a great experience)
 - ▶ Voice of the process
(providers are burning out and exhausted)
 - ▶ Voice of the business
(taxpayers are bearing all the costs)
- 



Beauty of Patient First model


- Customer friendly – same needle in arm outcome but better experience (care comes to client)
- Adaptable to any immunizer cycle time and clinic size
- Reduced need for supplies, skilled staff and space
- Better for patients, providers, and payers

A personal timeline



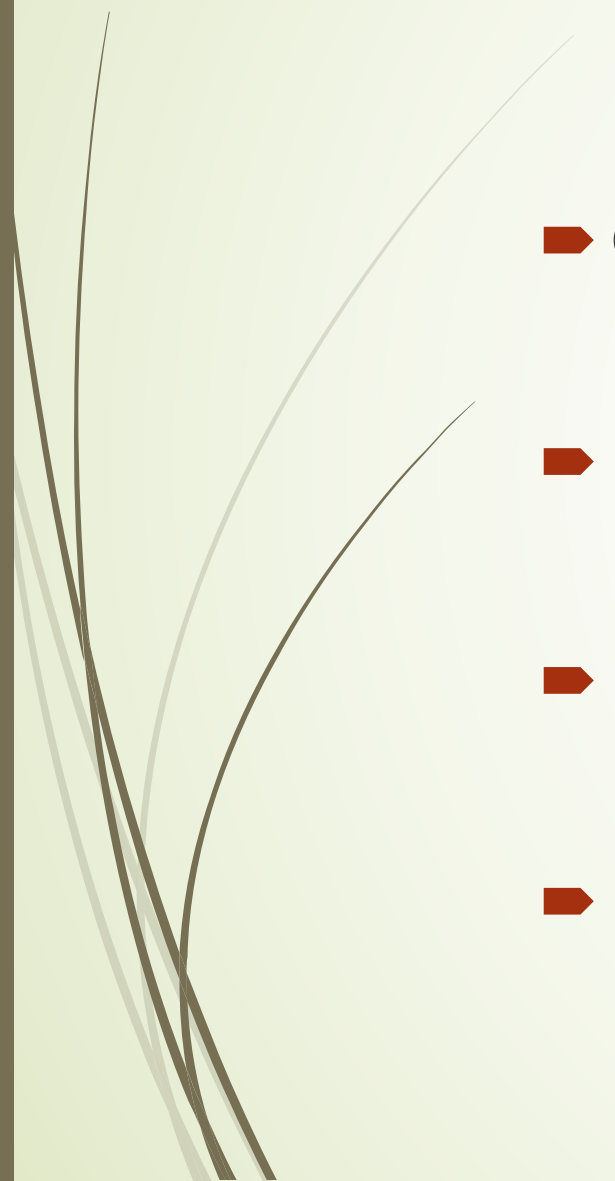


Feb 5: Seconded from 3sHealth to the SHA Readiness team

- 28 QI employees from Patient Safety portfolio
 - Task: Ensure 206 clinics across the province are ready to go-live by March 15
 - Goal: Safely and efficiently ramp up as vaccine supplies increase
- 

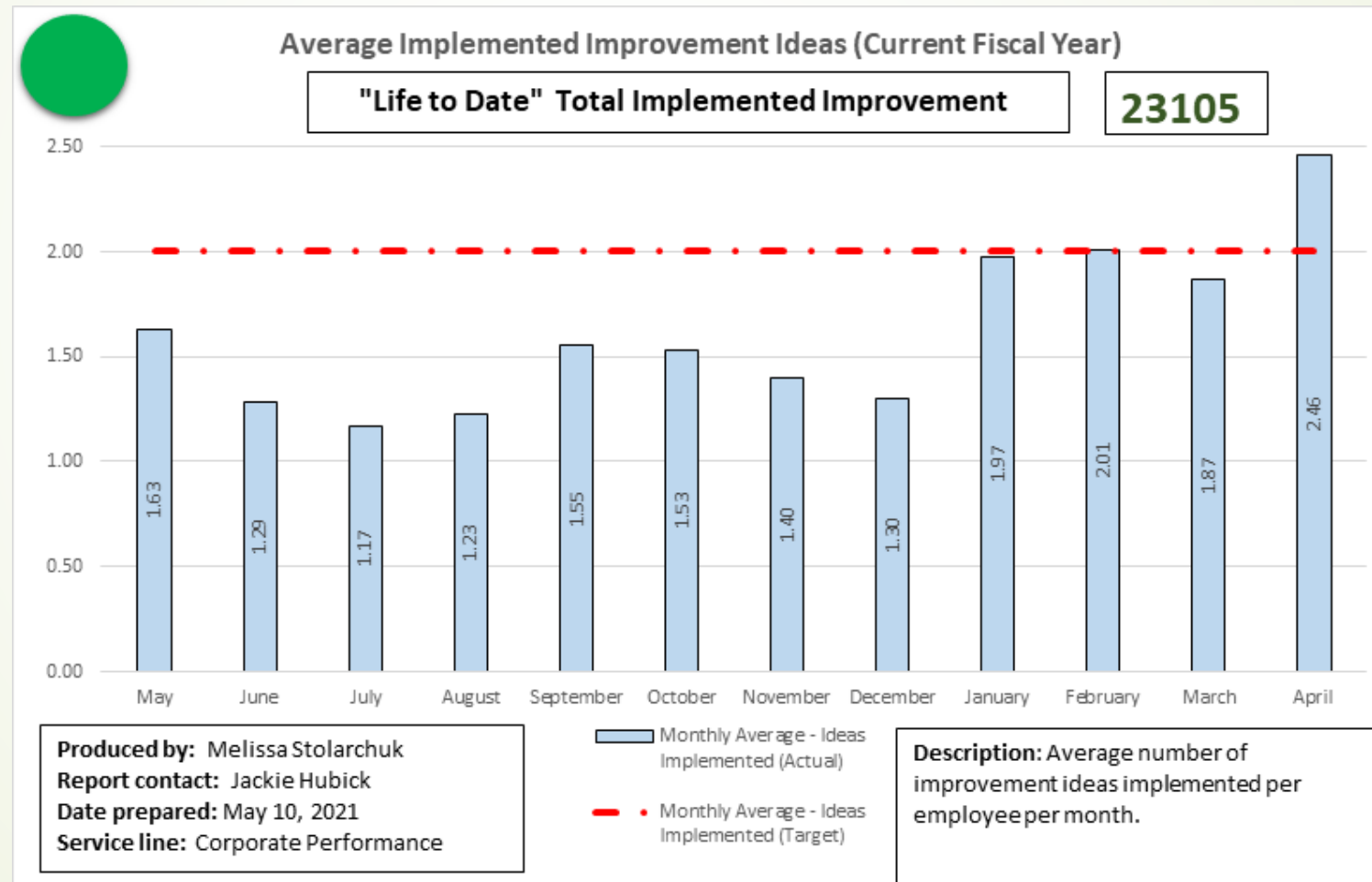


Not starting from scratch

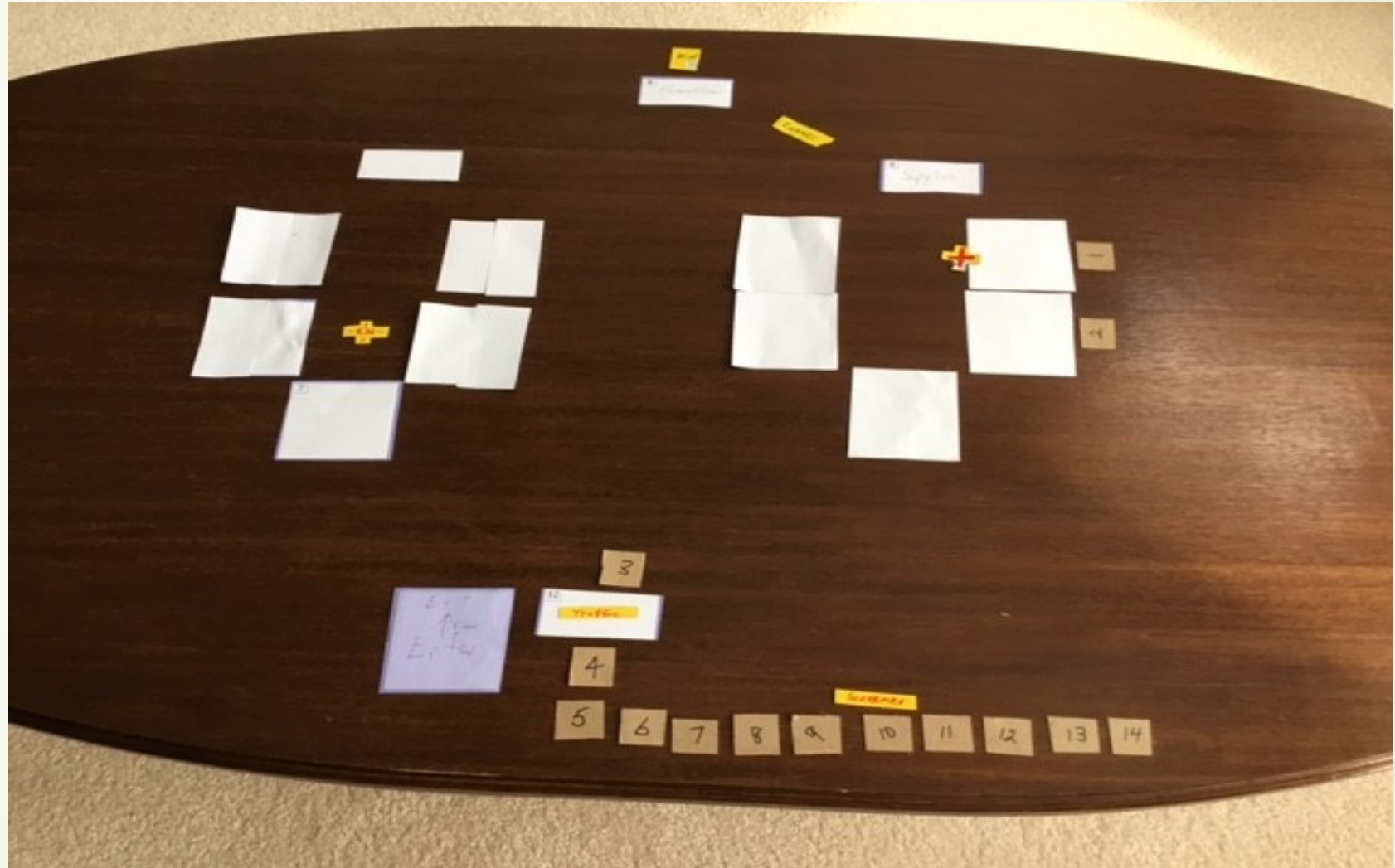
- COVID testing centres
 - Flu vaccine clinics
 - Early COVID vaccine clinics
 - Readiness package based on “7 flows of medicine”
- 

Not new to continuous improvement...

3sHealth ideas implemented



Feb 10: U cell idea submitted to SHA





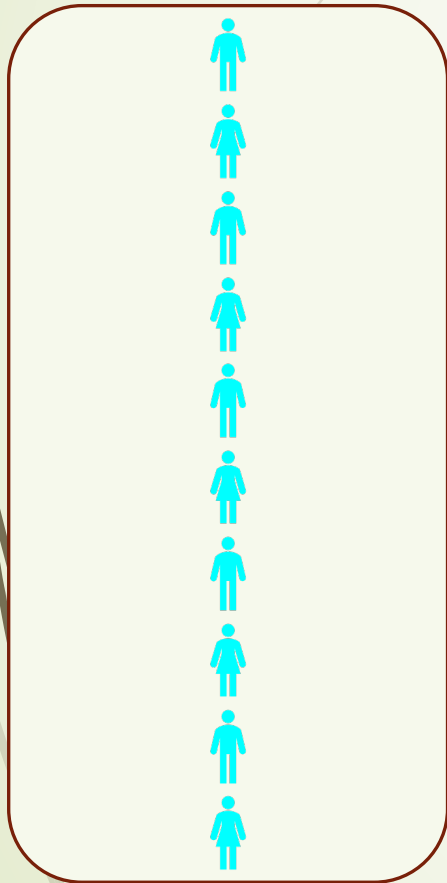
Problem to solve... we had to be able to ramp up significantly

- Current state cycle times for immunizers were 10 minutes
- With current design, we would run out of immunizers and space

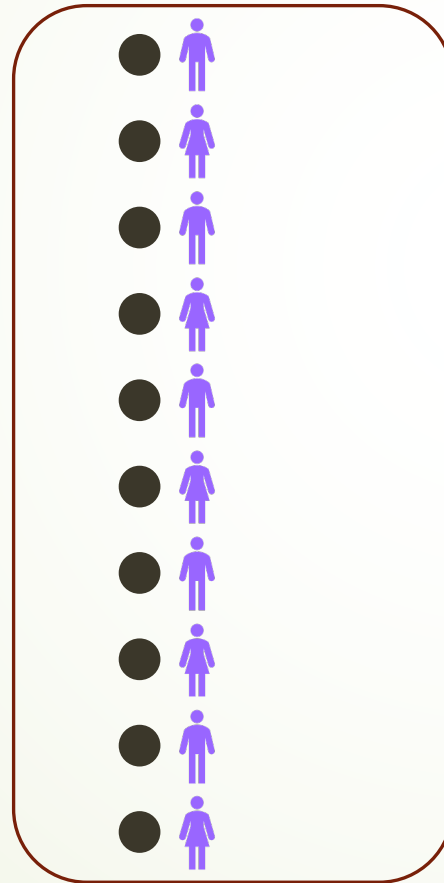
Vaccinator cycle time: 2 mins

10 Immunizers
Current model

Registration Area



Vaccination Area



Post-vaccine Area



Exit Area



Left @0819 hrs

10 Immunizers
Patient First Model

Vaccinator cycle time: 2 mins

Exit Area





March 2: Demo for VacciNexus group

- More Cheerio box cardboard cut-outs now on my dining room table...
 - A few minutes starting at 27:30 mark
<https://youtu.be/Hk8NliXW6oY?t=1645>
- 

March 15: No-appointment drive thru opens

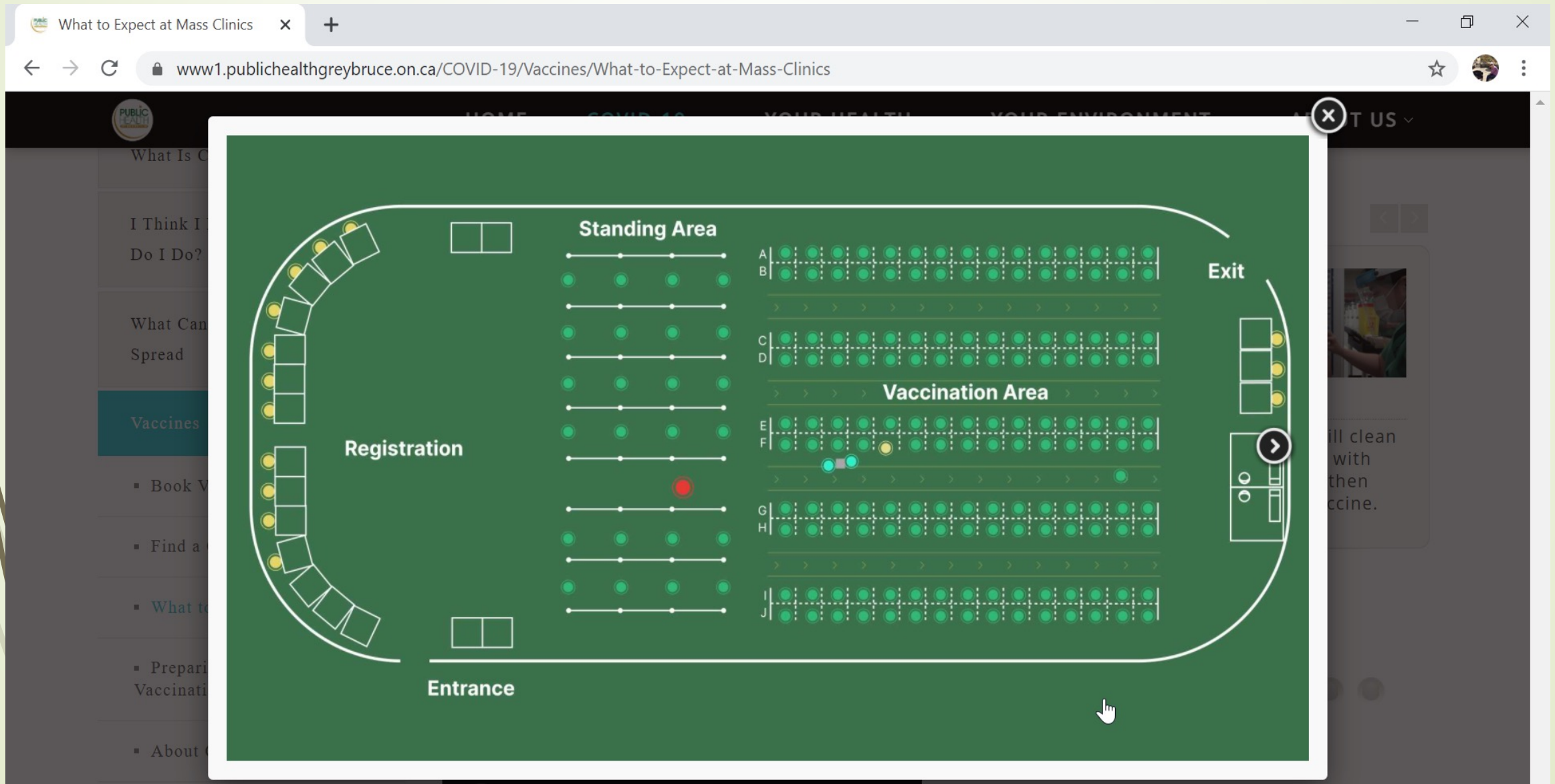




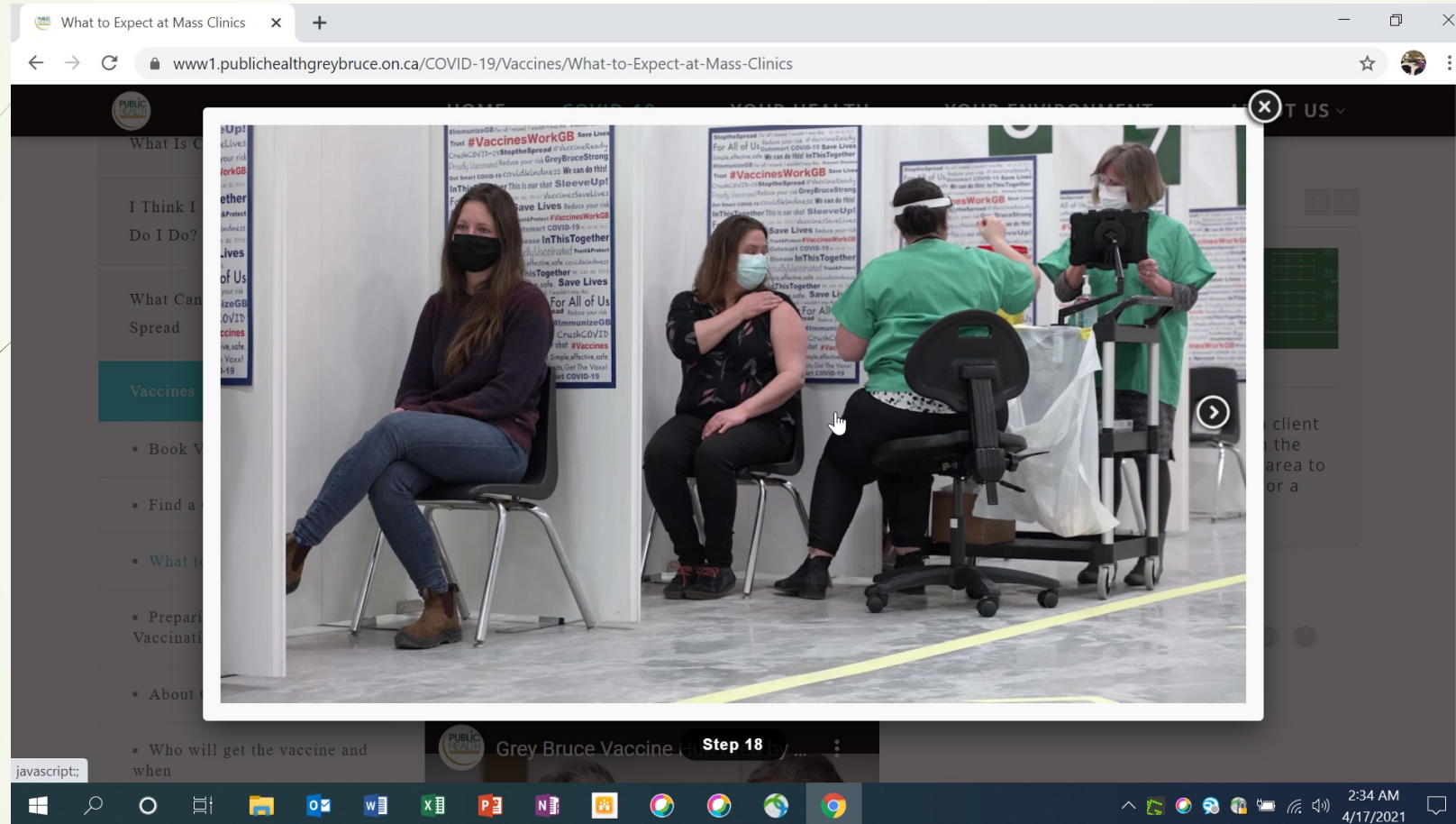
March 27: Call with Dr. Ian Arra in Ontario

- The Hockey Hub model
- Patient First without the roving registration
- Designed for mass immunization sites
- <https://www.leanblog.org/2021/05/improvements-to-the-covid-vaccination-process-large-and-small/>

Grey-Bruce County hockey hub model



150 client stations as 5 pods



<https://www1.publichealthgreybruce.on.ca/COVID-19/Vaccines/What-to-Expect-at-Mass-Clinics>



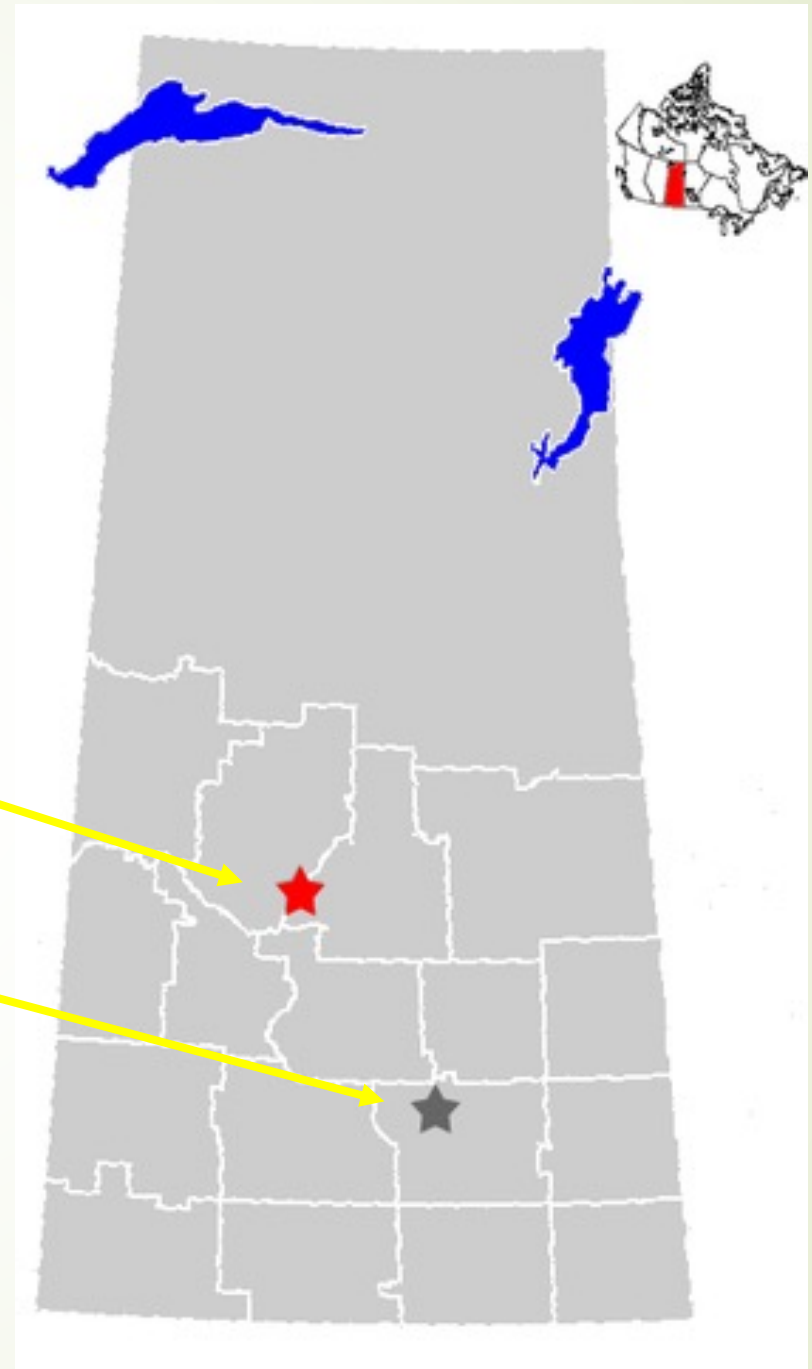
Grey-Bruce sets record at one clinic 3498 doses in 10 hours

- **150 client stations/pods** in rink area
- **5 immunizers** rove continuously through pods with support
- **1 minute cycle time (70 doses per immunizer per hour)**
 - 50 other support staff/volunteers
 - 8 registration clerks
 - 10 reconstitution staff also pre-fill syringes
 - 5 page screening/consent by client as part of appointment booking

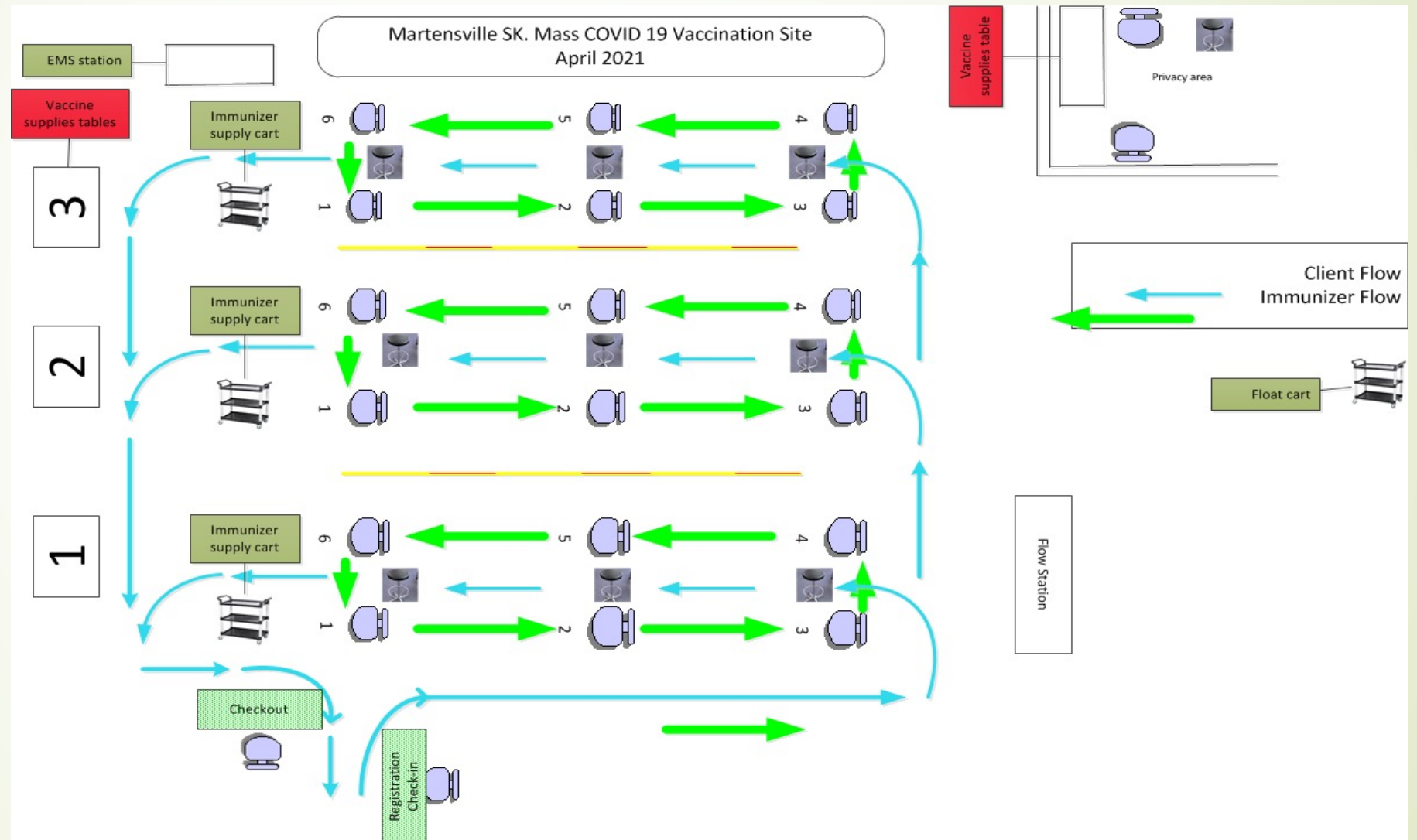
Let's try it!

Martensville (small town)

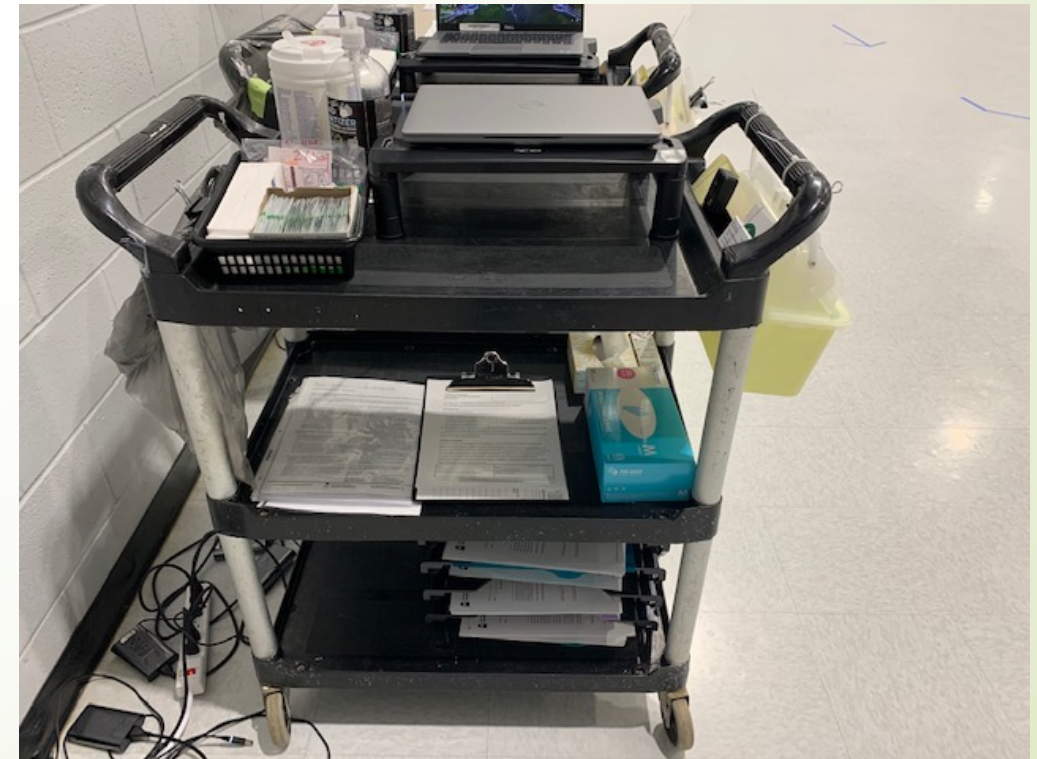
Regina (capital city)



April 1: Martensville rotating clinic



Martensville – 132 doses with 4 immunizers

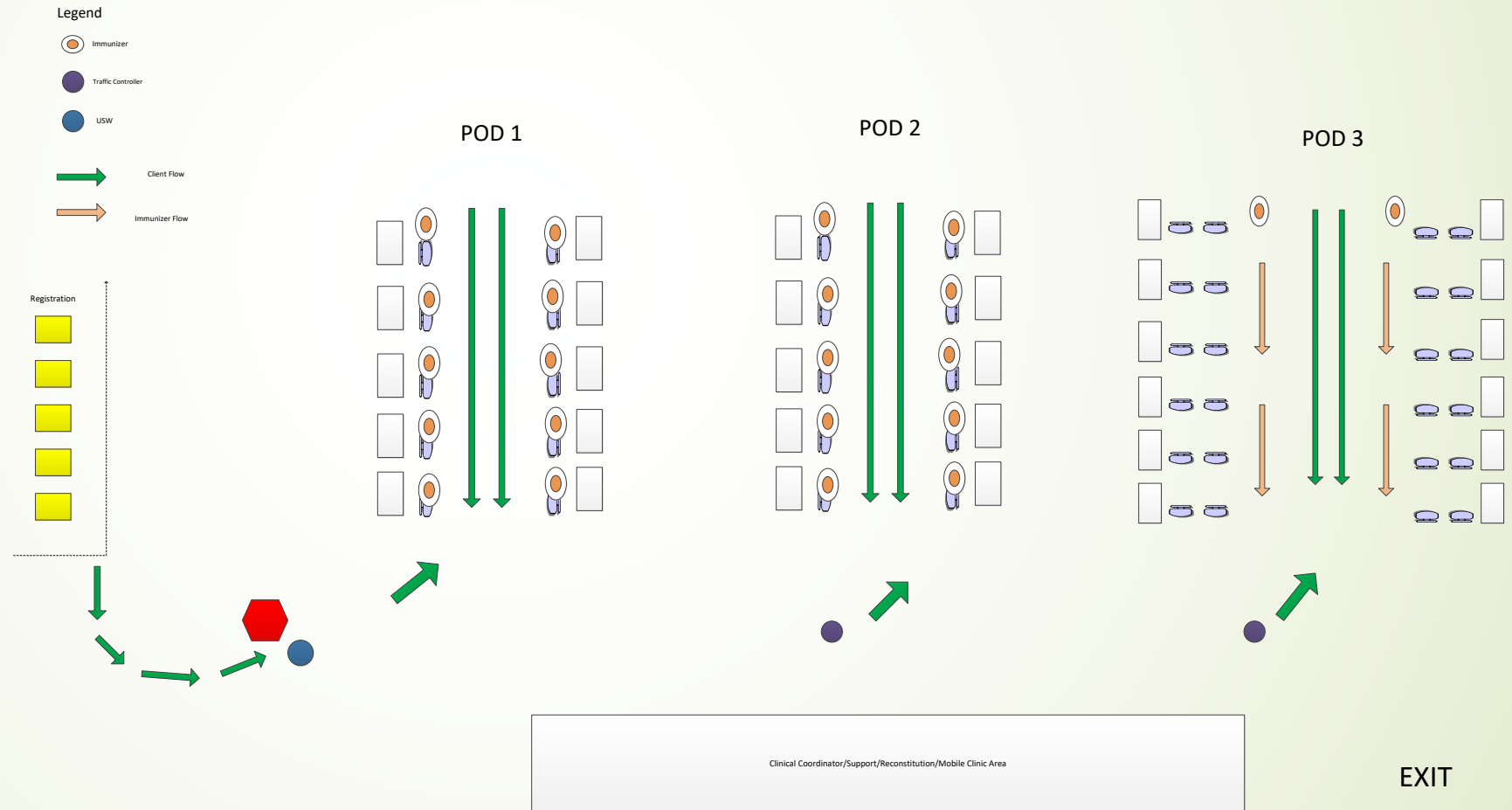




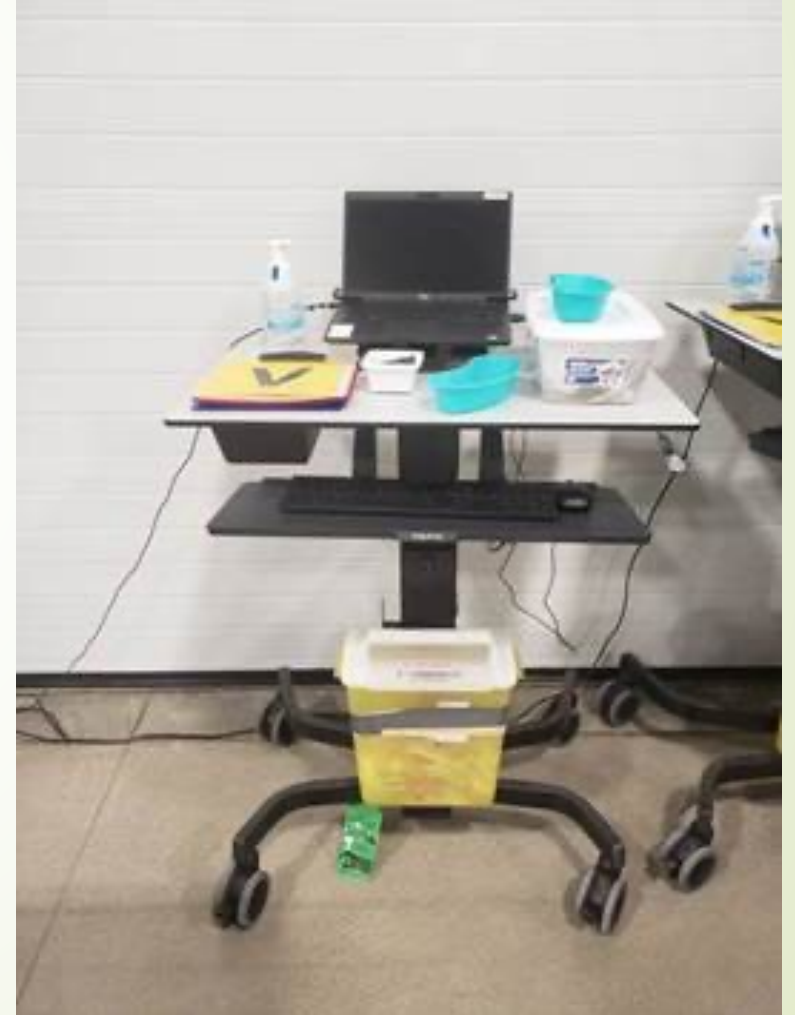
Learnings

- Patient First (modified hockey hub) model works
 - Did not rove registration
- Need minimal infrastructure

April 27: Regina Mass Appointment Clinic



**Pod 3 all day plus Pod 2 in afternoon
180 doses with 3 immunizers**



Client Station Setup





Learnings

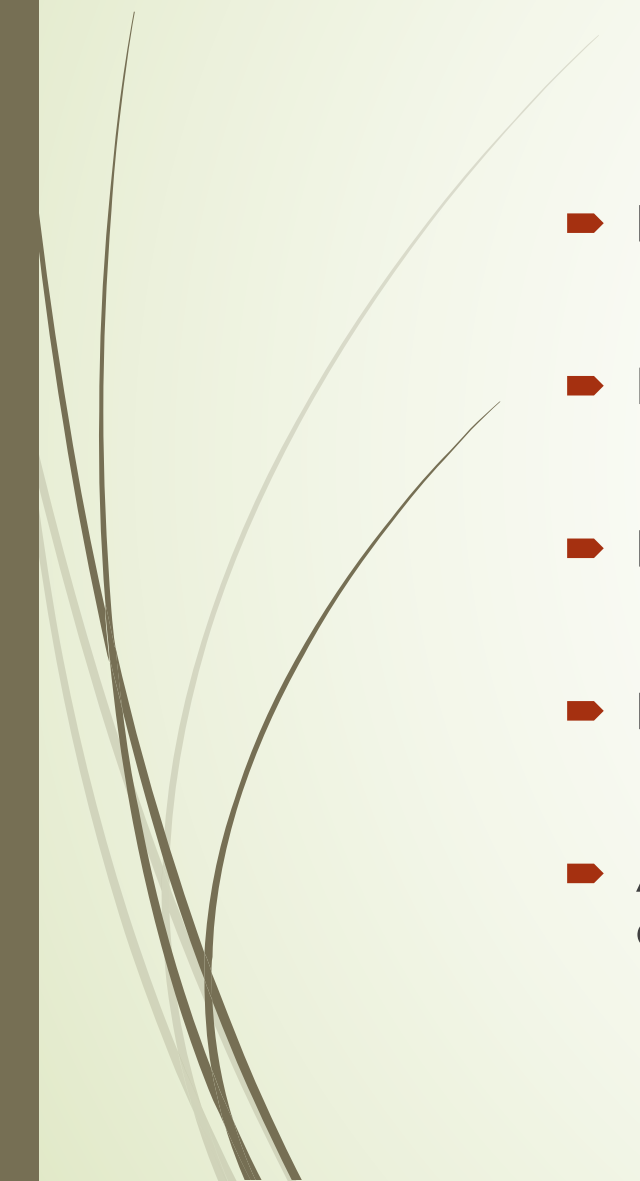
- Improved productivity by 50% with no changes to actual immunization task
- Removed from immunizer
 - the NVA work of sanitizing the immunization station
 - the NVA time of waiting for a patient to come to the immunization station
 - the defect of the traffic worker not seeing the immunizer was waiting

Afternoon roving registration in Pod 2

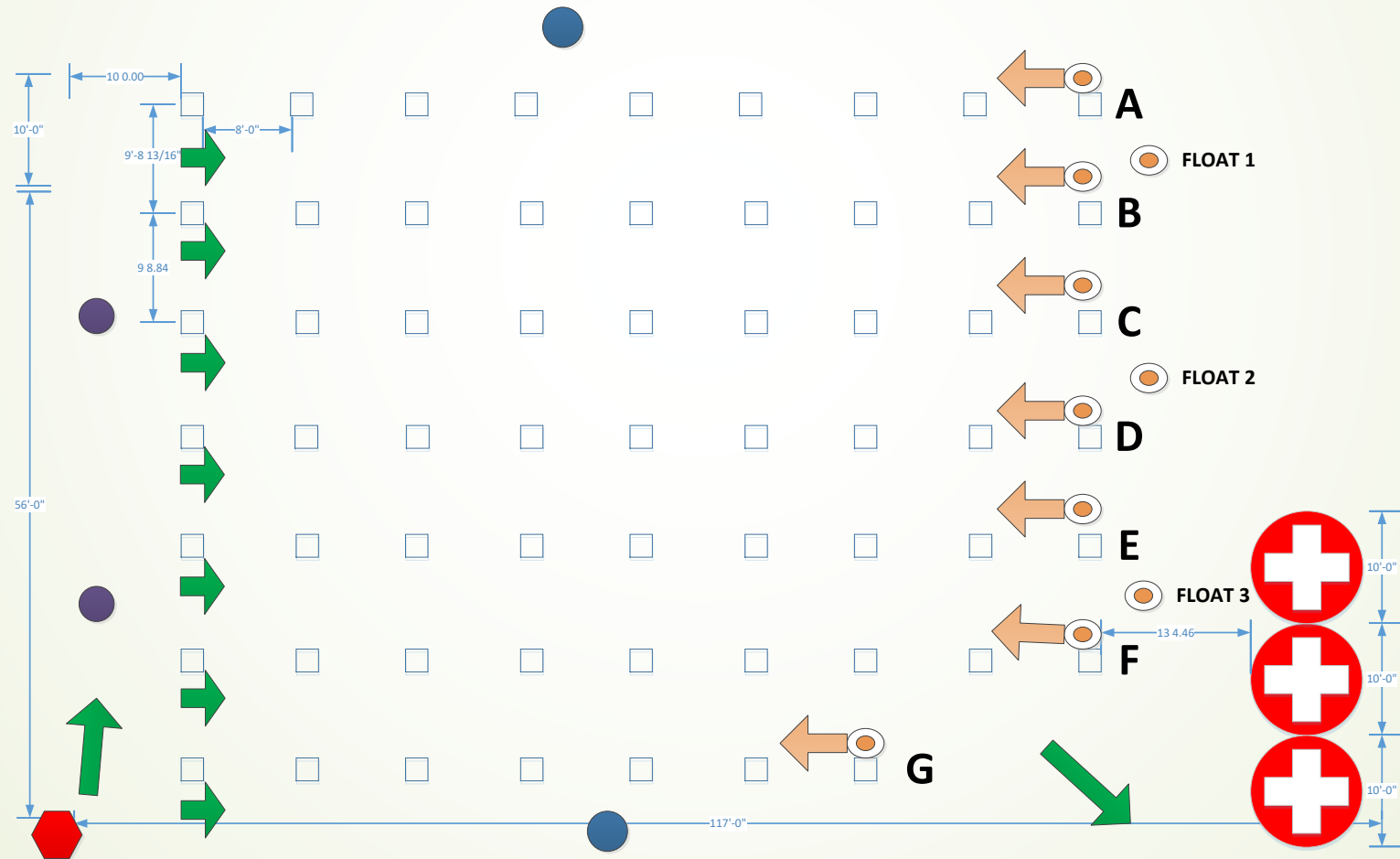




Learn the most from failure...

- 
- Lunch breaks meant line-ups and production pressure
 - Registration glitches and no back up help
 - No traffic management
 - Filled pod so no visual for flow direction
 - Adapted with no roving registration, 2 roving immunizers, used observation area (so met faster cycle times but no other savings)

May 7 Regina mass site closed – Convert all 3 pods to Patient First



Assumptions:

May 10: 625 doses with 10 immunizers



60 PDCAAs...





Patient First Hub Model Layout

- 7 Rows – Labeled A through G
- 68 Client Stations – Numbered
- Chairs are 10ft on center leaving 8ft between the chairs (marked with a X on the floor)
- Rows A & G have 2 chairs at each station (other rows can accommodate 2 chairs if needed)
- Row G has 8 stations while A through F have 10 stations per row (to accommodate for the exit)
- 4 High needs stations with stretchers



Client Flow

- Client is COVID screened prior to entry and then is Registered
- Client enters clinic and is directed to an “On Deck” circle for a row or directly to a numbered chair by walking down the right side of the row
- Client is instructed to read the information hanging on the back of their chair as they wait for the immunizer to arrive
- Chairs are facing the immunizer and so can see the process as the immunizer is moving towards them and prepare their arm
- Client is greeted by the Immunizer, receives the vaccine and is asked to turn their chair 90 degrees to face the exit (and on to show immunized)
- Client waits for 15 minutes observation in the same chair and then leaves the clinic

Immunizer Flow

- This model works when the cycle time of the immunizer matches the number of stations they have available to them
- The immunizers are never waiting for a client to arrive
- The clients are not sitting waiting for an extended period of time for the immunizer
- The faster the immunizer, the more stations they need

Guide for lane size is

$(15 \text{ minutes/Immunizer Cycle Time}) + 6 = \text{Number of stations required}$

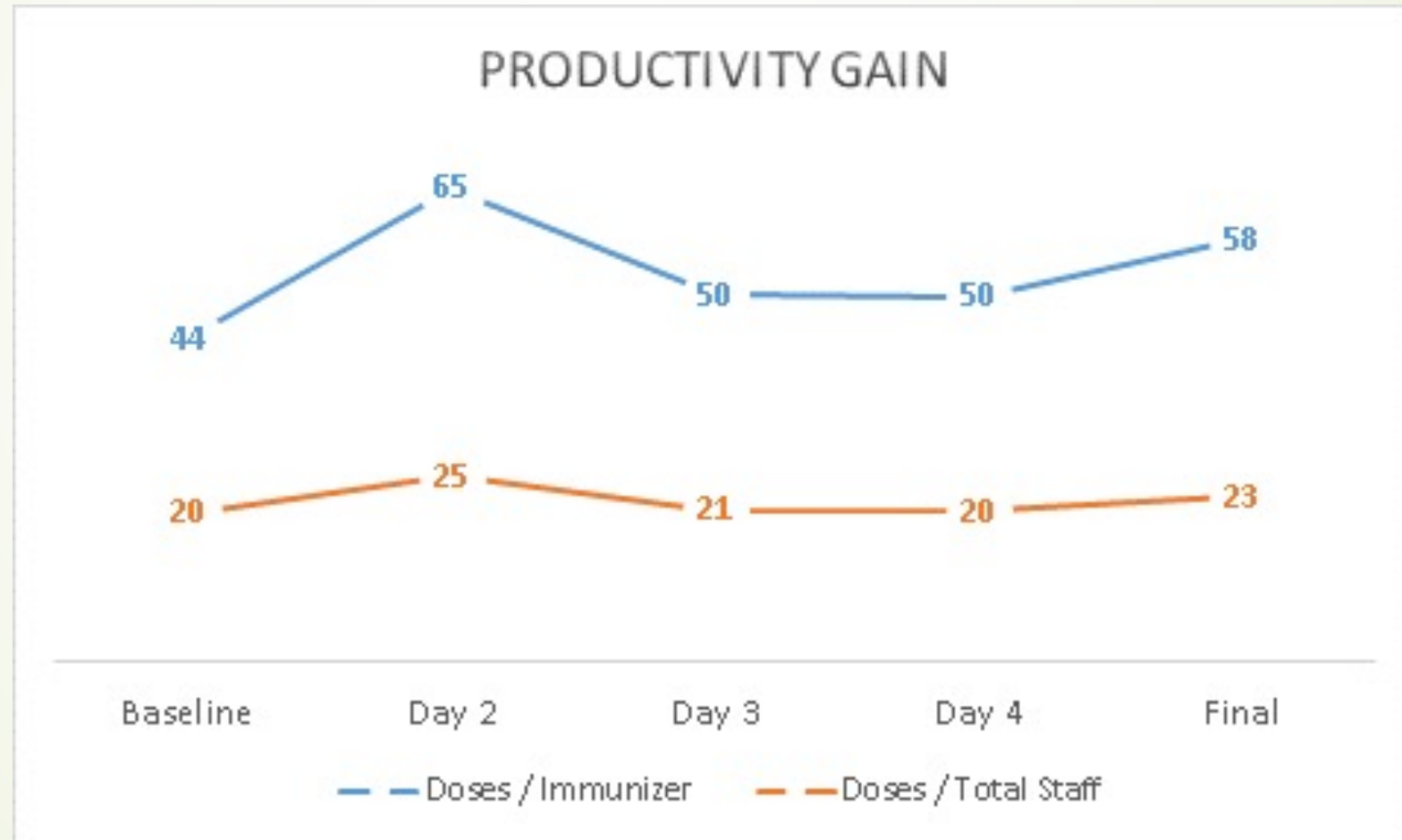
***the +6 is a buffer to allow for roving registration, the immunizer, 2 clients waiting, and 2 chairs empty for flow/cleaning**



May 13: Examples of PDCAAs completed

- Added more high needs stations
- Better visual cues for clients and staff
- Team based management of pod
- Key performance metrics developed for ongoing management and spread

Note – no changes to scheduling, staffing, or VA immunizer work






Staffing Requirements for 6 lanes

- 2 USW (COVID screening at doors)
- 4 Registration clerks
- 9 Immunizers
 - 1 Immunizer per lane
 - 1 Float Immunizer per 2-3 lanes
- 2 USW (traffic control in clinic)
- 2 USW (cleaning and supplies)
- 2 Clinical Coordinators
- 2 Reconstitution staff

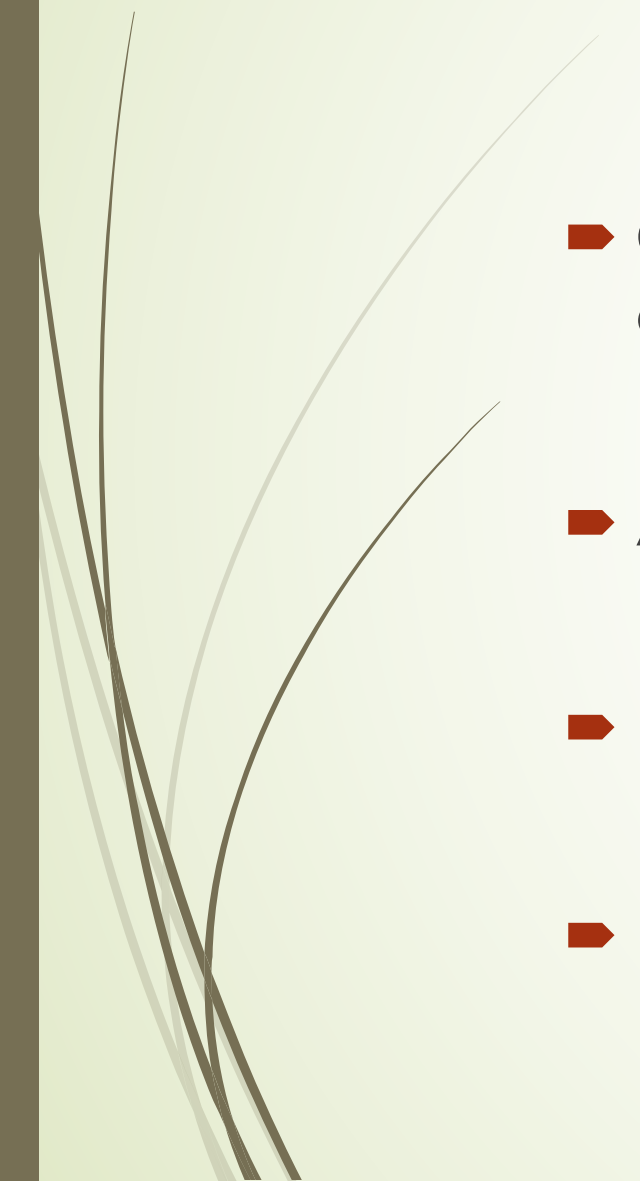


May 13 Martinsville: Walk-in clinic 302 doses with 6 immunizers

- Productivity increase 50% from baseline
 - Pre-filled syringes by reconstitution staff
 - Client prepared ahead by reading vaccine screening questions
- 

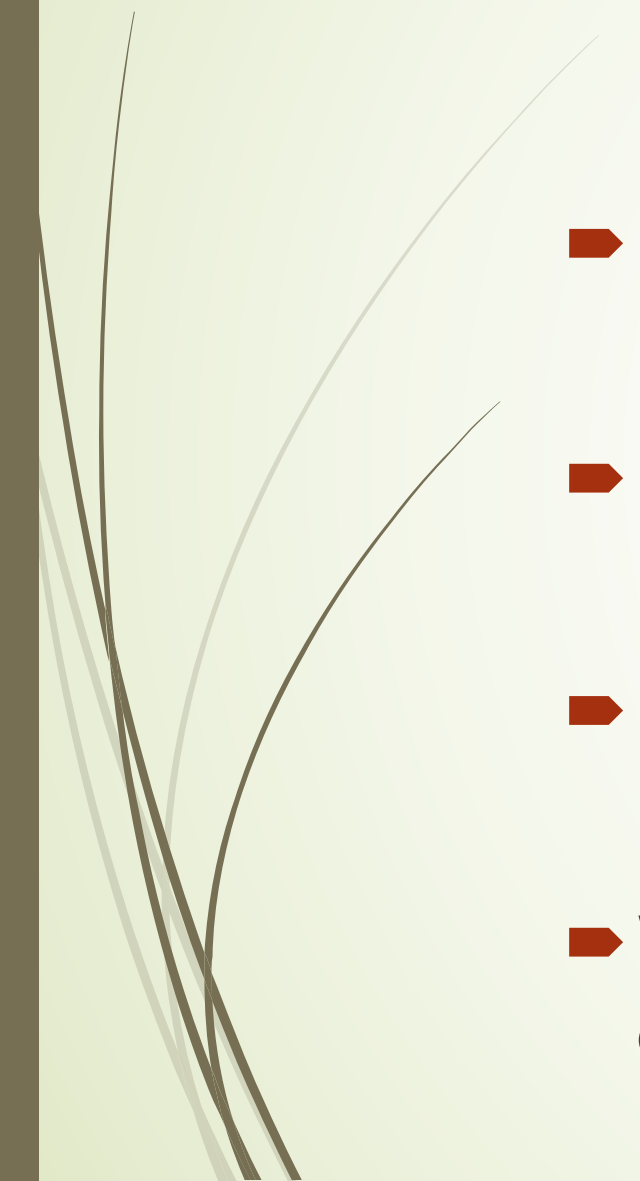


Beauty of Patient First

- Customer friendly – same outcome but better experience (care comes to client)
 - Adaptable to any cycle time and clinic size
 - Reduced need for supplies, skilled staff and space
 - Better for patients, providers, and payers
- 



Still lots to learn and try...

- 
- Registration roving to client
 - Immunizer support for data entry
 - Plain language patient materials
 - Whatever new thing is thrown at us by COVID and decision-makers

Questions?



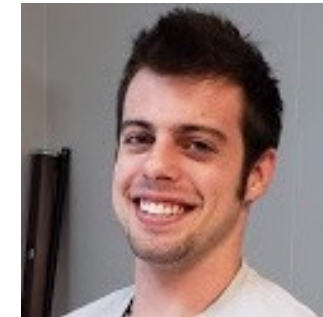
Announcements

(Then Q&A)

KaiNexus Webinars

Register: www.KaiNexus.com/webinars

- Training Team Office Hours
 - May 19th,
 - *KaiNexus customers only*



- Next Webinar
 - Panel discussion with some KaiNexus customers
 - May 20th
 - *Open to everybody!*

Other Resources

The screenshot shows the KaiNexus website's 'Continuous Improvement Webinars on Demand' section. The header includes the KaiNexus logo and navigation links: Why KaiNexus, Solutions, How, Features, Learn, About, and a 'Get Started' button. The main heading is 'Continuous Improvement Webinars on Demand'. Below this, there is a featured webinar titled 'Reporting the ROI of Improvement' with a 'WATCH NOW' button. The description states: 'Learn how to measure and report the ROI of continuous improvement in this free webinar.' At the bottom, there are four smaller webinar thumbnails with titles: 'The Colors of Love', '"Primero Kaikaku... Evento Kaizen Después"', 'Transitioning Lean from Manufacturing to the Office', and 'Understanding your Strengths and Blind Spots for Enhanced Buy-in and Communication'.

KaiNexus.com/webinars

The screenshot shows the KaiNexus Blog page. The header is identical to the webinars page. The main heading is 'KaiNexus Blog' with the tagline 'Everything Continuous Improvement' and a 'SUBSCRIBE' button. Below the header, there are two tabs: 'IMPROVEMENT' (selected) and 'CUSTOMER'. The featured article is 'An Overview of DMAIC for Beginners', posted by Brittany Currier on Mar 18, 2021 1:20:21 PM. It includes 'Tweet' and 'Share' buttons. The article text describes DMAIC as a data-driven technique used to improve processes, a key tool of Six Sigma methodology, and can be implemented as a standalone improvement method or as part of other process initiatives like Lean. It states: 'The technique is simple, yet powerful. It brings structure to the improvement process and helps teams explore potential solutions, decide a course of action, and implement process controls in short order.' To the right of the text is a vertical flowchart of the DMAIC process: 'Define' (orange box), 'Measure' (green box), 'Analyze' (green box), and 'Improve' (teal box), connected by downward arrows.

blog.KaiNexus.com



- Free platform for sharing vaccination process improvements!

The screenshot displays the VacciNexus COVID Vaccine Dashboard. The interface includes a top navigation bar with the VacciNexus logo, a search bar, a notification bell with a red '2', and a user profile for Mark Graban. A left sidebar contains navigation links for BOARDS, LISTS, REPORTS, PEOPLE, and ADMIN. The main content area is titled 'COVID Vaccine Dashboard' and features a large blue header for '(22) Questions for the Community'. Below this header is a table with columns for 'Title' and 'Last Comment'. A question is visible: 'Can you share the rough throughput times for each process step and other useful process details?'. The answer, provided by Mark Graban on April 25, 2021, at 7:06 AM, describes two vaccination sites and their processes. Below the main question section are six smaller dashboard panels, each with a title and a list of items: (4) Vaccine Hesitancy, (42) Scheduling and Access, (20) Efficiency & Patient Flow, (17) Communication, (15) Vaccines & Supplies, and (23) Safety & Vaccination Rates.

COVID Vaccine Dashboard

(22) Questions for the Community

Title	Last Comment
Can you share the rough throughput times for each process step and other useful process details?	<p>I've seen two vaccination sites where the time at the vaccination table was either 60 seconds or 80 seconds (that's how long each patient was there).</p> <p>Both sites had two people at the table -- the division of work was a little different in each case, but each site had one person pretty well focused on the injection while the other did some data entry and other indirect tasks.</p> <p>In both cases, syringes were pre-filled in a side operation with people dedicated to that work. Since filling and prepping a syringe can take 5 to 7 minutes, I think that's important to do as a "subassembly" operation. There's no reason to make the patient sit and wait while their syringe is being drawn up. When you have the subassembly operation, you do need processes that help prevent the production of extra syringes at the end of the day.</p>

(4) Vaccine Hesitancy

- Getting Staff to Say Yes
- Fielding Staff Vaccine Questions and Concerns
- Increasing Staff Vaccination Rates
- Reducing Vaccine Hesitancy in Staff

(42) Scheduling and Access

- Set up specific protest area to not block access
- Getting Staff to Say Yes
- Fielding Staff Vaccine Questions and Concerns
- Reducing Wait Times for Staff at On-Site Clinic
- Increasing Staff Vaccination Rates
- Organizations paying staff to get vaccinated

(20) Efficiency & Patient Flow

- Set up specific protest area to not block access
- Employee Vaccination Program
- "Fast Track" Pass for Patients with Mobility Issues
- Tip: Start "quick and crude" and then "check and adjust"
- Quick and easy improvement board
- Drive-Through Vaccination Clinic in Extremely Cold

(17) Communication

- Getting Staff to Say Yes
- Fielding Staff Vaccine Questions and Concerns

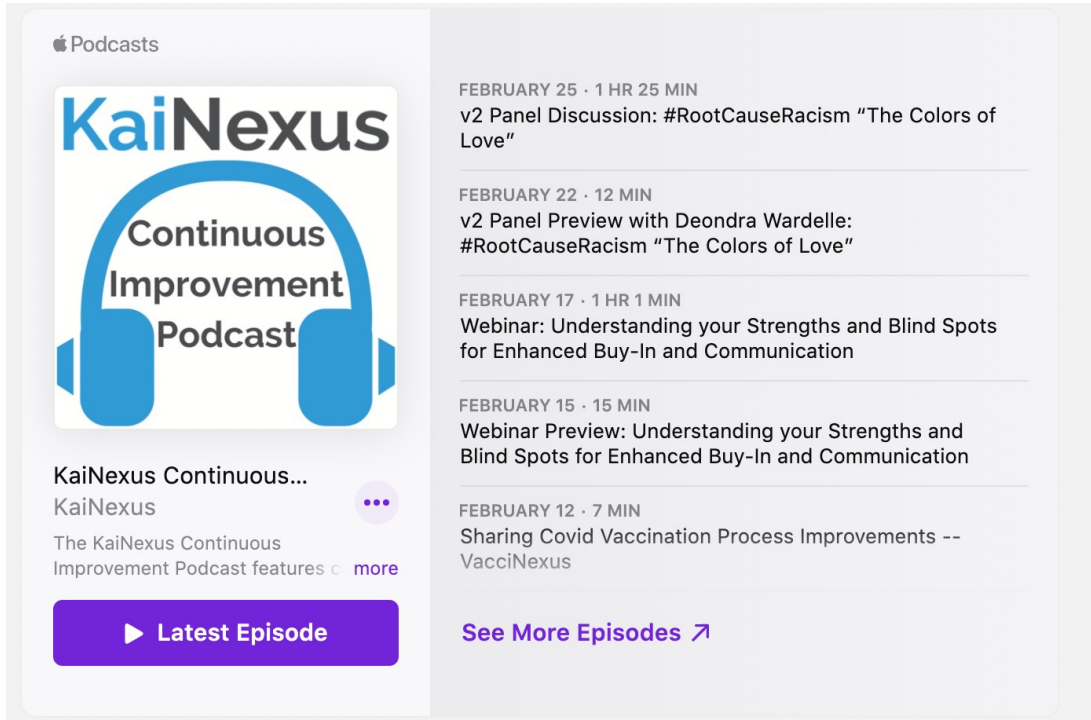
(15) Vaccines & Supplies

- Article
- Reducing Vaccine Hesitancy in Staff

(23) Safety & Vaccination Rates

- Set up specific protest area to not block access
- Getting Staff to Say Yes

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