

EMBRACING EXCELLENCE

LEAN

CONFERENCE CANADA
WINNIPEG | JUNE 6-9, 2022



PRESENTED BY

CANADIAN
MANUFACTURERS
& EXPORTERS

CANADA'S LARGEST LEAN
EVENT IN 2022

EMBRACINGEXCELLENCE.CA



LEAN & COVID-19 VACCINES

THE INSIDE SCOOP ON MANITOBA'S VACCINE CLINIC INNOVATIONS

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**‘THANK YOU
FOR YOUR
SERVICE’**

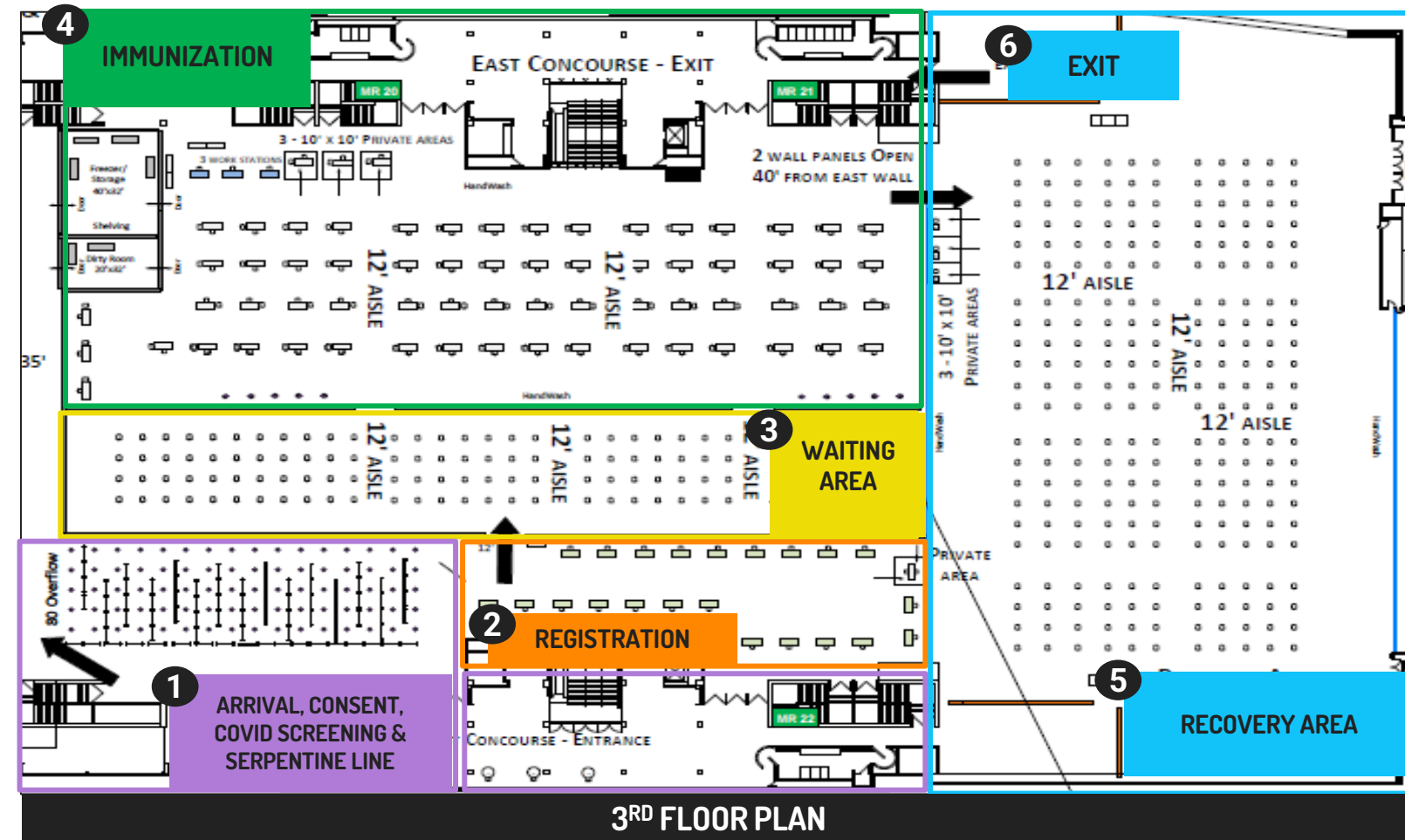


MANITOBA COVID VACCINE CLINICS

TRADITIONAL (ARTISAN) MODEL

TRADITIONAL VACCINE CLINIC MODEL

RBC CONVENTION CENTRE



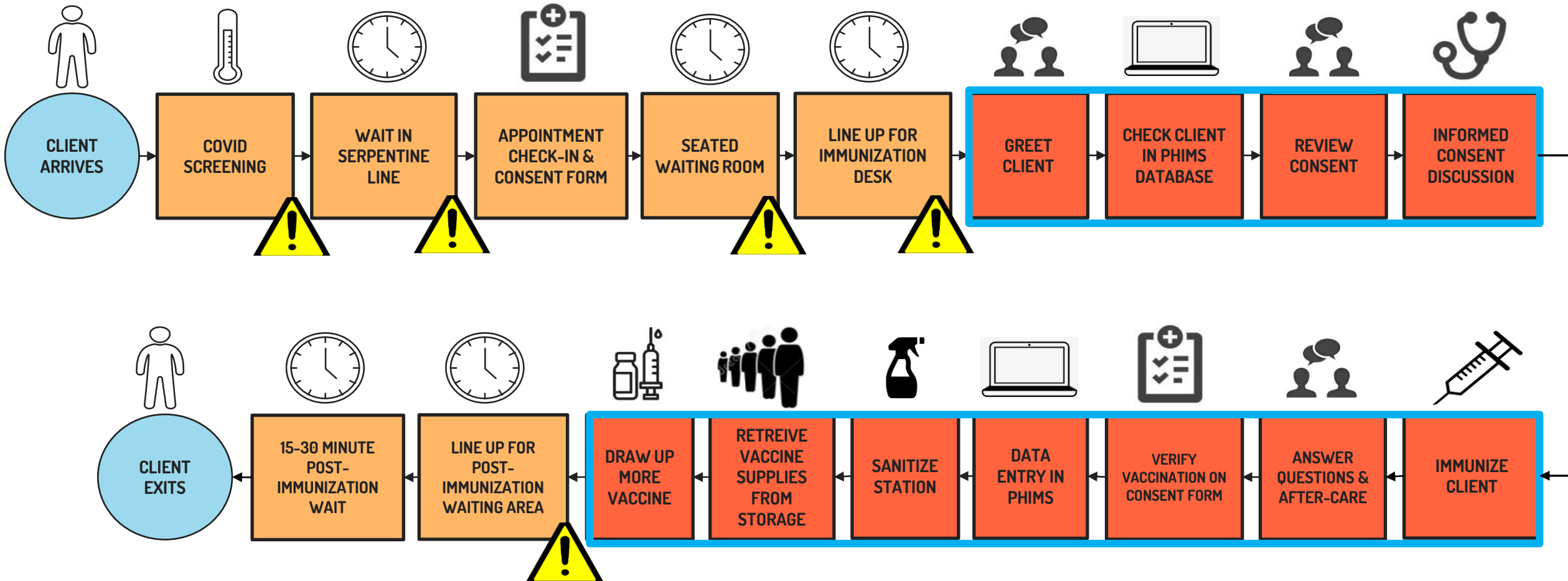
1ST & 3RD floors of the RBC Convention Centre in downtown Winnipeg

Original design capacity was 6,000 doses/day

Operational limitations would have capped out at ~5,000 doses/day

GOAL:
MAXIMIZE THROUGHPUT TO 10,000 DOSES/DAY

TRADITIONAL VACCINE CLINIC MODEL



35-85 MIN
TURNAROUND TIME

WINNIPEG, MANITOBA | JUNE 6-9, 2022

TRADITIONAL VACCINE CLINIC MODEL

MULTIPLE TASKS BY IMMUNIZER



Immunizer completes all process steps at assigned table
(other than Covid screening and appointment check-in)

VARIATION OF 2.5 MIN- 25.0 MIN PER CLIENT

Large cycle time variation due to:

- Immunizer experience/speed
- Immunizer data entry/technology skills
- Immunizer frequently stopping production
(e.g. to draw-up additional vaccine)
- Client requires informed consent
- Client mobility, vaccine risk/comprehension

**Unable to interpret the types of improvements
required with such large variation**

IMPROVING SERVICE DELIVERY

OPERATIONAL CHALLENGES



- Traditional system designed to be driven by 'pull' by the immunizers
- A few immunizers operating at a slower pace undetected for 1-2 hours could create tremendous backlog

5000 appointments/day = new client every 8 seconds

- Small production problems can cause major lineups to form in minutes, with inability to catch up for hours

Photo courtesy of Protect MB: <https://protectmb.ca/covid-19-vaccine/>

IMPROVING SERVICE DELIVERY

FACTORS DRIVING CHANGE- IN THE NEWS



MANITOBA'S HEALTH MINISTER IS SATISFIED WITH PACE OF COVID-19 VACCINE ROLLOUT DESPITE SUPPLY PROBLEMS

'What we need to see is more urgency and more dedication from the provincial government to ramp up and scale up the pace at which they're delivering vaccines to people in the province right now.'

Winnipeg
Free Press

NO SILVER MEDAL FOR VACCINE ROLLOUT

'The province had the doses to start immunizing the elderly much earlier. It chose not to. It could cost lives'

Winnipeg
Free Press

CONCERNS MOUNT OVER VACCINE SUPERSITE

'Staff scheduling issues resulted in some unacceptable delays for patients at the Winnipeg supersite.'

TRADITIONAL VACCINE CLINIC MODEL

PROBLEMS MANAGED BY OVERSTAFFING

Increased the # of immunizers to offset those immunizers operating at a slower pace & temporarily improve client wait times

Puts a 'Band-Aid' on the problem, but does not address the root causes:

- Too many tasks for immunizers
- Wide range of immunizer competencies
- Large variation in client cohort characteristics
- Lack of target KPI's or target pace to work towards

Difficult to get key decision makers on board to make changes when problems were hidden by overstaffing





“Takin’ on a challenge is a lot like ridin’ a horse. If you’re comfortable while you’re doin’ it, you’re probably doin’ it wrong.”
- Ted Lasso

INSPIRATION FOR CHANGE

ONTARIO GREY BRUCE HEALTH UNIT- HOCKEY HUB MODEL





**CLIENTS GETTING VACCINATED
& RECOVERING IN PLACE**



**OBSERVER CHECKING ON CLIENTS
POST-VACCINATION**



DR. IAN ARRA
ONTARIO MEDICAL OFFICER OF HEALTH &
GREY BRUCE HEALTH UNIT CEO

IMPROVING SERVICE DELIVERY

TRADITIONAL MODEL VS. AVP MODEL



TRADITIONAL MODEL- desks



AVP MODEL- 'trunk lines'

IMPROVING SERVICE DELIVERY

MAINTAINING CONSISTENT IMMUNIZER PACE

KEY CHANGES:

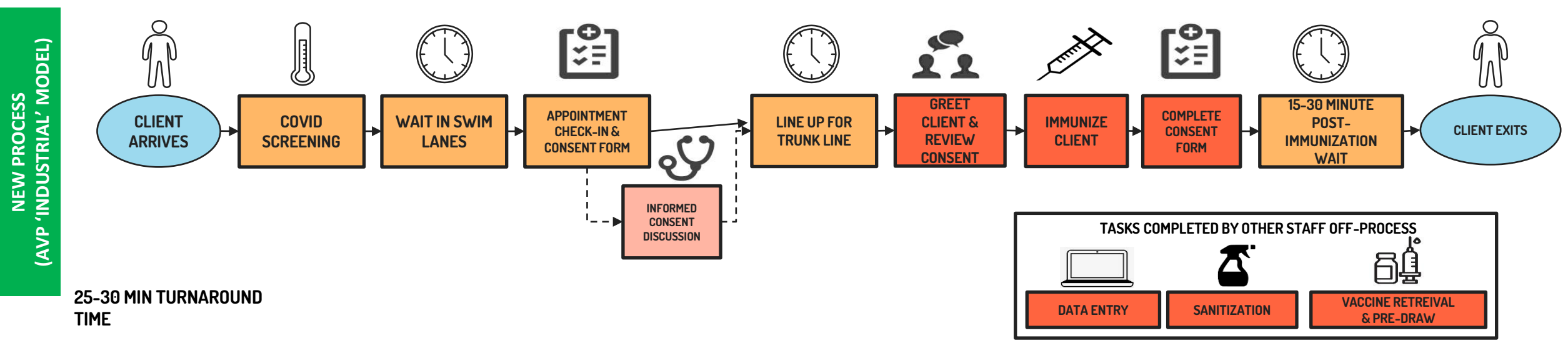
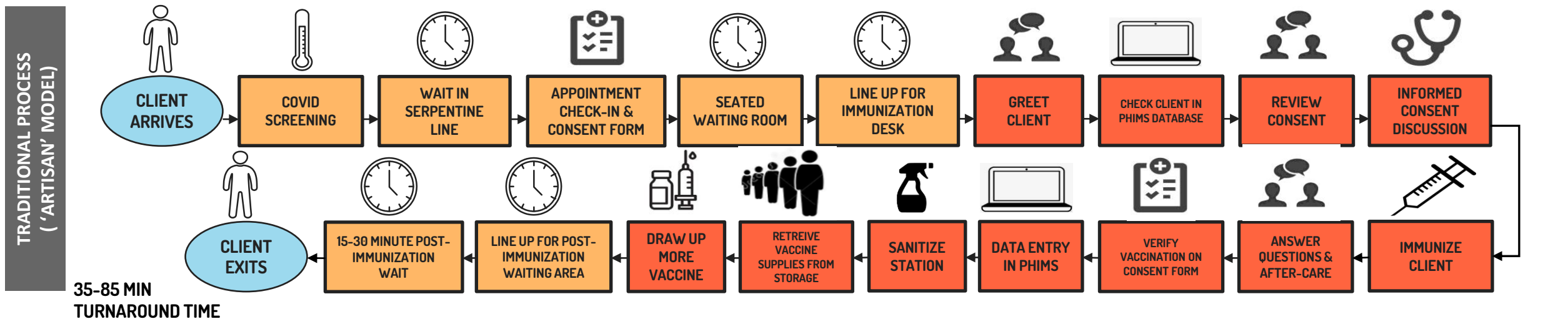
- Launched the Accelerated Vaccination Program (AVP)- an industrial model
 - Changed the floor plan for better flow
 - Work divided into small, repeatable blocks
 - Let the immunizers immunize
- Repeatable processes and lower variation in cycle times allows for:
 - predictable staffing models
 - visibility to process blockages
 - easier to identify root cause
- Implemented vaccine pre-draw on an industrial scale (new concept to Manitoba)
 - Resulted in 30% productivity for immunizers



**LET THE IMMUNIZERS
IMMUNIZE!**

IMPROVING SERVICE DELIVERY

TRADITIONAL VS. NEW AVP MODEL



IMPROVING SERVICE DELIVERY

KPIs- MEASURING IMMUNIZER PACE (TAKT)



- In order to 'balance the line' to the pace of the immunizer, we needed to find a way to measure it
- With the AVP model, we still had the problem of 1-2 immunizers operating at a slower pace creating significant backlogs in other process areas if not quickly addressed
- The ideal pace was **1 minute per client** in order to manage client demand
- We began observing and timing the immunizers as they moved from client to client, which led to some interesting outcomes...

NEED TO KEEP TRACK OF THE IMMUNIZER'S PACE SO CLINICAL LEADS COULD STEP IN AND PROVIDE COACHING, IF REQUIRED

IMPROVING SERVICE DELIVERY

THE HAWTHORNE EFFECT

THE HAWTHORNE EFFECT:

- The tendency for people to modify their behaviour when they are aware they are being observed
- Openly measuring an aspect of your business may unintentionally influence that aspect, simply because of the attention it is receiving, rather than because of the manipulation of independent variables
- This is a side effect, and not the desired outcome of using measures!

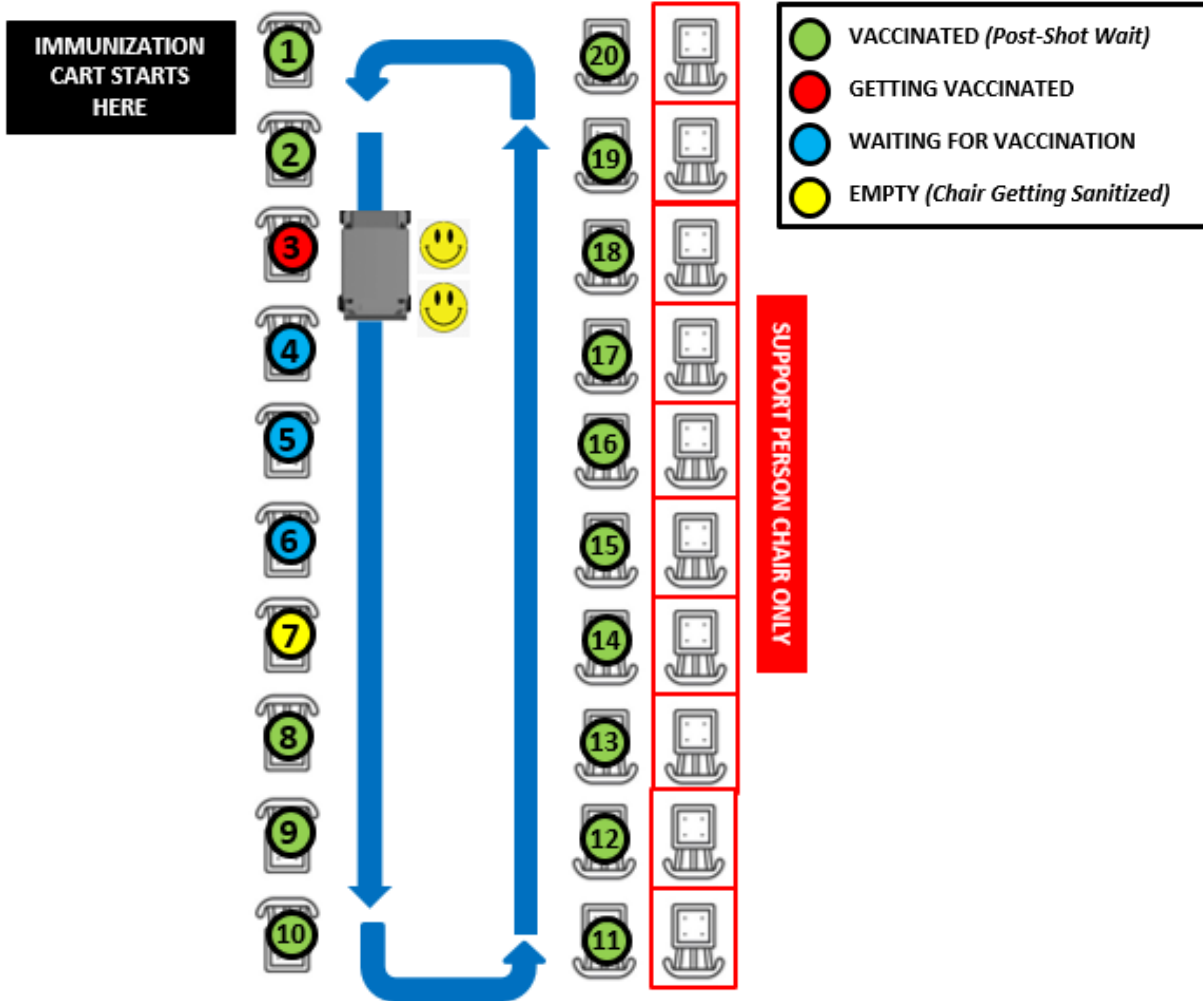


**TIMING THE PACE OF IMMUNIZERS
CAUSED A NEGATIVE IMPACT!**

**NEED A NON-INVASIVE WAY TO MONITOR
PERFORMANCE OF THIS CRUCIAL PROCESS STEP**

IMPROVING SERVICE DELIVERY

ASSESSING IMMUNIZER PACE (TAKT)



IMMUNIZER CIRCUIT:

- Each loop contains 20 chairs
- Immunizer pace should be 1 minute/dose

**IDEAL IMMUNIZER PACE:
 3 - 4 CLIENTS AHEAD OF IMMUNIZER**



Client experience needs the following attributes:

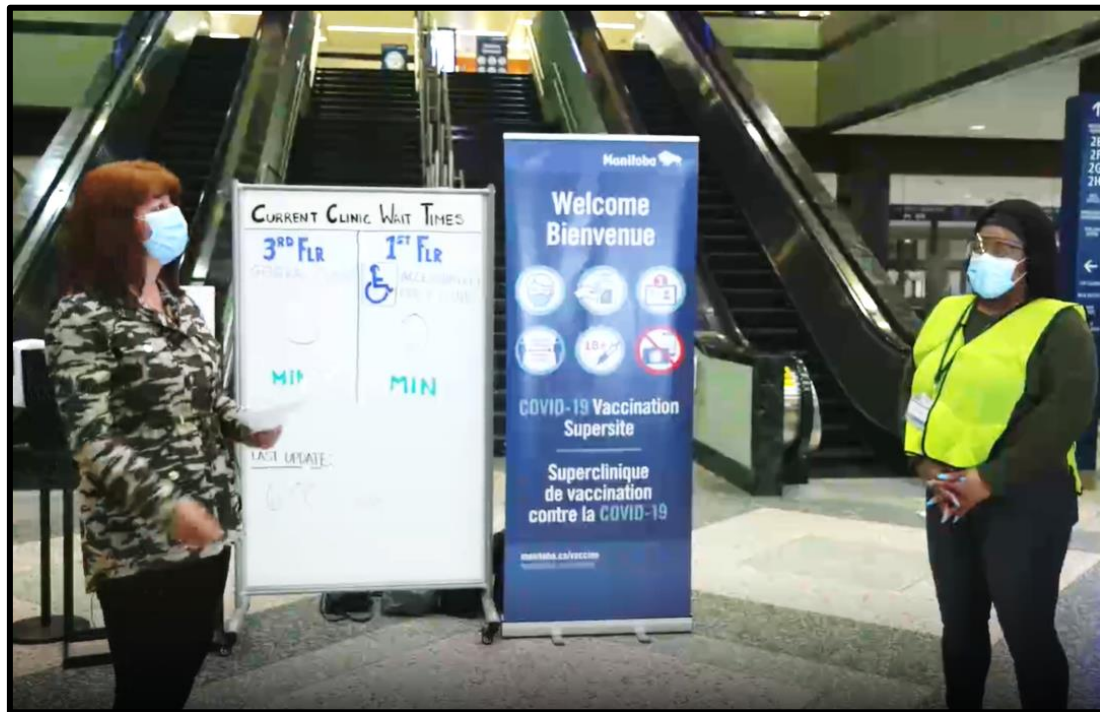
- ▶ Safe
- ▶ **Fast**
- ▶ Courteous

'FAST'- HOW TO MEASURE CLIENT WAIT TIME?

Constraint: Scheduling system didn't allow data exports in real-time (check-in time vs. appt time)

Solution:

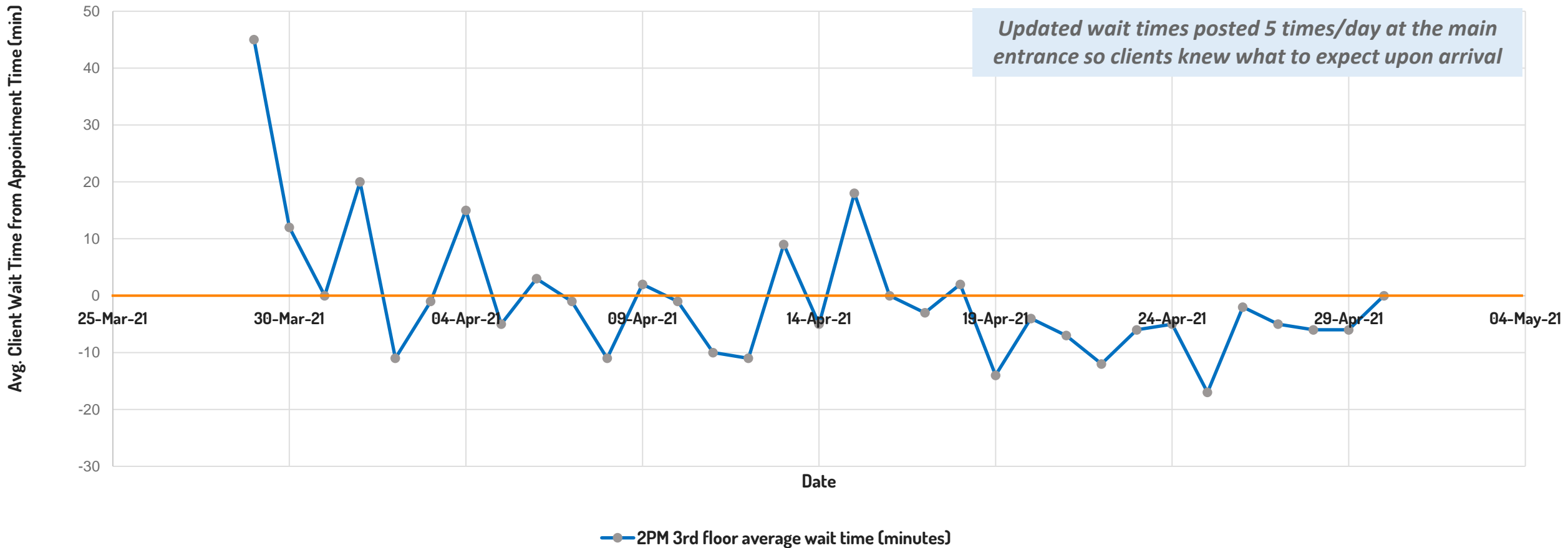
1. Identify a central point where all clients pass through the system
2. Walk the floor, asking clients for their **appointment time** and **compare with the current time**
3. Take the **average** of all wait times recorded at each time interval



IMPROVING SERVICE DELIVERY

KPIs- CLIENT WAIT TIMES

2PM RBC 3rd Floor Average Wait Time (minutes)



IMPROVING SERVICE DELIVERY

AVP MODEL- ADDITIONAL KPIs

- Increased client throughput:
 - Additional **4000+ appointments/day** (**10,000+ total** at RBC alone)
 - Eliminated **9+** major process steps through **20+** kaizens
- Reduced variability and significantly improved flow
- Improved client turnaround time:
 - up to **55 min** saved per client
 - Reduced wait time to **0 minutes** (average)



<https://protectmb.ca/vax-scenes/>

CLIENT PERSPECTIVE

- Recover-in-place model
- Better for elderly, clients with mobility issues, or medical/mental health concerns
- Smoother flow = less waiting and delays

EMPLOYEE PERSPECTIVE

- Clear roles and responsibilities
- Simplified/streamlined tasks
- Better utilization of staff skills
- Easier to learn roles and become proficient
- Greater flexibility and variety in role rotations

EFFICIENCY PERSPECTIVE

- Fewer active immunizers required for higher output
- Doubled capacity = immunize more Manitobans in less time
- Model scalable to both large and small sites in Manitoba

IMPROVING SERVICE DELIVERY

20-30 KAIZENS & PROCESS IMPROVEMENTS IMPLEMENTED

Methodology:

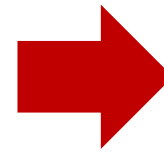
- Do regular GEMBA walks
- Start at the end of the process and work upstream against the flow
- Stop at the first line up/problem; do root cause analysis
- Engage operations staff in the process



CLINIC PROCESS IMPROVEMENTS

'MAKING INVISIBLE WORK VISIBLE' IN VACCINE PRE-DRAW

BAGS OF VACCINE IN PRE-DRAW TO BE DELIVERED TO IMMUNIZERS

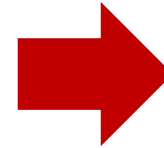


DATE: June 11/21		# DOSES: 7679		
# TRUNKS	RBC1	RBC3-3	RBC3-4	
	3	7	5	
TIME	RBC1 SUPPLIED	RBC3 SUPPLIED		*number in next time slot is planned
900-1000	30	50 (50)		*circle when supply ready
1000-1100	30	50 (50)		*cross out when picked up
1100-1200	15 (15)	45 (45)		*To calculate demand for 1/2 hr #trunks x 5
1200-1300	15 (15)	45 (50)		
1300-1400	15 (15)	45 (55)		
1400-1500	15	10	55	60
1500-1600	15	15	60	60
1600-1700				
1700-1800				
1800-1900				
1900-2000				

Inspired by Ken Eaken's work from Office Lean- 'make invisible work visible'


CLINIC PROCESS IMPROVEMENTS

ANDON LIGHTS IN REGISTRATION AND INFORMED CONSENT



CLINIC PROCESS IMPROVEMENTS

COVID-19 SYMPTOMS DIGITAL SELF-SCREENING TOOL

COVID-19 Screening Questions 

Symptom and exposure screening questions (check all that apply)

A. Do you have a new onset, or worsening, of any ONE of the following symptoms?	Yes	No
<input type="checkbox"/> Fever > 38°C or subjective fever/ chills		
<input type="checkbox"/> Cough		
<input type="checkbox"/> Sore throat/ hoarse voice		
<input type="checkbox"/> Shortness of breath/ breathing difficulties		
<input type="checkbox"/> Loss of taste or smell		
<input type="checkbox"/> Vomiting or diarrhea for more than 24 hours		
If "yes" to any one of the above, DO NOT ENTER		
B. Do you have a new onset, or worsening, of any TWO of the following symptoms?	Yes	No
<input type="checkbox"/> Runny nose		
<input type="checkbox"/> Muscle aches		
<input type="checkbox"/> Fatigue		
<input type="checkbox"/> Conjunctivitis (pink eye)		
<input type="checkbox"/> Headache		
<input type="checkbox"/> Skin rash of unknown cause		
<input type="checkbox"/> Nausea or loss of appetite		
<input type="checkbox"/> Poor feeding (if an infant)		
If "yes" to any two of the above, DO NOT ENTER *		
* If you have only one symptom in section B and it has been less than 24 hours since it started, stay home and avoid contact with others. Re-evaluate after 24 hours, and use the on-line COVID-19 Screening Tool. https://sharedhealthmb.ca/covid19/screening-tool/ .		
Exposure history	Yes	No
1. Have you been in close contact (within 2 metres/ 6 feet for more than 10 minutes total over 24 hours) in the last 14 days with someone who has tested positive for COVID-19 (with a rapid antigen test or laboratory based test)? **		
2. Have you traveled outside of Manitoba in the past 14 days and are required to self-isolate (quarantine)? ***		
3. Has a member of your household had COVID-19 symptoms in the last 14 days? **		
4. Are you waiting for COVID-19 test results?		
5. Have you tested positive (with a rapid antigen test or laboratory based test) in the past 10 days?		
If "yes" to any of the above, DO NOT ENTER. Take the online screening tool https://sharedhealthmb.ca/covid19/screening-tool/		

manitoba.ca/vaccine
manitoba.ca/vaccin 



ENGLISH

Covid Screening Fast Track!

You can now self-screen with your phone.

SCAN THIS QR CODE and show your results to the clinic screening staff.


Dépistage rapide de la COVID-19!

Vous pouvez maintenant procéder au dépistage avec votre téléphone.

BALAYEZ LE CODE QR et présentez vos résultats au personnel de la clinique de dépistage.



FRANÇAIS

 **STAFF INITIATED IMPROVEMENT!**

DIGITAL TOOL RESULTS SCREEN

Health and Seniors Care
Manitoba.ca > Health and Seniors Care > COVID-19 Screening

COVID-19 Screening

Thank you for completing the screening. Please show this page to the screening staff.

SEH

1/25/2022, 9:12 am

<https://forms.gov.mb.ca/covid-screening/index.html>

CLINIC PROCESS IMPROVEMENTS

LESSONS LEARNED



- Sometimes a manual data collection process is needed
- The simplest method to measure is often best
- Choose your queries carefully to properly represent reality
 - What is your appointment time?
 - NOT
 - How long have you been waiting?
- Be cautious about the Hawthorne/Observer effect impacting staff and client's behaviour



‘Easy as ABC at the RBC Convention Centre!’ – Sunshine Miasco

‘Walking into the building, we found it completely organized. Help was provided at every turn and no waiting in lineups of any kind....my experience getting vaccinated was simple, easy and positive.’ - Mamalsz

**‘The clinic was running like a well oiled machine. Very organized, efficient, and to top it off, everyone was friendly. I am so proud our province has turned our situation around.’
– 204_CALM**

‘Super efficient, so prompt and extremely well managed, and also on such a big scale. Salute to all front line workers at RBC Convention Centre!’ – Kapil Sharma

**‘THANK YOU
FOR YOUR
SERVICE’
-Anonymous**





THANK YOU!

LEAN & COVID-19 VACCINES
THE INSIDE SCOOP ON MANITOBA'S VACCINE CLINIC INNOVATIONS

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