



Using an IIS to Build Health Equity into COVID-19 Vaccine Distribution

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Land Acknowledgement

Every community owes its existence and vitality to generations from around the world who contributed their hopes, dreams, and energy to making the history that led to this moment. Some were brought here against their will, some were drawn to leave their distant homes in hope of a better life, and some have lived on this land for more generations than can be counted. Truth and acknowledgment are critical to building mutual respect and connection across all barriers of heritage and difference.

We begin this effort to acknowledge what has been buried by honoring the truth. I am standing on the ancestral lands of the Dakota people. We want to acknowledge the Dakota, the Ojibwe, the Ho Chunk, and the other nations of people who also called this place home. We pay respects to their elders past and present. Please take a moment to consider the treaties made by the Tribal nations that entitle non-Native people to live and work on traditional Native lands. Consider the many legacies of violence, displacement, migration, and settlement that bring us together here today. Please join us in uncovering such truths at any and all public events.*

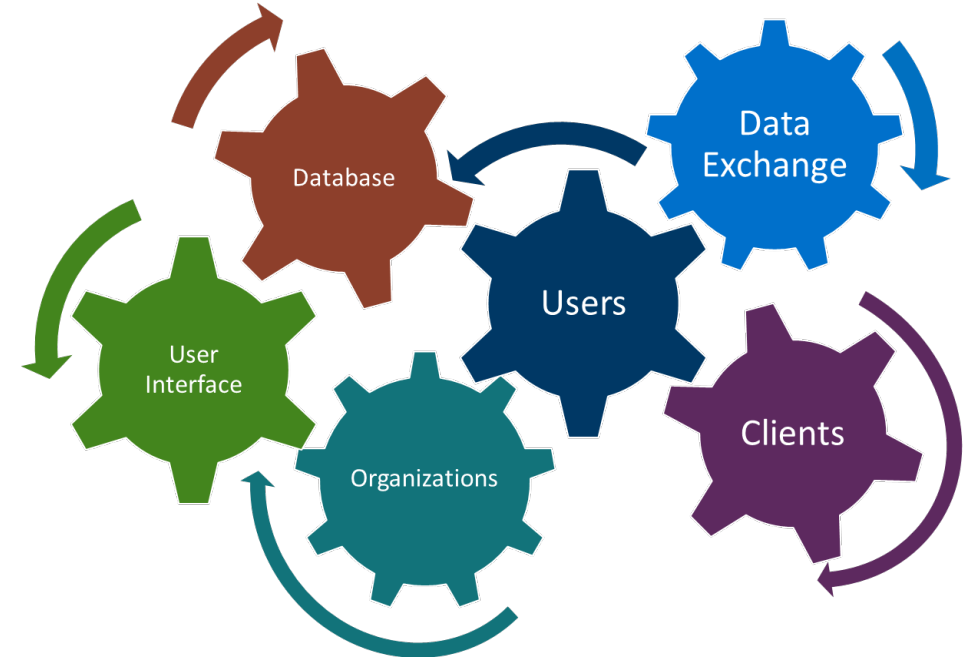
*This is the acknowledgment given in the USDAC Honor Native Land Guide – edited to reflect this space by Shannon Geshick, MTAG, Executive Director Minnesota Indian Affairs Council

- Introduction
- COVID-19 Vaccine Response Planning
- Provider Tiering
- Operationalizing in MIIC
- Final Thoughts

Introduction

Minnesota Immunization Information Connection (MIIC)

- Minnesota's immunization information system.
- Started in 2002.
- 2011 built in vaccine ordering.
- 2,117 providers enrolled for vaccine ordering:
 - 1,358 enrolled for COVID-19 only.
 - 759 enrolled in Minnesota Vaccines for Children and/or Uninsured Underinsured Adult Vaccine programs.



COVID-19 Vaccine Response Planning

Prebook Functionality in MIIC

- MN had been considering implementing prebook functionality in MIIC for influenza.
 - COVID-19 pushed up our timeline.
- Summer of 2020 explored options to build into MIIC.
 - Interviewed several states.
 - Began design process.
- Development work occurred in several phases:



Prebook – Allocating Vaccine

organization MIIC • user Kristin Hardy • role Developer

Allocate Requested NDC

Special Vaccine Event Description: 5 to 11-Year-Old COVID-19 Vaccine Distribution
 Special Vaccine Event Status: OPEN
 NDC: 59267-1055-04
 Trade Name: Comirnaty-PFR t-s 10mcg
 Packaging: 10 multi-dose vials of 10 doses - PED - 300 dose minimum request (Orange Cap)
 Manufacturer: PFR
 Ordering Intention: PED

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Vaccine Provider List

Filter the list of providers

Field:

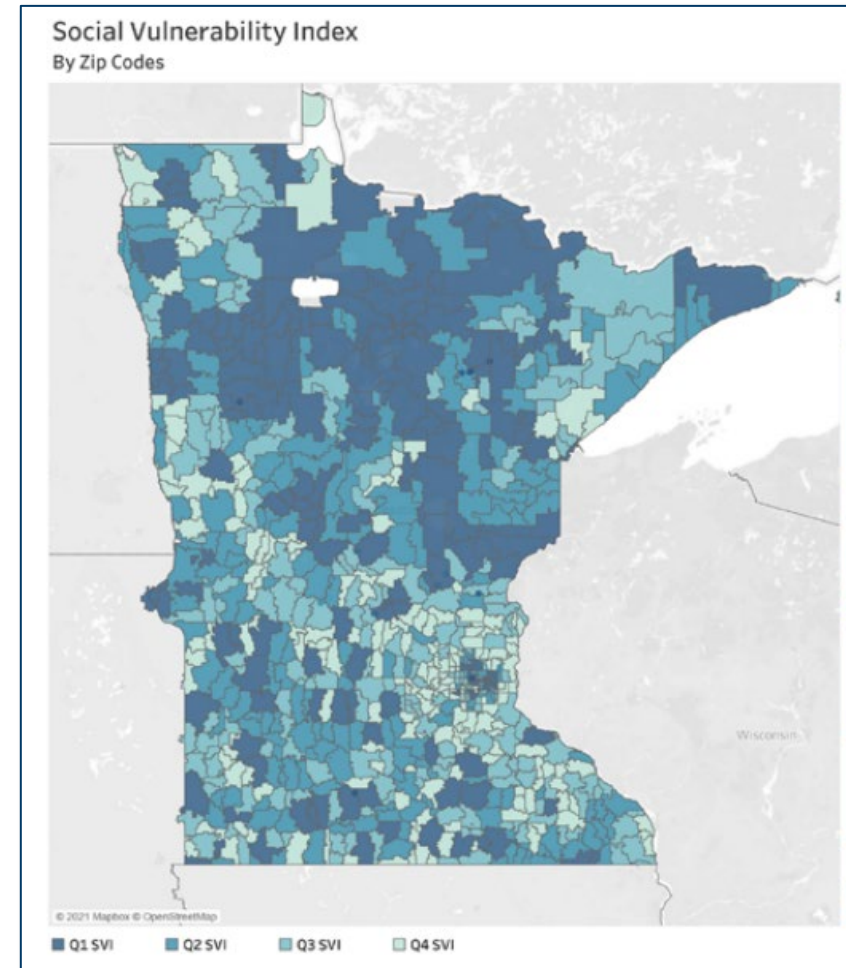
Value:

Total Doses Requested: 2400
 Doses Available to Allocate: 2400(100%)
 Doses Allocated: 0
 # of Sites Allocated: 0(0%)

Random #	MnVFC PIN	MnVFC PIN Link	Site Name	Org Type	FQHC/RHC	Tribal/IHS	Vaccine Delivery County	Vaccine Delivery Zip Code	Program Status	Priority Level	Prebook Priority	Prebook Status	Initial Doses Requested	Approved Doses Requested	Total Doses Allocated To Date	Date Last Doses Ordered	Balance Due	Doses To Allocate	Change Shipping Info	Hold Allocation	Special Delivery Instruction
36987	666666	999999	MIIC- Testing Org	Primary Care Clinic	N	N	RAMSEY	55114	Active		On Time	SUBMITTED	900	900	0		900	<input type="text" value="900"/>	<input type="checkbox"/>	<input type="checkbox"/>	
87227	999999	999999	Minnesota Department of Health - Vaccina	Public Health	N	N	RAMSEY	55164	Active	Tier 1	On Time	SUBMITTED	1500	1500	0		1500	<input type="text" value="1500"/>	<input type="checkbox"/>	<input type="checkbox"/>	

COVID Vaccine Health Equity Goals

- MDH is addressing equity using place-based strategies to allocate vaccine doses that incorporate a metric of community need.
- Equity goal: 40% of all doses administered should be prioritized to the communities hit hardest by the COVID-19 pandemic
 - Used the Social Vulnerability Index ZIP code quartiles.
 - SVI Q1 = Most vulnerable, SVI Q4 = Least vulnerable



Vaccine Coverage by SVI Quartile Over Time, 12+



5-11 Year-Old COVID Vaccine Distribution

- To build more equity into the distribution plan, MDH needed a metric to help prioritize orders from providers who serve more vulnerable pediatric populations.
- Make metric available in MIIC:
 - Referenced during allocation process
 - Convenient
 - Efficient
 - Reduces errors

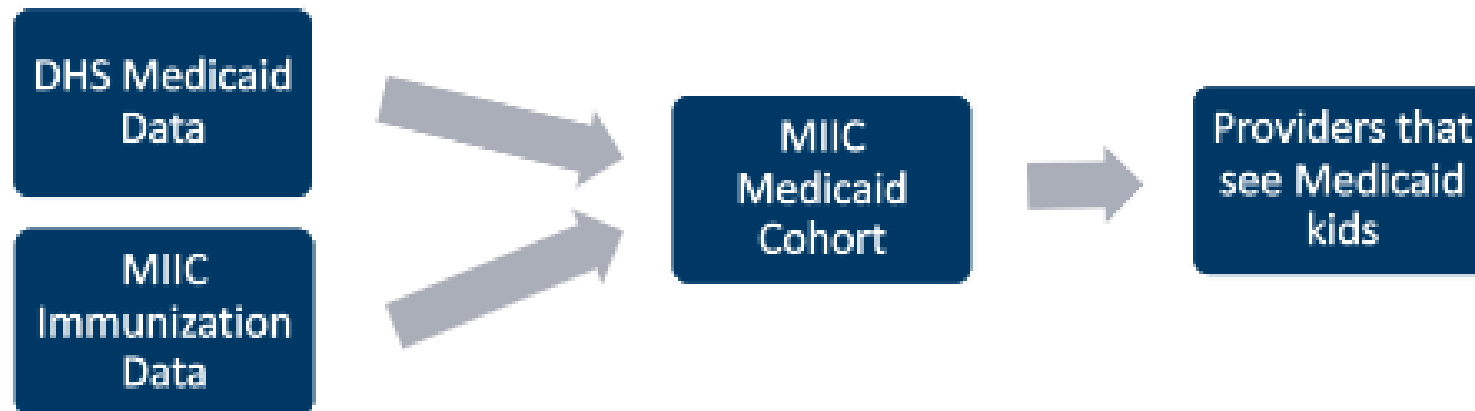
Provider Tiering

Why Tier?

- Due to the quick nature of the rollout, MDH needed a quick and efficient way to ensure a proportional amount of vaccine was sent to the most vulnerable populations in the first week.
- We had access to data from the Department of Human Services (DHS) that contained clients who were enrolled in a Minnesota Health Care Plan (MHCP).
- Used this data as a proxy for at-risk populations

Data Compilation

- Matched list of MHCP enrolled children to MIIC data.
 - Ages 5 through 11 years 11 months as of August 31st, 2021.
- Used information from the most recent non-influenza immunization to identify the vaccinating provider.
- Calculated the percent of pediatric COVID-19 vaccine eligible children that were on an MHCP at each provider site.



Tiering Process

- Provider level percentage data was imported into SAS Enterprise Guide
- Created program that cleaned and ranked the percent MHCP patients per provider into tertiles.
- These tertiles started as a baseline for our 3 tiers

The MEANS Procedure

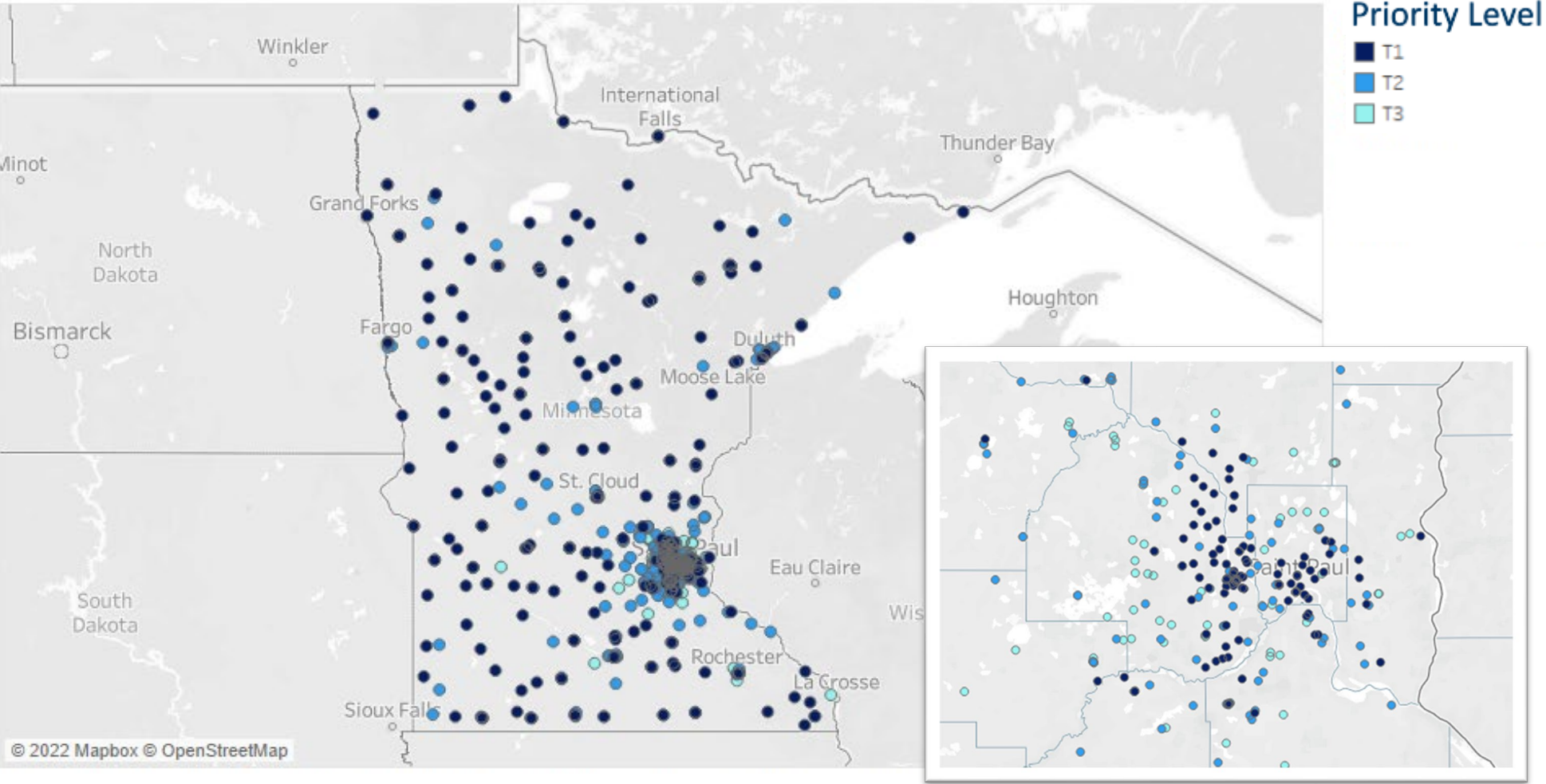
Analysis Variable : medicaid						
Rank for Variable medicaid	N Obs	N	Mean	Std Dev	Maximum	Minimum
.	334	0
0	282	282	0.1545370	0.0580432	0.2457673	0.0140845
1	283	283	0.3234970	0.0472819	0.4088986	0.2465753
2	283	283	0.5359121	0.1151481	0.9230769	0.4070158

Tiering Process

- Providers were able to move tiers depending on MDH knowledge of their immunization program.
- Tier 1 was adjusted to include all Local Public Health, Tribal Health, FQHCs, large community vaccinators, and providers we knew served vulnerable patients.
- Tiers 2 and 3 remained relatively unchanged from initial ranking.
 - Tier 1 = provider serves more vulnerable 5-11 year-old population.

Final Tier Groups	Tier 1	Tier 2	Tier 3	Total
Number of providers	347	177	126	650

Tiered Provider Distribution



Operationalizing in MIIC

- Database update to populate an existing Priority Level field with the provider tiering metric.
 - Priority Level field in MIIC = Provider Tier level
 - Tier 1 = provider serves more vulnerable 5-11 year-old population.
- Used in MIIC prebook functionality:
 - Filtered on the Priority Level field (ex: Tier 1).
 - Created COVID-19 vaccine orders for the selected sites.

Priority Level field in MIIC

organization MIC • user Kristin Hardy • role Developer

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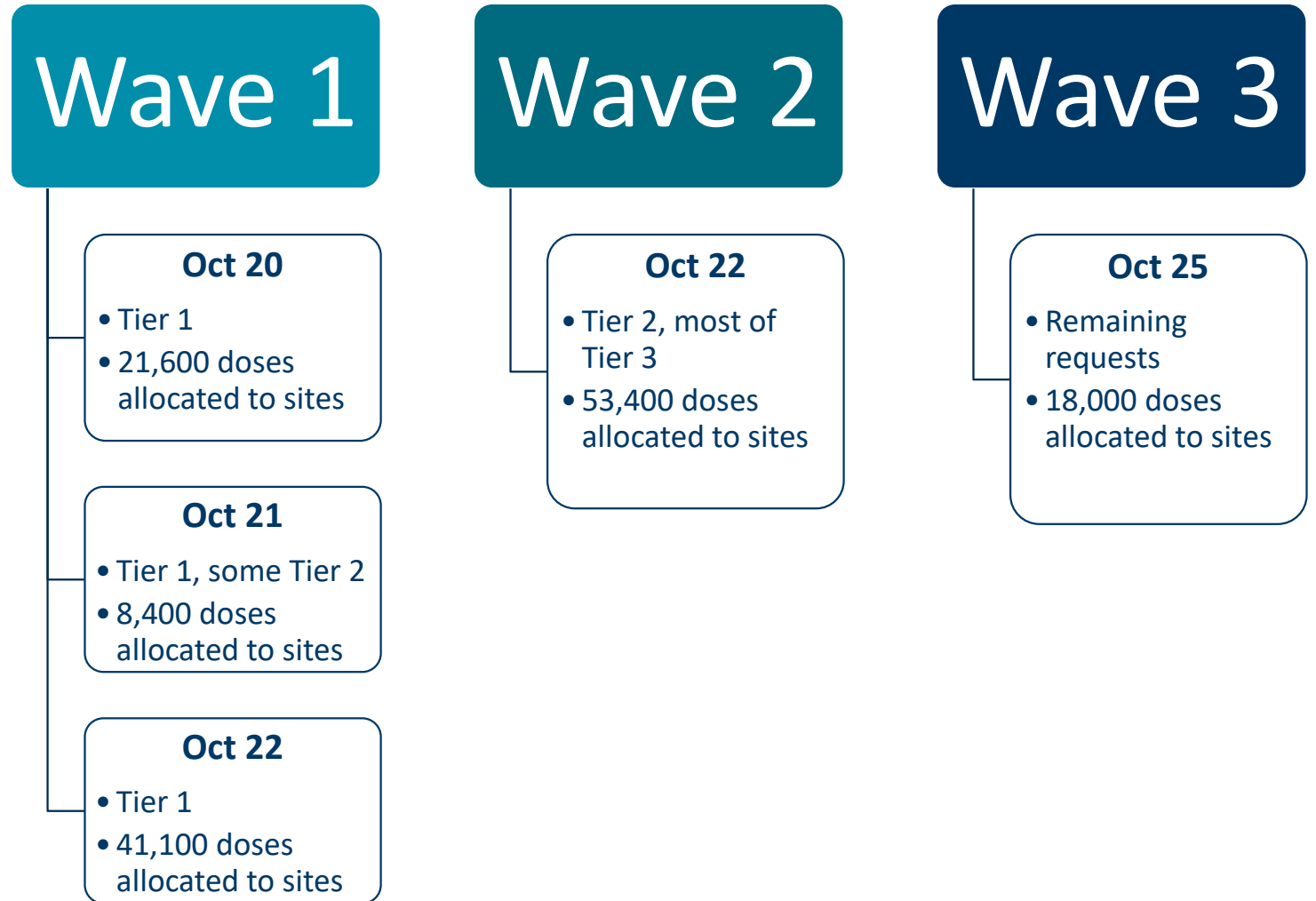
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168	001019		Dakota County Public Health	Public Health	N	N	RAMSEY	55555	Active	Tier 1	-	-	-	-	0		-	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19675	001073		Stearns County Public Health	Public Health	N	N	STEARNS	55555	Active	Tier 1	-	-	-	-	0		-	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	

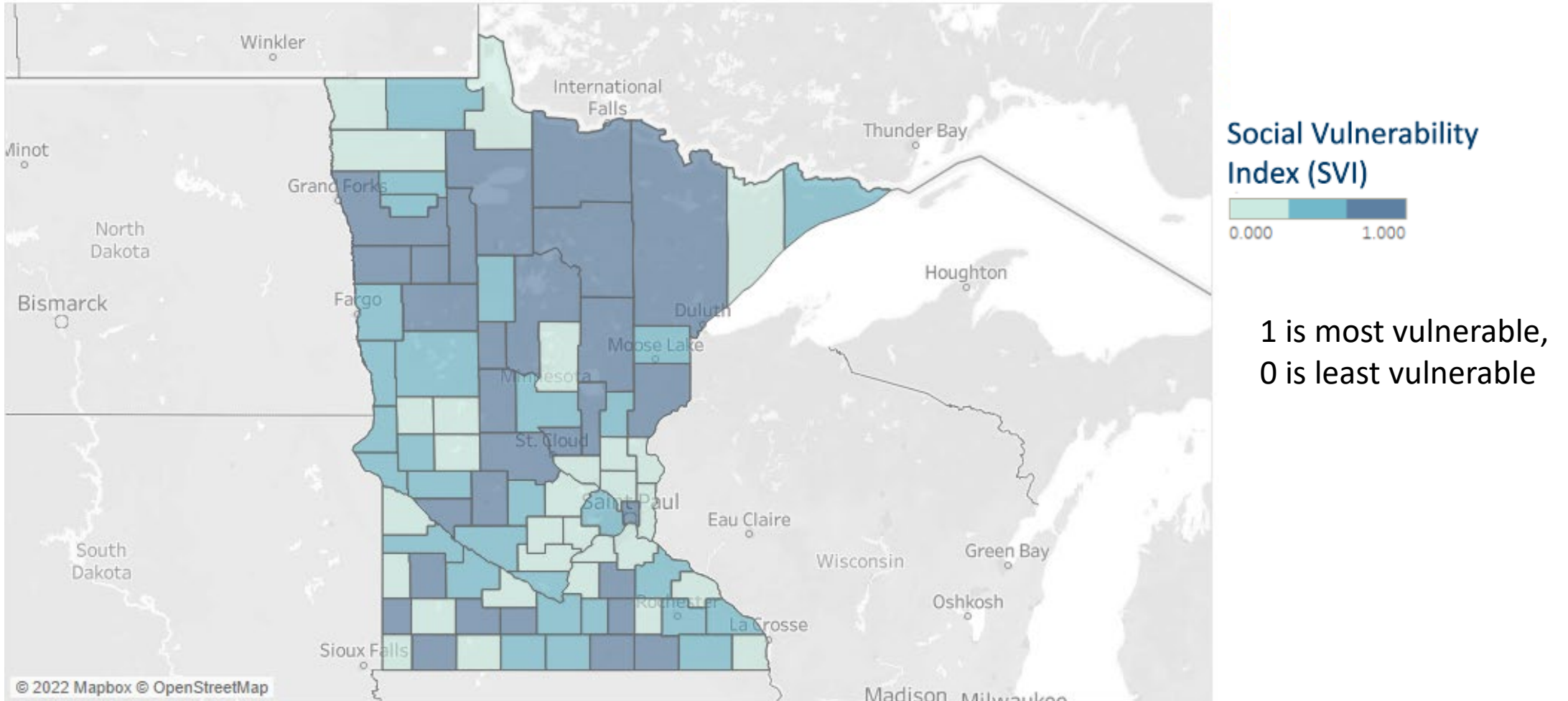
Vaccine Allocation and Ordering Waves

- Oct 18, 2021 opened 5-11 year-old COVID-19 Ordering Event in MIIC
- Processed 122 organizations' orders
 - 142,500 doses ordered in one week.

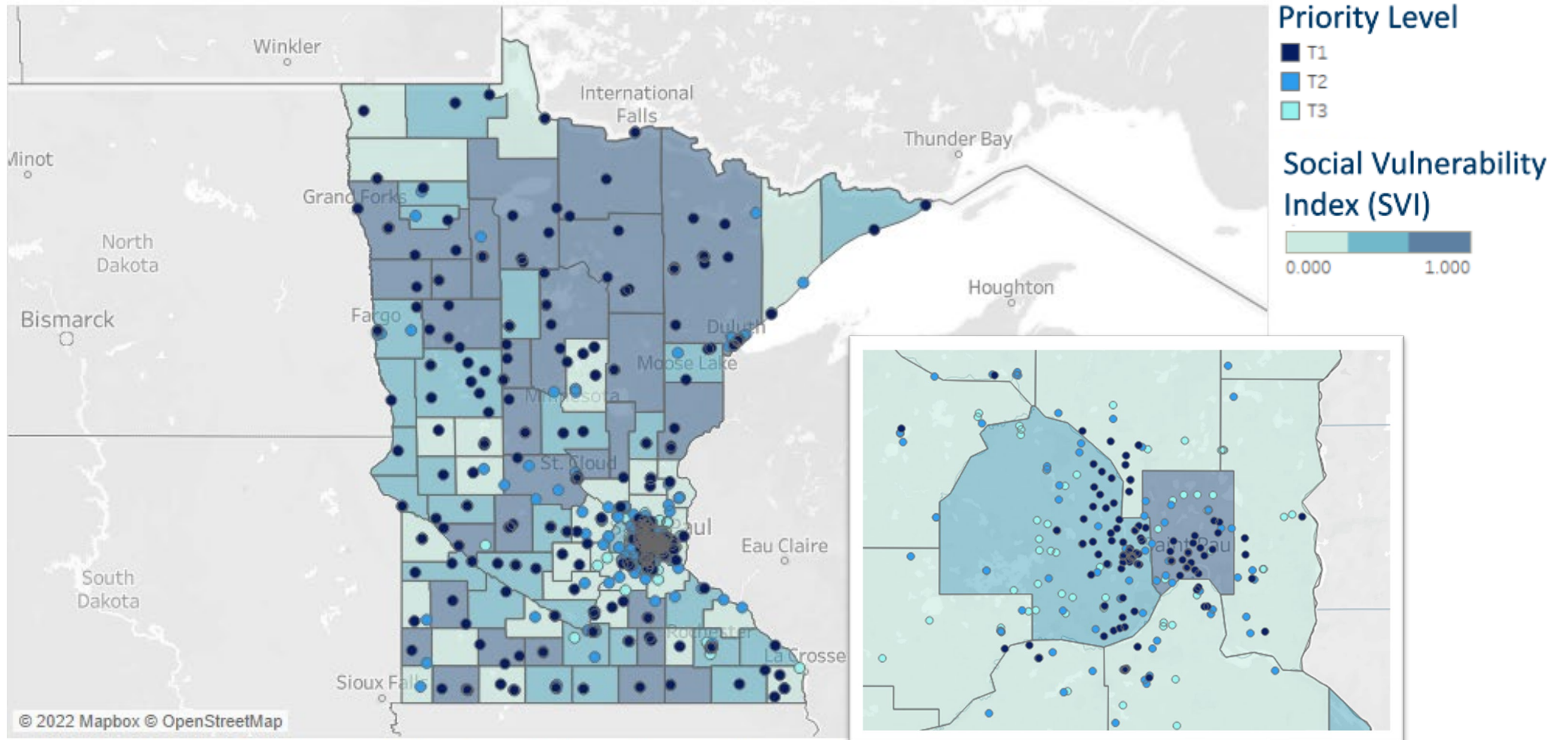


Final Thoughts

Social Vulnerability Index by County

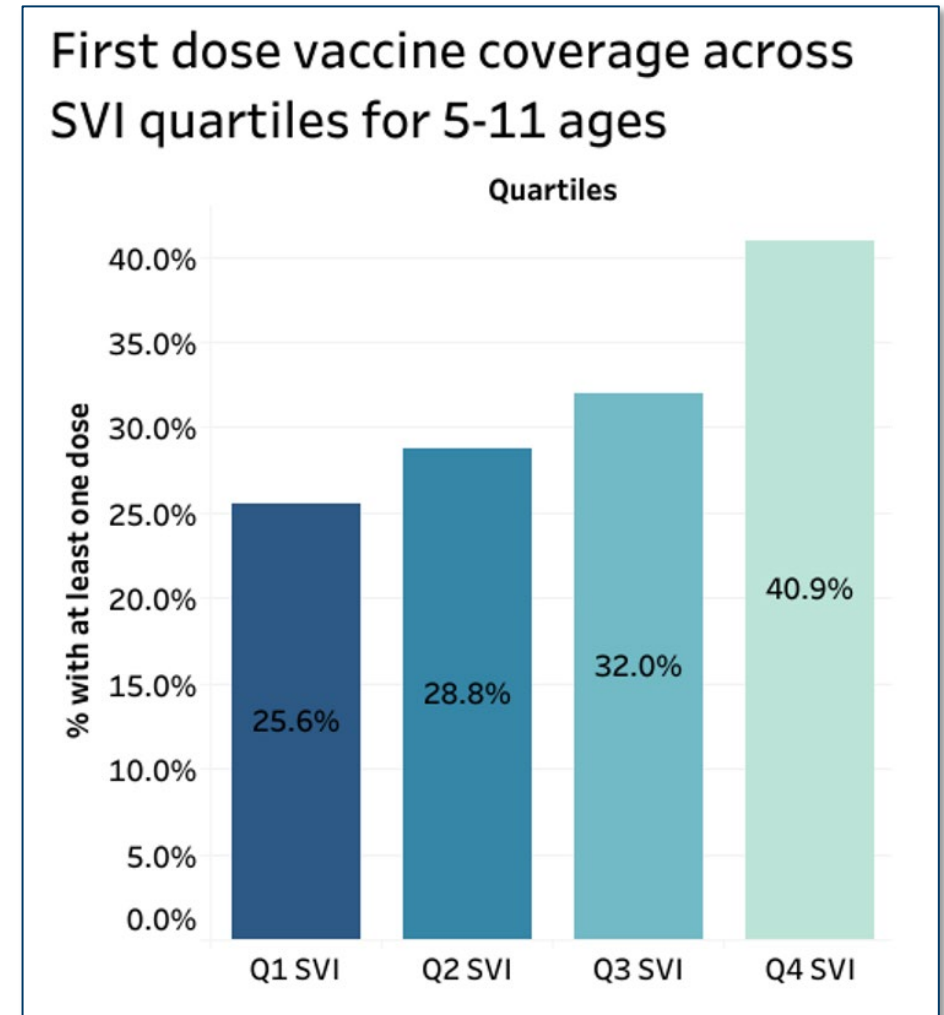


Tier of Provider and Social Vulnerability Index by County



Was it successful?

- We were able to distribute 5-11 year-old COVID-19 doses to SVI Q1 areas around the state.
 - This is just a portion of what is needed to reach this population with vaccine.
- Technology is only one component of what is needed to truly operationalize equity in our COVID-19 vaccination efforts.
 - Providers must take steps not only to mitigate further inequities in access, but to continue to build a more just and community-driven approach to health in response to the COVID-19 pandemic.



- Lot of work to build new functionality into an IIS on a tight timeline.
 - With more time, might design differently.
- Short timeline for planning and allocating 5-11 COVID-19 vaccine doses .
- Used data we had readily available.
- Takes many partners to address health equity.
 - This project only focused on one variable (vaccine distribution) of the equation.

- Continue making improvements to prebook functionality
- Additional health equity focused analyses.
 - Expand on our preliminary analysis of distributing doses to areas of higher need based on SVI.
 - Continue to use Medicaid data – potential for Medicaid gap analysis.
 - VFC clinic coverage.

It Takes a Village!

- HUGE thank you to:
 - The MDH COVID-19 Vaccine Distribution Team
 - MIIC Operations team and developers
 - Oregon, Wisconsin, and Iowa for prebook demonstrations

Thank You!

Kristin Hardy

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