WISCONSIN IMMUNIZATION REGISTRY (WIR)

Using 2D barcode scanners during mass vaccination exercises

Wisconsin Immunization Registry

Purpose

The purpose of this document is to give a general overview of some resources and best practices to keep in mind when using barcode scanners to enter mass vaccination event data into WIR.

Assumptions and limitations

This content is intended for:

- Organizations established within WIR.
- WIR users preparing to conduct a mass vaccination exercise.
- WIR IR administrators preparing new users to use WIR barcode scanning during a mass vaccination exercise.

This content is limited to WIR activities only. This does not take into account all guidance and protocols that should be followed during a mass vaccination event.

Direct any questions or concerns regarding WIR to the WIR help desk staff at 608-266-9691 or dhswirhelp@wi.gov. Any general questions or concerns for the Wisconsin Immunization Program can be directed to DHSImmProgram@dhs.wisconsin.gov.

WIR barcode scanning preparedness checklist for providers

(Note: this is a tool intended to be used by staff setting up a mass vaccination exercise. It is not necessary to submit this to Wisconsin Immunization Program staff.)

Mass Vaccination Clinic

Site name:	
Address:	
Date of event:	
Ordering authority:	
Notes:	

CHECKLIST	Reminders
☐ Acquire scanners capable of reading small 2D barcodes, as found on vials and syringes.	Total quantity will differ for each clinic based on staffing and desired workflow.
☐ Set up scanners.	Use the barcode scanner's package insert to provision the barcode scanner to include a carriage return/line feed.
☐ The WIR user manual has been reviewed with new vaccinators entering immunization data into WIR.	Chapter 14: Mass Vaccination Appendix #4: Barcode Scanning
☐ Any/all vaccinators needing IR Mass Vaccination roles in WIR have been setup by an IR administrator.	
☐ IR Mass Vaccination training modules have been assigned to the new users by an IR administrator.	
☐ All new users have completed training modules prior to the event.	
☐ All inventory is brought up to date within WIR prior to the event.	
☐ Barcode reports are printed and ready for use.	If possible, laminating the reports for use is especially helpful.
☐ Backup plans are in place.	Have additional scanners and charging stations available, make sure users know how to manually enter information into WIR, have paper records available in the case of an internet outage, etc.

Resources: Table of Contents

WIR User Manual: Navigation

The WIR user manual is found within the "forms" tab once a user is logged into an organization within WIR.

Image 1: The WIR top menu bar for a user logged in under an organization.

Image 2: The "WIR User Manuals" section within the "forms" tab.

The WIR user manual is composed of a series of chapters and appendices. The corresponding section can be opened by clicking the hyperlink under "chapter."

system user manual:	
Chapter	**Description**
TOC	Table of Contents
Chapter 1	Introduction
Chapter 2	System Requirements
Chapter 3	Accessing WIR
Chapter 4	Public Access

Image 3: A sample picture of the WIR user manual.

WIR User Manual: Setting up new users

Mass vaccination event staff recording administered immunizations, with no additional WIR responsibilities, should be granted the role of IR Mass Vaccination. This will give the users access to the mass vaccination modules to add immunizations to existing clients or create clients as needed. Chapter 7 of the WIR user manual, "Manage Users and Organizations," includes information to assist IR administrators to update or create new users.

Wisconsin Immunization Registry

In this chapter:

User Roles
Adding Users
Adding Multiple Users
Finding/Viewing Users
Maintaining Users
Viewing Provider Organizations
Editing Organizations

Image 4: Chapter 7: Manage Users & Organizations

WIR User Manual: Training modules

Once the users are created, the IR administrator will be able to assign and monitor training modules for users under the "Manage Training" menu. The new users should not view or enter data within WIR until they have completed these training modules.

User Training Status

Organization	WIR Physicians II
User	barcode example2 (barcodingexample2020)
Role	IR Mass Vaccination
Status	Pending

Select the training course(s) to put status to complete.   [Complete]

Return to previous page.   [Cancel]

Assigned Training Courses	Topics	Status	Select
WIR Manage Access/Accounts			☐
	WIR Manage My Account	Pending	
	WIR Adding Users	Pending	
	WIR Adding Multiple Users	Pending	
	WIR Editing Users	Pending	
	WIR Email Notifications	Pending	
	WIR List Organizations	Pending	
	WIR Editing Organizations	Pending	
WIR Mass Vaccination			☐
	WIR Mass Vaccination with Inventory	Pending	
	WIR Mass Vaccinations Bar Code	Pending	
	WIR Mass Vaccination	Pending	

Image 5: The "training status" screen an IR administrator may use to review progress.

Instructions for IR administrators to assign and manage training can be found within chapter 9 of the WIR user manual.

In this chapter:

Assigning Training
Training Status
Accessing Training Courses

Image 6: Chapter 9: Managing Training

WIR User Manual: Inventory

Prior to the mass vaccination event, it is important to double check inventory. Any vaccine being used for the event should already be accounted for within WIR inventory before the event begins. Instructions to manage inventory manually can be found in chapter 11: Managing Inventory of the WIR user manual. Instructions to add inventory using a barcode scanner can be found in Appendix 4: Barcode Scanning.

Image 7: Links within the WIR user manual. Chapter 11: managing inventory. Appendix #4: barcode scanning.

Note: Per the COVID-19 Interim Playbook for Jurisdiction Operations, COVID vaccine may come with a temporary expiration date placeholder of 12/31/2069. In this case, it will be important to update the expiration date per the Center for Disease Control and Prevention (CDC) guidance to ensure WIR is kept up-to-date and notifications are generated appropriately. (See appendix A.)

WIR IR administrators should always have an updated email listed. WIR uses the email account listed to enable users to reset their own passwords, but also sends notifications for order status changes and low or expiring vaccine inventory to the email on file.

Image 8: WIR "Edit User" screen

WIR User Manual: Mass vaccination

By cutting out some of the typical steps needed to record immunizations within WIR, the mass vaccination option provides a quick, straightforward way to enter a high volume of immunizations in a timely manner. Instructions regarding mass vaccination entry can be found in chapter 14 of the WIR user manual.

Image 9: Chapter 14: Mass Vaccination
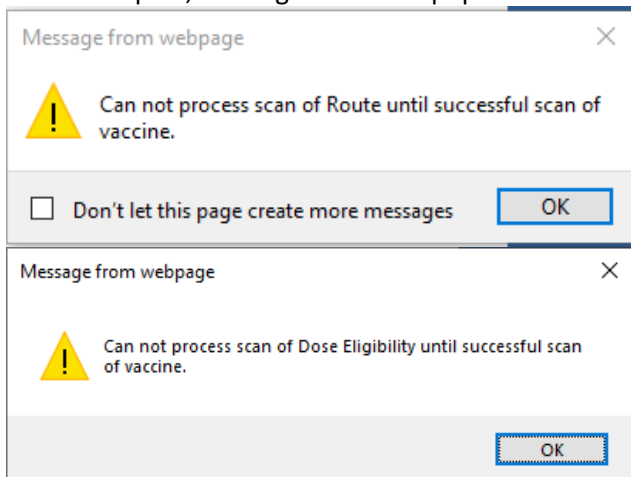
WIR User Manual: Barcode scanning

Appendix #4 of the WIR user manual provides information regarding how to use barcode scanner reports with barcode scanners to enter information quickly and efficiently into WIR.

In Appendix 4:

Creating a Barcode Scan Report
Adding New Inventory
Updating Inventory
Entering Immunizations
Entering Immunization Information Using
  Mass Vaccination

Image 10: Appendix #4: Barcode Scanning

Note: Some newer scanners have been found to periodically pick up neighboring barcodes on the barcode report, causing an error to populate.

Message from webpage   ✕

⚠️ Can not process scan of Route until successful scan of vaccine.

☐ Don't let this page create more messages   OK

Message from webpage   ✕

⚠️ Can not process scan of Dose Eligibility until successful scan of vaccine.

                                                              OK

Images 11 and 12: Example errors of the scanner picking up on a neighboring barcode when scanning the lot number information.

If this is happening, there are some workarounds to avoid this issue:
- Print separate reports to keep the data on separate pages.
- Screenshot and crop the barcodes from the report onto separate pages in another program like PowerPoint or Word. (If taking this approach it is very important to test the barcodes before printing multiple copies for use. Inadvertently changing the size or shape of the barcodes may cause them not to be usable.)

Barcode scanning: Selecting and setting up

Prior to purchasing scanners, be sure to select a model that will be able to scan the small 2D barcodes found on vials and syringes. (See appendix B) WIR does not endorse or offer preferential advice for any specific brand of 2D barcode scanner. There is no additional software necessary to activate barcode scanners to work with WIR— they just need to be plugged in and set up per the manufacturer's instructions.

Once barcode scanners have been acquired, set them up by following the barcode scanner's package insert to provision the barcode scanner to include a carriage return/line feed.

Example using the wireless Zebra DS8178 Digital Scanner:

1)   Assemble and charge the barcode scanner using an open USB slot on the device being used.
2)   Scan the barcode under "Set Defaults" to add a carriage return/line feed.
3)   Scan the default barcode listed under "setup interface" [*USB Keyboard (HID)].
4)   Test by adding a dose of vaccine to inventory using the barcode scanner.
        You should be ready to go!

Barcode scanning: Some things to keep in mind

Barcode scanners can help streamline data entry during a mass vaccination exercise. Some things to consider:

- Consider workflow from start to finish to identify who will be using barcode scanners and when.
- Consider workflow when creating barcode reports. Only print the elements necessary for the event. (Example: Rather than including the entire clinician list, only include barcodes for the clinicians that will be on site administering vaccines.)
- Laminating barcode reports will help protect the barcodes throughout the event.
- If using wireless barcode scanners, have a backup plan or power source to prevent downtime due to battery fatigue.

Workflow example

The workflow for each mass vaccination exercise may vary from one to the next. It is important to review mass vaccination planning ahead of time to identify the best use of barcode scanners for staff conducting the event.

Prior to the event, double check:
- User access— all necessary WIR users are active and have completed training.
- Plenty of barcode scanners are set up and tested.
- Administering clinicians are updated in WIR.
- Inventory has been brought up-to-date in WIR.
- Barcode reports are printed, protected (clear pocket, lamination) and available for each administering clinician.

Recording administered vaccine during a mass vaccination event:
- Open the WIR "add mass vaccination" screen.

Wisconsin Immunization Registry

Client Search Criteria

Last Name / Barcode		Gender ○M ○F ○N/A	Find
First Name		SSN ___ - ___ - ___	
Middle Name		Phone ___ - ___ - ___	
Mother's Maiden Last		Chart #	
Mother's First Name			
Birth Date			

Image 13: WIR add mass vaccination search screen

- o Use WIR to pull up the client's immunization record.
    - ▪ Scan the barcode on a Wisconsin issued driver's license or identification card (See appendix B)
            Or
    - ▪ Conduct a manual search to pull up the client.
- o Review the client's history.
- o Check/update the inventory site.

History

Vaccine Group	Date Administered	Trade Name
Influenza	10/16/2018	FluLaval Quad, P-Free
Influenza	01/21/2019	
Influenza	04/21/2020	Fluzone Quad PF 6-35M
Influenza	09/29/2020	FluLaval

Site Capitol Square ⌄

New Immunizations (1)

Date Provided 09/30/2020 Ordering Authority Unknown ⌄

Remove	Immunization	Trade Name-Lot	Dose	Administered By / Dose Eligibility	Body Site / Immunization Route
☐	Influenza	⌄	Full ⌄	Unknown ⌄	⌄
				⌄	intramuscular ⌄

Image 14: WIR add mass vaccination screen with history, blank

- o Scan the immunization information
    - ▪ Ordering authority
    - ▪ Vaccine barcode (vial, syringe or barcode report)
    - ▪ Administering clinician
    - ▪ Dose eligibility (if applicable)
    - ▪ Body site
    - ▪ Immunization Route

Wisconsin Immunization Registry

New Immunizations (1)					
Date Provided	09/29/2020		Ordering Authority	Unknown	

Remove	Immunization	Trade Name-Lot	Dose	Administered By Dose Eligibility	Body Site Immunization Route
☐	Influenza	FluLaval\XYZ98\public	Full	provider, admin	left deltoid
					intramuscular

Historical Immunizations (1)					

Remove	Immunization	Date Provided	Trade Name	Lot Number	Provider Org
☑	Influenza	09/29/2020			

OK   Cancel

Image 15: WIR add mass vaccination screen, filled in

Once the vaccine administration information has been completed, click "ok" to navigate back to the WIR "add mass vaccination search screen" to prepare for the next client.

Client Search Criteria			Immunization(s) added.
Last Name / Barcode		Gender ○ M ○ F ○ N/A	Find
First Name		SSN	
Middle Name		Phone	
Mother's Maiden Last		Chart #	
Mother's First Name			
Birth Date			

Image 16: WIR add mass vaccination search screen after adding immunizations

Appendix A – Expiration date information per the CDC's Vaccination Program Interim Playbook for Jurisdiction Operations (Version 2.0 dated 10-29-2020)

Inventory Management

COVID-19 vaccination providers will be required to report COVID-19 vaccine inventory daily using VaccineFinder. Once providers are enrolled in VTrckS, they will be preregistered for a VaccineFinder account and provided instructions via email on how to submit daily supply information. Jurisdictions may also require that providers submit inventory on hand when placing an order for more vaccine to help inform their allocation decisions. However, submission of this information into VTrckS is optional. All inventory should be managed in accordance with storage and handling requirements specific to each vaccine.

It is anticipated that COVID-19 vaccines will initially be authorized under an Emergency Use Authorization (EUA). Vial and carton labels for vaccines *authorized* under an EUA will contain slight variations from labels typical of *approved* Food and Drug Administration (FDA) products, including:

• **Expiration Date:** The vaccine vials and cartons may not contain a printed expiration date. Expiration dates may be updated based on vaccine stability studies occurring simultaneously with COVID-19 vaccine distribution and administration. Additional information will be provided about how to access expiry information for individual vaccines. To ensure that information systems continue to work as expected, CDC has worked with FDA and the manufacturers to include a two-dimensional (2D) barcode on the vaccine vial (if possible) and carton (required) labels that includes a National Drug Code (NDC), lot number, and a placeholder expiration date of 12/31/2069 to be read by a scanner. The placeholder 12/31/2069 expiration date is not visible on the vaccine packaging nor found anywhere else; it is only to facilitate information system compatibility. CDC is developing "beyond use date" (BUD) tracker labels to assist clinicians with tracking expiration dates at the point of vaccine administration. The label templates will be available on the CDC website.

• **Manufactured Date:** A manufactured date will be on the packaging and should not be used as the expiration date when documenting vaccine administration. This date is provided to help with managing stock rotations; however, expiration dates should also be considered (see above) as using manufactured date alone could have some limitations.

• **2D Barcode:** The 2D barcode available on the vaccine carton (also on the vials for some vaccines) will include NDC, lot number, and a placeholder expiration date of 12/31/2069.

• **QR Code:** Each vaccine manufacturer will include a Quick Response (QR) code on the vaccine carton for accessing FDA-authorized, vaccine product-specific EUA fact sheets for COVID-19 vaccination providers and COVID-19 vaccine recipients.

A list of authorized COVID-19 vaccine products with corresponding EUA fact sheets for health care providers and vaccine recipients, and up-to-date expiration information by vaccine lot will be available on an HHS website.

Once the website has been made available, the Wisconsin Immunization Program will also share this information via email.

Appendix B – Driver's license and identification card scanning

Newly added in late 2020, the Wisconsin Immunization Program worked with the WIR vendor to implement the ability to scan Wisconsin driver's licenses and identification cards. This functionality is intended to streamline the mass vaccination workflow for administering clinicians by reducing the need for additional button clicks to search for clients within WIR.

The process to set the scanners up will be slightly different for providers looking to add this funtionality. Once barcode scanners have been acquired, the manufacturer's technical guide should be used to provision the barcode scanner.

Example using the wireless Zebra DS8178 Digital Scanner:
1) Locate the complete user's manual, which can be found at https://www.zebra.com/content/dam/zebra_new_ia/en-us/manuals/barcode-scanners/ds8178-prg-en.pdf.
2) Assemble and charge the barcode scanner using an open USB slot on the device being used.
3) Scan the "Set Factory Defaults" barcode located on page 125:

Set Factory Defaults

4) Dock the scanner and wait for the confirmation beeps.
5) Undock and scan the "<DATA> <SUFFIX 1> (01h)" barcode on page 160:

<DATA> <SUFFIX 1>
(1)

6) Wait a few seconds until after the beep, then scan the "Fast hid disable" barcode on page 96:

Fast HID Disable

7) Wait a few seconds until after the beep, then scan the "Disable Keypad Emulation" barcode on page 95:

Disable Keypad Emulation

Confirm prior functionality by adding a dose of vaccine to inventory using the barcode scanner.