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Information and instructions included in this reference guide periodically change with system updates and are subject to annual review. Please be advised: Images and directions may no longer replicate current system function.
THINGS TO KNOW ABOUT 2D VACCINE BARCODE SCANNING

Defining Barcodes

If a vaccine’s entire 2D barcode data string was embedded in a linear barcode it would be too large to fit on a small vaccine vial or syringe. Notice the difference in character length for each of the below barcode types.

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
<th>Data Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Barcode</td>
<td><img src="image" alt="Linear Barcode Example" /></td>
<td>Maximum–56 a/n characters</td>
</tr>
<tr>
<td>Composite Barcode</td>
<td><img src="image" alt="Composite Barcode Example" /></td>
<td>Max. 56-2361 a/n characters</td>
</tr>
<tr>
<td>2D Data Matrix Barcode</td>
<td><img src="image" alt="2D Data Matrix Barcode Example" /></td>
<td>Max 2335 a/n characters</td>
</tr>
</tbody>
</table>

Deciphering the Information Contained in a Vaccine’s 2D Barcode

The following is an example of a 2D vaccine barcode’s raw data string: 01003492815890581714032910U4412AA

The MCIR is designed to parse the continuous “raw” string of data fields, separating the information into separate data fields.
Benefits of Embedding Vaccine Information into a Barcode

Having the information (e.g., lot number, manufacturer, expiration date) already laid out in the vaccine barcode’s raw data string:

- increases the accuracy of the information being captured, minimizing manual data entry errors.
- improve client chart documentation
- decrease inventory reconciliation time
- aids in patient safety initiatives

Using a Barcode Scanner

- Hold your scanner 4-5” away from the barcode.
- Do not block 2D barcode.
- Aim/scan 2D barcode, not the linear barcode.
- Note: It may help to cover the linear barcode with your fingers.
- Do not stand in direct sunlight or scan in a dark room.
- A successful scan will result in a single beep.
- There is no scanner configuration required for MCIR scanning – i.e., use your scanner with the factory setting.
- You must wait for the series of three beeps when you plug the scanner into your computer before you begin scanning vaccines into MCIR.
- Clean the scanner lens with an alcohol swab and allow to air dry. Do not use Kleenex, paper towel or soap & water.
- Do not handle or dangle the scanner by the cord.
- Never touch the scanner lens. The oil from your hands and your fingerprints will impede the scanners ability to read barcodes; and avoid anything that will scratch the scanner lens.

Currently Available 2D Barcoded Vaccines

For a list of currently available 2D barcoded vaccines, please see the CDC 2D Vaccine Barcode information.
### Troubleshooting Scanned 2D Vaccine Barcodes

<table>
<thead>
<tr>
<th>Issue</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am trying to scan but do not see the red light.</td>
<td>Check to ensure the scanner cable is firmly connected to the bottom of the device and into the computer's USB port.</td>
</tr>
<tr>
<td></td>
<td>Did you wait for the computer to recognize the hardware when you plugged it in – i.e., Did you hear the series of 3 beeps? Unplug and then reconnect the device to the computer. Listen/wait for 3 beeps.</td>
</tr>
<tr>
<td>I am unable to scan the barcode.</td>
<td>Ensure you are holding the barcode 4-5” from the scanner.</td>
</tr>
<tr>
<td></td>
<td>While scanning, slightly rotate the vial along its length to increase scanning consistency.</td>
</tr>
<tr>
<td>The barcode data is not populating my computer screen.</td>
<td>Ensure your cursor is placed in the appropriate field of the computer screen.</td>
</tr>
<tr>
<td></td>
<td>If the scanner did not beep, it did not read the barcode. A successful scan should result in 1 beep of the scanner.</td>
</tr>
<tr>
<td>I keep scanning the linear barcode instead of the 2D barcode.</td>
<td>Try placing your finger over the top of the linear barcode when scanning.</td>
</tr>
<tr>
<td>I am not scanning right now but the scanner's red light keeps turning on</td>
<td>While plugged into your computer, the scanner will sense movement which will cause the red light to activate. Either move the scanner away from your work area or unplug it when not in use.</td>
</tr>
<tr>
<td>Will the scanner lose its MCIR configuration if I unplug it?</td>
<td>No, there is no special setting required to scan into MCIR. The scanner should remain set the manufacturer “out of the box” setting.</td>
</tr>
</tbody>
</table>
ADDING 2D VACCINES TO YOUR MCIR INVENTORY

Step 1: Click on the Add New Lot link in your VFC/Public or Private inventory.

Click on the Use 2D Barcode link to prepare to scan.
Step 2: The **Add Vaccine Lot 2D Barcode** window should appear. Your cursor will automatically appear in the **Scan1** field.

Be sure to scan the 2D barcode on the vaccine box. The raw data string should populate **Scan1** field. Click **Submit** when finished.
You will receive the following message if you accidentally scan and submit the linear barcode.

Notice the difference in the length of a scanned 2D barcode and a scanned linear barcode:

2D scan:

Linear scan:
Step 3: Once you have submitted your scanned vaccine, you will be directed to the **Add Vaccine Lot** screen. Complete the required fields and click **Submit** when finished. You will be returned to the **Manage Inventory** screen.

Step 4: The vaccine just scanned should now appear in your inventory.

Note: If you attempt to scan and add a lot to your inventory which already exist in your **Inactive** inventory, scanning the barcode will pull the lot back into your **Active** inventory, provided the vaccine’s expiration date is in the future.
REPORTING ADMINISTERED 2D BARCODED VACCINES TO MCIR

Step 1: If you use the Vaccine Inventory Module (VIM), you will need to ensure the vaccine you intend to scan has already been added to your inventory. It is not, however, a requirement to use VIM to scan administered vaccines. The immunization administration Type should automatically default to No Inventory for Non-VIM sites.

Step 2: From the Add Immunizations screen. Click on the Use 2D Barcode link.
Step 3: The Add Immunization 2D Barcode window should open and your cursor should automatically appear in the Immunization Information field box for line Scan1.

![Add Immunization 2D Barcode](image1)

Step 4: Scan the 2D barcode on the vaccine vial or syringe, then tab over to the Eligibility field and select the appropriate vaccine eligibility.

![Add Immunization 2D Barcode](image2)

Tab down to the next line, or place your cursor in the Immunization Information field of that line, to scan the next vaccine. Be sure you aim your scanner at the 2D barcode, not the linear barcode.
Step 5: To delete a vaccine scanned in error, click on the Clear link, far right end of the scan line.

Step 6: Once all vaccines have been scanned, click Submit from the bottom of the Add Immunization 2D Barcode window.

Step 7: The vaccine(s) should now display in the Add Immunizations screen. All vaccine information should be parsed (separated) and display correctly. Make sure you review the information, adding any additional information, before you click to Submit.

Submitting an administered immunization will trigger the appropriate transaction (deduction) to occur in inventory, if applicable. For additional information on the Vaccine
Inventory Module (VIM), please refer to the MCIR User Reference Guide: Vaccine Inventory Module.

When you attempt to submit a scanned vaccine already existing in both your Public/VFC and Private inventories, you will receive the following message:

The system will force you to manually choose a lot from the Lot drop-down menu.
Shortened Vaccine Expiration Dates

Although a vaccine’s expiration date can be manually altered (shortened) in the MCIR inventory, the embedded information contained within the vaccine’s 2D barcode cannot be altered. It is impossible to change the information contained with the barcode.

Expiration date embedded in the vaccine’s 2D barcode
(Example: 10/29/2017)

![Immunization Information]

Exact same vaccine lot in inventory with a shortened expiration date
(Example: 01/01/2017)

![Lot Information]

Scanning a vaccine where the expiration date has been modified (shortened) in inventory will result in an error message, forcing the user to manually select the appropriate lot from the Lot drop down menu.
SCANNER EQUIPMENT CONSIDERATIONS CHECKLIST

Purchasing Considerations

☐ The scanner must read two-dimensional (2D) barcodes, not just linear.
☐ Scanners range in cost from $200 and up. Scanner cable cords are at an additional cost. Extended warranties can also be purchased.
☐ Scanner technology is considered up-to-date for about 2 years, after which the recommendation is to update the hardware, i.e., buy new equipment.
☐ Scanner stands can be purchased for an additional cost. It is advisable to discuss stand options with the company you are purchasing the scanners from. Each model has a compatible stand(s). Sand-weighted stands are more stable, but cost more.

Scanner Models/Brands

☐ The Motorola DS4208 and the Gryphon I GD4430 were both verified as MCIR compatible during Michigan Dept. of Health and Human Services’ (MDHHS) 2014 2D Barcode Project.
☐ Other brands have not been by the MDHHS for compatibility with MCIR.

Scanner Settings and MCIR Compatibility

☐ For the scanner to properly function with MCIR, it must remain set to the factory settings, i.e., used straight out of the box.
☐ Scanners currently utilized with electronic health record (EHR) systems will not work with MCIR because they have been configured (i.e., altered) to work within the EHR application.
☐ For information on EHR 2D barcode scanning, please contact your vendor.
MCIR 2D VACCINE BARCODE ERROR MESSAGES

Questions regarding error messages received while scanning into your electronic health record (EHR) should be directed to your office’s technical staff or your EHR vendor.

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Description</th>
<th>How to Fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot number 'lot Number' with expiry date 'Expiry Date' does not match on expiry date. Please select appropriate lot and expiry date.</td>
<td>The Lot Number and expiry date does not match the lot# and expiry date in inventory. This could be the result of: either a lot #’s expiry date being shortened or because the lot has not been added to an active VFC (Public) or Private inventory.</td>
<td>Manually select Lot# and expiry date from persons Add Immunization screen’s lot dropdown menu.</td>
</tr>
<tr>
<td>Lot number 'lot Number' has multiple expiry dates. Please select appropriate lot and expiry date.</td>
<td>The Lot Number has multiple expiry dates in inventory. This could be the result of having the same lot# in Private and VFC (Public) inventories.</td>
<td>Manually select Lot# and expiry date from persons Add Immunization screen’s lot dropdown menu.</td>
</tr>
<tr>
<td>Duplicates found for scan ‘Scan Text’ Please correct before proceeding.</td>
<td>Scanned code is a duplicate of another scanned code.</td>
<td>Clear one of the duplicate entries. Be sure to verify the line you keep correctly reflects the Vaccine Eligibility and inventory.</td>
</tr>
<tr>
<td>Scan (lines 1 to 8): Lot Number: 'Lot Number' does not exist in inventory</td>
<td>Site has an active inventory, but the scanned lot# does not exist in the inventory.</td>
<td>Add lot to inventory and then attempt the administration scan again to create an inventory transaction.</td>
</tr>
<tr>
<td>Scan (lines 1 to 8) NDC 'ndc' does not exist in the system (For Scan Line 1 to 8 if NDC does not found in inventory system).</td>
<td>The vaccine includes a 2D barcode which has not been added to MCIR.</td>
<td>Contact your regional MCIR office.</td>
</tr>
<tr>
<td>Please select the eligibility for scan (lines 1 to 8).</td>
<td>Eligibility was not selected prior to submitting scanned data.</td>
<td>Select eligibility and click Submit.</td>
</tr>
<tr>
<td>Scan (lines 1 to 8) text does not have sufficient characters. Please check it and scan again.</td>
<td>The Linear barcode was scanned instead of 2D barcode.</td>
<td>Delete the line and re-scan, using the 2D barcode.</td>
</tr>
</tbody>
</table>