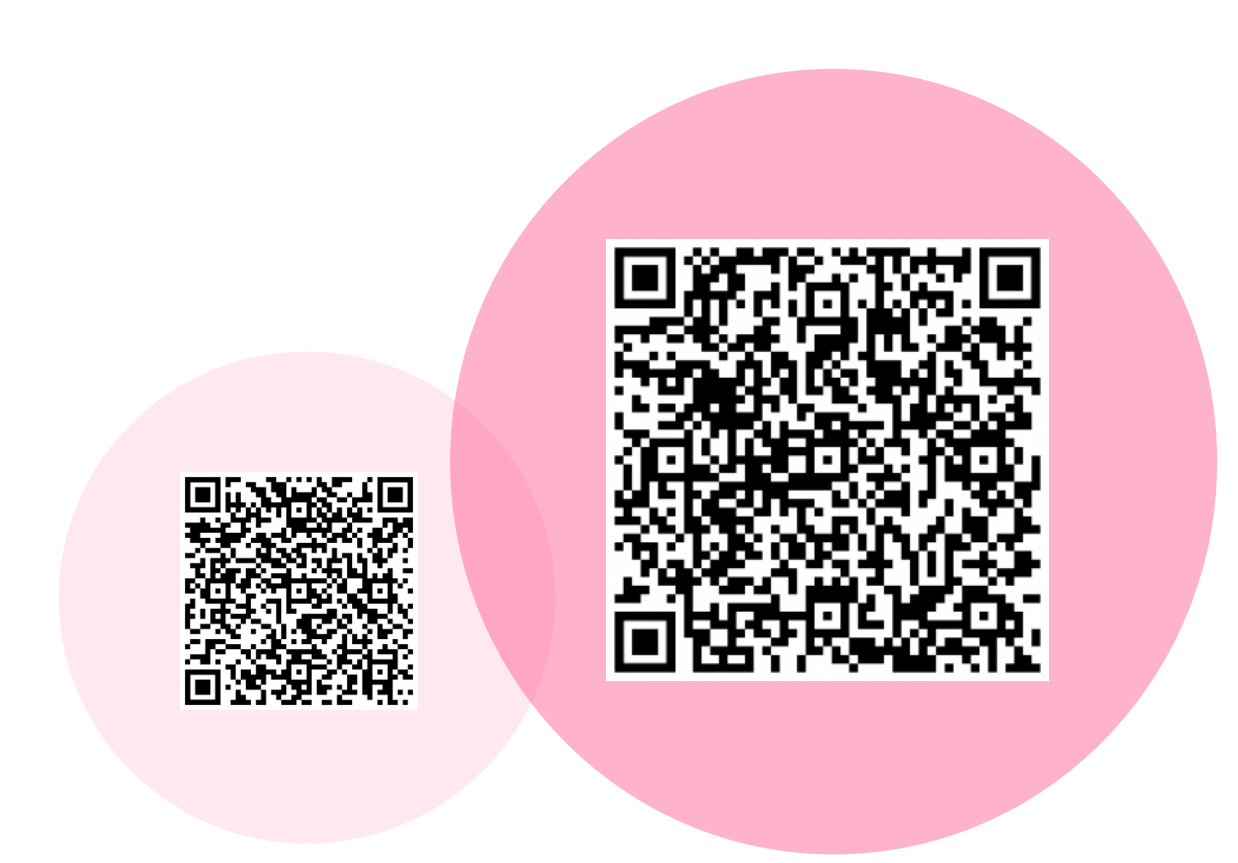


Barcoding Revolution: A New Process to Patient Safety

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BACKGROUND

In late 2019, Alberta Health Services had launched its first wave of Connect Care, which is an electronic clinical information system that will manage the records of care of a patient. Connect Care uses an application called EPIC.

Barcoding, a vital factor of Connect Care, is integrated into health disciplines to improve patient safety. This can be achieved by using barcodes to (1) *validate the patient* (ensures the patient being treated is the right patient, and the right treatment is given), (2) *track products* (e.g. medication, breast milk, blood sample, urine sample), and (3) *control inventory* (ensures that products are available and accounted for).

Royal Alexandra Hospital (RAH), was part of Wave 4 and was scheduled to launch this November 2021. In anticipation of this, the Barcoding area was introduced in Mid-March 2021 to accommodate labelling drugs with Data matrix barcodes that include information such as drug name, strength, form, stock size, lot number and expiry date. Some manufacturers are using this type of barcodes on their products already, therefore, these drug products are exempted to be barcoded in the Barcoding area.

Data matrix barcodes are used in tracking drugs from filling, checking, and delivery, until it gets administered to the right patient.

This poster is to present the Barcoding area and process. Furthermore, show the progress of RAH-Pharmacy in barcoding at least 90% of the drugs in the inventory by the end of August 2021 for the Connect Care launch.

METHOD: Barcoding Area Layout, Team, Equipment and Prioritization

The pharmacy was revamped to make provision for the Barcoding area (Figure 1). The Barcoding area layout consists of 3 zones:

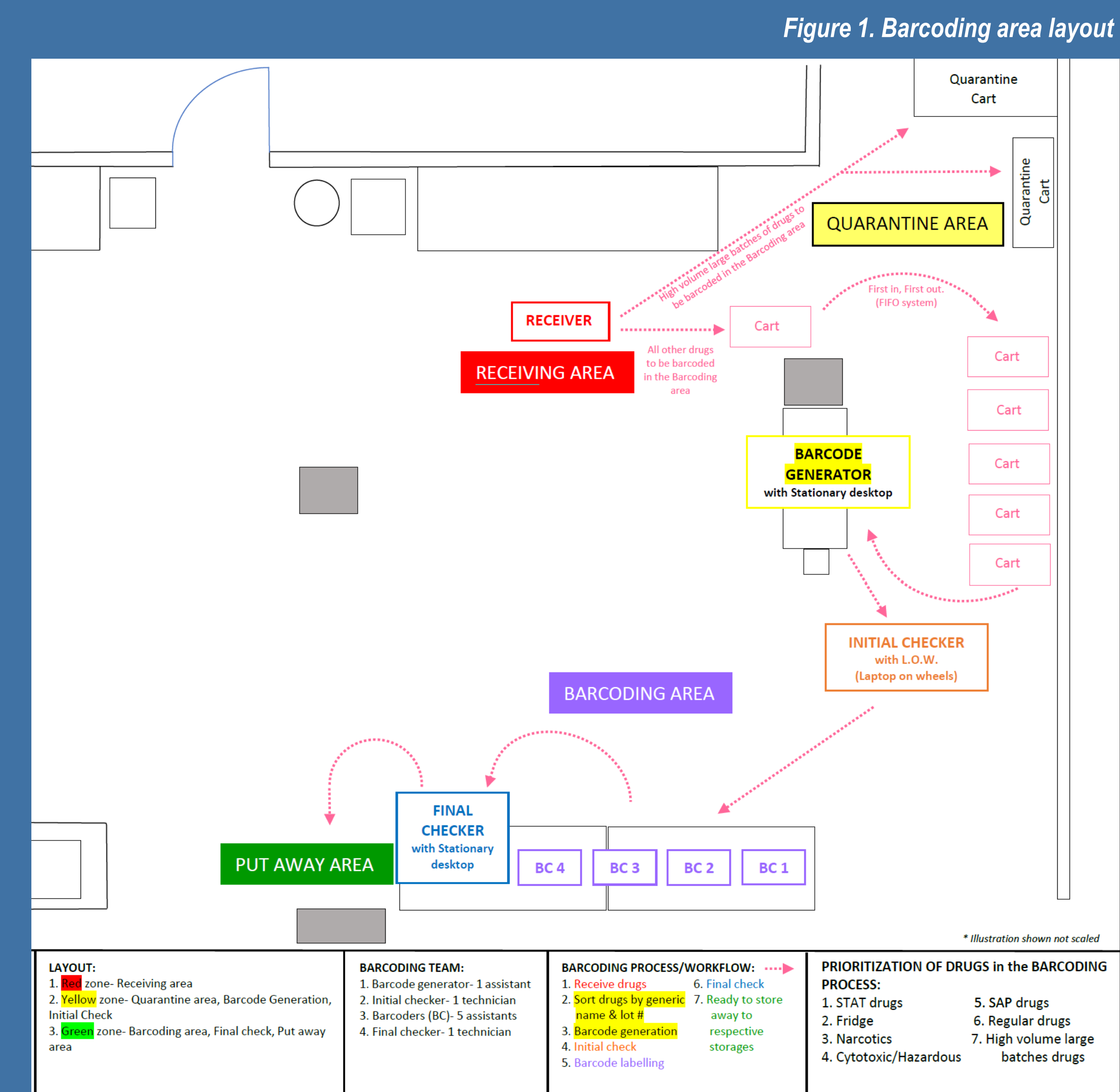
1. **Red zone** (Receiving area- a "No Touch" zone for Barcoding team)
2. **Yellow zone** (Quarantine area, Barcode Generation, Initial Check)
3. **Green zone** (Barcoding area, Final Check, Put Away area).

Our **Barcoding team** comprises 6 Pharmacy assistants (1 Barcode generator, 5 Barcoders) and 2 Pharmacy Technicians (1 Initial Checker, 1 Final Checker).

For **equipment**, we have 2 Stationary desktops for the Barcode generator and Final checker, 1 Laptop on Wheels (L.O.W.), 2 Zebra ZD420 printers, 1 Zebra ZT410 printer, 3 Zebra Barcode scanners DS8178 for all desktops and the Laptop on wheels.

Prioritization of drugs in the Barcoding area is as follows:

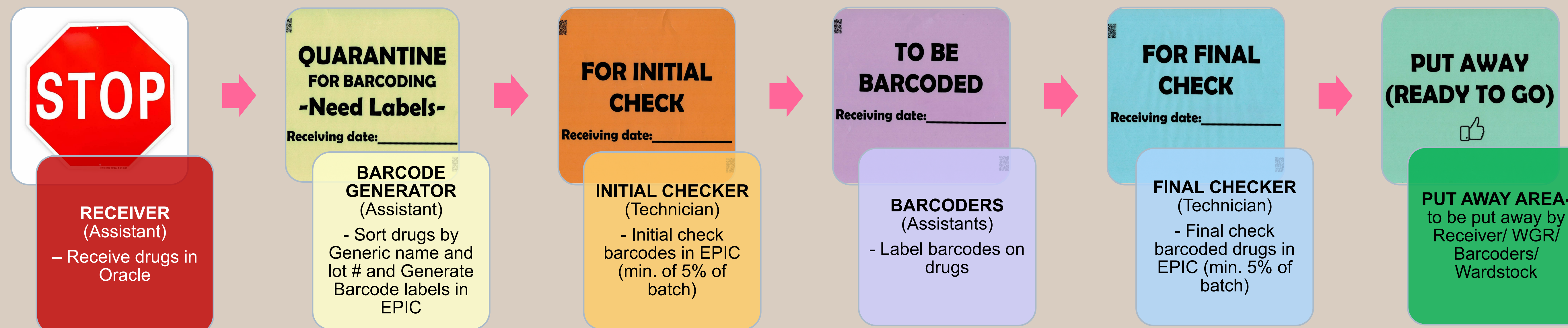
1. STAT drugs
2. Fridge
3. Narcotics/ Controlled/ Benzodiazepines
4. Cytotoxic/ Hazardous
5. SAP
6. Other Regular drugs
7. High Volume Large batches drugs



General Barcoding Process and signs

Five colour-coded status signs are used for indicating where the drugs are in the barcoding process. **Quarantine for barcoding (need barcode labels)** sign in Yellow, **For Initial Check** sign in Orange, **To be barcoded** sign in Purple, **For Final Check** sign in Blue, and **Put Away** sign in Green. Each sign has a provision for the date when the drugs were received to apply the First in-First out (FIFO) system. (Figure 2)

Figure 2. Barcoding Process with corresponding Status signs



Identifying signs are also used for recognition purposes for different drugs and for areas wherein drugs will proceed after the barcoding process is completed. The signs will relay additional communication to the Barcoding team throughout the Barcoding process.

Barcoding workflows for Refrigerated drugs, Narcotics/ Controlled/ Benzodiazepines, Cytotoxic/ Hazardous drugs, SAP drugs, and High Volume large batches drugs have been modified according to the requirements of each category.

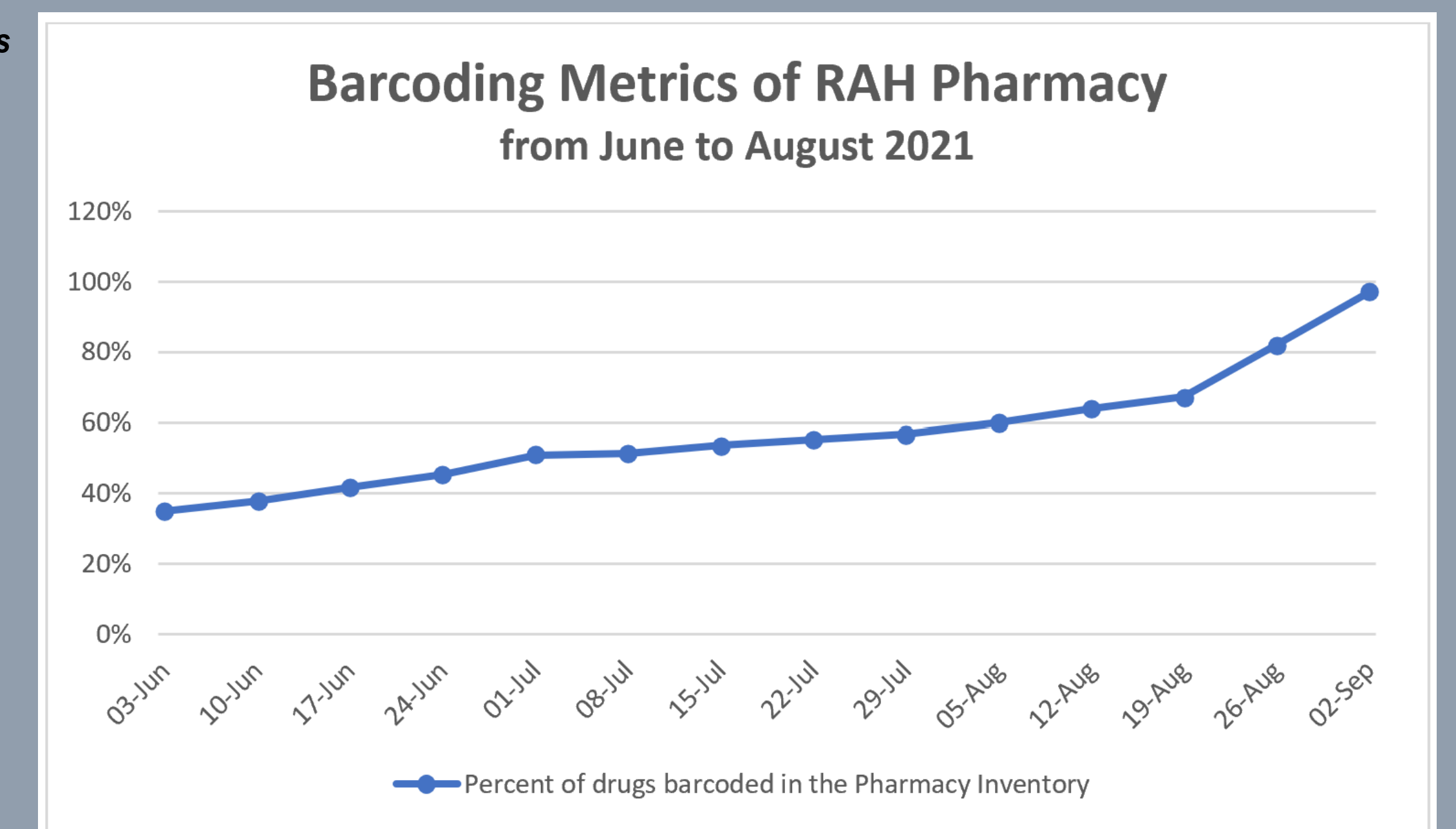
RAH-Pharmacy label barcodes on approximately 6,000- 9,000 drug products per day. Modifications were made to the Barcoding area and processes as we deemed fit to facilitate optimum barcoding efficiency in our site.



RESULTS

RAH-Pharmacy reached and exceeded the goal by the end of August 2021. Quantity of barcoded drugs are monitored every day and Barcoding Metrics were submitted to the Barcoding SMOREs every week (Graph 1). Early September 2021, it was announced that Wave 4 launch will be delayed and rescheduled for May 2022 due to Covid-19 pandemic.

Graph 1. RAH Barcoding Metrics from May to August 2021 (Early September 2021)



CONCLUSION

A multitude of work is done by the Pharmacy team to apply Barcoding on drug products. The utilization of barcodes for tracking drugs will ensure that the right medication will reach the utmost essential end-user, the patient, which will optimize patient safety.

REFERENCES:

- RAH Barcoding System- Assistant Manual
- RAH Barcoding System- Technician Manual
- <https://insite.albertahealthservices.ca/cis/Page12170.aspx>
- Manufacturer Barcode Assessment
- Connect Care Willow- Medication Barcodes