

Cart Smart – Rethinking Crash Cart Preparedness

Joseph Bland, Tara White, Mark Siemon, Wei Yang, Alan Haber, Ela Kowalski, Jenna Booth, Dawn Elliott, Stephanie Childs, James Helstrom
 Fox Chase Cancer Center, Philadelphia, PA 19111



Abstract

Crash carts have been proven to be pivotal to improving code event outcomes. It has been estimated that at least 300,000 cases of in-hospital cardiac arrest occurred in the USA between 2013 and 2018 and that every minute without medical intervention survival falls 10-15%.

In 2010, the Pennsylvania Patient Safety Authority reported 56 cases of outdated or missing medications and/or missing or malfunctioning equipment when crash carts were used in emergency situations. Further, the Joint Commission hospital accreditation service released a bulletin in 2017 emphasizing the importance of crash cart preparedness.

Checklists are proven effective and in use in crash cart preparedness. However, when done on paper the extensive inventories and high volume of daily reviews still leave room for errors and require manual audits.

At the Hospital, we had a rate of issues discovered during codes of ~25%, in spite of a robust paper process.

Objectives

Reduce code cart readiness errors by designing a process that would directly integrate the three aspects of cart readiness – restocking, daily checklist review, administrative audits – leveraging manufacturer barcodes and standardized inventory to streamline restocking process.

Approach:

Consistent, Cohesive, Comprehensive

The flowchart illustrates the 'Crash Cart Master' process:

- Inputs: Assign Cart to Location, Update Pharmacy Tray, CSR Restock / Scanning.
- Central Hub: Crash Cart Master.
- Outputs: Find Pharmacy Tray, On Demand Reporting and Dashboard, Digital Log Book, Daily Email Digest, Recurrent Error Email until issues resolved.
- Supporting Processes: Daily Cart Review, Cart Audit History, All-Carts-Are-In-Order Processing.

The digital interface screenshot shows a scan of a barcode (00382903029952) for 10 ml syringes, with a list of items and their expiration dates (e.g., 07/31/2025, 05/31/2022).

Results

- Immediate reduction in cart readiness issues
- Significant reduction in cart restock time
- Daily cart readiness digest eliminates need for manual audit of paper logs
- Early warning of upcoming item expirations
- Detailed administrative metrics
- Full campus-wide visibility of cart status from anywhere at any time
- Use of manufacturer barcodes gives complete confidence in individual item readiness

Crash Cart Notification (Crash Cart Daily Report)

Report Date: 08/23/2022

Summary: 13 of 13 locations reviewed by 9:15

Issues Log:

- 08/23/2022 06:41 Some items will expire soon in cart[FC004], location[Diagnostic Radiology], (Drawer 3: 08/31/2022)
- 08/23/2022 07:12 Some items will expire soon in cart[FC012], location[EMB], (Drawer 3: 08/31/2022)

Comments Recorded: No comment found.

Cart	Location	Reviewed Date	Reviewer	REV_CSLOCK	REV_RXLOCK
FC001	CPD Infusion Room	08/23/2022 06:43	Stephanie Leach	1301848	1301847
FC003	2 South	08/23/2022 05:09	Laura Pence	1301850	1301705
FC004	Diagnostic Radiology	08/23/2022 06:41	Maria Cruz-Dennis	1301827	1301828
FC005	CR	08/23/2022 08:31	Christina Andena	1301866	1301998
FC006	MRI	08/23/2022 06:03	Karen Myers	1301843	1301821
FC007	Radiation Oncology	08/23/2022 07:08	Marcilleen Smith	1301816	1301817
FC009	3 South	08/23/2022 06:25	Berna Raju	1301814	1301983
FC010	DRU	08/23/2022 06:50	Kristin Hand	1301818	1301822



Replacing existing paper processes with online interfaces in an integrated suite of applications that leverage results from each component to simplify usage and reporting