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What we can learn from Near Miss Patient Safety Events: Analyzing Near Miss Event Data Prevents Harm to Patients

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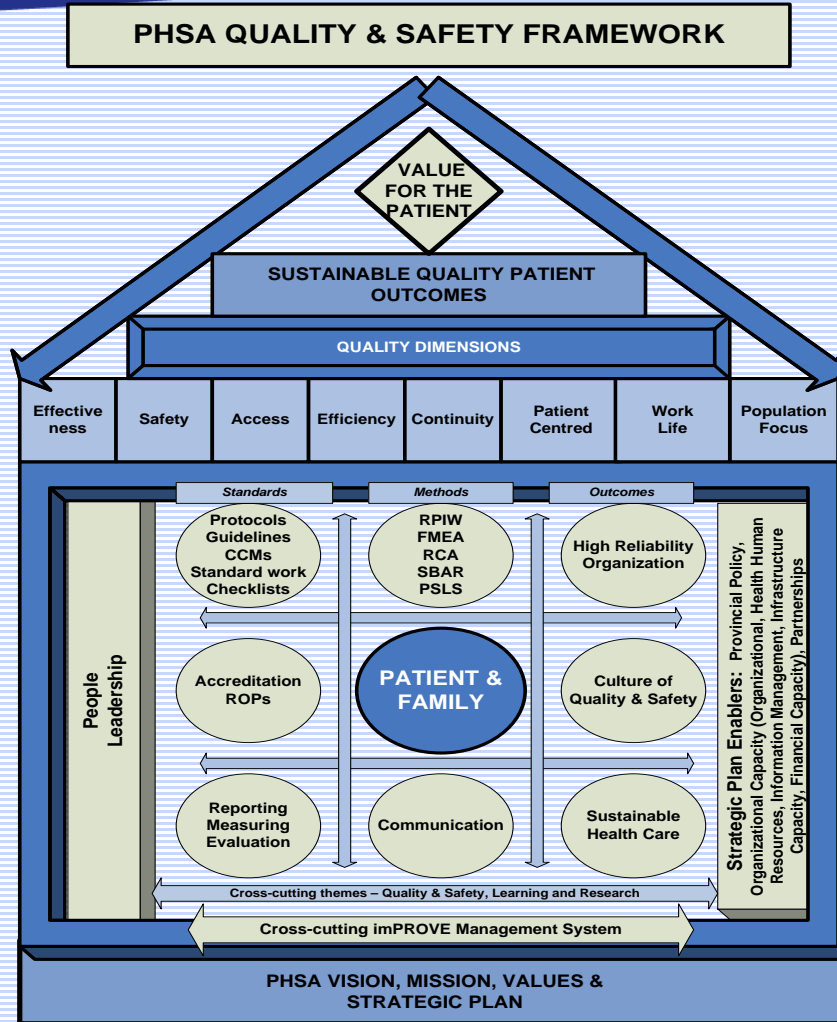


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PHSA Quality & Safety Framework





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Near Miss: Definition

- **An event that could have resulted in unwanted consequences but did not because either by chance or timely intervention the event did not reach the patient. (*ISMP Canada*)**



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Importance of Near Miss Reporting

- A near miss should be clear evidence that a tragic event could occur. An analysis of an organization's near misses and actual patient safety events reveals a similar trending in the types of errors. Therefore, when organizations pay attention to near misses and put strategies in place to prevent near misses, the number of actual patient safety events will also be reduced.



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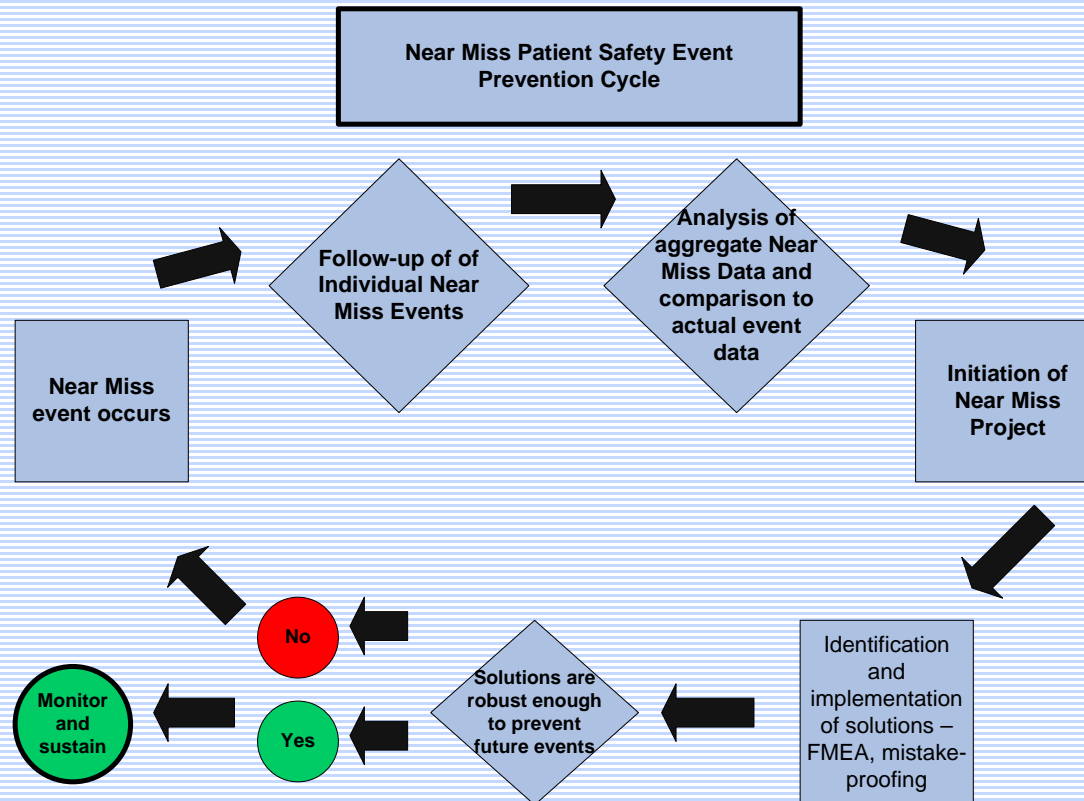
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Becoming a High Reliability Organization (HRO)

- High-reliability-organization (HRO):
 - practices help prevent catastrophic failures in complex systems
 - have a palpable passion for safety
 - see learning as inseparable from everyday work and a necessary precursor for change
 - HROs regard near misses as system failures that reveal potential danger or evidence of success since potential harm was avoided
- Willingness to speak up and have an open discussion about errors in a non punitive /non-blaming environment
- Rigorous analysis of near miss and actual patient safety events (PSEs) to reduce reoccurrence



Near Miss Event Prevention Cycle



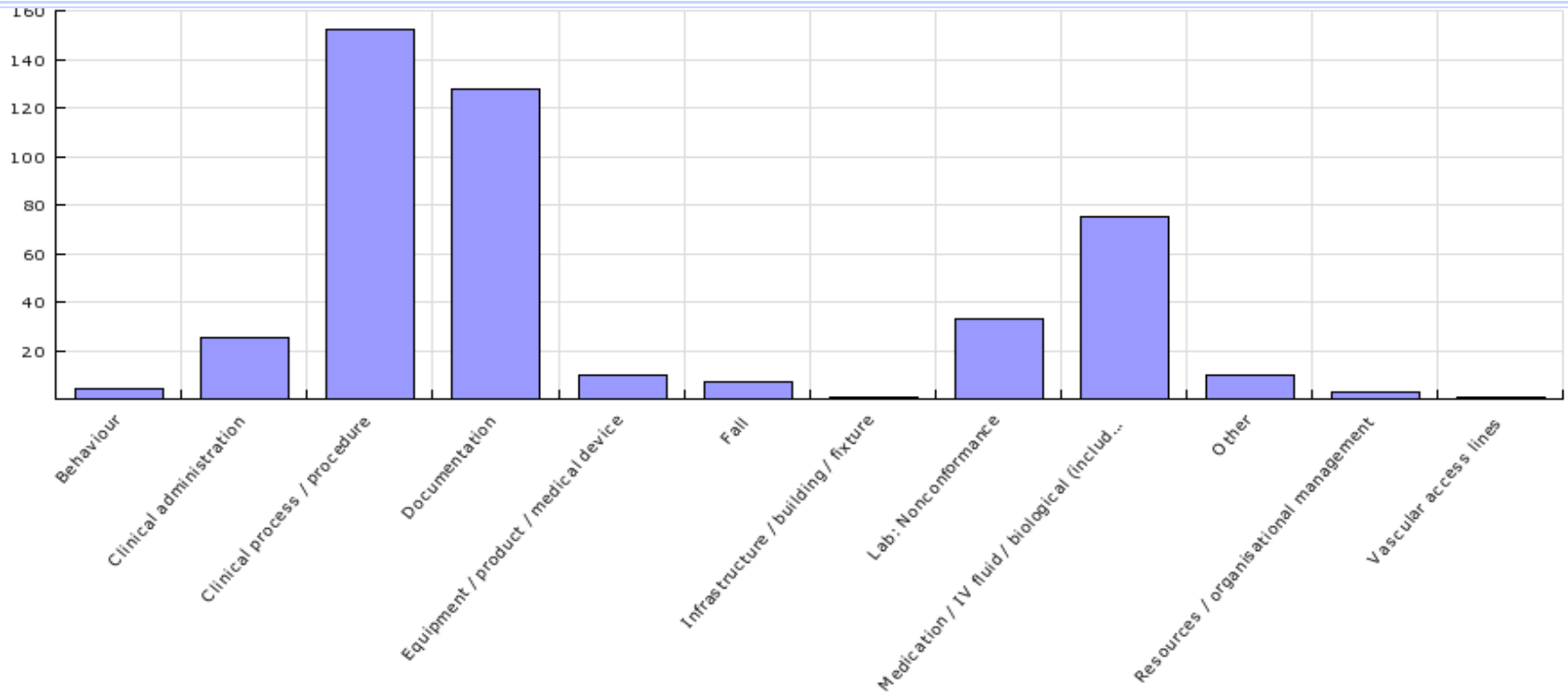


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BCCA Near Misses by Category of Events





Crosstab - Category of Event - Month/Year

	Jan 2009	Feb 2009	Mar 2009	Apr 2009	May 2009	Jun 2009	Jul 2009	Aug 2009	Sep 2009	Oct 2009	Nov 2009	Dec 2009	Total
Behaviour	0	0	0	2	1	0	0	0	1	0	0	0	4
Clinical administration	0	3	3	4	3	2	2	0	2	4	1	1	25
Clinical process / procedure	11	4	17	9	20	13	13	13	16	10	13	13	152
Documentation	3	1	1	18	15	14	17	15	14	10	10	9	127
Equipment / product / medical device	0	0	0	0	2	0	2	0	1	0	1	4	10
Fall	2	1	0	0	1	1	0	1	1	0	0	0	7
Infrastructure / building / fixture	0	0	0	0	0	0	0	1	0	0	0	0	1
Lab: Nonconformance	0	0	0	1	6	6	5	1	4	3	4	3	33
Medication / IV fluid / biological (includes vaccine)	4	4	9	6	4	8	6	4	3	16	8	3	75
Other	0	0	0	0	0	3	0	0	1	0	3	4	11
Resources / organisational management	0	0	0	0	0	0	0	0	2	0	1	0	3
Vascular access lines	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	20	13	30	40	52	48	45	35	45	43	41	37	449



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In-depth Analysis of Events



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BCCA: Analysis of Near Misses

	Categories/Trends of Near Miss	AC	CSI	FVC	VCC	VIC	Total
1	Bolus dimensions documented incorrectly for mould room	1	2				3
2	Second check not done earlier	7	7	1	1		16
3	Place information in incorrect field	2	3	3	4		12
4	Inadequate set up instructions	20	5	5	4	1	35
5	Field borders not marked/ matched	3	7	12	1	1	24
6	No weekly SSD/ Incorrect/ Inadequate SSDs	12	2	2	1		17
7	Wrong Calculation/ Incorrect info in field	8	5	1			14
8	Medication Mixed in wrong diluent	2			1	1	4
9	Incorrect amount of diluent	2				1	3
10	*Dr.'s order changed nurse and pharmacy unaware	6	6	2	3		17
11	Pt appt not booked/changed, pharmacy made up chemo (threw out)	2			1	4	7
12	Drug keep in fridge instead of freezer	1					1
13	Incorrect amount of medication made up	3	2			1	6
14	Wrong addressograph/ name on prescription	3				4	7
15	Lab delays (10 min delay)	3			3		6
16	PICC Concerns dressing	2					2
17	Transition from hospital- Chart/ Patient	2					2
18	*Pt suicidal discovered in paperwork after pt gone home	3	3	1		1	8
19	Equipment not operational - no patient/ staff injury	2					2
20	Incorrect order by MD	5		5	4 (1 email order)		14
21	Incorrect order identified- not match pt's meds	2					2
22	Incorrect dose entered by pharmacy-picked up	1					1
23	Wrong prep instructions/ teaching given to pt	2			1		3
24	Wrong patient name on image- identified by same person	5	1				6
25	Orders with wrong addressograph or no addressograph	1			3	1	5
26	Lab drug request with wrong addressograph/ not processed		4		5		9
27	*Missed processing of orders- caught early without patient effects		19	1	4	3	27
28	Meds incorrectly labelled/ wrong pt info on chart		4	1	2		7
29	Brachytherapy info on pt needles incorrect		1				1



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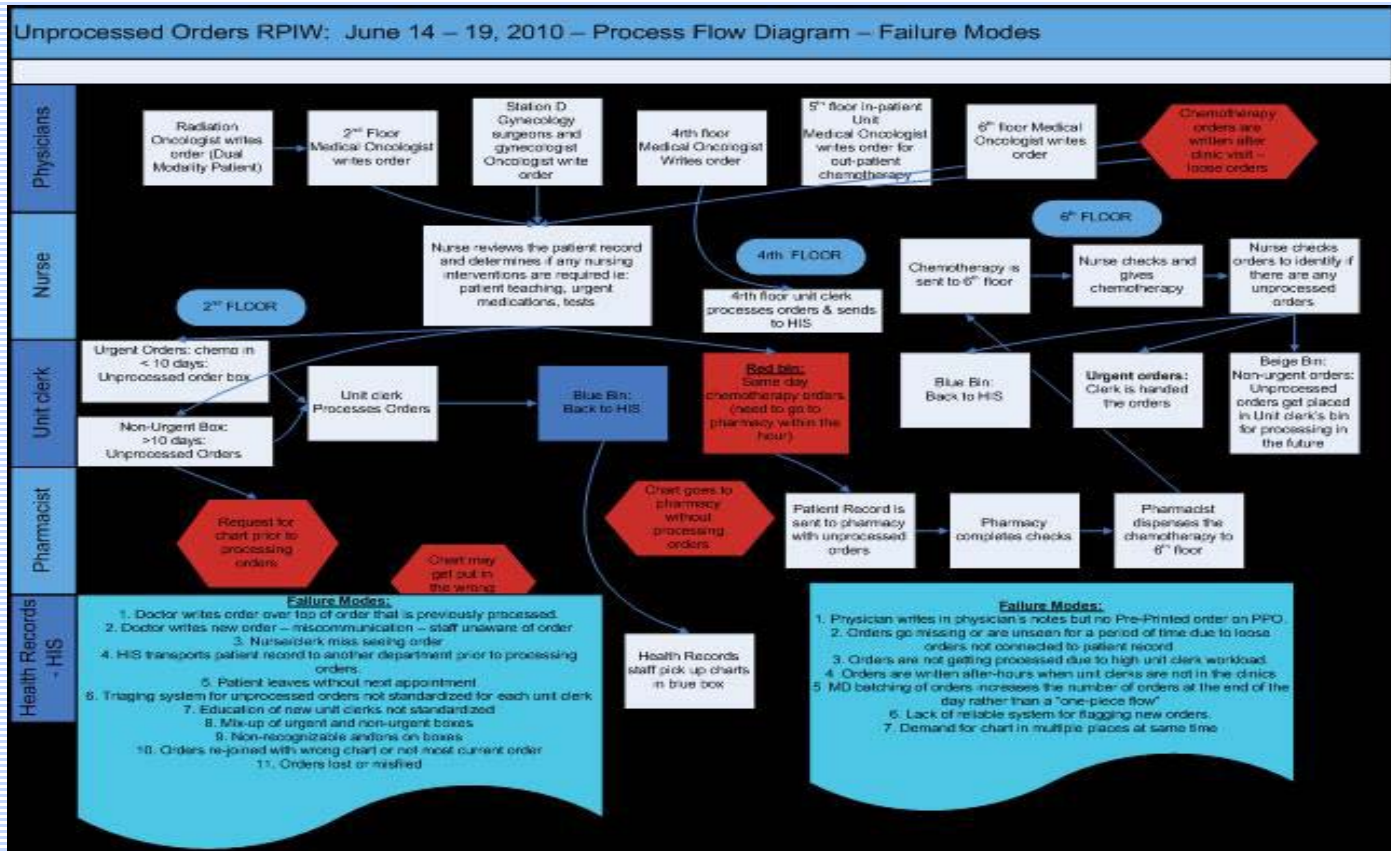
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Prevention of Unprocessed Order FMEA/Lean Project

- Physicians write an average of 75 sets of orders per clinic per day at the BCCA
- 39,000 sets of orders per year in 2 clinics
- There are times when orders are missed being processed
- Results: Patients missed subsequent chemotherapy or radiation therapy appointments being booked
- Patient Safety Event: Patient missed treatment for a period of time (weeks, months)



Process Flow Diagram – Failure modes





Failure Modes

Unprocessed Physician's Orders FMEA **Failure Modes Effects Analysis**

Failure Modes: Points in the process that may fail

1. Doctor writes order over top of order that is previously processed.
2. Doctor writes new order – miscommunication – staff unaware of order
3. Nurse/clerk miss seeing order
4. HIS transports patient record to another department prior to processing orders.
5. Patient leaves without next appointment
6. Triaging system for unprocessed orders not standardized for each unit clerk
7. Education of new unit clerks not standardized
8. Mix-up of urgent and non-urgent boxes
9. Non-recognizable andons on boxes
10. Orders re-joined with wrong chart or not most current order
11. Orders lost or misfiled
12. Physician writes in physician's notes but no Pre-Printed order on PPO.
13. Orders go missing or are unseen for a period of time due to loose orders not connected to patient record.
14. Orders are not getting processed due to high unit clerk workload.
15. Orders are written after-hours when unit clerks are not in the clinics
16. MD batching of orders increases the number of orders at the end of the day rather than a "one-piece flow"
17. Lack of reliable system for flagging new orders.
18. Demand for chart in multiple places at same time

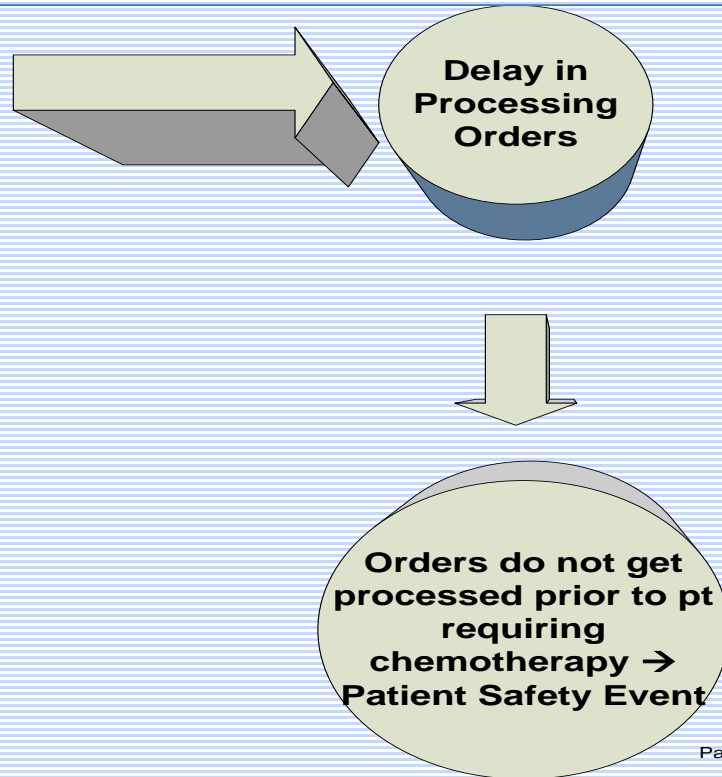


Reasons for Delays in Processing Orders

Reasons for Delays of Unit Clerks Processing Physician's Orders

Reasons for Delays of Unit Clerks processing orders

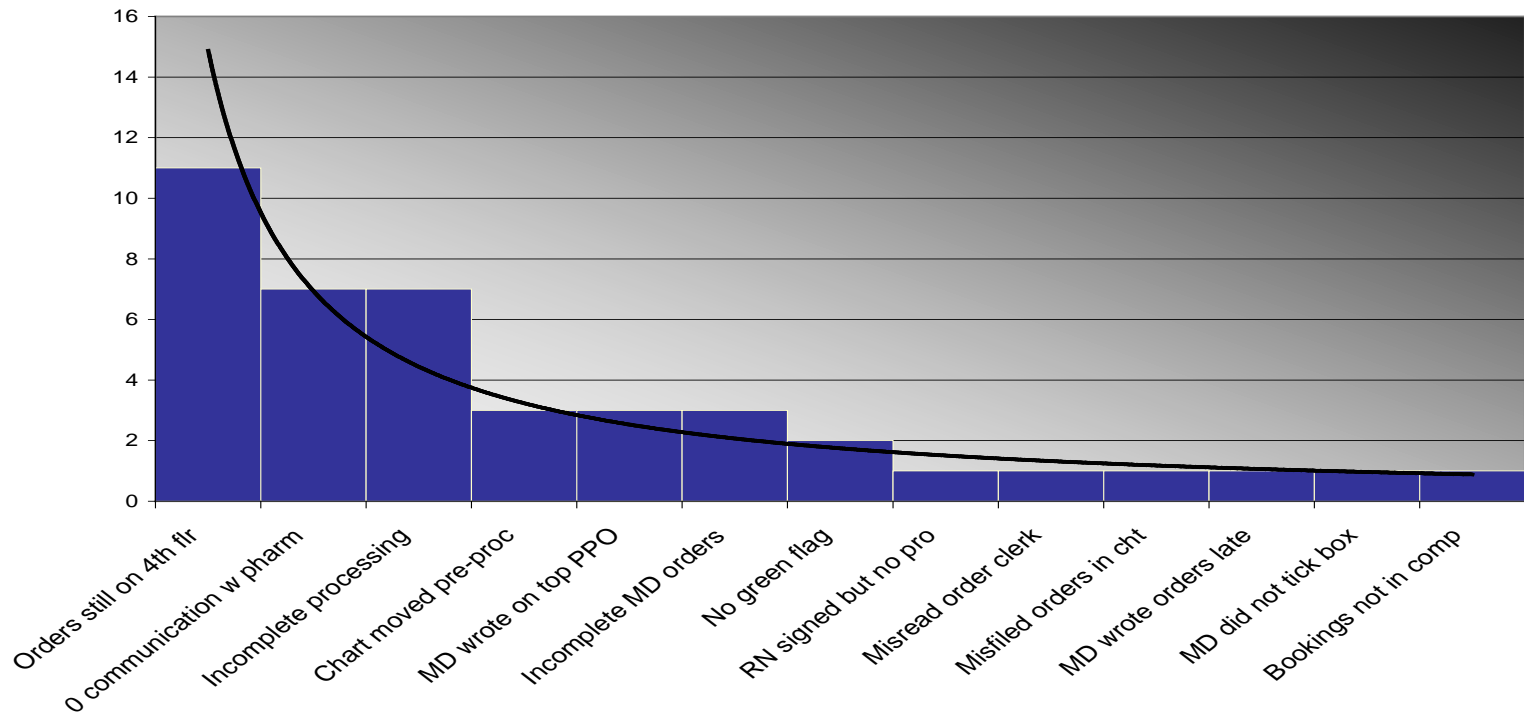
- Physician's orders are not clear and require clarification via discussion or telephone call
- Missing requisitions that physicians have not completed
- PPOs incomplete
- Orders need to be more specific for when the next chemo visit should be if it is to be delayed
- Illegible handwriting
- Patient Treatment Record only completed 30% of the time
- Nurses should be checking:
 - completeness of lab and test requisitions
 - for any medication orders or chemotherapy teaching sessions required to be booked
 - Prescriptions are given to patients before they leave
 - Patient Treatment Record is completed





Pareto Diagram – Reasons for Events

Reasons for Unprocessed Physician Orders - Pareto Diagram VCC - 2010 06 02



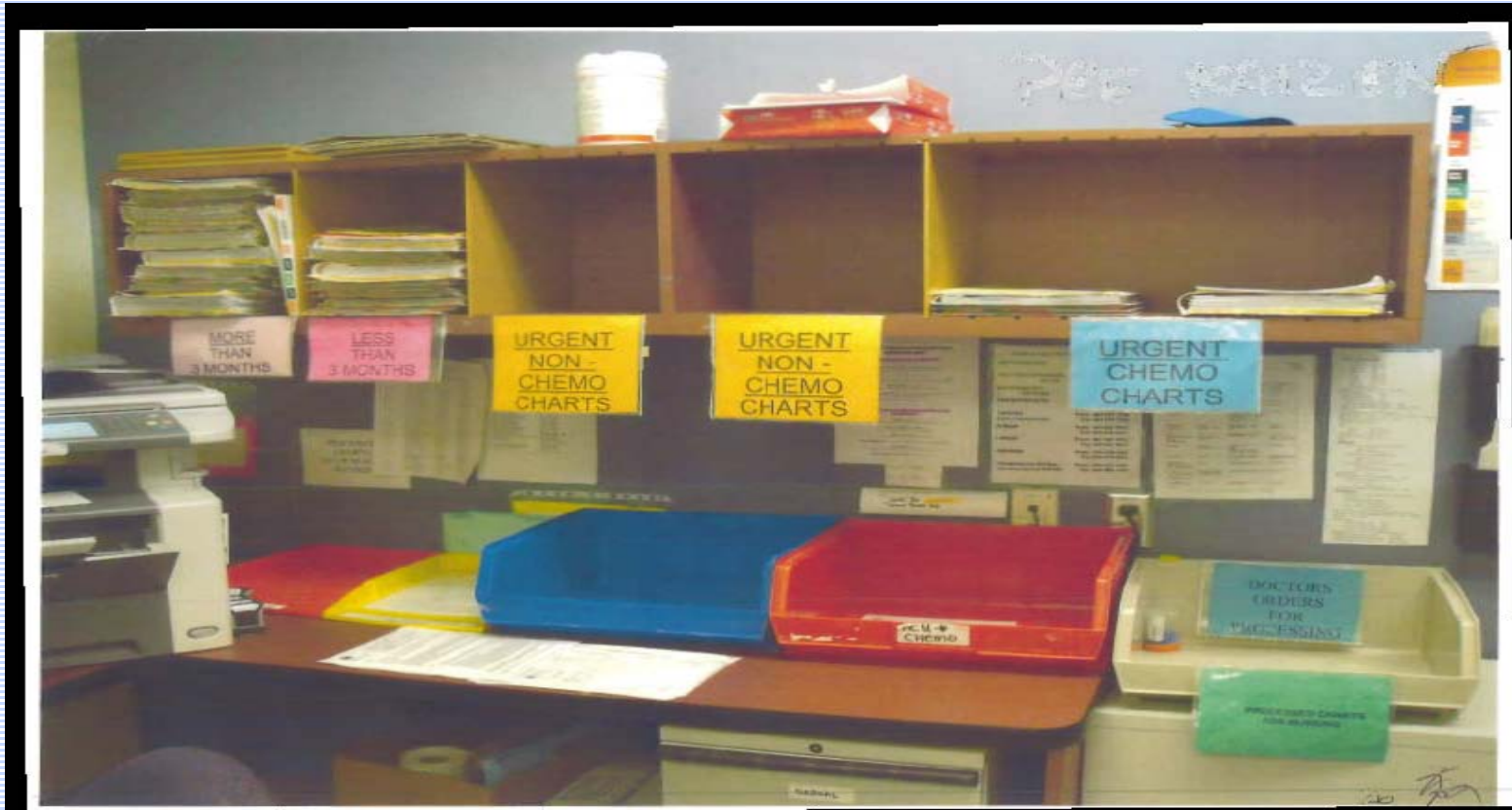


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Before the FMEA/Lean or imPROVE – many bins





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Potential Solutions

Failure Mode in process	Potential Solutions
1. Mix-up of bins	Review location/labeling of bins Two bins – Now and future
2. Clerk misses orders	Establish standard work for clerks (checking off orders) Physician follow-up order sheet MD to check with clerk prior to leaving clinic
3. No standard triaging system for charts	Standard work for clerks to triage charts Orientation & education of clerks
4. MD writes over top of already processed order	New PPO to be used for each new or revised chemo order



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Potential Solutions

Failure Mode in process	Potential Solutions
5. Batching of MD orders	Complete MD orders after each patient
6. Illegible or unclear orders	New physician's follow-up order sheet
7. Orders written after hours	Process for alerting pharmacy after-hours for urgent orders that require processing in 24 or 48 hours
8. HIS takes chart before processing	Urgent orders processed within 24 hours HIS clerk asks unit clerk to process orders prior to moving chart



Potential Solutions

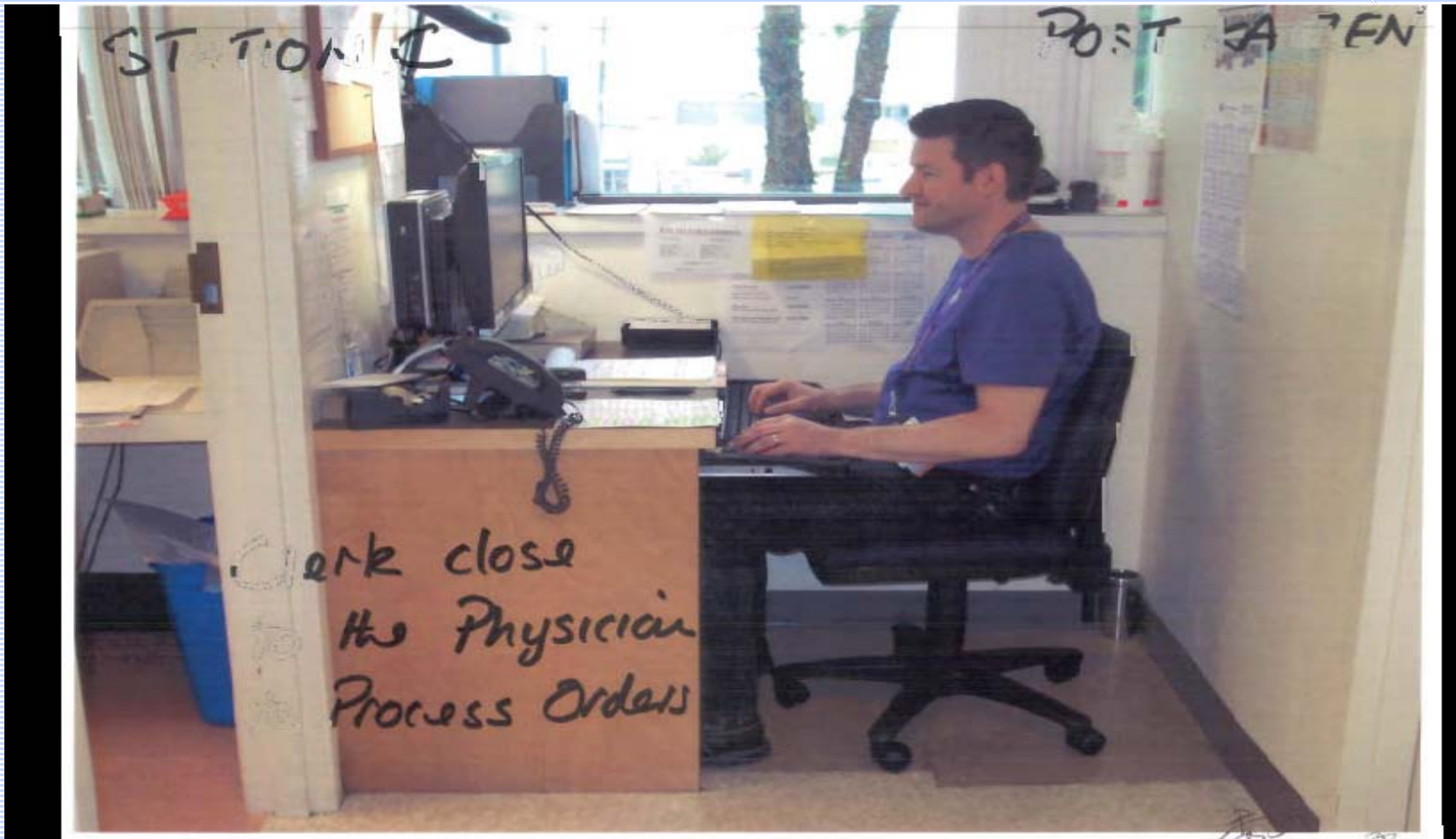
Failure Mode in process	Potential Solutions
9. Orders joined with wrong chart	HIS double checking patient ID stamp x2
10. Loose orders not getting processed	Orders to be written at point of care as much as possible Follow process for urgent orders (communication with clerk, stamp, walk orders up to pharmacy)
11. Clerical volume/workload	Reduce re-work of clerks with clear orders, acceptable abbreviations and complete orders with requisitions
12. Roaming unit clerk	Clerk addresses unclear orders with physician at the time that orders are written



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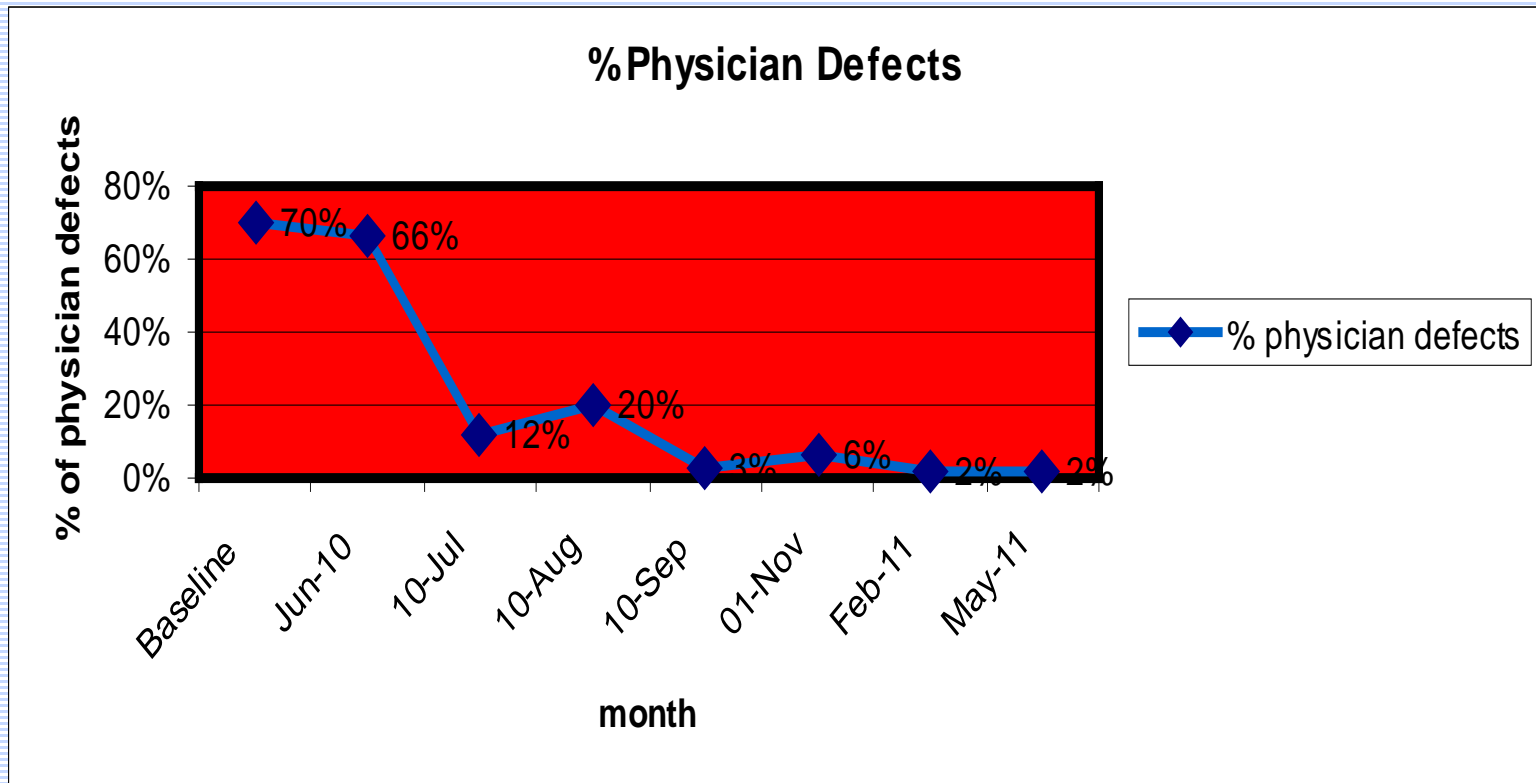


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Results: one near miss/no actual events in 18 months





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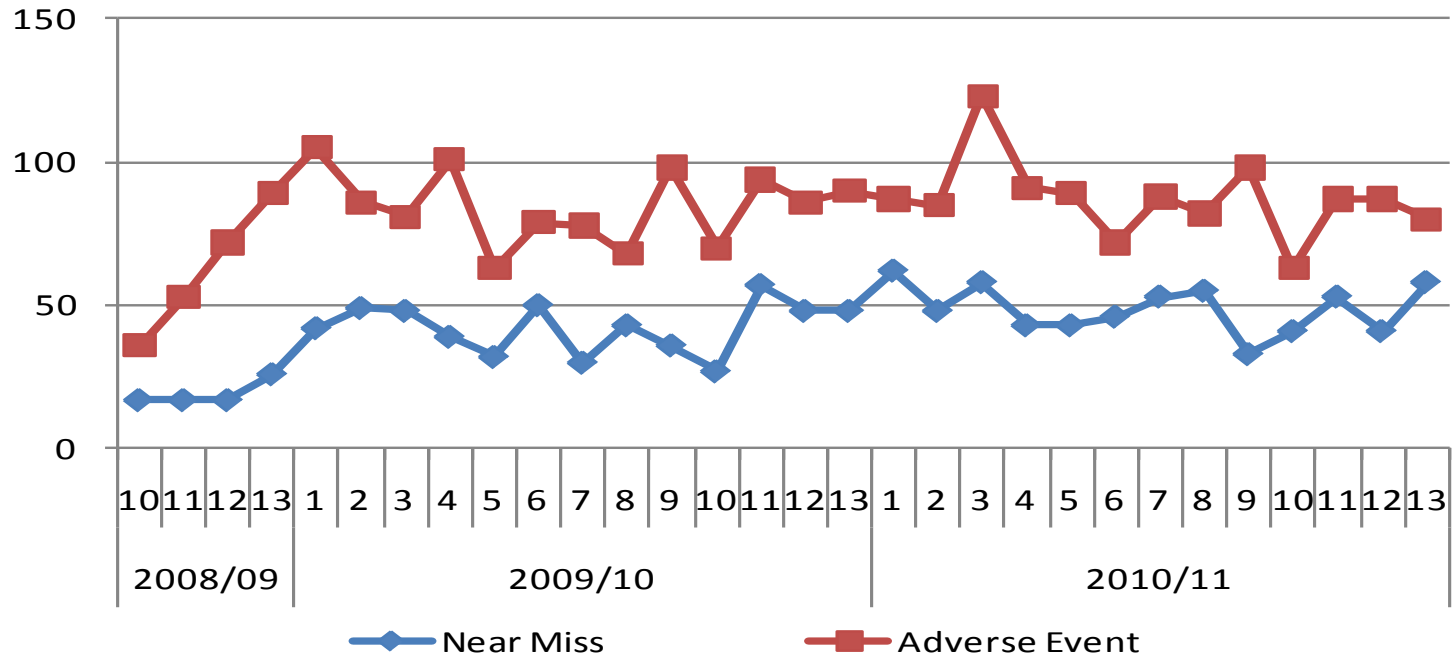
Results

- Educated BCCA physicians about defects in MD orders
- Built in quality control to everyone's position to prevent patient safety events
- Mistake-proofed the process to prevent events
- Simplified and streamlined the order triaging system
- Set and met our target of completing the processing of urgent orders in one day instead of five
- Created standard work for all disciplines and a new protocol for follow-up orders
- Re-organized the clerk stations closer to the physicians
- Eradicated the issue and replicated the process in 3 other cancer centres with no events after 8 months



Near Miss Events vs Actual Events

Number of "near miss" events vs adverse events for BCCA





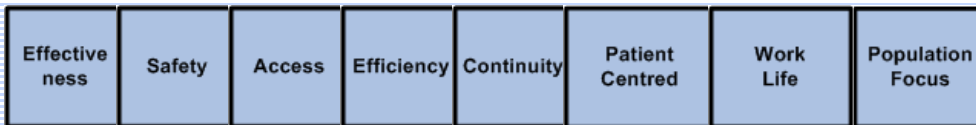
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SUSTAINABLE QUALITY PATIENT OUTCOMES



Outcomes

Methods

Standards

RPIW
FMEA
RCA
SBAR
PSLS

High Reliability Organization

PATIENT & FAMILY

Culture of Quality & Safety

Communication

Sustainable Health Care