Reducing Preventable Harm: Strategies to Reduce Chemotherapy/Biotherapy Administration Errors

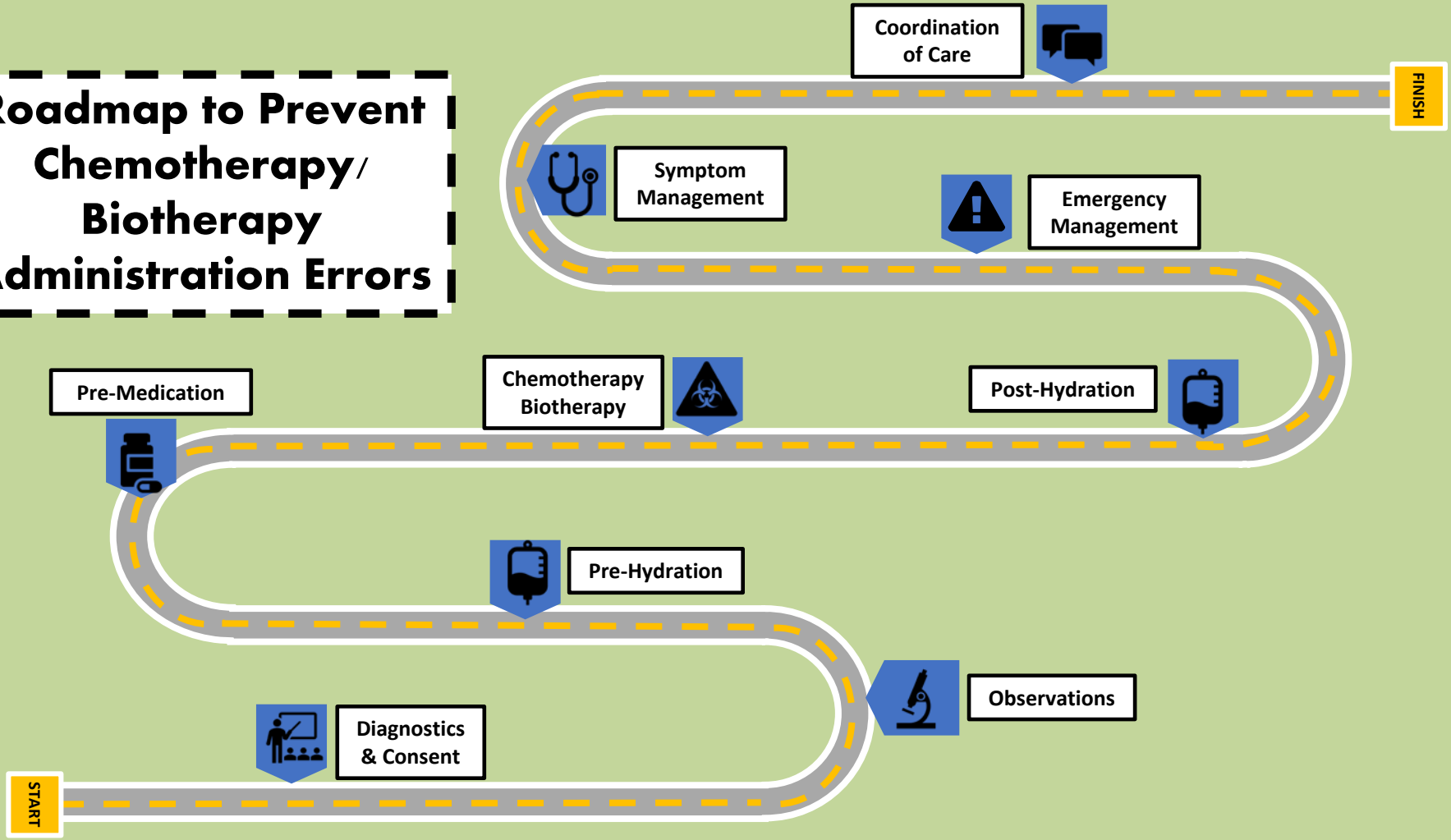
Mindy Bibart, MSN, RN, CPHON, NE-BC, CSSBB

APHON National Conference, 2020

Nationwide Children's
When your child needs a hospital, everything matters.

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER

Roadmap to Prevent Chemotherapy/ Biotherapy Administration Errors



Objectives/Disclosures

Objectives:

- Attendees will be able to identify common medication administration errors,
- Attendees will be able to describe how QI methodology can reduce medication errors through standardization of practice.

Disclosures:

- Nothing to disclose


Medication
Response
Dose
Person
Reason
Time
Route


The very first requirement in a hospital is that it should do the sick no harm.
Florence Nightingale

Medication Errors – The Numbers

- US Patient Care
  - >770,000 patients harmed/year
    - **7,000-9,000 deaths**
  - ≈ **40-50% administration errors**
  - 13% of all oncology adverse events medication errors
  - Most are **preventable**
  - $1-$5 billion/year

- US Pediatric Chemo/Bio Treatment
  - 18% visits associated with chemo errors
  - 56% administration errors
  - 10% error rate with PO chemo

- One Program Average/Year (Level 4-9)
  - 94,000 doses
    - 31,000 related chemo/bio treatment
  - 5 Medication errors (5.4σ)
  - **80% administration errors**
    - **50% related chemo/bio treatment**

(Aboumrad, et al., 2018; Slight, et al., 2018; Weingart, 2010, 2011)

Communication

65%

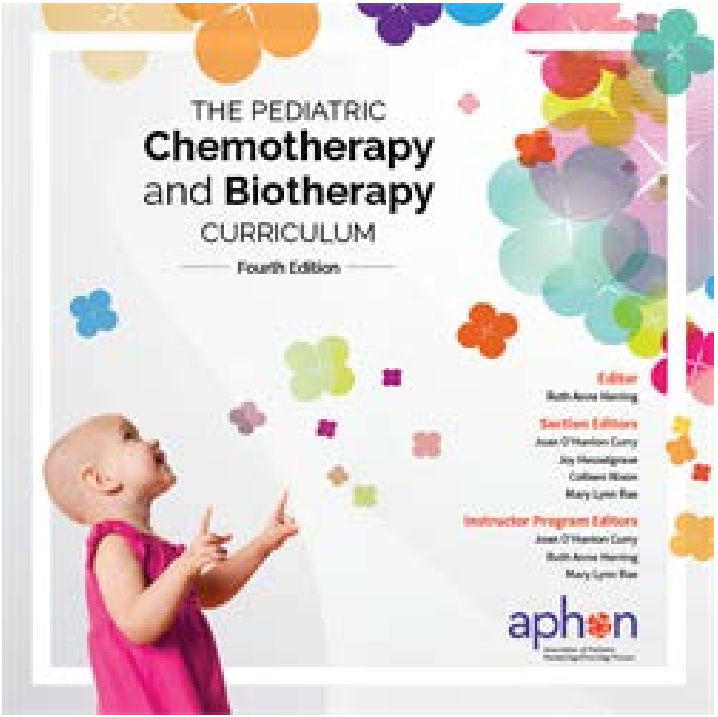
of Sentinel Events reported to TJC identify Communication Failure as Root Cause for error

(Joint Commission, 2015)

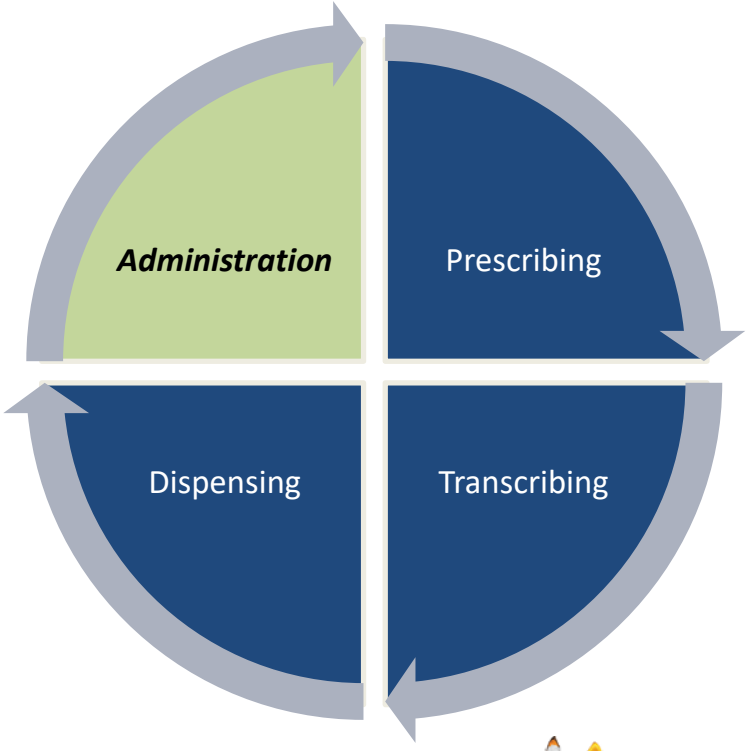
Q.I. Doesn't Replace Best Practice

Systems-Based Problems

Evidence Based Practice

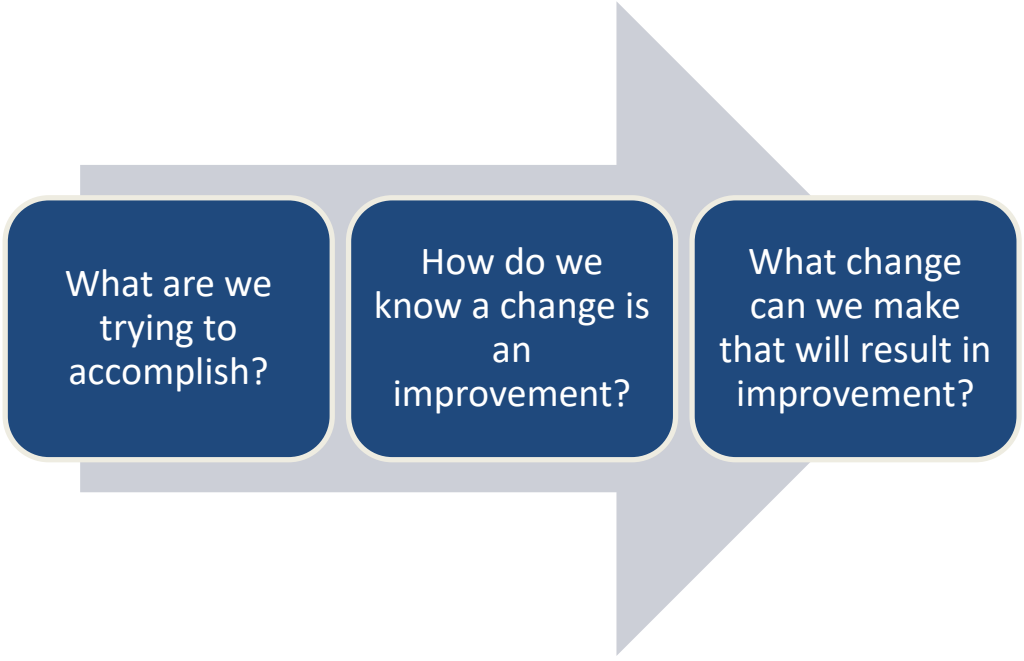


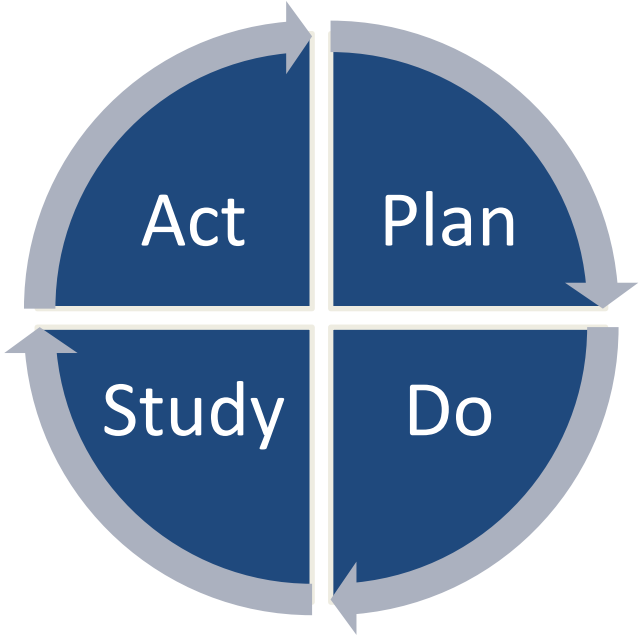
Medication Errors



Clinical Error Severity Levels	
1	Circumstances or events that have the capacity to be followed by error or harm
2	An event occurred but did not reach the patient
3	An event occurred that reached the patient but was not followed by patient harm
4	An event occurred that was followed by increased patient monitoring and/or minimal patient harm or minor injury
5	An event occurred that was followed by increased treatment or intervention and/or temporary patient harm
6	An event occurred that was followed by initial or prolonged hospitalization and temporary patient harm
7	An event occurred that was followed by permanent patient harm
8	An event occurred that was followed by a near death event
9	An event occurred that was followed by patient death

Institute for Healthcare Improvement Quality Improvement Model





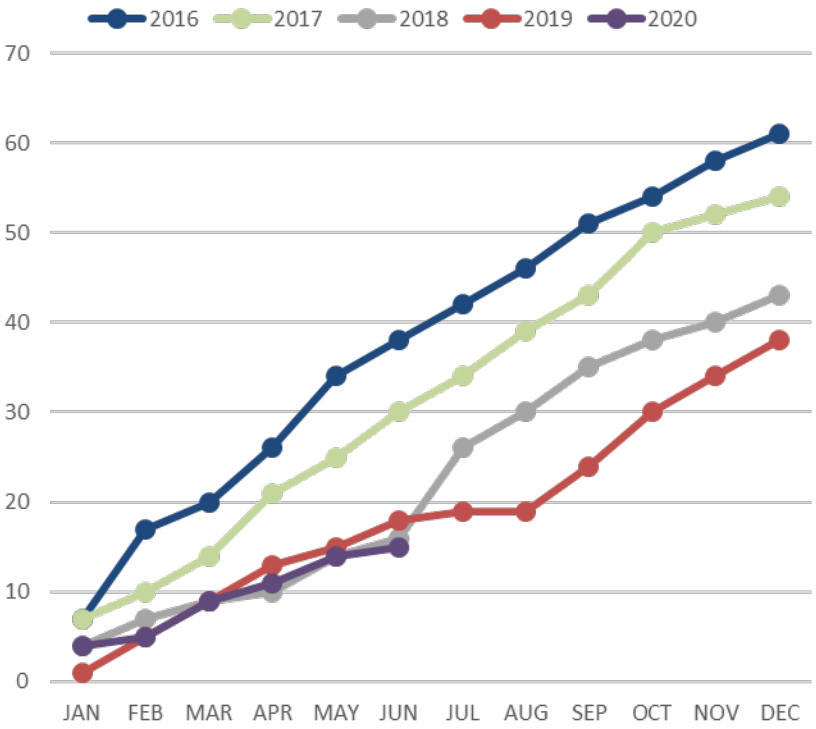
(Langley, G.L., Moen, R., Nolan, K. M., Nolan, C. L., & Provost, L. P., 2009)

AIM: Setting the Project Goal

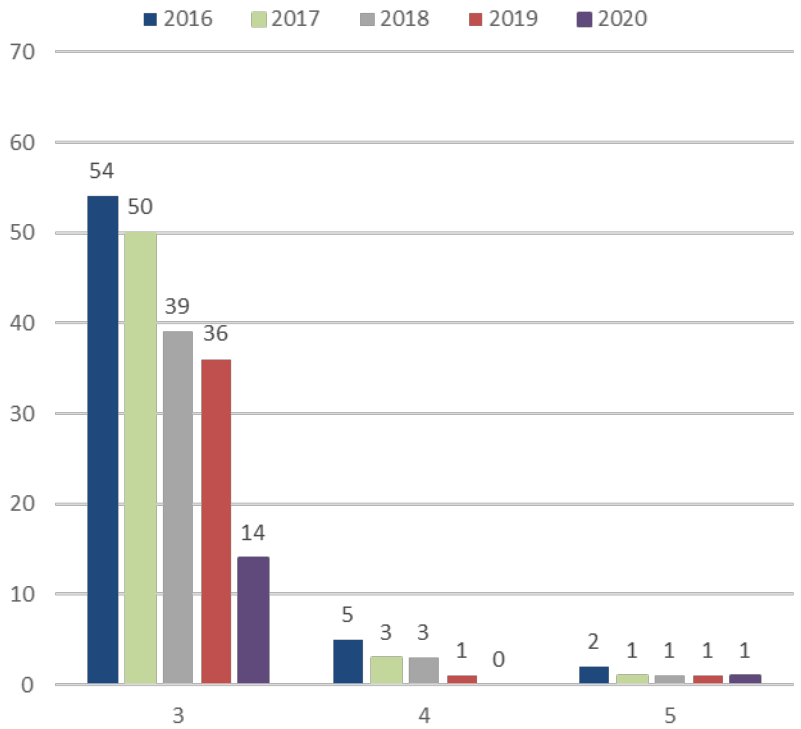
Component	Details
We will ↑ or ↓ What	Decrease med admin related events level 3-9
In which Group/Population	Pts receiving Chemo/Bio INP
From What (baseline)	38 events
To What (goal)	34 events
By When (target)	12/31/2020
For How Long (sustain)	12 months

Clinical Error Severity Levels	
1	Circumstances or events that have the capacity to be followed by error or harm
2	An event occurred but did not reach the patient
3	An event occurred that reached the patient but was not followed by patient harm
4	An event occurred that was followed by increased patient monitoring and/or minimal patient harm or minor injury
5	An event occurred that was followed by increased treatment or intervention and/or temporary patient harm
6	An event occurred that was followed by initial or prolonged hospitalization and temporary patient harm
7	An event occurred that was followed by permanent patient harm
8	An event occurred that was followed by a near death event
9	An event occurred that was followed by patient death

Administration Cumulative Errors (3-9) by Year



Administration Errors by Severity and Year



Administration Stage	Common Process Pitfalls
Observations	- Missing observations/tests - Completed observations/tests unintended for NOS - Process for provider clearance
Pre/Post-Hydration	- Wrong fluid - Incorrect total fluid rate with concurrent meds/fluids - Compatibility
Pre-Medication	- Aloxi & Zofran - Lack of standardized protocols - Timing Dexrazoxane
Chemotherapy/Biotherapy	- Tubing & line concerns - Primary vs. secondary infusions - Include or exclude flush in rate - Retiming medications after assigning HR0 - Order-sets/treatment plans/ad-hoc orders

Administration Stage	Common Process Pitfall
Emergency Management	- When to stop vs. when to continue infusions - Safety medications at the bedside
Symptom Management	- Total daily dosage across multiple care locations - Potential drug interactions - Drugs prohibited by studies
Coordination of Care – Internal	- Handoff between caregivers - D/C medication teaching - Home delivery medication and supplies - Emergency instructions - Communicate plan of care - Line care and infusion education
Coordination of Care - External	- Clinical research office - Pharmacy - Lab - Homecare

Look for Themes

Distrac-tions

Variation in practice

EPIC MAR

Meds due at Shift Change

Meds left at bedside

RN staffing

Pyxis Supply

Incorrect Orders

Failed Double Checks

CVC & tubing Issues

Pharm/ Lab delays

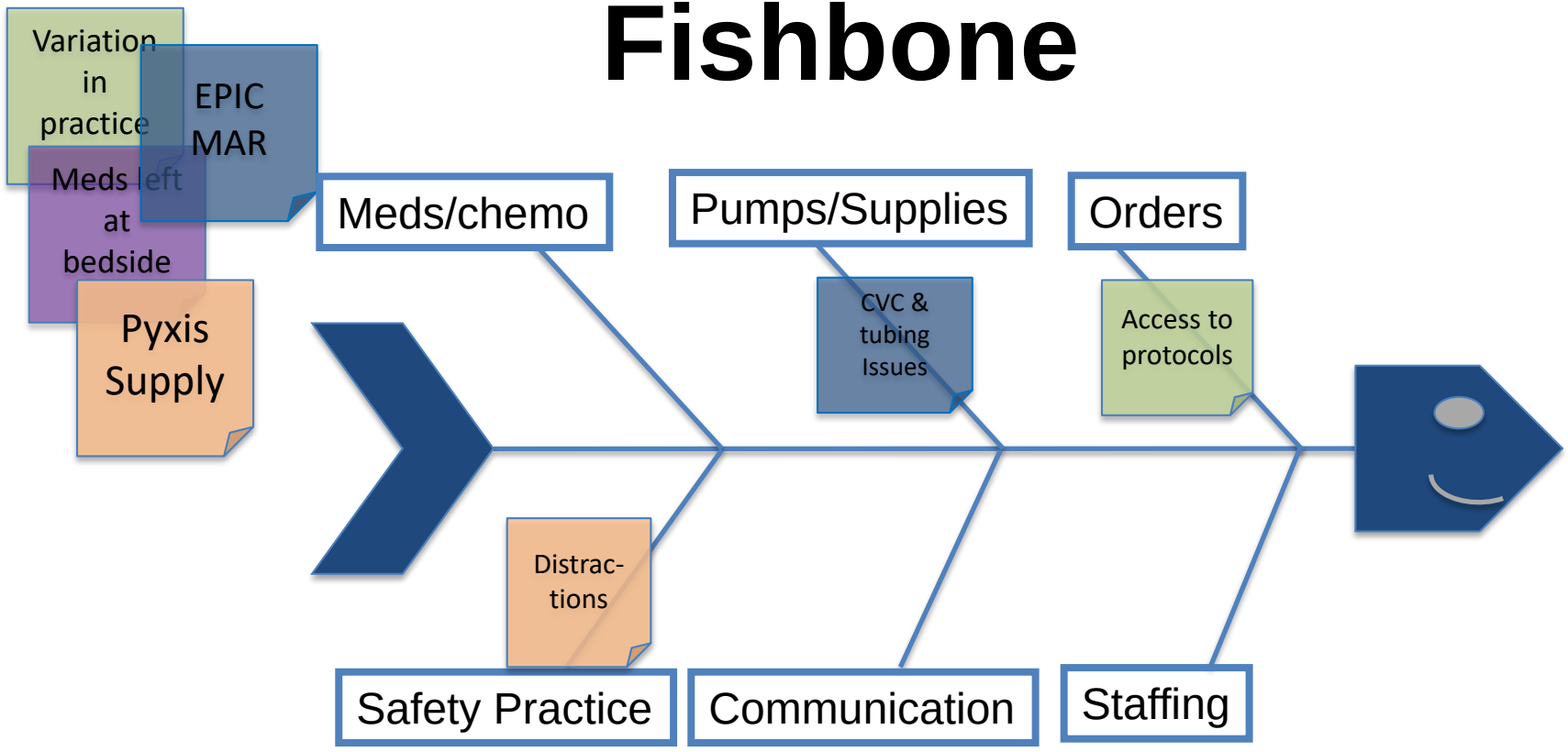
Access to protocols

Incomplete handoff

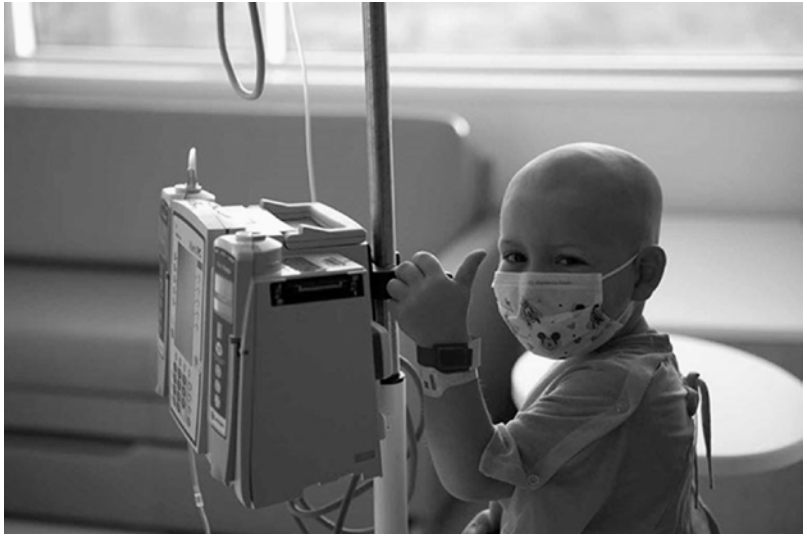
Commun-ication failures

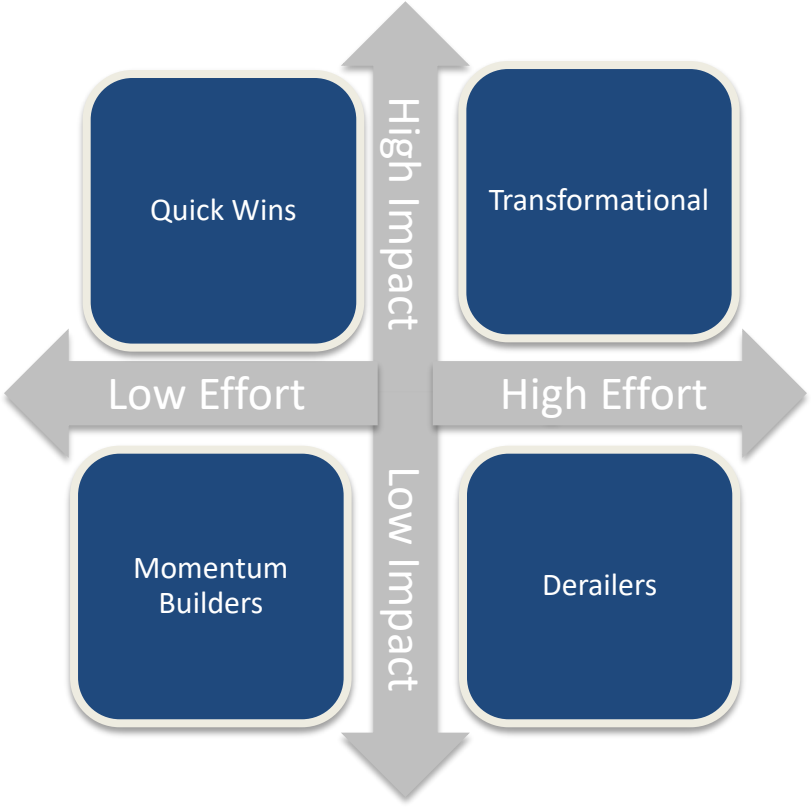
PO med rituals

Fishbone


Variation in practice
EPIC MAR
Meds left at bedside
Pyxis Supply
Meds/chemo
Pumps/Supplies
CVC & tubing Issues
Orders
Access to protocols
Distrac-tions
Safety Practice
Communication
Staffing

Brainstorm Solutions





NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.

References:

Aboumrad, M., Fuld, A., Soncrant, C., Neily, J., Paull, D., & Watts, B. V. (2018). Root cause analysis of oncology adverse events in the veterans health administration. *Journal of Oncology Practice, 14*(9), e579-e590. www.doi:10.1200/jop.18.00159.

Langley, G. L., Moen, R., Nolan, K. M., Nolan, T. W., & Provost, L. P. (2009). *The improvement guide: A practical approach to enhancing organizational performance, (2nd ed.)*. Jossey-Bass Publishers.

Joint Commission (2015). Sentinel Event Statistics for 2015. *Joint Commission Perspectives. www.info.jcrinc.com/494-MTX-066/images/Sentinel39.pdf*

Slight, S. P., Seger, D. L., Franz, C., Wong, A., & Bates, D. W. (2018). National cost of adverse drug events resulting from inappropriate medication-related alert overrides in the United States. *Journal of the American Medical Informatics Association, 25*(9), 1183-1188. www.doi:10.1093/jamia/ocy066.

Weingart, S. N., Toro, J., Spencer, J., Duncombe, D., Gross, A., Bartel, S., Miranski, J., Partidge, A., Shulman, L. N., & Connor, M. (2010). Medication errors involving oral chemotherapy. *Cancer, 116*(10), 2455-64. www.doi:10.1002/cncr.25027.

Weingart, S. N., Spencer, J., Buia, S., Duncombe, D., Singh, P., Gadkari, M., & Connor, M. (2011). Medication safety of five oral chemotherapies: A proactive risk assessment. *Journal of Oncology Practice, 7*(i), 2-6. www.doi:10.1200/JOP.2010.000064.