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Background

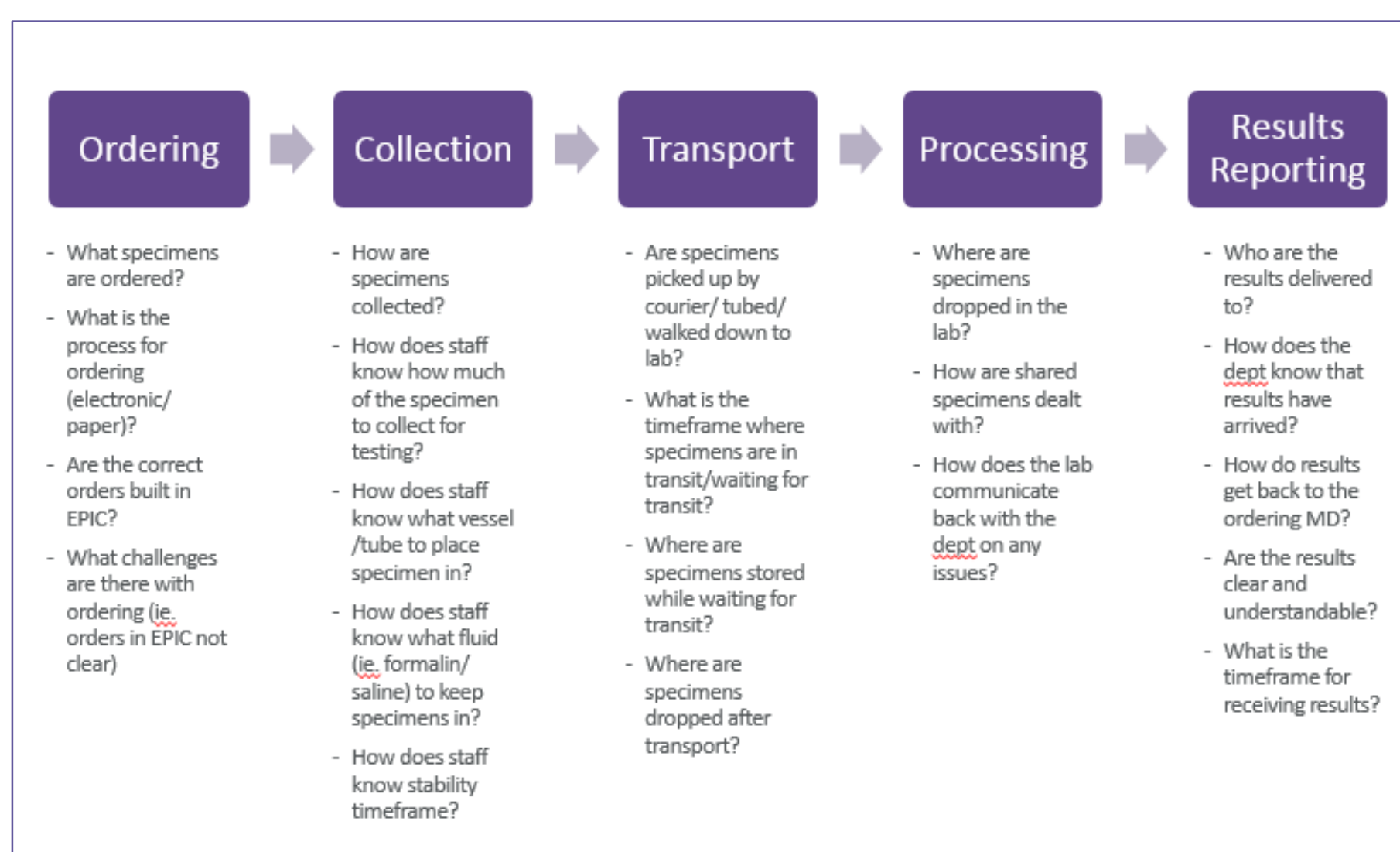
Problem Statement: Incomplete ordering, collection, handling, and processing of specimens obtained from procedures is leading to a lack of information for physicians to appropriately care for patients.

Overall, there have been **189 cases, or 16 per month, in the last 12 months** reported in Northwestern's Event Tracking System (NETS) related to specimen management.

In addition, over the last **14 months, 9 cases** related to specimen management were so impactful as to be reviewed by Clinical Classification and Evaluation Committee (CCEC), which translates to **0.62 cases/month**.

Repeating specimen collection and/or processing can lead to patient safety and patient satisfaction concerns, as well as the possible destruction of an irreplaceable specimen.

Figure #1: High Level Process Map and Questions to Answer



Methods

Process Mapping: Process Mapping across 28 departments at Central DuPage Hospital and physician groups identified the top issues and categorized them into 8 themes and 4 work teams.

Figure #2: Common Themes

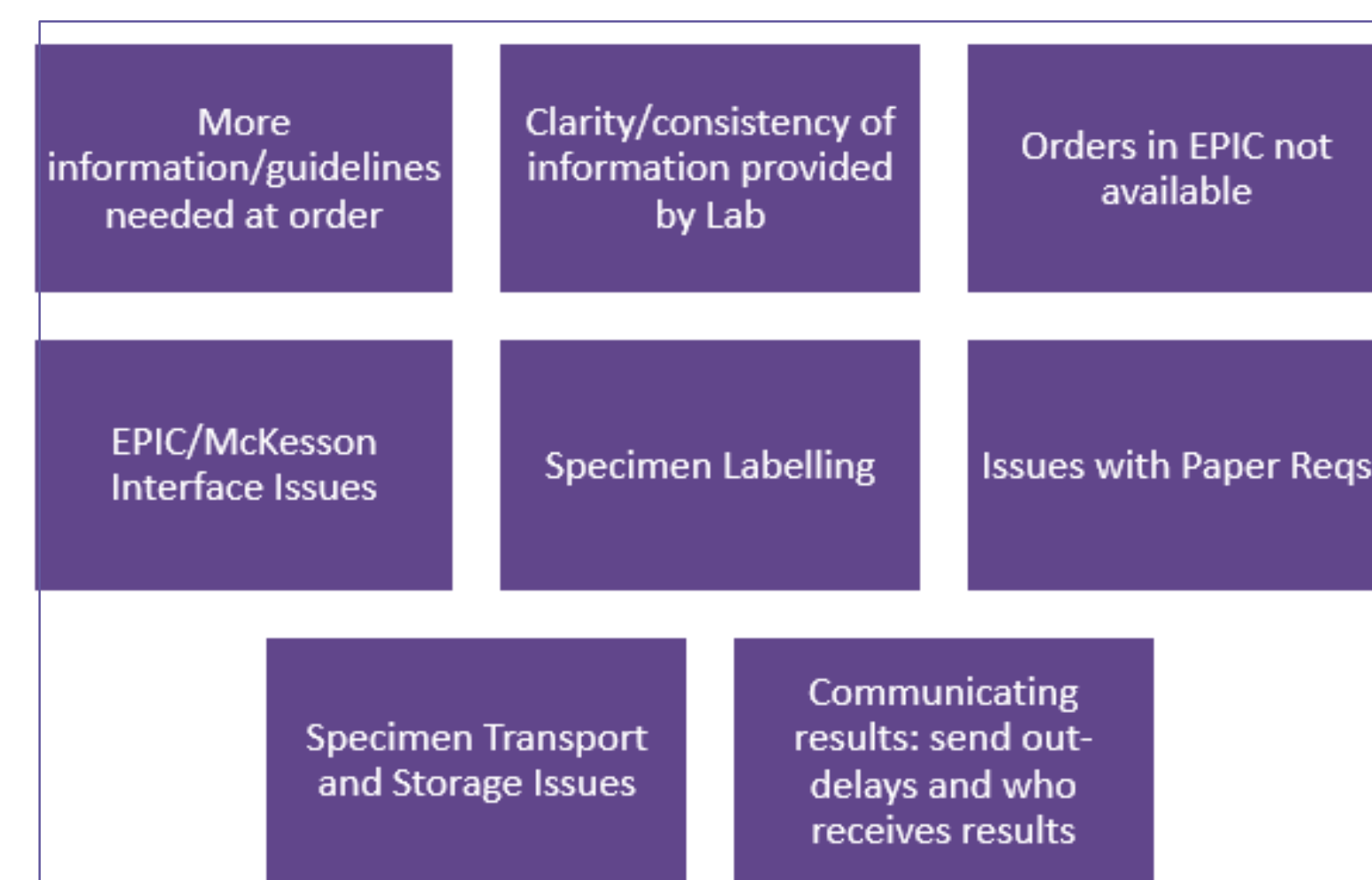
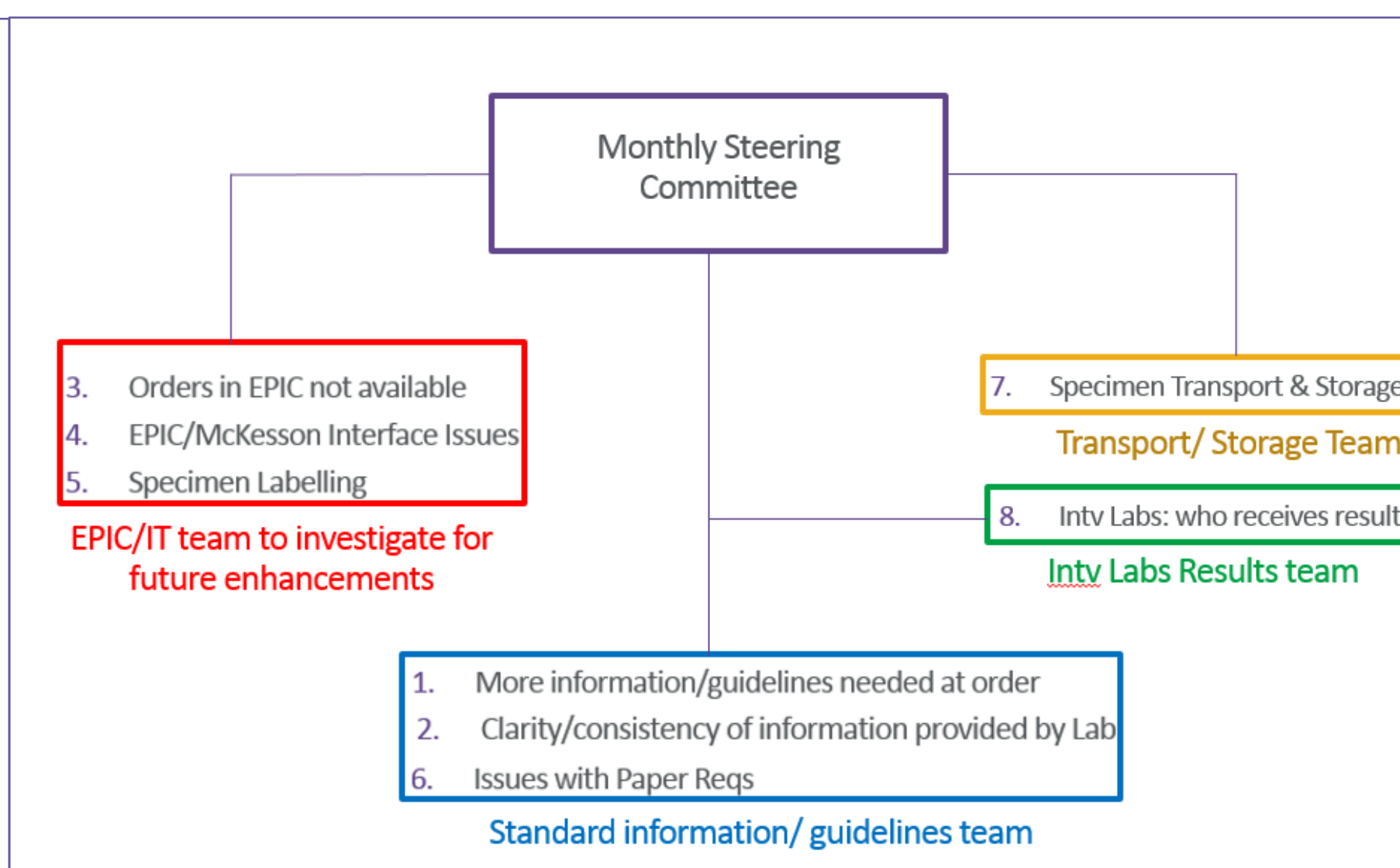


Figure #3: Work Teams Created



Solution Identification: Solutions were brainstormed to resolve the issues noted in the process maps and NETS/CCEC cases. The solutions were then prioritized by impact and effort, and the workteams began implementation

Figure #4: Solutions Implemented

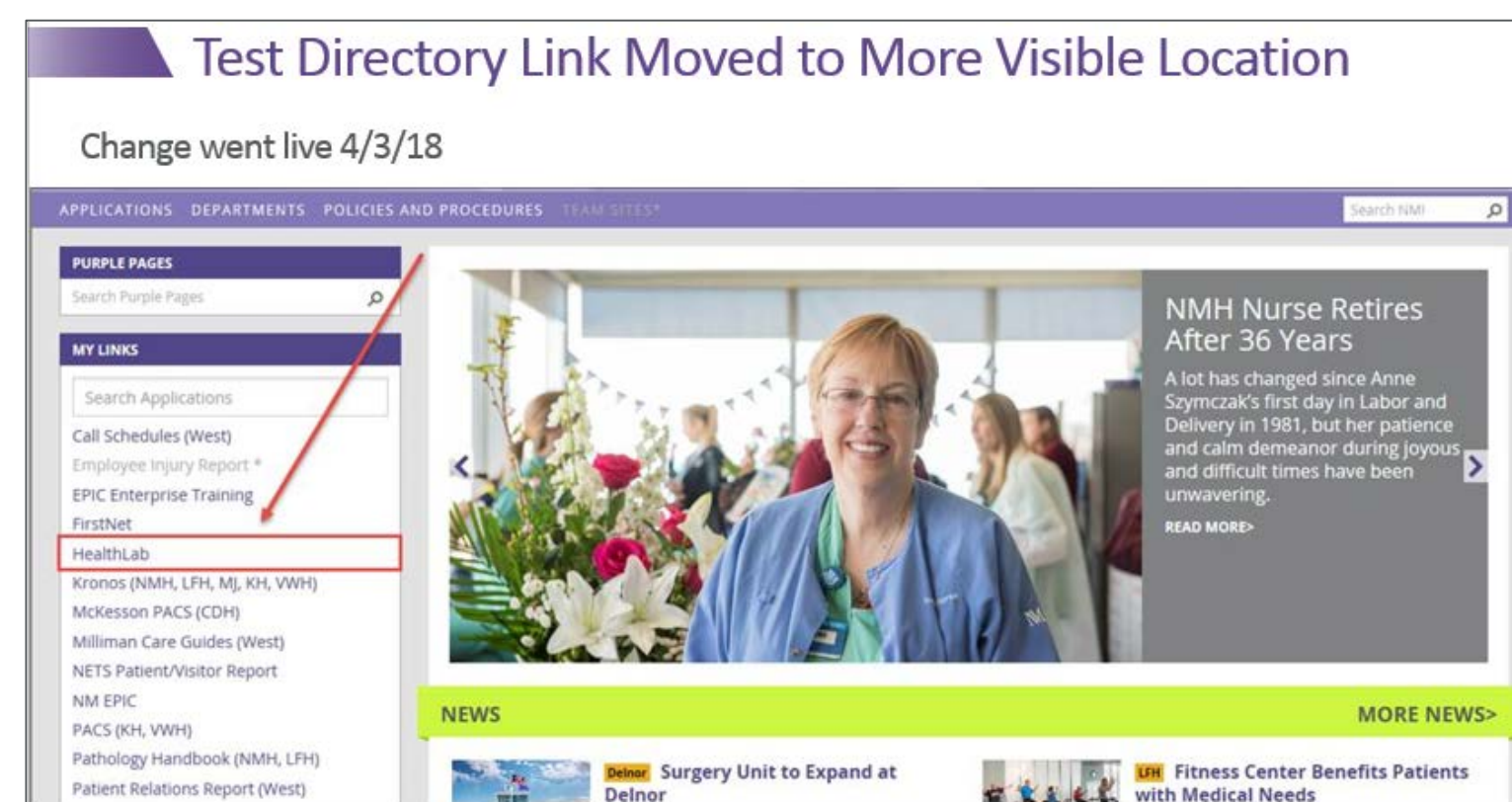
Standard Information/Guidelines

Solution
Improve Health Lab Test Directory and Build Awareness
Put link to lab test directory on NMI in more obvious place
Link photo of collection container/tube to individual tests in directory
Add information on lab test directory & client services phone # (for questions) to daily safety huddles and on "5 things for leaders to know" on NMI
30-60 minute Lab training session for all procedural staff/physicians (slotted for June 2018)
Simplified Paper Req for OR, GI Lab, and Interventional Labs
Add test directory/client svcs # in OR onboarding binders & on phone reference cards
Cell Count Tip Sheet for Ortho Offices
Processing/Receiving Improvements
Calls going to Processing/Receiving forwarded to Client Services
Information Provided by Client Services
Client Services to receive EPIC ordering training to be able to answer questions

Transport and Storage

Solution
Specimen Prep in Procedural Areas
Create a short list of specimens that are small and always go in formalin
Consistent process for OR specimens that need fixative to quickly be placed in formalin
Lab to do visual check on specimens (is there a specimen there, does it look right)
Specimen Dropoff at Lab
Created a single drop-off point for specimens
Only exception: tissues during pathology hours of operation
Short term: New dropoff log at processing/receiving to record # of specimens and when they were dropped off
Long term: EPIC monitor in processing/receiving that shows pending tests to check specimen drop-offs against
Courier/Offsite Pickup Process Improvements
Education on when stat pickups are required/escalation of courier issues
Cosigning on pickup at selected RMG offices

NMI HealthLab Test Directory



EPIC/IT and Results Teams

EPIC/IT Team
Planning for OpTime Upgrades to begin later this year which will allow the OR, GI Lab, and Interventional Labs to eliminate the paper requisition

Intv Labs Results Team
Issue resolved on its own based on P1 upgrades and improved communication between the Lab and Intv Labs

New Specimen Drop-Off Log Sheet

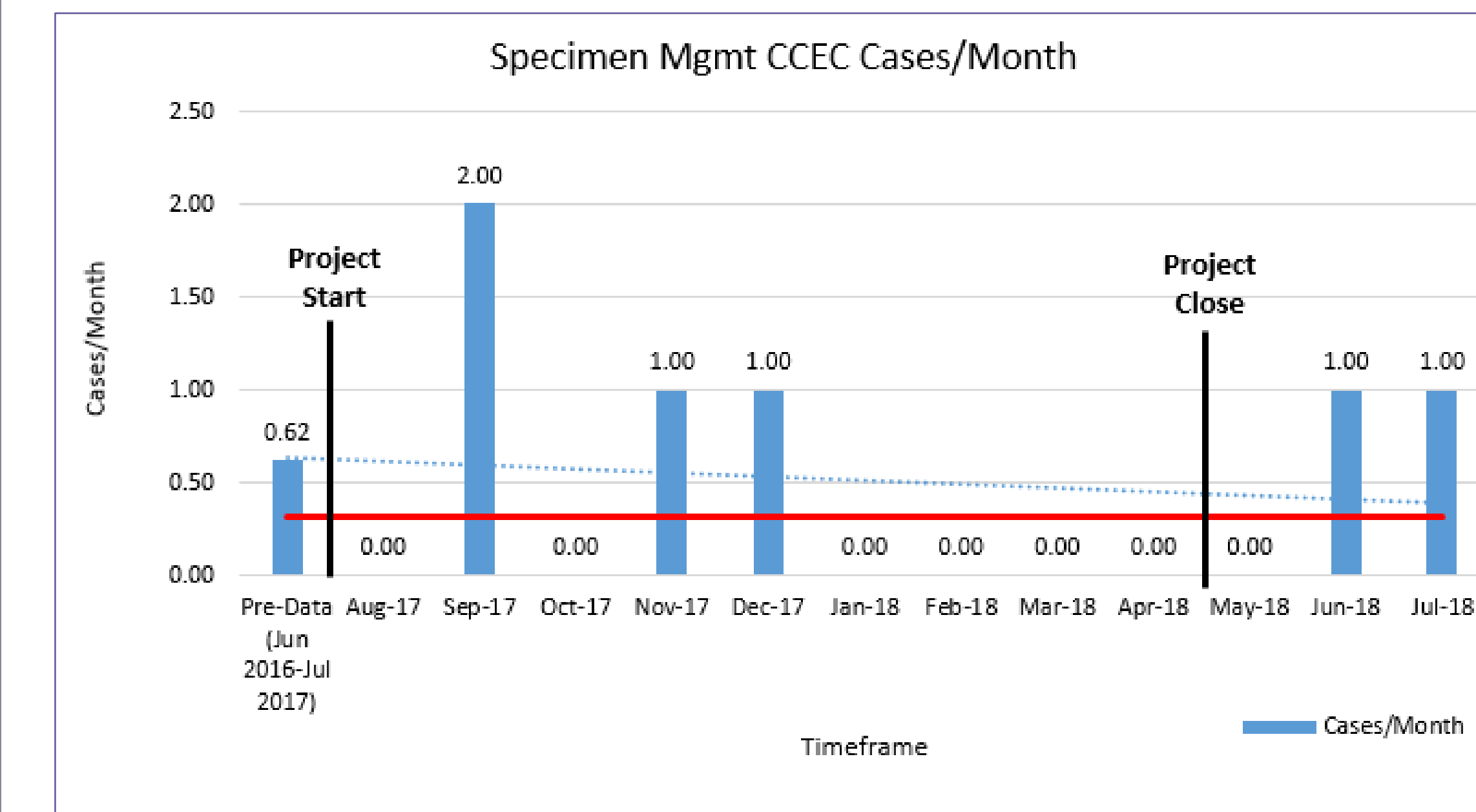
Date	Time	Patient Name (or sticker)	SPECIMEN TYPE	TEST(S)	NUMERICAL ACCORD TO THE ACCO NUMBER IN THE LABEL	DELIVERED BY NMI (OR NOT, WHY, FOR HOW LONG)	RECEIVED BY NMI # (OR NOT, WHY, FOR HOW LONG)

New Specimen Guidelines in ORs

- Specimens- key facts**
- There are certain specimens which should NEVER be placed into Formalin:
 - Lymph nodes
 - Products of Conception
 - Placentas
 - Large organs
 - Tissue for cultures
 - It is extremely important that small specimens go into formalin as soon as possible. Small tissue specimens start to dry out very quickly, even if placed in a refrigerator. Send small specimens to the lab immediately if not placed in formalin.
 - Any specimen you are unsure of call the Gross Room at x31810..... to crosscheck with lab.

Results

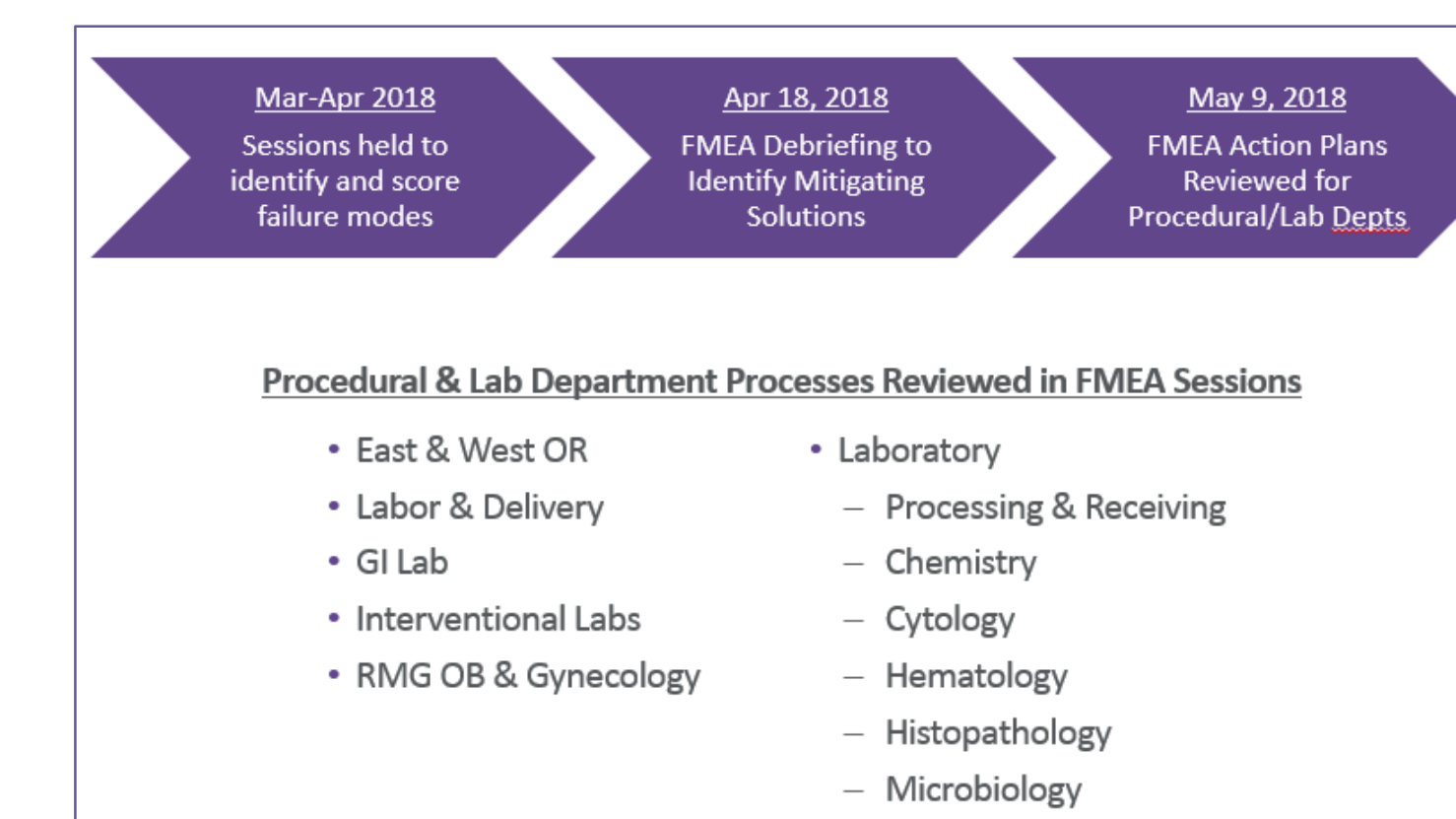
Figure #5: Outcome Metric Results



Overall, we are tracking at 0.44 cases/month in the 11 months since the project started, versus baseline of 0.62.

For 5 months there was a streak of 0/month!

Figure #6: Failure Mode Effects Analysis (FMEA)



An FMEA was conducted after all solutions were implemented to identify any remaining high risk issues. Action Plans were developed and continue to be monitored.

Figure #7: Control Plan

Metric	Goal	Control Limit	Review Process	Frequency	Process Owner	Threshold for Action	Recommended Action Steps
# of Specimen Issues Reported to CCEC (due to the same cause)	0	2	Terri tabulates data	Monthly	Terri Halverson	HR control limit 30/year	
NETS reports: Near Miss/Good Catches on Transport/Body Fluids Baseline is 0/20/month (3/20/18-4/20/18)	N/A- monitor trends only		Cherie/Graham tabulate data	Monthly	Cherie Wiberg/ Graham Prohaska	N/A- monitor trends only	
NETS reports: Specimens not right prep at processing/receiving Baseline is 0/20/month (3/18-4/18/18)	0	1	Cherie/Graham tabulate data	Monthly	Cherie Wiberg/ Graham Prohaska	HR control limit 30/month	Pull a team together to review the process and determine potential solutions
NETS reports: Specimens in incorrect Container Baseline is 0/20/month (3/18-4/18/18)	0	1	Cherie/Graham tabulate data	Monthly	Cherie Wiberg/ Graham Prohaska	HR control limit 30/month	
Reports to Lab (eg. Directly to Lab Baseline is 0/20/month (4 mb 2018)	>100	N/A	Marketing runs report and sends to Cherie monthly	Monthly	Cherie Wiberg	N/A- monitor trends only	

Multiple metrics continue to be tracked as part of the control plan. Specific actions are recommended if metrics are deemed to be out of control.

Conclusions

Future Recommendations:

- Make all specimen logs electronic and incorporate badge scanner and/or tablet signoff at handoff points
- Utilize barcode scanning and photographs wherever possible to track specimens
- Implement a regular review meeting or assign a dedicated lab liaison to discuss process issues between the lab and procedural areas to ensure communication and collaboration