



To: Joint Conference Committee Members
 From: Supervisor John Gioia – District I
 Supervisor Diane Burgis – District III
 By: Samir Shah MD, Chief Executive Officer
 Contra Costa Regional Medical Center

Date: August 2, 2021
 Subject: Meeting Notice
Joint Conference Committee

Due to the recent Covid-19 Public Health Emergency, this meeting will not be held in person. You may access the meeting remotely by using the information on page 2 of this agenda.

**JOINT CONFERENCE COMMITTEE
 VIA ZOOM WEBINAR-Instructions on Page Three of This Agenda
 AGENDA
 August 2, 2021 from 1:00 – 2:00 pm**

Tab #	AGENDA ITEM	RECOMMENDATION
	I. CALL TO ORDER and INTRODUCTIONS Meeting Chair- Supervisor John Gioia, District I	Inform
	II. APPROVAL OF MINUTES – May 3, 2020 Supervisor Gioia	Inform/ Action
	III. PUBLIC COMMENT Supervisor Gioia <i>At this time, members of the public may comment on any item not appearing on the agenda. It is recommended that you keep your comments to two minutes or less. Under State law, matters presented under this item cannot be discussed or acted upon by the Board at this time. For items appearing on the agenda, the public will be invited to make comments at the time the item comes up for Board consideration.</i>	Inform
	VI. ADMINISTRATIVE UPDATE Sergio Urcuyo, MD, Hospital Medical Officer A. Covid-19 update B. CDPH Survey Readiness C. Health Centers Security Unit update	Inform
Tab #	AGENDA ITEM	RECOMMENDATION

	<p>V. SAFETY AND QUALITY UPDATES</p> <p>A. Patient Safety and Performance Improvement Committee Highlights: May - June 2021 Sonia Sutherland MD, Medical Director of Quality and Safety</p> <p>B. Utilization Management Committee Update James Rael MD, Medical Director of Utilization Management</p>	<p>Inform</p> <p>Inform</p>
	<p>V. CONSENT AGENDA</p> <p>A. Quality Assurance Non-MD Clinical Contract Services report Karin Stryker, Director, Safety/Performance Improvement</p> <p>B. Annual Medical Error Reduction Plan Shideh Ataii, Director, Pharmacy Services</p>	<p>Inform/Action</p> <p>Inform/Action</p>
	<p>VI. ADJOURN</p>	<p>Inform</p>
	<p>VII. NEXT MEETING: October 4, 2021</p>	

Joint Conference Committee observes Ralph M. Brown Act open meeting law procedures. Reasonable accommodations will be provided for persons with disabilities planning to attend. Contact the staff person listed below at least 72 hours before the meeting. Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the County to a majority of members of the Joint Conference Committee prior to that meeting are available for public inspection at 2500 Alhambra Avenue during normal business hours. Public comment may also be submitted via electronic mail at least one full work day prior to the published meeting time. For information contact Karin Stryker – karin.stryker@cchealth.org, 925-370-5141.

Zoom Webinar Meeting-Instructions

Please click the link below to join the webinar:

<https://ccccounty-us.zoom.us/j/85934528205?pwd=blh3RHdhd2tqcXN2WUVJaDN4Z0RGQT09>

Passcode: 000710

Or Telephone:

Dial:

USA 214 765 0478 US Toll

USA 888 278 0254 US Toll-free

Conference code: 154228

Or an H.323/SIP room system:

H.323: 162.255.37.11 (US West) or 162.255.36.11 (US East)

Meeting ID: 859 3452 8205

Passcode: 000710

SIP: 85934528205@zoomcrc.com

Passcode: 000710



JOINT CONFERENCE COMMITTEE

MINUTES

May 3, 2021, from 1:00 – 2:00 pm

Due to the Covid-19 Public Health Emergency, this meeting was not be held in person.

<i>ATTENDANCE</i>	
<p><i>VOTING MEMBERS PRESENT: Supervisor John Gioia, District I; Dr. Courtney Beach, Chair, Hospital Medicine; Andrea Sandler MD, Chair, Family Medicine. VOTING MEMBERS ABSENT: Supervisor Diane Burgis, District 3. NON-VOTING MEMBERS PRESENT: Pat Godley, Health Services COO CFO; Samir Shah MD, Chief Executive Officer/Chief Medical Officer; Kristin Moeller MD, Medical Staff President; Anna Roth, R.N., Health Services Director. NON-VOTING MEMBERS ABSENT: None. GUESTS PRESENT: Jaspreet Benepal RN, Chief Nursing Officer; Leah Carlon, Health Care Risk Manager; Gabriela Sullivan MD, Ambulatory and Specialty Medical Director; Sonia Sutherland MD, Medical Director of Quality and Safety; Sergio Urcuyo MD, Hospital Medical Director; Karin Stryker, Director, Safety and Performance Improvement; Nancy Hendra, Infection Control and Inpatient Nursing Director; David Runt, Chief Operations Officer.</i></p>	
AGENDA ITEM	RECOMMENDATION
<p>I. CALL TO ORDER and INTRODUCTIONS Meeting Chair- Supervisor John Gioia, District I</p>	<i>Inform</i>
<p>II. APPROVAL OF MINUTES Supervisor Gioia</p> <p><i>In open session, voting members of Contra Costa Regional Medical Center Joint Conference Committee voted to accept the December 7, 2020, Joint Conference Committee minutes.</i></p>	<p><i>Motion:</i> <i>By Gioia</i> <i>Seconded by Beach</i></p> <p><i>Ayes:</i> <i>Sandler</i></p> <p><i>Absent: Burgis</i></p> <p><i>Abstain: None</i></p>
<p>III. PUBLIC COMMENT Supervisor Gioia</p> <p><i>No Public Comment.</i></p>	<i>No Public Comment</i>
<p>IV. GOVERNANCE Kristin Moeller MD, Medical Staff President</p> <p><i>The Governing Authority Bylaws were presented with no revisions. Bylaws are being moved forward for approval.</i></p>	<i>Inform</i>
<p>V. ADMINISTRATIVE UPDATE Samir B. Shah, MD, Chief Executive Officer/Chief Medical Officer</p> <p><i>Presented preventative and chronic care measures in Contra Costa County. Discussed the recent causes of death in California. Covid-19, the increase in opioid deaths and stroke and cardiac related issues were mentioned. Individuals struggling with the pandemic – the virus and other impacts - and patient reluctance to go to their provider or the emergency room for conditions that they would normally not hesitate to address, were cited.</i></p>	<i>Inform</i>



PROFESSIONAL AFFAIRS COMMITTEE-VIA ZOOM

MINUTES

May 3, 2021, from 2:00 to 3:00 pm

Due to the Covid-19 Public Health Emergency, this meeting was not be held in person.

<i>ATTENDANCE</i>	
<p><i>VOTING MEMBERS PRESENT: Supervisor John Gioia, District I; Dr. Courtney Beach, Chair, Hospital Medicine; Andrea Sandler MD, Chair, Family Medicine. VOTING MEMBERS ABSENT: None. NON-VOTING MEMBERS PRESENT: Pat Godley, Health Services COO CFO; Jaspreet Benepal RN, Chief Nursing Officer; Samir Shah MD, Chief Executive Officer/Chief Medical Officer; Kristin Moeller MD, Medical Staff President. NON-VOTING MEMBERS ABSENT: None. GUESTS PRESENT: Gabriela Sullivan MD, Ambulatory and Specialty Medical Director; Sonia Sutherland MD, Medical Director of Quality and Safety; Sergio Urcuyo MD, Hospital Medical Director</i></p>	
AGENDA ITEM	RECOMMENDATION
<p>I. CALL TO ORDER Meeting Chair- Supervisor John Gioia, District I</p>	<i>Inform</i>
<p>II. ADJOURN TO CLOSED SESSION Supervisor Gioia</p>	
<p>III. APPROVAL OF MINUTES Supervisor Gioia</p> <p><i>There were no minutes needing approval.</i></p>	<i>Inform</i>
<p>IV. PATIENT SAFETY UPDATE Sonia Sutherland MD, Medical Director of Quality and Safety Chair of Patient Safety and Performance Improvement Committee</p> <p><i>Patient unplanned pregnancy due to missed Depo Provera injection was discussed.</i></p> <p><i>Presented improvements actions and preventative measures.</i></p> <p><i>See presentation for details.</i></p>	<i>Inform</i>
<p>V. ADJOURN</p>	<i>Inform</i>
<p>Minutes approved by Chair: Supervisor John Gioia, District I</p>	
<p>_____</p> <p>Supervisor John Gioia</p>	<p>_____</p> <p>Date</p>
<p><i>Minutes by Shanazz Ahmad</i></p>	



Security Services at Contra Costa Regional Medical Center and Health Centers



Benefits of partnership with the Sheriff's Office

1. Better alignment with County services, resources, and protocols
2. Better communication with local agencies
3. Higher level of security and training

Contra Costa County Office of the Sheriff's

Health Services Security Unit (HSSU)

Proudly serving

Health Services (HSD)

August 2, 2021



Services

- Site Security
- Respond to calls for service from HSD staff and patients
- Investigate crimes
- Threat assessments for patients and staff
- Facilities Security Assessments
- Training of Health Services Staff:
 - Active shooter training
 - General safety courses

HSSU Security Staff

- One Sheriff's Lieutenant
- Two Sheriff's Sergeants
- 8 Deputy Sheriffs
- 10 Sheriff's Rangers

Other Security Staff

- Guardian Security Agency

Security Site Locations

- Antioch Health Center
- Brentwood Health Center/EHSD
- CCRMC campus
- Miller Wellness Center
- Martinez Health Center
- Willow Pass Wellness Center
- North Richmond Health Center
- Pittsburg Health Center
- West County Adult Mental Health
- West County Health Center

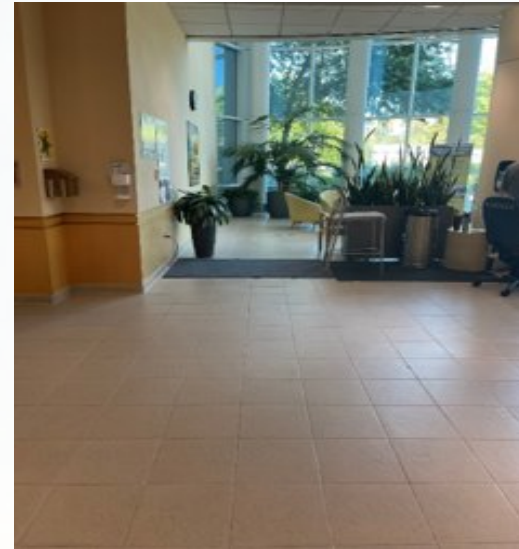
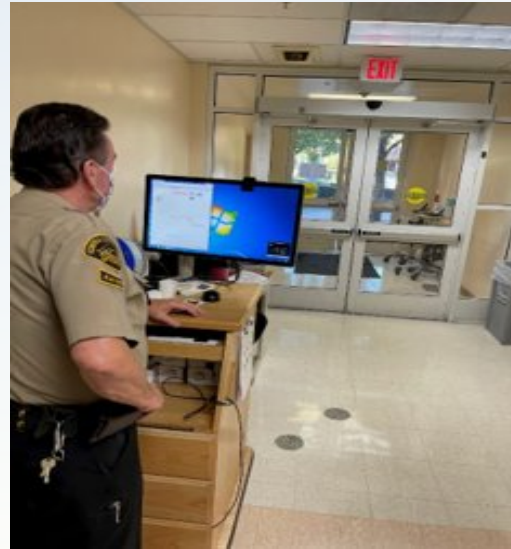
Response Protocol

- CCRMC
- Clinic Locations

Calls to HSSU for Service

- Investigative reports: FY 2021 = 236, FY 2020 = 440
- Responding to elopements
- 592 unit to unit escorts requested by clinical staff

HSSU Status during COVID



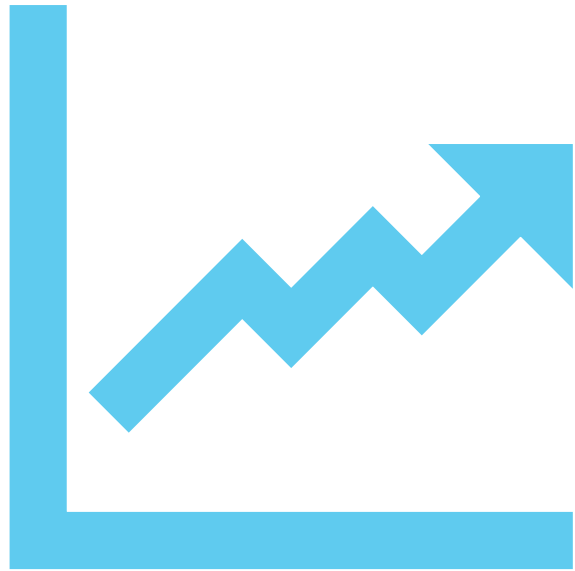


CONTRA COSTA
HEALTH SERVICES

together living well

Questions?





PSPIC Highlights May '21 - Jun '21

Medical Executive Committee

August 2021

Dr. Sonia Sutherland

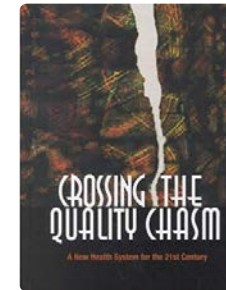
Patient Safety Performance Improvement '20 - '21

Covid Safety Response



IOM Six Dimensions of Quality:

Safe, Effective, Patient-Centered, Timely, Efficient, and Equitable



CMS Condition of Participation:

Quality assessment and performance improvement program.

The [hospital](#) must maintain & demonstrate evidence of its QAPI program for review by [CMS](#)



PSPIC '20 - '21



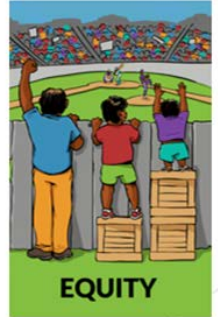
PSPIC GRATITUDE BOARD, 2020 – 2021

2020-2021 was a banner year for quality! Our collective smart work in performance improvement resulted in the following recognitions and we appreciate everyone's contribution in continuing to level up the quality of care and safety.

- **1 Million Covid-19 Vaccinations as of April 24, 2021:** Well ahead of the July 4th expected date.
- **Covid-19 Caregivers:** Award of Merit, California Hospital Association
- **Gold Seal of Approval, Hospital:** The Joint Commission, 2/24/2021
- **Gold Seal of Approval, Laboratory:** The Joint Commission, 11/14/2020
- **A+ Value of Care Grade, Avoidance of Use of Low-Value Services,** Lown Institute
- **Baby Friendly Designation, Hospital:** Baby-Friendly USA
- **Grade B:** Leapfrog Hospital Safety Grade, Fall 2020, Spring 2021
- **4 Stars:** CMS Overall Hospital Quality Star Rating
- **3 Stars:** CMS Patient Star Rating
- **Top Performer, Score of 90:** LGBTQ Healthcare Equality Index, Human Rights Campaign, 2020
- **Best Maternity Hospitals:** Newsweek, 2020
- **2020 PRIME Targets Met:** Cesarean Birth, Exclusive Breast Milk Feeding, Severe Maternal Morbidity among Hemorrhage Cases; Hemorrhage; Massive Transfusions (>=4 Units) per 1000 live births; Timely Prenatal Care; Timely Postnatal Care
- **ZERO:** CAUTI, CLABSI, SSI Hysterectomy, VRE, CRE, Accidental Perfs and Lacerations
- **eCR Now:** Covid 19-Electronic Case Reporting/eHealth Exchange Hub, 2020
- **eHealth Exchange Participant** (Hub Two-Way; Content Validated)

We are also thanking **ALL the PSPIC MEMBERS** who supported a **Culture of Quality and Performance Improvement** by actively participating in PSPIC meetings this year: **Adeebah Fakurnejad, Andrea Sandler MD, Annalina Rivers, Anne Staunton, Arlene Trimble, Courtney Beach, David Runt, Donna Kaufman, Gabriela Sullivan, Helena Martey, Ira-Beda Sabio, Jaspreet Benepal, Karim Stryker, Kim Haglund, MD, Kim Hauer, Kristin Moeller, Leah Carlon, Mary Campbell, Nancy Hendra, Nicole Branning, Samir B. Shah, Sergio Urcuyo, Shideh Ataii, Stuart Forman MD, Tiffany Chan, Troy Kaji MD, Web Beadle. Special thanks to Annalina Rivers, Support Staff**

- Special thanks as well to the following staff/PSPIC Members who had shoutouts during PSPIC meetings.**
- **Abnesh Kishor:** for preparing/delivering Covid Swab kits.
 - **Adam Buck, MD:** for mapping lab results to generate monitoring alert for providers.
 - **Andrea Sandler, MD:** for initiating and monitoring the provider performed microscopy improvement.
 - **Annalina Rivers:** for PSPIC meeting minutes taking and record maintenance.
 - **Anne Staunton:** for raising \$150/\$250-time awareness and shepherding through resolution.
 - **Antonio Magana:** for Great Customer Service (Patient Empathy during Covid Warm Handoff).
 - **Arlene Trimble:** for the concept development, design, and launch of PSPIC Summaries and Recognition Screensavers/Site Stories.
 - **Bridget Dyer, MD:** for Code Blue expertise.
 - **Brent Porteous, MD:** for Code Blue expertise.
 - **Dave Duet:** for Quiet Around Room at Night Assistance.
 - **David Runt:** for Quiet Around Room at Night Assistance.
 - **Gabriela Sullivan, MD:** for successfully overseeing the testing and vaccinations at the health centers.
 - **Helena Martey:** for transporting the vaccine supplies to the site.
 - **Ira Beda-Sabio:** for tracking and reporting on the regulatory compliance.
 - **Jerry Casey:** for Quiet Around Room at Night Assistance.
 - **Leah Carlon:** for incredible work at Covid Command Center; worked with Pharmacy to get the doses where they need to go.
 - **Kristin Moeller, MD:** for the Medical Staff Office oversight of the provider performed microscopy improvement.
 - **Lori Yaniz:** for keeping infection control survey data entry current during 2020.
 - **Ngaz Emenalom:** for managing PES.
 - **Rebecca Lee, MD:** for Code Blue expertise.
 - **Roberto Vargas:** for transporting the vaccine supplies to the sites.
 - **Ronney Leffel:** for Quiet Around Room at Night Assistance.
 - **Sergio Urcuyo, MD:** for hands-on problem solving of Psych Safety, Lab collection workflow standardization.
 - **Shannon Dickerson:** for incredible work at Covid Command Center.
 - **Trenia Burgess:** for \$150/\$250 BPA build and testing.
 - **Web Beadle:** for his consistent PSPIC participation and representing the patient voice.



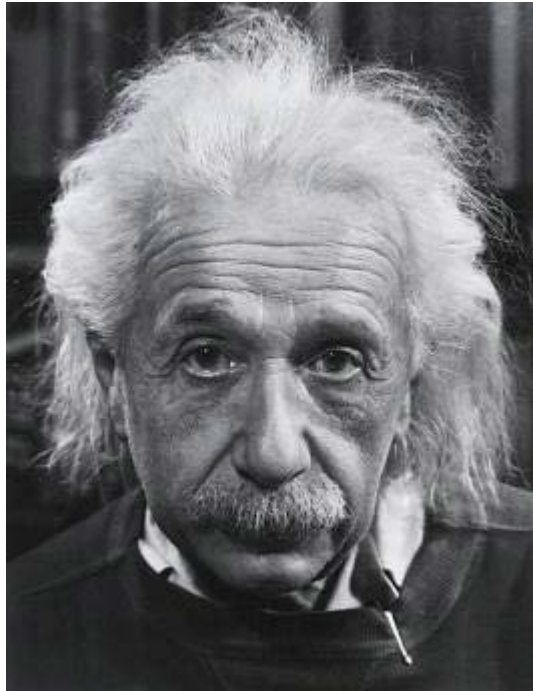


Safety Event Reporting System '20-'21



SERS GRATITUDE BOARD, 2020 – 2021

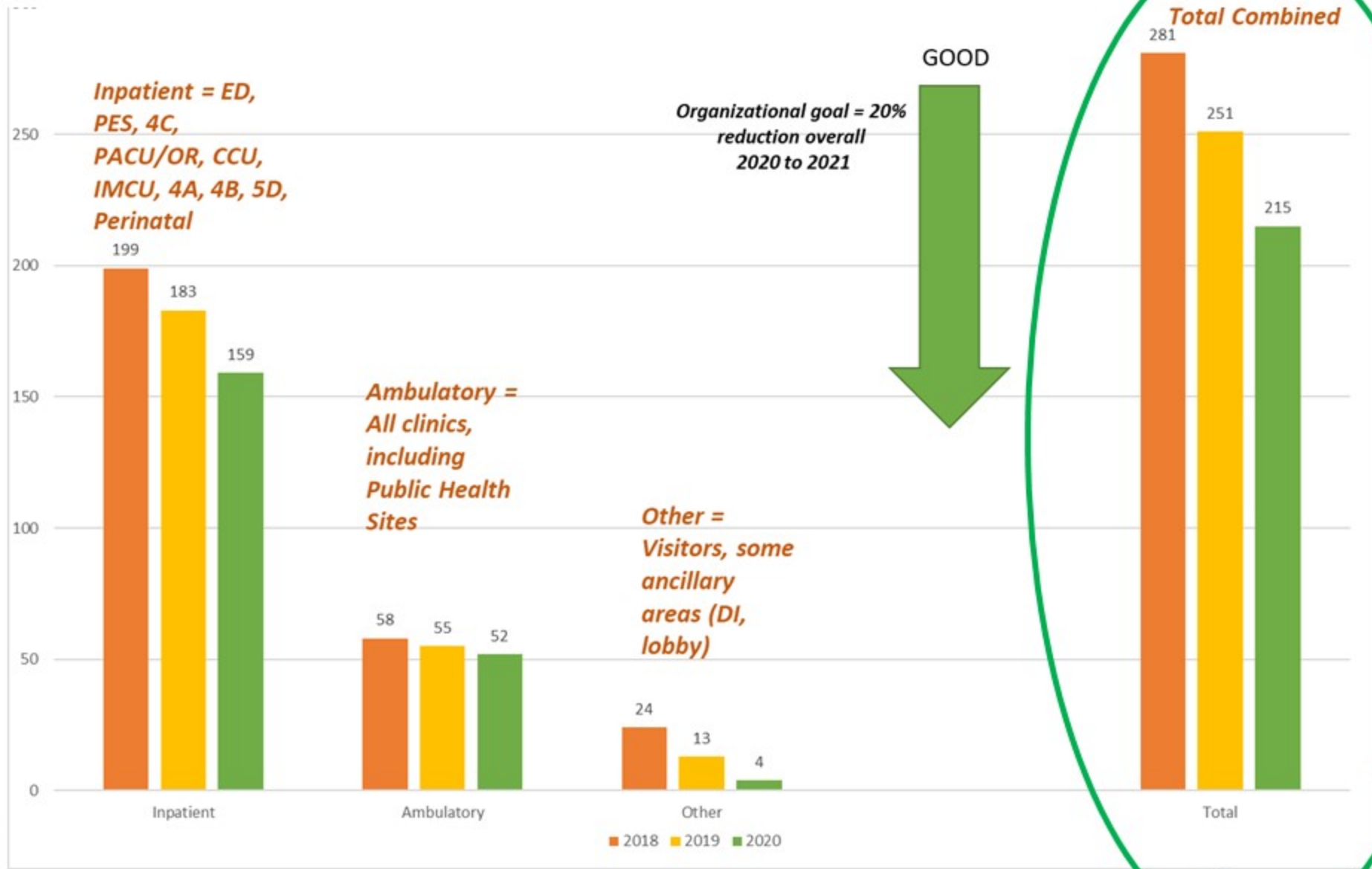
Compliments to the following staff for consistently strengthening our **culture of safety** through timely SERS Actions.



*“The only mistake in life is the lesson not learned”
- Albert Einstein*

- **Abnesh Kishor**: for **preparing/delivering** Covid Swab kits.
- **Alan Siegel, MD**: for **verifying** patient's Covid Vaccine site.
- **Andrea Sandler, MD**: for **sharing** patient's lab concern; for informing staff what's OK to say when providers are out of the office.
- **Angela Cotton**: for identifying a wound as **POA** (Present on Admission).
- **Angelica Rubio**: for identifying wounds as **POA** (Present on Admission).
- **Arturo Hernandez**: for developing lab signage; for **timely response** re the Respiratory Clinic.
- **Brian Bonthron**: for identity theft **investigation** and action.
- **Caroline Killough**: for **teamwork** and timely response re the Respiratory Clinic.
- **Cheryl Standley**: for **standardizing** the provider-nurse handoff and labeling of specimen.
- **Chukwuma Ubanwa**: for **self-reporting** near misses.
- **Courtney Beach, MD**: for **quick response** to SERS
- **David Hearst, MD**: for **reporting** delay in access for patient leading to expedient action.
- **David Longstroff**: for **confirming** Contact Isolation Precautions; communicating the Bx UCSF Send outs Workflow to Physician.
- **Deana Hearst**: for **self-reporting** near misses.
- **Dennis Hsieh, MD**: for **clarifying** the CCHP Transportation process.
- **Donna Kaufman**: for **coordinating** the specimen chain-of-custody improvement work.
- **Eddie Mendoza-Ong**: for identifying a wound as **POA** (Present on Admission).
- **Ermeli Reyes**: for identifying wounds as **POA** (Present on Admission).
- **Fernando Mendoza**: for **following up** and sharing the good news that the new lab equipment was due to arrive in Jan. 2021.
- **Gabriela Sullivan, MD**: for **informing staff** what's OK to say when providers are out of the office.
- **Gino Rogers, NPM**: for **implementing** the strongest level of corrective action in safety events.
- **Gloria Eminue**: for **self-reporting** a Near Miss.
- **Grace Dwyer**: for **resolving** the slow lab registration process; quickly resolving the printing of pathology special lab orders.
- **Grace Ma, NPM**: for **immediate SERS review**, follow-up, and documentation of Covid testing status.
- **Harkaren Bhandal, RN**: for identifying wounds as **POA** (Present on Admission).
- **James Walls**: for initiating and **clarifying** the External Specialty Referrals workflow for Medicare only patients.
- **Jennifer Sanchez**: for identifying a wound as **POA** (Present on Admission).
- **Jose Rivera**: for identity theft **investigation** and action.
- **Kathy Ferris**: for **immediate assistance**, guidance, and responsiveness re PPE Safety.
- **Kelly Taylor, RN**: for **preventing** potential teen suicide.
- **Kenneth Edmark**: for self-reporting a near miss.
- **Kristie Tran**: for **speaking up for safety** and reporting cart near miss.
- **Kristin Burnett**: for **verifying** Covid Vaccine site.
- **Lauren Wondolowski, MD**: for reporting safety concerns.
- **Leah Romito, MD**: advocating for patient's My Chart results
- **Lindsay Tock**: for identifying a wound as **POA**.
- **Lynnette Watts**: for developing lab signage.
- **Mari Panaligan**: for identifying wounds as **POA** (Present on Admission).
- **Marina Shenouda**: for identifying a wound as **POA** (Present on Admission).
- **Mark Willie, MD**: for helping in updating ccLink with guard rails to prevent hypercalcemia in Hyperparathyroid patients.
- **Megan Perez, MD**: for following the chronic pain management program guidelines and for **involving** her Attending Physician, Erik Gonzales.
- **Meilin Wong**: for **self-reporting** near misses.
- **Michael Gynn, MD**: for **communicating** the workflow to the Surgeons.
- **Nate Brooks, MD**: for immediately **reassigning** patient and supporting NP Shannon P. Turner.
- **Nicole Boisvert, MD**: for patient advocacy.
- **Olga Kelly, MD**: for **preventing** potential teen suicide.
- **Oliver Graham, MD**: helping in updating ccLink with guard rails to **prevent hypercalcemia** in Hyperparathyroid patients.
- **Opal, Taylor, MD**: for **reporting** the slow lab registration process.
- **Orlando Rodriguez**: for identifying a wound as **POA** (Present on Admission).
- **Rabbart Allan A. Bala**: for identifying wound as **POA** (Present on Admission).
- **Rebecca Miller, MD**: for escalating the impact of equipment issues (Lab CMP Analyzer) on medical care and decision making
- **Sandra Harris**: for lactation **empathy** and emotional support.
- **Sandra Murgia, NP**: for lactation **empathy** and emotional support.
- **Sergio Urcuyo, MD**: for including pre-checked asymptomatic Covid Test in the ccLink admission order sets; **standardizing** lab collection workflow.
- **Shideh Atai, PharmD**: for standardizing workflows, roles, and responsibilities of Pharmacists.
- **Shweta Das, MD**: for **updating** the Send-out Specimen forms; for sharing that the new lab equipment was due to arrive in 1/2021.
- **Skender Najibi**: for reporting a safety concern addressing patient's risk for **CAUTI**.
- **Tara Lehman, MD**: for revising ccLink to include checkbox affirming specimen collection; **standardizing** the provider-nurse specimen handoff.
- **Troy Kaji, MD**: for **updating** ccLink: guard rails to prevent hypercalcemia; specimen collection confirmation; external specialty referrals
- **Ushma Vora**: for working with ccLink Team to **eliminate** standalone IV insulin orders.
- **Will Sheldon**: for reporting delays in responding to In-Basket Messages resulting in **system-level review and resolution**.

FALLS 2018-2020





Clinical Informatics Safety Ambulatory- Dr. Troy Kaji

QIP related alerts

Tobacco

Elevated BMI

Advanced Care Planning - surrogate decision maker

Vaccine "high risk" groups

Asplenia, functional asplenia = sickle cell


Health Maintenance for HiB, Men B, Men ACYW, Pneumococcal

MyChart 2 factor auth

Information Blocking exception

Harm Exception

Privacy Exception

 Reason for Blocking ✕

You are choosing to restrict the patient's access to this note. This may be considered illegal information blocking UNLESS you have a reasonable belief that restricting access to this note will substantially reduce a risk of PHYSICAL (not emotional) harm to the patient and/or another person

Reasonable belief that restricting access to this note will substantially reduce risk of PHYSICAL (not emotional) harm to the patient and/or another person. Type of harm: comment below

Privacy Exception - Patient request to not share through MyChart.

Comments

Informatics Safety - Hospital Accurate 5150 Display - Dr. Kim Haglund

Solution: BPA to prompt RN order correction



Provider Performed Microscopy

TJC Lab Requirement for moderately complex tests i. e. Wet Mounts, Fern Testing

Annual Competency - Direct Microscopy Observation and E-Learning

Incorporated into Medical Staff Credentials and Privileges - Hospital and Ambulatory Providers

Shout Out: Drs. Das, Moeller, Bliss, Sandler, Levin, Sullivan and F. Tolentino, K. Cullom, & H. Cedermaz

Closed RCA

Delayed Depo Provera Injection

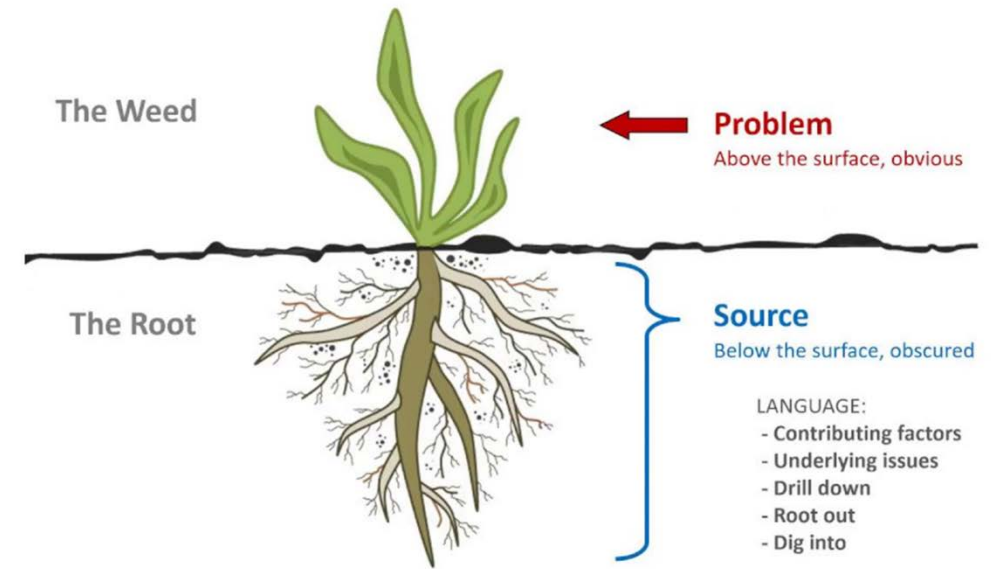
- Dr. Andrea Sandler

Patient missed scheduled Depo Provera injection for contraception. Had a follow-up appointment but did not receive Depo Provera in a timely manner resulting in an unplanned pregnancy.

Completed Actions:

- ▶ Immediate Action: Order Emergency Contraception with Initiation of Depo Provera
- ▶ Order Set Updates: Auto Upload Patient Education including revised Missed Depo Provera Injection Instructions
- ▶ Reschedule Next Depo at Day 84 instead of Day 91
- ▶ AVS shows today's Depo injection & Next appointment only - No preset schedule from initial treatment date
- ▶ Nursing BPA for Depo Provera Ordered but not Given
- ▶ Reinvigorated Nursing Handoff tool for break relief

Root Cause Analysis - The Concept



4D Unit



Infection Control Practices & Cleanliness of the Environment of Care

SAFETY & REGULATORY READINESS

DETENTION HEALTH UPDATES

Quality Improvement Efforts for the safety and well-being of the Detention patients in the areas below to comply with the February '21 Consent Decree in progress.

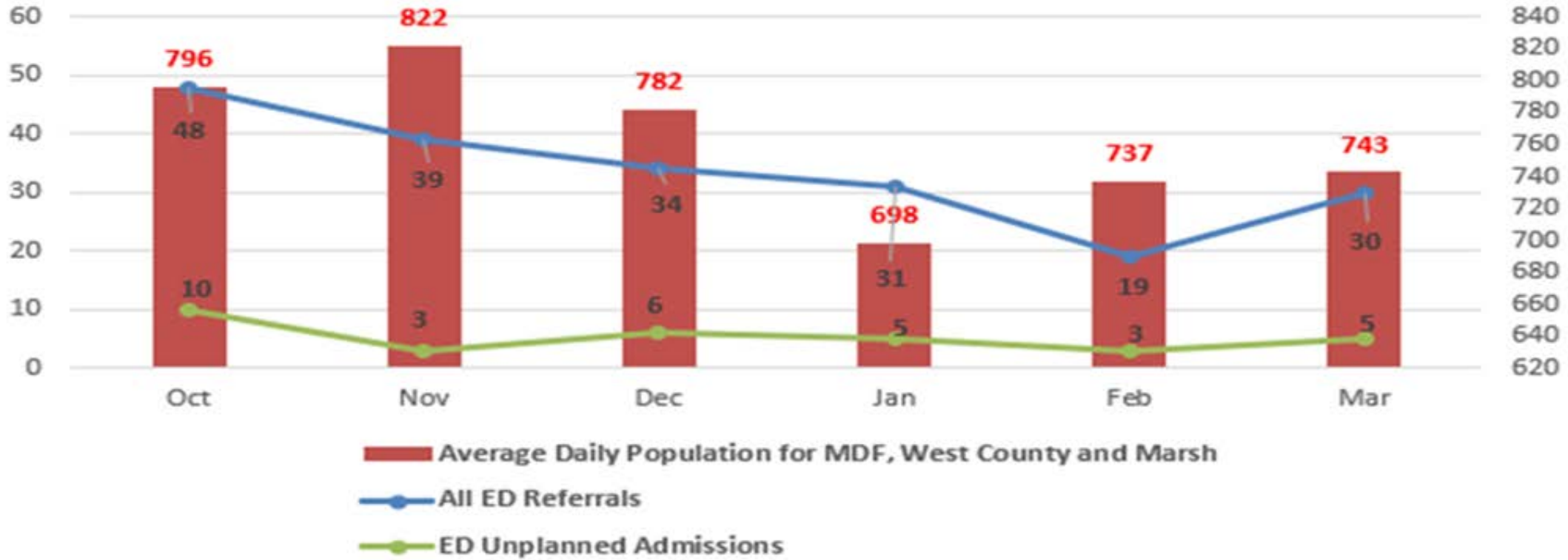
- Medical Care
- Mental Health Care
- American Disability Act (ADA) Standards
- Confidentiality/Privacy

Court-appointed Medical and Mental Health Experts as well as the Prison Law Office Attorneys will monitor the implementation of the remedial measures.

Shoutouts: Physicians, FNP's, Psychiatrists, Nurses, Mental Health Counselors, Pharmacists, Dentists, Quality Improvement, and Custody Staff for collaborating and contributing towards the completion of the requirements.

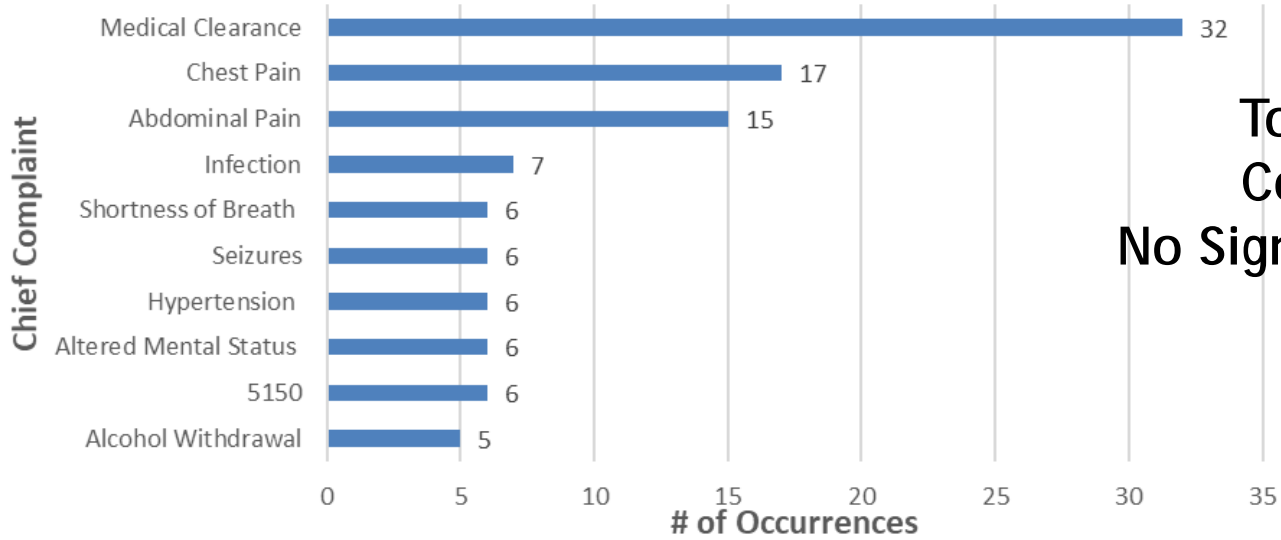


Detention Health 2020-2021



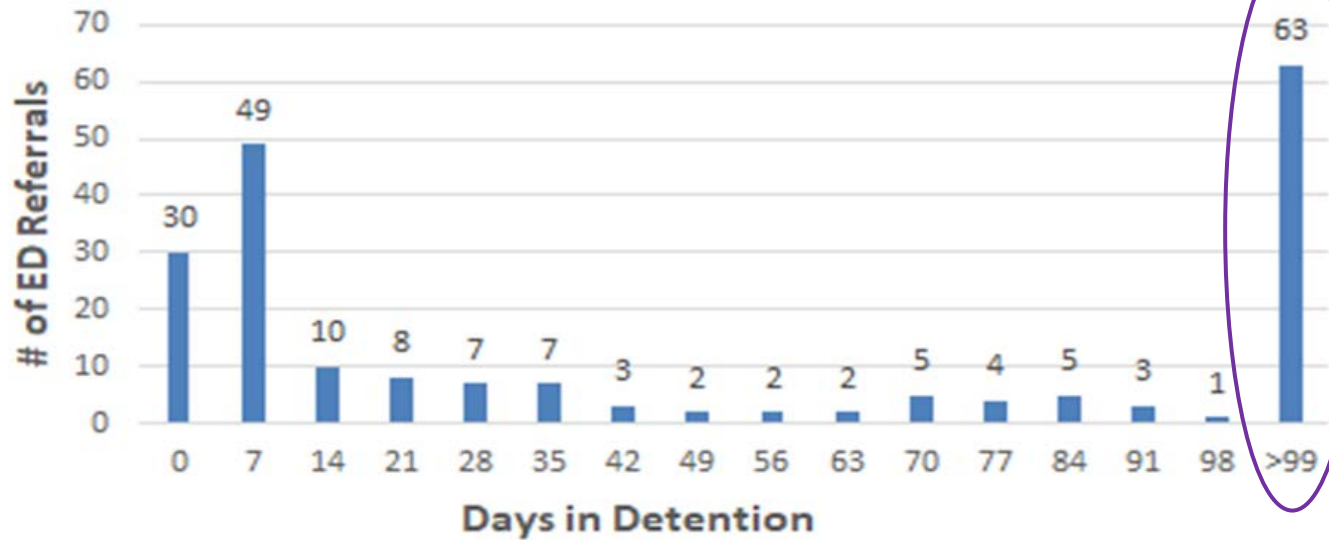
ED Referral Rate - 4%
 Unplanned Admissions - 1%

Top 10 Det ED Referrals Oct 20-Mar 21



**Top 3 Chief Complaints
No Significant Trends**

Patient Days in Detention Prior to Emergency Referral - Oct 20-Mar 21



Next Steps:
Review Unplanned Admissions >90 Days in Detention



Medical Executive Committee: Utilization Management Department	Date: June 21, 2021
	Committee Chair: James Rael, MD
	Sponsors: Yvonne Hollister,
	Quality Support: Melissa Pineda
Purpose of Presentation	<input checked="" type="checkbox"/> Routine Report <input type="checkbox"/> Consent Agenda <input type="checkbox"/> Status Update <input type="checkbox"/> Feedback on PI process <input type="checkbox"/> Follow up report requested by the committee <input type="checkbox"/> Other: _____ <input type="checkbox"/> Requesting specific resources: _____
Background	<p>The purpose of the UM program is to ensure care and services received by CCRMC patients are patient centered, culturally sensitive, safe, efficacious, equitable, appropriate, timely, of high quality, consistent with evidence-based standards of care, and are coordinated and continuous across the health care spectrum.</p> <p>The scope of the UM program includes acute inpatient hospital care, surgical procedures and ambulatory health services (not behavioral health) delivered to CCRMC patients. The main focus of UM includes review of inpatient hospital admissions, continued stays for medical necessity and appropriate setting. Other review activities may include avoidable admissions; admissions for which early discharge may be possible; delays in service which increase length of stay; long stays of outlier status; patients awaiting long-term and chronic care placement; “social” or administrative hospital stays; planned surgeries; high-cost diagnostic testing; appropriate use of specialty and ancillary services.</p>
Aim Statement	<p>To facilitate safe, equitable, appropriate, high quality, cost effective care and settings for CCRMC patients. To promote collaboration and communication between clinical departments to enhance the efficacious and appropriate utilization of health care services, improve care quality, promote continuity of care. To assess, monitor, and implement appropriate utilization processes that promote the efficacious use of health care services.</p>
Measurement Strategy and Goals	<p>The UM department is responsible for monitoring appropriate length of stays, usage of blood products, and SIMS criteria, which includes surgical approval rates, and tissue concordance rates.</p>
Analysis	<ul style="list-style-type: none"> - <i>InterQual 2020-21 version:</i> Interqual is the software we use for evaluating patient’s for acuity on admission, and for continued stay. Starting next month, our 2020 InterQual version will interact directly with EPIC. One of the updates will allow emergency room doctors and hospitalist real-time analysis on whether the patient is meeting acuity for admission. This software update has been used by other hospitals for years. Its’ use is meant as a guideline and a learning tool. I still hear from physicians who either don’t agree with the criteria or don’t care about the criteria. I’ve educated, provided resources for some. This mostly involves patients admitted overnight in preparation for an elective cholecystectomy. The next group being those admitted overnight for evaluation the next day for chest pain. Another group being IV antibiotics for non-complicated cellulitis. These patient’s will normally meet for an “observation” status admission, but not for an acute admission. However, CCRMC does not have observation status for admissions. We’re not able to bill for these admissions, and at times, the patient can receive the bill for admission. - <i>Expedited Placement for CCRMC ED:</i> This UM department has continued to work with our emergency department providers to prevent non-acute admissions primarily for non-acute medical reasons. Additional resources have been in place (utilization review coordinators, MSWs, mental health community substance abuse specialist and public health specialist, if applicable) to help with the expedited placement process. The ED will hold the patient up to 92 hours allowing the discharge planning team to assess and collaborate a more appropriate discharge plan. In

2020, there were ~330 expedited placement patients seen. About 277 were placed, 53 were admitted. These actions divert non-acute admissions which in turn frees up inpatient beds for their intended purpose.

- **UM Staffing:**

Primary staffing concern is not having a dedicated 4D “psych” UM nurse. At present, UM RN staff members are being pulled from other units to provide sporadic part-time coverage. Psychiatric UM is a specialty. At present, we have only one “psych” UM RN who covers 4C. The job can be learned, but requires a dedicated RN for consistency.

This is important in regards to knowing if a patient meets criteria for admission or continued stay. Also important as the inpatient psych undergoes a MCal triennial utilization audit (Jan 2022) in which we retrospectively review one months’ worth of admissions and perform a self-disallowance audit of what we believe as patient’s not being acute. Specifically, we don’t receive the amount of the self-disallowance. This is in addition to what the state disallows during their general audit of other patients. This is a requirement by the state. The motivation for being objective about non-acute days and administrative days comes from the threat of the state declining a similar percentage of overall non-acute and administrative days for the entire 3-year period.

Actions Taken

- Physician and RN training to take place regarding InterQual 2020 version.
- Request for dedicated 4D UM nurse position previously submitted, but not approved.

Recommendations / Action Plan

Tasks

Responsible Person(s)

Due Date

Utilize Allscripts® to expedite the placement referral process

Troy Kaji

County Counsel review since 2019

Implement InterQual (by Change Healthcare) to Epic interface

Yvonne Hollister, medical staff

July 2021

NON-MD CLINICAL CONTRACT SERVICES QA REPORT - 2021

VENDOR NAME	DEPARTMENT	MONITORING EMPLOYEE	TYPE OF SERVICE	CONTRACT #	QA Program on file	Included in Internal QA	Contractor reports quality to Dept	Renew Contract? (Y/N)
Cardionet	Cardiopulmonary	Gashaw Takele	Cardiac monitoring	26-784-07	N	Y	N	Y
Per Diem Staffing System	Cardiopulmonary	Gashaw Takele	Respiratory staffing	26-306-30	Y	Y	Y	Y
VANCHCS	Diagnostic Imaging	Angela Womble	Nuclear medicine	26-346-22	Y	Y	Y	Y
Virtual/Radiologic Professionals of CA (formerly Nighthawk Radiology Svcs)	Diagnostic Imaging	Angela Womble	Teleradiology	26-515-15	Y	Y	Y	Y
Oceanside Laundry	Environmental Svcs	David Duet	Linen rental/cleaning	26-776-03	Y	Y	Y	Y
Donor Network West	Hospital Admin.	Nancy Hendra	Organ procurement services	26-358-07	Y	Y	Y	Y
ProTransport	Hospital Admin.	Karin Stryker	Non-emergent patient transport	26-891-05	N	Y	Y	Y
American Red Cross	Laboratory	Fernando Mendoza	Total blood & blood component svcs	26-338-20	Y	Y	Y	Y
Bennet Omalu Pathology	Laboratory	Fernando Mendoza	Autopsy services	26-258-03	N	Y	Y	Y
Lab Corp of America	Laboratory	Fernando Mendoza	HPV	76-556-01	Y	Y	Y	Y
Monogram Bio Sciences	Laboratory	Fernando Mendoza	HIV	26-791-02	Y	Y	Y	Y
NeoGenomics Laboratory	Laboratory	Fernando Mendoza	Outside lab testing	76-558-01	Y	Y	Y	Y
Prometheus	Laboratory	Fernando Mendoza	Reference lab	76-564-01	Y	Y	Y	Y
Santa Clara Valley Med Ctr	Laboratory	Fernando Mendoza	Neonatal toxicology lab testing	26-658-08	Y	Y	Y	Y
Specialty Lab (Quest Diagnostic)	Laboratory	Fernando Mendoza	Outside clinical lab	26-583-24	Y	Y	Y	Y
UCSF Dermatopathology and Oral Pathology	Laboratory	Fernando Mendoza	Reference lab - skin disease	26-764-06	Y	Y	Y	Y
All Health Services	Nursing	Nancy Hendra	Health care staffing	26-577-16	Y	Y	Y	Y
Apheresis Care Grp (frmly Bay Area Mobile Apheresis)	Nursing	Nancy Hendra	Therapeutic apheresis	26-362-12	N	Y	Y	Y
AYA Healthcare Inc (DBA: Access Nurse)	Nursing	Nancy Hendra	Health care staffing	26-458-24	Y	Y	Y	Y
Cross Country Staffing Inc (DBA: Medical Staffing Network)	Nursing	Nancy Hendra	Health care staffing	26-347-32	Y	Y	Y	Y
Maxim Healthcare Services	Nursing	Nancy Hendra	Health care staffing	26-391-28	Y	Y	Y	Y
Nurse Travel Staffing (DBA: Medical Solutions, LLC)	Nursing	Nancy Hendra	Health care staffing	26-745-10	Y	Y	Y	Y
Pediatrix Medical Group	Nursing	Nancy Hendra	Newborn hearing screening svcs	26-713-02	Y	Y	Y	Y
Per Diem Staffing System	Nursing	Nancy Hendra	Nurse staffing	26-306-30	Y	Y	Y	Y
Supplemental Health Care (AKA: SHC Svcs)	Nursing	Nancy Hendra	Health care staffing	26-473-26	Y	Y	Y	Y
Sodexo - Nutrition	Nutrition Svcs	Helena Martey	Nutrition management services	26-606-16	N	Y	Y	Y
Metadynamic	Operating Room	Helena Martey	Guidance navigation system	26-874-03	Y	Y	Y	Y
UHS Surgical Services	Operating Room	Helena Martey	Laser procedures	26-232-05	Y	Y	Y	Y
Cardinal RX E-Source	Pharmacy	Shideh Atai	Pharmacy review of after hours orders	26-492-19	Y	Y	Y	Y
Covelo (formerly MGA Healthcare)	Pharmacy	Shideh Atai	Pharmacists/Tech staffing	26-644-21	Y	Y	Y	Y

MERP PLAN FOR THE YEAR 2021

PRESCRIBING

- **New Processes:**
 - Pharmacy to begin using a Bayesian program to dose vancomycin based on AUC/MIC monitoring.
 - Under guidance from the Antimicrobial Stewardship Committee, pharmacy will work with cLink IT to create an antibiotic order set to promote safe and appropriate use of antibiotics.
 - Pharmacy to work with cLink IT to create an oral opiate medication order set to ensure safe and appropriate use.
 - Pharmacy to work with cLink IT to create an antidote order set to promote ease of ordering the appropriate antidote/dose for what is being treated.

- **Continue the following:**
 - Continue all Pharmacy Monitors, including but not limited to DDI checks, clinical conditions, lab monitors and reviewing therapeutic appropriateness via data mining software and various EPIC reports [i.e. crystal, dashboard, system lists]). Monitors will be optimized as needed.
 - Continue all processes under the Antimicrobial Stewardship Program (ASP), including collaboration with the ID physicians and PCP&E privileges given to pharmacy staff to optimize antimicrobial use.
 - Continue reviewing all order sets on a multidisciplinary note in cLink as opportunities for improvement are identified, and work on new order sets as needed.
 - Continue reviewing external resources (ex: ISMP newsletters and self-assessments, FDA alerts, etc.), to analyze current practice at CCRMC and improve processes according to the most recent guidelines and literature.
 - Continue to optimize SubQ insulin prescribing through ongoing provider education. Continue the physician oversight process in which all hypoglycemic events for patients on insulin at CCRMC are reviewed to ensure that appropriate actions are taken, and education provided when needed. Continue to optimize order sets and panels involving insulin to further prevent hypoglycemic events.
 - ADC access:
 - Continue to monitor and trend medication overrides and provide feedback to the end users.
 - Continue to monitor ADC access to ensure that unauthorized personnel (i.e. upon departure or termination of employment of nursing/anesthesiology/pharmacy staff, etc.) are removed from the system upon leaving the facility to prevent unauthorized access to medications.
 - Continue to utilize the rescue medication report as an educational tool for medical staff.
 - Multimodal pain management strategies to continue to be optimized via various means (order set/ EHR updates, formulary additions, etc.) as a part of ERAS (early recovery after surgery).
 - Opioid stewardship committee to continue meeting quarterly to ensure appropriate use of opiates.
 - Continue monitoring for duplications in therapy and optimize order sets/order panels as needed.
 - Continue to create guidelines and order-sets pertaining to COVID-19 related treatments to ensure safe and appropriate use of the medications.

MERP PLAN FOR THE YEAR 2021

PRESCRIPTION ORDER COMMUNICATION

- **New Processes:**
 - Pharmacy to work with cLink IT to optimize vancomycin trough order communication process.
- **Continue the following:**
 - Continue reviewing all order sets on a multidisciplinary note in cLink as opportunities for improvement are identified, and work on new order sets as needed.
 - Continue the Transitions of Care (TC) Program to 1) Minimize medication transcribing errors upon admission and discharge with effective communication with “High Risk” patients (as defined by CCRMC) and to retail pharmacies and 2) Ensure medication understanding and adherence by educating patients.
 - Multimodal pain management strategies to continue to be optimized via various means (order set/ EHR updates, formulary additions, etc.) as a part of ERAS (early recovery after surgery)
 - Opioid stewardship committee to continue meeting quarterly to ensure appropriate use of opiates through various means (i.e. order set modification, education, etc.)
 - Continue monitoring for duplications in therapy and optimize order sets/order panels as needed to ensure effective prescription order communication of PRN medications.
 - Continue to create guidelines and order-sets pertaining to COVID-19 related treatments to ensure safe and appropriate use of the medications.

MERP PLAN FOR THE YEAR 2021

PRODUCT LABELING, PACKAGING AND NOMENCLATURE

- **New Processes:**
 - 28-day expiration calendar tool updated to give staff visual examples to assist with correct MDV expiration labeling.
- **Continue the following:**
 - In the face of drug shortages, appropriate assessment of products available to be conducted and information relayed to the appropriate disciplines (pharmacy staff, nursing staff, medical staff, etc.). Appropriate changes to be made in the electronic health record to avoid transcribing errors, order set errors and medication order errors.
 - Pharmacy and nursing to continue assessing compliance with accurate labeling per nursing of IV solutions retrieved from Medline carts, along with MDVs expiration labeling.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes according to the most recent guidelines and literature.
 - Continue Kit Check labeling and barcoding to optimize PAR levels of medications in anesthesia workstations in the OR and crash carts.
 - Continue to create guidelines, processes and master formulas for COVID-19 therapies (ex: remdesivir, monoclonal antibodies) to ensure safe use of these medications that when under EUA, may have labelling deficiencies.
 - Continue monitoring MDV expiration labeling.

MERP PLAN FOR THE YEAR 2021

COMPOUNDING

- **New Processes:**
 - Physical remodeling of the inpatient compounding environment to be completed.

- **Continue the following:**
 - Continue to review and assess USP 797 for adequate compliance per CCRMC policy in accordance with the CA State Board of Pharmacy.
 - Continue to review and assess USP 800 & NIOSH guidelines for adequate compliance per CCRMC policy in accordance with the state and federal regulations.
 - Continue end-product testing to assure integrity and sterility of compounding environment.
 - Continue sending samples of purchased goods from compounding pharmacies and CCRMC compounded products to a tertiary lab to assure sterility and potency via random sampling.
 - Continue usage of barcoding technology in the inpatient and outpatient IV sterile compounding environments.
 - CCRMC master formula is reviewed and updated on a routine basis.
 - Continue to create master formula documents for new COVID-19 therapies as needed (ex: remdesivir, bamlanivimab, etc.)
 - Continue auditing IV room medication compounding within the monthly Pharmacy Dispensing Audit by pharmacy.
 - Continue IV admixture training for nursing staff, and extensive IV competency training for pharmacists and technicians on an annual basis.

MERP PLAN FOR THE YEAR 2021

DISPENSING

- **New Processes:**
 - Implementation of “Dispense tracking,” to allow nursing and pharmacy to track the medications from the time of verification to the unit.
 - Implement barcode scanning in the willow ambulatory environment in MIP.
 - Start using baskets at the discharge station in MIP to keep the discharge prescriptions organized and prevent errors.
 - CCRMC inpatient Pharmacy to prepare and dispense syringes of Pfizer-BioNTech COVID-19 vaccine to MWC. Pharmacy also to dispense vials & supplies to the various clinics as allocated.

- **Continue the following:**
 - Continue monitoring all dispensing areas of Pharmacy Dept.
 - Continue monitoring the KPI report for pharmacy turn-around-time for order verification.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes according to the most recent guidelines and literature.
 - Continue to optimize inventory of the medication repackager in the inpatient pharmacy.
 - Opioid stewardship committee to continue meeting quarterly to ensure appropriate use of opiates.
 - Continue barcode scanning of medications dispensed (IV medications since inception of EPIC, PO cart fill and first dose medications initiated in 2018).
 - Continue assessment of in-basket messages sent to pharmacy by the nursing department and improve system as necessary. This is an active PI for the pharmacy department for the year 2020.

MERP PLAN FOR THE YEAR 2021

DISTRIBUTION

- **New Processes:**
 - Start using baskets at the discharge station in MIP to keep the discharge prescriptions organized and prevent errors.
 - “Dispense tracking” will be implemented to track the medications from the time of verification to the floor.

- **Continue the following:**
 - Controlled Substances: continued monitoring of controlled substance transactions and documentation processes in the Nursing and Anesthesiology departments by Pharmacy department for quality assurance.
 - Continue to monitor and trend medication overrides and provide feedback to the end users.
 - Continue performing Malignant Hyperthermia (MH) mock codes to ensure proper use of MH cart.
 - Continue detailed daily review of D50 usage via in-basket message to clinical pharmacy dept. (assess for appropriateness of events).
 - Continue Kit Check labeling and barcoding to ensure adequate PAR levels of medications in anesthesia workstations in the OR and crash carts.
 - Pharmacy to continue reviewing the Omnicell Par vs. usage report for proper inventory management.
 - Continue to monitor ADC access to ensure that unauthorized personnel (i.e. upon departure or termination of employment of nursing/anesthesiology/pharmacy staff, etc.) are removed from the system upon leaving the facility to prevent unauthorized access to medications.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes according to the most recent guidelines and literature.
 - Pharmacy to continue assessing compliance with accurate expiration labeling of MDVs by nursing.
 - Ongoing pharmacy staff education to ensure accurate filling of Omnicell.
 - Continue assessment of in-basket messages sent to pharmacy by the nursing department and improve system as necessary. This is an active PI for the pharmacy department for the year 2020.

MERP PLAN FOR THE YEAR 2021

ADMINISTRATION

- **New Processes:**
 - “Dispense tracking,” will be implemented to allow nursing and pharmacy to track medications from the time of verification to the unit.
 - New smart CADD pumps were implemented for L&D (epidurals) and for Infusion clinic (5-FU infusions) in 2020. Monitor usage for QA going forward.
 - Continue administration of COVID-19 vaccines at the clinics (ex: MWC, CHC, PHC, BPHC, etc.)

- **Continue the following:**
 - Controlled Substances: continued monitoring of controlled substance transactions and documentation processes in the Nursing and Anesthesiology departments by Pharmacy department for quality assurance.
 - Continue evaluating Alaris Pump infusion knowledge portal and CQI reports and use this for nursing education and modification of drug library.
 - Continue assessment of in-basket messages sent to pharmacy by the nursing department and improve system as necessary. This is an active PI for the pharmacy department for the year 2020.
 - Continue to monitor and trend medication overrides and provide feedback to the end users.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes accordingly.
 - Continue to optimize nursing workflow in ccLink in relation to medication management based on routine review of medication errors and MSC feedback.
 - Continue to in-service nursing staff as needed.
 - Continue to monitor barcoding compliance in the nursing environment to achieve the goal of greater than 95% compliance.
 - Continue monitoring for appropriate use of EnFit syringes in accordance with assembly bill 444.
 - Continue to review and assess USP 800 & NIOSH guidelines for adequate compliance per CCRMC policy in accordance with the CA State Board of Pharmacy.
 - Multimodal pain management strategies to be optimized via various means (order set/ EHR updates, formulary additions, etc.) as a part of ERAS (early recovery after surgery)
 - Pharmacy leadership discussed the issues surrounding missed doses at the organizational safety huddle in 2020. Continue to increase awareness and educate staff to prevent missed doses (ex: ensure lines are unclamped).
 - Continue to create guidelines and order-sets pertaining to COVID-19 with administration instructions and nursing communications to ensure safe and appropriate administration of the medications.
 - The heparin taskforce will continue to address the misuse/ nonuse use of the heparin infusion calculator.

MERP PLAN FOR THE YEAR 2021

MONITORING

- **New Processes:**
 - Pharmacy to explore using Bayesian program for vancomycin AUC/MIC monitoring.
 - Pharmacy to work with ccLink IT to improve vancomycin trough communication process.
 - Pharmacy to update the Pharmacy vancomycin dosing protocol with more information for dosing in patients on CRRT.
 - Pharmacy to work with ccLink IT to create a CRRT system list.

- **Continue the following:**
 - Continue all Pharmacy Monitors, including but not limited to DDI checks, clinical conditions, lab monitors and checking for therapeutic appropriateness via data mining software and various EPIC reports [i.e. crystal, dashboard, system lists]). Monitors will be optimized as needed.
 - Monitors in the inpatient setting: vancomycin, heparin infusion, insulin, psychiatric medications, etc.
 - Monitors in the ambulatory setting: Diabetes Care Management Clinic, ESA Clinic, Transitions in care services, etc.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes according to the most recent guidelines and literature.
 - ***Continue all processes under the Antimicrobial Stewardship Program (ASP), including collaboration with the ID physicians and PCP&E privileges given to pharmacy staff to optimize antimicrobial use.
 - Continue monitoring of ADEs (ADRs and medication errors) retrospectively to assess for appropriateness of medication use and monitoring.
 - Continue retrospective review of different systems, reports and processes (ex: rescue medication report, medication error report, ADC utilization report, etc.) for appropriateness of medication use and monitoring from different disciplines (medical staff, nursing, pharmacy, etc.), and implement educational plans for medication monitoring as needed.
 - Continue the physician oversight process for all hypoglycemic events (BG < 50 mg/dl) for patients on insulin at CCRMC to ensure that appropriate actions are taken, and education provided when needed.
 - Optimize all order sets according to available and most recent guidelines.
 - Controlled Substances: continued monitoring of controlled substance transactions and documentation processes in the Nursing and Anesthesiology departments by Pharmacy department for quality assurance.
 - Continue to create guidelines and order-sets pertaining to COVID-19 related treatments to ensure safe and appropriate monitoring of the medications.
 - The heparin taskforce will reconvene to address the misuse/ nonuse use of the heparin infusion calculator.

MERP PLAN FOR THE YEAR 2021

EDUCATION

- **New Processes:**
 - Provide re-education to nurses about ensuring IV lines are unclamped to prevent missed doses.
 - Under guidance from the Antimicrobial Stewardship Committee, pharmacy will work with ccLink IT to create an antibiotic order set to promote safe and appropriate use of antibiotics.
 - Pharmacy to update the Pharmacy vancomycin dosing protocol with more information for dosing in patients on CRRT.
 - Pharmacy to work with ccLink IT to create a CRRT system list.
- **Continue the following:**
 - Continue all Pharmacy Monitors, including but not limited to DDI checks, clinical conditions, lab monitors and checking for therapeutic appropriateness via data mining software and various EPIC reports [i.e. crystal, dashboard, system lists]). Monitors will be optimized as needed.
 - Monitors in the inpatient setting: vancomycin, heparin infusion, insulin, psychiatric medications, etc.
 - Monitors in the ambulatory setting: Diabetes Care Management Clinic, ESA Clinic, Transitions in care services, et
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes accordingly by optimizing operations and educating staff.
 - Continue to work with the Profession Development Department to educate staff on the USP 800 requirements.
 - Continue to in-service nursing staff as needed.
 - Malignant Hyperthermia: Continue Mock MH drills, collaborating with the Professional Development Dept.
 - Continue formal pharmacist training and competency assessment for participation in the ASP program, DCM, and ESA Clinics, and all clinical processes upon hire.
 - Continue competency assessments for pharmacists and pharmacy technicians during orientation for new hires.
 - IV competency training is completed by pharmacists, technicians and nursing staff.
 - Continue the Transitions of Care (TC) Program and provide education to patients to promote safe medication use.
 - Continue retrospective review of different systems, reports and processes (ex: rescue medication report, medication error report, ADC utilization report, etc.) for appropriateness of medication use and monitoring from different disciplines (medical staff, nursing, pharmacy, etc.), and implement educational plans for medication monitoring as needed.
 - Continue evaluating Alaris Pump infusion knowledge portal and CQI reports and use this for nursing education and modification of drug library.
 - Continue to optimize educational efforts to ensure safe and appropriate prescribing and administration of SubQ insulin at CCRMC.
 - Provide further education to nursing to address the misuse/ nonuse use of the heparin infusion calculator.

MERP PLAN FOR THE YEAR 2021

USE

- **New Processes:**
 - “Dispense tracking” will be implemented to allow nursing and pharmacy to track the medications from the time of verification to the floor.
 - Under guidance from the Antimicrobial Stewardship Committee, pharmacy will work with ccLink IT to create an antibiotic order set to promote safe and appropriate use of antibiotics.
 - Pharmacy to work with ccLink IT to create an oral opiate medication order set to ensure safe and appropriate use.
 - Start barcode scanning in the willow ambulatory environment in MIP.
 - Start using baskets at the discharge station in MIP to keep the discharge prescriptions organized and prevent errors.

- **Continue the following:**
 - Controlled Substances: continued monitoring of controlled substance transactions and documentation processes in the Nursing and Anesthesiology departments by pharmacy department for quality assurance.
 - Continue evaluating Alaris Pump infusion knowledge portal and CQI reports and use this for nursing education and modification of drug library.
 - Continue reviewing external resources to analyze current practice at CCRMC and improve processes accordingly by optimizing operations and educating staff.
 - Focus on high risk areas and review external resources to optimize the operation and educate Pharmacy Staff.
 - Malignant Hyperthermia: Continue Mock MH drills, collaborating with the Professional Development Dept.
 - Continue pharmacy monitors/programs, including but not limited to anticoagulants, high alert medications, therapeutic drug monitoring, antimicrobial stewardship program (in conjunction with ID physician), transitions of care services, DCM Clinic, ESA Clinic etc.
 - Continue assessment of in-basket messages sent to pharmacy by the nursing department and improve system as necessary. This is an active PI for the pharmacy department for the year 2020.
 - Continue Kit Check labeling and barcoding to ensure adequate PAR levels of medications in anesthesia workstations in the OR and crash carts.
 - The heparin taskforce will reconvene to address the misuse/ nonuse use of the heparin infusion calculator.

MERP PLAN FOR THE YEAR 2021

TECHNOLOGY

- **New Processes:**
 - “Dispense tracking” will be implemented to track the medications from the time of verification to the floor.
 - Start barcode scanning in the willow ambulatory environment in MIP.
 - Create system list for patients on CRRT.
 - Pharmacy to work with cLink IT to optimize vancomycin trough order communication process.
 - Pharmacy to explore using Bayesian program for vancomycin AUC/MIC monitoring.
 - Under guidance from the Antimicrobial Stewardship Committee, pharmacy will work with cLink IT to create an antibiotic order set to promote safe and appropriate use of antibiotics.
 - Pharmacy to work with cLink IT to create an oral opiate medication order set to ensure safe and appropriate use.
 - Pharmacy to work with cLink IT to create an antidote order set to promote ease of ordering the appropriate antidote/dose for what is being treated.
 - New smart CADD pumps were implemented for L&D (epidurals) and for Infusion clinic (5-FU infusions) in 2020. Monitor usage for QA going forward.

- **Continue the following:**
 - Continue evaluating Alaris pump infusion knowledge portal and CQI reports and use this for nursing education and modification of drug library.
 - Continue BCMA monitoring and tracking to achieve the goal of greater than 95% compliance.
 - Continue on reviewing all order sets on a multidisciplinary note in cLink as opportunities for improvement are identified, and work on new order sets as needed.
 - Continue to improve and enhance technological tools (i.e. cLink, Alaris) as a result of medication error trending and analysis.
 - Continue with all processes under the Antimicrobial Stewardship Program (ASP), including collaboration with the ID physicians and PCP&E privileges given to pharmacy staff to optimize antimicrobial use.
 - Continue Kit Check labeling and barcoding to ensure adequate PAR levels of medications in anesthesia workstations in the OR and crash carts.
 - Optimize inventory of the medication repackager in the inpatient pharmacy.
 - Pharmacy to continue reviewing the Omnicell par vs. usage report for proper inventory management.
 - Continue to promote safe and appropriate use of SubQ insulin via technology (i.e. order set optimization, BPA alerts, in basket messages, etc.)
 - Multimodal pain management strategies to be optimized via various means (order set/ EHR updates, formulary additions, etc.) as a part of ERAS (early recovery after surgery)
 - Continue pharmacy monitors/programs, including but not limited to anticoagulants, high alert medications, therapeutic drug monitoring, antimicrobial stewardship program (in conjunction with ID physician), transitions of care services, DCM Clinic, ESA Clinic etc. with the utilization of technological tools such as system lists and dashboard reports via EPIC as well as data mining software (i.e. Vigilanz®).
 - Continue monitoring of ADEs (ADRs and medication errors) retrospectively to assess for appropriateness of medication use and monitoring and utilize as a tool for education.
 - The heparin taskforce will reconvene to address the misuse/ nonuse use of the heparin infusion calculator.

MERP PLAN FOR THE YEAR 2021

TRANSITIONS IN CARE

- **New Processes:**
 - “Dispense tracking” will be implemented to track the medications from the time of verification to the floor.

- **Continue the following:**
 - Continue the Transitions of Care (TC) Program and provide education to patients to promote safe medication use, including admission medication reconciliation for “High Risk,” patients as defined by CCRMC. Admission medication reconciliation for “High risk,” patients was initiated in December 2018.
 - Continue to provide necessary medications with appropriate quantity for homeless patients.
 - Continue to educate nurses during nursing orientation that medications must be transferred with patient from one unit to the next.

Agenda Item: Medication Error Data Analysis, 2020 Annual Report

Committee Name: Medication Safety Committee
Meeting Date: Feb 19, 2021
Preparation Date: January 2021

Issue Name: Medication Error Data Analysis, Annual Summary | **Presenter:** Pharmacy

Situation: Medication Error Report, Summary

Background: Beginning in 2010, CCRMC began categorizing medication errors into one of eleven different categories. Those categories (known as 'Elements') were defined by the California Department of Public Health (CDPH). In June 2012, these elements were redefined and expanded into twelve different "Event Categories." The event categories are as follows:

1. Prescribing	4. Compounding	7. Administration of Medication	10. Use
2. Prescription Order Communication	5. Dispensing	8. Monitoring	11. Technology
3. Product Labeling, Packaging and Nomenclature	6. Distribution	9. Education	12. Transitions in Care

These event categories and subcategories have been programmed into SERS (Safety Event Reporting System).

Once medication events have been categorized into one of the above event categories, they are assessed for severity level (per NCC MERP scale) as follows:

Level A	Circumstances or events that have the capacity to cause error
Level B	An error occurred but the error did not reach the patient
Level C	An error occurred that reached the patient but did not cause patient harm
Level D	An error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to preclude harm
Level E	An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention
Level F	An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization
Level G	An error occurred that may have contributed to or resulted in permanent patient harm
Level H	An error occurred that required intervention necessary to sustain life
Level I	An error occurred that may have contributed to or resulted in the patient's death

This report highlights the medication error trends that occurred in 2020, along with the etiologies of the error trends and system improvements made as a result of the errors. The specifics of these trends will be presented by run charts.

Data Source:

Medication errors are voluntarily reported by staff who become aware of errors using the SERS reporting system. The pharmacy department uses various methods including ccLink reports, clinical monitors, automated dispensing cabinet audits, and other fact-finding strategies to detect medication errors and enter them in SERS. Pharmacy department promotes transparency and awareness in the organization and uses SERS as an approach to identify areas for improvement so that strategies could be implemented to correct these issues. Pharmacy department generates the most SERS of the organization in order to support this methodology for improvement. Reports are reviewed, referred for further input, and analyzed by the Medication Safety Advocates. The medication error review process is multi-disciplinary, with at least one physician present at all times, and 100% of all errors are reviewed. Data is tabulated and trended monthly and annually.

Data Highlights and Totals:

- **There were 508 medication related SERS reported in 2020, compared to 879 in 2019, and 1,115 in 2018.** There was a 42% decline in SERS reported in 2020 vs. 2019. In 2020, the hospital census was much lower than previous years due to the Coronavirus pandemic. When looking at the percent of errors reported (# of errors/ # of doses dispensed), there was a 0.05% error rate in 2020, vs. 0.07% in 2019 and 0.1% in 2018. The decrease in percent error rate can in large part be attributed to the reduction in controlled substance discrepancies since 2018 to 2020. The decrease is as a result of the ongoing efforts by Pharmacy, Nursing and Anesthesiology to minimize controlled substance discrepancies (technological enhancements, education, etc.) along with oversight from the Opioid Stewardship Program Committee. It is important to note that 100% of controlled substance discrepancies are investigated and resolved.
- The organization promotes transparency and encourages staff to report medication errors, including near miss medication events. The majority of errors reported did NOT result in harm (median harm index of 0 %). Specifically, in 2020, 99.4% of errors reported did NOT result in harm. Additionally, there was a 67% reduction in the number of Level E errors in 2020 compared to 2019, and an 82% reduction compared to 2018.
- Pharmacy leadership continues to promote reporting of medication events for system and process improvement reasons. There was a total of 1,546 near miss medication events in 2020 (259 events reported via SERS and while not discussed in this annual SERS report, 1,287 near misses captured via the Alaris pump), vs 1861 near miss medication events in 2019 and 1862 events in 2018. The decrease in near miss errors in 2020 compared to 2018 and 2019 is as a result of the intense education, monitoring and process changes implemented.
- **Medication errors by drug class:** Controlled substances and antimicrobials have persistently been the top medication classes involved in medication errors at CCRMC since 2010.
 - There were 229 medication errors with controlled substances in 2020, **a 49% reduction compared to 2019 and a 59% reduction since 2018** (449 in 2019 and 558 in 2018). The large number of SERS are generated due to the controlled substance discrepancy monitoring program by pharmacy, which utilizes SERS as a method to report and resolve discrepancies. This decline is due to the ongoing efforts by Pharmacy, Nursing and Anesthesiology to minimize controlled substance discrepancies at CCRMC via technological enhancements and education, along with oversight from the Opioid Stewardship Program Committee.
 - The reduction in controlled substance discrepancies is due to the ongoing monitoring and reporting of controlled substance discrepancies on a daily basis by pharmacy along with a new task being added to the task list for OR and L&D OR in January 2020 for nurses to ensure that the anesthesiologists completes post case dose reconciliation prior to closing the case. In 2020, CCRMC was recognized in the Cal Hospital Opioid Care Honor Roll as one of the 25 hospitals ranked in the "superior performance." Going forward in 2021, pharmacy will continue to monitor and report controlled substance discrepancies. The multidisciplinary Opioid Stewardship Committee will continue to meet on a quarterly note to review guidelines and regulations, and optimize pain management strategies at CCRMC.
 - There were 57 medication errors involving antimicrobials in 2020, **a 25% reduction compared to 2019 and a 44% reduction since 2018** (75 in 2019 and 101 in 2018).
 - The top error type involved missed doses. Specifically, missed doses due to clamp errors (8 errors in 2020, vs. 14 errors in 2019 and 15 in 2018- a 43% reduction since 2019 and a 47% reduction since 2018). There are several processes in place from previous years that have contributed to the downtrend of clamp errors and maintaining a low number of errors (i.e. audits by pharmacy and nursing, education by the professional development department, alert in Alaris pump, etc.).
 - 8 errors involved vancomycin trough monitoring (vs. 9 errors in 2019 and 15 errors in 2018- an 11% reduction since 2019 and a 40% reduction since 2018). 7 of the 8 errors in 2020 (88%) involved a missed vancomycin trough due to the order not being released by nursing. In addition to ongoing education, pharmacy will work with ccLink IT in 2021 to optimize the vancomycin trough order communication process.
- **"High Alert," Medication Error trends are as follows:**
 - The number of high-alert medication errors decreased from 95 errors in 2018 and 74 errors in 2019 to 56 errors in 2020 (a 24% reduction from 2019 and a 70% reduction from 2018) as a result of the ongoing efforts by the organization to reduce errors surrounding these high alert medications. **The median harm index (Level E and higher events) for four of the five high alert categories has been 0 since Q1 of 2015** (Anticoagulants, Chemotherapeutics, Fentanyl patch, PCA). While insulin's median harm index has been at 2 errors per month since Q1 2018 (due to increased vigilance and reporting by pharmacy), the percent rate of severe hypoglycemia (BG ≤ 50 mg/dl) has declined from 3.5% in 2017 to 1.2% since February 2019.
 - Insulin errors: The number of insulin errors decreased from 40 errors in 2018 and 34 errors in 2019 to 20 errors in 2020 (a 41% reduction from 2019 and a 50% reduction from 2018). The top error type involved MDV labeling errors (wrong date and no expiration label errors.) by nursing staff in 2020, which accounted for 8/20 (40%) of errors. Following MDV labelling errors, the error type that peaked involved inappropriate management of patients on SubQ insulin (25%). In 2018, a multi-disciplinary task force was created and began meeting regularly to address the issues surrounding SubQ insulin management. Several optimizations were made in ccLink, along with education and increased awareness among staff. A

daily physician oversight process was also implemented in 2019, resulting in all cases of severe hypoglycemia being reviewed by a physician to ensure the appropriate steps were taken to prevent any further hypoglycemic events and to communicate any additional actions needed to the primary team. Education was also optimized and provided to medical staff via. E. Learning. In 2020, the hyperkalemia panel was optimized to ensure appropriate monitoring and prevention strategies are taken when insulin is administered to patients for treatment of hyperkalemia, especially for patients without diabetes. Going forward in 2021, standalone regular insulin IV will be removed and will only be available through order sets and panels. Pharmacy will continue to tabulate and interpret data and the Insulin taskforce will continue to review the data and optimizes processes as needed.

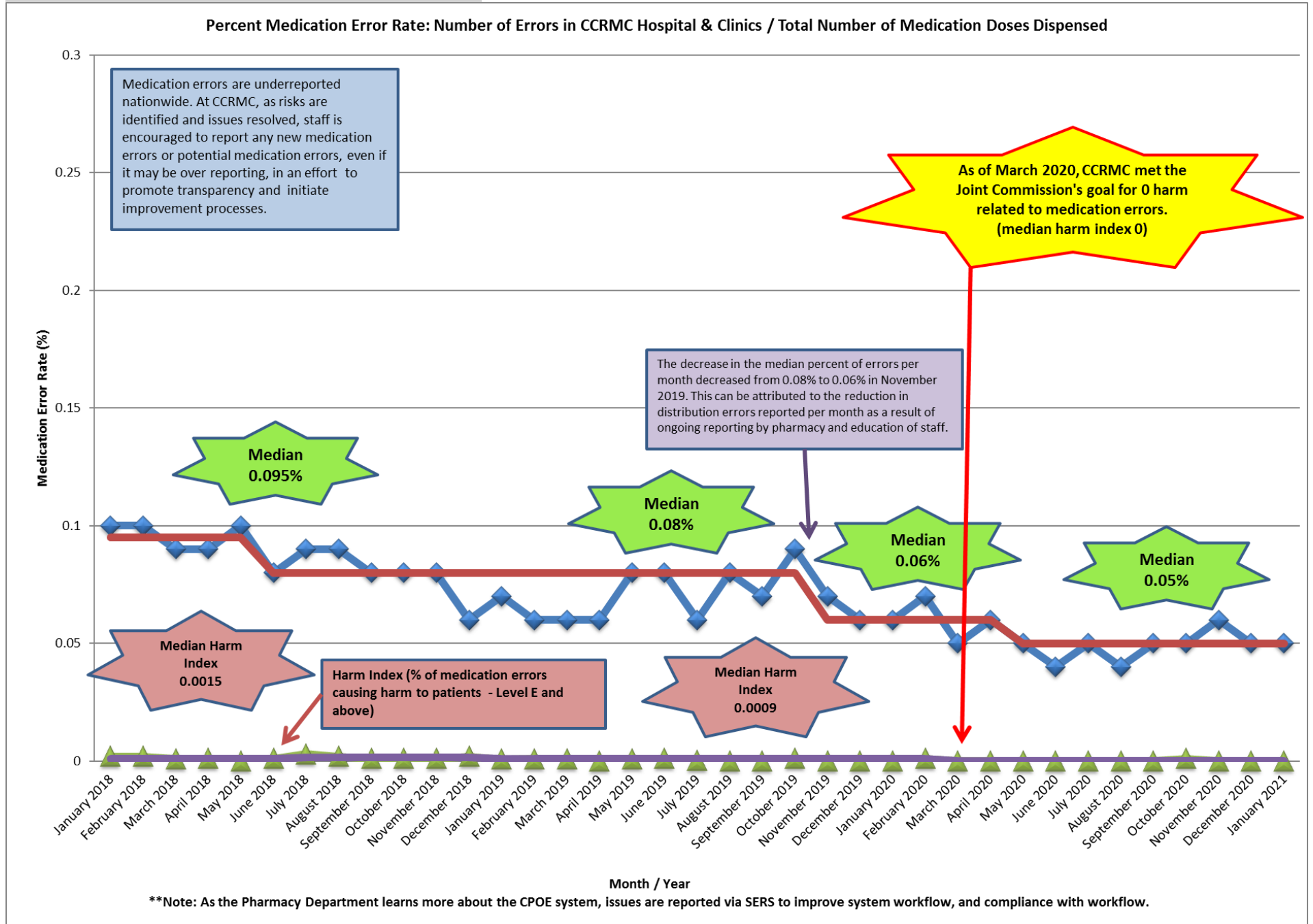
- Anticoagulant errors: There were 18 errors involving anticoagulants in 2020, vs. 24 errors in 2019 and 32 errors in 2018. There was a 25% reduction in errors from 2019 to 2020 and a 44% reduction from 2018 to 2020. The majority of errors since 2017 have involved heparin infusion errors (ex: rate not adjusted in a timely manner, wrong rate, etc.). In 2017, a multi-disciplinary task force was initiated to address the issues surrounding heparin infusion. In 2018, several improvement actions took place. In July 2019, a heparin calculator went live in cclink. While errors from 2017 and 2018 were resolved (heparin rate not being adjusted in a timely manner, lab timing errors by lab and nursing), the heparin calculator introduced a new set of errors involving the misuse and inconsistent use of the heparin calculator by nursing staff. The heparin calculator works well when used correctly. However, due to technological limitations, use of the heparin calculator is not mandatory in cclink which has led to inconsistent and incorrect use of the calculator(per the cclink IT team there will be an optimization in the future that will allow the calculator to be mandatory going forward). The heparin task force began meeting again towards the end of 2020 to update the heparin calculator tip sheet and to reinforce education for nursing staff.
 - Chemotherapeutic errors: There were 14 errors reported in 2020, vs. 8 in 2019, and 13 in 2018. In 2020, 43% (6 out of 14 errors) involved errors with the CADD pump (3 errors due to battery depletion, 2 malfunctions leading to full dose not being infused and 1 programming error leading to dose not being infused). In October 2020, new smart pumps (CADD Solis) were purchased to replace the old CADD pumps. Infusion clinic went live with these pumps in October 2020 and no new CADD Pump errors were reported from October – December 2020. Pharmacy will continue to monitor for CADD pump errors.
 - Fentanyl patch errors: There was 1 fentanyl patch error reported in 2020, vs. 0 in 2019 and 3 errors in 2018. The one error in 2020 was a near-miss error due of fentanyl patch documentation by the nurse. Several efforts are in place to ensure safe use of fentanyl patch at CCRMC, including a thorough initial screening for appropriateness by the clinical pharmacy department along with a daily clinical monitor and patient education. Additionally, in 2020 pharmacy made the fentanyl patch require dual pharmacist independent verification as an extra step to ensure safe use of fentanyl patch. Going forward in 2021, staff will continue to be vigilant to ensure safe and appropriate use of fentanyl patch at CCRMC.
 - PCA errors: There were 3 errors involving PCAs in 2020, compared to 6 errors in 2019 and 7 errors in 2018. There was a 50% reduction in errors since 2019 and a 57% decrease since 2018. None of the errors resulted in patient harm (Level E or higher). Education was provided to staff involved in all cases.
- **MERP Element Trends for 2020: In 2020, all elements had medians that have been stable or have decreased.**
Below are the elements that had a decrease in median:
 - **Prescribing: The median number of prescribing errors per month decreased from 7 errors per month to 2 errors per month starting in December 2019.** This is as a result of the improvements seen in reducing the number of overrides (90% reduction since 2018), reducing inappropriate insulin management (83% reduction since 2018), via order set changes, order panels and education, and reducing duplications in therapy (69% reduction since 2019) via order set changes and order panel creation. In 2020, the error type that peaked involved medications prescribed and given too soon after a dose had already been given (4 errors reported). Going forward in 2021, the pharmacy department will also work with cclink IT to investigate implementing technological tools to help prevent medications being given too soon after a dose has already been given.
 - **Distribution: There was a decrease in median from 34.5 to 20 errors per month starting in January 2020.** This can be in large part attributed to the 60% reduction in controlled substance discrepancies since 2018, along with the 48% reductions since 2019 in issues surrounding Omnicell and MDV expiration labelling errors by nursing.
 - **Use: There was a decrease in the median errors per month from 34.5 to 21 starting in January 2020.** There was an overall 60% decrease in controlled substance discrepancies since 2018.
 - **Administration: Looking back in 2020, there was a decrease in median from 30.5 errors per month to 18.5 errors in November 2019, and another decrease to 12 errors per month in March 2020.** The top error types that peaked were override errors and missed dose errors. While these errors were the top error types, they had overall reductions since 2018 by 63% for overrides and 47% for missed doses due to ongoing efforts by the organization. Going forward in 2021, pharmacy will continue to monitor overrides for any trends and work with NPMs to resolve any issues. In regards to missed doses, the majority were related to the medication line being clamped. There are several processes in place from previous years that have contributed to the downtrend of clamp errors.
 - **Monitoring: Looking back in 2020, there was a decrease in the median number of errors per month from 2 to 0 starting in April 2020.** There was a 40% reduction in vancomycin trough errors, a 62% reduction in heparin infusion errors and an

86% reduction in insulin errors since 2018. In order to further reduce the vancomycin trough errors, going forward in 2021, pharmacy will work with ccLink IT to optimize the communication of vancomycin trough errors to ensure that they don't get missed. While heparin infusion errors have decreased, there has been an increase in errors involving the heparin calculator since it went live in July 2019 (calculator misuse or inconsistent use). The multidisciplinary heparin taskforce will begin to meet again in 2021 to address these errors, emphasize education and work with ccLink IT to optimize the heparin calculator. The decrease in insulin related errors can be attributed to the several actions taken by the multidisciplinary insulin task force since its inception in 2018.

- **Education:** Looking back in 2020, the median number of errors per month decreased from 7.5 to 3.5 starting in March 2020. The majority of education errors are also classified under the other elements that apply to the error and are further discussed and trended under those elements. There was a 33% decrease in delays in therapy and a 60% decrease in failure to monitor due to education. There was an increase in missed doses that were classified under education, but overall there has been a 47% decrease in the specific event type of missed doses. Going forward in 2021, pharmacy will work with nursing leadership and the Professional Development Department to promote ongoing education to prevent missed doses.
- **RXe-Source Pharmacy (After hours pharmacy) medication errors trend:**
 - In 2020, RXe-Source pharmacy contributed to 11 errors vs. 18 errors in 2019 and 14 errors in 2018. Education was provided to the pharmacists involved in all cases per the RXe-Source director.
 - 5 of the errors in 2020 (45%) involved antibiotics (3 wrong formulation [IV push or IV syringe instead of IVPB] and 2 wrong timing of order).
 - There were 6 level B errors, 3 Level C errors, 1 Level A error and 1 level D error. Thus 7/11 (63%) were near misses that did not reach the patient and none of the errors contributed to patient harm.

Conclusion: The MERP program has been effective in detecting medication errors and in developing corrective actions taken for the past year. The annual SERS review was completed in February 2021.

APPENDIX A: PERCENT MEDICATION ERROR RATE GRAPH



APPENDIX B: NEAR MISS MEDICATION ERROR GRAPH & SEVERITY GRAPH

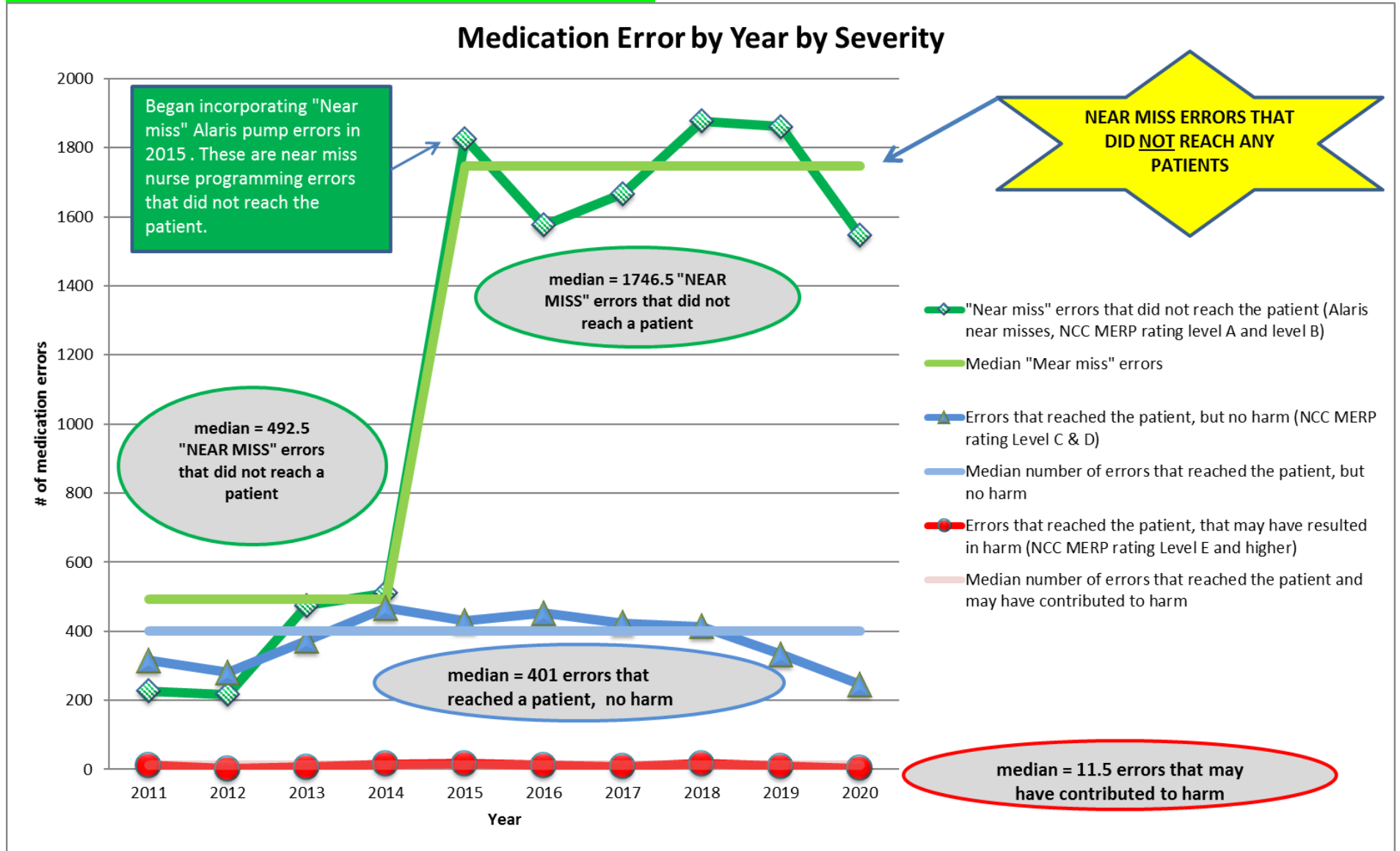
Near Misses that did NOT reach a Patient (Includes Alaris Pump and Medication Error Near Misses)



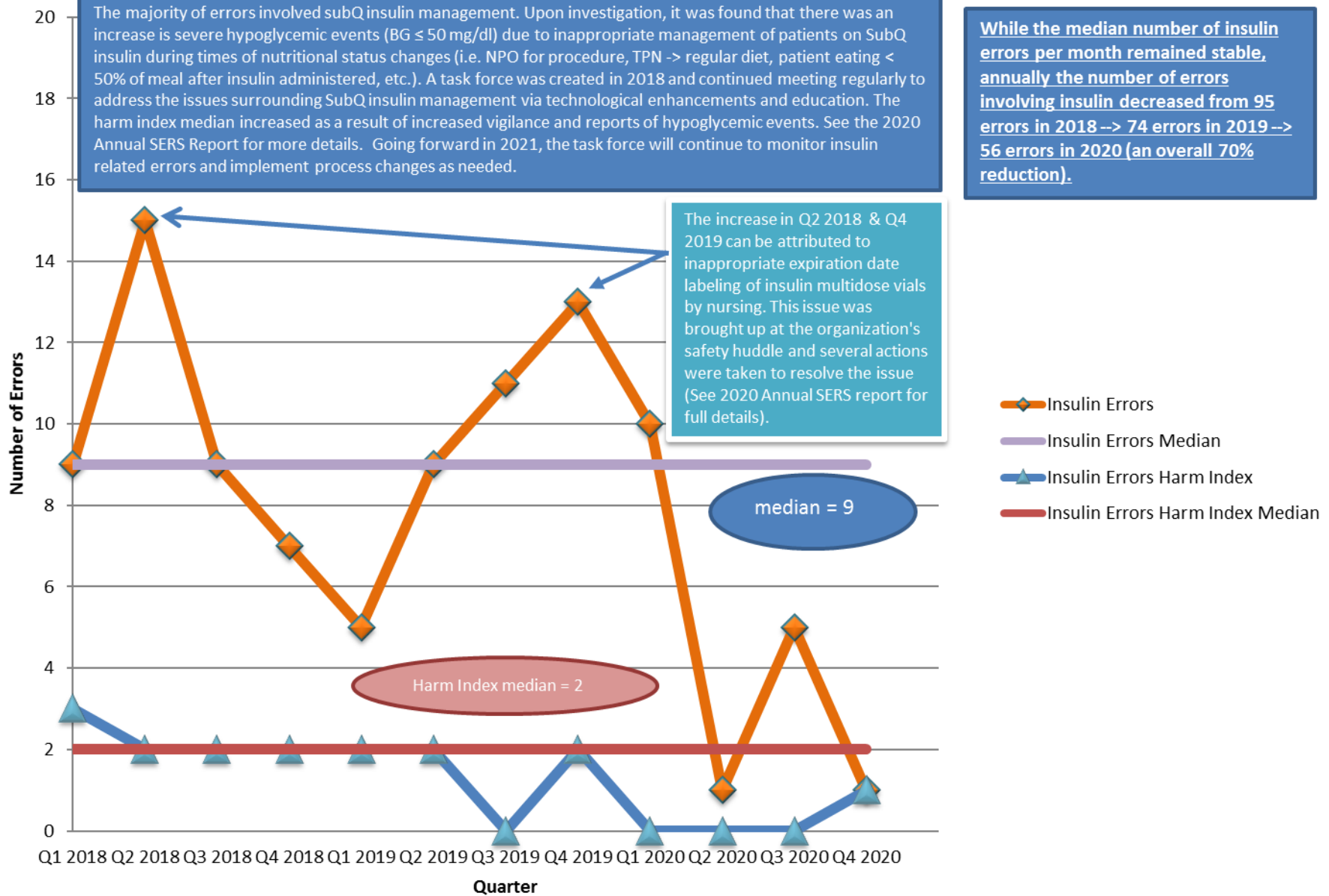
Efforts are being made to increase reporting of near miss events. Pharmacy dept. uses this as a strategy to apply improvement strategies to all MERP elements.

****See Alaris quarterly SBAR for details of Alaris Pump Near Misses (categorized as low risk, medium risk and high risk) and see monthly medication error report for Medication Error Near Misses**

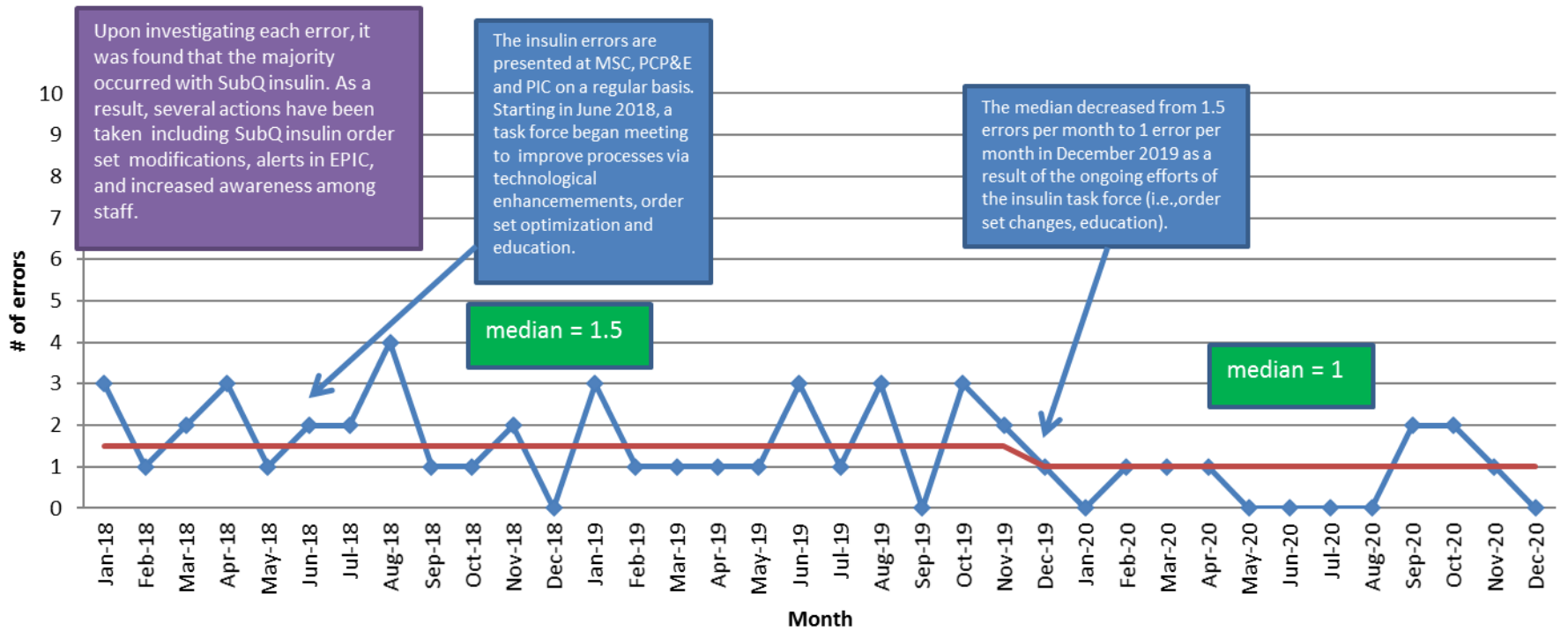
APPENDIX B: NEAR MISS MEDICATION ERROR GRAPH & SEVERITY GRAPH



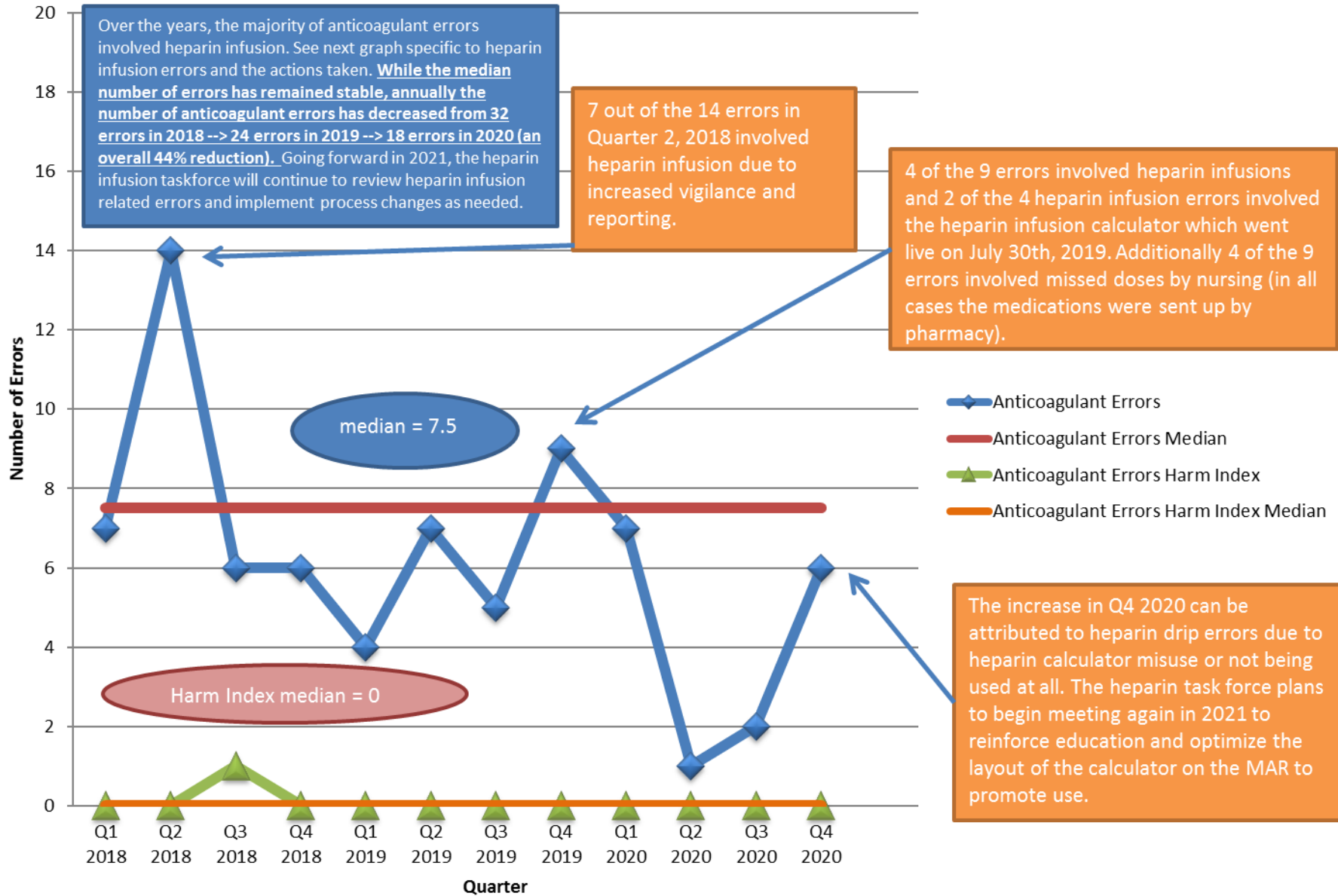
Number of Insulin (IV and SubQ) Medication Errors by Quarter



Number of Medication Errors Involving Insulin (excluding labeling errors)



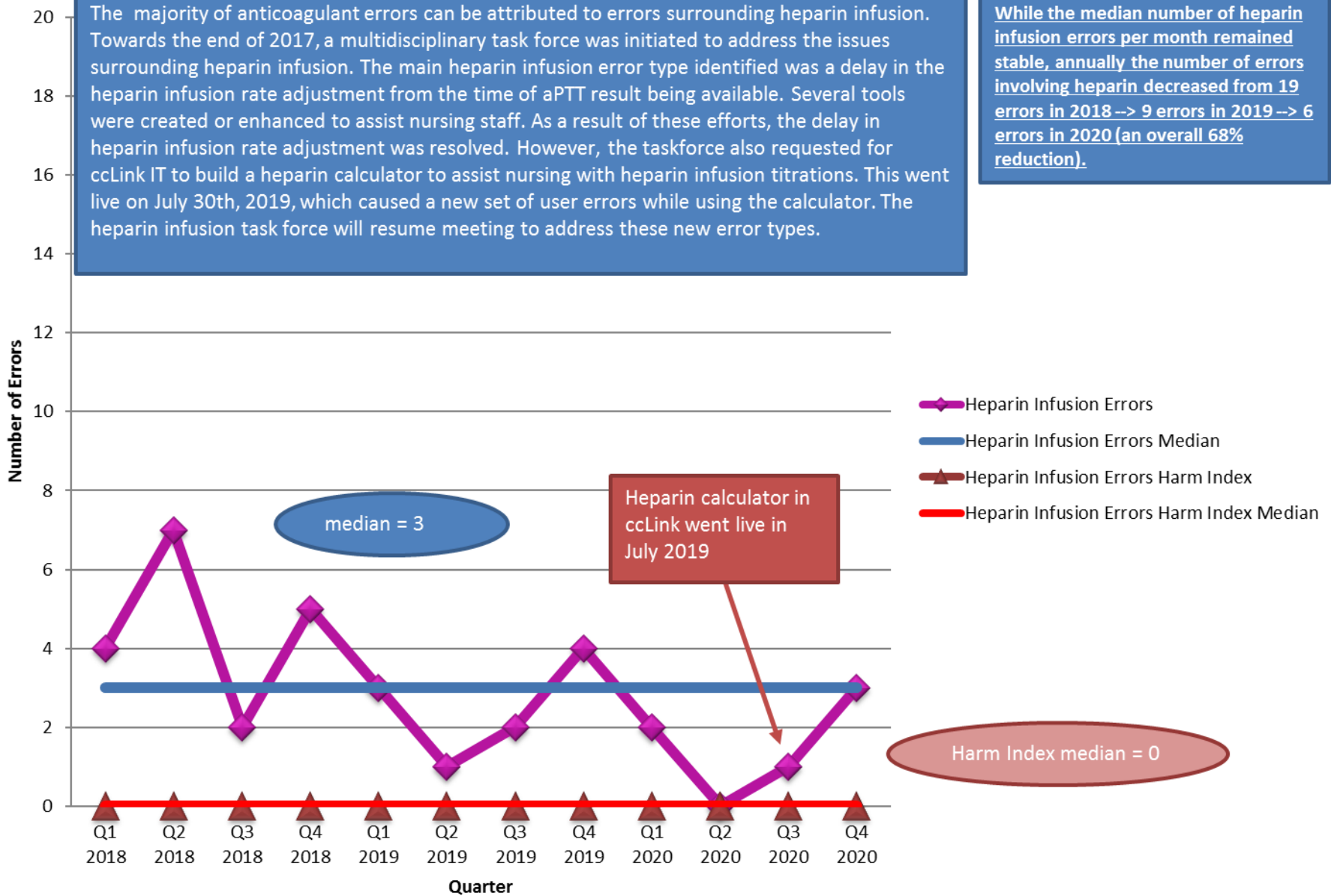
Number of All Anticoagulant Medication Errors by Quarter



Heparin Infusion Errors by Quarter

The majority of anticoagulant errors can be attributed to errors surrounding heparin infusion. Towards the end of 2017, a multidisciplinary task force was initiated to address the issues surrounding heparin infusion. The main heparin infusion error type identified was a delay in the heparin infusion rate adjustment from the time of aPTT result being available. Several tools were created or enhanced to assist nursing staff. As a result of these efforts, the delay in heparin infusion rate adjustment was resolved. However, the taskforce also requested for ccLink IT to build a heparin calculator to assist nursing with heparin infusion titrations. This went live on July 30th, 2019, which caused a new set of user errors while using the calculator. The heparin infusion task force will resume meeting to address these new error types.

While the median number of heparin infusion errors per month remained stable, annually the number of errors involving heparin decreased from 19 errors in 2018 --> 9 errors in 2019 --> 6 errors in 2020 (an overall 68% reduction).



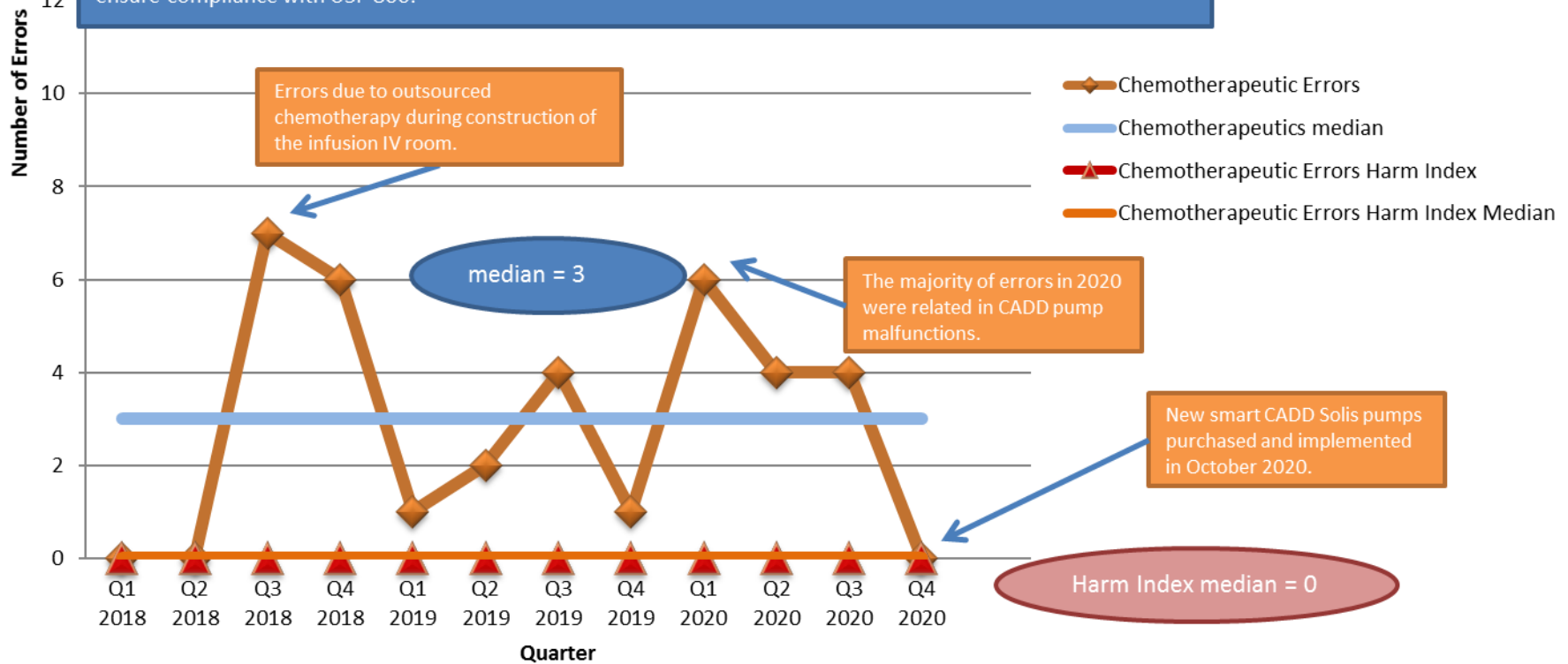
APPENDIX C: HIGH ALERT MEDICATION ERROR GRAPHS

Number of Chemotherapeutic Medication Errors by Quarter

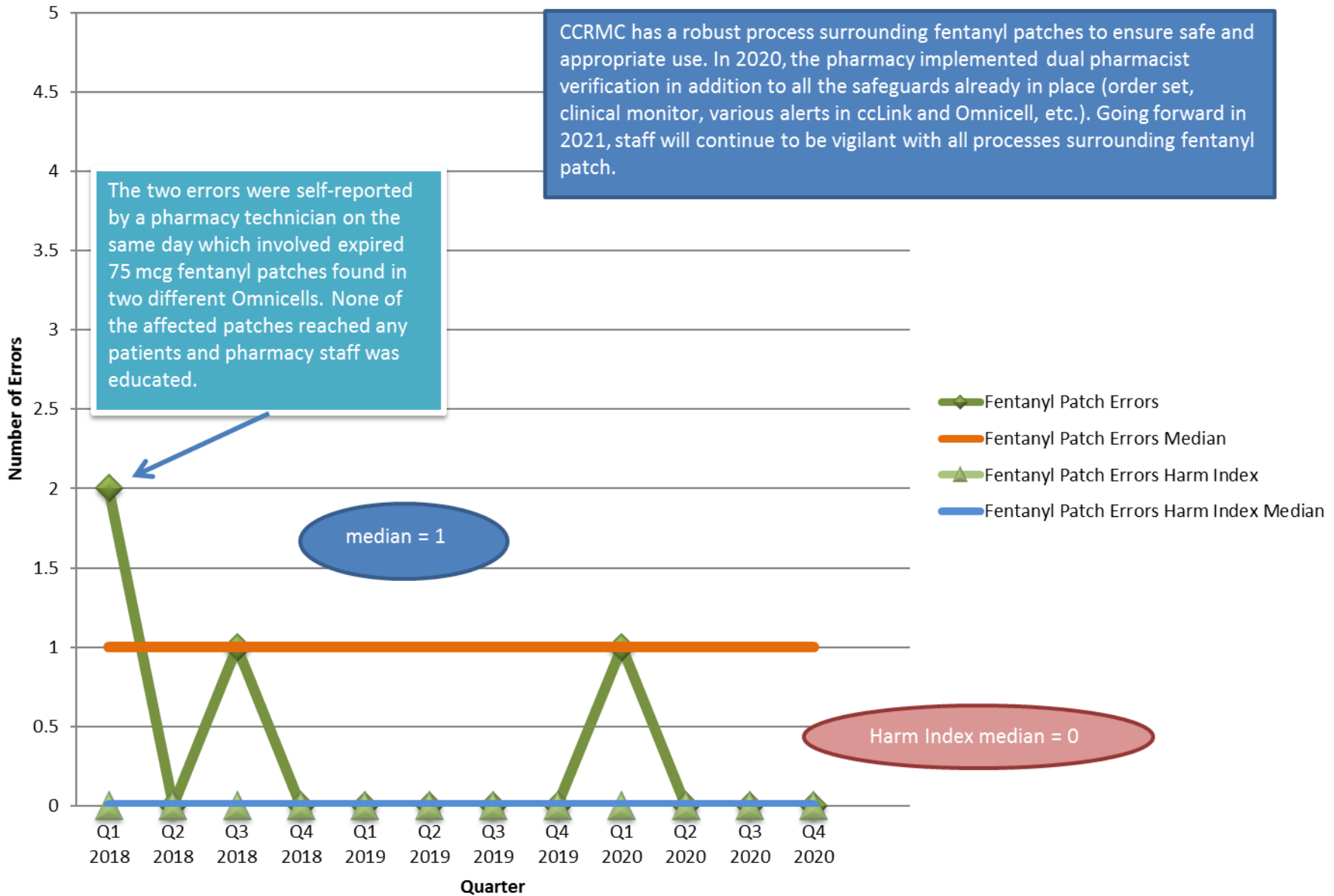
From May 2018 - June 2019, the infusion pharmacy was closed for construction to become compliant with USP 800 requirements. In the interim to allow the infusion clinic to remain open, CCRMC purchased patient specific chemotherapy from an outsourced compounding pharmacy, which created a new set of errors while the chemotherapy was being outsourced (i.e. chemotherapy bag damage during transportation, order communication errors). In 2019, the pharmacy department took several actions in preparation to comply with the USP 800 standards. Pertinent staff was trained on using the closed system transfer device (Equashield®), the CCRMC Assessment of Risk for Hazardous Drugs table was completed, distributed and made available as an Isite link in ccLink, the chemotherapy spill kit contents were optimized to be compliant with USP 800, appropriate staff were mask fit tested for a USP 800 compliant mask, and MAR icons were created to assist nurses in appropriate administration and disposal procedures for medications.

In 2020, the majority of chemotherapy related errors were due to CADD pump malfunctions. New Smart CADD Solis pumps were purchased and went live in October 2020 in infusion clinic.

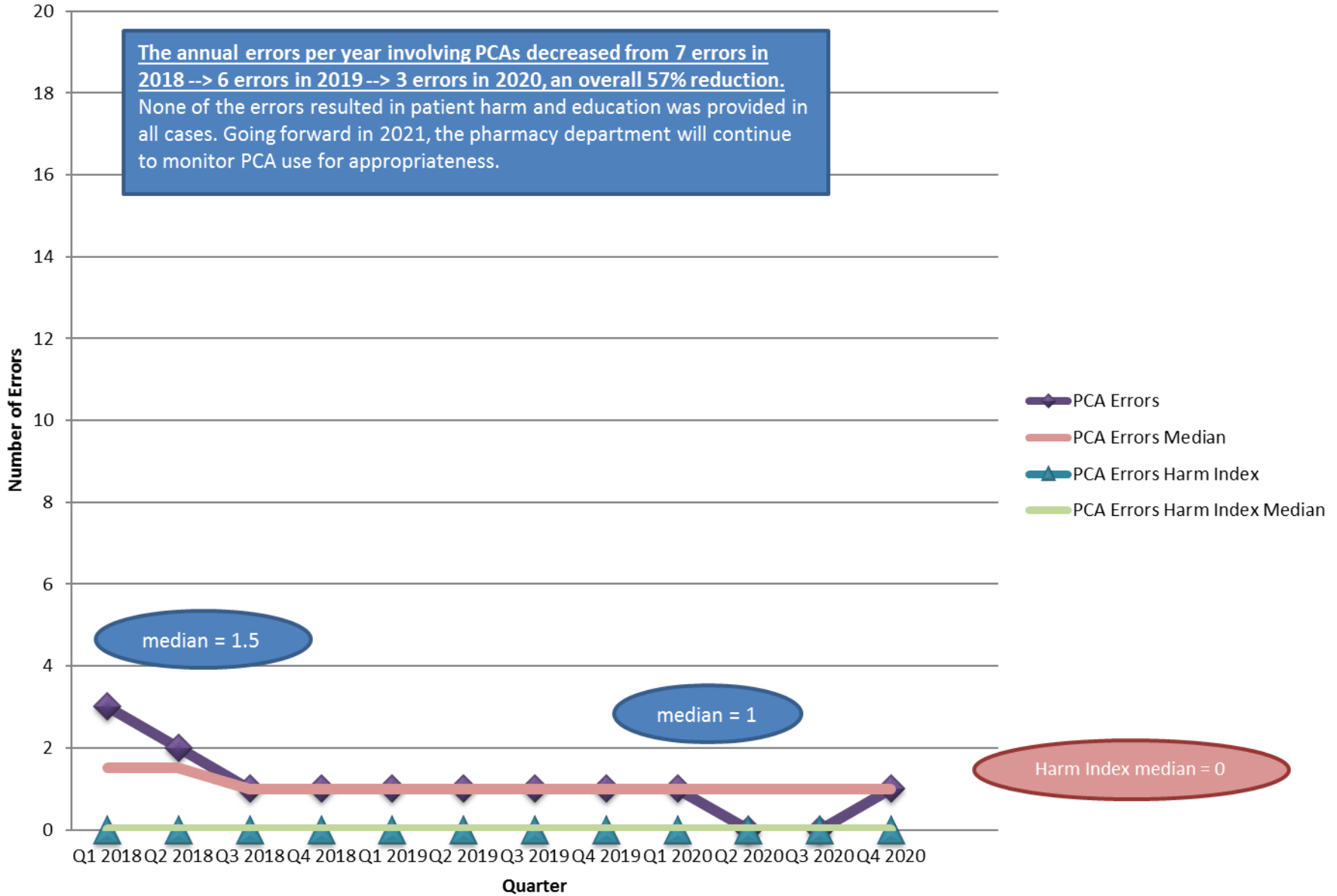
Going forward in 2021, pharmacy will continue to monitor for chemotherapy related errors and continue to ensure compliance with USP 800.



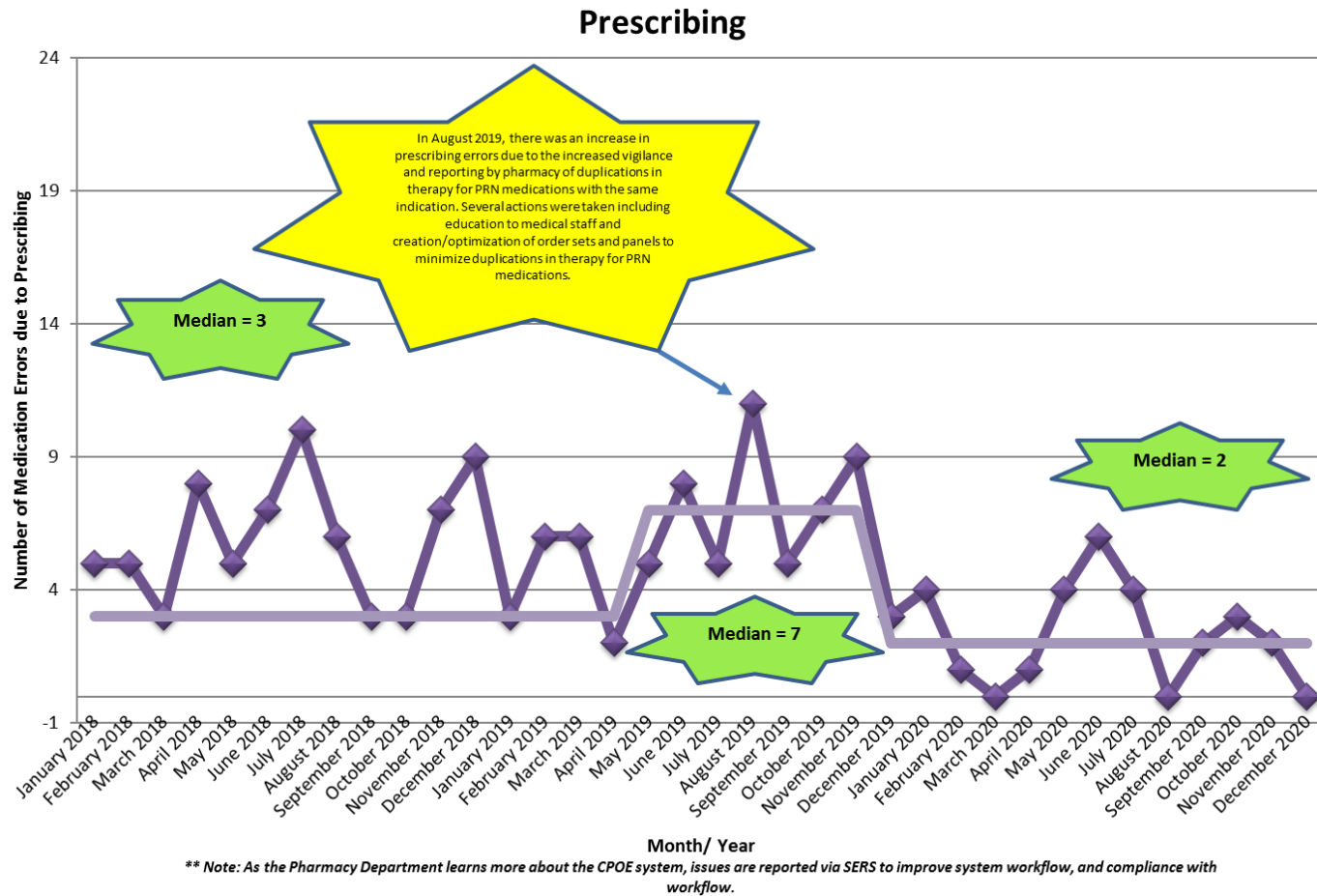
Number of Fentanyl Patch Medication Errors by Quarter



PCA Medication Errors by Quarter



APPENDIX D: MERP ELEMENT GRAPHS



Prescribing by Year:
2018: 73 errors (0.007% error rate)
2019: 70 errors (0.006% error rate)
2020: 26 errors (0.003% error rate)

Looking back since 2018, CCRMC has reduced errors involving overrides, inappropriate insulin management and duplications in therapy.

Overrides:
 21 in 2018 → 15 in 2019 → 2 in 2020, an overall 90% reduction. This is as a result of nursing leaderships efforts to minimize overrides along with pharmacy’s fast turn around time for order verification.

Inappropriate insulin management:
 6 in 2018 → 5 in 2019 → 1 in 2020, an overall 83% reduction. See the High Alert Section of this SBAR and the Insulin SBAR for more details on all actions taken.

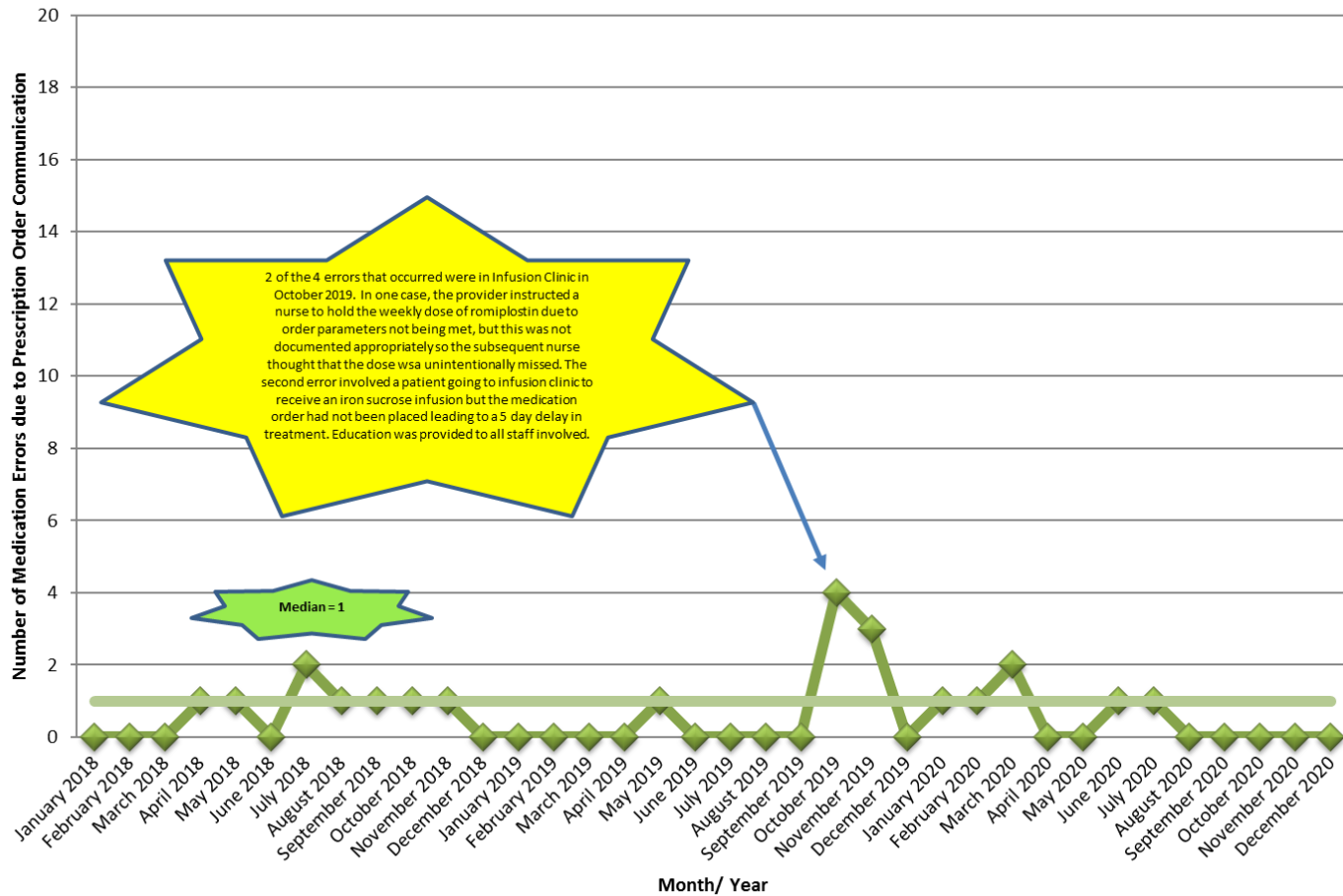
Duplications in therapy:
 3 in 2018 → 13 in 2019 → 4 in 2020, a 69% reduction from 2019. In 2019 several efforts were made to minimize duplicate PRN medications (order set changes, order panels created, etc.). The pharmacy’s increased vigilance led to an increase in reporting of medications with duplicate PRN reasons.

Looking back in 2020, the median number of prescribing errors per month decreased from 7 errors per month to 2 errors per month starting in December 2019. This is as a result of the improvements seen in reducing the number of overrides (90% reduction since 2018), reducing inappropriate insulin management (83% reduction since 2018), via order set changes, order panels and education and reducing duplications in therapy (69% reduction since 2019) via order set changes and order panel creation. In 2020, the error type that peaked involved medications prescribed and given too soon after a dose had already been given (4 errors reported).

Going forward in 2021, the focus will be to continue monitoring the areas above to ensure continued optimization and improvement. Going forward in 2021, the pharmacy department will also work with ccLink IT to investigate implementing technological tools to help prevent medications being given too soon after a dose has already been given.

APPENDIX D: MERP ELEMENT GRAPHS

Prescription Order Communication



** Note: As the Pharmacy Department learns more about the CPOE system, issues are reported via SERS to improve system workflow, and compliance with workflow.

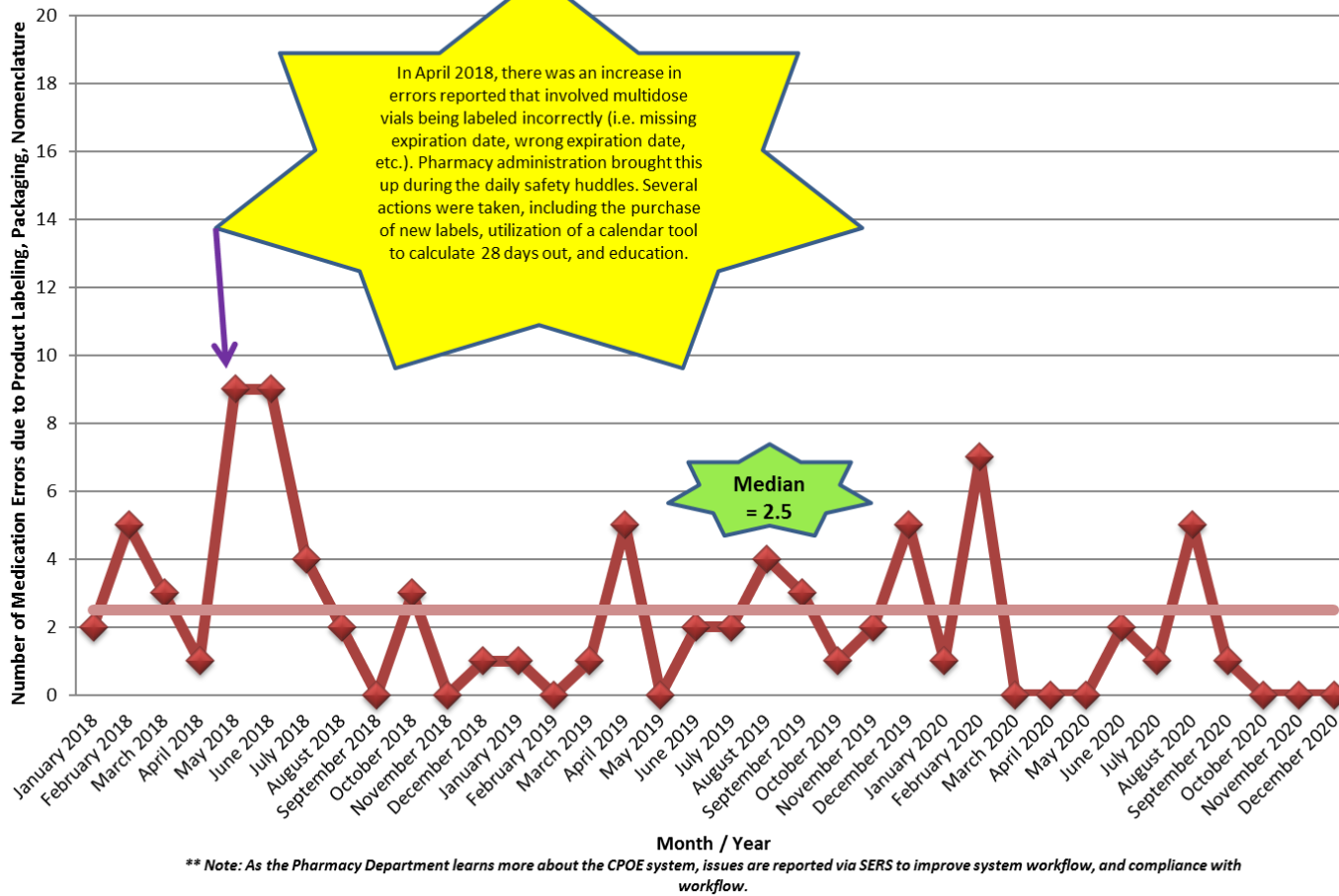
Prescription Order Communication by Year:

2018: 8 errors (0.0007% error rate)
2019: 8 errors (0.0006% error rate)
2020: 6 errors (0.0006% error rate)
 Looking back since 2018, the percent error rate has been consistently low. The only trend noted was missed doses as a result of a communication error.
Missed doses due as a result of a communication error:
 2 in 2018 → 3 in 2019 → 2 in 2020.

Looking back in 2020, there was no trend in errors, aside from the 2 involving missed doses. Education was provided in both cases. Going forward in 2021, pharmacy will continue to monitor prescription order communication errors for any trends and act accordingly.

APPENDIX D: MERP ELEMENT GRAPHS

Product Labeling, Packaging, and Nomenclature



Product Labeling, Packaging and Nomenclature:

2018: 39 errors (0.004% error rate)

2019: 26 errors (0.002% error rate)

2020: 17 errors (0.002% error rate)

Looking back since 2018, the percent error rate has been consistently low. The trends noted are as follows:

MDV expiration labeling errors by nursing:

19 in 2018 → 16 in 2019 → 11 in 2020, an overall 42% reduction. This is as a result of several optimizations made (providing list of Omnicell MDVs on each nursing unit, nursing cycle counts each shift, 28-day calendar tool provided by pharmacy to nursing and nursing education.

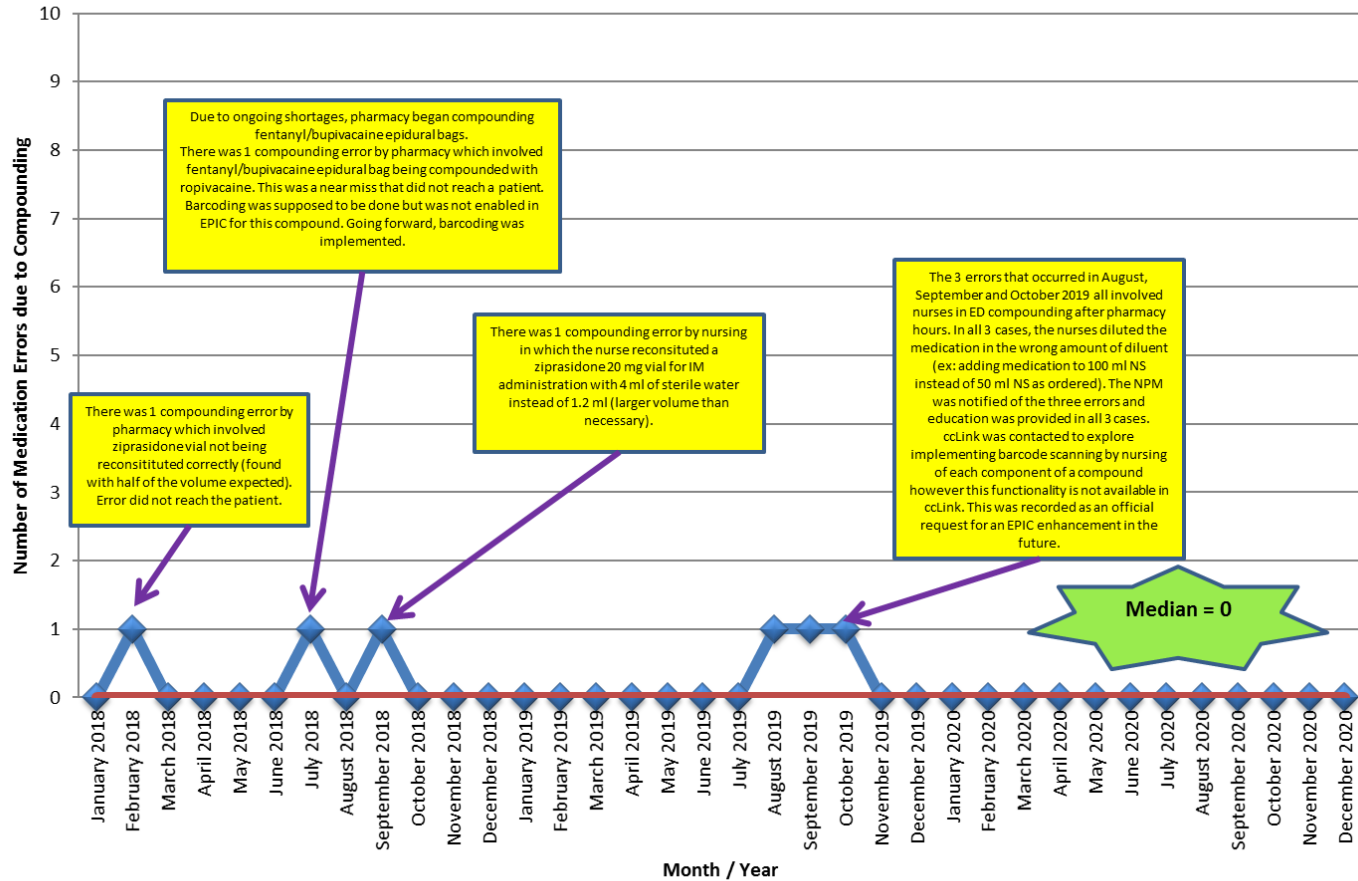
Expiration date labeling errors by pharmacy:

7 in 2018 → 3 in 2019 → 1 in 2020, an overall 86% reduction. These were all near miss errors that did not reach any patients.

Looking back in 2020, there was a 42% decline in MDV expiration labeling errors by nursing compared to 2018. There was also an 86% decline in expiration date labeling errors by pharmacy compared to 2018. Going forward in 2021, pharmacy will continue to monitor for and report these types of errors. Pharmacy will continue to reinforce cycle counts of the MDVs by nursing and will continue to encourage all pharmacy staff to continue to be vigilant and report any labeling errors.

APPENDIX D: MERP ELEMENT GRAPHS

Compounding



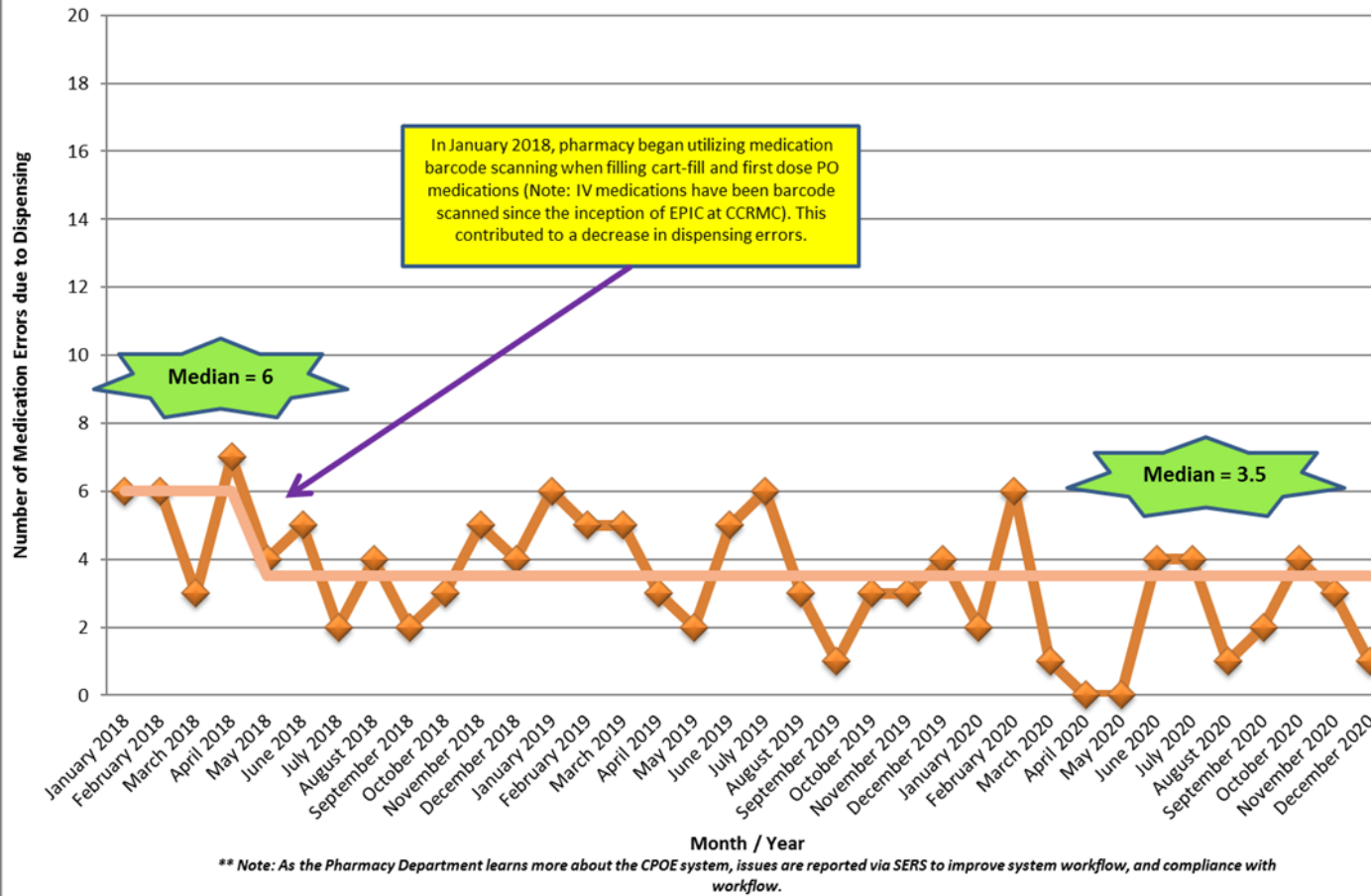
**** Note:** As the Pharmacy Department learns more about the CPOE system, issues are reported via SERS to improve system workflow, and compliance with workflow.

Compounding:
2018: 3 errors (0.0003% error rate)
2019: 3 errors (0.0002% error rate)
2020: 0 errors (0% error rate)
 In 2018, there were 2 errors by pharmacy but both were caught before they reached the patient.
 In 2019, there were 3 errors in which nurses compounded medications after pharmacy hours and diluted with the wrong volume of fluid. All 3 errors happened in the ED and pharmacy reached out to the ED NPM to educate staff.
 In 2020, there were no compounding errors reported.

Looking back in 2020, construction was started to change the inpatient pharmacy compounding area from a segregated compounding area to an ante/buffer clean room. The construction is planned to be completed in 2021. Going forward, pharmacy will continue to monitor for compliance with USP 797 and USP 800 standards via pharmacy audits.

APPENDIX D: MERP ELEMENT GRAPHS

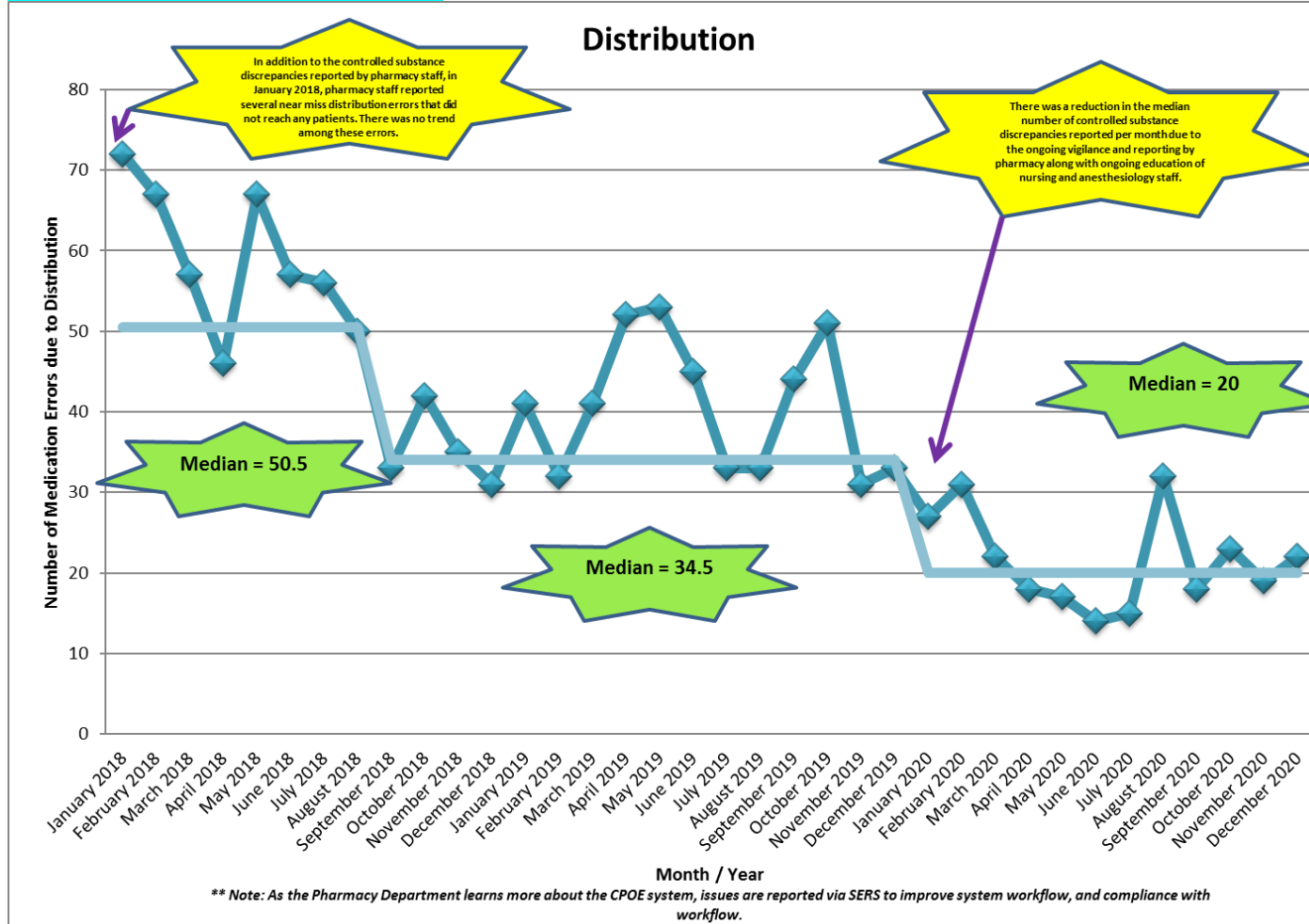
Dispensing



Dispensing:
2018: 52 errors (0.005% error rate)
2019: 46 errors (0.004% error rate)
2020: 28 errors (0.003% error rate)
 Looking back since 2018, the percent error rate has been consistently low. The trends noted are as follows:
Wrong dose/strength errors:
 11 in 2018 → 13 in 2019 → 3 in 2020. The reduction can be attributed in part due to improvement in compliance with barcode scanning in the pharmacy department.
Dispensing delays:
 8 in 2018 → 3 in 2019 → 2 in 2020

Looking back in 2020, there was a 73% reduction since 2018 in wrong dose/strength of medications being dispensed. This is as a result of pharmacy previously optimizing barcode scanning in the pharmacy department in 2018, followed by improved compliance with barcode scanning. In 2020, one new error type that peaked involved medications prescribed and verified, then given too soon after a dose had already been given (3 errors). Going forward in 2021, the pharmacy department will also work with cLink IT to investigate implementing technological tools to help prevent medications being given too soon after a dose has already been given.

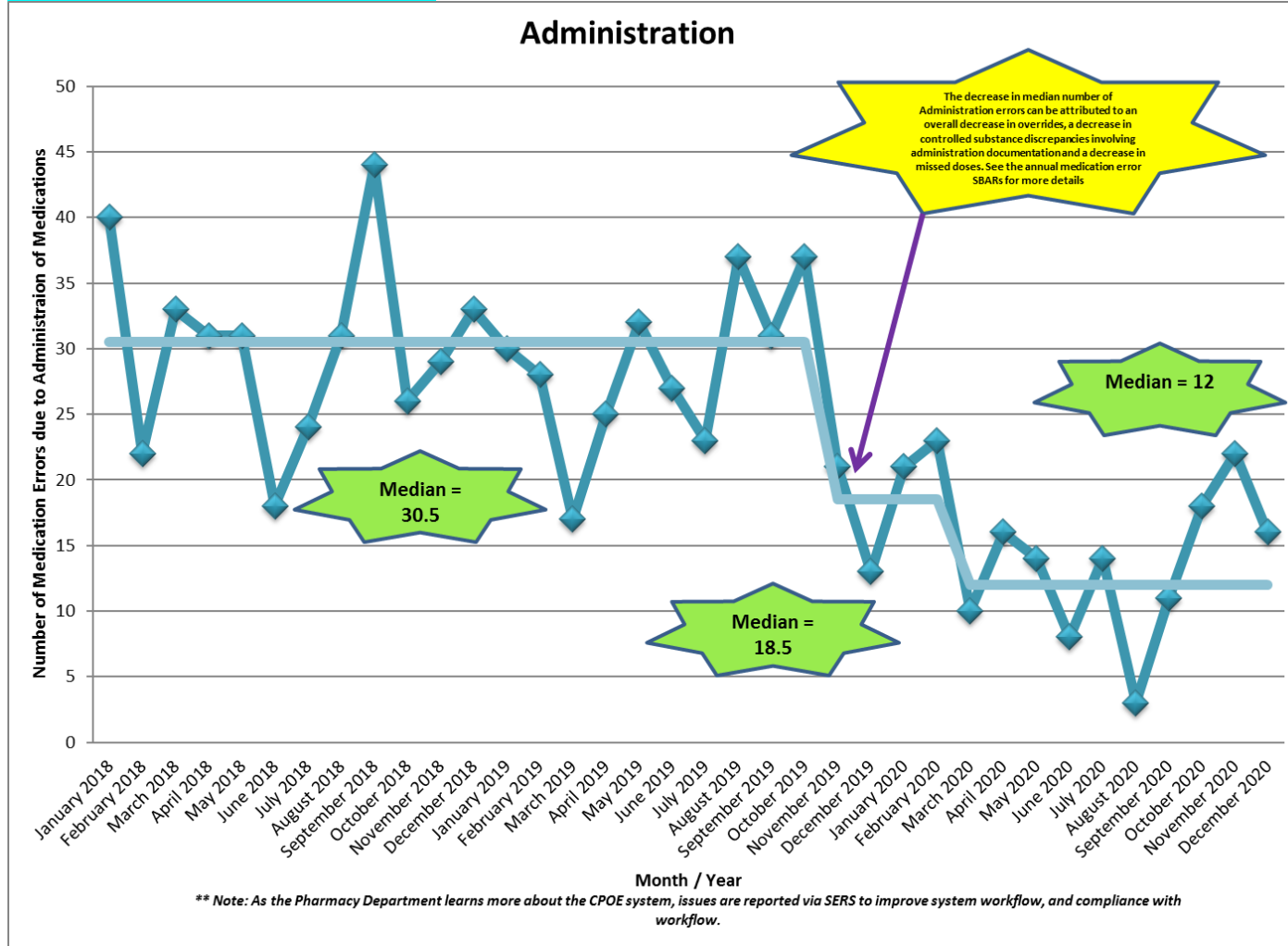
APPENDIX D: MERP ELEMENT GRAPHS



Distribution:
2018: 615 errors (0.056% error rate)
2019: 490 errors (0.039% error rate)
2020: 257 errors (0.026% error rate)
 Looking back, there was a decrease in median from 34.5 to 20 errors per month starting January 2020. In 2020, a new task was added to the task list for OR and L&D OR for nurses to ensure that anesthesiologists complete post case dose reconciliations prior to closing their cases.
Controlled substance discrepancies:
 486 in 2018 → 386 in 2019 → 193 in 2020, an overall 60% reduction
Issues surrounding Omnicell:
 25 in 2018 → 21 in 2019 → 13 in 2020, an overall 48% reduction which can be attributed to ongoing education of pharmacy staff to ensure accurate filling of Omnicell bins. Note that there is a technological limitation of Omnicell that only allows barcode scanning of the first dose being added to the Omnicell, instead of each dose.
MDV expiration labeling errors by nursing:
 21 in 2018 → 19 in 2019 → 11 in 2020, an overall 48% reduction due to the ongoing efforts by pharmacy and nursing to reduce these errors (education, MDV cycle counts by nursing, 28 day calendar tool)

Looking back in 2020, there was a decrease in median from 34.5 to 20 errors per month starting in January 2020. This can be in large part attributed to the 60% reduction in controlled substance discrepancies since 2018, along with the 48% reductions since 2018 in issues surrounding Omnicell and MDV expiration labelling errors by nursing. The reduction in controlled substance discrepancies is due to the ongoing monitoring and reporting of controlled substance discrepancies on a daily basis by pharmacy along with a new task being added to the task list for OR and L&D OR in January 2020 for nurses to ensure that the anesthesiologists completes post case dose reconciliation prior to closing the case. In 2020, CCRMC was recognized in the Cal Hospital Opioid Care Honor Roll as one of the 25 hospitals ranked in the “superior performance.” Going forward in 2021, pharmacy will continue to monitor and report controlled substance discrepancies. The multidisciplinary Opioid Stewardship Committee will continue to meet on a quarterly note to review guidelines and regulations, and optimize pain management strategies at CCRMC.

APPENDIX D: MERP ELEMENT GRAPHS



Administration:
2018: 352 errors (0.032% error rate)
2019: 299 errors (0.023% error rate)
2020: 161 errors (0.017% error rate)
 Looking back in 2020, there was a decrease in median from 30.5 errors per month to 18.5 errors per month starting in October 2019, down to 12 errors per month starting February 2020.

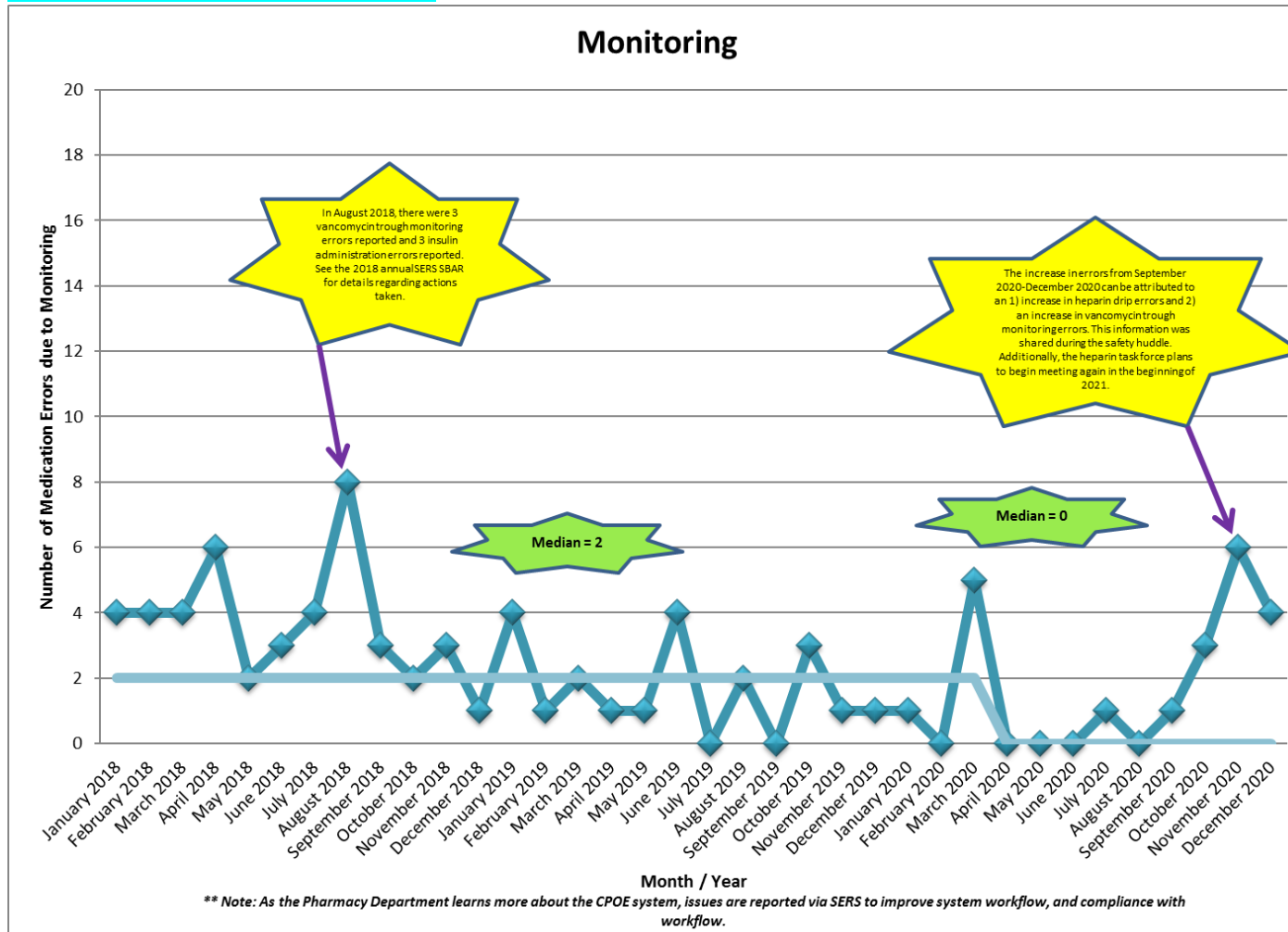
Overrides:
 87 in 2018 → 72 in 2019 → 32 in 2020, an overall 63% reduction.

Missed doses:
 47 in 2018 → 51 in 2019 → 25 in 2020, an overall 47% reduction.

Missed doses due to clamp errors:
 14 in 2018 → 14 in 2019 → 8 in 2020

Looking back in 2020, there was a decrease in median from 30.5 errors per month to 18.5 errors in November 2019, and another decrease to 12 errors per month in March 2020. The top error types that peaked were override errors and missed dose errors. While these errors were the top error types, they had overall reductions since 2018 by 63% for overrides and 47% for missed doses due to ongoing efforts by the organization. Going forward in 2021, pharmacy will continue to monitor overrides for any trends and work with NPMs to resolve any issues. See the annual overrides SBAR for more details. In regards to missed doses, the majority were related to the medication line being clamped. There are several processes in place from previous years that have contributed to the downtrend of clamp errors and maintaining a low number of errors (i.e. audits by pharmacy and nursing, education by the professional development department alert in Alaris pump, etc.). The Medication Safety Committee will continue to monitor and trend these types of errors.

APPENDIX D: MERP ELEMENT GRAPHS



Monitoring:
2018: 44 errors (0.004% error rate)
2019: 23 errors (0.001% error rate)
2020: 24 errors (0.002 % error rate)
 Looking back in 2020, the median number of errors decreased from 2 per month to 0 per month starting in April 2020. Trends noted are as follows.
Vancomycin trough errors:
 15 in 2018 → 9 in 2019 → 9 in 2020, an overall 40% reduction
Heparin infusion errors:
 13 in 2018 → 10 in 2019 → 5 in 2020, an overall 62% reduction
Insulin errors:
 7 in 2018 → 1 in 2019 → 1 in 2020, an overall 86% reduction.

Looking back in 2020, there was a decrease in the median number of errors per month from 2 to 0 starting in April 2020. There was a 40% reduction in vancomycin trough errors, a 62% reduction in heparin infusion errors and an 86% reduction in insulin errors since 2018.

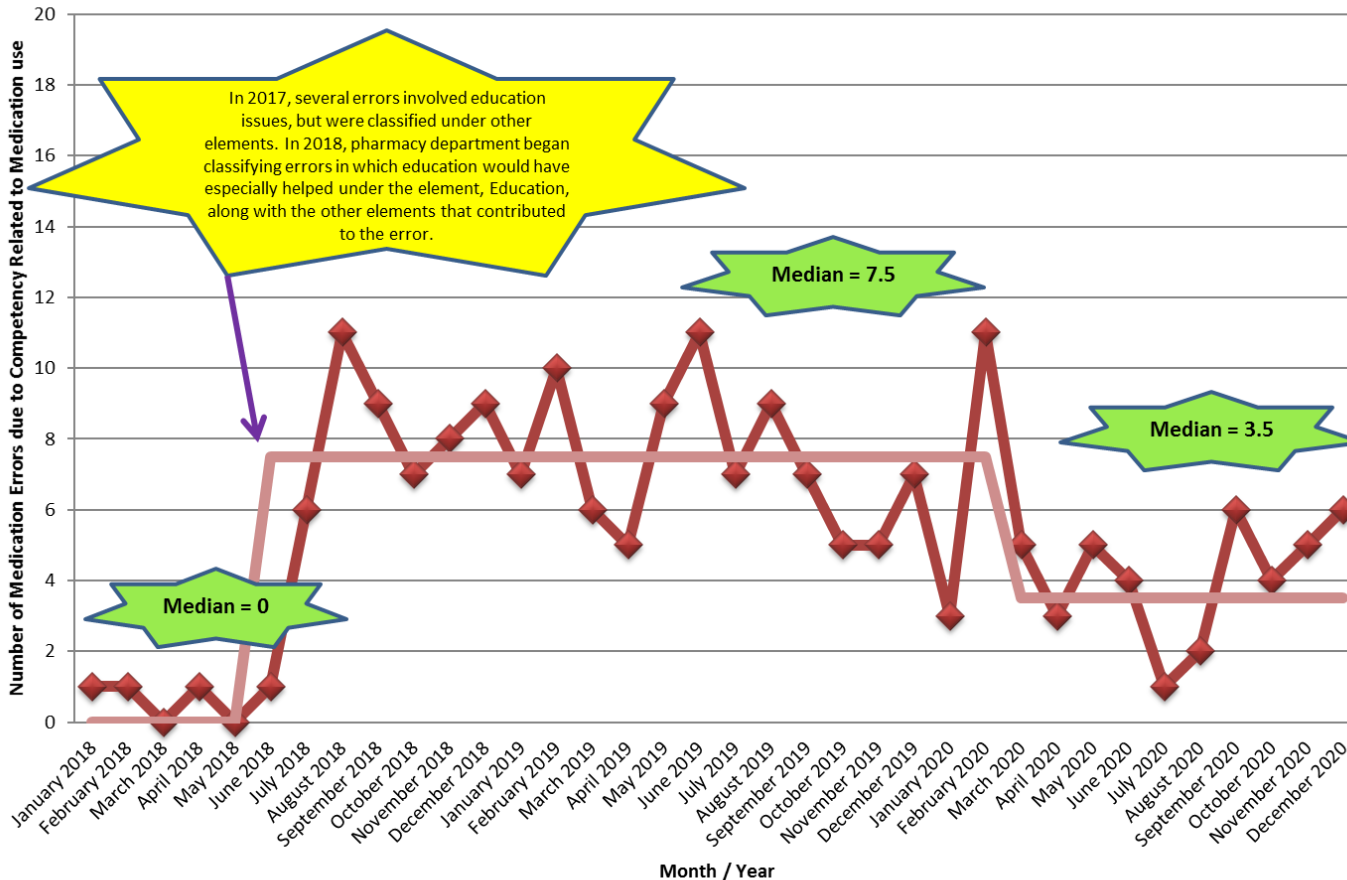
In order to further reduce the vancomycin trough errors, going forward in 2021, pharmacy will work with ccLink IT to optimize the communication of vancomycin trough errors to ensure that they don't get missed.

While heparin infusion errors have decreased, there has been an increase in errors involving the heparin calculator since it went live in July 2019 (calculator misuse or inconsistent use). The multidisciplinary heparin taskforce will begin to meet again in 2021 to address these errors, emphasize education and work with ccLink IT to optimize the heparin calculator. As a technological limitation of ccLink, it is not mandatory to use the heparin calculator. Per ccLink IT, in 2021 there is an expected optimization that will allow for making the calculator mandatory going forward.

The decrease in insulin related errors can be attributed to the several actions taken by the multidisciplinary insulin task force since its inception in 2018. See the "high alert" section of this SBAR and the Insulin SBAR for more details.

APPENDIX D: MERP ELEMENT GRAPHS

Education



**** Note:** As the Pharmacy Department learns more about the CPOE system, issues are reported via SERS to improve system workflow, and compliance with workflow.

Education:

**Note: historically several errors have involved education issues but were classified under other elements. In June 2018, the pharmacy department began classifying errors in which education would have especially helped under the element Education, along with the other elements that contributed to the error.*

2018: 55 errors (0.005% error rate)

2019: 87 errors (0.007% error rate)

2020: 55 errors (0.006 % error rate)

Looking back in 2020, the median number of errors decreased from 7.3 per month to 3.5 per month starting in March 2020.

Trends noted are as follows.

Delays in therapy:

6 in 2018 → 5 in 2019 → 4 in 2020

Failure to monitor:

5 in 2018 → 8 in 2019 → 2 in 2020

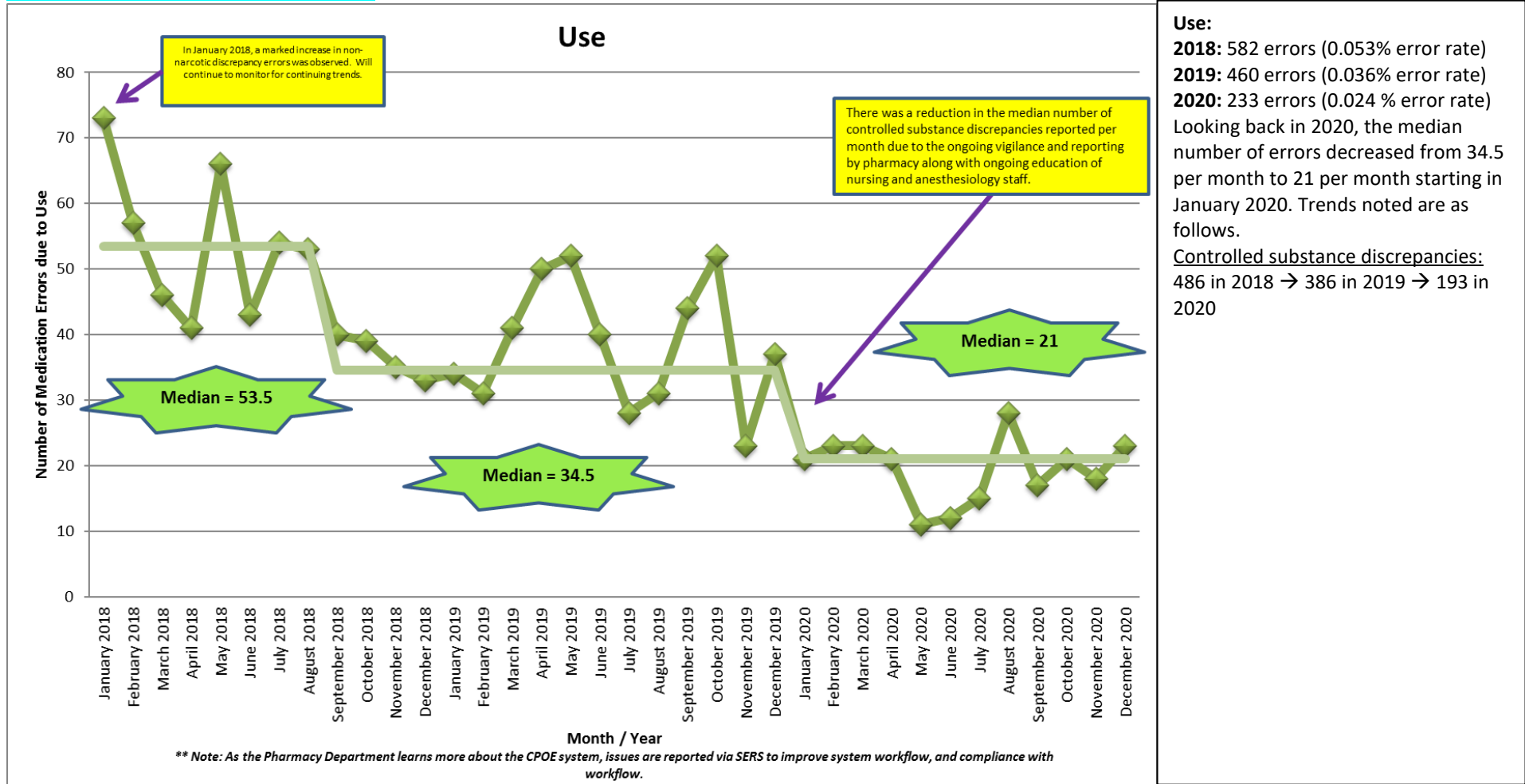
Missed doses:

3 in 2018 → 5 in 2019 → 6 in 2020

Looking back in 2020, the median number of errors per month decreased from 7.5 to 3.5 starting in March 2020. The majority of education errors are also classified under the other elements that apply to the error and are further discussed and trended under those elements.

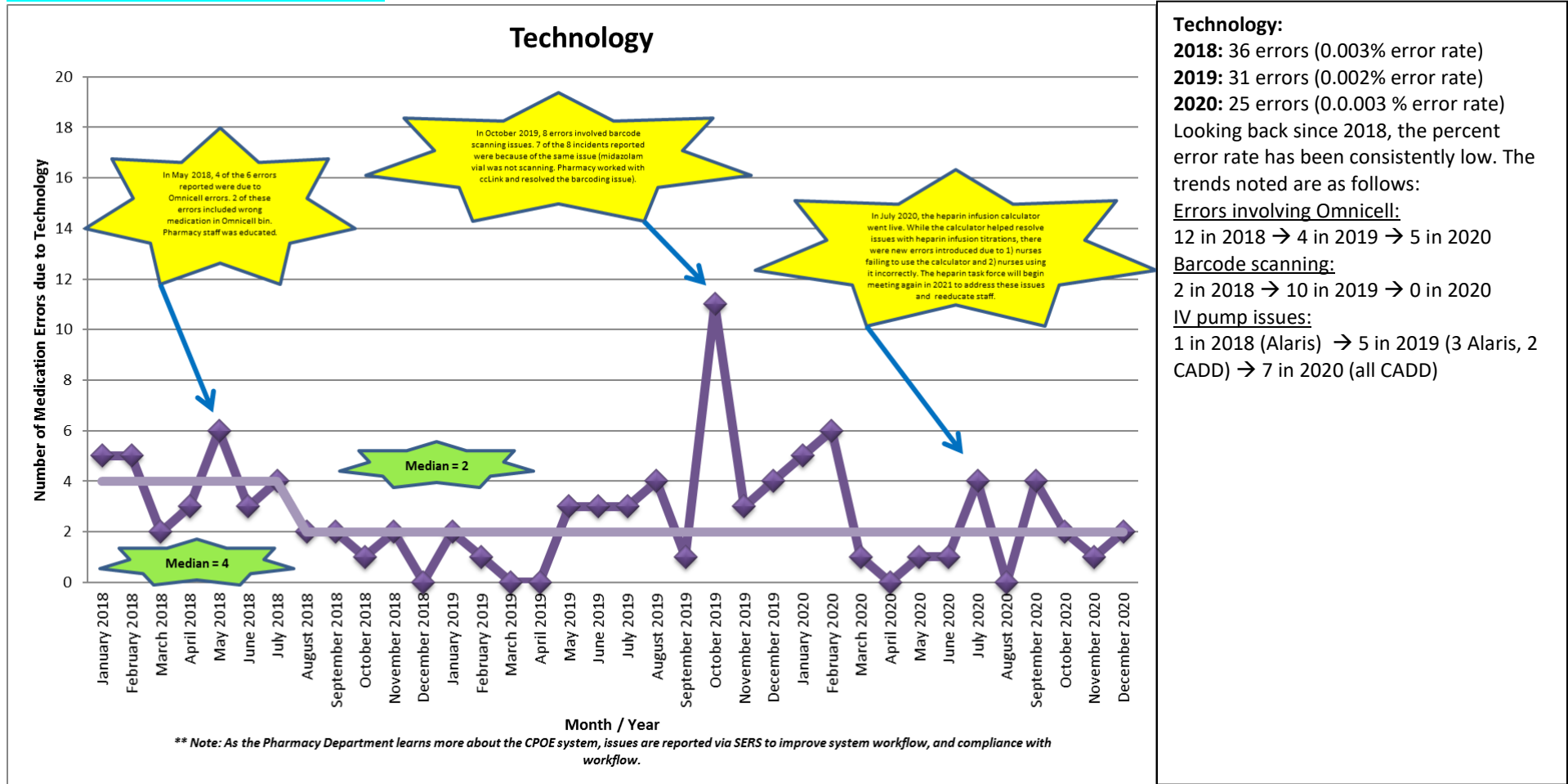
There was a 33% decrease in delays in therapy due and a 60% decrease in failure to monitor due to education. There was an increase in missed doses that were classified under education, but overall there has been a 47% decrease in the specific event type of missed doses. Going forward in 2021, pharmacy will work with nursing leadership and the Professional Development Department to promote ongoing education to prevent missed doses.

APPENDIX D: MERP ELEMENT GRAPHS



Looking back in 2020, there was a decrease in the median errors per month from 34.5 to 21 starting in January 2020. There was an overall 60% decrease in controlled substance discrepancies since 2018. The reduction in controlled substance discrepancies is due to the ongoing monitoring and reporting of controlled substance discrepancies on a daily basis by pharmacy along with a new task being added to the task list for OR and L&D OR in January 2020 for nurses to ensure that the anesthesiologists completes post case dose reconciliation prior to closing the case. In 2020, CCRMC was recognized in the Cal Hospital Opioid Care Honor Roll as one of the 25 hospitals ranked in the “superior performance.” Going forward in 2021, pharmacy will continue to monitor and report controlled substance discrepancies. The multidisciplinary Opioid Stewardship Committee will continue to meet on a quarterly note to review guidelines and regulations, and optimize pain management strategies at CCRMC.

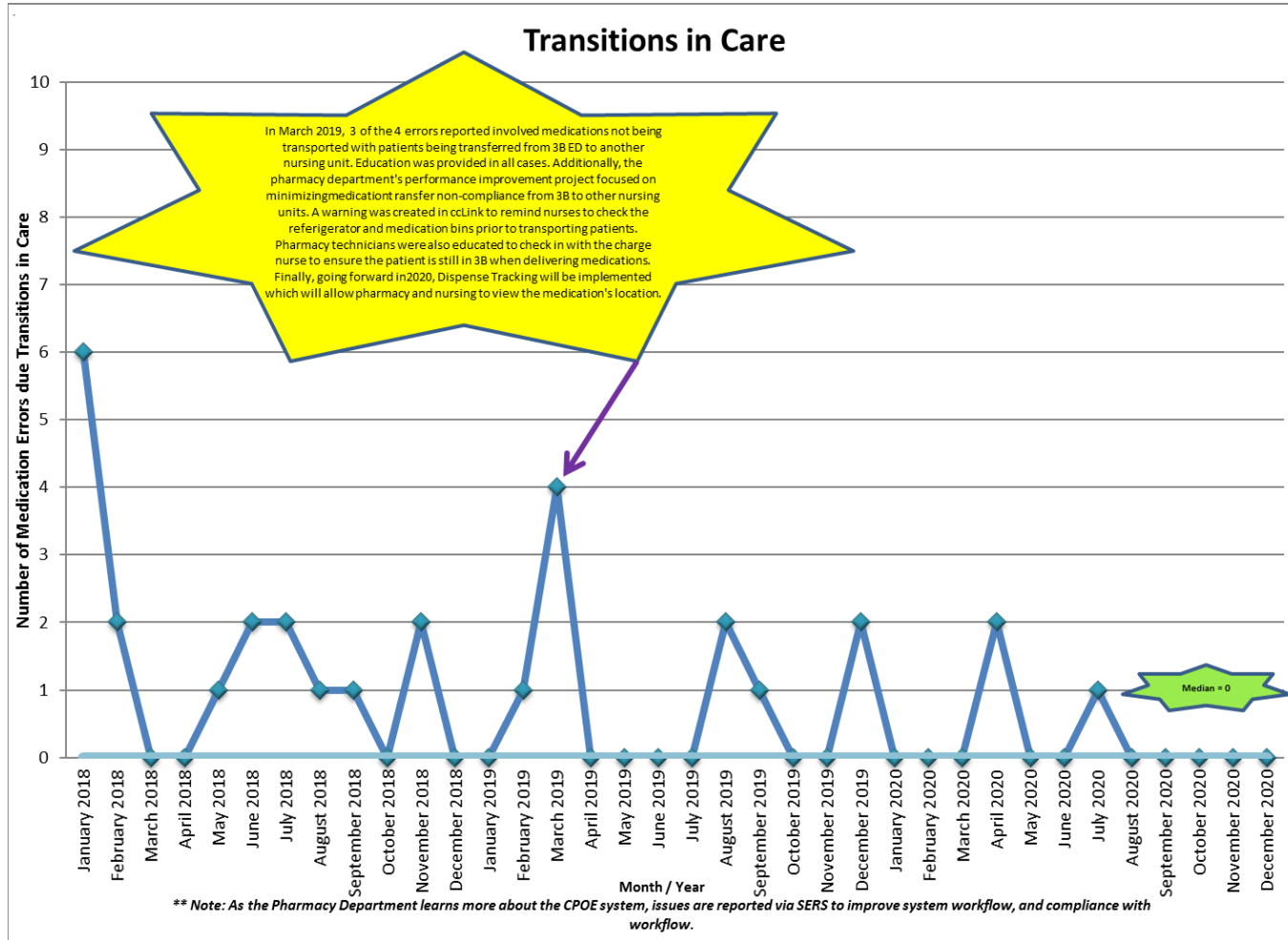
APPENDIX D: MERP ELEMENT GRAPHS



Technology:
2018: 36 errors (0.003% error rate)
2019: 31 errors (0.002% error rate)
2020: 25 errors (0.0.003 % error rate)
 Looking back since 2018, the percent error rate has been consistently low. The trends noted are as follows:
Errors involving Omnicell:
 12 in 2018 → 4 in 2019 → 5 in 2020
Barcode scanning:
 2 in 2018 → 10 in 2019 → 0 in 2020
IV pump issues:
 1 in 2018 (Alaris) → 5 in 2019 (3 Alaris, 2 CADD) → 7 in 2020 (all CADD)

Looking back in 2020, there was a 58% decrease in errors involving Omnicell due to ongoing education of pharmacy staff. There was also a decrease in barcode scanning errors from 10 errors in 2019 to 0 in 2020 as a result of technological fixes and education of pharmacy and nursing staff. In 2020, there was an increase in CADD pump malfunctioning errors in infusion clinic. In October 2020, new smart CADD Solis pumps were purchased for infusion clinic and went live. Since then, there have not been any more CADD pump errors reported. Pharmacy will continue to trend and monitor technological errors. Pharmacy will also trend CADD pump data and report findings to the Medication Safety Committee.

APPENDIX D: MERP ELEMENT GRAPHS



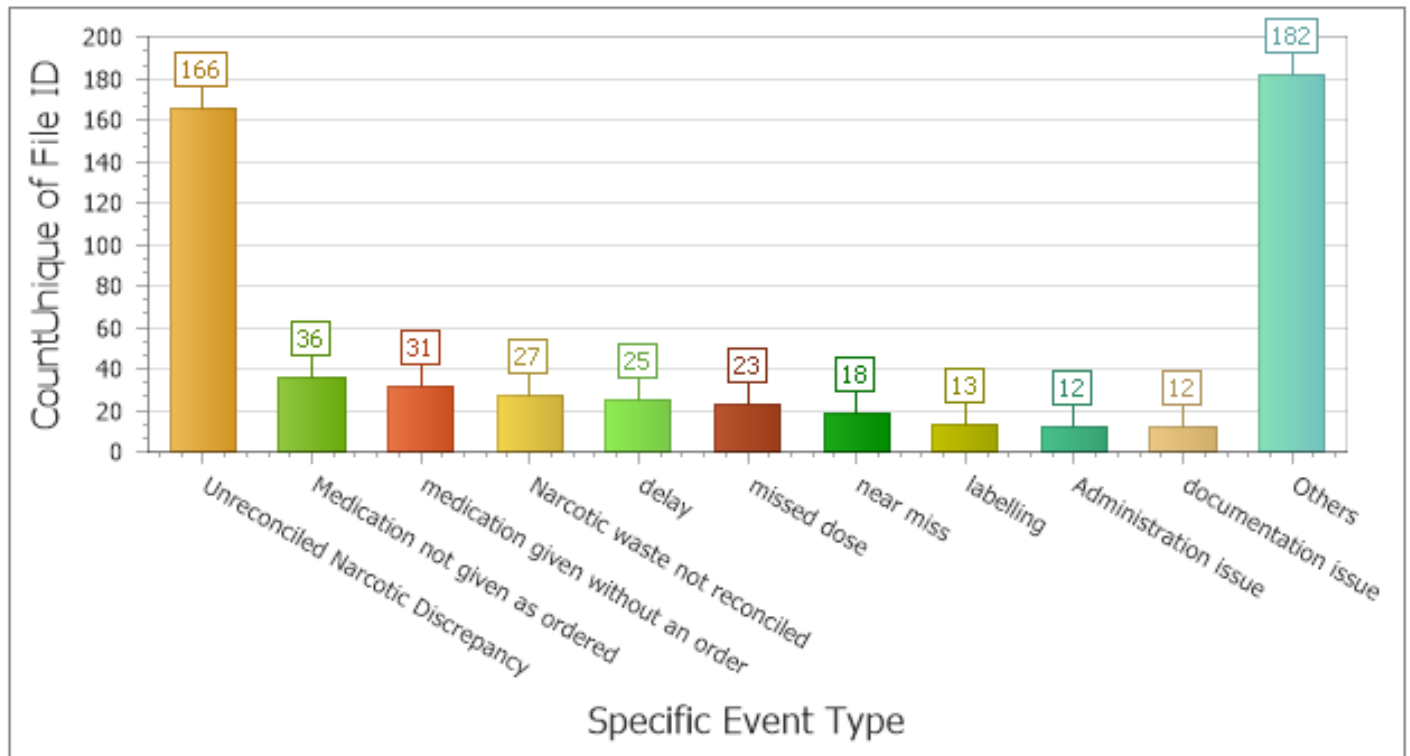
Transitions in Care:
2018: 17 errors (0.002% error rate)
2019: 10 errors (0.0008% error rate)
2020: 3 errors (0.0001% error rate)
 Looking back since 2018, the percent error rate has been consistently low. The trends noted are as follows:
Errors involving patient transfer within the hospital from one unit to the next:
 5 errors in 2018 → 9 errors in 2019 → 2 errors in 2020

Looking back in 2020, there was a 78% decline in errors from 2019 to 2020 involving patient transfer within the hospital from one unit to the next. The pharmacy department's performance improvement project was to deliver medications to patients in a timely manner and improve pharmacy operations by reducing unnecessary in-basket messages. Upon investigation, it was found that the top reason for in-basket messages was for missing doses. With further analysis, it was found that one of the top two contributing factors to missing doses was non-compliant medication transfer events (i.e. medications already dispensed from pharmacy not being transferred with patient from one unit to the next). In 2020, pharmacy and nursing focused on educating staff which contributed to the decline in errors reported. Simultaneously, in 2020, pharmacy explored utilizing a dispense tracking system to help with locating missing doses that have already been dispensed. Going forward in 2021, the pharmacy department will purchase the needed equipment and software to allow for dispense tracking and then will pilot the dispense tracking system in 5D Med/Surg.

APPENDIX E- MEDICATION ERRORS BY TYPE

CCRMC & HC Med Errors by Type by Month

Event Date is within 01-01-2020 and 12-31-2020



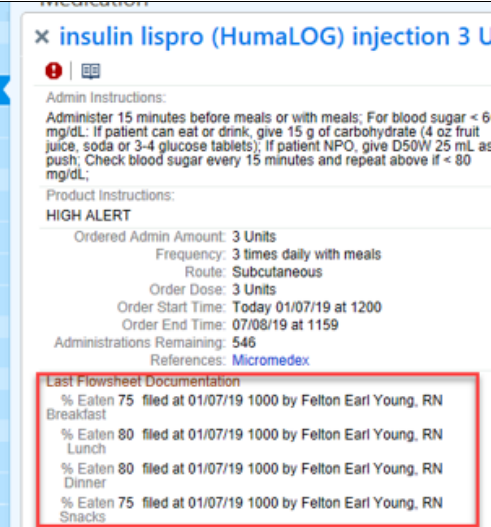
SUPPLEMENT

DETAILED DOCUMENTS

CCRMC TIMELINE OF EFFORTS MADE TO REDUCE SEVERE HYPOGLYCEMIA (BG ≤ 50 MG/DL)

Date	Action Taken	Status
October 2017	As a result of multiple level E events in one patient, the plan of correction was to create a BPA, which went into effect in October 2017. The BPA reminds physicians to reduce the insulin dose in the scenario if all of the following is true: 1) patient has had more than one day in the hospital. 2) Diet order changed from non-NPO to NPO. 3) On long acting insulin or insulin infusion. If all 3 are true, POP-UP will alert the physician to consider decreasing the insulin regimen.	Completed
February 2018	The pre-checked dextrose fluid for patients who become NPO in the SubQ insulin order sets was unchecked and hidden due to a technological glitch in the programming. This was fixed in February 2018.	Completed
March 2018	The BPA regarding NPO status was not coded correctly and was programmed to not fire within 24 hours of patient being in the ED (including boarder patients who may be in the ED for longer than 24 hours). BPA was updated to fire for ED boarder patients in March 2018.	Completed
March 2018	Administration instructions were added to scheduled mealtime insulin in March 2018: <i>"If scheduled mealtime insulin already administered and patient does not eat, check BG 30 minutes after insulin administration."</i>	Completed
March 2018	Updated BG goals were added to the SubQ insulin order sets in March 2018, consistent with ADA Diabetes Care Guidelines. <i>Goal blood glucose is 140-180 mg/dL for non-pregnant adult inpatients.</i> <i>More stringent goal blood glucose (110-140 mg/dL) may be appropriate for selected patients if this can be achieved without significant hypoglycemia.</i>	Completed

March 2018	Conducted DUE for SubQ insulin and severe hypoglycemia ≤50 mg/dl. Continued to do so and findings shared with multidisciplinary insulin taskforce	Ongoing
June 2018	Vigilanz activation for pharmacy for insulin and BG ≤ 70 mg/dl was activated by June 2018.	Completed
July 2018	SQ insulin sidebar report was made and is available for inpatient nurses in July 2018.	Completed
September 2018	Multidisciplinary meetings to begin in the 4 th Quarter 2018 in order to continue to address the issues surrounding insulin and hypoglycemia.	Completed
October 2018	New system list created for nutrition dept. for any patient on insulin (previously had a list of patients on long acting insulin only). This was completed in October 2018.	Completed
November 2018	PRN fluid changed from D5W to D5NS per request of medical staff and admin instruction changed from for NPO patients with BG < 250 mg/dl, to start upon patient becoming NPO. This was completed in November 2018.	Completed
November 2018	Hyperkalemia treatment- Insulin +D50 order panel created, which includes POCT BG checks before administration, then hourly after administration x 6 hours. This was completed in November 2018.	Completed
January 2019	5D Pilot project to improve percent eaten documentation initiated	Ongoing
January 2019	Multidisciplinary meeting to explore barcoding meal trays to help with amount eaten documentation	Not started due to technological limitations with EPIC
January 2019	MAR updated to allow RN to view previous % eaten documentation under insulin order in the administration screen	Completed January 2019

		
January 2019	Drug utilization evaluation of insulin and BG \leq 50 mg/dl conducted, and findings shared with multidisciplinary insulin committee	Completed
February 2019	Physician oversight/QA process initiated in February 2019 for any patients with severe hypoglycemia	
February 2019	RN education plan to educate nurses to administer rapid acting insulin with first bite of meal (0-15 minutes before eating).	
February 2019	SubQ insulin guideline sidebar to be updated to include specific instructions and to match MAR administration instructions.	Finalized in May 2019
February 2019	SubQ insulin administration instructions updated	Finalized in May 2019
February 2019	Vigilanz alerts for BG < 70 mg/dl to 5D charge nurses and certain providers	
February 2019	Requested PRN POCT BG Q6 Hours while NPO order to be placed into the SubQ insulin order sets	Completed
March 2019	Hypoglycemia smart phrase created so that physician oversight/QA process could be standardized with plan to start running reports on this.	Smart phrase was created. Pending- create way to run reports
March 2019	NPO for diabetic order panels (including dextrose fluid and POCT BG Q6 hours) were built out.	Completed
March 2019	eLearning for providers regarding insulin management	Completed in May 2019
March 2019	Charge nurses requested to have option in EPIC to add a column for POCT BG orders to their system list.	Completed
March 2019	New Vigilanz alerts for pharmacists: - Incremental BG decline New BPA for providers for SCr > 1.5 mg/dl and BG < 110 mg/dl	Completed
April 2019	Nourishment room updates- PARs of certain food items increased based on need of each nursing unit to ensure that snacks are available for diabetic patients at all times.	Completed
May 2019	Update SubQ insulin order sets to include a whole separate section for NPO patients (with Q6 hour correctional dose insulin).	In process
May 2019	Informational BPA to provider if patient has NPO status ordered but has TID AC/HS correctional dose lispro or vice versa	Completed

December 2019	Haiku alert for BG < 80 mg/dl to doctor first contact went into production	Completed
December 2019	Ensure that all pre-procedure order sets have a dextrose containing fluid and hypoglycemia protocol for diabetic patients	In process
June 2020	The Hyperkalemia panel (insulin + D50 + POCT BG checks) was made searchable with the term "insulin," in ccLink.	Completed
December 2020	Consider removal of single IV insulin order in the ED medications preference list. Instead make a mini panel with POCT BG checks post administration	In process

Heparin Infusion Multidisciplinary Task Force Action Taken	Date
Heparin Multidisciplinary task force began meeting.	June 2018
Heparin Infusion PDSA initiated in 3D.	June 2018
Administration instructions on MAR updated to be clearer, along with heparin Sidebar table.	August 2018
"Heparin aPTT," lab order created, to differentiate aPTT results for patients on heparin infusion. With this new lab, all results are considered "critical," which prompts a phone call from lab to nurse caring for patient or charge nurse regarding aPTT result.	January 2019
Isite report enhanced to track heparin aPTT lab orders (time of order, time of result, time of MAR action)	January 2019
Heparin activity report created so that nursing could easily view past actions taken in regards to heparin infusion.	January 2019
BPA to direct nurse to order the correct lab "aPTT Heparin," for patients on heparin infusion.	February 2019
Heparin infusion calculator built and in production.	Request was made in October 2019, testing started in March 2019 and implementation occurred on July 30 th 2019
Administration instructions "DO NOT REBOLUS AFTER A HOLD" are already in the heparin infusion medication order, however these instructions were not in the bolus order. The instructions were added to the bolus order.	September 2020
Errors were submitted to the nursing educators to educate nurses on heparin drip, including how to use the heparin calculator and to remind nurses to always use the calculator.	September 2020
Heparin Task Force to begin meeting again to address the issues surrounding heparin drip.	Upcoming

Action Taken to prevent therapeutic duplication of PRN medications	Date Completed
<p>“Post-Anesthesia Orders”: Post-anesthesia order set contained PRN orders for fentanyl, morphine and hydromorphone with the same indication based on patient’s pain score. To prevent duplication of PRN orders with the same indication, the post-anesthesia order set was revised to include instructions for the nurse as to which opioids is to be given first, second and third. The ordering provider must choose the opioid to be given as first, second and third choice at the time of ordering. This will provide clear instructions for the nurse how to administer the 3 PRN opioids medications ordered for pain management.</p>	Q1, 2018
<p>Ticket 424475- Acetaminophen PO/IV order panels. Administration instructions were added.</p>	7/1/2019
<p>Ticket 424756- Constipation medications order panel and antiemetic medications order panel created. All single order medications in these panels removed from orderable in EPIC.</p>	7/1/2019
<p>Email sent to RXe-Source regarding therapeutic duplication of PRN orders.</p>	7/6/2019 and again on 8/1/2019
<p>CIWA order set with multiple lorazepam PRN orders with same indication. Administration instructions were added to clarify when to give which order of lorazepam.</p>	7/8/2019
<p>Ticket 425262- Acetaminophen PO/Rectal order panel removed from order sets.</p>	7/8/2019
<p>Memo from Pharmacy director distributed to medical staff regarding prevention of therapeutic duplication of PRN medications. Director of Pharmacy also met with residents with the support of the residency director to discuss this issue.</p>	7/16/2019 & 8/5/2019
<p>Ticket 428004-Post-partum C-section order set constipation section was updated to have clear instructions.</p>	7/17/2019
<p>Ticket 428321- Promethazine IM/PO/Gel. IM route was removed. Administration instructions were added to the gel and the PO tablet to provider instructions to nurse to initiate therapy with topical and then switch to PO if topical ineffective.</p>	7/23/2019
<p>Meetings with Chair of the psychiatry department and nurse program manager. Plan to optimize order sets to eliminate duplicate PRN medications.</p>	Meeting on 8/1/19 and 8/8/19
<p>Ticket 429490- Hydrocodone/APAP and oxycodone/APAP orders in ccLink had an option to use for mild pain (1-3). This option was removed so that these would only be used for moderate/ severe pain and promote use of non-narcotic options for mild pain. This also prevents duplication of therapy between analgesics.</p>	8/7/2019
<p>Pharmacy department also requested a new I-vent category to be created (“Duplication of PRN reason”). Going forward, interventions will be documented under the new I-vent category. Additionally, SERS are submitted for errors found, and variance reports are also submitted to RXe-Source pharmacy to ensure education of all staff involved.</p>	8/15/19

Analysis of Medication Errors- 2020:

- Top medication classes involved in medication errors
- Medication errors by severity Level
- High alert medication errors
- Trend of MERP elements
- Summary of actions taken

MEDICATION ERRORS BY DRUG CLASS:

Below are the medication classes that have persistently caused the highest number of medication errors per year:

CONTROLLED SUBSTANCES

DATA HIGHLIGHTS:

229 errors involved controlled substances (0.22% of total controlled substance transactions in 2020) vs 449 (0.36%) in 2019, and 558 (0.4%) in 2018.

165/229 (72%) of errors did not reach the patient (Level B and lower), and 100% of errors did not cause harm (Level D and lower).

TRENDS NOTED:

- The #1 error type reported in 2020 was related to controlled substance discrepancies, which is consistent with 2019, and 2018. There was a 50% reduction in controlled substance discrepancies in 2020 compared to 2019 (193 discrepancies in 2020, 386 discrepancies in 2019 and 486 in 2018).
- There were 193 controlled substance discrepancies reported in 2020 (0.18%, 193/106,454 of controlled substance transactions in Omnicell, a reduction from 386 (0.32 in 2019), and 486 (0.36) in 2018.
 - The breakdown of the different controlled substance discrepancy types are as follows:
 - "Unreconciled Narcotic Discrepancy" (n=166 discrepancies/106,454 controlled substance transactions=0.18% in 2020, vs. 0.25% in 2019, and 0.29% in 2018)
 - "Narcotic waste not reconciled" (n= 27 discrepancies/106,454 controlled substance transactions= 0.03% in 2020, vs. 0.07% in 2019, and 0.06% in 2018)
 - "Missing narcotic from Pharmacy return bin" (n=0 discrepancies/106,454 controlled substance transactions=0% in 2020, vs. 0.0008% in 2019 and 0% in 2018)
 - "Cycle count errors" (n = 0 discrepancies/106,454 controlled substance transactions= 0% in 2020, vs. 0% in 2019 and 0.003% in 2018.
- There was no trend among the other errors involving controlled substances.

MAIN ACTIONS TAKEN:

- Controlled substance discrepancy monitoring was pharmacy's performance improvement (PI) project from March 2014 through to December 2015. The reports used by pharmacy to capture discrepancies were optimized in 2017 to include anesthesiologists. In 2017, an FTE was also hired and began reviewing all anesthesiologist transactions on a daily basis. The pharmacy continues monitoring and reporting of controlled substance discrepancies on a daily basis as a quality assurance measure. In 2020, a new task was added to the task list for OR and L&D OR for nurses to ensure that the anesthesiologist completes post case dose reconciliation prior to closing the case.
- With the California Code of Regulations, title 16, section 1715.65, the pharmacy department implemented a quarterly inventory count for all Schedule II medications at CCRMC in 2018. This report includes any discrepancies noted with

comments and explanations as needed. This is in addition to the monthly inventory Omnicell report and oversight of controlled substance transactions.

- The multidisciplinary Opioid Stewardship Committee was created in 2016 and continues to meet on a quarterly note to review guidelines and regulations, and optimize pain management strategies at CCRMC. The committee works to ensure the quality and safety of care provided at CCRMC. In 2020, CCRMC was recognized in the Cal Hospital Opioid Care Honor Roll as one of 25 hospitals ranked in the “superior performance.” For a comprehensive overview of actions taken, see the “controlled substance and pain” SBAR.

ANTIMICROBIALS

DATA HIGHLIGHTS:

57 errors in 2020 (### of antimicrobial orders), vs. 75 errors (0.07%) in 2019 and 101 errors (0.08%) in 2018. 56/57 (98%) of errors did not cause harm (Level D and lower).

TRENDS NOTED:

- Breaking down the errors by event type, the top 3 event types were as follows:
 - The main cause of antimicrobial errors overall was missed doses with 20/57 (35%) vs. 25/75 errors (33%) in 2019 and 23/101 (23%) in 2018.
 - **TREND:** 8/20 (40%) of missed dose errors involving antimicrobials were due to incorrect tubing connections/nursing forgetting to unclamp the secondary line, a reduction from 14/25 (56%) in 2019, and 15/23 (65%) in 2018. .
 - a. A breakdown by nursing unit reveals that 3 errors occurred in 4B, 3 in 5D, 1 in 3D and 1 in 5C.
 - b. A breakdown by nursing shift reveals that 5 errors occurred during day shift, 2 during PM shift and 1 during night shift.
 - c. There was no trend in regards to time of day for error occurring.
 - **TREND:** 0/20 (0%) of errors involved medication not being activated, a decrease from 4% in 2019 and 9% in 2018.
 - Issues with vancomycin trough monitoring accounted for 8/57 errors (14%), compared to 9/57 errors (12%) in 2019 and 15/101 errors (15%) in 2018. In 2020, the following trends could be noted:
 - **TREND:** 7 errors involved the vancomycin trough order not being released by the nurse despite instructions in MAR note and active order placed by pharmacist.
 - **TREND:** A breakdown by nursing unit reveals that 4 errors occurred in 5D, 2 in 3D, 1 in 3E and 1 in 4B.
 - Delays in antimicrobial administration accounted for 4/57 (7%) in 2020 vs. 6/75 errors (8%) in 2019 and 7/101 (7%) in 2018. There was no trend noted among these errors.

MAIN ACTIONS TAKEN:

- Regarding the nurses forgetting to unclamp the secondary line, there are several processes in place from previous years which had previously contributed to the downtrend of clamp errors and maintaining a low number of errors, including pharmacy department audits of medication administration, nursing audits of medication administration, and education by the professional development department for orienting nurses. The number of clamp errors in 2020 was lower than 2019 and 2018 as noted above.
- In 2020, there were 8 vancomycin trough monitoring errors, vs. 9 in 2019 and 15 in 2018. While the number of errors overall decreased, CCRMC observed that 5 out of the 8 errors occurred in the 4th quarter of 2020. Because of this,

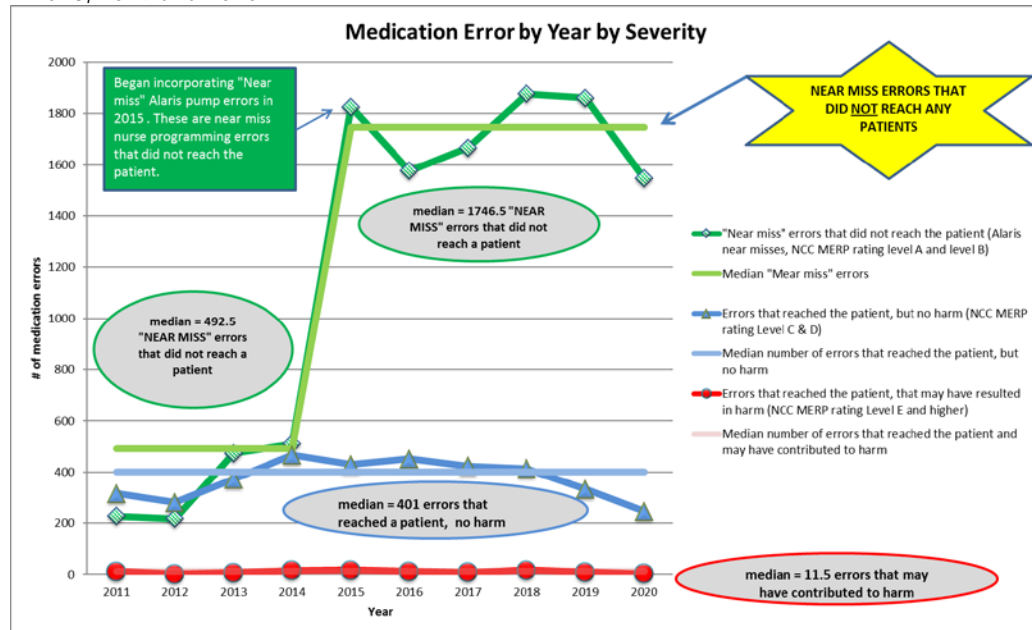
going forward, the pharmacy department will work with ccLink to optimize the current process for communication of vancomycin trough orders. Additionally the pharmacy department will explore adopting AUC/MIC monitoring utilizing Bayesian software as discussed in the 2020 Consensus Guideline by ASHP, IDSA, PIDS, and SIDP on Vancomycin Monitoring. Going forward in 2021, the pharmacy department will also optimize the pharmacist vancomycin dosing protocol by providing additional details to assist pharmacists in dosing patients on CRRT.

- Several actions have also been taken over the past several years in an effort to ensure appropriate vancomycin trough monitoring.
 - In 2018, the vancomycin trough monitoring issues were discussed during one of the organization’s safety huddles to educate staff and minimize this type of error.
 - Pharmacy continues to educate nursing staff regarding the vancomycin trough monitoring process upon hire, during the nursing orientation.
 - Pharmacy continues to educate new pharmacist hires on the pharmacy vancomycin dosing protocol. New hires also take a baseline competency test and a post-training competency test to ensure adequate understanding of CCRMC monitoring protocols, including the vancomycin monitoring protocol.
- CCRMC has had a robust Antimicrobial Stewardship Program (ASP) in place through the Pharmacy Dept for years. A Formal ASP committee and team was formed in early 2015 and meets quarterly. A pharmacist and ID physician meet daily to conduct a stewardship review of select patients and make recommendations when appropriate. The acceptance rate of interventions is monitored and trended. Additionally, the committee reviews antibiotic usage trends, and conducts further drug utilization evaluations to assess for appropriateness of therapy when necessary (See the Antimicrobial Stewardship SBARs for full details). Pharmacy continues previous efforts, including: discontinued antibiotic order renewal reminders, renal dose adjustment monitor, IV to PO conversion, culture and sensitivity reporting, assessing completed antibiotics, and aminoglycoside monitoring. In 2019, a gap analysis was conducted using the CDC’s Core Elements of Hospital Antimicrobial Stewardship Programs and CCRMC was found to be compliant with all elements. In 2020, the committee was granted approval to create an antibiotic order set to promote the appropriate and safe use of antibiotic therapy. Pharmacy worked with the ID physician to draft the order set in 2020. Going forward in 2021, pharmacy will work with ccLink IT to create and implement the order set in ccLink.

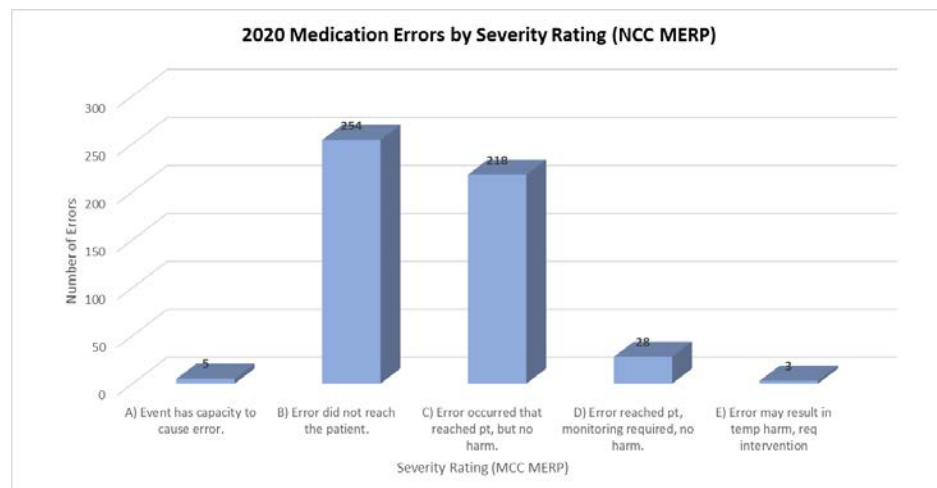
MEDICATION ERRORS BY SEVERITY LEVEL:

- The majority of errors reported did not result in patient harm (Level A-D). The harm index median has been consistently low over the years and has been marginally above 0 (0.0009%) since January 2019 (See Appendix B for graph).
 - Percentage of medication errors that did not result in any patient harm by year:
 - 2011= 97.8% (Level A-D (no harm))= 547/ 559 SERS; Level E= 12)
 - 2012= 99.4% (Level A-D (no harm))= 537/ 540 SERS; Level E= 3)
 - 2013= 99.1% (Level A-D (no harm))= 846/ 853; Level E =7)
 - 2014= 98.5% (Level A-D (no harm))= 977/ 992; Level E= 14; Level F= 1)
 - 2015=98% (Level A-D (no harm))= 798/814; Level E= 15; Level F = 1)
 - 2016=99% (Level A-D (no harm))= 769/780; Level E= 8; Level F = 3)
 - 2017=99.1% (Level A-D (no harm))= 970/979; Level E= 8; Level F = 1)
 - 2018=98% (Level A-D (no harm))= 1098/1,115; Level E= 17)
 - 2019=99% (Level A-D (no harm))= 86/878; Level E= 9)
 - 2020=99.4% (Level A-D (no harm))= 505/508; Level E= 3)

- In 2020, Level A-D, which did not cause any harm accounted for the majority of the errors. There were 3 level E events (0.6%), meaning that intervention was required or there was temporary harm. There were 0 errors that were level F-I in 2018, 2019 and 2020.



- The near miss errors reported (Level A, Level B), continues to account for the majority of errors reported with 259/508 (51% of errors reported), vs. 530/878 (60%) in 2019 and 670/1,115 (60%) in 2018.
- Level E errors (3 errors total):
 - There were 3 level E errors in 2020, vs. 9 level E errors in 2019 and 17 level E errors in 2018 (an 82% reduction)
 - There was no trend among the 3 errors (1 error involved a patient taking their own illicit fentanyl while hospitalized resulting in respiratory depression, 1 error involved hypoglycemia after insulin +D50 use for hyperkalemia treatment and inadequate POCT BG monitoring, and the last error involved a patient developing AKI with vancomycin.
 - The number of Level E errors involving insulin decreased from 9 errors in 2018 to 6 errors in 2019 and 1 error in 2020 (89% reduction). A multidisciplinary task force was formed to address the issues surrounding SubQ insulin management and began meeting regularly in 2018. The committee continued to meet regularly in 2019 and as needed in 2020. See "High-Alert medication errors," section for specific actions involving insulin.
 - Education was provided to staff in all the events and process changes were implemented as necessary.



HIGH-ALERT MEDICATION ERRORS (56 ERRORS REPORTED IN 2020):

High-Alert medications have an increased risk of causing significant harm to a patient when used in error. High-Alert medication errors are trended and analyzed by the pharmacy department in an effort to enhance or implement specific safeguards to reduce errors and reduce the risk of harm. This analysis is also conducted to ensure that pharmacy is compliant and proactive in regard to CCRMC's policy #3701 "High Risk/High Alert Medication Management." High alert medications included in this policy are: anticoagulants, insulin, chemotherapy, PCA medications and fentanyl patch.

The number of high-alert medication errors decreased from by 41% from 95 errors in 2018→ 74 errors in 2019→ 56 errors in 2020. The median harm index (Level E and higher events) for 4 of the 5 high alert categories has been 0 since Q1 2015, meaning that none of the errors contributed to patient harm (anticoagulants, chemotherapeutics, fentanyl patch and PCAs). While insulin's median harm index has been at 2 errors per month since Q1 2018 (due to increased vigilance and reporting by pharmacy), the percent rate of severe hypoglycemia (BG ≤ 50 mg/dl) has declined from 3.5% in 2017 to 1.2% since February 2019. See the Insulin SBAR for full details. Below are actions taken in 2019 and plans for 2020 (See Appendix B for graphs).

Anticoagulants:

18 (0.06% of all anticoagulant orders) errors involved anticoagulants in 2020, vs. 24 (0.07% of all anticoagulant orders) in 2019, 32 (0.09% of all anticoagulant orders) in 2018.

8 of the 18 errors (44%) involved anticoagulant drip errors (2 involved argatroban infusion and 6 involved heparin infusion). Towards the end of 2017, a multidisciplinary task force was initiated to address the issues surrounding heparin infusion. While, the top error type from 2017 of heparin infusion rate not being adjusted in a timely manner was resolved (3 delay in rate change errors in 2018 and 0 in 2019), there was an increase in lab timing errors by nursing and lab (ordered for wrong time, lab order communication errors, delays in lab results). The new heparin calculator was also built out in cclink per the request of the multidisciplinary task force to assist the nurses with heparin infusion titrations. This new calculator went live on July 30th, 2019 and introduced a new set of errors. In 2020, there was a decrease in lab timing errors by nursing and lab, however there was an increase in the misuse of the heparin calculator leading to errors. The heparin task force began meeting again towards the end of 2020 to identify ways to optimize the calculator as well as promote education on the correct use of the calculator.

Insulin:

20 errors (0.08% of all insulin orders) involved insulin in 2020, vs. 34 (0.14% of all insulin orders) in 2019, and 40 errors (0.15% of all insulin orders) in 2018.

Note: Excluding MDV labeling errors from the count, there were 12 insulin errors which count for #### of all insulin orders.

Of the 20 errors, 5 involved inappropriate management of patients on SubQ insulin (down from 12 errors in 2019 and 17 errors in 2018). There were 4 errors involving insulin drips (2 of the 4 involved insulin drip rate change errors). In 2020 there were no errors at times of change in nutritional status, which is an improvement from 2019 when this was the top error type. Out of the 20 errors, only 1 error resulted in a hypoglycemic event which was managed appropriately. Since 2018, there was an increased vigilance surrounding hypoglycemic events. A multidisciplinary task force was formed in 2018. Through this committee, several actions have taken place including 1) Changes in cclink (optimization of order sets and panels, creation of best practice alerts, etc.) 2) Optimization of pharmacy

monitoring process to ensure uniform review of patients (See Appendix D for full list of actions taken) and identification of high risk patients (ex: patients with worsening renal function). 3) A quality assurance physician oversight process was created in 2019 which involves a medical staff physician reviewing the cases of severe hypoglycemia (BG \leq 50 mg/dl), providing feedback to the primary team, and documenting interventions via a "Hypoglycemia prevention," progress note in the patients chart. See appendix F for a full list of all actions taken. 8 of the errors involved inappropriate expiration date labeling of insulin multidose vials by nursing (no expiration label after opening, wrong expiration date written, etc.). This is down from 13 errors in 2019 and 19 errors reported in 2018. The multi-dose vial labeling issue was brought up at the organization's safety huddle and several actions were taken to resolve the issue in 2018, including the purchase of new expiration labels, adoption of a calendar tool to help with a calculation of 28 days out, and education of nursing staff. In 2018, a cycle count was implemented for charge nurses to conduct and this was reinforced in 2019. Data will continue to be trended and reported in 2020.

Chemotherapeutics:

14 errors (**0.8% of all chemotherapy orders**) involved chemotherapeutic agents in 2020, vs. 8 errors (**0.29% of all chemotherapy orders**) in 2019, and 13 errors (**0.47% of all chemotherapy orders**) in 2018.

In 2020, 43% (6 out of 14 errors) involved errors with the CADD pump (3 errors due to battery depletion, 2 malfunctions leading to full dose not being infused and 1 programming error leading to dose not being infused). In October 2020, new smart pumps (CADD Solis) were purchased to replace the old CADD pumps. Infusion clinic went live with these pumps in October 2020 and no new CADD Pump errors were reported from October – December 2020. Pharmacy will continue to monitor for CADD pump errors.

Fentanyl Patch:

There was 1 error involving fentanyl patch in 2020 (**2.2% of all fentanyl patch orders**), vs. 0 errors in 2019 (**0% of all fentanyl patch orders**), and 3 errors in 2018 (**1.2% of all fentanyl patch orders**).

There was 1 fentanyl patch error in 2020 which was a **near miss** fentanyl patch documentation error by the nurse (patch was present on patient upon admission but not documented under the skin assessment flowsheet). The error was caught and did not reach the patient. Several efforts are in place to ensure safe use of fentanyl patch at CCRMC, including a thorough initial screening for appropriateness by the clinical pharmacy department along with a daily clinical monitor and patient education. Additionally, in 2020 pharmacy made the fentanyl patch require dual pharmacist independent verification as an extra step to ensure safe use of fentanyl patch. Going forward in 2021, staff will continue to be vigilant to ensure safe and appropriate use of fentanyl patch at CCRMC.

PCA:

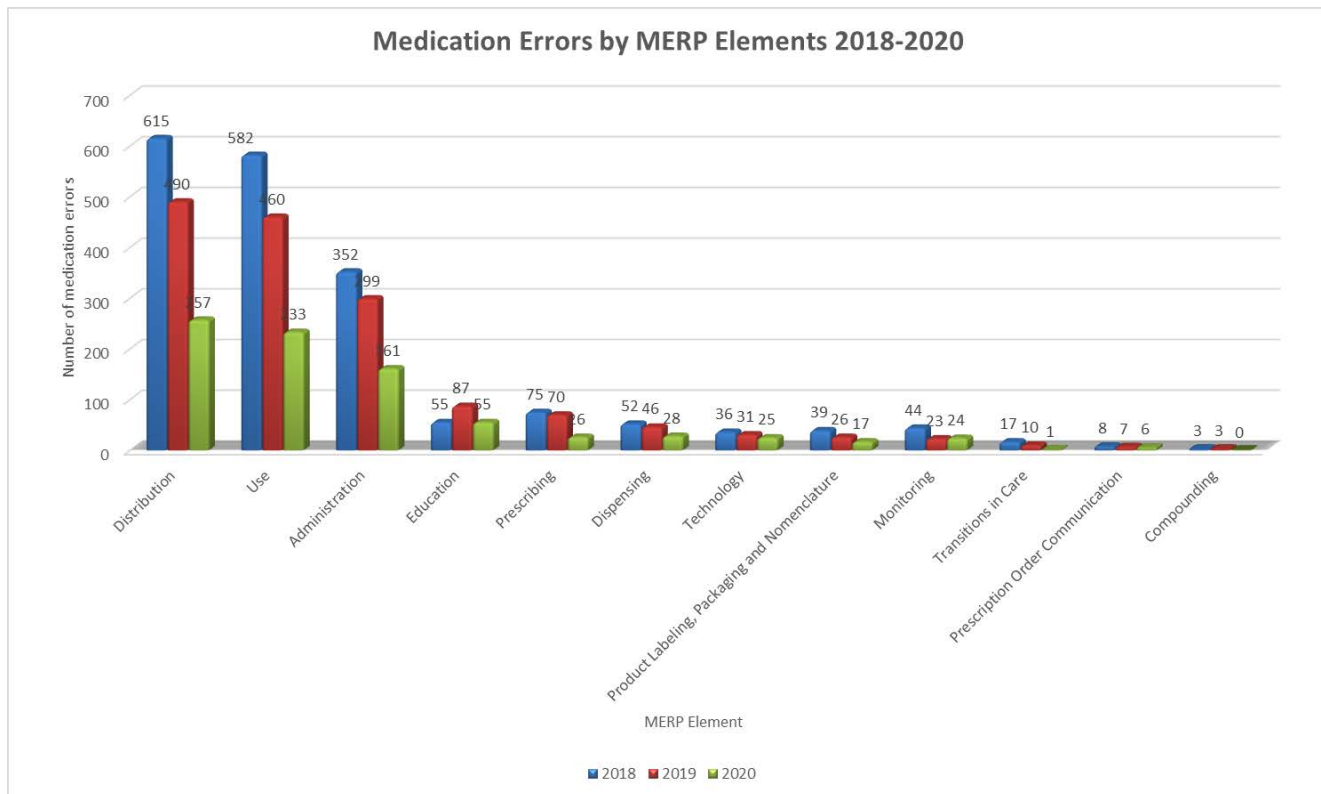
3 errors involved a PCA in 2020 (**0.86% of all PCA orders**), vs. 6 errors in 2019 (**1.6% of all PCA orders**), and 7 errors in 2018 (**1.2% of all PCA orders**).

There was no trend among the 3 errors. 1 error was a near miss that did not reach the patient, and the remaining 2 errors were level C which reached the patient but did not cause harm. Education was provided to staff in all 3 cases. In 2019, the nursing documentation of PCA administration was optimized via ccLink flowsheet enhancements. In 2020, pharmacy, nursing and ccLink IT worked together, meeting regularly to update the PCA and documentation tools to ensure PCAs are easier to order, verify and administer. Going forward in 2021, PCA errors will continue to be monitored and any trends will be reported. The pharmacy will continue to review patients on PCAs daily.

ERRORS BY MERP ELEMENTS IN 2020:

The breakdown of these 508 medication errors into MERP elements, in order of most errors reported can be seen below. The error rate is a calculation of the # of errors/ # of doses dispensed (974,658):

- Distribution: 257= 0.026% error rate vs. 0.039% in 2019 and 0.056% in 2018
- Use: 233= 0.023% error rate vs. 0.036% in 2019 and 0.053% in 2018
- Administration: 161 = 0.0165% error rate vs. 0.023% in 2019 and 0.032% in 2018
- Education: 55 = 0.006% error rate vs. 0.007% in 2019 and 0.005 in 2018
- Prescribing: 26= 0.003% error rate vs 0.006% in 2019 and 0.007% in 2018
- Dispensing: 28 = 0.003% error rate vs. 0.004% in 2019 and 0.005% in 2018
- Technology: 25= 0.003% error rate vs. 0.002% in 2019 and 0.003% in 2018
- Product Labeling, Packaging and Nomenclature: 17 = 0.002% error rate vs. 0.002% in 2019 and 0.004% in 2018.
- Monitoring: 24= 0.003% error rate vs. 0.001% in 2019 and 0.004% in 2018.
- Transitions in Care: 1= 0.0001% error rate vs. 0.0008% in 2019 and 0.002% in 2018
- Prescription Order Communication: 6 = 0.0006% error rate vs. 0.0006% in 2019 and 0.0007% in 2018
- Compounding: 0 = 0% error rate vs. 0.0002% in 2019 and 0.0003% in 2018



Element #1. PRESCRIBING

TRENDS NOTED:

- “Prescribing” accounts for 26 medication errors in 2020. This calculates to a 0.003% (# of errors/# of doses dispensed) error rate vs. 0.006% in 2019, and 0.007% in 2018.
- Breaking down the events by Specific Event Type, the top 3 event types were as follows:
 - Wrong medication prescribed accounted for 4 errors in 2020 vs. 0 errors in 2019 and 0 in 2018.
 - TREND: 3 of the 4 errors were near misses that were caught by pharmacy. The one error that reached a patient involved the provider ordering gabapentin 300 mg PO for the wrong patient. There was no harm to the patient who received the dose erroneously.
 - Medication prescribed and given too soon after a dose had already been given accounted for 4 errors in 2020 vs. 1 error in 2019 and 5 errors in 2018.
 - TREND: 2 of the 4 errors involved ketorolac being ordered and administered too soon due to patient receiving a dose in PACU and then being transferred to the floor and receiving another dose on the floor.
 - Duplications in therapy accounted for 4 errors in 2020 vs. 13 errors in 2019 and 3 errors in 2018
 - TREND: The decrease in duplications in therapy is as a result of the multidisciplinary efforts to reduce duplications of PRN medications with the same indications. Several actions were taken towards the end of 2019 including order set changes, education to medical staff, pharmacy and nursing staff, and oversight by the pharmacy department via a clinical monitor.
 - Medication given without an order accounted for 2 errors in 2020, a reduction from 15 errors in 2019 and 21 errors in 2018.
 - TREND: all errors were due to overrides without orders. See “administration,” section for more information on overrides and actions taken.
 - Contraindicated medication prescribed accounted for 2 errors in 2020, vs 2 errors in 2019 and 3 in 2018,
 - The two errors involved inappropriate IV haloperidol prescribing in 2020. Both cases involved IV haloperidol being prescribed in patients with elevated baseline QTc > 500 msec. In 2020, the IV haloperidol order panel was updated to include ECG daily, potassium and magnesium levels and telemetry monitoring orders. The IV route was also removed from all other orders for haloperidol so that only the IM and SubQ routes would be available.
 - Inappropriate insulin management accounted for 1 error (vs. 5 errors in 2019 and 6 errors in 2018).
 - The decrease in errors is as a result of all the actions taken by the multidisciplinary task force.
- There were no major trends by drug class with the “Prescribing,” errors.
- Breaking down “Prescribing” errors by MERP severity rating, we see that there were:
 - 13 level C errors
 - 10 level B errors
 - 3 level D errors
 - 1 level E error (see “Medication Errors by Severity Level,” section for more detail)
 - See “Percent Medication Error Rate” graph with harm index (Appendix B)

NOTE: The one level E error involved insulin prescribing, which is an improvement from 4 errors involving insulin prescribing in 2019.

MAIN ACTIONS TAKEN:

- In regards to medication being ordered and administered too soon after a dose has already been given, it was found that the majority of these types of errors occur upon transition of patients from the OR to PACU or from the PACU to the floor. A duplicate therapy warning was created for pharmacy to fire even when a medication was completed however it only works if both orders are PRN or both orders are scheduled. Pharmacy continues to work with ccLink to address this issue on a global basis.
- In an effort to minimize therapeutic duplication of PRN medication orders at CCRMC, several order sets have been optimized and order panels have been created with clear instructions for nurses to make selections between drugs prescribed for the same indication (See Appendix H). Additionally, the pharmacy department monitors for therapeutic duplication 1) upon verification of orders and 2) via a retrospective review of the dashboard report "Rx Multiple Order with same PRN Reason." Any interventions made by pharmacy are documented via "I-vents" under the category "duplicate therapy."
- In regards to the errors involving inappropriate insulin management, see the "high alert medication errors" section for actions taken.
- NPMs investigated 100% of SERS for overrides, and all were appropriate per NPM, and were either resolved, or orders were back-charted. See the "administration," section for actions taken involving overrides.

ANALYSIS: In 2020, the top error types were wrong medication prescribed, medication ordered and administered too soon after a previous dose had been given and duplications in therapy. The majority of wrong medication prescribed errors were near misses caught by the pharmacy department that did not reach the patient. For medications that were ordered and administered too soon after a previous dose had been given, pharmacy will work with ccLink IT going forward in 2021 to implement technological fixes to help prevent these types of errors. In regards to duplication ins therapy of PRN medications, several actions were taken in 2019 including enhanced monitoring and reporting by the pharmacy department and the optimization of several order sets/creation of new order panels. These efforts resulted in a 69% decrease in this type of error from 2019 to 2020. Going forward in 2021, the pharmacy department will continue to monitor and trend duplications in PRN therapy errors. In 2020, errors due to inappropriate insulin management improved by 80% since 2019 and by 83% since 2020. This is as a result of several actions taken by the multidisciplinary insulin taskforce (see High Alert section for more details).

Element #2. PRESCRIPTION ORDER COMMUNICATION

TRENDS NOTED:

- "Prescription Order Communication" accounts for 6 total medication errors in 2020. This calculates to a 0.0006% error rate (# of errors/# of doses dispensed) vs. 0.0006% in 2019 and 0.0007% in 2018.
- Breaking down the events by Specific Event Type:
 - TREND: There were 2 errors in communication that led to missed doses.
 - There was no trend noted among the remaining errors.
- When reviewing the errors by drug class, there was no trend by drug class.
- Breaking down "Prescription Order Communication," errors by MERP severity rating, there were:
 - 3 level B errors
 - 3 level C errors
 - Therefore, **none** of the errors resulted in harm. See "Percent Medication Error Rate" graph with harm index (Appendix B)

MAIN ACTIONS TAKEN:

Education was provided to staff involved in all cases.

ANALYSIS: Looking back in 2020, there was no trend in errors, aside from the 2 involving missed doses. Going forward in 2021, pharmacy will continue to monitor prescription order communication errors for any trends and act accordingly.

Element #3. PRODUCT LABELING, PACKAGING & NOMENCLATURE

TRENDS NOTED:

- “Product Labeling, Packaging, and Nomenclature” accounts for 17 medication errors in 2020. This calculates to a 0.002% error rate (# of errors/# of doses dispensed) vs, 0.002% in 2019 and 0.004% in 2018.
- Breaking down “Product Labeling, Packaging, and Nomenclature” by specific event type, the top event types were as follows:
 - TREND: 11 (65%) involved multi-dose vial expiration labeling issues by nursing (28-day expiration date missing, wrong, etc.), a reduction from 16 errors in 2019 and 19 errors in 2018. These were all “near miss” medication errors that did not reach any patients.
 - There were no other trends noted among the remaining errors.
- Breaking down “Product Labeling, Packaging and Nomenclature,” by drug class, the top drug class was insulin, which accounted for 7 of the 11 MDV labelling errors (64%). The insulin MDVs were either incorrectly labeled or not labeled with beyond use dates after being opened. There was no trend in any other drug class.
- Breaking down “Product Labeling, Packaging, and Nomenclature” errors by MERP severity rating, there were:
 - 16 level B events
 - 1 level D event
 - Therefore **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

The multi-dose vial (MDV) expiration labeling errors issue was brought up by pharmacy at the organizational safety huddles. Additionally, in 2018, charge nurses began to receive a list of Omnicell MDVs at their units and then cycle count the MDVs every shift to monitor compliance with MDVs operation. A 28-day calendar tool was also provided by pharmacy to nursing to assist nurses in determining the expiration date. In 2019, it was found that the charge nurses were not doing the cycle counts as intended. Pharmacy continues to reinforce cycle counts of the MDVs by nursing and continues to monitor for these errors and report findings to the Medication Safety Committee.

ANALYSIS: Looking back in 2020, 65% of the “Product Labeling, Packaging and Nomenclature,” errors were due to multi-dose vial expiration date labeling by nurses which were addressed as specified above at an institutional level with pharmacy working closely with nursing leadership to resolve the issue. Education was provided in all cases. Going forward, medication errors will continue to be evaluated and trended in 2021.

Element #4. COMPOUNDING

TRENDS NOTED:

- “Compounding” accounts for 0 errors in 2020. This calculates to a 0% error rate (# of errors/# of doses dispensed) vs. 0.0002% in 2019 and 0.0003% in 2018.

MAIN ACTIONS TAKEN:

CCRMC continues to be compliant with USP 797 and USP 800 standards. Starting in November 2020, construction was started to change the inpatient pharmacy compounding area from a segregated compounding area to an ante/buffer clean room. The construction is planned to be completed in 2021.

ANALYSIS: Going forward, pharmacy will continue to monitor for compliance with the USP 797 and 800 standards via pharmacy audits.

Element #5. DISPENSING

TRENDS NOTED:

- “Dispensing” accounts for 28 total medication errors in 2020. This calculates to a 0.003% error rate (# of errors/# of doses dispensed) vs. 0.004% in 2019 and 0.005% in 2018.
- Breaking down the Dispensing errors by Specific Event Type, the top event types were as follows:
 - TREND: 3 errors involved wrong dose, strength, formulation or medication being dispensed, a 77% improvement from 13 errors in 2019. 2 of the three errors were near misses. (1 involved wrong medication in Omnicell bin, 1 involved dose prescribed and verified being too high and 1 involved wrong formulation). 2 of the 3 errors involved barcode scanning issues.
 - TREND: 3 errors involved providers prescribing medications too soon, resulting in patient receiving two doses of the same medication too closely together (1 involving acetaminophen and 2 involving ketorolac). In all cases, there were transitions in care (ex: one dose received in PACU and subsequent dose received on the floor after patient was transferred).
 - There was no trend in the remaining errors.
- Breaking down the dispensing errors by drug class, the following was noted:
 - 5 errors involved electrolytes (TREND: 2 of the 5 errors involved duplicate therapy).
 - 3 errors involved analgesics (all 3 involved medications being prescribed and then verified too soon after initial dose)
- Breaking down “Dispensing” errors by MERP severity rating, there were:
 - 12 level B events
 - 12 level C events
 - 4 level D events

➢ Therefore **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- In January 2018, pharmacy began utilizing medication barcode scanning when filling cart-fill and first dose PO medications (Note: IV medications have been barcode scanned since the inception of EPIC at CCRMC). This

resulted in a 71% reduction in errors involving wrong dose/strength/formulation being dispensed. In 2020, there were two wrong dose, strength, formulation or medication being dispensed which involved barcode scanning. One case was a user error and the pharmacist and all pharmacy staff was educated. The second case occurred in the Willow ambulatory environment which did not have barcode scanning functionality set up. Going forward in 2021, the pharmacy department will implement barcode scanning in the willow ambulatory environment.

- For medications that were ordered and administered too soon after a previous dose had been given, pharmacy will work with ccLink IT going forward in 2021 to implement technological fixes to help prevent these types of errors.
- Pharmacy staff was educated in all cases.

ANALYSIS:

Looking back in 2020, the majority of dispensing errors were due to wrong dose, strength, formulation or medication being dispensed. Since 2018, the pharmacy department has optimized barcode scanning. Going forward, barcode scanning will also be implemented in the willow ambulatory environment. In regards to medications being prescribed too soon after a previous dose, the pharmacy department will work with ccLink IT in 2021 to implement technological fixes to prevent these types of errors.

Element #6. DISTRIBUTION

TRENDS NOTED:

- "Distribution" accounts for 257 total medication errors in 2020. This calculates to a 0.026% error rate (# of errors/# of doses dispensed), vs. 0.039 in 2019 and 0.056% in 2018. In 2020, 77% of the distribution errors were categorized as level A or B events, that did not reach any patient.
- Breaking down "Distribution" errors by Specific Event Type, the top event types were as follows:
 - 193 (79%) distribution errors were due to controlled substance discrepancy errors that were entered by pharmacy department as part of the controlled substance surveillance program at CCRMC. See "Medication Errors by Drug Class- Controlled Substance," section for more information.
 - 13 errors were due to issues surrounding Omnicell. TREND: Specifically, 9 errors included wrong medication found in Omnicell bin. This is a decrease from 21 errors in 2019 and 16 errors reported in 2018.
 - 11 errors involved multidose vials expiration labeling by nursing of certain medications in Omnicell (TREND). See "See "Product labeling, packaging and nomenclature" section for more details." This is an improvement from 19 errors in 2019.
 - Other errors were due to miscellaneous causes in which no trend could be noted.
- Breaking down "Distribution" errors by drug class, the following was noted:
 - 202 errors were due to controlled substances (193 were controlled substance discrepancies)
- Breaking down "Distribution" errors by severity rating, there were:
 - 197 level B errors
 - 59 level C errors
 - 1 level A error
 - Therefore, **none** of the events resulted in harm. See "Percent Medication Error Rate" graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- See "Medication Errors by Drug Class- Controlled Substance," section for in-depth review of controlled substance monitoring and corrective actions.

- Pharmacy staff was educated to ensure accurate filling of Omnicell medications. There is barcode scanning that is utilized in Omnicell, but due to technological limitations, only one tablet of each medication fill is required to be scanned, instead of all of them. CCRMC pharmacy leadership has repeatedly reported this to Omnicell as an issue that needs addressing.
- In regards to the errors involving multidose vial expiration labeling by nursing, see “Product labeling, packaging and nomenclature” section for more details.

ANALYSIS: Looking back in 2020, the majority of distribution errors surrounded controlled substance monitoring. The total number of controlled substance discrepancies decreased from 486 errors in 2018 to 386 errors in 2019 and then even further down to 193 in 2020 (an overall 60% decrease from 2018 to 2020). Pharmacy will continue to monitor for controlled substance discrepancies going forward in 2021.

Element #7. ADMINISTRATION OF MEDICATION

TRENDS NOTED:

- “Administration” accounts for 161 medication errors in 2020. This calculates to a 0.017% error rate (# of errors/# of doses dispensed), which is decreased from 0.023% in 2019 and 0.32%.
- Breaking down “Administration,” errors by Specific Event Type, the top event types were as follows:
 - 32 errors were due to overrides (See Appendix C for graphs). When looking at the overrides over the total number of doses dispensed from Omnicell in the year, this calculates to a 0.003% override rate in 2020, a reduction from 0.006% in 2019 and 0.009% in 2018.
 - Looking at override errors by unit, the following 5 units had the most overrides.
 - a. 3B (ED)- 8 overrides (vs. 19 in 2019 and 27 in 2018)
 - b. 5A (L&D)- 8 overrides (vs. 7 in 2019 and 7 in 2018)
 - c. 2B (OR)- 3 overrides (vs.10 in 2019 and 22 in 2018)
 - d. 2C (PACU) 3 overrides (vs. 2 in 2019 and 4 in 2018)
 - e. 3D (CCU)- 3 overrides (vs. 6 in 2019 and 12 in 2018)
 - It is important to note that anesthetic agents contributed to 2 overrides, an improvement from 13 overrides in 2019 and 23 overrides in 2018 (An overall 91% improvement from 2018 to 2020).
 - 25 errors involved “missed doses.” When looking at the number of missed doses over the total doses dispensed, this calculates to a 0.003% error rate vs. 51 errors in 2019 (0.004%) and 47 errors in 2018 (0.004%).
 - Of the 25 missed doses, the top error trends were as follows:
 - a. Incorrect tubing connections/ line clamped: 9 errors (TREND: 7 of the 9 cases involved antimicrobials (78%). 5 of the 6 errors (83%) occurred during day shift (Of those, 1 occurred at time of shift change, a decrease from 8 errors during shift change in 2019). The total errors due to incorrect tubing connections/ line clamped decreased to 9 errors in 2020 vs. 14 errors in 2019 and 14 errors in 2018.
 - b. Nurse forgot/distracted/busy: 5 errors (no trend was noted among the 5 errors)
 - Breaking down the “missed dose,” errors by location: 4B Med Surg (10 errors), 5D Med Surg (6 errors), 3E IMCU (3 errors), 5C Postpartum (2 errors), 3D ICU (2 errors), 5A L&D (1 error), 3B ED (1 error).

- Breaking down administration errors by drug class, the following was noted:
 - 34 anti-infectives in 2020 vs. 52 in 2019 and 56 in 2018 (TREND: the top error type for ant infectives was missed dose with 16 errors, 3 vancomycin trough errors and 3 delays in therapy).
 - 19 controlled substances vs. 61 in 2019 and 80 in 2018 (TREND: The top error types were 7 override errors and 3 unreconciled narcotic discrepancies).
 - 12 anticoagulant errors (TREND: 5 involved anticoagulant drip titration errors (4 heparin drips and 1 argatroban drip)
- Breaking down administration errors by severity level:
 - 2 were level A
 - 17 were level B
 - 123 were level C
 - 19 were level D

➤ Therefore, **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- All administration override issues: NPMs investigated 100% of SERS for overrides, and all were appropriate per NPM, and were either resolved, or orders were back charted. Data from the Annual Override Report is shared with Nursing Leadership.
- In regards to the nurses forgetting to unclamp the secondary line, see above “Antimicrobials,” section for more details on actions taken.

ANALYSIS:

Looking back in 2020, the top errors that peaked were override errors and missed dose errors which is consistent with the previous year. The percent rate of overrides continued to decrease in 2020 as compared to 2019 and 2018. In 2020, the majority of overrides took place in the ED, which is consistent with 2019 and 2018. Going forward in 2021, pharmacy will continue to monitor overrides for any trends. Overrides of anesthetic agents significantly improved by 91% from 2018 to 2020.

In regards to missed doses due to the medication line being clamped, there are several processes in place from previous years that have contributed to the downtrend of clamp errors and maintaining a low number of errors ((i.e. audits by pharmacy and nursing, education by the professional development department). In 2019, the pharmacy department’s Performance Improvement Project focused on minimizing missed doses due to medication transfer non-compliance from 3B ED to subsequent units. Several actions were taken including nursing education, warnings in ccLink to remind nurses to retrieve the patient’s medications upon transfer and pharmacy technicians double checking that the patient is still in the ED when delivering medications. This was continued in 2020. Going forward in 2021, a Dispense Track system will be piloted in 5D Med/Surg to track where a medication has been delivered to in the hospital. Pharmacy will continue to be vigilant in monitoring for controlled substance discrepancies (specific actions taken and to be continued are specified in the “Medication Errors by Drug Class- Controlled Substance,” section).

Element #8. MONITORING

TRENDS NOTED:

- Monitoring accounts for 24 total medication errors in 2020. This calculates to a 0.002% error rate (# of errors/# of doses dispensed) vs. 0.001% in 2019 and 0.004% in 2018.
 - Breaking down “monitoring,” errors by Specific Event Type, the most common event types were as follows:
 - 9 errors involved vancomycin trough monitoring errors vs. 9 in 2019 and 15 in 2018 (see the “Antimicrobial,” section for more details).
 - 5 errors involved heparin infusion vs 10 errors in 2019 and 13 errors in 2018. See the “High Alert,” section for more details).
 - 1 error involved insulin infusion vs. 1 in 2019 and 7 in 2018.
 - Breaking down monitoring errors by class, the following was noted:
 - 8 due to anticoagulants (TREND: 5 of 7 cases (71%) involved heparin infusion, 2 of 7 cases (29%) involved argatroban infusion- see above)
 - 11 due to anti-infectives (TREND: 9 out of 11 cases (92%) involved vancomycin trough monitoring- see above)
 - Breaking down Monitoring errors by harm level, there were:
 - 13 level C
 - 9 level D
 - 2 level E (see “Medication Errors by Severity Level,” section for more detail)
- See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- For heparin infusion errors, see the “High Alert Medication Errors,” section for actions taken. Additionally pharmacy reviews all heparin infusions on a daily basis and communicates with the nurse involved when an action is needed.
- For vancomycin trough errors, see the “Antimicrobials,” section for details of actions taken.

ANALYSIS: In 2020, the majority of monitoring errors were due to issues surrounding vancomycin trough monitoring. This issue was discussed by the Medication Safety Committee and a ticket was placed with ccLink to optimize the communication of vancomycin trough orders to ensure that they don't get missed. Going forward in 2021, pharmacy will work with ccLink to accomplish this. It is notable to mention that heparin infusion errors decreased from 13 errors in 2018 to 10 errors in 2019 and down to 5 errors in 2020 (an overall 62% decrease. This can be attributed to the several efforts taken by the multi-disciplinary heparin task force (see the “High Alert Medication Errors,” section for details on actions taken and plans for 2021). It is also notable to mention that the number of insulin infusion monitoring errors decreased from 7 in 2018 to 1 error in 2019 and 1 error in 2020 (an overall 86% reduction) due to several actions taken by the insulin committee (See the “High Alert Medication Errors,” section for details on actions taken and plans for 2021).

Element #9. Education

TRENDS NOTED:

- “Education accounts for 55 errors in 2020. This calculates to a 0.006% error rate (# of errors/ # of doses dispensed), vs. 0.007% in 2019 and 0.005% in 2018.
- The top error types that peaked were:
 - 6 errors involved missed doses (TREND: There were two missed doses due to the line being clamped)

- 4 errors involved delays in therapy (TREND: 2 errors involved medications not being transferred with patient from one unit to the next).
- 4 errors involving documentation issues (there was no trend among these errors).
- The top drug classes that peaked were:
 - 10 errors involved anti-infectives (TREND: 4 involved missed doses, 2 of the 4 were due to the line being clamped)
 - 6 errors involved narcotics (there was no trend among these errors)
 - 5 errors involved chemotherapeutics (TREND: 3 errors were prescribing issues that were all near misses and did not reach the patients).
- Education was provided to involved staff in all cases.
- Breaking down Monitoring errors by harm level, there were:
 - 22 level C
 - 21 level B
 - 8 level D
 - 2 level E (see "Medication Errors by Severity Level," section for more detail)
 - 2 level A
- See "Percent Medication Error Rate" graph with harm index (Appendix B).

MAIN ACTIONS TAKEN: Education was provided to involved staff or patient (when applicable) to ensure safe medication use. See the "Antimicrobials" section for specific actions taken in regards to the antimicrobial errors. See the "High Alert Medication Errors" section for specific actions taken in regards to the chemotherapeutic errors. In regards to the errors involving narcotics, education was provided to all staff involved.

ANALYSIS:

In 2020, there were trends noted in errors involving missed doses and chemotherapeutic prescribing, and insulin management. See the "antimicrobials," and "High Alert Medication Errors," sections for more details on actions taken and plans going forward in 2021.

Element #10. USE

TRENDS NOTED:

- "Use" accounts for 233 total medication errors in 2020. This calculates to a 0.024% error rate (# of errors/# of doses dispensed), a decrease from 0.036% in 2019 and 0.053% in 2018. This is the #2 most common MERP element classification for errors in 2019, which is due mostly to controlled substance discrepancy monitoring by pharmacy department. See "Medication Errors by Drug Class- Controlled Substance," section for in-depth review of controlled substance monitoring and corrective actions taken/corrective actions.
- Breaking down the "Use," errors by Specific Event Type, the top errors were as follows:
 - 193 (83%) 386 (84%) of errors were due to controlled substance discrepancy monitoring errors that were entered by pharmacy department as part of the controlled substance surveillance initiatives. This is a reduction from 386 errors reported in 2019 and 486 errors reported in 2018 (an overall 60% reduction). See "Medication Errors by Drug Class- Controlled Substance," section for in-depth review of controlled substance monitoring and corrective actions taken/corrective actions.
 - 10 errors involved labeling issues (TREND: all 10 errors involved multi-dose vial expiration labelling by nursing staff- see the "Product labeling, packaging and nomenclature," section for more detail.)

- Breaking down the “Use, errors by drug class, the following was noted:
 - 196 errors involved controlled substances (193 controlled substance discrepancies)
 - 8 errors involved anti-diabetic agents (TREND: 6 errors involved multi-dose vial expiration labelling by nursing staff)
 - 7 errors involved anti-infectives (no trend noted)
 - Breaking down “Use” errors by severity rating, there were:
 - 173 level B errors
 - 58 level C errors
 - 2 level D errors
- Therefore, **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- See “Medication Errors by Drug Class,” section for in-depth review and actions taken in regards to controlled substance discrepancy errors and for errors involving anti-infectives.
- See the “Product labeling, packaging and nomenclature,” section for actions taken in regards multi-dose vial expiration labeling errors by nursing.

ANALYSIS: Looking back in 2020, the majority of “use” errors surrounded controlled substance monitoring, which are trended via unit specific controlled substance discrepancy reports. However, the number of discrepancies decreased by 60% from 2018 to 2020 as a result of the ongoing efforts to reduce discrepancies. Going forward in 2021, pharmacy will continue to be vigilant in monitoring for controlled substance discrepancies and continue to report all discrepancies in SERS.

Element #11. TECHNOLOGY

TRENDS NOTED:

- “Technology” accounts for 25 total medication errors in 2020. This calculates to a 0.003 % error rate (# of errors/# of doses dispensed) vs. 0.002% in 2019 and 0.003% in 2018.
 - Breaking down the “technology,” errors by “Specific Event Type,” the main error types were:
 - 7 errors involved issues with the CADD pump in the infusion center (see the High Alert Section for more details).
 - 5 errors involved Omnicell (TREND: 2 errors involved issues with the dispenser coils- the coils for each error reported were replaced).
 - 4 errors involved issues due to limitations in ccLink (there was no trend among these errors)
 - Breaking down “technology,” errors by drug class, the following was noted:
 - 8 errors involved chemotherapy (TREND: 7 cases involved CADD pump malfunctions).
 - 6 errors involved narcotics (TREND: 2 cases involved dispenser coil issues)
 - Breaking down “Technology” errors by severity rating, there were:
 - 12 level C errors
 - 9 level B errors
 - 1 level A error
 - 3 level D errors
- Therefore, **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- In regards to the CADD pump issues, the pumps were replaced in 2020. See the “High Alert,” section for more details.
- In regards to the dispenser coil issues in Omnicell causing extra medications to be dispensed, each dispenser coil involved in an error was replaced.

ANALYSIS: Looking back in 2020, the most common error involved CADD pump issues (ex: battery depletion, pump malfunction, etc.) the pumps were replaced in 2020 with new smart pumps with drug libraries and the capability to run reports for quality monitoring. Going forward in 2021, data continue to be trended and processes will be optimized as needed.

Element #12. TRANSITIONS IN CARE

TRENDS NOTED:

- “Transitions in Care accounts” for 3 total medication errors in 2020. This calculates to a 0.0001% error rate (# of errors/# of doses dispensed) which is reduced from 0.0008% in 2019 and 0.002% in 2018.
- 2 of the 3 errors involved missing medications that had already been dispensed by pharmacy due to medications not being transferred with the patient upon transfer from one unit to the next.
- Breaking down “Transitions in Care” errors by severity rating, there were:
 - 1 level C error
 - Therefore, **none** of the events resulted in harm. See “Percent Medication Error Rate” graph with harm index (Appendix B).

MAIN ACTIONS TAKEN:

- Staff was educated in the case listed above.

ANALYSIS: Looking back in 2020, the errors that peaked involved medications not being transported with the patient upon transfer from one unit to the next, however there was a 78% decrease in this error type from 2019 to 2020. The pharmacy department’s performance improvement project was to deliver medications to patients in a timely manner and improve pharmacy operations by reducing unnecessary in-basket messages. Upon investigation, it was found that the top reason for in-basket messages was for missing doses. With further analysis, it was found that one of the top two contributing factors to missing doses was non-compliant medication transfer events (i.e. medications already dispensed from pharmacy not being transferred with patient from one unit to the next). In 2020, pharmacy and nursing focused on educating staff which contributed to the decline in errors reported. Simultaneously, in 2020, pharmacy explored utilizing a dispense tracking system to help with locating missing doses that have already been dispensed. Going forward in 2021, the pharmacy department will purchase the needed equipment and software to allow for dispense tracking and then will pilot the dispense tracking system in 5D Med/Surg.

Overall Summary:

- There was a 42% decline in SERS reported in 2019 vs. 2018, which can be attributed to the reduction in controlled substance discrepancies in 2020 vs. 2019 and 2018. This is as a result of the ongoing efforts by Pharmacy, Nursing and Anesthesiology to minimize controlled substance discrepancies (technological enhancements, education, etc.) along with oversight from the Opioid Stewardship Program Committee.
- In 2020, 99.4% of error did not contribute to any patient harm (Level E errors or higher).
- Controlled substances contributed to the highest number of errors. The top error type was controlled substance discrepancies. Following controlled substances were anti-infectives. The top error types were missed doses due to IV line remaining clamped and vancomycin trough monitoring errors.
- Pharmacy department promotes awareness and transparency in the organization and uses SERS as an approach to identify areas for improvement so that strategies could be implemented to correct these issues. Pharmacy department generates the most SERS of the organization in order to support this methodology for improvement.

Conclusion: The MERP program has been effective in detecting medication errors and in developing corrective actions taken for the past year. The annual SERS review was completed in February 2021.

	2018	2018 harm	2019	2019 harm	2020	2020 harm
Total Number of Medication Errors	1115		879		508	
BREAKDOWN BY MERP ELEMENT						
	2018		2019		2020	
Distribution	615	0	490	0	257	0
Use	582	2	460	0	233	0
Administration	352	7	299	5	161	0
Education	55	7	87	2	55	2
Prescribing	75	11	70	5	26	1
Dispensing	52	1	46	1	28	0
Technology	36	1	31	0	25	0
Product Labeling, Packaging and Nomenclature	39	0	26	0	17	0
Monitoring	44	4	23	0	24	2
Transitions in Care	17	1	10	0	1	0
Prescription Order Communication	8	0	7	0	6	0
Compounding	3	0	3	0	0	0

MEDICATION ERROR REDUCTION PLAN

I. PURPOSE:

To outline the Medication Error Reduction Plan & the Annual review of the MERP plan

II. REFERENCES:

TJC Standards LD.01.03.01, LD.03.01.01, LD.03.02.01, LD.03.05.01, LD.04.04.01, MM.06.01.01, MM.07.01.03, MM.08.01.01, PI.01.01.01, PI. 02.01.01, PI.03.01.01

CMS CoP § 482.11(a), 482.12(b)(d)(f), 482.21(a)(b)(c)(d)(e), 482.23(c), 482.25(a)(b), 482.41(c), 482.42(b)

California SB 1875

III. POLICY:

SB1875 requires an annual review of all MERP elements for efficacy. There are twelve different 'elements' to the medication management process that require monitoring: Prescribing, Prescription Order Communication, Product Labeling, Packaging, and Nomenclature, Compounding, Dispensing, Distribution, Administration of Medications, Monitoring, Education, Use, Technology, and Transitions in Care.

IV. PROCEDURE:

Below is a breakdown, by element, of the monitors in place at CCRMC. This is a multidisciplinary process, with many departments involved/responsible for the monitor/audit/report.

1. Prescribing:

- Medication errors: review and analysis of all medication errors involving prescribing
- Adverse Drug Events: review and analysis of all reported adverse drug events
- Pharmacy interventions: review and analysis of all reported pharmacist interventions with providers
- Antibiotic stewardship: report on appropriate prescribing and monitoring of antibiotic therapy

- Fentanyl patch: review of all fentanyl patch orders for appropriateness of therapy and monitor of provider prescribing process
- Rescue medications: review of 100% of all doses of rescue medications administered to patients
- LASA review: review of latest literature on LASA and report on all CCRMC medication errors involving look-alike-sound-alike errors

2. Prescription Order Communication:

- Medication errors: review and analysis of all medication errors involving order communication

3. Product Labeling, Packaging, and Nomenclature:

- Medication errors: review and analysis of all medication errors involving labeling, packaging, and nomenclature
- Internal pharmacy audit: monthly audit of pharmacy-dispensed doses, looking for proper labeling, ingredients, cart fill check, etc
- LASA review: review of latest literature on LASA and report on all CCRMC medication errors involving look-alike-sound-alike errors

4. Compounding:

- Medication errors: review and analysis of all medication errors involving compounding
- Internal pharmacy audit: monthly audit of pharmacy-dispensed doses, looking for proper labeling, ingredients, cart fill check, etc.
- End-Product-Testing

5. Dispensing:

- Medication errors: review and analysis of all medication errors involving dispensing
- Internal pharmacy audit: monthly audit of pharmacy-dispensed doses, looking for proper labeling, ingredients, cart fill check, etc
- Turn-Around Time: monitor of pharmacy TAT
- LASA review: review of latest literature on LASA and report on all CCRMC medication errors involving look-alike-sound-alike errors

6. Distribution:

- Medication errors: review and analysis of all medication errors involving distribution.

- Internal pharmacy audit: monthly audit of pharmacy-dispensed doses, looking for proper labeling, ingredients, cart fill check, etc
- High risk/high alert: review of latest literature on high risk medications and report of all medication errors involving high risk medications
- LASA review: review of latest literature on LASA and report on all CCRMC medication errors involving look-alike-sound-alike errors

7. Administration of medications:

- Medication errors: review and analysis of all medication errors involving administration of medications
- Bar code report: report on medications being administered without proper barcoding.
- Alaris pump report: report on improper use of Alaris pump
- Override report: monitor of medications removed from the automated dispensing machine using the override function
- LASA review: review of latest literature on LASA and report on all CCRMC medication errors involving look-alike-sound-alike errors

8. Monitoring:

- Medication errors: review and analysis of all medication errors involving monitoring of medications
- Antibiotic stewardship: report on appropriate prescribing and monitoring of antibiotic therapy
- Pharmacist-managed Diabetes Care Management Clinic: review and analysis of patient outcomes for pharmacist-managed diabetes patients vs provider-managed diabetes patients.
- Pharmacy interventions
- D50 Use Review
- Review of Rescue medications
- Adverse Drug Events: review and analysis of all reported adverse drug events

9. Education:

- Medication errors: review and analysis of all medication errors with regards to competency of staff
- Patient education on fentanyl patch: review and monitor for documentation of patient education for all patients being discharged on fentanyl patch
- Professional Development Department provides ongoing education for nursing staff

- Transitions of Care program by pharmacy department: Admission medication reconciliation and discharge medication reconciliation for patients deemed as “High Risk,” per defined criteria.

10. Use:

- Medication errors: review and analysis of all medication errors related to medication use
- Antibiotic stewardship: report on appropriate prescribing and monitoring of antibiotic therapy
- Fentanyl patch: review of all fentanyl patch orders for appropriateness of therapy and monitor of provider prescribing process

11. Technology:

- Medication errors: review and analysis of all medication errors related to technology
- Alaris pump report: report on improper use of Alaris pump
- ccLink: reports on system changes made in response to system issues

12. Transitions in Care:

- Medication errors: review and analysis of all medication errors related to transitions in care
- Transitions of Care program by pharmacy department: Admission medication reconciliation and discharge medication reconciliation for patients deemed as “High Risk,” per defined criteria.

An annual report on the effectiveness of the plan, illustrated by the annual medication errors and metrics associated with each element is prepared and presented to the Medication Safety Committee, Patient Care Policy & Evaluations Committee and the Performance Improvement Committee, and the Medical Executive at the end of the MERP year. The plan is then modified, based on the findings, for the following year and adopted by the organization.

- V. Attachment:
[Annual MERP Review](#)
[MERP Plan 2019](#)

VI. **RESONSIBILITY:**

Director of Pharmacy Services

Reviewed: 3/14, 3/16, 3/18, 3/19, 3/20, 3/21

Revised: 3/14, 3/16, 3/18, 3/19, 3/21

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Approval	Signatures	Date
Chief Executive Officer		3/2021
Chief Medical Officer		3/2021
Chief Nursing Officer		3/2021
Chief Quality Officer		3/2021
Medical Executive Committee		3/2021
Patient Safety and Performance Improvement Committee		3/2021
Patient Care Policy and Evaluation		3/2021
Governing Body		3/2021
Director of Pharmacy Services, Medication Safety Committee		3/2021

Policy (5013-SEE ATTACHED)

The Medication Error Reduction Plan submitted to CDPH in 2001 as a facility plan to eliminate or substantially reduce medication-related errors (by authority of SB1875/801) and Health & Safety code 1339) has been incorporated in this policy.

Annual review of the effectiveness of the plan will be performed depicted in the MERP grid. If the plan is not effective in reducing medication errors, MERP will be revised to redesign actions and achieve goals.

Signature sheet for March 2021

Due to the challenges surrounding COVID-19 pandemic, starting the 1st quarter of 2020, the in-person meetings were cancelled, however, all material related to MERP including the plan was shared with committee members electronically. The MERP Plan was reviewed and approved by JCC and PAC members.

Director of Pharmacy Services: _____ Date: _____



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Addendum I: Pharmacy Department's QA/PI collaborative structure

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I. INTRODUCTION

The following is Contra Costa Regional Medical Center and Clinic’s plan to eliminate or substantially reduce medication-related errors as part of Senate Bill 1875/ 801 and Health & Safety Code 1339.

A. CONTRA COSTA REGIONAL MEDICAL CENTER AND CLINICS MERP

Contra Costa Regional Medical Center is a 167 bed county hospital located in Martinez California. We are directed and guided by established policies and procedures, protocols and guidelines to minimize medication errors and adverse drug events. Events are reported through an electronic event reporting system (SERS), a voluntary, non-punitive reporting system for all problems/risk issues identification, and preventive action designed for implementation to reduce errors or potential risks. Medication safety initiatives were developed in 2001. Over the years we have incorporated into our medication safety and quality system risk reduction requirements from Federal and State Laws, including but not limited to CMS, CDPH, FDA, other governmental agencies, TJC standards; National Patient Safety Goals & TJC Booster Pack, applicable clinical practice guidelines and recommendations from nationally recognized organizations (e.g., ISMP, The Medical Letter, etc...), professional societies and associations (e.g., ASHP, CSHP, APhA, ADA, etc...) as well as shared learnings from any external resources with successful medication practices demonstrated in reducing medication errors and adverse drug events.

B. VISION

To be the health care system of choice in Contra Costa County where partnerships with patients and employees exist to promote individuals and community wellness.

C. MISSION

The mission of Contra Costa Health Services is to care for and improve the health of all people in Contra Costa County with special attention to those who are most vulnerable to health problems.

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- We provide high quality services with respect and responsiveness to all.
- We are an integrated system of health care services, community health improvement and environmental protection.
- We anticipate community health needs and change to meet those needs.
- We work in partnership with our patients, cities and diverse communities, as well as other health, education and human service agents.
- We encourage creative, ethical and tenacious leadership to implement effective health policies and programs.
- We have a department-wide goal to reduce health care disparities and health disparities by addressing issues of diversity and linguistic and cultural competence

D. VALUES

Respect, Safety, Learning, Honesty, Excellence, Functional, Communication, Stewardship, Creativity, and Compassion.

E. STRATEGIC DIRECTIVES

CCRMC and Clinics use a system-wide approach to identify high risk and problem prone patient and care processes, redesign unsafe care processes, implement best practices, and adopt successful practices from other organizations that will improve and ensure patient safety. Our goal is to increase the safety of patients receiving medications at CCRMC and Clinics.

II. OVERVIEW OF CCRMC's MERP

A. SCOPE OF THE MEDICATION ERROR REDUCTION PLAN

1. Ensuring provision of pharmaceutical services meet the patient's therapeutic goal by improving safe medication use processes that optimize therapeutic outcomes
2. Ensuring the safe administration of medications according to physician's orders
3. Ensuring compliance with regulatory requirements related to medication safety and security throughout the hospital

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4. Reviewing, analyzing, and trending medication errors and adverse drug events (i.e., Adverse Drug Reactions as well as medication errors), and identifying processes and practices which require improvement
5. Implementing evidence-based practices in medication administration, medication safety and security, and improved technologies and pharmaceuticals

B. GOAL AND OBJECTIVE

Our objective is to increase effectiveness in the implementation of evidence-based medication practices shown to reduce preventable adverse medication events. Medication safety will be improved through compliance with medication error reduction standards and safety practice implementation required by CMS, CDPH, FDA, Board of Pharmacy, TJC and its National Patient Safety Goals as well as Booster Pack.

- Development and revision of policies and procedures and protocols to minimize Adverse Drug Events (ADE) will be based on review of facility reported adverse drug events, medication use evaluation, chart reviews, observed medication passes, accepted professional principles, incorporation of Federal & State laws and regulations, TJC medication management standards and National Patient Safety Goals, its Booster Pack as well as its Sentinel Event Reports, other external alerts and/or recommendations from national associations including but not limited to the Institute For Safe Medication Practices (ISMP), National Coordination Council for Medication Error Reporting and Prevention (NCCMERP), Institute of Healthcare Improvement (IHI), other governmental agencies such as FDA Medwatch program, as well as clinical practice guidelines and standards of practice from nationally recognized professional organizations (e.g., American Pharmaceutical Association (APhA), American Society of Healthcare Systems Pharmacists (ASHP), California Society of Healthcare Pharmacists (CSHP), etc.

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Our processes include but are not limited to the following:

1. Identify the causes of preventable Adverse Drug Events (ADE)
2. Identify the causes of preventable Rescue medications
3. Implement selected short-term changes, as well as
4. Identify, evaluate and implement long-term strategies that require operational and capital expenditures that will ensure safe medication processes and systems with or without technology.

C. ACTION PLANS AND INITIATIVES

See MERP Grid for an updated medication safety QA/PI project list, demonstrating numerous medication safety goals, initiatives, and medication related best practices. Our priority is to achieve continual implementation of safe medication practices to substantially reduce medication errors and/or proactively prevent adverse events by addressing issues, actual or potential risk points or deficiencies associated with CDPH MERP elements.

III. ORGANIZATIONAL RESPONSIBILITY AND ACCOUNTABILITIES

[\(DHS-CDPH guiding principle #1-Establish an organized quality system that addresses the issue of a facility wide reduction of medication errors\)](#)

1. CCRMC has an ongoing approved and leadership-supported Medication Error Reporting Program with policies and procedures which clearly establish organizational structure in providing the leadership and quality system in advancing patient safety, risk management, and error reduction. Approved policies and procedures establishing our medication management and quality system are continually addressing issues in improving and refining processes, based on what went wrong, to design corrective actions for implementation and prevent re-occurrence.
2. Under the oversight of the PCP&E, a multidisciplinary Medication Safety Committee was formed in 2001. The Medication Safety Committee (MSC), run by the Department of Pharmacy (SEE

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Addendum I), has oversight on all medication management processes, system wide. MSC is a subcommittee of the Patient Care Policy and Evaluation Committee (PCP&E) and reports to PCP&E, PS&PIC, and MEC on a monthly basis. MSC oversees/addresses ALL medication errors and meets on a multidisciplinary note, every month, to discuss in detail all medication errors that occurred during that month. Medication errors are trended using NCCMERP ratings and through ongoing data aggregation analysis and preventative action design. In addition, at CCRMC, Pharmacy Dept trends near misses as well as harm index (see SBARs in MERP binder or electronic MERP document).

3. This committee is co-chaired by the Director as well as the Assistant Director of Pharmacy Dept. The quality of different services in ensuring compliance with all MERP elements and established hospital policies is assessed and monitored via data collection. (See Annual Medication Error Reports in the MERP binder).
4. MSC has oversight on all medication related processes and generates many reports, including but not limited to Medication Errors, Rescue Meds, CSPs (Compounding Sterile Products), Clinical Monitors, Alaris® pump, Overrides, Pharmacy Department's Performance Improvement projects, ADRs, and ISMP reports.
5. Medication error reports and adverse drug reaction reports with executive summary and pertinent data feedback relative to the user/user department are sent/referred to relevant medical staff, nursing unit/departments. Action response is requested from unit management/department head before SERS is closed.
6. Feedbacks on medication safety initiatives are reported to the Medical staff as well as Nursing staff through leadership of these departments.

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7. A summary of all MSC agenda items are reported to PCP&E, PS&PIC as well as MEC. The Director of Pharmacy Department is a member of all these committees and presents the report on all pertinent information on a monthly basis to the aforementioned committees.
8. Implementation of our MERP is integrated into the facility-wide quality assurance/performance program.
9. Ongoing educational efforts are in place to heighten the awareness of medication safety to our patients.

IV. REPORTING SYSTEMS AND MONITORING

(DHS-CDPH guiding principles #2-Develop effective reporting mechanisms to ensure medication related errors are reviewed)

Reduction of medication errors and adverse reactions can be achieved by effective reporting systems that proactively identify causative factors and are used to implement corrective actions to reduce or prevent reoccurrences. To facilitate reporting, CCRMC adopted a medication error definition that is broad enough in scope to capture actual, potential, or “near miss” events and an adverse drug reaction (ADR) definition to capture suspected as well as actual ADRs.

CCRMC conducts proactive identification of adverse drug events or unsafe care processes including concurrent and retrospective review of patient’s clinical records, monitoring of targeted high-risk drugs with pertinent lab results, observing medication passes, conducting drug use evaluation and drug regimen review for high-risk patients for drug and or dosage adjustment to prevent potential adverse drug events, as well as performing other QA/PI initiatives as listed in MERP grid.

At CCRMC the Pharmacy Department believes in transparency and uses our event reporting system (SERS) to place in all near misses as well as discrepancies. Pharmacy Department

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believes that SERS is a means of trending and alerting healthcare members of the ongoing challenges in the system. In addition, Pharmacy Department uses analyzed data as a means of identifying QA and PI projects. See MERP Grid for examples of system enhancement projects using this methodology by the Pharmacy Department.

Pharmacy Department is the biggest contributor to SERS entry in the organization. All relevant data from our monitors and reports are entered into this system on a concurrent and retrospective basis. Through subsequent follow up with Nursing, Medical Staff, and Quality departments, we have been able to overcome many medication safety challenges in the past few years.

- A. CCRMC has a voluntary, non-punitive reporting system to monitor and report Adverse Drug Events (ADE) via a long-standing effective medication error reporting as well as an Adverse Drug Reaction program (ADR) with data collection, aggregation, analysis, and special emphasis on designing and implementation of preventative actions on an ongoing basis.
- B. Medication events, actual, potential, or near misses are reviewed and trended to evaluate changes in our systems that could improve patient safety. Evaluation and implementation of medication safety initiatives follow our continuous quality improvement process using the PDSA (Plan-Do-Study-Act) model, the Rapid Cycle Improvement techniques, the Failure Mode and Effect Analysis (FMEA), and the Root Cause Analysis (RCA) model for sentinel event or “near misses” in conjunction with our Quality department / Risk management & Patient Safety Officer.

V. PROCESS-MERP IMPLEMENTATION ASSESSMENT

A. ASSESSMENT

(DHS-CDPH guiding principle #3- Establish a baseline assessment and then, at a minimum annually review the effectiveness of the plan to reduce medication-related errors)

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Baseline assessment of medication related problems and annual review of the effectiveness of the plan are performed using an objective based critical review. If the plan is not effective in reducing medication errors, MERP will be revised to redesign actions to achieve goals.

B. CDPH REQUIREMENT IN ASSESSING EFFECTIVENESS OF MERP IMPLEMENTATION:

Evaluate, assess, and include a method to address each of the procedures and systems listed under 1339, H&S, subdivision (d) to identify weaknesses or deficiencies that could contribute to errors in the administration of medications. CDPH categorized and focused on evaluating twelve elements on MERP implementation for ongoing improvement.

At CCRMC we use our medication error reports to trend challenging elements. Medication errors are reviewed periodically (i.e., monthly, quarterly, and annually).

The following year's plan is drafted after meticulous review of all Medication Errors, analyzing the cumulative data using monthly and annual Med Error patterns. Subsequently thereafter, plans are implemented to reduce the likelihood of the errors in those certain areas.

Pharmacy Dept uses the above Run Chart methodology to graph each MERP element to assess the effectiveness of the instituted plans and whether those plans were adequate in reducing medication errors over time.

Run Charts are cumulative; using Median Line, we can detect any trends, shifts, or astronomical data points. We also insert annotations on the aforementioned run charts to be able to describe the cause and effects concerning any peaks or trough vs any observed isolated incidents.

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Pharmacy Dept works very well with ALL departments (Nursing, medical, or ancillary departments) in conjunction with Quality Managers and the Professional Development Department (PDD) to apply corrective actions. Success is measured by following SERS in the affected areas to see if the action plan was proven effective or not and reflected on the run charts as cited above.

Education and Information dissemination

1. CCRMC disseminates information to hospital leadership, physicians, nurses, pharmacists, and quality managers. The following activities are currently underway to increase awareness of patient safety:
 - a. Data feedback to physicians by Pharmacy Department's leadership on medication errors, rescue meds, adverse drug reaction reporting and medication use quality assurance and use audits.
 - b. Data feedback to nursing by Pharmacy Department's leadership on medication errors, rescue meds, adverse reactions, and quality audits.

At CCRMC we have actively received and used new information and notices related to:

- Medication errors
- Processes for avoiding errors
- Recalls
- Problem prone medications and
- Resources related to adverse events associated to medications.

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A monthly memo is generated by the Pharmacy Department with all the PCP&E updates. In addition, a memo is generated and sent to the Medical Staff president regarding “Preventable ADRs as well as Preventable Rescue Meds as a learning and educational opportunity.

Technology Strategies

(DHS-CDPH guiding principle #4-Technology implementation shall be part of the plan)

Technology will be used whenever possible to improve effectiveness and efficiency in the medication use processes to make errors difficult to commit and to promote a culture of safety and quality in the workplace. Listed below are technological applications completed at CCRMC.

Technology action plan:

1. Automated Dispensing Cabinets (i.e, Omnicell)
 - Continue using the alerts, reports, and paging system available by the Omnicell software
2. Continue using Repackager (Omnicell) to minimize medication errors in form of medication Unit Dosing and distribution to Nursing units
3. Provide ongoing support to maintain quick access and availability to medical information or current IV administration guidelines, online:
 - Micromedex-available to all staff
 - Lexicomp- available to all staff
4. Expanding reporting capabilities of EPIC (our EHR) to generate more and more meaningful reports in form of system lists, workbench reports, or crystal reports.
5. EHR (ccLink)

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- Usage of EHR, i.e, ordersets, Best Practice Alerts (BPA's), First Data Bank (FDB) warnings (i.e., concerning allergy, Drug-Drug Interaction, high dose, etc...) enables us to ensure safe medication practices at CCRMC.
 - Barcoding technology
 - Introduced globally as BCMA
 - Introduced departmentally in most areas of the Pharmacy dept
 - Antimicrobial Stewardship (ASP) module
6. Utilizing different software and technologies to extract data and trend values
7. VigiLanz (A data mining system)
- a) VigiLanz is programmed to include many monitors. It filters the data and reports all monitors that need to be addressed by the pharmacists on a daily basis
 - b) Antimicrobial Stewardship Dashboard
8. SERS (Safety Event Reporting System)
- Electronic event reporting system with the built in reporting mechanism
9. Alaris® Pump (i.e, Smart pump)
- Smart pump has been programmed to match our EHR rates of administration for all formulary drugs. The use of basic infusion is monitored and use of guardrail is encouraged. Alaris® committee is a subcommittee of MSC that meets every month. Data is trended using its report functionality. Rounds are made by Pharmacy and Nursing to assure compliance with set safety parameters.
10. Kitchcheck®

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- Kit check® uses the RFID technology. Pharmacy Dept uses this technology to improve the efficiency of monitoring the expired medications in variety of kits and carts.
- Kit Check® technology was instituted in Anesthesia Workstations to better manage the inventory of the trays.

11. Central Temperature monitoring software

C. Literature review for ongoing review of the plan

(DHS-CDPH guiding principle #5- Review pertinent literature related to the reduction of medication related errors in the development and ongoing review of the plan.)

Pertinent literature related to the reduction of adverse drug events has been and will continue to be reviewed in the development and review of the plan. The ultimate goal is to deliver safe medication practices at CCRMC and Clinics.

Literature for ongoing learning and sharing are readily obtained from any of our resources at CCRMC. We have a very generous library of resources made available to staff, electronically. A few examples would be Micromedex, Up-To-Date, many journals and ebooks through our library. In addition to that, we benefit from nationally recognized entities and their publications such as IHI, FDA Medwatch alerts, etc... (SEE Goal and Objective section above)

D. CCRMC participates in the following medication safety collaborative for learning from errors and sharing of best practices:

- East Bay Society of CSHP (California Society of Healthcare Pharmacists): Collaboration of all East Bay Pharmacy Leadership
- South Bay Society of CSHP (California society of Healthcare Pharmacists): Collaboration of all South Bay Pharmacy Leadership

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- ARC-Gordon and Betty Moore foundation: Avoid Readmission Coalition. Pharmacy Director has done a number of presentations for this organization and currently is the expert speaker/presenter for Avoid Readmission Campaign in the East Bay
- ISMP Canada: Pharmacy Director has been invited to ISMP in Canada to share the Medication Reconciliation Process at CCRMC as IHI model hospital

VI. MERP ELEMENTS OF THE PLAN TO MONITOR AND EVALUATE SAFE MEDICATION PRACTICES IN ERROR REDUCTION:

The main section of this report will be categorized by the twelve elements of medication practices: Prescribing, Dispensing, Distribution, Administration, Education, Product-labeling, Packaging and Nomenclature, Compounding, Prescription Order Communication, Monitoring, Use, and Transition of Care.

The annual MERP program assessment review and effectiveness evaluation in support of identifying plan weaknesses and deficiencies for change implementation and MERP program modification are highlighted in our MERP Grid.

Processes to Reduce Medication Errors:

Methodologies to reduce medication errors include on-going proactive surveillance and retrospective tools to identify the root causes of variation or deviation in medication management process and system performance. Examples of on-going proactive surveillance tools include the use of trigger tool to identify areas for improvement in clinical care and patient safety, the reviews of medication usage evaluations, and daily monitoring of Automated Dispensing Cabinets medication overrides.

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Data from comprehensive review of reported medication events and on-going proactive and retrospective reviews of system performance will be utilized to determine and evaluate medication safety systems related to, but not limited to: prescribing, prescription order communication, product labeling, packaging and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, medication use and storage of medications, and transitions of care.

Corrective actions are promptly initiated to address each of the eleven processes and systems once a significant trend or pattern has been identified through the on-going monitoring methodologies as described above. Corrective actions may include changes in systems, procedures, staff and management in-services, and revision in policies and procedures. Should the corrective actions as implemented prove to demonstrate a decrease or reduction in medication errors overtime, then the specific hospital policy and corresponding procedures will be revised and forwarded to the Medication Safety Committee (MSC) as well as the oversight committees (i.e, PCP&E, etc...) for review and approval.

Annually, all the revised and changed procedures and systems will be reviewed and evaluated by the MSC as well as PCP&E to determine if the changes undertaken have been effective, or not; and whether the ongoing indicator should continue to be monitored for the forthcoming year. Frequency of monitoring for the specific indicator that has demonstrated a reduction in medication errors will also be revisited and determined by the Medication Safety Committee and approved by the PCP&E Committee.

ANNUAL Medication Error Reduction Plan (MERP) REVIEW
CONTRA COSTA REGIONAL MEDICAL CENTER (3/2018-3/2021 cycle)

VII. MERP GRID:

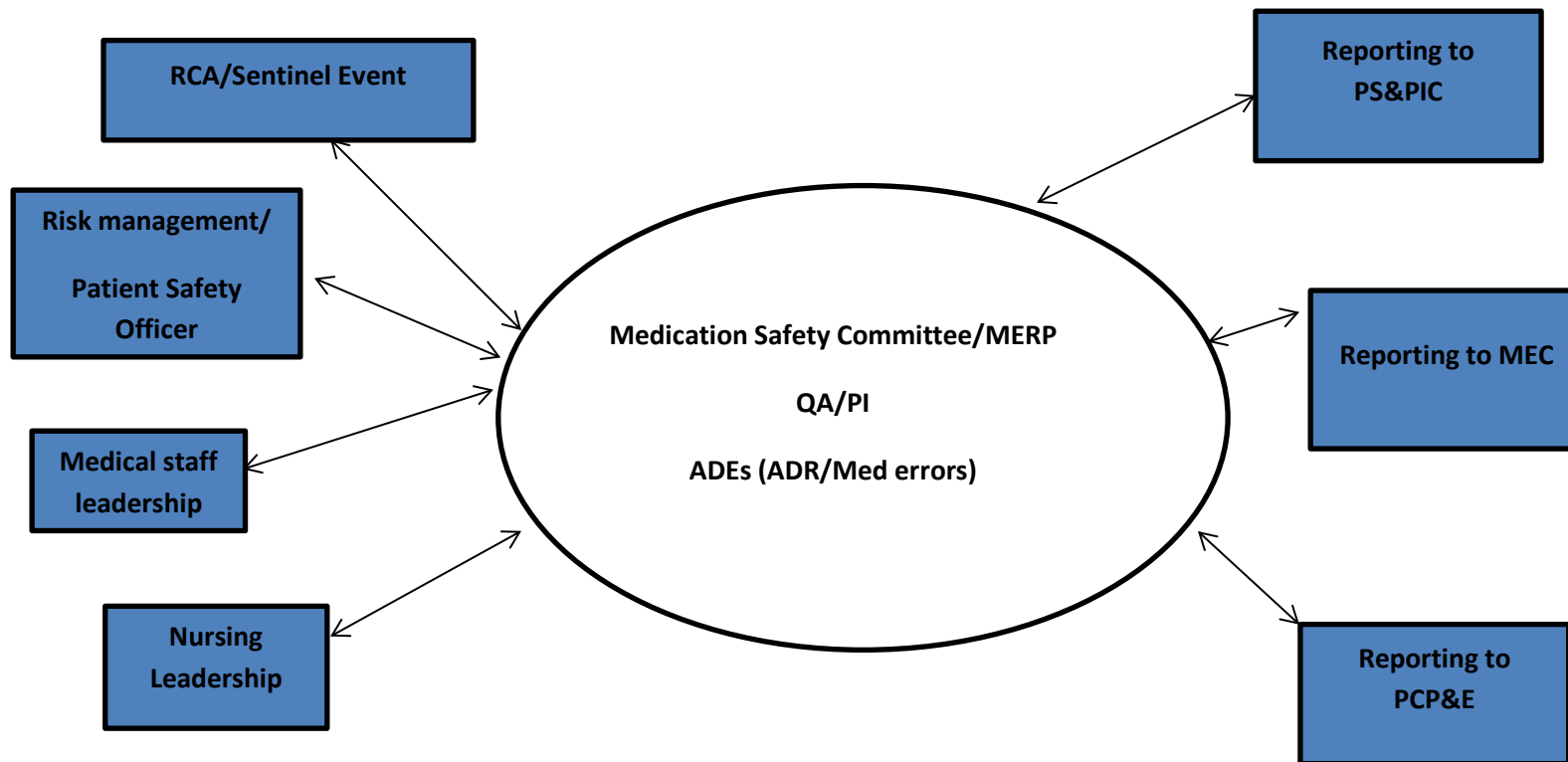
See MERP binder and/or electronic files with hyperlinks to data analysis and reports.

VIII. Effectiveness of the Plan:

The program has been effective in detecting medication errors and in developing corrective actions for the past year (see MERP grid).

ANNUAL Medication Error Reduction Plan (MERP) REVIEW
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Addendum I- Pharmacy Department's QA/PI collaborative structure



MSC Chair:

Shideh Ataii, Pharm.D., APH, Director of Pharmacy Dept, CCRMC and HealthCenters

Adeebah Fakurnejad, Pharm.D., Assistant Director of Pharmacy Dept, CCRMC and HealthCenters