Graduate Medical Education

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

CU GME Quality & Safety Programs

2023-2024 Annual Report

Tyler Anstett, DO | Joe LaFond

Office of Graduate Medical Education

University of Colorado School of Medicine

Table of Contents

.

GME Quality & Safety Incentive Program

Purpose

The GME Quality & Safety Incentive Program works to align quality and safety initiatives between clinical training sites and residency and fellowship programs. The Incentive Program is a collaborative effort between GME, the affiliated hospitals, and the Housestaff Association.

Guiding principles

All CU GME residents and fellows are eligible to participate.

The Quality & Safety Steering committee is comprised of Chief Quality Officers from Children's Hospital of Colorado, University of Colorado Hospital, and Denver Health Medical Center, as well as representatives of the Housestaff Association, CU Associate Dean of GME, GME Director of Quality and Safety Programs, and GME Quality and Safety Program Coordinator.

The Quality & Safety Steering committee supports the administration of the program and guides residents to select metrics that are data-driven, align with our hospitals' and departments' quality/safety priorities, meaningfully impact patient care, and pertain to residents' clinical work.

The guiding principles of the incentive program are:

Goals can be tiered for achievement
Meaningfully patient care improvement
Clinical institutions value the goal/metrics

GME Quality & Safety Incentive Program

Residency and fellowship programs were assigned to hospital metrics as designated by their specialty and sites of rotation. Programs could be assigned in the following way:
• CHCO Only (Pediatric Residencies and Fellowships)
• UCH Only
• UCH and Denver Health

The maximum possible incentive payout was $1,000 per resident. The metrics for the 2023-2024 reporting period (July-April) were as follows.

University of Colorado Hospital

The University of Colorado Hospital (UCH) metric was based on resident/fellow attendance at certified Collaborative Case Review conferences (CCR) and completion of a quality & safety training module. Metric achievement was determined at the individual resident level. Residents were required to attend at least three Collaborative Case Reviews and complete the training module during the reporting to earn the full incentive for the UCH metric. Depending on a program's rotation schedule, some residents were eligible to earn 50% (up to $500) payout for the UCH metric and 50% payout for the Denver Health Metric (more below).

Denver Health Hospital

The Denver Health (DH) metric was based on trainee submission of patient safety occurrence reports through the STARS system. To achieve the incentive payout, training programs needed to meet a pre-specified number of report submissions determined by the monthly average of trainees in the program rotating at Denver Health. Additionally, each resident must attend at least two "Loop Closure Meetings" meant to directly address one or more specific STARS reports. This metric achievement was determined by both program-level and individual performance with each resident earning the same amount for the collective performance of the group in reporting events but also earning an individual payout for their meeting attendance.

Children's Hospital Colorado

The Children's Hospital Colorado (CHCO) metrics varied between the Pediatric Residency program and Pediatric fellowships. The Pediatric Residency program measured achievement based on three target areas: adverse event reporting and in-person Spanish interpreter utilization. Pediatric fellowships will submit work on either a new or existing quality improvement and/or patient safety project within their program.

GME Quality & Safety Incentive Program

Summary of Incentive Program Results

Payout Amount	Payout Percentage	#Residents Meeting This Tier	Percentage Meeting this tier
0	0%	60	5%
$1-500	≤50% (1-50%)	209	16%
$501-999	≥50% (51-99%)	633	48%
$1,000	100%	415	32%
	Totals	1317	

Fig. 1 - Cumulative final payout statistics for all eligible residents across all three participating sites.

uchealth

Payout Amount*	Payout Percentage	# Residents Meeting This Tier	Percentage Meeting this tier
$0	0%	93	8.98%
$1-250 or $1-500	≤50% (1-50%)	146	14.09%
$251-499 or $501-999	≥50% (51-99%)	125	12.07%
$500 or $1000	100%	672	64.86%
	Totals	1036	

DENVER HEALTH™
est. 1860
FOR LIFE'S JOURNEY

Payout Amount	Payout Percentage	#Residents Meeting This Tier	Percentage Meeting this tier
0	0%	0	0%
$1-250	≤50% (1-50%)	285	30%
$251-499	≥50% (51-99%)	515	54%
$500	100%	147	16%
	Totals	947	

Children's Hospital Colorado

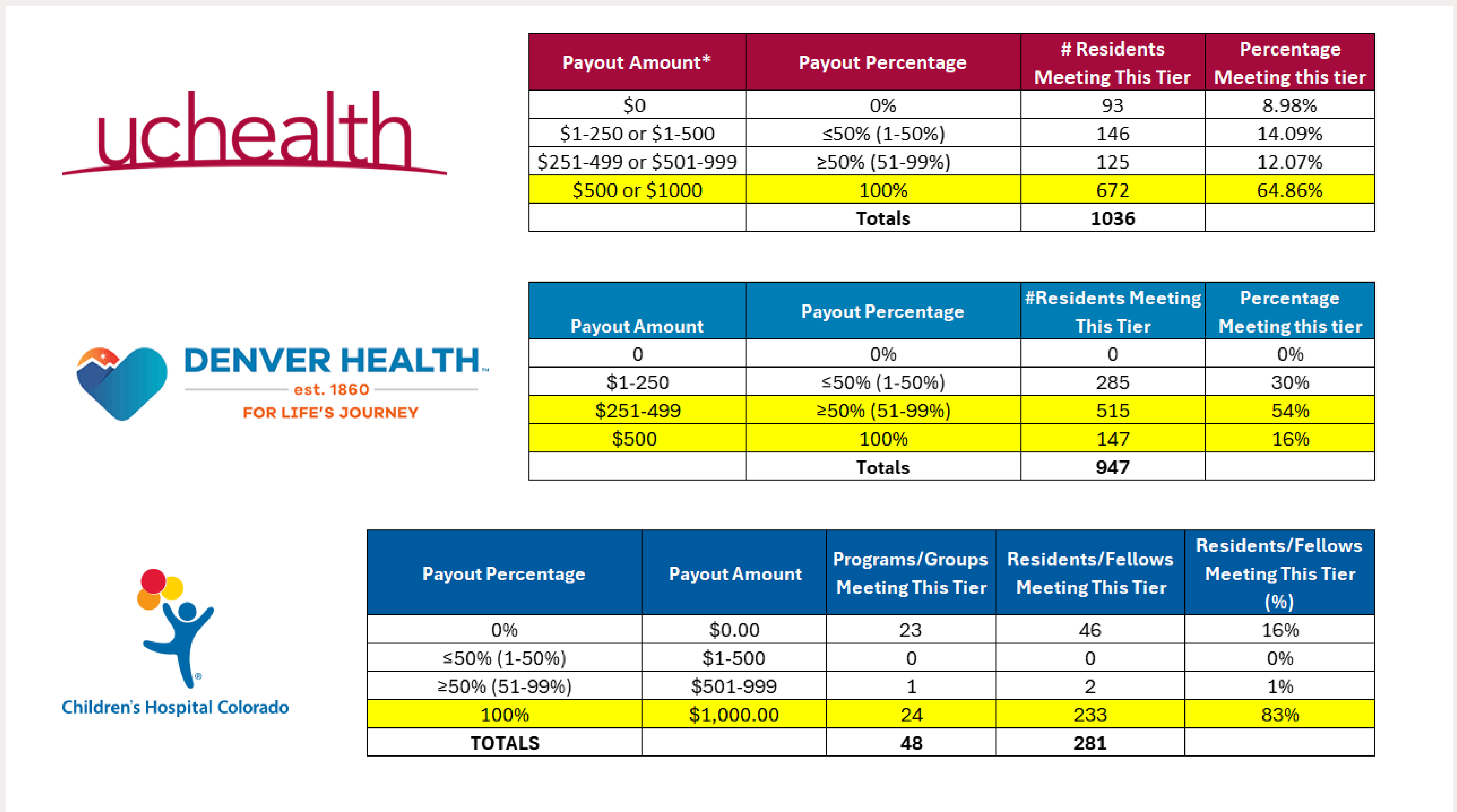| Payout Percentage	Payout Amount	Programs/Groups Meeting This Tier	Residents/Fellows Meeting This Tier	Residents/Fellows Meeting This Tier (%)
0%	$0.00	23	46	16%
≤50% (1-50%)	$1-500	0	0	0%
≥50% (51-99%)	$501-999	1	2	1%
100%	$1,000.00	24	233	83%
TOTALS		48	281	

Fig. 2 - Final payout statistics from each site/metric.

GME Quality & Safety Incentive Program

Summary of Incentive Program Results

University of Colorado Hospital

CCRs attended	Year	Number of Residents	Percentage Meeting Tier
0	AY 2021-2022	88	8.6%
	AY 2022-2023	55	5.4%
	AY 2023-2024	93	9.1%
1	AY 2021-2022	34	3.3%
	AY 2022-2023	82	8.0%
	AY 2023-2024	122	11.9%
2	AY 2021-2022	744	72.4%
	AY 2022-2023	108	10.5%
	AY 2023-2024	126	12.3%
3+	AY 2021-2022	161	15.7%
	AY 2022-2023	774	75.6%
	AY 2023-2024	695	67.9%

Fig. 3 - Final metric performance statistics for University of Colorado Hospital metric (CCR attendance) vs. prior year.

Denver Health Hospital

Group in STARS (safety event reporting system) Dropdown	Minimum Safety Event Reports	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Months Meeting Goal	Payout Per Resident
Anesthesiology	4	7	4	5	3	5	7	5	4	4	7	9	$ 225.00
Dermatology	1	1	1	1	1	1	1	2	2	1	0	9	$ 225.00
Emergency Medicine	12	6	56	30	23	16	15	10	16	19	9	7	$ 175.00
Family Medicine, Addiction Med, Hospice, Occupational, Public Health, Rural, Sports	10	12	11	10	11	11	11	13	10	11	14	10	$ 250.00
Cardiovascular Disease, Electrophysiology, Interventional	2	1	6	4	4	3	4	2	2	3	3	9	$ 225.00
Endocrinology	1	1	1	1	2	1	1	1	2	1	1	10	$ 250.00
Gastroenterology	1	0	0	0	1	1	1	1	0	1	1	6	$ 150.00
Hematology/Oncology	1	0	0	0	0	0	1	0	3	2	0	3	$ 75.00
Infectious Disease	1	1	3	0	1	0	3	0	1	0	0	5	$ 125.00
Internal Medicine, Med-Peds	12	5	10	18	25	15	5	19	3	11	18	5	$ 125.00
Nephrology	1	0	0	2	0	0	1	1	1	0	0	4	$ 100.00
Pulmonary Critical Care	1	1	5	3	1	1	0	5	1	0	0	7	$ 175.00
Rheumatology	1	0	0	1	0	2	1	0	0	0	0	3	$ 75.00
Neurosurgery	1	0	0	0	x	x	x	x	x	x	1	1	$ 62.50
Neurology	4	5	2	6	6	6	4	5	4	4	4	9	$ 225.00
Obstetrics/Gynecology, Gyn Oncology	8	12	11	15	10	9	12	14	12	11	12	10	$ 250.00
Ophthalmology	2	2	4	1	6	4	0	4	0	2	2	7	$ 175.00
Orthopedic Surgery, Hand	8	1	1	9	2	0	0	0	0	0	0	1	$ 25.00
Otolaryngology	2	4	5	2	2	2	3	3	2	3	3	10	$ 250.00
Pathology	1	1	1	1	2	1	1	1	2	2	1	10	$ 250.00
Physical Medicine and Rehabilitation	1	1	1	1	1	1	1	1	2	2	1	10	$ 250.00
Psychiatry, Addiction Psych, Consult/Liaison	10	10	0	30	11	12	13	15	11	10	11	9	$ 225.00
Radiology, Interventional, Diagnostic, Neuroradiology	8	12	14	11	6	11	8	11	9	4	2	7	$ 175.00
Surgical Critical Care, Trauma/Acute	2	2	3	5	7	3	4	3	4	4	3	10	$ 250.00
Surgery, Plastic, Vascular	12	9	13	19	3	9	13	11	7	7	2	3	$ 75.00
Urology	1	1	1	1	3	2	0	1	1	1	2	9	$ 225.00
Met program goal for month		95	153	176	131	116	110	128	99	103	97	183	

Fig. 4 - Final metric performance statistics for Denver Health Hospital Metric (STARS Report Submissions).

GME Quality & Safety Incentive Program

Summary of Incentive Program Results

Children's Hospital Colorado

Metric	Target Goals		YTD Achievement	Payout Per Resident
Adverse Event Reporting (QSRS and PSI)	Threshold	35 files/mo	47.5	$500
	Stretch	40 files/mo		
In Person Spanish Interpreter Encounters	Threshold	35%	54%	$500
	Stretch	50%		

Fig. 5 - Final metric performance statistics for Children's Hospital Colorado - Pediatric residency metrics.

	Payout Amount	Payout Percentage	Projects Meeting This Tier	Programs Represented
0	$0.00	0%	26	26
1	$1-500	≤50% (1-50%)	0	0
2	$501-999	≥50% (51-99%)	1	1
3	$1,000.00	100%	21	20*
		Projects submitted	22	47%
		Eligible Fellowships	47	

Fig. 5 - Final metric performance statistics for Children's Hospital Colorado - Pediatric Fellows metric.

GME Quality & Safety Incentive Program

Looking Ahead to AY 2024-2025

For AY 2024-2025, trainees will again work to achieve predetermined metrics depending on the hospital(s) to which they primarily rotate. The metrics for each hospital are:

University of Colorado Hospital

Attendance of 3 or more at a certified Collaborative Case Review conferences (CCR) and completion of the University of Colorado Hospital Quality & Safety Module. Residents were required to submit the module completion by 10/1/2024, otherwise they forfeit 50% of their UCH payout. They were also required to log attendance at one CCR by 10/1/2024, otherwise they forfeit 33% of their UCH payout.

Denver Health Hospital

The Denver Health (DH) metric will continue as hybrid metric. Part will be based on trainee submission of patient safety occurrence reports through the STARS system with a payout based on group performance. Residents must also document attendance at least two Denver Health Collaborative Case Reviews (formerly Loop Closures) pertaining to a Denver Health case/patient during the reporting period; the payout for this will be based on individual attendance.

Children's Hospital Colorado

There will be two quality incentive metrics for the Pediatric Residency (and combined residencies) for 2024-2025: Participation in hospital-wide quality metrics (Emergency Transfers, Adverse Drug Events) AND participation in at least 2 Children's Hospital Collaborative Case Reviews (CHCO CCR). Achievement of the hospital-wide metrics will be measured over the course of the year and averaged to determine final incentive payouts. CHCO CCR attendance measures individual achievement.

Pediatric fellowships will have two options for participation: 1) submit work on either a new or existing quality improvement and/or patient safety project within their program; or 2) participate in Resident metrics (Hospital-wide QI Initiatives and CCR attendance).

Culture of Safety

The concept of safety culture originated outside of healthcare in studies of "high reliability organizations", which consistently minimize adverse events in a setting of complex work. A culture of safety includes key elements of a commitment to achieving consistently safe operations, a blame free environment where individuals report errors or near misses without fear of punishment or retribution, a flattening of hierarchical structures to solve patient safety problems and commitment of organizational resources to address safety concerns. Improving the culture of safety at the University of Colorado is critical to preventing or reducing errors and improving overall healthcare quality.

Patient Safety Reporting
As part of promoting a culture of safety at University of Colorado, we have emphasized the importance of patient safety event reporting to residents and fellows. Each year, new interns and residents undergo training on adverse event reporting. Housestaff adverse event reporting activity has been monitored since 2014.

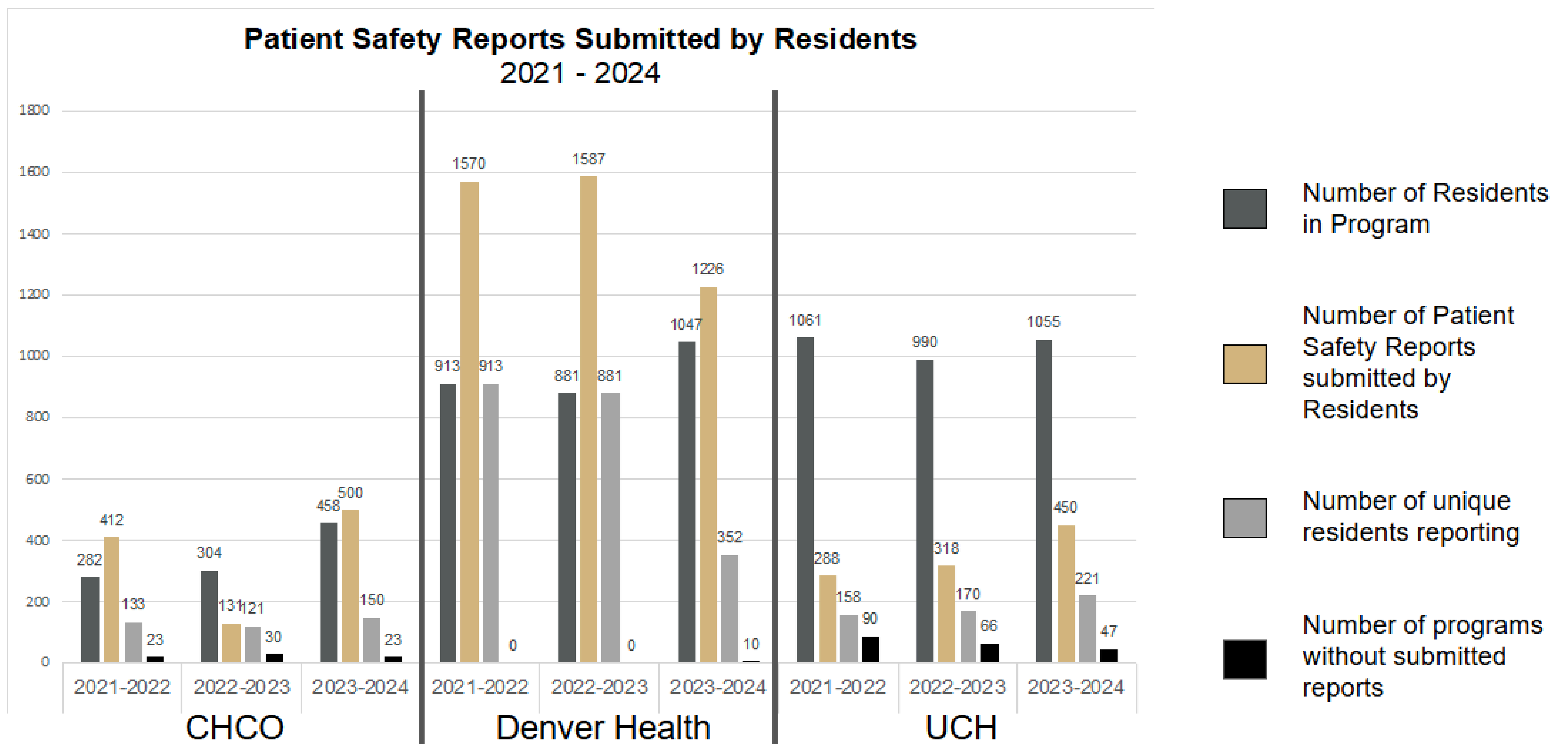### 2021 – 2024 Patient Safety Reporting Data:

Fig. 6 - Patient safety reports submitted by residents across three main clinical sites: Denver Health, Children's Hospital Colorado, and Univeristy of Colorado Hospital

Quality & Safety Academy

Co-Sponsored by the **Institute for Healthcare Quality, Safety, and Efficiency** and Graduate Medical Education

The Quality & Safety Academy, offers residents, fellows, and faculty in any program affiliated with University of Colorado a series of workshops designed to build foundational knowledge in quality improvement and patient safety, which will enable them to effectively participate in quality and safety work in the clinical setting. Program content builds on itself to support progressive acquisition of competency, and program elements.

ENGAGEMENT

AY 2024 GME Attendees	AY 2024 # of GME Programs Represented	AY 2024 Series Completions
105	**49**	**30**

Session	Session Overview
Quality Improvement & Change Management	This session will focus on the basics of Quality Improvement, following a step-wise guide for implementing a successful QI project. The classic QI teaching is coupled with a practical Change Management framework which facilitates success and makes change more likely to stick.
Applied Patient Safety	This session will further enhance the concepts of Just Culture and discuss and guide the development and participation in a systems-based case review conference. Attendees will emerge being able to build, facilitate or better participate in these important patient safety tools at their institution. Finally, we will explore the second victim phenomenon and discuss how to support caregivers when errors occur.
Designing for Change	Fundamentally, system change requires behavior change. Thus, effective solution design is rooted in fully understanding both the problem and the people involved. This session will cover topics including design thinking, choice architecture, and pre-mortem analysis to help attendees identify and produce the right solutions, for the right problem, implemented at the right time, for the right people.
Acquiring Data to Drive Change	Critical to any change effort is finding, sharing and tracking data. Attendees to this session will emerge with skills for obtaining the necessary data for tracking improvement as well as a basic understanding of how to interpret data to identify when a change has occurred.
Spreading Change Locally and Nationally	Success can and should beget more change. This session will show how to spread QI project success within your institution as well as nationally. This session will discuss critical differences between QI and traditional research as well as how and where to share your work through presentations and publications.
Coaching and Teaching Quality Improvement	Quality Improvement is a team sport. Thus, leaders of any project need to be able to teach and coach others through the QI process. This session will teach attendees how to coach and teach the principles of Quality Improvement to inexperienced team members in a way that stokes their passion and ensures project success.

Quality & Safety Academy

Quality & Safety Academy Growth

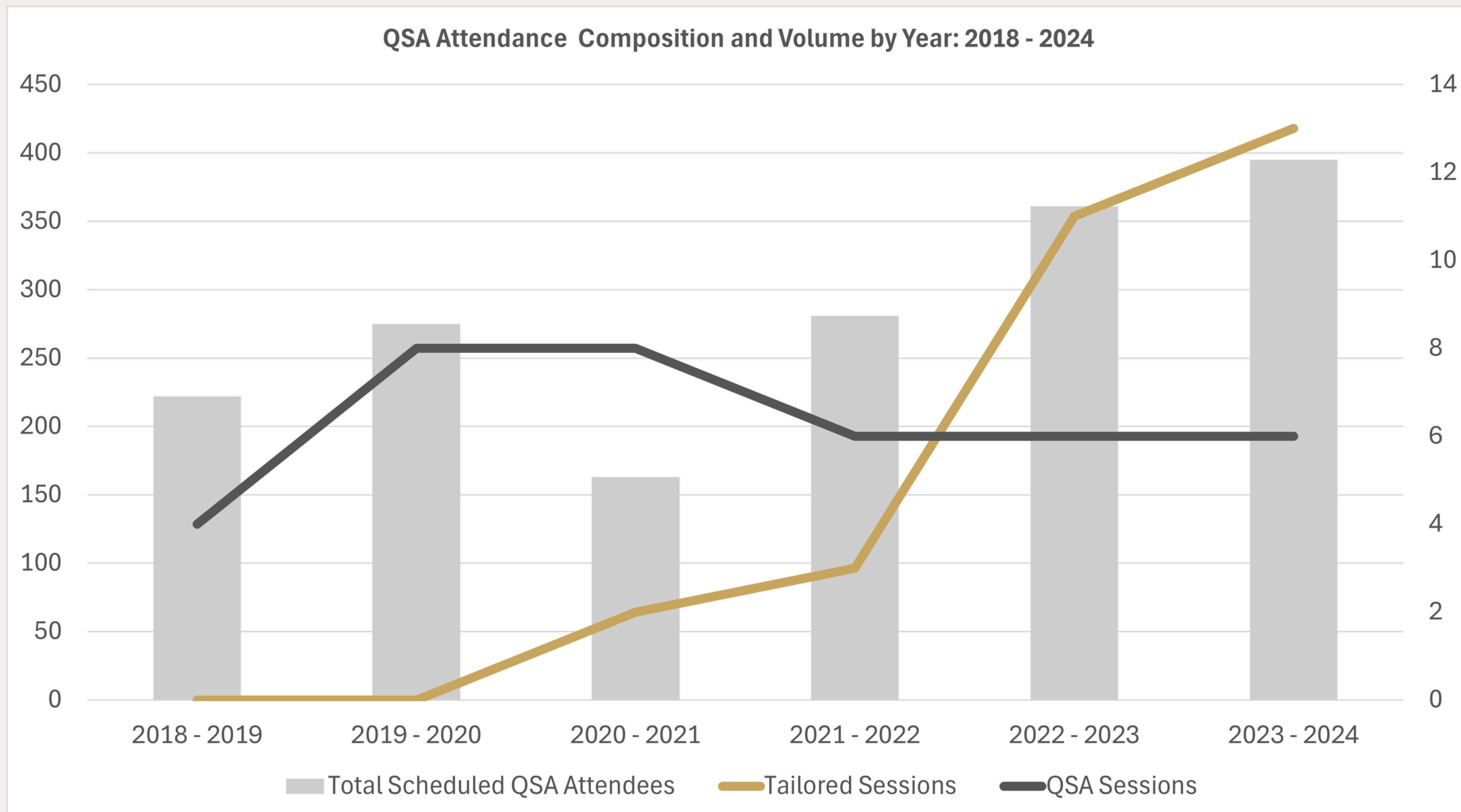**QSA Attendance Composition and Volume by Year: 2018 - 2024**

Fig. 7 - Chart showing changes in QSA offerings and attendance from 2018-2024.

Quality & Safety Academy Satisfaction

QSA participants consistently report positively on course content and experience. In addition to consistently positive assessments of course content and experience, QSA participants show significant gains in knowledge and comfortability with key Quality Improvement and Patient Safety competencies.

How satisfied are you with this session?	Number of Responses	Percentage
Extremely satisfied	172	64%
Somewhat satisfied	70	26%
No Answer/Neutral	17	6%
Extremely dissatisfied	7	3%
Somewhat dissatisfied	3	1%
How likely are you to recommend this training to others in your program/at your institution? (Avg. Rating)		8.65 out of 10

Quality & Safety Academy

Quality & Safety Academy Impact

In addition to consistently positive assessments of course content and experience, QSA participants show significant gains in knowledge and comfortability with key Quality Improvement and Patient Safety competencies.

Table 1. Cumulative Knowledge Scores, Before and After, by Session

Session	Before the Session	After the Session	P-value*	Maximum Possible Score
Acquiring Data to Drive Change (Data Differences: QI, Research, Accountability, Sources of Data for QI Projects, Analyzing QI Data: Pareto, SPC, Run Charts, Electronic Health Record (EHR) Data Structure)	4.3 ± 3.1	8.8 ± 1.6	<.0001	12
Applied Patient Safety (Culture of Safety, Differentiate a systems-based case review from other case conferences, Recognize the importance of identifying the adverse event and/or medical error, 2nd Victim/Caring for the Caregiver)	6.5 ± 2.7	10.4 ± 1.6	<.0001	12
Designing for Change (Design Thinking, Choice Architecture and Behavioral Nudges, User-Centered Design, Pre-Mortem Analysis)	3.0 ± 2.7	8.4 ± 1.8	<.0001	12
Quality Improvement and Change Management (Value Equation, 5-Steps for a Successful QI Project, Kotter's 8-Steps of Change Management)	2.6 ± 2.0	7.0 ± 1.5	<.0001	9
Spreading Change Locally and Nationally (Diffusion of Innovation and Adopters of Change, Learning Health System, SQUIRE 2.0 Guidelines, QI Grant Sources, IRB: QI vs. Research)	5.1 ± 3.5	11.1 ± 2.2	<.0001	15

*Paired t-test comparing cumulative scores pre and post for each respondent
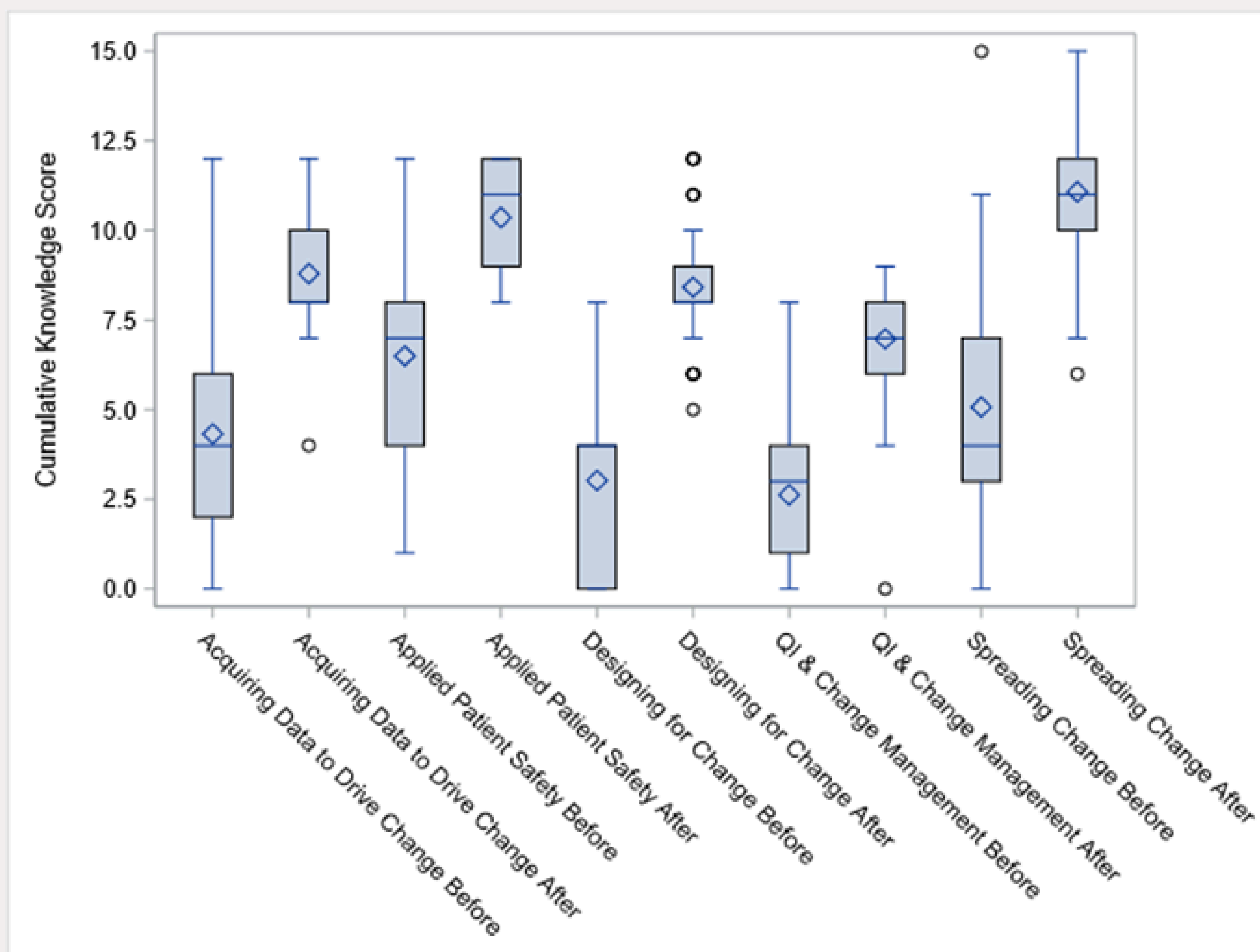

Figure 8. Cumulative Knowledge Scores, Before and After, by Session

Goals for AY 2024-2025

Patient Safety reporting accuracy and improvement
1. Capture patient safety reports submitted by residents at each institution (DH, CHCO, UCH, VA).
2. Reduce the number of programs without submitted reports by 10% at each institution.

Engage with Veterans Affairs around quality and safety.
1. Receive patient safety reports submitted by program.
2. Engage in procedure supervision work.

Increase Engagement in Quality & Safety Incentive Program
1. 85% of residents achieve more than $500 payout (up from 80% 2023-2024).
2. Maintain median payout in each institution distribution (UCH + DH, UCH, CHCO) of $800 or more.

Expand Quality and Safety Education
1. 100% of programs provide or facilitate QI/PS education as indicated on the Annual Program Evaluations.