



2018

EDUCATING THE EDUCATORS

PROVIDED BY

**ASSOCIATION OF UNIVERSITY PROFESSORS OF
OPHTHALMOLOGY
PROGRAM DIRECTORS COUNCIL**

JANUARY 24
AUSTIN, TEXAS

Meeting Syllabus



**Association of University
Professors of Ophthalmology**

Educating the Educators 2018

MEETING SUPPORT

This activity is supported by independent medical education grants from **Alcon, Regeneron Pharmaceuticals, Inc,** and **Shire**; an independent unrestricted education grant from **Johnson & Johnson Surgical Vision**; and this program was made possible in part by a grant from **Bausch + Lomb**.

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The Association of University Professors of Ophthalmology's Program Directors Council welcomes you to the annual Educating the Educators conference in Austin, Texas.

In its 15th year, the Educating the Educators meeting continues to be the leading forum for all educators, including residency program directors, medical student educators, program coordinators, and chairs to share ideas and best practices related to ophthalmic education.

This year, the morning session will include three concurrent symposia to choose from, each with different focus areas. Selections include a Primer for New Program Directors, Topics for Veteran Program Directors, and Protecting Ophthalmic Medical Student Education moderated by **Grace Sun, Susan M. Culican** and **Ruhksana Mirza**, respectively. Our afternoon symposia will feature three invited guest speakers. **Dr. Jonathan MacClements**, Assistant Dean for GME and DIO at Dell Medical School, UT Austin, will be speaking on Improving the Clinical Learning Environment. **Dr. Robert Nolan**, Associate Dean for GME from UT Health San Antonio, will discuss Resident Wellness. **Dr. Josh Hawley-Malloy**, Residency Program Director Internal Medicine at the Brooke Army Medical Center will address how to engage millennial learners. Two free paper sessions will allow you to hear from a wide variety of our peers on their projects related to education. The morning session will emphasize surgical learning and assessment. The afternoon will feature original research focusing on wellness and team-building, very hot topics in GME circles these days.

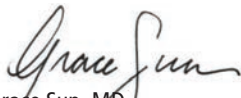
A review committee consisting of our peers has had the difficult job of selecting outstanding oral and poster presentations from among a record number of excellent submissions.

New this year, we are introducing an optional "Book Club" event during the lunch break. Selections include Oliver Burkeman "The Antidote: Happiness for People Who Can't Stand Positive Thinking", Fred Lee "If Disney Ran Your Hospital: 9 1/2 Things You Would Do Differently", and Bruce Tulgan "Not Everyone Gets a Trophy: How to Manage the Millennials". The books were selected to augment the symposia topics and give educators insights into ways to better understand and manage their trainees.

We look forward to seeing you in Austin, and hope you enjoy the meeting!



Laura K. Green, MD
Co-Chair, Educating the Educators
Member-at-Large
AUPO Program Directors Council



Grace Sun, MD
Co-Chair, Educating the Educators
Member-at-Large
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Susan Culican, MD, PhD
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Educating the Educators 2018 Program

Wednesday, January 24

7:00 AM – 8:00 AM	Registration and Continental Breakfast	Lone Star Foyer
7:00 AM – 8:00 AM	New Program Directors Breakfast (By invitation)	Room 303-304
8:00 AM – 8:05 AM	Welcome and Announcements	Salon B-C
8:00 AM – 12:00 PM	EE Posters (Morning Session)	Lone Star Foyer
8:05 AM – 9:15 AM	Free Paper Session I: Surgical Learning and Assessment – Moderator: <i>Susan M. Culican, MD, PhD</i>	Salon B-C
8:05 AM – 8:15 AM	Comparison of Simulation-Based vs. Live Tissue-Based Ocular Trauma Training for Corneal Laceration Repair – <i>Thomas B. Ableman, MD</i>	
8:15 AM – 8:25 AM	Building Better Assessments Through REDCap Resident Surgery Evaluations – <i>Grace Paley, MD, PhD</i>	
8:25 AM – 8:35 AM	Expert Crowd Source Assessments of Surgical Skills for Cataract Surgery – <i>Erin Seefeldt, MD</i>	
8:35 AM – 8:45 AM	Characterizing the Resident Surgeon Phacoemulsification Learning Curve – <i>Daniel Kasprick, MD</i>	
8:45 AM – 8:55 AM	Intraoperative Complication Rates in Cataract Surgery Performed by Ophthalmology Resident Trainees Compared to Staff Surgeons in a Canadian Academic Center – <i>Stephanie A. W. Low, MD</i>	
8:55 AM – 9:05 AM	PCR Rates for Surgery Performed by 1st and 2nd Year Residents 2009-15: RCOphth National Ophthalmology Database – <i>John Ferris, MB, ChB, FRCOphth</i>	
9:05 AM – 9:15 AM	Panel Discussion	
9:15 AM – 9:40 AM	Organizational Updates	Salon B-C
9:15 AM – 9:20 AM	San Francisco Match Program – <i>Dennis Thomatos</i>	
9:20 AM – 9:25 AM	OKAP – <i>Kathryn Peters, PMP</i>	
9:25 AM – 9:30 AM	Prometric – <i>Kimberly Farace</i>	
9:30 AM – 9:35 AM	AAO Young Ophthalmologists – <i>Jeff H. Pettey, MD</i>	
9:35 AM – 9:40 AM	AAO Committee for Resident Education: Simulation and ONE Network – <i>Laura K. Green, MD</i>	
9:40 AM – 9:55 AM	Break and Poster Viewing	Lone Star Foyer
9:55 AM – 11:45 AM	Morning Symposia (Choose One)	
	Teaching Old Dogs New Tricks: Topics for Veteran PDs	Salon B-C
9:55 AM – 10:15 AM	An Important Partnership: You and Your Associate PD – <i>Carolyn Kloek, MD</i>	
10:15 AM – 10:35 AM	Innovative Strategies to Getting Paid for Teaching – <i>Thomas A. Oetting, MD</i>	
10:35 AM – 10:55 AM	Techs, Optoms and Orthoptists as Teachers: How to Integrate Them into Your Education Program – <i>Dru Krishnan, MD</i>	
10:55 AM – 11:15 AM	TMI: Reducing Paperwork in Your Program – <i>Amy M. Fowler, MD</i>	
11:15 AM – 11:35 AM	Data Driven Assessments: A Plea to the ACGME for Milestones 2.0 – <i>Susan M. Culican, MD, PhD</i>	
11:35 AM – 11:45 AM	Panel Discussion – Moderator: <i>Susan M. Culican, MD, PhD</i>	
	Drinking From a Fire Hose: A Primer for New PDs	Room 301
9:55 AM – 10:15 AM	The New PD Checklist: What You Need to Know and When You Need to Know It – <i>Laura L. Wayman, MD</i>	
10:15 AM – 10:35 AM	My CCC is Dysfunctional. Creating an Effective CCC – <i>Grace Sun, MD</i>	
10:35 AM – 10:55 AM	Does Your PEC and APE Prepare You for the NAS Self Study? – <i>Jeff Soohoo, MD</i>	
10:55 AM – 11:15 AM	Interviewing for Program Success – <i>Laura K. Green, MD</i>	
11:15 AM – 11:35 AM	The Journey of Program Improvement – <i>Andrew T. Thliveris, MD</i>	
11:35 AM – 11:45 AM	Panel Discussion – Moderator: <i>Grace Sun, MD</i>	
	Climate Change: How to Protect Ophthalmic Medical Student Education	Room 302
9:55 AM – 10:15 AM	Medical School Ophthalmic Curricula: Best Practices – <i>Lisa Kelly, MD</i>	
10:15 AM – 10:35 AM	Medical School Ophthalmic Curricula: Fighting Institutional De-prioritization – <i>Rukhsana Mirza, MD</i>	
10:35 AM – 10:55 AM	Mentoring Faculty to Mentor Students, Trainees, and Each Other – <i>Roy Chuck, MD</i>	
10:55 AM – 11:15 AM	Advising the Student Who is Not Competitive for Ophthalmology Residency – <i>Evan Waxman, MD, PhD</i>	
11:15 AM – 11:35 AM	Recruiting Medical Students into Ophthalmology – <i>Courtney Francis, MD</i>	
11:35 AM – 11:45 AM	Panel Discussion – Moderator: <i>Rukhsana Mirza, MD</i>	

Educating the Educators 2018 Program

Wednesday, January 24 (continued)

11:45 AM – 1:00 PM	Lunch (included) and Poster Viewing	Salon G-H
12:30 PM – 1:00 PM	Book Club (Optional; sign up required)	Salon G-H
1:00 PM – 2:10 PM	Free Paper Session II: Wellness – Moderator: <i>Grace Sun, MD</i>	Salon B-C
1:00 PM – 1:10 PM	Anatomy of a Murder – How to Kill a Great Residency Program – <i>James H. Bates, MD</i>	
1:10 PM – 1:20 PM	A “CBC-Approach” to Increase Physician Engagement and Alignment in Academic Medical Centers – <i>Shlomit Schaal, MD, PhD</i>	
1:20 PM – 1:30 PM	Resident Stress Level During Steps of Cataract Surgery – <i>Aditya Rali, BS</i>	
1:30 PM – 1:40 PM	Using Personal Improvement Projects to Teach Principles of Quality Improvement – <i>Daniel Tu, MD, PhD</i>	
1:40 PM – 1:50 PM	Cataract Surgery Tech Program for Ophthalmology Residents – <i>Royce Chen, MD</i>	
1:50 PM – 2:00 PM	Improving Cataract Surgery Efficiency in an Academic Setting – <i>Saras Ramanathan, MD</i>	
2:00 PM – 2:10 PM	Panel Discussion	
1:00 PM – 4:30 PM	EE Posters (Afternoon Session)	Lone Star Foyer
2:10 PM – 2:30 PM	Break and Poster Viewing	Lone Star Foyer
2:30 PM – 4:20 PM	Invited Guest Lecturers – Moderator: <i>Laura K. Green, MD</i>	Salon B-C
2:30 PM – 3:00 PM	Engaging Millennials: Leveraging their Strengths – <i>Josh Hawley-Malloy, MD</i>	
3:00 PM – 3:30 PM	ACGME Pursuing Excellence in Clinical Learning Environments Project – <i>Jonathan MacClements, MD</i>	
3:30 PM – 4:00 PM	Physician Burnout: Symptom or Disease? – <i>Robert Nolan, MD</i>	
4:00 PM – 4:20 PM	Panel Discussion	
4:20 PM – 4:30 PM	Conclusion and Adjournment	Salon B-C
5:00 PM – 6:30 PM	Reception	Salon D

Free Paper Session I:

Surgical Learning and Assessment

Comparison of Simulation-based vs. Live Tissue-based Ocular Trauma Training for Corneal Laceration Repair

THOMAS B. ABLEMAN, MD*; JOSEPH F. PASTERNAK; ROSE K. SIA; DENISE S. RYAN; MARCUS H. COLYER

Background:

Comparison of Simulation-based vs. live tissue-based ocular trauma training for corneal laceration repair.

Purpose:

To assess whether time-limited, simulation-based (SIM) deliberate training for corneal repair provided similar initial skills acquisition compared to live tissue-based (LIVE) training.

Methods:

79 Ophthalmology residents were randomized to undergo 1.5 hours of either SIM or LIVE training with a faculty preceptor. Participants each performed a before-training corneal laceration repair (BTR) and a post-training repair (PTR) on a pig eye model, each graded by 3 observers. Outcomes included: if the corneal laceration was successfully repaired, number of sutures to close wound, time required, and the following graded on a scale of 1-4 (1-poor, 2-fair, 3-good, 4-excellent): tissue apposition, suture depth, tension and length, and knots buried (All, > 50%, <50%).

Results:

Compared to SIM, the LIVE group had significantly higher PTR median scores for suture depth, suture tension and suture length ($P < 0.043$). Half of SIM participants successfully completed PTR compared to 71% LIVE ($P = 0.091$)

Conclusions:

While more skills were gained after LIVE training than SIM, residents were able to successfully repair a corneal wound after either training method.

Building Better Assessments Through REDCap Resident Surgery Evaluations

GRACE PALEY, MD, PHD*; **SUSAN CULICAN, MD, PHD**

Background:

In our experience, resident physician evaluation forms were overly time-consuming and onerous to complete, leading to haphazard use and inconsistent grading by faculty.

Purpose:

Design and implement a concise, web-based evaluation form that measures gains in trainee proficiency.

Methods:

The O-SCORE surgery evaluation form was adapted using the REDCap platform and distributed via email weblink to faculty at our program. A global assessment score indicated the extent to which the attending participated in the case. Completed evaluations were analyzed for score trends with time and across levels of training.

Results:

In one year, 195 surgical evaluations were collected (74% cataracts, 18% strabismus, and 8% other procedures), representing a >11-fold increase in evaluations compared with our prior paper system. A cross-sectional analysis of cataract evaluations demonstrated improving scores with increasing PGY ($p < 0.0001$). Scores trended upward significantly for 4 of 5 third-year residents throughout the study ($p < 0.05$).

Conclusions:

The REDCap resident evaluation is an effective assessment tool that is readily accessible via a weblink, facilitates feedback, increases the quantity and quality of surgical evaluations, and demonstrates cross-sectional and longitudinal discriminative validity for cataract surgery (i.e. detects increased skill level with time in training). This assessment tool provides useful data for documenting trainee progression and program accreditation.

Expert Crowd Source Assessments of Surgical Skills for Cataract Surgery

ERIN SEEFELDT, MD*; **TRAVIS FRAZIER, MD**

Background:

This project aims to evaluate whether crowd-sourced assessments of surgical skills from videos of cataract surgeries correlate with experts' assessments of the same videos. Crowd workers and experts rated the videos of cataract surgeries using elements of the Global Rating Assessment of Skills in Intraocular Surgery (GRASIS) scale.

Purpose:

Cataract surgery is one of the primary procedures taught in ophthalmology residency. Residents often do not receive timely and specific feedback that allows them to make adjustments in technique and understand their progress. Faculty often find it difficult to make the time to provide this feedback and are subject to biases that crowd reviewers do not face. Crowd review of surgical videos is validated in Urology and General Surgery and is being successfully used to provide feedback to surgeons. This study is the first we know of in ophthalmology to look at crowd-based surgical ratings in cataract surgery.

Methods:

The crowd-based mean GRASIS ratings for each video were generated using a linear mixed-effects (LME) model. The LME model incorporates adjustment for clustering by crowdworker ID. Ratings furnished by experts on each video were summarized with averages (ordinary arithmetic mean). Spearman's rank correlation coefficient (ρ) was used to quantify the strength of the relationship between the crowd LME mean and the expert average rating. Spearman's ρ is a nonparametric statistic that can detect any form of monotonic (strictly increasing or strictly decreasing) relationship between two measures. In the context of crowd-sourced vs expert ratings, CSATS considers that ρ values of (>0.8) indicate very strong agreement, ρ values in the range 0.6 to 0.8 indicate moderately strong agreement, 0.3 to 0.6 indicates fair agreement, and <0.3 indicates poor to no agreement. The intraclass correlation coefficient (ICC) was calculated as a measure of the agreement among expert ratings of the same video. Higher ICC values provide better support for analyses aimed at demonstrating correlation between expert average ratings and crowd scores as lower agreement among experts lends to lower agreement with crowds. CSATS considers expert ICCs in the range 0.6-0.7 as providing reasonable support and ICCs above 0.7 as providing optimal support for this type of analysis.

Results:

Agreement among experts: The ICCs observed for the expert ratings of this set of videos were on the low, ranging from 0.35 to 0.59 for the different GRASIS domains. Relationship between crowd-based LME mean score and expert average score: Scatter plots and Spearman correlations between the crowd LME means and the expert averages are shown below. All GRASIS domains utilized in this study show statistically significant positive correlations between crowds and experts. The strongest correlation between crowds and experts occurs for the Time and Position domains ($\rho=0.63$, p -value <0.001 for both), followed by the Overall rating ($\rho=0.53$, p -value=0.002), the Instrument domain ($\rho=0.50$, $p=0.003$), and the Tissue domain ($\rho=0.40$, $p=0.020$).

Conclusions:

Crowd LME mean ratings are significantly correlated with expert average ratings. These relationships were evident even though the agreement among the experts rating the same video was lower than ideal for conducting crowd versus expert correlation analyses. Future studies aimed at further elucidating the relationship between crowd-based ratings using the GRASIS scale and expert average ratings may benefit from use of a larger expert pool or pre-qualified reviewer pools who agree with each other, which would lend greater stability and precision to the estimation of expert averages.

Characterizing the Resident Surgeon Phacoemulsification Learning Curve

DANIEL KASPRICK, MD*; **SHAHZAD MIAN, MD**

Background:

Previous studies have demonstrated a decrease in intraoperative complication rate and an improvement in surgical efficiency as residents gain phacoemulsification experience. The ACGME currently mandates that a minimum of 86 phacoemulsification cases be completed during training but a surgical skill plateau point has not been clearly identified.

Purpose:

To characterize the resident phacoemulsification learning curve through analysis of cumulative dispersed energy (CDE) and posterior capsule tear rate.

Methods:

Retrospective review of 28 resident self-reported logs for phacoemulsification cases performed between 2011 and 2017 at the Kellogg Eye Center and Ann Arbor VA Medical Center. Posterior capsule tear rates and CDE were compared across groups based on resident experience level (Cases 1-50, 51-100, 101-150, 151-200, 201-225).

Results:

Posterior capsule rupture rate decreased significantly early on in training but neared a plateau after 150 cases. Mean CDE continued to decline even after the rate of posterior capsule rupture had plateaued.

Conclusions:

Despite the rate of posterior capsule tear nearing a plateau around 150 cases, residents demonstrate continued improvement in surgical efficiency even beyond the 150 case mark. This data suggests that resident surgeons benefit from additional phacoemulsification training well beyond the mandated minimum of 86 cases.

Intraoperative Complication Rates in Cataract Surgery Performed by Ophthalmology Resident Trainees Compared to Staff Surgeons in a Canadian Academic Center

STEPHANIE A.W. LOW, MD*; ROSA BRAGA-MELE, MD, FRCSC; DAVID B. YAN, MD, FRCSC; JOHN C. LLOYD, MD, FRCSC, DABO; SHERIF EL-DEFRAWY, PHD, MD, FRCSC

Background:

Cataract surgery is an important aspect of Ophthalmology surgical training. While trainee complication rates have been published, there is a lack of studies directly comparing cataract surgery complication rates between staff surgeons and resident trainees. Establishing whether resident participation in cataract surgery impacts complication rates is integral for proper informed consent at academic centers with trainee involvement.

Purpose:

To compare the intraoperative complication rates in cataract surgery performed by resident trainees and staff Ophthalmologists.

Methods:

Data was collected prospectively from tracking forms completed by resident trainees following each case. The primary outcome was intraoperative complication rates for resident and staff cases.

Results:

A total of 8738 consecutive cases performed between January and December 2016 were included in the study. Staff surgeons completed 56% and residents completed 36% of cases in their entirety. 8% were completed in part by a resident. For simple cases, there was no difference in overall complication rates (1.7% and 2.0%, $p=0.52$), posterior capsular rupture rates (0.9% and 0.8%, $p=0.76$), or vitreous loss rates (0.4% and 0.2%, $p=0.08$) for staff compared to residents.

Conclusions:

There is no difference in intraoperative complication rates for primary cataract surgery performed by resident trainees compared to staff surgeons.

PCR Rates for Surgery Performed by 1st and 2nd Year Residents 2009-15: RCOphth National Ophthalmology Database

JOHN FERRIS, MB, CHB, FRCOPHTH*; JOHN SPARROW; PAUL DONACHIE; JEFF PETTEY

Background:

It is widely accepted that posterior capsule rupture (PCR) during cataract surgery, is an indicator of surgical quality. There have been no large prospective studies that have prospectively analysed PCR rates for junior residents.

Purpose:

To analyze the PCR rates for 1st and 2nd year residents over a 7-year period and to establish what factors may have had an impact on PCR rates.

Methods:

23 centres, who train junior residents, have been contributing electronic medical record (EMR) data on cataract surgery since 2009 to the Royal College of Ophthalmologists' National Ophthalmology Database. In these centres 14,741 cases (5.7%) were performed by 204 junior residents and were eligible for PCR analysis. Data regarding case-mix and Eyesi simulation training were also collected.

Results:

The yearly PCR rate decreased from 4.63% in 2009 to 2.63% in 2015, and was lowest at 2.16% in 2014. PCR rates were 3.85% before access to Eyesi simulation, 2.58% after access and 3.88% for operations in centres with no access to an Eyesi. Case-mix did not vary from 2009-2015.

Conclusions:

This is the largest prospective study of PCR rates for junior residents. The introduction of Eyesi training is the only variable that could account for the halving of PCR rates between 2009-2015.

Free Paper Session II: Wellness

Anatomy of a Murder - How to Kill a Great Residency Program

JAMES H. BATES, MD*

Background:

The author's experience during the closure of the institution's Emergency Medicine program revealed rare and possibly unprecedented issues.

Purpose:

To outline what was learned from the incident - the assessment of risk of contracts in regards to continuity of resident education, the power/influence of the Graduate Medical Education Committee, and the implementation of the mandated disaster plan required by the ACGME.

Methods:

The experiences of the author as a Chair/Program Director, GMEC member, and as the subcommittee chair of GMEC charged with shutting down the EM residency brought insights into uncharted territories for the home institution and the ACGME.

Results:

The institution navigated the uncharted territory and, working with the ACGME, was allowed to complete training of 9 senior residents, place 21 junior residents, and close 6 months after the incident.

Conclusions:

The lessons learned from this experience might be applied to any residency program, including ophthalmology, when there are contracts for key portions of resident training. The author hopes that this will generate risk analysis by programs, and tell how an empowered GMEC is key to institutional success.

A "CBC-Approach" to Increase Physician Engagement and Alignment in Academic Medical Centers

SHLOMIT SCHAAL, MD, PHD*; JULIA JOHNSON, MD; KATHLEEN LEBLANC

Background:

Low physician engagement remains a major problem for many academic medical centers nationally and globally. It impacts physician productivity and satisfaction, patient experience, and quality of care. Physician engagement also has a significant impact on physician retention as well as the ability to attract the highest quality of physicians and residents to the academic institution.

Purpose:

To increase the engagement and alignment of academic physicians.

Methods:

Physician Engagement Committee (PEC) was established to address low physician engagement within our health system. Three new arms of the committee, each tasked to focus on specific areas were formed. Each arm led by three or more co-leaders from our intertwined entities--namely UMass Memorial Healthcare, UMass Memorial Medical Group and UMass Medical School--to fully integrate the concept that our physicians, the principal care providers of our patients, are employed members of the Medical Group, are also our valued Faculty members who are educating the next generation of physicians and innovating improvements in health care delivery.

Results:

Three arms formed and are known as the CBC that include the following thematic areas: 1) Communication: responsible for communications "top-down" and "bottom-up". 2) Burnout: responsible for physician burnout and wellness. 3) Community: responsible for forming a community of personal relationships between physicians from different specialties and sub-specialties within the organization. Each arm leader recruited team members that work together to make a difference in their area. Departmental engagement champions were assigned to address issues that are department-specific.

Conclusions:

Increasing physician engagement and alignment should be top priority for academic health centers. Recognizing that academic physicians are valued faculty members is imperative. The CBC approach is expected to make a significant difference in physician engagement through a united focus on three thematic areas as described.

Resident Stress Level During Steps of Cataract Surgery

ADITYA RALI, BS*; **YOUSUF KHALIFA, MD**

Background:

Surgical training can be a stressful experience, especially during cataract surgery where the resident plays a significant lead role. While a certain amount of stress can assist task performance, excessive levels can have a detrimental effect.

Purpose:

To better understand stress levels during different steps of cataract surgery.

Methods:

Resident heart rate was used as a measure of acute stress level. Chest-strapped Bluetooth devices recorded heart-rate during the surgeries, and data was collected for the following steps of surgery: Incisions, Continuous Curvilinear Capsulorhexis, Hydrodissection, Nucleus Disassembly, Quadrant Removal, Cortical Cleanup, IOL Insertion and Closure.

Results:

Six residents were enrolled in the study and 219 cataract surgeries were recorded over a four-month period at Grady Memorial Hospital. Average heart rate was significantly higher during certain steps of the surgery, mostly notably Quadrant Removal, followed closely by Nucleus Disassembly and Continuous Curvilinear Capsulorhexis.

Conclusions:

Intra-operative heart rate monitoring is a viable method to measure resident stress levels during cataract surgery. Better understanding stress patterns could lead to more effective stress management strategies, serve as a teaching aid and help optimize surgical outcomes.

Using Personal Improvement Projects to Teach Principles of Quality Improvement

DANIEL TU, MD, PHD*; **THOMAS HWANG, MD;** **DAVID J. WILSON, MD**

Background:

The 2017 ACGME Common Program Requirements state that "residents must receive training and experience in quality improvement processes." However, few ophthalmology faculty are trained in quality improvement processes, making it challenging for ophthalmology residency programs to provide appropriate training. An additional challenge is to make quality improvement relevant for residents who (1) are already busy with stressful schedules and (2) might not see the benefit of quality improvement training.

Purpose:

To overcome barriers to teaching quality improvement processes to ophthalmology residents, we aim to combine a quality improvement curriculum with resident wellness.

Methods:

We asked residents and faculty to complete a set of online modules from the Institute for Healthcare Improvement (IHI) training website. Participants were asked to formulate and complete a personal improvement project utilizing quality improvement principles learned from the IHI modules.

Results:

We experienced a better understanding of quality improvement processes in addition to the value-added benefits to resident wellness related to completing personal improvement projects.

Conclusions:

Ophthalmology residents can be taught quality improvement principles effectively by using online modules in conjunction with practical application of quality improvement methods to personal improvement projects.

Cataract Surgery Tech Program for Ophthalmology Residents

ROYCE CHEN, MD*; **BRYAN J. WINN, MD;** **LORA R. GLASS, MD;** **GEORGE A. CIOFFI, MD**

Background:

If you drive a car, it's good to know how the engine works. Our residents are well-trained in cataract surgery; however, they may still better understand the roles of other operating team members, as well as deepen their understanding of surgical equipment.

Purpose:

To familiarize residents with all aspects of cataract surgery, including identification of instruments, setup of the phacoemulsification machine, and preparation of intraocular lens for implantation. To instruct residents about the capabilities and potential errors of the phacoemulsification machine.

Methods:

Wet lab sessions on the Alcon Centurion were organized with surgical representatives from Alcon. Residents were instructed on machine settings and parameters, and they learned to identify surgical instruments. Each resident was required to tech 5 co-resident cases from start to finish.

Results:

Residents served as surgical tech for 5 cases from setup to finish. They demonstrated better understanding of the Centurion and surgical instruments after this program, and several modified phacoemulsification settings to suit their different operating styles.

Conclusions:

This program provides a deeper understanding of the technology that residents use during cataract surgery. We hope that if our residents encounter problems when they are practicing independently, they will be better equipped to handle them.

Improving Cataract Surgery Efficiency in an Academic Setting

JESSICA MINJY KANG, MD, MA; SRIRANJANI P. PADMANABHAN, MD; JULIE SCHALLHORN, MD; NEETI PARIKH, MD; SARAS RAMANATHAN, MD*

Background:

Cataract surgery performed by residents often takes longer and is therefore costlier for the hospital. We were interested in whether implementing group goal and group performance theories could improve efficiency without compromising trainee learning or patient safety.

Purpose:

To examine the impact of group goal and group performance theories on operating room efficiency for resident-performed cataract surgeries in an academic setting.

Methods:

This prospective interventional study looked at four specific segments of operating room utilization: room-to-incision time (RIT), incision-to-close time (ICT), close-to-exit time (CET), and room-turnover time (RTT). We measured these times for 134 resident-performed cataract cases prior to our proposed intervention. We then set group goals for ideal times of each usage segment. We identified behaviors of the surgery, anesthesia, nursing, pharmacy, and housekeeping teams that would improve group performance. Utilization segments were measured again post-intervention in 136 resident-performed cataract cases.

Results:

Prior to our intervention the average overall case time was 55 minutes, allowing for 10 cases in a 10-hour day. Following the intervention, the average overall case time was 46, allowing for 13 cases in a 10-hour day. The decrease in post-intervention times for overall case time, RIT and CET were statistically significant.

Conclusions:

OR utilization for resident-performed cataract surgery is enhanced by setting group goals. A multidisciplinary effort to enhance group performance through behavior modification can improve efficiency without compromising patient safety or resident teaching.

Poster Abstracts:

Morning Session

Adopting a Correctional Facility Residency Rotation

ANDREW CHEN, MD*; **ANAND RAJAN, DO**; **BENJAMIN P. HAMMOND, MD**

Background:

Correctional facilities often are required to transport inmates to eye care centers for ophthalmic care, which requires substantial manpower and tax payer revenue. The Flaum Eye Institute has collaborated with the New York Department of Corrections to set up a unique delivery of care arrangement where attendings and residents travel directly to the regional medical center to provide care at regular intervals.

Purpose:

To describe the logistics of setting up an ophthalmology clinic at a correctional facility and to assess attending and resident attitudes towards a correctional facility rotation.

Methods:

Clinical and surgical metrics were collected and will be presented. Surveys of staff, attendings, and residents were used to measure perceived attitudes and acceptance before and after rotating through the clinic.

Results:

Clinical data is actively being monitored and will include 8 months of visits at the time of presentation. Survey results are being compiled and results will be presented. The logistics of clinic setup and referral process will be outlined.

Conclusions:

A correctional facility site is a feasible means of providing efficient care to a niche population of underserved patients that benefits resident education.

It is Time to Update and Expand Your Program Policies

ANDREW J. HENDERSHOT, MD*

Background:

We first took a more in depth and critical look at our policies when we had a resident raise concerns over unequal treatment. Analysis of this complaint and what could have helped prevent it, pointed to not having written policies for things that were assumed to be "institutional knowledge."

Purpose:

The project was to systematically analyze and update every policy on file and to create new policies where needed.

Methods:

During the project, we used internal policies from our department and from other departments in our medical center. New policies were created to more definitely and officially spell out areas such as call coverage during absences, communication with the education team and operating room expectations. Additionally, we used this tool to help create awards for OKAP performance, publications and to help establish a Global Health Elective.

Each policy was reviewed both at regular educational team meetings and with the department chair. The program director then went through the policies with the incoming residents during orientation, and with the existing residents at our monthly resident forum meeting. Finally, the complete set was given to all residents on a USB drive and a signed letter of acceptance and planned compliance was obtained from each resident.

Results:

We now have a more robust set of policies that set clear expectations and better allow for disciplinary action to be taken should it be needed.

Conclusions:

A complete and up to date set of departmental policies is an important cornerstone for any program. It would be beneficial for the AUPO / AAO to host a site that would allow for program directors and coordinators to share and exchange policies.

Improving Ophthalmology Care and Coordination in the Surgical Center

CASEY BEAL, MD*; **STEPHEN MYLES POTTER, MD**

Background:

Many ophthalmologists operate in multispecialty surgical centers. The preoperative and postoperative nursing and support staff are crucial to patient care, yet often do not have ophthalmology specific training.

Purpose:

This project was performed to assess and improve the ophthalmology knowledge and ophthalmic surgical understanding of surgical center staff in order to improve patient care.

Methods:

A pre-survey was taken by surgical center staff utilizing a Likert five point scale detailing their knowledge of ophthalmic medications and surgeries. A 50-minute lecture was given to the surgical center staff including reviewing common ophthalmic medications, indications for drops, and surgical procedure videos. The survey was then repeated upon conclusion of the course.

Results:

The survey results showed an average improvement of 2.1 (out of 5) points ($p < 0.0001$) on the Likert scale after the in-service course. 100% of the respondents felt that the course was beneficial and they all felt more prepared to answer patient questions.

Conclusions:

A 50-minute in-service course on basic ophthalmology anatomy, physiology, medications and surgical procedures was found to increase staff knowledge and comfort with ophthalmology surgical procedures. This will hopefully improve patient care and decrease medical errors.

Effect of Personal Telephone Appointment Reminders on the No-Show Rate at a Resident Ophthalmology Clinic

EMILY LI, MD*; VENKATESH BRAHMA, MD; RUSSELL LEVINE, MD; ANDREW POUW, MD; JULIE CHO, MD, PHD; JESSICA CHOW, MD

Background:

The Dana Eye Clinic (DEC) at Yale-New Haven Hospital (YNHH) is a first-year ophthalmology resident-run clinic aimed at providing acute ophthalmic follow-up care for patients evaluated in the YNHH and Saint Raphael Hospital Emergency Departments, as well as patients seen while hospitalized at YNHH. Inherent to the nature of these primary encounters, a large portion of these patients have limitations to routine ophthalmic care, including lack of health insurance and access to transportation. Possibly due to multiple factors, there is a relatively high no-show rate to DEC follow-up appointments. Currently, there is a system in place which provides automated telephone reminders to patients to serve as a reminder of their appointment if scheduled two or more days in advance. It is unknown whether a more direct, personal method of patient reminder would improve the show rate for DEC appointments.

Purpose:

To investigate the effect of implementing a direct, personal reminder system on the show rate for appointments at DEC.

Methods:

We conducted a prospective interventional study with a total of 475 scheduled follow-up appointments at DEC in addition to the YNHH system of automated calling. Non-English speaking patients were called through a translation service. Calls were placed 6 to 24 hours prior to the patient's scheduled appointment time. Those who did not answer were called a second time; thereafter, a voicemail was placed if possible. We then calculated the no-show rate for appointments during the intervention interval from March 27, 2017 to April 28, 2017—a total of five weeks and the missed-appointment rate during the five weeks after completion of intervention. Exclusions included appointments that were made less than 24 hours prior to the scheduled time and appointments for patients who were hospitalized.

Results:

The pre-intervention no-show rate from February 20, 2017 to March 24, 2017 was 20.74 percent (27 missed appointments out of a total of 130 scheduled appointments). During the intervention, from March 27, 2017 to April 28, 2017, the no-show rate was 21.08% (25 missed appointments out of a total of 166). From May 1, 2017 to June 2, 2017 after the intervention, the no-show rate was 19.44% (35 missed appointments out of a total of 180).

Conclusions:

Implementation of a direct, personal reminder system did not significantly lower the rate of missed appointments at the DEC. No-show appointments are likely multifactorial in etiology. Our findings underscore the need to address additional potential barriers to patients making their follow-up appointments at the DEC.

Physician's Perplexity on Pay for Performance Programs

FREDERICK W. FRAUNFELDER, MD, MBA*; STEVAN P. WHITT, MD

Background:

Physician compensation in the United States is primarily based on fee for service. Things are changing, however, to connect physician compensation to value (quality + satisfaction/cost). The Affordable Care Act, and its many amendments, legislates providers and hospitals track quality metrics, or be subject to financial penalties that affect physician salaries.

Purpose:

Physicians are uneasy tying their salary to quality metrics where there is substantial data subjectivity and many sources of potential measurement and reporting errors. We will briefly review the following areas of potential error: (1) not comparing apples to apples, (2) patient error, (3) narrow percentile rank window, (4) low number of completed surveys (leading to selection bias?), (5) intra-specialty comparison errors, and (6) government.

Methods:

Literature review and academic center based experience with implementing non-performance based incentives in an ophthalmology department.

Results:

The possible solutions are : (1) intrinsic motivation of care providers, (2) compare similar organizations, (3) improve infrastructure, (4) increase support staff, and (5) set thresholds for success and focus on physician engagement.

Conclusions:

The keys are to have patience, and to apply a multi-faceted approach to quality improvements. It is important to improve subjective survey methodologies while also improving the whole patient care experience. The whole patient care experience must include adequate infrastructure and a fully staffed clinic. If we, as a healthcare community, can accomplish some of these goals, then doctors will be able to trust the "system" and patients will get the quality care that they deserve.

A Gender-Based Analysis of Resident Self-evaluations in Ophthalmology

KATHERINE J. DAVIS, MD*; **RYAN ARONBERG, MD;** **ANJALI SHAH, MD;** **SHAHZAD MIAN, MD**

Background:

A recent JAMA Ophthalmology study demonstrates the gap in pay between male and female ophthalmologists and raises the question of if there is a difference in perceptions of self-value between male and female ophthalmologists. In regards to training, there is scarce research on variations in self-evaluation patterns between male and female Ophthalmology residents.

Purpose:

This study explored resident self-evaluation data from over ten years of the University of Michigan Ophthalmology Residency Program to assess for potential differences.

Methods:

Aggregate data was obtained from the Medhub evaluation system website, and consisted of anonymized aggregate responses to self-evaluation questionnaires administered from 2001-2017. Data was divided and analyzed by gender. Student's t-test were used to compare mean scores for each question and competency, based on gender. A paired t-test was then implemented to compare overall male versus female responses (cumulative) across all questions.

Results:

In nearly all Competency categories, self-evaluation ratings were higher among males than females. Females rated themselves higher than males in Patient Care-Surgical, and Systems-Based Practice. There was a statistically significant difference between male and female aggregated average self-ratings across all competencies ($p < 0.05$). A larger percentage of male residents rated themselves as "8" or "9" than females.

Conclusions:

Further research is needed on differences between self-evaluation and performance patterns between male and female trainees in Ophthalmology.

Review of Teaching Methods and Outcomes of Resident Phacoemulsification

KEVIN KAPLOWITZ, MD; AZIN ABAZARI, MD*; MOHAMMAD YAZDANIE, BA

Background:

Cataract surgery is one of the most critical skills in all of ophthalmology residency. Given its central position in education, it is vital to critically assess methods to accelerate the learning curve, reduce complications, and optimize attending surgical intervention.

Purpose:

Our purpose is to explore the evidence used to define a learning curve for resident cataract surgery. We will summarize the reported incidence and risk factors for complications in resident performed cataract surgery to help identify cases that require a higher level of skill to improve visual outcome.

Methods:

Our paper focuses on training in the US but we reviewed all 150 papers we could find on teaching phacoemulsification on Pubmed or Embase.

Results:

Based on some evidence, complication rates decline significantly after a resident performs 70 +/- 20 cases. The most commonly studied complication is posterior capsule rent which occurred in 5.71 +/- 3.58% of cases.

Conclusions:

Poor final vision after resident phacoemulsification is usually related to ocular co-morbidities and perioperative complications. Larger prospective studies that take a more systematic approach specifically with matching comorbidities, preoperative risk scores, resident skill level, and attending takeover rate are necessary to make definitive evidence-based suggestions.

Development, Implementation, and Evaluation of a Pre-residency Curriculum Using the Ophthalmology News and Education Network

LINDSAY MACHEN, MD*; AHMAD A. AREF, MD; KAREN E. JONAS, BSN, RN, RV; PAUL CHAN, MD

Background:

Integration of the internship year with the categorical ophthalmology residency has been discussed among educators. While awaiting incorporation, a standardized pre-residency curriculum could serve as a bridge and means of introduction.

Purpose:

To develop, implement, and evaluate a pre-residency ophthalmologic curriculum to improve basic knowledge of ophthalmic anatomy, diagnosis, and management.

Methods:

We developed a curriculum utilizing educational materials from the American Academy of Ophthalmology's (AAO) ONE network. The initial curriculum focused on key concepts in retinal pathology. Trainees included six incoming ophthalmology residents accepted to the Illinois Eye and Ear Infirmary of the University of Illinois at Chicago (UIC). A pretest and posttest were administered before and following completion of the pre-residency curriculum.

Results:

There was a statistically significant improvement ($P=0.0007$) in mean test score achieved following administration of the curriculum. Qualitative survey findings demonstrated an appreciation for the curriculum and desire for additional sub-specialty materials.

Conclusions:

Pre-residency ophthalmology curricula may be a beneficial addition to the intern year experience with potential to better prepare residents for the transition to residency.

Is Resident Performed Glaucoma Surgery Safe and Effective?

LOKA THANGAMATHESVARAN, BS*^{*}; ELLIOT CRANE, MD; KUNJAL MODI, MD; ALBERT KHOURI, MD

Background:

Tube shunt surgery (TSG) is commonly performed by residents.

Purpose:

To compare outcomes of resident and attending performed TSG.

Methods:

Records of patients who underwent TSG were retrospectively reviewed. Cases were matched based on patient age, pre-operative IOP, number of glaucoma medications, and visual acuity. Baseline IOPs were the average of the two visits prior to surgery. Post-operative IOPs were recorded at: 1, 3, 6, and 12 months. Rate of complications were noted. Success for Kaplan-Meier analysis was defined as 20% IOP reduction sustained for one-year.

Results:

60 attending and 57 resident cases were included. Kaplan-Meier analysis did not show a significant difference in outcome between the two groups (Figure 1, $p = .180$). Attending and resident IOPs were significantly reduced from a baseline of 30.2 and 30.5 mm Hg to 15.1 and 15.2 mm Hg respectively ($p = .307$). No significant differences were noted in the rate of complications.

Conclusions:

No differences in outcomes or safety were noted between resident and attending performed cases in this cohort.

Poster Abstracts: Afternoon Session

Taking Wet Lab Microsurgical Skills Training Beyond Cataract Surgery for Ophthalmology Residents

MEENAKSHI CHAKU, MD*[†]; SARAH GRIFFIN, MA; NARYAN SABHERWAL, MD; ANURADHA KHANNA, MD

Background:

Despite a widespread integration of wet labs for cataract surgery, there is a void of subspecialty surgical skills wet labs in ophthalmology residency.

Purpose:

The purpose was to design a wet lab that provides skills training opportunity for residents in non-cataract microsurgery to improve multi-specialty operating room readiness.

Methods:

Ophthalmology residents from all 6 Chicagoland area residency programs participated in the wet lab. Each resident completed a pre-test; rotated through stations including glaucoma, cornea, globe trauma repair, and laser procedures; and completed a post-test. The attending physicians evaluated the residents' progress via a questionnaire.

Results:

There was a trend toward improvement in the attending physicians' evaluations and the residents' own assessment of their skills and attitudes toward surgery. Additionally, 66% reported that they would return for the next wet lab.

Conclusions:

While cataract surgery is the focus for ophthalmology wet labs, we have found that including other microsurgical techniques can enhance residents' skills and attitudes and also attendings' assessment of the residents' skills. We anticipate this will lead to increased safety and quality when performing surgery on patients.

Piloting of an Innovative Teaching and Learning Method Embracing Digital Technologies for Ophthalmology Residents

MISHA SYED, MD*; **DAVID DEL PINO KLOQUES, MS;** **PATIENCE WIELAND, MS**

Background:

Resident physicians are challenged to learn an increasing amount of material, while academic faculty must be financially productive while balancing teaching responsibilities. The Interactive Ophthalmologic Learning (IOL) curriculum uses a blended online and classroom approach to teach Ophthalmology residents efficiently and effectively even when off-site.

Purpose:

To improve residents' satisfaction with their learning experience and increase knowledge accrual/retention with a novel blended curriculum.

Methods:

Ophthalmology faculty participated in development workshops with creation of interactive modules using Blackboard as the online learning platform. Pre/post online quizzes were created to gauge learning acquisition and retention. Faculty learned about online learning tools, HIPAA compliance, and the Free Open Access Medical Education (FOAM) community. Administrative staff received training to assist faculty in Blackboard use.

Results:

Faculty reviews of the workshops were positive, and residents voiced overall satisfaction with Blackboard-based learning. A trend towards improved pre/post quiz scores was noted, although power is lacking for statistical analysis. Data is being collected as the curriculum continues to be utilized.

Conclusions:

- A blended learning approach can facilitate self-directed resident learning and allow teaching flexibility for faculty.
- Educational meaningfulness may be demonstrated downstream by improvement in standardized examination performance (in-training exams, board certification pass rates).

Impact of a Research Competition on Resident Scholarly Activity

OLUSEYE ODUYALE*; FASIKA WORETA, MD, MPH; DIVYA SRIKUMARAN, MD

Background:

Research publications are used as a metric to determine resident success in academic medicine. This data is also collected by the Accreditation Council for Graduate Medical Education for residency accreditation. We are interested in determining factors that increase resident research engagement and publications.

Purpose:

We analyze the impact of a resident research competition with a monetary prize on resident publications at the Wilmer Eye Institute.

Methods:

A review of research publications by 28 residency graduates between 2013 and 2017 was performed. Participation in the annual resident research grant and research competition was determined.

Results:

All 28 residents participated at least once in our resident research grant program. 16/28 (57%) residents participated at least once in our resident research competition. 14/16(87.5%) residents that participated in the research competition published their work compared to only 5/12 (42%) of the residents who did not participate in the competition ($p= 0.01$). 12/12 (100%) of resident who won the competition published their work.

Conclusions:

All 28 residents participated at least once in our resident research grant program. 16/28 (57%) residents participated at least once in our resident research competition. 14/16(87.5%) residents that participated in the research competition published their work compared to only 5/12(42%) of the residents who did not participate in the competition ($p= 0.01$). 12/12 (100%) of resident who won the competition published their work.

Development of an Open Sourced Platform to Improve Resident Transitions

SHAWN LIN, MD, MS, MBA; ANTHONY C. ARNOLD, MD; STACY L. PINELES, MD*; JOHN D. BARTLETT, MD

Background:

UCLA's ophthalmology residency is spread across 5 sites with 3 different electronic health record (EHR) systems. Residents rotate every 6 weeks and gain experience in many practice settings. However, this site-to-site variation also steepens the learning curve at each transition.

Purpose:

We wanted to create a crowd sourced platform to ease the transition onto each new rotation.

Methods:

We utilized the A3 problem solving framework, surveying residents pre- and post-intervention. We defined what a successful implementation would look like, and worked backwards to analyze which strategy would allow us to reach our goals. An important goal was to be able to implement and maintain the solution with any group of residents without external IT support.

Results:

We chose to utilize Google Sites, which would allow the user to log in with an existing Google account, update the website as they would a Google Drive document, and access the platform from any hospital. Our post-implementation survey showed improvement in all categories: obtaining site specific information, admitting patients, finding instruments, emergency surgery paperwork, and Avastin / laser protocols ($p < 0.0001$). In addition, we utilized the built-in Google Analytics engine to track user and site metrics.

Conclusions:

Many residency programs are spread across multiple hospitals systems with varying EMR systems and policies. We have piloted a free, easy to access, cross-platform model which allows for improved resident transitions.

Teaching for the Future of Ophthalmology

THOMAS HWANG, MD*; **DAVID WILSON, MD;** **DANIEL TU, MD, PHD**

Background:

To adapt to rapid technological advances and explosive growth in information, ophthalmology residents require a set of skills and knowledge that are not traditionally taught in training programs.

Purpose:

To propose a curriculum that better prepares residents for the future of medicine.

Methods:

We surveyed the literature and reports from the Institute of Medicine for competencies beyond medical knowledge and clinical skills to adapt to changes in medicine.

Results:

We identified clinical informatics (CI) and improvement science (IS) as the major areas of required competencies. In CI, electronic health records, picture archiving and communications system (PACS), device integration, interoperability, decision support, and telemedicine were identified as key knowledge areas. In IS, workflow analysis, The Model for Improvement, change management, and leadership were identified. High-quality teaching resources are available in some of these subjects, but material designed specifically for ophthalmology residents is lacking.

Conclusions:

Teaching clinical informatics and improvement science may prepare residents to adapt to the rapid changes in medicine. A successful implementation will require a thoughtful balancing of the overall curriculum and development of context-specific educational material.

Availability of Resources for After-hours Surgical Management of Eye Injuries

TINA H. CHEN, MD*; **HASSAN A. SHAH, MD;** **JESSICA KANDEL, MD;** **MARK SLIDELL, MD, MPH;** **KATHRYN COLBY, MD, PHD**

Background:

Ophthalmology residency programs have a wide range of resources available for eye injuries requiring after-hours surgical intervention.

Purpose:

The purpose of this study was to determine availability of resources for after-hours eye surgery, and their effect on clinician satisfaction.

Methods:

An online survey was sent to all AUPO program directors to assess the availability of eye-trained operating room (OR) nurses, a functional operating microscope, and adequate surgical materials.

Results:

Fifty-seven programs completed the survey. 54/57 (95%) had access to a functioning microscope and 50/57 (88%) had access to adequate surgical materials frequently. 28/57 (48%) of programs had frequent access to eye-trained OR nurses. Programs with frequent access to eye-trained OR nurses had a significantly higher average clinician satisfaction score (7.8/10) than those with infrequent access (4.9/10) ($p < 0.01$).

Conclusions:

Less than half of programs have frequent access to eye-trained OR nurses after hours. In contrast, most programs have frequent access to a functional microscope and adequate surgical materials. Access to eye-trained OR nurses may be the most important resource that can be added for after-hours eye surgery to improve clinician satisfaction.

Near-peer Teaching Outreach Programs to Increase Minority Physician Recruitment

WENDY F. LI, BS*; **NICHOLAS APOSTOLOPOULOS, BA;** **ANAND D. GOPAL, BA/BS;** **JOHN A ENCANDELA, PHD;** **CHRISTOPHER C. TENG, MD;** **KRISTEN NWANYANWU, MD, MBA;** **SUSAN H. FORSTER, MD**

Background:

Health disparities among racial and ethnic groups exist in the U.S. despite improvements in health status and access to care. These inequalities may be reduced by increasing minority physician recruitment; however, how best to recruit these physicians remains unclear.

Purpose:

Near-peer teachers are not professionally trained, but have recently learned material that they themselves teach. Near-peer teaching in minority student outreach programs may effectively increase minority physician recruitment. The authors used a near-peer teaching model to promote interest in medicine, specifically ophthalmology, as a career path for near-peer teachers and minority high school students participating in an outreach program.

Methods:

Twenty-one college and graduate-school near-peer teachers of various backgrounds and thirty-one inner-city high school students participated. Pre- and post-test surveys assessed students' knowledge about and interest in science, medicine, and ophthalmology; analysis used pairwise T-test comparisons. An end-of-training survey assessed students' and near-peer teacher's satisfaction with the program and perceptions about medicine.

Results:

Students' knowledge about and interest in medicine and ophthalmology increased significantly after participation. Near-peer teachers agreed that teaching in the program was beneficial to their careers and made it more likely that they would enter medicine and ophthalmology.

Conclusions:

Near-peer teaching may be an effective model to increase minority physician recruitment.

Outcomes of Resident-performed Complex Cataract Surgeries Over Time

XINYI CHEN, BS*; **SHAMEEMA SIKDER, MD;** **DIVYA SRIKUMARAN, MD;** **TAHREEM MIR, MD;** **FASIKA WORETA, MD, MPH**

Background:

Resident cataract surgeries can be associated with higher complications given the learning curve. Risks factors for complications should be studied to understand how to reduce complications.

Purpose:

To examine associations between case complexity and intraoperative complications of PGY4-performed cataract surgeries over time.

Methods:

A retrospective study was conducted on cataract surgeries performed by third-year residents in the first three months (n = 119) and last three months (n = 147) of their residency. Complex cases were identified as those with a small pupil, mature cataract, posterior polar cataract, trauma, pseudoexfoliation, post-vitreectomy, or pre-existing zonular weakness. Intraoperative complications were defined as vitreous loss or zonular dehiscence.

Results:

The overall complication rate for cases decreased from 11.8% in the first three months of the year to 4.1% in the final three months (p=0.02). Complex cases in the first three months were associated with a higher complication rate (18.2%) than during the last three months (3.6%) (p=0.02). For routine cases, no statistical difference was found for complication rates over the year (p=0.26).

Conclusions:

Residents are more competent at performing complex cataract surgeries at the end of their third year. Residency programs must pay attention to high-risk cases at the beginning of the year to reduce complications.

Resident and Program Characteristics That Impact Performance on the Ophthalmic Knowledge Assessment Program (OKAP)

XUEYANG (SARAH) WANG*; DIVYA SRIKUMARAN, MD; JIANGXIA WANG, MS; MICHAEL V. BOLAND, MD, PHD; SHAMEEMA SIKDER, MD; FASIKA WORETA, MD, MPH

Background:

Performance on a resident's third-year OKAP exam has been found to predict passing the written board exam, but OKAP preparation regimens vary across programs.

Purpose:

To determine what characteristics are correlated with higher performance on OKAP.

Methods:

A 22-question survey for ophthalmology residents of all years was distributed to all program directors in the US. Resident study habits and program requirements were correlated with self-reported scores on the 2017 OKAP exam.

Results:

The survey was distributed to residents by 19 programs, and 192 responses were received (71% response rate). Resources that correlated with OKAP scores were online question banks ($p=0.0001$) and review sessions provided by programs ($p=0.0001$). Average number of hours/week spent on studying was positively correlated with OKAP score (Pearson's $r=0.201$, $p=0.007$). Residents from programs that offered incentives had higher performance than those in programs that did not (mean score 72.9 vs. 57.6, 95% confidence interval (67.2-78.5) vs. (52.8-62.4), $p=0.0003$). Programs that provided year-round didactics also had residents with higher scores ($p=0.0015$).

Conclusions:

Online question banks, review sessions, year-round didactics, and incentives are correlated with higher OKAP scores and could help enhance preparation for the written board exam.

Correlating Resident Performance to Application Components

YASMIN BRADFELD, MD*; **DAN SKLANSKY, MD**

Background:

Evidence lacks for predictors of resident performance during residency. USMLE Step 1 and 2 exams may be used to predict successful graduation, but have not been linked to broader resident performance.

Purpose:

To determine whether resident application characteristics correlated with performance by ophthalmology residents.

Methods:

An application scoring tool was designed giving specific scoring weights to scholarly activity, commitment, humanism, and leadership, and exam scores and class rank. Sub-scores of USMLE/rank, scores without USMLE/rank, and leadership/humanism were also compiled. Criteria for satisfactory performance included timely graduation, no performance improvement plan, meeting ACGME surgical minimums, and achieving rotation competency. Chief residency selection or obtaining desired fellowship defined ideal performance.

Results:

Fourteen ophthalmology residents were included. Application scores ranged from 56-88. The highest total scores predicted strong OKAP performance, but not satisfactory performance, chief resident selection or strongest overall performance. Two top scoring residents required professionalism and knowledge performance improvement plans. The lowest scores correlated with weak OKAP performance and surgical improvement plans. Sub-grouped scores predicted poor OKAP and medical knowledge, but did not predict chief residency selection or desired fellowship match.

Conclusions:

Application scores correlated with OKAP performance and surgical improvement plans, but not with satisfactory or ideal performance.



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