2014
EDUCATING THE EDUCATORS

JANUARY 29
TRUMP NATIONAL DORAL MIAMI
MIAMI, FLORIDA

PROVIDED BY
ASSOCIATION OF UNIVERSITY PROFESSORS OF OPHTHALMOLOGY
PROGRAM DIRECTORS COUNCIL

Meeting Syllabus

Educating the Educators 2014

MEETING SUPPORT

Educating the Educators is supported by an independent medical education grant from Alcon Research, Ltd.

The Educating the Educators Reception is sponsored by the San Francisco Matching Program.

The Association of University Professors of Ophthalmology's Program Directors Council would like to welcome you to the 11th annual Educating the Educator's conference being held in Miami, Florida.

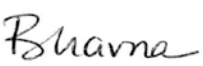
The Educating the Educators meeting has fast become the essential meeting for educators in Ophthalmology. This meeting was initiated with the idea of providing residency program directors with the proper tools to train residents, but has become an outstanding opportunity for all educators, including residency program directors, medical student educators, program coordinators, and chairs to coordinate our efforts in ophthalmic education.

This year we have organized two very special symposia. After last year's, outstanding presentation by Dr. Travis Frazier, we are very pleased to have Drs. Eric Bean and Erin Seefeldt provide insight on how to Develop Mental Toughness Competencies using Attention Control Strategies To Enhance Surgical Performance. We are also privileged to have Dr. David Cook, renowned expert in education principles, discuss use of educational technologies to enhance curriculum development.

We have had a tremendous increase in the number of high quality abstracts submitted this year. Once again, we had a peer led review committee to select the presentations for the free paper session and have added a poster session during the breaks. We hope these efforts will enhance the quality of the meeting program and further encourage medical education research in ophthalmology.

We thank you for your continued support and hope you will join us for the social immediately following the meeting.

Shahzad Mian, MD



Bhavna P. Sheth, MD, MBA

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asterisk (*) designates abstract presenter

POSTER SESSION

Educating the Educators 2014 Program

Wednesday, January 29		
7:00 am – 8:00 am	Registration	
7:15 am – 8:00 am	Continental Breakfast & Poster Viewing	
8:00 am – 8:10 am	Welcome and Announcements (welcome New PDs, Coordinators, Clerkship Directors) – Shahzad Mian, MD	
8:10 am – 8:20 am	San Francisco Match Program Update – Dennis S. Thomatos	
8:20 am – 8:30 am	O.K.A.P Update – Richard Zorab	
8:30 am – 8:35 am	Resident HUB Update – Jean Hausheer, MD	
8:35 am – 8:40 am	Journal of Academic Ophthalmology Update – Karl C. Golnik, MD	
8:40 am – 12:00 am	Free Papers (Part I)	
	8:40 – 8:55 am	Clinical Outcomes and Patient Satisfaction with Laser Refractive Surgery Performed by Surgeons in Training – Sarah M. Nehls, MD*; Shahed Y. Ghoghawala, MD; Frank S. Hwang, MD; Amir A. Azari, MD
	8:55 – 9:10 am	A Comparison of Anesthesia Type on Complication Rates in Resident Physician Cataract Surgery – John T. Lind, MD, MS*; Matthew Currie, MD; Michael Merkley, MS, IV; Devin West, MS, IV; Hugo Y. Hsu, MD
	9:10 – 9:25 am	Reliability Determination of the ICO-OSCAR:phaco and ICO-OSCAR:strabismus – Karl Golnik*, W. Walker Motley, Hilary Beaver, Andrew Lee, Vinod Gauba, Eduardo Mayorga, Gabriela Palis, George Saleh
	9:25 – 9:40 am	A Resident Clinic as a Model for Excellence in Patient Care and Residency Education – Laura K. Green, MD*; Anthony Castelbuono, MD; Donald Abrams, MD; Wendy Schnitzer; C-TAGME
	9:40 – 9:55 am	Ophthalmology Resident Perspectives on Informed Consent Training: A Survey Study – Kian Eftekhari, MD*; Kian Eftekhari, MD; Gil Binenbaum, MD, MSCE; Thomasine N. Gorry, MD; Prithvi S. Sankar, MD; Paul J. Tapino, MD
	9:55 – 10:10 am	Improving Resident Cataract Surgery Planning and Surgery Outcome Analysis – Gokul N. Kumar, MD*; Aaron Y. Lee, MD
	10:10 – 10:30 am	Break & Poster Viewing Session
	10:30 am – 12:00 pm	Developing Mental Toughness Competencies in Ophthalmology Residents: Using Attention Control Strategies To Enhance Surgical Performance – Eric Bean, PhD*; Erin Seefeldt, MD*; Travis Frazier, MD
12:00 pm – 1:30 pm	Lunch (included) & Poster Viewing Session	
1:30 pm – 3:00 pm	Free Paper session (Part II)	
	1:30 – 1:45 pm	House Bill 527: What is the Role of a Program Director? – Ramesh Ayyala, MD, FRCS*
	1:45 – 2:00 pm	Is It Time to Adopt Vision Screening for Ophthalmology Residency Program Applicants? – Preston H. Blomquist, MD*
	2:00 – 2:15 pm	Comparison of Resident-Performed Argon and Selective Laser Trabeculoplasty in Patients with Open Angle Glaucoma – Eugene Lowry, BA*; Daniel A. Greninger, MD; Travis C. Porco, PhD, MPH; Ayman Naseri, MD; Robert L. Stamper, MD; Ying Han, MD, PhD
	2:15 – 2:30 pm	Impact of a Dedicated Research Rotation in Ophthalmology – Blake Fausett, MD, PhD*; Gale Oren, MILS, AHIP; Shahzad Mian, MD
	2:30 – 2:45 pm	Video Image Analysis for the Objective Evaluation of Cataract Surgical Technique – Xue

Educating the Educators 2014 Program

		Wang, MS*; Alexander A. Sawchuk, PhD; Ronald J. Smith, MD, MPH
Wednesday, January 29 (continued)		
	2:45 – 3:00 pm	A Program Improvement Plan to Facilitate Annual Program Reviews of Graduate Medical Education Programs – Elias I. Traboulsi, MD*; John Tetzlaff, MD; Krista Lombardo-Klefos; Lori Smith
3:00 pm – 3:15 pm	Break & Poster Viewing Session	
3:15 pm – 4:45 pm	Use of Technology in Education Symposium	
	3:15 – 3:30 pm	Smartphone App to Improve Quality of Resident Feedback – Doug Fredrick, MD*; Christopher Sales, MD
	3:30 – 3:45 pm	Online Learning Logs: A Tool for Resident Self-Reflection and Milestone Assessment – Peter Quiros, MD*; Gabriela Palis, MD
	3:45 – 4:00 pm	Understanding the Role of Virtual Reality Simulation in Cataract Surgery Education – Colin A. McCannel, MD*; David C. Reed, MD; Darren R. Goldman, MD
	4:00 – 4:45 pm	Teaching with New Technologies: What's Available? What Works? and When to Use it? – David A. Cook, MD, MHPE*
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POSTER SESSION

Use of Direct Ophthalmoscopy by Medical Students – Kruti Dajee, MD; Jess T. Whitson, MD; Angela Mihalic, MD; James Wagner, MD; Preston H. Blomquist, MD

Predictors of Matching in Ophthalmology for International Medical Graduates (IMGs) – Allison Loh, MD; Todd Driver, BS; Damien Joseph, BA; Jeremy Keenan, MD, MS; Ayman Naseri, MD

Resident Self-Reported Preparedness for Cataract Surgery – Shameema Sikder, MD; Christina Prescott, MD, PhD; Divya Srikumaran, MD

Analysis of Capsulorrhexis Performance Trends on a Haptic Simulator with 6 Months of Intervening Operating Room Experience – Shameema Sikder, MD; Jonathan Song, MD; Luo Jia, PhD; Cristian Luciano, PhD; Patrick Kania, MS; Eman Al Kahtani, MD; Abdul-Elah Al-Towerki, MD; Pat Banerjee, PhD

A System for Ranking Resident Applicants that Works – Julie K. Calderwood, MD; Natalie C. Kerr, MD

Perioperative Eye Injuries After Non-Ocular Surgery at Yale-New Haven Hospital – David R. Shield, MD; John J. Huang, MD

Ophthalmology Call Efficiency Solution – Stephen Winkler, MD; Laura Green, MD

Resident Exposure to Variations in Phacodynamic Settings and Nuclear Disassembly Techniques in Cataract Surgery – Hoon Jung, MD; Surbhi Bansal, MD; Jorawer Singh, MS, IV

The Staggered Start: Education for the Millenials – Taliva D. Martin, MD; Susan H. Day, MD

Development of a Wet Laboratory Curriculum for Descemet Membrane Endothelial Keratoplasty – Hassan N. Tausif; Michael Titus; Kyle Mavin; Shahzad I. Mian, MD

Ophthalmology Simulation Games – Cultivating a Competitive Environment to Enhance Resident Surgical Skills – David J. Goldman, MD, MBA; Adrian Elfersy, MD; Deborah Darnley, MD; Paul Edwards, MD

Cataract Immersion as a Model for Ophthalmic Surgical Training – Pavan Angadi; Arlene Bagga, MD; Linda Rose, MD

Interactive Web-Based Ophthalmic Pathology Curriculum in Resident Education – Tatyana Milman, MD; Steven A. McCormick, MD

Resident HUB Update

JEAN HAUSHEER, MD*

The Resident Hub Update
AUPO 2013
Educating the Educator's Presentation

Jean Hausheer, MD, FACS
Clinical Professor
University of Oklahoma
Dean McGee Eye Institute

American Academy of Ophthalmology
The Eye M.D. Association

The Resident Hub: Content Catalog

- 17 multimedia courses developed by CRE
- 4086 questions
- 244 assessments
- 15 videos (incl. 8 Annual Meeting lectures)
- 83 Focal Points modules
- Subjective Refraction and Prescribing Glasses text
- Licensed content from Astute Doctor, Eyemaginations, and JCAHPO
- Content in all Subspecialties, Basic Skills and Optics, Patient Communication, Advocacy, Ethics, and more

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The Resident Hub: Testimonials

- In a 2012 survey, 89.5% of resident respondent users indicated that access to its content had "helped improve their knowledge about the practice of ophthalmology," citing examples such as:
  - "Well organized, high yield information in an easy-to-read format."
  - "It has gone over subjects that I don't know very well."
  - "this is an excellent source for questions and courses. please keep it available to us!!"

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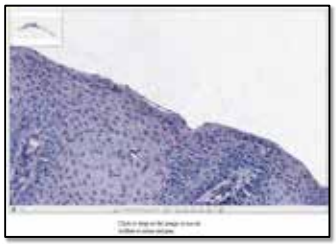
The Resident Hub: Future Changes

- Major interface improvements to make it easier to access and utilize valuable content
- More Pathology content, including virtual microscopy slides with questions
- Major edits to database of 4,000+ questions over the next 2 years
- Social learning features
- "TED Lectures" – recording the best lectures at programs throughout US
- With more users the Academy can justify more investment



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The Resident Hub: New Content

- Astute Doctor Patient Communication (6 courses) – to help programs meet ACGME reqs
- Videos from the Academy's DVD collection
- Vision Rehab course
- 2 new Optics courses via CRE
- Study Questions from the BCSC
- The Eyes Have It

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The Resident Hub: Utilization

- Current subscribers
  - 36 US programs (27% of total)
  - 7 Canadian programs (47% of total)
  - 17 programs from other countries
- Since launch in July 2011 over 500 residents have logged in over 6,300 times (total)
  - 1231 course completions
  - 679 residents took 18,419 assessments

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RESIDENT HUB UPDATE – HAUSHEER

The Resident Hub: More Info

- **For more information, email thehub@aao.org**
- **See Sarah Page at AUPO, email her at spage@aao.org or call 415-447-0264**

The Resident Hub: Concerns

- **Ophthoquestions competitor**
  - **Academy's Self-Assessment Committee will be working on major edits to its database of ~4,000 questions over the next 2 years (regular edits are ongoing)**

Financial Disclosures

- **Jean Hausheer, MD, FACS**
  - **Chair, Committee for Resident Education (CRE)**
    - **No financial relationships to disclose**

The Resident Hub: What it Does Well

- **Residents self-study with valuable, vetted Academy resources**
- **Retains scores for each assessment attempt**
- **Records information about each activity a resident takes, including how long the activity was open**

The Resident Hub: Concerns

- **While self-study features are easy to use, CRE has concerns with usability of other features**
  - **Academy working to improve the interface and make it easier to access and utilize valuable content**
  - **Several CRE members are in a design partnership team with Oracle to provide direct feedback to guide planned improvements**

The Resident Hub: What it Does Well

- **Assign content to residents in Learning Plans**
- **View reports of data (assessment scores, activities)**
- **Easily view which questions your residents answered correctly and incorrectly - identify gaps in knowledge across your program**

RESIDENT HUB UPDATE – HAUSHEER

The Resident Hub: With More Time

- Create your own assessments, including randomized with a unique set of questions
- Create multimedia courses with your materials, including audio, video, PPT presentations, PDFs
- Assign residents task to upload a document or perform something like give an oral presentation
- Build assessments using your own questions (with or without Academy questions)

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The Resident Hub: Concierge

- If you are struggling to take advantage of features within The Resident Hub due to interface and time or resource constraints, let the Academy do the work for you!
- Get in touch with Sarah Page for personalized assistance. Sarah has helped many programs get added value out of The Resident Hub.

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The Resident Hub: Cost

- $200/year per resident
- $50/year per Faculty, PD, Coordinator
- Pricing will not increase this year
- No discounts
- The Resident Hub is a mission-driven initiative that the Academy runs at a significant loss as a service to residents and residency programs

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Clinical Outcomes and Patient Satisfaction with Laser Refractive Surgery Performed by Surgeons in Training

SARAH M. NEHLS, MD*; SHAHED Y. GHOGHAWALA, MD; FRANK S. HWANG, MD; AMIR A. AZARI, MD

Background:

Residents are required to assist or perform six refractive surgery cases to graduate. Several barriers, including concern for patient safety and satisfaction, limit the success of implementing laser refractive surgery training in residency. To date, few studies show surgical outcomes and none address patient satisfaction following resident refractive surgery.

Purpose:

To evaluate the refractive error quality of life (RQL) improvement, patient satisfaction, and clinical results of resident and fellow performed laser refractive surgery.

Methods:

We reviewed results of 138 LASIK and 4 PRK cases performed between March 2010 and February 2012 by ophthalmology residents and fellows. One year postoperative analysis of RQL patient satisfaction in 34 patients was completed using the National Eye Institute Refractive Error Correction Quality of Life Instrument-42 (NEI-RQL-42).

Results:

Pre-operative average spherical equivalent (SE) was -2.97 + 2.4. Final post-operative mean SE measured -0.20D (95% CI -0.26 to -0.13) and mean Snellen uncorrected vision was 20/20.47 (95% CI = 20/19.47 to 20/21.11). No cases showed loss of visual acuity. Equivalent to superior satisfaction in RQL was demonstrated in all but one Scale Score of the NEI-RQL-42 when compared to NEI normative data.

Conclusions:

Laser refractive surgery performed by surgeons in training demonstrates safety and efficacy, along with high patient satisfaction.

A Comparison of Anesthesia Type on Complication Rates in Resident Physician Cataract Surgery

JOHN T. LIND, MD, MS*; MATTHEW CURRIE, MD; MICHAEL MERKLEY, MS, IV; DEVIN WEST, MS, IV; HUGO Y. HSU, MD

Background:

The project was initiated to look at whether anesthesia choice or other factors in resident cataract cases influences specific complications.

Purpose:

This study retrospectively looks at factors that could influence cataract complication rates and is may be the first study to look at complication rates based on anesthesia choice, which could offer benefits or risks to the patient.

Methods:

A retrospective chart review of all cataract surgeries done on the resident cataract service was conducted between July 1, 2007 and June 30, 2012. 1031 operative reports were reviewed. Details regarding the surgery and systemic and ocular complications were recorded. ANOVA Analysis with SPSS software was used to analyze the data.

Results:

There was no significance difference in complication rate based on anesthesia performed (0.61), the quarter of the year of which the surgery was done (0.33), or the age of the patient (0.84). One attending physician had a lower complication rate (0.02).

Conclusions:

In this study, no anesthesia type was found to be significantly different when looking at ocular or systemic complications. One attending physician was found to be a statistically significant factor in preventing complications.

A COMPARISON OF ANESTHESIA TYPE ON COMPLICATION RATES IN RESIDENT PHYSICIAN CATARACT SURGERY – LIND

Washington University in St. Louis
School of Medicine

A Comparison of Anesthesia Type on Complication Rates in Resident Physician Cataract Surgery

Association of University Professors of Ophthalmology *Educating the Educators*

John T. Lind, M.D. January 29, 2014

Special Thanks

- My co-collaborators: Matt Currie, M.D.

Medical Students- Devin West and Michael Merkley

Past Chairman- Oscar A Cruz, MD- Saint Louis University

- My past and present Washington University Saint Louis Chairmen:

Michael Kass, M.D. and Todd Margolis M.D., Ph.D.

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Conflict of Interest

- I have no conflict of interest in the material presented
- I do serve on advisory boards for Allergan, Inc.

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The questions

- Is it safer for residents to perform cataract surgery on patients under general anesthesia?
- Are there other variables?

Methods

- Retrospective review of operative reports
  - Dept of Ophthalmology at Saint Louis University
- Inclusion criteria:
  - CPT codes 66984 and 66982
  - July 1, 2007 through June 30, 2012
  - five attending surgeons
- Exclusion criteria
  - no PGY-IV resident assisting
- Included 1031 operative reports, 1038 eyes

Methods

- Obtained from each operative report:
  - Attending
  - Anesthesia type
  - Laterality
  - Complications

A COMPARISON OF ANESTHESIA TYPE ON COMPLICATION RATES IN RESIDENT PHYSICIAN CATARACT SURGERY – LIND

Anesthesia Types

- Unknown - 9
- General - 82
- Topical - 408
- Retrobulbar - 532
  - including peribulbar and sub-tenon's

Complications

- Conversion to manual extracap or fragmatome
- Descemet membrane tears
- Capsulorhexis complications
- Anterior capsule tears
- Posterior capsule tears
- Vitrectomy
- Retained lens
- Iris prolapse
- Systemic complications

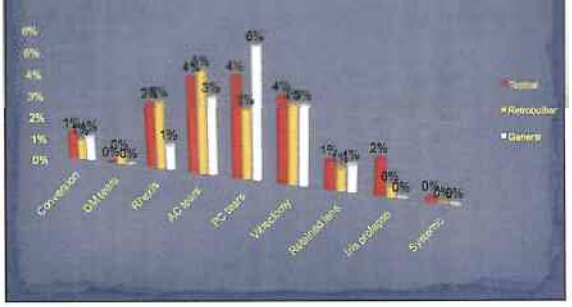
Methods

- Statistical analysis using SPSS software
- ANOVA

Overall Complications in our patients

- Systemic complications: 0.1%
- Descemet tears: 0.2%
- Conversion to secondary technique: 1%
- Retained lens: 1%
- Iris prolapse: 1%
- Capsulorhexis formation complications: 3%
- Anterior capsule tears: 4%
- Posterior capsule tears: 4%
- Vitrectomy: 4%

Complication by Anesthesia Type



Results

- Is there a difference in complication rate by:
  - Anesthesia type
  - Different years
  - Time of Year
  - Age of Patient
  - Attending

A COMPARISON OF ANESTHESIA TYPE ON COMPLICATION RATES IN RESIDENT PHYSICIAN CATARACT SURGERY – LIND

By Anesthesia Type

- ANOVA - no significant difference (0.61)
- General
- Topical
- Retrobulbar
  - Peribulbar and sub-tenon's

By Anesthesia Type

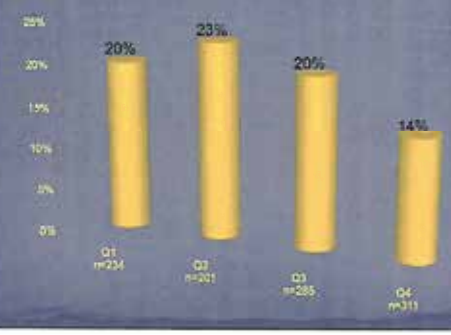
By Academic Year

- ANOVA - no significant difference (0.18)
- Trend towards higher complication rate for one year

By Time of Year

- ANOVA - no significant difference (0.33)
- Trend for lower complication rate in fourth quarter

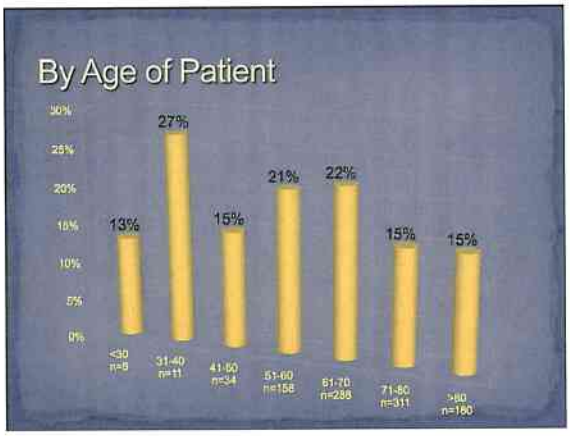
By Time of Year

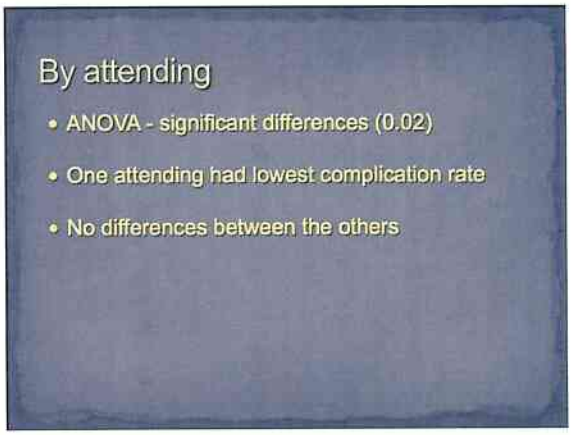


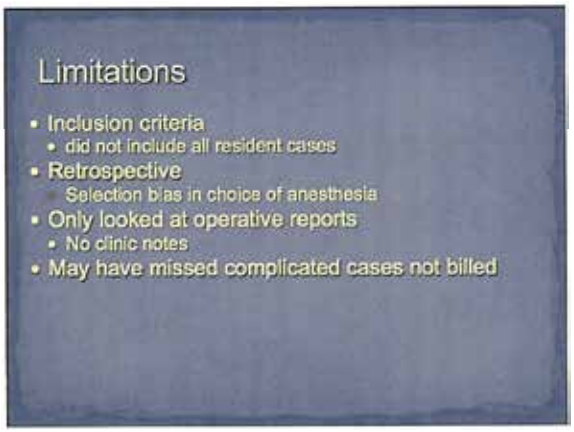
By Age of Patient

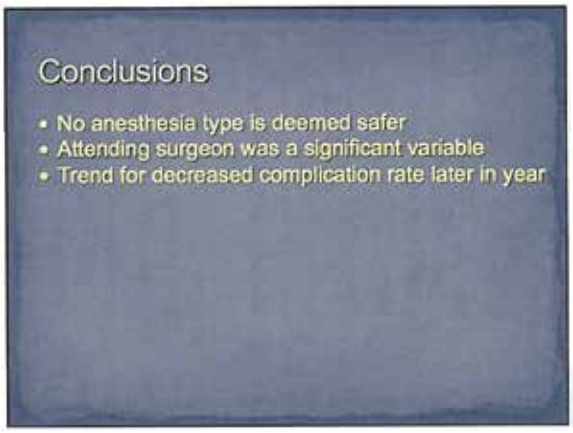
- ANOVA - no significant difference (0.84)

A COMPARISON OF ANESTHESIA TYPE ON COMPLICATION RATES IN RESIDENT PHYSICIAN CATARACT SURGERY – LIND









Reliability Determination of the ICO-OSCAR:phaco and ICO-OSCAR:strabismus

KARL GOLNIK*, W. WALKER MOTLEY, HILARY BEAVER, ANDREW LEE, VINOD GAUBA, EDUARDO MAYORGA, GABRIELA PALIS, GEORGE SALEH

Background:

We previously developed two new surgical skill assessment tools the International Council of Ophthalmology's Ophthalmic Surgery Competency Assessment Rubric for phacoemulsification (ICO-OSCAR:phaco) and strabismus surgery (ICO-OSCAR:strabismus) and described their content validity. We sought to show these tools have inter-rater reliability.

Purpose:

To show the ICO-OSCAR:phaco and ICO-OSCAR:strabismus have inter-rater reliability.

Methods:

Six phacoemulsification procedures and six starbismus procedures were videotaped. Via the internet, 10 international teachers of cataract surgery and 10 teachers of strabismus surgery reviewed the procedures and graded them with the relevant OSCAR assessment tool. Cronbach alpha corefficients of inter-rater reliability were calculated.

Results:

Cronbach alpha for the ICO-OSCAR:phaco was 0.92. Cronbach alpha for the ICO-OSCAR:strabismus was 0.91 .

Conclusions:

The ICO-OSCAR:phaco and ICO-OSCAR:strabismus are valid and reliable assessment tools that can be applied internationally to satisfy the global need for new instruments to comply with emerging trends in ophthalmic education.

A Resident Clinic as a Model for Excellence in Patient Care and Residency Education

LAURA K. GREEN, MD*; ANTHONY CASTELBUONO, MD; DONALD ABRAMS, MD; WENDY SCHNITZER; C-TAGME

Background:

Our residency separated from Wilmer in July 2007. We needed to build up a resident clinic where the majority of resident surgeries (especially cataracts and glaucoma) would originate. Beginning with PGY-2 residents in the summer of 2007, we had two years to grow enough patient volume and pathology to meet ACGME minimum numbers in time for their graduation in June 2010. Through several innovations and a well organized and well-supported resident clinic, we were able to achieve over 100 cataract surgeries for each of our first class of residents. The numbers of visits and surgeries generated has continued to grow over the past 6 years, and we think that this provides a model for resident education with patient continuity and appropriate supervision that can be transported to other programs.

Purpose:

To grow a viable, fiscally self-sustaining resident clinic that would become the cornerstone of an excellent community-based residency program.

Methods:

We will use surgery numbers from ACGME database, de-identified patient visit numbers, financial data, ACGME resident survey, internal end-of-year survey, 360 evaluations by patients, and surveys of recent graudates. A comparison will be made in each of these metrics comparing the pre-2007 open resident clinic and the post-2007 continuity clinic.

Results:

In each of the past 6 academic years, growth has been shown in total number of clinic visits and in numbers of cataract and glaucoma procedures performed by the residents. Residents enjoy having continutity of care which allows them to follow disease processes longitudinally. Residents always have appropriate attending supervision with a designated attending for each session. Patients return because of a high level of satisfaction with their resident physicians, whom they identify with as the main provider. Graduates feel well prepared to enter fellowship and private practice.

Conclusions:

A resident clinic where residents spend approximately 50% of their time (with the other half in attending clinics and OR) provides a good balance of autonomy and supervision when the faculty fully supports the mission. A resident clinic provides excellent quality of care with superb patient satisfaction. Our model can be integrated into most residencies as a way to promote a high level of resident engagement and excellent surgical numbers. A strong resident clinic is an excellent way to prepare our residents for independent practice. We hope to be able to move this model to our new satellitel location at Northwest Hospital

Ophthalmology Resident Perspectives on Informed Consent Training: A Survey Study

KIAN EFTEKHARI, MD*; KIAN EFTEKHARI, MD; GIL BINENBAUM, MD, MSCE; THOMASINE N. GORRY, MD; PRITHVI S. SANKAR, MD; PAUL J. TAPINO, MD

Background:

Scant literature exists regarding resident experiences with informed consent in ophthalmology. Authors in the field of emergency medicine have shown that there is little formal training in informed consent and lack of confidence among residents consenting for common procedures.

Purpose:

To assess the extent of training ophthalmology residents receive and also the confidence they have in obtaining informed consent for common ophthalmic procedures.

Methods:

Anonymous online survey.

Results:

95 residents participated. 56% had received formal training in providing IC. 95% felt comfortable obtaining informed consent for laser peripheral iridotomy, 90% for eyelid laceration repair, 89% for cataract surgery (100% of PGY-4's), 78% for open globe repair, and 55% for strabismus surgery. Most residents desired more formal training in informed consent. Additional data collected include level of experience with informed consent, reasons for discomfort and preferred training methods.

Conclusions:

For many common ophthalmic procedures, residents do not feel comfortable obtaining informed consent. Additional formal training in obtaining informed consent would be welcomed by ophthalmology residents. In the future, we plan to implement a formal training program to measure resident competency in obtaining informed consent. This program would address five of the six core competencies outlined by the ACGME.

Improving Resident Cataract Surgery pPlanning and Surgery Outcome Analysis

GOKUL N. KUMAR, MD*; AARON Y. LEE, MD

Background:

For cataract surgeons-in-training, refractive planning and tracking of quality-based outcomes are critical. Before every case, there should be a systematic approach that allows for planning of wounds and lens choices. Individualized outcome measures should be available, including surgically-induced astigmatism and refractive outcomes for lenses. Postoperative data should guide planning for future surgeries.

Purpose:

To implement a free web-based perioperative cataract planning and outcome-tracking system and to test its functionality in a resident setting.

Methods:

We created www.threeplus.org where residents can create personal profiles and perform all pre-operative planning and post-operative outcome tracking with minimal required inputs. We then tested the software for two beginning surgeons.

Results:

53 cataracts were tracked for 2 surgeons. Mean SIA was 0.07 D in the axis of the wound. Mean spherical equivalent from target was -0.11D. Individualized IOL-calculation constants were successfully derived for all 3rd generation IOL formulas: SRK/T, Hoffer-Q, and Holladay 1.

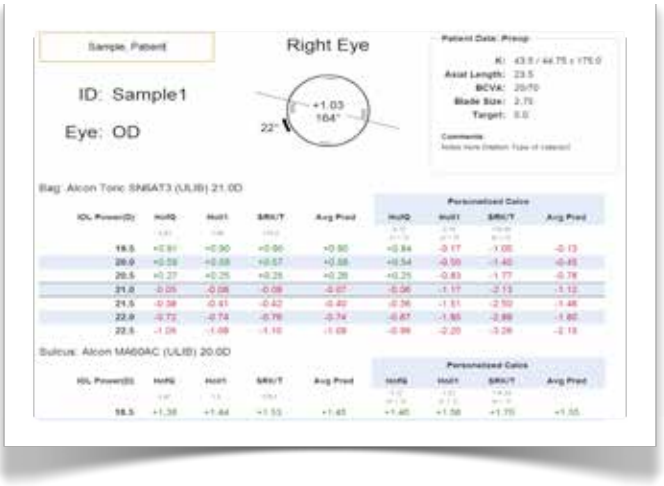
Conclusions:

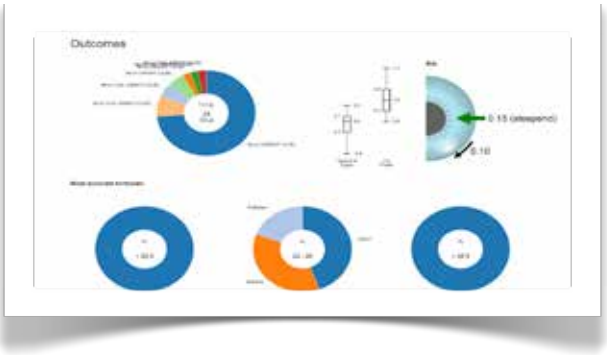
threeplus.org is a free online cataract planning and outcome tracking software. Tracked data is personalized to each user, and the site can aggregate data for any group since data is collected in a centralized server. It improves the refractive planning for residents in a step-wise manner, enforcing proper pre-operative approaches.

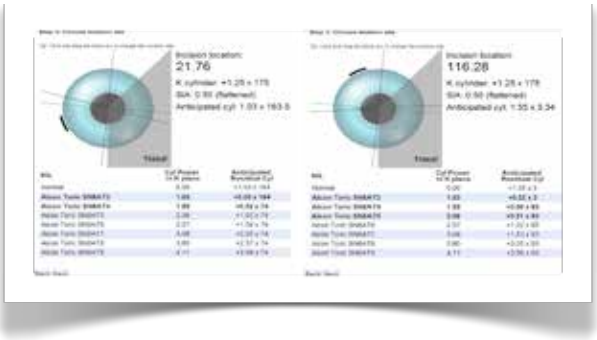
IMPROVING RESIDENT CATARACT SURGERY PLANNING AND SURGERY OUTCOME ANALYSIS – KUMAR

threeplus.org

A free online tool for improving cataract surgery planning and outcomes







Features

Individually track cataract surgery refractive outcomes

Utilize outcomes to plan future surgeries

Built-in IOL calculations allow lens selection within the program

Integration of astigmatic IOLs

No upgrades since everything operates online

All data can be exported into Excel spreadsheets for external analysis

Training programs can track outcomes, complications, and more

Free for residents, fellows, and faculty - no need to purchase licenses

Security features and de-identified information help stay HIPAA compliant

Contact us to sign up, ask questions, or offer suggestions:

support@threeplus.org

Presenters:
Aaron Lee
aaronylee@gmail.com
Gokul Kumar
gokul.n.kumar@gmail.com

Developing Mental Toughness Competencies in Ophthalmology Residents: Using Attention Control Strategies To Enhance Surgical Performance

ERIC BEAN, PHD*; ERIN SEEFELDT, MD*; TRAVIS FRAZIER, MD

Abstract:

Elite athletes, pilots, and other professionals have long been utilizing performance psychology strategies to enhance their performance and increase their resiliency and consistency. One cornerstone of performance psychology is the ability to effectively manage ones attention by limiting the impact of external and internal distractions and concentrating on relevant stimuli. Managing attention requires an effective allocation of limited cognitive resources which is largely managed by one's working memory. Working memory is essentially a system that actively holds information in order to manipulate that information for verbal and non-verbal tasks (i.e. reasoning, decision-making, and comprehension). Working memory and cognitive overload have been extensively discussed in the performance-choking literature (Beilock & Carr, 2005). It has been shown that choking (i.e. performing more poorly than expected) can occur when working memory resources, typically devoted to skill execution, are consumed by thoughts of worry, anxiety or other mental distractions. Furthermore, recent research has demonstrated that cognitive overload (i.e. when the processing demands exceed the processing capacity) effects surgical and non-surgical physicians in a similar fashion by impacting their decision making skills often leading to diagnostic errors (Chisholm, et al 2000; Laxmisan, et al, 2007; Wears & Leape, 1999). Because of the nature of the medical environment residents' working memory is frequently taxed (e.g. diagnosing patients, applying recently learned material, performing under pressure/expectations, etc.) and, therefore, often at risk for overload. In this 90 minute workshop you will be introduced to cognitive load theory, attention control strategies to mitigate the deleterious effects of cognitive overload, the reasoning and process involved in developing mental toughness competencies in Ophthalmology residents.

House Bill 527: What is the Role of a Program Director?

RAMESH AYYALA, MD, FRCS*

Background:

HB 527 is an optometry sponsored surgery scope bill that was introduced into Louisiana(LA) Legislature in April 2013. If approved, optometrists could have performed many surgical procedures. 95% of LA ophthalmologists did not oppose the bill because of conflict in business interests or afraid of political consequences.

Purpose:

To report the ethical role played by Tulane residency program in opposing HB527.

Methods:

The PD along with the residents agreed to testify before the house committee opposing the HB 527.The entire program was drafted to collect data from various sources in preparation for the testimony. E-mails were sent to Ophthalmologists suggesting reasons to oppose the bill. State Representatives' were contacted. Social media was used to increase public awareness.

Results:

The chief resident and PD testified explaining as to why optometrists should not be allowed to operate and the differences involved in the training of ophthalmologists and optometrists. The testimony inspired many ophthalmologists to come out openly against the bill. With AAO's help, LA ophthalmologists successfully defeated the bill from reaching the house floor.

Conclusions:

PDs can play a very important role in inspiring future ophthalmologists (current residents) to stand against unethical issues such as HB527, in the interest of public safety.

Is It Time to Adopt Vision Screening for Ophthalmology Residency Program Applicants?

PRESTON H. BLOMQUIST, MD*

Background:

There has not been set a minimum standard for vision to perform intraocular surgery despite the belief among many educators of the importance of good vision in predicting the technical ability of the beginning microsurgeon. Applicants are disserved when allowed to start a microsurgical residency if they lack the physical prerequisites to successfully complete it.

Purpose:

To propose that evidence-based vision standards be set for applicants to ophthalmology residency programs.

Methods:

A review of the literature was conducted, including recent studies with ophthalmic microsurgical virtual simulators and subjects with visual defects.

Results:

Applicants do not self-select themselves for surgical careers on basis of their dexterity and often perform lower than their self-assessed dexterity on simulated surgical tasks. Innate dexterity strongly influences the initial rate of learning a task as well as the level of technical skill an individual can attain with training and experience. Recent studies with the Eyesi eye surgery simulator (VRmagic, Mannheim, Germany) on validated modules show a decrease in performance for subjects with abnormal stereoacuity.

Conclusions:

Testing of stereoacuity is a reasonable measure for those applying to ophthalmology residency. Stereoacuity is not the only determinant of innate dexterity, and future virtual simulator studies are needed to elucidate other factors.

IS IT TIME TO ADOPT VISION SCREENING FOR OPHTHALMOLOGY RESIDENCY PROGRAM APPLICANTS? – BLOMQUIST

Is It Time to Adopt Vision Screening for Ophthalmology Residency Program Applicants?

Preston H. Blomquist, M.D.
Professor

UT SOUTHWESTERN Medical Center

I have no financial or proprietary interests to disclose.

The future of medicine, today.
UT SOUTHWESTERN Medical Center

What We Desire in a Resident

- Intelligent, hard-working, motivated to learn, scholarly
  - The application usually reveals this
- Not a jerk or a sociopath, but a team player
  - The interview hopefully reveals this
- Technically skilled (ie, potential to be a good microsurgeon
  - A vision exam may help with this

The future of medicine, today.
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Predicting Technical Ability

- Required to pass a vision test prior to driving a car, but not for sticking a keratome in an eye?
- What are the visual requirements for a microsurgeon?
  - Stereopsis?
  - Visual acuity?
  - Color vision?
  - None of the above?

The future of medicine, today.
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Predicting Technical Ability

- American With Disabilities Act (1990)
  - ADA Title I covers employment
    - Affects employers with 15 or more employees
    - Prohibits discrimination of qualified individuals with disabilities in recruitment, hiring, promotions, training, pay, social activities, and other privileges of employment
      - Restricts questions that can be asked about an applicant's disability before a job offer is made
      - Requires reasonable accommodation be made, unless it results in undue hardship

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Is There Self-Selection for Surgical Career?

- A study using laparoscopic VR simulation found applicants significantly performed lower than their self-assessment of dexterity
  - Self-assessed dexterity tasks (video gaming, sports, artistic activities, musical instruments) were not predictive of performance on the simulator
  - Internal medicine interns scored higher on 3 of 4 tasks
- No apparent self-selection for career based on actual surgical skills
  - Need a way to assess technical proficiency

The future of medicine, today.

Panait L, Larios JM, Brenes RA, et al. J Surg Res 2011; 170:189-194

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IS IT TIME TO ADOPT VISION SCREENING FOR OPHTHALMOLOGY RESIDENCY PROGRAM APPLICANTS? – BLOMQUIST

Attributes Important in Selection of Surgical Candidates

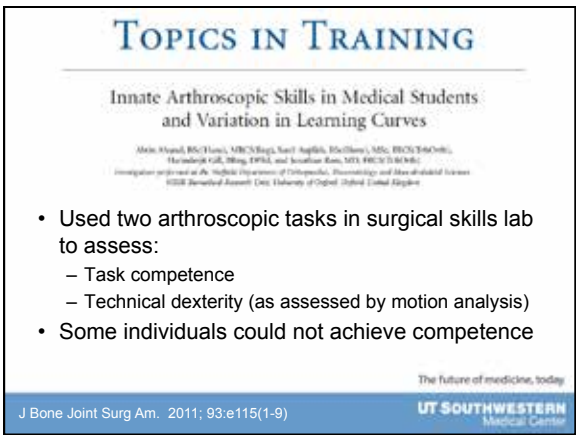
- Cognitive factors
- Personality traits
- Innate dexterity – *"strongest determining factor in the level of technical (operative) skills that the individual attains with training and experience"*
  - Spatial perception
  - Hand-eye coordination
  - Aiming
  - Multilimb coordination
  - Hand-arm steadiness

Cuschieri A, Francis N, Crosby J, Hanna JB. Am J Surg 2001; 182:110-116

Predicting Technical Skill

- The Dental Admission Test includes questions testing perceptual ability (two- and three-dimensional problem solving)
- At Royal College of Surgeons in Ireland all short-listed candidates for higher surgical training undergo formal testing of both technical skills and fundamental abilities (psychomotor skills, visuospatial ability, depth perception)

Gallagher AG, Leonard G, Traynor OJ. ANZ J Surg 2009; 79:108-113



- Used two arthroscopic tasks in surgical skills lab to assess:
  - Task competence
  - Technical dexterity (as assessed by motion analysis)
- Some individuals could not achieve competence

J Bone Joint Surg Am. 2011; 93:e115(1-9)

Innate Ablility

- *Innate ability* to acquire a skill strongly influences initial rate of learning a task
- "Given an infinite amount of time, anyone can learn anything"
  - *Groundhog Day*

Unfortunately/fortunately we have residents for only 3 years, and some innate ability levels will keep some from ever succeeding

- eg, I will never dunk a basketball!

Can simulators be used to identify individuals who lack technical ability?

- Eyesi by VRmagic – virtual reality simulator for tasks of intraocular surgery
  - Can teach basic skills, measure tremor, allow practice of some of the steps of surgery

Eyesi

- Good construct validity for Eyesi anti-tremor, forceps training, capsulorhexis modules
- So, can the Eyesi identify those applicants with poor technical ability?
- Better yet, can the Eyesi identify factors more easily measured that are predictive of poor technical ability?
  - Visual acuity
  - Stereopsis
  - Color vision

IS IT TIME TO ADOPT VISION SCREENING FOR OPHTHALMOLOGY RESIDENCY PROGRAM APPLICANTS? – BLOMQUIST

Performance of Patients with Deficient Stereoacuity on the Eyesi Microsurgical Simulator

- 21 subjects with absent or deficient stereoacuity (≤ 100 seconds of arc) and 21 control subjects (40 – 60 seconds of arc)
- Individuals with normal stereoacuity performed better than those with deficient stereoacuity (P < 0.001)
  - *Additional attempts did not result in improved performance by the study group compared to the control group*

The future of medicine, today.

Sachdeva R, Traboulsi EI. Am J Ophthalmol 2011; 151:427-433

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Can Virtual Reality Simulation Help to Determine the Importance of Stereopsis in Intraocular Surgery?

- 30 junior doctors with no previous ophthalmic surgical experience
- Four attempts of level 4 module binocularly, then another 4 monocularly (to simulate acute loss of stereopsis)
- Significant findings (P < 0.05)
  - Avg total score decreased
  - Avg corneal area injured increased (0.95 mm^2 to 2.30 mm^2)
  - Avg lens area injured increased (1.76 mm^2 to 3.53 mm^2)
  - Avg time taken increased (69.6 s to 77.4 s)
  - 3 of the 30 had statistically increased scores monocularly
    - Mainly due to quicker time or decreased odometer scores, however also had more lens injury

The future of medicine, today.

Waqar A, Williams O, Park J, Modi N, Kersey T, Sleep T. Br J Ophthalmol 2012: 96:742-746

UT SOUTHWESTERN Medical Center

Eyesi and Stereopsis

- Studies with Eyesi confirm importance of stereopsis in ophthalmic surgery
- Didn't we already know this?
  - High-grade stereopsis has shown to be essential in skilled precision grasping
  - Amblyopes have normal initial reaching and grip shaping, but deficient terminal reach and final grip closure/application

The future of medicine, today.

Melmoth DR, et al. IOVS 2009; 50:3711-3720
Grant S, et al. IOVS 2007; 48:1139-1148

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Eyesi

- Granted that confirmation that performance on simulators correlates with future overall performance in residency (and beyond) is lacking
- But stereopsis appears an important, but not sole, factor limiting technical ability
- Other factors at play as well
  - Some tested with normal stereopsis performed horribly

The future of medicine, today.

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Deficient Stereopsis

- I suggest it disqualifies one to train to:
  - Fly jet fighters (which may cost more than $100,000,000 each)
  - Fly me… anywhere!
  - Perform microsurgery
- What about the expert surgeon who suffers loss of stereopsis?
  - We test residents for competence, why stop at graduation?
  - Model after maintenance of driving privileges in elderly?
    - Failure of vision test leads to road test

The future of medicine, today.

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Comparison of Resident-Performed Argon and Selective Laser Trabeculoplasty in Patients with Open Angle Glaucoma

EUGENE LOWRY, BA*; DANIEL A. GRENINGER, MD; TRAVIS C. PORCO, PHD, MPH; AYMAN NASERI, MD; ROBERT L. STAMPER, MD; YING HAN, MD, PHD

Background:

IOP reductions of resident-performed ALT and SLT have not previously been compared.

Purpose:

Compare IOP reduction and complications of resident-performed ALT and SLT.

Methods:

Retrospective, interventional, comparative case series at the San Francisco Veterans Administration Hospital including 77 patients undergoing one ALT each from 2006-2009 and 81 patients undergoing one SLT each from 2009-2011. Primary outcomes were defined as IOP differences at 12 months with secondary outcomes looking at number of eye drop medications and additional interventions.

Results:

There was no evidence of a difference between intraocular pressure reductions in patients undergoing ALT compared with SLT at 12 months ($p = 0.41$, linear modeling) or across all follow-up appointments ($p=0.62$, linear mixed effects regression). Patients undergoing ALT had a significantly increased drop requirement (+0.6 vs. -0.1 drops, $p<0.001$, Wilcoxon rank-sum test) and probability of repeat interventions (26% vs. 12%, $p = 0.02$, Fisher's exact test).

Conclusions:

Patients undergoing resident performed ALT compared with SLT required a greater increase in drops and additional procedures to maintain similar IOP control at 12 months.

Impact of a Dedicated Research Rotation in Ophthalmology

BLAKE FAUSETT, MD, PHD*; GALE OREN, MILS, AHIP; SHAHZAD MIAN, MD

Background:

In 2009, the Kellogg Eye Center ophthalmology residency program introduced a formal research rotation. Working with a faculty advisor, residents conduct a clinical or scientific research project and are encouraged to publish their results. The research rotation is designed to provide a rewarding and productive research experience during residency.

Purpose:

To determine what impact implementation of a dedicated research rotation had on scholarly productivity during residency.

Methods:

Scholarly productivity was measured by tallying resident publications and presentations for a four year period spanning the three years of residency and the first year after graduation. Fellowships and academic appointments were also recorded. Productivity was compared between residents graduating 2007-2009 and 2010-2012.

Results:

Residents who had a dedicated research rotation averaged 3.00 publications and 2.90 presentations compared to 2.78 publications and 2.26 presentation for residents who did not (p=0.79 and 0.13 respectively). Residents with a research rotation were more likely to pursue fellowship training, 86% versus 68% (p=0.21), and hold an academic position, 57% versus 42% (p=0.29).

Conclusions:

A dedicated research rotation resulted in a modest increase in scholarly productivity during residency. Residents who had a dedicated research rotation were more likely to pursue fellowship training and an academic career.

Video Image Analysis for the Objective Evaluation of Cataract Surgical Technique

XUE WANG, MS*; ALEXANDER A. SAWCHUK, PHD; RONALD J. SMITH, MD, MPH

Background:

Accurate assessment of surgical technique and prompt feedback to the resident promises to accelerate learning. Subjective surgical technique evaluation tools have been developed, but not all questions on an evaluation tool produce equally reliable assessments.

Purpose:

To develop objective metrics to assess aspects of capsulorhexis surgical technique on surgical video clips.

Methods:

Video image analysis algorithms were tested to identify the best method for recognizing the limbus and stabilizing the images. Algorithms tested included edge detection, color histogram, shape descriptors, manual tracing, optical flow and correlation. The best algorithm sequence was tested on surgical video clips of the capsulorhexis from surgeons ranging in experience from a PGY 3 resident with 7 prior cases to an experienced surgeon with 10,000 prior cases.

Results:

The limbus was reliably identified by ellipse fitting, optical flow and correlation techniques. Eye movement was reliably identified and stabilized using tracking algorithms. Digital subtraction of the stabilized images provided objective and visual feedback of the surgical movements within the eye. Line segment detection outlined instruments.

Conclusions:

Video image analysis provides an objective way to measure surgical technique and may provide new insights to understand the learning of surgical skill.

A Program Improvement Plan to Facilitate Annual Program Reviews of Graduate Medical Education Programs

ELIAS I. TRABOULSI, MD*; JOHN TETZLAFF, MD; KRISTA LOMBARDO-KLEFOS; LORI SMITH

Background:

The ACGME requires institutional oversight of the requirement for each accredited ACGME program to conduct and Annual Program Review (APR) and create a program improvement plan. A mandate was set to create a subcommittee for Program Improvement Plans (PIP) of the Graduate Medical Education Council (GMEC). Members of the PIP subcommittee were recruited from the GMEC, and conducted a series of meetings, including an open forum at a GMEC Retreat.

Purpose:

Our goal was to create a process for uniform review of APR and PIP and create institutional oversight with accountability

Methods:

Based on input from members, review of the ACGME Common Program Requirements, and input from the House Staff Association, a PIP process was created. Each program would be required to complete annual Resident annonymous surveys, faculty survey and the ACGME survey. Other data was collected from the central database (MedHub) including teaching score, resident and faculty compliance with surveys, the most recent Internal Review and the most recent ACGME Site Visit report. Each program was assigned to one staff and one house staff reviewer, not from the same department. They were expected to review the documents (electronically) and create themes for review by the program at APR. The program was expected to review the suggested themes during their APR and create responses. The responses were presented at a PIP committee meeting by the reviewers and either accepted or accepted with recommendations, as appropriate. The outcome was presented at a full GMEC meeting for information and a resolution of outcome sent to the program.

Results:

Measures of quality/effectiveness - All of the programs completed the process for the 2010-2011 and 2011-2012 Academic years. The process was reasonably smooth and has resulted in documentation of an APR and program improvement plan for a large number of programs in a large GME environment. The faculty found the process reasonable and an added benefit was the exposure to academic medicine for the resident/fellow reviewers, who uniformly found the process satisfying. We will present a tally of the themes most commonly discovered to have issues with them in the overall institutional assessment.

Conclusions:

The PIP process has adapted to the obvious needs of a large undertaking. Keeping track of completion of the various steps has caused us to modify the database (MedHub) tool that was built and we anticipate annual changes until the process is mature. A surprising positive is the reduction of duplicate reports. Previously, each element reviewed in the PIP (resident survey, staff survey, ACGME survey) all required separate reports. The lack of duplication may allow programs more time to actually improve their programs, as opposed to completing three reports. The other positive, previously mentioned, is the added benefit gained by the experience of the house staff reviewers, perhaps attracting them to academic medicine in the future. We now will be modifying the process slightly to comply with the latest ACGME requirements of an Annual Program Evaluation under the Next Accreditation System.

PLAN TO FACILITATE ANNUAL PROGRAM REVIEWS OF GRADUATE MEDICAL EDUCATION PROGRAMS – TRABOULSI

The Program Improvement Plan (PIP)

Elias I. Traboulsi, M.D.
Anna Zulia, M.Ed.
John E. Tetzlaff, M.D.

Graduate Medical Education
Cleveland Clinic

12/15/13

Cleveland Clinic

Cleveland Clinic GME Programs

- 1179 clinical trainees
- 169 Programs
  - 66 accredited
  - 103 non-accredited
- GMEC composed of Heads of Education Committees (or delegates) of 28 Institutes and several members-at-large
- Meet 2nd and 4th Fridays for 1 hour

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Background

- Accredited GME programs are required to annually review the performance of residents/fellows, the faculty, and the program itself
- Numerous annual items
  - RRC Site visit, Internal Review, anonymous ACGME resident survey, internal resident survey, internal faculty survey
- Reports required

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ACGME Institutional Requirement

- "Responsibilities: GMEC responsibilities must include oversight of:
  - I.B.4.a.(4) the ACGME-accredited programs' annual evaluation and improvement activities;"
- GMEC required to monitor the results

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The Issue

- Proliferation of surveys
- Proliferation of reports
- Common themes in programmatic deficiencies
- Worst case scenario - one program has multiple different program improvement activities at the same time in the same academic year
- GMEC required reports on each to achieve oversight
- Writing the reports distracts from the actual efforts to improve the program

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Consensus - Spring 2010

- DIO and the GMEC determined that a systematic approach to internal program oversight should be designed
- A single annual event
- User-friendly for programs
- Document oversight of all accredited programs using available resources, including electronic residency management system

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PLAN TO FACILITATE ANNUAL PROGRAM REVIEWS OF GRADUATE MEDICAL EDUCATION PROGRAMS – TRABOULSI

The Plan

- Creation of a GMEC Subcommittee
  - "Program Improvement Plan (PIP)"
- Membership from GMEC staff and house staff
- Meetings to create a process and timeline
- General announcement at GMEC Retreat, September 2010

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The Strategy

- To create a process that would work at our large GME environment
- To create a program that would be user friendly for our individual programs
- To make GME oversight easier and more streamlined
- Maximum utilization of electronic residency management system (RMS)

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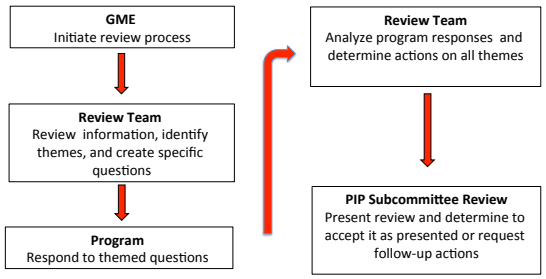
Workflow Overview



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The Procedure

- Based on annual process, July-June
- GME user (coordinator) initiates the process
  - Populates information from the residency management system (internal/external surveys, internal review reports, site visits, etc.)
  - Assigns the review team
- Review team staff arranges for a peer-selected house staff member

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The Review

- Review team notified of assignment
- All available data reviewed
- Review team to identify themes where there are potential issues and to create specific questions for the program
- Questions linked to themes transmitted to program for responses
- Response by program transmitted to review team
- Review team to analyze program responses and to determine actions on all themes

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Actions by the Review Team

- Areas of strength (overview)
- Comments (to document PIP process issues)
- Review all available data and identify any issues within themes
- Create theme-based questions for the program
- Submit questions to program for response

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PLAN TO FACILITATE ANNUAL PROGRAM REVIEWS OF GRADUATE MEDICAL EDUCATION PROGRAMS – TRABOULSI

GME Oversight

- Reviewers submit theme-based questions
- GME office

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Areas of Strength

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Themes

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Themes

- Clinical Teaching
- Supervision
- Didactics
- Evaluations
- Goals & Objectives
- Fatigue/Sleep Deprivation/Stress
- Academic Activity
- Participation in Program Improvement – House Staff
- Participation in Program Improvement – Staff
- Communications within the Program (fear of intimidation/acceptance of criticism)
- Other Learners
- Service versus Education
- Faculty Development
- Duty Hours
- Resources/Support
- Patient/Procedural Experience
- ACGME Competencies
- Oversight of Participating Institutions
- Board Pass Rate
- Other

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PIP Meetings

- Scheduled to follow twice monthly GMEC Meetings
- Chair by PIP Committee chair or DIO
- 90 minute meetings
- 4-6 reviews per meeting
- In-person participation by review team, program director confirmed in advance
- Discussion of each theme, resolution of any issues, minutes
- "Review Accepted" or "Follow-up Required" (timing and content specified)

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GMEC Oversight

- Reviews completed and presented at PIP Committee meeting are added to next available GMEC meeting
- Presented by PIP Committee chair or DIO
- Fully satisfactory programs presented for information
- For "Follow-up Required"- full discussion
  - If further action required, details specified
- Actions become part of GMEC meeting minutes

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PLAN TO FACILITATE ANNUAL PROGRAM REVIEWS OF GRADUATE MEDICAL EDUCATION PROGRAMS – TRABOULSI

The Content

- For 2011:
  - All programs had themes identified
  - Number ranges from 1-14 per program
  - Average 6.1 themes per program
- Most common themes (descending order):
  - Evaluations (44)
  - Academic activity (32)
  - Service versus Education (32)
  - Clinical Teaching (31)
  - Didactics (31)

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Content- continued

- For 2012:
  - All programs had themes identified
  - Number ranges from 1-15 per program
  - Average 6.2 themes per program
- Most common themes:
  - Clinical Teaching (39)
  - Evaluations (36)
  - Didactics (32)
  - Service versus Education (32)
  - Academic activity (27)

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Content- continued

- For 2013:
  - All programs had themes identified
  - Number ranges from 1-18 per program
  - Average 7.2 themes per program
- Most common themes:
  - Evaluations (43)
  - Clinical Teaching (42)
  - Didactics (42)
  - Academic activity (35)
  - Service vs Education (34)

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Three Year Trends

- About the same number of themes each year
  - 6.1 to 7.2 per program
- Wider range in year 3 (1-18 themes per program in 2013)
- Mostly same 5 themes at top

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Plans for 2014

- New narrative text boxes for the Program Director
  - Program Targeted Areas for Improvement
  - Areas of Strength
  - Quality & Patient Safety Initiatives (plus new theme)
  - Faculty Development Information
  - Clinical Competency Committee Information
- Requirement of two PIPs per GMEC member with an option to delegate an alternate core faculty member

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Conclusions

- PIP process is possible for institutions with large number of programs utilizing an electronic resident management system
- Important programmatic issues become apparent and can be categorized under a number of themes
- Corrective actions result in change
- House staff members have expressed a high level of satisfaction with participation in the program
- GMEC oversight of annual program evaluation and its outcomes is achieved by the PIP process

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PLAN TO FACILITATE ANNUAL PROGRAM REVIEWS OF GRADUATE MEDICAL EDUCATION PROGRAMS – TRABOULSI

Smartphone App to Improve Quality of Resident Feedback

DOUG FREDRICK, MD*; CHRISTOPHER SALES, MD

Background:

The best feedback is that which is both descriptive and evaluative, timely and frequent. Unfortunatley, too often both residents and teachers fail to receive such feedback. In addition, educators often have methods of delivering feedback that are unstructured, inconsistent and unrecognizable as being feedback by the learner.

Purpose:

In order to facilitate improving the quality, timeliness and frequency of feedback, a smartphone app was developed with both the educator and learner in mind. The goal was to develop a platform that would allow daily feedback structured on the competencies that would allow easy summative evaluation applicable to ophthalmology milestones.

Methods:

A smartphone app based on a "keep doing, stop, start" delivery of feedback was created. The seven competencies where used to structure feedback, and goal was to enable feedback delivery in less than 5 minutes. The app was beta tested within our department of ophthalmology.

Results:

Use of a smartphone feedback app was readily accepted by both learners and educators. There is a demonstrated increase in resident's perception of "faculty interest in teaching " after introduction of this technology.

Conclusions:

Use of a smartphone app enhances the quality and quantity of feedback provided to both learners and educators. It facilitates end of rotation evaluations and is useful in application of milestones as apart of resident evaluation.

SMARTPHONE APP TO IMPROVE QUALITY OF RESIDENT FEEDBACK – FREDRICK

Smartphone App to Improve Quality of Resident Feedback

Educating the Educators 2014
48th AUPO Annual Meeting
Miami, Florida
January 29, 2014
Doug Fredrick
Stanford

Disclosures

- None

Collaborators

- Lars Osterberg MD
  - Director Stanford Educators 4 CARE
- Christopher Sales MD
  - Chief Resident Stanford Ophthalmology

Why Feedback?

- Required to achieve a goal –gain competency

Mission Control

Why Feedback?

- Learners need it
- Teachers need it
- The Light That Highlights Teaching Moments

SMARTPHONE APP TO IMPROVE QUALITY OF RESIDENT FEEDBACK – FREDRICK

Attending Perception

Resident Perception

Resident/Faculty Perception

Question	Resident Response	Faculty Response	Significance
Asked pertinent questions during case	3.56 ± 0.83	3.97 ± 0.73	0.067
Feedback during case is constructive	3.44 ± 0.95	3.84 ± 0.57	0.06
Postoperative positive feedback	2.53 ± 1.09	3.34 ± 0.81	0.01
Effort of faculty to act as a teacher in operating room	3.56 ± 0.78	4.09 ± 0.77	0.007

460 Journal of Surgical Education • Volume 68/Number 6 • November/December 201

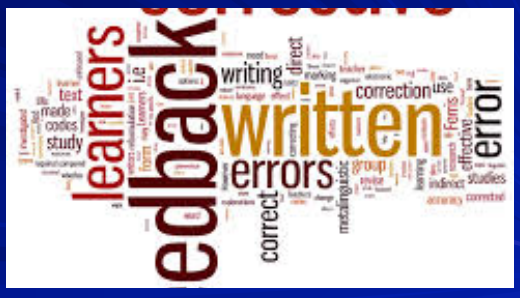
Rose J Surg Ed 2011:68, 459

Reasons for resident perception of inadequate feedback

- Don't recognize teaching as feedback
- Not timely
- Not specific
- Not interactive
- Does not demand self reflection

ACGME ANNUAL SURVEY

Satisfied that program uses evaluations to improve	90%
Satisfied with feedback after assignments	100%



SMARTPHONE APP TO IMPROVE QUALITY OF RESIDENT FEEDBACK – FREDRICK

Feedback and the Johari Window

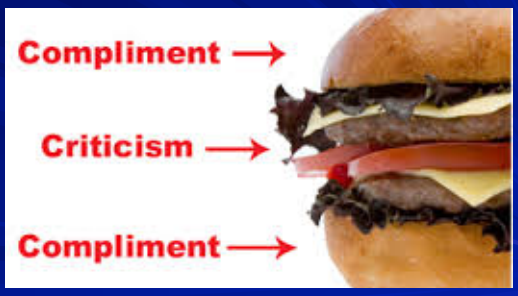
Others \ You	Public Self	Blind Spots
	feedback →	
	Private Self	Unconscious

Adapted from the American Academy on Communication in Healthcare

Feedback Essentials

1. Goal Referenced
2. Tangible
3. Actionable
4. User friendly
5. Timely
6. Interactive
7. Consistent

How NOT to give Feedback



Why Feedback Sandwich should be trashed

- Not what learner ordered
- Little preparation required
- Hard to digest
- Leaves bad taste and hunger for something more substantial

Set-up

- Creating a **permissive environment** for maximal learning
  - In the spirit of a dialogue rather than a download
  - Temporally close to event
  - In accordance with learner's goals
  - In accordance with learner's readiness

SMARTPHONE APP TO IMPROVE QUALITY OF RESIDENT FEEDBACK – FREDRICK

The ART of Giving Feedback

- Ask
- Repond
- Tell

ARTful Delivery

- **Ask**
  - Self-assessment
  - Recall previously-stated goals from Set-Up
- **Respond**
  - Depends on active listening
  - Using empathic words can be helpful
- **Tell**
  - Your own assessment and thoughts
  - Behavioral and specific
  - Can illuminate blind spots

ASK

- Ask for objective at start of session
- Ask for self assessment at end of session
  - Preps the ground for your feedback
- Make them earn your feedback

Respond

- Acknowledge learners feelings/state of mind
- **PEARLS**
  - Partnership
  - Empathy
  - Apology
  - Respect
  - Legitimation
  - Support
    - From Amer Acad on Communication in Healthcare

Respond

- Helpful to summarize briefly what learner has said, and gently redirect self-criticism for now
- Use PEARLS tools to build relationship
  - **P**artnership: "I am happy to work with you on this"
  - **E**mpathy: "Sounds like it was frustrating to struggle…"
  - **A**pology: "I'm sorry to hear you had difficulty…"
  - **R**espect: "Thanks for sharing your perspective"
  - **L**egitimation: "This is really a hard exercise"
  - **S**upport: "Let's see how I can help you with this"

Adapted from the American Academy on Communication in Healthcare

Tell

- KEEP
  - What they did well
- STOP
  - What they must stop doing
- START
  - Ways to improve next time

SMARTPHONE APP TO IMPROVE QUALITY OF RESIDENT FEEDBACK – FREDRICK

Feedback Regimen

1. Objective for the session/surgery/ encounter -**ASK**
2. Reflection –"how did that go"-**Respond**
3. KEEP- **Tell**
4. STOP
5. START
6. Documentation

Documentation

- Resident responsible-professionalism
- Useful for CCC and milestone
- App coming

ClipDoc.MD

Examples

- Surgical
- Clinic Encounter
- In house consult
- Case presentation
- Morning report

Smartphone App to Improve Quality of Resident Feedback

Educating the Educators 2014
48th AUPO Annual Meeting
Miami, Florida
January 29, 2014
Doug Fredrick
Stanford

Online Learning Logs: A Tool for Resident Self-Reflection and Milestone Assessment

PETER QUIROS, MD*; GABRIELA PALIS, MD

Background:

The Milestones project requires residents to perform many learning activities that can be difficult to adequately demonstrate using currently available means. For example, self-reflection, self-assessment, mentoring of junior residents, cultural sensitivity and awareness, communication and coordination with other specialties may not be apparent in chart reviews, global assessments, tests, and observed clinical exams. Therefore, we initiated this project as a means to complete to teach and assess these activities and enable our clinical competency committee to readily demonstrate these milestone achievements.

Purpose:

To teach and assess resident learning in the context of the milestones project. To teach residents to use realtime, on-going self-reflection as a means to achieve competency. To enable faculty to have a more well-rounded assessment of the residents strengths and weaknesses. To create a venue for timely formative feedback and dialogue.

Methods:

Residents were instructed to create a Google docs "Sheets" document. Google's version of Excel. This document contained columns for the resident to document a daily learning experience. In addition there were areas for faculty comment, resident response, and milestone tracking. No identifiable patient information is present on the sheet and residents were instructed to use only HIPAA compliant language such as that used in meeting presentations that would maintain patient confidentiality. These documents which are kept on google drive are then shared with the program director, the service chief, and key faculty on each rotation. The faculty can then log-on and comment on the resident experience and provide guidance, correction, assessment, or simply encouragement. In order to assist with access to google drive all residents were provided with iPad mini tablets.

Results:

Most residents began using the learning log right away. Some required some training/coaxing into how the entires should be made and the content of the entries. Within 1 month all residents were making regular entries into the learning logs. Faculty had similar issues but within 2 months most faculty were checking and commenting on resident logs regularly. Residents greatly appreciated the regular written feedback. All felt that the logs enhanced their learning as they were forced to think about the experience and put it into words. Many felt that they had explored the topic in a much more in-depth manner due to the use of the log. Faculty were impressed by the depth of resident understanding which is not always as apparent in daily verbal interactions. Additionally, through the use of the logs they were able to easily detect and correct misconceptions and guide the residents to a deeper understanding. Additionally, the program director was able to use the logs as a means to document the achievement of many milestones. All involved felt they were more "connected" in their teaching and learning experience through the use of the logs.

Conclusions:

Online learning logs are an efficient and inexpensive way to: 1. Provide an enhanced resident learning experience through documentation and self-reflection 2. Provide faculty an opportunity for regular formative feedback with early corrective action 3. Provide a means of assessing difficult to assess milestones 4. Provide a more complete picture of resident learning 5. Improve communication between faculty and residents

Understanding the Role of Virtual Reality Simulation in Cataract Surgery Education

COLIN A. MCCANNEL, MD*; DAVID C. REED, MD; DARREN R. GOLDMAN, MD

Background:

It is unclear whether or not training residents to perform a surgical step on a microsurgical simulator results in improvement in that step only in the simulated environment or also during real live surgery.

Purpose:

The goal of this study was to assess the impact of virtual reality simulation capsulorhexis training using the capsulorhexis intensive training curriculum (CITC) on the rate of errant CCCs in a teaching hospital environment.

Methods:

Using a quality improvement database, the cataract surgery outcomes and complications were tracked over four academic years in 1037 cases. The study group was divided into a baseline and post-intervention cohorts.

Results:

There were 68 errant CCCs (15.7%) in the baseline cohort and 30 errant CCCs (5.0%; $P < 0.0001$) in the post-intervention cohort, a 3.2-fold or 68% reduction. Case volume increased from 434 cases to 603 cases for the consecutive 2 year cohorts.

Conclusions:

This study suggests that virtual reality surgical simulation training using the CITC on the Eyesi has a measurable impact on errant CCC rates, and possibly on surgical efficiency. A formal program for surgical training via virtual reality simulation should be strongly considered in ophthalmology resident surgical education.

Teaching with New Technologies: What's Available? What Works? and When to Use it?

DAVID A. COOK, MD, MHPE*

Abstract:

Electronic technologies are becoming increasingly ubiquitous in our personal and professional lives. How can we harness these technologies to support learning? What works, and when and how should we use these technologies? How can we plan for the future? Dr. Cook will answer these and other questions as he highlights current applications of educational technologies in health professions education, summarizes research on their efficacy, identifies evidence-based principles of effective instructional design, and anticipates future key issues. Since change is inevitable (there will always be new technologies), he suggests that instructors focus on selecting the right technology for a given objective, integrating new technologies with traditional approaches, and using evidence-based principles of teaching and learning.

TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COOK

Teaching with new technologies: What's available? What works? and When to use it?

David A. Cook, MD, MHPE
Mayo Clinic College of Medicine
January 29, 2014

Technology: materials and devices created or adapted to solve practical problems



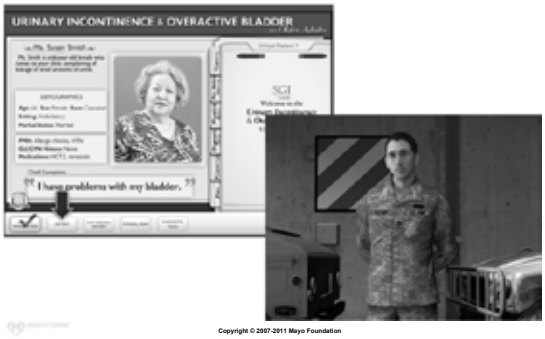

No e
No i
No virtual

What's available?

Computer-based tutorials

Audio and video

Virtual patients



TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COOK

Asynchronous communication: Email, discussion boards

Tools for collaboration: Blogs, wikis, social networks

Virtual immersive environments

Online games

Learning Management Systems

moodle

Blackboard learn

LAMS FOUNDATION

Drupal

Sakai

Mobile technologies

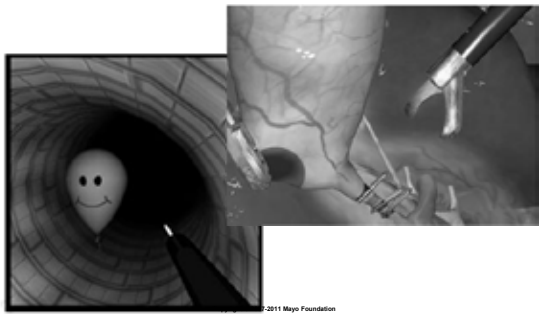
TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COOK

MOOCs
(massive open online course)

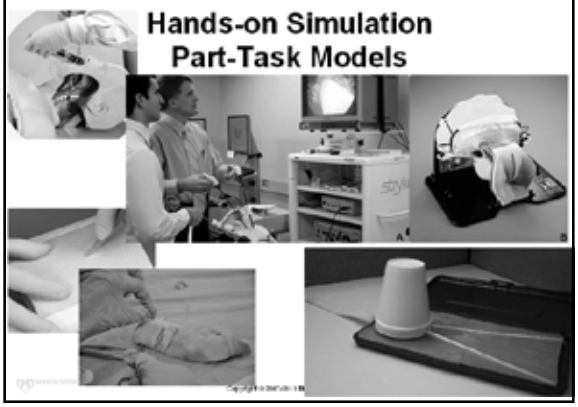
Learning Portfolios

Hands-on Simulation
Manikins

Hands-on Simulation
Virtual Reality



Hands-on Simulation
Part-Task Models



What works?

TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COOK

The burning question:

Which is better?

Computer or classroom?

Virtual patient or clinical?

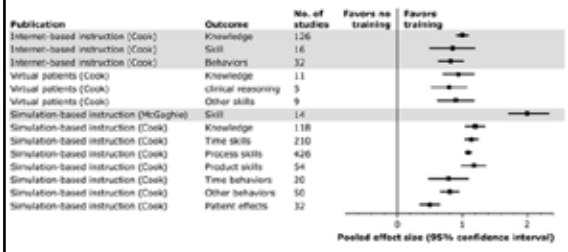
Computer or mannequin?

That is the wrong question

Show me the evidence …

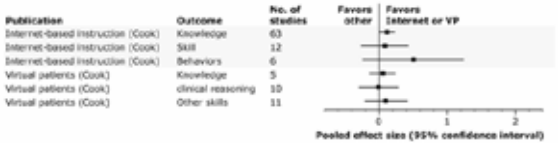
- 3 systematic reviews …
  - Internet-based instruction (N=242)
  - Virtual patients (N=45)
  - Simulation-based instruction (N=985)

Show me the evidence
Comparison with no intervention



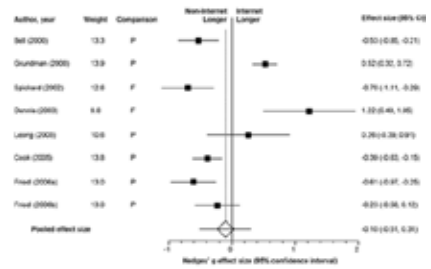
Cook et al, JAMA 2008
Cook & Triola, Acad Med 2010
McGaghie et al, Med Educ 2011
Cook et al, JAMA 2011

Show me the evidence
Comparison with non-computer



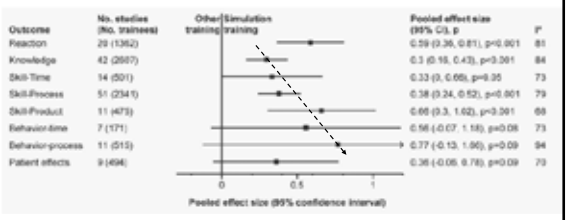
Cook et al, JAMA 2008
Cook & Triola, Acad Med 2010

Show me the evidence
Comparison with non-computer
Time outcomes



Cook et al, AHSE 2010

Show me the evidence
Comparison with non-simulation



 Cook et al, Simul Healthc 2012

BOTTOM LINE
Do Educational Technologies work?

- Compared with nothing: YES!

"If you teach them, they will learn"

- Compared with traditional

"No significant difference"

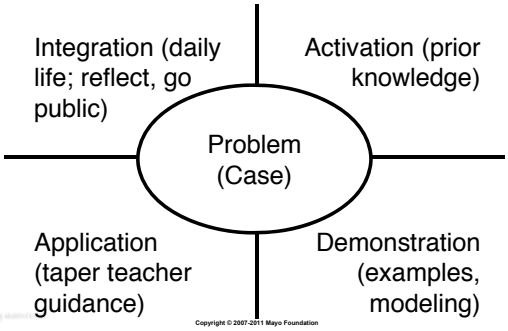
What works *to do it better*?

(That is the question!)

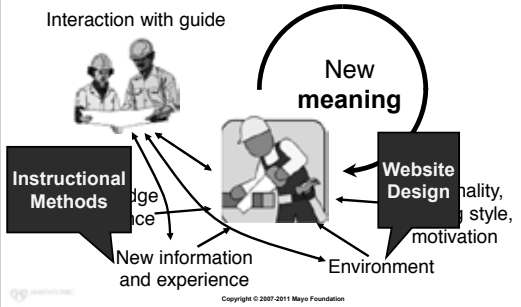
Core principles of learning
Kaufman (BMJ 2003)

1. Learner an ***active contributor***
2. Context of real-life problem ("situated")
3. Activate prior knowledge
4. Self-direction (metacognition)
5. Practice and feedback
6. Reflection

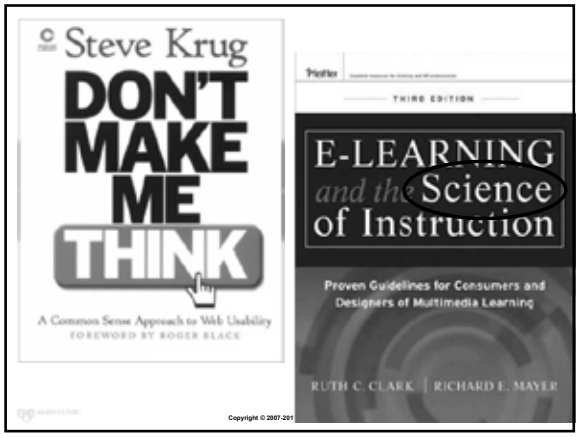
First Principles of Instruction
Merrill, Educational Technology Research and Development (2002)



e-learning:
The role of the instructor



TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COOK

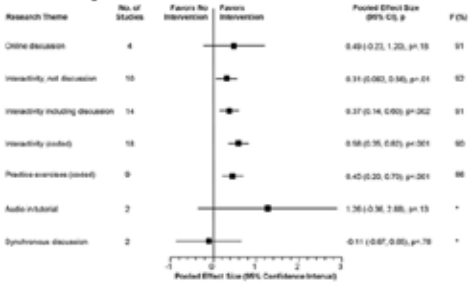


Principles of Multimedia Learning

Multimedia Principle	Effect Size
Multimedia	1.5
Contiguity	1.11
Coherence	1.32
Modality	.97
Redundancy	.69
Personalization	1.30
Segmenting	.98
Pretraining	1.3

From Clark & Mayer 2007

Show me the evidence
Comparative effectiveness CAI



Learning outcomes

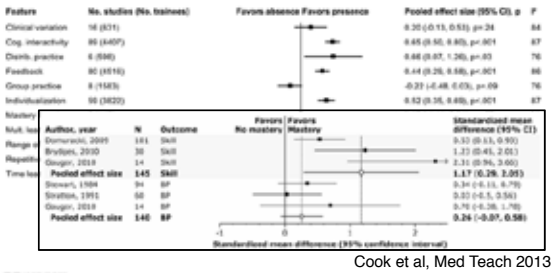
Cook et al, Acad Med 2010

Features of Effective Simulation

- Feedback
- Deliberate practice
- Curriculum integration
- Range of difficulty
- Multiple learning strategies
- Clinical variation
- Controlled environment
- Individualized learning
- Defined goals
- Simulator fidelity (?)

Issenberg et al, Med Teach 2005
McGaghie et al, Med Educ 2010

Show me the evidence
Comparative effectiveness SBME



Cook et al, Med Teach 2013
Cook et al, Acad Med 2013

When to use ETs?
(and which?)

TEACHING WITH NEW TECHNOLOGIES: WHAT'S AVAILABLE? WHAT WORKS? AND WHEN TO USE IT? – COO

Why are educators so interested in ETs?

- New toys are fun

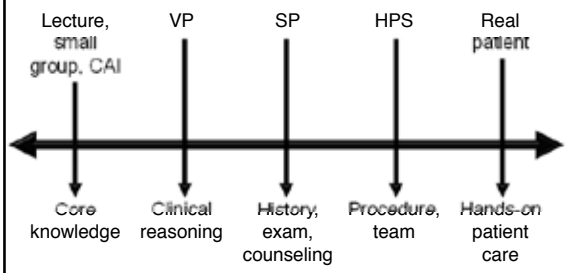
- Everyone else is doing it

Hype Cycle

Why SHOULD we be interested?

- Flexibility: time, location, scale, pace
- Control: content, design, mix, mastery, safety
- Monitoring/analytics

A continuum of competency



Cook & Triola, Med Educ 2009

1. There will always be something new

- Implications for education:
  - Use technology to ***support*** learning
  - Focus on learning needs, not technology itself
    - Ask "What technology will help with this problem?"
    - NOT "When can I use this technology?"

2. ICT will become less expensive, more powerful, and more common

- Use ICT in personal, professional lives
- More opti

- Implicatio
  - Learn
    focus
  - Match with needs: learners
  - Train teachers – options, appli

3. ICT *development* will get easier

- Authoring tools
- Reusable objects, shared / free content

- Implications for education:
  - Teach learners (and teachers) how to identify trustworthy content
  - Invest in quality development tools
  - Train teachers – develop, reuse

4. ICT will blend with other approaches

- Potentially seamless, unconscious
- We will no longer think about technology

- Implications for education:
  - Learn to ***integrate*** technology
  - Train teachers – sequence, coordinate

5. The fundamentals will not change

- People's brains will work the same
- There are no magic bullets, no secrets

- Implications for education:
  - Use evidence-based learning principles
  - Same *principles* for all technologies – but new *specifics*
  - Will require ongoing research

6. Health professionals will care for humans, not computers

- Implications for education:
  - Use ICT to emulate clinical scenarios
  - ICT cannot replace clinical training – work at bedside, face-to-face teams

Conclusion: Key points

- ETs work … but no significant difference
  - → Use them b/c you need to (not b/c they are better)
- Many options - constantly moving target
  - → **Toolbox**; focus on fundamentals
- It's **how** you use it, not what you use
  - → Core principles of learning

Use of Direct Ophthalmoscopy by Medical Students

KRUTI DAJEE, MD; JESS T. WHITSON, MD; ANGELA MIHALIC, MD; JAMES WAGNER, MD; PRESTON H. BLOMQUIST, MD

Background:

Direct ophthalmoscopy, an essential component of a complete routine physical examination, was taught at our institution by clinical mentors, usually non-ophthalmologists, to medical students.

Purpose:

To assess whether medical students feel competent in direct ophthalmoscopy.

Methods:

440 third- and fourth-year medical students at UT Southwestern were surveyed at the end of the academic year.

Results:

243 students responded (55%). 78% owned an ophthalmoscope, but only 11% carried it with them on most clerkships. 22% of students felt they were only a novice with direct ophthalmoscopy (defined as able to identify a red reflex), 65% felt they were an advanced beginner (can see the optic disc sometimes), while only 13% felt they were at least competent (can distinguish between normal and abnormal discs). 47% never performed direct ophthalmoscopy on new patients on the Medicine clerkship, with another 33% performing on a fifth or less of new patient admissions.

Conclusions:

Direct ophthalmoscopy is not being taught or used adequately to allow most students to achieve competency. This baseline data will allow us to assess the results of a focused intervention, an ophthalmologist-led eye skills workshop which includes instruction and practice with the direct ophthalmoscope in the preclinical years.

Predictors of Matching in Ophthalmology for International Medical Graduates (IMGs)

ALLISON LOH, MD; TODD DRIVER, BS; DAMIEN JOSEPH, BA; JEREMY KEENAN, MD, MS; AYMAN NASERI, MD

Background:

Although IMGs comprise a large proportion of the applicant pool for ophthalmology residency training, little is known about the predictors of those that match in ophthalmology.

Purpose:

To determine the predictors of IMGs successfully matching in ophthalmology.

Methods:

This is a retrospective case-control study of 170 successful and 170 unsuccessful IMG applicants from 2003 to 2008. Predictor variables included USMLE Step 1 scores, academic awards, letters of recommendation, research experience and publications, and postgraduate clinical experience. Logistic regression was used to determine the predictors of successful matching.

Results:

In multivariate analysis, a higher USMLE Step 1 score (odds ratio [OR], 3.22, 95% confidence interval [CI], 1.38-7.49 comparing highest and lowest quartile), more academic awards (OR: 1.12, 95% CI, 1.03-1.22, per additional award), letters of recommendation written by US ophthalmologists (OR: 3.98, 95%CI, 1.75-9.04 for 2 letters and OR: 6.20, 95% CI, 2.54-15.16 for 3 letters, compared to no letters), high impact journal publications (OR: 2.99, 95% CI, 1.51-5.72 for 2 or more publications, compared to no publications), and US research experience (OR: 2.95, 95% CI, 1.31-6.67) were associated with increased odds of matching. Additional years of clinical postgraduate training (OR 3+ years: 0.26, 95% CI, 0.12-0.58) were associated with reduced odds of matching.

Conclusions:

In addition to gaining high marks on the USMLE exams, IMGs improve their odds of matching into ophthalmology residency by developing professional relationships with US ophthalmologists, gaining more research experience, and publishing in academic journals.

Resident Self-Reported Preparedness for Cataract Surgery

SHAMEEMA SIKDER, MD; CHRISTINA PRESCOTT, MD, PHD; DIVYA SRIKUMARAN, MD

Background:

At Wilmer, we are developing a more structured cataract surgery curriculum for the first year and wanted to assess resident perception of effective teaching methods.

Purpose:

As part of our needs assessment, we surveyed how residents perceive their current level of preparedness as they started to perform cataract surgery in our program.

Methods:

An anonymous electronic 7 question survey was sent to all of our 20 residents.

Results:

18 residents from all three years completed the survey (90% response rate). Preparation for initial cataract surgeries often included reading the chart and attending discussion. While some residents felt well-prepared to make a paracentesis, for the majority of cataract surgery steps, residents initially felt less prepared. The most highly rated methods of teaching were individual time with faculty in the practice lab/OR and watching videos (resident or other) with an attending.

Conclusions:

The purpose of our resident survey was to establish how prepared residents felt as they started cataract surgery and obtain feedback on effective teaching modalities. We hope to expand this survey nationwide to understand how our educational efforts (lectures, wetlab, simulator use, etc) are perceived by the resident learner.

Analysis of Capsulorrhexis Performance Trends on a Haptic Simulator with 6 months of Intervening Operating Room Experience

SHAMEEMA SIKDER, MD; JONATHAN SONG, MD; LUO JIA, PHD; CRISTIAN LUCIANO, PHD; PATRICK KANIA, MS; EMAN AL KAHTANI, MD; ABDUL-ELAH AL-TOWERKI, MD; PAT BANERJEE, PHD

Background:

Surgical simulators are now a part of an educational armamentarium and have a role into teaching but can also serve as an assessment tool.

Purpose:

To evaluate a haptic-based simulator, MicroVisTouch (ImmersiveTouch, Chicago, IL), and its efficacy as a learning tool of cataract surgery.

Methods:

The prospective study comprised in total 110 experiments performed at Wilmer Eye Institute at Johns Hopkins Medical Center, Baltimore, MD, USA and King Khaled Eye Specialist Hospital (KKESH), Riyadh, Saudi Arabia over a two-year period. In each experiment, three variables ('Circularity', 'Accuracy' and 'Fluency') were tested by the simulator and compiled.

Results:

The average showed Wilmer 2013 residents performed better than KKESH 2013 residents in all fields. In the comparison between the years, the 2013 residents in both institutes performed better than 2012 residents in all areas. In addition, a reduction in standard deviation from 2012 to 2013 for the most part of the data was observed.

Conclusions:

The residents who were evaluated on MicroVisTouch performed statistically better in the second round of testing than in the first round. Their performances became more uniform as well. The users did improve from their initial attempts on the simulator.

A System for Ranking Resident Applicants that Works

JULIE K. CALDERWOOD, MD; NATALIE C. KERR, MD

Background:

Ranking applicants using information extracted from applications and interviews can be challenging, with unexpected outcomes resulting in disastrous consequences.

Purpose:

To evaluate and share a ranking system that has been in use for over a decade.

Methods:

Rank lists and evaluations from faculty were collected for graduating classes 2002-2013. A total of 38 residents were included in the study. Two were excluded because they were accepted outside the match. Evaluations by faculty in the 2nd and 3rd years of residency and rank list number were reviewed for each resident.

Results:

Of 38 residents matched, only 2 required remediation. Using a 9 point Likert scale, the average evaluation for all residents completing the program within 3 years was 7.4, with only 1 (of 36) residents below 6. In six of 11 match years, the highest ranked resident also completed the program with the highest evaluations. In only 2 years did the highest ranking matched resident complete the program with the lowest evaluations.

Conclusions:

Our system for choosing residents yields consistently good results. This system, with protocols for choosing interviewees, interviewing the applicants, and conducting the ranking session, will be presented and discussed.

Perioperative Eye Injuries after Non-Ocular Surgery at Yale-New Haven Hospital

DAVID R. SHIELD, MD; JOHN J. HUANG, MD

Background:

Eye injuries are rare but potentially serious complications of non-ocular surgery. Exposure keratopathy, the most common eye injury, is related to insufficient eye protection during anesthesia. Rarely, devastating eye injuries related to non-ocular surgery may occur, such as ischemic optic neuropathy.

Purpose:

To characterize the frequency and reasons for ophthalmologic consultation in the perioperative period from non-ocular surgery.

Methods:

Retrospective chart review of ophthalmologic consultations over 24 months was performed to identify eligible patients with non-ocular surgery within 24 hours of consultation. Relevant data related to patient characteristics, surgery, anesthesia, and perioperative eye prophylaxis was abstracted from the medical record.

Results:

85 cases were identified of ophthalmologic consultation following non-ocular surgery. Exposure keratopathy, unilateral (86%) or bilateral (14%), was the diagnosis in all cases, with no cases of other potential injuries such as optic neuropathy. The average rate of eye injury was 15 per 10,000 surgeries (0.15%). General Surgery (0.64%, RR=4.33, p=0.0001) and Endocrine Surgery (0.44%, RR=2.96, p=0.0021) had rates at least double the average.

Conclusions:

We found a high rate of eye injuries associated with non-ocular surgery. This may reflect a low threshold for consultation in our academic medical center and represents an opportunity for education regarding eye prophylaxis during surgery and treatment of post-operative exposure keratopathy.

Ophthalmology Call Efficiency Solution

STEPHEN WINKLER, MD; LAURA GREEN, MD

Background:

Drops, ophthalmoscopes, and lenses are some of the many expensive and unique tools ophthalmologists employ during ocular exams. We found that these were often lost during emergent consults or early mornings in the ER leading to frustration, increased expense, a lack of professionalism and unnecessary overhead cost.

Purpose:

The purpose of the project was to create a compact, durable organizer that would improve efficiency, professionalism and decrease the amount of lost and damaged materials.

Methods:

The initial model was developed and tested extensively throughout a single year period at the Kreiger Eye Institute by 6 residents. Given its popularity, a second prototype was developed which incorporated the residents' feedback into the design. Extensive research was conducted to find a lightweight, durable and waterproof fabric for the exterior and a soft, protective fabric for the interior that was ideal for out of office consults.

Results:

The final product has resulted in a durable roll out kit that has not only diminished the loss of ophthalmologic instruments and medications but also improved clinical efficiency and professionalism.

Conclusions:

A custom designed ophthalmologic instrument organizer is a useful addition to both starting residents and experienced ophthalmologists.

Resident Exposure to Variations in Phacodynamic Settings and Nuclear Disassembly Techniques in Cataract Surgery

HOON JUNG, MD; SURBHI BANSAL, MD; JORAWER SINGH, MS, IV

Background:

Advance dialogue amongst ophthalmologists to track cataract skills competencies.

Purpose:

To characterize the exposure of residents performing cataract surgery in the context of different phacodynamic settings and lens disassembly techniques.

Methods:

Two platforms used by the University at Buffalo (UB), Infiniti and Constellation, Alcon Inc. Fort Worth, TX, were analyzed. Settings at affiliated sites were tabulated to determine differences in settings for: 1. Surgeons working at >1 site 2. By subspecialty training 3. Pediatric vs. Adult

Results:

Residents training in surgery were supervised by 11 surgeons from 5 different subspecialties. Surgeons operate at 6 sites utilizing 18 setting types. Techniques included "divide-and-conquer," "stop & chop," "vertical chop" and "phaco-flip." 5 surgeons operate at multiple sites with 4/5 utilizing different settings at each site. Cornea and pediatric sub-specialists utilized a "prephaco" mode, while cornea and retina sub-specialists utilized a high vacuum "chop" mode. In general, cornea sub-specialists utilized higher "irrigation" settings while retina surgeons utilized higher "vacuum" and "aspiration" settings.

Conclusions:

Extracapsular cataract extraction encompasses a range of techniques and settings to which residents are exposed. Standardization of progression in settings and techniques may benefit surgical competency advancement.

The Staggered Start: Education for the Millenials

TALIVA D. MARTIN, MD; SUSAN H. DAY, MD

Background:

Our residency starts residents individually. With any "match" class of three, one each starts in July, November and March. Start date is based on preferences of the match class.

Purpose:

To assess the staggered start education of Millennial residents.

Methods:

We reviewed the start date preferences of our Millenial generation residents. Additionally, we reviewed national GME educational trends from a perspective of "fit" with Millenial generation values.

Results:

An increase in "off cycle" start date preference conceptually enhances the following Millennial characteristics: - flexibility, individuality: preference is linked to personal goals of extra time before or after residency. - being special; confident: each resident has his/her own slot and is held completely responsible for all rotations. - team-oriented: a heightened sense of teamwork and cooperation is fostered. National trends emphasizing or requiring educational equivalency, graduated responsibility, and patient safety may also be served by neutralizing the "July effect."

Conclusions:

A staggered start complements individuality, lifestyle balance/ flexibility, confidence/graduated responsibility, and educational equivalency; it may benefit resident education of the Millennial generation.

Development of a Wet Laboratory Curriculum for Descemet Membrane Endothelial Keratoplasty

HASSAN N. TAUSIF; MICHAEL TITUS; KYLE MAVIN; SHAHZAD I. MIAN, MD

Background:

DMEK may be the preferred practice for endothelial transplantation. However, this procedure is technically challenging with limited availability of teaching programs. We developed a curriculum to counter these limitations.

Purpose:

Illustrate an adoptable cornea wet laboratory course

Methods:

A literature review was performed to evaluate established ophthalmology wet laboratories and corneal transplantation in wet lab models. A team consisting of members from the region's eye bank, medical school, and division of cornea and refractive surgery developed and assessed components of a DMEK wet laboratory teaching curriculum. Practice sessions were held to review the effectiveness of our model.

Results:

To teach endothelial keratoplasty to cornea faculty, fellows, and residents, the program is divided into two segments: didactic instruction and wet laboratory experience. While our program focuses on DMEK, the course and laboratory can be adapted to accommodate a range of corneal transplantation.

Conclusions:

While current ophthalmology wet lab models focus on cataract surgery, they fail to simulate corneal transplantation. Although no simulated surgery can mimic that of a live patient, the curriculum presented establishes a useful learning tool for cornea surgeons, fellows, and residents around the world for the practice of corneal transplantation.

DEVELOPMENT OF A WET LABORATORY CURRICULUM FOR DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY – TAUSIF

2013

Teaching DMEK Instructor's Guide

Resource outline of course contents

This document highlights the contents included in this module as well as the conceptual background, implementation advice, objectives, and limitations to this course.

Tausif, HN; Mian, SI
Kellogg Eye Center University of Michigan
11/25/2013

DEVELOPMENT OF A WET LABORATORY CURRICULUM FOR DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY – TAUSIF

Teaching DMEK
Instructor Guide

List of included resources and explanations as to how and when to utilize each file

Teaching DMEK has been conveniently divided into two parts: Didactic Instruction and Wet Laboratory.

The Didactic Instruction portion includes the following:

1. **Required Materials and Instructor Checklist** (Knowledge of this list allows instructors to better prepared themselves for presentation day. This checklist guides the instructor through all aspects of delivering the didactic portion of the module. We recommend reviewing this document at least two weeks prior to instruction to allow time to gather materials or reserve a lecture space.)
2. **Student Objectives and Recommended Resources** (Students should review this handout prior to coming to class to increase the effectiveness of the presentation. Pass out this material at least one week in advance and inform the students of the date of the presentation. The resource list is for students in case they wish to review additional material. This serves as a guide for students as they prepare themselves to enter the wet lab and begin practicing.)
3. **Pre-quiz with and without answers** (Hand out (without answers) at the beginning of class prior to the presentation and allow 5-10 minutes for students to complete.)
4. **PowerPoint** with diagrams and videos (The PowerPoint will be played at the time of the presentation. This will take up the majority of the time. The instructor should welcome questions as they arise to ensure attention, participation, and comprehension. It is recommended that the instructor narrate the diagrams and videos for the students. PowerPoint slideshows have been divided into subtopics to allow for better organization. These include: **Introduction to DMEK**, **Method of Donor Tissue Preparation**, **DMEK Procedure**, and **DMEK Complications and Management** and should be presented in this order. **Videos** are linked within the PowerPoint but may require re-linking to function properly. These videos are included in the module and are labeled according to the slide to which each belongs (**00 – DMEK Tissue Preparation, 01 – DMEK Tissue Preparation (Scoring and Staining), 02 – DMEK Tissue Preparation (Checking Edges and Staining), 03 – DMEK Tissue Preparation (Stripping EDM from Posterior Stroma), 04 – DMEK Surgical Procedure (Recipient Preparation), 05 – DMEK Surgical Procedure (Graft Preparation and Insertion), 06 – DMEK Surgical Procedure (Graft Positioning and Apposition**). There are many more pictures, diagrams, and videos available on the web that can be added to the PowerPoint. These have been left out for copyright purposes. Depending on the audience, material in the introduction segment may be basic and can be skipped.)
5. **Post-quiz with and without answers** (This is identical to the Pre-quiz and should be distributed after the lecture presentation. Allow 5-10 minutes for students to fill and compare to Pre-quiz.)
6. **Student Instructor and Module Evaluation** (The Instructor Evaluation allows the instructor to gain feedback regarding their presentation and explanation of the material along with where improvements can be made in the future. The Module Evaluation allows the students to influence the future of the module. Instructors can use these to tailor their own course. We also encourage instructors to email Module Evaluations along with any comments and suggestions to DMEKcourse@gmail.com to help us improve the course. Allow 5-10 minutes to complete.)

DEVELOPMENT OF A WET LABORATORY CURRICULUM FOR DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY – TAUSIF

Teaching DMEK
Instructor Guide

The Wet Laboratory portion includes the following:

1. **Curriculum, Student Objectives, and Recommended Resources** (This document can be distributed to students with the Student Objectives for the Didactic portion. It outlines the organization and objectives of the Wet Laboratory course along with a list of resources students may wish to review. The objectives should guide students to improve specific skills during their time in the lab. This section can be edited to fit the specific goals of your program.
2. **Wet Lab Foundation and Required Materials** (This document outlines how to prepare a cornea wet lab for DMEK practice. Following these steps will help to create an organized and well prepared wet lab experience. Topics include: Setting the physical space, Establishing faculty and curriculum, Obtaining, Stabilizing, and Preparing practice eyes, and Funding the wet lab.)
3. **Lab Manual** (Serves as a step by step instruction guide for students to follow in the wet laboratory. Distributing these with the other materials will also be ideal as students can review these steps carefully prior to practicing in the wet lab under supervision and on their own.)
4. **Student Instructor and Wet Laboratory Evaluation** (The Instructor Evaluation allows the instructor to gain feedback regarding their instruction and guidance during the procedure along with where improvement can be made in the future. The Wet Laboratory Evaluation allows the students to influence the future of the module. Instructors can use these to tailor their own course. We also encourage instructors to email Wet Laboratory Evaluations along with any comments and suggestions to DMEKcourse@gmail.com to help us improve the course.)
5. **Instructor Evaluation of Student** (This gives the instructor a chance to gauge how well the student is performing DMEK. Students can use these evaluations to improve certain areas of the procedure as they continue practicing in the wet lab.)

The Didactic Instruction should take place before students enter the wet lab. The above materials are found in the module and can be implemented in the order presented above. Although the didactic portion will take place only once, the wet lab should occur at least once with one-on-one faculty supervision and then repeatedly (3+ times) with the student practicing on his or her own.

Purpose:

Descemet Membrane Endothelial Keratoplasty (DMEK) is a form of corneal transplant in which only the single cell layer of corneal endothelium along with its basement member (Descemet's membrane) is introduced onto the recipient's posterior stroma. Unlike DSEK/DSAEK, where additional donor stroma is introduced, no unnatural stroma to stroma interface is created. As a result, the natural anatomy of the cornea is preserved resulting in shortened recovery time and improved visual acuity. However, since the transplanted tissue lacks stroma, the graft becomes very delicate, begins to roll, and is difficult to manipulate. Consequently, DMEK is characterized by a steeper learning curve than DSEK since it lacks systematic procedure making it difficult to teach and master. Teaching modules for DMEK were non-existent, until now. It is our goal to allow residents, fellows, and practicing ophthalmologists to become familiar with and confident in learning, practicing, and teaching DMEK as part of their curriculum. Our hope is to provide the knowledge and guidance toward constructing a wet lab that will provide simulated practice before attempting to practice this procedure on patients.

DEVELOPMENT OF A WET LABORATORY CURRICULUM FOR DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY – TAUSIF

Teaching DMEK
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Objectives:

At the end of the presentation, ophthalmology residents and cornea fellows should be able to:

1. Define what constitutes Descemet Membrane Endothelial Keratoplasty
2. Describe the indications and contraindications for DMEK
3. Explain the benefits of DMEK as treatment for endothelial disorders
4. Report the risks involved with DMEK
5. Cite the studied outcomes of DMEK
6. Differentiate between DSAEK and DMEK
7. Explain the process of preparing donor tissue including the use of instruments involved
8. Explain the process of performing DMEK including the use of instruments involved
9. Describe post-operative management including management of complications

After successful practice in the wet laboratory, ophthalmology residents and cornea fellows will possess the ability to:

1. Demonstrate fine motor and proprioception skills while operating under the microscope
2. Demonstrate proficiency in working in a small surgical field as both a surgeon and assistant using the microscope
3. List the differences in DMEK instruments and the proper usage for each
4. Demonstrate performance of 5 adequate corneal incisions along with correct placement of paracentesis on cadaver eye models
5. Identify and demonstrate performance of the steps of DMEK tissue preparation
6. Identify and demonstrate performance of the steps of DMEK on cadaver eye models
7. Differentiate the donor tissue, its preparation, and surgical procedure between DMEK and DSEK / DSAEK

Conceptual Background:

Teaching DMEK was developed at The Kellogg Eye Center at University of Michigan in an effort to expose ophthalmology residents and cornea fellows to Descemet Membrane Endothelial Keratoplasty (DMEK) as a front-line treatment for endothelial dystrophies. The concept of this module was to create awareness about this revolutionary procedure with the use of lecture didactics and interactive Q&A followed by multiple sessions of supervised and unsupervised wet laboratory practice. By preceding wet lab with lecture instruction, students are better educated about DMEK and utilize time more efficiently when practicing in the wet lab. Although a real surgical experience can never be substituted, wet lab offers students the ability to learn without the risk and pressure of practicing on live patients. In doing so, students develop core skills to better prepare themselves for the operating room. We understand one wet lab experience is not enough. Students should utilize their own time to enter lab and practice.

Implementation Advice:

The current submission contains all required materials to present the Didactic Lecture along with instructions for setting up a wet laboratory experience. Although we cannot provide the physical materials that wet labs require, we believe our module constructs a strong foundation from which a lab experience can be built around. This module should not be rushed. The didactic portion is expected to

elapse between 1 - 2 hours depending on which presentation topics are included and student involvement with questions, quizzes, and evaluations. The wet lab experience will depend on number of faculty available, number of students in the program, and each student's ability to master the techniques. We strongly recommend that the instructors familiarize themselves with DMEK and, if not already familiar with DSEK, to read the literature on this procedure as well. This will allow faculty to better convey the material in the presentation while answering students' questions to the best of their ability. The presentation is a standard PowerPoint and will require the appropriate Office Suite along with audio / video equipment. If facilities permit, video recording students' practice procedure in the wet lab will promote students to revisit their performance and adjust areas requiring improvement.

Advantages:

Corneal transplantation is a practice maintained by the "see one, do one, teach one" methodology of learning. However, if surgeons in training possessed the capability to practice in a wet laboratory model, they may benefit from a reduced number of complicated surgeries. Experience in the wet lab will endow ophthalmologists the opportunity to test new maneuvers and experiment with different techniques. There exists a nationwide shortage in the availability of programs offering cornea wet labs. This module aims to ease the development of a wet laboratory experience at ophthalmology programs around the country. By creating a curriculum for teaching Descemet Membrane Endothelial Keratoplasty, we have laid the foundation for a cornea wet laboratory experience geared in teaching one of the most technically challenging procedures.

Limitations:

Although our wet laboratory model attempts to portray the physical sensations of ophthalmic surgery, it cannot simulate the mental and emotional sensations experienced during live surgery. The cadaver simulation model may also fail to simulate realistic eye pressures. Regardless of the advances in simulated surgical training, these experiences cannot replace experience in a real surgical setting. Our hope is to encourage ophthalmologists and cornea specialists to become more comfortable with the steps of DMEK and feel better prepared to practice on live patients. We believe that having wet lab experience will serve as an opportunity to make mistakes, learn techniques, and become proficient in this technically demanding procedure.

Lessons Learned:

Although this module contains all of the materials to establish a cornea wet laboratory experience to teach DMEK corneal transplantation, only attempts to implement our procedure at other institutions will gauge the effectiveness of what we have provided. Our goal is not only to introduce this wet lab at W.K. Kellogg Eye Center, but for other institutions around the nation to benefit from these methods. Our hope is to continue the development of the course as experiences arise at various institutions. This is why we encourage all comments, concerns, and questions be forwarded to **DMEKcourse@gmail.com**. Please feel free to forward the Didactic Module and Wet Laboratory Evaluation forms to this address. Also, we would appreciate comments from surgeons who have transitioned from the wet laboratory and have begun implementing DMEK in their own practice as a result of this module.

DEVELOPMENT OF A WET LABORATORY CURRICULUM FOR DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY – TAUSIF

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Ophthalmology Simulation Games - Cultivating a Competitive Environment to Enhance Resident Surgical Skills

DAVID J. GOLDMAN, MD, MBA; ADRIAN ELFERSY, MD; DEBORAH DARNLEY, MD; PAUL EDWARDS, MD

Background:

In 2011, we created a novel approach to simulation training with the creation of the Simulation Games - a one day competition amongst residency programs aimed at increasing simulation training. We utilized the EyeSi simulation platform (VR Magic), generating an objective scoring report across 10 different anterior segment tasks. In 2013, the competition has been expanded to include more programs, particularly since research demonstrates that simulation training improves resident performance in the operating room.

Purpose:

To promote simulation usage by residents, nurture learning between programs, and become the first medical discipline to utilize simulation training in this format.

Methods:

The simulator generates objective scoring for each task based on a series of surgical indices not generally quantified during in vivo surgical training, such as instrument and microscope handling, surgical efficiency, and tissue damage.

Results:

Registration for 2013 includes 5 residency programs and a medical student team. Results will be available after the competition on Sept 18th, 2013.

Conclusions:

The Simulation Games increase resident usage of their programs' ophthalmic simulators. Competition fosters increased training. As previously demonstrated, extra training will pay dividends in the operating room.

Cataract Immersion as a Model for Ophthalmic Surgical Training

PAVAN ANGADI; ARLENE BAGGA, MD; LINDA ROSE, MD

Background:

Little to no data exists on whether immersion in cataract surgery reduces complication rates. The University of New Mexico rotating resident experience is unique in that third-year residents are performing on average six cases per week for an 8-14 week rotation.

Purpose:

We hypothesize that this immersion in surgery reduces complication rates.

Methods:

We conducted a retrospective chart review of cataract surgery performed by rotating residents at the University of New Mexico. We looked at intraoperative complications rates and compared them to published data regarding third-year resident complication rates.

Results:

A total of 1304 resident cataract cases were reviewed with each resident doing on average 6 cases per week. The total complication rate per 100 cases was found to be 2.33 with a rate of vitreous loss of 0.84 per 100 cases. When compared to previously reported data we found that the rate of posterior capsule tears, wound burns, vitreous loss as well as the total complication rates were significantly lower.

Conclusions:

In comparison our overall complication rates were significantly lower than published rates for third-year residents. This data points toward an immersion experience in cataract surgery as a tool for reducing complication rates in resident teaching.

Interactive Web-Based Ophthalmic Pathology Curriculum in Resident Education

TATYANA MILMAN, MD; STEVEN A. MCCORMICK, MD

Background:

There is currently a shortage of ophthalmic pathologists in ophthalmology residency training. This difficulty can be potentially overcome by creation of web-based ophthalmic pathology educational modules, featuring virtual slides and interactive live instruction with an expert.

Purpose:

To create and implement an interactive web-based ophthalmic pathology curriculum to enhance ophthalmology resident education.

Methods:

The interactive web-based ophthalmic pathology curriculum has been created to incorporate the following:

I. Interactive virtual slide teaching sessions with an experienced instructor.
These interactive teaching sessions replicate the multi-headed microscope experience in eye pathology lab. The sessions are conducted via Webex and are scheduled to accommodate the needs of participants. Virtual slides implementing Aperio technology are used. The slides can be moved around on the screen and viewed with a range of magnification, similar to a glass slide under a light microscope. The pathology cases are discussed with an emphasis on clinical-pathologic correlation. The curriculum covers the entire range of pathology topics, including normal anatomy/histology, cornea, conjunctiva, sclera, lens, iris, glaucoma, retina, orbit and optic nerve, eyelid, trauma, inflammation, congenital anomalies, and intraocular tumors.

II. On-line virtual slide curriculum.
The on-line virtual slide curriculum covers all topics discussed in the interactive virtual slide teaching sessions. The material is subdivided into courses by topic. Each course contains a series of cases, with pertinent clinical and gross pathology images and corresponding annotated virtual slide. In addition, each course contains virtual slides and questions for self-assessment.

III. On-line recorded eye pathology lecture series.
The on-line recorded pathology lecture series cover all topics discussed in interactive virtual slide teaching sessions.

IV. On-line syllabus.
The on-line syllabus consists of a text and annotated color atlas, which cover all topics discussed in interactive virtual slide teaching sessions.

V. Grossing session and microscopic review of biopsies obtained at the participating institution.
The participants will be able to observe via Webex sectioning of the specimens which they obtained. The specimens are sectioned under dissecting microscope. The sessions are scheduled in advance and conducted in real-time (live). The participants will also have the ability to microscopically review these specimens in a virtual slide format.

This curriculum can be individualized to accommodate the program's needs.

Results:

In addition to the New York Eye Infirmary Ophthalmology Residency program, 3 other New York-Metropolitan area programs subscribed for the on-line curriculum. Thus far the responses have been positive. A formal questionnaire will be provided to the subscribers at the end of the course.

Conclusions:

Interactive web-based ophthalmic pathology curriculum can be used to successfully meet Ophthalmology Residency Program's needs, particularly in programs without a dedicated Ophthalmic Pathologist.

INTERACTIVE WEB-BASED OPHTHALMIC PATHOLOGY CURRICULUM IN RESIDENT EDUCATION – MILMAN

New York Eye and Ear Infirmary

A Member of the Mount Sinai Health System

Web-Based Ophthalmic Pathology Education

Department of Pathology & Laboratory Medicine Offers

Interactive virtual slide teaching sessions with an experienced instructor

These interactive teaching sessions replicate the multi-headed microscope experience in eye pathology lab. The sessions are conducted via Webex and are scheduled to accommodate the needs of participants. Virtual slides implementing Aperio technology are used. The slides can be moved around on the screen and viewed with a range of magnification, similar to a glass slide under a light microscope. The pathology cases are discussed with an emphasis on clinical-pathologic correlation. The curriculum covers the entire range of pathology topics, including normal anatomy/histology, cornea, conjunctiva, sclera, lens, iris, glaucoma, retina, orbit and optic nerve, eyelid, trauma, inflammation, congenital anomalies, and intraocular tumors.

On-line virtual slide curriculum

The on-line virtual slide curriculum covers all topics discussed in the interactive virtual slide teaching sessions. The material is subdivided into courses by topic. Each course contains a series of cases, with pertinent clinical and gross pathology images and corresponding annotated virtual slide. In addition, each course contains virtual slides and questions for self-assessment.

On-line recorded eye pathology lecture series

Covers all topics discussed in interactive virtual slide teaching sessions.

On-line syllabus

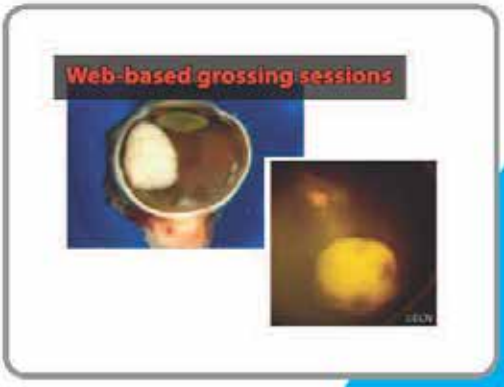
A text and annotated color atlas, which cover all topics discussed in interactive virtual slide teaching sessions.

Grossing session and microscopic review of biopsies obtained at the participating institution.

The participants will be able to observe via Webex sectioning of the specimens which they obtained. The specimens are sectioned under dissecting microscope. The sessions are scheduled in advance and conducted in real-time (live). The participants will also have the ability to microscopically review these specimens in a virtual slide format.

This curriculum can be individualized to accommodate the program's needs.

Interactive web-based ophthalmic pathology curriculum can be used to successfully meet Ophthalmology Residency Program's needs, ***particularly in programs without a dedicated Ophthalmic Pathologist.***



For more information about access on a trial basis and subscription to the program, please contact

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Internet Based Eye Pathology Teaching Initiative

L.F. Montgomery Ophthalmic Pathology Laboratory
Emory University, Atlanta, Georgia

The L.F. Montgomery Laboratory, a full time, independently licensed ophthalmic pathology laboratory, and has hosted students for rotations for the past 20 years. These include Emory medical students, Emory ophthalmology residents, Emory pathology residents, and medical students and residents from outside institutions.

Since there are only a handful of full time ophthalmic pathology laboratories in the United States, and the Residency Review Committee (RRC) requires ophthalmic pathology training for ophthalmology residents, creative solutions have been developed to increase availability and exposure of U.S ophthalmology residents to ophthalmic pathology.

The Internet-Based Eye Pathology Teaching Initiative is the L.F. Montgomery Laboratory program to provide ophthalmic pathology training to these students. Development of this Initiative was funded by an Emory University Teaching Fund Award (EUTF) from 2001-2002. The Initiative includes on-line, password protected access to four anchored based instruction interactive tutorials and eye pathology teaching cases presented as “unknowns”. There are 10 new unknowns posted quarterly, the cases are archived at the website, and the answers to the unknowns are posted after the quarterly eye pathology unknown conference held at the Emory Eye Center. The cases included de-identified clinical images and pathology images, along with a quiz for each case. The cases are identified each quarter by Dr. Grossniklaus as interesting teaching cases. A brief history including the patient’s age, sex and location of the pathology is included for each case. This teaching initiative has had IRB approval as a research study and has a complete HIPPA waiver.

https://secure.web.emory.edu/eyecenter/MontgomeryLab/

OPHTHALMIC PATHOLOGY VIRTUAL MICROSCOPY WEBSITE

Virtual microscopy is a novel method of posting microscope images on, and transmitting them over, computer networks for the purpose of facilitating collaborative interaction among colleagues across diverse geographical locations. It involves a synthesis of microscopy technologies and digital technologies. With recent advances in virtual microscopy, it is now possible to achieve image resolutions approaching that visible under the optical microscope.

An ophthalmic pathology virtual microscopy workgroup has been established under the auspices of the American Association of Ophthalmic Oncologists and Pathologists (AAOOP) and Loyola University Chicago in order to create an educational resource for ophthalmologists, ophthalmology residents, and medical students. Additional potential benefits include Continuing Medical Education for ophthalmologists and eye pathologists, and Quality Assurance programs for practicing eye pathologists. The following institutions are part of this workgroup:

- Loyola University Chicago, Stritch School of Medicine
- Wilmer Eye Institute, John Hopkins Medicine
- Duke University
- University of Iowa, Carver College of Medicine
- Northwestern University, Feinberg School of Medicine
- The New York Eye and Ear Infirmary
- Rush University Medical Center
- Bascom Palmer Eye Institute

High quality histopathologic images for ophthalmic pathology are created using slide scanning technology. We currently have a large data base of scanned specimens which are available for viewing at http://path.bnbdev.com/index1a.htm. The site can also be accessed from the Loyola University Chicago Ophthalmology Department Webpage (http://www.stritch.luc.edu/depts/ophtha/residency/virtual_microscopy.htm) or via the AAOOP learning Center (http://aaoop.org/learning-center/virtual-eyepath-slides). There is an educational video available on the site to guide users on how to navigate the site. Specimens are annotated with important histopathologic features identified. The site has a “self-test” feature with interactive annotations visible only when hovering over a point of interest on the screen using a mouse; it is believed this will enhance the educational value for the user. The site is continually updated; glass or virtual image contributions of pathologic entities not currently available on the site are being sought from interested parties. Currently, we are developing interactive OKAP style questions to enhance the educational value of the site. Ultimately, the goal of this project is to provide an invaluable ophthalmic pathology resource which will be made available to interested individuals worldwide.