



Building bridges: Developing a core curriculum for pediatric subspecialty fellowships

Bonnie Halpern-Felsher, Bruce Herman, Ann Klasner, Kathleen McGann, Angela Myers, Katherine Mason, Pnina Weiss, Hayley Gans

Association of Pediatric Program Directors

May 21, 2018

Welcome

- For Polleverywhere
- please Text to 37607 hayleygans812



Conflict Of Interest

- There are no conflicts to report

Welcome, tell us what your role is.

Residency Program or
Associate Program Director

Fellowship Program or
Associate Program Director

Residency Program
Coordinator

Fellowship Program
Coordinator

Resident

Fellow

Other

Does your institution have a departmental curriculum?

YES

NO

- Describe the requirements for and value of a common core curriculum for fellows.
- Identify different institutional approaches for a core curriculum.
- Determine potential barriers to initiating and maintaining a core curriculum.
- Create an action plan for implementing a core curriculum or components of the core curriculum
- Introduce outcomes to foster the study of a fellows' core curriculum program.



Current State of Affairs



National Regulatory Body Requirements

American Board of Pediatrics (ABP) Requirements

Accreditation Council for Graduate Medical Education (ACGME)

- ACGME Common Program Requirements
 - I-V: 2016 (revisions 2019 – residencies and fellows separated)
 - VI: 2017
- ACGME Pediatric Subspecialty Program Requirements

Core Curriculum in Scholarly Activities



ABP Core Curriculum in Scholarly Activities

All fellows must participate in a core curriculum in scholarly activities. This curriculum should provide skills that lead to an **in-depth** understanding of:

- Biostatistics
- Clinical and laboratory research methodology
- Study design
- Preparation of applications for funding &/or approval of research protocols
- Principles of EBM & Critical literature review
- Ethical principles of clinical research
- Achievement of proficiency in teaching
 - Teaching curriculum should lead to understanding of adult learning principles and provide skills to participate effectively in curriculum development, delivery of information, provision of feedback to learners, and assessment of educational outcomes.
 - Graduates should be effective in teaching both individuals and groups of learners in clinical settings, classrooms, lectures and seminars, and also by electronic and print modalities
- Additional content specifications developed for subspecialty examinations based on the competencies related to the core curriculum in scholarly activities

ABP Subspecialty Examinations

Did you know that ...

- Questions regarding the Core Scholarly Activities appear in all ABP Subboard Certification examinations.
 - Specific content incorporated into each subspecialty's Content Outline
- The scholarly activity questions comprise:
 - 4 - 7% of each subspecialty's initial Certification examination
 - 2 - 5% of each subspecialty's Maintenance of Certification (MOC) examination

ABP Content Specifications for Subboard Examinations: Core Knowledge in Scholarly Activities

Principles of Biostatistics in Research

1. Types of variables (eg, continuous, ordinal, nominal)
2. Distribution of data (eg, mean, standard deviation, skewness)
3. Hypothesis testing (eg, Type I & Type II errors, p-values, power)
4. Common statistical tests (eg, ANOVA, Chi-square, nonparametric tests)
5. Measurement of association and effect (eg, correlation, RR, OR)
6. Regression (eg, linear, logistic, survival analysis)
7. Diagnostic tests (eg, sensitivity & specificity, predictive values, disease prevalence, ROC curves)
8. Systematic review and meta-analysis

Ethics in Research

1. Professionalism and misconduct in research (eg, conflicts of interest, falsification)
2. Principles of research involving human subjects
3. Principles of consent and assent

Principles of Epidemiology and Clinical Research Design

1. Study design, performance, and analysis (internal validity)
2. Generalizability (external validity)
3. Bias and confounding
4. Causation
5. Incidence and prevalence
6. Screening
7. Cost benefit, cost effectiveness, and outcomes
8. Measurement (eg, validity, reliability)

Quality Improvement

1. Project design (eg, models, aims, key drivers, tools, Plan-Do-Study-Act (PDSA) cycle)
2. Data & measurement (eg, outcomes, balancing measures, run charts, control charts, common cause and special cause variation)

Teaching Proficiency – no longer on examinations

ACGME Pediatric Subspecialty Program Requirements



ACGME Pediatric Subspecialty Program Requirements

Program Director must:

- ensure fellows are mentored in development of clinical, educational, and administrative skills (II.A.4.p)
- with other FPDs and Core Program - address a departmental approach to common educational issues and concerns (e.g. **core curriculum**, competencies, evaluations) (II.A.4.s) *(Detail)*

ACGME: Section IV. Educational Program

Medical Knowledge:

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. *(Outcome)*

Fellows:

must have a **working** understanding of biostatistics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical research protocols, critical literature review, principles of evidence-based medicine, ethical principles involving clinical research, and the achievement of proficiency in teaching for all subspecialty fellows (IV.A.5.b).(1)
(Outcome)

teach proficiently based on knowledge of the principles of adult learning, including participating effectively in curriculum development, delivery of information, provision of feedback to learners, and assessment of educational outcomes. *(Outcome)*

Distinct from their own Subspecialty Curriculum

ACGME: Additional Requirements around Fellows' Education

- The curriculum must advance fellows' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care (IV.B.1.) (*Core*)
- Where appropriate, the core curriculum in scholarly activity should be a collaborative effort involving all of the pediatric subspecialty programs in the institution (IV.B.1.a) (*Detail*)

Additional Topics mentioned in ACGME Pediatric Subspecialty Program Requirements:

- Economics of healthcare and health care management issues
- Public health principles and improvement methodology
- Leadership
- Fiscally sound and ethical management of a practice (eg, billing, coding, etc)
- Patient safety
- Quality improvement processes, including an understanding of health care disparities
- Well-being (identification of the symptoms of burnout, depression, substance abuse)
- Fatigue mitigation
- Bioethics
- Less specific but topics mentioned:
 - Communication skills, Professionalism, Leadership, Cultural competency/sensitivity, Population health, Cost awareness & risk-benefit analysis, etc.

Literature Review: Fellows Curriculum

- Pediatric Subspecialty Training Fellowships at Cincinnati Children's Hospital Medical Center *WF Balistreri, A Jobe, TF Boat, 2005*
- Building Bridges Between Silos: An Outcomes-Logic Model for a Multidisciplinary, Subspecialty Fellowship Education Program *JR Campbell, DL Palazzi, J Rama, D Balmer, GE Schutze, TL Turner, 2015*
 - Describe design & implementation of a Fellows' College, centralized educational program
 - Goals:
 - 1) enhance subspecialty education for fellows
 - 2) support FPDs and Coordinators
 - Process: needs assessment, national requirements, departmental support
 - Steering committee/Advisory Board
 - Developed an Outcomes-Logic Model
 - inputs, outputs and outcomes
 - immediate (<1yr), intermediate (1-3yrs) & impact (3-5yrs) changes or benefits

BCM Fellows' College Outcomes-Logic Model

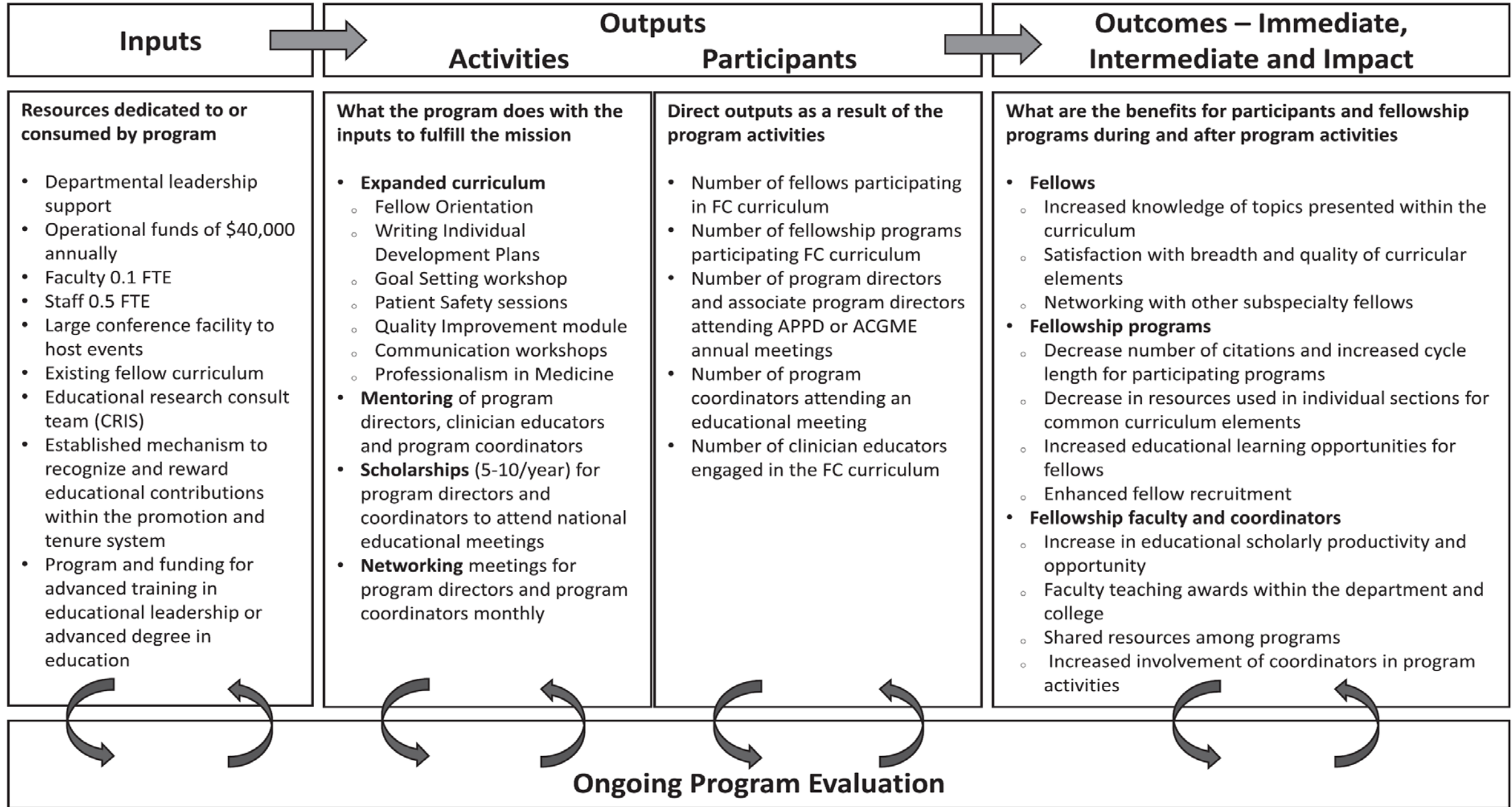


Table. Fellows' College Modules*

Core Curriculum (25 sessions)

- Fellows as Educators (4 sessions)
- Communication (4 sessions)
- Mentors and Mentees
- Professionalism (2 sessions)
- Quality improvement (6 sessions)
- Patient safety (2 sessions)
- Time management
- Physician wellness and fatigue (2 sessions)
- Work-life balance
- Technology resources (2 sessions)

Career Development (10 sessions)

- Setting goals
- Individual development plans (2 hours)
- Career pathways
- Scientific writing
- Grants
- Job search process (3 sessions)
- Interviewing
- Productivity and promotion

Research and Scholarship (5 sessions)

- Writing an abstract
- Preparing a poster
- Giving an oral presentation
- Scholarship workshop (1.5 hours)
- Annual research symposium (2 hours)

*Each session is 1 hour long unless otherwise indicated.

Outputs

- Enhanced peer fellow network
- New topics (GH, Sim)
- 16 of 20 (80%) FPDs cited shared curricular resources as important
- Sustained participation of all 20 ped subs
 - Other departments' fellows have joined
- Increased Fellow attendance, 2011 to 2015:
 - 49 fellows in 11 programs to 75 in 23 programs
 - # fellows/session: 16-36 (avg 25) to 14-53 (avg 31)
- Faculty receipt of teaching awards
- Junior faculty mentored by seasoned educators

Conclusions:

Building Bridges Between Silos: An Outcomes-Logic Model

- Model helped identify resources, implementation and evaluation
- Supportive departmental leadership, collaborative participants and existing institutional resources essential to innovative curriculum development
- Identification of committed faculty across subspecialties was key

Literature Review (contd)

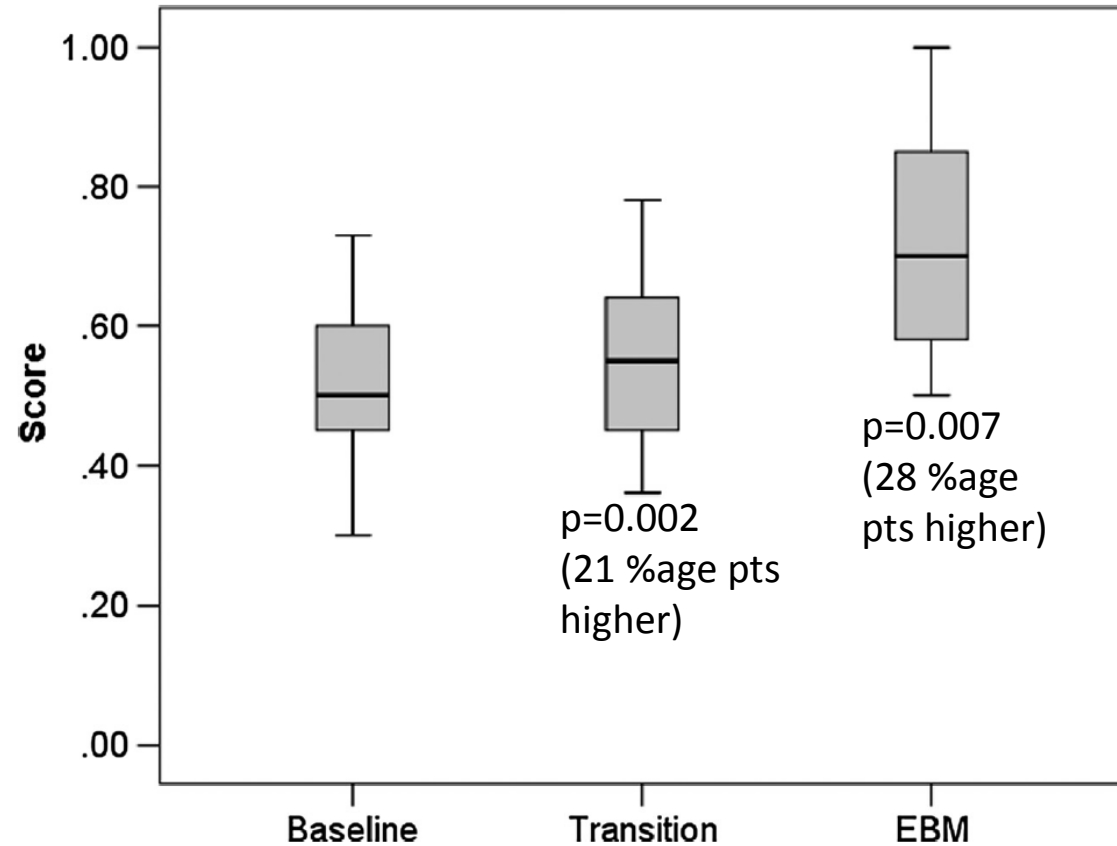
- Evidence-Based Medicine Curriculum Improves Pediatric Emergency Fellows' Scores on In-Training Examinations

MM Tavarez, TS Kenkre, N Zuckerbraun, 2017

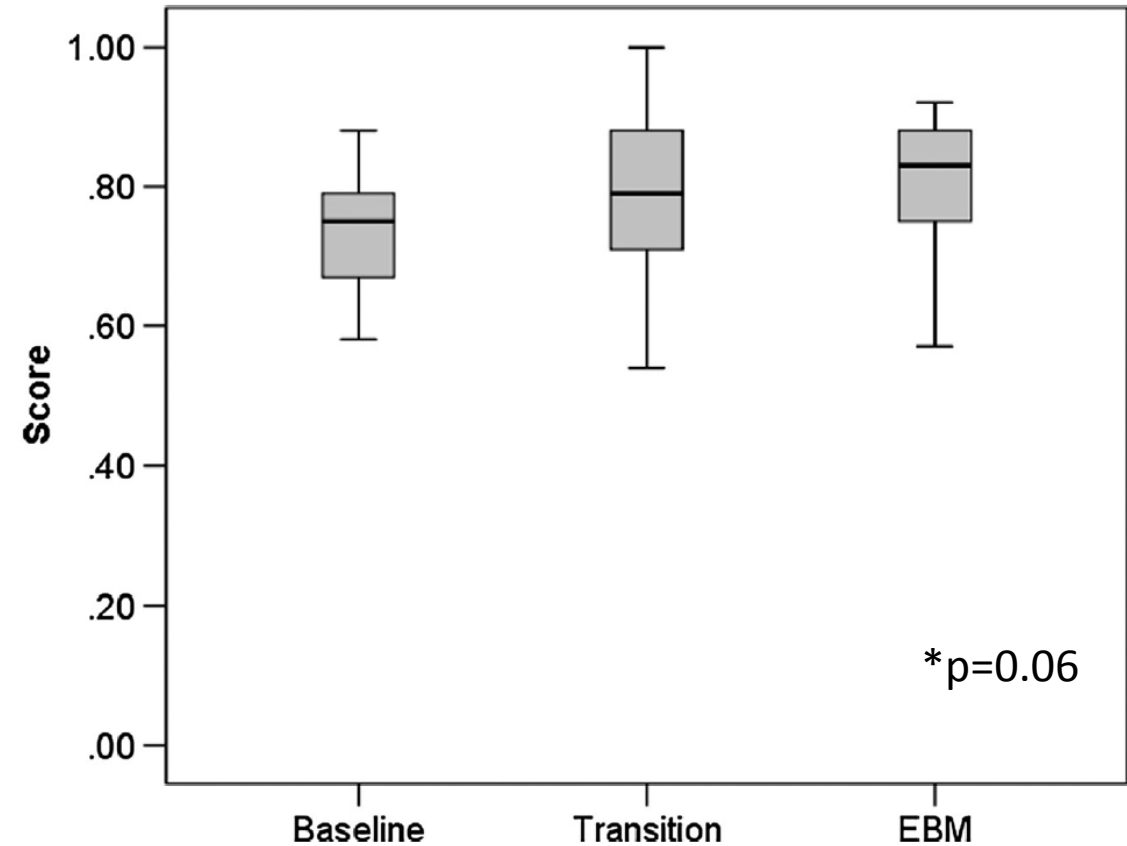
- Determine if EBM curriculum changed PEM fellows' scores on 'Scholarly Activities' (SA) section of ITE; 'Emergencies Treated Medically' (EM) scores as comparison
- Study period: Baseline, Transition, EBM
- Evaluated 49 SA and EM subscores of 22 fellows over 6 yrs
- Limitations: small sample size, single training program

PEM Fellows ITE: Comparison of Median Subscores across Instruction Periods

Significantly higher scores on SA section after EBM curricular intervention



"Scholarly Activities" Section



"Emergencies Treated Medically" Section

Literature Review: Other References Fellows Curriculum (contd)

- Developing a quality and safety curriculum for fellows: lessons learned from a neonatology fellowship program *M Gupta , S Ringer, A Tess, A Hansen, J Zupancic , 2014*
- Leadership: “They Never Taught Me This in Medical School” *E Fruge, et al, 2010*
- Consensus on a Core Curriculum in American Training Programs in Pediatric Hematology-Oncology: A Report from the ASPHO Training Committee *C Hastings, et al, 2007*
- Exploring Opportunities in Quality Improvement During Fellowship *W Zhou, 2016*
- Others

Acad Pediatr 2014;14:47

J Pediatr Hematol Oncol 2010;32:304

Pediatric Hematology & Oncology 2007;24:503

J Am College of Cardiology 2016;67:1859

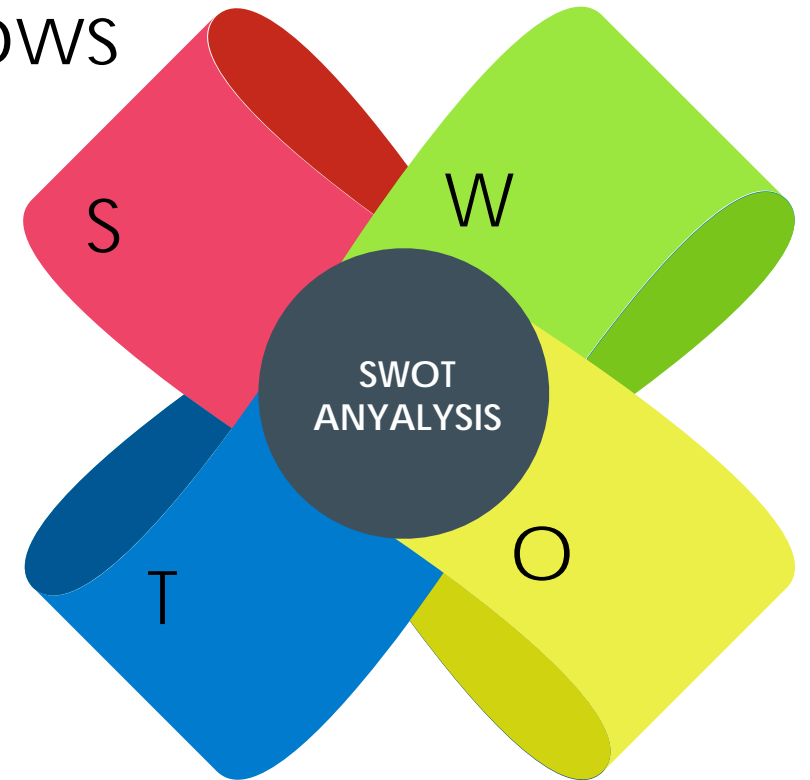
Break out I SWOT activity



SWOT ANALYSIS

Core Curriculum for Pediatric Fellows

March 21, 2018

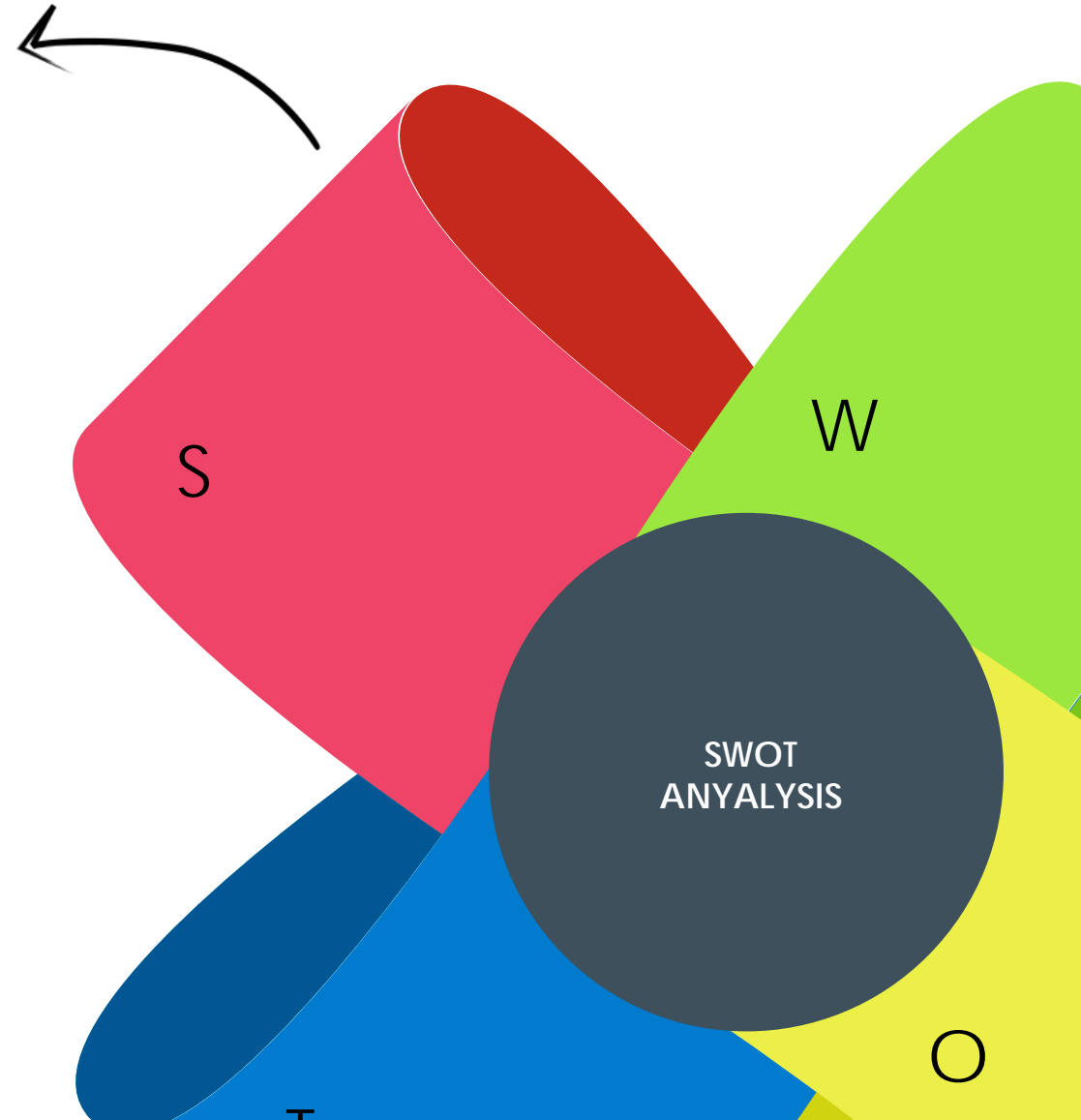


SWOT ANALYSIS

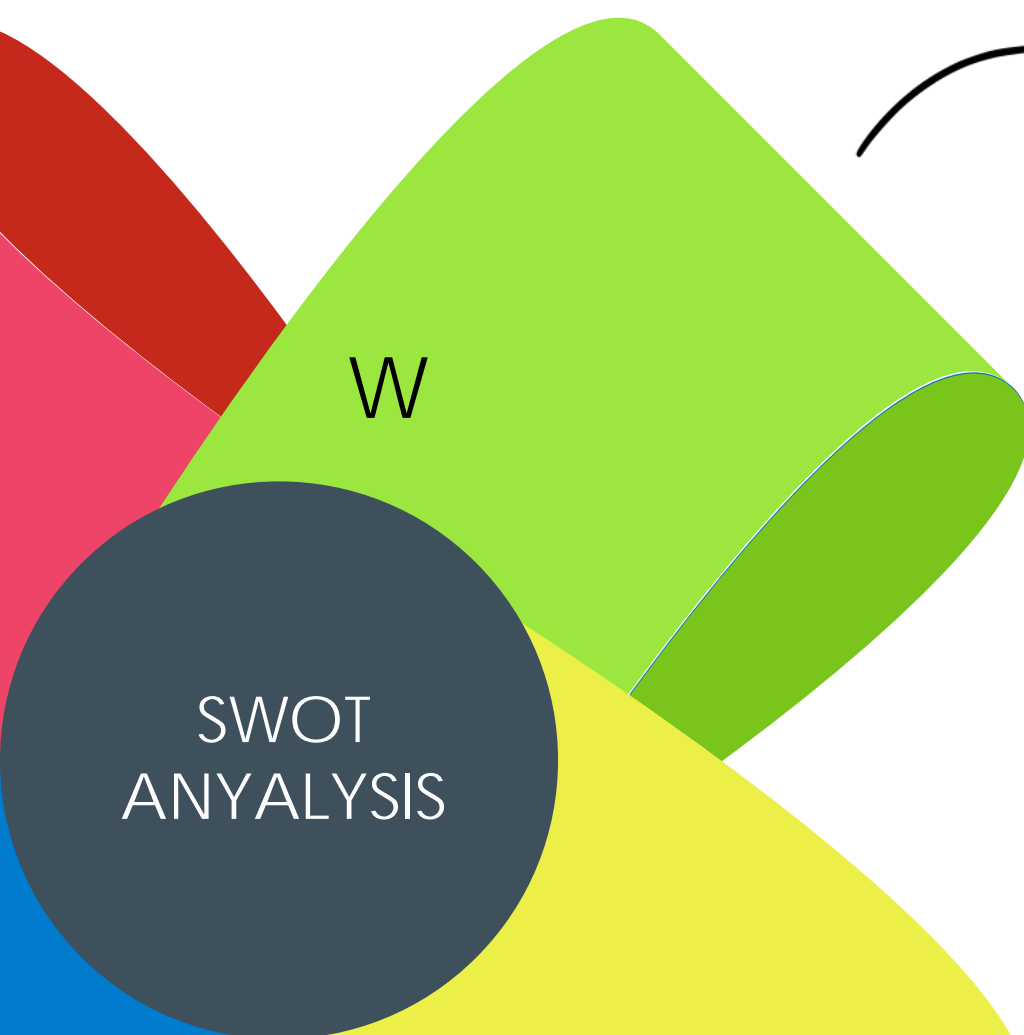
Strengths

Internal Factors – Program Achievements

- Board pass rates
- Formal faculty mentoring program
- Educational leadership
- Diverse patient population & clinical experiences
- Commitment to improvement
- Flexibility of program and approach to education
- Commitment to wellness/work-life integration
- Size of program
- Approachable/Available leadership
- Global Health Education
- Common Core Curriculum
- QI Curriculum
- Simulation



SWOT ANALYSIS



Weaknesses

Internal Factors - Areas for Improvement

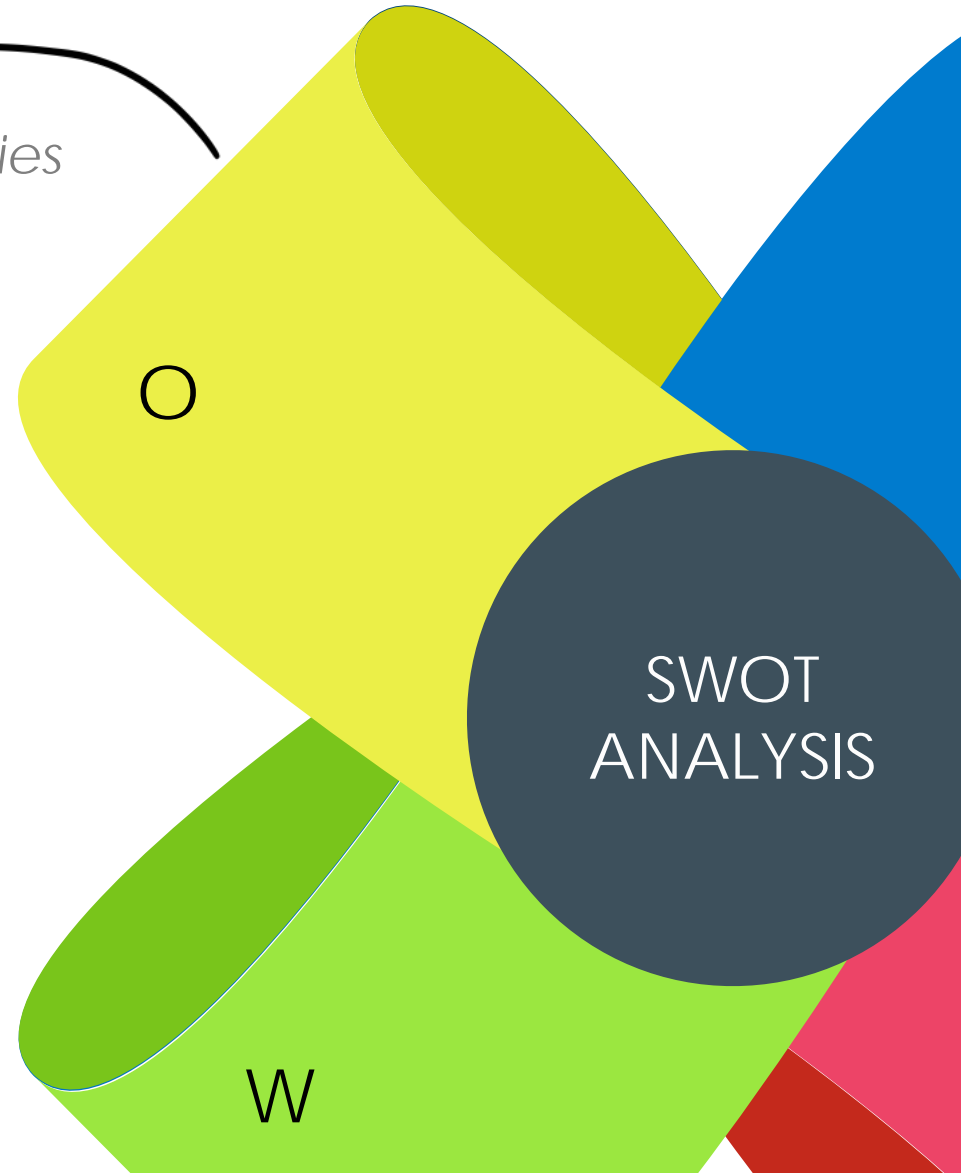
- Strain of patient volume vs. program size
- Financial constraints of education
- Duty hours compliance
- Autonomy
- Documentation (EMR)
- Funded research mentors for trainees

SWOT ANALYSIS

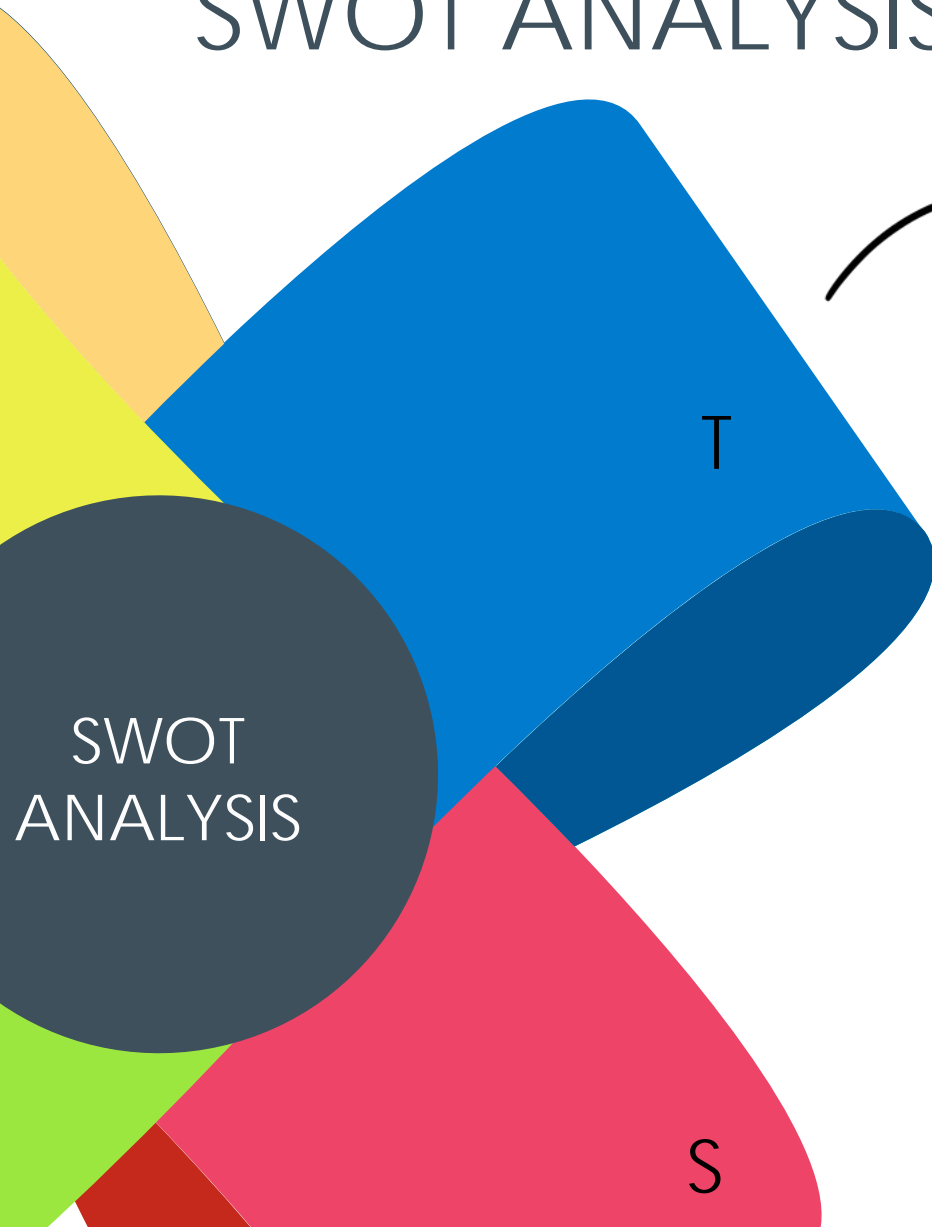
Opportunities

External Factors – Take advantage of potential opportunities

- Improve compliance with duty hours
- Improve (EMR)
- Investigate innovative program funding
- Integrate value, education, & research efforts
- Increase interdisciplinary research collaboration
- More involvement with community organizations
- Continue innovative education
- Improve real time feedback
- Maximize educational value of clinical encounters



SWOT ANALYSIS



Threats

External Factors – Mitigating threats to the program

- Limited finances for residents (funding for GME)
- Increased clinical productivity expectation for teaching faculty
- Faculty burnout and morale
- Increasing learners diluting education
- Staff turnover
- Hospital budget cuts



Models of Core Curriculum

What “we” are doing...

- Packet contains examples from 7 different institutions
- Overall:
 - Many different ways to approach this need
 - Consider size of programs, what resources already exist, who are obvious partners
 - No “one size” fits all package
 - This leaves lots of opportunity to trial examples from others or to experiment with what works for your institution
 - Collaborations with colleagues to share content

Some of our examples....

- Kansas City: *tackled specific area content and specific group of trainees*
 - 1 year curriculum for first year fellows based on leadership; 1 hour in length; monthly
 - Other core requirements covered in years 2-3 and in separate QI/stats curricula
- Duke: *Focused on all core requirements, condensed time frame to encourage attendance*
 - 2 year curriculum – 3 weeks/month for 1 hour
 - 4th week of month is Fellow Research Conference
- Stanford: *Focused on all core requirements; divided scholarship/education*
 - 3 year longitudinal curriculum
 - General topics - 4 hour blocks; 4 sessions/PGY year; open to all trainees
 - Scholarship – 1 hour bimonthly
- Yale: *Focused on all core requirements: divided scholarship/education*
 - 3 year curriculum - 1 hour weekly session (30 hours/year)
 - 2nd year fellows course in Biostats, Research Methods

Lessons learned



Successes



- Opportunity for faculty to be engaged with fellows
 - Diversify the presenters to expose fellows to key institutional faculty
- Offering incentives to attend has been met with some success, i.e. outside conference scholarship and gift cards
 - Utilize early adapters as opinion leaders to help engage early majority to reach critical mass
- Improved social networking between fellows in different subspecialties
 - Building trainee community especially for small programs is a key benefit
 - Think beyond the requirements; career panels
- Opportunities for faculty who are involved to add to their scholarship
- Objective information that content is benefiting trainees

Challenges

- Attendance for some subspecialties is challenging
- Truly protecting trainees to attend
- No universally “best” time slot for all subspecialties
- Finding experts who can present meaningful and interesting presentations for this level of learner
- How to measure outcomes



Maximizing Attendance:

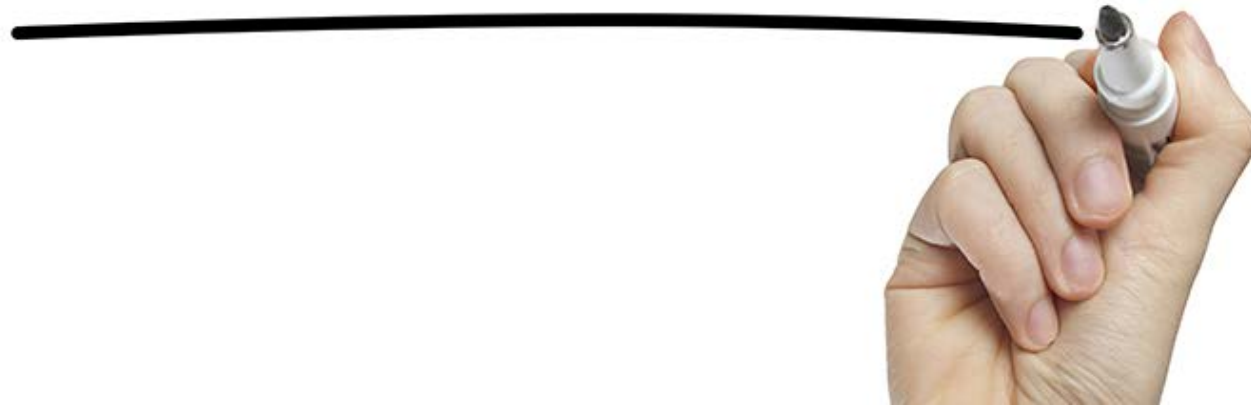
- Buy in from all fellowship programs
 - Meeting with PD prior to developing the curriculum
 - Establishing the value of the program; early adapters, Departmental leadership support, report out evaluations periodically, trainee “word of mouth”
 - Incorporate divisional content where relevant
- Use of different times slots can be helpful-consider survey of fellows/PD’s
 - Release of schedules early before trainee schedules are developed so protective time can be incorporated
- Potential use of online educational opportunities
- Consider live streaming of sessions for off-site fellows
 - Caution, diminishes community building

How do you find people to present:

- Look outside of Department of Pediatrics
 - Human Resources
 - Educational Office
 - Risk Management
- May need to “coach” a presenter to hit the points desired
- Consider junior faculty members in addition to senior faculty
 - They may be more motivated to give a very quality presentation



ACTION PLAN



Break out II
Build an Action Plan

Action Plan

- Please group yourselves by size of your program
- Work in pairs to develop an action plan for your institution using the Action Plan template in your packet

Considerations

- What are some quick gains, i.e. low hanging fruit
 - Tackle one clear gap, i.e. leadership, or one specific group
- Determine early adaptors who will help bring others on board
- With some foresight, outcome measures can be incorporated into the curriculum plan from the beginning
 - important to objectivize value

SMART Objectives

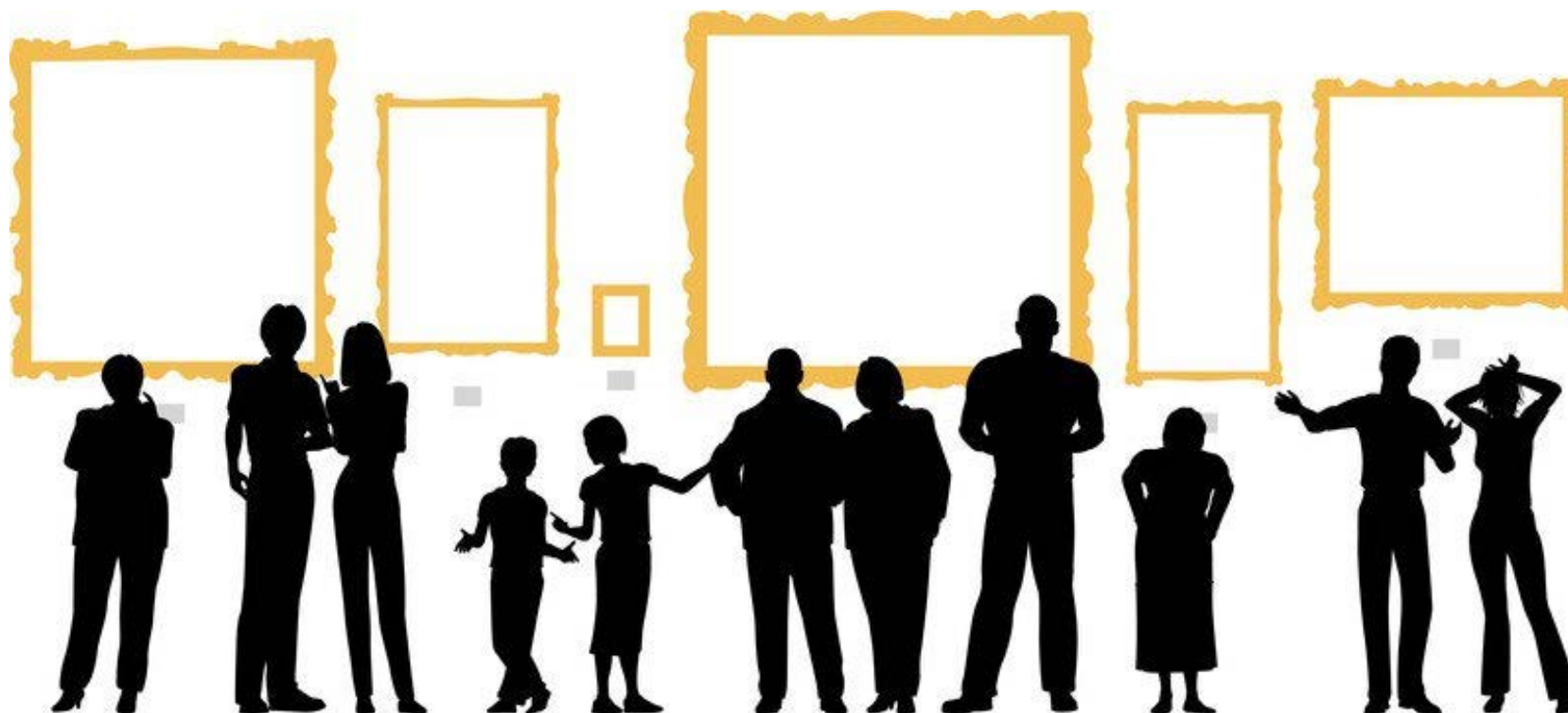
S	(Specific)—Stated as simply, concisely, and explicitly as possible?	
M	(Measurable)—State how you will know the goal has been completed?	
A	(Achievable)—Is this realistic?	
R	(Relevant)- Will it make you a better subspecialty pediatrician?	
T	(Time-bound)—Do you have a specific deadline for completion?	

Post-it Completion

- Three post-it notes can be found at the tables: please complete as follows
 - **Green:** What I will accomplish in next 6 months?
 - **Pink:** What resources are presently available that I can use?
 - **Blue:** What resources do I lack and will need to discuss further with key stakeholders or find creative ways to address?

Post-it notes will be collected, collated and shared in post-meeting communication





Gallery Walk

Wander the room.....

- Please post your action plans
- Wander the room seeing what your colleagues have proposed
- Using the post-its at the table, please review your colleagues plans and leave suggestions (and of course borrow a few ideas)





Outcome measures

KIRKPATRICK'S LEVELS OF EVALUATION



Reference: Kirkpatrick, D., & Kirkpatrick, J. (2006). Transferring learning to behavior: Using the four levels to improve performance. Berrett-Koehler Publishers.

KIRKPATRICK EVALUATION MODEL



Outcome measures

- Level 1: Satisfaction/reaction
 - Qualitative measures after each session
 - Faculty and trainee
- Level 2: Transfer of knowledge
 - Survey before and after each year (L2)
 - Use of validated tools
 - Exam scores on Fellow Core Curriculum topics (L2)
 - In training exam scores on key areas
 - Subboard exam on key areas

Outcome measures

- Level 3: Application of knowledge
 - Survey questions of how they will change their practice
 - Trainee Performance (observation or evaluations)
 - Appropriate utilization/implementation of EBM, Statistics, Grant writing, Manuscript preparation, Teaching proficiency, ethics or research (hard to measure), clinical and/or lab research design (?likely many things playing into their competence with these aspects, esp lab or clinical research design more likely related to mentors)
- Level 4: Results
 - Patient outcomes / Research outcomes
 - Milestones: Professionalism, cultural competency
 - Grant submissions-Grants awarded...Manuscripts accepted
 - Presentations: local/national

Outcome measures

Please share with the group some outcome measures you will be utilizing to study/evaluate your initiatives

Thanks, please fill out your evaluations



University of Utah
Primary Children's Hospital



Brown University Medical Center
Hasbro Children's Hospital



University of Alabama Medical Center
Children's Hospital of Alabama



Stanford University Medical Center
Lucile Packard Stanford Children's Hospital



Yale University Medical Center
Yale New Haven Children's Hospital



Children's Mercy Hospital
University of Missouri–Kansas City School of Medicine



Duke University Medical Center
Duke Children's Hospital