AAFP GLOBAL HEALTH SUMMIT

Primary Health Care and Family Medicine: Health Equity for All

Experiential learning in procedural and surgical skills for family medicine trainees anticipating comprehensive global health practice

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Activity Disclaimer

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Drs. Twyman and Wikoff have indicated they have no relevant financial relationships to disclose.

Objectives

- Appreciate the need for surgical training in primary care
- Understand the desired elements and critical components necessary to train family physicians in advanced diagnostic or therapeutic procedures and basic surgery.
- Appreciate key stakeholders involved in the development of procedural and surgical training curricula for postgraduate family medicine trainees, and develop a framework for how to effectively collaborate with these stakeholders for ongoing mutual benefit.
- Identify obstacles or pitfalls in curriculum implementation and adopt strategies to avoid them in individual training contexts.

Abstract

- Inadequate access to general surgical procedures has been recognized as a major contributor to the global burden of disease. Family medicine physicians can be trained to provide these services. We report on the development, implementation, and ongoing adaptation of a unique, longitudinal procedural and surgical training curriculum for family medicine residents who anticipate participation in global health settings with limited resources and specialty access. We will share our first four years' experience with this program, which is based at a large family medicine residency training program in a safety net teaching hospital and which requires an additional year of training. We will discuss successes and challenges relating to sustainability including development of the necessary organizational culture, collaboration with key stakeholders, the construction of resident and faculty schedules, and the process of ongoing evaluation of program residents and graduates.

Presenters

- Stephen Twyman, MD, MPH, FAAFP
  - Medical Director of Advanced Rural Medical and Surgical Track and Program Faculty; John Peter Smith Hospital Family Medicine Residency in Fort Worth, TX
  - Medical Director; Hope Clinic of McKinney in McKinney, TX
- Richard Wikoff, MD, FACS
  - Surgical Director of Advanced Rural Medical and Surgical Track; John Peter Smith Hospital Family Medicine Residency in Fort Worth, TX
  - Clinical faculty, Baylor General Surgery Residency in Dallas, TX

What's the

BIG IDEA?

BIG IDEA #1:
Comprehensive Medical Care Includes Surgery and Procedures

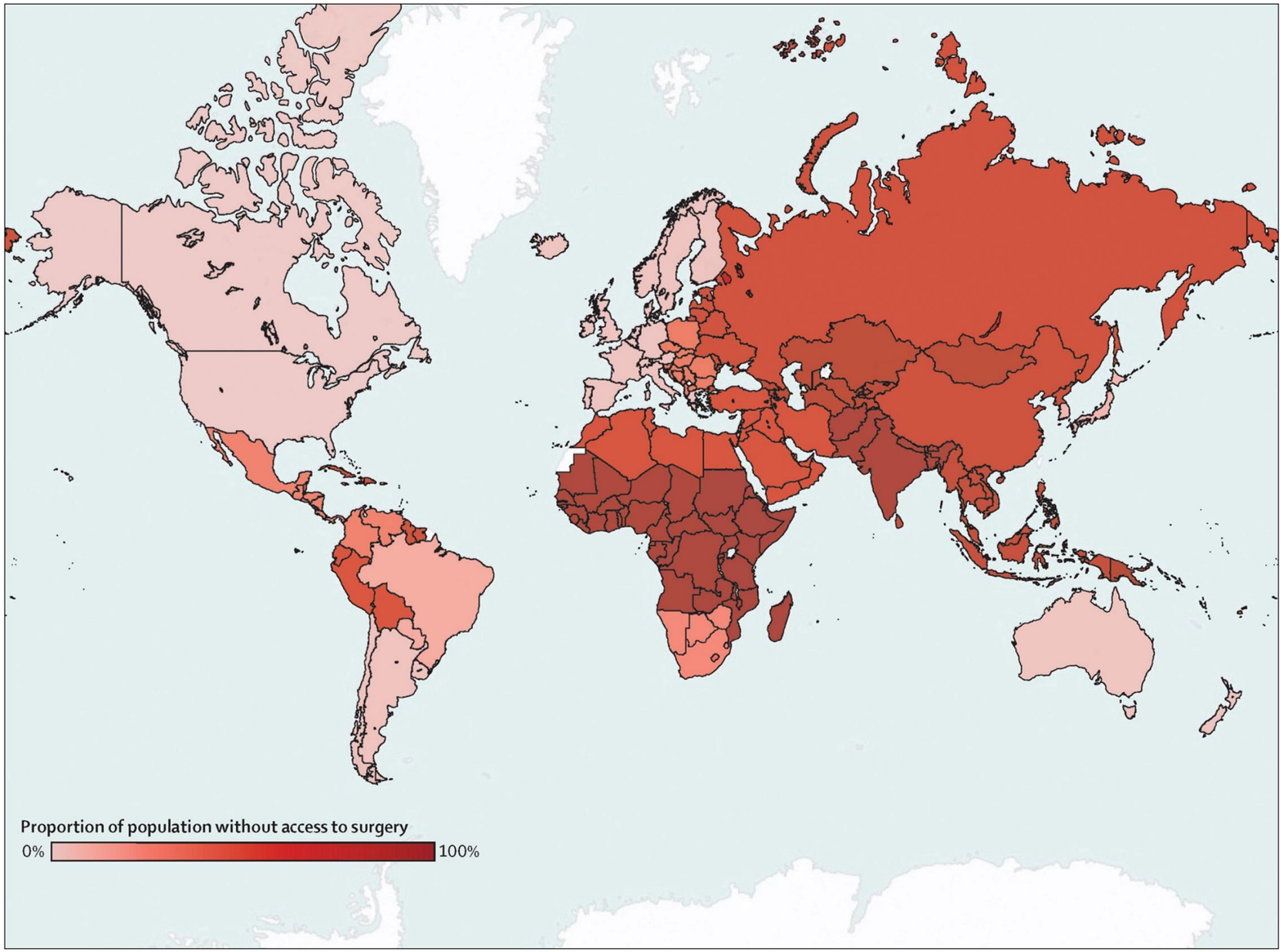
Global Burden of Surgical Disease

- Difficult to ascertain exactly
- Likely varies widely based on context, location, local epidemiology, etc.
- 2011: estimated 11% of worldwide burden of disease
- 2015: surveys of providers suggest up to 30% of worldwide burden of disease

Global Impact

- *Global Surgery 2030, Meara, et al.* (2015)
  - **5 billion people do not have access** to safe, affordable surgical and anesthesia care
  - 313 million procedures performed worldwide annually. Of those, only **6% are done** in low or lower-middle income countries

- Disease Control Priorities, Third Edition (2015)
  - Full provision of essential surgical procedures would **avert 1.5 million deaths a year** in low- and middle-income countries.
  - Essential surgical procedures rank among **the most cost-effective** of all health interventions.



Regional Disparities

- The proportion of the population without access to safe, affordable surgery and anesthesia varies widely by geographic region

Solutions to address this

- Train more full-fledged general surgeons?
- Train more surgical specialists?
- Invest more into surgical infrastructure?
- Build capacity and reinforce existing overburdened systems?
- Train generalists and family medicine physicians to help meet the need?

BIG IDEA #2:
Family Medicine Physicians Can Be Trained To Provide Comprehensive Medical Care Including Surgery and Procedures*

What others have done

- Australian College of Rural and Remote Medicine
  - "Rural Generalist Surgeons"
  - 24 month fellowship at specified posts
- Canadian National Working Group on Enhanced Surgical Skills
  - "Family Physicians with Enhanced Surgical Skills"
  - 17 modules over 12 months

Our Approach – Advanced Rural Medical and Surgical Training (ARMS)

The goal of ARMS training is to produce Family Medicine physicians who are confident and competent enough to perform or assist in a limited number of important and much needed procedures and surgeries in low-resource settings where access to such services is not available.

John Peter Smith Hospital
Fort Worth, TX

- Tertiary care county safety-net hospital
- Large residency program (22 residents per class)
- Length of training pilot and P4 training group
- Level 1 trauma center

BROAD SKILLS (FM)

SPECIFIC SETTING
(RURAL VS GLOBAL)

Our beginnings

- 3 second-year (PGY2) residents
- No faculty yet committed
- An optional additional year of training (P4 program and length of training pilot through ACGME)
- A tertiary care county (tax-payer supported) hospital
- Lots of pathology

Our program now

- 3 family medicine residents (PGY-4)
  - 1 plans for full-time rural practice with intermittent short-term global health practice
  - 1 plan for rural practice before moving to full-time global health practice
  - 1 plans to practice full-time global health

- 2 year longitudinal training over 3rd and 4th years

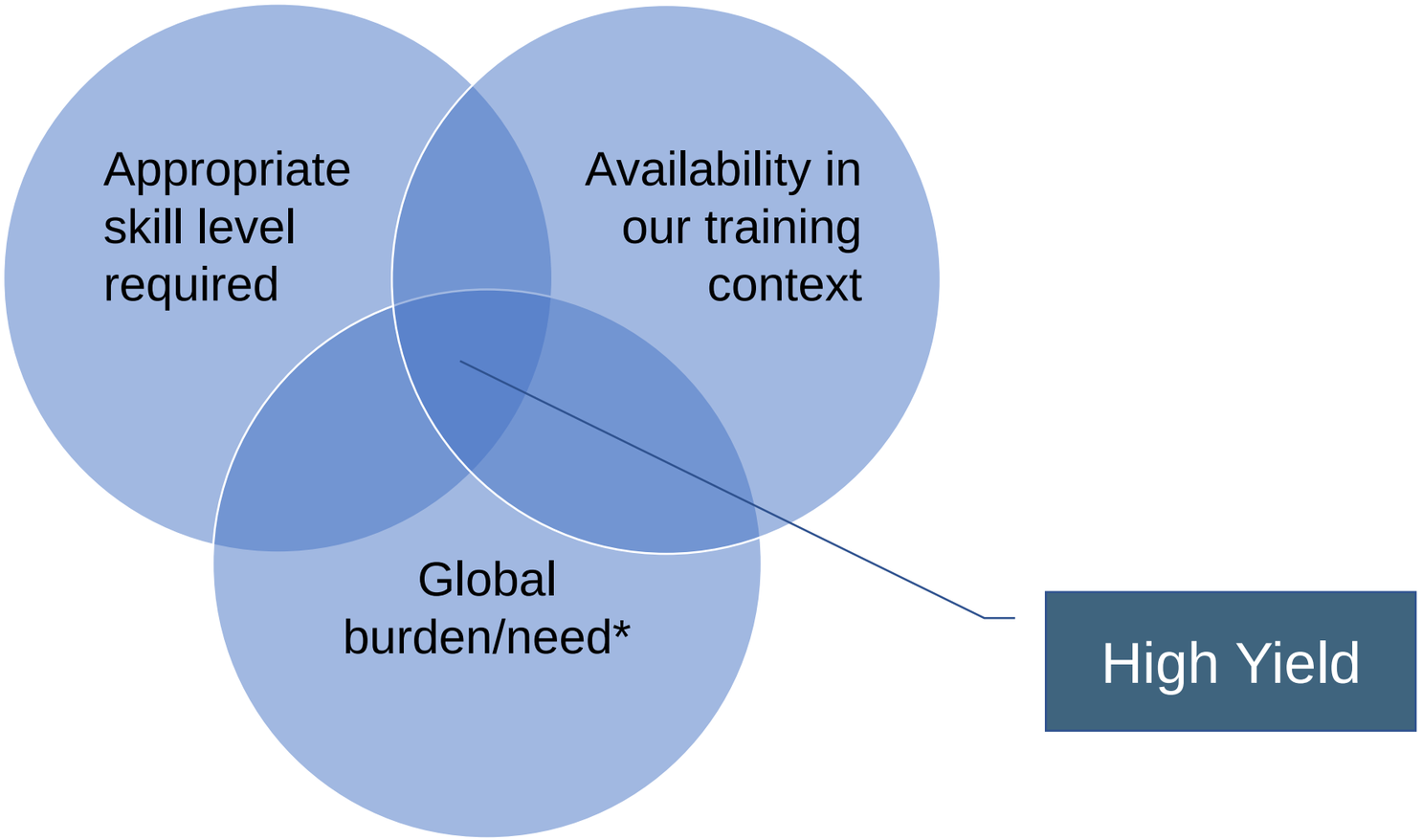
Organizational structure

- Training is longitudinal over 4 years but most of curriculum occurs over the 3rd and 4th years of residency

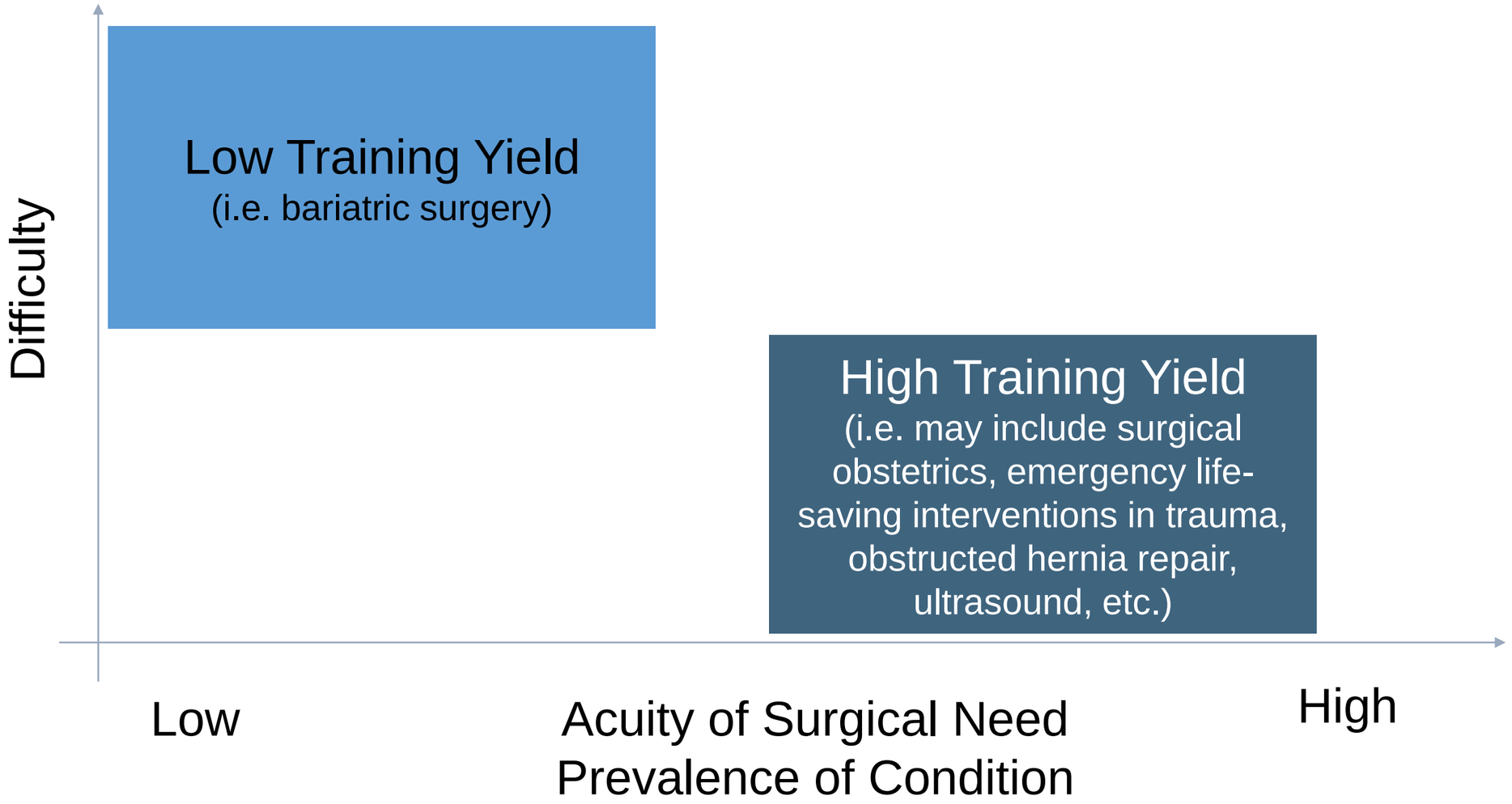
- Areas of emphasis (AOE)
  - Maternal Child Health
  - ARMS
  - Street Medicine
  - HIV
  - Adolescent health

- Fellowships
  - Geriatrics
  - Sports Medicine

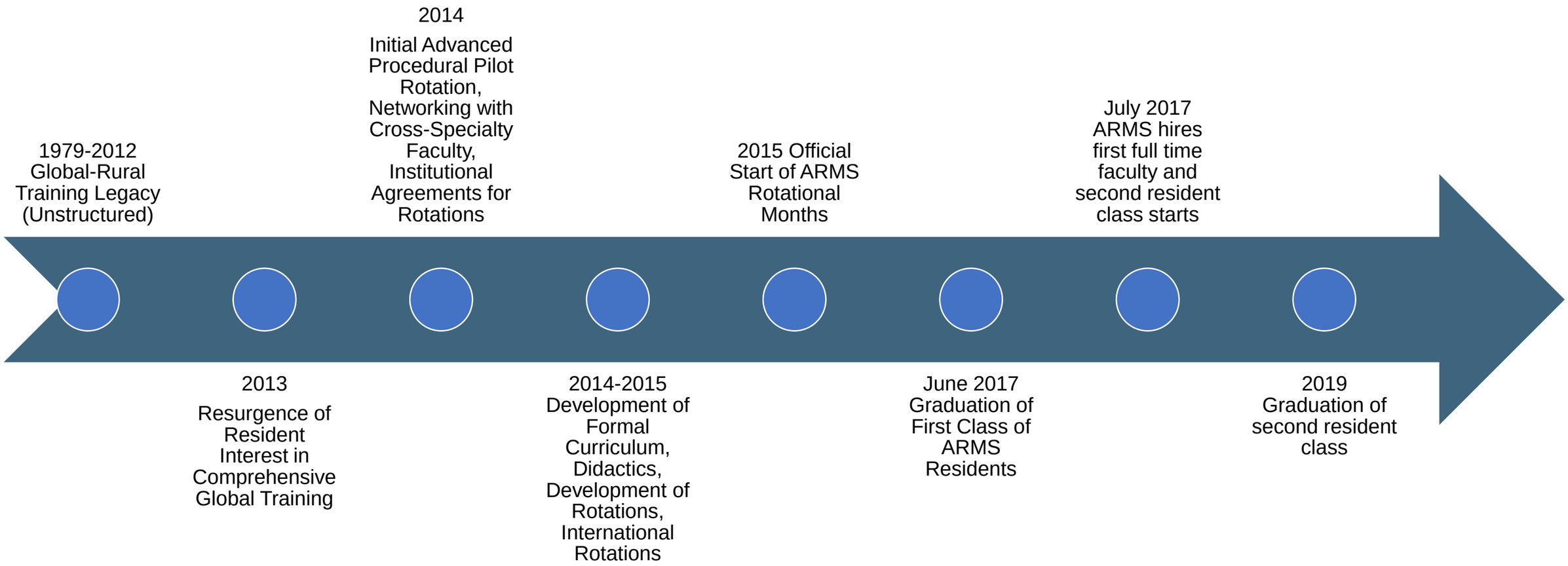
Where do we focus?



Competencies Selection



Program Development Timeline



Stakeholders

- Family medicine department and residency director
- Family medicine residents
- General surgery faculty and residents
- Specialty surgeons (urology, plastic surgery, vascular surgery, colorectal surgery, etc.)
- Other local providers within physician group/hospital system
- Clinical staff
- OR staff
- Hospital administrators
- EMR support staff

Our Model for Effective Communication with Stakeholders

- Diligently avoid turf battles
- Clearly state purpose of program
- Closed-loop communication for referrals
- Be available
- Flexibility

Curriculum

Surgical

- General Surgery, Trauma, Plastic Surgery, Urology, SICU, Orthopedics
- Obstetrics in first two years of training at home institution and abroad thereafter
- Weekly Didactics

Medical

- MICU, NICU, PICU, FM Core, Ultrasound, Anesthesia, ID, ER
- Weekly Didactics

ARMS Curriculum

Rural & Global

- 5 months of international rotations (over 4 years)
- Weekly Didactics
- ATLS, AWLS, ALSO, ABLS, NRP, PALS, ACLS, BLS

Leadership & Ethics

- Resident responsibility for pathology watchlist, complications
- Monthly complications discussion
- Leadership Modules
- Ethics Modules

Outpatient Clinic

- **International Health Clinic**
  - Coordination with Refugee Resettlement and County Health
  - See recent or former refugees in residents' continuity clinics
- **ARMS clinic**
  - Pre-op and post-op only
  - Surgical or procedural consults
  - Staffed by Family Medicine or General Surgery faculty
- **General surgery clinic**
  - Staffed by General Surgery faculty
- **Procedure clinics**
  - Booked directly or after being seen in pre-op clinic
  - Staffed by family medicine faculty

Referral System

- **EMR-Based referrals**
  - Developed a referral pathway within our EMR to accept referrals from providers across our entire county health system
- **Intra-departmental open scheduling**
  - Primary care physicians can also simply schedule their patients to follow-up in the ARMS clinic for their next appointment

Referral System

- **Advantages**
  - Multi-disciplinary team within the family medicine resident clinic improves access to surgical consultation for primary care providers and their patients
  - Improved patient access systemically for minor issues: skin tags, skin lesions, joint injections, colposcopy, ultrasounds, etc.
  - Ideal for closed-loop feedback and communication between medical teams
- **Disadvantages: Separate, Unique Referral = Separate, Unique Clinic**
  - Separate referral creates confusion about ARMS scope as a service at times
  - Separate clinic instills false sense of need for compartmentalization of patient's issues for trainees

Curriculum Development
Minimum necessary components

- Personnel
  - General surgeon or surgery trained FM
  - 1 other faculty (FM or other primary care)
- Access to appropriate patient population/pathology in these areas:
  - Obstetrics
  - Surgery
  - Endoscopy
  - Dermatology
  - Trauma/ICU
- Institutional support
  - Appropriate supervision guidelines
  - OR time
- Training program buy-in
  - Scheduled didactics
- Interested residents*

Curriculum Development
Beneficial Elements

- Personnel:
  - Wound care specialist/Plastic surgeon
  - Orthopedic surgeon
  - Dermatologist
  - Urologist
  - Obstetrician
  - Trainer skilled in ultrasound
- Equipment:
  - Ultrasound

Richard Wikoff, MD FACS
General Surgery
Surgical Director - ARMS

My Role

- Teach ARMS residents
  - Surgical technique and basic procedures
  - Outpatient clinical evaluation and management
  - Inpatient clinical evaluation and management
- Teach General Surgery Residents Robotic Surgery

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  - **Outpatient clinical evaluation and management**
  - Inpatient clinical evaluation and management
- Teach General Surgery Residents Robotic Surgery

My Goal

My Goal

Provide the ARMS residents with a **broad set of good surgical skills** and understanding of how to do a basic subset of procedures, with exposure to more complex procedures, so that when they get to their ultimate destination they can **complete their training based upon what they are actually going to do**, using local techniques and local resources.

I am **NOT** trying to train general surgeons. I do not have enough time to do that.

BIG IDEA #3: Scope is very important

Challenges

Be Non-Threatening

Be Non-Threatening

- Surgery staff/faculty
- Surgery residents
- Nursing and technicians

“But family medicine doctors should not be doing these things.”

- Quality and annual volume
- Training is insufficient
  - Our residents meet ACGME’s minimum requirement for General Surgery residents in the procedures they are performing

Common Objections Continued

- Dealing with complications
  - Patient selection and scope are critical components of training
  - Our residents get exposure to many different areas of surgical care in order to be better prepared to handle complications
- Credentialing?

Need Buy In

- General Surgery
- Orthopaedic Surgery
- Urology
- Plastic surgery

- OB/GYN

- Family practice

What’s in it for them?

Residents?

Differences in Approach Between Resource Rich and Resource Poor

A trend away from open cases

A trend towards robotic and advanced laparoscopic cases

Use of expensive disposables like GI staples, harmonic scalpels, advanced bipolar devices, and even mesh

Barriers - Curriculum

- Developing appropriate focus
  - Time constraints
  - Varied interests among trainees
- Access to certain procedures/pathology can vary

Residents Start 3rd Year with No Surgical Skills

We are fixing this

The Importance of Teaching

- Residents are given opportunities to teach their peers as often and as early as possible.
  - Procedure clinics
  - OR
  - Didactics (cases, peer teaching, etc.)
  - Lectures for residency program at large

General Family Medicine Procedures

Arterial lines
Audiometry
Central lines
Colposcopy
EKG
Lesion and mass excisions
Intubations
Joint Injections
Foot care
Paracenteses
Pap smears
Pulmonary function testing/spirometry
Skin/punch biopsies
Splinting/casting
Suturing lacerations
Thoracentesis
Ultrasound imaging
Tympanometry
Vasectomy
Deliveries/C-sections*
IUDs/Nexplanon/EMBs

Family Medicine Procedures - ARMS

Anal disease (fistulas, hemorrhoids, fissures, abscesses)
Amputations
Burns*
Colonoscopy
Cystoscopy
Dilation and curettage
EGDs
Extensor tendon repairs
Excision of masses
Inguinal hernia repairs
Laparoscopic cholecystectomies
Skin cancer management
Skin grafts
Umbilical hernia repairs
Ventral hernia repairs
Wound care

Curriculum – Monthly Overview

Competency Area	Duration
Surgical	12 months, some longitudinal
Obstetrics & Gynecology	6-7 months, some longitudinal
International and/or Rural	Up to 5 months
Intensive Care	Up to 8 months
Other Competencies & Electives (outside FM-Core)	Up to 3 months, some longitudinal

Weekly schedule

	MON	TUES	WEDS	THURS	FRI	SAT	SUN
	Rounds	Rounds	Rounds	Rounds	Rounds	Rounds	
AM	OR CASES	OR CASES	International Health Clinic	General Surgery clinic	ENDO/ OR CASES	ORTHO CALL	OFF
PM	OR CASES	OR CASES/ Didactics*	Maternal Child Health or ARMS Didactics	Ultrasound Procedure clinic	ARMS CLINIC	ORTHO CALL	OFF

Curriculum

- Textbook: Greenfield's Surgery Scientific Principles and Practice. 6th edition. Michael W Mulholland.
- Primary Surgery
- Ultrasound models and training
- Tropical medicines cases
- Quarterly workshops
  - Bowel anastomoses
  - Dental extractions
  - Advanced suturing

Barriers – from a trainee's perspective

- Learning curve - "I feel like I started over as an intern when I started this program"
- Credentialing – "can I convince people to let me do these things?"
- Work-life balance – both as a trainee and after graduation

Results

- 6 program graduates
- All are participating in global health seasonally
- 3 intend to practice in an international setting full-time

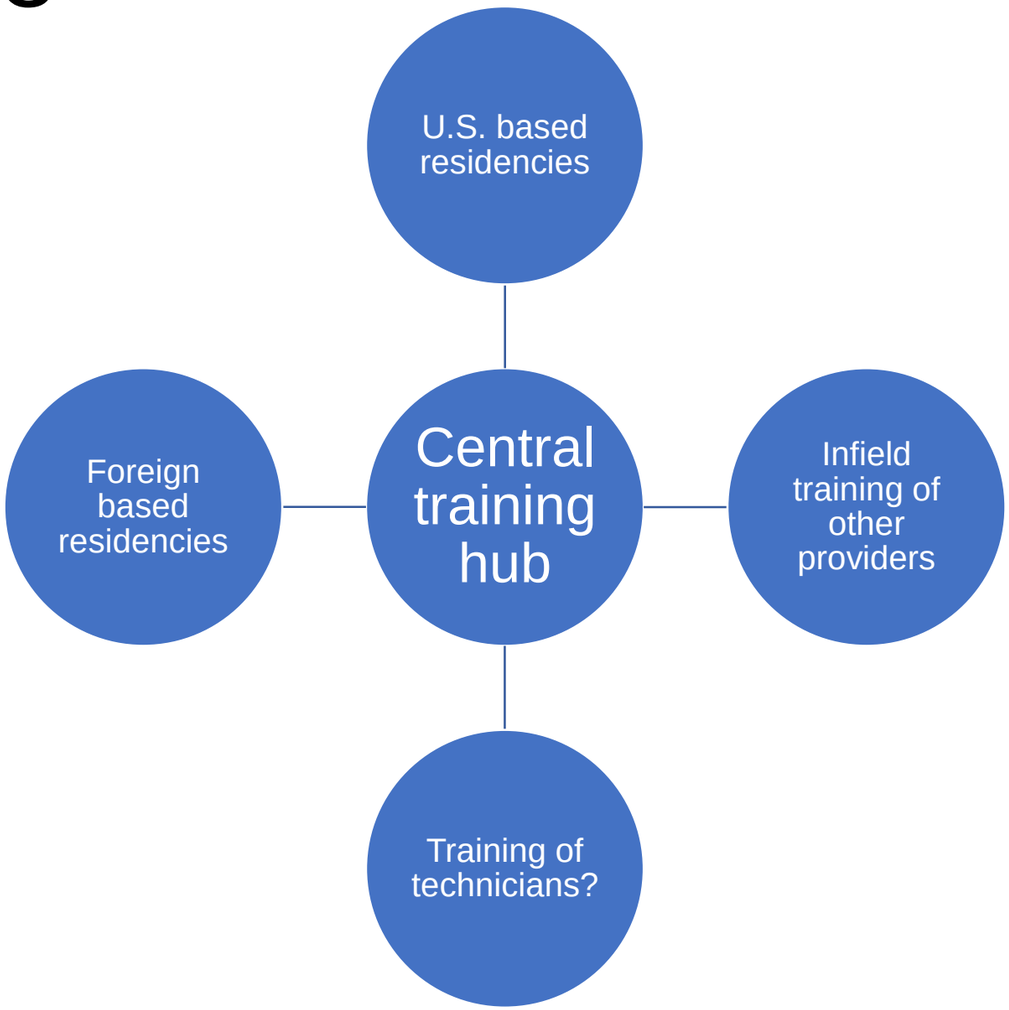
	Global health	Rural health	Involved in GME
Charlie Cassidy, MD, JD	☑	☑	
Shivum Agarwal, MD	☑	☑	☑
Stephen Twyman, MD	☑		☑
Sonika Momin, MD	☑	☑	☑
Kevin Melgren, MD	☑	☑	
Zhanna Winchell, MD	☑		☑

Ongoing Evaluation

- Resident/faculty surveys
- Procedure/surgery logs
- Resident/faculty evaluations including assessment of procedural skill set, medical knowledge, etc.
- Post-graduation credentialing and procedure logs

The Future

- Uniformity of curriculum/training requirements
- Accreditation
- Training of trainers



Summary

- Big ideas
  - Surgery and procedures are an integral part of comprehensive care
  - Generalists can help meet this need
  - Appropriate scope and boundaries are essential
- There are many barriers and challenges to training primary care trainees in these areas but these can be mitigated and/or overcome through collaboration

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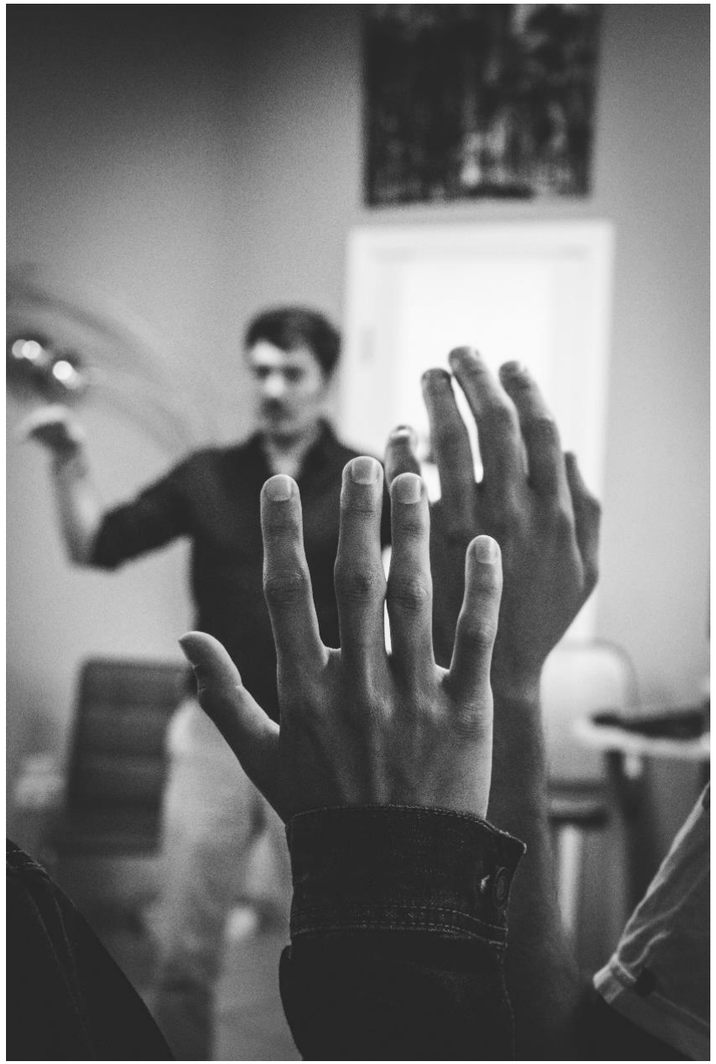

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