Planning your CBME curriculum

Teaching and Learning in CBME

ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA

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Introductions

- What I do?
- What do you do?

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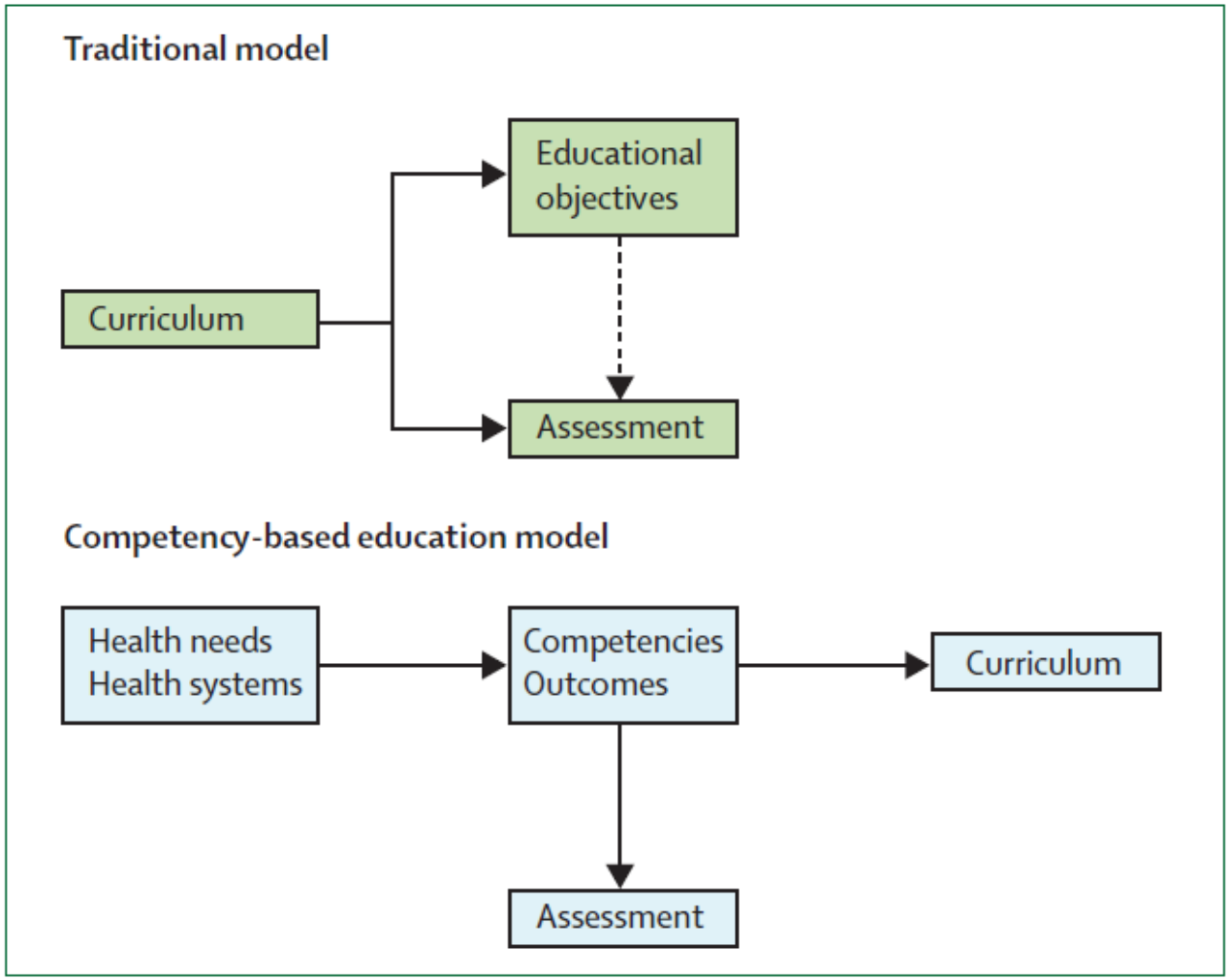
What is Competency-Based Medical Education?

A model to prepare physicians for practice that is:

- oriented to outcomes desired in physician;
- based on patient needs;
- based on the needs of the learner, with more accountability and flexibility; and
- focused on achieving skills and performance, instead of time-spent in training.

Adapted from: Frank JR, Snell L, Dath, D, Sherbino, J, Holmboe ES, et al. Competency-based medical education: theory to practice. Med Teacher. 2010;32:638-45.



Julio Frenk et al, Lancet 2010; 376 :1923-58.

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CBME

- Focus on outcomes :
  - Patient needs drive curriculum
  - Assessment for learning, assessment for progression
- Focus on outcomes (not process)
  - Allows innovation within programs
  - Flexibility for learner
- Time as a resource, not a standard

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The tea-steeping model

B Hodges, Academic Medicine 2010: 85, S34-44

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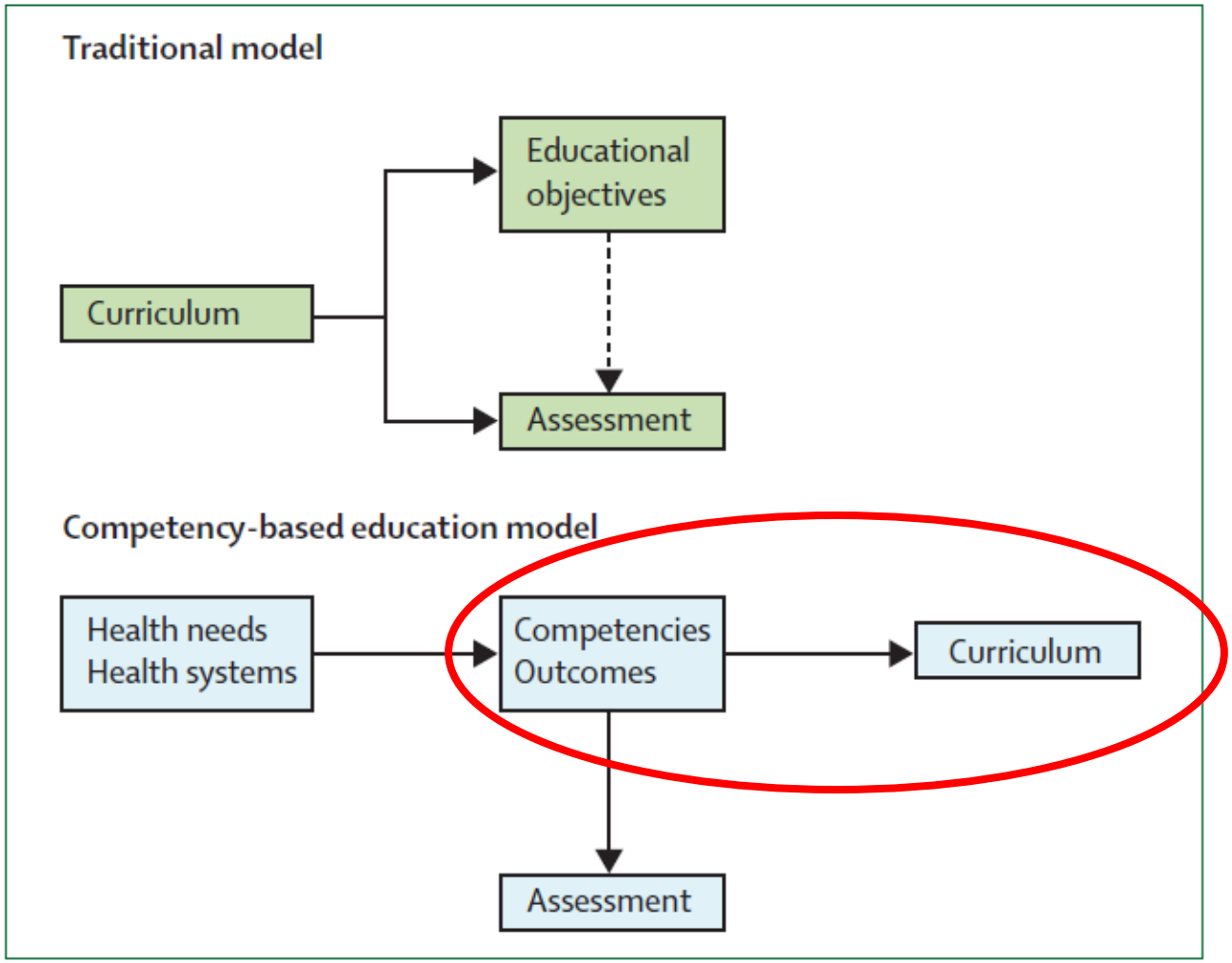
The achievement model



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Core Components of CBME

- Competencies are clearly articulated
- Competencies are arranged progressively
- Learning experiences facilitate the progressive development of competencies
- Teaching practices promote the progressive development of competencies
- Assessment practices support and document the progressive development of competencies

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A day in the life.....

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	WARD			
	[redacted]			59F: ? line sepsis from Hawkesbury
ER			TTS	54M: HD recent exit site infec.Catheter change.fevery NYD?Line infection
7510			PD	80M: PCKD, needs to start RRT, ?PD; from HGH ER, NPO at midnight for cath Sx tues
7510				82M: PRI pt buried PD catheter, CHF – HGH, now better,
7510				81M: Cr 700, high psa, R hydro-mildly better on sat U/S, ceftriaxone, **?rehab vs conval**
7511		ALC	TTS	79F: QCH HD, hypotension, cholecystitis, new pneumonia
7511			*Tx*	*35F: pyeloneph*
7511		ALC	TTS	54F: A/CKD, DN, osteomyelitis, pericarditis, leukocytosis NYD, better on Ancef and Flagyl, **to SCO wed**
7513		ALC	MWF	66F: CHF and pulm. HTN. Weakness falls post D/C, will need rehab, CCH when bed ready
7514			PD	74M: PD cath exteriorization tues, ?D/C wednesday
7515			*TTS*	*59M: fever post PD cath removal*
7515				*59M: AKI, bx Mon, pred 50, Cr better*
7520				78M: NH, dementia, afib, AKI, hyperK, eosinophilia, IVIG for ITP, AIN from cipro?, C.diff
7521			MWF	86F: CKD, dementia, severe RV (1st HD Nov; ICU from Nov-Feb & Mar 11-22 resp failure PEG 20/4, fever22/4
7532		ALC	MWF	88F: cardiorenal syndrome from QCH, now on HD. CHF vs. pneumonia. **refused GAU, HD Sat**
7533			Tx	67F: urosepsis ESBL Klebsiella, hypo, PMHx CHF; LGIB (ASA/warf), C-scope cancelled, home wed
	ICU			
4	[redacted]		SLED	61F, leukemia, MSOF, pnemonia
8			MWF	90M pnemosepsis
12			MWF	53 M NET pancreas, isch bowel, AKI, open abdo wound, HD May 12, 13, 14
13		Med	Tx '72	65F: ?infection, Cr 53, pred/Imuran
24			HD	82F: AKI from Winchester, lactic acidosis, metformin, ?sepsis, HD May 13, 14, 15
27			SLED	40F: DM1, Tx '07; shock- ?adrenal insuff, recurr fever NYD; NSTEMI 20/4, PTLD, CHOP, ritux 16/5
32		Hem	MWF	60F: sepsis – E Coli-empyema, aHUS, PLTs low, pyelo, trach, recurr asp, no SLED Sat/Sun, HD Mon ?line fxn
	CONS-A			
ER	[redacted]	Med		46F: ?active TB
ER		Med	PD	75M: Stroke
5401		Med	TTS	OCDC pt, pneumonia
5405		Med	TTS	weakness
5514		Med	TTS	84F; Septic shock, ascending cholangitis, AKI; was on SLED; IHD #1 11/04
5526		Med	TTS	72M: AKI on CKD central cord syndrome,RRT since Jan 2016, MRSA bacteremia, new line Apr 29
6103			PD	Transferred to STR
6227		Onc		62M: ARF, hyperCa, node bx pending, lymphoma vs. sarcoid. **May need increase in CS**

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- What are they there to do?
- What are they there to learn?
- How is that different for PGY1, PGY3, PGY5?
- What is my role as their teacher/supervisor?

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How does CBME help teaching and learning?

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Clearly articulated

- Competencies required for practice are articulated based on a profile of professional practice

- Specification of learning outcomes promotes focus and accountability

- Social Accountability
- Outcome-based Learning
- Backwards Design

Conscious Incompetence	Conscious Competence
Unconscious Incompetence	Unconscious Competence

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Arranged progressively

- Competencies are organized in a way that leads to a smooth transition to practice.

- A sequential path supports the development of expertise

- Novice to Expert
- Surface & deep approaches to learning

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this chart belongs to:

Sunsational Swim Skills Chart

1. TADPOLE SKILLS

- [ ] · Blow bubbles with mouth on surface
- [ ] · Wet face and head without submersion
- [ ] · Monkey Crawl along wall
- [ ] · Hold on to wall and yell for help
- [ ] · Climb out of the pool
- [ ] · Face in water & hold breath
- [ ] · Float on back with support
- [ ] · Float on front with support
- [ ] · Kick feet on front with instructor support (2 meters)
- [ ] · Assisted jump in water from sitting position, turn grab wall

2. STARFISH SKILLS

- [ ] · Submerge head
- [ ] · Blow bubbles with nose
- [ ] · Kickboard or noodle front kick
- [ ] · Streamline float on front
- [ ] · Float on back
- [ ] · Kick on front
- [ ] · Kick on back with support
- [ ] · Show an understanding of pool safety
- [ ] · Open eyes and retrieve object on step
- [ ] · Roll front to back with assistance
- [ ] · Assisted jump in water from standing, turn grab wall

3. GOLDFISH SKILLS

- [ ] · Kick on back with noodle
- [ ] · Streamline kick on front
- [ ] · Roll from front to back
- [ ] · Independent Jump in & kick back to wall
- [ ] · Kick on front & roll to back with assistance
- [ ] · Kick on front with paddle arms (Face under)
- [ ] · Swim, Float, Swim (kick only)
- [ ] · Answer 2 questions on poolside safety
- [ ] · Float for 10 seconds on back
- [ ] · Pick up object from surface with assistance

4. JELLYFISH SKILLS

- [ ] · Swim, Float, Swim (kick & paddle)
- [ ] · Kick on back with arm paddling
- [ ] · Swim 2 m, turn, Swim back to step/wall
- [ ] · Perform underwater bobs with nose exhalation
- [ ] · Seahorse (tread water action) on noodle
- [ ] · Pick up object from shallow surface
- [ ] · Jump into deep water, kick on back to wall
- [ ] · Big arms on front
- [ ] · Skull on back
- [ ] · Float on back, roll over & find nearest wall

5. SEAHORSE SKILLS

- [ ] · Tread water 5 seconds
- [ ] · Swim on front, turn and kick on back
- [ ] · Pick up an object from deeper surface
- [ ] · Freestyle stroke
- [ ] · Side breathing with assistance
- [ ] · Elementary backstroke
- [ ] · Skull headfirst 2m
- [ ] · Swim Backstroke
- [ ] · Breaststroke arms

6. DOLPHIN SKILLS

- [ ] · Breaststroke legs
- [ ] · Jump into pool, tread water 10s, return to side.
- [ ] · Swim Freestyle with side breathing
- [ ] · Tread water 30 seconds
- [ ] · Forward somersault
- [ ] · Skull headfirst 5m
- [ ] · Swim Breaststroke
- [ ] · Backstroke 1 lap
- [ ] · Dolphin Kick

7. SEAL SKILLS

- [ ] · Swim 2 laps backstroke
- [ ] · Swim 2 laps freestyle
- [ ] · Tread water 30 seconds & 1 lap swim
- [ ] · Retrieve underwater object in deep end
- [ ] · Head first surface dive in deep end
- [ ] · Flip turn
- [ ] · Butterfly

sunsationalswimschool.com

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Core Components

- Assess pts with renal dysfunction and identify who is high risk for progression
- Manage patients with stable CKD
  - Secondary prevention
- Document outpatient consultations

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Appropriate for PGY2?

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Learning experiences

- Learning takes place in settings that model practice, is flexible enough to accommodate variation in individual learner needs & is self-directed.

- Learning through real life experiences facilitates membership into the practice community & development of competencies.

- Situated learning
- Deliberate practice
- Self-regulated learning
- Professional identity development

Break

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Apply CBME as an educator

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Small group work

- Pick one level of learner
  - Hint: early or junior
- Pick one
  - Learning environment
  - Challenge in program
    - Gap in skills
    - Rotation that underperforms
  - Offservice frustration
- What's the desired outcome? What do you want them to **do**?
  - Articulate the competency/task
  - Where does it fit in the progression?
  - What's the right learning experience?

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Report back

- Which learner?
- What's the desired outcome?
- What's the right learning experience?
  - How sequenced?

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Teaching practices

- Teaching is individualized to the learner, based on what is required to progress to the next stage.

- Development of competence is stimulated when students are supported to learn at their own pace and stage.

- Zone of proximal dev't & scaffolding
- Constructive friction
- Learner-centered teaching
- Cognitive apprenticeship

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What are the benefits of cues?

- who dunnit video
- https://www.youtube.com/watch?v=ubNF9QNEQLA

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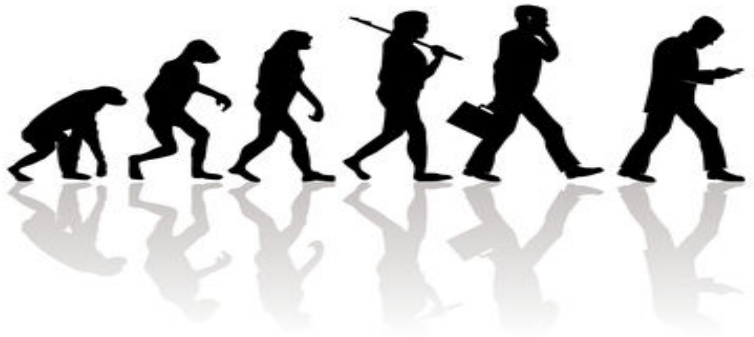
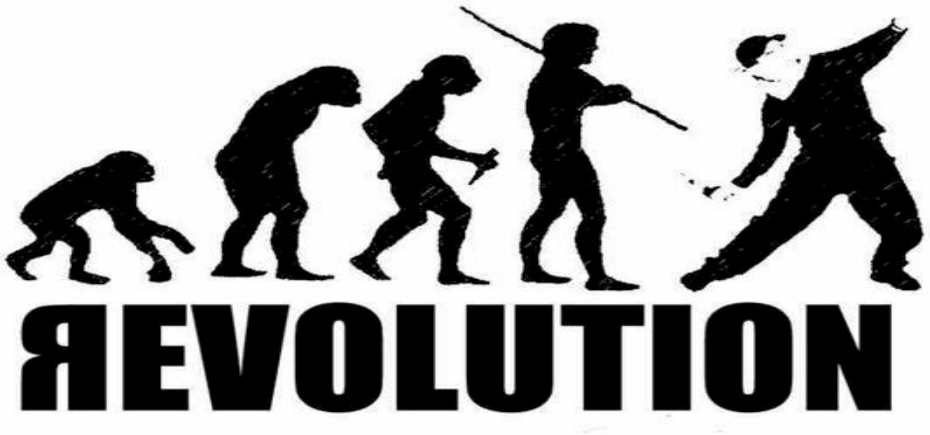
Evolution vs Revolution





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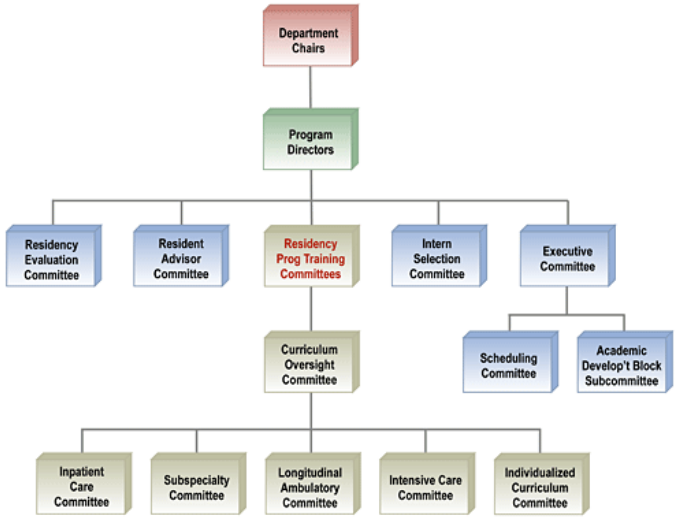
Evolution vs Revolution



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Evolution for the teacher

- Objectives → Task
- Know → Do
- Teach → Coach
- Supervise ↔ Supervise

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Revolution for the educator?

- Explicit articulation of competencies
  - Based on desired societal outcomes
- Deliberate progression
- Selection of learning experiences to facilitate progression

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Competence by Design

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2015	2016	2017	2018	2019	2020
Urology	Neurosurgery	General Surgery	Orthopedic Sx	Dermatology	Colorectal
Anesthesiology	Cardiac Surgery	Plastic Sx	Vascular Sx	Ophthalmology	Gen Surg Onc
IM	Pediatrics	Obs/Gyn	Neuro Path	Diag Rad	Thoracic Sx
GI	Anatomic Path	PMR	Neurology	Medical Genetics	Interventional Rad
Forensic Path	Gen Path	Nuclear Med	Hem Path	Public Health	Palliative Med
SFAC	Radiation Oncology	Psychiatry	Hematology	Peds EM	Pain Med
	Emergency Medicine	Respirology	Peds Hem/Onc	GREI	Developmental Peds
	CCM	Cardiology	Peds Sx	MFM	Neuro Rad
	GIM	Rheumatology	Clin Pharm/Tox	Gyne/Onc	Peds Rad
	Nephrology	Geriatrics	Forensic Psych	ID	Occupational Med
		NPM	Child and Ado Psy	Med Micro	Endo and Met
		CIA	Geriatric Psych	Med Biochem	
			Adolescent Med		