

# Continuity, LICs and Competency-based Education

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# Three contemporary training models

Clinical participation of medical students

Programme A: Context - metropolitan tertiary hospital. Model - block rotation

Medicine	Surgery	O&G	Paediatrics	Rural GP	Psychiatry	Medicine	Surgery	O&G	Paediatrics	Psychiatry
						Urban GP 1 session per week				

Programme B: Context - urban community-based. Model - hybrid (block and longitudinal)

Medicine	Surgery	O&G	Paediatrics	Psychiatry	Specialist ambulatory care clinics
					Emergency medicine
					General practice / Aged care

Programme C: Context - rural towns with local hospital. Model - longitudinal integrated clinical (LIC) placement

Medicine
Surgery
O&G
Paediatrics
Psychiatry
General practice

**Figure 1** Three contemporary clinical education programmes. GP = general practice; O and G = obstetrics and gynaecology

# Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LICs)
- Outcomes of Longitudinal Integrated Clerkships (LICs)
- How Longitudinal Integrated Clerkships (LICs) support competency-based medical education

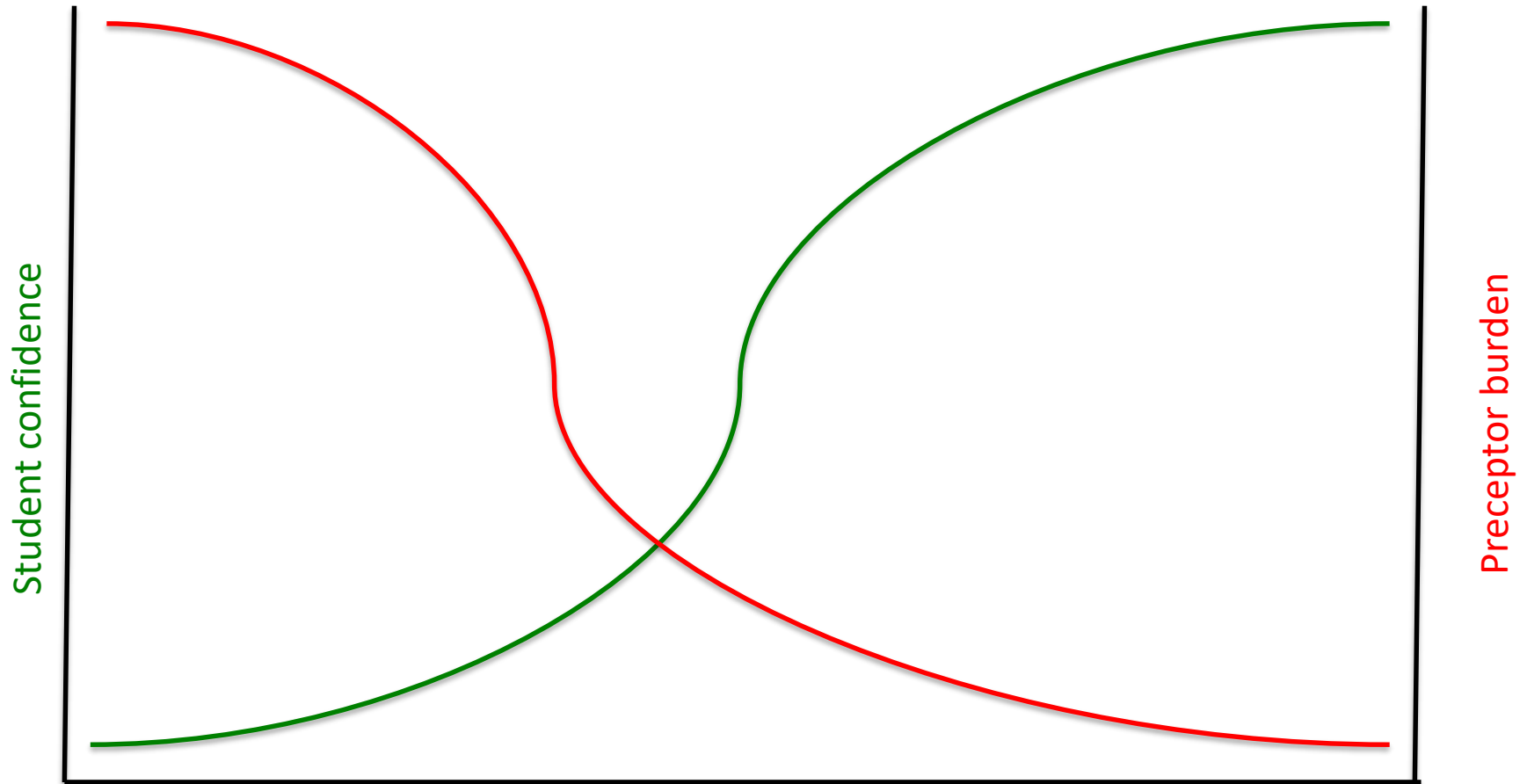
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## Integrated Clinical Immersion – Sample Four Weeks

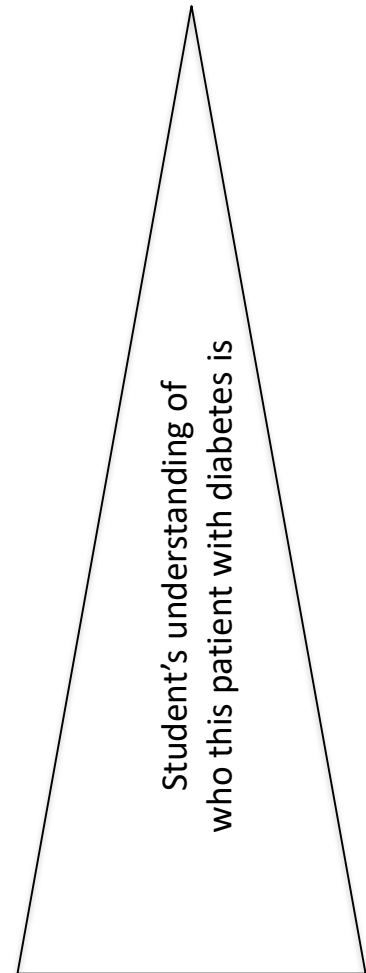
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
A M		FAMILY MEDICINE	INTERNAL MEDICINE	SURGERY CLINIC	PEDIATRICS	SURGERY OR	ER CALL SHIFT
P M		Follow up on Mrs. Graham's labs	PISCES SCHOOL	2:30 appt with Mr. Flores' cardiologist	NEUROLOGY		
E V							
A M	7:00 Round on admitted patient with post call team	FAMILY MEDICINE	9:00 Jupiter Family meeting with hospital ward internal medicine team	HOME VISIT Ms. Sullivan	7:00 Round on admitted patient with post call team	OB/GYN	
P M		ER DAY SHIFT	PISCES SCHOOL	1:00 Neurosurgery consult with Ms. Lee 3:30 pediatric audiology appt. for Johnny Russell	Follow up Mr. Rubinky's MRI results	PISCES SCHOOL	
E V				ER NIGHT CALL			
A M	ER CALL SHIFT	7:00 Round on admitted patient with post call team	INTERNAL MEDICINE	ANESTHESIA Spine Surgery Module	PEDIATRICS	OB/GYN	
P M		Prepare case presentation for PISCES school	PISCES SCHOOL		PSYCHIATRY	1:00 Join traditional students at surgery skills workshop	
E V		ADULT URGENT CARE					
A M		FAMILY MEDICINE	INTERNAL MEDICINE	SURGERY CLINIC	8:30 Meet with faculty advisor for monthly check in	SURGERY OR	7:00 Round on admitted patient with post call team
P M		Wound check for Mr. Baker	PISCES SCHOOL	PEDS ACUTE CARE	ORTHO CLINIC		
E V						PEDS NIGHT CALL	

# Longitudinal trajectory of a 12-month LIC



# Learning map for the year – a patient with diabetes

- First few encounters
  - Gathering and documenting clinical information
- Early focus
  - Increasing emphasis on diagnostic skills
- Mid-year focus
  - Increasing emphasis on management skills
- End of the year
  - Highlight system of case and quality issues



# Continuity in LICs

1. With curriculum
2. With peers
3. With site and staff
4. With preceptor
5. With patients



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LICs improve:



LICs improve:



# LICs improve:



# The Harvard Medical School Cambridge Integrated Clerkship Satisfaction

How Satisfied Have You Been With ....? (1- not at all, 6 - extremely)			
	CIC (n=27)	CON (n=40)	P
The Amount of Mentoring You Have Received from Attendings	5.26	3.15	<0.001
The Atmosphere for Learning You Have Encountered	5.59	4.03	<0.001
The Quality of Feedback You Have Received	4.37	3.33	0.002
The Quality of Your Clerkship Overall	5.38	4.60	<0.001

# The Harvard Medical School Cambridge Integrated Clerkship Content Knowledge: Shelf Exam Scores

	CIC 1-3 (n=27)	CON 1-3 (n=40)	P
Ob/Gyn	73.70	71.75	0.375
Pediatrics	80.60	74.79	0.008
Surgery	76.85	73.32	0.098
Psychiatry	80.22	71.05	0.001

Hirsh and Ogur 2007

## LICs improve the patient experience - 1

“She [the student] has basically been managing me since I first got out of hospital...she was *another doctor* but she’s been with me through my whole case with my treating GP...and every time he (GP) would come and consult and it saves a lot of time it’s a better quality of *service, cos I was getting two doctors for the price of one.*”

—UoW rural LIC patient [22]

## LICs improve the patient experience - 2

- *“Dealing with the ordeal of having cancer and going through treatment at a hospital like UCSF, which is very busy, can be kind of overwhelming at times. I kind of looked to him as a friendly face, sort of a liaison between the doctor and the patient.”*
- —UCSF LIC patient 504 [15]



## LICs improve the patient experience - 3

- “I find medical students are just...they’re willing to learn...they’re just a lot more aware of *the patient I think sometime. I met her at the beginning of my pregnancy. I went through* a few things...you’d come to visit again and she’d be there. *It was kind of like she was* growing with me...if that makes sense.”
- —UoW rural LIC patient [22]

# LICs promote strong student-preceptor relationships

**Table 6.** Preceptor perceptions of medical students skills, abilities, and interests, Denver Health LIC, 2014 (*N* = 28).

In general, how well do you know the medical students you teach?	Percent ( <i>N</i> )		Mean (SD) (scale 1–4)		<i>p</i> Value
	Baseline	End of LIC	Baseline	End of LIC	
Limited knowledge	3.6 (1)	0.0 (0)	2.82 (0.85)	3.39 (0.68)	.004
General Knowledge	35.7 (10)	10.7 (3)			
Enough to Tailor	35.7 (10)	39.3 (11)			
Enough to Tailor and Mentor	25.0 (7)	50.0 (14)			

LIC: longitudinal integrated clerkship; *N*: number; SD: standard deviation

<sup>a</sup>Item stem: in general how well do you know the medical student/LIC students you teach/taught? Four-point scale: 1 = I have a limited knowledge of a student's skills, 2 = I have a general knowledge of a student's skills, 3 = I know them well enough to tailor instruction, and 4 = I know them well enough to tailor instruction and provide mentorship.

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# LICs support competency-based education

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## Van Melle's Core Components of CBME

1. Competencies required for practice are clearly articulated.
2. Competencies are arranged progressively.
3. Learning experiences facilitate the progressive development of competencies.
4. Teaching practices promote the progressive development of competencies.
5. Assessment practices support and document the progressive development of competencies.



# LIC preceptors use more advanced teaching approaches

**Table 5.** Frequency and mean rating of teaching techniques utilized, Denver Health LIC, 2014<sup>a</sup> (N = 28).

	Percent (N)		Mean (SD) (scale 1–5)		p Value
	Baseline	End of LIC	Baseline	End of LIC	
	% Using technique at least 75% of the time	% Using technique at least 75% of the time			
Techniques used less frequently in the LIC compared to prior teaching roles					
Assign readings or topics for investigation	67.9 (19)	25.0 (7)	3.93 (0.94)	2.64 (1.28)	<.001
Review basic science related to clinical decisions	67.9 (19)	28.6 (8)	3.86 (0.80)	2.96 (1.14)	<.001
Have students observe you with patients	75.0 (21)	35.7 (10)	4.00 (0.90)	3.18 (1.12)	.005
Observe students with patients	60.7 (17)	25.0 (7)	3.68 (1.06)	3.00 (1.02)	.004
Techniques used more frequently in the LIC compared to prior teaching roles					
Ask questions to promote thinking	35.7 (10)	50.0 (14)	3.11 (1.03)	3.61 (0.88)	.02
Provide feedback to students	14.3 (4)	53.6 (15)	2.46 (0.84)	3.64 (0.87)	<.001
Provide students practice in clinical reasoning	21.4 (6)	60.7 (17)	2.68 (1.19)	3.89 (0.92)	<.001
Techniques with no change					
Teach procedural skills	14.3 (4)	21.4 (6)	2.61 (1.03)	2.50 (1.11)	.59

LIC: longitudinal integrated clerkship; N: number; SD: standard deviation

<sup>a</sup>Item stem: indicate the frequency with which you currently use each of the following commonly used activities when you teach medical students. Five-point scale: 1 = Never use, 2 = Use 25% of time, 3 = Use 50% of time, 4 = Use 75% of time, and 5 = Always use.

Snow et al Faculty experience and engagement in a LIC Medical Teacher 2017; 39: 527-534

# Curiosity-driven learning

1. Clinical medicine, including the presentation, differential diagnosis and management of the conditions seen in practice
2. The basic science foundations of clinical findings, disease pathogenesis, evidence-based medicine and treatments
3. Emotional and psychosocial issues (ours and the patients')
4. The clinical microsystem, community resources and barriers and the larger US health system

Leavitt and Cooke The Clinical Teacher 2011; 8:93-96.

# General Patient Care in an Integrated Model



- AB: 63 year old established patient in my practice w/ remote HD, ADPKD, renal failure on PD

Events over year: incarcerated hernia in exp lap incision, new Dx NSC lung cancer

Learning points: molecular basis of cyst formation, giving bad news, interpretation of isolated prolonged aPTT, cross-specialty collaboration

- MM: 40 year old with spina bifida, chronic pain, depression, and poly-substance abuse referred from neurology in September for primary care
- Events over year: Doctor-shopping, suicide attempt, residential rehab
- Learning points: Embryology of neural tube defects, folate and methylation hypothesis, principles of pain management, pharmacology of buprenorphine, setting limits and managing boundaries

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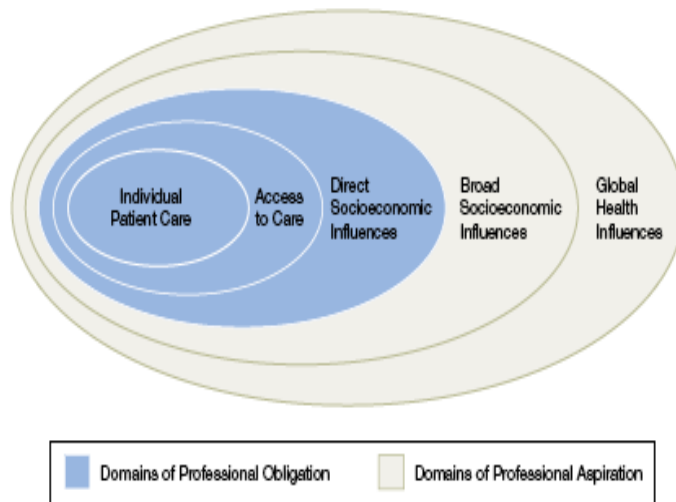
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# Integration of the roles of a physician

**Figure.** Model of Physician Responsibility in Relation to Influences on Health



The ways in which socioeconomic factors influence individual patients' health are shown in expanding domains, depicting the proximity of each to physicians' core responsibility for patient care. Physicians have professional obligations to promote access to care and address socioeconomic factors that directly influence individuals' health (eg, smoking, road safety, interpersonal violence, housing conditions that cause disease), according to evidence of illness causation and feasibility of physician action. Aspirations for improving broader health determinants (eg, local or global disparities in income, education, or opportunity) are laudable, but physicians' responsibilities in these domains may not be sufficiently different from those of other citizens for them to be recognized as professional obligations. As evidence changes, however, issues may move from one domain to another.

- Physician-citizen, scientist, leader-manager, policy maker-advocate
- Areas of concentration
- Residency – Pathways

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Questions and comments