

School of Medicine
University of Dundee

Longitudinal Integrated Clerkships- a new model of medical education ?

Maggie Bartlett, James McMillan and Neil Merrylees

SMEC 27.4.18



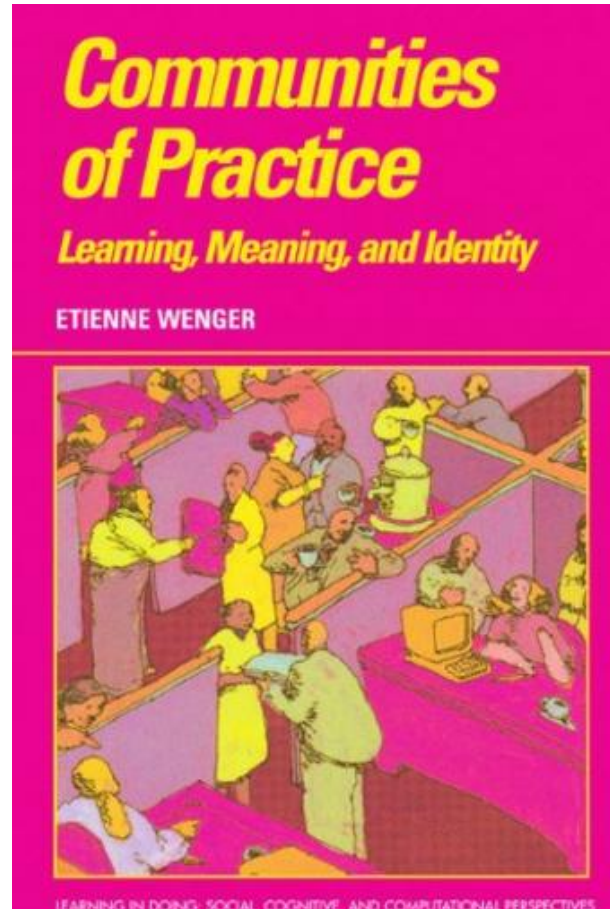


Some educational theory...

Dewey...Flexner... Osler... Knowles...



Roles and relationships





Longitudinal Integrated Clerkships

Norris et al *Academic Medicine*. 2009; 84 (7): 902-907

Students participate in

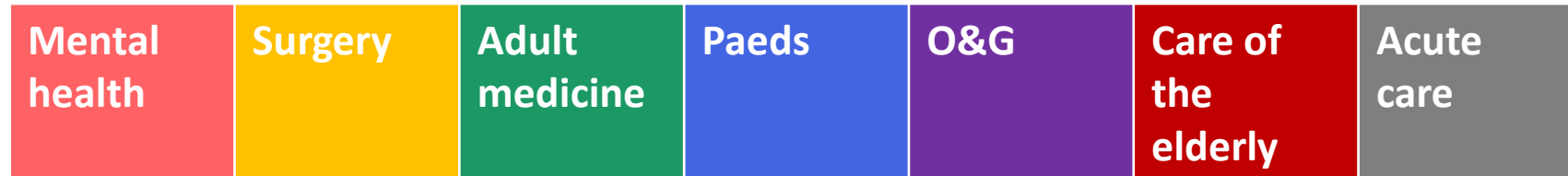
- the comprehensive care of patients over time
- continuing learning relationships with patients' clinicians

The majority of the core curricular competencies are met across multiple disciplines simultaneously

The organizing principle is continuity

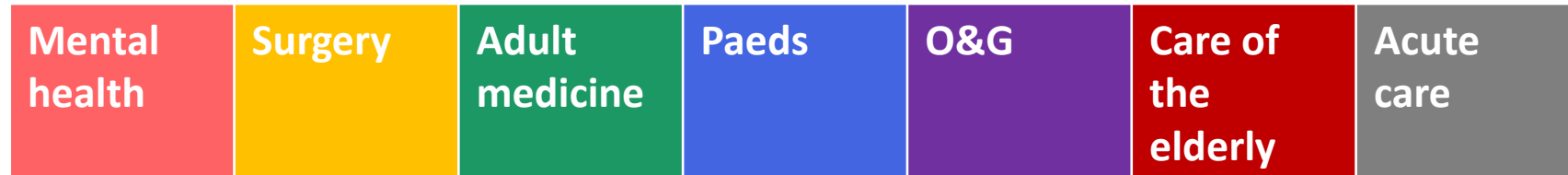


Block based curriculum





Block based curriculum





Mental health

Surgery

Adult medicine

Paeds

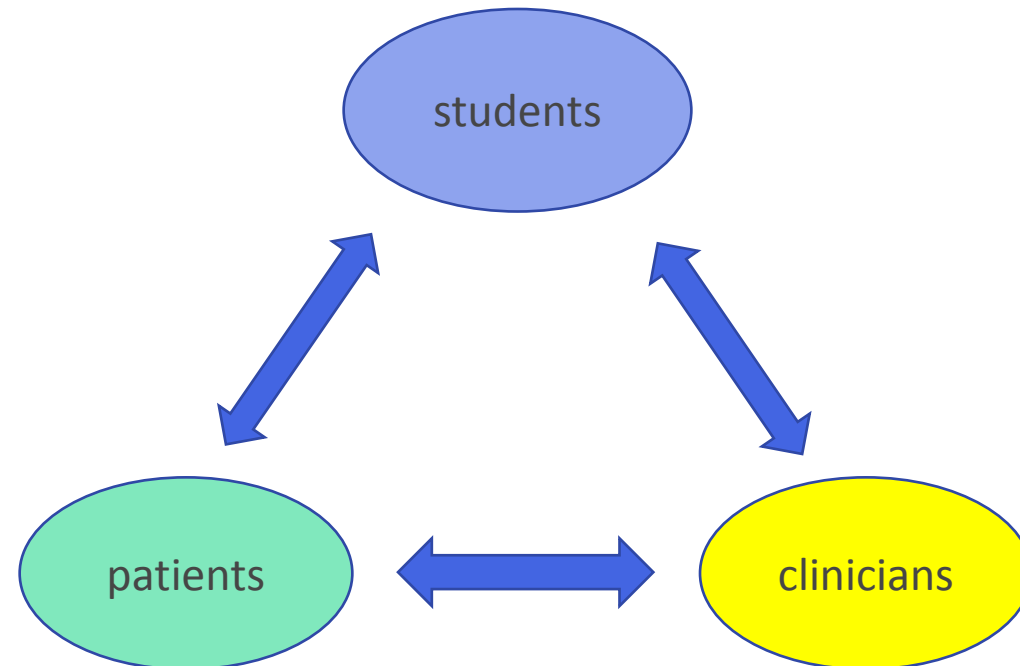
O&G

Care of the elderly

Acute care

Integration of disciplines
'The unit of integration is the patient'

Relational learning, social learning systems, co-construction of knowledge, transformative learning ... and symbiosis

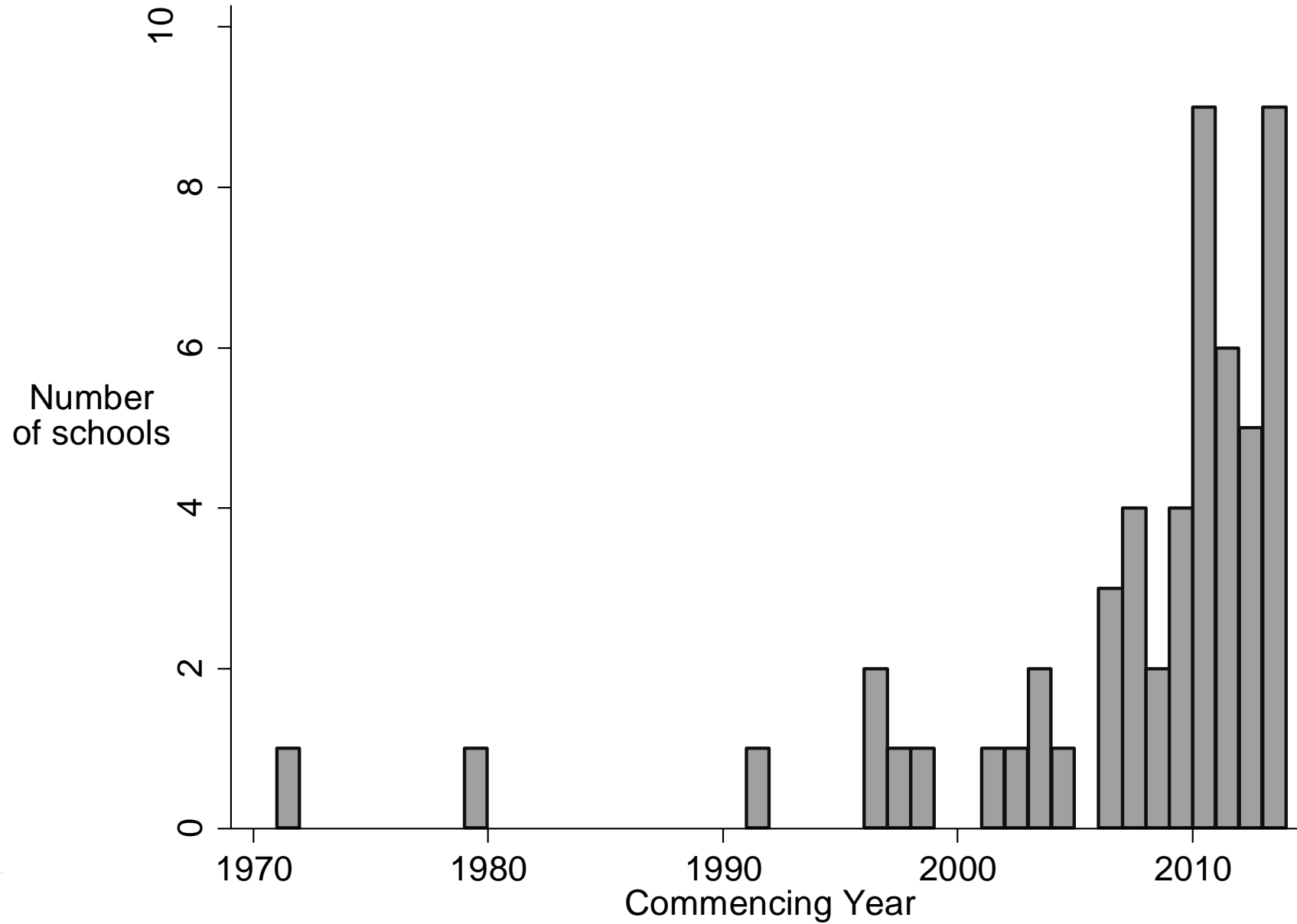




History and Geography



Numbers of LICs by decade worldwide:
54 in 2016



longitudinal integrated clerkships

2016

A typology of longitudinal integrated clerkships

Paul Worley,^{1,2} Ian Couper,³ Roger Strasser,⁴ Lisa Graves,⁵ Beth-Ann Cummings,⁶ Richard Woodman,⁷ Pamela Stagg⁸ & David Hirsh^{9,10} on behalf of The Consortium of Longitudinal Integrated Clerkships (CLIC) Research Collaborative

CONTEXT Longitudinal integrated clerkships (LICs) represent a model of the structural redesign of clinical education that is growing in the USA, Canada, Australia and South Africa. By contrast with time-limited traditional block rotations, medical students in LICs provide comprehensive care of patients

schools, seven countries and over 15 000 student-years of LIC-like curricula.

RESULTS Wide variation in programme length, student numbers, health care settings and principal supervision was found. Three distinct typological pro-

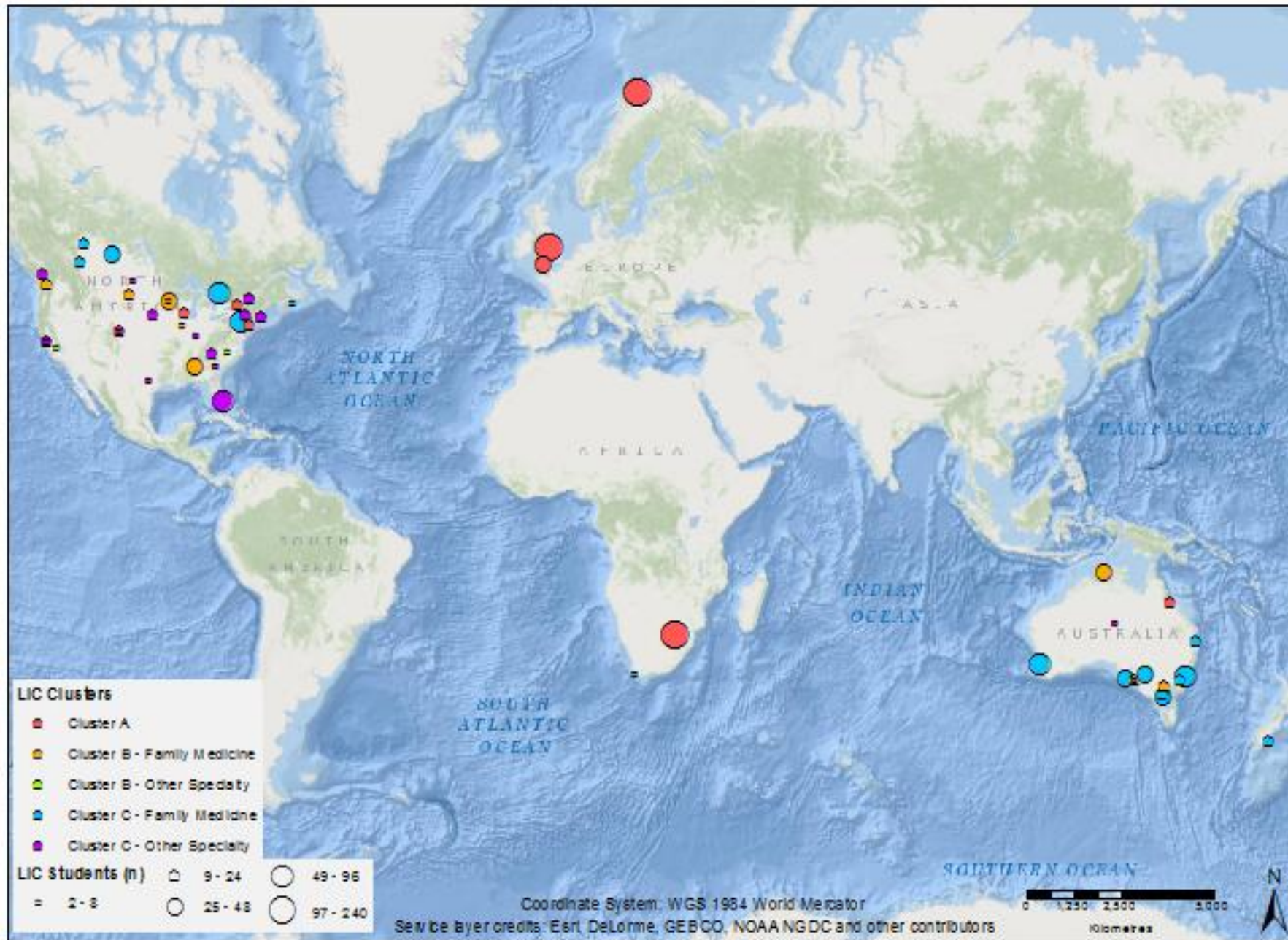


The ABC of LICs

Amalgamative Clerkships (9)

Blended LICs (11)

Comprehensive LICs (34)





The Practicalities



LICs - The Practicalities

A clinical 'home'

Outreach or Inreach ?



TREND ARTICLES

Development of a longitudinal integrated clerkship at an academic medical center

Ann Poncelet^{1*},
Karen E. Hauer³,
Lindsay Mazotti⁸,
Lowell Tong⁷, M



Andy J. Lai³,
i⁶,
son⁴



Components

- Continuity of long term care across specialties/services – *key patients*
- Continuity in acute illness – *acute care ‘bursts’*
- White space – to respond to learning needs arising from patients and to follow them into care episodes
- Planned learning
- Assessments



'Key patients' - examples

Paeds

- A child with an acute illness needing admission
- A child with a long term condition
- A child with feeding difficulties

Medicine

- A patient with delirium
- A patient with multimorbidity needing polypharmacy
- Two/three patients with a long term condition
- Two/three patients with an acute condition needing admission
- A patient with a progressive neurological condition



Typical week

	early morning	morning	afternoon	evening
Monday	Follow up patients	GP consulting/visits/patient follow up in practice		
Tuesday	GP consulting/visits/patient follow up in practice			
Wednesday	Follow up patients	GP consulting	Patient follow up/self directed learning (may involve specialty clinic attendance)	
Thursday		Tutorial with regional tutor	Patient follow up/self directed learning (may involve specialty clinic attendance)	
Friday	Follow up patients	Specialty clinic attendance	Patient follow up self /directed learning (may involve specialty clinic attendance)	



'Acute' weeks

	early morning	morning	afternoon	evening
Monday	Follow patients on wards	GP		
Tuesday	GP		Self directed learning	Acute take
Wednesday	Acute take patient follow up			
Thursday	Acute take patient follow up	Tutorial with regional tutor	GP	Acute take patient follow up
Friday	Patient follow up	Self directed learning		



Week following an acute week

	early morning	morning	afternoon	evening
Monday	Follow up patients	GP consulting/visits/patient follow up in practice		
Tuesday	GP consulting/visits/patient follow up in practice			
Wednesday	Follow up patients	GP consulting	Patient follow up/self directed learning (may involve specialty clinic attendance)	
Thursday		Tutorial with regional tutor	Patient follow up/self directed learning (may involve specialty clinic attendance)	
Friday	Follow up patients	Specialty clinic attendance	A&E 'shift'	



Other activities/planned learning

Specialist Tutorials – for example

- Radiology
- Pathology
- Fluid balance
- Safeguarding
- Ethics



Do LICs work ?



Outcomes of longitudinal integrated clinical placements for students, clinicians and society

Lucie Walters,¹ Jennene Greenhill,² Janet Richards,² Helena Ward,³ Narelle Campbell,⁴ Julie Ash³ & Lambert WT Schuwirth³

'A credible and effective pedagogical alternative to traditional block rotations'

Academic results



- *'at times better, usually no different and rarely poorer'* than block rotations



Cohort study of examination performance of undergraduate medical students learning in community settings

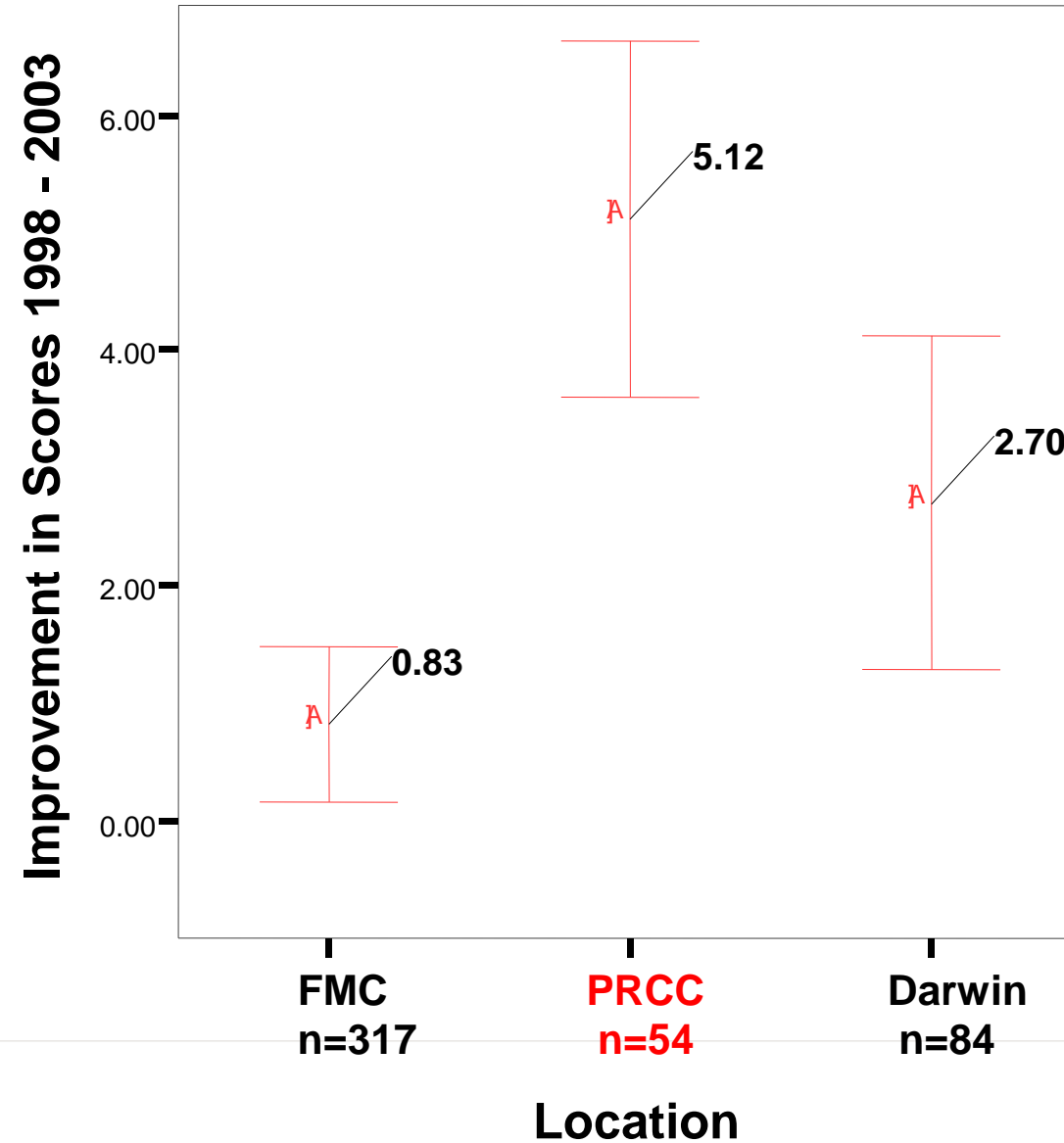
Paul Worley, Adrian Esterman, David Prideaux

BMJ May 2004



Examination Performance Y2-Y3

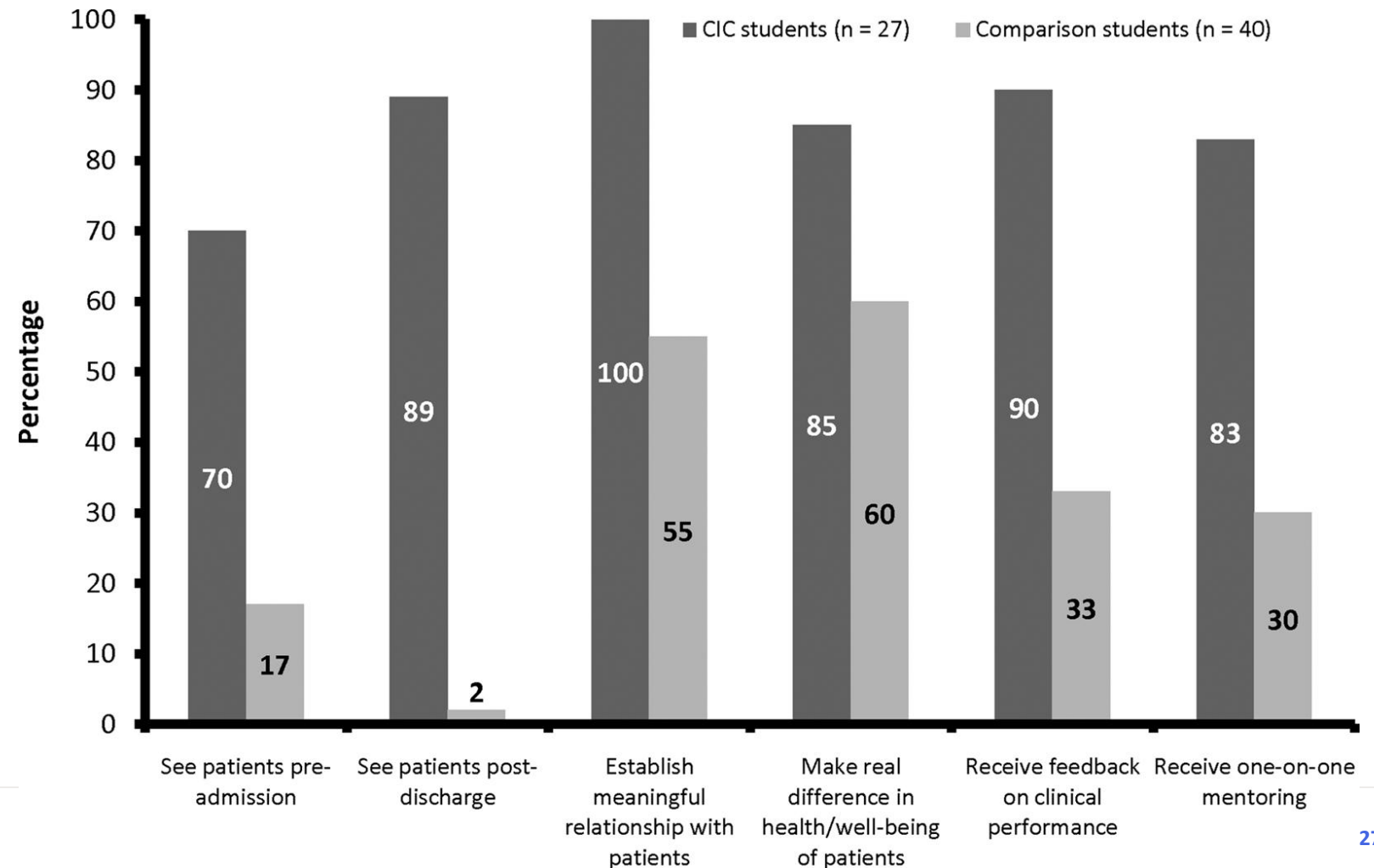
BMJ May 2004



Educational Outcomes of the Harvard Medical School–Cambridge Integrated Clerkship: A Way Forward for Medical Education



David Hirsh, MD, Elizabeth Gaufer, MD, MPH, Barbara Ogur, MD,
Pieter Cohen, MD, Edward Krupat, PhD, Malcolm Cox, MD,
Stephen Pelletier, PhD, and David Bor, MD





Clinical performance

- Better developed clinical communication skills
- Deeper understanding of psychosocial components
- Greater recognition and respect for the roles of other HCPs
- More contribution to health care of patients
- Improved understanding of their own limits
- Greater confidence in dealing with uncertainty
- Better able to reflect
- More self-directed
- Better prepared for work



Student values and ethics

- Increased patient-centredness and empathy
- Greater sense of responsibility to patients
- Greater sense of responsibility to a community
- More experienced in managing boundaries
- More confident in managing ethical dilemmas



Adv in Health Sci Educ (2012) 17:585–596
DOI 10.1007/s10459-011-9335-y

Creating stories to live by: caring and professional identity formation in a longitudinal integrated clerkship

Jill Konkin · Carol Suddards



medical education
www.mededuc.com

Longitudinal Integrated Clerkships

Into the future: patient-centredness endures in longitudinal integrated clerkship graduates

Elizabeth Gaufberg✉, David Hirsh, Edward Krupat, Barbara Ogur, Stephen Pelletier, Deborah Reiff, David Bor



Learning experiences

- Better access to broader range of patients/conditions
- Continuity of supervision facilitates knowledge acquisition
- Tasks tailored to student's needs
- Frequent, progressive feedback reinforces core knowledge
- 'being treated as a near peer' by experienced doctors and see themselves as active contributors to health care



Education for Primary Care

ISSN: 1473-9879 (Print) 1475-990X (Online) Journal homepage: <http://www.tandfonline.com/loi/tepc20>

'Knowledge leech' to 'part of the team': students' learning in rural communities of practice

Maggie Bartlett, Eliot Lloyd Rees & Robert K. McKinley



[a patient had] really acute severe pneumonia...this guy looked horrible...

he was only 30 or something and the GP managed him at home and that guy ... I saw that guy the following day and two days after and two days after that and a week after that ... I followed that guy... as long as he was a patient. And I saw him going from that to completely better having shaved and looking like a smart guy having seen him as a mess. And that was good...

....he could have diedand you wouldn't know...



Impact on clinical supervisors

- Collaborative working relationships
- Progressive increase in students' contributions to the work of the team
- 83% staff reported that their professional lives were more satisfying
- Patient care and teaching no longer seen as competing – each contributes to the other
- Increased ownership of students' learning



Patients like LIC students

Hudson *et al.* *BMC Family Practice* 2012, **13**:72
<http://www.biomedcentral.com/1471-2296/13/72>



RESEARCH ARTICLE

Open Access

Patient perceptions of innovative longitudinal integrated clerkships based in regional, rural and remote primary care: a qualitative study

Judith N Hudson^{1*}, Patricia J Knight² and Kathryn M Weston²



Career outcomes

- Positive impacts on rural and community career choice
- Longer LIC placements have greater impact



How do LICs work ?



How do LICs work?

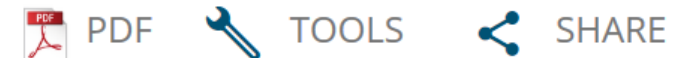


Commentary

Integration, continuity and longitudinality: the ‘what’ that makes patient-centred learning in clinical clerkships

Lucie Walters , Kathleen Brooks

First published: 26 August 2016 | <https://doi.org/10.1111/medu.13118> | Cited by:2



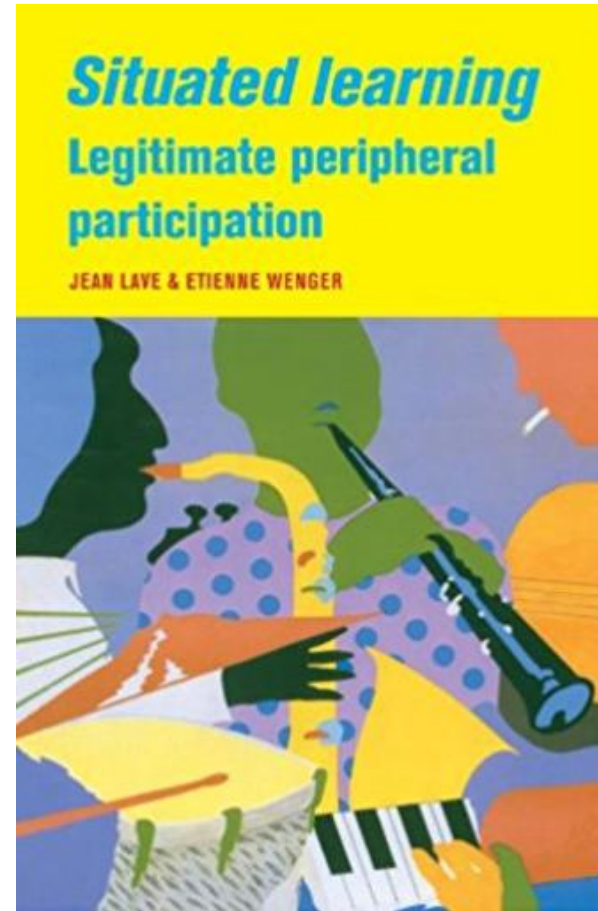
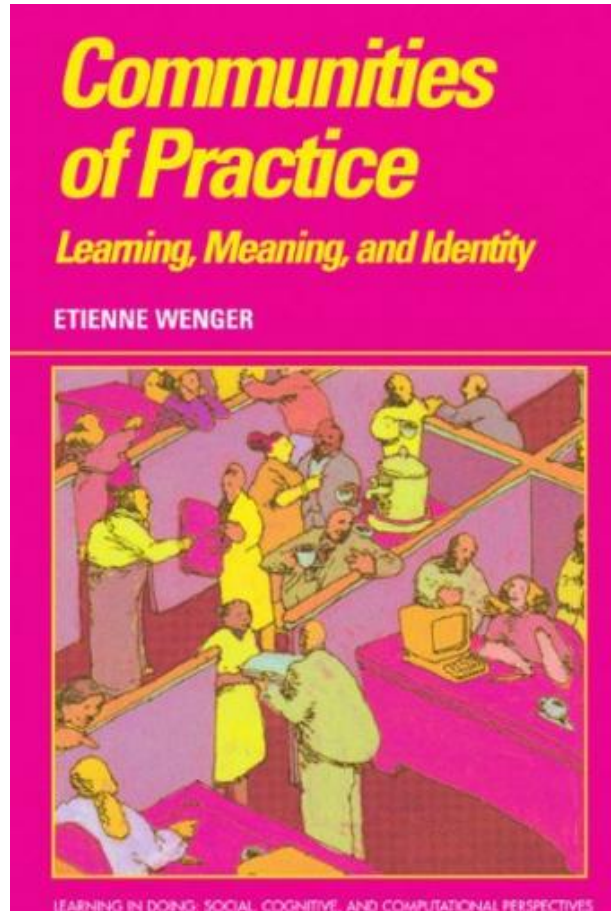


Feeling useful is important and drives learning

workplace-based learning

The role of role: learning in longitudinal integrated and traditional block clerkships

Karen E Hauer,¹ David Hirsh,² Iris Ma,³ Lori Hansen,⁴ Barbara Ogur,² Ann N Poncelet,¹ Erik K Alexander⁵
& Bridget C O'Brien¹





How do LICs work ?

1. Providing meaningful and authentic roles for learners
2. Patients matter to students – ‘an ethic of care’
3. Students matter to clinician teachers - continuity
4. Students see the outcomes of clinical decisions – clinical reasoning
5. Communities matter to students
6. Learning science effects (interleaving, spaced learning, questioning & enquiry)

Worley P and Hirsh D 2013



Mem Cogn (2013) 41:392–402
DOI 10.3758/s13421-012-0272-7

Why interleaving enhances inductive learning: The roles of discrimination and retrieval

**Monica S. Birnbaum • Nate Kornell •
Elizabeth Ligon Bjork • Robert A. Bjork**



Learning science

1. Spacing – returning to a topic at intervals leads to better learning than blocks (or massed learning) – more effective retrieval from long term memory by repeated re-activation of prior learning

2. Interleaving –

- mixing tasks and topics
- constant retrieval of information makes us able to extract more general rules and transfer them to multiple areas of learning (comparison of similarities and differences)
- ‘desirable difficulties’ lead to longer term retention because we need to process new material more deeply

3. Questioning and enquiry – works better than passive methods



Closer to home...

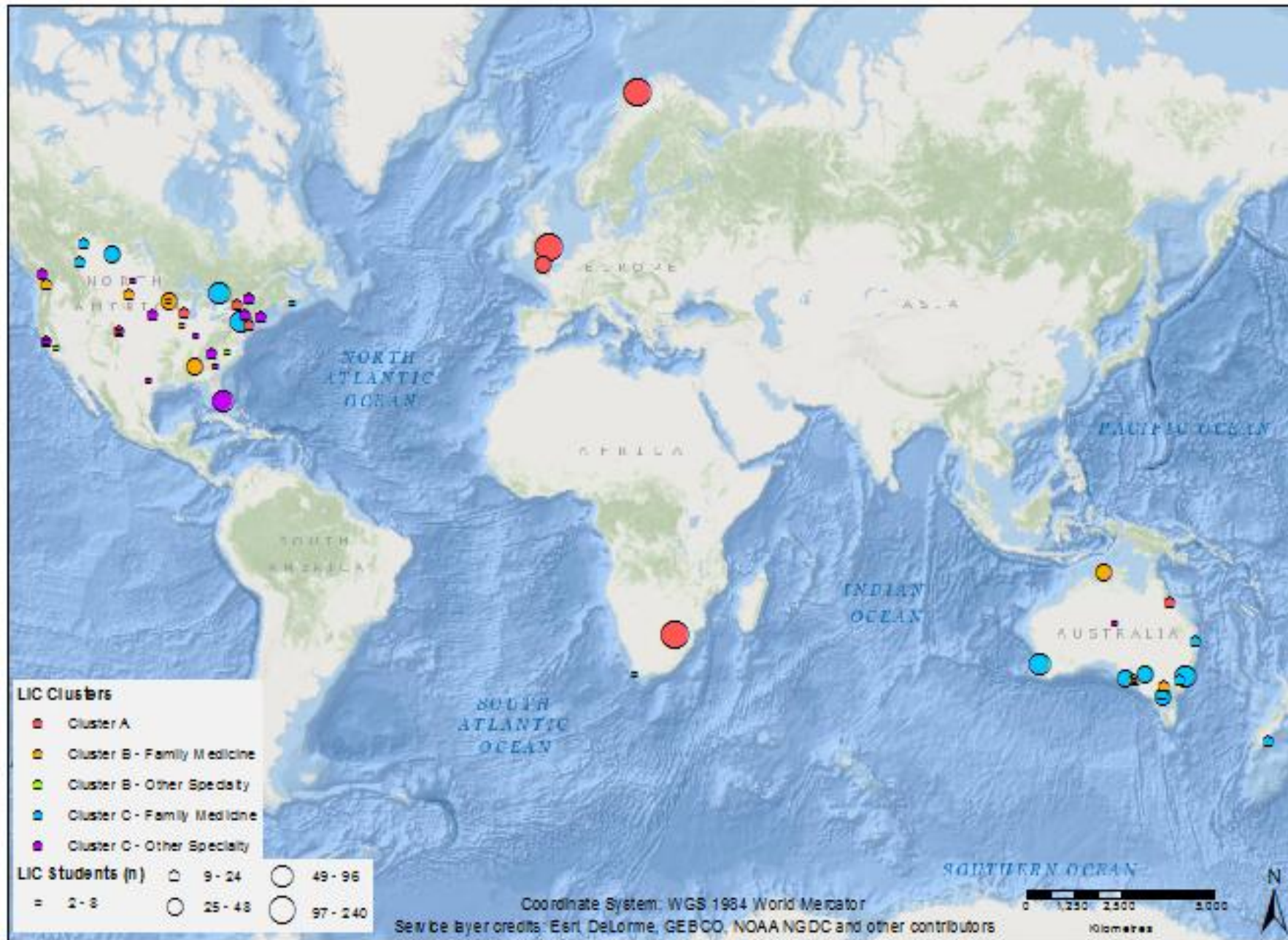


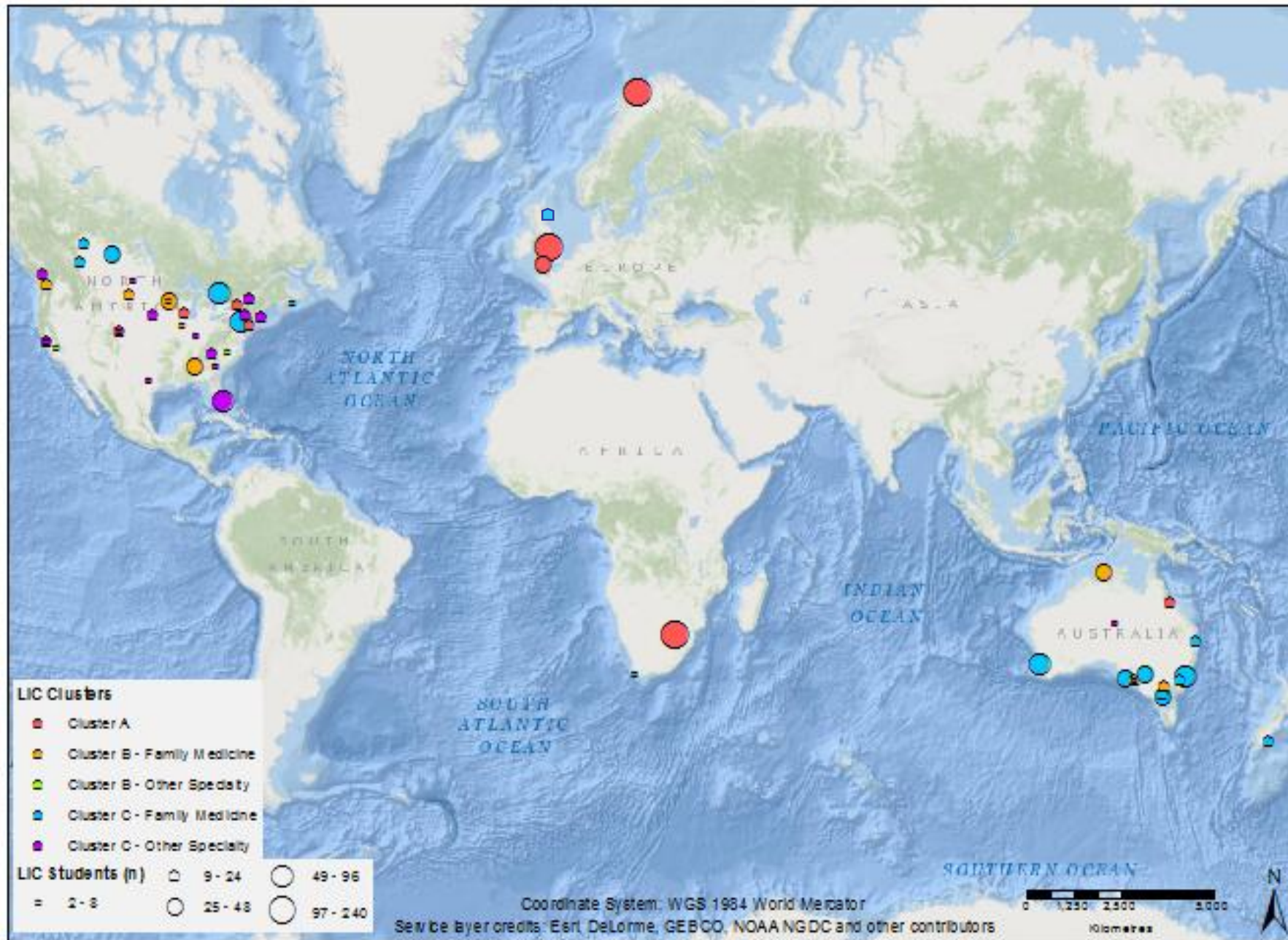
The ABC of LICs

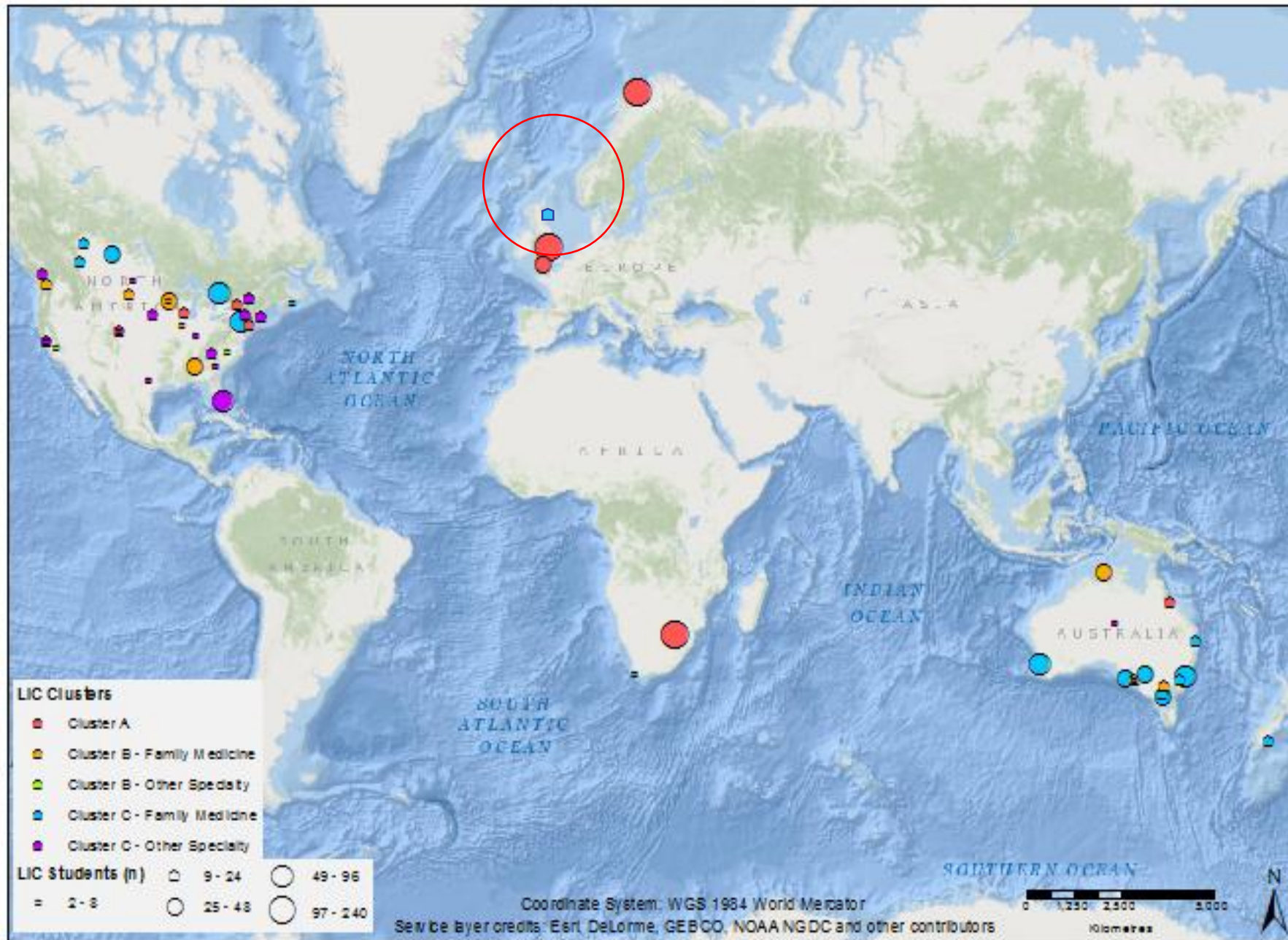
Amalgamative Clerkships (9)

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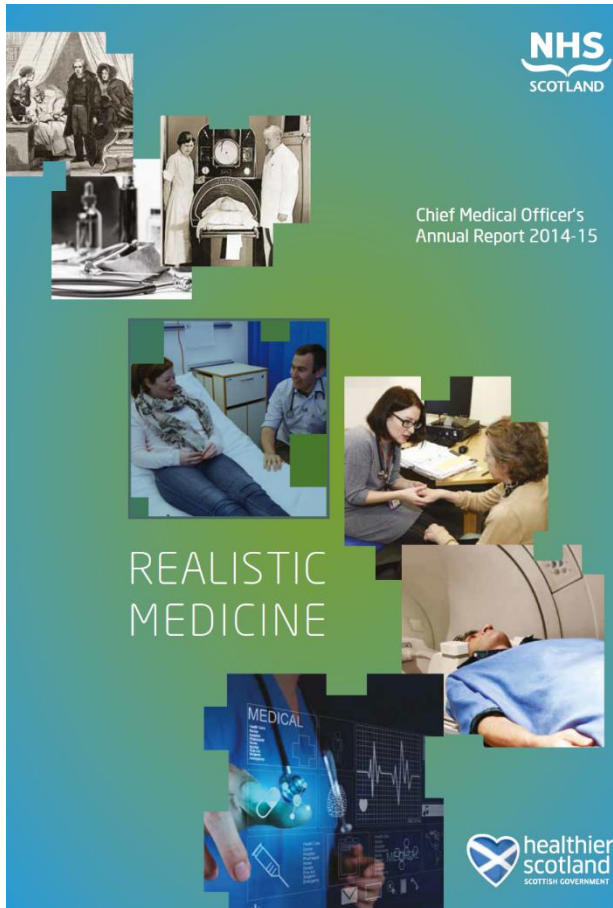


The Dundee LIC

- Started in 2016-7
- 14 students to date
- 40 weeks
- 60% GP and 40% secondary care



- Integrated care
- Focus on prevention and supported self-management
- Shorter hospital stays 'day surgery the norm' and quick return to the community
- Patient at centre of decision making



- Build a personalised approach to care
- Change our style to shared decision-making
- Reduce unnecessary variation in practice and outcomes
- Reduce harm and waste
- Manage risk better
- Become improvers and innovators



Our students' experiences

..you get to see the whole story, the whole big picture of a patient, of the community, of health care itself...'

'it's adult learning in a nutshell...'

'you get to feel the buzz of realistic medicine...'



Our students' experiences – a key patient

- Seen several times in GP
- Exacerbations of COPD
- Cushingoid from steroids
- Back pain, joint pains
- New seizures at age 50
- Admitted to hospital – clerked her in on the ward
- She died a few days later

'I'd never really followed a patient like that ...never had anyone close to me die...I got to see her from the start, got to see how she progressed and then look back at the whole case...'



Our students' experiences



Journal
Education for Primary Care >
Volume 29, 2018 - Issue 2

Enter keywords, authors, DOI etc.

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Letter

Being an agent of change: a student's view of the UK's first yearlong Longitudinal Integrated Clerkship (LIC)

Lewis Mundell

Page 121 | Received 06 Dec 2017, Accepted 01 Jan 2018, Published online: 19 Jan 2018

Download citation <https://doi.org/10.1080/14739879.2018.1423643>



Full Article

Figures & data

References

Citations

Metrics

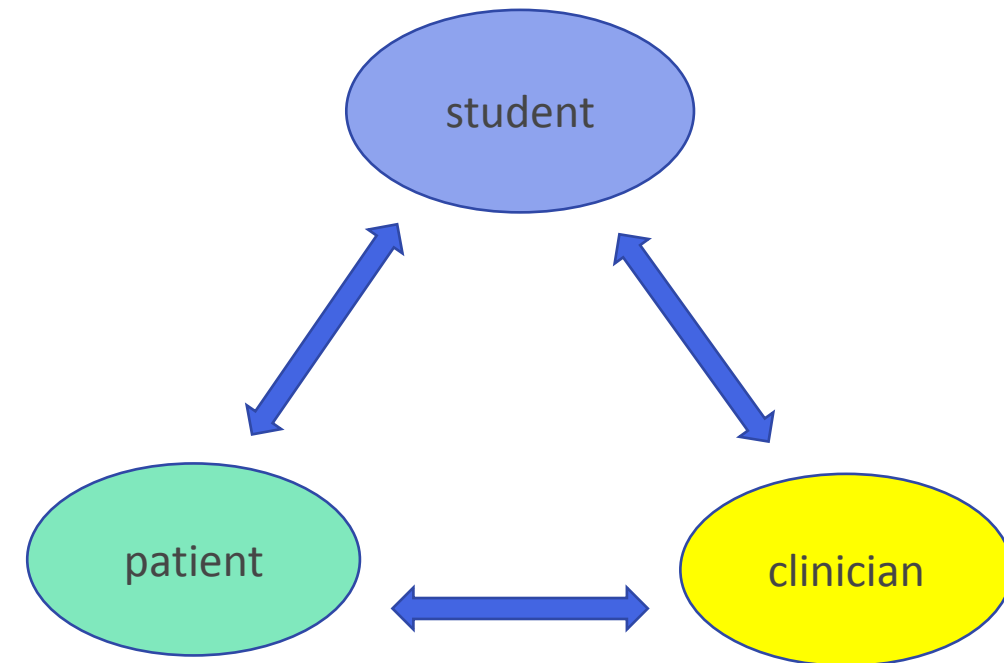
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“General Practice is now the career choice for me, it’s the specialism of un-complicating the complicated but sadly as a medical student you get very little exposure to these experts. This needs to change and LICs are definitely the solution.”



Our GP tutors' experiences





Challenges

- The NHS
- 'Coveritis'
- Students trying to recreate the traditional block rotation
- Assessments



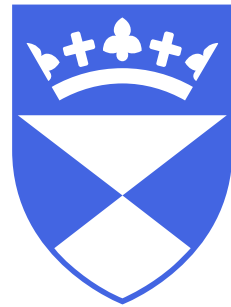
So...a new model of clinical education ?

- 553 papers on search for 'longitudinal integrated clerkship'
- Gaining ground in the UK

Questions ?



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