Maggie Bartlett, James McMillan and Neil Merrylees

Longitudinal Integrated Clerkships- a new model of medical education?

SMEC 27.4.18
Some educational theory...

Dewey...Flexner... Osler... Knowles...
Roles and relationships
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

- Mental health
- Surgery
- Adult medicine
- Paeds
- O&G
- Care of the elderly
- Acute care
Block based curriculum

Mental health  Surgery  Adult medicine  Paeds  O&G  Care of the elderly  Acute care

ethics

professionalism
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
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 Hirsh9,10 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?
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

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<thead>
<tr>
<th></th>
<th>early morning</th>
<th>morning</th>
<th>afternoon</th>
<th>evening</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Follow up patients</td>
<td>GP consulting/visits/patient follow up in practice</td>
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<td>Tuesday</td>
<td>GP consulting/visits/patient follow up in practice</td>
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<tr>
<td>Wednesday</td>
<td>Follow up patients</td>
<td>GP consulting</td>
<td>Patient follow up/self directed learning (may involve specialty clinic attendance)</td>
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<tr>
<td>Thursday</td>
<td></td>
<td>Tutorial with regional tutor</td>
<td>Patient follow up/self directed learning (may involve specialty clinic attendance)</td>
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<tr>
<td>Friday</td>
<td>Follow up patients</td>
<td>Specialty clinic attendance</td>
<td>Patient follow up self /directed learning (may involve specialty clinic attendance)</td>
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‘Acute’ weeks

<table>
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<tr>
<th>Day</th>
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<th>afternoon</th>
<th>evening</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Follow patients on wards</td>
<td>GP</td>
<td></td>
<td></td>
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<tr>
<td>Tuesday</td>
<td>GP</td>
<td></td>
<td>Self directed learning</td>
<td>Acute take</td>
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<tr>
<td>Wednesday</td>
<td>Acute take patient follow up</td>
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<tr>
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<td>GP</td>
<td>Acute take patient follow up</td>
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<tr>
<td>Friday</td>
<td>Patient follow up</td>
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<td>Self directed learning</td>
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## Week following an acute week

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<tr>
<td>Friday</td>
<td>Follow up patients</td>
<td>Specialty clinic attendance</td>
<td>A&amp;E ‘shift’</td>
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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

Error Bars show 95.0% CI

FMC
n=317

PRCC
n=54

Darwin
n=84

Improvement in Scores 1998 - 2003

BMJ May 2004
Educational Outcomes of the Harvard Medical School–Cambridge Integrated Clerkship: A Way Forward for Medical Education

David Hirsh, MD, Elizabeth Gaufberg, 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
Creating stories to live by: caring and professional identity formation in a longitudinal integrated clerkship

Jill Konkin · Carol Suddards
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

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

Judith N Hudson, Patricia J Knight and Kathryn M Weston
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
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)

Blended LICs (11)

Comprehensive LICs (34)
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...’
"General Practice is now the career choice for me, it’s the specialism of uncomplicating 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?

m.bartlett@dundee.ac.uk