UNIVERSITY OF SOUTH DAKOTA
SANFORD SCHOOL OF MEDICINE

Longitudinal Integrated Clerkships: Challenges of expanding to all campuses and all students

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Objectives

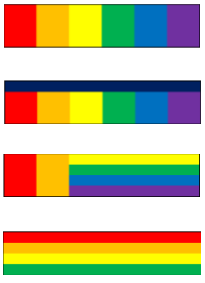
Following this session, participants will be better able to:

1. Identify the Longitudinal Integrated Clerkship (LIC) model,
2. Describe the evidence about advantages of the LIC as compared to block clerkships,
3. Anticipate potential challenges to implementation of a multi-campus LIC, and
4. Identify strategies to address these challenges.

Longitudinal Integrated Clerkship (LIC)

- Students participate in comprehensive care of <u>patients</u> over time
- develop continuous relationships with <u>faculty</u>
- <u>Curriculum</u> addresses core clinical competencies across multiple disciplines simultaneously

Clerkship Models



Traditional Block

Longitudinal Ambulatory Track

Hybrid Block & LIC

Longitudinal Integrated

Example LIC Schedule

Administration

Central administration
- LIC director (assistant dean)
- Office of medical education

Clerkship directors
- department assistants

Distributed administration
- Campus deans (chair coordinating committees)
- Coordinating committees
- Education coordinators

Role of Coordinating Committees

Monthly review - Every student discussed every month

- Student-Patient experience/procedure logs
- Independent learning activities: online cases, H&Ps, etc.
- Feedback from attendings (3 times a year)
- Test scores (when available)
- Monthly feedback from mentor on the committee

Formative (mid-year) & summative grading

- Exact scores are calculated for each course at mid-year (formative) and end of year (summative)

Assessment:
Credits by disciplines and competencies

25 credits divided among:

- Family medicine
- Internal medicine
- Neurology
- OB/Gyn
- Pediatrics
- Psychiatry
- Surgery

23 credits divided among:

- Medical knowledge
- Patient care
- Interpersonal & communication skills
- Practice-based learning & improvement
- Professionalism
- Systems-based practice

Assessment:
Grading Formula Examples

Discipline Example:

- Internal medicine
  - 50% Subject exam
  - 30% Attending eval
  - 20% H&Ps, online cases

All discipline grades use the same components and weightings.

Assessment:
Grading Formula Examples

Competency Example:

Interpersonal & communication skills

-50% attending evaluations (Communication items from all disciplines)

-30% OSCE (communication sub-score)

-20% small group facilitator evaluation

Grading components and weightings vary by competency.

Show me some evidence!

Medical Knowledge

- Equivalent knowledge[1,2] and clinical skills on standardized testing[3,4,5]
- Step 1 to Step 2 scores increase (LIC students >5 points lower Step 1, slightly higher on Step 2)[6]
- OSCE – equivalent knowledge[7]

[1]Schauer R., Schieve D. Performance of Medical Students in a Nontraditional Rural Clinical Program, 1998-99 through 2003-04. Acad Med 2006; 8 (7): 603-607

[2]Worley, et al. The Parallel Rural Community Curriculum: an integrated clinical curriculum based in rural general practice. Med Educ 2000; 34: 558-565

[3]Hirsh, et al. Educational Outcomes of the Harvard Medical School- Cambridge Integrated Clerkship: A way forward for medical education. Acad Med May 2012; 5: 643-649

[4]Myhre D., et al. Academic Performance of Longitudinal Integrated Clerkship Versus Rotation-Based Clerkship Students: A Matched-Cohort Study. Acad Med, Vol 89(2), Feb 2014; pp. 292-295.

[5]Mclaughlin, et al. A comparison of performance evaluations of students on longitudinal integrated clerkships and rotation-based clerkships. Acad Med 2011; 86: 525-9

[6]Hansen L, Simanton E. Comparison of third-year student performance in a twelve-month longitudinal ambulatory program with performance in traditional clerkship curriculum. SD Med 2009 Aug; 62(8):315-7.

[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block. Acad Med 2013; 88 (1) 881-889.

Medical Knowledge

- Trend higher on USMLE Step 2 CK but not statistically significant[7]
- Improved knowledge retention beyond the third year[8]
- Residency directors rated RICC stronger overall performance compared to RBC[9]

[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block. Acad Med 2013; 88 (1): 881-889.
[8]Hansen L., Simanton E. Long-term retention of information across the undergraduate medical school curriculum. SD Med 2012 Jul; 65(7): 261-263
[9]Woloschuk W., et al. Comparing the performance in family medicine residencies of graduates from longitudinal integrated clerkships and rotation-based clerkships. Acad Med. Vol 89,(2), Feb 2014, pp 296-300.

Patient Care/Clinical Skills

- Patient continuity provides a "doctor-like role"[10,11]
- Improved patient-centered attitudes[7,12,13]
- More meaningful patient interactions[14]
- No difference in surgery skills - OSATS[15]

[10]Hauer, et al. The role of role: learning in longitudinal integrated and traditional block clerkships. Med Educ 2012; 46:698-710.
[11]Walters, et al. Outcomes of longitudinal integrated clinical placements for students, clinicians and society, Med Educ 2012; 46: 1028-1041.
[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block. Acad Med 2013; 88 (1) 881-889.
[12]Gaufberg et al. Into the future: patient-centeredness endures in longitudinal integrated clerkship graduates. Med Educ 2014; 48:572-582.
[13]Poncelet, et al. Patient views of continuity relationships with medical students. Med Teach 2013; 35: 465-471.
[14]O'Brien, et al. Students' clinical roles and opportunities for learning in the workplace: Clerkship learning in two clerkship models. Med Educ 2012; 46: 613-624.
[15]Brooks, et al. Surgical Skills acquisition: performance of students trained in a rural longitudinal integrated clerkship and those from a traditional block clerkship on a standardized examination using simulated patients. J Surg Educ. 2014 Mar-Apr; Vol. 71(2), pp 246-53.

Patient Care/Clinical Skills

- LIC students better understand patient's experience[16]
- LIC students learn diagnostic reasoning faster[17]
- LIC students describe their role as caregiver; BC students as team player and performer[18]

[16]Ogur B., et al. The Harvard Medical School –Cambridge integrated clerkship: an innovative model of clinical education. Acad Med 2007; 82: 397-404
[17]Hansen, Simanton, Bien. Comparing clinical learning in longitudinal integrated clerkships versus block clerkships using diagnostic reasoning testing. Poster Presentation, 2012.
[18]O'Brien, et al. Visions of the ideal medical student: Impressions from longitudinal integrated and block clerkship experiences. AAMC. Research in Medical Education Annual Meeting. Philadelphia, PA. November 5, 2013. (oral presentation)

Practiced-based Learning and Improvement

- Facilitates professional identify formation[19,10]
- LIC students spent significantly more time performing direct patient care activities alone at the end of the year[14]

[19]Konkin J., Suddards C. Creating stories to live by: caring and professional identity formation in a longitudinal integrated clerkship. Adv in Health Sci Ed. 2012; 17: 585-596
[10]Hauer, et al. The role of role: learning in longitudinal integrated and traditional block clerkships. Med Educ 2012; 46:698-710.
[14] O'Brien, et al. Students' clinical roles and opportunities for learning in the workplace: Clerkship learning in two clerkship models, Med Educ 2012; 46: 613-624.

Communication

- Positive patient evaluations[20,21]
- Better developed clinical communication skills[3,16,22]
- OSCE –Improved data gathering[7]

[20]Poncelet, et al. Patient views of continuity relationships with medical students. Med Teach 2013; 35: 465-471.
[21]Hudson, et al. Patient perceptions of innovative longitudinal integrated clerkships based in regional, rural and remote primary care: a qualitative study. Family Practice 2012; 13: 72-79.
[3]Hirsh, et al. Educational Outcomes of the Harvard Medical School- Cambridge Integrated Clerkship: A way forward for medical education. Acad Med May 2012; 5: 643-649
[16]Ogur B., et al. The Harvard Medical School –Cambridge integrated clerkship: an innovative model of clinical education. Acad Med. 2007; 82: 397-404
[22]Wamsley, et al. Continuity in a longitudinal out-patient attachment for Year 3 medical students. Med Educ 2009; 43: 895-906.
[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block, Acad Med 2013; 88 (1): 881-889.

Professionalism

- Increased student satisfaction and perceived value of feedback[7]
- Less burnout and improved empathy [23,24]

[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block. Acad Med 2013; 88 (1): 881-889.
[23]Krupat, et al. Can Changes in the Principal Clinical Year Prevent the Erosion of Students' Patient-Centered Beliefs? Acad Med 2009; 84: 582-586.
[24]Hansen L, Simanton E. Program Evaluation and the Hidden Curriculum, USD; Poster Presentation, 2011

Professionalism

- Scholarly activity –Graduates of the LIC attained awards and published papers at the same rate as peers and were more likely to engage in health advocacy work[12]
- LIC students gain confidence to influence their own learning and modify circumstances to meet learning needs[25]
- Improved recognition and respect for health professional roles[26] and interprofessional teams[27]

[12]Gaufberg, et al. Into the future: patient-centeredness endures in longitudinal integrated clerkship graduates. Med Educ 2014; 48: 572-582.
[25] Hauer, et al. More is better: Students describe successful and unsuccessful experiences with teachers differently in brief and longitudinal relationships. Acad Med 2012; 87:1389-1396
[26] Zink T., et al. Learning professionalism during the third year of medical school in a 9-month-clinical rotation in rural Minnesota. Med Teach 2009; 31: 1001-6
[27]Myhre D., et al. Exposure and attitudes towards interprofessional teams: a three-year prospective study of longitudinal integrated clerkship versus rotation -based clerkship students. J Interprof Care 2014; 28 (3): 270-2.

Systems-Based Practice

- Workforce – LIC grads more likely to enter primary care residency and rural practice[28,29,30,31]
- LIC students make career specialty decision earlier[32]

[28]Norris, et al. Accomplishing the Workforce Mission: A Multi-site study of key long-term outcomes of rural longitudinal integrated clerkships in the United States: submitted
[29]Worley P. Vocational career paths of graduate entry medical students at Flinders University: a comparison of rural, remote and tertiary tracks. Med J. Aust; 2008 Feb 4; 188(3): 177-8.
[30]Zink T., et al. Efforts to graduate more primary care physicians who will practice in rural areas: examining outcomes from the university of Minnesota-Duluth and the rural physician associate program. Acad Med 2010; Apr 85(4);599-604.
[31]Stagg, et al. Are medical students influenced by preceptors in making career choices, and if so how? Rural Remote Health 2012; 12: 1832
[32]Lindemann J., Hansen L., Simanton E. When do students make their career specialty decision and does clerkship format matter?, CGEA poster presentation, 2014.

Systems-Based Practice

- LIC students of value to health care team, understand the patient experience, contribute to care and facilitate transition[33,34]
- Progressively increasing patient responsibility[7,33,35]
- Improve the perceived quality of patient care[33]

[33]Ogur B, Hirsh D. Learning through Longitudinal Patient Care-Narratives from the Harvard Medical School-Cambridge Integrated Clerkship. Acad Med 2009; 84 (7):844-850.
[34] Worley, et al. Empirical evidence for symbiotic medical education: a comparative analysis of community and tertiary-based programmes. Med Educ 2006; 40: 109-116
[7]Teherani, et al. Outcomes of different clerkship models: longitudinal integrated, hybrid, and block. Acad Med 2013; 88 (1): 881-889.
[35] Mihalynuk, et al. Student learning experiences in a longitudinal clerkship programme. Med Educ 2008; 42: 729-732.

Political Implications

Challenge
- Departments may sense a loss of control over "their" curriculum

Strategies
1. Seek department input
2. Without compromising outcomes, allow flexibility
3. Find key champions
4. Acknowledge loss

Bolman L, Deal T(2008). Reframing organizations: Artistry, choice, and leadership (4th ed.). San Francisco: Jossey-Bass. (Political, Structural, Human Resource, and Symbolic)

Structural Implications

Challenge
- Logistical complexity

Strategies
1. Faculty and staff development
2. Get department chairs working with you; others will follow
3. Consistently address concerns and incorporate new ideas (Best practices LIC)
4. Model after successful programs

Human Resource Implications

Challenge
- Concern about job security and new roles

Strategies
1. Meet regularly with all players, (from admin assistants to department chairs)
2. Reassure as appropriate
3. Retrain

Symbolic Implications

Challenge

-"This is not how I trained."

Strategies

1. Review changes in med ed and research behind it
2. Emphasize continuity of patient relationships, faculty relationships, curriculum
3. Focus on the future while acknowledging the past

Summary

1. Longitudinal Integrated Clerkships emphasize continuity of patients, faculty, curriculum.
2. Evidence demonstrates comparability and advantages of LIC as compared to blocks.
3. Anticipate challenges to implementation that are more about change angst than pedagogical theory.

Q&A