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CLINICAL TEACHER'S TOOLBOX

THE CLINICAL TEACHER

The future integrated care workforce

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1 | INTRODUCTION

This toolkit brings together those with first-hand experience of designing, delivering, evaluating and participating in a Longitudinal Integrated Clerkship (LIC) within a UK Higher Education Institution and those working closely on programmes focussing on Health Education England (HEE)'s and NHS England's national priorities.

In August 2022, a collaborative workshop was held for students and tutors participating in a London-based LIC in 2021–2022, faculty with prior experience in running LICs, and HEE representatives. The aim of the workshop was to co-produce a toolkit to guide undergraduate institutions, who may wish to introduce an LIC within their medical school curriculum that aligns to these national priorities. Although this toolkit primarily focuses on a UK audience, we anticipate that other health systems facing a need for similar educational reform may also find use for this toolkit.

2 | BACKGROUND

The NHS Long Term Plan,[1] the HEE Future Doctor Report[2] and The Enhance Programme[3] have outlined key national priorities for the future of health and social care (Figure 1), including how we can train our workforce to deliver these aims. These priorities include embedding generalist skills in early career doctors, so they can better provide person-centred care in the context of complex multimorbidity, while considering the impact of deep-rooted health inequity and social determinants of health.

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3 | WHO IS THIS TOOLKIT FOR?

This toolkit has been written for medical schools but may also be beneficial for other undergraduate and postgraduate health educators, who are considering setting up longitudinal educational programmes

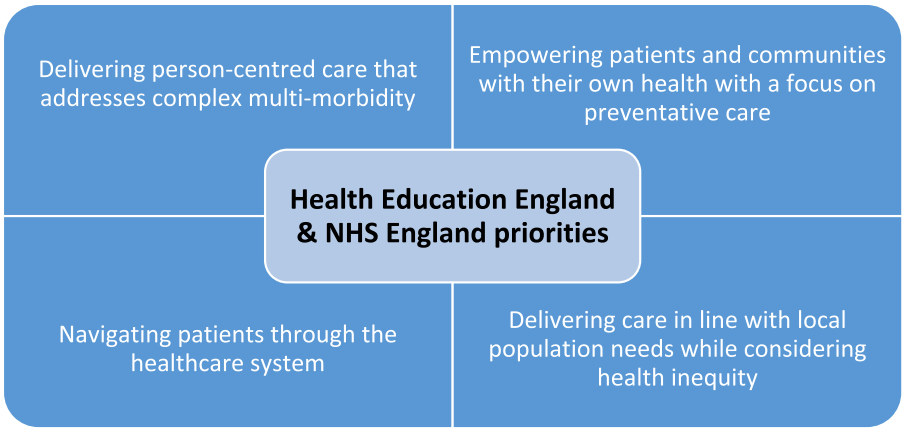

FIGURE 1 UK health policy priorities.

to meet their local and national health and workforce priorities. This document may also enable health and social care providers and third sector organisations, who are partnering up to support educational programmes, to better understand how longitudinal courses may benefit their health priorities.

4 | WHY IS THIS TOOLKIT NEEDED?

Currently, undergraduate and postgraduate training is fragmented in its provision of educational supervision and patient care. The lack of continuity of relationships with patients, supervisors and peers, can make it harder to effectively address the increasing complexity of multi-morbidity at an individual and population level. Because this fragmentation continues in the educational experience of postgraduates, it has a domino effect on undergraduates placed within those fragmented clinical settings—it becomes easy to see how this cyclical lack of continuity could perpetuate workforce burnout and poor retention.[4,5]

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There is also a need for the future workforce to better understand the effects of health inequity, both at an individual and community level. It is well-recognised that certain groups of patients have poorer health outcomes than others.[6] However, a deeper understanding of local population health priorities is difficult to achieve within our current, fragmented teaching and training programmes and instead requires being embedded into a community over a period of time.

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LICs (Figure 2) are an ideal educational model to address the issues of fragmentation of the student experience, and the need for students to have a better grasp of local population health. LICs place a greater emphasis on continuity for students and patients,[7] greater responsibility for patient care, with more rewarding outcomes for students/trainees, and their patients and communities.[8] Furthermore, many of the LICs in the United Kingdom are based in primary care,[9] which provides a fertile ground for students to develop meaningful longitudinal patient relationships, and allows students to be embedded within a local community.

5 | THE CURRENT LITERATURE

The discussions within our workshop were informed by the existing literature on LICs which provides an international lens on how to develop LICs, what benefit they can provide, and their pitfalls.[10–12] This toolkit builds on this literature with our lived experience within a UK health care and higher education environment, and aims to

FIGURE 2 Longitudinal Integrated Clerkships.

What is a Longitudinal Integrated Clerkship?

A Longitudinal Integrated Clerkship (LIC) is a model of clinical education with continuity at its core. For students, this means continuity with their supervisors, curriculum, and patient interactions. The model facilitates continuity by allowing students to be situated in one core learning environment (or a series of closely connected learning environments) for a significant portion of the academic year (8). Over this time, students experience extended and repeated interactions with their patients, developing a relationship with them and their families. They can provide care and advocacy by acting as a bridge between their patients and the health system. They can begin to understand the hurdles in accessing healthcare and how these might affect some patients more than others. In doing so, students develop a deeper understanding of complex multi-morbidity, a greater appreciation of the impact of social determinants of health on wellbeing, and move closer to the delivery of person-centred care.

re-frame the importance of LICs as an educational model that better aligns to new integrated care priorities in the United Kingdom. For consistency in this toolkit, we use the term 'Longitudinal Integrated Clerkship' as it is most commonly known within the literature. However, there is debate about whether this term is relevant to the UK context and whether a more general term such as 'longitudinal placement' would better capture what currently exists and is achievable within the UK landscape.[13]

6 | THE TOOLKIT

The toolkit below outlines what we regard as key steps in how an institution may consider implementing an LIC:

A) Design & Development of an LIC
   1. Identification and co-production with key stakeholders
   2. Establishing the purpose of your LIC
   3. Curriculum design
   4. Provision of support
B) Evaluation and Research of an LIC

7 | DESIGN AND DEVELOPMENT OF AN LIC

7.1 | Identification and co-production with key stakeholders

To ensure an LIC that is sustainable, it is important to identify and consult with key stakeholders from the outset. Consideration of your institution's culture will also be important to ensure the success of an LIC, particularly with regard to the assessment process and how the LIC will be perceived within the hidden curriculum.[14]

Stakeholders might include the following:

1. Clinical educators across all sectors (primary and secondary care), and the postgraduate setting, for example, local training hubs
2. Student body
3. Health, social and third sector partners, that is, local Integrated Care System
4. Local patient groups (such as patient participation groups) and wider community voices (such as local charity organisations)
5. Internal and external LIC alumni to share their experiences

Having identified your key stakeholders, it may be beneficial to set up a *steering group committee* for LIC development, who can champion and achieve buy-in within their individual organisations. It is important to consider remuneration for those who are not already contracted to input into curriculum/training development, for example, students, patients and third sector partners.

7.2 | Establishing the purpose of your LIC

A co-created *mission statement* for your LIC can help to ensure that all stakeholders are on the same trajectory. The overarching aim of your LIC is likely to depend on your local context. For example, in your local area, a main driver may be the need to address workforce recruitment and retention. Alternatively, addressing health inequity within underserved communities in the local area may be your main driver.

When considering *learning outcomes* for your LIC, these can be considered under the headings of educational and health outcomes to ensure mutual benefit for those served by health systems and educational institutions. Similarly to a programme's mission statement, LIC outcomes are best defined with input from educational, health and community stakeholders. Investment at this stage from all stakeholders will be important as there may be conflicting priorities that will need to be worked through. Educational outcomes should align with the broader priorities and values of your institution, as well as national priorities, such as the Medical Licencing Assessment and those from HEE. Creation of a curriculum blueprint will be useful at this stage. Health outcomes would consider NHS policy documents (such as the Five Year Forward view), as well as local policies relevant to health context.

7.3 | Curriculum design

The success of an LIC will depend on how the principles of the longitudinal model are adapted to fit with existing educational and service delivery models in your institution and local area. While there are existing frameworks of what an LIC might look like, these are based on the international literature, and local context should be considered for the successful delivery of an LIC. For example, from current

TABLE 1 LIC curriculum design.

What to consider when designing a Longitudinal Integrated Clerkship	
Which year of medical school?	Consider the overarching outcomes of your LIC. Use this to decide what stage of medical school it is best delivered in. *Early years* E.g., Key LIC outcome = deeper understanding of the health inequity and preventative care for your population. You may wish to introduce these foundational concepts via an LIC at an early stage of clinical training, when there may be more curriculum space to dedicate to these concepts, and students are establishing their values around health equity. *Later years* E.g., Key LIC outcome = enhancing preparation for practice in line with national priorities In this case, the LIC may be better suited for those who are about to graduate
How many students?	*New medical schools* or those undergoing curriculum review may wish to implement an LIC for an entire cohort *Medical schools with an established curriculum* could pilot an LIC with a small group of students, with a phased roll-out in future years, allowing for improvements in your model if you fully roll out. Or there are many LICs that are small cohort student-selected programmes. If do you choose to run a pilot LIC, consider how you will advertise and recruit prospective students.
LIC curriculum structure?	The format of an LIC can vary internationally. Within the United Kingdom, LIC structure can range from a full time LIC to 1 day a week. Also consider the balance between • 'service-led' learning (students actively learning through interactions with patients during service provision) • Timetabled classroom teaching • Community-project work • 'White space' (students defining how they learn during un-timetabled curriculum space) Consider if your original LIC outcomes can be achieved in your chosen format and whether you can evaluate and assess these outcomes (see below for evaluation and assessment) within the constraints of your given structure.
Setting?	LICs can take place in a variety of settings with one setting usually acting as the main base for student learning • Primary or secondary care • A mixture of both primary and secondary care • Also consider the third sector as potential placement providers, e.g., nursing homes, hospices and day care centres
Supervision?	Adequate supervision ensures clinical and educational safety for students and the patients they care for. This is an important consideration across all clinical settings. Also consider how undergraduates and postgraduates, and students from different health professions within the same learning environment can be brought together to enhance learning for both groups, e.g., through group supervision, tutorials or patient care.
Patient interactions?	Supervisors should facilitate student–patient partnerships so students can navigate their patient's journey through the health care system. This may be done by • Supporting students in taking ownership of their patient caseload under supervision • Identifying areas where students can add value to patient care • Building flexibility into the timetable so students can advocate for their patients, e.g., when they attend appointments in different care settings
Assessment?	Assessment should be considered from the outset of LIC planning to ensure there is alignment with learning outcomes, as well as medical school and national assessments. Consider • The balance of formative versus summative assessment • Overall assessment burden across the whole curriculum—is it achievable for students? • If service-led assessment alleviates some of this burden, e.g., a formative community quality improvement project? How and when these assessments will be reviewed should also be factored into the timetable for students and supervisors.

Abbreviation: LIC, Longitudinal Integrated Clerkship.

literature, an LIC should be long enough for students to establish meaningful relationships, and Worley et al. suggest that an appropriate length of time should be from 6 to 12 months.[15] We would suggest the length of time should be conducive to students having repeated encounters with the same patients, educators and peers to maximise relationships.

There is no formal consensus on how 'repeated encounters' should be defined but the aim is for students to experience patient care over time in different settings with different health care practitioners. Facilitating sustained patient–student partnerships across the course of an LIC lies at the heart of this educational model. It is through these partnerships that mutual benefit can be garnered.

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Table 1 outlines some important factors to consider during the design of your LIC.

7.4 | Provision of support

LICs are likely to require a shift in mindset and logistics from the existing culture of learning at your institution, not only from the perspective of students, but also placement supervisors and central faculty. Adequate support for all relevant groups will help to identify early teething problems and ensure smoother transitions during implementation (see Table 2).

8 | EVALUATION AND RESEARCH OF AN LIC

With any educational intervention, particularly one that is new to an institution, there will be multiple reasons to collect data. For future iterations of the course, it is important to establish what worked well and what could be improved. Broadly, this type of data would be regarded as evaluation. Additionally, different stakeholder groups will have particular outcomes they are interested in, and these data might fall under the category of research.

When deciding what data to collect, it is worth looking back at the primary LIC objectives, and planning from the outset how evaluation will be conducted and data collected, alongside the design and development of the overall LIC. This will help make early decisions regarding why the data are being collected, when and from whom, and ensures timely ethics and funding applications. Reviewing the existing literature at this stage will help shape both the LIC and your evaluation and research questions.

Kirkpatrick's hierarchy can be a useful heuristic when considering what type of data to collect—for example, collecting qualitative data from different stakeholders on their perceptions and experience of the LIC. You may also choose to collect specific quantitative student or patient outcome data.

When deciding who to collect data from, consider the whole range of stakeholders. For example, if a key aim of your LIC is to improve patient access to health care in your local area, it would be important to hear from patients themselves on their experiences.

TABLE 2 Providing support during an LIC.

Providing support during a Longitudinal Integrated Clerkship	
Student support	Establishing student support networks ensures students feel supported academically and psychologically during an LIC, where they may take on more clinical responsibility than in previous clinical placements. It is a well-known phenomenon that LIC students undergo a J-curve transformation, where their confidence may dip before it starts to improve. Additional support during this time is important to prevent students feeling isolated, especially if your LIC is being run for a partial cohort of students. Examples of support networks could include reflective debriefs with their LIC group, LIC tutor meetings or liaising with their personal tutor or student union representatives.
Supervisor support	For students to gain the most of their LIC experience, their supervisors need to also feel adequately supported. This is particularly the case where supervisors have less experience with the LIC model and may have trained via more traditional educational models themselves. Central LIC faculty should consider developing the necessary training, tools and platforms to provide this support. This may include provision of course handbooks, and regular group meetings to allow LIC supervisors to network, share ideas and problem solve. Site visits by faculty and more tailored support can be helpful when needed by individual supervisors. The time needed for supervisor training and support should also be factored into LIC planning.
Administrative and faculty support	Institutions need to consider funding streams for placement providers, and a strategy to retain them, to make LICs sustainable educational models. Adequate administrative support for all LIC stakeholders is imperative in facilitating smooth transitions in curriculum change. This is important whether introducing an LIC from the outset of curriculum design, or adapting existing curriculum models to incorporate an LIC. The logistics of design, implementation, faculty development and evaluation need to be adequately scheduled and costed.

Abbreviation: LIC, Longitudinal Integrated Clerkship.

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While data are often collected to look at what additional value an intervention provided, it is equally important to ensure no harm has inadvertently been inflicted on stakeholder groups in the process. This is also something to consider when deciding what parameters should be evaluated.

The timeframe of data collection is also an important consideration. In keeping with a longitudinal process, some research questions may be better answered by looking at different points across the course, to capture how data change over time.

When writing up and presenting data, consider involving all stakeholders in this process. It would be worth looking at presenting and publishing avenues that reach a broad audience—for example, health care arenas, patient and community facing publications, and medical educators.

9 | CONCLUSION

The future health workforce will require new complex skills to manage increasingly complex population needs. Current undergraduate training needs to consider how it is preparing future graduates to develop the skills needed to adapt to the rapidly changing health care landscape. An LIC places continuity and integration at its core and is an ideal educational model to embed these key skills within the curriculum. This, in turn, could help prepare our future workforce in providing person-centred integrated care that meets population need. This toolkit can be used to guide those considering educational reform in line with population need. Finally, it is the collaborative partnerships with students, policy makers, educators, and health and social care providers that will help ensure alignment between population priorities, workforce needs and medical education.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest to disclose.

ETHICS STATEMENT

No data have been used in this submission that would require formal ethical approval. All participants of our workshop have been listed as authors and have contributed and consented to the work.

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REFERENCES

1. NHS Long Term Plan
2. HEE Future Doctor Report
3. HEE Enhancing Generalism Programme
4. Spiers J, Buszewicz M, Chew-Graham C, Gerada C, Kessler D, Leggett N, et al. Who cares for the clinicians? The mental health crisis in the GP workforce. British J Gen Pract. 2016 Jul 1;66(648): 344–5. https://doi.org/10.3399/bjgp16X685765
5. Shah R, Clarke R, Ahluwalia S, Launer J. Finding meaning in the hidden curriculum—the use of the hermeneutic window in medical education. Educ Prim Care. 2022;12:1–5.
6. Marmot M. Social determinants of health inequalities. Lancet. 2005; 365(9464):1099–104. https://doi.org/10.1016/S0140-6736(05)71146-6
7. Hirsh DA, Ogur B, Thibault GE, Cox M. "Continuity" as an organizing principle for clinical education reform. N Engl J Med. 2007;356(8): 858–66. https://doi.org/10.1056/NEJMsb061660
8. Hudson JN, Poncelet AN, Weston KM, Bushnell JA. Longitudinal integrated clerkships. Med Teach. 2017;39(1):7–13. https://doi.org/10.1080/0142159X.2017.1245855
9. McKeown A, Mollaney J, Ahuja N, Parekh R, Kumar S. UK longitudinal integrated clerkships: where are we now? Educ Prim Care. 2019; 30(5):270–4. https://doi.org/10.1080/14739879.2019.1653228
10. Bartlett M, Couper I, Poncelet A, Worley P. The do's, don'ts and don't knows of establishing a sustainable longitudinal integrated clerkship. Perspect Med Educ. 2020;9(1):5–19. https://doi.org/10.1007/S40037-019-00558-Z
11. Brown ME, Anderson K, Finn GM. A narrative literature review considering the development and implementation of longitudinal integrated clerkships, including a practical guide for application. J Med Educ Curric Dev. 2019;6:2382120519849409. https://doi.org/10.1177/2382120519849409
12. Ellaway R, Graves L, Berry S, Myhre D, Cummings BA, Konkin J. Twelve tips for designing and running longitudinal integrated clerkships. Med Teach. 2013;35(12):989–95. https://doi.org/10.3109/0142159X.2013.818110
13. Harding A. A rose by any other name; longitudinal (integrated) placements in the UK and Europe. Educ Prim Care. 2019;30(5): 317–8. https://doi.org/10.1080/14739879.2019.1666306

14. Brown ME, Hafferty FW, Finn GM. The hidden curriculum and its marginalisation of Longitudinal Integrated Clerkships. Educ Prim Care. 2020;31(6):337–40. https://doi.org/10.1080/14739879.2020.1774808
15. Worley P, Couper I, Strasser R, Graves L, Cummings BA, Woodman R, et al. A typology of longitudinal integrated clerkships. Med Educ. 2016;50(9):922–32.

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