Evidence Brief: Education redesign

Contents

Produced by the Knowledge Management team Evidence Briefs offer an overview of the published reports, research, and evidence on a workforce-related topic.

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Key publications – the big picture

Clinically-Led workforcE and Activity Redesign (CLEAR)
Health Education England (no date)
CLEAR offers individuals, organisations, and regions the opportunity to investigate systems and services using a unique methodology, placing service transformation in the hands of those delivering care.

By joining the national CLEAR programme, service providers gain access to expert research and analytics for workforce and service redesign projects. Unlike other similar services, CLEAR trains frontline clinicians in data analysis and service modelling to deliver change.

See also: The clinically led worforcE and activity redesign (CLEAR) programme: a novel data-driven healthcare improvement methodology BMC Health Services Research, March 2022

The Future Doctor Programme: A co-created vision for the future clinical team
Health Education England (no date)
[p. 22] How Must Education and Training Adapt?

- Greater focus on supporting meaningful prevention, shared decision making and shared responsibility as a core part of communication skills teaching
- Accelerating and embedding learning for excellence in digital communication skills
- Learning grounded in understanding the needs of communities within local systems, which should start at medical school, enabling the appreciation of support available, including community and third sector assets
- Training doctors to have an understanding of local health population and cultures
- Embracing a culture of doctor and team wellbeing as central components of compassionate, high-quality patient care.

Our vision for the future of medical education and training
General Medical Council (no date)
As the regulator of the quality of prequalification medical education, courses are only approved if they meet our standards. We will support the wider ambitions for enhancing and improving undergraduate, pre-qualification education and increasing capacity across the four countries of the UK as long as these standards are met. This includes innovation around delivery methods and the length of study and initiatives such as apprenticeships.

The expansion of undergraduate medical places across the UK, including to relatively under-doctored areas, is welcome. Governments need now to set out the criteria by which additional places and new schools will be allocated so we can work with those organisations to establish them in a timely manner that meet our standards.

The state of medical education and practice in the UK: Workforce report
General Medical Council, November 2024
Despite acute system pressure, medicine continues to be an attractive career and the UK a desirable place to practise—as the growth to the register demonstrates. But it's also becoming clear that the infrastructure to train and support doctors is struggling to keep pace with their increasing numbers. Clinical and educational supervisors are reporting unsustainably high workloads and are struggling to cope. More than half are at high risk of burnout.

Government ambitions to increase medical school places across the UK are both welcome and necessary. But there is no sense training more medical students if we can't also support them to become capable, competent doctors.

The state of medical education and practice in the UK: 2020
General Medical Council, November 2020
[Chapter 2 – The state of medical education] The pandemic has had a significant impact on formal medical education. In response, April rotations were cancelled for all doctors in training and a new post (FiY1) was created for some 2020 medical school graduates to join the workforce early. We approved around 550 additional training locations, so doctors redeployed to them could count this experience towards their training progression. It's likely that the lessons learned during the pandemic will have a profound impact on the delivery of training in the future.

Making the case for quality improvement: lessons for NHS boards and leaders
The King's Fund, October 2017
There are a range of opportunities for NHS organisations to improve quality of care and value for money. Examples can be found across the NHS where teams and organisations are already acting on these opportunities and demonstrating positive results for their patients, as the examples given in this briefing show. But the systematic use of quality improvement approaches within the NHS is still patchy, and many improvement efforts fail to deliver the results expected.

NHS leaders – and boards in particular – have a vital role to play in creating a supportive environment for quality improvement within their organisation – for example by providing a clear vision and objectives for improving quality and putting in place the capabilities and support needed for staff to improve services. Leaders must also work between organisations to develop new care models and co-ordinate improvements. The 10 key lessons outlined provide a starting point for NHS leaders seeking to more firmly embed quality improvement within their local plans for improving services.

Educational governance in the NHS: a literature review Abstract only*
International Journal of Health Care Quality Assurance, October 2010
The educational governance in healthcare literature search indicates that this is a relatively under-researched area. There are few attempts to define educational governance, although several authors note similarities with clinical governance. Authors cite educational governance as an important component of integrated approaches to healthcare governance, noting inter-dependent relationships between areas such as clinical governance, organisational development and risk management.

Case Studies

Development and Evaluation of a Massive Open Online Course on Healthcare Redesign: A Novel Method for Engaging Healthcare Workers in Quality Improvement
Nursing Reports, October 2022
Health service improvement or healthcare redesign is a high-pressure, rapidly evolving area, which is of great relevance to industry and government for economic, equity and quality of care reasons. Although a large number of short industry training courses are available in the area of health service improvement and system innovation, there is little in the way of free courses specifically focused on healthcare redesign. The Healthcare Redesign MOOC filled the important purpose of organisational learning, as organisations are starting to focus on supporting

learning among employees, promoting innovation, reducing waste and improving efficiency. This, coupled with emerging evidence that more organisations are using MOOCs to develop employees' skills to carry out their work, suggests our educational strategy is on target. As educators, we took industry needs into consideration, as the Healthcare Redesign MOOC was designed to aid the development of sustainable Tasmanian and national healthcare systems, focussing on ongoing improvement in the quality, effectiveness and safety of care delivery and inspiring widespread engagement with the process. This strategy was further supported by MOOCs in the workplace having a positive impact on job competency and innovation.

Restructuring of an evidence-based practice curriculum and assessment with structural mapping by course outcome verb
Journal of Chiropractic Education, March 2022
An evidence-based clinical practice (EBCP) subcurriculum within a chiropractic curriculum was restructured to distribute EBCP topics to courses throughout the curriculum. We posited that this would enhance student learning through early exposure, repetition, and the use of progressively more difficult levels of learning. In this paper we describe how we determined if Bloom's verb level trended upward from the beginning of the curriculum to the end and if there were any gaps in presentation of topics periodically in the curriculum. We describe how we determined if the restructured subcurriculum provided adequate integration of topics.

Transdisciplinary behaviour change: A burst mode approach to healthcare design education Abstract only*
Proceedings of the 23rd International Conference on Engineering and Product Design Education (E&PDE 2021), January 2022
With the future of health(care) shifting from treatment to prevention, design for behaviour change is an essential part of this movement. Although we have made significant breakthroughs in behavioural science and design for shaping behaviours there are still some significant gaps and opportunities unexplored. Developing new transdisciplinary approaches to the education of designers for behaviour change becomes of increased importance. New practice-based models are required to facilitate the connection between the understanding of behavioural theories and applying these to healthcare contexts. This paper illustrates a unique blended teaching model which fuses teams of mixed healthcare, design and other diverse backgrounds and the use of digital technologies to pre-empt unwanted behaviour and assist behaviour change. The course module combines asynchronous learning for behaviour change diagnosis with synchronous collaborative concept development and rapid-prototyping. Digital platforms are used to facilitate remote global teamworking alongside individual physical hands-on prototyping using sensors and electronics.

A collaborative process for a program redesign for education in evidence-based health care
Journal of Chiropractic Education, March 2019
We outline the framework of a collaborative process to redesign an existing 5-year health education program, which may prove useful to other similar institutions. The aim was to strengthen evidence-based practice and curriculum alignment. The mechanism of curriculum mapping allowed for discussion about the flow of information from year to year and how evidenced knowledge and understanding can be developed. It is necessary that everyone participates and understands the importance of program goals as developed by the process. Because drift in curriculum can occur incrementally over the years, to be effective, the program requires ongoing monitoring and regular collaboration to continue improvements.

The Star for workforce redesign

More resources and tools are available by searching for **“education”** in the Star

National Data Programme

Workforce, Training and Education staff can look at the National Data Warehouse (NDL) SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

Approaches, challenges, and impact

The unseen costs of medical training in the UK: a growing crisis
Frontiers in Medicine, May 2025
An adequate holistic response to the UK trainee doctors' financial pressures must address the immediate and structural challenges on all fronts (23). The current funding and workforce models do not take into account the long-term implications of economic pressure on retention, patient safety, and NHS stability. The problem is not just the cost of training but how these economic barriers reinforce inequalities, drive shortages, and deter potential and current talent from entering or remaining in the profession. Reform must reach farther than modest budget adjustments, embedding sustainable and visionary policies that treat funding as an investment, not a cost.

Evaluating the Wider Impacts of Changes to UK Medical Education in Response to the COVID-19 Pandemic
General Medical Council, September 2023
We have explored the impact of the changes introduced to support training progression through the COVID-19 pandemic. Our results indicate that while these were largely effective and well received, there were also some negative experiences that can inform planning for a response to a future similar event. The changes have largely served their purpose in relation to COVID-19, and their retirement in 2023 seems appropriate. However, some participants warned that this should not mean a reversion to the status quo ante. Rather, it reflects an opportunity to draw on learning that can benefit the education and training system.

The changes represented an effective, innovative and timely response to extraneous challenge. The strength of collaborative decision-making at a strategic level was apparent, and the value of working together with a common purpose. It seems intuitive that this should not be lost in the return to business as usual.

Despite the challenges faced, the pandemic fostered innovation and adaptability in educational processes. The insights gained, as outlined in this report, can serve as a valuable guide to support future developments through, and beyond, the post-COVID-19 era.

Healthcare education needs radical reform to emphasise careful and kind care
BMJ, July 2023
Evidence shows that strong relationships between healthcare professionals and their patients and families are associated with enhanced patient experience, increased health literacy, and better health outcomes. As kindness is increasingly associated with healthcare quality, it should be the starting point for how

healthcare workers are trained, what they learn, and how services are led and experienced.

Context matters in curriculum reform: An analysis of change in surgical training
Medical Education, February 2023
This case study responds to calls in the literature to examine how educational standards are enacted in local contexts. Our use of a case study approach and complexity theory deepens our understanding of how history, systems and contexts interact to facilitate or inhibit change within one area of medical education. Our study paves the way for further empirical work examining the influence of the “dark matter of context” in curriculum reform, and thus determining how best to bring about change in practice.

State of the science: Quality improvement of medical curricula—How should we approach it?
Medical Education, August 2022
This narrative review explores some of the assumptions and practices in QI of medical curricula and makes recommendations for curriculum teams.

New ways of working

Universal Design for Learning (UDL) in simulation-based health professions education
Advances in Simulation, June 2025
Embracing UDL principles enables educators to create simulation experiences that meet the diverse needs of learners, fostering an inclusive environment where everyone can thrive. Future research should explore UDL as a theoretical framework for simulation and also the impact of UDL and other curriculum diversification approaches on learning outcomes, learner satisfaction, and organizational performance.

A review of ChatGPT in medical education: exploring advantages and limitations Abstract only*
International Journal of Surgery, June 2025
This review provides an overview of the current benefits and limitations of ChatGPT in medical education. It examines ChatGPT’s applications, explores potential future developments, and outlines the concerns associated with its use. Key applications in medical education include personalized learning, automated scoring, instructional support, rapid information retrieval, generation of case scenarios and exam questions, development of clinical clerkship content, language translation, image processing, writing assistance, public health education, and universal patient counseling. However, its implementation raises concerns that necessitate careful consideration and the adoption of appropriate safety measures.

The Future of the Health Professions: Navigating Shortages, Imbalances, and Automation
The International Journal of Health Planning and Management, November 2024
The healthcare sector is undergoing significant transformation driven by workforce shortages, role imbalances, and technological advances. Traditional health professions, characterised by advanced knowledge and self-regulation, face challenges from two key trends. First, there is a growing reliance on less-trained workers, such as nursing assistants and physician associates, to fill gaps, raising concerns about patient safety and the quality of care. While these roles can assist in simpler tasks, their expanded responsibilities—often exceeding their training—can lead to adverse outcomes, particularly in critical medical scenarios. Second, the rise of automation and artificial intelligence (AI) offers both opportunities and risks. While AI shows promise in reducing administrative burdens and aiding specialized tasks like image recognition, its limitations

hinder its broader adoption, such as reinforcing biases and failing to reason diagnostically. This editorial argues that uncritical reliance on these developments risks compromising healthcare quality. It calls for evidence-based policymaking, robust oversight, and updated regulatory frameworks to ensure patient safety while adapting to these shifts. Getting the right balance between maintaining professional autonomy and integrating new roles and technologies is critical for building resilient healthcare systems capable of responding to future challenges.

Reimagining Preparedness of Health Professional Graduates Through Stewardship Abstract only*
Teaching and Learning in Medicine: An International Journal, December 2022
It is time we expand our thinking about what is valuable and necessary to learn in order to become health professionals equipped to address the health and social care problems now and to come. Furthermore, continuing to address the challenges of preparedness for practice in the same ways as we have done for decades will not result in change; new and different educational approaches are required to meaningfully reimagine health professional education. We need to value education as a scholarly field in its own right, as much as we do evidence-based healthcare.

The promise of a health professions education imagination
Abstract only*
State of the Science, August 2021
Building upon previous scholarship in medical education, the author argues for the development in trainees of a 'health professions education imagination' or a unique 'quality of mind' that facilitates navigating competing ways of knowing. This concept borrows explicitly from 'the sociological imagination', which is briefly described. Next, some of the principles of thinking that might contribute to a similar 'imagination' in health professions education are identified. Finally, exemplars are provided highlighting how recent scholars have used their health professions education imaginations in recent research and teaching practice.

How can WhatsApp® facilitate the future of medical education and clinical practice?
BMC Medical Education, January 2021
The potential instant messaging applications (IMAs) have to enhance the delivery of the pre-registration medical curriculum has been well recognised for a number of years. WhatsApp's ever-growing popularity and irreplaceability, among medical students and tutors, to facilitate learning from the classroom setting of PBL sessions to the erratic environment of clinical attachments, is a testament to this. This major shift in perception, from the days where phones were viewed solely as an interference, is down to the increased awareness of the opportunities

Organizational Support in Healthcare Redesign Education: A Mixed-Methods Exploratory Study of Expert Coach and Executive Sponsor Experiences
International Journal of Environmental Research and Public Health, June 2020
Healthcare organizations must continue to improve services to meet the rising demand and patient expectations. For this to occur, the health workforce needs to have knowledge and skills to design, implement, and evaluate service improvement interventions. Studies have shown that effective training in health service improvement and redesign combines didactic education with experiential project-based learning and on-the-ground coaching. Project-based learning requires organizational support and oversight, generally through executive sponsorship.

Redesigning Medical Education to Improve Health Care Delivery and Outcomes Abstract only*
The Health Care Manager, March 2013
The need to improve the health of individuals and populations by providing high-quality health care has become a priority and has led to the implementation of various quality indicators to measure performance and outcomes. However, significant disparities exist in the health care delivery and outcomes among individuals that can only intensify, considering the future projections for an aging and increasingly diverse population. This article provides the authors' perspectives on how these issues can be addressed and overcome by redesigning medical education so the future generations of physicians have the necessary knowledge, skills, and attitudes to provide high-quality, patient-centered, and culturally sensitive care.

Organisational culture

Balancing medical education with service in the workplace: a qualitative case study Abstract only*
Journal of Workplace Learning, August 2021
Factors that contributed to a positive educational environment included trainees and educators feeling valued, the presence of supportive leaders and the provision of a safe space for learning. Perceived barriers included time constraints, differing motivation and the generic format of formal education. Participants reflected on how the Wrap Around project helped improve the workplace educational culture and offered suggestions for further improvement including the provision of ongoing feedback to learners about their performance.

Developing a Workplace-Based Learning Culture in the NHS: Aspirations and Challenges
Journal of Medical Education and Curricular Development, June 2020
In response to the gap in literature considering the barriers to the delivery of workplace-based education in the NHS, we have drawn on faculty staff 's perspectives to show the aspirations and barriers involved with shaping a learning culture. We have argued that leadership is key to addressing many of these barriers and propose further research focusing on leadership and educational change.

Once armed with an overview of issues impacting the delivery of education and a supportive learning environment, interventions can be developed to address them. To this end, we propose a toolkit (Table 2) that can support NHS Trusts to identify areas to address within their workplace, with suggestions on how to tackle them.

Involving healthcare support workers in education design
Abstract only*
Nursing Management, May 2016
NHS Education for Scotland (NES) has adopted a co-production model in its development work with HCSWs (HCSWs). The approach means that HCSWs are at the centre of NES activity, and ensures their voice is strong and influential in the creation, implementation and evaluation of education initiatives related to their development. This article describes how the co-production model has been advanced through a HCSW advisory group that oversees relevant NES activity.

Developing learning organisations in the new NHS
BMJ, April 2000
Individuals learn and enhance their personal capabilities within organisations, but what does it mean to talk of an organisation

learning? Can a hospital, a general practice, or a health authority be said to learn? An organisation is not simply a collection of individuals; the whole amounts to something greater than the sum of the parts. Similarly, the learning achieved by an organisation is not simply the sum of the learning achieved by individuals within that organisation. Individuals may come and go, but the organisation (even in the turbulent world of health care) usually endures. Robust organisations can still accumulate competence and capacity despite the turnover of staff; individual learning can be retained and deployed in the organisation. How well any organisation can do this depends on factors such as internal communication and the assimilation of individual knowledge into new work structures, routines, and norms. Learning organisations see a central role for enhancing personal capabilities and then mobilising these within the organisation.

Social accountability

Perspectives of health, and human and social sciences professionals on student transformation regarding racial discrimination in healthcare
BMC Medical Education, July 2025
Change and awareness are accompanied by a variety of feelings, but discomfort, shame and uncertainty can be foundational feelings for antiracism education in medicine. Providing theoretical input on the reality of discrimination, contextualising from a historical point of view, present testimonials, carrying out clinical supervision, and helping to metabolise all this learning through simulation. Our findings suggest the need to spell out the realities and remove taboos before awareness can be raised and the process initiated; the importance of storytelling and the hierarchical example in encouraging people to speak out; and the need to take account of the complex context in which this demanding decentring takes place.

Components of social accountability in medical education: a scoping review
BMC Medical Education, March 2025
The main components of social accountability in medical education include communication in providing medical education, communication in providing medical services, equity in providing medical education and services, cost-effectiveness of medical services, quality of medical services, revising medical curricula, conducting research based on community needs, and providing infrastructures of social accountability in medical education. Therefore, medical education that responds to the needs of society requires attention to these components.

Making Medical Education Socially Accountable in Australia and Southeast Asia: A Systematic Review
Medical Science Education, February 2025
This work has highlighted the critical role of vertical themes of the social obligation spectrum, learning environment, values of SA, graduate outcomes, and partnership linked with the horizontal themes of governance, education, service, and research. Their interconnectedness enhances community health outcomes, aligns medical training with societal needs, and fosters the development of competent, socially responsible healthcare professionals, in Australian and WHO-SEAR contexts.

The impact of community engaged healthcare education on undergraduate students' empathy and their views towards social accountability; a mixed methods systematic review
BMC Medical Education, December 2024
Community engaged education can help students better understand community needs, social determinants of health, improve empathy and cultural sensitivity, and build advocacy for social justice and change.

Where are we now? Evaluating the one year impact of an anti-racism curriculum review
Medical Teacher, February 2024
An antiracism curricular review followed by an embedded continuous quality improvement process can be an effective approach to address racism in medical school curricula. Addressing racism in medical education requires medical schools to regularly identify curricular gaps, faculty needs and monitor their progress.

Pathways, journeys and experiences: Integrating curricular activities related to social accountability within an undergraduate medical curriculum
Medical Education, October 2023
Our study contributes to the scholarship on bridging a knowledge-to-practice gap by examining the important factors that contribute to ongoing curriculum planning and implementation related to SA in undergraduate medical education. We have highlighted the relevance of experiential learning, engagement with community partners and collaborative approaches to curriculum development in fostering SA among medical students. By providing insights into these key elements, we have emphasised the need for a competency-based, longitudinal and integrated curriculum that incorporates service learning and community engagement to help students develop the necessary competencies for SA.

The impact of socially accountable health professional education: Systematic review
Journal of Family Medicine and Primary Care, December 2022
The results of the present systematic review showed that social accountability can both help cultivate a healthy and skilled medical workforce and be effective in improving service delivery to the public. On the other hand, there are different perceptions and views on what social responsibility really is and how its effectiveness can be measured, and there is a need to raise awareness in this area for students.

Dismantling the hub and spoke: Social accountability and rural medical education Abstract only*
Medical Education, January 2021
The authors argue that more focused efforts are needed to improve postgraduate rural specialty training and that rural training sites need to be included as essential partners within academic medicine.

Social Accountability Frameworks and Their Implications for Medical Education and Program Evaluation: A Narrative Review
Abstract only*
Academic Medicine, November 2020
Medical schools face growing pressures to produce stronger evidence of their social accountability, but measuring social accountability remains a global challenge. This narrative review aimed to identify and document common themes and indicators across large-scale social accountability frameworks to facilitate development of initial operational constructs to evaluate social accountability in medical education.

Leadership

Curriculum mapping to audit and grow longitudinal graduate medical education leadership training
BMJ Leader, December 2024
Effective leadership training should address critical topics and capitalise on experiential learning opportunities that exist within residency training programmes. The training must be seamlessly integrated into the demanding obligations of GME trainees, a process that can be achieved using curriculum mapping. Curriculum mapping can provide insight into a residency

programme's leadership curriculum and create a direction for future leadership curriculum development.

Clinical leadership development in postgraduate medical education and training: policy, strategy, and delivery in the UK National Health Service
Journal of Healthcare Leadership, December 2022
Successfully led organizations require empowered multiprofessional teams where any one member can step up to the plate to lead. But West et al point out that our approach to leader and leadership development in UK health care is "distorted by a preoccupation with individual leader development (important though it is), often provided by external providers in remote locations". The report reiterates the view that successful organizations are "leader-ful" not just "well led", highlighting that in comparison with the literature on leader development, "the development of the capacity of groups and organizations for leadership as a shared and collective process – is far less well explored and researched" and urge that we begin to look in that direction.

Undergraduate education

Modernizing undergraduate medical education by bringing public health into focus
Frontiers in Medicine, September 2024
It is posited that there is a decline in medical student empathy during the course of their studies. It may be that the current curricular emphasis on biomedical models of disease, and cure rather than prevention augments this. Certainly there is an overall decline in medical student understanding of social determinants of health during their studies, persistent through decades of medical education, despite overt attempts to change this trajectory. Internationally, this area remains challenging, whether attempting to address antibiotic stewardship, climate change and environmental damage, lifestyle medicine. Current approaches create overloaded curricula and do not create the adaptable, socially conscious doctors that are needed.

Critical evaluation of the undergraduate curriculum – are we asking the right questions?
Skin Health and Disease, September 2021
The curricular content in medical education needs continuous development and therefore must regularly undergo a critical evaluation. Here, the author describes an implemented shift in the teaching substance of an undergraduate dermatology course aimed to focus on relevance and practicability for general practitioners. The changes were based on a comprehensive nationwide database analysis of the spectrum of skin-related conditions seen in primary care.

International examples

Thinkings on the reform of medical education system in China
Medical Education Online, January 2024
Different clinical medicine programs exist in China, which are mainly the 3-year junior college medical program, the 5-year medical bachelor's degree program, the 5 + 3 medical master's degree program, and the 8-year medical doctoral degree program. Medical graduates obtain different degrees from various medical programs, leading to inequality and polarization of the cultivation. The extended length of schooling discourages talented students from pursuing clinical medicine. The current situation has worsened due to the mismatch between clinical competence and promotion, as well as insufficient remuneration. The most critical reform measure is to establish separate degree systems for scientific research skill training and clinical training, which helps clarify the boundaries between these two. Students who receive academic postgraduate education obtain academic degrees, such as the master of medical science and doctor of

philosophy; students who take part in the national standardized resident training, specialist training, or general practitioner training obtain professional degrees, such as master of medicine and doctor of medicine. It is imperative to consider shortening the duration of medical education, with an ideal limit of eight years on average. Optimizing the way to promotion and raising the expenditure of remuneration are also crucial. The reform of medical education system in China still has a long way to go and requires gradual adjustment and optimization.

Radical reform of the undergraduate medical education program in a developing country: the Egyptian experience
BMC Medical Education, March 2023
In 2017, the Egyptian medical education authorities mandated all medical schools to change their curricula to comply with revised national academic reference standards, which changed from outcome-based to competency-based. In parallel, they also changed the timeline of all medical programs for six years of studentship and one-year internship to five years and two years, respectively. This substantial reform involved the assessment of the existing situation, an awareness campaign for the proposed changes and an extensive national faculty development program. Monitoring the implementation of this substantial reform was performed through surveys, field visits and meetings with students, teaching staff and program directors. In addition to the expected challenges, the COVID-19-associated restrictions presented a significant further challenge during the implementation of this reform. This article presents the rationale for and steps of this reform, the challenges faced and how they were addressed.

Effect of national curriculum reform on medical students' preparedness for practice: a prospective cohort study from undergraduate to postgraduate periods
BMC Medical Education, November 2022
A shortened duration of clinical rotatory training is associated with a decrease in preparedness for practice during the transition from undergraduate to postgraduate study. Clinical confidence and patient management were the main domains affected. Nevertheless, students from both curriculum groups showed a gradually increasing trend over the study period. Older learners were associated with an increased level of burnout during clinical rotation.

Competency-based education

Unveiling the paradoxes of implementing post graduate competency based medical education programs
Medical Teacher, May 2024
Competency-based medical education (CBME) has gained prominence as an innovative model for post-graduate medical education, yet its implementation poses significant challenges, especially with regard to its sustainability. Drawing on paradox theory, we suggest that revealing the paradoxes underlying these challenges may contribute to our understanding of post graduate competency-based medical education (PGCBME) implementation processes and serve as a first-step in enhancing better implementation. Thus, the purpose of the current study is to identify the paradoxes associated with PGCBME implementation.

From Competence by Time to Competence by Design: Lessons From A National Transformation Initiative
Perspectives on Medical Education, March 2024
The aim of this set of papers is to tell the story of CBD in the context of the greater global CBME implementation. These

papers identify challenges and successes in CBME implementation at a national scale and articulate the unique approach taken by the Royal College of Physicians and Surgeons of Canada (Royal College) in the implementation of CBD, including the rationale, approach and methodology, tailored design elements, early outcomes and lessons learned.

Strategies to Enable Transformation in Medical Education: Faculty and Trainee Development in Competence By Design
Perspectives on Medical Education, February 2024
The outcomes described in this article required a deliberate framework and design as well as a commitment to nurturing the social and communication elements for sustained engagement. Encouraging key partners to use a variety of communication channels (from the level of the PD through to the level of the PGME offices) to provide input around what they needed, and what was or was not working. Ongoing attention to early results using the logic model to pivot, adjust, and fill gaps was crucial to success. Encouraging a growth mindset at all levels from the institution to the individual allowed all to learn about the change and contribute to the outcomes.

Competency-Based Workforce Development and Education in Global Oncology
Current Oncology, January 2023
The centrality of the workforce in delivering equitable cancer care and accelerating progress towards Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs) has been increasingly recognized. However, research on health professional education is lagging significantly behind other areas of cancer research in terms of funding and recognition. Strengthening research on health professional education and workforce optimization is often omitted, even in the most recent calls delineating the priorities for cancer research in LMIC. Global collaboration in CBME can hopefully raise the profile of educational scholarship, address areas of uncertainty, and stimulate the CBME debate and the global sharing of best practices in optimizing a cancer workforce capable of delivering compassionate and competent care while ensuring good stewardship of resources across the globe. Vehicles for such collaboration include enhancing partnerships between academic institutions, utilizing the platforms of oncology professional organizations and societies, and creating global oncology CBME networks and bodies.

Overcoming the barriers to implementation of competence-based medical education in post-graduate medical education: a narrative literature review
Medical Education Online, August 2022
Three key themes emerged from the articles: the value of broad stakeholder engagement and leadership, the importance of faculty and resident development, and the development of specific support systems for the educational curriculum. Different strategies were considered and contrasted for addressing these important themes. This review provides important insights and practical approaches to the barriers that should be useful as programs prepare for the implementation of CBME.

Competency Frameworks

Competency based medical education – Where do I start?
Current Problems in Pediatric and Adolescent Health Care, October 2024
Our specialty has developed an EPA framework for general pediatrics and pediatric subspecialties to serve as the foundation for education and assessment in our training programs. Each of these EPAs integrate multiple competencies, and for an individual to successfully execute an activity, they must demonstrate a number of specific behaviors related to a given

activity, reinforcing the importance of a comprehensive program of assessment that includes readiness to execute an activity and the developmental behaviors accomplished along the way.

Implementing competency-based medical education: Moving forward Abstract only*
Medical Teacher, June 2017
This editorial introduces a series of papers that resulted from summits held in 2013 and 2016 by the International CBME Collaborators, a scholarly network whose members are interested in developing competency-based approaches to preparing the next generation of health professionals. An overview of the papers is given, as well as a summary of landmarks in the conceptual evolution and implementation of CBME.