HONG KONG ACADEMY OF MEDICINE
香 港 醫 學 專 科 學 院

Hong Kong Academy of Medicine

POSITION PAPER ON POSTGRADUATE MEDICAL EDUCATION 2023

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FOREWORD

This year marks the 30th Anniversary of the Academy and serves as a reminder of our responsibilities and unwavering commitment to the betterment of postgraduate medical education in Hong Kong. Our first Position Paper on Postgraduate Medical Education, published in 2010, had laid down a strong foundation for necessary reforms in medical education and played a pivotal role in shaping the course of our progress. We are deeply grateful for the efforts and foresight of our predecessors.

In the face of changing professional landscapes and societal needs, we shall continue to adapt, evolve, and innovate in pursuit of excellence. The 2023 Position Paper embodies such spirit by incorporating insights and consensus arising from the Tripartite Medical Education Conference and Strategic Planning Retreat held in the same year. Its recommendations aim to pave the way towards competency-based medical education, the enhancement of Continuing Medical Education/Continuous Professional Development, faculty development, and quality assurance, with the ultimate goal of ensuring the provision of patient care of the highest standards.

I would like to extend my sincere gratitude to all the Colleges and individuals for their invaluable contributions to this work, and to all our Fellows, trainees and professional partners for their support in building a greater future together.

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EXECUTIVE SUMMARY

Introduction: In 2010, the Hong Kong Academy of Medicine (HKAM) published a position paper outlining necessary reforms for postgraduate medical education. Building upon the foundation set by the 2010 Position Statement, HKAM is looking to further enhance its commitment to medical education and training by embracing new opportunities and adapting to changes in the professional landscape.

Methods: The Tripartite Medical Education Conference (MEC) 2023 and a Strategic Planning Retreat have been organised to evaluate and plan future actions. This position statement extends the 2010's one, based on Tripartite MEC 2023 discussions and a survey conducted before and discussed during the Retreat.

Results: There are eleven recommendations in this Position Statement as follows:

1. Continue to advance specialist training towards competency-based medical education (CBME)
2. Undertake actions to implement CBME
3. Establish a mechanism to regularly evaluate CBME implementation and impact
4. Promote lifelong learning based on practice-based needs assessment and self-directed learning
5. Undertake actions to transform Continuing Medical Education/Continuous Professional Development (CME/CPD)
6. Establish a mechanism and regularly evaluate the progress of CME transformation
7. Enhance teaching skills, motivate participation in educational activities and strengthen leadership in medical education through the introduction of faculty development programmes
8. Develop a set of guidelines for trainers, a system for certifying trainers, and strategies to cultivate a distinguished image of clinical educators
9. Implement a structured quality assurance initiative
10. Create a mechanism to regularly review and share the experiences in quality assurance and improvement activities
11. Liaise with the Government, the Hospital Authority and other funding sources to secure resources to support our advancement towards CBME, transformation of CME/CPD, faculty development and quality assurance

Conclusion: This statement represents HKAM's efforts to enhance and modernise postgraduate medical education, with a focus on initiatives, informed by the Tripartite MEC and the Strategic Planning Retreat.

HKAM POSITION PAPER ON POSTGRADUATE MEDICAL EDUCATION 2023

Introduction

The Hong Kong Academy of Medicine (HKAM) is committed to promoting the development of postgraduate medical education and continuing medical education.[1] In 2010, HKAM published a position paper outlining the necessary reforms to modernise postgraduate medical education.[2]

The 2010 Position Paper laid out a series of recommendations aimed at refining the specialist training process and better preparing healthcare professionals for their roles. Progress has been made in different areas such as defining core competencies, incorporating communication skills into specialist training, organising training modules, standardising and systematising training programmes, and implementing comprehensive assessments. An Education Office was subsequently established under the HKAM's Education Committee to coordinate resources allocation and provide dedicated support to the development of postgraduate medical education and training initiatives. This office, geared by the Hong Kong Jockey Club Innovative Learning Centre for Medicine established in 2013, collaborates closely with all Academy Colleges to further enhance the quality of training and assessment.

As HKAM celebrates its 30th Anniversary, we aim to build upon the foundation set by the 2010 Position Statement by embracing new opportunities and adapting to the evolving professional landscapes of medical education and healthcare delivery.[3] To reinforce the Academy's commitment to excellence in medical education and training, the HKAM's Education Committee and its Education Office organised the Tripartite Medical Education Conference (MEC) 2023 and the Strategic Planning Retreat on Education and Training 2023 to evaluate existing frameworks and formulate actions for the future.

The Tripartite MEC 2023, themed "Actualising the Curriculum Continuum", brought together local and international medical experts to share experiences and insights on optimal alignment of postgraduate and undergraduate education and workplace requirement. Spanning two days, the event featured various sessions, including a first-of-its-kind roundtable discussion that highlighted the importance of coordination and collaboration along the professional training continuum for the identification of knowledge gaps, planning of instructional strategies, and assessment of progress in medical training and education.

The roundtable discussion, titled "Ten Years Down the Line", took place on 14 January 2023, and featured four distinguished speakers from the medical schools in Hong Kong, the Hospital Authority, and the Academy who discussed critical topics in medical education,

specialty training, and manpower planning. The key areas covered included the challenges faced by young doctors, the importance of quality assurance, role modelling, demographic shifts, and the need for trust in the healthcare system. The speakers also touched upon the impact of technology and data sciences on healthcare delivery, the concept of mandatory teaching skills for trainees, and the importance of resilience and well-being among young doctors.[4]

To follow up on the Tripartite MEC 2023, the Strategic Planning Retreat on Education and Training, held on 4 March 2023, aimed to discuss and set directions for the Academy in fulfilling its fundamental responsibilities and functions within postgraduate medical education,

training, and assessment of specialist trainees and Fellows.

This position paper thus represents a strategic update and extension of the 2010 Position Statement based on discussions arising from the Tripartite MEC 2023, and the results of a survey conducted before and discussed during the Retreat.[5] It also draws on relevant literature. (See Appendix for the methodologies of the literature review and survey.) Four key areas are addressed:

A. **Postgraduate Medical Education (PGME);**
B. **Continuing Medical Education/Continuous Professional Development (CME/CPD);**
C. **Faculty Development (FD);**
D. **Quality Assurance (QA)**.

A. Postgraduate Medical Education (PGME)

The primary focus of the HKAM's core business, PGME, has traditionally been on clinical competency. However, it is now recognised that modern professional training must prepare doctors to adapt to rapid advancements in medicine, understand patient perspectives, appreciate other professionals' skills, and work effectively in teams.[6, 7] To address this, training for 'Hong Kong's Specialist' must encompass all seven domains of competencies defined by HKAM.[2] The seven domains are:

i.   Professional expertise
ii. Health promoter
iii. Interpersonal communication
iv. Team working
v.   Academic
vi. Manager-leader
vii. Professionalism

PGME has traditionally been time-based, but there are compelling reasons to move towards competency-based medical education (CBME).[8] CBME is an approach that prepares physicians for practice by focusing on their abilities and organising competencies based on societal and patient needs, rather than time-based training.[9] This approach promises greater accountability, flexibility, and learner-centeredness.[9] While the 2010 Position Statement recommended a combination of competency-based and time-based training, the current view is that time should be regarded as a resource for learning, rather than the basis for competency progression.[6, 8, 9] Therefore, instead of a combination, the focus should be on advancing towards CBME. Our Retreat survey revealed that all 15 Academy Colleges are already moving in this direction.

> *Recommendation 1: Colleges should continue to advance specialist training towards **competency-based medical education.***

Advancing from the traditional approach to CBME presents challenges that can be addressed through four key strategies.[6, 10] Firstly, since CBME is a complicated concept that differs significantly from the current practice, it is essential to communicate effectively with stakeholders to engage them in this resource-intensive change. Secondly, CBME requires trainers to possess the mastery of teaching and facilitation skills that may not be familiar to all. Faculty development programmes are crucial for empowering trainers to meet this requirement. Thirdly, aligning learning and assessment methods with CBME principles and approaches necessitates a redesign of educational standards and procedures.[10, 11] Lastly, given that PGME is a

relatively new discipline with limited academic presence, generating knowledge specific to the local context is necessary to guide implementation and engage stakeholders.[12]

> *Recommendation 2:* HKAM and the Colleges should undertake the following actions to implement CBME.
> 2.1 Develop and implement a comprehensive **communication plan** through appropriate channels to engage with each stakeholder segment effectively.
> 2.2 Design and deliver **faculty development** programmes that empower Fellows to master the teaching and facilitation skills required for CBME.
> 2.3 Redesign training and assessment **standards and procedures** to align with the principles and approaches of CBME.
> 2.4 Support and participate in **research** activities to advance the field of PGME and generate evidence on

> *the benefits of CBME that can be used to engage stakeholders.*

CBME is a constantly evolving approach aimed at achieving better healthcare through effective medical education.[8] To ensure progress and continuous improvement, regular evaluations are necessary. The International CBME collaboration has developed a framework outlining the five core components, which can guide this evaluation.[13] The five core components are:

i. Outcome competencies
ii. Sequenced progression
iii. Tailored learning experiences
iv. Competency-focused instruction
v. Programmatic assessment

> *Recommendation 3:* HKAM and the Colleges should establish a mechanism to regularly **evaluate** CBME implementation and impact. A timeline for this process should be implemented and external reviewer involvement should be considered.
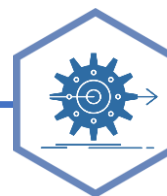
B. Continuing Medical Education/Continuous Professional Development (CME/CPD)

The medical profession is constantly advancing, and specialists must engage in lifelong learning, or CME/CPD.[14] CME aims to promote development in doctors' and dentists' practices, and the Institute of Medicine (IOM) emphasises that an effective CME/CPD system should prepare healthcare professionals to provide patient-centred care, work in teams, use evidence-based practice, apply quality improvement, and utilise health informatics.[15, 16] However, current CME practices mainly involve didactic activities that are not always related to patient outcomes, and which have been shown to have less than anticipated impact on physician practice.[17, 18, 19, 20, 21] Hence, there is a need for transformation. Our Retreat survey revealed that 9 out of the 15 Colleges are moving in this direction.

To design effective CME/CPD activities, attention must be given to its three components: needs assessment, learning activity design, and learning assessment.[14] Recent studies have demonstrated that CME/CPD can improve performance and patient outcomes if it is based on practice-based needs assessment, is ongoing, uses interactive learning methods, and is contextually relevant.[22] The conceptual model of Moore et al can guide CME/CPD activity design,[23] while Knowles' process of inquiry supports self-directed learning and is particularly relevant to adult learners (Fig 1).[24]

> *Recommendation 4: HKAM and the Colleges should promote lifelong learning based on **practice-based needs assessment** and **self-directed learning**.*

Several challenges must be overcome to transform CME/CPD effectively. One of the biggest hurdles is that stakeholders are unfamiliar with the new paradigm, so effective communication is crucial to engage them. Additionally, many learners currently view CME/CPD as a mere requirement for specialist registration rather than an opportunity for lifelong learning, posing a motivation problem that requires not just engagement efforts but also a change in the CME system. Another challenge is empowering our Fellows and CME/CPD providers to use methods that support adult learning, such as interactive techniques, simulation-based medical education, and online learning. Of these, online learning is particularly promising, as research shows that it can promote lifelong learning most effectively.[25, 26] Finally, many learners lack the skills and personal attributes needed

for self-directed learning, so support is necessary to help them acquire these abilities.[27]

Recommendation 5: HKAM and the Colleges should undertake actions to transform CME/CPD, including:

5.1 Devise and deliver a comprehensive **communication plan** to effectively engage all stakeholders.

5.2 Reform **the structure** and redesign the **standards and procedures** of CME requirements and accreditation to align with the new CME paradigm.

5.3 Design and implement **faculty development** programmes to empower Fellows and possibly other CME providers to use learning methods which support adult learning.

5.4 Nurture the capacities of learners to practise **self-directed learning**.

5.5 Support the development of online learning through the provision of technology and relevant training in educational practices.

5.6 Establish partnerships with overseas CME/CPD accreditation bodies.

The process of transforming CME/CPD, much like the implementation of CBME, will be a lengthy journey that necessitates regular evaluation to ensure that we are moving forward in the correct direction.

Recommendation 6: HKAM and the Colleges should establish a mechanism and regularly evaluate the progress of CME transformation.
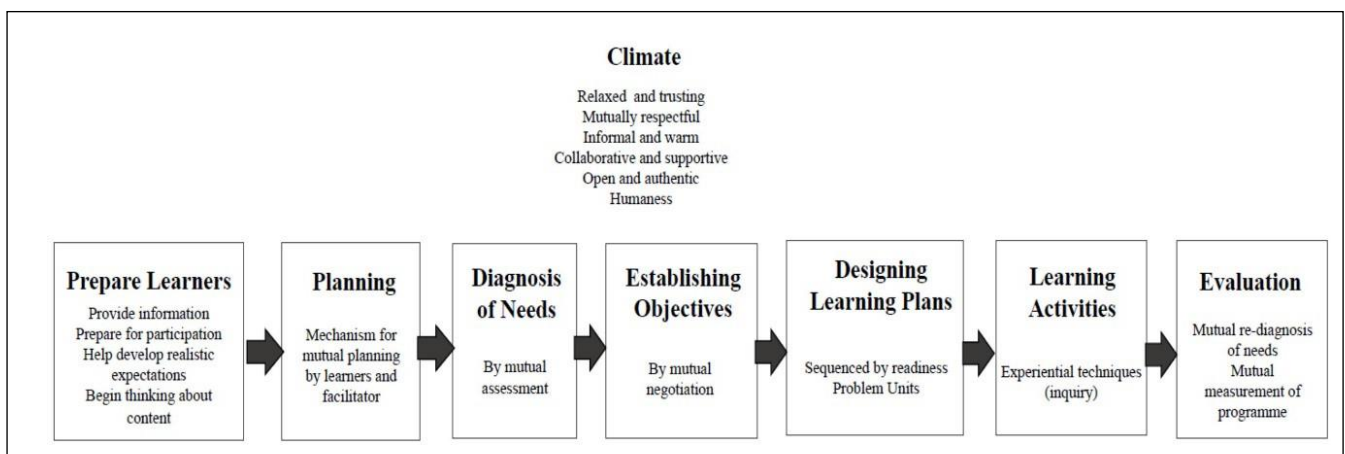

Fig 1. Knowles' process of inquiry.[24] It supports self-directed learning and is particularly relevant to adult learners.

C. Faculty Development

The development of PGME and CME relies on clinical educators equipped with knowledge and skills of modern medical education. Presently, few educators have been trained in these areas, and many trainers continue to rely on outdated teaching methods.[28] This highlights the critical need for faculty development (FD), which encompasses activities that improve the knowledge, skills and behaviours of health professionals as teachers, leaders, and researchers.[29] For the purpose of this positional statement, the term "faculty" encompasses all individuals involved in teaching and educating learners at all levels. Our Retreat survey revealed that 10 out of 15 Colleges are moving in this direction.

While the Colleges recognise the importance of FD, there is a need for assistance from HKAM to establish a core group before some Colleges can organise their own FD programme (FDP). A generic FDP that can be adapted to meet specific needs would be beneficial. The objectives of FDP should not only be on how to teach, but also on motivating Fellows to participate in teaching activities and emphasising values and professional identity.[30, 31] Leadership and organisational change are necessary for transformation in PGME and CME, and FDP should include activities to enhance leadership skills for those in leadership roles.[30]

Competency-based FDP guided by a curriculum should be designed using sound education theories such as situated learning, Knowles' principles of adult learning (Fig 2),[24]
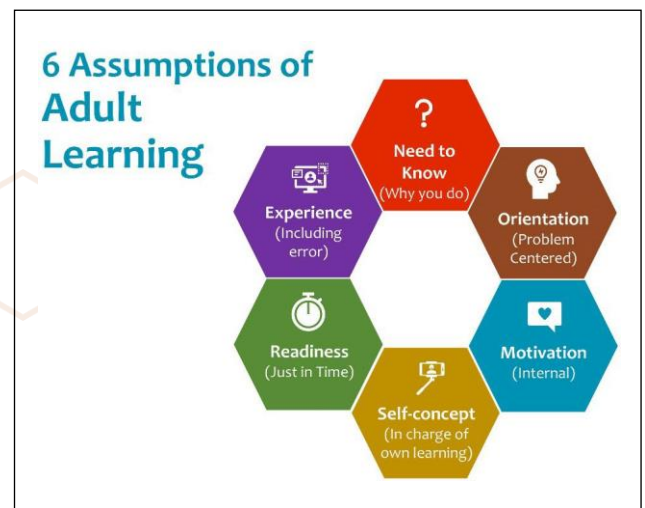

Fig 2. Knowles' assumptions of adult learning[24]
There are 6 assumptions of adult learning. (1) Orientation of learning: adult learners want their learning can be applied to their everyday lives. (2) Motivation to learn: as learners become older, their motivation to learn becomes internal. (3) Self-concept: adults are responsible for their own decision and are self-directed individuals. (4) Readiness: adults are more eager to learn what enables them to achieve their goals. (5) Experience: adult learners use their past experience in the learning process. (6) Need to know: adult learners need to know the reason for learning.

and Kolb's experiential learning cycle (Fig 3).[32] The professional standards published by the Academy of Medical Educators in the United Kingdom provide helpful guidance for competencies in five domains: (i) design and planning of learning activities; (ii) teaching and facilitating learning; (iii) assessment of learning; (iv) educational scholarship and evidence-based practice; and (v) educational manage-ment and leadership.[33] The approach to FDP should prioritise programmes that extend over time, promote workplace learning, and foster community development.[33] Continuous improve-ment is key, and FDPs should be evaluated using both quantitative and qualitative methods.[31, 34]

Recommendation 7: HKAM and the Colleges should enhance teaching skills, motivate participation in education activities, and strengthen leadership in medical education

*through the **introduction of faculty development programmes (FDPs)**.*

*7.1 HKAM should create a **competency-based curricula** for FDPs for clinical teachers of varying levels based on their respective roles and responsibilities.*

*7.2 FDPs should comprise **induction courses** or workshops based on theories of situated learning, experiential learning, and adult learning. Additionally, opportunities for **workplace learning** and mutual learning should be provided through communities of practice involving clinical educators.*

*7.3 HKAM and the Colleges should establish mechanisms to **evaluate** FDPs using both quantitative and qualitative methods.*
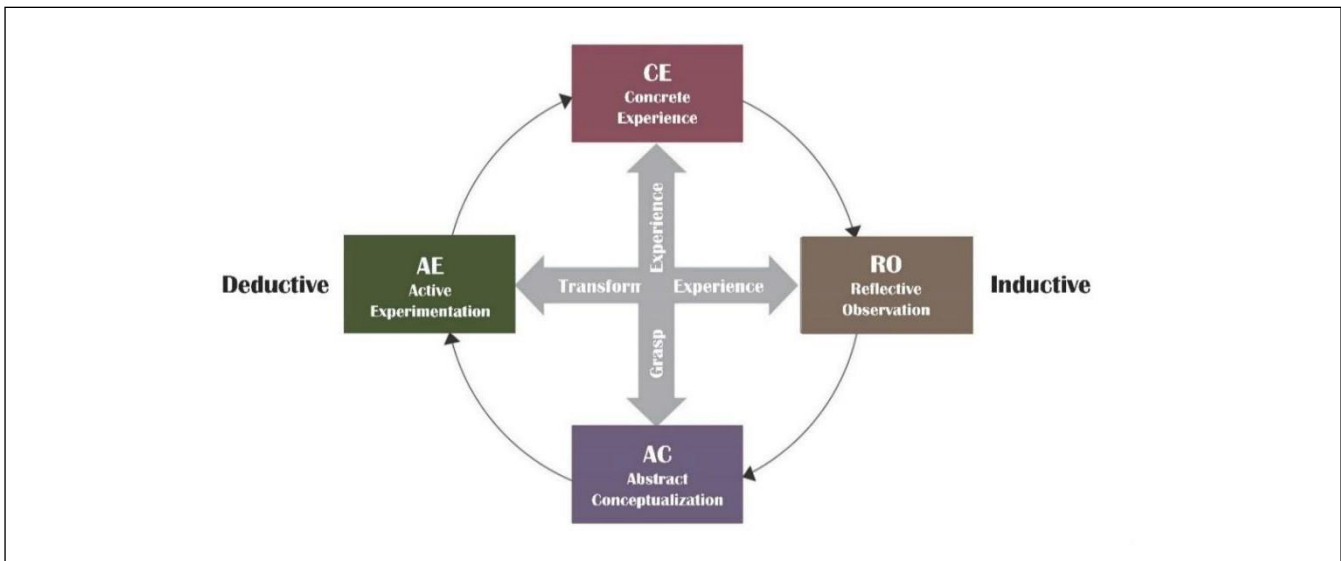

Fig 3. Kolb's experiential learning cycle.[32]

In order to involve Fellows in teaching activities, modifications to the system are imperative. The status of trainers needs to be enhanced by both HKAM and the Colleges. It is recommended that HKAM establish a benchmark for trainer accreditation and define the teaching responsibilities that are expected of trainers. These standards and requirements can then be customised by each College to suit their individual needs. In addition, HKAM and the Colleges should explore ways to acknowledge the valuable contribution of Fellows to education. For example, training activities should be creditable towards CME/CPD.

Recommendation 8: HKAM and the Colleges should develop a set of **guidelines** for trainers, a system for **certifying** trainers, and strategies to cultivate a **distinguished image** of clinical educators.

D. Quality Assurance

Quality assurance refers to the planned and systematic activities that ensure a product or service fulfils its quality requirements.[35] As a provider of PGME and CME, HKAM and the Colleges have the responsibility to ensure quality and are accountable for the training they provide.[36] This requires providing information and generating data to improve the quality of education.[36] However, quality assurance is currently not widely perceived as a priority for many Colleges, and more communication, engagement, and encouragement are needed to address this issue.

Our emphasis is on internal quality assurance (IQA), although external quality assurance can also be implemented to achieve quality assurance. IQA involves implementing activities and processes to control, monitor, improve, and enhance educational quality.[35] The IQA cycle consists of three steps: defining measurement parameters, judging quality based on collected data, and taking actions for improvement.[35] Our Retreat survey revealed that 9 out of 15 Colleges are moving in this direction.

The World Federation for Medical Education has set standards in eight areas for PGME, two of which were highlighted during the Retreat: trainer quality and assessments.[37] Evaluation of psychometric properties of assessments can be facilitated with the support of psychometricians and using appropriate software, while training is necessary for interpreting findings. To gather rich data for improvement purposes, qualitative methods like questionnaires using open-ended questions, interviews, focus groups, and observations are often used. However, our Fellows may require training to become familiar with these methods.

In the second phase of the cycle, criteria and standards are set to interpret the collected data and judge the quality of education.[35] Finally, actions are taken for improvement, necessitating the assignment of responsibility and the development of a culture of continuous improvement and a sense of ownership and commitment among learners and staff.[35, 38]

Recommendation 9: HKAM and Colleges should implement a structured quality assurance initiative by taking the following steps:

9.1 Develop and execute a comprehensive communication strategy that reaches each stakeholder segment through appropriate channels.

9.2 Establish quality assurance standards.

9.3 Provide training to Fellows responsible for quality assurance

on quality assurance fundamentals, standard establishment, quality metric interpretation, and qualitative evaluation methods.

9.4 Allocate resources to facilitate quality assurance initiatives.

For IQA to yield helpful results, the assessment tasks need to be executed in an organised and structured manner, while being seamlessly integrated into the organisation's daily operations.[39] It is imperative that HKAM and the Colleges scrutinise their quality assurance procedures to ensure compliance with these conditions.

*Recommendation 10: HKAM and Colleges should create a mechanism for the Colleges to regularly **review and share** their experiences in quality assurance and improvement activities.*

The successful implementation of the foregoing ten recommendations will require a significant investment of resources. Both Fellows and doctors in training will need to devote a considerable amount of time and effort to realise these aspirations. However, due to manpower limitations and heavy clinical workload, assigning the necessary personnel

and accomplishing the recommended actions can be challenging for the Colleges. Nevertheless, since PGME and CME are essential for producing competent and compassionate medical practitioners and providing high-quality patient care,[40] HKAM must liaise with the Government and the Hospital Authority to obtain their support.

Moreover, in addition to support from Fellows, there is a need for other resources such as medical education expertise, information technology, and secretarial assistance. Given the manpower shortage, exploring the possibility of utilising technology is crucial. E-learning can be developed to allow trainers to focus on workplace-based learning activities instead of information transmission. HKAM should seek potential funding resources to support these initiatives.

*Recommendation 11: HKAM should liaise with the Government, the Hospital Authority (HA), and other funding sources to secure **resources** that support advancement towards CBME, transformation of CME/CPD, faculty development, and quality assurance. HKAM should work in partnership with the HA to identify training needs for the whole territory, rather than the HA alone.*

Conclusion

This position statement, building upon the foundation and accomplishments laid down by the 2010 "Position Paper on Postgraduate Medical Education", provides an update on our strategic directions and priorities in modernising and reforming postgraduate medical and dental specialist training in Hong Kong. The eleven recommendations set out in this position statement are the products of intense deliberations involving the 15 constituent Colleges and the Education Office of HKAM, as well as leaders from the two local medical schools and the Hospital Authority. It is anticipated that the progressive implementation of these recommendations will bring about a more cohesive, effective, and evidence-based framework of postgraduate training in the face of new opportunities and challenges offered by changes in professional landscape, healthcare delivery model, and societal needs.

References

1. Hong Kong Academy of Medicine. "Our Objectives". Available from: https://www.hkam.org.hk/en/our-objectives

2. Hong Kong Academy of Medicine position paper on postgraduate medical education. Hong Kong Academy of Medicine; Hong Kong: 2010. Available from: https://www.hkam.org.hk/sites/default/files/HKAM_position_paper.pdf

3. So HY. Postgraduate medical education: see one, do one, teach one…and what else? Hong Kong Med J 2023 Apr;29(2):104. Available from: https://doi.org/10.12809/hkmj235145

4. Lai Paul BS, Wong Gordon TC, Wong Samuel YS. 'Ten Years Down the Line': a roundtable on the progress and advancement of medical education and training. Hong Kong Med J 2023 Jun;29(3):195-197. Available from: https://doi.org/10.12809/hkmj235146

5. Hong Kong Academy of Medicine. Summary Report of Strategic Planning Retreat on Education and Training held on 4 March 2023. Hong Kong Academy of Medicine; Hong Kong: 2023. Available from: https://online.hkam.org.hk/lms/retreat2023/Report-on-Strategic-Planning-Retreat-with-appendixes.pdf

6. Frank JR, Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. Medical Teacher 2007;29:642-647.

7. Long G, Gibbon WW. Postgraduate medical education: methodology. Br J Sports Med 2000;34:236-237.

8. Holmboes ES, Sherbino J, Englander R, et al. A call to action: The controversy of and rational for competency-based medical education. Medical Teacher 2017;39(6):574-581.

9. Frank JR, Mungroo R, Ahmad Y, et al. Toward a definition of competency-based education in medicine: a systematic review of published definitions. Medical Teacher 2010;32(8):631-637.

10. Caverzagie KJ, Nousiainen MT, Ferguson PC, et al. Overarching challenges to the implementation of competency-based medical education. Medical Teacher 2017;39:588-593.

11. Lockyer J, Carraccio C, Chan MK, et al. Core principles of assessment in competency-based medical education. Med Teach 2017;39:609-616.

12. Swanwick T. Postgraduate Medical Education: The same, but different. Postgraduate Medical Journal 2015;91(1074):179-181.

13. Van Melle E, Frank JR, Holmboe ES, et al. A core components framework for evaluating implementation of competency-based medical education programmes.

Academic Medicine 2019;94(7):1002-1009.

14. Stevenson R. Learning and behaviour in medicine: A voyage around CME and CPD. London, England: Taylor & Francis; 2022.

15. Fox RD, Bennett NL. Learning and change: implications for continuing medical education. BMJ 1998;316:466-468.

16. Institute Of Medicine (U.S.). Committee On Planning A Continuing Health Care Professional Education Institute. Redesigning continuing education in the health professions. Washington, D.C.: National Academies Press; 2010.

17. Sibley JC. A randomized trial of continuing medical education. New England Journal of Medicine 1982;306:511-515.

18. Berg AO. Does continuing medical education improve the quality of medical care? A look at the evidence. The Journal of Family Practice 1979;8(6):1171-1174.

19. Miller GE. Continuing education for what? Journal of Medical Education 1967;42(4): 320-326.

20. Abrahamson S. Evaluation in continuing medical education. JAMA 1968;206(3):625-628.

21. Bertram DA, Brooks-Bertram PA. The evaluation of continuing medical education: a literature review. Health Education Monographs 1977;5(4):330-362.

22. Cervero RM, Gaines JK. The impact of CME on physician performance and patient health outcomes: An updated synthesis of systematic reviews. J Cont Educ Health Prof 2015;35:131-138.

23. Moore Jr. DE, Chappell K, Sherman L, Vinayaga-Pavan M. A conceptual framework for planning and assessment learning in continuing education activities designed for clinicians in one profession and/or clinical teams. Medical Teacher 2018;40(9):904-913.

24. Knowles MS, Holton III EF, Swanson RA. The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development. 5th ed. Woburn, Mass: Butterworth-Heinemann; 2005.

25. Gerstein J. Moving from education 1.0 through education 2.0 towards education 3.0. In: Hase S, Kenyon C, editors. Self-Determined Learning: Heutagogy in Action. London, England: Bloomsbury Academic; 2015.p.83-98.

26. Sinclair PM, Kable A, Levett-Jones T, Booth D. The effectiveness of internet-based e-learning on clinician behaviour and patient outcomes: A systematic review. International Journal of Nursing Studies 2016;57:70-81.

27. Sawatsky AP, Ratelle JT, Bonnes SL, Egginton JS, Beckman TJ. A model of self-directed learning in internal medicine residency: a qualitative study using grounded theory. BMC Med Educ 2017;17:31.

28. MacDougall J, Drummond MJ. The development of medical teachers: an enquiry into the learning histories of 10

experienced medical teachers. Medical Education 2005;39:1213-1220.

29. Steinert Y. Faculty Development: Core Concepts and Principles. In: Steinert Y. Faculty Development in the Health Professions: A Focus on Research and Practice. Dordrecht: Springer; 2014.p.3-25.

30. Steinert Y, Naismith L, Mann K. Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. Medical Teacher 2012;34(6):483-503.

31. Steinert Y. Developing medical educators: A journey, not a destination. In: Swanwick T, Forrest K, O'Brien BC, editors. Understanding Medical Education: Evidence, Theory, and Practice, Third Edition. The Association for the Study of Medical Education (ASME); 2019.p.31-548.

32. Kolb DA. Experiential learning: Experience as the source of learning and development (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall; 1984.

33. Academy of Medical Educators. Professional Standards (4th Edition). Cardiff, Academy of Medical Educators; 2022.

34. Steinert Y, Mann K, Anderson B, et al. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. Medical Teacher 2016; 38(8):769-786.

35. Stalmeijer R, Dolmans D, van Berkel H, Wolfhagen I. Quality Assurance. In: Hillen H, van der Vleuten C, Scherpbier A. (Eds). Lessons from Problem Based Learning. Oxford University Press; 2010.p.157-166.

36. Vroeijenstijn AI. Quality assurance in medical education. Academic Medicine 1995;70(supplement):S59-S67.

37. World Federation for Medical Education. WFME Global Standards for Quality Improvement in PGME. World Federation for Medical Education; 2023.

38. Stalmeijer RE, Whittingham JRD, Bendermacher GWG, Wolfhagen HAP, Dolmans DHJM, Sehlbach C. Continuous enhancement of educational quality — fostering a quality culture: AMEE Guide No. 147. Medical Teacher. 2023;45(1):6-16.

39. Dolmans DHJM, Wolfhagen HAP, Scherpbier AJJA. From quality assurance to total quality management: How can quality assurance result in continuous improvement in health professions education? Education for Health 2003;16 (2):210-217.

40. McLean M, Cilliers F, Van Wyk JM. Faculty development: Yesterday, today, and tomorrow. Medical Teacher 2008;30:555-584.

APPENDIX. Methodologies and Results of Thematic Analysis of Pre-Retreat Survey, Strategic Planning Retreat Discussion, and Literature Review

1. Method of Pre-Retreat Survey

Forty-three participants, including presidents and the officers responsible for the education of our 15 constituent Colleges, office bearers of the HKAM, members of the Faculty Development Workgroup under the Innovative Learning Centre for Medicine, and members of the Young Fellows Chapter were invited to join the Strategic Planning Retreat on Education and Training (the "Retreat"), held on 4 March 2023.

A survey was conducted before the Retreat. This consisted of four videos summarising best practices from the literature on four topics: competency-based medical education (CBME), continuing medical education/continuous professional development (CME/CPD), faculty development (FD), and quality assurance (QA). These were distributed to participants through our newly established Learning Management System (Canvas).[1] Three questions were asked at the end of each video:

1. Is your College advancing in the direction described in the video?

2. What hurdles are you experiencing, or what prevents you from advancement?

3. What can HKAM do to facilitate the improvement?

Thirty participants from all 15 Colleges completed the survey. The findings of the survey were summarised and presented at the beginning of the Retreat. Participants were then divided into four groups and each group was assigned one of the four topics. Based on information from the videos and findings of the survey, they were invited to discuss and present on the following issues for each topic:

1. Their opinion of the presented practice

2. Further hurdles identified

3. Good practices shared by the Colleges

4. Suggested actions for HKAM

All participants were given the opportunity to supplement, question and comment after the presentations. Findings of the survey and discussions during the retreat were then analysed using template analysis and informed by the consolidated framework of implementation research.[1,2,3] The consolidated framework of implementation research is a comprehensive model that identifies key factors that influence successful implementation of evidence-based practices in various settings. These factors are grouped into five domains: (1) Intervention characteristics; (2) The outer setting; (3) Inner setting; (4) Individuals involved and

understanding of all these four domains would inform; and (5) Implementation process. The following link to a video provides more information on the model: https://youtu.be/-TJAutrxXnI

2. Results

The themes identified from the survey and discussions are summarised under the four topics below:

2.1 Postgraduate Medical Education (PGME)

2.1.1 Intervention (CBME)

CBME is a complex concept and very different from current practice, stakeholders may not be aware of its advantage, and there are misconceptions.

> *"Most Fellows may not [have] heard of CBME before, and still think knowledge is the most important aspect in medical education." (Participant 26)*

Implementation of CBME is resource-intensive, especially in terms of time of trainers and trainees.

> *"CBME needs huge amount of workplace-based assessment (WBA) to be valid, and such large volume of assessment need extra resource, in terms of time of both trainers and trainees, IT support, secretarial support." (Participant 26)*

2.1.2 Inner Setting

Colleges vary in their readiness for change because of their differences in size and number of subspecialties, the presence of partnerships with overseas colleges, and the implementation climate.

> *"Some subspecialties may stick to existing time-based training." (Participant 3)*
> *"Many of us are too used to our old ways of doing things, including educating!" (Participant 7)*

2.1.3 Outer Setting

Our trainers and trainees are mostly employees and there is an interaction between clinical work and training. The workload and manpower situation affect the possibility to allocate manpower for training.

> *"It's time-consuming for the trainer to give feedbacks and especially when the attrition of manpower is challenging in current situation." (Participant 18)*

The existing working condition may affect the implementation of CBME.

> *"…lack of onsite supervision and instant feedback and inconsistency in the quality of onsite supervision…" (Group Discussion)*

2.1.4 Individuals Involved
Trainers/Fellows

Motivation of trainers can be challenging especially in the presence of high clinical workload.

"Fellow's willingness to engage in participation and development of CME materials." (Participant 4)

There is a need for paradigm shift as well as the acquisition of new skills.

"We also worry trainers may not buy in and making WBA just a tick box exercise. They may be reluctant to tell the truth on trainees' weakness as they do not want to break the friendly relationship with trainees." (Participant 26)

Trainees

Trainees would need to be engaged and prepared for this new form of learning.

"Education of trainees that they are responsible for learning and no longer any spoon feeding." (Participant 24)

2.1.5 Implementation Process Resources

There is a need to liaise with the Hospital Authority (HA) to consider the importance of training and allocate resources for training.

"The Academy could help convince the HA to allocate resources for training and suggest making training and education outcomes one of the KPIs of the HA." (Group Discussion)

Resources also include policy, guidelines, and commitment to quality of education from HKAM,

educational resources, e-learning, and secretarial support.

"Support of HKAM to College[s] to migrate to online bite-sited learning for majority of bookstuffs. Then College can setup schedule with interactive online platforms to deliver baseline knowledge to trainees. On-site clinical training provision by each Training centre[s] can focus on hands-on practice, workplace-based assessment." (Participant 15)

Communication

There is a need to identify all stakeholders and engage them through effective communication strategies.

"Required understanding of this approach by every stakeholder." (Participant 5)

Redesign

Colleges need to realign their training and assessment system with the new approach.

"Perhaps we will have to start by updating/modifying our training pathways so to align with competency-based training and assessment." (Participant 31)

Faculty Development

Faculty development is vital for the implementation of CBME.

"Train-the-Trainer programmes are vital…" (Group Discussion)

Research

There is a need to generate new knowledge and evidence to convince stakeholders and guide the implementation of CBME, especially because the outcome of educational intervention is context-dependent.

> *"Adoption of WBA for competency outcome evaluation had limitation for XX specialty which would require tremendous range of skill sets." (Participant 15)*

> *"…evaluating the outcomes of CBME vs traditional time and case-based curriculum" (Participant 14)*

2.2 Continuing Medical Education/ Continuous Professional Development (CME/CPD)

2.2.1 Intervention (Transformation of CME/CPD)

The intervention is complicated, and unfamiliar to most stakeholders.

> *"Trainer do not have this concept in mind." (Participant 19)*

Implementation of the intervention is resource-intensive.

> *"Lack of financial resource and expertise to organise anything other than didactic lectures." (Participant 20)*

Adaptability may facilitate implementation.

> *"Allow the individual Colleges to have flexibility in carrying out this new model of CME." (Participant 23)*

2.2.2 Inner Setting

Implementation climate varies amongst Colleges. Some Colleges did not identify any hurdle, while others found that very difficult.

2.2.3 Outer Setting

Workload in the clinical workplace impact learning.

> *"Manpower shortage and work overloading of all our trainers and trainees in our training centres." (Participant 7)*

2.2.4 Individuals Involved

CME Providers

This form of CME is unknown to many CME providers.

> *"No discussion on this form of continued [e]ducation before." (Participant 23)*

Learners

Learners currently perceive CME/CPD as a requirement for the continuation of specialist registration, not for learning. There is no incentive to move onto more demanding form of learning activity.

> *"Fellows view CME as a requirement, not need for continuous learning and training." (Participant 17)*

Learners may not be prepared for self-directed learning.

> *"Self-evaluation and peer feedback is important for CPD but feedback literacy amongst Fellows is generally challenging and not psychologically safe." (Participant 14)*

2.2.5 Implementation Process Resources

There is a need to secure funding to support this transformation.

> *"Similar to previous topic of Faculty Development, namely: (1) Workshops; (2) Advocacy; (3) Funding lobbying." (Participant 5)*

The mandate from HKAM is required to drive transformation.

> *"The Academy can collaborate with Colleges to establish a unified framework and standard for CME/CPD mapped to specialists' core competencies and professional standards". (Group Discussion)*

The development of e-learning can facilitate the transformation.

> *"E-learning will be a good way forward, having an instructional designer to help Colleges develop materials will be good." (Participant 14)*

Communication

Communication strategy to engage stakeholders is vital. This includes sharing amongst sister Colleges.

> *"May need to promote designing more effective forms of CME activities relevant to our College." (Participant 11)*

Redesign

There is a need to change the CME system to facilitate the transformation.

> *"…modifying CME requirements to incorporate more facets other than just active and passive CME." (Participant 14)*

Making reference to overseas practice can guide the redesign process.

> *"Benchmarking with international standards is considered a good practice in Colleges…" (Group Discussion)*

Faculty Development

Training is required for Fellows and other CME providers, not only to enhance skills but also for attitude change.

> *"Need a paradigm shift and awareness of trainers." (Participant 22)*
>
> *"Training CME providers to offer adult-oriented learning." (Participant 20)*

2.3 Faculty Development

2.3.1 Intervention (Faculty Development)

Faculty development is well understood and its role in driving CBME is recognised.

"We understand the importance of faculty development. From the traditional medical education, teaching (or facilitation of learning) is not part of the intended development of a clinician. However, without the involvement of trainers, CBME will not be possible." (Participant 26)

2.3.2 Inner Setting

Colleges vary in their readiness to implement FDP due to variations in size, number of subspecialties, and availability of expertise.

"Lack of Fellows and staff who have the knowledge, time and commitment." (Participant 2)

2.3.3 Outer Setting

The availability of trainers is heavily affected by the "brain-drain" in the public healthcare system.

"Trained faculty often leave the training hospitals to private very soon after being trained." (Participant 14)

Faculty development is very difficult in the face of inadequate manpower for clinical work.

"The main hurdle is the manpower issue." (Participant 21)

2.3.4 Individuals Involved

Motivation of Fellows to take up trainer role is difficult, there is a lack of recognition and other incentive.

"Most of the promotion opportunities are not considering the competency in teaching. Fellows may not have incentive to develop their skill in it." (Participant 26)

2.3.5 Implementation Process Resources

There is a need to secure funding and support from the government and the Hospital Authority.

"Lobby with the government for more funding." (Participant 5)

Standard and System

HKAM should promulgate a standard for trainer accreditation, clarify the requirement of Fellows' participation in teaching activities, and encourage teaching activities through recognition.

"Set up a general guidance for training applicable to all Colleges so that resistance from COS and HA admin will be lessened." (Participant 17)

"Build up a community of practice, set up a prestigious identity for clinical educators. develop the culture of educating our next generation of doctors." (Participant 26)

Training Programme

HKAM should develop a generic course but adaptable to suit different Colleges and solicit mutual support amongst Colleges.

> *"Faculty development courses that can be adopted to different Colleges for implementation." (Participant 14)*

2.4 Quality Assurance

The following themes were identified from the survey and discussion.[4]

2.4.1 Intervention (Quality Assurance)

Quality assurance is an unfamiliar concept.

> *"Inadequate knowledge and experience." (Participant 9)*

Quality assurance requires significant input of resources including manpower, means to collect and analyse data, as well expertise in interpretation and quality improvement.

> *"A dedicated and sustainable team with relevant knowledge is required to take it forward." (Participant 2)*

2.4.2 Inner Setting

Quality assurance is currently not a priority of our Colleges.

> *"Quality assurance is not emphasised." (Participant 3)*

2.4.3 Outer Setting

Clinical workload makes it difficult to allocate time and manpower for quality assurance activities.

> *"A lack of protected time for quality assessment." (Group Discussion)*

2.4.4 Individuals Involved

There is a shortage of Fellows who are passionate about quality assurance.

> *"Only selected few have interest in quality assurance." (Participant 14)*

2.4.5 Implementation Process
Communication

Many stakeholders are unfamiliar with the concept and communication is essential.

> *"More courses to Fellows and trainers to introduce such a concept so that trainers would buy in the usefulness and hence the readiness of them to participate." (Participant 22)*

Resources

Colleges would require support in the collection and analysis of data for quality assurance.

> *"Academy can provide support from psychometricians and statisticians in examination standard setting and offer technical support such as automated programs for MCQs and QA of exams." (Group Discussion)*

Standard and System

Quality of trainers/examiners and quality of examination assessment are two foci identified by participants. HKAM should promulgate relevant standards and establish mechanisms to monitor performances.

> *"HKAM can….mandate QA procedures to be built into training and examination for all Colleges." (Group Discussion)*

Training

Quality of examination and assessment is another identified focus. Quality assurance of assessments frequently involve standard setting and evaluation of psychometric properties of assessments. Apart from support from psychometrician, Fellows responsible for the quality of assessments in each College have to understand how to interpret those findings and methods of standard setting.

> *"Colleges and the Academy can work together to heighten the awareness of examiners in statistics, standard setting in assessments, and psychometrics." (Group Discussion)*

Improvement requires rich data using qualitative method.

> *"We have been evaluating the quality of our central academic lectures but it seemed that the evaluation outcome could not offer much insight for us (Questionnaires only). We need more in-depth and quality discussions with the teachers and trainees on this issue." (Participant 23)*

References

1. Hong Kong Academy of Medicine. Summary Report of Strategic Planning Retreat on Education and Training held on 4 March 2023. Hong Kong Academy of Medicine; Hong Kong: 2023.

2. King N. Doing Template Analysis. In: Cassell C. Qualitative Organizational Research: Core Methods and Current Challenges. Symon G, editor. London, England: SAGE Publications; 2012.p.426-450.

3. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation Science 2009;4(1):50.

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