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## Synthesis and perspectives from the Ottawa 2022 conference on the assessment of competence

Katharine Boursicot<sup>a</sup> , Sandra Kemp<sup>b</sup> , John Norcini<sup>c</sup> , Vishna Devi Nadarajah<sup>d</sup> , Susan Humphrey-Murto<sup>e</sup>, Elize Archer<sup>f</sup> , Jen Williams<sup>g</sup>, Eeva Pyörälä<sup>h</sup> and Riitta Möller<sup>i</sup>

<sup>a</sup>Health Professional Assessment Consultancy, Singapore, Singapore; <sup>b</sup>Graduate School of Medicine, University of Wollongong, Wollongong, Australia; <sup>c</sup>Department of Psychiatry, Upstate Medical University, Syracuse, NY, USA; <sup>d</sup>Teaching and Learning, International Medical University, Kuala Lumpur, Malaysia; <sup>e</sup>Core Research Unit, University of Ottawa, Ottawa, Canada; <sup>f</sup>Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa; <sup>g</sup>Faculty Dean of Medicine and Health, University of New England, Armidale, Australia; <sup>h</sup>Center for University Teaching and Learning, University of Helsinki, Helsinki, Finland; <sup>i</sup>Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden

### ABSTRACT

**Introduction:** The Ottawa Conference on the Assessment of Competence in Medicine and the Healthcare Professions was first convened in 1985 in Ottawa. Since then, what has become known as the Ottawa conference has been held in various locations around the world every 2 years. It has become an important conference for the community of assessment – including researchers, educators, administrators and leaders – to share contemporary knowledge and develop international standards for assessment in medical and health professions education.

**Methods:** The Ottawa 2022 conference was held in Lyon, France, in conjunction with the AMEE 2022 conference. A diverse group of international assessment experts were invited to present a symposium at the AMEE conference to summarise key concepts from the Ottawa conference. This paper was developed from that symposium.

**Results and discussion:** This paper summarises key themes and issues that emerged from the Ottawa 2022 conference. It highlights the importance of the consensus statements and discusses challenges for assessment such as issues of equity, diversity, and inclusion, shifts in emphasis to systems of assessment, implications of ‘big data’ and analytics, and challenges to ensure published research and practice are based on contemporary theories and concepts.

### KEYWORDS

Assessment; Ottawa consensus; OSCE; systems of assessment; assessment of competence

### Brief history of the Ottawa conferences

The Ottawa Conference on the Assessment of Competence in Medicine and the Healthcare Professions was first convened by Professors Ian Hart (Ottawa, Canada) and Ronald Harden (Dundee, UK) in 1985 in Ottawa (Hart and Harden 2000). It has been held biennially since then and it provides a forum for medical and other healthcare professions educators to network and share ideas and learning on all aspects of the assessment of competence across the continuum of education, in both clinical and non-clinical domains. Since 2010, the Ottawa Conference has been jointly planned and delivered by AMEE in collaboration with local organizing committees to ensure that it continues to offer a special focused international forum for research and best practice in the assessment of competence (<https://www.ottawaconference.org>).

The Ottawa Conferences have been especially important in the development and introduction of new approaches to the assessment of learners in the healthcare professions and in the sharing of views and experiences from different countries (Harden 2015a). Thus, the conference enables the community of researchers, teachers, clinicians, administrators, leaders and others to meet, broaden their knowledge, and develop international standards of assessment in health professions education leading to improvement in the quality of healthcare globally.

### The Ottawa consensus papers

On the 25th anniversary of the Ottawa Conference, held in Miami, USA in 2010, the local organizing committee marked the occasion by commissioning a series of Consensus Statements and Recommendations relating to assessment in the healthcare professions (Issenberg 2011). The notion was to provide an opportunity to review and reflect on what had been developed over the previous 25 years and to drive the adoption of good practice internationally. The first six Ottawa Consensus Statements were:

1. Criteria for Good Assessment (Norcini et al. 2011)
2. Performance Assessment (Boursicot et al. 2011)
3. Assessment of Professionalism (Hodges et al. 2011)
4. Assessment for Selection (Prideaux et al. 2011)
5. Research in Assessment (Schuwirth et al. 2011)
6. Technology Enabled Assessment (Amin et al. 2011)

Since then, a further series of papers updating some of the first Ottawa Consensus Statements have been published:

- Framework for good assessment (Norcini et al. 2018)
- Assessment of professionalism (Hodges et al. 2019)
- Selection and recruitment to the healthcare professions (Patterson et al. 2018)

- Performance Assessment (Boursicot et al. 2021)
- Technology enhanced assessment (Fuller et al. 2022)

New areas of interest in assessment have emerged and these have resulted in the publication of other statements:

- International consensus statement of the assessment of interprofessional learning outcomes (Rogers et al. 2017)
- Ottawa 2020 consensus statement for programmatic assessment – 1. Agreement on the principles (Heeneman et al. 2021)
- Ottawa 2020 consensus statements for programmatic assessment – 2. Implementation and practice (Torre et al. 2021)

These influential papers are based on expert reviews of the evidence and represent the views of the international academic community on evidence-informed best practice and have been cited hundreds of times. These statements provide critical and ongoing value through an expert consensus view of the literature, which can be used to underpin and inform practical implementation, innovations and standards related to assessment in wide-ranging education contexts. The papers highlight key contemporaneous issues in health professions assessment and provide useful frameworks, analyses of emerging issues and trends, and synthesised guidance for educators and researchers.

### Overview of Ottawa Conference 2022 conference themes

The Ottawa Conference 2022 theme was *Reimagining assessment across the continuum*, and this connected with a key focus in the conference on the assessment of outcomes, related to the current dominant discourse of Outcomes/Competency Based Education in healthcare professions. The symposia, workshops and presentations explored different aspects of assessment, scrutinising the evidence for not only the use and effectiveness of assessment tools but also the ways in which assessment is designed and implemented. This latter emphasis on systems of assessment, rather than the at times eclectic use of different tools, took into consideration overarching effects of assessment: the impact of assessment on wellbeing and learning, how to enhance learner engagement, the criticality of feedback conversations and perhaps most importantly, evaluation of the effects of new assessments and systems of assessment in terms of improved learner outcomes and patient outcomes.

There was a great deal of interest in technology enhanced assessment (especially due to the effects of COVID-19 pandemic) and 'remote assessments', including the adoption by some of 'remote OSCEs', with some interesting discussions about validity considerations versus what was 'feasible'. There was consideration about the impact of technology on equity, diversity and inclusivity, balancing arguments espousing the positive aspects of remote assessments with many advising caution rather than complete reliance on this modality. Another separate focus of the impact of technology was the use of electronic portfolios and this was a major feature in discussions about workplace-based assessment (WBA), especially as a tool to

support the tracking of learner acquisition of skills, the assessment of professionalism and the development of professional identity.

Another feature of this Ottawa conference was discussions about the removal of some high-stakes clinical examinations (OSCEs) following COVID-19 related suspension of such examinations by, for example, the United States Medical Licensing Exam (USMLE) and the Medical Council of Canada (MCC). The idea of replacing examinations with other methods such as a system of WBAs within a system of assessment such as programmatic assessment, Entrustable Professional Activities (EPAs) or Accreditation Council for Graduate Medical Education (ACGME) Milestones was debated in several forums. The evaluation of outcomes (intended and unintended) from such strategies will be a topic for further research.

### Learning from assessment experts

The opening plenary at the Ottawa Conference addressed 'The Future of Performance Assessment' and explored some of the complex areas from the Ottawa Consensus statement on Performance Assessment (Boursicot et al. 2021). A key point was that a review of the literature on OSCE development since the 2011 Performance Assessment Consensus statement highlighted that OSCEs were still a valid mode of testing clinical and communication skills in an examination format and reiterated some specific recommendations including clarity of purpose of an OSCE, blueprinting to learning outcomes, ensuring sufficient sampling, and using a recognised criterion-referenced standard setting method. Newer recommendations included attention to validity framework criteria, OSCE-specific metrics, valuing examiner diversity, and using examiner training to reduce the impact of examiner conduct, behaviour and bias.

In relation to the future of WBA, recommendations included placing an integrated and coherent set of WBAs within an overall system of assessment, being clear about the purpose of WBA, engagement of learners longitudinally, and valuing observer judgements. In particular, a major development noted for best practice was the move away from numerical scoring to marking schemes which used the language of clinical practice and narrative feedback, the latter being much more valuable and meaningful for learners than numbers or grades.

Another plenary session in the conference saw a diverse group of assessment experts address the question of 'What's right and what's wrong with assessment and what can we do about it?'. The speakers provided thought-provoking views and raised challenges for the audience on the current state of assessment across a variety of jurisdictions and education/training pathways, a reminder of lessons learnt in the past, and what still remains as gaps in the literature and evidence base but a priority for addressing. One gap is the focus on the assessment of competence of individuals and there is little evidence on understanding the collective competence of teams, which forms an important part of competence of healthcare professionals.

## Value of the evidence-base and recent Ottawa consensus statements

Building on the importance of Ottawa consensus statements, some symposia during the conference reiterated the importance of these statements to the health professions assessment community. The symposium titled *The synergistic intersection of the Ottawa consensus statements on Performance Assessment and Technology in Assessment* explored interconnectivity between the two consensus statements – Performance Assessment (Boursicot et al. 2021) and Technology in Assessment (Fuller et al. 2022) – from validity and education perspectives, and from the perspective of ‘choosing wisely’ for how technology can enhance, and sometimes disadvantage assessment and learners. Another symposium connected with the Ottawa consensus statements for programmatic assessment (Heeneman et al. 2021; Torre et al. 2021) brought diverse participation and examples related to implementing a particular type of system of assessment (i.e. programmatic assessment). The symposium on an upcoming consensus statement on big data titled *Ottawa Consensus Statement: Big data research in Assessment and Medical Education: Ethics, Equity, and Emerging Practices* (to be published in a later issue of *Medical Teacher*) provided conference participants the opportunity to hear and contribute to work in progress and emphasised the complexity of ethical aspects in this emerging field.

Through these symposia, and other sessions, as well as the plenaries, the conference provided an important forum for exploration of complex issues in relation to recently published consensus statements, and an opportunity for participants to contribute to consensus statements in progress.

## Learning from international perspectives on assessment

The Ottawa conference also brought to light valuable perspectives on common assessment issues from around the world. Presentations on online assessments highlighted pandemic-related assessment decision making and the transition to remote online assessments in a variety of countries. Presenters were also evaluating evidence related to open book assessments, concerns with academic integrity, issues with design, and there were mixed reports on the validity, design, value and acceptability of such assessments. Assessment of professionalism topics discussed familiar issues including the ‘failure to fail’ phenomenon in relation to students who demonstrated behavioural issues, different definitions of professionalism, or with faculty facing difficulties of assessing cultural competence. Assessment outcomes, especially student or graduate readiness for the workplace, were of concern due to pandemic disruptions. Peer support programmes and remediation opportunities for senior students and junior doctors were presented as viable considerations to support work readiness. Sessions on tensions for faculty roles as both teachers and assessors were particularly useful with key messages on the importance of triangulation *via* 360 degree feedback approaches. Other sessions related to the need for faculty to respond and adapt to evaluation. Other

messages from presenters suggested that peer observation and feedback may need institutional support and leadership role modelling for sustainability.

## Thorny issues in assessment – ‘stones in our shoes’

During the conference, vigorous debates flourished. One ongoing deliberation was about formative and summative assessment, with focus on contrasts between the use of OSCEs and WBAs; there were some reports of abandoning high-stakes OSCEs and replacing them with some form of WBA system.

It was noted that the research evidence about the rise of WBA spanned a shorter time frame compared to several decades of evidence related to OSCEs. The value of WBA as linked to authentic practice was noted but at the same time concerns about the impact of WBAs on clinician workload and clinical service provision were highlighted. Other points related to design of systems of assessment which optimise the information garnered from WBAs, OSCEs and other assessments, of which programmatic assessment was one example. Data analytics and modelling were seen to present opportunities to derive personalised feedback for learners within different types of systems of assessment.

Several OSCE-related innovations were discussed indicating that the evolution of the OSCE continues. Authenticity through task alignment with station timing, integrated tasks (e.g. history-taking and patient counselling) and design of marking schemes were valuable foci in some presentations. The use of technology for OSCEs was explored from equity and accessibility perspectives, such as when candidates are in remote geographical locations. Innovative studies were presented on rater cognition and examiner effects on standard setting.

Some presentations included detailed analyses of OSCE design and delivery. Whilst it is evident that careful planning, resources, and a strong understanding of facets of OSCE construction link to validity evidence, conducting large scale, high quality OSCEs continues to be a challenge. Common pitfalls include examinations comprising an inadequate number of stations (hence insufficient sampling and insufficient data for desired validity), stations where performance of clinical skills is not required, absence of evidence-informed standard setting procedures, and use of suboptimal marking schema. The conference opening plenary provided a memorable quote when delegates were reminded that ‘an OSCE is not an OSCE simply because you call it that’ (Boursicot 2022), and that fundamental principles underlying this assessment method are important (Harden 2015b) such as ensuring sufficient testing time, an adequate number of stations, blueprinting and formal examiner training, amongst other areas. The impact of the pandemic and the consequent restrictions on in-person face-to-face assessments may have led to some implementation of sub-standard OSCE practices, but in other aspects, there has been innovation and progress in the evaluation of technology in relation to OSCEs. Progressive monitoring of clinical skills development remains at a fledgling stage, but evidence related to sequential testing formats for OSCEs is building. Feedback for learners on their

performance was noted as a critical aspect of further development of learning from this assessment method.

## Views about assessment in Competency Based Medical Education

CBME (Competency Based Medical Education) uptake continues within different global jurisdictions and the conference focused on several topics directly related to assessment in CBME. Areas covered in presentations and workshops included increasing social accountability by engaging multiple stakeholders such as trainees, patients, policy makers and administrators in the development of EPAs. Other areas covered included stakeholder engagement using consensus-based methods such as the Delphi and Nominal group technique to inform about patient safety during OSCEs, or to understand professional behaviours. Presentations also emphasised the importance of CBME assessment being focussed on the standards reached by the student/trainee, and that individuals may reach those standards at different points in time. This continued the direction from earlier Ottawa conferences on the need to shift focus away from time spent in training, and explore how assessment is designed to account for individual variation in time taken to reach a standard.

Other areas presented related to entrustment scales for entrustment-supervision ratings, and longstanding 'failure to fail' concerns remained. As a topic, 'Milestones' saw fewer presentations than previous conferences but novel machine learning algorithms using Milestones data attracted interest from participants. Notably absent were abstracts dedicated to competence committees.

A general theme highlighted throughout the conference was that, in theory, assessment practices in CBME have great potential benefit for the learner. Yet implementation of CBME to realise these advantages remains challenging. The use of WBA underscored the tension between learning and assessment with questions raised such as: '*Is WBA for learning or decision making?*' and '*Can the learning coach be the assessor too?*'. That learners strategically pursue high performance on WBAs and faculty remain reluctant to document constructive feedback were persistent themes across some presentations.

The context in which learners and faculty function remained an important topic for discussions which built on the quote from the conference opening plenary: 'The system in which you place your WBA is critical' (Boursicot 2022). Globally, healthcare services are under pressure and heavy clinical workloads and associated time pressures limit resources for WBA. Common threads across presentations highlighted the competitive nature of selection for entry into postgraduate education and the limitations of longitudinal assessment as well as learner concerns that isolated poor performance could thwart future professional aspirations.

## Areas where our thinking about assessment was challenged

There are at least four areas where our thinking was challenged. First, and perhaps most importantly, conference sessions made clear that the field must confront issues of

equity, diversity, and inclusion in assessment. On the one hand, this means acknowledging the existence and effects of systemic bias and taking this into account as an integral part of the work. On the other hand, it means devoting additional effort to ensuring that assessment systems, design and delivery do not adversely impact examinees based on their personal characteristics such as gender, race, and ethnicity, on physical abilities (or limitations), or on access to resources (e.g. IT infrastructure, high speed internet capacity).

Second, the conference highlighted a gradual shift in emphasis from single assessments to systems of assessments. Such systems have always existed but it is only recently that we have begun to think of these systems as more than just a loosely related collection of single assessments. Whether the conference participants focussed on a particular system (i.e. programmatic assessment) or the more general forms, the challenge ahead is to develop a standard nomenclature, and recommendations for the construction and evaluation of such systems.

Third, conference sessions challenged us to consider the implications of 'big data' and analytics for assessment. As with other areas of endeavour, access to vast troves of data provides exciting opportunities to increase understanding of the effects of system inputs, with the resultant prospect of improving assessment practices. At the same time, such data raise significant ethical and fairness issues. The development of a consensus statement on this topic is a critical step in acknowledging and addressing these challenges and opportunities.

Fourth, over the past 40 years there have been numerous developments in test validation. Despite these advances, one symposium emphasised that a substantial portion of the published research continues to be based on outdated theories. A significant challenge to the field of assessment is to find ways to translate newer concepts of validity (as well as other improvements) into both research and practice.

## Conclusion

The Ottawa 2022 conference represented a welcome return to a face-to-face conference, combined with the ability to participate in hybrid spaces for those who could not be present. Themes that emerged from the conference sessions represented new and emerging challenges, and contemporary thinking about long-standing challenges to the medical education and health professions assessment community. Areas such as systems of assessment, purposes of assessments, challenges related to equity, diversity and inclusion, validity, the value of feedback to improve learning, technology and assessment, big data, test validation, and how assessments could be evaluated through the lenses of learner and patient outcomes were discussed and debated.

The conference drew attention to the importance of using and understanding the evidence-base of assessment, across time, spanning decades. The Ottawa 2022 conference proved to be a valuable means of supporting learning for newer as well as experienced members of the assessment community to further dialogue and understanding, and the growing catalogue of consensus statements

supported that endeavour in important ways. Ottawa conference 2022 played a key role in contributing to faculty development, cross-institutional networking, and welcomed many new members of the assessment community, in part due to the impact of the pandemic on medical and health professional education.

The Ottawa conference continues to be of importance because it is an international platform that provides credibility to assessment across the continuum of health professions education. Credibility brings trust to stakeholders, and the continuous discourses from the Ottawa conferences which include people development, processes and method development and evidence of best practices benefit all stakeholders, including students, educators, educational institutions, the health professions, and patients. The conference also brings diversity of presentations from educators around the globe, emphasising the vital message that assessment implementation needs to be grounded in theory and evidence-informed practice and that context matters when evaluating assessment systems.

Future conferences will no doubt provide an important platform for key assessment issues, nevertheless there are areas that could benefit from urgent attention. Educational leadership face increasing challenges for operationalising health professions education with staffing, digital transformation and learning spaces costs increasing. To continue making a case for resources in assessment, compelling discourses and evidence related to investment in assessment are key. Areas such as investment in technology for assessment and building faculty expertise, particularly in resource-constrained contexts, deserve increased attention. There is an opportunity for future Ottawa conferences to highlight the value and voices of assessments from a range of global jurisdictions, including marginalised and differently abled communities, and we hope all involved in assessment for the medical and health professions globally will consider contributing to and participating in the next Ottawa conference in Melbourne, Australia, 2024.

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The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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The first two authors, Katharine Boursicot and Sandra Kemp, contributed equally as the main co-authors of the paper. All other authors are listed in order of contribution.

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### Notes on contributors

**Katharine Boursicot**, BSc, MBBS, MRCOG, MAHPE, NTF, SFHEA, FRSM, is Director of Health Professional Assessment Consultancy, Singapore. She was the opening plenary speaker at the Ottawa Conference 2022.

**Sandra Kemp**, BMHS(Ed), MA, PhD, is Deputy Dean, Innovation and Scholarship Medical Education at the Graduate School of Medicine, University of Wollongong, Australia.

**John Norcini**, PhD, is Research Professor in the Department of Psychiatry at Upstate Medical University, a Fellow of Presence (a Center at Stanford Medical School) and President Emeritus of the Foundation for Advancement of International Medical Education and Research (FAIMER®).

**Vishna Devi Nadarajah**, BSc, MAHPE, PhD, is Pro-Vice Chancellor for Institutional Development and International, International Medical University, Malaysia.

**Susan Humphrey-Murto**, MD, FRCPC, Med, is Associate Professor at the University of Ottawa and Director of the Core Research Unit.

**Elize Archer**, BSocSc, BCur (Hons), MPhil in Higher Education, PhD in Health Professions Education, is an associate professor in the Centre for Health Professions Education, Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa.

**Jennifer Williams**, BSc, BA, MBBS, MACE, FACEM, is Faculty Dean of Medicine and Health, University of New England, NSW, Australia.

**Eeva Pyörälä**, PhD, MME, MSocSci, FAMEE, is an Assistant Professor of University Pedagogy at the Center for University Teaching and Learning at the University of Helsinki, Finland.

**Riitta Möller**, MD, PhD, is a senior consultant in otolaryngology at Karolinska University Hospital and senior lecturer and associate professor at the Department of Medical epidemiology and biostatistics, Karolinska Institutet, Stockholm, Sweden.

### ORCID

Katharine Boursicot  <http://orcid.org/0000-0001-9705-4715>

Sandra Kemp  <http://orcid.org/0000-0002-1689-0541>

John Norcini  <http://orcid.org/0000-0002-8464-4115>

Vishna Devi Nadarajah  <http://orcid.org/0000-0002-7126-7189>

Elize Archer  <http://orcid.org/0000-0002-9739-3730>

Eeva Pyörälä  <http://orcid.org/0000-0002-2474-2434>

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