Covid-19 online pivot of an undergraduate obstetrics and gynaecology curriculum: Example from Dundee MBChB

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Abstract

Background

A global pandemic has resulted in the international suspension of face-to-face teaching in educational institutions. Medical students undertaking their clinical attachment in Obstetrics and Gynaecology would learn through experiential learning in normal circumstances. This unprecedented international emergency has required medical educators to create an online learning package to replace face-to-face teaching to support students in their self-directed studies.

Approach to online resources

Collaboratively, we have transformed the Obstetrics and Gynaecology undergraduate curriculum into an e-learning package. We mapped the learning resources to the curriculum to provide transparent guidance on the learning resources available for each learning outcome. The resources created include virtual wards and clinics, online tutorials, national guidelines and reports, procedural videos, online textbook and formative assessments.

Conclusion

Transitioning a clinical placement to the virtual world has been a challenge which has faced medical educators globally. A virtual undergraduate Obstetrics and Gynaecology curriculum was created in our institution through the collaboration of teachers and learners. Our approach to creating a virtual curriculum is transferable to other areas within medicine during this unprecedented time.

Keywords: Covid-19; online learning; obstetrics and gynaecology; virtual resources; e-learning; undergraduate
Background

International spread of a novel coronavirus has resulted in a worldwide pandemic. This unprecedented situation has resulted in the temporary closure of many educational institutions globally. It is estimated that worldwide 72% of all learners (1,268,164,088 people) are affected by such closures (UNESCO, 2020). The University of Dundee has 71 year 4 medical students who are currently unable to partake in a clinical placement within local Obstetrics & Gynaecology (O&G) Departments. This represents 28.9% of the year group. In normal circumstances year 4 medical students would learn through experiential learning in a variety of settings including clinics, wards & operating theatres. Experiential learning puts practice at the centre of learning and is the process of conceptualising new ideas from the learners pre-existing knowledge or experience (Yardley et al., 2012). Students would spend 4 weeks 'attached' to a variety of differing doctors and teams, witnessing a varied number of clinical situations. Students would also partake in a series of face to face small group tutorials. This report details Dundee Medical School’s response to the pandemic and how an alternative O&G attachment was delivered using e-learning methodology.

Context

Locally, at the University of Dundee, all face-to-face teaching was suspended on 16th March 2020 (“University of Dundee”). Educators were immediately tasked with transitioning to online teaching. Our community of medical educators had to create resources to support the medical students in their self-directed studies. The ability to do so relies on in-depth knowledge of the current curriculum and the students learning needs. Furthermore, such resources optimally foster the development of critical reasoning, an important transition in thought process that medical students make throughout their undergraduate training but particularly in years 4 &5 during clinical experiential learning (Chamberland and Mamede, 2015). This restructuring of thinking is thought to occur with increasing exposure to clinical cases, utilising a problem-solving approach to the clinical scenario presented (Kassirer, 2010).

Innovation

We created an e-learning guide with a package of learning resources for the 4th year undergraduate obstetrics and gynaecology clinical placement. Our aim was to replicate, as far as possible, the experience and exposure the students would have face-to-face in our department. We utilised the undergraduate Royal College of Obstetrics and gynaecology curriculum to guide the resources created, ensuring the breadth and depth of the curriculum was delivered (“Royal college of Obstetrics and Gynaecology”). This national curriculum is mapped against General Medical Council (GMC) competencies, Foundations Competencies and Medical Licensing Assessment (MLA) requirements, and delivers a comprehensive yet focussed list of learning objectives. By providing suggested learning opportunities per learning objective in the ‘E-learning O&G Guide’ we ensured that the students are clear of the learning opportunities available to them to achieve the learning outcomes (Harden, 2001). Suitable freely available learning resources were identified such as TED talks, recorded ‘grand ward round’ lectures, articles, guidelines, publications, national reports, charitable websites, videos and postgraduate interprofessional online modules including 18 created by e-learning for health and The Perinatal Training Programme (PTP) were freely made available to students. These resources were curated by the teaching lead and permissions were sought where necessary. This is a completely new set of resources which replace pre pandemic teaching and offer future blended learning opportunities when face-to-face teaching is reinstated. Previously students were provided with a core clinical problems list and a generalised reading list for the block. This new resource has specific objectives with a suggested learning resource mapped to each one. We felt this needed to be more prescriptive in order to guide the students in their self-directed learning.
Clinical teaching

Clinical teaching was the biggest challenge to replicate electronically. We chose a case based approach to virtual clinical teaching. We aimed to support the students in improving their problem solving skills to scaffold their assembly of knowledge and clinical reasoning processes (Yuan et al., 2013). Using Microsoft's "sway" to present virtual patients, we created a case for every clinical placement our students would have experienced normally; labour ward, gynaecology ward, antenatal ward, postnatal ward, general gynaecology clinic, antenatal clinic, infertility clinic, early pregnancy clinic, termination of pregnancy clinic and community midwife clinic. We also created a "sway" to cover acute care scenarios. Each virtual clinic and ward had a simple task for every patient; to provide a plan of care for the patient. Students were asked to document their thoughts on how to execute this and then were given an accepted answer once they had formulated their own plan of care for the patient.

Tutorials

Pre-shut down, students would usually have a daily lunchtime tutorial, covering core problems in O&G. These were largely revision sessions and had previously evaluated well by students. Therefore, it was decided that providing revision resources was a priority for the new ‘block’. The teaching lead hosted alternative weekly virtual tutorials instead on key areas within the specialty; genetics, human factors, professional behaviours and communication via "blackboard collaborate". We felt it important to involve the student body in this transition from face-to-face to virtual learning at the planning stage. A group of students with an interest in O&G have formed the Obstetrics and Gynaecology Society (OGSoc), which was already established pre pandemic. They have created, under clinician's supervision, an online revision textbook, "the cOG text" to support virtual learning during the pandemic to replace the information shared during tutorials. This text presents all core clinical knowledge in O&G. In response to this pandemic, this group of students felt empowered to complete this text urgently to disseminate to the student body, along with our newly created virtual resources. This helped to cover the content that would ordinarily be taught during the traditional tutorials. The cOGtext has 10 virtual chapters each of which has formative multiple choice questions (MCQ) for the students to self-assess their learning.

Clinical skills

Pre-pandemic, the Communication Skills Lead within the university would take the students during this attachment for a complex communication skills session utilising an interpreter. They transformed this session in to a virtual learning event utilising video resources to demonstrate different approaches used to acquire skills in complex communication within this context. The online formative OSCE stations allow students to practice communication skills remotely with their peers. Assessment criteria, aligned with summative OSCE examinations, allow students to develop communication skills for history taking, breaking bad news, and discussing reproductive choice. There was no formative OSCE before this pandemic and so this is an additional resource created for the purpose of honing clinical skills. The curriculum outlines necessary skills and examination techniques, which would usually be delivered in clinical skills. Presentations regarding these were made available as part of our resource and include vaginal birth, pelvic examination, examination of the pregnant abdomen, blood pressure measurement and urinalysis.

Theatre

To make up for the lost time in theatre, we utilised freely available video resources of commonly performed procedures in obstetrics and gynaecology to support the learning that the students would have encountered in their theatre sessions. These resources were found externally and reviewed by the authors and the most appropriate
resources chosen for inclusion, which covered the intended learning outcomes. Videos regarding theatre situational awareness, communication and patient safety in obstetric theatre are currently in development in house. These resources were created for a human factors course but will be utilised in this virtual block to support the students in their learning as they wont see these skills in practice.

### Assessment

During the clinical attachment, the students would have submitted a case report which would be a summative assignment, formally marked and graded. There was previously no formative OSCE resources and the formative MCQ bank was limited for the O&G block. This case report would usually be written from information gathered from the patient. As this cannot be reproduced electronically, a 7-station formative OSCE exam was created for the students to utilise. This allows students to hone their history taking skills. A new formative bank of MCQs has been made available to students. Summative assessment of the student’s engagement with e-learning during the block will be assessed by their participation in the 6 tutorials and by assessing their documented elearning evidence. This evidence is open to student’s interpretation; such as a reflective journal. We have actively encouraged the use of reflection to demonstrate self-assessment and demonstrate achievement of personal goals during this virtual block, which will foster self-regulation and ongoing development (Sanders and Cleary, 2011).

### Implications

Educators and learners have had to become innovative and flexible in the approach to education during the covid-19 pandemic. Replacing teaching within the clinical environment to a virtual platform was a challenge and required a collaborative approach from both teachers and learners. Berman et al., (2016) discussed the potential benefits of utilising virtual patients in medical education. We have created a virtual block in obstetrics and gynaecology by creating virtual wards, clinics, curating external resources and delivering online tutorials. We believe that this may transform and compliment clinical based teaching in to the future. The approaches we have discussed in our transition from face-to-face to online teaching can be utilised by other departments to map their own curriculum and provide a fully virtual clinical attachment during this unprecedented time.

### Take Home Messages

- Replacing face to face teaching with online teaching is a challenge.
- A fully virtual clinical attachment is achievable through collaboration with teachers and learners.
- The approaches used in this article are transferable to other departments.

### Notes On Contributors

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Appendices

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