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Reflections on the integration of virtual GP tutorials to the medical undergraduate curriculum at Glasgow

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ABSTRACT

Virtual tutorials were introduced into the Year 3 medical undergraduate curriculum at Glasgow in 2020/21. This model of teaching proved highly successful from tutor and student perspective. A hybrid teaching model, comprising virtual tutorial teaching alongside placement time will be implemented this year. Virtual (videoed) GP patient cases are selected for tutorials each week, linked to other curriculum content in Year 3. Pedagogically, this aligns pathological and clinical learning for our students and enables some consistency of taught GP content. Concomitant clinical placement time complements this learning with actual patient cases. Communication and consultation techniques considered in the virtual tutorials with facilitated tutor discussion are practised on GP placement days, encapsulating the essence of experiential learning. Challenging or unusual patient cases can be selected for teaching from the virtual case repertoire. This provides uniform exposure to clinically important aspects of general practice, and simultaneously enables an increased diversity of patient cases for our students. Logistical advantages of virtual tutorial delivery include its appeal to a different demographic of GP tutor, enabling us to diversify and expand our teaching team. Remote tutorial delivery offers a futureproof adjunct to the traditional practice-based GP teaching models.

The COVID pandemic necessitated rapid evolution of undergraduate medical student teaching. Ensuring progression of medical students required the development of 'virtual placements' aligned with existing learning outcomes. At Glasgow, this involved the use of the 'Virtual Primary Care (VPC)' video resource [1] as a focus for delivery of virtual General Practice tutorials to Year 3 students. The successful implementation and evaluation of this innovative teaching format have enabled its development subsequently. This teaching modality will be integrated into our Year 3 curriculum to complement and enhance our clinical placement teaching. We describe our novel hybrid model of general practice teaching at Glasgow, combining 12 virtual tutorials with 7 days of clinical placement time, and reflect on the merits of this teaching model.

The virtual tutorial teaching model

A series of 12 'virtual' tutorials, taught remotely by general practice tutors are delivered weekly to small groups of Year 3 medical students. Learning content for each tutorial is designed around two patient 'cases'. The cases comprise videos of real-life GP consultations from the VPC resource, with each case linked to learning outcomes described in national curriculum documents [2,3].

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Each virtual tutorial has bespoke student and tutor resources aligned to the learning outcomes, and suggested discussion topics for each case (Figure 1). Students and tutors watch the video consultations and review resources asynchronously. Tutorial time is used for tutor facilitated discussion of the cases to ensure coverage of the learning outcomes, including consideration of GP consultation styles. Tutorial resources are varied, incorporating clinical guidelines (NICE, SIGN, BNF and Red Whale), patient information resources, linked clinical examination and procedural skills revision, and evidence base relevant to the clinical cases. The time allowed per case for discussion in virtual tutorials (20-30 minutes) maximises the learning opportunities from each patient. This may ultimately result in more in-depth, robust learning.

To complement their virtual tutorial learning, students also attend seven days of general practice placement. Here, students consult with patients in 'studentled' surgeries, starting to take a history and practice their clinical examination, communication skills and procedural skills. Placement time enables students to put into practice the consultation skills and communication techniques discussed in the virtual tutorials, enabling them to consider their own developing consultation styles. This directly consolidates and reinforces the

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Week 4 Cardiology

Cardiology

This week there are patient cases related to your learning about cardiology, but with a general practice focus.

- How might someone with high blood pressure be assessed and managed in primary care?
- · What is the GP role in caring for patients who have cerebrovascular events (stroke/TIA) in the community?

Both the patients in todays videos have multimorbid health care needs - you might want to discuss this with your GP tutor. Does this affect how you might treat the patient, or what your longer term care planning might be?

The learning tasks for this week are:

1) To review two patient cases - videos are on the week 4 playlist for you.

- · A middle aged man with migraine and hypertension
- A patient who has recently had a stroke

2) Clinical skills revision - Cardiovascular system examination

1	Week 4 Learning Outcomes and Resources 🔿 🗚
	Cardiovascular examination video
1	Migraine summary 🔿 🗚
ð	CV examination

Figure 1. Example of weekly tutorial content hosted on university site.

tutorial taught course content. Students can reflect upon and refine their burgeoning consultation skills with knowledge from tutorial discussions, enabling valuable experiential learning to occur [4].

Virtual tutorial case choice

Control of the virtual tutorial learning stimulus (i.e. choice of virtual patient case in advance) facilitates several educational benefits for our hybrid teaching model. This is something that cannot be achieved with placement experience, where patient case selection is diverse; being fundamentally dependent on the patients presenting each day to teaching GP

tutors. Amalgamating commonality of teaching content in the virtual tutorials with the variety of actual GP patient cases seen on placement enables us to strike an ideal balance of case consistency (from the perspective of curriculum delivery and assessment blueprinting) and authentic clinical experience.

Tutors reported that the tutorials enabled 'more comprehensive clinical teaching than when you had to rely on what came through the door'. Students also appreciated the consistency of teaching content, commenting that: '[the teaching] was good ... everyone in the year received the same teaching and it wasn't dependent on what type of patients you saw in clinic'. The case consistency in the virtual tutorials (compared with the previous placement experience alone) enabled specific module learning outcomes to be produced. This aided assessment blueprinting, enhancing content validity from a student perspective.

Selection of patient cases for the virtual tutorials also allows us to align these with other Year 3 speciality-based core teaching. This provides both clinical context for concomitant pathological learning, and relevant general practice cases for study across the curriculum. Tutors noted the tutorial content *'integrated well with the topics the students were learning'*. Students added *'it was really nice to have such clinically relevant classes'* and *'it was great to apply the course content in a real-life scenario: I felt like I was integrating the theory I learned'*.

Virtual tutorial format

The tutorial format itself was well received by our teaching GPs and students. One tutor commented that they liked 'using consultation videos as a springboard to discussion' and another that the 'consistency of the learning available' was the best part of the teaching. Some tutors also described teaching content being a useful refresher of their own clinical knowledge; mirroring evidence high-lighting this cognitive benefit of teaching from GP placement tutors [5].

The virtual tutorial teaching model affords students the opportunity to study 24 virtual GP consultations in depth over the 12 tutorials, enabling observation and review of different clinicians' consulting styles. Students can use this knowledge to consider their own consultation style as they then undertake student-led consultations during placement time. Student feedback acknowledged the value of this: 'it gives you a really good insight into what makes a good and a bad consultation. ... it makes it a bit easier to see what behaviours to adapt and which should maybe be avoided. Something we might not get if we only ever had one GP to compare to'.

An astute student feedback comment that 'the opportunity to watch a GP who wasn't teaching us /associated with Glasgow was useful as it meant there was space to discuss with our tutor what we perhaps would do differently ... without feeling rude ... ' highlights another benefit of the hybrid approach. The ability to deconstruct and reflect on consultation styles freely and honestly may not be possible on clinical placements with a single named GP tutor, a unique advantage of the virtual tutorial approach.

Virtual tutorial case repertoire

The video cases used in our virtual tutorials allowed students to experience challenging or less common cases in a familiar teaching environment. For example, the inclusion of acutely ill patients, a transgender patient, palliative care patients, and patients with mental health and drug addiction problems was possible. The complexity of such cases can be challenging, particularly for Year 3 students, and the virtual tutorial delivery model meant these could be considered in a supportive, familiar, and time-relaxed setting. Consistent and structured teaching on these important topics can thus be incorporated into key curriculum teaching. Student recognised the benefits of this too: 'I think continuing to utilise these digital resources to enhance learning is something I'd emphatically support. Especially for the cases more rarely seen (e.g. trans patients)'.

Use of the VPC cases could enable the delivery of robust and consistent equality, diversity, and inclusion curriculum content, centred around actual patients. This would provide a realistic and cogent model for this vital curriculum content to be delivered. This is also something not achievable on placements reliably, with the natural diversity of patient populations and the fixed ethnic and social demographic mix of a single GP practice attachment. Students at Glasgow are now already exposed to a greater diversity and repertoire of patient cases than with our historic single practice-based teaching model.

Paedagogical perspective

The incorporation of several learning styles with our hybrid model is also worth noting. Adult learners have diverse and varied learning techniques. Employing a variety of teaching platforms and teaching methodologies to impart knowledge (using patient case videos, tutorial resources, facilitated discussion, and clinical placement time) encompasses several learning styles to engage students [6]. Peer and selfdirected learning, apprenticeship style teaching and utilisation of online and face to face teaching modalities are encompassed by our hybrid model. This enables students to benefit from traditional and contemporary teaching approaches in course delivery, appealing to many learner styles. Use of technology particularly has been helpful to engage our IT savvy students, with 85% of students reporting that the course was fully accessible to them, and 89% of students agreeing/strongly agreeing that they enjoyed using the VPC video resource, for example.

Pastoral perspective

We recognised that our tutors would have an informal pastoral role for students through their weekly tutorial small group contact. Attendance at, and contribution to, virtual tutorial teaching has helped better identify struggling or non-engaging students. The social benefits of weekly tutorials for students are significant: enabling them to maintain regular peer contact to facilitate benchmarking of their learning, to discuss challenges and to socialise. One tutor told us that 'it was lovely to see them gel as a group' and others highlighted increased confidence and engagement as the weeks progressed. Students appreciated this aspect too: '[the tutorials] brought some light-hearted fun to my week and allowed me to engage with my fellow students' and 'This was my favourite class ... down to my tutor, my peers and the content of each week'.

Unanticipated benefits

The online model for teaching has been resilient and robust. We have been able to utilise tutors for this teaching mode who are unable to engage with traditional practice-based teaching models, for example locum, out-of-hours and sessional GPs who do not have practices to host teaching from. The appeal of this teaching format to an increased repertoire of GPs assists both in futureproofing this teaching model and in widening and enhancing our GP tutor pool *per se*. Tutor feedback comments echoed this: *'it is refreshing and novel to do this without travelling anywhere'*, and *'the virtual tutorials were more flexible they supported our practice drive to do some working from home'*.

With an imperative to increase GP teaching in medical schools [7], it is gratifying to note that our hybrid teaching model has enabled an increase in GP teaching time in the curriculum, with the addition of the 12 virtual tutorials to usual Year 3 placement time. This hybrid teaching model has highlighted to us both the flexibility of GPs as tutors, and the assumption that GP curriculum time should be practice based. By being responsive and innovative in our approach to teaching, we have augmented our GP teaching time, delivering this with an increasingly diverse and expanding cohort of GP tutors. Ensuring that we can utilise the full scope of GP teaching capacity will be important with rising medical student numbers and the national drive for more generalist undergraduate teaching. Our model illustrates a way in which this is achievable.

Remote (online) tutorial delivery also provides a reliable and feasible mode for teaching with selfisolation, quarantining and international travel logistics continuing to impact on face-to-face teaching delivery for the foreseeable future.

Conclusion

We used the enforced curriculum delivery changes imposed by COVID-19 to produce a novel and replicable model of virtual tutorial delivery during the 2020/ 21 academic year. The success of this teaching format has led to module evolution of our Year 3 general practice teaching to better meet our students' learning needs. Our hybrid module this year provides consistent and clinically relevant curriculum content in virtual tutorial teaching, which supplements our 'usual' GP placement teaching where students practice their clinical and communication skills. The virtual tutorial design enables us to align our patient cases to speciality week teaching during Year 3, both providing clinical context for students each week, and highlighting the role of a GP in providing patient care across speciality topics. Longer term, our hybrid teaching model encompassing virtual tutorials and GP placement time provides a futureproof and engaging learning module for students. The course format utilises a variety of teaching styles and educational environments to enhance the learning experience for students. Unanticipated benefits of our model include the ability to increase and diversify our teaching GP pool and incorporate additional general practice teaching time into Year 3. Furthermore, the virtual tutorials themselves offer a resilient mode of teaching that circumvents any logistical challenges imposed by illness and travel restrictions.

Take home messages

- A hybrid teaching approach combining virtual tutorials and placement time enables a varied and diverse repertoire of teaching styles to be used, theoretically engaging a range of adult learning styles.
- Clinical placement time complements and enhances tutorial learning, and specifically enables experiential learning of student consultation styles.
- The VPC video resource provides an authentic virtual learning tool for preclinical and clinical students that worked effectively in a virtual tutorial format, with clear learning outcomes and guided tutor support.

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- Use of video patient cases enables consistent teaching on rare, challenging and important patient scenarios for students. One aspect of this that can be developed in future is to enable standardised teaching on ED&I topics.
- A blended model incorporating virtual and face to face teaching has proved a resilient and superior teaching model at Glasgow.

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