Adapting virtual patients to a pandemic context

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Virtual patients (VPs) are online cases often used to train healthcare students in clinical reasoning. This includes gathering information, formulating and prioritizing differential diagnoses, ordering tests to confirm or rule out diagnoses, deciding about a final diagnosis and developing a treatment plan. The VPs currently available are designed to take place in a non-pandemic environment, and do not reflect this new contextual factor. So, in the current situation the clinical reasoning process has changed in a way that first of all it has to be pre-assessed whether a patient might be infected by Covid19 and protective measures have to be undertaken. Also, for all VPs showing COVID-19- like symptoms this is a new differential diagnosis that depending on the risk factors, like exposure or co-morbidities, has to be considered in the whole process of clinical reasoning without overrepresenting its probability.

In the publicly available collection of 64 VPs in English, German, and Polish (https://crt.casus.net) it is neither possible nor reasonable to adapt all of them to the new context in this rapidly changing situation. Therefore, our approach is based on the following three actions:
(1) Updating selected VPs with similar key-symptoms, such as a virtual patient with a common cold suffering from fever and cough, to the current situation without changing the final diagnoses to represent a realistic probability of diseases.
(2) Creating a new virtual patient who actually is tested positive for COVID-19
(3) Providing an introduction to the VP collection explaining that the VPs have been designed for a non-pandemic context. Additionally, we provide information sources about COVID-19 and points to the adapted VPs in the collection for students for further information.

This rapid global change of the context in which teaching and clinical reasoning takes place requires manifold and quick adaptations to the teaching environment. On the other hand, it provides a great opportunity for students experiencing how context influences the clinical reasoning process.
When adapting and creating the VPs we faced the following challenges:

A major challenge for adapting and designing the VPs are the constantly changing guidelines on COVID-19, which also differ between countries. Also, often decisions depend on the circumstances such as availability of testing facilities and equipment or hospital regulations. We solved this by asking open questions concerning the process and providing feedback by referring

to up-to-date guidelines from global institutions such as the World Health Organization (WHO) or the European Centre for Disease Prevention and Control (ECDC). Additionally, we ask students to look for more specific information on the process in their area.
Another challenge is the provision of updated multimedia material for the VPs to illustrate the current situation, for example by showing healthcare professionals with protective gear. We have not yet a final solution for that, but experiment with publicly available images on the internet and editing the images used so far.
In the future, a more dynamic adaptation of virtual patients to contextual factors might not only help in such extreme situations but also provide in general a more diverse and adaptable learning experience for the students.