synthesis and professionalism, into a fully digital platform to accommodate 105 second-year medical students.

2 | WHAT WAS TRIED?

Students' competence was assessed in interviewing, clinical reasoning, supporting patient emotion, counselling, explanation of diagnostic test results, and oral and written presentation. Three standardised patient (SP) encounters, mapped to expected clinical competencies, were developed and administered through a telehealth format in Zoom™ (Zoom Video Communications Inc., San Jose, CA, USA). All 315 encounters were completed over 3 days in early April 2020 and recorded (two audio only and one audio video) to facilitate student reflection. Interview and patient communication were assessed through written SP and faculty member observer feedback. Clinical reasoning and oral presentation were assessed by faculty member observers. Students self-assessed their written presentations using exemplar notes. Reflection on feedback was further fostered through daily self-reflection assignments and faculty member-facilitated Zoom groups (three students each). Students completed the NBME Comprehensive Basic Science Self-Assessment. Professionalism competencies were assessed through structured peer feedback. Collectively, these components informed students' individual development plans, which encompassed academic, career development and personal goals.

3 | WHAT LESSONS WERE LEARNED?

Several key elements facilitated success. The digital format allowed measurement of nearly all clinical competencies; few physical examination competencies were assessed. The leadership team leveraged expertise in technology, deep understanding of our curriculum, flexibility with shared leadership and expeditious decision making, and availability in a period of clinical duress. Expedited training and inventory of technology access amongst SPs and students were necessary to swiftly build

technological capacity and ensure effective use across participants. Deliberate strategies to optimise the digital learning environment included video orientation, detailed written instructions, daily Zoom 'office hours,' team huddles and consistent communication with students.

Interestingly, the move to a digital format offered unanticipated advantages. Removing physical infrastructure barriers (suitable rooms) expanded capacity for simultaneous assessment of learners by 50%. Eliminating distance, transportation and physical ability barriers offered advantages beyond efficiency, including increased SP diversity and lower programmatic costs. Related to this, telephone cases allowed flexibility in SP demographics (eg age, race) as well as preserving clinical fidelity. The opportunity to participate remotely facilitated faculty member recruitment in spite of increased clinical pressures and provided employment opportunities for simulation staff despite social distancing, including those who are elderly or otherwise at risk. Faculty member, student and SP satisfaction with the fidelity of cases and overall assessment quality were high. Remote access to centrally trained SPs and faculty member observers can promote assessment standardisation and quality across sites with variable resources. As such, we are adapting this assessment format to other classes, and it holds potential to address clinical instruction gaps created by removing students from clinical environments.

In sum, we found that a fully digital year-end comprehensive assessment provided a rich and impactful formative assessment during a time of disruption, and modifications made by necessity created unexpected advantages.

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Transition to online is possible: Solution for simulation-based teaching during the COVID-19 pandemic

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1 | WHAT PROBLEMS WERE ADDRESSED?

In March 2020, Polish universities had to suspend all on-site activities due to the coronavirus disease 2019 (COVID-19) pandemic. As a result, we were faced with the problem of how to convert a simulation-based course in geriatrics into distance learning. The main focus of the original course (30 academic hours) is to expose fourth-year medical students, working in teams of three, to eight simulated cases including acute dyspnoea (pneumonia), behaviour change (somatic delirium), and cardiopulmonary deterioration. Educational objectives (EOs) pertain to correct diagnosis and management and performing certain non-technical skills. An electronic, simulated patient (SP) data system supports remote ordering of laboratory and imaging tests and enables the instructor to see orders immediately, send the results to inform the scenario development, and record students' performance.

2 | WHAT WAS TRIED?

Within 2 weeks the Department of Didactics and Medical Simulation made necessary preparations using 'functional task alignment' as the conceptual framework to guide the process.¹ Preparations included re-consideration of which EOs could be achieved in an online simulation context, adjustments to course materials, SPs and technician training, and an electronic SP file system update to facilitate logging from a distant location. Mock simulation sessions helped training and discovery of several technical issues. The resulting on-line simulation environment consisted of: patient's room with SimMan 3G (Laerdal, Stavanger, Norway); a technician (substituting for 'students' hands'); patient's monitor (shared as separate screen when a closer view was required, eg, 12-lead electrocardiogram); SP; instructor, and students who participated from his or her home. Zoom™ (Zoom Video Communications Inc., San Jose, CA, USA) was used as the meeting platform. Free web services provided sounds (auscultatory, cough) that were played when examination was performed on the manikin. The Zoom-chat served as an additional communication channel, and its file transfer option enabled timely delivery of patient documentation (paramedic report, medication chart).

3 | WHAT LESSONS WERE LEARNED?

Preservation of functional and psychological resemblance to on-site conditions was possible, as students' engagement, emotions, and

topics discussed during debriefings (reflecting EOs) were similar to on-site simulations.

Within the concept of physical resemblance, visual and auscultatory perceptions were attainable, whereas the tactile sensation needed to be described as actions were ordered by the student and then executed by the technician. This lack of non-verbal feedback created a challenge for students and faculty members and influenced the spectrum of non-technical skills learned. These alterations required lengthening of scenarios by 10 minutes.

That said, we found these barriers could be substantially overcome by proper faculty member and SP training, utilising Zoom-chat as an additional communication channel, devoting extra time to acquainting students with on-line environment, and increasing scenario duration.

A larger than normal patient monitor, high-resolution video cameras, and alteration of the patient's room layout may be necessary for better visibility. The above issues were discovered during the mock simulation sessions conducted before launching the course. Unexpected technical problems resulted mainly from Internet connection capacity. We noticed, owing to specific audio conditions, that it was easy to follow all conversations taking place during scenarios, and to distinguish each participant's contribution to the final diagnosis and decision-making process.

We acknowledge that impediments connected with the online context can alter training to some extent. Therefore, transition needs to be preceded by careful consideration of what functional properties of the simulation remain aligned with the learning objectives.¹

From our experience, the presented approach provided an acceptable alternative to on-site simulation-based teaching during the COVID-19 pandemic. Although not suitable for psychomotor skills-oriented scenarios, it seems to preserve sufficient resemblance enabling learners to train in critical thinking, multitasking, prioritising, decision making, cautious task distribution and resource utilisation, managing documentation, and various aspects of communication that are necessary for managing scenarios reflecting complicated medical problems.

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