



# Transforming the Healthcare Simulation Spectrum: Now, Next and Beyond

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## Journey to Excellence from Classroom to Virtual Learning!

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### Introduction

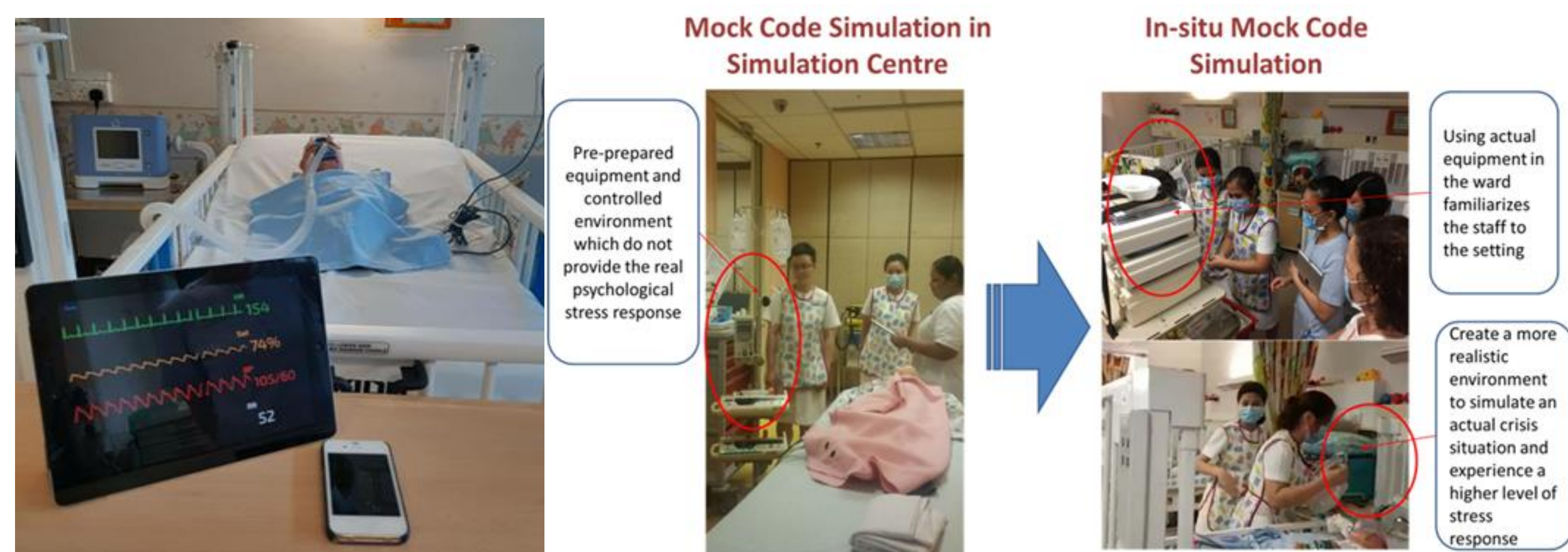
In-situ simulation is the practice of using scenarios in a clinical environment and it has been increasingly used in healthcare for managing emergencies and resuscitation. Frequent refresher in-situ simulation training ensures retention of knowledge and skills in managing emergency situations.

KK Women's and Children's Hospital (KKH) had been conducting In-situ Mock Code Training for nurses, to ensure that nurses are prepared to handle medical emergencies. This is a face-to-face training conducted once a month in each of the wards. This mode of delivery and assessment requires frequent training sessions, which had been often limited by the shortage of trainers and equipment.

### Aim

To improve delivery of In-Situ Mock Code Training through virtual platform and combine the gaming as a learning strategy to teach and educate nurses in resuscitation management as follows:

- Achieve an uniform and precise scoring assessment for the test-takers using CAT to accurately assess staff competency.
- Prepare and enable nurses to handle any medical emergency in the clinical setting.
- Relieve trainers' time in conducting refresher training and pre-course briefing.
- Serve as an assessment tool to reach out to a larger number of participants at a more regular training frequency.
- Improve team dynamics and teamwork during acute emergencies.

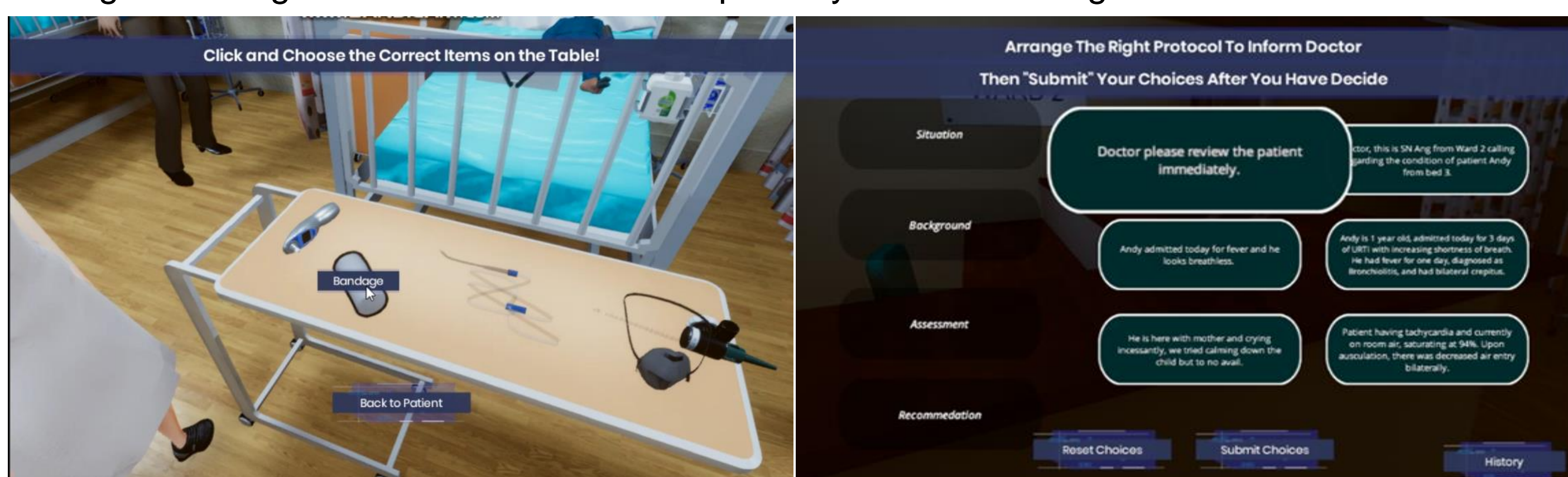


### Description

The Paediatric Mock Code Simulation game was designed by Nursing and Quality Improvement representatives in collaboration with Serious Games Asia. This game is scenario-based that assess the technical skills of nurses on resuscitation, selection and use of appropriate equipment and escalation process. Soft skills such as teamwork and effective communication (SBAR tool) are also assessed. Assessment score is given and calculated at each stage of the game. The total assessment score determines the knowledge, skills and competency of the staff in crisis management.

The game was piloted on thirty nurses in three institutions over a period of one month. Feedback from all the participants were generally positive:

Eighty percent of the participants felt that the purpose of the game has been achieved. Majority of the participants commented that the game mechanics are clear and the simulated environment is realistic. The game interface is also intuitive and interactive and participants could relate the game to their past experiences. Participants also agreed that the game is a good reflection of their competency in crisis management.



### Gamification

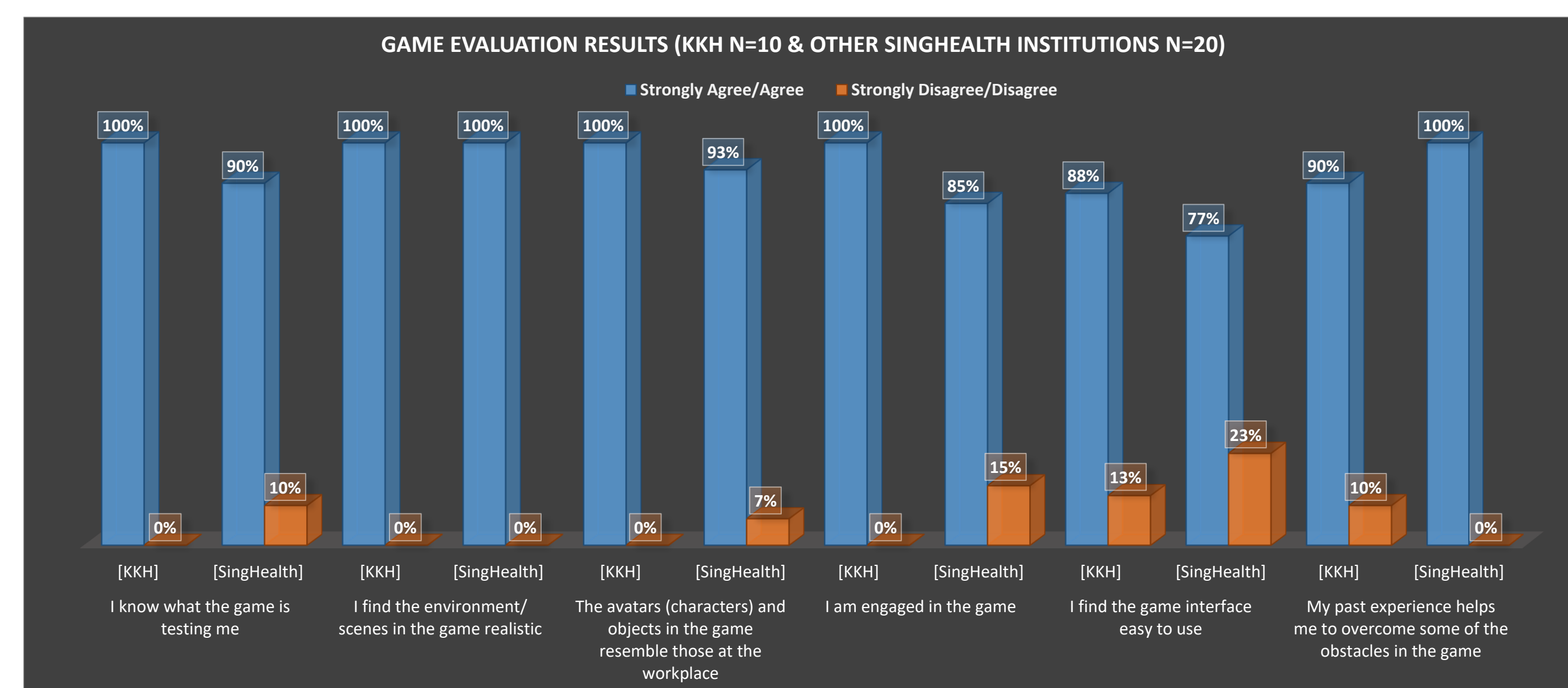
Avatars are used for the virtual learning and the scenario based training starts from recognizing a sick child up to the proper escalation of the case.

- Level 1 – Recognising a sick child
- Level 2 – Child had a deteriorating airway condition and required oxygen and suction
- Level 3 – Child required mask ventilation and activation of Code Blue
- Level 4 – Arrival of Code Team



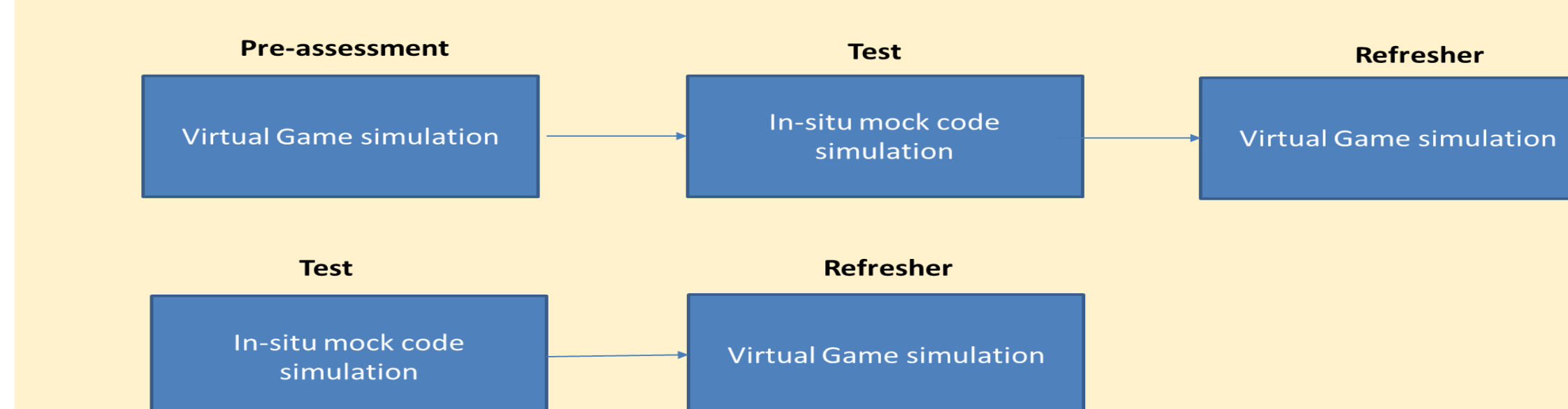
### Results

The game was piloted to the 10 nurses from each of the 3 institutions. The feedback gathered includes: 1) Game purpose has been achieved, 2) Game mechanics are clear, 3) Simulated game environment is realistic, 4) It is engaging and fun, 5) Game interface is intuitive and interactive, 6) The game is relatable to participant's past experiences, and 7) participants agree the game is a good reflection of their competencies. This results showed that our in-situ simulation game can be easily spread and provide sustainable learning for staff in KKH and other SingHealth institutions.



### Conclusion

Complemented the in-situ mock code simulation by:



The Paediatric Mock Code Simulation game provides a realistic simulation experience for trainees and promotes inter-professional collaboration between doctors and nurses. Evaluation and competency assessments have also been standardized - to cater to the needs of a variety of trainees. Furthermore, trainings can now be conducted regularly every three months which have contributed to the higher retention of knowledge in nurses in a hybrid manner. Both trainers and learners are able to view the results of the game, and data derived from the learners' results can be used for evaluation of staff improvement as well as provide evidence-based data for future training and education development. The game design can be enhanced to include various scenarios which will increase nurses' competency in identifying and handling different emergency situations.