



Blood Transfusion Competency

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Introduction:

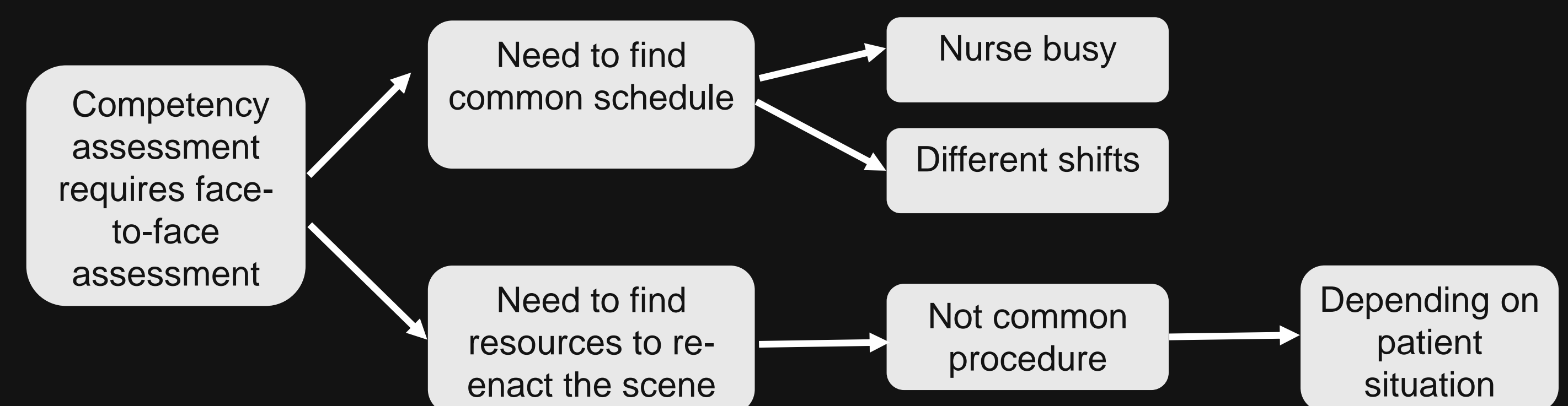
Conducting skill based competency assessment would required face to face assessment and observing the skill practiced in the clinical area which takes up time for both assessor and assessee. It also poses a challenge in our current setting especially if the skill performed is rarely observed. In addition, the assessment can be varied as it depends on the judgement of the assessor and it may not encompass all different scenarios that is faced in the clinical area.

Mission Statement:

Reduce the need for face to face competency assessment by 80% in 1 year

Analysis:

The team analysed the issue with a 5-Why diagram:

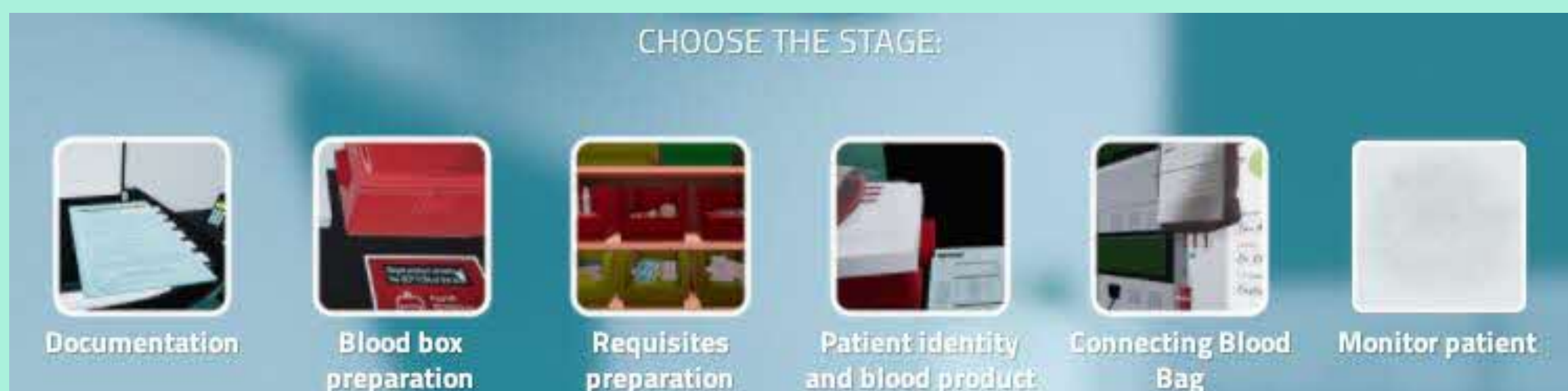


Interventions

The team envisioned using 'Serious Games' for nurses to be assessed objectively in a real physical set-up. This would allow testing of decision making and responses for rare complications/ scenarios which is not possible in the traditional way of assessment.

'Administration of Blood and Blood Products' competency assessment was chosen as it is a yearly competency assessment and there is limited opportunities for nurses to be assessed in the clinical areas. In addition adverse events during blood transfusion is rare and usually would require the nurse to reiterate the steps without performing the skill. Having a virtual environment set-up can help the nurses to visualize and practice carrying out this procedure in a safe environment without involving a real patient.

An online simulation game was created with the following features:

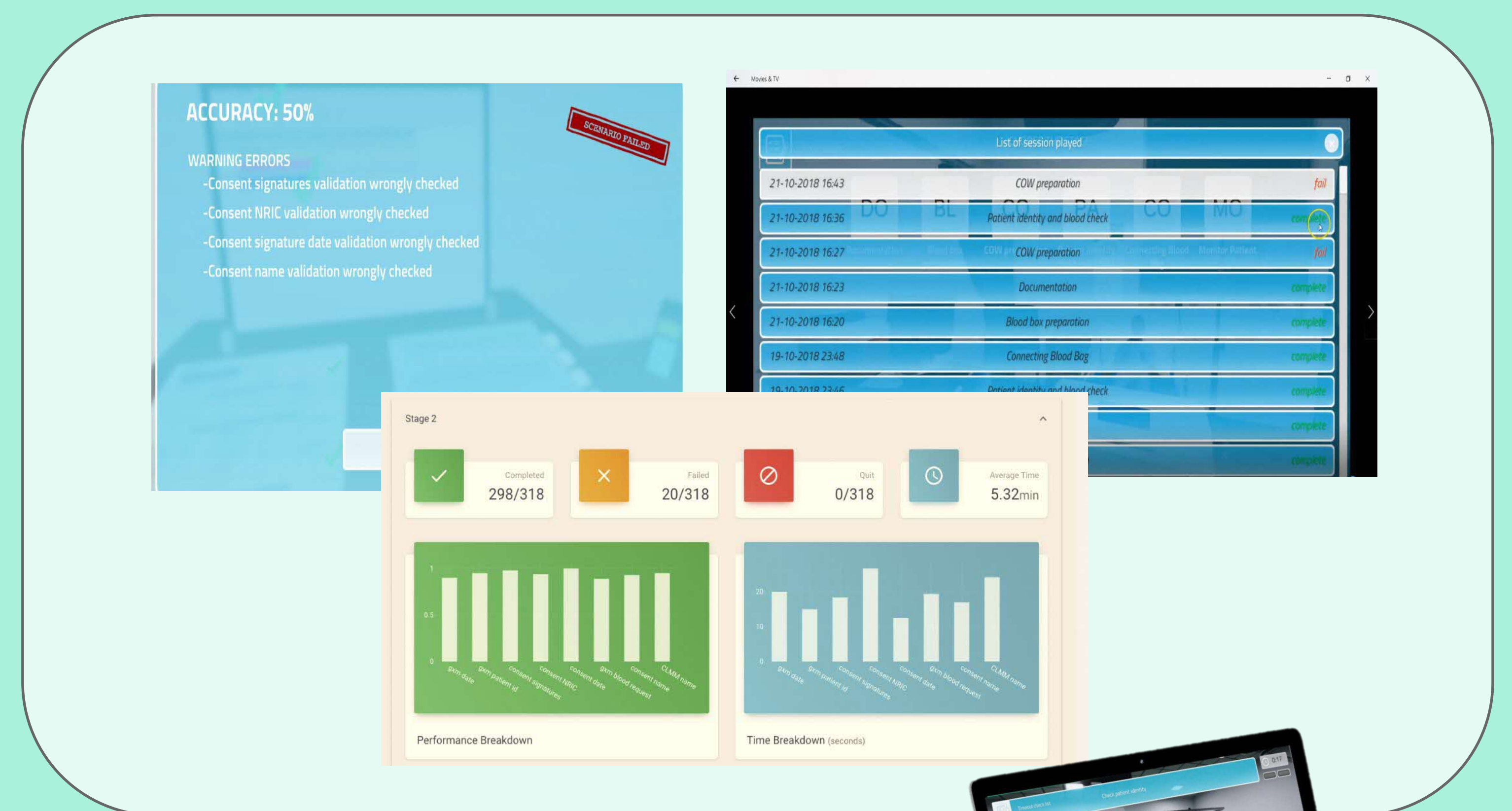


- Spilt into stages for 'bite size' assessment
- Player to pass the stage to continue with the next
- Built in 'distractors' to test player's reactions and decision-making

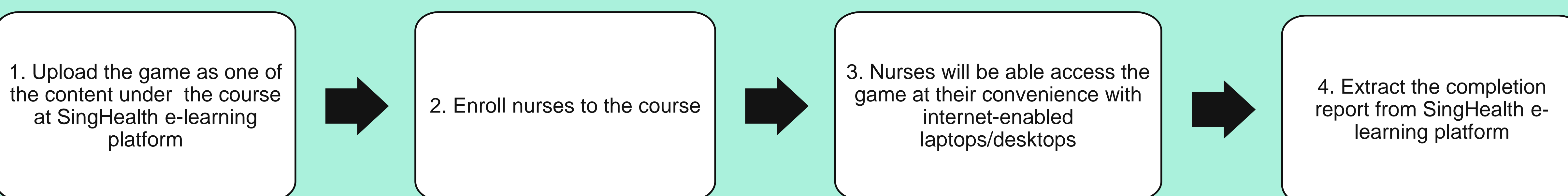
Using the gaming concept, the player will need to reenact the correct steps when administering blood to pass the competency. Any mistake in the game is captured and analysed so that learning and corrective actions can be taken by the player.

This also allows the assessor to view their progress and provide targeted training or practice reinforcement.

Backend, Nursing Division has an overall view of the nurses' responses which creates an opportunity for management to understand the behaviour in the designed work process and review the current work process.



PROCESS AFTER LAUNCHING THE GAME:



Result:

An approximate of 2200 nurses has successfully completed the assessment via the game from February to May 2019. hence the mission of 80% reduction in face to face competency assessment was achieved

In addition we have also achieved manpower savings as there is no need for an assessor to conduct the competency assessment which can be used to perform patient centered care.

An approximate **manpower saving hours of 1100 hours per year.**,
(2200 nurses to conduct assessment x 0.5 hour)

A T-Test was performed for 30 observations. P-value is 5.64229E-19 which is statistically significant.

Conclusion:

With the implementation of the game, as an alternative to traditional method of assessment, we have achieved manpower saving hours and competency assessment can be carried out in safe environment. Nurses were also tested on their critical decision-making process as the game require them to solve real-life scenarios and spatially complex tasks. Nurses can do their competency at their own time and pace using their own laptops/desktops and receive prompt feedback for their answers.

The team will explore other competency assessment to build using this gaming platform,