The use of in-situ simulation in the planning of a new EVAR programme at North District Hospital

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Introduction
A new endovascular aortic repair (EVAR) programme was to be introduced at North District Hospital. The procedure is performed at the Angiography Suite where elective procedure under GA has never been carried out. In-situ simulation offers a unique opportunity to identify potential process and system issues before the new service was introduced.

Objectives
(1) To identify the process and system issues of running a GA case at angiography suite (2) To evaluate the clinical care flow of a clinical crisis during an EVAR procedure

Methodology
Before the simulated scenario, a meeting among stakeholders and a tour of the location were held. Patient selection criteria, preparation, transfer logistics, location setup, equipment, drugs and consumables stocks, and postoperative care were discussed. Members agreed to run an in-situ simulation to evaluate our planning. The Anaesthesiology team developed a scenario and coordinated the simulated event. A checklist was designed for several observers to identify any deficiency and safety issues associated with the event. The evaluation began with pre-medication and sending of the patient to Angiography suite. Surgical safety check was performed using an actor-patient followed by induction of GA on a Laerdal 3G-simman simulator. Positioning, surgical draping, range of x-ray table and blood ordering logistic were tested. All surgical instruments including a test-EVAR set were laid out by the scrubbed nurse. The scenario progressed to a sudden hypotensive episode due to complication, with the patient requiring transfer to emergent operating theatre. The simulation ended when the patient arrived in operating theatre. A debrief of the events was conducted.
Result
Several process and system issues were identified during the simulation, including anaesthetic and surgical issues such as poor patient positioning, draping pattern, unfriendly equipment setup, inadequate critical surgical instruments, blood products request logistics and inadequate nursing support during crisis. Some of these issues would have affected the flow of the procedure and led to potential patient safety concerns if allowed to present themselves with a real patient. In-situ simulation allowed us to identify potential issues in a new environment for EVAR under GA and avoided potential risks to patient.