

Case study

Integrating Simulation with Staff Training Programs



The Great Western Hospital

Swindon, UK

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This case study is one, in a series of seven, describing various aspects of European simulation centers. The document was developed in collaboration with and approved by The Great Western Hospital in Swindon.

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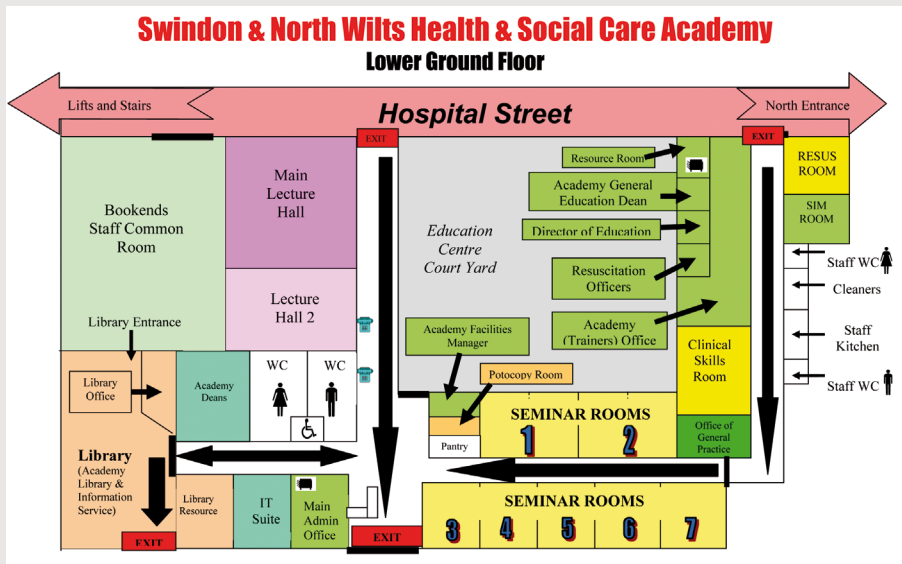
THE GREAT WESTERN IN SHORT

The Great Western Hospital in Swindon integrated medical simulation training with the staff training program in the late 1990s. The Educational Department (the Academy) trains about 2000 individuals every year, internal hospital staff and external, public service personnel. The training facilities comprise two rooms located at the Educational Department on the hospital's ground floor. Simulation training is occasionally facilitated on the wards, where people who work together get the opportunity to train together in their own environment (in situ simulation). Hospital employees are encouraged to make individual use of the simulation equipment in between the facilitated scenario training.

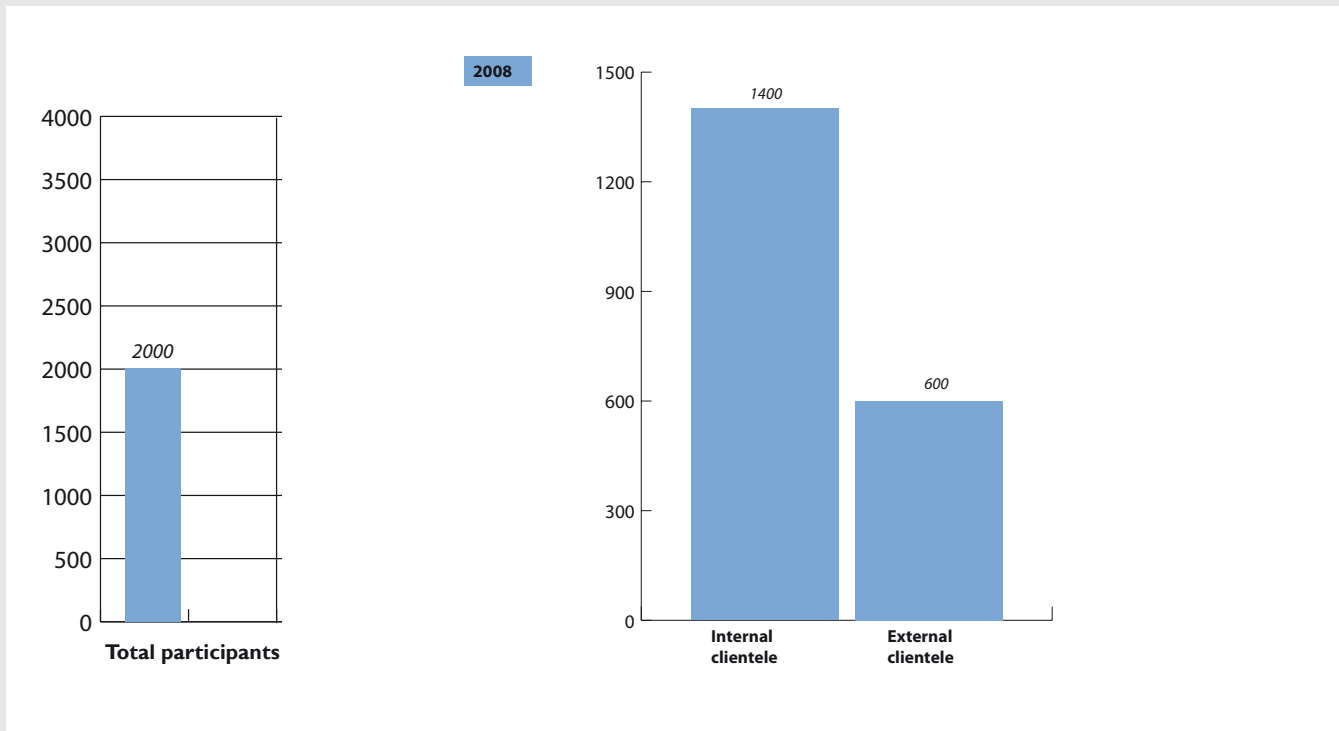
Profile

Simulation training is provided for all sectors in the chain of survival.

Floor plan



Activity



WHY SIMULATION WAS IMPLEMENTED

The main incentive to implement medical simulation training has been the conviction that simulation training translates into improved quality of care and increased patient safety.

ORGANIZATIONAL MODEL

The simulation program is an integral part of the Great Western Hospital and is headed by a hospital employed Senior Resuscitation Officer.

Staff competency levels

Both instructors have a nursing background and are UK Resuscitation Council Advanced Life Support (ALS) and European Pediatric Life Support (EPLS) Instructors. Formal instructor training is not required.

Staffing

General manager

Instructors: 2 nurses

Facilities

The Great Western is equipped with 2 simulation rooms, 2 halls used for lectures and several rooms for briefs/debrief sessions. Scenarios can be run independently in both simulation rooms, but are normally conducted on the wards.

Curriculum

The instructors at the Academy develop and control the curriculum.

FINANCIAL MODEL

The Great Western simulation program is owned by the hospital department. Funding covers daily management, including wages and investments. Training for external clientele generates some additional funding.

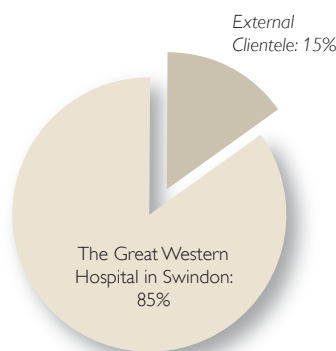


Figure 1. Funding.

BENEFITS OF MODEL

- **Location:** The core clientele (hospital staff) have easy access to the training facilities. Having the simulation equipment stored close to its core users, makes it easier to organize training on the hospital wards (in-situ training).
- **Meeting Educational Needs:** By allocating time to clinical practice, the training staff manages to maintain a clear understanding of the core participants' educational needs.
- **External Clientele:** Simulation courses for external clientele generate some additional funding.

CHALLENGES WITH MODEL

- **Staffing:** Limited opportunities to conduct simulation training in teams, due to staff shortage.

DEMOGRAPHICS OF PARTICIPANTS

Professionals

Physicians

Anesthesiologists
General practitioners
Junior Doctors
Orthopedics
Radiologists
Pediatricians
Senior residents
Surgeons

EMS

Ambulance personnel
Casualty clinic personnel
Paramedics

Other

Operating room technicians

Nurses

Anesthesia
Emergency Care
Intensive Care Unit
Operating Room
Pediatric
Registered Nurses

Students

Medical students: 5th year

External Clientele

Local hospitals
Primary care trusts
Police force

EDUCATIONAL ACTIVITIES

The Circle of Learning (fig 2) reflects the continuing process of attaining, maintaining, and enhancing clinical competence. The Great Western simulation center facilitates knowledge acquisition, skills proficiency, computer simulation, and full-scale simulation in teams. Physicians and nurses utilize computer simulation (MicroSim) to prepare for the ACLS courses. Computer simulation has been also made accessible on the hospital wards.

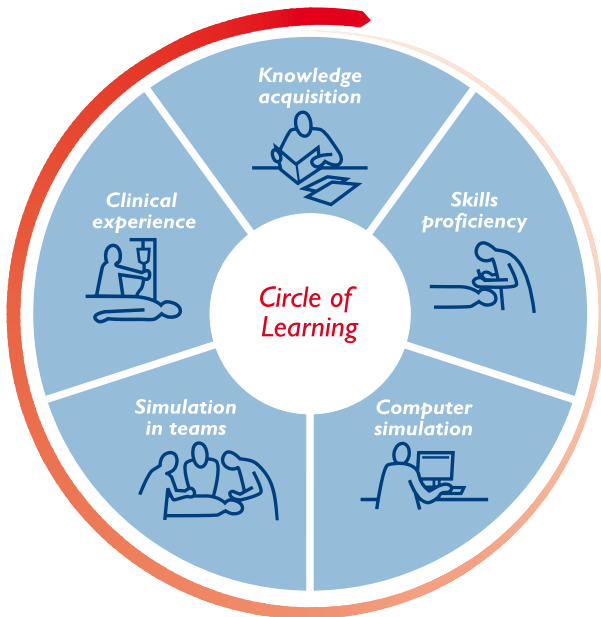


Figure 2. The Circle of Learning reflects the continuing process of attaining, enhancing, and maintaining clinical competencies.

TRAINING SOLUTION

The training equipment currently includes:

- 1 SimMan
- 1 SimBaby
- 1 ALS simulator
- MicroSim
- Skill trainers and manikins

METHODOLOGY

Simulation Training in Teams

Preparation: Participants prepare by attending subject related lectures, by studying relevant literature, and by working with computer simulation (MicroSim).

Brief: The instructors provide a 5-minute brief comprising an introduction to how medical simulations are carried out, a description of simulator features, and equipment functionality.

Validity: Great Western emphasizes validity to a high degree. All team training is conducted on the hospital wards, as in situ training yields a much higher sense of realism than training carried out at the simulation center.

Interactive Approach: Instructors adjust the scenarios according to how the participants perform. When participants need help in moving forward - or would perhaps benefit from greater challenges than the ones they first were presented with - the instructor will either simplify or complicate the scenario according to perceived needs.

Scenarios: All scenarios are self-made.

Most frequently used scenarios

- Acute, critical illness
- Cardiac arrest
- Chest pain
- Coma
- Difficult airway / Intubation
- Hemorrhage – post op
- Hemorrhage – chock
- Myocardial infarction
- Respiration – impaired
- Respiratory arrest
- Trauma

Debriefing

Emphasis: Medium.

The instructor makes use of the dialogue and encourages an exchange of opinions in order to focus what went well. Participants are asked to mention three such occasions, whereupon the instructor shows video-recorded examples to mirror the topics of discussion. When asked what the participants will concentrate on or do different the next time, the participants never come up short in terms of suggestions for improvements.

Applied tools

- Notes taken during ongoing simulation
- Video clips recorded during ongoing simulation
- Collaboration operator/instructor

Focus

- Team performance
- Individual performance

WHAT MAKES GOOD SIMULATION PROGRAMS

Issenberg et al¹ reviewed and synthesized existing evidence in educational science that addressed the following question: What are the features and uses of high-fidelity medical simulations that lead to most effective learning?

Issenberg argued that the weight of the best available evidence suggests that high-fidelity medical simulations facilitate learning, when training is conducted under the "right conditions."

The right conditions include:

- Feedback is provided during the learning experience
- Learners engage in repetitive practice
- Simulation is integrated into the normal training schedule
- Learners practice with increasing levels of difficulty
- Simulation training is adapted to multiple learning strategies
- A wide variety of clinical conditions are provided
- Learning on the simulator occurs in a controlled environment
- Individualized and team learning are provided
- Learning outcomes are clearly defined
- Ensures the simulator is a valid learning tool

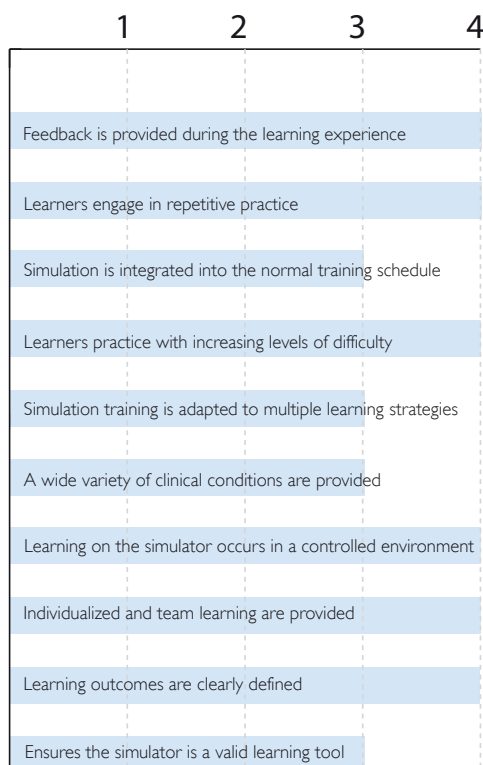


Figure 3. The bars indicate to which degree The Great Western Hospital delivers on each of the right conditions - as assessed by the simulation center on a 4 - point Likert scale (4 = highest).

REFERENCES

1. Barry Issenberg, William C. McGaghie, Emil R. Petrusa, David Lee Gordon, Ross J. Scalese (2005) Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review, *Medical Teacher*, Vol.27, No.1, pp. 10-28

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