



All Wales Simulation-Based Education and Training Strategy for the Healthcare Workforce

The vision for the next five years:
2022 – 2027

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1 ~ Strategy Summary

Vision

Aspiring for excellent Interprofessional Simulation Based-Education and Training; HEIW will lead the development of a highly trained healthcare workforce able to deliver high quality, safe and sustainable care across Wales.

Mission Statements

- Inspiring, promoting and supporting the delivery of exemplary, high quality, interprofessional simulation-based education and training accessible to all across the healthcare workforce in Wales
- Promoting simulation-based education and training, which is efficient and cost-effective, as integral to the development of the healthcare workforce in Wales
- Advancing healthcare simulation not only as an educational modality but also as an important tool for quality improvement and translational science, to enhance patient and service user safety, experiences and outcomes
- Fostering the development of simulation-based education and training for healthcare across Wales, based on collaborative learning and working
- Advocating for patients, service users and learners to be the focus of all simulation-based education and training activity

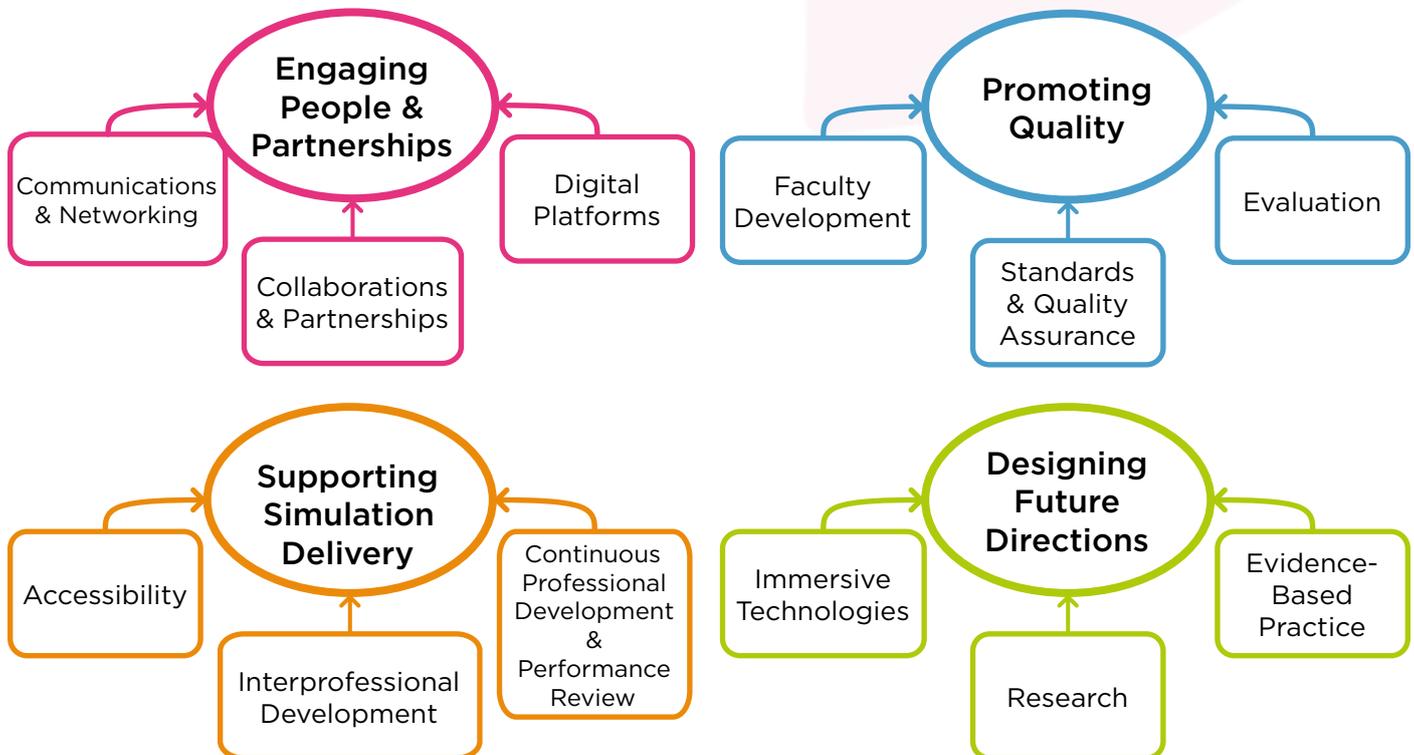


Figure 1. Strategy Structure – Domains and Workstreams

Engaging People and Partnerships

Communications and Networking: Maximise communications and networking opportunities to share information and facilitate engagement between simulation educators, trainers, learners, patients, service users and other stakeholders

Collaborations and Partnerships: Establish collaborations and partnerships across Wales, the UK and globally, as well as with industry to harness learning

Digital Platforms: Develop digital platforms to share resources and expertise, showcase best practice, facilitate collaborations and enhance communications across the healthcare simulation-based education and training community in Wales

Promoting Quality

Faculty Development: Provide equitable access to a standardised simulation faculty development programme

Standards and Quality Assurance: Promote quality assured simulation-based education and training across healthcare in Wales underpinned by standards and evaluated to ensure best practice in safe learning environments

Evaluation: Foster evaluation processes to promote a culture of reflective learning leading to improvement

Supporting Simulation Delivery

Accessibility: Improve accessibility, deliverability and utilisation of simulation-based education and training facilities, equipment, faculty and other resources, striving for equitable access for all across the healthcare workforce in Wales

Interprofessional Development: Promote simulation-based education and training as integral and fundamental to interprofessional development and education across the healthcare workforce of Wales

Continuous Professional Development and Performance Review: Recognise and support the work of those delivering simulation-based education and training through Continuous Professional Development (CPD) and performance reviews

Designing Future Directions

Immersive Technologies: Embrace current and future developments in Immersive Technologies to enhance the learning experience delivered by simulation-based education and training

Research: Promote research and evaluation to support the advancement of simulation-based education and training across healthcare in Wales

Evidence-Based Practice: Translate simulation-based education knowledge, literature and evidence into everyday simulation design and delivery



2 ~ Introduction and Background

Health Education and Improvement Wales and the Simulation Team

Health Education and Improvement Wales (HEIW) is a Special Health Authority within NHS Wales and plays a leading role in the education, training, development, and shaping of the healthcare workforce in Wales, in order to ensure high-quality care for the people of Wales and ‘transform the workforce for a healthier Wales’.

The role of the workforce is pivotal in building sustainable healthcare for the people of Wales in the future. HEIW’s purpose is to integrate, and grow expertise and capability in planning, developing, shaping and supporting the health workforce to ensure that the right staff, with the right skills, are available to deliver world-class healthcare to the people of Wales.

HEIW’s Simulation Team was established in 2020 to meet HEIW’s strategic objective to ‘lead the development and management of a multi-professional infrastructure and strategy for simulation-based education’. The team comprises Associate Deans and colleagues from a range of professional, clinical and education provider backgrounds, bringing a wide breadth of simulation, leadership and management experience.

The Simulation Team works alongside the healthcare simulation-based education and training (SBET) community in Wales, recognising and valuing the existing expertise and high-quality simulation being delivered, to

- ~ Support the delivery of high quality, interprofessional and accessible SBET across the healthcare workforce in Wales
- ~ Understand the needs to further enhance SBET across healthcare education and training in Wales
- ~ Facilitate collaborative learning and working relevant to healthcare SBET including developing ‘communities of practice’ to share expertise and promote best practice
- ~ Advocate for reflection and evaluation of all aspects of SBET
- ~ Identify and develop the future directions for SBET across healthcare in Wales
- ~ Ensure that patients, service users and learners are the central focus of all SBET activity

Since the team’s inception, its work has been founded on three main principles (1) equitable access to SBET for all across the healthcare workforce in Wales (2) the importance of interprofessional education and training (3) key standards to underpin all SBET that is delivered.

The Role of Simulation-Based Education and Training

‘Simulation is a learning tool that supports development through experiential learning by creating or replicating a particular set of conditions which resemble real life situations. It should provide a safe environment where participants can learn from their mistakes without any danger to patients, allowing individuals to analyse and respond to these realistic situations, with the aim of developing or enhancing their knowledge, skills, behaviour and attitudes.’¹

There is a wide breadth of modalities and tools that can be used for simulation. These include part-task trainers, advanced procedural trainers, full body manikins, role play, standardised patients and ‘serious gaming’.² There is also growing relevance of virtual reality, mixed reality, augmented reality, which may also involve haptics and artificial intelligence, all of which come under the umbrella terms ‘immersive technologies’ or ‘extended reality’.

Simulation can be delivered via several different routes including face-to-face, in-situ simulation or simulation centres, as well as virtually. There are also increasing opportunities for hybrid and blended approaches.

How ‘real’ and ‘lifelike’ the simulation experiences are, depends on and varies according to the need of each individual learning event. Some experiences may only require the simulation to be ‘reflective’ of the real environment, whereas others may need to be as realistic as possible, to achieve the identified learning outcomes.

Simulation has been used as a learning tool for education and training in healthcare for many years and there is growing evidence highlighting its positive impact on many areas of learning including knowledge, skills, behaviours, team performance and communication skills.^{3, 4, 5, 6, 7} There is also evidence of its role in improving patient outcomes.^{3, 7, 8}

Healthcare simulation not only has a role as an educational modality but also as an important tool to improve patient and service user safety and experience as well as healthcare systems - ‘...translational simulation may be used to explore work environments and/or people in them, improve quality through targeted interventions focused on clinical performance/patient outcomes, and be used to design and test planned infrastructure or interventions’.⁹

Clinical Skills Training

Within the context of this strategy, ‘clinical skills’ is acknowledged as being part of the spectrum of modalities that come under the umbrella of simulation. The principles of this strategy therefore are considered applicable and relevant in the delivery of clinical skills training across healthcare in Wales.

The Background to the Strategy

The strategy was written and revised in consultation with the healthcare SBET community and key stakeholders to ensure its relevance to and longevity for the education and training of the healthcare workforce of Wales.

HEIW’s principal role in its Standing Orders is ‘to take a strategic approach to developing the Welsh health workforce for now and for the future’; this strategy



therefore meets HEIW’s strategic objective for 2022-2025 - ‘Lead the development and implementation of a multi-professional strategy for Simulation-Based Education and Training’.¹⁰ This strategy sets out a centralised shared vision for healthcare simulation-based education and training in Wales and how this can be best achieved.

The strategy in turn enables implementation plans to be outlined for the necessary support, infrastructure and resources needed in order to plan for, deliver on and meet the current and future needs for healthcare SBET across Wales.

Notably, the strategy reinforces the importance of patients, service users and learners being the focus of all SBET activity. It also puts emphasis on the valuable role that SBET has in enhancing learning, supporting cost-effectiveness and contributing to improving patient and service user safety, experiences and outcomes.

SBET has never had a more important role than it does now in supporting the rapidly evolving landscape for education and training across healthcare in Wales, particularly in view of the current challenges facing healthcare. Meeting the needs of SBET requires effective and efficient deployment. This strategy will set the direction for a collaborative and co-ordinated approach to high quality, interprofessional and accessible SBET across the healthcare workforce in Wales for the coming five years.

Purpose of the Strategy

- ~ This strategy is of relevance to all involved in simulation-based education and training across the healthcare workforce in Wales including education providers, health boards, trusts, educators and trainers, learners, patients and service users as well as external stakeholders and partners
- ~ It sets out a vision and provides direction and transparency regarding the principles, priorities and aims that will guide HEIW and the Simulation Team’s work over the next five years in supporting SBET across the healthcare workforce in Wales
- ~ Its role is to provide clarity, consistency, and alignment of expectations, setting out principles for adoption across Wales
- ~ It aims to inform and engage all key stakeholders in the delivery of the strategy, facilitating a shared commitment to continuously enhancing learning and learner outcomes in addition to improving the safety, experiences and outcomes of patients and service users across Wales
- ~ This strategy provides a framework for measurable objectives to be delivered so that progress and impact can be evaluated. We will develop plans for implementation of the strategy within the HEIW Integrated Medium Term Plan (IMTP) and Annual Plans. As part of this, consideration will be given to what measures can be implemented to assess the impact of the strategy in supporting efficiencies and cost-effectiveness

Intended Benefits of the Strategy

To Patients and Service Users:

- ~ Contribute to improving patient and service user safety, experience and outcomes
- ~ Support high quality education and training of the current and future healthcare workforce to underpin safe and effective care and services
- ~ Inform of what to expect from HEIW regarding simulation-based education and training across healthcare in Wales
- ~ Provide reassurance that HEIW is planning for the SBET needs of the healthcare workforce in Wales

To Learners:

- ~ Enhance learning and learner outcomes by safely preparing learners to work in healthcare environments
- ~ Foster high quality SBET across all professions
- ~ Support SBET faculty in the delivery of consistent and equitable simulation experience for all learners
- ~ Provide reassurance that SBET across healthcare in Wales is fit for purpose
- ~ Provide greater insight into what learners can expect as participants in SBET

To Healthcare Systems:

- ~ Share information about the role of HEIW in SBET across healthcare in Wales
- ~ Provide opportunities for key stakeholders to collaboratively deliver high quality, interprofessional and accessible SBET across healthcare in Wales
- ~ Promote the importance of continuous reflection, learning and improvement
- ~ Highlight the importance of cost-effectiveness in SBET planning and delivery



How the Strategy is Structured

The **vision** sets out what we aim to achieve in the next five years followed by five **mission statements** to outline key driving principles. The strategy itself is divided into four **domains**, each representing a specific theme relevant to simulation-based education and training. Three key areas of work, also known as **workstreams**, sit within each domain. Each workstream has its own **aim**, followed by a series of **objectives**. The strategy structure is set out in Figure 1.

Key Definitions

- ~ The **'healthcare workforce'** refers to all persons who are involved in the delivery of healthcare to patients and service users across Wales
- ~ Each individual in the 'healthcare workforce' is referred to as the **'learner'**
- ~ **'Learners'** encompasses those on undergraduate courses or in training through to those who are post-qualification and working in practice i.e. undergraduate, pre-registration, postgraduate and post-registration
- ~ This also includes those who are in registered posts as well as those in non-registrant posts such as Health Care Support Workers and Managers
- ~ The purpose of these terms is to reinforce the important role that simulation has in education and training across the continuum of a healthcare worker's career

Commonly recognised definitions for **interprofessional education** (IPE) within this strategy include:

1. **'...occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes'** ¹¹
2. **'...occasions when members or students of two or more professions learn with, from and about each other to improve collaboration and the quality of care and services'** ¹²

Expected Contributions of Key Stakeholders in the Delivery of the Strategy

HEIW's Simulation Team:

- ~ Deliver on the strategy
- ~ Regularly review and revise the strategy to ensure that it is

responsive to needs

- ~ Disseminate and raise awareness regarding the strategy to all relevant key stakeholders
- ~ Provide guidance and support regarding the strategy to all key stakeholders involved in the delivery of healthcare education and training across Wales
- ~ Evaluate the impact of the strategy on learners, patients and service users

Health Boards, Trusts and Education Providers in Wales:

- ~ Acknowledge the strategy as a guiding document for SBET across healthcare in Wales
- ~ Adopt the principles, priorities and aims of the strategy, embedding them into educational policies, strategies and processes
- ~ Support educators and trainers with the resources needed to adopt, embed and sustain the principles, priorities and aims of the strategy
- ~ Evaluate and feed back on the impact of the strategy on learners, patients and service users

Educators and Trainers across Healthcare in Wales:

- ~ Acknowledge the strategy as a guiding document for SBET across healthcare in Wales
- ~ Adopt the principles, priorities and aims of the strategy embedding them into educational events and activities
- ~ Work with organisation leads to identify the resources needed to adopt, embed and sustain the principles, priorities and aims of the strategy
- ~ Evaluate and feed back on the impact of the strategy on learners, patients and service users

Learners:

- ~ Provide feedback on and evaluation of the impact of the strategy to learning and learner outcomes



Ensuring Cost-Effectiveness

The simulation strategy will ensure cost-effectiveness in terms of enabling the healthcare workforce across Wales to acquire and evolve the knowledge, skills and behaviours that make procedures, processes and systems safer, contributing to better experiences and outcomes for patients and service users. With increased efficiencies, overall healthcare costs will be reduced.

In delivering the strategy, we will seek to work with all relevant key stakeholders to explore how resources can potentially be shared and duplication of work prevented, among other benefits. The strategy also focusses on enhancing the quality of SBET delivered across healthcare in Wales, aiming to improve quality, safety, experiences and outcomes as well as efficiencies of care delivered to patients and service users.

Assessments of the impact of this strategy on cost-effectiveness and efficiencies will be considered as part of delivery plans.

Welsh Language Act

We will ensure that the simulation strategy complies with the HEIW Welsh Language Scheme.¹³ We advocate for simulation design and delivery through the medium of Welsh where appropriate and will support this.

Equality and Diversity

We are committed to achieving better outcomes for people and an Equality Impact Assessment is an integral part of ensuring that our simulation strategy is fair and does not present barriers to participation or disadvantage any protected groups. This strategy acknowledges the need for SBET to be inclusive of all patients and service users and be representative of all groups across the breadth of the communities that are cared for by the healthcare workforce in Wales.

Environment and Sustainability

In accordance with HEIW's Biodiversity and Decarbonisation Strategy 2021-2024, a Sustainability Impact Assessment will be undertaken to ensure that we have integrated sustainable development into the simulation strategy and considered both short-term and long-term effects.¹⁴

3 ~ Vision, Mission Statements and Domains

Vision

Aspiring for excellent Interprofessional Simulation Based-Education and Training; HEIW will lead the development of a highly trained healthcare workforce able to deliver high quality, safe and sustainable care across Wales.

Mission Statements

- Inspiring, promoting and supporting the delivery of exemplary, high quality, interprofessional simulation-based education and training accessible to all across the healthcare workforce in Wales
- Promoting simulation-based education and training, which is efficient and cost-effective, as integral to the development of the healthcare workforce in Wales
- Advancing healthcare simulation not only as an educational modality but also as an important tool for quality improvement and translational science, to enhance patient and service user safety, experiences and outcomes
- Fostering the development of simulation-based education and training for healthcare across Wales, based on collaborative learning and working
- Advocating for patients, service users and learners to be the focus of all simulation-based education and training activity



Figure 1. Strategy Structure - Domains and Workstreams

4 ~ Strategic Aims and Objectives



Engaging People and Partnerships

Communications and Networking

Aim

Maximise communications and networking opportunities to share information and facilitate engagement between simulation educators, trainers, learners, patients, service users and other stakeholders

Objectives

- ~ To promote inclusivity across the healthcare simulation-based education and training (SBET) community in Wales
- ~ To foster working relationships across all professions of the healthcare SBET community in Wales in order to create 'communities of practice' to increase collaboration, share knowledge and expertise, promote best practice and make resources increasingly available to all
- ~ To facilitate networking through a variety of modalities so that communication is accessible to all involved in healthcare SBET
- ~ To connect the healthcare SBET community in Wales with national and international simulation fora in order to keep abreast of current and future global simulation developments and showcase simulation initiatives from Wales

Collaborations and Partnerships

Aim

Establish collaborations and partnerships across Wales, the UK and globally as well as with industry to harness learning

Objectives

- ~ To engage with all stakeholders involved in SBET across Wales, including learners, patients, service users, educators and trainers, as well as management and executive teams from across Health Boards, Trusts, education providers and HEIW
- ~ To establish links with external stakeholders relevant to healthcare SBET including professional regulatory and statutory bodies, simulation

societies, Royal Colleges, professional societies, health education bodies and third sector parties across the UK

- ~ To embrace opportunities for collaboration with international simulation societies and initiatives
- ~ To connect with SBET-related industry and explore innovation-related opportunities
- ~ To ensure that patients, service users and learners are the focus of all SBET activity and have a voice in its design, delivery and evaluation

Digital Platforms

Aim

Develop digital platforms to share resources and expertise, showcase best practice, facilitate collaborations and enhance communications across the healthcare simulation-based education and training community in Wales

Objectives

- ~ To act as a central hub for sharing SBET-related knowledge, skills and learning resources
- ~ To connect all involved in SBET across the healthcare workforce in Wales
- ~ To highlight best practice and showcase innovative SBET approaches
- ~ To facilitate collaborative learning and working relevant and of benefit to SBET across healthcare in Wales
- ~ To promote the importance of appropriate commitment to and investment in digital infrastructure and capability for the healthcare workforce in Wales, which are essential to the delivery of SBET





Promoting Quality

Faculty Development

Aim

Provide equitable access to a standardised simulation faculty development programme

Objectives

- ~ To support simulation educators and trainers in the development of educational skills, knowledge and behaviours that will enable them to provide consistent high quality SBET in safe learning environments
- ~ To offer flexible and accessible faculty training opportunities to further develop a multiprofessional and diverse faculty workforce through the provision of a tiered education and accreditation framework
- ~ To support Interprofessional Simulation-Based Education and Training (IPSBET) through faculty development training, facilitating opportunities for collaborative and transformative learning

Standards and Quality Assurance

Aim

Promote quality assured simulation-based education and training across healthcare in Wales underpinned by standards and evaluated to ensure best practice in safe learning environments

Objectives

- ~ To raise awareness and promote the application of the Association for Simulated Practice in Healthcare (ASPiH) standards and other professional regulatory and statutory bodies relevant to SBET across healthcare in Wales
- ~ To embed these standards into simulation faculty development programmes in order to cascade their routine inclusion into everyday SBET practice

- ~ To promote 'learning from' success, failure and everyday experiences as a means to improve the quality of SBET
- ~ To foster a culture in which SBET contributes to continuously improving the safety, experiences and outcomes of patients and service users across Wales

Evaluation

Aim

Foster evaluation processes to promote a culture of reflective learning leading to improvement

Objectives

- ~ To promote the evaluation of all phases of SBET activity in order to facilitate feedback at individual, departmental and organisational level
- ~ To reinforce the importance of evaluating the impact of SBET on patient and service user safety, experiences and outcomes
- ~ To facilitate equitable access to support, tools and processes to evaluate the quality of SBET being delivered and assess whether standards relevant to SBET are being met
- ~ To explore avenues for collaborative evaluation with relevant stakeholders including HEIW's Evaluation, Research, Improvement and Innovation Collaborative (ERIIC)
- ~ To encourage and support dissemination of outcomes, findings, and reports to ensure reflection, learning and improvement across SBET in healthcare across Wales





Supporting Simulation Delivery

Accessibility

Aim

Improve accessibility, deliverability and utilisation of simulation-based education and training facilities, equipment, faculty and other resources, striving for equitable access for all across the healthcare workforce in Wales

Objectives

- ~ To explore ways to make resource allocation transparent and equitable across all professional groups
- ~ To nurture collaborative local and regional networks to champion and promote sharing of SBET resources across Wales
- ~ To promote and instil the principles of SBET resources being inclusive, used efficiently and effectively, maximising existing and new opportunities, to enhance sustainable cost-effective learning

Interprofessional Development

Aim

Promote simulation-based education and training as integral and fundamental to interprofessional development and education across the healthcare workforce of Wales

Objectives

- ~ To promote the benefits of Interprofessional Simulation-Based Education and Training (IPSBET)
- ~ To advocate for the healthcare SBET community in Wales to adopt and integrate IPSBET into everyday practice
- ~ To collaborate with key stakeholders to identify the needs and potential pathways, processes and solutions required to further develop IPSBET across the healthcare workforce in Wales
- ~ To encourage all organisations across the healthcare workforce to commit to the future of IPSBET through their policies, strategies and resource allocation to ensure its ongoing development and sustainability

Continuous Professional Development and Performance Reviews

Aim

Recognise and support the work of those delivering simulation-based education and training through Continuous Professional Development (CPD) and performance reviews

Objectives

- ~ To signpost, promote and offer opportunities for continuous professional development for all involved in SBET across the healthcare workforce in Wales
- ~ To advocate for regular reflection and evaluation of SBET performance as part of professional/personal development reviews, appraisals and revalidation processes
- ~ To make recommendations for organisational recognition of all work undertaken by individuals delivering SBET





Designing Future Directions

Immersive Technologies

Aim

Embrace current and future developments in immersive technologies to enhance the learning experience delivered by simulation-based education and training

Objectives

- ~ To identify key priorities, benefits and challenges for incorporating immersive technologies into SBET across healthcare education and training in Wales
- ~ To collaborate with key stakeholders to create a vision of how immersive technologies should be embedded to support the continuum of learning and be equitably accessible to all across the healthcare workforce in Wales
- ~ To promote sharing of ideas, innovation and best practice in the use of immersive technologies

Research

Aim

Promote research and evaluation to support the advancement of simulation-based education and training across healthcare in Wales

Objectives

- ~ To foster a research culture which contributes to the SBET evidence base
- ~ To encourage research and evaluation projects exploring the impact of SBET upon patient, service user and learner outcomes in collaboration with HEIW's Evaluation Research Improvement and Innovation Collaborative (ERIIC)
- ~ To promote equitable access to research and evaluation support for all involved in SBET

- ~ To develop links and working relationships with external stakeholders relevant to SBET research and evaluation on a local, regional, national and international level
- ~ To highlight best practice and showcase simulation-based research being undertaken across Wales

Evidence-Based Practice

Aim

Translate simulation-based education knowledge, literature and evidence into everyday simulation design and delivery

Objectives

- ~ To advise on how to apply SBET-based evidence to everyday simulation practice
- ~ To identify the range of local, regional, national and international learning opportunities to develop the knowledge and understanding of the SBET evidence base
- ~ To encourage and support the dissemination of work through abstracts, posters, presentations and publications to showcase SBET activity



5 ~ Glossary

Accessibility: ‘...involves designing systems to optimise access. Being inclusive is about giving equal access and opportunities to everyone wherever possible.’¹⁵

Artificial Intelligence (AI): ‘A system of computerized data-gathering and prediction that models human behavior and decision-making with minimal human intervention. In healthcare simulation, AI often refers to underlying programming that provides physiological or system-based algorithm changes based on inputs from users and learners. Often paired with machine learning, in which the software is programmed to alter algorithms and predictions based on observed data and results without human intervention. Virtual patients use artificial intelligence to react appropriately to the user or learner.’¹⁶

ASPiH: Association for Simulated Practice in Healthcare <https://aspih.org.uk>

Augmented Reality (AR): ‘presents digital information, objects, or media in the real world through a mobile device or headset. These elements can appear as a flat graphical overlay or can behave as a seemingly real ‘3D’ object.’¹⁷

Blended Learning: ‘...a method of teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more flexibility to customize their learning experiences.’¹⁸

Clinical Skill (CS): ‘A CS may contain one or several different domains such as: physical examination skills, practical procedure, communication skills, and management. Acquiring CSs includes three components: learning how to perform certain movements (procedural knowledge), why one should do so (underlying basic science knowledge), and what the findings might mean (clinical reasoning).’¹⁹

Digital Platforms: within this strategy, ‘digital platforms’ refers to online area(s) to share resources and expertise, showcase best practice, facilitate collaborations and enhance communications across the healthcare SBET community in Wales as well as other key stakeholders that interact with it.

Domains: The strategy is divided into four domains, each representing a specific theme relevant to simulation-based education and training.

Education Providers: within this strategy, ‘education providers’ refers to Higher Education Institutions and other stakeholders and organisations across Wales who deliver healthcare-based education and training excluding HEIW, NHS Health Boards and Trusts.

Evaluation, Research, Improvement and Innovation Collaborative (ERIIC): is a community of learning (peer group) focussed on collaborating, sharing and disseminating projects and ideas. It links closely to the HEIW Research Governance Group and other areas of work within HEIW including Quality Improvement Skills Training (QIST).

Experiential Learning: ‘Learning is the process whereby knowledge is created through the transformation of experience.’²⁰

Face-to-Face: within this strategy, ‘face-to-face’ refers to education and training delivered in person at a physical venue.

Faculty: within this strategy, ‘faculty’ refers to all individuals involved in the design and delivery of SBET including educators, trainers, facilitators, actors and technicians.

Faculty Development: within this strategy, ‘faculty development’ refers to activities and resources to support the development of educational knowledge, skills and behaviours required for individuals to design and deliver high quality SBET.

Full Body Manikin: ‘These manikins are intended to replicate patients more completely in form and function. Some are designed to offer close anatomical and/or physiological modelling, often used in combination with patient monitoring adjuncts and other consumables used in the clinical setting. These simulators can be used within simulated or real clinical environments (‘in-situ simulation’) and provide useful opportunity for individual or team-based training exercises to help develop broader professional capabilities, teamworking skills or orientation to new work procedures, protocols and environments.’²

Haptics: ‘...assist in immersing the user in a virtual world through an enhanced sense of touch. Often taking the form of a pair of gloves or an articulated arm, haptic technology enables users to not only see and hear their environment but feel it through vibration and changes in temperature.’¹⁷

Healthcare Workforce: within this strategy, ‘healthcare workforce’ refers to all persons who are involved in the delivery of healthcare to patients and service users across Wales.

HEIW: Health Education and Improvement Wales.

Hybrid Simulation: ‘The union of two or more modalities of simulation with the aim of providing a more realistic experience.’²¹

Immersive Technologies: Also known as ‘Extended Reality’. Immersive Technologies ‘is an umbrella term encapsulating AR, VR, MR and everything in between.’¹⁷

In-situ Simulation: ‘Taking place in the actual patient care setting/environment in an effort to achieve a high level of fidelity and realism; this training is particularly suitable for difficult work environments, due to space constraints or noise. For example, an ambulance, a small aircraft, a dentist’s chair, a catheterization lab. This training is valuable to assess, troubleshoot, or develop new system processes.’²²

Interprofessional Education: ‘...occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes.’¹¹

IPSBET: Interprofessional simulation-based education and training.

Learner: within this strategy, ‘learner’ refers to each individual in the ‘healthcare workforce’. This encompasses those on undergraduate courses or in training through to those who are post-qualification and working in practice i.e. undergraduate, pre-registration, postgraduate and post-registration. This also includes those who are in registered posts as well as those in non-registrant posts such as Health Care Support Workers and Managers.

Mixed Reality (MR): ‘is the latter form of AR described above where physical and digital objects co-exist – in other words, the digital objects appear anchored to the real-world environment.’¹⁷

Multiprofessional Education: ‘...occasions when members or students of two or more professions learn side by side for whatever reason.’²³

Part-Task Trainers: ‘These can be physical replicas of a body part or a screen-based representation, or a combination of the two. These are used most often to help train specific skills or tasks...’²

Serious Games: ‘A game designed for a primary purpose other than pure entertainment. Serious games have an explicit and carefully thought out educational purpose, and are not intended to be played primarily for amusement.’²⁴

SBE: Simulation-Based Education. ‘Simulation is a learning tool that supports development through experiential learning by creating or replicating a particular set of conditions which resemble real life situations. It should provide a safe environment where participants can learn from their mistakes without any danger to patients, allowing individuals to analyse and respond to these realistic situations, with the aim of developing or enhancing their knowledge, skills, behaviour and attitudes.’¹

SBET: Simulation-Based Education and Training. Same meaning as SBE however SBET is the preferred term used by HEIWs Simulation Team to inclusively reflect the range of terminology used across professions.

Standardised Patient: also known as ‘simulated patient’. ‘This form of simulation involves interaction between learner(s) and another person who plays the role of the patient, a family member / carer, or a colleague (for example). This form of simulation is a powerful way to focus on training or assessment of key communications skills, such as consultations, taking consent, breaking bad news, or speaking up. In high stakes assessments this involves professionals as the simulated patient (or other role) whilst at the other end of the spectrum it can involve students or staff role playing different roles themselves.’²

Transformative Learning: ‘Transformative learning is described as learning that changes the way we see the world through an experience or event that encourages reflection, typically challenging preconceived understandings, which enables positive future action and meaningful relationships.’²⁵

Translational Simulation: ‘...is a functional descriptor of healthcare simulation whose purpose is to directly improve patient care and healthcare systems, through diagnosing safety and performance issues and delivering simulation-based interventions.’⁹

Virtual Reality (VR): ‘immerses users in a fully digital environment through a headset or surrounding display. This environment can be computer-generated or filmed in 360-degree video.’¹⁷

Workstreams: within this strategy, three key areas of work, also known as workstreams, sit within each domain. Each workstream has its own aim, followed by a series of objectives.

6 ~ Appendices

Appendix 1:

How the Strategy was Developed ²⁶

Stage 1:

Work formally started on the strategy in Spring 2021. The Simulation Team had already gained awareness of key strategy needs from (1) engagement and networking events that they had undertaken with the healthcare simulation community across Wales since coming into post in summer 2020 and (2) work with the HEIW Simulation Steering Group at point of appointment as to how the Simulation Team should develop. A range of online-available simulation strategies were reviewed to gain knowledge of current approaches and strategic themes. ^{27, 28, 29, 30,31} A first draft was outlined with a vision and mission statements, four domains and twelve workstreams; also known as ‘the plan on a page’. Work with HEIW’s Planning and Performance team followed, with extensive discussions to ensure appropriate choice of key terminology.

Stage 2:

Each Associate Dean worked with the Strategy Lead to define objectives for each of their responsible workstreams. The Simulation Team subsequently peer reviewed each other’s work to form the final version of the draft strategy.

Stage 3:

A programme of key stakeholder engagement events was planned, for consultation and feedback on the draft strategy, including sessions with simulation experts, learners, patient/service user representatives and the wider healthcare SBET community. The first event engaging simulation experts led to minor revisions to the mission statements, which were cascaded to subsequent consultations. Other revisions were withheld until completion of all feedback events which concluded in August 2022.

Stage 4:

Concluding revisions were made with planned submission of the finalised strategy to HEIW’s Board for approval and ‘sign off’.

The strategy was submitted to HEIW’s Executive team for review and feedback at various points over the course of the development of the document. In addition, update presentations/Q&A sessions were provided to the SBET community at various webinars (June and December 2021, June 2022).

Appendix 2:

Strategy Working Group and Inputting Stakeholders

Strategy Working Group:

- Bethan Bartholomew
- Sara-Catrin Cook
- Cristina Diaz-Navarro
- Clare Hawker
- Bridie Jones
- Suman Mitra
- Andreлина Ramdhun

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Lastly, sincerest thanks and appreciation to all who took part in the strategy feedback engagement events, which have been invaluable in shaping the strategy to ensure that it is relevant and meets the needs of simulation-based education and training across healthcare in Wales for the next five years.



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