

Use of simulation for pre-hospital healthcare education

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Abstract

Simulation is increasingly being utilised for pre-hospital professional education in Europe. To ensure this growth continues, it is important that experience is shared throughout Europe to help 'spread the word' and share examples of 'best practice'. The Society in Europe for Simulation Applied to Medicine (SESAM) is an organisation which was set up to help facilitate and exchange knowledge about the use of simulation in medical (and paramedical) education throughout Europe. Previous SESAM annual meetings have not attracted significant numbers of delegates from the pre-hospital professions. This could be because previous programmes have not had much direct relevance for this audience. Working with the SESAM executive committee for the 2012 annual meeting in Stavanger, the authors helped co-ordinate a group of European pre-hospital simulation educationalists to create a programme of presentations and workshops designed to be directly relevant to a pre-hospital professional audience. Attendance overall for the 2012 annual meeting in Stavanger was significantly higher than in 2011 and it appears that more pre-hospital professionals attended in 2012 (but this cannot be supported in this paper). The increased emphasis placed on pre-hospital simulation in Stavanger helped create a specific SESAM supported network (Pre-Hospital Special Interest Group or PH-SIG) and this network will help share simulation 'best practice' amongst European pre-hospital professionals in the future.

Key words

●IMSH●PH-SIG●SESAM●SAFER●SSH

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It can be argued that the first use of a mannequin for healthcare simulation was in the 1960s with the introduction of the Resusci Anne mannequin (Jeffries, 2007). In 1964, it was reported that this mannequin was used in a low fidelity simulation educational study for cardiopulmonary resuscitation (CPR) skills acquisition which involved paramedics and lay people (Winchell et al, 1966). Resusci Anne has to date helped train over 350 million people

globally with 'hands on' CPR training, and a significant proportion of this total has been with individuals involved with pre-hospital healthcare.

During the 1980s the use of simulation for aviation and military training was investigated by anaesthesia educators. However, it was the introduction of affordable, portable and versatile patient simulators (such as SimMan) in the late 1990s and 2000s, which helped stimulate the wider global adoption of simulation for healthcare education. The Chief Medical Officers Report for England and Wales in 2009 recommended that simulation training in 'all its forms' was to be a vital part of building a safer healthcare system (Donaldson, 2009) and therefore central to improving patient safety. The use of simulation for the training of pre-hospital healthcare staff in Europe in this context has, until relatively recently, primarily made use of basic simulation techniques and tools. It was reported in 2009 that ambulance personnel in the UK still have too few opportunities to take part in realistic simulation exercises with appropriate and relevant debriefing and reflection. This report went on to state that increased investment by ambulance services in this area may improve the quality of patient care in the future (Alinier, 2007). There is evidence that this is now occurring more widely (Alinier, 2010). However, what is also required is a suitable international forum to help disseminate the benefit of simulation for pre-hospital care and share examples of 'best-practice' globally.

SESAM, SSH and their relevance for pre-hospital health professionals

The Society in Europe for Simulation Applied to Medicine (SESAM) is a multi-professional network

of simulation enthusiasts based in Europe. The Society was founded in Copenhagen in 1994. It aims to develop and apply simulation for education, research and quality management in medicine and healthcare. The Society helps to facilitate and exchange knowledge throughout Europe. One of the key ways that the Society achieves this is through the annual meeting of the Society. 14–16 June 2012 marked the 18th annual meeting, hosted in Stavanger and comprised a mixture of keynote lectures, themed oral presentations, workshops, roundtable discussions, expert panels, and poster sessions. In the past, the annual meetings have tended to have a high proportion of simulation ‘pioneers’ and ‘early adopters’ from anaesthesia and academia. This has changed over the years but pre-hospital healthcare professionals have tended to be under-represented as a group, although this is changing to some extent. In 2011, approximately 400 delegates from 32 countries attended the 17th annual meeting in Granada, Spain and the proportion of delegates attending from the pre-hospital professions continued to be relatively low.

A similar annual meeting in the USA, the International Meeting on Simulation in Healthcare (IMSH) is organised by the Society for Simulation in Healthcare (SSH). This meeting, of which there have been 13 annual meetings to date, tends to attract a larger audience and also appears to attract a significant number of attendees from the pre-hospital healthcare professions. In 2011 there were approximately 2500 delegates from 34 countries attending the IMSH annual meeting. This increased to approximately 3100 attending the meeting in San Diego in 2012 from 37 countries. This greater participation overall has helped to spread knowledge and experience about simulation amongst the delegates, including the pre-hospital community (and especially from those within the USA). Part of the reason for this disparity in attendance between the IMSH and SESAM is the broad content of the meeting programme and its increasing relevance for a pre-hospital audience. The programme is very diverse with offerings for the novice in healthcare simulation up through to the expert educator.

Attracting more pre-hospital professionals to the SESAM meeting

The increasing use of simulation in nurse education and the corresponding increase in attendance of nurse educators at IMSH and SESAM is a good example of how a tailored conference programme can help influence the

adoption and sharing of best practice with a particular group of healthcare professionals. A few years ago, the proportion of the IMSH annual programme devoted to nurse education was relatively small, but it has now increased to become a significant proportion of the total programme as the number of nurse educators attending the conference has correspondingly increased.

An increase in the number of delegates from the nursing profession has also occurred with the SESAM meeting, albeit at a reduced level and over a longer time period. However, the number of nurse educators attending has risen steadily in recent years and in the 2011 programme the total number of hours at the SESAM annual meeting specifically devoted to the needs of nurse education was 4 hours (out of a programme 15.5 hours long) (SESAM, 2011). In 2012, the total SESAM programme was 12.5 hours long but there were more parallel sessions than in 2011, thus significantly increasing the options available for the delegates attending. A total of 11 hours of programme content was highlighted on the 2012 programme as relevant for nursing (SESAM, 2012). This increase in programme content for nurses has helped increase the number of nurse educators attending SESAM.

As a comparison, in 2011, there was only a single round table session on the SESAM programme specifically relevant for a pre-hospital audience with the title ‘Pre-hospital Emergency Team Training’. Professor Andy Newton was a speaker for this round table and he described the attendance of this session as ‘disappointing’, with only approximately 20 delegates taking part.

Increasing relevant content for the 2012 SESAM programme

At the 17th SESAM conference in Granada in June 2011, the authors met to discuss the need for greater programme content for pre-hospital professionals at the 2012 SESAM meeting being hosted by the SAFER centre in Stavanger with the objective to encourage pan-European pre-hospital attendance. This clear objective was then discussed with key members of the SESAM organising committee to ensure that this aim was also in line with the committee’s wishes and objectives.

With the committee’s endorsement, the authors decided to invite individuals with a keen interest in the use of simulation in the pre-hospital environment to a meeting at the South East Coast Ambulance Service Head Quarters at Banstead in Surrey, UK. This meeting



Figure 1. A Mama Natalie birthing simulator being used during an obstetric simulation workshop for pre-hospital health professionals at the SESAM meeting in Stavanger

occurred on 16 November 2011. Pre-hospital care professionals from Italy, Spain, Austria, Holland, Germany, Norway, and the UK were invited to attend. At this meeting, various titles and subject matter for presentations and workshops were discussed and agreed with an emphasis placed on their attractiveness for a European pre-hospital audience. It was agreed that abstracts would be submitted by the respective authors before the abstract deadline date and that the SESAM organising committee would be kept fully informed in advance with regard to the group's ambitions. This was to ensure there would be sufficient time within the final programme for the submitted abstracts (assuming they were accepted by the scientific committee).

A follow up meeting was held (again at Banstead in Surrey, UK) on 20 February 2012 with additional delegates attending from Ireland, Sweden, and Switzerland. Helge Lorentzen (then SESAM President) also attended this meeting. This was extremely useful as he was able to recommend the best methodology for grouping presentations and workshops into common themes which would then fit with the overall proposed SESAM programme structure.

Helge Lorentzen highlighted to the group the existence of another European pre-hospital group with an interest in simulation. This group was being co-ordinated by a pre-hospital professional (Kai Kranz) based at the Swiss Institute of Emergency Medicine (SIRMED) in Nottwil, Switzerland. This group also had participating members from Germany, Denmark, Norway, and Portugal. Helge suggested that the authors should act as

a link between the two groups to investigate the possibility of sharing mutual interests. Jonathan Smart accepted a kind invitation to attend a meeting with this group at the Swiss Institute of Emergency Medicine in Nottwil, Switzerland on 6 March and it was evident from this meeting that there were common interests to share.

The 2012 SESAM meeting

After the abstracts were submitted, they were subsequently accepted and the 2012 SESAM programme culminated in over 7 hours of content for a pre-hospital audience. There was a mixture of oral sessions and workshops specifically highlighted for a pre-hospital audience and these were delivered from members of the group who previously met at Banstead. Pre-hospital simulation experience from Austria, Holland, Spain, UK, Ireland, and Sweden was delivered in these sessions. The subject matter included a number of practical workshops for a pre-hospital audience. These included, for example, topical themes such as obstetrics (see *Figure 1*) and paediatrics, as well as the remote use and control of simulators in external locations for in-situ use.

All sessions relating to pre-hospital care were extremely well attended with the majority at full capacity. The overall attendance for the meeting went from approximately 400 in 2011 to over 650 in 2012, with delegates from 39 countries attending. It is unclear how many of the additional delegates at Stavanger were paramedics or from other health care professions working for ambulance services and pre-hospital care as this information was not recorded by the SESAM organisers. However, the programme offered an additional opportunity for a specific pre-hospital network meeting which was held on the last day of the SESAM conference. At this meeting, approximately 50 delegates attended (including members from the Banstead group, the Nottwil group, and other pre-hospital professionals). At this meeting it was agreed to merge the 2 groups and establish a specific SESAM supported special interest network for simulation for pre-hospital practitioners (now known by the acronym PH-SIG (Pre-Hospital Special Interest Group)). Prof Andy Newton and Kai Kranz were elected as co-chairs at this meeting and a follow-up meeting took place in Copenhagen in early November, 2012, where issues relating to the governance of the group were discussed and agreed. It was also agreed at this meeting that the PH-SIG would continue to drive for increased pre-hospital content for the programme for the 19th annual SESAM meeting in Paris in June 2013. This subsequently happened with the Paris meeting containing over 8 hours of pre-hospital related

content. The PH-SIG network, therefore, has successfully continued the excellent work carried out for SESAM 2012 and the network continues to ensure that pre-hospital simulation 'best practice' within Europe is shared.

Conclusions

To conclude, the work of the Banstead group (with co-ordination with the Nottwil group) has helped share simulation experience amongst European pre-hospital professionals by encouraging attendance at the 2012 SESAM annual conference with programme content directly relevant to this audience. This increased participation has allowed institutions to get to know each other and to share experience and, in some cases, helped facilitate visits between institutions. This emphasis has also helped to subsequently create the PH-SIG network which ensured that the programme for the 2013 SESAM conference in Paris also had an increased level of pre-hospital content. The PH-SIG network should continue to help ensure that future annual meetings of SESAM will have programme content of interest to this audience which will in turn encourage growth in pre-hospital professional attendance. This will support the goal of disseminating knowledge and 'sharing of best practice' of the use of simulation for pre-hospital education with the ultimate aim of helping to improve patient care in the future.

Conflict of interest: Jonathan Smart is an employee of Laerdal Medical. The 2012 SESAM annual meeting was held in Stavanger and was co-ordinated locally by SAFER (Stavanger Acute medicine Foundation for Education and Research). Laerdal Medical is an equal partner of SAFER (with Stavanger University Hospital and the University of Stavanger). Laerdal Medical made travel bursaries available for the attendees of the meetings held in

Key points

- The use of simulation as an experiential teaching modality for European pre-hospital professional education has increased over recent years.
- Participation of European pre-hospital professionals at the annual SESAM meeting (before 2012) has been relatively poor due to lack of relevant programme content.
- An increase in relevant programme content at the Stavanger SESAM meeting appears to have helped increase the numbers who attended this meeting in June 2012 and June 2013.
- The formation of a SESAM supported pre-hospital special interest group (PH-SIG) at Stavanger should help ensure that the needs of pre-hospital professionals continue to be met at future annual meetings. This group will also help with the 'sharing of best practice' with the use of simulation for pre-hospital education.

Banstead described in this paper and also for those group members attending SESAM who had their abstracts accepted.

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