

Deployment of Automated External Defibrillators (AEDs) in the District of Dachau: A Strategy to Obtain Coverage of a Whole Rescue Service Area by Using Existing Local Resources

K. Wilhelm; C. Günzel; F. William; H. Estner
Förderverein Rettungsdienst Dachauer Land e.V., Germany

Sudden cardiac arrest is one of the most common causes of death in industrial countries. Ventricular fibrillation (VF) has been identified as a positive predictor for survival in cardiac arrests. The aim is to provide rapid response defibrillation for out-of-hospital, cardiac arrests to reach more patients still in VF and thus increase survival in these patients.

In a mostly rural area such as the district of Dachau, with an area of 579 square kilometers, the emergency medical service (EMS) often must travel too far to be on-site in time to reach the patient still in VF. The EMS operates from four rescue stations with ambulances and two emergency doctor vehicles around the clock provided by the Bavarian Red Cross. In addition, five first-responder units have been installed by the Bavarian Red Cross and one has been installed by the Technische Hilfswerk (THW) to close the gaps between the rescue stations.

A system of first responders with automated external defibrillators (AEDs) covering the whole district is being established by using existing local resources to cover the time until arrival of the EMS. Therefore, 20 AEDs have been provided with the financial help of two major banks of Dachau, and have been deployed at 20 sporting clubs, thereby covering a great part of the district. More than 500 volunteers in these sporting clubs are being trained in resuscitation and defibrillation with the AED. These volunteers then will provide rapid response defibrillation at all sporting events and many cultural events in the district.

In a next step, these first responders also could be sent to a cardiac arrest in their neighborhood to cover the time until the arrival of the EMS. The problem of alarming the nearest first responder has yet to be solved. The easiest way seems to be an alarm by the rescue coordination center (RCC) that also deploys and coordinates the EMS vehicles. Attaching prepaid mobile phones to the AEDs seems to be a simple and cheap possibility for establishing this. To ensure the function of all these first responders, training must be carried out once a year at each one of these sporting clubs, which requires great resources in personnel.

This system is a good addition to the professional provision of defibrillation by the EMS because it is much cheaper and still ensures almost complete coverage of the district. Moreover, there seems to be unlimited numbers of motivated responders.

Keywords: automatic external defibrillator (AED); emergency medical services; first responders; on-site; response; time; volunteers

Prehosp Disast Med 2005;20(2):s36

Community-based, Emergency Cardiac Care Chain-of-Survival: A Novel Delivery Approach

M.E. Gebhart
Wright State University, School of Medicine, Dayton, Ohio USA

It is well-known that the time to defibrillation is related directly to survival rates from cardiopulmonary arrest. More specifically, ventricular fibrillation must be treated immediately. Data suggest that for every minute of untreated ventricular fibrillation, the chance for conversion and return to spontaneous circulation decreases by 10%.

A fully functional model program operating in Kettering, Ohio is described. This novel approach recognizes system delivery limitations and has taken the "community responder approach." The community responder approach enables the delivery of emergency defibrillation to any area in the mid-sized community of 60,000 people within two minutes.

This program can serve as a model to other communities, both large and small, as they attempt to increase the survival rates of out-of-hospital arrest.

Keywords: cardiopulmonary arrest; communities; community responder; defibrillation; Ohio

Prehosp Disast Med 2005;20(2):s36

Free Papers Theme 11: Education-1 Nursing

Emergency Preparedness Curricula Nursing Schools in the United States

P. Trangenstein; E. Weiner; M. Irwin; J. Gordon
Vanderbilt University, Nashville, Tennessee USA

Introduction: The terrorist attacks on the United States (US) on 11 September 2001 (9/11) attracted attention to potential inadequacies in the abilities of the US healthcare system to respond to mass-casualty events. Nursing leaders began to question the preparedness of the 2.7 million nurses in the US by the organization of the International Nursing Coalition for Mass-Casualty Education (INCMCE). It became important to examine emergency preparedness curricula for nursing prior to the events of 9/11, as well as following the event, in order to plan strategically to address the educational needs for nurses in the United States. This study sought to determine the type and level of disaster preparedness curricula delivered or in development at all levels of nursing educational programs in the US.

Methods: The INCMCE worked in collaboration with the National League for Nursing (NLN) to survey 2,013 deans or directors of nursing schools about their curriculum for emergency preparedness prior to 9/11, and during the following academic years. Initial requests were sent via e-mail and the US Postal Service. Respondents were invited to answer the on-line survey so that the data could be entered directly into a database.

Results: Overwhelmingly, the 378 respondents selected curriculum plans (79.4%) as being of the greatest help, with competency lists (54.5%) selected as the next most useful.

More than 40% of the respondents selected train-the-trainer resources, guest speakers, and online courses as being helpful. However, <30% felt that seminars were useful. These survey results validate the general assumption that nursing programs provide limited content in disaster preparedness. The mean values of the number of hours of disaster preparedness content did not change significantly over the three academic years, only approximately four hours (ranged from 3.9 in 2000–2001 to 4.2 in 2002–2003). The study also indicated that 75% of the respondents felt that nursing faculty were prepared inadequately in the area of disaster nursing.

This study demonstrated the lack of emergency preparedness curriculum content in US nursing programs and established a baseline for future curriculum growth. In addition, there are implications for future faculty development in emergency preparedness. The study should be replicated in other countries for comparison.

Keywords: curricula; education; emergency preparedness; nurses; training; United States

Prehosp Disast Med 2005;20(2):s36-s37

Education on Emergency Preparedness for Public Health Nurses in Florida

S.A. Straub; P.J. Gardner; K.T. Albers
Florida Department of Health, USA

The Florida Department of Health's Office of Public Health Nursing (OPHN) has developed awareness and operational-level training to prepare public health nurses (PHN) to respond to all types of hazards/emergencies. The awareness level focuses on general understanding of preparedness concepts pertinent to job functions. The operational level focuses on the application of preparedness concepts pertinent to job functions. Both courses are based on the core competencies developed by Columbia University in cooperation with the Centers for Disease Control and Prevention (CDC).

The awareness-level course is web-based and can be taken online. Lessons learned during the 2004 hurricane season have been incorporated into the curriculum. Brief tests presented at the conclusion of each section of the course are used to assess student outcome. Continuing education credit is awarded.

A team of trainers teaches the operational-level course. Each student completes a learning needs assessment before class attendance. Information from these assessments allows for personalization of teaching methods. Didactic sessions provide information on natural, chemical, biological, radiological, nuclear, and explosive hazards and the public health nurse's role and response to such hazards/emergencies. Concepts such as incident command, triage, communication, and surveillance are included. Whenever possible, concepts are illustrated using "disasters" occurring in the world at the time of the class. Students who recently have been involved in an emergency response are encouraged to contribute information from their experience. Skill drills (table-top exercises) on selected concepts are interspersed throughout the day to encourage the application of these concepts.

Because Florida is a large state with many public health nurses, a team of trainers is being recruited to provide the

operational-level course to all public health nurses. Preparation to be a trainer includes attendance at the course, as well as a "train the trainer" course, which will include topics on adult education. The trainers and course presentation will be evaluated through course evaluation documents and periodic audits of actual classes.

Keywords: awareness; education; emergency; Florida; operational; preparedness; public health nurses; response; training

Prehosp Disast Med 2005;20(2):s37

Standardizing Expectations of Nursing Contributions to Emergency Response: The Role of International Nursing Coalition for Mass Casualty Education (INCMCE)

K. Gebbie;¹ C. Conway-Welsh;² R. Lavin;³ M.P. Couig;⁴ J. Stanley;⁵ M. Chaffee⁶

1. Columbia University School of Nursing, USA

2. Vanderbilt University, USA

3. United States Department of Health and Human Services, USA

4. Food and Drug Administration, Department of Health and Human Services, USA

5. American Association of Colleges of Nursing, USA

6. Department of Defense, USA

The International Nursing Coalition for Mass Casualty Education (INCMCE) was formed in 2001 to increase the assurance that anyone developing a response to emergencies (including mass-casualty events, bioterrorism, or large natural disasters) could rely on nurse responders to have a common and appropriate ability to fit into an incident management system, fulfill typical functional roles requiring nursing skills, and do so in an ethical manner. The development of the required competencies has involved nurses from five nations already active in their own national emergency improvement programs, and (in the United States) nurses from both uniformed services and civilian organizations.

The INCMCE Competencies for Nurses were published in 2003, and have been widely distributed in both electronic and hard copy form. The INCMCE has moved to develop action plans for the incorporation of the competencies in nursing education, and for the development of an agenda of nursing research that would facilitate both improved education and improved emergency nursing response.

Keywords: competencies; emergency; nursing; response

Prehosp Disast Med 2005;20(2):s37

An Online Emergency Curriculum for Nurses Internationally

E. Weiner;¹ M. Irwin;¹ S. Woods;² L. Norman¹

1. Vanderbilt University, USA

2. Little Planet Learning, Inc., USA

The Vanderbilt University School of Nursing has taken a leadership role with the establishment of the International Nursing Coalition for Mass-Casualty Education (INCMCE). This coalition consists of organizational representatives of schools, accrediting bodies, specialty organizations, and governmental agencies interested in promoting mass-casualty education for nurses. Several grants have been obtained to develop an online curriculum that addresses the competencies as developed by the INCMCE members for all nurses.