





**Helping the public safety community save lives and property by providing critical capabilities to plan, prepare, respond and recover from emergencies caused by natural, accidental or malicious events.**





Governments at all levels face a multitude of social, political, economic and environmental issues. National security, public safety, a well-functioning society and a healthy economy are all top-priorities for governments around the world to ensure the well-being of their populations. This seemingly simple objective comes with highly complex problems to solve for nations and its citizens. Natural disasters, accidental and human-made catastrophes, and overall public safety and security, including public health and medical response, are all areas where response time is highly critical. There is little margin for error when it comes to saving lives. Disasters such as hurricanes, floods and earthquakes; the release of toxic chemicals and biological contaminations; or oil and gas spills can all have catastrophic consequences to the people and infrastructure of the affected region. These emergencies require well-coordinated actions to be taken within and between government agencies, defence forces, health agencies and emergency management organizations at the regional, national and often at the international level.

CAE's comprehensive portfolio of simulation centres, services and products can help our customers mitigate and better prepare for disastrous events. Our simulation-based solutions can also help improve casualty care using the most advanced technology on the market. We partner with our customers operating in complex, mission critical environments by providing the most innovative modelling and simulation-based solutions to enhance safety, improve efficiency, and help solve challenging problems.

CAE brings a range of capabilities together to help our clients:

- Enhance public safety and security;
- Improve teamwork and interoperability across first responders and all levels of government;
- Develop effective and efficient communication channels and skills;
- Develop cognitive and psychomotor skills;
- Train and rehearse to improve response time and effectiveness;
- Provide analytical data to improve decision-making based on simulated outcomes.

## Our Public Safety/Emergency Management and Healthcare Customers:

- Governments, including domestic security, public safety and supporting defence forces;
- Emergency management organizations across all levels of government, non-government organizations and the private sector;
- Hospitals, medical and healthcare institutions, and government organizations;
- Decision-makers and first responders;
- Critical infrastructure owners and operators;
- Academic institutions.

## CAE provides simulation-based solutions and support services to our customers to help solve complex problems related to:

- Natural disasters such as hurricanes, tornados, floods, earthquakes, and volcanic eruptions;
- Human-made catastrophes such as explosions, toxic chemical, oil and gas spills, and contaminations;
- Overall public health and medical response to infectious diseases, casualties from disasters, complex medical evacuation, and high risk/low occurrence events;
- Major event security and participant safety, counter-terrorism, border patrol, public safety during armed conflict, and insurgency.





# Leveraging nearly 70 years of experience in modelling, simulation and training. CAE delivers turnkey training and operational solutions for its public safety/emergency management and healthcare customers.

## Our Value

Simulation-based solutions are ideal for any organization needing to make decisions in mission-critical environments with high consequence of failure. CAE delivers unique value to our clients by combining our leadership position in modelling, simulation and training with additional expertise in architecture frameworks, human factors, human systems integration and hardware/software integration. This expertise helps define and provide end-to-end solutions to meet public safety and security requirements. Partnering with our clients, we develop solutions that help empower organizations and their personnel needing to analyze, prepare, train and then make life-saving decisions. CAE's team of expert solutions architects identify functional software and hardware components and integrate them into complete technical solutions. CAE then draws on its legacy of simulation-based capabilities to support training through "learning by doing." Within an integrated virtual environment, public safety and security response can be practiced and rehearsed, thus reducing the high costs and risks associated with live training. Finally, CAE continues to work with our clients to analyse after action reviews and lessons learned as the basis for continuous improvement of public safety and security capabilities.

## Partnering with CAE

CAE is a global leader in modelling, simulation and training that offers integrated solutions to help our clients solve complex challenges. Utilizing enterprise architecture frameworks to define solutions and combining best-of-breed software and hardware components, we support effective process implementation and apply expertise in human systems integration. CAE develops effective and efficient operational systems and comprehensive training solutions based on advanced simulation technology and integrated training services.

Our vision is to be the Partner of Choice for clients operating in highly complex, mission-critical environments. We offer our clients in emergency management and healthcare a complete range of innovative simulation-based products, services and turnkey training centres designed to help them cost-effectively meet mission critical needs for safety, efficiency and enhanced readiness.

CAE has established its reputation around the globe and is currently providing products, services, and simulation centre solutions to help emergency management communities plan, prepare, respond and recover from critical situations. We are also providing these solutions to medical and healthcare organizations to help improve patient safety. It is our mission to ensure our customers have the capabilities to help save lives and minimize impacts on infrastructures and economies.





## CAE is a systems integrator that is recognized as a global leader in modelling, simulation, and training:

- > CAE has been serving the needs of our customers since 1947;
- > We have customers from 190 countries training at over 100 CAE facilities;
- > CAE offers civil and military training services at more than 67 training centres where more than 120,000 crewmembers train yearly;
- > CAE supports defence and security forces from more than 50 countries and provides training support services at more than 80 sites worldwide;
- > We have been supporting public safety, emergency management and healthcare organizations for more than a decade;
- > CAE provides Integrated Emergency Management Systems across various levels of government;
- > We provide advanced resource deployment decision-support solutions to first responders;
- > CAE Healthcare provides world-class simulation-based products and training solutions for healthcare professionals.





## How we Accomplish the Mission

CAE offers a comprehensive portfolio of operational and simulation products as well as a range of services, including turnkey simulation centres, to help public safety, emergency management and healthcare communities plan, prepare, respond and recover from potentially catastrophic events. Working closely with our customers and industry partners, CAE's team of multidisciplinary experts have the knowledge and experience in applying simulation-based solutions to support organizations operating in complex and mission critical environments. CAE is truly a partner of choice by providing the most innovative simulation, training, and operational solutions that help minimize the impacts of disasters to save lives and property.



## Turnkey Simulation Centre Solutions

CAE has extensive experience delivering turnkey simulation centre solutions to our customers. We have the broadest training services network in the world for the civil aviation, military, public safety, emergency management and healthcare markets. Because of our expertise in designing and delivering world-class training facilities, our customers can focus on their mission – to improve individual and larger collective outcomes in the public safety and security domain while minimizing economic impact and most importantly, helping to save lives.



CAE's simulation centre solutions for emergency management and healthcare combine our services, simulation products and operational systems.

## Services

- > Capability analysis, lessons learned analysis and capability gap analysis;
- > Capability development, design and engineering;
- > Operational and training systems integration;
- > Emergency management life cycle support;
- > Instructional design, curriculum and courseware development;
- > Analysis, design, implementation, experimentation, testing and evaluation;
- > Human factors and human systems integration;
- > Training centre architecture;
- > Program and centre operations management;
- > In-service support.

## Simulation Products and Operational Systems

- > Deployable training and rehearsal solutions;
- > First responder solutions;
- > Integrated emergency management solutions;
- > Advanced decision-support tools;
- > Communication and multi-agency training tools;
- > Modelling, simulation, and visualization software;
- > Courseware and curriculum;
- > Surgical, imaging and patient simulation;
- > Audiovisual and centre management systems;
- > Integrated learning management tools.



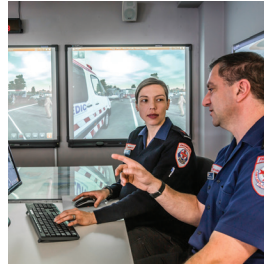




# Leading-Edge Solutions for Emergency Management

Governments and emergency management professionals around the globe have recognized that the optimal time to minimize the impact of hazards and threats is before disaster strikes. CAE supports the various levels of the end-to-end emergency management community by providing integrated, simulation-based training solutions for multi-agency decision-makers and first responders to improve the effectiveness and efficiency of response.



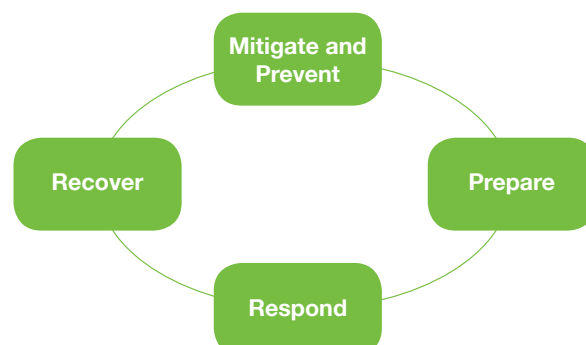


The response to disasters, whether natural or man-made, often requires a multidisciplinary team involving all levels of government, the private sector and in many cases the military. This is particularly true for large-scale disasters such as floods, fires, earthquakes, extreme weather, or large-scale industrial accidents. When such events occur, even highly skilled specialists have to be ready to work in a coordinated effort with other specialist teams to ensure a timely and effective response.

Training and preparation are essential for first response teams to take the appropriate action in a coordinated effort, and at the right time. With traditional exercise-based training methods, risks are high and it is almost impossible to re-create the scene of a major casualty event. CAE can help your organization plan and mitigate, prepare, respond and recover quickly from major events using simulation-based training and decision-support solutions. CAE's solutions enable participants to experience first-hand the planning, preparation and coordinated execution of an emergency response within an affordable, low-risk, low consequence virtual environment.

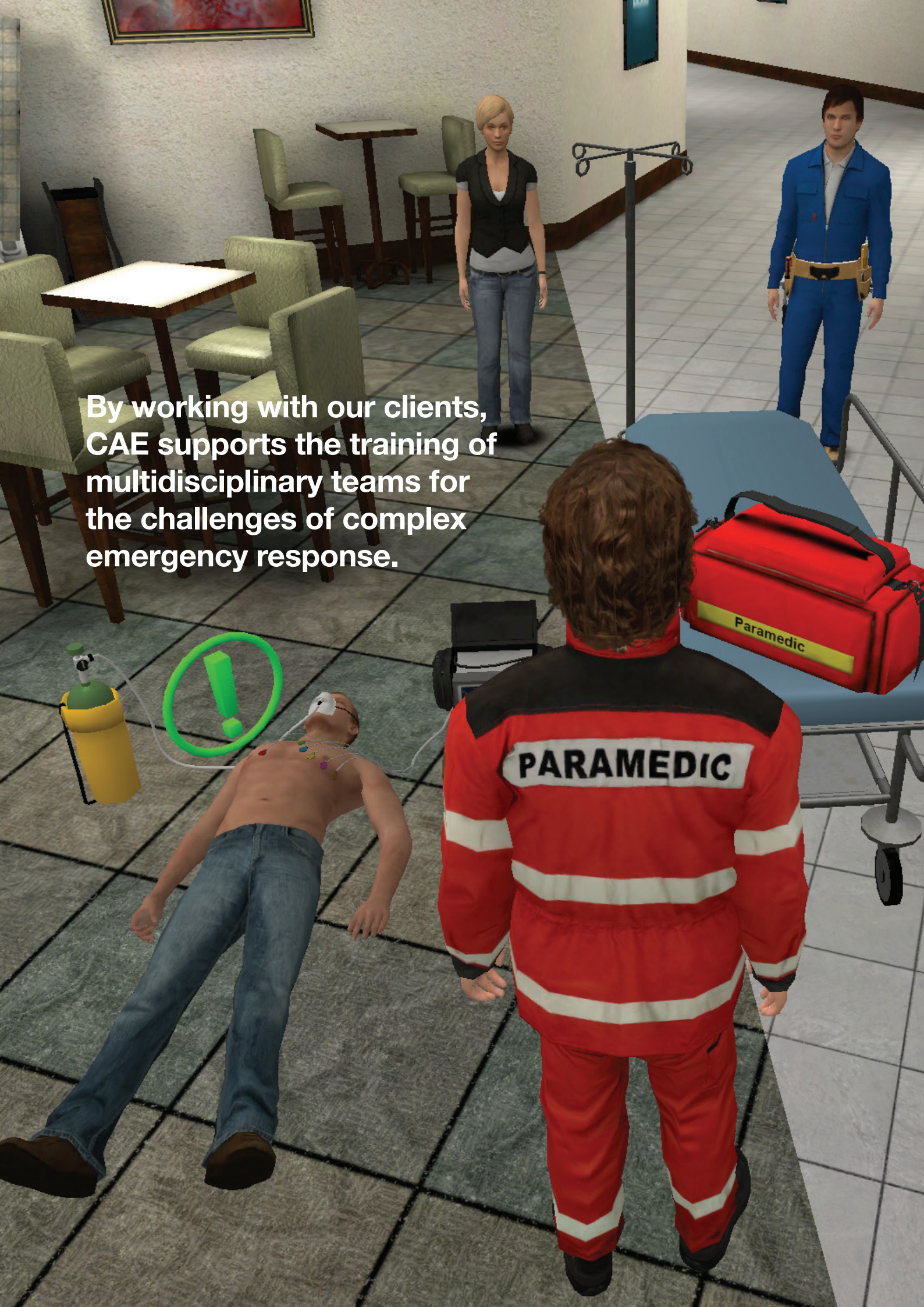
- > **Plan and mitigate** – Develop an action plan to respond to critical situations and mitigation plan to avoid occurrence of disasters.
- > **Prepare** – Train and rehearse using our modelling and simulation solutions.
- > **Respond** – Efficiently respond to situations by having prepared and practiced in advance using decision support and operational systems.
- > **Recover** - Use our simulation-based solutions for quicker recovery from disastrous events and applying lessons learned to prevent future occurrences.

## EMERGENCY MANAGEMENT LIFECYCLE





By working with our clients,  
CAE supports the training of  
multidisciplinary teams for  
the challenges of complex  
emergency response.





CAE's simulation-based solutions enable the collective training of individuals to effectively employ their expertise within well-coordinated response teams. By working closely with our clients, CAE develops tailored training for multidisciplinary teams to meet the challenges of complex emergency response.

With our integrated, simulation-based solutions, you can train in a synthetic environment replicating real life scenarios and environments. CAE uses geospatial data, satellite imagery, and rapid database generation tools to develop a synthetic environment of any geographic area. The synthetic environment can then be populated with representations of people, resources, vehicles and any other features that may be needed for making training highly realistic to responders and decision-makers. Virtual exercises can be conducted to determine response times, optimal evacuation routes, resource requirements, and other synchronization considerations. Most importantly, metrics for the exercise can be developed and the effectiveness of the response measured. An improvement plan can be developed so that lessons identified from the virtual exercise can truly be learned and integrated to the emergency operations and training plans.

A customized program to improve emergency incident response offered by CAE could include:

- Threat and impact models with simulated and real data to support informed decision-making;
- Simulations to convey situational awareness of the potential effects of an event;
- Response task analysis of the current emergency plan;
- Advanced synthetic environment development;
- Emergency scenario development;
- Individual, team, and large-scale collective training;
- Multi-agency exercises using blended Live, Virtual and Constructive (LVC) simulation;
- Performance metrics designed and captured to support continuous improvement.

Our team of experts have a deep knowledge and understanding of applying effective and affordable simulation-based solutions to a range of complex critical mission environments. We offer our clients:

- Integration services;
- Professional and engineering services;
- Enabling technology and software tools;
- Turnkey simulation centres.







# Innovative Solutions for Healthcare

*Improving patient safety by raising the standards of  
healthcare education and training.*

Today, healthcare professionals and organizations operate in fast-paced, complex environments, and deal with life threatening situations with little room for error. When responding to disasters, there is almost always a human healthcare component of the response required as protecting and saving lives becomes the top priority. The need for accuracy in patient diagnosis and treatment, quick and efficient interventions, attracting and retaining healthcare professionals, team training, and ultimately patient safety are all at the heart of top priorities in healthcare. The effective use of tools and processes combined with education and training enhances competency and performance, which directly leads to improvements in patient outcomes, a decrease in medical error rates, better response during emergencies, and lives saved.





CAE has nearly 70 years of experience as an innovator and global leader in modelling, simulation and training for aviation. We believe that, like in aviation, the use of simulation-based training solutions improves safety and helps save lives. CAE offers the widest breadth of medical simulation-based products, services, and simulation centres to the military and civil medical education markets. We offer a full range of human patient simulators, interventional simulators, ultrasound simulators, courseware, and simulation centre management services. Our products are complemented by medical simulation program development services in training, education, research, and analysis. The integration of medical simulation services with medical simulation products is at the core of CAE's mission to improve patient outcomes through simulation-based education and training. CAE now offers end-to-end solutions for medical simulation centres that support the development and growth of current and future healthcare training programs through human systems integration, human factors, instructional systems design, and virtual training development for process improvement.

At CAE, innovative ideas are turned into reality so physicians, nurses, emergency first responders, military medical personnel, and other health professionals can learn in a safe, simulated environment to improve teamwork, communication, and efficiency. CAE's advanced courseware and simulation technology allows healthcare professionals to work through realistic scenarios and gain practical, hands-on experience. This experience comes in an affordable, low risk and low consequence virtual environment before they apply their new or refined skills on human patients. CAE leverages an in-house interdisciplinary team of front-line medical, instructional systems design and technical subject matter experts to create Continuing Medical Education (CME), including accredited courseware and e-learning solutions. Our simulation-based courseware provides over 500 validated scenarios and case studies dealing with trauma, heart attack, drug overdose, effects of bioterrorism, and numerous other medical crises. At CAE, we are improving patient safety by raising the standards of healthcare education and training.

**CAE offers end-to-end solutions for healthcare simulation centres that support the development and growth of current and future healthcare training programs**





## Expanding Beyond Training

CAE's offering expands beyond training by providing solutions to ensure healthcare organizations have the right processes, tools and skills to accomplish their mission to reduce preventable medical errors and improve patient safety. Our long-term history providing services such as process improvement and implementation, quality control, accreditation, human factors, and systems integration helps our healthcare customers enhance overall patient outcomes and safety.

## State-of-the-art simulation centres and innovative programs for healthcare

CAE leverages its expertise and experience in training centre operations for defence and civil aviation, where more than 120,000 crewmembers are trained yearly, and applies it to the healthcare sector. CAE is an expert training systems integrator capable of defining, developing and operating integrated simulations centres and facilities. Our comprehensive portfolio includes products, services and simulation centres for healthcare. CAE partners with customers and organizations worldwide to develop and deliver turnkey training solutions, including: training needs analysis, media evaluation and optimization, knowledge and skills transfer, instructional systems design, courseware, training devices, instruction, learning management information systems, facilities, maintenance support services, logistics support, configuration management, technology insertion, and even financing.

## CAE's portfolio of turnkey solutions for healthcare includes:

- > Training needs and media analysis;
- > Interventional and ultrasound simulators;
- > High-fidelity adult, pediatric, and infant patient simulators;
- > Curriculum, courseware and learning programs;
- > Audiovisual and centre management systems (brief/debrief capabilities);
- > Deployable training solutions;
- > Project management;
- > Human factors engineering;
- > Facility operations management and maintenance;
- > Global network of simulation centres.

CAE's cutting-edge learning tools and innovative simulation solutions for healthcare education and training have been independently validated for effectiveness in achieving measurable improvements in individual and team performance as well as patient care outcomes.

## Customer benefits:

- > Decreased time to skill acquisition and proficiency for healthcare professionals;
- > Enhanced clinical effectiveness and accuracy;
- > Improved patient safety and patient outcomes;
- > Decreased time for nurse onboarding;
- > Lowered staff turnover rate;
- > Decreased operating costs;
- > High return on investment.

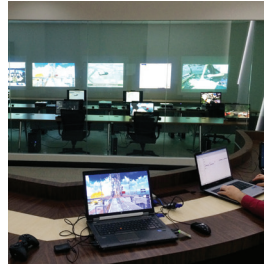




# Unparalleled Experience

CAE has a proven track record supporting public safety, emergency management and healthcare for almost two decades. Our team of experts has extensive experience and “know-how,” offering a comprehensive portfolio of operational and simulation products, services, and turnkey simulation centres.





**CAE's medical simulators are used in 75 percent of U.S. medical schools and we have sold over 7,000 medical simulators worldwide. Our customers include the U.S. military, Veterans Affairs, NATO, leading hospitals, medical schools, nursing schools, and governments and ministries around the world. Here are some examples of recent programs leveraging CAE's innovative simulation centres, services, and products.**

### **CAE Brunei Multi-Purpose Training Centre (MPTC) - A Shining Example**

The CAE Brunei Multi-Purpose Training Centre (MPTC) was officially launched in September 2014. It is a joint venture between CAE and the Government of Brunei Darussalam through the Ministry of Finance. The CAE Brunei MPTC has established an Emergency and Crisis Management Centre of Excellence that is providing Brunei's Ministry of Home Affairs and National Disaster Management Centre (NDMC) with comprehensive training designed to better plan and prepare for emergencies. Using simulation-based training, the CAE Brunei MPTC is offering emergency and crisis management training programs that will help improve coordination, response and operational decision-making during a range of emergency scenarios. The CAE Brunei MPTC will also be offering emergency and crisis management training to the Association of Southeast Asia Nations (ASEAN).

## Aeromedical Evacuation Training System

In 2014, CAE was awarded a contract to provide the United States Air Force Reserve Command (AFRC) at Dobbins Air Force Base with a comprehensive C-130 Aeromedical Evacuation Training System. CAE will be providing a high-fidelity C-130 fuselage trainer that is configured for aeromedical evacuation missions along with CAE Healthcare's iStan human patient simulators.

The CAE Healthcare iStan mannequins feature internal robotics that mimic human cardiovascular, respiratory and neurological systems. The overall C-130 Aeromedical Evacuation Training System will include the courseware and curriculum, as well as a hand-held wireless tablet instructor operator station to provide full control and customization of a variety of training scenarios.





## CAE Virtual Paramedic Training Solution

CAE's Virtual Paramedic is an innovative, award-winning training solution used by Ambulance Victoria in Australia to train all ambulance paramedic's personnel so they are ready to respond in a timely and cost-effective manner. The simulation scenarios are developed and validated using data of actual incidents and patients. The CAE Virtual Paramedic allows the trainees to interact with intelligent, virtual characters representing other response agencies and bystanders to make decisions that achieve the desired operational outcome. CAE also implemented a learning management system to record results and provide trainees feedback on their performance. Plans for future development include implementing the roles of transport officers and health commanders, which will enable Ambulance Victoria paramedics to execute all the primary roles in their emergency response plan.

## Other Program Examples

- Emergency Management Information System implementation and program delivery for the City of Ottawa, Canada.
- Integration and program delivery of the Emergency Management Enterprise Solution (EMES) for the Ministry of Community Safety & Correctional Services, Government of Ontario, Canada.
- Exercise support for the planning and preparation of the Vancouver 2010 Olympic Games, Canada.
- In-depth process analysis and human factors design support for the Ottawa Central Ambulance Communications Centre and the Ottawa Police Service Communications Centre, Canada.
- Lead industry partner for the Canadian Safety and Security Program (CSSP) Standing Offer for Defence Research and Development Canada, Centre for Security Sciences, Canada.
- Healthcare simulation centres at the University of Montreal and the Albert Einstein Training Centre in Sao Paulo, Brazil.







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