

SOW for Difficult Airway Algorithm and Rescue Cricothyrotomy (DAARC) Educational Game VHA SimLEARN

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1. EXECUTIVE SUMMARY

A formal instructional system needs assessment and gap analysis has identified a Cricothyrotomy training requirement. The Veterans Health Administration (VHA) Simulation Learning Education and Research Network (SimLEARN) Educational Gaming section has been determined to be the best modality to satisfy this VA Medical Practitioner training need.

The DAARC learning system provides Veterans personalized, proactive, patient-driven healthcare through advancing innovation trials, emerging health technologies, and experimentation.

The complete DAARC learning system is comprised of two educational games, Game 1 and Game 2, along with a simulation mannequin task-trainer module, a training video module with didactic job aids. The whole DAARC learning system package integrates within the Veterans Administration (VA) Network software and hardware architecture requirements.

The contractor shall design and develop only Game 1 and Game 2, using a game engine with embedded tracking technology to log, record, and display learner performance outcome feedback for in-process guidance, after-action reviews and performance scores that integrate into the entire DAARC learning system package. Game 1 and Game 2 shall include at least 12 high fidelity virtual simulation medical scenarios overlaid with front end challenging game elements.

For maximum utility across the Veteran's Health Administration (VHA) Enterprise, the games will be hosted on VA servers accessible via a browser but be portable to use on a mobile platform – tablet or phone. The VHA uses Microsoft Internet Explorer web browser version 11 on OS Windows 7 enterprise 64bit Service Pack 1, DirectX runtime version 11.0, Graphics Card Nvidia 4200M, Driver version 327.62 on a Dell Intel i5 computer with 4GB RAM.

Game 1 is formative in design, embedded tracking technology data and feedback guide learner improvements. Game 2 is summative in design, embedded tracking data measures the level of success or proficiency obtained at the end of a virtual simulation scenario activity and game ending. The final Game 2 summative high stakes score is pass-fail. The games shall be independently capable modules but integrated as a part of the percutaneous cricothyrotomy learning system as a whole.

2. BACKGROUND/RATIONALE

Difficult Airway Algorithm & Rescue Cricothyrotomy (DAARC), as an educational program, is a novel composite of Virtual Avatar Learning-based Games with Simulation Mannequin-based Task Trainer activities designed to help reduce patient morbidity and mortality associated with difficult and lost airways. The instructional cognitive, affective, and psychomotor focus is on the time-based critical clinical decision making related to a difficult airway management algorithm (Vortex) and the placement of a percutaneous cricothyrotomy catheter.

DAARC emphasizes the use of the percutaneous cricothyrotomy technique during failed airway scenarios in virtual operating rooms, emergency rooms, intensive care units, and in any location physicians practice Advanced Cardiac Life Support (ACLS). Additionally, the assessment strategy collects performance data to measure cognitive changes involved in the application of the difficult airway management guidelines as well as time dependent skills maintenance or degradation periods. The training audience is Anesthesiologists, Emergency Medicine Physicians, Critical Care Physicians and Otolaryngologists. This training is online anytime anywhere with internet access and local simulation mannequin-based task trainer practice.

3. PURPOSE

In order to provide veterans mission critical personalized, proactive, patient-driven health care through innovation and improvements, professional medical providers need iterative Emergency Difficult Airway Algorithm and Rescue Percutaneous Cricothyrotomy training. The DAARC training program intends to help reduce patient morbidity and mortality associated with difficult and lost airways.

The purpose of this training is to help participants develop:

- Airway Management temporal decision-making skills in the context of rare Emergency Difficult Airway, Can't Intubate and Can't Ventilate (CICV) scenarios.
- A new Percutaneous Cricothyrotomy procedural understanding in the context of an emergent failed airway in and out of the operating room setting.
- A tactile understanding and appreciation of percutaneous airway placement through safe virtual and simulated hands-on experiential learning activities.

4. SCOPE

4.1. Game Subject: Emergency Airway Management and Rescue Cricothyrotomy.

4.2. Medical Target Audience: Anesthesiologists, Emergency Medicine Physicians, Critical Care Physicians and Otolaryngologists at VHA facilities.

4.3. Learning Objective(s):

4.3.1. Upon completion of Game 1 and Game 2 in the DAARC simulated virtual medical game-based learning system scenarios the participant will meet the following Learning Objectives:

- Identify which Emergency Cricothyrotomy Catheter kits or instruments available at their facility.
- Assess rapidly the patient with an Unanticipated Difficult Airway.
- Identify the anticipated emergent airway where the patient's ability to maintain their airway deteriorates rapidly. To the extent, the majority of patients lose the ability to maintain their own airway.
- Achieve an acceptable performance level for Difficult Airway Management temporal decision making in various critical emergency difficult airway situations.
- Demonstrate Difficult Airway Management temporal decision-making skills in time-limited activities with death a possible outcome.
- Describe three different surgical techniques for gaining airway access. The Melker Percutaneous Bougie technique, the Scalpel Spreader Bougie technique, and the Cric-Control System.
- Apply three different surgical techniques for gaining airway access.
- Use a Melker Percutaneous Cricothyrotomy technique during Advanced Cardiac Life Support (ACLS).
- Use a Scalpel Spreader Bougie Open Surgical Technique during Advanced Cardiac Life Support (ACLS)
- Use a Cric-Control System Open Surgical Technique during Advanced Cardiac Life Support (ACLS)
- Use a Melker Percutaneous Cricothyrotomy technique during emergent failed airways.
- Use a Scalpel Spreader Bougie Open Surgical Technique during emergent failed airways.
- Use a Cric-Control System Open Surgical Technique during emergent failed airways.
- Identify relevant anatomical landmarks.
- Introduce an 18-gauge needle through the cricothyroid membrane.

- Aspirate free air to confirm location of needle tip in trachea.
- Advance the guidewire through the 18- gauge needle followed by removal of the needle leaving the guidewire in place and advance a dilator-airway catheter assembly over the guidewire.
- Inflate the catheter cuff and confirm catheter placement with end tidal CO2 during ventilation.

5. GAME CONCEPT

Difficult Airway Algorithm & Rescue Cricothyrotomy (DAARC), as an educational program, is a novel composite of Virtual Avatar Learning-based Games with Simulation Mannequin-based Task Trainer activities designed to help reduce patient morbidity and mortality associated with difficult and lost airways. The instructional cognitive, affective, and psychomotor focus is on the time-based critical clinical decision making related to a difficult airway management algorithm (Vortex) and the placement of a percutaneous cricothyrotomy catheter.

DAARC emphasizes the use of the percutaneous cricothyrotomy technique during failed airway scenarios in virtual operating rooms, emergency rooms, intensive care units, and in any location physicians practice Advanced Cardiac Life Support (ACLS). Additionally, the assessment strategy collects performance data to measure cognitive changes involved in the application of the difficult airway management guidelines as well as time dependent skills maintenance or degradation periods. The training audience is Anesthesiologists, Emergency Medicine Physicians, Critical Care Physicians and Otolaryngologists. This training is online anytime anywhere with internet access and local simulation mannequin-based task trainer practice.

6. PERIOD/PLACE OF PERFORMANCE AND TRAVEL

6.1. PERIOD OF PERFORMANCE

- 6.1.1. The base period of performance shall be one (1) year from date of award.
- 6.1.2. Any work at the Government site shall not take place on Federal holidays or weekends unless directed by the Contracting Officer (CO).
- 6.1.3. There are ten (10) Federal holidays set by law (USC Title 5 Section 6103) that VA follows:
 - Under current definitions, four are set by date:

New Year's Day	January 1
Independence Day	July 4
Veterans Day	November 11

- Christmas Day December 25
If any of the above falls on a Saturday, then Friday shall be observed as a holiday. Similarly, if one falls on a Sunday, then Monday shall be observed as a holiday.

6.1.4. The other six are set by a day of the week and month:

Martin Luther King's Birthday	Third Monday in January
Washington's Birthday	Third Monday in February
Memorial Day	Last Monday in May
Labor Day	First Monday in September
Columbus Day	Second Monday in October
Thanksgiving	Fourth Thursday in November

6.2. PLACE OF PERFORMANCE

6.2.1. Tasks under this contract shall be primarily performed at Contractor facilities.

6.3. TRAVEL

6.3.1. The Government anticipates travel under this effort to perform the tasks associated with the effort, as well as to attend program-related meetings or conferences through the period of performance. The contractors will travel 12 times, once per month during a 12-month development cycle of the Alpha, Beta, and Gold versions. The location of these trips shall be Orlando, Florida.

7. SPECIFIC TASKS AND DELIVERABLES

The services contemplated under this contract include front end analysis, design, development, integration, test, management, documentation, delivery, implementation of gaming capabilities, and all that may be necessary to complete a particular project. All requirements, tasks and deliverables apply to the contractor and all subcontractors awarded under this contract.

The contractor shall perform the following:

7.1. CONTRACT PROJECT MANAGEMENT

7.1.1. PROJECT MASTER SCHEDULE

The Contractor shall deliver a Project Master Schedule (PMS) that defines the Contractor's timeline and tools to be used in execution of the contract/order. The Contractor shall deliver the schedule in a graphic format that displays the schedule, milestones, risks, and resource

support. The Contractor shall update and maintain the VHA Project Manager (PM) approved Schedule throughout the period of performance.

- Deliverable:
 - Project Master Schedule

7.1.2. REPORTING REQUIREMENTS

- The Contractor shall present the initial baseline Project Master Schedule (PMS) for concurrence as part of a contract Kick-Off Meeting. The Schedule will track the development of game based products identified by the Government and provide a monthly report to the VHA Gaming Project Manager. The Contractor shall prepare meeting minutes from the Kick-Off Meeting discussions.
- The Contractor shall provide the Contracting Officer's Representative (COR) with Monthly Progress Reports in electronic form in Microsoft Word and Project formats. The report shall include detailed instructions/explanations for each required data element, to ensure that data is accurate and consistent. These reports shall reflect data as of the last day of the preceding Month.
- The Monthly Progress Reports shall cover all work completed during the reporting period and work planned for the subsequent reporting period. The report shall also identify any problems that arose and a description of how the problems were resolved. If problems have not been completely resolved, the Contractor shall provide an explanation including their plan and timeframe for resolving the issue. The Contractor shall monitor performance against the SCHEDULE and report any deviations. VHA SimLEARN expects that the Contractor will keep in communication accordingly so that issues that arise are transparent to both parties to prevent escalation of outstanding issues.
- Deliverables:
 - Kick-Off Meeting Minutes
 - Monthly Progress Report

7.2. GAMING SOFTWARE

The Contractor shall develop the gaming software in accordance with recognized industry gaming standards and internally documented processes. The design shall incorporate features that promote ease of operation, ease of software maintenance, ease of future updates and modifications, data void work around,

and any smart designs that can justify a reduction in the amount of documentation. Computer programs and computer data system shall be fully integrated in accordance with the system specification and Veterans Administration information technology and assurance restrictions. The Contractor shall conduct market surveillance and market investigations, in order to maximize the procurement of commercial and non-developmental software. The Contractor shall maintain a software Controlled Development Environment that complies with the industry standards. The Contractor shall employ well-defined security policy models, structured, disciplined, and rigorous hardware and software development techniques, and sound system/security engineering principles.

7.2.1. SOFTWARE REQUIREMENTS AND ARCHITECTURE DEVELOPMENT AND REVIEW

The Contractor shall develop software requirements in accordance with the Veterans Administration (VA) information technology network architecture, hardware, and software requirements. For maximum utility across the VA and Veteran's Health Administration (VHA) Enterprise, the games will be hosted on VA servers accessible via a browser but be portable to use on a mobile platform – tablet or phone. The VHA uses Microsoft Internet Explorer web browser version 11 on OS Windows 7 enterprise 64bit Service Pack 1, DirectX runtime version 11.0, Graphics Card Nvidia 4200M, Driver version 327.62 on a Dell Intel i5 computer with 4GB RAM.

The Contractor is encouraged to suggest revisions to government requirements where such revisions would result in cost or schedule reduction or performance improvements. The Contractor shall define and record the operational concept for the gaming system, and define and record the architectural design of the gaming system (identifying the components of the system, their interfaces, and a concept of execution among them) and the traceability between the gaming components and requirements. As part of this activity, the contractor shall work within the Integrated Product Team (IPT) to iterate the system and System-of-System (SoS) software requirements and architecture. Based upon analysis of system requirements, system design, and other considerations, the contractor shall define and record the software requirements to be met by each software item, the methods to be used to ensure that each requirement has been met, and the traceability between the gaming software item requirements and gaming system requirements.

7.2.2. SOFTWARE DESIGN AND IMPLEMENTATION

The Contractor shall design and develop Gaming software, perform unit testing, and integrate software components (with each other and with hardware components) to meet gaming system requirements. Software design includes not only design to requirements, but selection of existing software products including open source software to meet gaming requirements, and iterating the requirements to allow use of existing products. The game design and implementation will follow the Storyboard, Prototypes, Alpha, Beta, and Gold Go-Live testing strategy.

- Storyboards - Contractor shall develop storyboard capturing requirements outlined in the statement of need or as provided by the end user. Contractor shall include the appropriate SMEs both internal and Government during storyboard development. Contractor shall submit Storyboard for review and final approval by the Government prior to Prototyping and entering into Alpha Testing. Storyboard development timeline will be captured in the schedule.
- Scenarios – Contractor shall develop 12 high-fidelity difficult airway scenarios that provide the target audience experiential learning opportunities to apply temporal-based decision making technical skills in stressful and emotional situations that stimulate an emergent difficult airway response and possible surgical rescue cricothyrotomy interventions.
- Game Elements – DAARC Game1 and Game 2 front end game elements overlay a series of gamified high fidelity cricothyrotomy medical simulations.
- Alpha Test Procedure/Testing - Contractor shall conduct an Alpha review prior to any Alpha testing. Alpha review will consist of providing the Government and Subject Matter Experts with Gaming script prior to development of the Beta Test Procedures. Contractor shall outline in the script the game look, feel and how the playing mechanics satisfy the learning objectives. Alpha review and testing timeline will be captured in the schedule.
- Beta Test Procedures/Testing - Contractor shall develop and submit for review Beta Test Procedures to the Government. The Government will identify participants to include in the Beta testing. Beta testing timeline will be captured in the schedule.

- Completed Game 1 formative end-state and Game 2 summative end-state Gold Versions. The contractor shall submit a Game 1 Gold version final end state and a Game 2 Gold version final end state for review as outlined in Addendum C.

7.2.3. Deliverables:

- Design Document for Games 1 and Games 2
- Storyboards
- Scenario Design
- Alpha Test Procedures for Games 1 and 2
- Alpha Version for Games 1 and 2
- Beta Test Procedures for Games 1 and 2
- Beta Version for Games 1 and 2
- Completed Games 1 and 2 with tutorials

8. HARDWARE AND SOFTWARE INTEGRATION

8.1. HARDWARE SPECIFICATION

The Contractor shall perform all activities to integrate and assemble the hardware and software to achieve a fully functional gaming system, with all support systems. The contractor shall deliver the optimal hardware performance specifications for the operational gaming capabilities. For maximum utility across the VA and Veteran's Health Administration (VHA) Enterprise, the games will be hosted on VA servers accessible via a browser but be portable to use on a mobile platform – tablet or phone. The VHA uses Microsoft Internet Explorer web browser version 11 on OS Windows 7 enterprise 64bit Service Pack 1, DirectX runtime version 11.0, Graphics Card Nvidia 4200M, Driver version 327.62 on a Dell Intel i5 computer with 4GB RAM.

9. TESTING

The Contractor shall verify the complete integration of the Gaming Product through the utilization of test procedures. Test Procedures shall be developed and implemented prior to Alpha testing and as part of the Storyboard development and review.

10. SECURITY SYSTEM

Security System compatibility and compliance shall be established for any Gaming product that touches the VA Network directly or indirectly or has the capability to connect, providing network administrators and security personnel with mechanisms to

prevent, detect, track, report, and remediate malicious computer-related activities and incidents across all VA networks and information systems as outlined in Addendum A. The contractor shall comply with 508 requirements, if possible, as outlined in addendum A.

11. QUALITY ASSURANCE (QA)

The contractor shall implement a QA program using industry-accepted best practices that comply and is accordance with the contractor's internal processes to ensure the system requirements are met. The contractor shall utilize measurement points that will provide maximum visibility into processes. The contractor shall select the proper methods to analyze these processes to continuously improve the system.

12. REFERENCES

- American Society of Anesthesiologists (203). Practice guidelines for management of the difficult airway. *Anesthesiology*, 98(5), 1269-1277.
- Anderson, P. J., & Klock, A. (2014). Airway management. *Anesthesiology Clinics* 32 (2) 445-461.
- Balik, M., Clark, P., Mariappa, V., Nayyar, V., & Stachowski, E. (2009). Cricothyroidotomy: comparison of three different techniques on a porcine airway. *Anesthesia and Intensive Care*, 37, (6), 961-967.
- Becher, J., Frommer, M., Ginzkey, C., Kranke, P., Metterlein, T., Roewer, N., & Schuster, F. (2011). A randomized trial comparing two cuffed emergency cricothyrotomy devices using a wire-guided and a catheter-over-needle technique. *The Journal of Emergency Medicine*, 41(3), 326-322.
- Blostein, A. P., Davidson, B. S., Matz, B. S. & VadenBerg, L. S. (2012). Percutaneous tracheostomy: A new approach to the emergency airway. *Trauma and Acute Care Surgery* 73(2), Supplement1, S83-S88.
- Deransy, R., Dupont, H., Duwat, A., Hubert, V., & Mahjoub, Y. (2014) Effect of simulation training on compliance with difficult airway management algorithms, technical ability, and skills retention for emergency Cricothyrotomy. *Anesthesiology*, 120(4).
- Marshall, D., & Mehra, R., (2014). The effects of a displayed cognitive aid on non-technical skills in a simulated can't intubate, can't oxygenate crises. *Anesthesia*, 69, 669-677.
- Melker, J. S., & Gabriella, A. (2005). Melker Cricothyrotomy Kit: An alternative to the surgical technique. *Annals of Otology, Rhinology, & Laryngology*, 114(7), 525-528.

ADDENDUM A

Cyber and Information Security Requirements for VA IT Services

The Contractor shall ensure adequate LAN/Internet, data, information, and system security in accordance with VA standard operating procedures and standard PWS language, conditions, laws, and regulations.¹ The Contractor's firewall and web server shall meet or exceed VA minimum requirements for security. All VA data shall be protected behind an approved firewall. Any security violations or attempted violations shall be reported to the VA Program Manager and VA Information Security Officer as soon as possible. The Contractor shall follow all applicable VA policies and procedures governing information security, especially those that pertain to certification and accreditation.

Each documented initiative under this contract incorporates the security clause VAAR 852.273-75 by reference as though fully set forth therein, as well as the VA Handbook 6500.6, "Contract Security," March 12, 2010, in its entirety. Both the security clause VAAR 852.273-75 and the VA Handbook 6500.6, "Contract Security" shall also be included in every related agreement, contract or order. The VA Handbook 6500.6, Appendix C, is included in this document as Addendum B.

Training requirements: The Contractor shall complete all mandatory training courses identified on the current external VA training site, the Employee Education System (EES), and will be tracked therein. The EES may be accessed at <https://www.ees-learning.net/librix/loginhtml.asp?v=librix>. If the decision is made by the local Program Office to provide the Contractor a VA Talent Management System (TMS) account, the Contractor shall use the VA TMS to complete their mandatory training, accessed at <http://www.insidetms.va.gov/>

Contractor employees shall complete a VA Systems Access Agreement if they are provided access privileges as an authorized user of the computer system of VA.

VA Enterprise Architecture Compliance

The applications, supplies, and services furnished under this contract must comply with One-VA Enterprise Architecture (EA), available at <http://www.ea.oit.va.gov/index.asp> in force at the time of issuance of this contract, including the Program Management Plan and VA's rules, standards, and guidelines in the Technical Reference Model/Standards Profile (TRMSP). The VA reserves the right to assess contract deliverables for EA compliance prior to acceptance.

A1.1. VA Internet and Intranet Standards:

¹ See VAAR 852.273-75 referenced *infra*.

The Contractor shall adhere to and comply with VA Directive 6102 and VA Handbook 6102, Internet/Intranet Services, including applicable amendments and changes, if the Contractor's work includes managing, maintaining, establishing and presenting information on VA's Internet/Intranet Service Sites. This pertains, but is not limited to: creating announcements; collecting information; databases to be accessed, graphics and links to external sites.

Internet/Intranet Services Directive 6102 is posted at (copy and paste the following URL to browser): http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=409&FTYPE=2

Internet/Intranet Services Handbook 6102 is posted at (copy and paste following URL to browser): http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=410&FTYPE=2

Notice of the Federal Accessibility Law Affecting All Electronic and Information Technology Procurements (Section 508)

On August 7, 1998, Section 508 of the Rehabilitation Act of 1973 was amended to require that when Federal departments or agencies develop, procure, maintain, or use Electronic and Information Technology, that they shall ensure it allows Federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by other Federal employees. Section 508 required the Architectural and Transportation Barriers Compliance Board (Access Board) to publish standards setting forth a definition of electronic and information technology and the technical and functional criteria for such technology to comply with Section 508. These standards have been developed and published with an effective date of December 21, 2000. Federal departments and agencies shall develop all Electronic and Information Technology requirements to comply with the standards found in 36 CFR 1194.

Section 508 – Electronic and Information Technology (EIT) Standards:

The Section 508 standards established by the Architectural and Transportation Barriers Compliance Board (Access Board) are incorporated into, and made part of all VA orders, solicitations and purchase orders developed to procure Electronic and Information Technology (EIT). These standards are found in their entirety at: <http://www.section508.gov> and <http://www.access-board.gov/sec508/standards.htm>. A printed copy of the standards will be supplied upon request. The Contractor shall comply with the technical standards as marked:

☒ § 1194.21 Software applications and operating systems

☒ § 1194.22 Web-based intranet and internet information and applications

☒ § 1194.23 Telecommunications products

☒ § 1194.24 Video and multimedia products

x § 1194.25 Self-contained, closed products

 x § 1194.26 Desktop and portable computers

 x § 1194.31 Functional Performance Criteria

 x § 1194.41 Information, Documentation, and Support

The standards do not require the installation of specific accessibility-related software or the attachment of an assistive technology device, but merely require that the EIT be compatible with such software and devices so that it can be made accessible if so required by the agency in the future.

Physical Security & Safety Requirements:

The Contractor and their personnel shall follow all VA policies, standard operating procedures, applicable laws and regulations while on VA property. Violations of VA regulations and policies may result in citation and disciplinary measures for persons violating the law.

1. The Contractor and their personnel shall wear visible identification at all times while they are on the premises.
2. The VA does not provide parking spaces at the work site; the Contractor must obtain parking at the work site if needed. It is the responsibility of the Contractor to park in the appropriate designated parking areas. The VA will not invalidate or make reimbursement for parking violations of the Contractor under any conditions.
3. Smoking is prohibited inside/outside any building other than the designated smoking areas.
4. Possession of weapons is prohibited.
5. The Contractor shall obtain all necessary licenses and/or permits required to perform the work, with the exception of software licenses that need to be procured from a Contractor or vendor in accordance with the requirements document. The Contractor shall take all reasonable precautions necessary to protect persons and property from injury or damage during the performance of this contract.

Confidentiality and Non-Disclosure

The Contractor shall follow all VA rules and regulations regarding information security to prevent disclosure of sensitive information to unauthorized individuals or organizations.

The Contractor may have access to Protected Health Information (PHI) and Electronic Protected Health Information (EPHI) that is subject to protection under the regulations issued by the Department of Health and Human Services, as mandated by the Health Insurance Portability and Accountability Act of 1996 (HIPAA); 45 CFR Parts 160 and 164, Subparts A and E, the Standards for Privacy of Individually Identifiable Health Information ("Privacy Rule"); and 45 CFR Parts 160 and 164, Subparts A and C, the Security Standard ("Security Rule").

Pursuant to the Privacy and Security Rules, the Contractor must agree in writing to certain mandatory provisions regarding the use and disclosure of PHI and EPHI.

1. The Contractor may have access to some privileged and confidential materials of VA. These printed and electronic documents are for internal use only, are not to be copied or released without permission, and remain the sole property of VA. Some of these materials are protected by the Privacy Act of 1974 (revised by PL 93-5791) and Title 38. Unauthorized disclosure of Privacy Act or Title 38 covered materials is a criminal offense.
2. The VA Contracting Officer will be the sole authorized official to release in writing, any data, draft deliverables, final deliverables, or any other written or printed materials pertaining to this contract. The Contractor shall release no information. Any request for information relating to this contract presented to the Contractor shall be submitted to the VA Contracting Officer for response.
3. Contractor personnel recognize that in the performance of this effort, Contractor personnel may receive or have access to sensitive information, including information provided on a proprietary basis by carriers, equipment manufacturers and other private or public entities. Contractor personnel agree to safeguard such information and use the information exclusively in the performance of this contract. Contractor shall follow all VA rules and regulations regarding information security to prevent disclosure of sensitive information to unauthorized individuals or organizations as enumerated in this section and elsewhere in this Contract and its subparts and appendices.
4. Contractor shall limit access to the minimum number of personnel necessary for contract performance for all information considered sensitive or proprietary in nature. If the Contractor is uncertain of the sensitivity of any information obtained during the performance this contract, the Contractor has a responsibility to ask the VA Contracting Officer.
5. Contractor shall train all of their employees involved in the performance of this contract on their roles and responsibilities for proper handling and nondisclosure of sensitive VA or proprietary information. Contractor personnel shall not engage in any other action, venture or employment wherein sensitive information shall be used for the profit of any party other than those furnishing the information. The sensitive information transferred, generated, transmitted, or stored herein is for VA benefit and ownership alone.
6. Contractor shall maintain physical security at all facilities housing the activities performed under this contract, including any Contractor facilities according to VA-approved guidelines and directives. The Contractor shall ensure that security procedures are defined and enforced to ensure all personnel who are provided access to patient data must comply with published procedures to protect the privacy and confidentiality of such information as required by VA.
7. Contractor must adhere to the following:
 - a. The use of "thumb drives" or any other medium for transport of information is expressly prohibited.
 - b. Controlled access to system and security software and documentation.



- c. Recording, monitoring, and control of passwords and privileges.
 - d. All terminated personnel are denied physical and electronic access to all data, program listings, data processing equipment and systems.
 - e. VA, as well as any Contractor (or Subcontractor) systems used to support development, provide the capability to cancel immediately all access privileges and authorizations upon employee termination.
 - f. Contractor PM and VA PM are informed within twenty-four (24) hours of any employee termination.
 - g. Acquisition sensitive information shall be marked "Acquisition Sensitive" and shall be handled as "For Official Use Only (FOUO)".
 - h. Contractor does not require access to classified data.
8. Regulatory standard of conduct governs all personnel directly and indirectly involved in procurements. All personnel engaged in procurement and related activities shall conduct business in a manner above reproach and, except as authorized by statute or regulation, with complete impartiality and with preferential treatment for none. The general rule is to strictly avoid any conflict of interest or even the appearance of a conflict of interest in VA/Contractor relationships.

ADDENDUM B

VA INFORMATION AND INFORMATION SYSTEM SECURITY/PRIVACY LANGUAGE

VA HANDBOOK 6500.6, APPENDIX C, MARCH 12, 2010

1. GENERAL

Contractors, contractor personnel, subcontractors, and subcontractor personnel shall be subject to the same Federal laws, regulations, standards, and VA Directives and Handbooks as VA and VA personnel regarding information and information system security.

2. ACCESS TO VA INFORMATION AND VA INFORMATION SYSTEMS

a. A contractor/subcontractor shall request logical (technical) or physical access to VA information and VA information systems for their employees, subcontractors, and affiliates only to the extent necessary to perform the services specified in the contract, agreement, or task order.

b. All contractors, subcontractors, and third-party servicers and associates working with VA information are subject to the same investigative requirements as those of VA appointees or employees who have access to the same types of information. The level and process of background security investigations for contractors must be in accordance with VA Directive and Handbook 0710, *Personnel Suitability and Security Program*. The Office for Operations, Security, and Preparedness is responsible for these policies and procedures.

c. Contract personnel who require access to national security programs must have a valid security clearance. National Industrial Security Program (NISP) was established by Executive Order 12829 to ensure that cleared U.S. defense industry contract personnel safeguard the classified information in their possession while performing work on contracts, programs, bids, or research and development efforts. The Department of Veterans Affairs does not have a Memorandum of Agreement with Defense Security Service (DSS). Verification of a Security Clearance must be processed through the Special Security Officer located in the Planning and National Security Service within the Office of Operations, Security, and Preparedness.

d. Custom software development and outsourced operations must be located in the U.S. to the maximum extent practical. If such services are proposed to be performed abroad and are not disallowed by other VA policy or mandates, the contractor/subcontractor must state where all non-U.S. services are provided and detail a security plan, deemed to be acceptable by VA, specifically to address mitigation of the

resulting problems of communication, control, data protection, and so forth. Location within the U.S. may be an evaluation factor.

e. The contractor or subcontractor must notify the Contracting Officer immediately when an employee working on a VA system or with access to VA information is reassigned or leaves the contractor or subcontractor's employ. The Contracting Officer must also be notified immediately by the contractor or subcontractor prior to an unfriendly termination.

3. VA INFORMATION CUSTODIAL LANGUAGE

a. Information made available to the contractor or subcontractor by VA for the performance or administration of this contract or information developed by the contractor/subcontractor in performance or administration of the contract shall be used only for those purposes and shall not be used in any other way without the prior written agreement of the VA. This clause expressly limits the contractor/subcontractor's rights to use data as described in Rights in Data - General, FAR 52.227-14(d) (1).

b. VA information shall not be co-mingled, if possible, with any other data on the contractors/subcontractor's information systems or media storage systems in order to ensure VA requirements related to data protection and media sanitization can be met. If co-mingling must be allowed to meet the requirements of the business need, the contractor must ensure that VA's information is returned to the VA or destroyed in accordance with VA's sanitization requirements. VA reserves the right to conduct on site inspections of contractor and subcontractor IT resources to ensure data security controls, separation of data and job duties, and destruction/media sanitization procedures are in compliance with VA directive requirements.

c. Prior to termination or completion of this contract, contractor/subcontractor must not destroy information received from VA, or gathered/created by the contractor in the course of performing this contract without prior written approval by the VA. Any data destruction done on behalf of VA by a contractor/subcontractor must be done in accordance with National Archives and Records Administration (NARA) requirements as outlined in VA Directive 6300, *Records and Information Management* and its Handbook 6300.1 *Records Management Procedures*, applicable VA Records Control Schedules, and VA Handbook 6500.1, *Electronic Media Sanitization*. Self-certification by the contractor that the data destruction requirements above have been met must be sent to the VA Contracting Officer within 30 days of termination of the contract.

d. The contractor/subcontractor must receive, gather, store, back up, maintain, use, disclose and dispose of VA information only in compliance with the terms of the contract and applicable Federal and VA information confidentiality and security laws, regulations and policies. If Federal or VA information confidentiality and security laws, regulations and policies become applicable to the VA information or information systems after execution of the

contract, or if NIST issues or updates applicable FIPS or Special Publications (SP) after execution of this contract, the parties agree to negotiate in good faith to implement the information confidentiality and security laws, regulations and policies in this contract.

e. The contractor/subcontractor shall not make copies of VA information except as authorized and necessary to perform the terms of the agreement or to preserve electronic information stored on contractor/subcontractor electronic storage media for restoration in case any electronic equipment or data used by the contractor/subcontractor needs to be restored to an operating state. If copies are made for restoration purposes, after the restoration is complete, the copies must be appropriately destroyed.

f. If VA determines that the contractor has violated any of the information confidentiality, privacy, and security provisions of the contract, it shall be sufficient grounds for VA to withhold payment to the contractor or third party or terminate the contract for default or terminate for cause under Federal Acquisition Regulation (FAR) part 12.

g. If a VHA contract is terminated for cause, the associated BAA must also be terminated and appropriate actions taken in accordance with VHA Handbook 1600.01, Business Associate Agreements. Absent an agreement to use or disclose protected health information, there is no business associate relationship.

h. The contractor/subcontractor must store, transport, or transmit VA sensitive information in an encrypted form, using VA-approved encryption tools that are, at a minimum, FIPS 140-2 validated.

i. The contractor/subcontractor's firewall and Web services security controls, if applicable, shall meet or exceed VA's minimum requirements. VA Configuration Guidelines are available upon request.

j. Except for uses and disclosures of VA information authorized by this contract for performance of the contract, the contractor/subcontractor may use and disclose VA information only in two other situations: (i) in response to a qualifying order of a court of competent jurisdiction, or (ii) with VA's prior written approval. The contractor/subcontractor must refer all requests for, demands for production of, or inquiries about, VA information and information systems to the VA contracting officer for response.

k. Notwithstanding the provision above, the contractor/subcontractor shall not release VA records protected by Title 38 U.S.C. 5705, confidentiality of medical quality assurance records and/or Title 38 U.S.C. 7332, confidentiality of certain health records pertaining to drug addiction, sickle cell anemia, alcoholism or alcohol abuse, or infection with human immunodeficiency virus. If the contractor/subcontractor is in receipt of a court order or other requests for the above mentioned information, that contractor/subcontractor shall immediately refer such court orders or other requests to the VA contracting officer for response.

I. For service that involves the storage, generating, transmitting, or exchanging of VA sensitive information but does not require C&A or an MOU-ISA for system interconnection, the contractor/subcontractor must complete a Contractor Security Control Assessment (CSCA) on a yearly basis and provide it to the COR.

4. SECURITY INCIDENT INVESTIGATION

a. The term “security incident” means an event that has, or could have, resulted in unauthorized access to, loss or damage to VA assets, or sensitive information, or an action that breaches VA security procedures. The contractor/subcontractor shall immediately notify the COR and simultaneously, the designated ISO and Privacy Officer for the contract of any known or suspected security/privacy incidents, or any unauthorized disclosure of sensitive information, including that contained in system(s) to which the contractor/subcontractor has access.

b. To the extent known by the contractor/subcontractor, the contractor/subcontractor’s notice to VA shall identify the information involved, the circumstances surrounding the incident (including to whom, how, when, and where the VA information or assets were placed at risk or compromised), and any other information that the contractor/subcontractor considers relevant.

c. With respect to unsecured protected health information, the business associate is deemed to have discovered a data breach when the business associate knew or should have known of a breach of such information. Upon discovery, the business associate must notify the covered entity of the breach. Notifications need to be made in accordance with the executed business associate agreement.

d. In instances of theft or break-in or other criminal activity, the contractor/subcontractor must concurrently report the incident to the appropriate law enforcement entity (or entities) of jurisdiction, including the VA OIG and Security and Law Enforcement. The contractor, its employees, and its subcontractors and their employees shall cooperate with VA and any law enforcement authority responsible for the investigation and prosecution of any possible criminal law violation(s) associated with any incident. The contractor/subcontractor shall cooperate with VA in any civil litigation to recover VA information, obtain monetary or other compensation from a third party for damages arising from any incident, or obtain injunctive relief against any third party arising from, or related to, the incident.

5. LIQUIDATED DAMAGES FOR DATA BREACH

a. Consistent with the requirements of 38 U.S.C. §5725, a contract may require access to sensitive personal information. If so, the contractor is liable to VA for liquidated damages in the event of a data breach or privacy incident involving any SPI the contractor/subcontractor processes or maintains under this contract.

b. The contractor/subcontractor shall provide notice to VA of a “security incident” as set forth in the Security Incident Investigation section above. Upon such notification, VA must secure from a non-Department entity or the VA Office of Inspector General an independent risk analysis of the data breach to determine the level of risk associated with the data breach for the potential misuse of any sensitive personal information involved in the data breach. The term 'data breach' means the loss, theft, or other unauthorized access, or any access other than that incidental to the scope of employment, to data containing sensitive personal information, in electronic or printed form, that results in the potential compromise of the confidentiality or integrity of the data. Contractor shall fully cooperate with the entity performing the risk analysis. Failure to cooperate may be deemed a material breach and grounds for contract termination.

c. Each risk analysis shall address all relevant information concerning the data breach, including the following:

- (1) Nature of the event (loss, theft, unauthorized access);
- (2) Description of the event, including:
 - (a) date of occurrence;
 - (b) data elements involved, including any PII, such as full name, social security number, date of birth, home address, account number, disability code;
- (3) Number of individuals affected or potentially affected;
- (4) Names of individuals or groups affected or potentially affected;
- (5) Ease of logical data access to the lost, stolen or improperly accessed data in light of the degree of protection for the data, e.g., unencrypted, plain text;
- (6) Amount of time the data has been out of VA control;
- (7) The likelihood that the sensitive personal information will or has been compromised (made accessible to and usable by unauthorized persons);
- (8) Known misuses of data containing sensitive personal information, if any;
- (9) Assessment of the potential harm to the affected individuals;
- (10) Data breach analysis as outlined in 6500.2 Handbook, *Management of Security and Privacy Incidents*, as appropriate; and

(11) Whether credit protection services may assist record subjects in avoiding or mitigating the results of identity theft based on the sensitive personal information that may have been compromised.

d. Based on the determinations of the independent risk analysis, the contractor shall be responsible for paying to the VA liquidated damages in the amount of \$37.50 per affected individual to cover the cost of providing credit protection services to affected individuals consisting of the following:

- (1) Notification;
- (2) One year of credit monitoring services consisting of automatic daily monitoring of at least 3 relevant credit bureau reports;
- (3) Data breach analysis;
- (4) Fraud resolution services, including writing dispute letters, initiating fraud alerts and credit freezes, to assist affected individuals to bring matters to resolution;
- (5) One year of identity theft insurance with \$20,000.00 coverage at \$0 deductible; and
- (6) Necessary legal expenses the subjects may incur to repair falsified or damaged credit records, histories, or financial affairs.

6. TRAINING

a. All contractor employees and subcontractor employees requiring access to VA information and VA information systems shall complete the following before being granted access to VA information and its systems:

- (1) Sign and acknowledge (either manually or electronically) understanding of and responsibilities for compliance with the *Contractor Rules of Behavior* relating to access to VA information and information systems;
- (2) Successfully complete the *VA Privacy and Information Security Awareness and Rules of Behavior* training and annually complete required security/privacy training; and
- (3) Successfully complete any additional cyber security or privacy training, as required for VA personnel with equivalent information system access *[to be defined by the VA program official and provided to the contracting officer for inclusion in the solicitation]*

document – e.g., any role-based information security training required in accordance with NIST Special Publication 800-16, Information Technology Security Training Requirements.]

b. The contractor shall provide to the contracting officer and/or the COR a copy of the training certificate and certification of signing the Contractor Rules of Behavior for each applicable employee within 1 week of the initiation of the contract and annually thereafter, as required.

c. Failure to complete the mandatory annual training and sign the Contractor Rules of Behavior annually, within the timeframe required, is grounds for suspension or termination of all physical or electronic access privileges and removal from work on the contract until such time as the training and documents are complete.

CONTRACTOR PERSONNEL SECURITY

a. Background Investigations and Special Agreement Checks (SAC)

- (1) All contractor employees are subject to the same level of investigation as VA employees who have access to VA Sensitive Information and VA information systems. The position sensitivity for this effort has been designated as <enter risk level> and the level of background investigation is <enter type of background investigation>. This requirement is applicable to all subcontractor personnel requiring the same access.
- (2) The contractor employee is required to submit all requested paperwork to appropriate VA staff for the background investigation within requested timeframe.

b. Contractor Responsibilities

- (1) Background investigations from investigating agencies other than OPM are permitted if the agencies possess an OPM and Defense Security Service certification. Security and Investigations Center staff will verify the information and advise the contracting officer whether access to the computer systems can be authorized.
- (2) The contractor shall prescreen all personnel requiring access to the computer systems to ensure they maintain a U.S. citizenship and are able to read, write, speak and understand the English language without the use of an interpreter.

(3) The contractor, when notified of an unfavorable determination by the Government, shall withdraw the employee from consideration from working under the contract.

(4) Failure to comply with the contractor personnel security requirements may result in termination of the contract for default.

(5) The contractor will be responsible for the actions of all individuals provided to work for the VA under this contract. In the event that damages arise from work performed by contractor provided personnel, under the auspices of this contract, the contractor will be responsible for all resources necessary to remedy the incident.

c. Government Responsibilities

(1) The VA Security and Investigations Center (07C) will provide the necessary forms to the contractor or to the contractor's employees after receiving a list of names and addresses.

(2) Upon receipt, the VA Security and Investigations Center (07C) will review the completed forms for accuracy and forward the forms to OPM to conduct the background investigation.

(3) The VA facility will pay for investigations conducted by the OPM.

(4) The VA Security and Investigations Center (07C) will notify the contracting officer and contractor after adjudicating the results of the background investigations received from OPM.

INTERNET/INTRANET

a. The contractor shall comply with Department of Veterans Affairs (VA) Directive 6102 and VA Handbook 6102 (Internet/Intranet Services).

b. VA Directive 6102 sets forth policies and responsibilities for the planning, design, maintenance support, and any other functions related to the administration of a VA Internet/Intranet Service Site or related service (hereinafter referred to as Internet). This directive applies to all organizational elements in the Department. This policy applies to all individuals designing and/or maintaining VA Internet Service Sites; including but not limited to full time and part time employees, contractors, interns, and volunteers. This policy applies to all VA Internet/Intranet domains and servers that utilize VA resources. This includes but is not limited to va.gov and other extensions such as, ".com, .edu, .mil, .net, .org," and personal

Internet service pages managed from individual workstations.

c. VA Handbook 6102 establishes Department-wide procedures for managing, maintaining, establishing, and presenting VA Internet/Intranet Service Sites or related services (hereafter referred to as "Internet"). The handbook implements the policies contained in VA Directive 6102, Internet/Intranet Services. This includes, but is not limited to, File Transfer Protocol (FTP), Hypertext Markup Language (HTML), Simple Mail Transfer Protocol (SMTP), Web pages, Active Server Pages (ASP), e-mail forums, and list servers.

d. VA Directive 6102 and VA Handbook 6102 are available at:
Internet/Intranet Services Directive 6102

http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=409&FType=2

Internet/Intranet Services Handbook 6102

http://www1.va.gov/vapubs/viewPublication.asp?Pub_ID=410&FType=2

e. In addition, any technologies that enable a Network Delivered Application (NDA) to access or modify resources of the local machine that are outside of the browser's "sand box" are strictly prohibited. Specifically, this prohibition includes signed-applets or any ActiveX controls delivered through a browser's session. ActiveX is expressly forbidden within the VA while .NET is allowed only when granted a waiver by the VA CIO *PRIOR* to use.

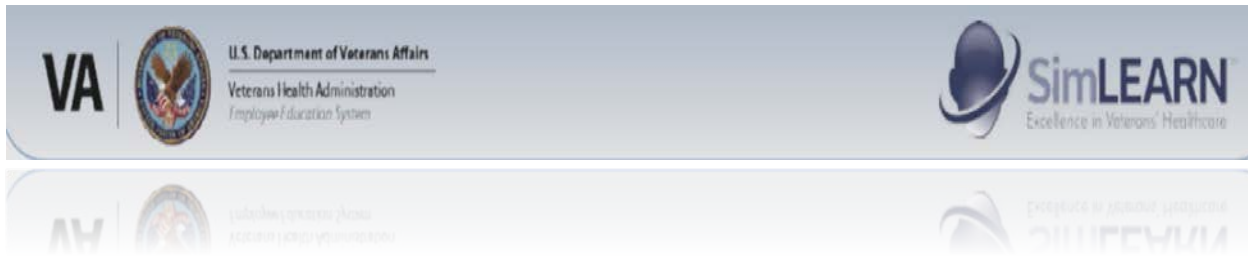
f. JavaScript is the preferred language standard for developing relatively simple interactions (i.e., forms validation, interactive menus, etc.) and Applets (J2SE APIs and Java Language) for complex network delivered applications.

52.224-1 Privacy Act Notification.

As prescribed in [24.104](#), insert the following clause in solicitations and contracts, when the design, development, or operation of a system of records on individuals is required to accomplish an agency function:

Privacy Act Notification (Apr 1984)

The Contractor will be required to design, develop, or operate a system of records on individuals, to accomplish an agency function subject to the Privacy Act of 1974, Public Law 93-579, December 31, 1974 ([5 U.S.C. 552a](#)) and applicable agency regulations. Violation of the Act may involve the imposition of criminal penalties.



52.224-2 Privacy Act.

As prescribed in [24.104](#), insert the following clause in solicitations and contracts, when the design, development, or operation of a system of records on individuals is required to accomplish an agency function:

Privacy Act (Apr 1984)

(a) The Contractor agrees to—

(1) Comply with the Privacy Act of 1974 (the Act) and the agency rules and regulations issued under the Act in the design, development, or operation of any system of records on individuals to accomplish an agency function when the contract specifically identifies—

(i) The systems of records; and

(ii) The design, development, or operation work that the contractor is to perform;

(2) Include the Privacy Act notification contained in this contract in every solicitation and resulting subcontract and in every subcontract awarded without a solicitation, when the work statement in the proposed subcontract requires the redesign, development, or operation of a system of records on individuals that is subject to the Act; and

(3) Include this clause, including this paragraph (3), in all subcontracts awarded under this contract which requires the design, development, or operation of such a system of records.

(b) In the event of violations of the Act, a civil action may be brought against the agency involved when the violation concerns the design, development, or operation of a system of records on individuals to accomplish an agency function, and criminal penalties may be imposed upon the officers or employees of the agency when the violation concerns the operation of a system of records on individuals to accomplish an agency function. For purposes of the Act, when the contract is for the operation of a system of records on individuals to accomplish an agency function, the Contractor is considered to be an employee of the agency.

(c)(1) "Operation of a system of records," as used in this clause, means performance of any of the activities associated with maintaining the system of records, including the collection, use, and dissemination of records.

(2) "Record," as used in this clause, means any item, collection, or grouping of information about an individual that is maintained by an agency, including, but not limited to, education,

financial transactions, medical history, and criminal or employment history and that contains the person's name, or the identifying number, symbol, or other identifying particular assigned to the individual, such as a fingerprint or voiceprint or a photograph.

(3) "System of records on individuals," as used in this clause, means a group of any records under the control of any agency from which information is retrieved by the name of the individual or by some identifying number, symbol, or other identifying particular assigned to the individual.

DRAFT

ADDENDUM C

1. Game-based Learning System

- 1.1. The complete DAARC learning system is comprised of two educational games, Game 1 and Game 2, along with a simulation mannequin task-trainer module, a training video module with didactic job aids. The whole DAARC learning system package integrates within the Veterans Administration (VA) Network software and hardware architecture requirements. The Government will provide required information to the Contractor as DAARC Development Government Provided Contractor Information.
- 1.2. The contractor shall design and develop only Game 1 and Game 2, using a game engine with embedded tracking technology to log, record, and display learner performance outcome feedback for in-process guidance, after-action reviews and performance scores that integrate into the entire DAARC learning system package. Game 1 and Game 2 shall include at least 12 high fidelity virtual simulation medical scenarios overlaid with front end challenging game elements.
- 1.3. Game 1 is formative in design, embedded tracking technology data and feedback guide learner improvements. Game 2 is summative in design, embedded tracking data measures the level of success or proficiency obtained at the end of a virtual simulation scenario activity and game ending. The final Game 2 summative high stakes score is pass-fail. The games shall be independently capable modules but integrated as a part of the percutaneous cricothyrotomy learning system as a whole.
- 1.4. The Contractor will design frontend Vortex theme-based game element overlays layered over a sequence of high fidelity virtual avatar medical simulations. This educational game overlay shall incorporate multiple game genres and emphasize fantasy, imaginary, or abstract styles in contrast to the high fidelity virtual avatar simulations.

2. Game 1 Formative

2.1. Game-based Learning in Virtual Avatar Simulations

2.1.1. Cognitive Decisions for the Difficult Airway Algorithm

- Standardized Environments I, Levels I
 - Operating Room Theater I (OR),
 - Intensive Care Unit I (ICU)
 - Emergency Room I (ER)
 - Surgical Medical Floor I
- Standardized Scenarios 1, Levels 1, and 12 scenario set with randomization
 - Can't Intubate 1
 - Can't Ventilate 1
 - Can't Intubate & Can't Ventilate 1
 - Obvious Upper Airway Occlusion 1

3. Simulation Mannequin-based Task Trainer

3.1. Percutaneous Cricothyrotomy Technique Skills Training :

- Difficult Airway Management Mannequin Training System (DAMMTS)
- Difficult Airway Algorithm & Rescue Cricothyrotomy (DAARC) Training Video

4. Game 2 Summative

4.1. Game-based Learning in Virtual Avatar Simulations

4.1.1. Cognitive Decisions for the Difficult Airway Algorithm

- Standardized Environments 2, Levels 2,
 - Operating Room Theater II (OR)
 - Intensive Care Unit II (ICU)
 - Emergency Room II (ER)
 - Surgical Medical Floor II
- Standardized Scenarios 2, Levels 2, and 12 scenario set with randomization
 - Can't Intubate 2
 - Can't Ventilate 2
 - Can't Intubate & Can't Ventilate 2
 - Obvious Upper Airway Occlusion 2

5. DAARC Game-based Learning System Scenario Set

Scenario 1	Ventilate successful	Patient	32 year old male, 72 inches, 180 kg
		Location	OR
Scenario 2	Masking	Patient	54 year old male, 68 inches 150 kg, Obese
	Cannot ventilate	Location	ER
	Intubation required		PMH: CAD Dx1
Scenario 3	Fixed upper airway foreign body	Patient	90 year old male
	Cannot ventilate	Location:	Emergency Department (ED)
Scenario 4	Cricothyrotomy	Patient	70 year old male
		Location	



Scenario 5	COPD with history of radiation for lymphoma	Patient	86 year old
		Location	Intensive Care Unit (ICU)
Scenario 6	LMA rescue	Patient	55 year old male
	Cannot ventilate	Location	
	cannot intubate		History of cirrhosis
Scenario 7	Can ventilate	Patient	70 year old female
	Can't intubate	Location	IR
Scenario 8	Cricothyrotomy	Patient	Patient 65 year old male ACLS
	Cannot ventilate	Location	
	Cannot intubate failed		
Scenario 9	LMA	Patient	55 year old female
		Location	
Scenario 10	Awake tracheotomy	Patient	Patient 70 year old male, 72 inches, 80 Kg
	Must Cric.	Location	ED Emergency Department
Scenario 11		Patient	54 year old male, 70 inches, 100kg
		Location	ED Emergency Department
Scenario 12		Patient	65 year old Female, 68 inches, 80kg
		Location	ICU Intensive care unit