

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

615



SUBMITTAL DATE:
July 21, 2011

FROM: Community Health Agency / Department of Public Health

SUBJECT: Approve the Single Source Purchase of a Software Update and Training for Five Medical Education Technologies, Inc. (METI) Human Patient Simulators (HPS).

RECOMMENDED MOTION: That the Board of Supervisors:

- 1) Approve the Single Source purchase of updated software for five Medical Education Technologies, Inc. (METI) Human Patient Simulators (4 METI-Men and 1 Baby-SIM); and
- 2) Approve the Single Source 2-day training for DOPH instructors; and
- 3) Authorize the Purchasing Agent to issue a purchase order in the amount of \$46,338 for the software for five Human Patient Simulators (\$38,400) and 2-day training (\$7,938).

(Background on page 2)

KS:nmh

Susan D. Harrington

Susan Harrington, Director of Public Health

FINANCIAL DATA	Current F.Y. Total Cost:	\$ 46,338	In Current 11/12 Year Budget:	YES
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	NO
	Annual Net County Cost:	\$ 0	For Fiscal Year:	11/12

SOURCE OF FUNDS: 100% federally funded by the Centers for Disease Control and Prevention through the California Department of Public Health.	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

C.E.O. RECOMMENDATION: APPROVE

County Executive Office Signature

Debra Courmayer

Debra Courmayer

- Policy
- Consent
- Policy
- Consent

Prev. Agn. Ref.: 6/28/05 Item 3.9; 5/1/07, Item 3.16; 6/22/10, Item 3.11 District: All Agenda Number:

ATTACHMENTS FILED
WITH THE CLERK OF THE BOARD

3.14

FORM APPROVED COUNTY COUNSEL
BY: NEAL R. KIPNIS
DATE: _____
Departmental Concurrence

Purchasing: *Mark Seiler*
Mark Seiler, Assistant Director

Dept's Recomm.:
Per Exec. Ofc.:

SUBJECT: Approve the Single Source Purchase of a Software Update and Training for Five Medical Education Technologies, Inc. (METI) Human Patient Simulators (HPS).

BACKGROUND (continued):

The purchase of 4 Human Patients Simulators (METI-Men) was approved by the Board of Supervisors on June 28, 2005, Agenda Item 3.9. The purchase of the Human Patient Simulator (Baby-SIM) was approved by the Board of Supervisors on May 1, 2007, Agenda Item 3.16. Then on June 22, 2010, Agenda Item 3.11, the Board approved a maintenance agreement and training classes.

The METI-Men and Baby-SIM are used to train staff from a variety of disciplines, including Public Health, Healthcare, Emergency Medical Services, Fire, Mental Health, and Law Enforcement. Trainings focus on the medical response to a variety of scenarios, including bioterrorism, improvised explosive devices and chemical agent attacks. The METI-Men and Baby-SIM can be tailored to any clinical experience level, from the most basic to the highest expertise. DOPH currently stores the four METI HPS mannequins at locations throughout the County, including Riverside County Regional Medical Center, Desert Regional Medical Center, American Medical Response and the Public Health Emergency Preparedness and Response Branch. This regional distribution maximizes access to the training tools for all potential users.

The requested software update will substantially reduce the amount of time to prepare and run training scenarios for instruction and exercise. The new software will also simplify and facilitate instructor education, making it easier to train new instructors as the need arises. DOPH is additionally requesting to purchase a 2-day training class from METI. During this training, METI personnel will program updated scenarios in all five Human Patient Simulators, will teach the Riverside County Department of Public Health Emergency Preparedness and Response Branch staff how to use the equipment and troubleshoot problems. This training will also instruct these staff to run the appropriate scenarios to maximize the knowledge gained by simulator trained students.

PRICE REASONABLENESS:

The cost of the software upgrade is regularly \$8,000 for each mannequin totaling \$40,000 for five Human Patient Simulators; however, METI is extending the County a discount of 4%, making the total \$38,400. The cost of a 2-day training class is \$7,938 which makes the total cost \$46,338.

Date: May 9, 2011

From: Susan Harrington Department/Agency: Department of Public Health

To: Board of Supervisors/Purchasing Agent

Via: Purchasing Agent

Subject: Single Source Procurement; Request for METI Human Patient Simulation (HPS)

The below information is provided in support of my Department requesting approval for a sole source. Outside of a duly declared emergency, the time to develop a statement of work or specifications is not in itself justification for sole source.

1. Supply/Service being requested:

Five (5) software updates and a 2 day training for METI Human Patient Simulation (HPS) using funding from the FY 09/10 California Department of Public Health, CDC Public Health Emergency Preparedness Cooperative Agreement Grant funds.

2. Supplier being requested:

Medical Education Technologies, Inc. (METI)
6000 Fruitville Rd.
Sarasota, FL 34232
(866) 462-7920

3. Alternative suppliers that can or might be able to provide supply/service:

Laerdal Medical Corporation produces the only other Human Patient Simulator (HPS) on the market at this time. However it would not be cost effective to switch vendors because:

1. The County already uses METI equipment and upgrading the software will not require the purchase of additional computers or mannequins. In order to switch to Laerdal HPS, mannequins would have to be purchased, including the laptop computers that go along with them, which are incompatible with the METI mannequins and equipments. This would cost between \$225,000 and \$325,000 for either the lower end mannequins known as the SimMan Essentials and the higher end SimMan 3G, respectively.
2. Additional instructors are needed to teach participants and to run the drill with the Laerdal HPS.

4. Extent of market search conducted:

There are two companies that make this type of product, Laerdal and METI. Each HPS mannequin has been researched and in-person demonstrations have been observed.

5. Unique features of the supply/service being requested from this supplier, which no alternative supplier can provide:

The METI HPS software and training can be provided by the METI Company.

6. Reasons why my department requires these unique features and what benefit will accrue to the county:

The unique features outlined above will allow the DOPH to provide standardized training to all levels of clinical expertise. Given the sophistication of the METI HPS, even the most advanced and experienced clinician will benefit from emergency response training.

Utilization of the METI HPS will facilitate training for medical and public health personnel and first responders, thereby allowing for a more standardized response to an actual terrorism event or naturally occurring disaster.

The requested software upgrade will substantially reduce the amount of time to prepare and run training scenarios for instruction and exercise. The new software will also simplify and facilitate instructor education, making it easier to train new instructors as the need arises. DOPH is also requesting to purchase a 2-day training class from METI at a cost of \$7,938. During this training, METI personnel will program updated scenarios in all 5 Human Patient Simulators, will teach the Riverside County Department of Public Health Emergency Preparedness and Response Branch staff how to use the equipment and troubleshoot problems. This training will also instruct these staff to run the appropriate scenarios to maximize the knowledge gained by simulator trained students.

7. Price Reasonableness:

The cost of the software upgrade is regularly \$8,000 for each mannequin totaling \$40,000 for five Human Patient Simulators; however, METI is extending the County a discount of 4%, making the total \$38,400. The cost of a 2-day training class is \$7,938 which makes the total cost \$46,338.

8. Does moving forward on this product or service further obligate the county to future similar contractual arrangements or any ongoing costs affiliated with this sole source? (Maintenance, support, or upgrades, if so, please explain).

No, the County is not obligated to pay any on-going costs. However, the Department of Public Health plans to continue to purchase annual maintenance agreements for the METI HPS using grant funds.

9. Period of Performance:

Training will be held in August, 2011 and will effectively complete the upgrade of the METI HPS.

(Provide a defined period of performance. Please note multi-year terms require Board approval, unless renewable in one year increments and the Purchasing Agent approves the terms.)

Susan D. Harrington 7/6/11
Department Head Signature Date

Purchasing Department Comments:

Approve Approve with Condition/s Disapprove
[Signature] 7-21-11
Purchasing Agent Date



METI Muse® Software SOLE SOURCE JUSTIFICATION

Medical Education Technologies, Inc. (METI®) is the premier manufacturer of high fidelity human patient simulators in the world. The following features are available only with the METI Muse Software interface to control these patient simulators.

One unique element of every METI patient simulation system is the application software. This software, which is based on human physiological and pharmacological models permits life-like simulator reactions to treatments and interventions. These models are licensed exclusively to METI. Additionally, the software ensures the simulation and the simulator system will react consistently and appropriately every time the same scenario is run. Thus, scenarios may be repeated accurately without re-programming the patient simulator. This METI-unique feature gives consistency to both training and testing. The automatic, realistic responses of the patient simulator also permit the instructor to spend more time with the students observing and instructing, instead of operating the simulator.

The following additional features are available only with the Muse Software interface:

Muse is the only patient simulator user interface software that employs multiple models of human physiology. These include, but are not limited to, the cardiovascular system, pulmonary system, neuromuscular system, and central nervous system. The models allow the patient to exhibit clinical signs (e.g., spontaneous breathing, eyelid blinking) and monitored parameters (e.g., electrocardiogram, blood pressure) and respond to therapeutic intervention with no or minimal input from an instructor.

Muse is the only patient simulator user interface software with cardiovascular system models that automatically calculate dependent variables (e.g., blood pressure, heart rate) in response to changing cardiovascular system status (e.g., bleeding, intravenous fluid administration).

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- A baroreceptor reflex model automatically compensates both centrally (e.g., heart rate, cardiac contractility) and peripherally (e.g., systemic vascular resistance, venous capacitance) to maintain circulation and perfusion.
 - A model of myocardial oxygen supply (e.g., diastolic blood pressure, arterial oxygen partial pressure) and demand (e.g., cardiac contractility, heart rate) yields appropriate cardiac response (e.g., cardiac rhythm, cardiac contractility) to myocardial ischemia. Untreated myocardial ischemia automatically results in cardiovascular decompensation with accompanying cardiac rhythms (e.g., ST-segment depression, ventricular tachycardia, ventricular fibrillation, asystole) and ultimately, cardiovascular collapse.
 - Arterial blood gases (e.g., PaO₂, PaCO₂, and pH) and mixed venous gases (e.g., PvO₂, PvCO₂) are automatically calculated.
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- Hematocrit is automatically calculated to reflect oxyhemoglobin saturation and administration of a variety of intravenous fluids, such as whole blood, packed red cells, colloids, and crystalloids.
- A complete hemodynamic monitoring package includes the capability to measure and monitor the following:
 - Arterial blood pressure
 - Left ventricular blood pressure
 - Central venous pressure
 - Right atrial pressure
 - Pulmonary artery pressure (including “floating” the catheter from atmosphere to the pulmonary artery)
 - Pulmonary artery occlusion (wedge) pressure
 - Thermodilution cardiac output

Muse is the only patient simulator user interface software with pulmonary system models that automatically calculate alveolar and arterial gas partial pressures in response to ventilation, fraction of inspired oxygen, intrapulmonary shunt fraction, and metabolic gas exchange.

- During spontaneous ventilation, the patient mannequin will breathe with a spontaneously controlled respiratory rate and tidal volume to maintain normocarbia and adequate oxygenation.
- Apnea or hypoventilation automatically results in hypercarbia, hypoxemia, decreasing oxyhemoglobin saturation, and tachycardia.
- Positive pressure ventilation or return of spontaneous ventilation automatically reverses apnea (providing the patient has not already expired from cardiovascular collapse) with the response appropriate to the rate and tidal volume of ventilation.
- The patient simulator automatically responds to the fraction of inspired oxygen present, such as with smoke inhalation or supplemental oxygen.

Muse is the only patient simulator user interface software with pharmacology system models that automatically calculate both the pharmacokinetics and pharmacodynamics for 68 intravenous and inhaled medications, yielding appropriate changes in patient clinical signs and monitored parameters.

- For example, a patient receiving excessive amounts of a muscle relaxant will automatically yield hypoventilation, eyelid closure, decreased oxyhemoglobin saturation, and tachycardia. Positive pressure ventilation will stabilize the patient until the drug is metabolized and eliminated, yielding a return to spontaneous ventilation and stabilized vital signs.

- An instructor only needs to enter the drug dosage—all patient responses are automatic, dose dependent, and follow an appropriate time course.

Muse is the only patient simulator user interface software that can be used to objectively evaluate clinical performance because patient outcome is based solely on patient physiology and the treatment administered (e.g., ventilation, oxygen therapy, drug therapy). Although intravenous medications must be entered into the system computer, an operator need not be a clinical expert in that particular drug and how it would impact the patient response in the simulation. Thus, not only is performance based on the objective clinical outcome, but it is not influenced by a subjective assessment of the operator, thus greatly reducing the risk of negative training transfer.

Due to the unique requirements and the need for training in some medical techniques in order to repair METI products, no other technicians other than METI employees are qualified to work on METI simulators in the Continental United States.