



*PDA STAT #400 Manikin Instruction Manual*



Statement of intended use: PDA STAT manikin is intended to be used for training of emergency medical personnel. All levels of EMS training can be administered to this manikin, including: physicians, nurses, ALS, and BLS.

Thank you for purchasing Simulaids' PDA STAT scenario trainer. This manikin has been designed for portability and rugged handling.

**Environments: WARNING: Do not use in water.** PDA STAT does not have protection from water or dust. PDA STAT does not have an IPA rating. However, PDA STAT is made to use in normal life environments, like offices, outside, or in the clinical setting. When using the manikin outdoors, dress it like you would expect to find a patient. **WARNING: Always use a grounded extension cord,** and when the weather changes, treat the manikin as if it were human; i.e., cover him to keep moisture away or place him inside a vehicle and/or place him on a stretcher to elevate him out of the moisture collecting around him. **Do not defibrillate a wet manikin,** just as you do not defibrillate a wet victim. Getting Started:

#### **PDA Set-up:**

See instructions enclosed with PDA for setting up your Palm Pilot. *You must do this before connecting the PDA to the manikin.*

#### **Computer Set-up:**

Please note that installing these programs on an institutional computer will probably require your IT staff with administrative rights to actually install the programming. If you are using a non-network computer, then the Simulaids' programming should automatically install by following the installation wizard that appears when you place the program disc in the computer drive.

#### **Manikin Set-up**

1. Support the head as you would an unconscious patient and remove the manikin from the carry case. Place the manikin on a flat surface. STAT comes without the lower legs attached. Match up the lower legs to the thighs and connect the color-coded tubing; white into white and blue into blue. Push and twist the connectors to secure them. Then insert the knee pin through the thigh and the lower leg and secure it.
2. Locate the power service cord at the right lateral chest area and plug it into your power source. **YOU MUST HAVE A GROUNDED OUTLET AND CORD.**

Locate the USB link cable. Install it by plugging the end into the USB port on the lower right side of the torso. Once the connection is secure, attach the PDA to the cable and initialize the STAT program located on your files screen and identified by a Star of Life icon. You are now ready to start choosing items from the pull down menus on the PDA screen. *See the “Programming Your PDA” Instructions* on the enclosed CD.

#### **IV ARM:**

**Caution – contains latex.** To augment the IV training, use the blood supply bags. On one of the reservoir bags, close the tubing clamp and then fill the bag with pre-mixed simulated blood or colored water. Attach the bag tubing to one of the IV arm tubes that exit the manikin’s right shoulder. Hang the bag on an IV pole next to the manikin, or, as in the case of patient moving in ALS, place the Reservoir bag under the shoulder of the manikin to induce pressure. To the other IV arm tube attach an empty IV reservoir bag. Make sure the filling port is closed and the tube clamp released. Place the empty bag on the floor or ground. Gravity (or shoulder pressure) will cause the IV veins to fill once you release the clamp on the full bag. As the scenario continues, the blood will drain into the lower bag. When the upper bag is about empty, switch the positions of the bags and the blood supply in the arm will remain constant.

Before storing the manikin, flush the IV tubing of the arm by hanging a bag of warm water and allowing it to circulate through the arm. Drain the rinse water into a receptacle for disposal. Flush the IV arm until the water exiting the tubing is clear.

#### **VEIN REPLACEMENT**

1. If the water or blood oozes out of the arm where the IV catheters have been installed and withdrawn, replace the veins with a segment from the enclosed IV Vein set.
2. Pull down the IV arm skin to access the affected area.
3. Clip with scissors the damaged section of vein tubing.
4. Install a plastic tubing connector in each of the remaining vein ends.
5. Use the new tubing in the kit and cut a piece the correct length for replacement. Install it between the tubing connectors. Make sure the tubing is seated all the way onto the connectors.
6. Pull the IV arm skin back over the veins.

The deltoid muscle of the right arm is for **IM injections** (*Use only water*). Pull the injection site out of the arm after use and squeeze the foam insert dry. Let it air dry before storing. Replacement units are included.

## **CHEST TUBE PLACEMENT:**

The chest tube feature will allow for simulated drainage. Fill a reservoir bag with water and hang it on an IV pole or elevated perch next to the left shoulder of the manikin. Attach the tubing to the medial port on the left shoulder area identified by the clear plastic connector and sized for the reservoir bag tubing connector. Release the tube clamp. Insert a chest tube in the right chest wall, midaxillary line until the chest tube contacts the valve inside the chest. Have a cup ready to catch the flow of water as the air is displaced inside the manikin. Stop the flow of water by pulling the chest tube back away from the interior valve. You are now ready to challenge the student.

To drain the chest tube system, first close off the water supply bag. Insert a chest tube into the right chest wall until it contacts the fluid valve. Expect water flow and have a container handy to catch the evacuated fluid. Elevate the shoulders slightly, or sit the manikin upright. Disconnect the fluid supply bag and tubing. Lean the manikin slightly to the right to encourage the fluid to drain from the internal piping. Withdraw the chest tube. There may be some additional fluid resting in both the left and right chest tube compartments. Rock the manikin to the left and the right to encourage drainage of that fluid and wipe the manikin dry.

## **TENSION PNEUMOTHORAX**

Install the pneumothorax patches when needed. The smaller circle fits the cut out area of the overlay. The larger circle is the shoulder that holds the patch in place. When a needle is inserted in either of the bi-lateral chest sites, the bladder will release the compressed air with an audible hiss. To do the exercise again, withdraw the catheter and re-activate the feature on the PDA lung screen. .

## **ECG MONITORING AND DEFIBRILLATION**

ECG Monitoring: Four ECG limb lead connectors, or snaps, are located on the chest skin. Each one is labeled, “NOT A DEFIBRILLATION SITE”. **WARNING:** Defibrillating through the ECG snaps may damage electrical components or may put the user at risk of electrical shock. To view limb lead ECG waveforms, attach your 3- or 4-lead ECG cable to the ECG snaps at the following locations:

RA (right arm): right shoulder snap

LA (left arm): left shoulder snap

LL (left leg): left waist snap

RL (right leg): right waist snap

Defibrillation: Two defibrillation sites are located on the chest skin. These two sites are unlabeled. If you are using a defibrillator with hands-free therapy cable, you will need training cables, and chest posts adapters. To order the training cable contact your distributor or Simulaids; you will need to know the make and model of your defibrillator. The chest post adapters are two threaded parts which are included with the manikin. You must screw these into the two defibrillation sites and then attach the training cable to them. If you are using a defibrillator with hand-held paddles, use the manual adapters that are included with your manikin if you do not have the adapters you will need to order a pair of Manual Defib Adapters No. 053 from your distributor or Simulaids. To deliver defibrillator and pacer pulses, and to view the PADS ECG waveform, attach the training cable (or hold paddles) at the following locations:

Apex: left side of chest, lower rib area

Sternum: right side of chest, middle rib area

## **PDA STAT MANIKIN TECHNICAL SPECIFICATIONS**

### **MAINS SUPPLY**

| Model | Input Voltage | Frequency | Input Current |
|-------|---------------|-----------|---------------|
| 400   | 120VAC        | 60 Hz     | 250mA         |
| 400X  | 240VAC        | 50 Hz     | 125mA         |

DEFIBRILLATOR ENERGY Max. Energy Delivered Min. Time Between Discharges Max. No. of 360J Discharges 360 Joules 10 seconds 15 over a five minute period

**ELECTROSTATIC DISCHARGE** In the event of an electrostatic discharge, the manikin may change states. User intervention may be required to bring it back to normal operation. User intervention may include re-transmitting selections from the PDA, or cycling power off and on.

**PDA STAT features and how to use them: For more specific PDA program instructions, refer to the enclosed PDA program manual.**

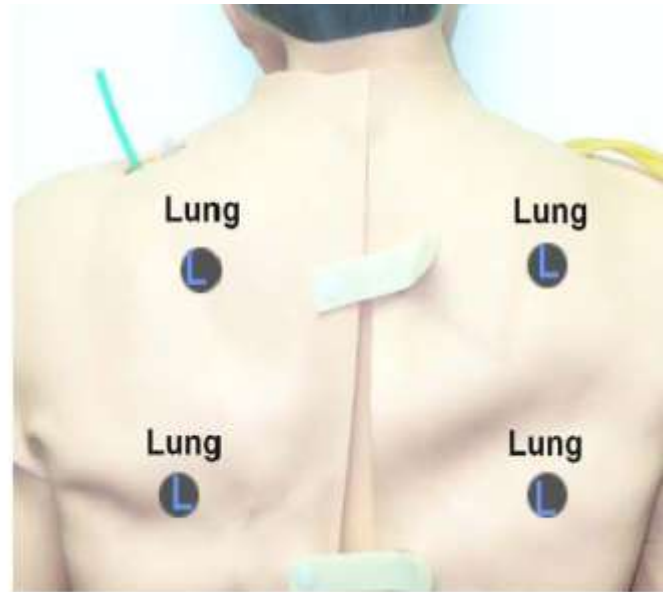
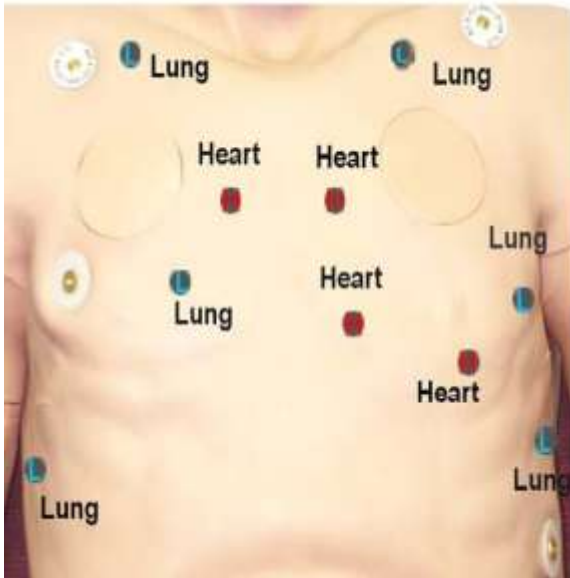
**AIRWAY: TEETH:** The upper front teeth are made to break out. You may pull them out to inspect them. You receive two different styles: short stem and long stem. By placing the short stem teeth in the gums you make it easier to knock out the teeth during intubation. You can also use this “remove” feature to demonstrate the importance of labeling patient prosthesis when they are removed during treatment.

**TONGUE EDEMA:** Select the Airway menu on the Palm unit by contacting the screen with the stylus on the small square box in the upper right corner marked with an “A.” The options shown will lead you to the drop down menus for the airway maintenance features. By touching *Tongue*, you will have the options exposed. Select one with the stylus and then tap *OK* and the tongue will react accordingly. You can return the tongue to normal by going back to the menu and selecting *normal*, and tapping *OK*. The same goes for any other option available in any menu.

**LARYNGOSPASM:** Find the airway menu and select the *Larynx* option. Select a choice from the dropdown menu and tap *OK*. The larynx reacts as indicated. You can return the larynx to normal by choosing that option. This is the same pattern used throughout the rest of the menus (and capnography in this section) on the PDA unit for the PDA STAT features.

**CRICOTHYROTOMY:** The anatomy of the cricoid membrane area uses a section of the roll of supplied tape to seal off the airway and create a membrane through which you may pass a needle. The replacement neck skins button into the lower jawbone post and the post on the inferior end of the larynx.

## Heart & Lung Sounds Speaker Positions



**Heart:** This programming contains 17 rhythms with rate variation, selection of running rhythm, and the opportunity to select a waiting rhythm to convert to after defibrillation. Install your choice of defibrillation adapters in the defibrillation sites on the chest. You may need to order a training cable to effectively use your hands free defib capability. You can then choose to convert or not to convert with the touch of the PDA screen. You can also pace by setting the level of capture on the appropriate PDA screen. Once the capture level has been set, the manikin's rhythm will be adjusted to coincide with the operation of the pacing feature on your monitor/ defibrillator.

You may also set the choice of heart sounds. There are 4 sites to auscultate. There are 4 choices: *normal*, *systolic murmur*, *diastolic murmur*, and *friction rub*. As in the human condition, the sounds are specific to the locations where you hear these anomalies, i.e., you will not hear the murmurs in the apex location. Refer to the accompanying chart for the locations of the sites. The amplitude of the heart sounds may also be varied to four levels.

An additional feature is the *PEA* button. Tapping the *PEA* button will cease all pulses during any rhythm.

**Pulses:** There are 12 pulse points palpable on STAT: *bilateral at carotid, femoral, radial, popliteal, and pedal* (top of the arch) sites. The *brachial* pulse is located at the antecubital site on the IV arm and the mid-bicep site on the B/P (left) arm. When the systolic pressure falls below 70mm, the distal pulses cease. During pulseless arrhythmias, an adequate cardiac compression gives a carotid and femoral pulse. There must be a positive difference between the systolic and the diastolic pressure set on the PDA otherwise there will be no pulses. The pulses are synchronized to the heart sounds and responsive to the chosen rhythm, and are also synchronized to the EKG pattern on the monitor.

### **Blood Pressure**

The blood pressure arm will work with any B/P cuff. However, one is furnished with the manikin because the tubing must be altered to connect it to the barbed tube on the left shoulder of the manikin. Placing the B/P cuff on the arm first will allow you to determine the best route to get the tubing to the barbed connector. Once connected, pump the cuff up to 150 mmHg. It will fluctuate some while the vinyl compresses, but when the pressure reading stabilizes, connect the PDA to the manikin via the USB cable and go to the “airway” screen. Tap the “Session” bar in the upper left corner of the screen, then tap “Calibrate 150.” Recheck that the pressure is correct on the cuff gauge, and confirm by tapping the “OK” button. The gauge will now read within 2 mmHg of the settings selected on the “heart” screen where you may set the systolic and diastolic pressures independently. Take a blood pressure at any time, just as you would on a patient.

**Lung:** The lung sounds can be auscultated in 6 locations anteriorly and 4 posteriorly. These sounds: *normal, rhonchi, crackles, stridor, and wheeze* can be heard in selected areas, i.e., you will not hear stridor in the lower lobes. You may also create a tension pneumothorax by selecting the left or right side. The drop down menu offers you *partial* or *complete*. By selecting *partial* you will reduce the amplitude of the sounds by half in the affected lung and initiate a pressure build up. If the student doesn't catch the problem, you can go to *complete* and the lung sounds and chest rise will disappear on that side and the pressure will maximize. When the student treats the ailment, you can restore lung sounds and chest expansion on that side and stop producing air pressure in the chest.



**Ventilating the patient** Do not use rescue breathing as you will contaminate a system almost impossible to disinfect. You may not assist ventilations on PDA STAT; it must be in apnea in order to see chest rise or hear lung sounds while ventilating using a BVM. Utilize the Lung screen to set the breathing rate at apnea or use the Heart screen to select a running rhythm that will kill the patient: VF or Asystole. At that point an adequate ventilation of correct volume around 600 ml over one and a half seconds will result in a chest rise.

**Events:** Two categories are available here. One concerns the physical activities that the student may elect to do during patient assessment and treatment. The other is the medication list.

In the Action drop down menu you will find a list of items like 12 lead ECG; Combitube, IV Line, and oxygen administered. In the Session mode, described later, these activity selections appear in chronological order when you confirm the selection by tapping the *OK* button. The same holds true for the Medication list. These 40, alphabetized, AHA-protocol drugs allow you the opportunity to determine if the selected drug is given in the correct, too little, or too much dosage by tapping the box with the -, +, or = signs

**Scenarios** Once you are familiar with the location of the features you can set up your own scenario, or start from a pre-arranged one from the Scenario section. The basic premise is that for each scenario you start at a base time of zero. You may then add physiologic settings that are to be present when the student approaches the manikin, i.e., normal sinus rhythm, pulse 72, B/P 120/ 80, respirations 10, normal heart and lung sounds (start up default settings on the manikin). Check out the list of pre-set scenarios for examples of starting points for your scenarios. You may then build and save your own choices in the Scenario files. Set the onset times in the Scenario file for the complications you choose. You can also add complications during the exercises. Keep in mind that if you pull the PDA from the cable during a session, you may change any of the features on the PDA and then reinsert the PDA into the cable, tap the Sessions tab, and tap "Update Manikin." All of those changes you made out of the cradle are now communicated to the manikin and it will respond to those new settings.

**You have been supplied with a CD that contains the programming for your PC. Once the programming is installed you will be able to work on your**

**scenarios on your PC and transfer them back to the PDA via the hot sync feature.**

The program also has storage facilities for many students' attempts at treatment. If scenario attempts are thirty minutes in duration, the programming offers approximately 2000 students' records stored within the PDA unit. Any time you choose after saving the students' activities, you can download the records to your PC for chronological printouts in Word document format. These logged sessions are reported in a minutes: seconds (XX:YY) format. Prior to printing, use the edit feature on your PC to make comments to assist in reviews. Use these printouts for personal review with the students, or for self-critique by comparing between the expected results of teaching objectives and demonstrated skill levels.

**Cleaning and Storage:** *This manikin is not waterproof.* NOTE: *Keep printed material off the vinyl skin.* There is no way to remove ink from the vinyl. Your PDA STAT can be cleaned with any water-soluble household cleaner from the grocery store. Do not immerse the manikin! Do not flush the manikin! It's electric! Simply dampen a rag with the household cleaner and then scrub the manikin surface to remove dirt. Store your PDA STAT lying down, either covered on a stretcher or inside the carry box for better protection. Storing the manikin in the case that is stood up will result in deforming the kneecap areas of the thighs and cause difficulty in attaching the lower legs. Storage temperature should be at or near human comfort levels. Storing in conditions that are too warm or too cold temperatures will affect the flexibility of the vinyl and can lead to unexpected damage while handling the manikin. Short periods of temperature extremes for training will not cause problems. In short, treat your PDA STAT like a patient.

**WARRANTY:** Simulaids warrants their products to be free from defects in materials and/or workmanship for a period of three years from the date of purchase, as evidenced by the date on the invoice of the product shipment to the end user. This warranty expressly does not cover abuse, accidental or purposeful damage, or any form of modification to the product. This warranty does not cover moulage products. Only products manufactured at the Simulaids plant in Saugerties, NY receive this limited warranty status.

All other products sold through Simulaids, but manufactured elsewhere, are subject to the warranties supplied by the product manufacturer. These warranties may differ from the Simulaids' warranty.

**RETURN POLICY:** Simulaids reserves the right to either repair or replace affected parts or the entire unit, at their sole discretion, after investigating and reviewing the actual product and the damage. In most instances, a digital photo of the product in question showing the damage will help qualify a product for return to the factory. At no time will any product be accepted without proper return authorization issued by Simulaids. Please contact our Customer Service Department to arrange a return and obtain a RGA number. Freight and Shipping charges are the sole responsibility of the end user. No product will be received with shipping charges due. Serial number and invoice number from the agency through whom the product was purchased must be provided for warranty repairs. No return authorization number will be provided without this information. Should you have any questions or wish further information on any product we manufacture call or write our Customer Service Department. **PDA TIPS** To *check the battery level* of the PDA, tap the “house” icon in the lower left of the PDA. This will bring up a list of all of the files on the PDA, and show you a battery in the top margin of the screen. The colored line indicates how much life is left in the battery. If it is below 1/3 life, recharge the batteries now. Following these steps should ensure that you will have sufficient power to operate the PDA while using the manikin. If the manikin becomes slow in responding to your commands on the PDA, check the battery life again. It is the only reason why the manikin should falter during use. If the battery dies, you will have to recharge the battery and hot sync the PDA again.

**Hot Sync Button error:** For those users having a serial cradle with a hot sync button, you may inadvertently strike the hot sync button while using the PDA. When that happens the manikin will not respond to any PDA signals. To correct this, remove the PDA from the cradle and cancel the HotSync operation by tapping on the “Cancel” button in the HotSync screen. After the HotSync operation has been canceled, restart the STAT PDA program by tapping on the STAT icon in the main screen. Unplug the manikin (or switch if off) and then re-energize it to eliminate any potential problems caused when the hot sync button was hit. Place the PDA back in the cradle. From any of the simulation selection screens, tap “Session.” A drop-down menu will appear. Tap “Update Manikin.” This will restore the manikin operation to the start-up default conditions.



## **PDA STAT TROUBLE SHOOTING GUIDE September 2005**

**NO RESPONSE FROM THE AIR COMPRESSOR** If it is not running, make sure that the electrical connections are tight and properly mated, (Export models, recheck the converter plug for appropriate direction, type and service) then check the fuse in the top of the electronics box inside the chest. To access the fuse receptacle, remove the chest overlay, pull the hairpins and washer off both sides of the chest and clavicle area, gently lift the chest far enough to release the CPR wheel wire from the eyelet screwed into the upper chest post on the superior side of the compression spring. Then gently lift the chest enough to expose the fuse receptacle. Release the fuse from the holder on the right side of the sloping area of the electronic box by depressing the disk and turning it. Replace the fuse and reinstall it. If all of these things are correct, you should be able to feel the compressor vibrating in the right thigh. If not, call the tech support hot line.

**PULSES:** If no pulses, check that the air compressor is running (you can feel the vibration in the right thigh if it is operational). If it is not running, make sure that the electrical connections are tight and properly mated, then check the fuse in the top of the electronics box inside the chest. Replace the fuse if necessary. If all of these things are correct, you should be able to feel the compressor vibrating in the right thigh. If not, call the tech support hot line. If you have **very weak, or no pulses**, start at the PDA and make sure the blood pressure is above 100 systolic, and the diastolic pressure is less. If the B/P is over 70 and the tongue inflates, then check the pulse tube connections, starting with the knee joints. Make sure the connectors are solidly attached to the tubing coming from the upper leg. If they are pulled loose they will act like a drain on the air pressure needed to drive the upper pulses. The same will hold true if the pulse lines from the arms are disconnected from the ports on the outside of the electronics box inside the chest. Another place to check for disconnections is on the femoral pulse connectors on the outside of the electronic box near the leg universals. If there are no disconnected or loosely connected tubing, and the tongue does not inflate, call the tech support hot line.

**B/P ARM:** If you cannot get a blood pressure, first check to make sure that the B/P tubing is attached to the sphygmomanometer, by way of the T barbed connector, and the manikin's left-shoulder, lateral port. Once that is connected, go to the PDA attached to the manikin's serial cradle. Access the heart screen and set the B/P volume to level four and the B/P systolic pressure above 100 mmHg. If you are still unable to take a B/P, remove the chest overlay, pull the hairpins and washer off both sides of the chest, gently lift the chest far enough to release the CPR wheel wire from the eyelet screwed in the upper chest post on the superior side of the compression spring. Then gently lift the chest enough to expose the left arm joint inside the torso. Follow the black wire exiting the arm pipe to the opposite side of the manikin and make sure it is firmly seated in the connector on the sloped area of the box that matches the black wire, white plastic, connector. If these connections are solid, disconnect the speaker plug and test the speaker wire for continuity. If that is negative, call the tech hot line. If the speaker wires have continuity, and you still don't have a B/P, call the tech hot line.

**HEART AND LUNG SOUNDS** If you cannot hear either heart or lung sounds at the speaker positions, start at the PDA with it connected to the manikin's cable. Click the PEA button and listen for sounds and check for pulses. If you have neither, click the PEA button again and check for sounds and pulses. If there is still no sounds, then go to both the heart and lung screens and make sure the volume controls are set at level *four*, and check to see that the manikin is not in *VF* or *Asystole*. Listen again for sounds at the speaker sites. If you still have no sounds, unplug the manikin and plug it back in. If you still have no heart or lung sounds, use the PDA and go to the *session* drop down list and choose *update manikin*. If you still don't have heart or lung sounds, remove the overlay from the chest, disconnect the pins from the sides and top of the chest wall, and gently raise the rib section until you can unhook the CPR wheel wire from the eyelet screwed in the upper chest post on the superior side of the compression spring. Lift the entire chest plate a little further until you can reach the electronic connections on the sloped, top, right side of the large white plastic box inside the manikin. Gently push down on each connection to determine that they are fully seated and attached. Check again for heart and lung sounds. Reassemble the unit in reverse order. If you still do not have heart or lung sounds, call the tech support hot line. If you have one set of sounds, but not the other after these steps, call the tech support hot line.



**There is No Response to Rescue Ventilation When Manikin isn't spontaneously breathing:** If your manikin is not spontaneously breathing, you should be able to ventilate the unit with a BVM and see the chest rise and hear lung sounds. Both of these responses to ventilation occur when sufficient pressure builds up in the airway. Make sure your seal is good around the mouth when ventilating. If the chest is not rising and the lung sounds are not present, check to see that the cricoid membrane tape is securely fastened to the anatomy under the neck skin, and that there are no holes in the membrane. Once the cric area is secured, the manikin should ventilate with both chest rise and lung sounds appropriate to ventilation skill. If you expect the manikin to be spontaneously breathing and it is not, go to the *Lung* screen and make sure that the breathing rate is set above zero and then go to the *Heart* screen and make sure the manikin is not in *VF* or *Asystole*.

### **PDA STAT REPLACEMENT PARTS**

| <b>Description</b>                      | <b>Item #</b> | <b>Included with purchase</b> |
|---|---------------|-------------------------------|
| Cricothyrotomy Replacement Skin (10 Pk) | 424           | x                             |
| Pneumothorax Pads (4 Pk)                | 423           | x                             |
| Injection Site (4 Pk)                   | 302           | x                             |
| Simulated Blood Powder                  | 225           | 2                             |
| IV Replacement Skin                     | 390           |                               |
| IV Replacement Vein Kit                 | 367           | x                             |
| Reservoir Bag                           | 144           | 3                             |
| Stomach                                 | 145           | x                             |
| Lungs                                   | 902           | x                             |
| Overlay, teaching                       | SA325         |                               |
| Teeth                                   | 303           | 6                             |
| Manual Defib adapters                   | 053           | x                             |
| Palm 125                                | PP4575        | x                             |
| Palm Cradle                             | PP4576        | x                             |
| Carry Case                              | PP3600        | x                             |
| Membrane tape                           | PP0283        | x                             |
| Syringe                                 | PP2161        | x                             |
| Syringe                                 | PP2105        | x                             |
| Lubricant                               | PP0362        | x                             |





Casualty Kits create additional patient care simulations for PDA STAT.

**Use this kit and wounds to further challenge your students during PDA STAT scenarios. Burns, fractures, and avulsions add to the multi tasking realism of Simulaids based training evolutions.**



## **Number 818**

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