SSCOR

THE ULTIMATE GUIDE

TO PURCHASING A PORTABLE EMERGENCY SUCTION DEVICE

INTRODUCTION

In its 2010 publication, Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science, the American Heart Association states:

"Both portable and installed suction devices should be available for resuscitation emergencies." [i]

Yet many hospitals still do not stock these lifesaving devices.

Purchasing an emergency medical suction device represents the ultimate commitment to patient safety. Even in large hospitals, generator failures and natural disasters can cause the installed suction systems you rely on to fail.

When your patient has a compromised airway in an area where wall vacuum is not available, or when your wall suction goes down, how will you manage?

If you're considering equipping your hospital with portable emergency suction devices, you may have a lot of questions, such as:

- How many devices do we need?
- Can our own biomedical engineers service these devices?
- Will we need to invest in additional consumables to use these devices?

This eBook provides answers to those questions and others. You may want to keep this guide handy to help with the decision-making process leading up to your emergency medical suction purchase.

Let's look at the most important considerations regarding portable medical suction devices.

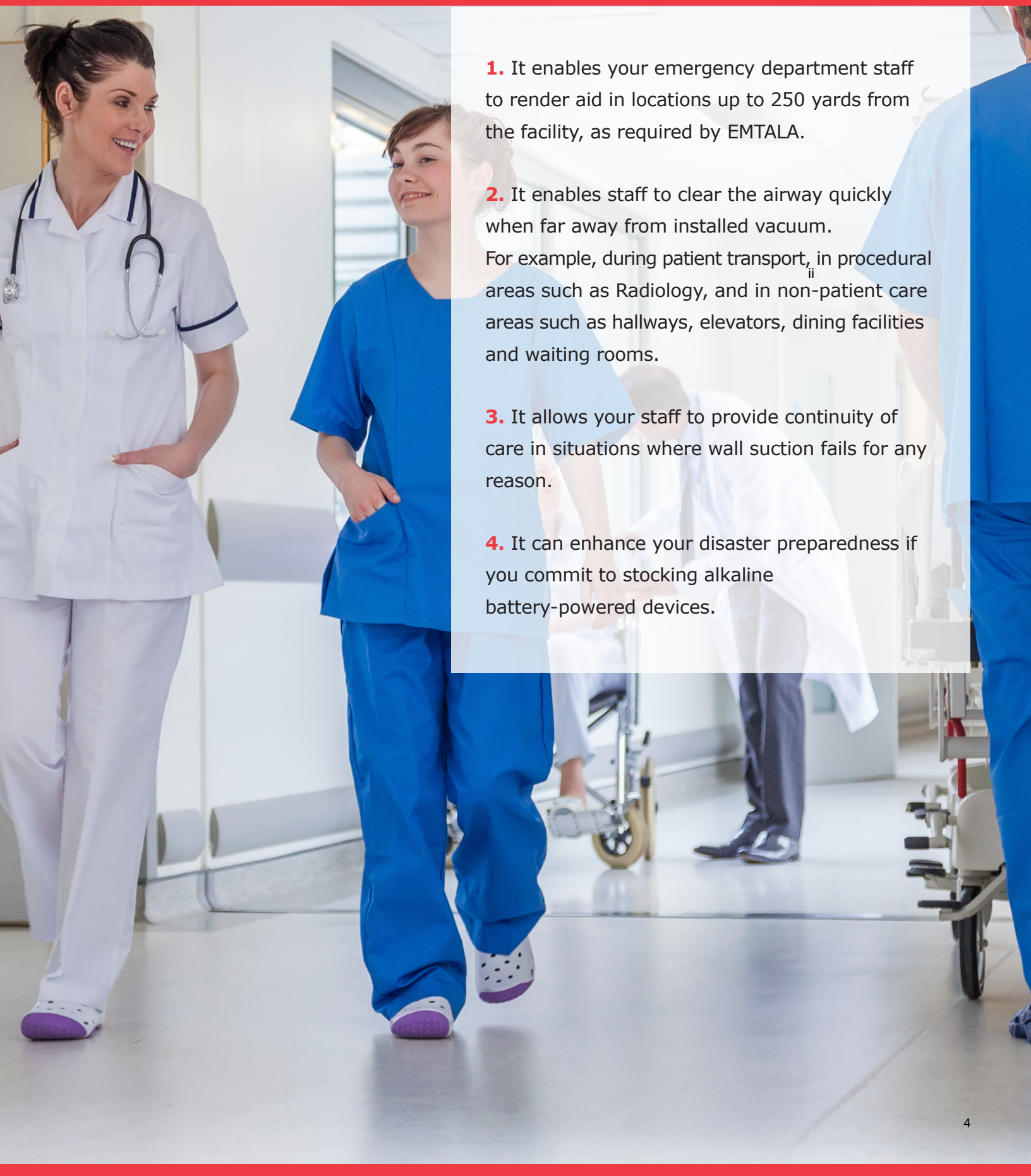
WHY PORTABLE EMERGENCY SUCTION?

You can't predict where an airway emergency might occur. In a hospital setting, visitors and patients alike can collapse far away from an installed suction port in the wall. You need to deliver lifesaving care wherever the emergency occurs.

And sometimes installed suction can fail system-wide. In that event, you need portable suction machines so your staff can care for intubated patients without interruption.

Furthermore, certain federal rules and regulations require a hospital to provide care to patients who present outside the walls of your building, far from areas set up for patient care.

Here are the top four reasons every hospital should consider equipping its facilities with portable emergency suction devices:



1. It enables your emergency department staff to render aid in locations up to 250 yards from the facility, as required by EMTALA.

2. It enables staff to clear the airway quickly when far away from installed vacuum.
For example, during patient transport,[ii] in procedural areas such as Radiology, and in non-patient care areas such as hallways, elevators, dining facilities and waiting rooms.

3. It allows your staff to provide continuity of care in situations where wall suction fails for any reason.

4. It can enhance your disaster preparedness if you commit to stocking alkaline battery-powered devices.

HOW MANY DEVICES DOES OUR FACILITY NEED?

Many hospitals determine the number of portable emergency suction devices needed by following the informal rule of **pairing one emergency medical suction device with every crash cart.** This is a convenient way to calculate how many units your facility may need.

However in some cases, one unit per crash cart may not be enough and you may want to stock multiple devices in certain locations. For example:

- Critical care departments may hold multiple intubated patients who will be vulnerable to injury in the event in-wall suction goes down throughout the facility.
- In the emergency department, stocking multiple portable suction devices offers a backup system for patients inside the facility and allows you to treat patients who present off-campus, thereby complying with EMTALA's "250-yard rule".[iii]

It's also important to consider public areas, because no one can predict where an airway emergency might occur on your campus.

The easiest way to determine how many portable suction machines you need is to calculate the total number of crash carts in your facility, and then add additional units for the critical areas referenced above.

This handy worksheet can help you visualize where a portable suction unit could be effectively deployed.

Just fill in the number for each location where a portable aspirator would reside. For example, for "crash carts," fill in the total number of crash carts your facility maintains.

☐	☐	☐	☐
Crash Carts	**Operating Rooms**	**Emergency Departments**	**Critical Care Areas**

☐	☐	☐
Response Kits (Outside Hospital)	**Public Areas (Such As Cafeterias)**	**Outdoor Common Areas**

KEY CONSIDERATIONS FOR PURCHASING PORTABLE MEDICAL SUCTION DEVICE

To obtain the device that best meets your hospital's needs, you may want to perform a comparison of functionality and features of various devices. Here's what to look for.

Suction

Since the purpose of a portable suction device is to enable medical professionals to remove secretions or contaminants from the airway, suction power becomes a crucial differentiator when evaluating various devices. A device that provides too little suction will be useless in certain emergencies, and a device that cannot be regulated can damage delicate tissues.

Fact: The American Heart Association guidelines state: "The amount of suction should be adjustable for use in children and intubated patients." [iv]

A portable suction device should provide a vacuum greater than 300 mmHg to perform effectively for adult oropharyngeal procedures. Ideally, the device should be adjustable so it can serve pediatric, neonatal and intubated patients as well.

You may also want to consider portable suction devices that adjust in a similar fashion to traditional wall suction ports. In an emergency, no healthcare professional wants to fumble while figuring out how to use an unfamiliar device. When choosing a portable suction machine, look for familiar features any clinician would instantly recognize and be able to use.

Key Questions to Ask Your Vendor:

- Does the unit provide negative vacuum at 300 mmHg or greater?
- Can suction be reduced below 50 mmHg for use on pediatric patients?
- How is suction adjusted on this unit? (For example, does the unit use a knob to adjust suction, or does it use a soft keypad with up/down arrows?)

Flow Rate

Flow rate refers to the amount of air or liquid that can be moved by suction in a given time period. In portable medical suction devices, the common specification for this measurement is airflow.

A good portable suction device should have airflow of at least 30 liters per minute. Lower flow rates may not deliver the results you expect from a suction device. Make sure that the unit you choose delivers the airflow necessary for the anticipated applications of your next emergency portable suction device.

Key Questions to Ask Your Vendor:

- What is the minimum air flow of this unit?
- How was this rate established?

And, don't just ask. Have it demonstrated to you by a flow meter placed at the end of the patient tubing.

Consumables

Many medical devices require consumable parts to function. Flexible defibrillator pads that are discarded after use represent one example of a consumable.

Portable medical suction devices use several consumable parts: canisters, tubing, wands, batteries and more. When a device requires proprietary consumables such as non-standard canisters, your post-purchase costs can increase. Stocking issues also may ensue. For example, if your portable suction machines will only work with one specific type of canister, how can you stock this item to make it readily available yet avoid confusion with the standard canisters used throughout the rest of your facility?

Your best bet is to obtain portable suction machines that can use the suction canisters, wands and other attachments your facility already stocks. This will eliminate the need to warehouse multiple different parts for otherwise similar devices.

In terms of the device's battery, look for units that use lead-acid or alkaline batteries to provide back-up power. These common batteries last a long time when properly cared for and can be replaced relatively inexpensively, as compared to lithium-ion batteries or other more costly battery chemistries.

Key Questions to Ask Your Vendor:

- Will this device accommodate our current suction canisters?
- If not, can the device be customized to use our canisters?
- What is the cost for this customization?
- What type of patient tubing does this device use?
- Does the device use standard suction wands and other attachments?
- What type of battery does this device require?
- How much do replacement batteries cost?
- Will the company replace the battery when it wears out?

Maintenance

You may have noticed that many types of medical devices contain warnings stamped on the body of the instrument that say "do not open case" or "opening case voids warranty."

These devices cannot be serviced by your hospital's biomedical engineers and must be returned to the factory or to an authorized service dealer for routine maintenance.

This not only takes the unit out of service for an extended period of time, but it may be expensive to ship the items back and forth – adding yet another potential post-purchase cost.

The best portable medical suction devices are field serviceable and designed so that a hospital's biomedical engineers can perform all routine maintenance. This avoids the need to take the device out of operation to ship it to a third party for servicing, as well as the expense involved with external servicing.

As well, if a component (such as a computer circuit board) fails in a portable suction device, your hospital's own biomedical engineers should be able to replace it without having to ship the device out or scrap it entirely.

Make sure the device you choose has readily available components, including batteries and replacement parts. It may be a good idea to involve your biomedical engineering team in evaluating portable suction machines - they will know all the right questions to ask about servicing and parts.

Key Questions to Ask Your Vendor:

- Is this device field serviceable by our own biomedical engineers?
- If not, what is the cost for maintenance?
- What is the turnaround time if we have to take our device out of service and ship it away for routine maintenance?
- What types of routine maintenance does this device require?
- If one component of the device fails for any reason, can it be replaced? Or must the whole device be scrapped?
- Are replacement parts readily available?

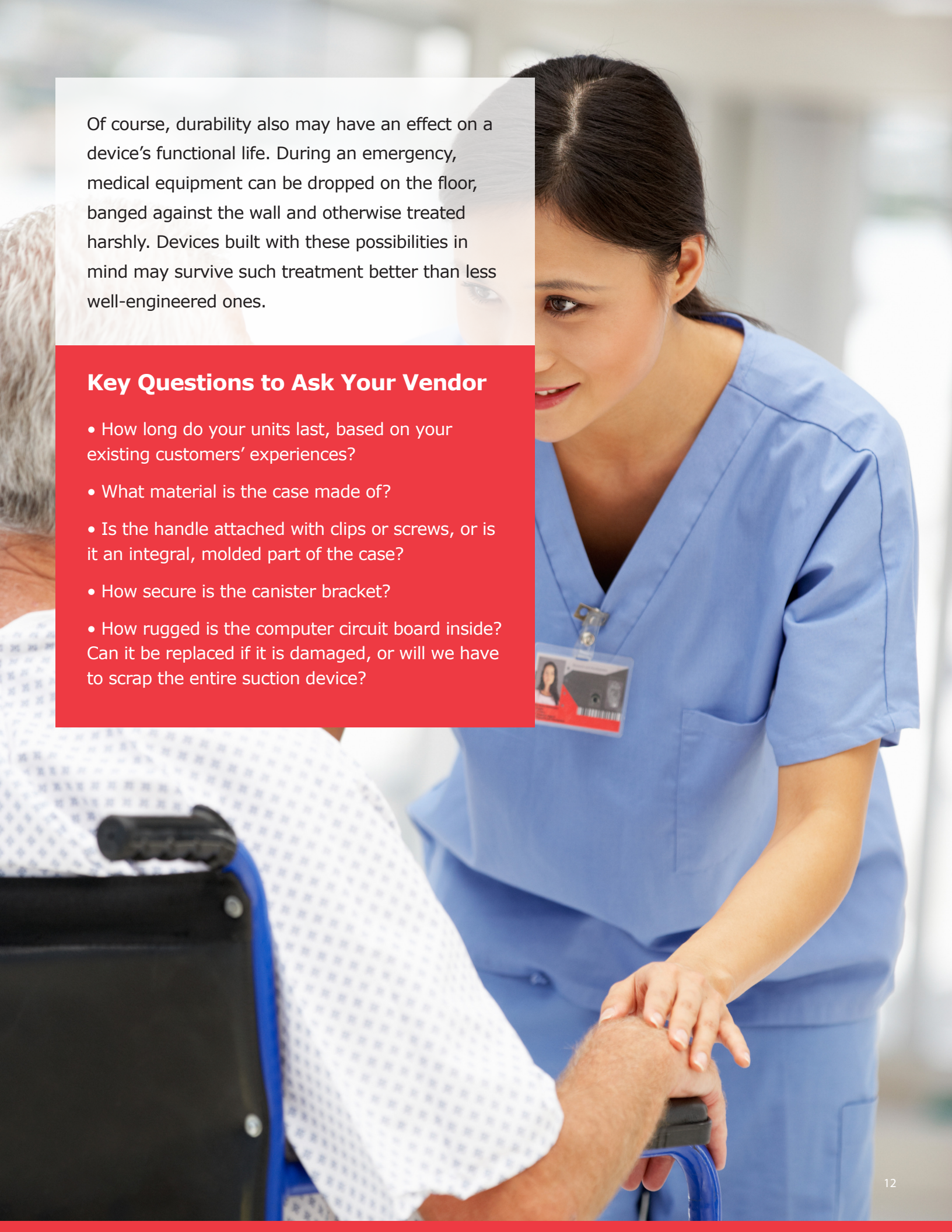
Durability and Life Expectancy

All nurses know 'durable' medical equipment isn't always so durable. It often breaks or fails right when you need it most.

Of course, every medical device has a limited functional life expectancy. Some devices are only built to last a few weeks, while others are designed to last for many years. When it comes to a portable medical suction machine, you want to invest in durable units with a lengthy prospective lifespan in order to maximize the financial viability of your purchase.

The U.S. Department of the Army's TB MED 7 technical bulletin pegs the useful life of any "suction apparatus" at 10 years. [vi]

This estimate provides a helpful starting point for evaluating how long your machines might last.



Of course, durability also may have an effect on a device's functional life. During an emergency, medical equipment can be dropped on the floor, banged against the wall and otherwise treated harshly. Devices built with these possibilities in mind may survive such treatment better than less well-engineered ones.

Key Questions to Ask Your Vendor

- How long do your units last, based on your existing customers' experiences?
- What material is the case made of?
- Is the handle attached with clips or screws, or is it an integral, molded part of the case?
- How secure is the canister bracket?
- How rugged is the computer circuit board inside? Can it be replaced if it is damaged, or will we have to scrap the entire suction device?

Space Planning Considerations

Clinical staff usually love to "geek out" over new medical equipment when it arrives, but your facility likely doesn't have unlimited warehouse space to store all the 'toys' your staff would like to have.

The ideal storage solution for portable suction equipment is to stock it at the point of care. For many hospitals, that means stocking portable suction devices on crash carts.

However, a cluttered crash cart is an unsafe crash cart. Ideally, you should look for portable aspirators that can be attached to the side of the cart to avoid taking up valuable 'real estate' on top of the cart. Mounting a portable suction machine on the side of the crash cart also makes it readily available for airway emergencies that don't require deploying the entire cart.

You may want to keep a portable suction machine in an area where there normally is not a crash cart, or have more than one machine in a particular department. As previously discussed, critical care areas and the emergency department often benefit from having multiple portable suction units on hand. In that case, it's a good idea to look at the overall dimensions of the device to see if you can easily store it in a location where it can remain on charge and be readily accessed while remaining out of the way.

Key Questions to Ask Your Vendor:

- Can this device be mounted on our crash carts?
- Do we need to purchase a separate bracket for this purpose?
- Can we use a bracket to mount the device someplace other than the crash cart?
- How big is the device, overall?
- How heavy is the device?

Ease of Use

In an emergency, no one has time to get out an instruction manual to figure out how to operate a medical device. It is particularly important that infrequently used emergency equipment presents a familiar-looking interface to clinical staff so they can successfully use it during a crisis situation with little to no training.

For portable suction devices, a familiar-looking interface might include adjustment knobs that resemble the kind typically employed with wall suction, easy-to-read gauges that are clearly labeled, and a prominent on/off switch. Ideally, your staff should require little to no training to operate a portable suction device. It should function like a standard, installed suction port.

Key Questions to Ask Your Vendor

- Is vendor-supplied training available to our staff?
- How is any training delivered (e.g.: in-person class, on-demand video, etc.)?
- Is training free?
- Is additional training available if we would like it?

CONCLUSION

Portable medical suction devices can enhance patient safety. Stocking these devices also demonstrates to your clinical staff that you support them and want to make available every tool that can aid them in performing at the highest level.

Purchasing and deploying portable suction machines can be easy when you use the worksheets and checklists provided in this eBook. Feel free to print out copies of this book to share with others, and use the tools provided when you interview vendors.

If you have additional questions about the role of portable aspirators or how to use them in your hospital, please contact us. We stand ready to assist you in any way we can.

ABOUT SSCOR

Since 1980, our family-owned business has manufactured medical devices that help clear the airway. Unlike some companies that manufacture thousands of different kinds of medical devices, we focus on doing one thing and doing it extremely well: portable suction machines.

We are an FDA registered establishment. Many of our products are CE marked and used throughout Europe and the rest of the world. Since our inception, SSCOR has relied on the input of healthcare professionals to develop portable suction machines that meet their needs. We welcome your feedback on the content of this eBook and will gladly answer any questions you may have about our suction devices.

---

i http://circ.ahajournals.org/content/122/18_suppl_3/S729.full

ii http://www.aha.org/advocacy-issues/legal/emtala-q-and-a.shtml

iii http://www.aha.org/advocacy-issues/legal/emtala-q-and-a.shtml

iv http://circ.ahajournals.org/content/122/18_suppl_3/S729.full

v http://circ.ahajournals.org/content/122/18_suppl_3/S729.full

vi http://armypubs.army.mil/med/DR_pubs/dr_a/pdf/tbmed7.pdf