



PHILIPS

Cardiac Resuscitation

HeartStart OnSite

Lead the way
to save a life

Philips HeartStart OnSite defibrillator

For the **extraordinary** moment

With access to the right equipment, training and support, everyone can help save a life. Philips HeartStart OnSite defibrillator acts as your personal coach to guide you through the process of treating a victim of suspected sudden cardiac arrest.¹ The OnSite AED provides real-time guidance through simple, step-by-step voice commands and CPR coaching.¹



Ready to act. Ready to go.

Designed for the ordinary person in the extraordinary moment, OnSite is ready to act and ready to go. It allows virtually anyone to treat the most common cause of sudden cardiac arrest (SCA) by delivering a shock quickly and effectively, wherever SCA happens.

Guides you through every step

Just pull the green handle to activate your OnSite defibrillator, and voice instructions will guide you through the entire process – from placing each pad on the patient to performing cardiopulmonary resuscitation (CPR) and delivering a defibrillation shock.¹ It even guides you on the frequency and depth of chest compressions, as well as breaths.¹

Use OnSite to train

Learning to use the OnSite is easy. You can install a special pads cartridge that temporarily turns your OnSite defibrillator into a trainer. Also available are a collection of videos that describe every aspect of the defibrillator.

Virtually ready to use out of the box

With OnSite's Ready-Pack configuration arrives virtually ready to rescue.

- Arrives with the SMART Pads cartridge and battery already installed
- Is positioned inside the carry case with a spare SMART Pads cartridge in place
- Just pull the green tab to launch the initial self-test
- Conducts a series of automatic self-tests daily, weekly, and monthly, including testing the pads



A simple, step-by-step process with voice instructions empowers even the most inexperienced responders.

What's the impact?

Cardiovascular disease is a leading cause of global mortality, accounting for almost 18 million deaths annually or 31% of all global mortality.² In developing countries, it causes twice as many deaths as HIV, malaria and TB combined.³ The survival rate from sudden cardiac arrest is less than 1% worldwide and close to 5% in the US.³ Over half the victims of the most common cause of SCA can survive when treated early with CPR and shock from a defibrillator.⁴

Save time. **Save lives.**

When you observe someone suffering from a suspected SCA, you should act quickly. We've equipped OnSite with integrated SMART Pads. Just place the SMART Pads on the person's bare skin, and they will provide feedback to the AED so it can adapt its voice instructions to your actions and your pace. The SMART Pads sense when they have been placed on the patient and when you've completed each step. The system won't announce the next step until you are ready. Prompts are repeated and rephrased, and include additional instruction to aid understanding.

Fast, shock delivery

Studies show that minimizing time to shock after CPR may improve survival.⁵⁻⁸ With patented Quick Shock, OnSite is fast at delivering shock treatment after CPR — typically in just eight seconds.⁹



Weighing just 1.5 kg (3.3 lbs), the HeartStart OnSite defibrillator is small and lightweight.

Personalized therapy. Enhanced care.

OnSite is designed for use on anyone, with features that personalize therapy. SMART Analysis automatically assesses the person's heart rhythm and will only deliver a shock if it is needed — even if the Shock button is pressed. You don't need to worry about shocking someone unnecessarily.



When used on infants and children, the system senses when the special Infant/Child SMART Pads cartridge is installed and automatically adjusts to a lower energy level.* It also provides coaching for performing infant/child CPR.¹⁰

How easy is it?

OnSite is made for people who have never used a defibrillator before. The first and only AED available without a prescription in the United States, it is designed to be easy to set up and use.



Establishing a successful program

As a world leader in AEDs, we're also a leader in providing products and services designed to help you establish and maintain a successful AED program. Smart Track, our web-based AED and accessory management tool, helps you keep track of your devices, and can even send an automatic email when it is time to replace pads or batteries. You can also choose to use our medical direction services to provide advice on your AED program and write any necessary prescriptions for pediatric pads cartridges.* In addition, we offer access to training providers and post-event support.

* The Infant/Child SMART Pads cartridge is sold separately, and is available only under the order of a physician, by prescription only in the United States.

Answers for your questions

Sudden Cardiac Arrest

Q: What causes SCA?

A: SCA occurs when the electrical system of the heart becomes chaotic, causing it to stop beating effectively. Lacking proper blood flow, the person becomes unresponsive and stops breathing normally. CPR is important, but it alone cannot restore a normal heart rhythm.^{11,12} A shock from a defibrillator is the most effective way to restore the heart's normal pumping rhythm.¹⁴

Technique

Q: What if I don't know the proper technique?

A: OnSite acts as your personal coach to guide you through the process of treating a victim of suspected sudden cardiac arrest. OnSite provides real-time guidance through simple, step-by-step voice commands and CPR coaching.

Q: How soon must the defibrillator shock be administered?

A: The person's best chance of survival is to receive that shock within 3-5 minutes of collapse.^{15,16} A defibrillator will not save every person who experiences SCA, but more lives could be saved if those affected were reached more quickly.¹⁵⁻¹⁷ Your quick response makes a real difference.

Q: How do I know if a shock is needed?

A: The defibrillator assesses the patient's heart rhythm. If a shock is advised, it directs you to press the flashing orange Shock button. If the defibrillator determines that a shock is not called for, you cannot deliver a shock, even if you press the Shock button.

Q: What if I don't know where to put the pads?

A: The SMART Pads cartridge contains two adhesive pads that have pictures on them to show you where to place the pads on the person's bare skin, and voice instructions will remind you to look at the pictures. The pads are "smart" because they sense when they have been removed from the cartridge, peeled from their liners, and applied to the patient, causing the voice instruction to adjust to your actions.

Q: What do I tell the professionals when they arrive?

A: They will know what questions to ask you. If an Emergency Medical Services (EMS) responder needs a summary of care, it can be retrieved from the defibrillator's internal memory. The EMS provider simply presses the i-button, and OnSite will verbally recount events from its last clinical use.

Technology

Q: How does OnSite assess heart rhythm?

A: OnSite includes highly proven Philips technology for heart rhythm assessment, called SMART Analysis. SMART Analysis is a sophisticated algorithm that simultaneously evaluates several attributes of a person's heart rhythm to determine if the rhythm is shockable.

Q: How does OnSite know how much energy to deliver?

A: A technology called SMART Biphasic Impedance Compensation helps OnSite deliver the optimal amount of current and energy. Smart Biphasic is the first biphasic therapy with sufficient evidence to be classed "standard of care" and "intervention of choice" by the American Heart Association.¹²⁻¹⁷ SMART Analysis and SMART Biphasic's effectiveness are backed by over 40 published, peer-reviewed studies.¹⁸

Training

Q: Is training available?

A: Yes. A special training SMART Pads cartridge can be installed in the defibrillator. It disables the defibrillator's ability to shock, while walking you through patient care scenarios. We also offer easily accessible, online training that discusses everything from setting up an AED program to replacing your defibrillator's battery.

HeartStart OnSite defibrillator specifications

Defibrillator	
Defibrillator family	HS1. Order M5066A
Standard configuration	Defibrillator, battery, adult SMART Pads cartridge (1 set), Setup and Maintenance Guides, Owner's Manual, Quick Reference Guide, date sticker
HeartStart OnSite Ready-Pack configuration	Order option R01. Defibrillator, battery, carry case, adult SMART Pads (1 pre-installed set, 1 spare set), Setup and Maintenance Guides, Owner's Manual, Quick Reference Guide, date sticker
Waveform	Truncated Exponential Biphasic; waveform parameters adjusted as a function of each patient's impedance
Therapy	Adult defibrillation: peak current 32 A (150 J nominal into a 50-ohm load) Pediatric defibrillation with optional Infant/Child SMART Pads cartridge installed: peak current 19 A (50 J nominal into 50-ohm load)
Shock-to-shock cycle time	Typically less than 20 seconds between shocks in a series
Quick Shock	Able to deliver a shock after the end of a CPR interval, typically in 8 seconds
Voice instructions	Detailed voice messages guide responder through use of the defibrillator
CPR coaching	Instructions for adult or infant/child CPR available at user's option
Shock delivery	Via adhesive pads placed on patient's bare skin as illustrated on pads
Controls	Green SMART Pads cartridge handle, green On/Off button, blue i-button, orange Shock button
Indicators	Ready light; blue i-button; caution light, Shock button lights up when shock is advised
Physical	
Size	7 cm x 19 cm x 21 cm (2.8" x 7.4" x 8.3") D x H x W
Weight	With battery and pads cartridge: 1.5 kg (3.3 lbs.) Without battery or pads cartridge: 1 kg (2.4 lbs.)
Environmental/physical requirements	
Sealing	Solid objects per EN60529 class IP2X Drip-proof per EN60529 class IPX1
Temperature	Operating: 0° – 50° C (32° – 122° F) Standby: 10° – 43° C (50° – 109° F)
Humidity	Operating: 0% to 95% relative, non-condensing Standby: 0% to 75% relative, non-condensing
Altitude	Operating: 0 to 15,000 feet Standby: 0 to 8,500 feet > 48 hours and 8,500 to 15,000 feet < 48 hours
Shock/drop abuse	Withstands one-meter drop to any edge, corner or surface
Vibration	Meets EN1789 random and swept sine, road ambulance specification in operating and standby states
EMI (radiated/immunity)	Meets EN55011 Group 1 Level B Class B and EN61000-4-3
Data recording and transmission	
Infrared	Wireless transmission of event data to a Smartphone or PC, using the IrDA protocol
Data stored	First 15 minutes of ECG and the entire incident's events and analysis decisions

Patient analysis system	
Patient analysis	Evaluates patient ECG to determine if a rhythm is shockable. Rhythms considered shockable are ventricular fibrillation (VF) and certain ventricular tachycardias (VT) associated with lack of circulation. For safety reasons, some VT rhythms associated with circulation will not be interpreted as shockable, and some very low-amplitude or low-frequency rhythms will not be interpreted as shockable VF.
Sensitivity/specificity	Meets AAMI DF80 guidelines and AHA recommendations for adult defibrillation (Circulation 1997;95:1677-1682)
Artifact detection	The effects of pacemaker artifact and electrical noise are minimized
Battery (M5070A)	
Type	9 Volt DC, 4.2 Ah, composed of disposable long-life lithium manganese dioxide primary cells
Capacity	Minimum 200 shocks or 4 hours of operating time (EN 60601-2-4:2003)
Install-by date	Battery is labeled with an install-by date of at least 5 years from date of manufacture
Standby life	Four years typical when battery is installed by the install-by date (will power the AED in standby state within the specified standby temperature range, assuming 1 battery insertion test and no defibrillation uses)
SMART Pads	
Adult SMART Pads cartridge	M5071A defibrillation pads for patients 8 years of age and older or 25 kg (55 lbs.) and over
Infant/Child SMART Pads cartridge	M5072A defibrillation pads for patients under 8 years of age or 25 kg (55 lbs.); by prescription only
Active surface area	85 cm ² (13.2") each
Cable length	Adult SMART Pads: 137.1 cm (54") Infant/Child SMART Pads: 101.6 cm (40")
Use-by date	Cartridge is labeled with a use-by date of at least 2 years from date of manufacture
Training SMART Pads	
M5073A	Adult Training SMART Pads cartridge
M5074A	Infant/Child Training SMART Pads cartridge
Function	Training SMART Pads cartridges feature 8 real-world training scripts; used with training mat (included) or with adapters on manikins
Automated and user-activated self-tests	
Daily automatic self-tests	Tests internal circuitry, waveform delivery system, pads cartridge, and battery capacity
Pads integrity test	Specifically tests readiness-for-use of pads (gel moisture)
Battery insertion test	Upon battery insertion, extensive automatic self-tests and user-interactive test check device readiness
Status Indicators	Blinking green "Ready" light indicates ready for use; audible "chirp" indicates need for maintenance

* Refer to the HeartStart OnSite Defibrillator Owner's Manual for detailed product instructions. All specifications based on 25° C unless otherwise noted. The defibrillator and its accessories are made of latex-free materials.

- Travers, A. H., Perkins, G. D., Berg, R. A., Castren, M., Considine, J., Escalante, R., . . . Basic Life Support Chapter, C. (2015). Part 3: Adult basic life support and automated external defibrillation: 2015 international consensus on cardiopulmonary resuscitation and emergency cardiovascular care science with treatment recommendations. *Circulation*, 132(16 Suppl 1), S51-83. doi:10.1161/CIR.0000000000000272.
- World Health Organization. (2018). World health statistics 2018: Monitoring health for the sdgs, sustainable development goals. Retrieved from <http://apps.who.int/iris/bitstream/handle/10665/272596/9789241565585-eng.pdf?ua=1>.
- Mehra, R. (2007). Global public health problem of sudden cardiac death. *J Electrocardiol*, 40(6 Suppl), S118-122. [https://www.jecgonline.com/article/S0022-0736\(07\)00667-X/fulltext](https://www.jecgonline.com/article/S0022-0736(07)00667-X/fulltext) doi:10.1016/j.jelectrocard.2007.06.023.
- Koster RW, Baubin MA, Bossaert LL, et al. European Resuscitation Council Guidelines for Resuscitation 2010 Section 2. Adult basic life support and use of automated external defibrillators. *Resuscitation*. 2010;81(10):1277-1292. [https://www.resuscitationjournal.com/article/S0300-9572\(10\)00435-1/fulltext](https://www.resuscitationjournal.com/article/S0300-9572(10)00435-1/fulltext). Accessed August 10, 2018.
- Eftestol, T., Sunde, K., & Steen, P. A. (2002). Effects of interrupting precordial compressions on the calculated probability of defibrillation success during out-of-hospital cardiac arrest. *Circulation*, 105(19), 2270-2273. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/12010909> on August 20, 2018.
- Yu, T., Weil, M. H., Tang, W., Sun, S., Klouche, K., Povoas, H., & Bisera, J. (2002). Adverse outcomes of interrupted precordial compression during automated defibrillation. *Circulation*, 106(3), 368-372.
- Snyder, D., & Morgan, C. (2004). Wide variation in cardiopulmonary resuscitation interruption intervals among commercially available automated external defibrillators may affect survival despite high defibrillation efficacy. *Critical care medicine*, 32(9 Suppl), S421-S424. doi:10.1097/01.CCM.0000134265.35871.2B
- Edelson, D. P., Abella, B. S., Kramer-Johansen, J., Wik, L., Myklebust, H., Barry, A. M., . . . Becker, L. B. (2006). Effects of compression depth and pre-shock pauses predict defibrillation failure during cardiac arrest. *Resuscitation*, 71(2), 137-145. doi:<https://doi.org/10.1016/j.resuscitation.2006.04.008>
- Nichol, G., Sayre, M. R., Guerra, F., & Poole, J. (2017). Defibrillation for ventricular fibrillation: A shocking update. *Journal of the American College of Cardiology*, 70(12), 1496-1509. doi:<https://doi.org/10.1016/j.jacc.2017.07.778>.
- Atkins, D. L., Berger, S., Duff, J. P., Gonzales, J. C., Hunt, E. A., Joyner, B. L., . . . Schexnayder, S. M. (2015). Part 11: Pediatric basic life support and cardiopulmonary resuscitation quality: 2015 american heart association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*, 132(18 suppl 2), S519-S525. DOI - 10.1161/CIR.0000000000000265.
- Kleinman, M. E., Brennan, E. E., Goldberger, Z. D., Swor, R. A., Terry, M., Bobrow, B. J., . . . Rea, T. (2015). Part 5: Adult basic life support and cardiopulmonary resuscitation quality: 2015 american heart association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*, 132(18 suppl 2), S414-S435.
- Link, M. S., Atkins, D. L., Passman, R. S., Halperin, H. R., Samson, R. A., White, R. D., . . . Kerber, R. E. (2010). Part 6: Electrical therapies: Automated external defibrillators, defibrillation, cardioversion, and pacing: 2010 american heart association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation*, 122(18 Suppl 3), S706-719. doi:10.1161/CIRCULATIONAHA.110.970954.
- Aschieri, D., Penela, D., Pelizzoni, V., Guerra, F., Vermi, A. C., Rossi, L., . . . Capucci, A. (2018). Outcomes after sudden cardiac arrest in sports centres with and without on-site external defibrillators. *Heart*. doi:10.1136/heartjnl-2017-312441.
- Patil, K. D., Halperin, H. R., & Becker, L. B. (2015). Cardiac arrest resuscitation and reperfusion. *Circulation Research*, 116(12), 2041-2049. doi:10.1161/circresaha.116.304495.
- Scott, T. (2017). Use of automated external defibrillators saves lives. *Emergency Nurse*, 25(3), 5-5.
- Myat, A., Song, K.-J., & Rea, T. (2018). Out-of-hospital cardiac arrest: Current concepts. *The Lancet*, 391(10124), 970-979. doi:[https://doi.org/10.1016/S0140-6736\(18\)30472-0](https://doi.org/10.1016/S0140-6736(18)30472-0).
- Guidelines 2000 for cardiopulmonary resuscitation and emergency cardiovascular care. Part 4: The automated external defibrillator: Key link in the chain of survival. The american heart association in collaboration with the international liaison committee on resuscitation. (2000). *Circulation*, 102(8 Suppl), I60-76.
- Philips Medical Systems. (2009). Philips smart biphasic therapy. Retrieved from <https://www.usa.philips.com/healthcare/product/HC861304/heartstart-frx-automated-external-defibrillator>.

© 2018 Koninklijke Philips N.V. All rights are reserved.

Philips Healthcare reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.



Please visit www.philips.com/OnSite

Printed in The Netherlands.
4522 991 38071 * SEP 2018