



# Connected Care

Philips HeartStart connectivity and data management  
for EMS professionals

**PHILIPS**

# Flexible and reliable, like

Connected Care is the Philips approach to open data management solutions that simplify your workflow and help you do what you do best. By capturing, conveying, displaying, and managing clinical data – from the point of care to the point of need – Philips helps you to provide excellent patient care and achieve operational efficiency.

## Philips Connected Care solutions are:

### Flexible

Our wide range of networking connections, transmission strategies, and delivery options fit any kind of operation. Print, display, copy, fax, email, and forward via data card, *Bluetooth* wireless technology, or Ethernet. Whatever your workflow, Philips can accommodate it.

### Reliable

We provide solutions that allow fast and reliable data transmission to one or multiple destinations. Reliable and trackable automated download and delivery solutions ensure no data is left behind. And Philips solutions allow your responders to focus on providing patient care, rather than worrying about data transmission or documenting vitals during treatment and transport.

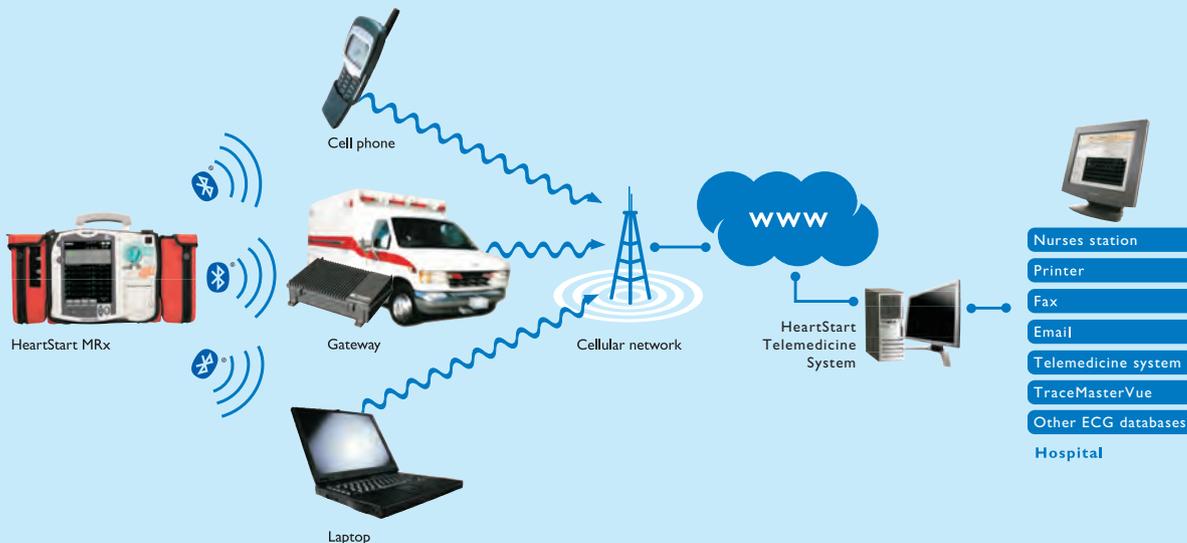
### Innovative

Among Philips many industry “firsts” are Bluetooth dial-up networking to transmit 12-lead ECGs to the Internet, and an Ethernet connection to move event summary files at LAN speed. Philips is the only company to offer an ALS monitor/defibrillator – the HeartStart MRx – capable of connecting via LAN or WiFi with the hospital’s patient monitoring network, streaming real-time data to a nursing station for remote alarming and surveillance.

### Open

You may choose to use Philips data management applications for the entire end-to-end solution or import Philips device data into your own electronic patient care reporting (ePCR) software. Philips lets you choose because after all, **it’s your data**. At Philips, we are “open for business.”

## Periodic clinical data transmission builds on the flexible, reliable, 12-lead transmission infrastructure



With a variety of options for data content, connectivity, access to the Internet and delivery schemes, Philips offers flexible, reliable, and comprehensive 12-lead transmission capabilities to get the information where you need it to go to prepare for the patient’s arrival and treatment.

## HeartStart Telemedicine System lets clinical users view inbound patients and their clinical status

The screenshot displays the HeartStart Telemedicine System interface. On the left, a 'Patients' panel shows an 'Inbound patient list (green = active)'. The main area is titled 'View Patient: 09060907372976a7' and includes a 'Transmissions' list with columns for 'Received' and 'Description'. A 'Waveform' window shows a 12-lead ECG with a callout: 'Latest waves, 12-leads, vitals'. Below the waveform, patient details are shown: '09060907372976a7 6/9/2009 7:39:03 AM', '48 yrs Male'. A 'Vital Trends' table is also visible.

	7:39 AM	7:38 AM	7:37 AM
HR(bpm)	72	--	--
diastolic(mmHg)	82	--	--
mean(mmHg)	97	--	--
systolic(mmHg)	128	--	--
SpO2(percent)	98	--	--
Pulse(bpm)	82	--	--

Medical control or receiving hospitals can see clinical data on inbound critical care patients including vitals, waveforms and 12-lead ECGs.

### STEMI management from discovery to treatment

Time to reperfusion begins with EMS, before the STEMI patient arrives at the hospital. Reperfusion begins with discovery, at the point the first 12-lead ECG is taken by the paramedic. Philips offers a unique set of STEMI Decision Support tools to give your medics confidence in their decisions and additional diagnostic data points to convey to the hospital. Philips solutions can help your team (EMS/ED/cath lab) work together to get patients to the cath lab quickly for primary PCI.

### Extending transmission for all critical care: trauma, stroke, respiratory, pediatric, cardiac patients

As with 12-lead transmission for STEMI patients, Periodic Clinical Data Transmission provides pre-notification of other types of arriving critical care

patients to help prepare the next level of care. Periodic Clinical Data Transmission sends patient vitals, 12-lead ECGs and waveform data from the HeartStart MRx to the receiving hospital ahead of patient arrival.

Hospital teams can better prepare for the arrival of the patient by making space decisions, pulling records and summoning specialists (or ruling out unnecessary consultations). The result? Better preparation in the ED and shorter handoffs, which mean patients are potentially out of the ED faster and onto the next level of care, while EMS responders can have a quicker return to service.

# Move the data quickly

## Streamlining your event summary workflow

### Moving files from device to downtown at LAN speed

At the end of shift or end of day, batch download all of your HeartStart MRx event summaries off your device and forward them to the QA/QI review team across town.

### Automate data downloading

Your medics have a lot to do. Downloading files and manually moving them isn't the best use of their time. With the Batch LAN Data Transfer feature on the HeartStart MRx and Data Messenger software on the base station PC, you can download all of the cases for the day to a nearby computer and automatically forward them to a destination on the network.

- Only Philips HeartStart MRx moves data over an ethernet cable, which enables rapid downloads and faster device return-to-service times
- Automated data download/delivery reduces medic involvement in administrative tasks so they can focus on caring for patients
- Feedback is given to the medic on both the sending HeartStart MRx unit and forwarding computer, and transmission logs track each step of the process to make sure no files or data are left behind, providing excellent reliability
- Automatic time setting ensures the HeartStart MRx is in sync with the system of record



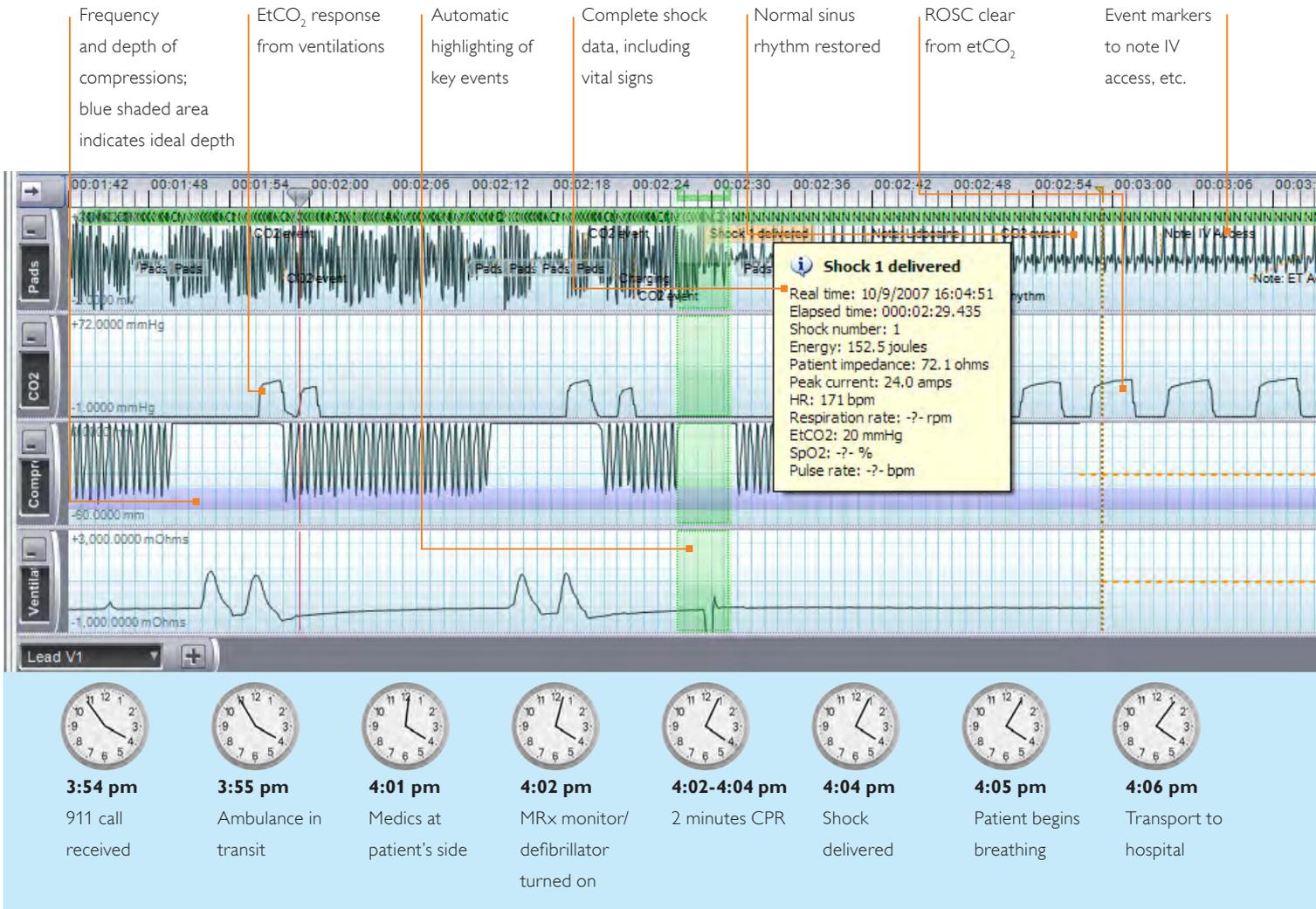
In addition to realtime transmission solutions, Philips offers tools to simplify and automate your documentation and retrospective quality review workflow, such as Batch LAN Data Transfer (left).



With Event Review Pro, the complete story of an event can appear in one powerful display that correlates ECG, CPR, CO<sub>2</sub>, and shock data (see screenshot next page).

# and easily

## The story of an event

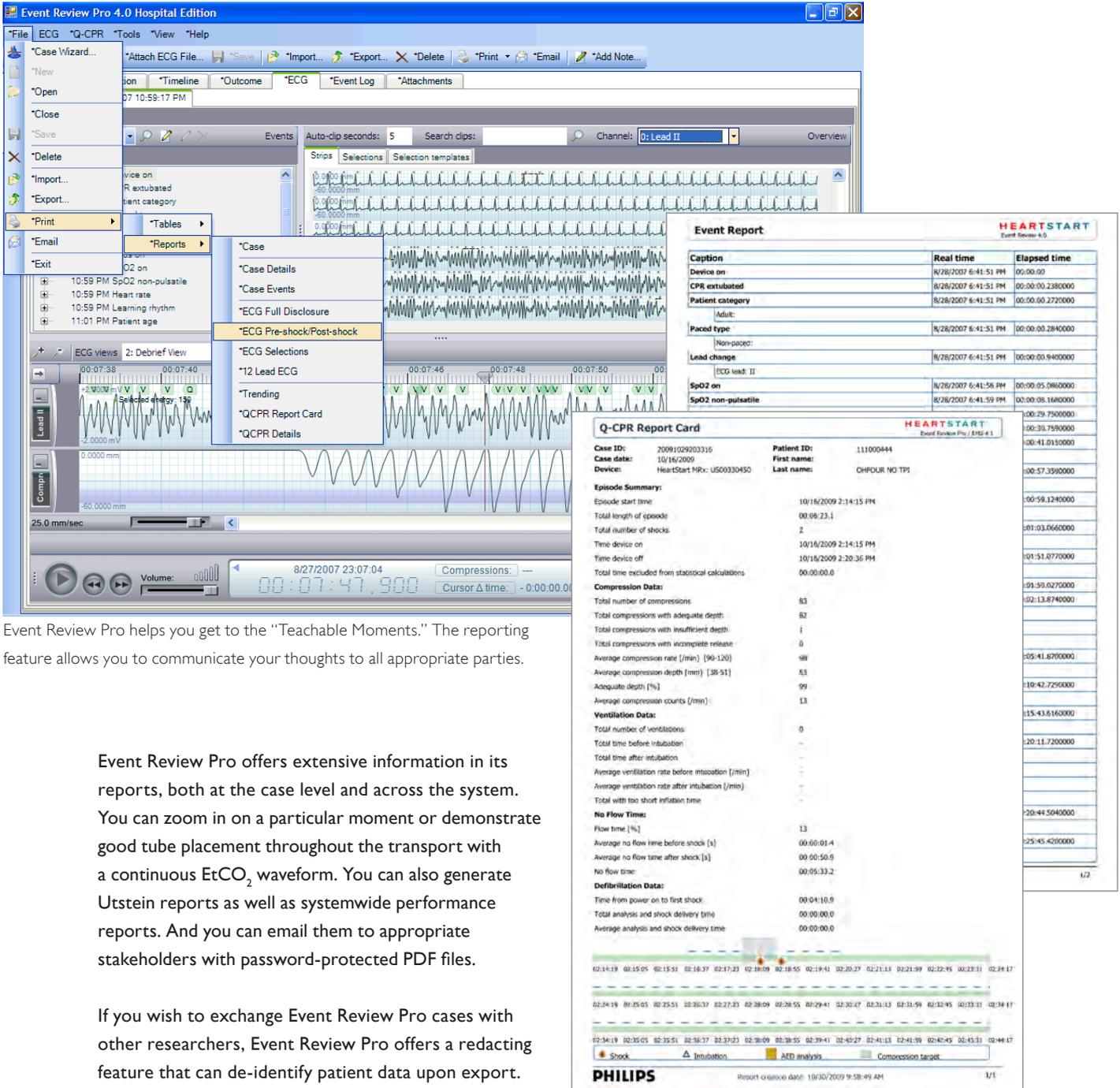


### Automate the import into Event Review Pro database

Event Review Pro (ERPro) is Windows based software for documenting, reviewing, and reporting monitor/defibrillator use in both EMS and hospital environments. It's easy to use for documenting critical cases. We also offer a powerful debriefing viewer to provide multiple viewpoints and preferences. The solution is

scalable to link communities of users and pool cases for aggregate analysis for continuous quality improvement. Now, files that are automatically forwarded to ERPro can be automatically imported without human involvement. All case activities are logged and duplicate cases are called out for attention by the data administrator.

# Make the most of your



The screenshot displays the Event Review Pro 4.0 Hospital Edition software interface. The main window shows ECG waveforms with a menu open over the 'Reports' section. Two report cards are overlaid on the right side of the screen.

**Event Report**

Caption	Real time	Elapsed time
Device on	8/28/2007 6:41:51 PM	00:00:00
CPR extubated	8/28/2007 6:41:51 PM	00:00:00.2380000
Patient category	8/28/2007 6:41:51 PM	00:00:00.2720000
Adult:		
Paced type	8/28/2007 6:41:51 PM	00:00:00.2840000
Non-paced:		
Lead change	8/28/2007 6:41:51 PM	00:00:00.9400000
ECG lead: II		
SpO2 on	8/28/2007 6:41:56 PM	00:00:05.0820000
SpO2 non-pulsatile	8/28/2007 6:41:59 PM	00:00:05.1680000

**Q-CPR Report Card**

Case ID: 20091029203316 Patient ID: 11100044  
 Case date: 10/16/2009 First name: Last name: CHPOUR NG TPI  
 Device: HeartStart Mx: US00330450

**Episode Summary:**

Episode start time	10/16/2009 2:14:15 PM
Total length of episode	00:06:23.1
Total number of shocks	2
Time device on	10/16/2009 2:14:15 PM
Time device off	10/16/2009 2:20:36 PM
Total time excluded from statistical calculations	00:00:00.0

**Compression Data:**

Total number of compressions	83
Total compressions with adequate depth	82
Total compressions with insufficient depth	1
Total compressions with incomplete release	0
Average compression rate (/min) [90-120]	98
Average compression depth (mm) [38-51]	53
Adequate depth (%)	99
Average compression counts (/min)	13

**Ventilation Data:**

Total number of ventilations	0
Total time before intubation	-
Total time after intubation	-
Average ventilation rate before intubation (/min)	-
Average ventilation rate after intubation (/min)	-
Total with too short inflation time	-

**No Flow Time:**

Flow time (%)	13
Average no flow time before shock (s)	00:00:01.4
Average no flow time after shock (s)	00:00:50.9
No flow time	00:05:33.2

**Defibrillation Data:**

Time from power on to first shock	00:04:10.9
Total analysis and shock delivery time	00:00:00.0
Average analysis and shock delivery time	00:00:00.0

Timeline: 02:14:19 02:15:05 02:15:51 02:16:37 02:17:23 02:18:09 02:18:55 02:19:41 02:20:27 02:21:13 02:21:59 02:22:45 02:23:31 02:24:17 02:25:03 02:25:49 02:26:35 02:27:21 02:28:07 02:28:53 02:29:39 02:30:25 02:31:11 02:31:57 02:32:43 02:33:29 02:34:15 02:35:01 02:35:47 02:36:33 02:37:19 02:38:05 02:38:51 02:39:37 02:40:23 02:41:09 02:41:55 02:42:41 02:43:27 02:44:13 02:44:59

Legend: Shock, Intubation, AED analysis, Compression target

**PHILIPS** Report creation date: 10/20/2009 9:58:49 AM 1/1

Event Review Pro helps you get to the “Teachable Moments.” The reporting feature allows you to communicate your thoughts to all appropriate parties.

Event Review Pro offers extensive information in its reports, both at the case level and across the system. You can zoom in on a particular moment or demonstrate good tube placement throughout the transport with a continuous EtCO<sub>2</sub> waveform. You can also generate Utstein reports as well as systemwide performance reports. And you can email them to appropriate stakeholders with password-protected PDF files.

If you wish to exchange Event Review Pro cases with other researchers, Event Review Pro offers a redacting feature that can de-identify patient data upon export.

# clinical information

## **It's your data – Use Philips data solutions or your own**

The HeartStart Data SDK, or software developer's kit, provides the tools to map data from HeartStart MRx monitor/defibrillators and HeartStart AEDs to your electronic patient care record (ePCR).

Because Philips embraces open data management and interoperability, we do not require you to run Event Review Pro on every tablet in your fleet. The Data SDK includes viewing and printing utilities for your ePCR to work with the Philips data within its native application. This means one less application to use on your computers.

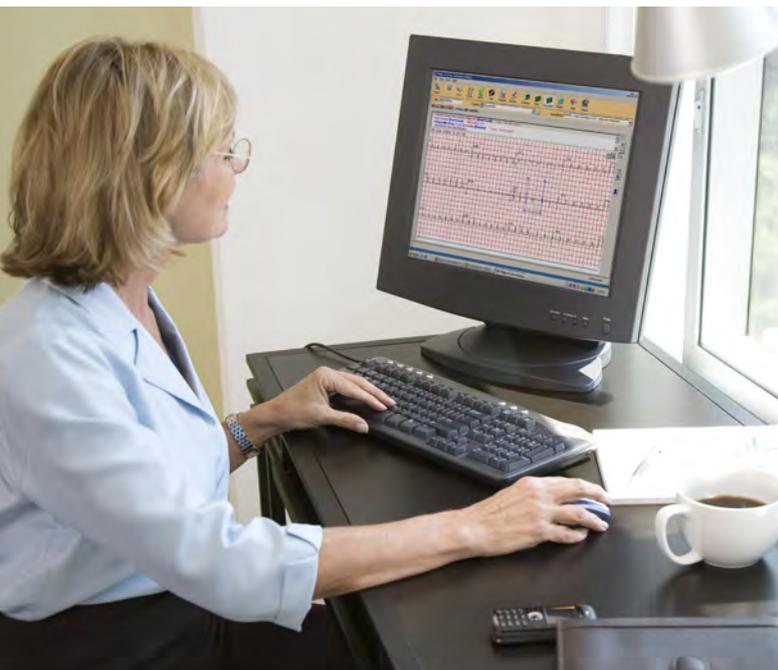
HeartStart Data SDK uses industry-standard technologies such as C#, .NET, and XML. The development environment contains everything a software developer needs to build and test code, including DLLs, a developer's guide, sample code, and sample data for testing. A runtime component allows HeartStart event summary data to be parsed and incorporated into a run report. This is how Philips HeartStart defibrillator data, including vitals and ECG waveforms, can appear seamlessly in a Patient Care Record.

Leading ePCR companies are also using HeartStart Data SDK to make their systems compatible with HeartStart defibrillators out of the box.

For a complete list of ePCR vendors participating in the Data SDK program, visit the Philips web site at [www.philips.com/epcrpartners](http://www.philips.com/epcrpartners).

Philips Connected Care data transmission and management solutions work across all of our AEDs and monitor/defibrillators to give you a comprehensive systemwide solution. Philips monitor/defibrillators can even connect into IntelliVue patient monitoring networks in hospitals to provide realtime streaming of data for remote in-hospital surveillance.

With Philips Connected Care, you can count on innovative, open data solutions to meet your data workflow challenges.



**Philips Healthcare is part of  
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