Streamlining Case Management Workflow

Application Note

Introduction

The clinical data captured by AEDs and advanced life support monitor/defibrillators during resuscitation and transport is extremely valuable. It can be used to answer a host of relevant questions, such as "Are we following medical protocols? Do we have the right protocols? Do certain drugs perform better than others?" Being able to review case data and make changes in protocols is part of a good continuous process improvement program.

At the same time, the process to download, transfer, and document event data can be challenging. This is especially true when an EMS system receives hundreds or thousands of calls each week. It requires time spent by medics copying files, filling out forms, and uploading cases to a central quality assurance/improvement (QA/QI) database. At headquarters, it means someone receiving those files and saving them into a database for review by the medical director or quality team. Sometimes it means going back weeks or months later to

look up a case that has come up for external review. The ability to ensure all cases are saved off the monitor/defibrillator and accounted for at headquarters is important for retrospective reviews, whether for training or for case consultations. Access to all cases might also make the difference between a positive and negative outcome in a litigation case. If you cannot prove it, it didn't happen.

To help you streamline and automate your case management processes, Philips has developed and implemented solutions for the HeartStart MRx monitor/defibrillator and AEDs that simplify data downloading tasks and clearly organize event summaries. This application note provides an overview of some enhanced workflows and how they benefit everyone from the patient and medic to the hospital and the medical director.

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Case Management Solutions That Help You Get the Most From Your Clinical Data

Philips offers case management solutions that link the Philips ALS monitor/defibrillator and AED in the field with the quality assurance officers downtown. The direct connection downloads and forwards every event automatically. Later, quality assurance officers can retrieve and review an event summary with confidence.

Because no two fire/EMS organizations have the same infrastructure or workflow operation, Philips offers a variety of application software to choose from for your specific needs. To help you select and use these application software, take an inventory of your current processes and define how you would prefer your operations to work.

Questions to consider:

▸ Do you currently use or are you planning to use an electronic Patient Care Reporting (ePCR) system?

▸ Do you plan to download device data after each call or at the end of a shift?

▸ Do you plan to download data in the field or back at the station?

▸ What is your preferred method for downloading the data: WiFi, cable, or data card?

▸ Where do you plan to perform a retrospective review of the event?

Post Event Management Workflow Scenarios

The HeartStart MRx lets you manage data after an event for quality assurance and improvement. A few examples include training sessions, billing, and archiving. Following are the most common workflow scenarios using the case management solutions. Each might have a number of variations.

▸ Scenario 1: *HeartStart MRx to ePCR in the field*

Many fire/EMS organizations have adopted laptop- or Tablet PC-based run reporting systems (or ePCR systems) for documenting patient care in the field. For these operations, the most likely workflow is to

download event summary data from the HeartStart MRx via Philips' Wireless Link WiFi solution or *Bluetooth* wireless technology post-delivery of the patient, usually in the ambulance or at the hospital.

Philips offers a data integration kit, Philips HeartStart DataSDK (DataSDK), that ePCRs use to attach and integrate the event summary inside the ePCR run report. The ePCR run report is then uploaded to the ePCR database.

▸ Scenario 2: *HeartStart MRx Batch LAN to Data Messenger to Event Review Pro software on a central database*
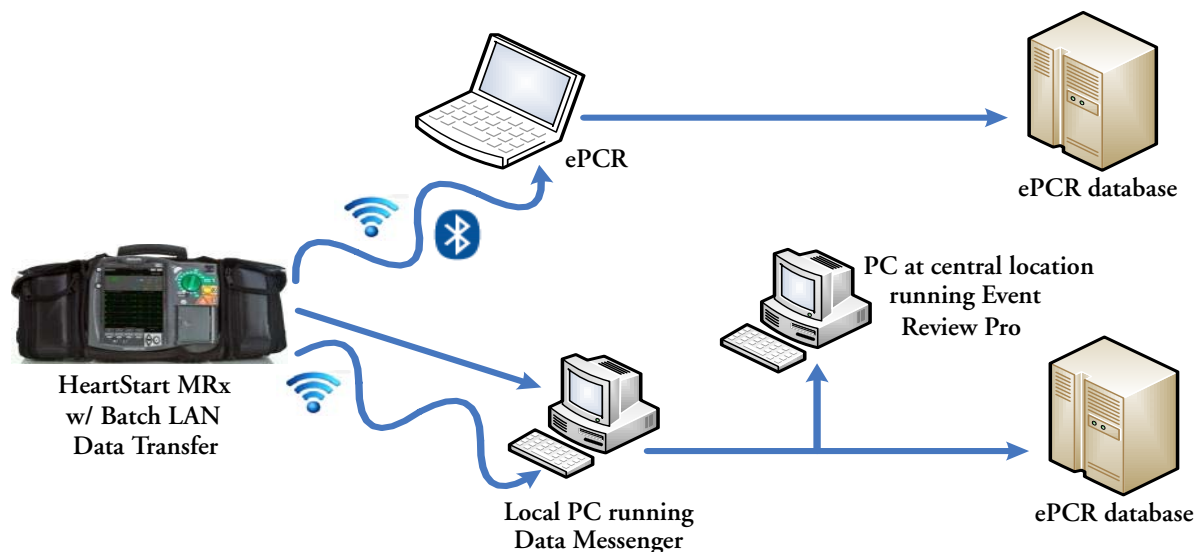
Your operations might call for an end of shift/end of day procedure to download all event summaries from each of your devices into a central database for retrospective review or research. The review is enabled by Philips' clinical data review application software HeartStart Event Review Pro. Event Review Pro is like a recorder that lets quality assurance/improvement officers and other clinical reviewers play back, assess, and report on every element of disciplined emergency response, including analysis of ECG, vital trends, CPR, CO_2, and shock data.

Transfer a single or all event summaries via Wireless Link through the Batch LAN Data Transfer option to the Event Review Pro central database on a network. A networked personal computer (running Philips' Data Messenger software) communicates with the HeartStart MRx locally to download event summaries and forward files to a PC running Event Review Pro that may be in a different location. Likewise, this configuration can be used to export files up to a centralized shared folder for later retrieval and attachment to ePCR software.

Using this method, the medic automatically connects to the wireless network via WiFi or through the LAN cable from the MRx. In a matter of seconds, the files transfer at WiFi or LAN speed and the monitor/defibrillator is then ready to return to service. If the user decides to download all cases from the MRx, the MRx internal memory is also wiped clean of the cases.

The following figure illustrates the workflow paths

described previously.

Case Management Benefits

How do the case management solutions benefit your organization? Here are some aspects to consider.

1   Flexibility

    Your case management solution is flexible. You can transfer MRx data via WiFi, *Bluetooth* wireless technology, or through a LAN cable. You can also set up a workflow whereby Data Messenger software forwards data to Event Review Pro and/or your ePCR.

2   Traceability

The communication between MRx, Data Messenger, and Event Review Pro is logged at each step so you know when data transfers successfully.

3   Open architecture

    You can choose Philips' end-to-end solutions or individual building blocks to integrate with your existing case management workflow. It's your data and you know best how you want to manage it!

4   In-depth case review

    You can capture a breadth of clinical data during a patient event. This detailed account provides critical information to evaluate trends and assess clinician performance to hopefully enhance patient outcomes.

Conclusion

Philips is focussed on improving emergency care, including how patient data are managed, quickly and simply. Streamlining and automating the event summary download and forwarding process can reduce the amount of time you or your staff spend on mundane documentation tasks. As a result, you have more time for

more productive tasks. Likewise, your office staff can find the cases they need to review more efficiently and confidently later.

Case management is just one part of a suite of data management solutions that make your life easier. For more details on Batch LAN Data Transfer, Event Review

Pro, and/or our alliance with a number of leading ePCR partners, please contact your Philips account representative or visit www.philips.com.

Hardware and Software Requirements

HeartStart MRx Software Version
T.00 or higher for Wireless Link option
9.0 or later for *Bluetooth* wireless*   *Bluetooth card 989803153411 might be needed with upgrade
Event Summary - *Bluetooth* (Option B10 or upgrade 861325)
F.01 for Batch LAN Data Transfer (Option B12 or upgrade 861447)*   *This option does not need to be purchased if you plan to use Wireless Link for Batch LAN. The option gets activated with the Wireless Link option.

Wireless Link Hardware
Wireless Link (Verizon) - 989803184451 (US only)
Wireless Link (AT&T) - 989803184461 (US only)
Wireless Link (Generic) - 989803184471

Bluetooth Software and Hardware
Bluetooth software version 1.1 or higher
Support for *Bluetooth* FTP profile

Data Messenger Software (must be on same subnet as HeartStart MRx to communicate)
Operating system   ▸ Microsoft Windows XP Professional SP 3 or later (32-bit)   ▸ Microsoft Windows XP Table Edition (32-bit)   ▸ Microsoft Windows 7 (32-bit and 64-bit)
Browser: Microsoft Internet Explorer 7.0 or later
Data Messenger Hardware
Processor speed: 1 GHZ or higher
Display: 1280 x 768 or higher
Memory: 1 GB or larger
Disk storage space: 40 GB or larger
Internet or Intranet Connection   ▸ To download and activate Data Messenger software, and transfer a case to Event Review Pro HeartStart Telemedicine destinations
Ethernet Connection   ▸ To receive HeartStart MRx data through batch LAN data transfers

Event Review Pro
Operating system ‣ Microsoft Windows XP Professional SP 3 or Microsoft Windows XP tablet Edition SP3 and Windows 7 (32-bit and 64-bit) ‣ Microsoft Windows® Server® 2008 SP1 for a remote server running the shared database

Database
 	
‣ Standalone database: Microsoft SQL Server 2008 R2 Express, installed as part of Event Review Pro
 	
OR
 	
‣ Shared database (one of the following):
 	
    – Microsoft SQL Server 2008 R2 Express with the latest service pack
 	
    – Microsoft SQL Server 2005 SP1
 	
    – Microsoft SQL Server 2008 with the latest service pack
 	
    – Microsoft SQL Server 2008 R2

Event Review Pro
Processor speed ‣ Minimum: 1 GHZ ‣ Recommended: 2 GHZ core duo or higher
Display ‣ Minimum: 1024 x 768 with 64 MB video memory ‣ Recommended: 1400 x 1050 or higher with 256 MB video memory
Memory ‣ Minimum: 1 GB ‣ Recommended: 2 GB or higher
Disk space ‣ Minimum: 2 GB of disk space, 300 MB of disk space during software installation, and 100 MB of disk space for event storage ‣ Recommended: 5 GB of disk space Variables affecting disk space requirements include the number of cases archived, amount of audio information archived, and defibrillator type.
Internet connection is required to activate the application software, to use the E-mail feature, and to receive software updates

**Philips Healthcare is part
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