

CARDIOLINE

Be
anywhere...

And still close
to your patient

ECGWebApp

Cardioline ECGWebApp is an innovative, web based "Multimodality ECG workflow management system".

Cardioline's ECGWebApp is an innovative, state-of-the-art web-based application for multimodality ECG reporting and storage. Accredited End-Users are given access through any Internet browser, with no need for individual PC-based installation.

ECGWebApp receives ECGs that have been completed and transmitted by Cardioline devices and other

competitor devices (see compatible standards), saving them on its database. ECGWebApp is a very flexible and powerful tool, scalable to complex environments and operational in a variety of situations, from a wide Internet infrastructure to a local network (intranet). ECGWebApp is perfectly suitable for any scenario, from complex e-health networks to hospital archives and private practice offices.

1 ECGWebApp in Hospital

The Cardioline ECGWebApp is the most accurate and efficient way to manage your multimodality ECG workflow inside your clinical institution.

Forget about all the limitations you have suffered so far: expensive, non-scalable, workstation based, single vendor systems all belong to the past.

Because it is based on web technology, the ECGWebApp can connect you with as many ECG machines as you need today - or will need tomorrow - to any physician accredited to edit ECGs in your organization, regardless of their physical position, inside your building or remotely.

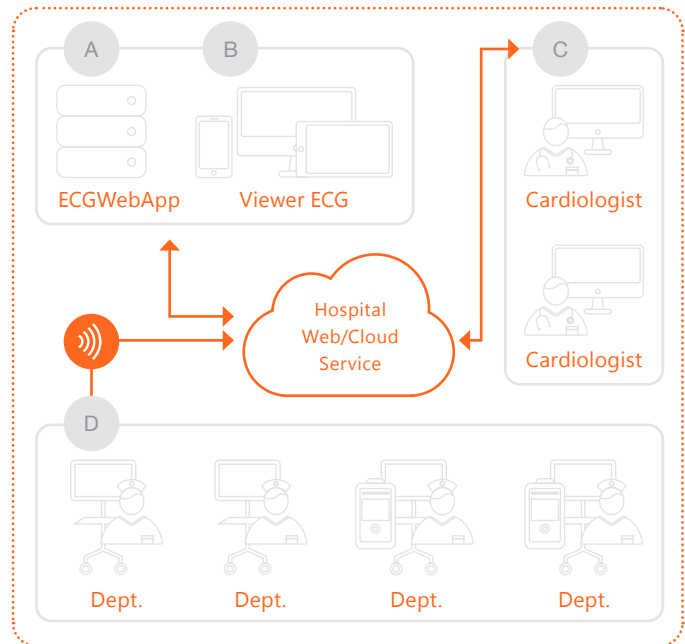
ECGs can be acquired at the point of care by ECG devices from Cardioline, as well as from other vendors, and stored in your secure Web Database where they can be accessed and edited by accredited physicians anywhere and anytime through a simple browser. Holter ECGs, Ambulatory blood pressure exams and stress exercise tests are also handled in this same manner, forever obsoleting the concept of expensive workstations.

Your own workflow can be integrated into the ECGWebApp. Orders from different sources can be addressed to any particular ECG machine. ECGs coming from certain machines or departments can be routed to specific clinicians, depending on their competence and or your internal organization. For

example, pediatric ECGs can be routed to a pediatric cardiologist, or emergency ECGs sent to the immediate attention of the Cardiologist on call, who can be alerted.

The whole process is GDPR compliant, protecting and preserving your valuable patient information at all times.

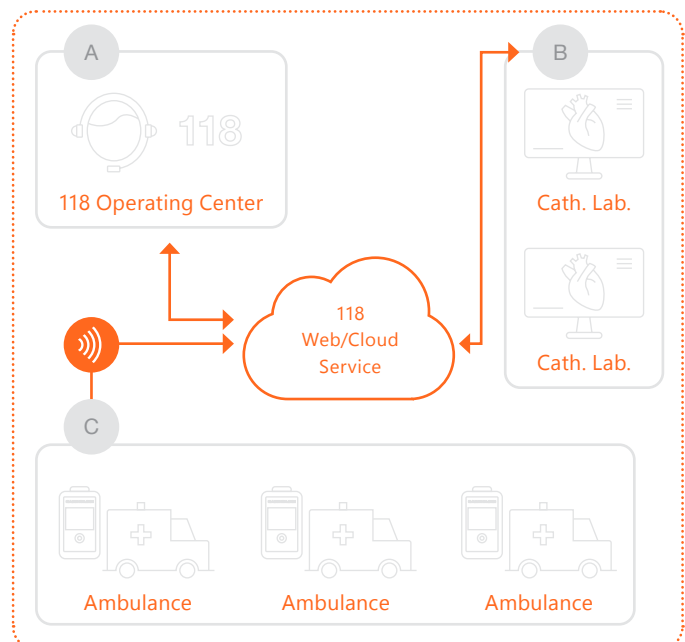
ECGWebApp can easily integrate into existing DICOM workflow or connect to HIS and Administrative systems for patient data, orders, worklists or permanent storage of exams.



2 ECGWebApp in Emergency

Since the introduction of 12 lead diagnostic ECG in ambulances, the mortality rate for STEMI has decreased consistently due to the fact that diagnosis of Myocardial Infarction is done sooner, with the patient sent by the quickest path to the hemodynamic lab, short cutting the Emergency Department with its inevitable delays. The patient is treated in a much timelier manner compared to going through regular emergency admission, saving irreplaceable heart muscle, as well as many lives.

The HD+ from Cardioline, combined with the WebApp management of the ECGs recorded in ambulances, is an ideal solution for any Cardiac Emergency project intended to reduce the cardiac infarction mortality in a given area. The acquisition device is handy and robust, is tested and approved for use in ambulances and provides a very high quality 12 lead ECG complete with the automatic interpretation from the Glasgow University ECG Interpretation Algorithm, known for its very accurate STEMI detection. The ECG is immediately sent to the ECGWebApp at the Emergency Center. If the STEMI is confirmed, the patient is routed



to the closest available cath-lab for angioplasty. All ECGs taken during the ambulance transfer, as well as those taken during and after the procedures, are stored in ECGWebApp for documenting the patient case and can be transferred in different formats to a final repository or EMR.

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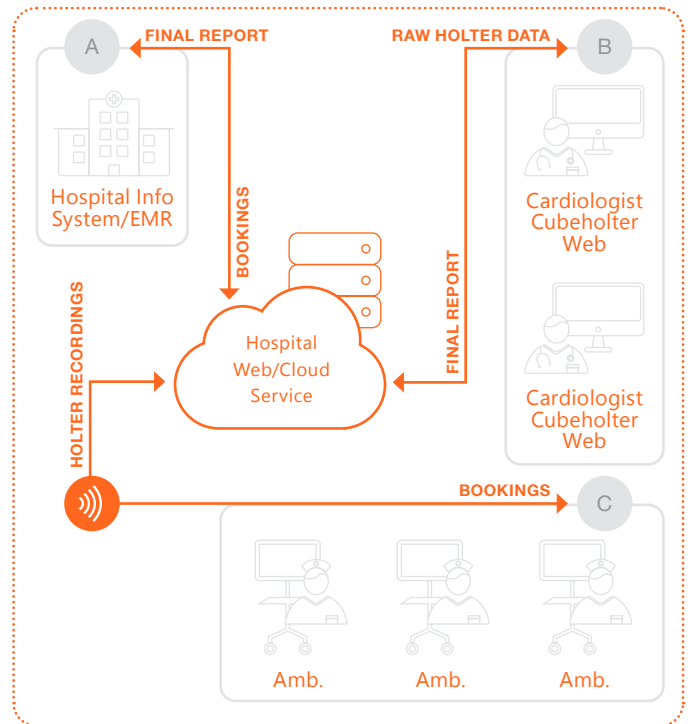
ECGWebApp Holter

Holter finally comes to the WEB! Almost 60 years after invention of the dynamic ECG by American physicist Dr. Norman J. Holter, this methodology finally makes full use of WEB technology.

The use of Holter analysis is widespread in the medical world because of its use in diagnosis of arrhythmias, including Atrial Fibrillation, considered today as the real epidemic of our century. Although the utility of long-term Holter exam is not at issue, the methodology is cumbersome as someone has to prepare the recorder, hook-up the patient, download the recording to a workstation (which often is not the same as where a cardiologist will scan the recording) and prepare the final report. Physicians have tried to make this procedure more efficient by using regular mail to send recordings to the scanning location, or more recently, by sending the raw data through unsafe and unprotected point-to-point connections. Normally adopted client server architectures increase the total system cost as licenses need to be paid for every reading workstation as well as for every data uploading station.

Cardioline ECGWebApp Holter is a web database, GDPR compliant, managing full Holter workflow, from the execution of the recording to the final reading. Both the uploading stations – where the recordings are prepared and uploaded – and the reading stations, can be placed anywhere within the health institution, or even outside. It is now possible for a multi-building

institution to have recordings discharged and exams analyzed from different locations, even from the cardiologist's own home. This "license free" architecture is pivotal in health organizations where remote review is the most important business factor, such as in all Telemedicine applications.

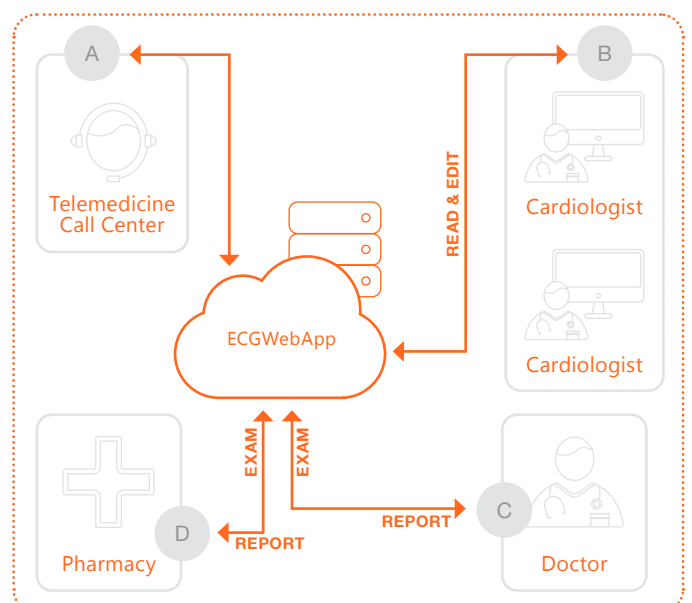


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ECGWebApp for Services & Telemedicine

Cardioline ECGWebApp for Telemedicine shares several features and characteristics with ECGWebApp for Hospitals. In this case, however, we have multiple centers of gravity, represented by reading centers (or Hubs), and multiple recording sites (or Spokes), often spread over a large territory. In the telemedicine world, a Spoke can be a pharmacy shop, a medical practice, an outpatient clinic, wellness centers, homecare services, and so on. Similar to the Hospital scenario, a single Hub can serve and manage a high number and "variety" of spokes. Different from the Hospital scenario, a single Spoke can potentially acquire services from many different Hubs: ECGWebApp offers the skeleton and nervous system supporting complex relationships, making the job much easier for everybody involved in the process.

Spokes and Hubs represent the two poles of the telemedicine world, as well as the two extremes of this end-to-end solution, hence they have different roles in the "environment". Regardless of roles and tailoring, within the environment, Cardioline represents both a path and a glue: we provide a turnkey solution allowing our Customers to focus highly on clinical activities, leaving the technical portion to trained professionals.





physician: "my patient data is always at my fingertips"



nurse: "taking and sharing an ECG is so easy, that I can keep my attention on my patient"



hospital administrator: "our workflow has improved a lot, saving us a significant amount of money"



IT manager: "patient data is safe and secure"

Workflow Management

- Web technology allows for optimal workflow management, with no compromise, at minimal cost
- The workflow can cover the entire healthcare institution, regardless of number of operators and their physical location. Multi building organizations can be connected and to include external ambulances, laboratories and private practices
- Records can be accessed from everywhere by accredited operators, through a browser. Even the Physician's home or vacation location can become a work-desk if necessary
- Devices originating exams are clearly identified, routed to a specific physician if needed, and final reports can be equipped with a specific header and logo of the organization

Multimodality

- Resting ECG
- ABPM
- Holter ECG

Data Protection

- Active Directory
- GDPR compliance
- HTTPS

Electronic Signature

- Qualified Digital Signature
- One Time Password Generated on Mobile
- Signed exams are stored on ECGWebApp

Interoperability

- All Cardioline equipment
- Any vendor's device supporting DICOM can be integrated
- Some major competitor's devices can be integrated in their native formats

Integrability

- The ECGWebApp can be easily integrated with PACS, EMR and HIS for receiving exam bookings (orders), retrieve patient demographics, storing final reports and billing
- DICOM protocol is fully supported
- HL7

