



## Cardiology Information Systems Provide Iowa Health - Des Moines & Specialty Cardiology Offices with Fingertip Access to Scheduling & Patient Data

*Fully integrated systems enhance communication across multiple campuses and offices, supporting continuity of care while maintaining HIPAA compliance*



Lutheran Hospital  
of Iowa Health - Des Moines

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Steve House  
Manager of Cardiovascular & Pulmonary Services  
Iowa Health - Des Moines

### Iowa Health - Des Moines Highlights

**Connecting Remote Users, Sites:** Iowa Health - Des Moines’ remote users—two campuses with multiple floors, departments, and specialty cardiology offices—seamlessly access the cardiovascular information system.

**Facilitate Communication & Continuity of Care:** The cath lab’s schedule is shared throughout the campuses, ensuring seamless care. Patients are prepped and ready for procedures on time and the ICU/CCU is prepared post-procedure.

**Facilitate Continuity of Care:** Physicians and caregivers can view the patient’s full cardiovascular medical record concurrently, ensuring continuity of care.

**Save Time for Physicians & Staff:** By giving physician’s offices access to the cath lab schedule, Iowa Health - Des Moines has cut down on the number of phone calls to the cath lab.

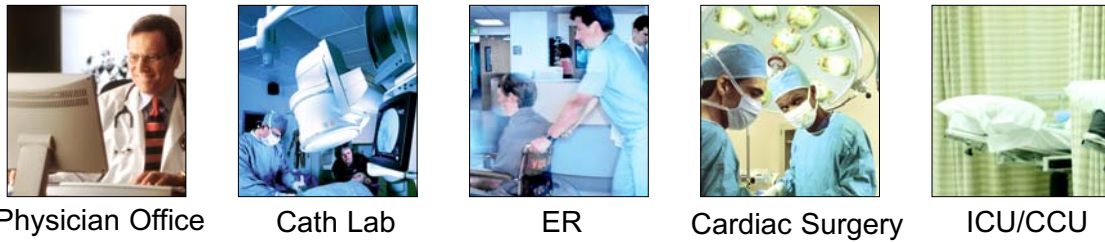
Iowa Health - Des Moines (IH-DM), comprised of Iowa Methodist Medical Center and Iowa Lutheran Hospital, utilize their integrated cardiology information system (CVIS) to broaden communication and awareness. By fully integrating systems, IH-DM is able to collect and then communicate data critical to scheduling and patient care. CVIS users can access data to streamline day-to-day workflow whether they are scheduling procedures electronically or accessing patient reports.

**Figure 1** depicts IH-DM’s CVIS. Increased communication and continuity of care is behind each component. First the departments collect the information and then that data is aggregated, analyzed, and shared to:

1. Access patient and scheduling information from different floors/CCU/ICU/ER/specialty offices

**FIGURE 1**

# Apollo Advance & CardioSchedule Facilitate Communication & Continuity of Care



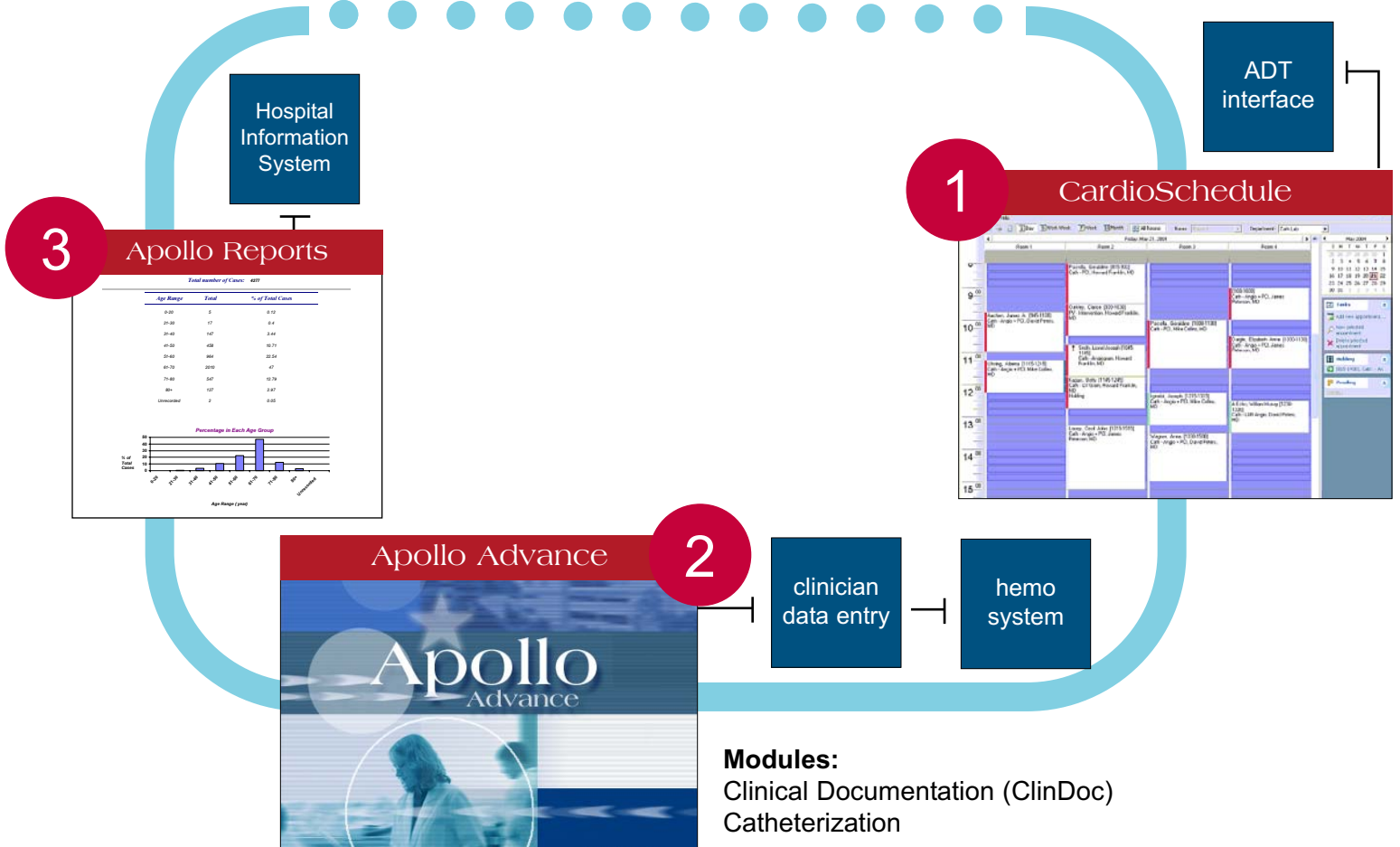
Physician Office

Cath Lab

ER

Cardiac Surgery

ICU/CCU



1. With CardioSchedule, the real-time patient and resource scheduler from LUMEDX, remote users can view the schedule from their office, know what times are available, know when they can schedule their procedure, and immediately book a new procedure. In CardioSchedule, the user selects the patient’s name and then their demographic information (brought over through an interface with ADT) populates the schedule. The user then sets the time and duration of the procedure on the electronic calendar.

2. Clinicians enter data into ClinDoc as the case progresses. At the end of the case, data from the hemodynamic system is imported into ClinDoc. This data is used to create the Nursing Flowchart Report. This data is also used to populate fields in the catheterization report, which the physician completes at the end of the procedure. The physician sits down at the end of the case and generates this report in Apollo.

3. Once the reports are complete, they are available to other Apollo users immediately. In addition, reports are interfaced to Iowa’s hospital information system, Last Word, so every physician and nurse in the hospital has immediate access to that report. The accessibility of reports supports multi-disciplinary teams who no longer need to share the paper chart. Therefore, immediate access supports increased communication and continuity of care. Prior to Apollo, patient reports were only sent to the hospital information system and physician offices after the reports were transcribed and finalized. This process was time consuming; reports were not available as quickly and reliably as they are today.

2. Increase awareness of physician practices—identify and share best practices
3. Collect necessary data for reimbursement and participation in government programs
4. Enhance community outreach
5. Communicate to referral base

### Connecting Remote Users, Sites

In 2004, IH-DM had given cardiology specialty offices associated with the health system access to Apollo Advance™, cardiovascular data repository. Because IH-DM implemented Apollo on a Citrix environment the specialty offices can access it via the Internet or through a network connection. The physicians and their staff can view or complete procedure reports from their offices. In addition, Iowa has integrated Apollo with their health information management system (HIM), which is used for their medical records, and in patient records processing, quality outcome analysis, and patient coding.

Since IH-DM already had already implemented Apollo Advance, they found the implementation of CardioSchedule™, electronic scheduler, simple. According to Jay Franzen, IT Systems Specialist for Cardiovascular Services, “Because it is an extension of Apollo, implementing CardioSchedule was easy. We had no complications or challenges; it was simply a matter of loading the software and we were done. And since CardioSchedule makes scheduling appointments easy—as far as choosing a day, a time, and entering the patient information—users required little or no training.”

### Scheduling: Connectivity & Accessibility

According to Steve House, Manager Cardiovascular & Pulmonary Services, “The main impetus for choosing CardioSchedule was a request from physicians to be able to view their own schedule as well as schedule procedures from their physician cardiology offices. CardioSchedule gave us that capability and its ease of use was apparent when we were able to implement it with minimal training.”

IH-DM implemented CardioSchedule at its two campuses in 2005. Iowa Methodist and Iowa Lutheran each have a campus-specific version of CardioSchedule with individual permissions for each physician group. This way, physicians can view their own schedule and patients while maintaining HIPAA compliance. Management and the technology team can view both schedules when necessary.

### CardioSchedule in Everyday Practice

Remote users can easily schedule new procedures—whether they are in the physician cardiology office, in the cath lab, or on another floor. According to Janice Heathman, Application Analyst, “At any given time, IH-DM may have 15 to 20 people using Apollo and CardioSchedule.” The users can look at the schedule from their office, know what times are available, know when they can schedule their procedure, and immediately book a new procedure. In CardioSchedule, the user selects the patient’s name and then their demographic information (brought over through an interface with ADT) populates the schedule. The user then sets the time and duration of the procedure on the electronic calendar.

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The availability of the schedule has improved communication and awareness throughout the Iowa's campuses. Prior to CardioSchedule, Iowa used a stand-alone scheduling system for the cath lab that limited accessibility. As a result, Iowa has a greater appreciation for the accessibility and increase communication supported by CardioSchedule. According to Mr. House, "We anticipate that as a result of CardioSchedule there will be a significant reduction of the number of calls from physician offices to scheduling. Now, staff at physician offices can directly schedule procedures at times best for their physicians and patients. In a busy lab like ours, CardioSchedule makes the coordination of schedules much easier. We no longer have staff acting as middlemen brokering times for procedures."

CardioSchedule saves both the physician's office and the cath lab time on the phone, while delivering a better schedule for the physician. Because the schedule is transparent and communicated to the network, each user can best utilize the scheduling information and apply it to their day-to-day responsibilities. For example, the *cath lab manager* can anticipate volumes and adjust staffing. *Case managers* and *clinicians* who "run traffic" have a better handle on where each case is and when they should prepare the next patient. The *patient care coordinator* uses CardioSchedule to manage the workflow of staff designated for post-cath care. The *three telemetry floors, ICU, CCU, ED, perfusion* and *surgery* on both campuses use CardioSchedule to track patient progress. The *floors* know when their inpatients are scheduled for cath and can anticipate when to have beds ready for post-op care. In surgery, the *thoracic team* tracks the cath lab schedule for emergency cases. The *perfusionists* can see if there are add-on or emerging cases.

### Growth in Analytics Ahead

As IH-DM looks to the future, they intend to implement further solutions to grow the capabilities and reach of their cardiology information system. In the future, Iowa intends to extend access to Apollo to their referring physicians. With Iowa being a rural state, IH-DM has many referring physicians in a hundred mile range of Des Moines. By giving these referring physicians access to their patient's reports they can be more of a part of their patients' care. This also helps referring physicians maintain patient contact and enables patients to do their follow-up care locally, which means more revenue to those local hospitals and referring physicians.

Jay and Steve also have their sights on CardioManager™, outcomes dashboard, which would enable them to easily customize department reports and conduct more data mining and analysis. "We hope to track more statistics all the way around with Apollo," says

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### LUMEDX SOLUTIONS AT IOWA HEALTH - DES MOINES

This Great Applications article describes how IH-DM has implemented LUMEDX's integrated software solutions. The software solutions they utilize are:

#### Software

- Apollo Advance
- CardioSchedule
- CardioGate

#### Modules

- ACC Registry Module
- STS Registry Module
- Catheterization Module
- Clinical Documentation Module
- Cardiovascular Surgery Module
- EP Module

#### Interfaces

- HL7 ADT Interface
- HL7 Results Reporting Interface
- CathCor Interface
- Pruka Interface
- Philips Tracemaster Interface
- Mennen Horizon 9000 Interface
- GE Marquette MacLab Interface

# great applications

## BUILDING CARDIOLOGY CENTERS OF EXCELLENCE

Steve. “Patient wait times, inter-cath times, and room-turnaround times are just some of the knowledge that we would like to glean from this technology.”

“I think statistics are going to drive reimbursement in the future. Outcomes data—such as the administration of aspirin and ace inhibitors, door to balloon time, etc.—are fields that Medicare require for the maximum level of reimbursement. In addition, statistics can positively affect physician practice and, in turn, patient outcomes. For example, IH-DM provides individual physicians and physician groups with blinded data tracking volumes, outcomes, and costs of procedures. This data can be used to share individual best practices that can make the group stronger as a whole.”

**About LUMEDX:** With over 500 heart center clients worldwide, LUMEDX is the market leader in fully integrated cardiovascular information systems and the No. 1 independent integrator of cardiology information solutions. LUMEDX offers the most proven, comprehensive package of clinical information tools, cardiovascular products, and services to help medical institutions enhance quality of patient care, reduce costs, streamline workflow, increase patient volume, and grow revenue.