

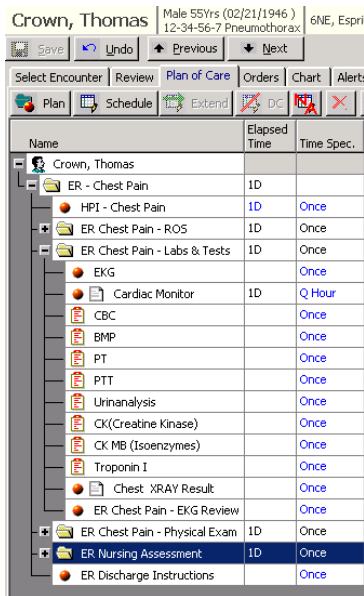


eSphere is a new paradigm for healthcare information systems – a single integrated system designed to create models that describe processes, from the most simple process to the most complex research algorithm. These models become the basis for data collection, monitoring, and analyses of the processes, forecasting resource utilization and determining costs.

Esprit's unique Care Module™ methodology provides the capability to model processes into hierarchical groupings enabling the ability to create complex and sophisticated structures. The system design incorporates a branching decision tree algorithm with dependencies and conditional decision points that can trigger other processes. With the sequence and timing of all events defined, the system creates a “schedule” for all activities.

The result is a model that is used to collect all data eliminating errors of omission and accounting for unexpected processes. Simply, **eSphere** “knows” what needs to be done, by whom, where, how, when and why.

eSphere is a new paradigm – one system that can be used to meet all of the needs of physicians and clinicians for patient care, principal investigators for clinical protocol research, as well as for safety, regulatory, and administrative needs.



Hierarchical Display of Process

Modeling Processes

- ▶ Describes the entire process, decision tree branches and paths, the sequence and timing of events (i.e. workflow), and the relationships between data elements
- ▶ A central repository of clinical elements that are used and re-used in the creation of all of the processes and maintains version control

Data Collection

- ▶ Errors of omission are eliminated from the data collection process because eSphere “knows” what should be collected and when
- ▶ Incorporates instructions, reminders and warnings into the data entry screens improving patient safety
- ▶ Workflow driven data collection improves timeliness and accuracy of care
- ▶ Charting by exception capability streamlines charting process while increasing comprehensiveness and quality of patient’s health record

Monitoring

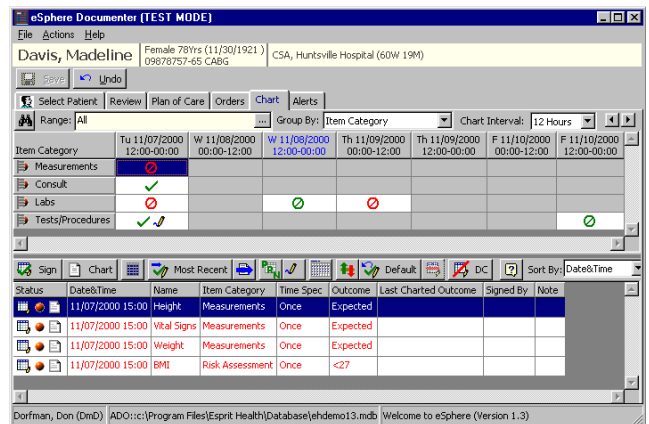
- ▶ Provides tools for real-time monitoring of the data collection process and of the documentation of patient care.
- ▶ Facilitates quality management checks from remote locations
- ▶ Chart status (e.g. Not documented, incomplete) communicated at a glance using color and symbols (circles, check mark, etc).

Data Analysis

- ▶ Standard and customized reports draw from patient demographic data, event/encounter data, and clinical data
- ▶ Transform data into information with powerful, easy to use wizards for ad-hoc queries, data extraction and export (e.g. XML, Excel, etc)

Information Management

- ▶ Powerful web based “personal portals” enables clinicians to view the data they want, where and when it is needed.
 - ✓ *Comprehensive.* Relevant areas of the patient's clinical data presented in the format best suited to each practitioner
 - ✓ *Customizable.* From content to "look and feel" everything can be designed (and easily updated) to reflect needs.
 - ✓ *Web enabled.* Web pages generated using Esprit's unique technology for rendering database driven HTML.



Color coded icons provide compliance status at a glance

A New Paradigm

eSphere's new paradigm for healthcare information systems is built on the following core principles and concepts:

Protocol Centric Design

- ▶ Creates a seamless infrastructure that gives researchers, clinicians and management timely data to successfully complete scientific investigations, empower decision-making and forecast personnel, material and capital needs.

Longitudinal Patient Record

- ▶ Enables a single longitudinal patient record, encompassed by the research protocol, which integrates *all* data across current and prior encounters.

Seamless Workflow

- ▶ Integrates processes across clinical, nonclinical and departmental boundaries for efficient research and care.

Multidimensional

- ▶ Emulates the multidimensional and multidisciplinary nature of the healthcare process.
- ▶ Researchers, caregivers and administrators require the capability to shape and view a patient's health information as needed.

Knowledge Based Decision Support

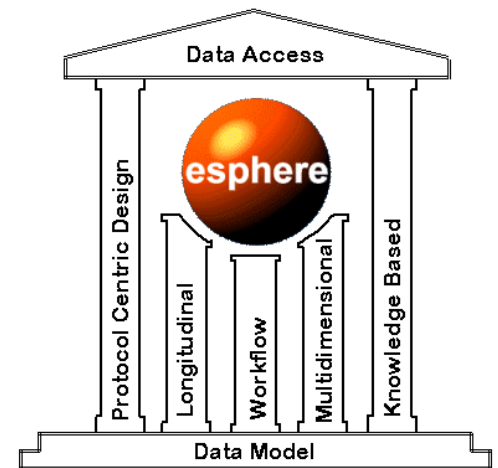
- ▶ Provides access to clinical references and resources.
- ▶ Incorporates a simple yet powerful If / Then rules engine and outcome dependencies to provide real time decision support on the basis of both clinical data and physician directed decisions.

Data Model

- ▶ A comprehensive set of linked data dictionaries and metadata that provides a common language for improved communication among all participants in the care process.

Access to Data

- ▶ Enable real time access to ALL data and export to specialized databases



Applications

Clinical Documentation

- ▶ Nursing Documentation
- ▶ Multidisciplinary Documentation
- ▶ Physician Documentation
- ▶ Emergency Department Documentation
- ▶ OR Management (including Documentation)
- ▶ Special Procedures

Clinical Processes

- ▶ Order Entry (Single, Standing Order Sets, Protocol based)
- ▶ Results Reporting
- ▶ Medication / IV Administration
- ▶ Workflow
- ▶ Discharge Planning

Education

- ▶ Education Program Management
- ▶ Patient Handouts

Administrative

- ▶ Resource Volume Forecasting and Costing
- ▶ Admission process including Patient Consent Forms
- ▶ Patient Registration and Encounter Management
- ▶ Compliance Checklist
- ▶ Employee Evaluations
- ▶ Case Management
- ▶ Disease State Case Management
- ▶ Quality / Outcomes Management

Research

- ▶ Clinical Trial Data Management
- ▶ Protocol Authoring, Tracking and Monitoring
- ▶ Serial Sampling
- ▶ Adverse Event Tracking & Reporting
- ▶ Cohort Accruals and Tracking against IRB Ceiling
- ▶ Simulations for Resource Determination, Sample and Cohort size

Technology

System Platforms

- ▶ Scalable SQL Database: Oracle
- ▶ Server: Unix, Windows NT, 2000, Citrix
- ▶ Client: Windows 98, 2000, NT, MAC
- ▶ LAN: TCP/IP, 802.11b
- ▶ Web enabled
- ▶ HL7 Interfaces

Architecture

- ▶ Object Oriented technology
- ▶ Three tier design
- ▶ Data Warehouse

Security

HIPAA Privacy & Confidentiality

- ▶ Fully compliant with latest rules
- ▶ User authentication, automatic logoff
- ▶ Role & context security access
- ▶ Audit trail

