

HL7 2003

Pen Computer Systems

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INTEGRATED CARE PROGRAM PHASE 2

Building a Generic Framework for Chronic Disease Decision Support

INTEGRATED CARE PROGRAM PHASE 2

ASTHMA

THE JOINT VENTURE PARTNERS



DEPARTMENT OF HEALTH & AGEING



GLAXO SMITH KLINE



MERCK SHARP & DOHME



ELI LILLY AND COMPANY



CENTRAL BAYSIDE DIVISION OF
GENERAL PRACTICE

THE PROJECT MANAGER

THE AUSTRALIAN DIVISIONS OF
GENERAL PRACTICE



THE HEALTH INFORMATICS COMPANY

PEN COMPUTER SYSTEMS
PTY LTD



Integrated Primary Care Phase II

A Clinical Decision Support System
for
Asthma

Overview

- Project
 - Started: February 14th 2003
 - Finish August 2003
 - Trial commences September/October 2003
- Progress
 - Framework: Beta testing
 - Asthma: Beta testing
 - Depression: In development

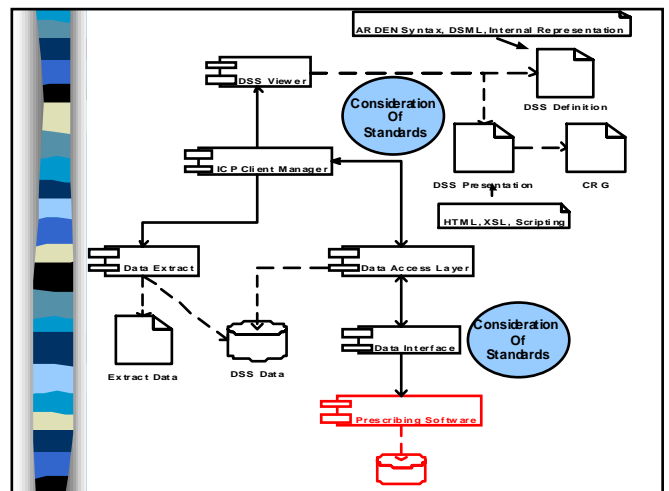
Key Technical Attributes

- Disease independent framework
- Data interface between GP clinical desktop software and system
- Data extraction
- Behaviour logging
- Technical Requirements
 - LAN, 98, Me, NT, 2000, XP
 - Internet/email via dialup link

Standards

- Determine external data interfaces
- Identify appropriate standards
- Engage vendors in development

CDSS Structure



Standards: Decision Support

- Logic modelling
 - Navigation rules (flowchart)
 - State/Event generation
- Data modelling (decision support)
- Data modelling (health record)
- Display styles and format

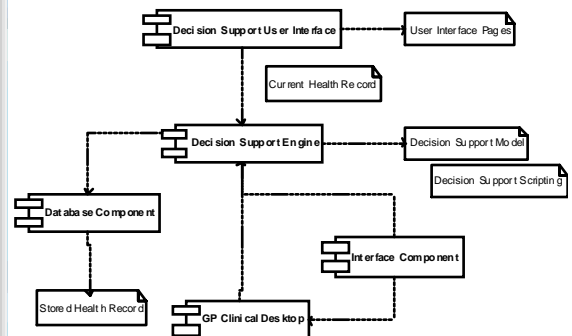
Decision Support Standards

- DSML
 - XML representation
 - Flowchart navigation modelled
 - Models data schema also
 - Numeric
 - Text
 - Selection (Enumeration)
 - Data only available for current session
 - Decision rules are modelled

Decision Support Standards

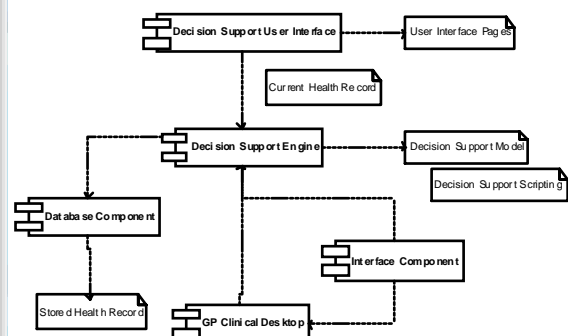
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- Arden Syntax
 - Programmatic Style
 - Event rules can be described
 - Difficult to represent flowchart
- GLIF – structured model
 - Proprietary
 - Decision rules are modelled



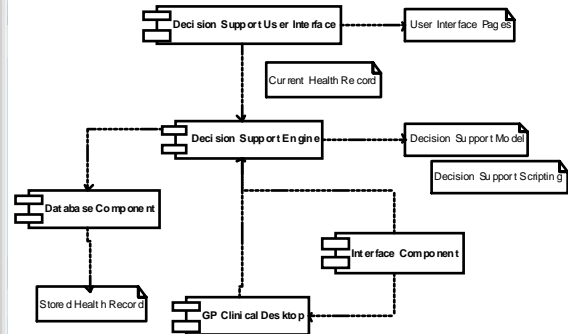
Data Interface Model

- HL7 V3.0 message (RIM, XML)
- Push model (launched by GP clinical desktop)
- Agreed query parameters for document
- LOINC coding for observations
- Merging required with health record
 - Multiple identifiers
 - Merging rules
 - Data ownership



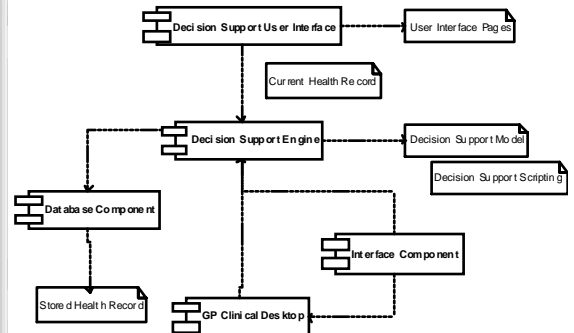
Data Storage Model

- Implements health record database
- Based on the Interface model
- XML database
- Library routines – JScript
 - Query routines scripted and using XPath
 - Update routines using XML DOM



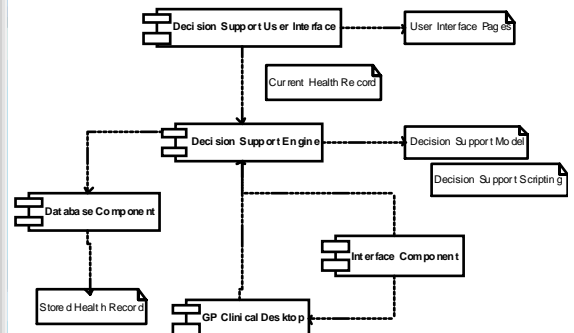
Decision Support Model

- Extended DSML model
- Scripted Logic – JScript
 - Navigation logic
 - State/Event logic
 - Score calculations (derived values)
- Scripted Storage – JScript
 - Get/Set database queries
 - Access health record model



Display Styles

- Standard transforms
 - XSL for page generation
 - DSML model for Decision Support
 - HL7 v3.0 Style for Health Record
- Standards applied
 - HTML,DHTML DOM,CSS
 - XML DOM, XSL, Xpath
- Flexibility Issues
 - Alternative user representation
 - Decision support logic not bound



Management of Versions

- Separation of content and framework
- Content development and versioning
 - Each disease area managed
 - Custom content can be developed
- Framework development and versioning
- Health record data model versioning
 - Associated data manipulation routines
 - Custom extensions can be developed

Complexity Level

- Require standards to cover mandatory basic functionality
- Standards must allow flexibility to handle increased complexity
- Adherence to standards makes development easier.

How to expand the standards

- Incentives for development
- More projects like this one
- Technical strategic goal setting
- Infrastructure focused projects
- Freely available components implementing standards.

SELECTION OF SCREEN SHOTS

ELECTRONIC DECISION SUPPORT
ASTHMA MANAGEMENT





