

VistA Laboratory Enhancement Proposals

Wish List of Improvements and Enhancements to
Laboratory Package Functionality

Overview

- Improving Existing Functionality
- Implementing Enhancements
- Support New Functionality
- Core Database Redesign
- Support External User Interface

Long-term goal

- Correct Existing Defects/Deficiencies
- Support Functionality Needed by Non-Governmental Sector
- Support Current and Emerging Legal and Clinical Requirements
- Implement and Support Data Standardization and Interoperability with External Systems

The Present Situation

- Current Database Design based on original requirements.
 - Single Laboratory Model
 - Slow/Incremental Technological Change
 - Limited Laboratory Testing Compendium
 - Adjunct to Paper Record System
 - Simple Customer Model – Ordering Provider

Development up to present

- Defect Correction Limited to Fixing Defects
- No Refactoring to Reflect Current Knowledge/Conditions
- Enhancements When Necessary Usually Limited to Immediate Requirement
- Loss of Domain Experts
- Maintenance Minimized in Anticipation of New Replacement System

Development up to present

- Laboratory Technology Continues to Advance at Rapid Rate
- Historical Categorizations Changing
 - Boundaries of Classical Laboratory Areas are being redrawn/eliminated by new technology
 - Test performed previously in “Microbiology” may now be performed in “Chemistry”

Potential Alternatives

- Continue Current “Band-Aid” Approach
 - Small Incremental Fixes
 - Leave Current Database/File Structure in Place
- Refactor Current System to Support New Functionality and Phase In Database Design Changes with Existing Database
- Redesign Existing Database to Support Existing and New Functionality

Areas for Enhancement

- Refactor existing functionality in areas of normal ranges, units and abnormality determination.
 - Normal ranges based on multiple age/sex/race
 - Normal ranges based on other factors – gestational age, therapy.
- Support normal ranges for non-numeric results – negative (normal)/positive(abnormal)
- Support additional abnormal flags - “normal”, “abnormal”, “significantly worse”

Areas for Enhancement

- Auto-verification of Automated Instrument Testing
 - Accept auto verified results from middle ware/automated instrument
 - Develop auto-verification functionality within VistA based on specified business rules when no external system
- Support Linking Images to All Areas of Laboratory Package.
 - Link/store images and binary documents for Chemistry/Hematology/Microbiology areas
 - Linking images at multiple levels – specimen, test, component.

Areas for Enhancement

- Support Phlebotomy Collection System
 - Transmit Orders
 - Process Request for Collection
 - Transmit Collection/Accession Information
- Adjunct/Replacement of Lab Data File (#63)
 - Support Multiple Standard Code Systems – LOINC, SNOMED, CPT at multiple levels
 - Support Textual/Word Processing Results
 - Support Comments/Notes and Supporting Information (User, Date/time, etc.) at Analyte Level
 - Support for Semi-Quantitative Results (Titers, Structured Numeric).

Areas for Improvement

- Urgency File
 - Allow inactivation of existing urgencies
- Label Printing
 - Print label to multiple printers
 - Allow printing to all members of a “hunt” group
- Delta Checks
 - Allow days back at test level
 - Override system setting
- Record Date/Time Order Placed
- Record Date/Time Order Requested For

Areas for Improvement

- **Historical Tests/Results**
 - Flag that they belong to an “Active” panel for Display/Lookup purposes.
 - Would not be Orderable
- **Audit Trail Capability**
 - Maintain a formal structured record of changes
 - Who, What, When, Why
- **Expand Lab Universal Interface**
 - Support Microbiology Instrumentation
 - Support Anatomic Pathology Processing and Transcription Systems.
- **Expand Point of Care Interface**
 - Support Existing Orders on VistA