

LIMS Implementation at the Delaware Public Health Laboratory

Jane Getchell, DrPH, Kathy Gray, LabWare, Lab Sections Managers
and Section LIMS “Experts”

June 6, 2006



*DELAWARE HEALTH
AND SOCIAL SERVICES*

Division of Public Health

Project Scope

➤ **APHL Requirements Implemented**

(Requirements for Public Health Laboratory Information Management Systems)

- BP #1. Laboratory Test Processing
(Clinical and Environmental)
- BP #3. Proactive Specimen/Sample Collection
- BP #4. Specimen and Sample Tracking
- BP #7. General Laboratory Reporting
- BP #8. Statistical Analysis and Surveillance
- BP #14. Quality Control (QC) and Quality Assurance (QA) Management



LIMS Users

➤ Lab Sections

- Virology
- Microbiology / Bioterrorism
- Environmental and Molecular Microbiology
- Environmental Chemistry
- STAT (remote) labs
- Chemical Terrorism

➤ Public Health Clinics

- 10 of 10 clinics are live

➤ Community based Organizations (CBO) (high school wellness centers, prisons, health clinics, etc.)

- To be implemented summer of 2006

➤ Hospital labs

- To be implemented fall of 2006



External Interfaces

- **Drinking Water – SDWIS ready**
- **Instruments: Balances, pH meters, ICP/MS and GC/MS**
- **Billing – extracted data report sent to Public Health billing office includes CPT codes and diagnosis (ICD-9)**
- **Master Client Index (MCI): Patient information**
- **CDC extract report for sexually transmitted diseases**
- **DERSS for epidemiology surveillance**
- **XPEMS: HIV**



Implementation Process

- **Initially reviewed requirements for all lab sections**
- **Focus turned to individual labs, which were implemented sequentially**
 - The only exceptions were Environmental Chemistry and EMM which overlapped
- **Configuration was workflow driven**
 - Scenarios were identified for each lab
 - Configuration completed from order entry to final reporting



Schedule

➤ **Start: Oct, 2004 End: Jun, 2006**

- **Project Duration: 20 months**

➤ **LabWare personnel**

- 2 LW consultants full time for the duration of the project
- 1 LW consultant 50% availability for the duration of the project
- 1 LW consultant full time for 10 months (Environmental Chemistry)

➤ **DPHL personnel**

- 1 LIMS Administrator full time for the duration of the project
- 2 Key users 20% availability starting in Micro for the duration of the project (14 months)



Schedule

Virology	Oct, 2004	May, 2005
Microbiology / BT	May, 2005	Nov, 2005
4 STAT remote labs	Nov, 2005	Dec, 2005
EMM	Dec, 2005	Apr, 2006
Environmental Chemistry	Jul, 2005	Apr, 2006
Chemical Terrorism	Apr, 2006	Jun, 2006



New Public Health Lab Functionality Introduced

- **Order Manager: Clinical patient test request**
- **Reference Ranges: Limits, reflex test definition**
- **Sample Rules: Specimen source definition**
- **Patient Manager: patient demographics**
- **Folder Manager: Sample workflow**
- **Child Test: Micro testing**
- **Lab Manager: Release testing rules**
- **Group Security: Clinic access rules**
- **Sample Display Fields:
Display Accession ID instead of sample ID**



Benefits Realized

- **Harmonize & centralize reports**
- **Data is more accessible**
- **Turnaround time has been reduced by 1 day**
- **Clinics have on-line access to results**
- **Sample accessioning administrative effort has been reduced**
- **All labs reduced transcription**
One example is during flu season. Prior to LabWare LIMS results were transcribed 7 times. With LabWare LIMS results are transcribed twice (notebook, and LabWare LIMS)
- **Product flexibility allows DPHL to configure changes**



Challenges

- **State IT policies sometimes hindered progress of the project**
- **Vendor needs to understand government operations**
- **Vendor knowledge of Public Health lab operations**
- **Refinements and process improvements always needed**
 - Most changes can be done by DPHL LIMS Administrator



Post Production Resources

- **1 LabWare Consultant required 4 weeks per year**
- **1 Delaware LIMS Administrator allocated 70% to project (configuration, upgrades)**
- **1 Delaware Key User per lab allocated 15% to project (Configuration, questions, training new staff)**
- **Maintenance contract for LabWare upgrades**

