Improving the Delivery of Transfusion Medicine Lab Services using ImmuLINK®

Marian Fortmann MS,MT(ASCP)SBB
Immucor User Group Meeting
May 12, 2016
Boca Raton, FL
Objectives

- Carolinas Healthcare System (CHS)
  - Our organization and services
- CHS Transfusion Medicine Integration Vision & Model using ImmuLINK
- ImmuLINK
  - Function and capabilities
Evolving Technology
Transfusion medicine technology

THEN

Now

One
ImmuLINK

• Technology has changed the way we live and the Transfusion Medicine lab is also impacted
• Many TM labs are transitioning to automated instruments and now have the opportunity to enter the virtual world
• ImmuLINK is virtually linking TM labs and introducing innovative lab process
• Instruments and systems in hospitals are becoming more intelligent
ImmuLINK™ is:

A data manager designed specifically for Donor Centers, Transfusion Services & Reference Labs

First of its kind in Blood Bank (“Middleware”)

Designed specifically for:
Background

• **ImmuLINK®** is a software suite designed specifically for Transfusion Medicine to improve testing efficiency and safety
  - Centralized data management solution
  - Single user interface for all Immucor instruments
  - Manage complex testing at remote sites from any location
    - Decrease LOS with increased consistency of results
  - Provide an easier way to manage Blood Bank test data (vs. LIS)
  - Customizable to fit current & future workflow
Single Facility without Immulink (current interface)

- Can only see results (final grading) in LIS
- Go to instrument to see details
Single Facility with ImmuLINK

- Can see instrument details in Immulink

5/10/2016
Data Manager  Middleware  Interface Methodology

ImmuLINK
manage

LIS

5/10/2016
Carolinas HealthCare System (CHS), one of the nation’s leading and most innovative healthcare organizations, provides a full spectrum of healthcare and wellness programs throughout North and South Carolina. Our diverse network of more than 791 care locations includes academic medical centers, hospitals, healthcare pavilions, physician practices, destination centers, surgical and rehabilitation centers, home health agencies, nursing homes, and hospice and palliative care.

Carolinas HealthCare System is an outgrowth of a community hospital originally founded in 1940. Since that time CHS has grown into one of the nation’s largest and most comprehensive systems, with more than 60,000 full-time and part-time employees, more than 7,460 licensed beds (acute care and post-acute care), and an annual budget exceeding $7.7 billion (comparable to many Fortune 500 companies).

Premier facilities include Levine Cancer Institute, Levine Children’s Hospital, Sanger Heart & Vascular Institute, Carolinas HealthCare System Neurosciences Institute-Neurology and The Transplant Center. Other specialties include maternity (regular and high risk), assisted reproduction, interventional oncology, radiation therapy, minimally invasive surgery, and many others. Through careful integration of services, CHS has built some of the nation’s largest accredited multi-hospital networks for treatment of stroke and heart attack.
CHS Hospital Laboratory Facilities

41 Hospitals Overall:
• Owned, leased or managed
• Includes Rehab, Behavioral Health

CHS Primary Enterprise Facilities:
• 11 Acute Care Hospitals (with TM)
• 6 Stand-alone E.D. facilities (emergency blood & RhIG)
• Infusion Centers
• 1 Regional Core Lab (no TM)
• Large Outreach (MD offices, etc.)
Using ImmuLINK - Worklist

Monitor instrument activity in real-time from the bench...

Or Anywhere!
Remote Validation Tool

User ID

Password

Enter
Worklist Management

ImmuLINK™ manage

Remote Validation Tool - Windows Internet Explorer

Worklist

Check In Date

From

To

Location

Instrument

Order Group

Sample Type

Sample ID

LIS

Status

Priority

Locked

Check In Date

Status

Sample ID

Priority

Group

Screen

Weak D

DAT

Records Found: 50

Page 1 of 3

Select All

ImmuLINK™ manage

Current User: Trainer Kevin

5/10/2016

Carolina HealthCare System

One
### Worklist Status Icons

Tests names can be customized.

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### Worklist Status Icons

- **Already received result for selected test(s)**
- **Everything complete**

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### Worklist Status Icons

Combination of different status based on each sample

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#### Sample is running

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### Worklist Status Icons

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## Worklist Status Icons

- **Green** = Test
- **Completed**

### Table

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**Green = Test Completed**
### Worklist Status Icons

- **Blue** = Test Running

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## Worklist Status Icons

![Image of Worklist Status Icons]

### Records Found: 6

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Test hasn’t started
RESULTS
### RESULTS

**Sample loaded on the instrument**

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**Sample transferred to LIS**

**Sample ready to be approved (no warnings by the instrument)**

**Attention required for this sample**

**Sample approved by authorized user**
### Results by Sample

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**Records Found:** 33
CMC Transfusion Services

• CMC Main provides comprehensive Transfusion Service Reference testing for CHS enterprise facilities
  – 20 technical staff (MT/ MLS) plus 4 part-time CLA
  – Work exclusively in Transfusion Service

• All work is triaged based on patient need including CMC Main, LCH, LCI and other CHS enterprise facilities
  – CMC Main is Trauma Level 1; LCH is Pediatric Trauma Level 2
  – Solid organ transplants & BMT; adult & pediatric

• Courier services by a contracted outside vendor
  – STAT transport times from 30 minutes to 2-3 hours
Carolinas HealthCare System

• Expanding services- acuity and volume
  – Sickle program, LCI/ LCH, Cardiac, etc.

• Lean staffing
  – ImmuLINK allows for a more efficient process

• Acute care lab techs work multiple departments
  – Require expert consultation from CMC Main 24/7

• Strong push to decrease Length of Stay for all patients
  – Inpatients
  – Infusion Center
  – OP Transfusion
  – Heme-Onc Clinics
Current TM Specimen & RBC Transport

CMC Main/ LCH
Each specimen not transported: TAT savings of at least 2-12 hours!
Future TM Specimen & RBC Transport

CMC Main/ LCH
Future State with ImmuLINK

- CMC Main is the facility where all the resulting and test approval occurs
- Acute care sites are where the samples reside and are loaded on the instrument
- **ImmuLINK® molecular** allows interaction with PreciseType™ HEA test results along with tools to assist with extraction and assay preparation.
- Immulink interface reduces the risk of transcription error
Process Improvement

• Process before ImmuLINK
  – Group and Screen and Crossmatch testing performed by acute care
  – Workup sent to CMC

• Process After ImmuLINK
  – Satellite site loads the instrument
  – Tech (MT, MLS, MLT, CLA) can leave and perform other lab work
  – Specimens with neg. ABSC and no discrepancies - sent to LIS
  – ABSC Pos and/or further testing is required – CMC reviews investigation via ImmuLINK and directs the completion of the investigation to include final results
Savings & Efficiencies

• What are the savings and efficiencies?
  – Auto verify of negatives produces tech time efficiencies
  – Reduction in errors – no manual entry of results into LIS
  – Transport costs
  – Improvement in TAT for patients at remote sites
    • Shipping time delays TAT
    • Future state: perform DAT, Antigen typing on instruments, can be checked remotely
  – Savings in reagent cost when samples are sent to CMC Main
    • No need to repeat testing
  – More effective access to central expertise
ImmuLINK facilitates ....

• Standardization of testing platforms across a region thereby promoting standardized SOPs and access to the results from any computer.
• Decrease in transportation cost
• More efficient tracking of specimens and patient results
• Better staff utilization
• Decrease in test redundancy across the system.
• Improving Specimen Review process
  – Troubleshooting
• Education
• Promotes integration, efficiency in staffing and centralization of expertise.
ImmuLINK improves the quality of service we provide thereby improving patient care and allows for the operation of lab in a cost efficient way.
## Efficiency and Safety Solutions

### Reduce Wasted Time

| Minimize sample and people movement | • Reduce sample shipments by interpreting results remotely  
• Reduce staff movement by having access to results away from the instrument |

### Improved access to archives

|  | • Fully automated with no user interaction.  
• Lookback to all archive results in a single location without accessing a disk  
• No instrument down time to access archives |

### Interface

| PreciseType HEA molecular results | • Reduce time spent on manual entry  
• Both serological and molecular results are viewable on the same screen at the same time |
# Efficiency and Safety Solutions

## Remote access your results with details
- Any technologists can assist at any location to resolve issues
- Supervisors or on-call staff can review & approve across multiple locations

## Global reflex rules
- Automatically reflex from one instrument to another
- Move the sample to any available instrument instead of waiting for the completion of routine testing

## Single LIS connection
- Connect multiple instruments to a single LIS connection interface
- Reduced interfacing complexity.
## Efficiency and Safety Solutions

| View detailed results (images) from any networked PC | • Quick intervention by supervisors means patients receive units quickly  
• See complete results, not just final interpretation |
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<td>Role and location based user access privileges</td>
<td>• Unique user logins determine which instruments and at which facilities a technician can access.</td>
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<td>Identify manual edits</td>
<td>• ImmuLINK will highlight manual edits made by authorized users for additional review</td>
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| Lock samples | • Locks result in ImmuLINK for further investigation.  
• Autolock historical mismatch before results reach the LIS |
Comments

• CHS pilot site was a smaller acute care
  – To work through IT/ firewall issues
  – Additional validation done at CMC due to our more expansive test menu

• LIS build
  – Sunquest Laboratory

• Training for Neo & for Echos
  – Relatively small differences in setup
QUESTIONS?

Thank you!

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