Interfacing

How-To and What’s New

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ACS Healthcare Solutions – MIDAS+
Tucson, AZ
Clinical Data Integration
Turning Data into Actionable Information

• Why interface?
  • More efficient workflow
  • Maximize resources
  • Reduce costs
  • Mandatory federal and state reporting requirements
  • Improve patient outcomes
How Can MIDAS+ Help with Integration?

- Workflow Tools — improve quality and efficiency of daily work activities
- Information Tools — collect and store information
EMR or Paper Equivalent

Laboratory, Pharmacy, Radiology, Orders, Nursing Assessments...

Hospital Information System: Administrative Data including UB92 (UB04)

Admission ----------------- Patient ----------------- Discharge

MIDAS+ Care Management
Case Management
Quality Management
Risk Management
Reporting/Performance Management

MIDAS+ DataVision:
Retrospective comparative data and JCAHO/CMS Reporting

MIDAS+ Seeker: Credentialing and Provider Profiling

MIDAS+ Database
Benefiting from an EMR

According to the US Department of Health & Human Services, National Institutes of Health...

One of the key benefits of an Electronic Health Record is its role in accurately identifying high-risk patients and enhancing disease management efforts.
Clinical Data Integration

Laboratory Interface

- Infection Control Module
- Blood Bank Module
- Lab Focus Studies
Assemble Your Team

• Who Needs to be Involved?
  • Infection Control Representative
  • Blood Bank Representative
  • Laboratory Information System Analyst
  • IT Analyst/Engine Analyst
  • MIDAS+ System Manager
Next Steps

• What happens next?

• Budget

• Send purchase order to MIDAS+

• Other vendor ready? IT/engine resource ready?

• Scheduler contacts MIDAS+ System Manager

• Project is scheduled and assigned

• Kick-off call
Laboratory Interface

• The Project begins...
  • Implement live feed from LIS or engine to MIDAS+ test area
  • Transactions are logged
  • ACS Clinical Integration Analyst performs the GAP analysis
Laboratory Interface

*Preparation Phase*

• What is the GAP analysis?
  
  • ACS Clinical Integration Analyst analyzes transactions for specific types of information
    
    • Isolates
    
    • Multiple organisms
    
    • Any other special processing
  
  • ACS Clinical Integration Analyst develops spec
  
  • ACS Interface Analyst/Technical Lead installs custom interface in the MIDAS+ test area
Lab Focus Studies

Preparation Phase

• How do we get started on the Lab Focus Studies?
  • Determine type of Focus Studies needed
  • Determine what results will be sent to focus studies
  • Set up separate security group
  • Determine values for Focus Sub-criteria Dictionary (#144)
  • Standard fields extracted
Lab Focus Studies

Preparation Phase

• Determine type of Focus Studies needed

• Chemistry - Digoxin, Dilantin, Electrolytes, Bilirubin
• Hematology - CBC, WBC, Prothrombin Time, INR
• Urology - Urinalysis
• Serology - HIV, Influenza Screen, Rapid Strep Screen
• Miscellaneous – Point of Care, Respiratory Care
Lab Focus Studies

Preparation Phase

• Determine what results will be sent
  • Lab department associated with result (typically OBR-24)
  • Ordered test code
Lab Focus Studies

Preparation Phase

• Set up separate security group for all lab focus studies and restrict user access as appropriate
  • Remember data should only be updated via the incoming lab interface
  • Accessed via inquire mode only
Lab Focus Studies

Preparation Phase

• Determine values for Focus Sub-criteria Dictionary (#144)
  • Identify and enter all Abnormal Flag codes and descriptions.
    • Example - H for High, L for Low, etc.
  • Identify and enter all Result Status codes and descriptions.
    • Example – F for Final, P for Preliminary, etc.
Lab Focus Studies

Preparation Phase

• Additional steps

• Other User-defined fields needed? If so, contact the ACS Clinical Integration Analyst
### Lab Focus Studies

**Preparation Phase**

- What standard fields are extracted?

<table>
<thead>
<tr>
<th>Midas+ Description</th>
<th>HL7 Description</th>
<th>HL7 Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility</td>
<td>Sending Facility</td>
<td>MSH-4</td>
</tr>
<tr>
<td>Patient Account Number</td>
<td>Patient Account Number</td>
<td>PID-18.1</td>
</tr>
<tr>
<td>Accession Number</td>
<td>Filler Order Number</td>
<td>OBR-20</td>
</tr>
<tr>
<td>Order Code</td>
<td>Universal Service Identifier</td>
<td>OBR-4</td>
</tr>
<tr>
<td>Date of Focus</td>
<td>Specimen Received Date/Time</td>
<td>OBR-14</td>
</tr>
<tr>
<td>Requested Date/Time</td>
<td>Requested Date/Time</td>
<td>OBR-6</td>
</tr>
<tr>
<td>Test Name</td>
<td>Observation Identifier</td>
<td>OBX-3</td>
</tr>
<tr>
<td>Result</td>
<td>Observation Value</td>
<td>OBX-5</td>
</tr>
<tr>
<td>Units</td>
<td>Units</td>
<td>OBX-6</td>
</tr>
<tr>
<td>Reference Range</td>
<td>Reference Range</td>
<td>OBX-7</td>
</tr>
<tr>
<td>Abnormal Flags</td>
<td>Abnormal Flags</td>
<td>OBX-8</td>
</tr>
<tr>
<td>Observation Status</td>
<td>Observation Result Status</td>
<td>OBX-11</td>
</tr>
<tr>
<td>Date/Time of Observation</td>
<td>Date/Time of Observation</td>
<td>OBX-14</td>
</tr>
</tbody>
</table>
Lab Focus Studies

Testing Phase

• Next phase – Testing

• ACS Interface Analyst will map interface fields to focus studies in Test area.
• Direct Lab Interface to MIDAS+ Test area/server.
• Examine records processed in test area against source system to ensure accuracy of interface output and mapping.
• Review the error queue for the interface and analyze any errors that are being posted.
Infection Control

Preparation Phase

• How do we get started on Infection Control?
  • Determine what results will be sent
  • Obtain files from the LIS for the 4 Infection Control Dictionaries
  • Define extended user fields
  • Setup security group
  • Standard fields extracted
Infection Control

Preparation Phase

• Determine what results will be sent
  • Lab department associated with result (typically OBR-24)
  • Ordered test code
Infection Control

Preparation Phase

• What Dictionaries are needed for IC?
  • Obtain files from the LIS for the 4 Infection Control Dictionaries
  • Files should contain all possible values MIDAS+ will receive from the LIS
  • Files should have two columns: code and description
  • Save file as a text delimited tab file
  • Interface Analyst will FLOAD these files
Infection Control

Preparation Phase

- Infection Control Dictionaries
  - Culture Source – Inf Culture Source (# 25)
  - Organism – Inf Culture Organisms (# 26)
  - Resistant Drug – Inf Antibiotics (# 30)
  - Diagnostic – Inf Diagnostics (# 28)
Infection Control

Preparation Phase

• Define Extended User Fields
  • Accession Number
  • Isolate Lines
  • Other commonly used fields such as body site of culture, ordering location, and specimen description
• Be sure to tell your ACS Interface Analyst what you have defined!
Infection Control

Preparation Phase

• What standard fields are extracted?

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<td>OBR-3</td>
</tr>
<tr>
<td>Requested Date/Time</td>
<td>Requested Date/Time</td>
<td>OBR-6</td>
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<td>Specimen Source</td>
<td>Specimen Source</td>
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<tr>
<td>Specimen Received Date/Time</td>
<td>Specimen Received Date/Time</td>
<td>OBR-14</td>
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<tr>
<td>Order Code</td>
<td>Universal Service Identifier</td>
<td>OBR-4</td>
</tr>
<tr>
<td>Ordering Physician</td>
<td>Ordering Provider</td>
<td>OBR-16</td>
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<tr>
<td>Organism</td>
<td>Observation Value</td>
<td>OBX-5</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Observation Identifier</td>
<td>OBX-3</td>
</tr>
<tr>
<td>Resistances</td>
<td>Abnormal Flags</td>
<td>OBX-8</td>
</tr>
</tbody>
</table>
Infection Control

Testing Phase

• Next phase – Testing

• ACS Interface Analyst will map interface fields to Infection Control fields in Test area.

• Direct Lab Interface to MIDAS+ Test area/server.

• Examine records processed in test area against source system to ensure accuracy of interface output and mapping.

• Review the error queue for the interface and analyze any errors that are being posted.
Infection Control Inquiry
General Tab

Onset Date: 2/27/2008

Infection Type: [Field]
Culture Source: Stool Culture
Reportable: [Field]
Location: [Field]

Precipitating Conditions:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: [Field]
### Infection Control Inquiry

#### Organism/Antibiotics Tab

![Infection Control Inquiry Form](image)

- **Onset Date:** 2/27/2008
- **Organism:** ESCHERICHIA COLI 0157
- **Resistant Drug:** AMIKACIN SUSCEPTIBLE, AMOX/K CLAVULANATE SUSCEPTIBLE, AMPICILLIN SUSCEPTIBLE
- **Antibiotic:**
  - **Start Date:**
  - **End Date:**
- **Isolation:**
  - **Type:**
  - **Start Date:**
  - **End Date:**
- **Comments:**

---

17th Annual MIDAS+ User Symposium  
GO FOR THE GOLD  
June 9-11, 2008 • Tucson, Arizona
Infection Control Inquiry

Prior Conditions/Tests Tab

Onset Date: 2/27/2008

Risk Factor: 

Diagnostic: STOOL CULTURE

Info Source: Readmit < 30: 

Implant: Preop Rx: 

Tracer: 

Comments: 

User Fields

Infection Comments

Close

Help
Infection Control Inquiry

Extended Screen – Infection Control Inquiry

Reported by: 
Accession Number: M359
Collection Date: 3/3/2008
Collection Time: 1:55 PM
Special Request: NONE
Gram Stain: MANY MIXED ORGANISMS
Report Status: FINAL 03/03/2008
Isolate 1: HEAVY MORAXELLA (BRANHAMELLA) CATARRHALIS
Isolate 2: LIGHT USUAL RESPIRATORY FLORA
Isolate 3:
Isolate 4:
Comments:
Infection Control

Linking Surgery Data

<table>
<thead>
<tr>
<th>Onset Date:</th>
<th>10/5/2007</th>
<th>Infection:</th>
<th>CDC INFECTION</th>
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<table>
<thead>
<tr>
<th>General</th>
<th>Physician/Surgery Data</th>
<th>Organisms/Antibiotics</th>
<th>Prior Conditions/Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician:</td>
<td>ABBOTT, CHARLES M. MD@</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR Rooms:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anes. Type:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anes. Risk:</td>
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</tr>
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</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>APPENDICOMY</td>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Surgery</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Class:</td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td>9/17/2007</td>
</tr>
<tr>
<td>Start Time:</td>
<td>8:30 AM</td>
</tr>
<tr>
<td>End Time:</td>
<td>4:00 PM</td>
</tr>
<tr>
<td>Exposed:</td>
<td>7:30</td>
</tr>
</tbody>
</table>

Comments: NOW

User Fields
Infection Comments
Close
Blood Bank

Preparation Phase

- How do we get started on Blood Bank?
  - Determine what results will be sent
  - Obtain files from the LIS for the 2 Blood Bank Dictionaries
  - Standard fields extracted
Blood Bank

Preparation Phase

• Determine what results will be sent
  • Lab department associated with blood bank result (typically OBR-24)
  • Ordered test code
Blood Bank

Preparation Phase

• What Dictionaries are needed for BB?
  • Obtain files from the LIS for the 2 BB Dictionaries
  • Files should contain all possible values MIDAS+ will receive from the LIS
  • Files should have two columns: code and description
  • Save file as a text delimited tab file
  • Interface Analyst will FLOAD these files
Blood Bank

Preparation Phase

- Blood Bank Dictionaries
- Blood Components (#32)
- Blood Order Type (#537)
**Blood Bank**

**Preparation Phase**

- What standard fields are extracted?

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<td>OBR-4</td>
</tr>
<tr>
<td>Component</td>
<td>Observation Value</td>
<td>OBX-5.1</td>
</tr>
<tr>
<td>Unit Number</td>
<td>Observation Value</td>
<td>OBX-5</td>
</tr>
<tr>
<td>Units Transfused</td>
<td>Observation Value</td>
<td>OBX-5</td>
</tr>
<tr>
<td>Ordering Provider</td>
<td>Ordering Provider</td>
<td>OBR-16</td>
</tr>
<tr>
<td>Date/Time of Transfusion</td>
<td>Date/Time of Observation</td>
<td>OBX-14</td>
</tr>
</tbody>
</table>
Blood Bank

Testing Phase

• Next phase — Testing

• ACS Interface Analyst will map interface fields to the Blood Bank fields in Test area.

• Examine records processed in test area against source system to ensure accuracy of interface output and mapping.

• Review the error queue for the interface and analyze any errors that are being posted.
<table>
<thead>
<tr>
<th>Component</th>
<th>Order Type</th>
<th>No. Transfused</th>
<th>Date</th>
<th>Time</th>
<th>More...</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFP, THAWED</td>
<td>PLASMA, FRESH FROZEN</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FFP, THAWED</td>
<td>PLASMA, FRESH FROZEN</td>
<td>1</td>
<td></td>
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<tr>
<td>FFP, THAWED</td>
<td>PLASMA, FRESH FROZEN</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
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<td>FFP, THAWED</td>
<td>PLASMA, FRESH FROZEN</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Final Disposition: ___________________________  Tracer: ___________________________
<table>
<thead>
<tr>
<th>Component</th>
<th>Order Type</th>
<th>No. Transfused Date</th>
<th>Time</th>
<th>More...</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH G</td>
<td>POST PARTUM RHOGAM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC, CPD</td>
<td>TYPE AND SCREEN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Components - More Data Entry**

- **Units**
  - Ordered: 1
  - Wasted:
  - Autologus: 
  - Cell Saver: 
  - STAT Order: ✓
  - Justified:

- **Physician**: PRESKILL, DAVID

- **Transfusion Criteria 1:**
- **Transfusion Criteria 2:**

- **Reaction**
- **Confirmed**
- **UNIT ID Number**

- **Component Comments:**
Laboratory Interface

Live Phase

• The big day...Go live

• Create dictionaries in live
• Create focus in live
• Create extended user fields in live
• ACS Interface Analyst moves interface programs to live
• Create live feed to live area
• Validate data in MIDAS+
• Start building SmarTrack Indicators and Worklist Rules
Pharmacy to Drug Therapy

• What standard fields are extracted?
  • Start & End Dates
  • Route
  • Frequency
  • Duration
  • Ordering Physician
  • Indication
  • Use
Drug Therapy Entry - Wagner, Arnold 2/25/2006

Date: 2/26/2006

Drug: Naloxone
Dosage: 2mg

Route: Intravenous Push

Frequency: 
Duration: 

Ordering Phys.: Smith, Robert

Indication: Narcotic Depression

Use: 

Blood Level: 
Justified: 

Adverse Reaction

Tracer: 

Comments: 

Save
Save & Print
Cancel
Help
Inbound Orders
Discharge Planning and Support Services

Focus Encounter Entry - Gold, Monica 5/7/2006 10:00 AM

- **Focus:** SOCIAL SERVICES ORDER
- **Date:** 5/11/2006
- **Focus ID:** 06-14
- **Providers:**
  - Franklin, Michael

**Order Description:**
- Transfer to SNF
- Family Counseling

**Comments:** Assist with SNF placement. Patient's daughter is having difficulty accepting mother's declining health.
Other New Interfaces/Services

• BedReady
• Get With the Guidelines (GWTG)
• Pennsylvania Patient Safety Reporting System (PSRS)
Remember the 5 W’s of Clinical Data Integration

- Who
- What
- When
- Where
- Why
Need more info?

• Contact your ACS Service Manager
• What information do you need to provide to MIDAS+?
  • Type of interface needed
    • Vendor and product name
    • Contact name for vendor (if applicable)
    • Will multiple facilities be sending data through this interface?
    • Engine?
    • Explain workflow and business requirements
Contact

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Christine.Bocher@acs-inc.com
Questions?