Centricity Reporting 101

PRESENTED BY

Mike Baeske, Software Applications Specialist – Team Leader
Objectives

1. Discover the reporting tools that are readily available in Centricity
2. See how Crystal Reports and Word documents can be generated based on SQL coding
3. Learn about key tables, views, and functions in Centricity
Ortho NorthEast

- An Orthopedic practice founded in 1962
- 12 locations throughout northeast Indiana
- 26 physicians, 7 anesthesiologists, 13 CRNAs, 24 mid-levels, 14 PT/OT
Prebuilt Centricity Reporting Tools
Chart Access Report
<table>
<thead>
<tr>
<th>Event Date Time</th>
<th>Event</th>
<th>User Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8/2014 9:11:42AM</td>
<td>Access a normal chart</td>
<td>IT Mike B (ALL)</td>
</tr>
<tr>
<td>8/8/2014 9:11:52AM</td>
<td>Chart tab changed</td>
<td>IT Mike B (ALL)</td>
</tr>
<tr>
<td>To tab: Summary</td>
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<tr>
<td>8/8/2014 9:18:05AM</td>
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<td>IT Mike B (ALL)</td>
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<td>IT Mike B (ALL)</td>
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<tr>
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<tr>
<td>8/8/2014 9:18:11AM</td>
<td>Document change</td>
<td>IT Mike B (ALL)</td>
</tr>
<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document contribution action: Created Document</td>
<td></td>
</tr>
<tr>
<td>8/8/2014 9:18:11AM</td>
<td>View a normal document</td>
<td>IT Mike B (ALL)</td>
</tr>
<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document contribution action:</td>
<td></td>
</tr>
<tr>
<td>8/8/2014 9:18:11AM</td>
<td>Chart tab changed</td>
<td>IT Mike B (ALL)</td>
</tr>
<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
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<td></td>
<td>Document contribution action:</td>
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<td>IT Mike B (ALL)</td>
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<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
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<td></td>
<td>Document contribution action:</td>
<td></td>
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<tr>
<td>8/8/2014 9:18:25AM</td>
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<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
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<td></td>
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<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
<td></td>
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<tr>
<td></td>
<td>Document contribution action:</td>
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</tr>
<tr>
<td>8/8/2014 9:18:54AM</td>
<td>View a normal document</td>
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<tr>
<td></td>
<td>Document summary: 08/08/2014 - Office Visit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document contribution action:</td>
<td></td>
</tr>
</tbody>
</table>
Chart Summaries
# Chart Summaries - Entire Appointment Book

## Print Settings

**Print Topics**
- Appointments
- Forms - For Selected Appt
- Forms - For Selected Books

**Print Items**

**Date Range**
- From: 08/10/2014
- To: 08/10/2014

**Books**
- Karr Foot Ankle

**Type**
- Chart Summary
- Letterhead: ONORTH

**Page Range**
- All

**Copies**
- 1

**Printer**
- Client/11-149#/PDFCreator
Chart Summaries

- Controlled by chartsum.rtf file in crwrpts folder
- Wordpad and Notepad / Notepad ++ are key tools for editing file
- MedicaLogic Expression Language (MEL) controls data being shown
PERCOCET 5-325 MG TABS
(OXYCODONE-ACETAMINOPHEN), 1-2 po q 6 hrs pm max 6/24 hrs

Med Status: Active Medication
Last Refill: 09/24/2014
Stop Date: <no stop date>
Stop Reason: 
Entered By: IT Mike B
Entry Date: 09/24/2014 3:17 PM

Prescriptions/Refills

Trainer! Fake!
44 Years Old Female   DOB: 07/15/1970   10646377
Insurance: Colonial (16003) Group: Plan N

Home (260) 493-3795   Work (260) 408-2533
MU2 Core Measure 6 Audit Report: Clinical Decision Support

---

**Date/Time** | **Action Type - Description** | **Patient Name** | **User ID** | **Machine Name** | **Outcome**
--- | --- | --- | --- | --- | ---
10/02/2014 10:59:54PM | Execute - MEL Decision Support | !Fake!, Trainer (443122-2326001) | mbaeske | ORTHONEICDC-XE! | Success

Please verify the patient is NOT allergic to any of the following before ordering Gel-One: Cinnamon, Chicken, Egg, Feathers, or Poultry products. If the patient is allergic to any of these consider using Orthovic.

10/02/2014 11:00:02PM | Execute - MEL Decision Support | !Fake!, Trainer (443122-2326001) | mbaeske | ORTHONEICDC-XE! | Success

Please verify the patient is NOT allergic to any of the following before ordering Hyalgan: Chicken, Egg, Feathers, or Poultry products. If the patient is allergic to any of these consider using Orthovic.
“Canned” GE Reports in Reports Module
Reporting Module Color Scheme
Inquiry Reporting
Inquiries

• Able to setup without needing to know programming languages
• Can save inquiries for future use
• Results can be used to navigate directly to chart area
Categories of Inquiries

<table>
<thead>
<tr>
<th>Inquiry</th>
<th>Find</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Historical Demographics</td>
</tr>
</tbody>
</table>
Setting Up Inquiries

- Ability to setup multiple conditions separated by AND’s or OR’s
- Can count or search
- Search results can take user directly to data
Saving Inquiries
Meaningful Use Stage 2 Reminders

• Inquiries combined with Letters can be utilized:
EMR Crystal Report Development
Creating an EMR Report

- Reports must be built in external editor
- ODBC connection utilized to build query
- MLO_default live system
Organizing Data
Running Totals

Create Running Total Field

Available Tables and Fields:
- Report Fields
- MLO (ODBC (RDO))
- Command
- PID
- DID
- SODID
- DCRID
- CHANGE
- XID
- USRID
- LRID
- EXTD
- DOCTYPE
- CLINICALDATE
- SUMMARY

Running Total Name: Number of Documents
Summary Field to summarize: Command.EXTERNALID
Type of summary: count

Evaluate:
- For each record

Reset:
- Never

Group #1: Command.SEARCHNAME

OK Cancel Help
# Documents Missing Orders

<table>
<thead>
<tr>
<th>PROVIDER</th>
<th>EXTERNALID</th>
<th>DOC#</th>
<th>SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barr MD, Jeffrey W.</td>
<td>795539</td>
<td>99</td>
<td>FU lumbar ES1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Documents:</strong> 1</td>
</tr>
<tr>
<td>Berghoff MD, William J.</td>
<td>778788</td>
<td>277</td>
<td>Post op LTK Rev</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Documents:</strong> 1</td>
</tr>
<tr>
<td>Conner MD, David M.</td>
<td>10360965</td>
<td>80</td>
<td>Suture removal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Documents:</strong> 1</td>
</tr>
<tr>
<td>Gemlick MD, Brett F.</td>
<td>718210</td>
<td>55</td>
<td>rt knee post-op</td>
</tr>
<tr>
<td></td>
<td>9940920</td>
<td>65</td>
<td>rt rotator cuff post-op</td>
</tr>
<tr>
<td></td>
<td>10049430</td>
<td>99</td>
<td>neck #5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Documents:</strong> 3</td>
</tr>
<tr>
<td>Hamlet MD, Ward P.</td>
<td>9274490</td>
<td>181</td>
<td>II thumb 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total Documents:</strong> 1</td>
</tr>
</tbody>
</table>

**Total Documents:** 7
EMR Report Setup
CPS Crystal Report Development
Creating a New Report

• Must be in Design Mode for the option to create a new report:
Creating a New Report
Report Control setup
Types of Controls

Available Controls
- Check
- Currency
- Date
- Date Range
- Drop List
- GroupBy SortBy
- List
- Masked Edit
- Radio Group
- Select, Allocation Set
- Select, Appointment Type
- Select, Batch
- Select, Charge Sets
- Select, Clearinghouse

Select
- Company
- Diagnosis
- Doctor
- Employer
- Facility
- Fee Schedule
- Guarantor
- Insurance Carrier
- Insurance Group
- Inventory Item
- Modifier
- Patient
- Physician
- Place of Service

Select, Procedure
- Resource
- Task Queue
- Transaction Column Set
- Type of Service
- Vendor
- Spin Edit
- Text
Control Setup

*Insert New Control*

- Control Type: Date Range
- Name: Visit Date

*Drop List - USER*

- Name: USER
- Label: User
- Data Source:
  - Table: SS7 - Data Element Syntax Error Code
- Query:
  ```sql
  SELECT DISTINCT CreatedBy AS Text, (CHAR(39) + CreatedBy + CHAR(39)) AS ItemData FROM PaymentMethod UNION SELECT ItemName, Null as ItemData ORDER BY Text
  ```

*Modify Control*

- Control Type: Radio Group
- Name: ALLPAYMENTTYPE
- Label: Payment Type
- Options: AllSelected

*Radio Group - ALLPAYMENTTYPE*

- Name: ALLPAYMENTTYPE
- Label: Payment Type
- Options: PAYMENTTYPE, PAYMENTTYPE1

*Properties*

- Properties button
- OK button
- Cancel button
Parameters

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>?DATE2</td>
<td>?DATERANGE.DATE2.U?</td>
</tr>
<tr>
<td>?REPORTNAME</td>
<td>?REPORT.NAME.U?</td>
</tr>
</tbody>
</table>

- `.U` returns data unquoted
- `.TEXT` returns string representation
- `.ITEMDATA` returns ID
- `.VALUE` pulls index from radio buttons
Retrieving Data

SQL:
```
SELECT cast(pv.visit as date) as 'Visit Date',
       vpp.DateOfBirth,
       vpp.PatientID,
       vsd.Name as 'Doctor',
       vsf.Name as 'Facility',
       vpp.SearchName as 'PatientName'
FROM PatientVisit pv
JOIN vPatientProfile vpp ON pv.PatientProfileId = vpp.PatientProfileId
JOIN vSelectDoctor vsd ON pv.DoctorId = vsd.DoctorId
JOIN vSelectFacility vsf ON pv.FacilityId = vsf.FacilityId
WHERE pv.visit >= ISNULL(?DATERANGE.DATE1, '1/1/1900') AND pv.visit < dateadd(d, 1, ISNULL(?DATERANGE.DATE2, '1/1/3000'))
AND ...
```
Setting Up Context Sensitive Reports
Report Configuration

- Alter the component setting in design mode to enable in different modules
Pulling Contextual Data

- Predefined Tokens used to extract contextual data

```sql
SELECT PatientProfile.PatientID, Guarantor.Prefix, Guarantor.First, Guarantor.Middle, Guarantor.Last, Guarantor.Middle, Guarantor.Last,
FROM PatientProfile, Guarantor, PatientVisit, InsuranceCarriers
WHERE PatientVisit.TicketNumber IN (?SELECTED_BILLING_TICKETNUMBERS.ITEMDATA.U?) AND
PatientVisit.CurrentInsuranceCarriersId = InsuranceCarriers.InsuranceCarriersId
```
Valid tokens for module-specific reports

Click the links below to see module-specific report tokens
(ControlName.ControlProperty) with a description of the selected token. For example, AR_STATUS.ITEMDATA and AR_STATUS.TXT are tokens for the billing visit. ITEMDATA is an internal value for the control property (for example, the value 303 for Dr. Andrew Jones). TXT is either a description of the information referred by the ITEMDATA (for example, Dr. Andrew Jones) or is the same as the ITEMDATA value (for example, a ticket number).

Note. There are no tokens for Administration or Balance Forward.

Tokens for module-specific reports

- Accounts Receivable
- Billing

  Token (ControlName.ControlProperty)  
  Description of the token for the selected visit(s)

  BILLING_STATUS.ITEMDATA  
  Billing status

  BILLING_VISITID.ITEMDATA  
  Visit ID

  BILLING_TICKETNUMBER.ITEMDATA  
  Ticket number

  SELECTED_BILLING_VISITIDS.ITEMDATA  
  Comma separated list of visit IDs

  SELECTED_BILLING_TICKETNUMBERS.ITEMDATA  
  Comma separated list of ticket numbers
## Registration Tokens

<table>
<thead>
<tr>
<th>Token (ControlName.ControlProperty)</th>
<th>Description of the token for the current patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT_PATIENTPROFILEID.ITEMDATA</td>
<td>Patient profile ID</td>
</tr>
<tr>
<td>PATIENT_PATIENTPROFILEID.TEXT</td>
<td>Patient profile ID</td>
</tr>
<tr>
<td>PATIENT_NAME.ITEMDATA</td>
<td>Full name</td>
</tr>
<tr>
<td>PATIENT_NAME.TEXT</td>
<td>Full name</td>
</tr>
</tbody>
</table>
Running Context Sensitive Reports

- Use File menu to select the report
- Can directly Print or Preview and send to PDF or Excel
Active Reports
Creating Active Reports

• Reports can be built to alter the database

• **Must be extremely careful with development!**

• **Setup limiting Where clause first**

• Two ways of implementing alterations:

  • Update Query
    • Requires user to confirm that they want to alter Database

  • Auto Query
    • Always alters the database automatically when report is executed
Update Query

Runtime

File: InitialNotice 04-22-13.rpt

Parameters and Formulas

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Value</th>
</tr>
</thead>
</table>

Report Query


Update Query

update patientvisit set VisitOwnerMid=33859 where VisitOwnerMid=63304
Auto Query

Runtime
File: Procedures by Patient.rpt

Parameters and Formulas
- Symbol: ?FOOTER
  Value: ?FOOTER.ITEMDATA.U?
- Symbol: ?REPORTNAME
  Value: ?REPORT.NAME.U?

Report Query
/* Procedures by Patient */
SET NOCOUNT ON
SELECT Date=pvp.DateOfServiceFrom,

Update Query

Plugin

Paper Orientation
- Portrait
- Landscape

DECLARE @ReportName varchar(50)
SELECT @ReportName = '?REPORT.NAME.U?'
Generating Word Documents
Exporting to Word

• Can export any report to Word via Print Preview Screen
• Results tend to be mixed
GEMS Word Runtime Report Setup

• Plugin allows simple word integration

• SQL query used as logic for filling information

```
Select PatientProfile.PatientProfileId, cast(PatientVisit.LastFiledDate as date) as LastFiledDate, PatientName=PatientProfile.First+' '+isnull(PatientProfile.Middle,'')+' '+PatientProfile.Last, PatientVisitAgg.InsAllocation, InsuranceCarriers.Name as InsuranceName, AddressLine1=InsuranceCarriers.Address1+' '+isnull(InsuranceCarriers.Address2, '')
```
Document Setup

• Word document must be setup ahead of time

• Images and text can be statically entered to surround extracted data

September 4, 2014

«InsuranceName»
«AddressLine1»
«AddressLine2»

Patient Name: «PatientName»
Patient ID#: «InsuredID»
DOS: «Visit»
Dr.: «Doctor»
Ticket: «TicketNumber»
Billed Charge: $«InsAllocation»

To Whom It May Concern,
Document Setup

- MergeFields used to pull SQL results

Field name must be identical to SQL select results

```sql
SELECT PatientProfile.FirstName, PatientProfile.MiddleName, PatientProfile.LastName, PatientVisit.VisitDate AS LastFiledDate, PatientProfile.StreetAddress AS AddressLine1, InsuranceCarriers.Name as InsuranceName
FROM PatientProfile
LEFT JOIN PatientVisit ON PatientProfile.PatientID = PatientVisit.PatientID
LEFT JOIN InsuranceCarriers ON PatientProfile.insuranceID = InsuranceCarriers.insuranceID
```

Field properties:
- Field name: InsuranceName
CPS Administration Reports

- Store Procedures determine how information is pulled
- Crystal Reports on servers are used for layout
- Custom criteria determine which report will generate
Database Tips
Key Centricity EMR Tables

- PERSON*
- OBS / OBSHEAD
- ORDERS
- PROBLEM
- ALLERGY
- PRESCRIB / MEDICATE
- USR
- DOCUMENT / DOCDATA
- DOCROUTE

- FLAG
- LOCREG
- MUACTIVITYLOG
- FAMILYHEALTHHISTORY
- RELPERS / RELBUSS / RELPROV *
- BUSINESS / SERVPROV *
- INSURANC *
- INSURECO *
- IMMUNIZATION

* Lost in migration
Key CPS Tables

- PatientProfile
- Guarantor
- PatientVisit
- PatientVisitProcs
- PatientVisitAgg / PatientProfileAgg
- Cases
- InsuranceCarriers
- PatientInsurance / Cases Insurance

- Appointments
- BillingNote
- Transactions
- DoctorFacility
- Pharmacy
- PatientRelationship / PatientContacts
- MedLists
- ActivityLog
Key Centricity EMR Views

- VPERSON
- RPTOBS
- RPTAPPT
- USRINFO
- INSURANCE_INFO
- RPT_AUDIT_EVENT

- VACTIVEALLERGY
- VACTIVEMEDICATE
- VACTIVEPROBLEM
Key CPS Views

- vSelectCase
- vSelectCompany
- vSelectDoctor
- vSelectFacility
- vSelectGuarantor
- vSelectInsuranceCarrier
- vSelectPatient

- vPatientAppointments
- vPatientInsurance
Key Centricity EMR Functions and Procedures

- **ARCHIVE_OBS()**
  - Boost chart loading speed by archiving older observations

- **SEND_FLAG()**
  - Used to Automatically generate a flag in the EMR

- **CONVERT_ID_TO_DATE()**
  - Used to convert certain date fields into actual date values

- **CONVERT_DATE_TO_ID()**
  - Used to take a date value and convert to special numeric date*

*Milliseconds since 01/01/1960*
Key CPS Functions and Procedures

- FunctionMonthlyFinancialSummary
- FormatName
- FormatPhone
- CMS1500_V0212
- MPMBlocked
- MPMPatientProfile
- MPMReceipt
- MPMStatement
- MPMSuperbill
- MPMUB92