



E-Health Records & Medicaid

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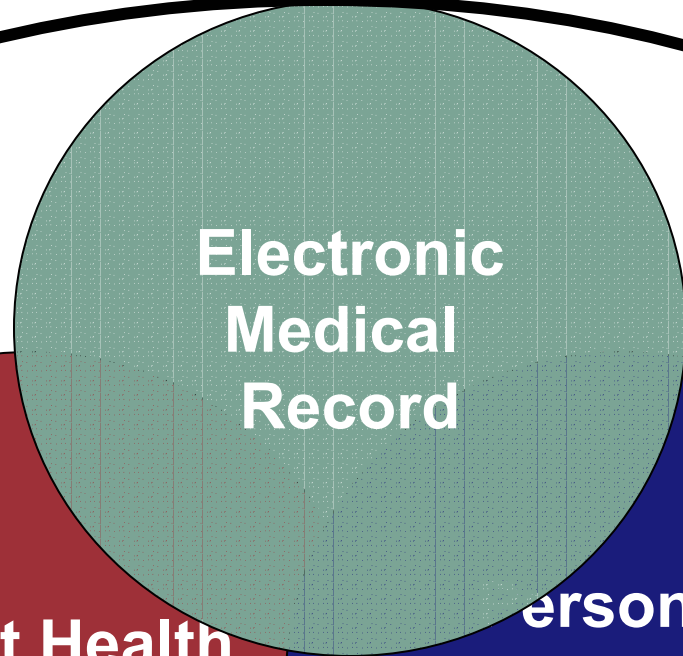
Overview

- E-Health Records
- Clinical data/Lab test results data
- Case Studies



Electronic Health Record (EHR)

EHR



Patient Health Record

Personal Health Record

Electronic Medical Record

Focus



Purpose of EHR

- One purpose:
 - Obtaining and Using Clinical Data
 - Numerous health care decisions—current, emerging, and unimagined—need better clinical information
 - The prospects of a uniform, accessible electronic health record is too remote to wait
 - Customers are asking: “What can be done now?”




EHR Tools

Tool	Def.	User	Example
Electronic Medical Record	Point of care data collection by care team	Physician at time of care to record encounter and for decision support	Contains all components of results of a urinalysis
Personal Health Record	Individual's collected health care experiences	Patient	Contains fact that urinalysis was done. May report normal/abnormal
Patient Health Record	Enrollees collected health care experience via claims data. ? Clinical data	Plan case manager, disease management	Contains urinalysis microalbumin, normal/abnorm. For diabetes DM





Personal Health Record: Lab



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Patient Summary
 Medical Details
 Drug Details
 Lab Results

Patient ID: 232179201

Patient Demographics

Name First Current:	Len	Name Last Current:	Bianco	Gender:	Male
Age In Years:	64	Account ID:	6112	Plan:	Med One Plus
PCP Name:	~Missing	Member Months:	1		

Lab Results

Rows 1..15 of 80

Service Date MMDDYYYY	LOINC Component	Lab Test	Lab Result Units	Lab Abnormal Flag	Lab Results	Ordering Prov Name	Paid Date MMDDYYYY
06/04/2003	POTASSIUM	Potassium SerPI-sCnc	MMOL/L	Low	2.807585	~Missing	06/04/2003
06/04/2003	TRIGLYCERIDE	Trigl SerPI-mCnc	~Missing	High	524.000000	~Missing	06/04/2003
06/04/2003	GLUCOSE	Glucose SerPI-mCnc 6777-7	MG/DL	High	176.000000	~Missing	06/04/2003
06/04/2003	SODIUM	Sodium SerPI-sCnc	MMOL/L	Normal	143.000000	~Missing	06/04/2003
06/04/2003	HEMOGLOBIN A1C/HEMOGLOBIN.TOTAL	Hgb A1c % Bld	~Missing	High	12.000000	~Missing	06/04/2003
06/04/2003	CHOLESTEROL	Cholest SerPI-mCnc	MG/DL	High	287.000000	~Missing	06/04/2003
06/04/2003	CHOLESTEROL.IN LDL	LDLc SerPI Calc-mCnc	~Missing	High	222.000000	~Missing	06/04/2003
06/04/2003	CHOLESTEROL.IN HDL	HDLc SerPI.Ultracent- mCnc	~Missing	High	73.000000	~Missing	06/04/2003
06/04/2003	CREATININE	Creat SerPI-mCnc	MG/DL	High	2.343303	~Missing	06/04/2003
06/04/2003	UREA NITROGEN	BUN SerPI-mCnc	MG/DL	High	27.000000	~Missing	06/04/2003
04/29/2003	SODIUM	Sodium SerPI-sCnc	MMOL/L	Normal	145.000000	~Missing	04/29/2003
04/29/2003	GLUCOSE	Glucose SerPI-mCnc 6777-7	MG/DL	High	176.000000	~Missing	04/29/2003
04/29/2003	UREA NITROGEN	BUN SerPI-mCnc	MG/DL	High	27.000000	~Missing	04/29/2003
04/29/2003	POTASSIUM	Potassium SerPI-sCnc	MMOL/L	Normal	2.985057	~Missing	04/29/2003
04/29/2003	CREATININE	Creat SerPI-mCnc	MG/DL	High	2.343191	~Missing	04/29/2003

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Use of Clinical Data: Plans, Governments



- Intervention
 - Identify patients
 - Patients with diabetes who are not “under control” will be enrolled in an intensive disease management program
 - Drug lab safety – low potassium with Digoxin
- Risk Stratification
 - Sort patients
 - Patients with diabetes who are not “under control” experience a different rate of complications
- Refine Clinical Performance Measures
 - “Clean up the denominator population”
 - Patients with diabetes “under control” should have eye exams every two years

Types of Clinical Data

- Patient history
- Patient physical examination
- **Test results**
 - Lab test results
- Patient experience and QOL/health status
- Management plan – education/information
 - drugs
 - surgery/radiation
 - PT/counseling



Mapped Clinical Data to Diseases/Conditions to Support Disease Management and Performance Measurement

Example Only

Chemistry Results and Conditions

	A	B	C	D	E	
Conditions	Kidney Function	Cholesterol	Blood Glucose	Blood Coagulation	Pregnancy-related Tests	Total "Ys" Rows
	Microalbumin, Creatinine, Blood Urea Nitrogen (BUN)	Total, high density lipoprotein (HDL), low density lipoprotein (LDL), HDL/LDL ratio	Random glucose, 2hr post-prandial HbA1c	Prothombin time (PT)	Pregnancy test (urine, blood), Blood Type, Rubella titer	
Asthma						
Chronic Obstructive Pulmonary Disease						
Coronary Artery Disease (CAD)		Y				1
Depression						
Diabetes	Y	Y	Y			3
Heart Failure (CHF)	Y	Y		Y		3
Hypertension	Y	Y	Y			3
Low back pain (LBP)						
Acute Otitis Media						
Non-strep Pharyngitis						
Acute Sinusitis						
Total "Ys" Columns	3	4	2	1	0	10

Y=Yes. The test(s) contribute to targeting for intervention; refinement of a performance measure; or refinement of risk adjustment.

Note: See accompanying document explaining as needed the "Yes" annotations.



Case Study #1

Successes and Failures in Collecting and Using Lab Result Data

Case Study #1 Mission

- Highlights
 - Data oriented company focusing on serving the highest need membership
 - Developed robust internal care management and disease management programs

Case Study #1 and Thomson Medstat

- Medstat client since 2002
 - Advantage Suite
 - NetEffect
 - Disease Management Module
 - Lab Results Table
 - Quality Spectrum Insight (QSI) – HEDIS reporting tool
- Partnered with Medstat to develop the lab results table
 - Served as a Beta site for initial release
 - In production for approximately 1 year

Lab Result Table Development

Successes and Failures – Receiving Result Files

- **Take Home Lessons**

- Analyze high volume lab vendors to determine if result set will provide enough information to justify work effort
- Identify business/executive sponsor to maintain focus on the project
- Initiate negotiations early and include requirements in vendor contracts
- Evaluate submission frequency, quarterly=large volume of data, monthly=smaller volume but more maintenance

Lab Result Table Development Successes and Failures – Concatenating Files

- **Take Home Lessons**

- Thoroughly review offered file layout options from each vendor
 - Compare with you vendor's minimum requirements
 - Plan on sufficient time to develop concatenated file
- Identify single person accountable for entire project
 - Staffing impacts ongoing development and maintenance

Lab Result Analysis

Uses and Challenges

- **Current/Proposed Uses**

- Case finding for care management
 - High Random Glucose Scores with no subsequent diagnosis of diabetes
 - High HbA1c scores
- Individual enrollee monitoring
 - Care management participants, LDL, HDL, HbA1c values
- Outcome evaluation
 - Trending results pre and post care management interventions
- Supplemental HEDIS data
 - Reduces need for some record reviews, i.e. diabetes care measure

- **Limitations**

- Long lead time in loading data, i.e. quarterly loads
- Gaps in results, representing a lack of care or testing done at another vendor or practice?
- Missing data for members at practices associated with academic medical centers or others with internal labs

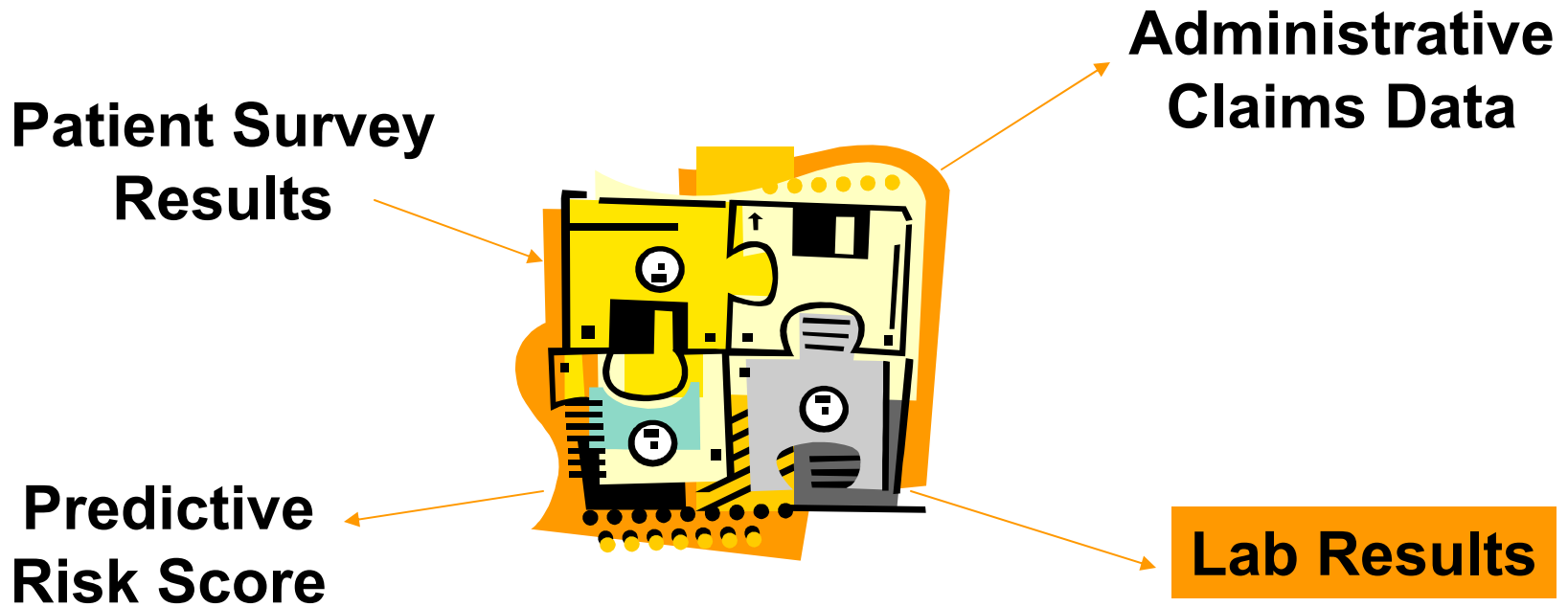


Case Study #2

Use of Lab Results for
Disease Management Patient Assessment and Outcomes

Lab results as piece of the puzzle

- Piece of the puzzle for:
 - Identification / Stratification
 - Patient Management
 - Outcomes Analysis



Identifying Patients for Disease / Case Management

- Provides quicker indication of patient health issue
- How many new patients can be identified with additional information?
 - May identify additional diabetic patients,
 - But must eliminate patients with single lab value as result of rule – out.
- How does stratification of DM patient population change with addition of lab results? Does a person stratified as low risk warrant inclusion based on lab result?
 - Perhaps the answer is yes if lab results indicates higher cholesterol but prescription drug data does not indicate use of cholesterol lowering agent!

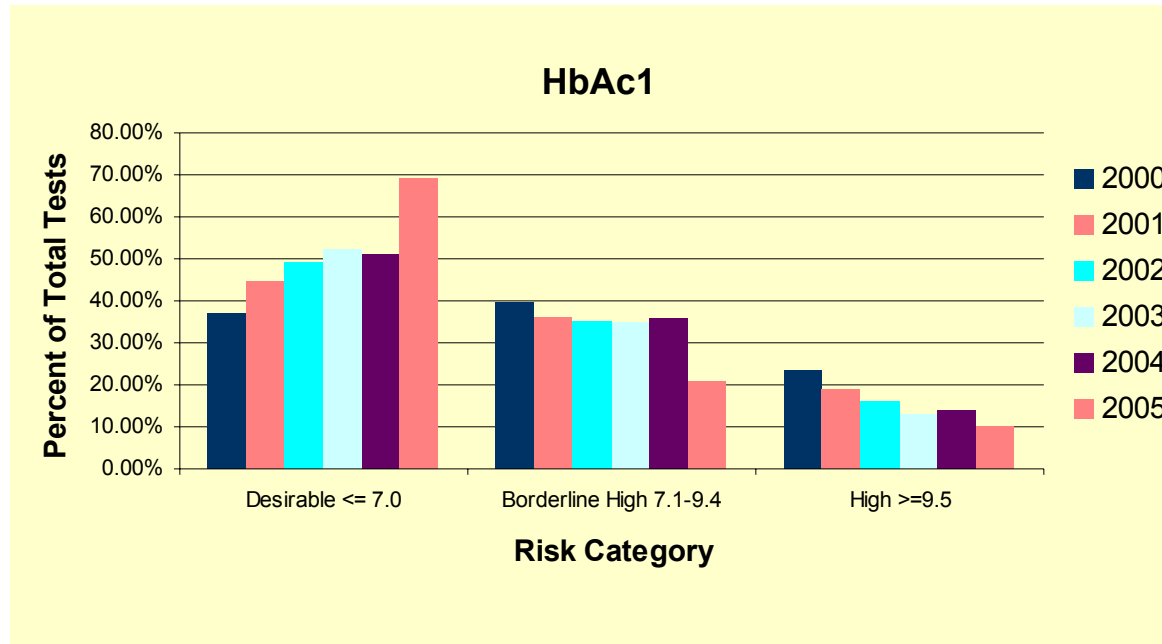
Managing Patient Clinical Outcomes

- Incorporating lab values in nurse case management system.
- Lab values updated monthly from lab results files.
- Example of nurse alert:

Priority	Action	Regarding	Due
High	Contact - Patient Initial		1/12/06
Normal	Contact - Patient Initial		
High	Clinical Data: Out Of Range	Task Description The A1c value of 7.5 entered on 3/9/2006 exceeds the patient's goal of less than 7.0. Contact patient within 1 week to assess glycemic control: Current SMBG values Use of insulin or or...	
Normal	Clinical Data: Out Of Range		
High	Clinical Data: Out Of Range		
High	Clinical Data: Out Of Range		
High	Clinical Data: Out Of Range		

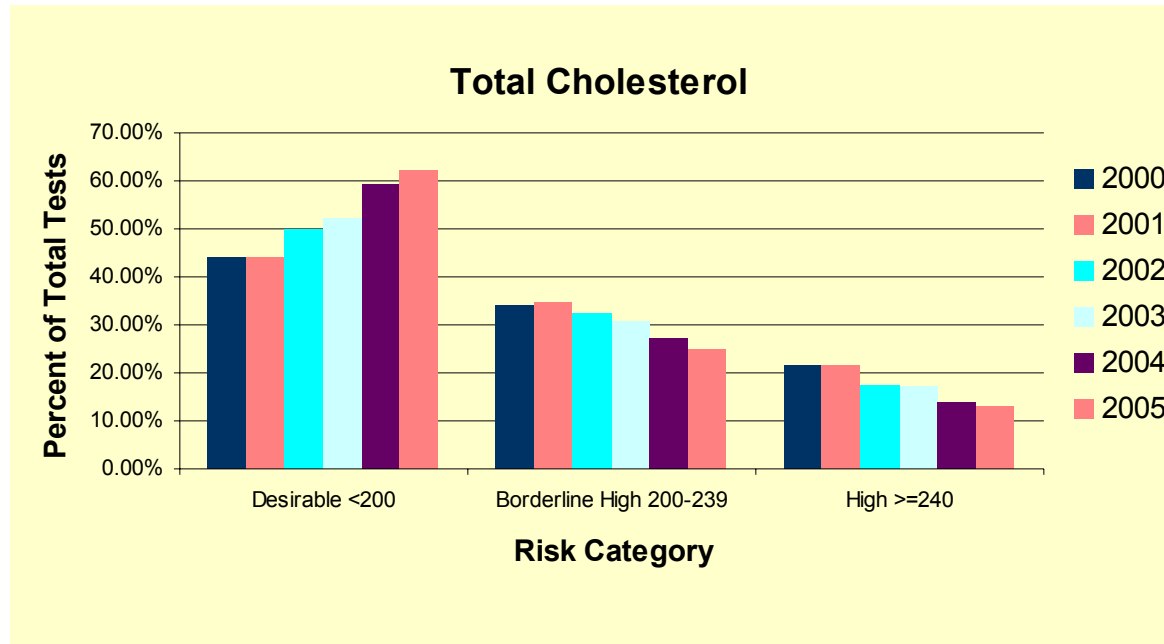
Reporting Patient Clinical Outcomes

- Reporting of HBA1c values



Reporting Patient Outcomes

- Cholesterol levels



State of using lab test results

- **Pitfalls**

- Lab results files do not always include member id; requires matching to plan eligibility to so that complete
- Watch for rule out test results

- **Gains**

- Clearer picture of patient health status.
- Indicator of improved quality of health.

- **Plan's next steps**

- More aggressive use of lab results with other clinical information for more refined patient stratification.

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