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Driving ACO Success with Macro and Micro Clinical Analytics

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Elsevier Clinical Decision Support is a division of Health and Science dedicated to providing quality electronic health care solutions and services. Whether improving healthcare workflow, building competency through our eLearning solutions or providing intelligence through data mining and predictive analytics, our aim is to improve the quality, safety and cost effectiveness of patient care.

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A recognized leader in healthcare analytics and data transformation offering award-winning solutions for the improvement of healthcare delivery. Utilizing cutting-edge predictive technology, payers and providers can predict patients at risk, identify cost drivers for their high-risk population, forecast future health plan costs, evaluate patient patterns over time and improve outcomes.

Why Accountable Care?

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Waste in Healthcare Spending estimated at 700B to 1.2 T

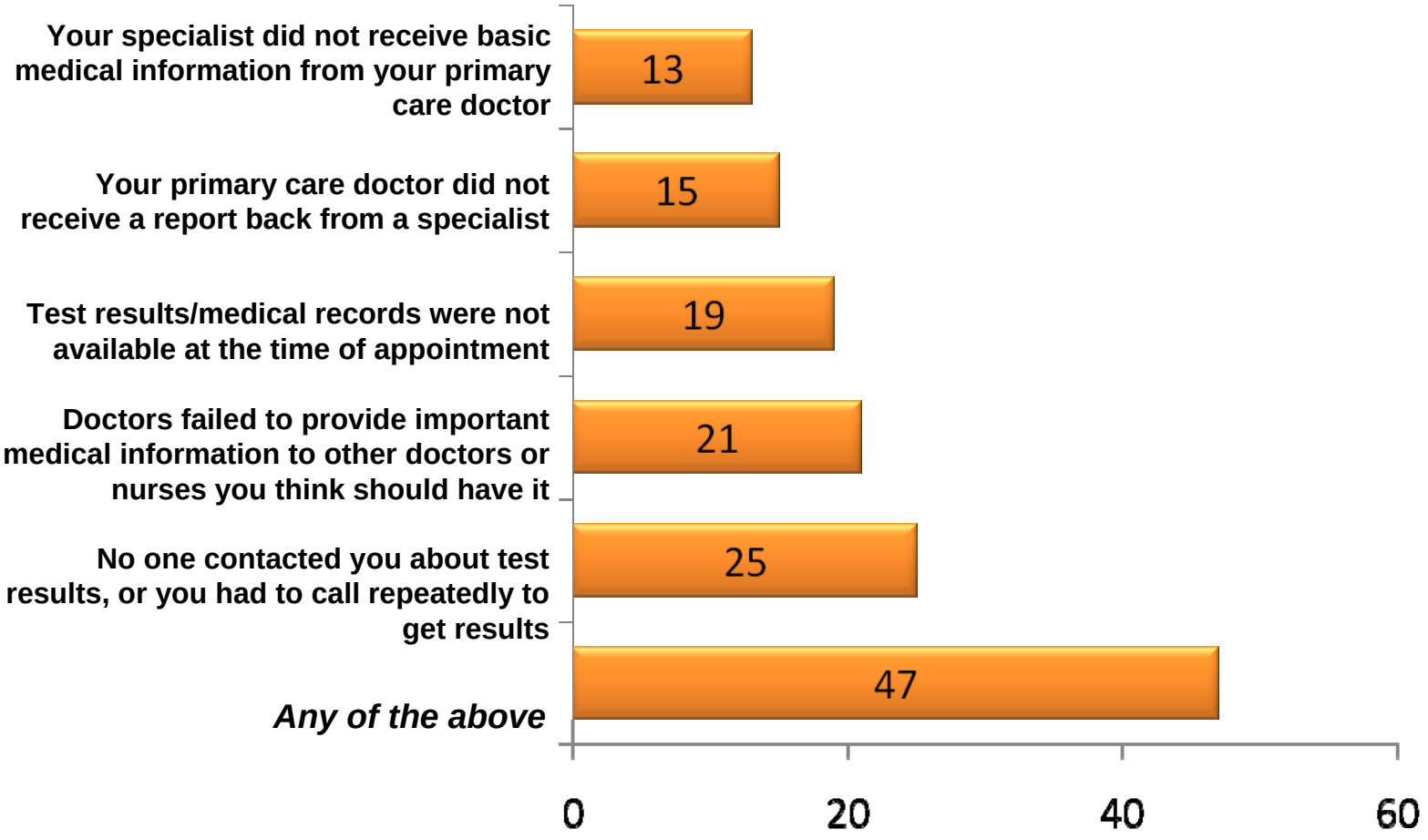
Address the waste in our current healthcare delivery system:

- Unnecessary Care = 40%
  - Overutilization
  - Inappropriate medication and diagnostic testing
- Fraud = 19%
  - Fraudulent claims and kickbacks
- Administrative Inefficiency = 17%
  - Redundant paperwork
- Provider Errors = 12%
  - Medical errors
- Preventable Conditions = 6%
  - Dollars spent on hospitalizations for controllable conditions (i.e., Diabetes)
- Lack of Care Coordination = 6%
  - Inefficient communication between providers
  - Lack of access to medical data
  - Duplication of efforts and inappropriate treatments

Source: "Where Can $700 Billion In Waste Be Cut From the U.S. Healthcare System?" 2009 Thomson Reuters

Poor Coordination: Nearly Half Report Failure to Coordinate Care

Percent U.S. adults reported in past two years:



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Source: Commonwealth Fund Survey of Public Views of the U.S. Health Care System, 2008.

Traditional Care Delivery Issues

- Physicians have very little time to actually deliver care (on average 10 – 15 min.) and address the following:
  - Acute, episodic care
  - Chronic disease management
  - Prevention and wellness strategies

- The traditional ambulatory care model is largely reactive in nature

Non-Adherence to Evidence-Based Services: Clinical and Economic Impact

- Up to 60% of chronically ill patients have poor adherence to evidence-based treatment
- Responsible for up to one-quarter of all hospital and nursing-home admissions
- Costs from poor medication adherence estimated to exceed $100 billion annually

Source : Dunbar-Jacob, *Journal of Clinical Epidemiology* 54 (2001) S57-S60

Cost Containment Efforts Should NOT Produce Avoidable Reductions in Quality of Care

- The archaic “one-size-fits-all” approach fails to acknowledge the difference in clinical value among medical interventions and among patients
- Ideally, higher patient co-payments would discourage the use of low-value care
- A growing body of evidence demonstrates that cost shifting leads to decreases in essential and non-essential care

Source: Mark Fendrick, MD University of Michigan Center for Value-Based Insurance Design

Disruption Breeds Innovation

Disruptive Drivers

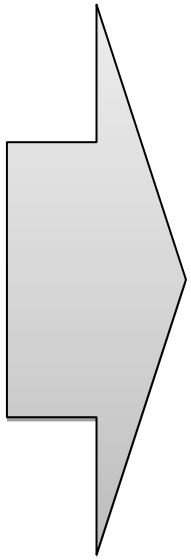
-Meaningful Use

-Health Insurance Reform

-Medicare Shared Savings Programs

-Clinical Quality and Performance Improvement

-Risk and Accountability Shifts



Emerging Models

-Accountable Care Organizations

-Bundled Payment Models

-Pay for Performance

-Patient-Centered Medical Home

-Coordinate Care Models

The Case for Accountable Care Organizations

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Why an ACO?

Simply put, to reduce the cost of care and increase care quality by changing the delivery model

Current Care Delivery System	Accountable Care Organizations
• Volume-based payments • Health plan directed • Claim data reporting • Disengaged patients	• Value-based payments • Focus on waste reduction • Clinical Quality reporting • Connected patients

Accountable Care Organizations

Collaboration, interdisciplinary coordination, measurement, risk sharing

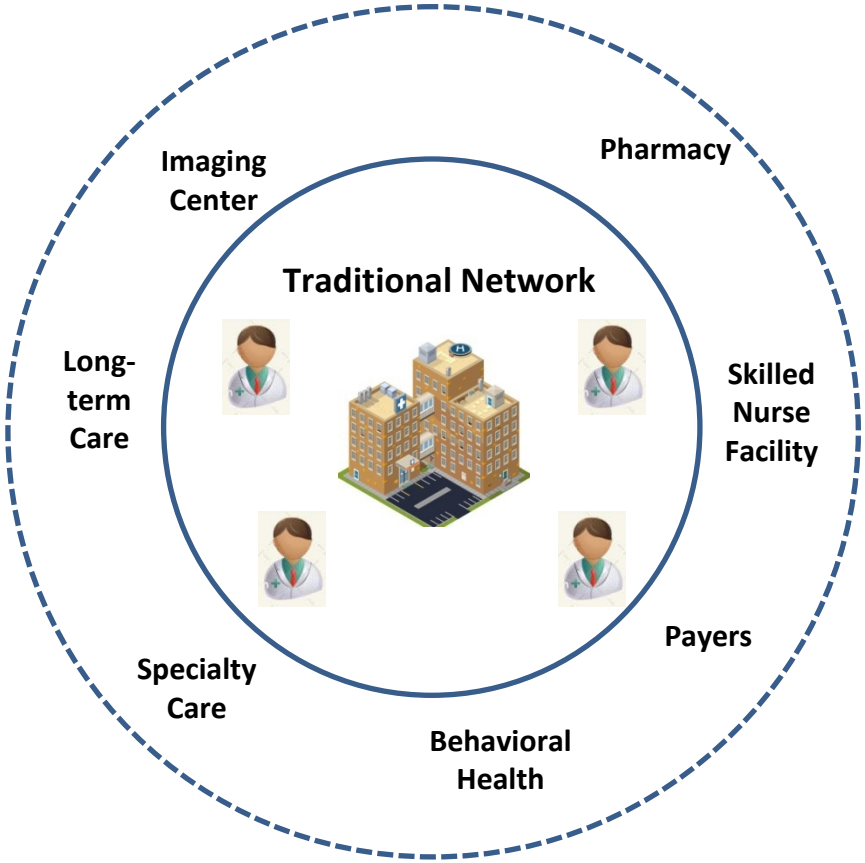
Traditional Hospital Network

Hospital

Employed Physicians

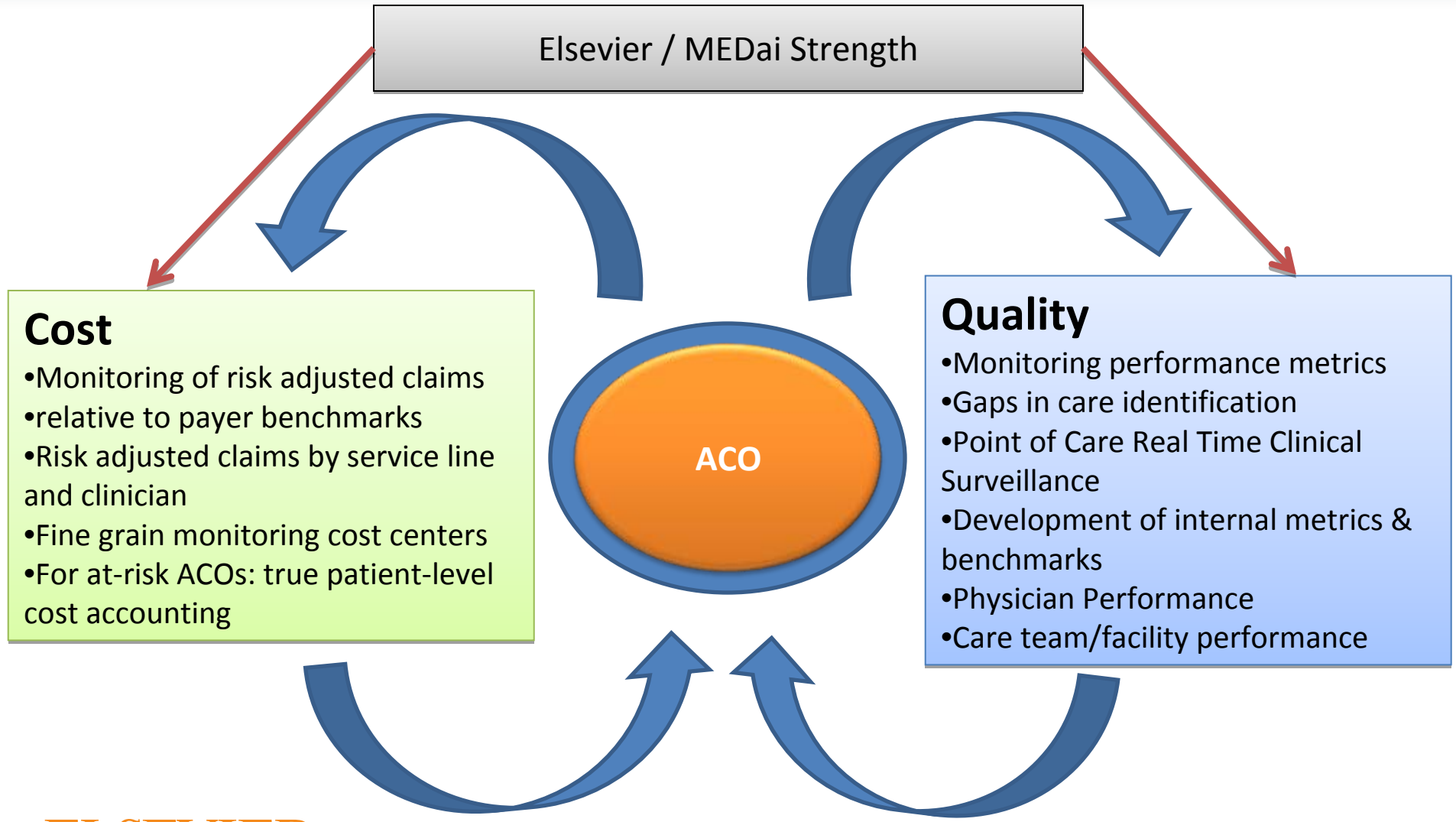
Contracted Physicians

Accountable Care Organization



So… What Do We Need?

Internal Analytics



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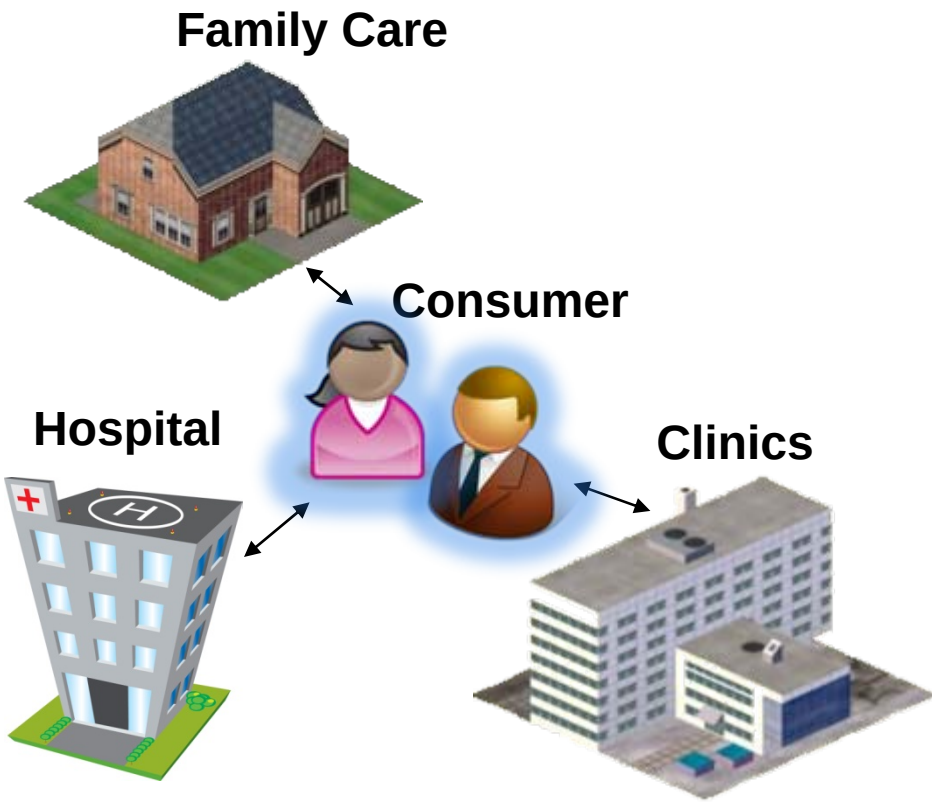
Reporting

Payer
- Payer mandated metrics
- Outcomes Metrics
- Process Metrics
- Physician Performance
- Claims for reimbursement

Regulatory
- Outcomes Metrics
- Guidelines Metrics
- Efficiency Metrics
- Clinical Process Metrics

Need to Bring the Information Together

- Successful strategies link all providers delivering care to the patient
- Patients create information at multiple care settings in the community
- Cross-enterprise information exchange new to HIT industry
- Standards-based approaches emerging



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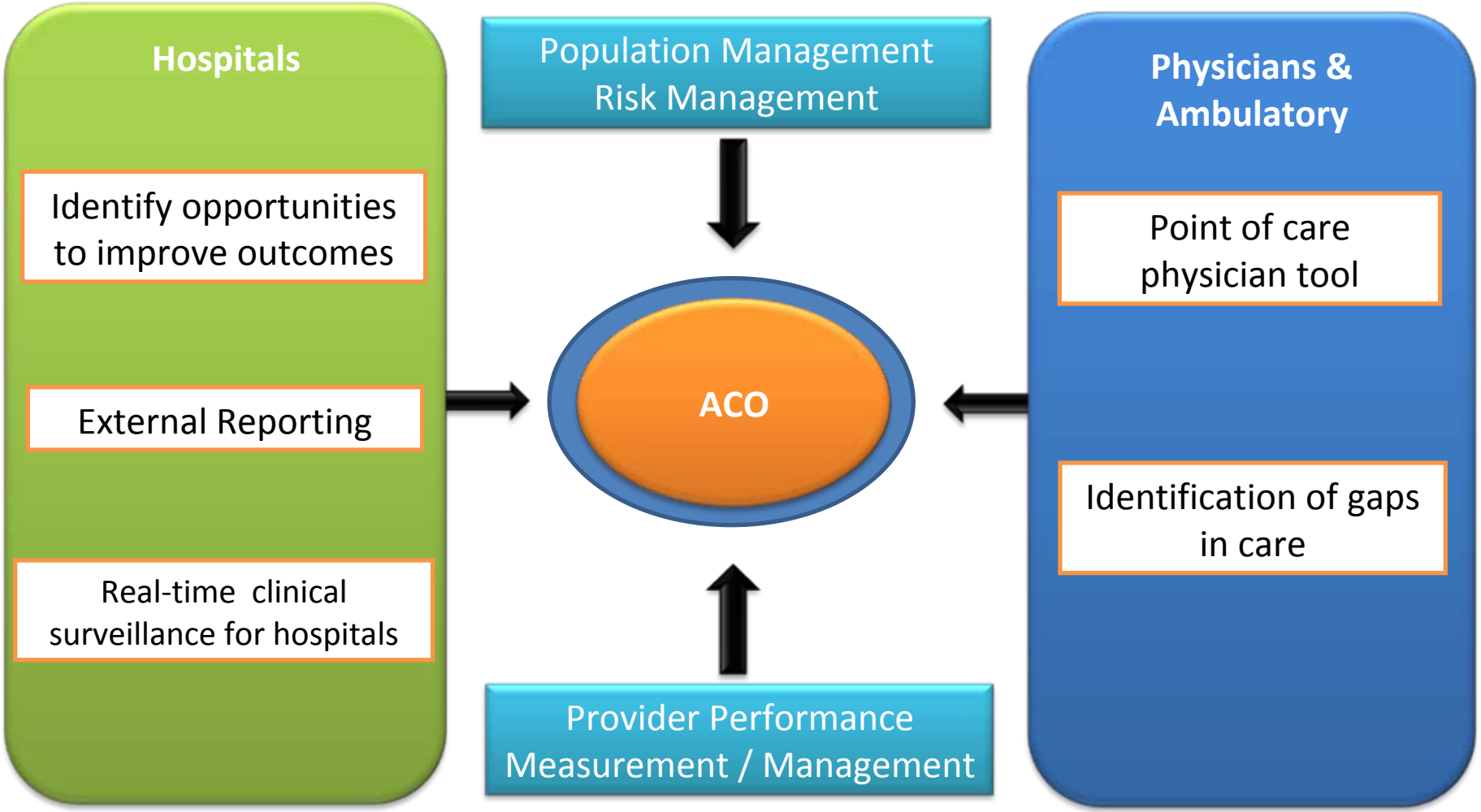
Two Levels of Clinical Decision Support

- Macro - Organizational
  - Quality is considered on a system, disease, more global basis
  - Focuses on processes and organizational level data
  - Utilizes HIT including order sets, CPOE, portals for regulatory reporting

- Micro – Patient Specific
  - Quality is considered on an individual / case by case basis
  - Focuses on the application of analytics to patient specific data for patient specific improvement
  - Utilizes HIT including near real-time surveillance, predictive analytics, real-time alerting

Analytic Solutions



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ACO: Population Management

- Identify Risk for all patients

- Actionable Predictions
  - Critical cost and risk drivers
  - Utilization predictions: Inpatient days, ER visits
  - Patient Motivation prediction

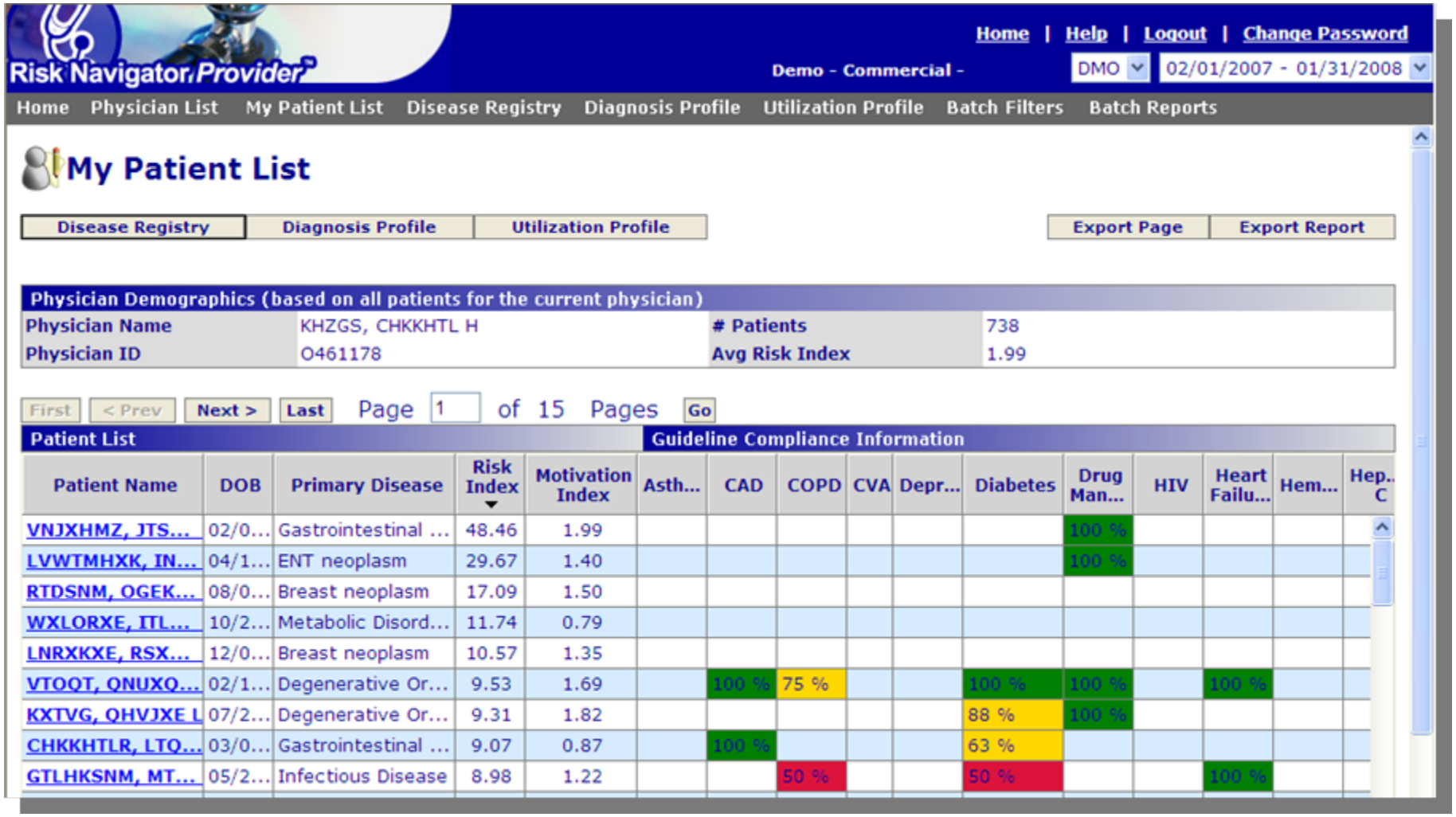
- EBM Compliance for Chronic Care Management
  - Based on key industry initiatives: NCQA, PCPI, NQF
  - Gaps in care
  - Chronic impact

What Physicians Need to Know

- Which patients need to be addressed?
  - Evidence-based Medicine Care Plan
  - Medication Compliance
  - Care History
  - Is the patient motivated to maintain their health status?

- Physicians need to know
  - At a practice level, how am I managing the risk of my patient population?
  - How well am I managing the outcomes of my patients

Risk Management



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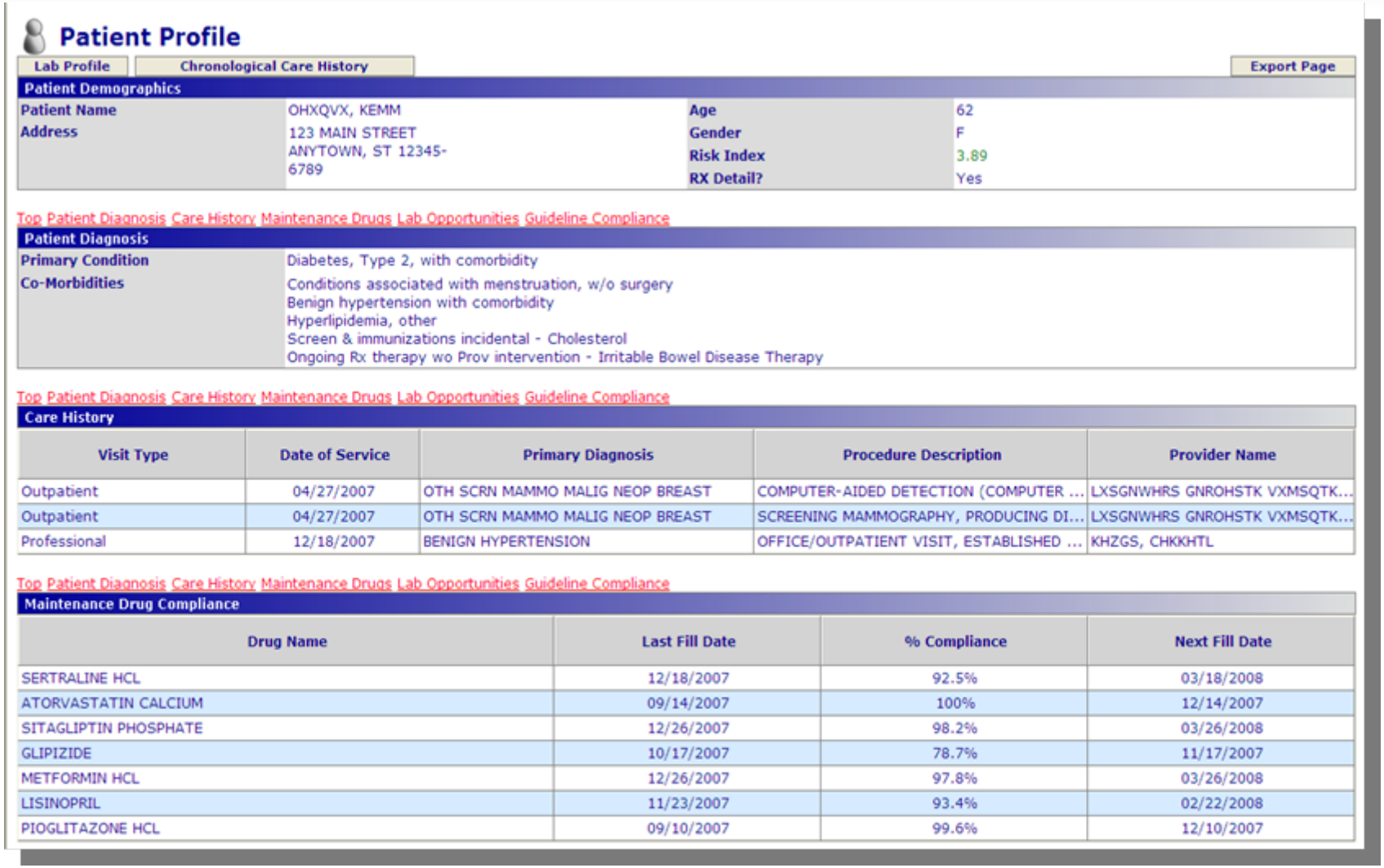
Care History



Patient Profile

Lab Profile | Chronological Care History | Export Page

Patient Demographics

Patient Name	OHXQVX, KEMM	**Age**	62
Address	123 MAIN STREET ANYTOWN, ST 12345-6789	**Gender**	F
		Risk Index	3.89
		RX Detail?	Yes

Top Patient Diagnosis Care History Maintenance Drugs Lab Opportunities Guideline Compliance

Patient Diagnosis

Primary Condition	Diabetes, Type 2, with comorbidity
Co-Morbidities	Conditions associated with menstruation, w/o surgery Benign hypertension with comorbidity Hyperlipidemia, other Screen & immunizations incidental - Cholesterol Ongoing Rx therapy wo Prov intervention - Irritable Bowel Disease Therapy

Top Patient Diagnosis Care History Maintenance Drugs Lab Opportunities Guideline Compliance

Care History

Visit Type	Date of Service	Primary Diagnosis	Procedure Description	Provider Name
Outpatient	04/27/2007	OTH SCRN MAMMO MALIG NEOP BREAST	COMPUTER-AIDED DETECTION (COMPUTER ...	LXSGNWHRS GNROHSTK VXMSQTK...
Outpatient	04/27/2007	OTH SCRN MAMMO MALIG NEOP BREAST	SCREENING MAMMOGRAPHY, PRODUCING DI...	LXSGNWHRS GNROHSTK VXMSQTK...
Professional	12/18/2007	BENIGN HYPERTENSION	OFFICE/OUTPATIENT VISIT, ESTABLISHED ...	KHZGS, CHKKHTL

Top Patient Diagnosis Care History Maintenance Drugs Lab Opportunities Guideline Compliance

Maintenance Drug Compliance

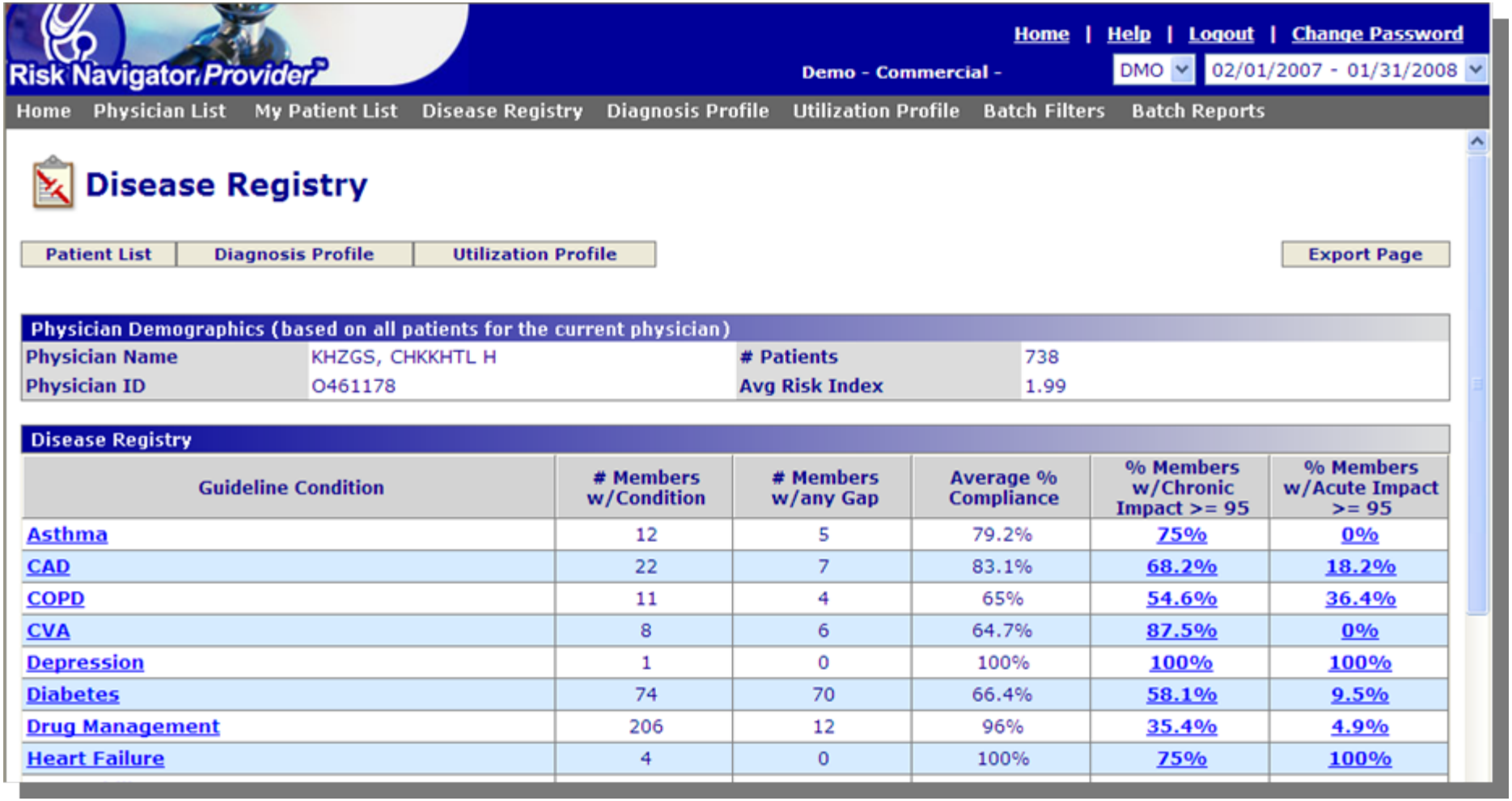
Drug Name	Last Fill Date	% Compliance	Next Fill Date
SERTRALINE HCL	12/18/2007	92.5%	03/18/2008
ATORVASTATIN CALCIUM	09/14/2007	100%	12/14/2007
SITAGLIPTIN PHOSPHATE	12/26/2007	98.2%	03/26/2008
GLIPIZIDE	10/17/2007	78.7%	11/17/2007
METFORMIN HCL	12/26/2007	97.8%	03/26/2008
LISINOPRIL	11/23/2007	93.4%	02/22/2008
PIOGLITAZONE HCL	09/10/2007	99.6%	12/10/2007

Gaps in Care

Guideline Compliance

Disease	Description	Current Compliance	Future Compliance	Permanent	
Diabetes	Eye exam (retinal) performed	NO			Edit
	Hemoglobin A1c (HbA1c) testing	Yes			
	Influenza immunization	NO			Edit
	LDL-C screening performed	Yes			
	Lipid profile or all component testing (total cholesterol, LDL-C, HDL-C, triglycerides)	Yes			
	Medical attention for nephropathy: screening or evidence of nephropathy	Yes			
	Microalbuminuria	Yes			
	With Hypertension: attention to blood pressure	Yes			
Drug Management	ACE or ARB: annual monitoring for persistent medication use	Yes			
	Statin: annual monitoring for persistent medication use	Yes			
Hyperlipidemia	Lipid-lowering medication, including niacin	Yes			
Hypertension	Multiple risk factors & receiving at least two agents from different classes	NO			Edit
	Thiazide diuretic	NO			Edit
Preventive Care	Colon cancer screening: Age 50 and older	Yes			
	Influenza immunization: Individuals age 5-64 with chronic conditions	NO			Edit
	Influenza immunization: Individuals age 50 to 64	NO			Edit
	Pneumonia immunization: Age >=65 or 2-64 with chronic condition	NO			Edit
Preventive Care - Women	Breast cancer screening: Women 40-69 years	Yes			
	Cervical cancer screening: Pap test within the previous 2 years	Yes			

Physician Performance Management



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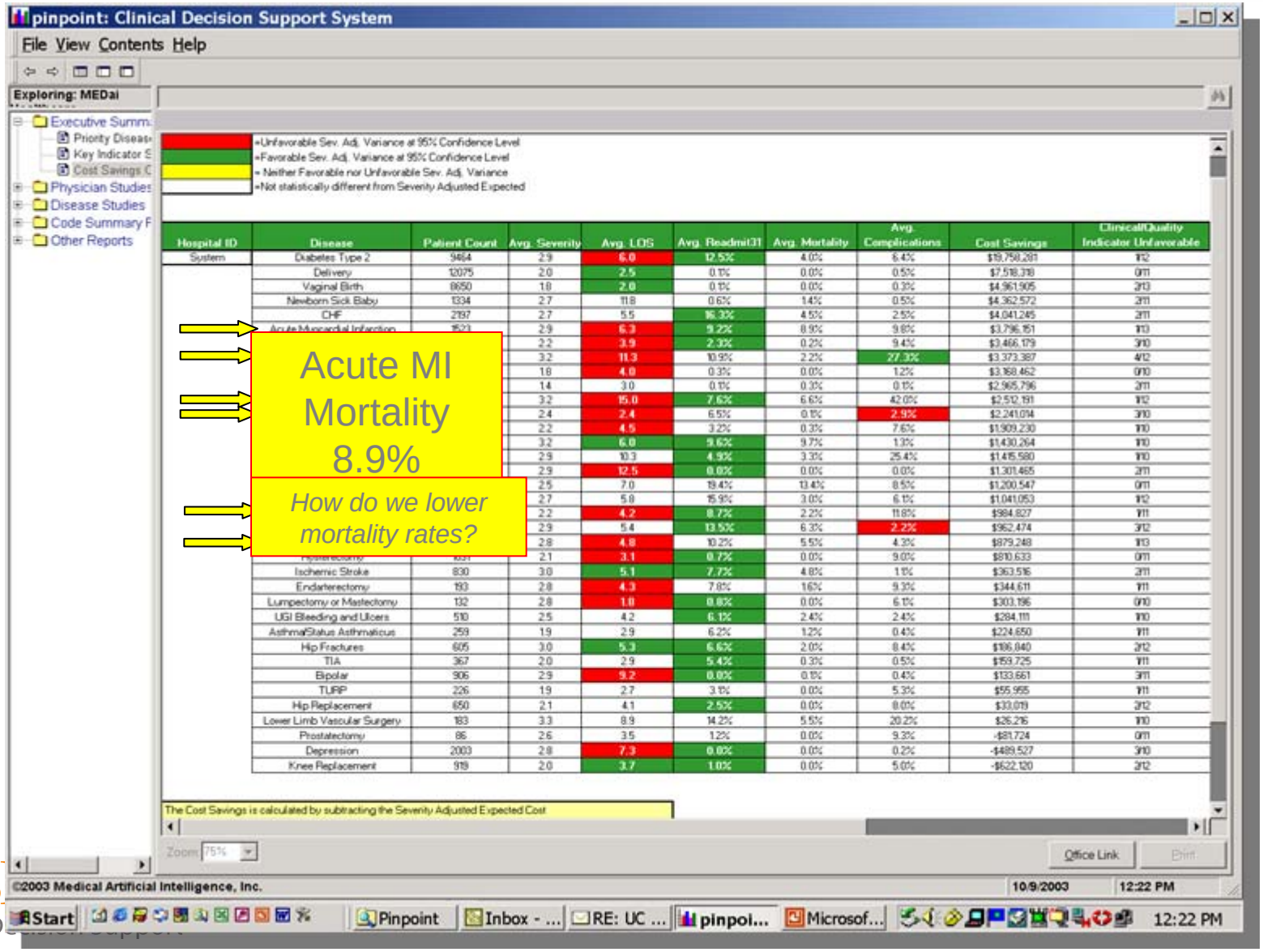
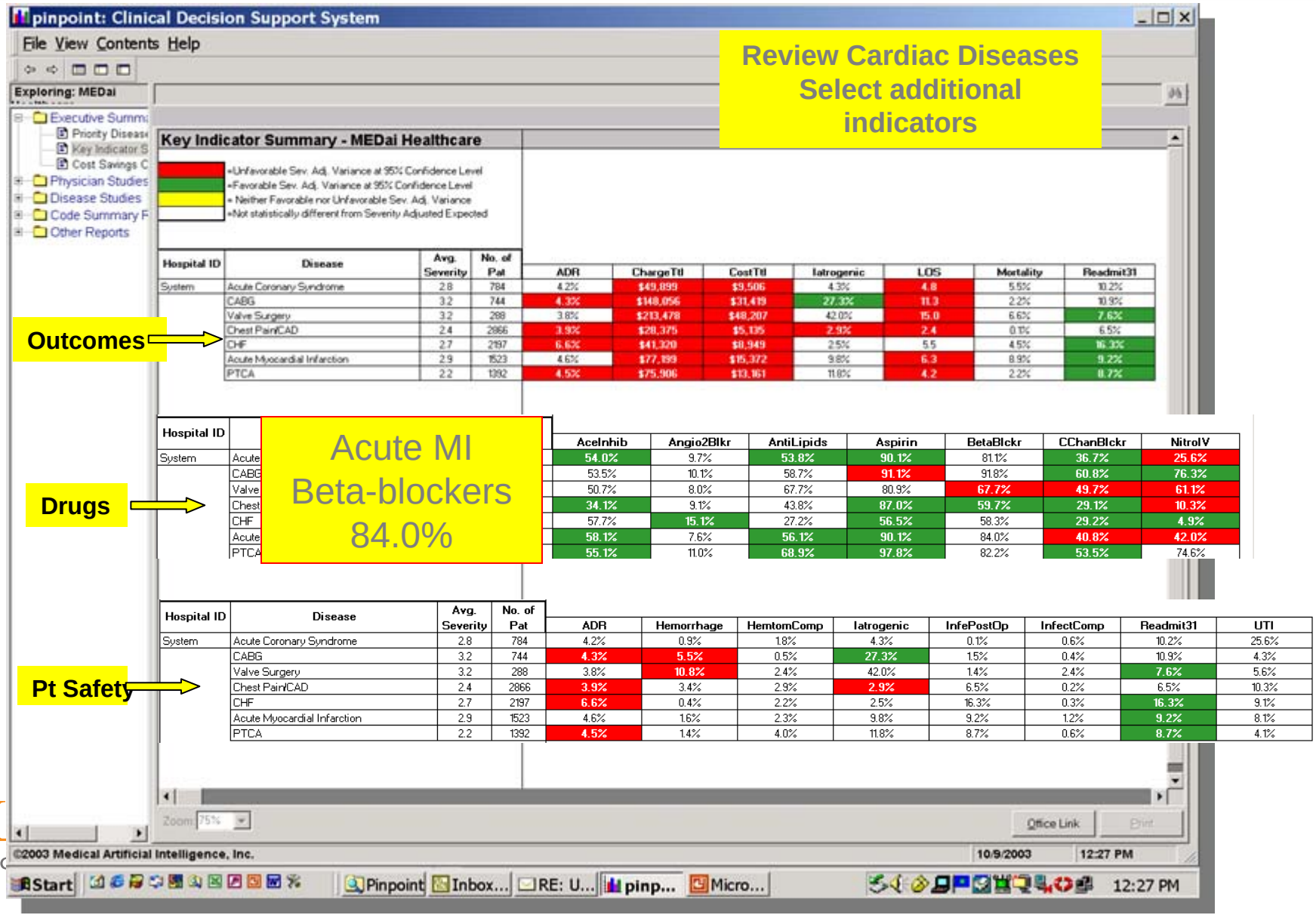
Hospital Level Reporting & Analytics

Executive Reporting – *System Level Cost Savings Report*



Executive Reporting - *Key Indicator Summary System Level*



Hospital ID	Disease	Avg. Severity	No. of Pat	ADR	ChargeTtl	CostTtl	Iatrogenic	LOS	Mortality	Readmit31
System	Acute Coronary Syndrome	2.8	784	4.2%	$49,899	$9,506	4.3%	4.8	5.5%	10.2%
	CABG	3.2	744	4.3%	$148,056	$31,419	27.3%	11.3	2.2%	10.9%
	Valve Surgery	3.2	288	3.8%	$213,478	$48,207	42.0%	15.0	6.6%	7.6%
	Chest Pain/CAD	2.4	2866	3.9%	$28,375	$5,135	2.9%	2.4	0.1%	6.5%
	CHF	2.7	2197	6.6%	$41,320	$8,949	2.5%	5.5	4.5%	16.3%
	Acute Myocardial Infarction	2.9	1523	4.6%	$77,199	$15,372	9.8%	6.3	8.9%	9.2%
	PTCA	2.2	1392	4.5%	$75,906	$13,161	11.8%	4.2	2.2%	8.7%

Hospital ID		AceInhib	Angio2Blkr	AntiLipids	Aspirin	BetaBlckr	CChanBlckr	NitrolV
System	Acute	54.0%	9.7%	53.8%	90.1%	81.1%	36.7%	25.6%
	CABG	53.5%	10.1%	58.7%	91.1%	91.8%	60.8%	76.3%
	Valve	50.7%	8.0%	67.7%	80.9%	67.7%	49.7%	61.1%
	Chest	34.1%	9.1%	43.8%	87.0%	59.7%	29.1%	10.3%
	CHF	57.7%	15.1%	27.2%	56.5%	58.3%	29.2%	4.9%
	Acute	58.1%	7.6%	56.1%	90.1%	84.0%	40.8%	42.0%
	PTCA	55.1%	11.0%	68.9%	97.8%	82.2%	53.5%	74.6%

Hospital ID	Disease	Avg. Severity	No. of Pat	ADR	Hemorrhage	HemtomComp	Iatrogenic	InfePostOp	InfectComp	Readmit31	UTI
System	Acute Coronary Syndrome	2.8	784	4.2%	0.9%	1.8%	4.3%	0.1%	0.6%	10.2%	25.6%
	CABG	3.2	744	4.3%	5.5%	0.5%	27.3%	1.5%	0.4%	10.9%	4.3%
	Valve Surgery	3.2	288	3.8%	10.8%	2.4%	42.0%	1.4%	2.4%	7.6%	5.6%
	Chest Pain/CAD	2.4	2866	3.9%	3.4%	2.9%	2.9%	6.5%	0.2%	6.5%	10.3%
	CHF	2.7	2197	6.6%	0.4%	2.2%	2.5%	16.3%	0.3%	16.3%	9.1%
	Acute Myocardial Infarction	2.9	1523	4.6%	1.6%	2.3%	9.8%	9.2%	1.2%	9.2%	8.1%
	PTCA	2.2	1392	4.5%	1.4%	4.0%	11.8%	8.7%	0.6%	8.7%	4.1%

Real-time Clinical Surveillance and Forecasting

- Identify Patients at Risk for Preventable Re-admit and Decubitus Ulcer
  - *High Risk:* Stratify all patients at risk using probability scores
  - *Movers:* Identify patients with a change in risk
  - *Why?*: View risk drivers to identify prevention strategy

- Provide Near Real-time Clinical Surveillance
  - Intelligent Alert feature with customized alert delivery options
  - Powerful data filtering features
  - Reporting by Hospital, Admitting Physician, Unit/Nursing Station, Diagnosis

- Use EHR data
  - Vital Signs
  - Lab Results
  - Pharmacy
  - Procedures
  - Central Supply

Clinical Surveillance at the System or Facility Level

What if a patient in your hospital...

- Was found to have a bedside glucose range check below 50 or above 180 (mg/dl)?
- Has a Creatinine that increased by more than 0.5 (mg/dl) since last reading?
- Has had 2 blood sugars out of range in 24 rolling hours?
- Had surgery but has not received Venous Thromboembolism prophylaxis?
- Initial Antibiotic Received within 6 hours of arrival for patient with Diagnosis of Pneumonia
- Blood Cultures Performed Within 24 Hours Prior to or 24 Hours After Hospital Arrival for Patients Who Were Transferred or Admitted to the ICU Within 24 Hours of Hospital Arrival
- Magnesium Range Check : MG below 1.8 or above 2.4 (mg/dl)
- Potassium Range Check: K below 3.0 or above 6 (mEq/1)

Questions?

Contact Us

For more information or questions,

please contact us at:

1.800.446.3324

Or

Sales@MEDai.com

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