ENGELBERG CENTER for
Health Care Reform
at BROOKINGS

Population Health Predictive Analytics and the Real World

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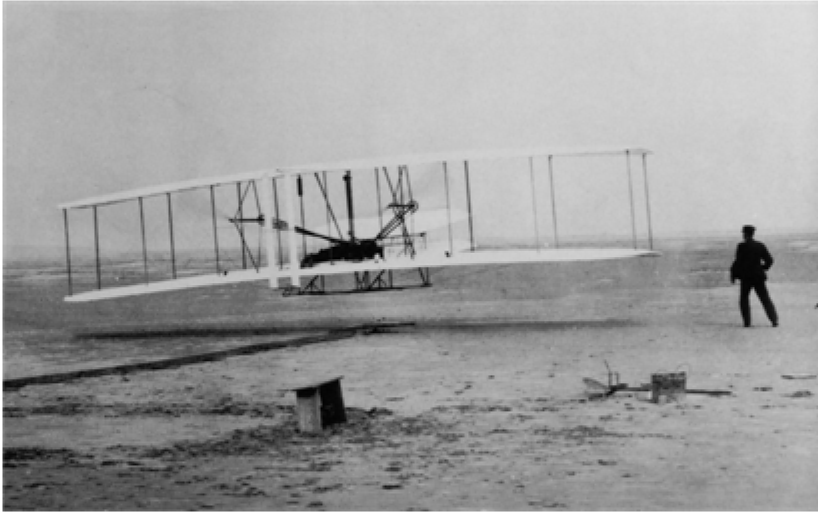
PUBLIC EXCHANGE LAUNCH



Think Wright Brothers….

Not Indianapolis 500

HOW TO PICK A HEALTH PLAN ON AN EXCHANGE

- Step 1. Decide on the diseases you and your family are going to have in the coming year
- Step 2. Find the best doctors and hospitals for those diseases
- Step 3. Identify which plans offer those doctors and hospitals
- Step 4. Select the cheapest plan
- Step 5. If there are no affordable plans with all the doctors and hospitals you want, go back to Step 1 and pick some new diseases

HEALTHCARE.GOV

- Congratulations, you made it through those annoying security questions. Sorry about the delays, we got hacked by the Koch Brothers…. what can you do?
- Good news is we rummaged around in your IRS records and some stuff we got from that Snowden guy and found out you make $12 an hour. We know you lie about your tips, but we all do, right?
- If you ever get a raise you will be eligible for Health Insurance through the exchange which will allow you to buy a very high-deductible health plan with a limited network for FREE!!!!
- Meantime, the news gets better, you are probably eligible for Medicaid, that will provide totally free access to a very limited network of providers (maybe the ones you see now because you are uninsured).
- Q: So what state do you live in?
- A: Louisiana
- Good luck with that. Come back when you get a raise.

WHAT HAPPENS WHEN THE LANDSCAPE CHANGES?

Understanding your Community vs. your Census: Atlanta GA

Health Status

Average Life Expectancy	
Atlanta, GA	75.5
National Avg	76.6
1 Std Dev Range	75 – 78.3
National Max	80.3
National Min	71.2
Ranking (out of 306)	75

Obesity	
Atlanta, GA	22.0%
National Avg	23.2%
1 Std Dev Range	20.2 – 26.1%
National Max	31.4%
National Min	15.3%
Ranking (out of 306)	204

Smoking	
Atlanta, GA	20.0%
National Avg	22.0%
1 Std Dev Range	18.4 – 25.7%
National Max	31.9%
National Min	7.2%
Ranking (out of 306)	224

Diabetes	
Atlanta, GA	6.4%
National Avg	7.3%
1 Std Dev Range	5.9 – 8.7%
National Max	10.9%
National Min	3.5%
Ranking (out of 306)	230

Triple Aim Status

Maximum composite ranking is 9, minimum ranking is 1. A higher composite ranking represents more opportunity for improvement

Quality

	Composite Ranking	Most Unfavorable Measure
Atlanta, GA	2.6	Knee Replacements per 1k Medicare Enrollees 7.0
National Avg	3.7	8.8
1 Std Dev Range	2.6 – 4.8	6.9 - 10.7
National Max	7.2	14.6
National Min	1.6	3.5
Ranking (out of 306)	247	253

Cost

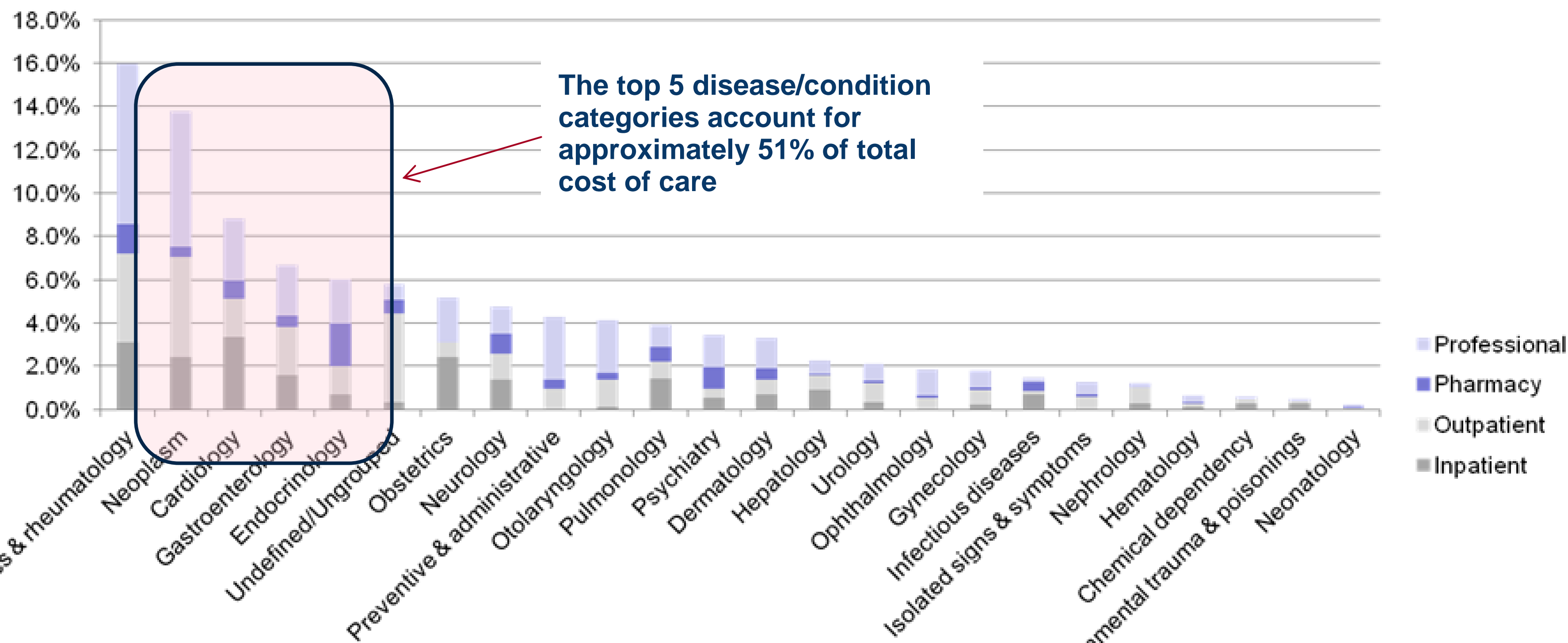
	Composite Ranking	Most Unfavorable Measure
Atlanta, GA	3.7	Mammography Screening 61%
National Avg	3.6	63%
1 Std Dev Range	2.4 - 4.7	57.5% – 68.8%
National Max	7.3	76%
National Min	1.6	49%
Ranking (out of 306)	101	111

Satisfaction

	Composite Ranking	Most Unfavorable Measure
Atlanta, GA	3.0	Average Life Expectancy 75.5
National Avg	3.6	76.6
1 Std Dev Range	2.0 - 5.3	75 - 78.3
National Max	8.7	80.3
National Min	1.2	71.2
Ranking (out of 306)	122	75

6

Demographics and Population Cost Distribution by Major Practice Category



Major Practice Categories (MPCs) are based on the diagnosis on claims data. They do not represent specific provider specialties. For example, claims submitted by family practice providers for treating diabetes cases would be placed in the Endocrinology MPC.

Community Snapshot: Atlanta, GA

Total Population Demographics

Total Population	5.8M
Uninsured Estimate*	1.2M
Medicare Advantage Members	26k
Medicare FFS Member Estimate*	446k
Medicaid Member Estimate*	833k
# of Fortune 1000 Employers	27

Physician Demographics

Atlanta, GA Nat Avg

PCPs in groups of 5 or smaller: 69% (avg is 55%)

Largest IDNs

System 1 (22%)

# of Hospitals	Gross Patient Revenue	Est 2013 Medicare Penalty
20	$7.04M	$0

System 2 (12%)

# of Hospitals	Gross Patient Revenue	Est 2013 Medicare Penalty
5	$3.7M	$0.5M

Largest Hospitals

Hospital A (6%)

Gross Patient Revenue	Est 2013 Medicare Penalty
$1.9M	$0

Hospital B (6%)

Gross Patient Revenue	Est 2013 Medicare Penalty
$1.8M	$0

Readmission Rate

Heart Failure

Atlanta, GA	**19.3%**
National Avg	**18.6%**
1 Std Dev Range	**14.4 – 22.7%**
National Max	**27.3%**
National Min	**6.9%**
Ranking (out of 306)	**135**

Pneumonia

Atlanta, GA	**14.3%**
National Avg	**14.3%**
1 Std Dev Range	**11.2 – 17.3%**
National Max	**20.3%**
National Min	**5.2%**
Ranking (out of 306)	**161**

AMI

Atlanta, GA	**10.5%**
National Avg	**9.8%**
1 Std Dev Range	**5.4 – 14.2%**
National Max	**21.3%**
National Min	**1.7%**
Ranking (out of 306)	**120**

** Estimate likely to be slightly high. Took county estimates, allocated to zip codes, and then rolled up into the specific Hospital Referral Region.*

Important Data: Medical Variability, Cost Variability and Health Status

Medical Variability

- Knee replacement per 1K Medicare enrollees (2005)[1]
- Hip replacement per 1K Medicare enrollees (2005)[1]
- Back Surgery per 1K Medicare Enrollees (2005)[1]
- Diabetes Discharges per 1K Medicare Enrollees (2005)[1]
- COPD Discharges per 1K Medicare enrollees (2005)[1]
- UHn physician quality score (compared to 1.0 national average)[1]

Cost Variability

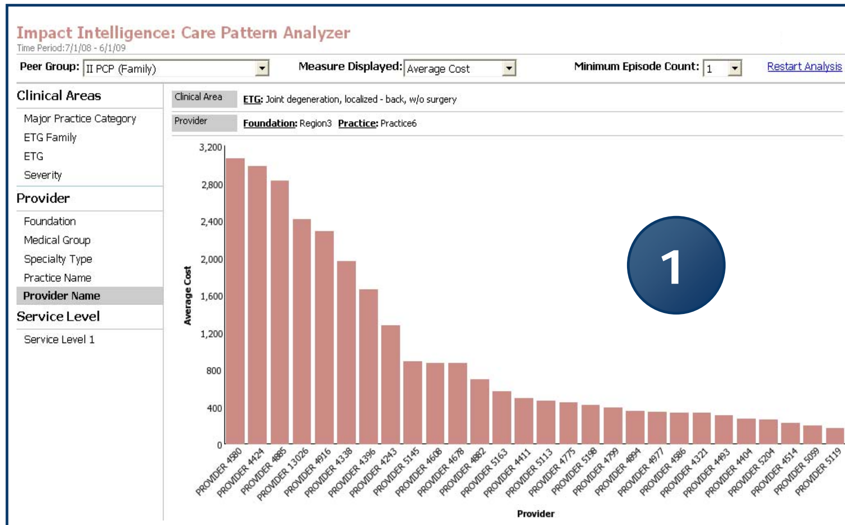
- Acute care hospital beds per 1K residents[1]
- Total specialists per 100K residents[1]
- Medicare spending per decedent by site of care during the last two years of life[1]
- Medicare hospital days per decedent during the last two years of life[1]
- Medicare physician visits per decedent during the last two years of life[1]
- Back pain cost per incident[2]
- Cardiac cath cost per incident[2]
- Hypertension cost per incident[2]
- Diabetes screening % HbA1c[3]
- Mammography screening[3]
- Medicare readmission data[5]

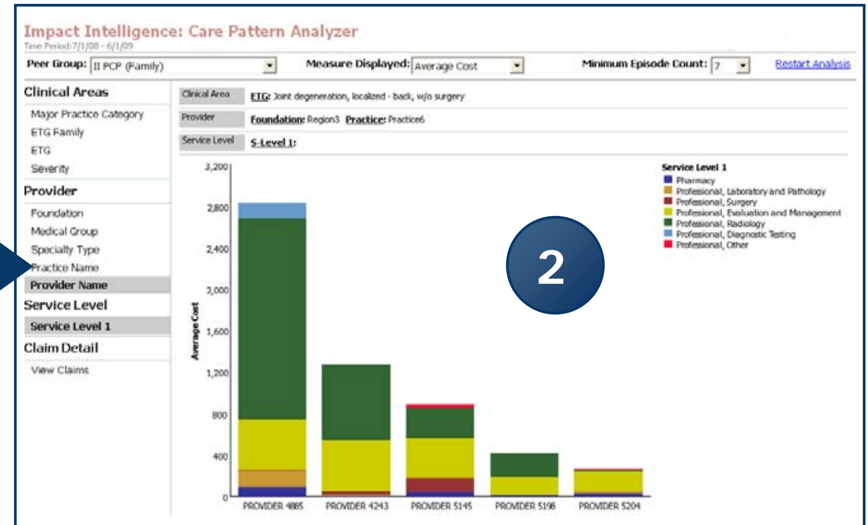
Health Status

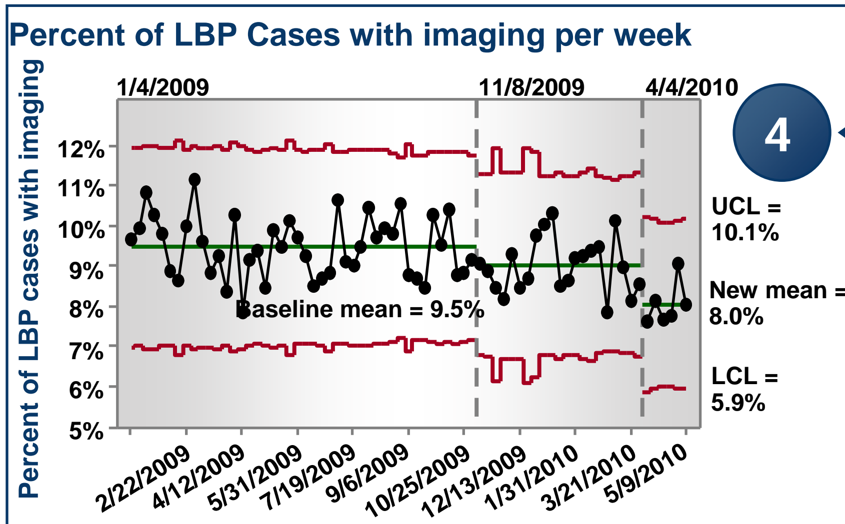
- Average life expectancy[4]
- Obesity percent[4]
- Smoking percent[4]
- Diabetes percent[4]
- Poor physical health days per month[3]
- Poor mental health days per month[3]
- Low birth rate (<2,500 grams)[3]
- Sexually transmitted diseases per 100k residents[3]

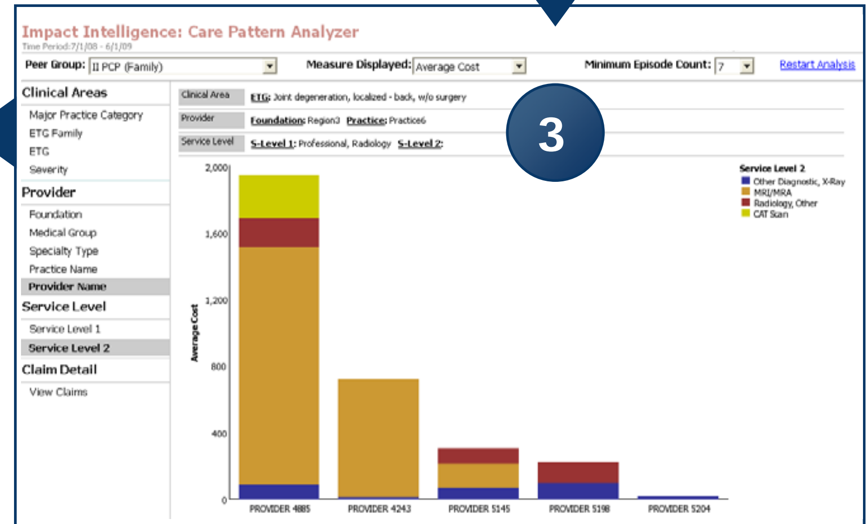
1: Information provided by Dartmouth Atlas
2: Information provided by Ingenix - Actuarial Group
3: Information provided by Wisconsin Population Health Institute
4: Information provided by HHS Community Health Sts
5: Medicare hospital compare

Understanding Your Performance– Back Pain









Silos to Coordination

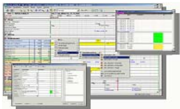
Secure Data Information Environment

Data Acquisition

Clinical Administrative Data

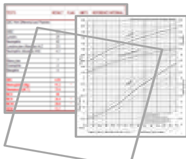
- Admission / Discharge notification
- Select specialty referral notifications
- Advanced imaging referrals

Claims & Enrollment Data



- Enrollment
- Professional
- Facility
- Pharmacy

Clinical Data



- Clinical Visit Details
- Laboratory/Radiology
- Biometric Data (Hgt, Wgt, BMI)
- Diagnoses
- Medications
- Allergies

Patient Derived Data

- Health Risk Assessment
- Functional Status
- Quality of Life
- Decision Quality

Population Health

- Health Status Survey
- County Level Health Indicators

Data Enrichment & Analysis

ETL Processes

Patient Centric Data Warehouse

Enterprise Service Bus & Business Rule Engine

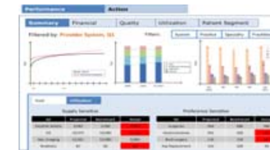
Reporting Datamarts

Population Management

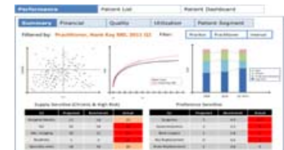
Care Management

PHR

Administrative Reports

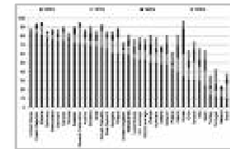


Physician Reports



CMS Reports

QI Initiatives

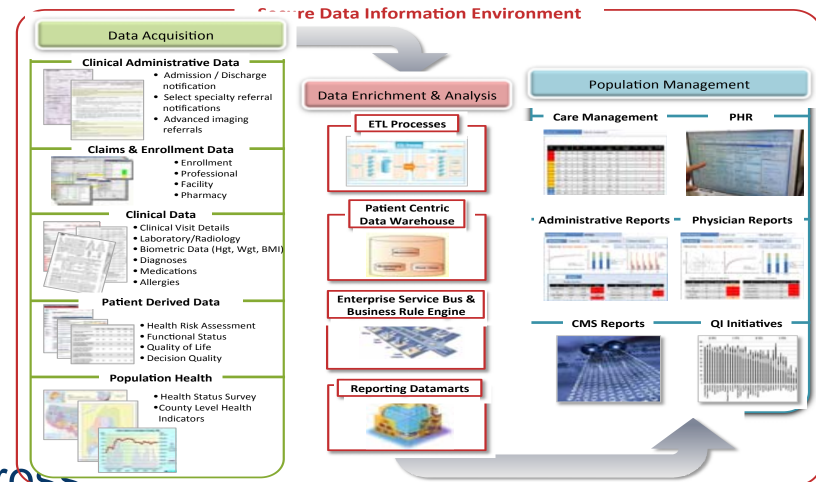


Information Suite

- Integrates clinical information (EHR, laboratory, etc), claims data, public health information and patient reported information

- Pools data allowing for
  - Population health analytics
  - Predictive modeling
  - Quality performance benchmarking support

- Enhances current EHR data
  - Creates a patient-centric data model
  - Provides a "single source of truth" across all applications for all users
  - Transforms integrated data into actionable information



Combination of existing foundational technology and innovative analytic & reporting solutions

Accountable Care Architecture – Analytic Engine and Services

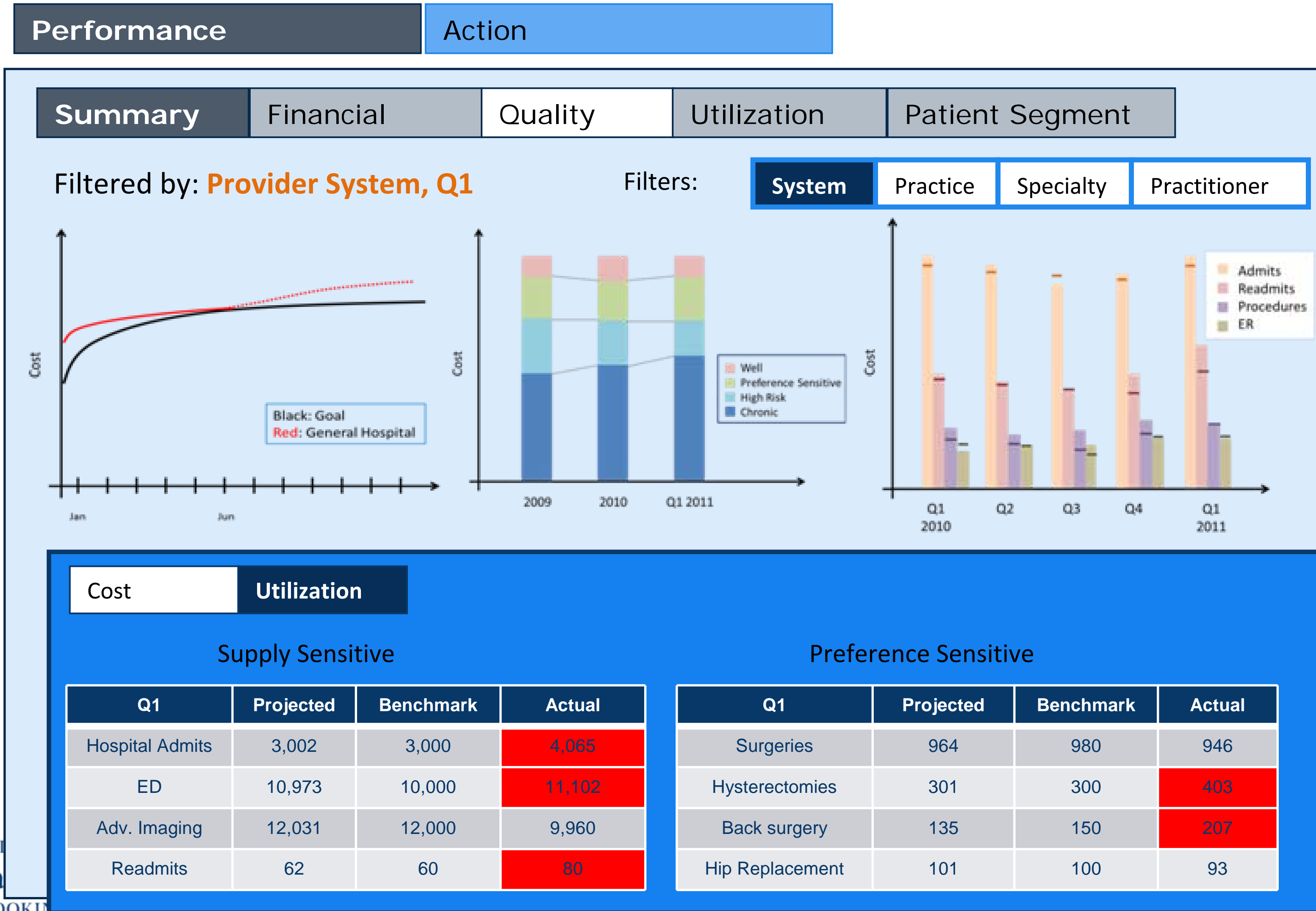
- The Analytic Engine uses the integrated source data to create facts, measures and models that provide robust patient-centric intelligence used in marts and views
  - Financial risk models
  - Clinical care and gaps in recommended care
  - Performance against standard and custom quality measures
  - Longitudinal view of patient and their events
  - Alerts of patient behavior such as recent ED visit, discharges, medication changes
  - Key diagnosis and comorbidities
  - Projected surgical decision points

Specific Tools

- Supports and enables management of patients by Care Managers, Clinicians and Administrators
- Facilitates decision support based on evidence-based medicine and best practices
- Encourages cost-effective personalized care

Executive View	Clinician View	Care Manager View
• Presents patient financial risk at the population level • Informs Executive user of important trends in their healthcare system • Anticipates where concerns and issues will arise	• Detailed information on population health, patient experience and predicted cost • Benchmarking data allows clinician to evaluate performance against peers • Focuses efforts on patients at highest risk	• Monitor patient census • Act on clinician orders or app recommendations • Schedule follow up • Distribute clinical resources • View lists according to risk level and priorities • Encourages interaction with patients and medical team

Executive View - Summary



Q1	Projected	Benchmark	Actual
Hospital Admits	3,002	3,000	4,065
ED	10,973	10,000	11,102
Adv. Imaging	12,031	12,000	9,960
Readmits	62	60	80

Q1	Projected	Benchmark	Actual
Surgeries	964	980	946
Hysterectomies	301	300	403
Back surgery	135	150	207
Hip Replacement	101	100	93

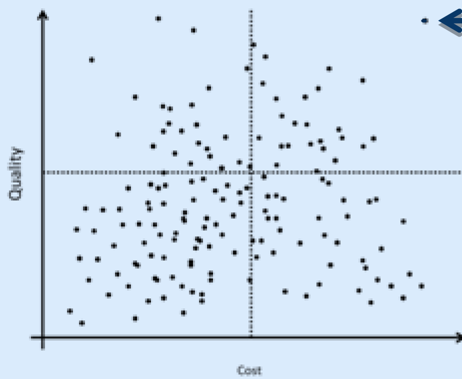
Clinician View – Performance Summary

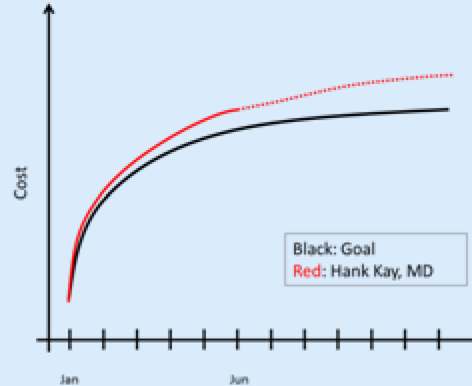
Performance | Patient List | Patient Dashboard

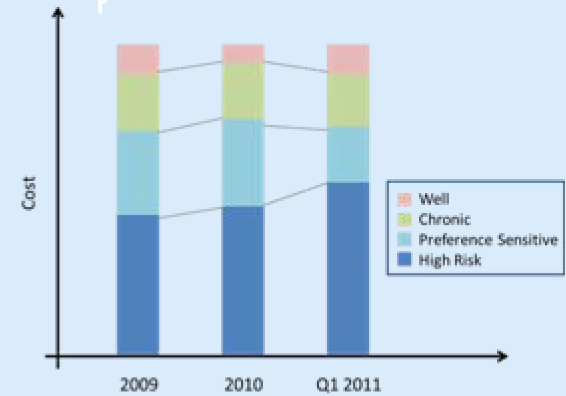
Summary | Financial | Quality | Utilization | Patient Segment

Filtered by: **Practitioner, Hank Kay, MD, Q1**

Filters: Practice | Practitione | Specialty







Supply Sensitive (Chronic & High Risk)

Q1	Projected	Benchmark	Actual
Hospital Admits	15	16	15
ED	55	50	56
Adv. Imaging	20	21	24
Readmits	1	2	4
Specialty visits	30	30	30

Preference Sensitive

Q1	Projected	Benchmark	Actual
Surgeries	5	4.9	5.0
Hysterectomies	1	1.5	3
Back surgery	1	0.8	1
Hip Replacement	0	0.5	1
Knee Replacement	1	0.8	0

Care Manager View – Patient List

Care List | Patient Dashboard

Alert	Last name	First name	M/F	Age	Pt ID	PCP	CC#	Care Concern	Risk	Timeframe (in days)	To do	Call	Email smail	Education
×	Smith	Joe	M	57	3245534	Kay	3	Diabetes	93%	1	10	□	□	□
×	Jones	Jane	F	65	5474324	Mann	6	HF	87%	1	6	□	□	□
×	Lee	Amy	F	81	2769431	Drake	4	CAD	81%	1	5	□	□	□
⊙	Chang	Terry	M	45	3286412	Ricci	2	HTN	75%	2	4	✓	□	□
⊙	Brown	Ken	M	62	3426769	Wood	3	Chol	75%	3	2		□	□
⊙	White	Paul	M	55	8943652	Adams	2	Leg ulcer	74%	3	1			□
⊙	Pent	Cal	M	64	2546432	Shin	4	HF	71%	2	3		✓	□
⊙	Santos	Mikey	M	37	6754327	Parks	3	Diabetes	65%	3	2			□
⊙	Gold	Babs	F	21	2687533	Pell	6	Chol	64%	3	5	□		□
⊙	Bolt	Sam	M	78	9785754	Ricci	3	CAD	52%	2	2		✓	□
⊙	Parker	Lisa	F	54	5437566	Pell	2	COPD	51%	3	3		□	□
□	Sands	Sal	M	35	3467543	Adams	4	Diabetes	49%	5	2	□		□
□	Posey	Mary	R	42	8664464	Drake	6	HF	41%	3	4		□	✓

Future Potential ‘views’

- Person views
  - Nothing about me without me
- Payer views
  - How are the systems performing
- Employer views
  - Supporting new arrangements with self insured

MEDICAL STAFF WILL NEGOTIATE AGGRESSIVELY OVER BUNDLED PAYMENTS, CAPITATION AND GLOBAL BUDGETS

HEALTH SYSTEMS TAKING RISK

- **Health Systems with Legacy Health Plans**
  - Inter-Mountain, Sharp, Presbyterian, Spectrum Health
- **Health Systems that recently built, acquired or merged with a Health Plan function**
  - Partners (Boston), Sutter, Dignity Health (Western Healthcare Advantage), Memorial (Long Beach), Baylor Scott and White, North Shore Long Island Jewish
- **Health Systems that are going deep on Commercial ACO plans and CMS ACOs with plan partners**
  - Montefiore, Steward, Aetna Whole Health (Inova, Banner, Aurora)
- **Health Systems "Go Your Own Way"**
  - Evolent Health (UPMC and Advisory Board Offering) includes Piedmont/Wellstar, Medstar

THE WORK

- Centrality of Clinical Integration
- Health IT as platform not panacea
- Learning to live on Medicare
- Managing Business Model Migration
- Building a culture of Quality and Accountability
  - "We have the anatomy of an Accountable Care Organization but none of the physiology"

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Questions?

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