



Aetna Business

Intelligence / Enterprise
Data Warehouse

Richard Ingraham Aetna Information Services

Aetna Business Profile

- Health care
- Dental
- Pharmacy
- Group life
- Disability
- Long-term care



Aetna Facts – then and now

2000 2004

Revenue

25 b

20 b

Net Income

-266 m

1.2 b

Earnings per share -1.86

6.80

Medical members

17.2 m

13.5 m

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Aetna Business Transformation

- Eliminate unprofitable business
- Improve customer service
- Introduce innovative products
- Profitable growth
- Increase products per customer
- “Information, Innovation, Integration”

Enabling Business Goals

- Executive dashboards
- Increased breadth and depth of data
- More complete drill downs
- Predictive Modeling
- New product analysis

Data Warehouse Statistics

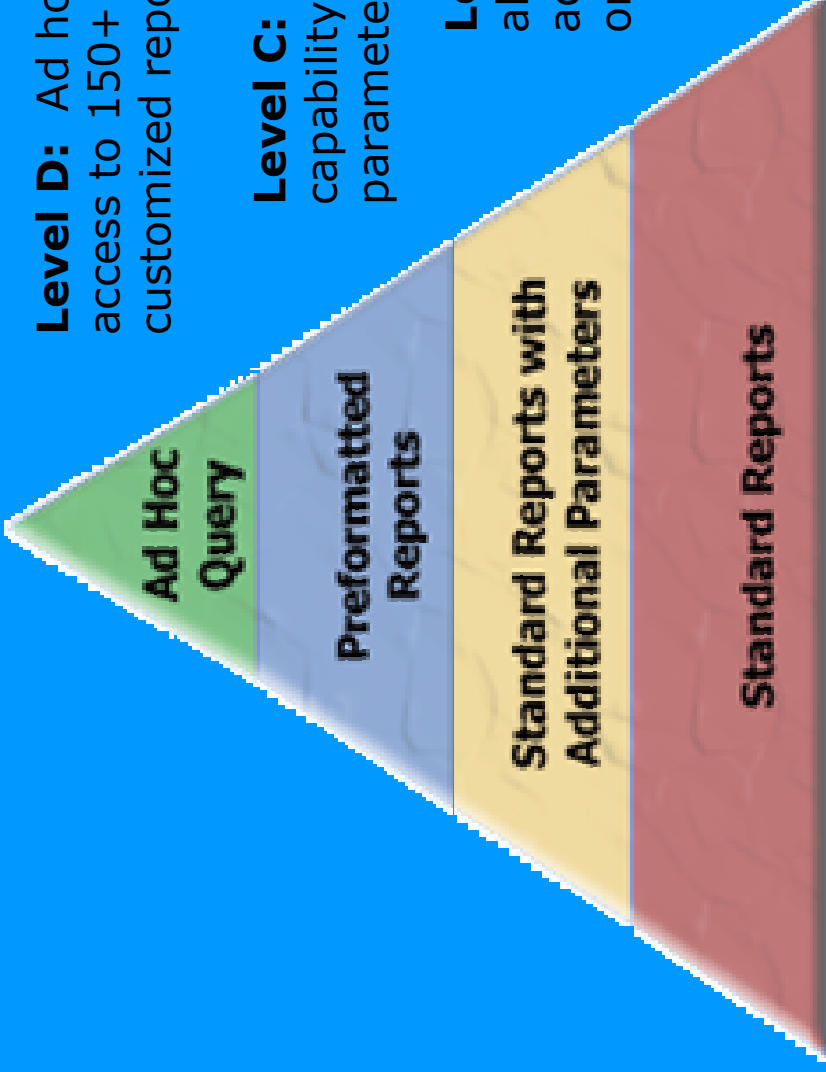
- 20 billion rows of data
- 500,000 information requests/ month
- 6,000 active users
- 3 – P690 AIX machines
- 120 IT professionals
- 100 business professionals

Business Intelligence Capabilities

- Web based portal delivery model
- OLAP Models
- Real time Ad Hoc request capability
- Predictive Modeling
- Data Mining

e. Plan Sponsor Monitor Levels of Power

Power



Level D: Ad hoc query tool provides access to 150+ data elements for customized report design

Level C: Value-added decision support capability features library of 50+ parameter driven report formats

Level B: Easy to use web tool allows users to run a specific account structure or time period on demand

Level A: Web based pre-run, product specific, high-level quarterly reporting

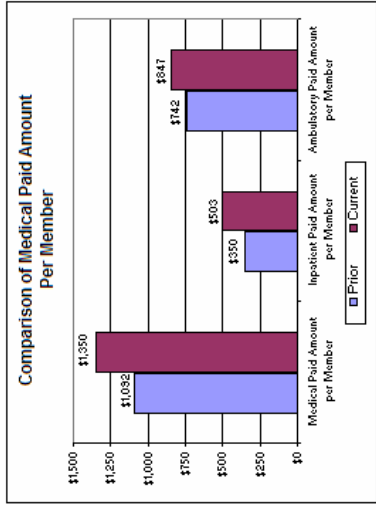
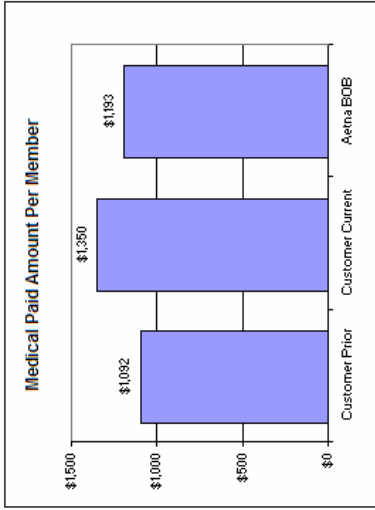
Self Insured HMO and Self Insured Pharmacy HMO
 Current Data For Claims Incurred January 1, 2002 - December 31, 2002
 Prior Data For Claims Incurred January 1, 2001 - December 31, 2001

Key Statistics

Demographics Summary for Medical		Customer Prior	Customer Current	% Change from Prior	Aetna BOB
8	Number of Employees	2,021	1,985	-1.8%	N/A
9	Number of Members	4,736	4,669	-1.4%	N/A
10	Ratio of Members to Employees	2.3	2.4	0.4%	2
11	Percent Male Members	47.3%	46.9%	-0.4%	49.0%
12	Percent Female Members	52.7%	53.1%	0.4%	51.0%
13	Average Age of Membership	30.0	30.4	0.4%	33.6

Key Statistics 1

16	Total Medical and Pharmacy Paid Amount	\$6,569,056	\$7,808,520	18.9%	N/A
17	Total Pharmacy Paid Amount	\$1,399,164	\$1,507,106	7.7%	N/A
18	Pharmacy Paid Amount per Member 2	\$400	\$438	9.6%	\$567
19	Total Medical Paid Amount	\$5,169,892	\$6,301,414	21.9%	N/A
20	Medical Paid Amount per Employee	\$2,558	\$3,175	24.1%	N/A
21	Medical Paid Amount per Member	\$1,092	\$1,350	23.6%	\$1,193
22	Total Medical Capitation Payments	\$852,480	\$882,441	3.5%	N/A
23	Medical Capitation Paid per Member	\$180	\$189	5.0%	N/A
24	Total Medical Paid (Claims and Capitation)	\$6,022,372	\$7,183,855	19.3%	N/A
25	Inpatient Paid Amount per Member	\$350	\$503	43.7%	\$406
26	Ambulatory Paid Amount per Member	\$742	\$847	14.2%	\$787
27	Admissions/1,000 Members	67	61	-9.0%	54
28	Days of Care/1,000 Members	151	176	16.6%	186
29	Average Length of Stay	2.2	2.9	31.8%	3.5
30	Total Surgeries/1,000 Members	460	512	11.3%	425
31	Inpatient Surgeries/1,000 Members	260	212	-18.5%	200
32	Ambulatory Surgeries/1,000 Members	200	300	50.0%	225
33	Office Visits/1,000 Members	3,100	3,228	4.1%	2,354
34	ER Visits/1,000 Members	240	225	-6.3%	208





Help

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Aetna Integrated Informatics®

The **Aetna Integrated Informatics Managed Care Monitor** is a decision support and reporting system that authorized Aetna staff can utilize to meet their business information needs.

[Click here](#) to begin using Managed Care Monitor.





Preferences

Output Manager

Message of the Day

Support

Information

Help

Logout

Select View

- Public - Content based
 - ADAM (Aetna DOS Analytical Model)
 - ADAM
 - ADAM Dental
 - CMIS Views-Clinical Mgt Information Suite
 - Dental
 - Disease Management
 - Episodes of Care
 - eTums UM / Health Programs
 - Health Profile
 - HEDIS
 - HMO QCCS Exclusions
 - IPMS
 - Marketing
 - MCM Usage Statistics
 - Medical Case
 - Medical Claim and Encounter**
 - Medical Membership
 - Pharmacy
 - Plan Sponsor
 - Plan Sponsor Custom
 - Provider
 - Private
 - Member

Create View Update View Open View Cancel

Medical Claim and Encounter [\(set as default folder\)](#)

Use Analytical Pathway

View Name

- M: Completed Claim Default View
- M: Paid Claim and Encounter Default View
- R: Aexcel Disruption Report
- R: Aexcel Disruption Report
- R: All Claims for a Member
- R: CJ Multi Database
- R: Claim Line Export
- R: Claim Turnaround Time Summary by Paid Provider
- R: Claim Turnaround Time Summary by Servicing Provider
- R: Claims by Benefit Code by IDS (HMO Only)
- R: Claims by Benefit Code by Paid Provider
- R: Claims by Benefit Code by Paid Provider NSA (Drill-Down)
- R: Claims by Check Number (HMO/QPOS Only)
- R: Claims by DRG and Benefit Code by IDS (HMO Only)
- R: Claims by DRG and Benefit Code by Paid Provider
- R: Claims by DRG and Benefit Code by Paid Provider NSA (Drill Down)
- R: Claims by Pin or Tin
- R: Claims by Procedure Code and Benefit Code by IDS (HMO Only)
- R: Claims by Procedure Code and Benefit Code by Paid Provider
- R: Claims by Procedure Code and Benefit Code by Paid Provider NSA (Drill-Down)

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Change

Data transformation + Outreach =

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Data transformation

Predictive Modeling

Linking Health-Disability

Identifying Gaps: MedQuery

Information Therapy

Racial & Ethnic Disparities

Quality Networks

+ Outreach

= Change



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Data transformation

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Predictive Modeling

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Data-Powered Interactions

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CLAIM
HISTORY

SELF-REPORTED
INFORMATION

DEMOGRAPHICS

TEST
RESULTS

INTELLIGENT
DATA GROUP

ACTION-ORIENTED
ALGORITHMS

PREDICTIVE
MODELING

TARGETED OUTPUT

Clinical Predictive Modeling

Preventive Care + Early Intervention = Reduction in Costs

(Traditional Intervention)

COST without early intervention

SAVINGS

COST with early intervention

Target Period

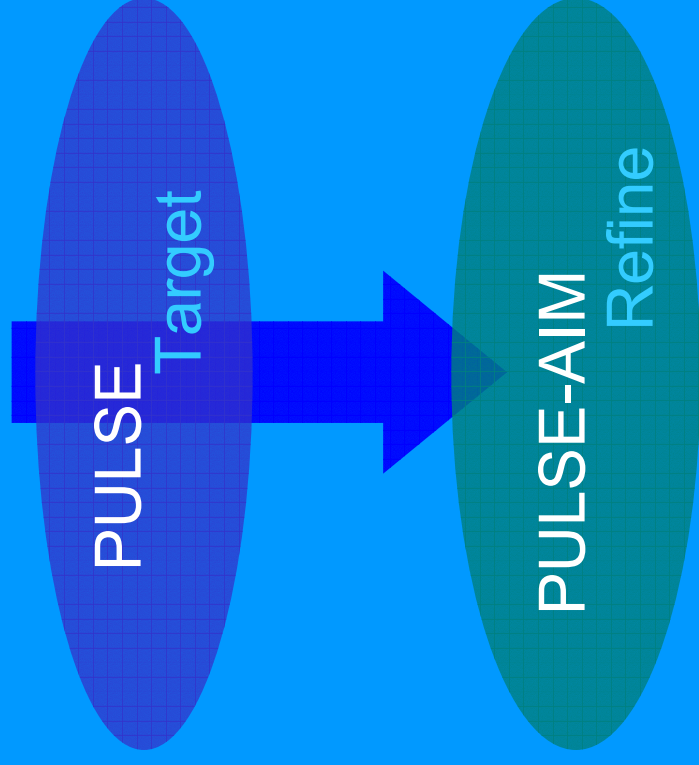
Intervention Period

Post Intervention Period

Two of Aetna's Predictive Models

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- All members evaluated each month
- Predicts future high medical costs
- Places member on prediction curve



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+ Outreach = Change

Predictive Modeling

Linking Health & Disability

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Racial & Ethnic Disparities

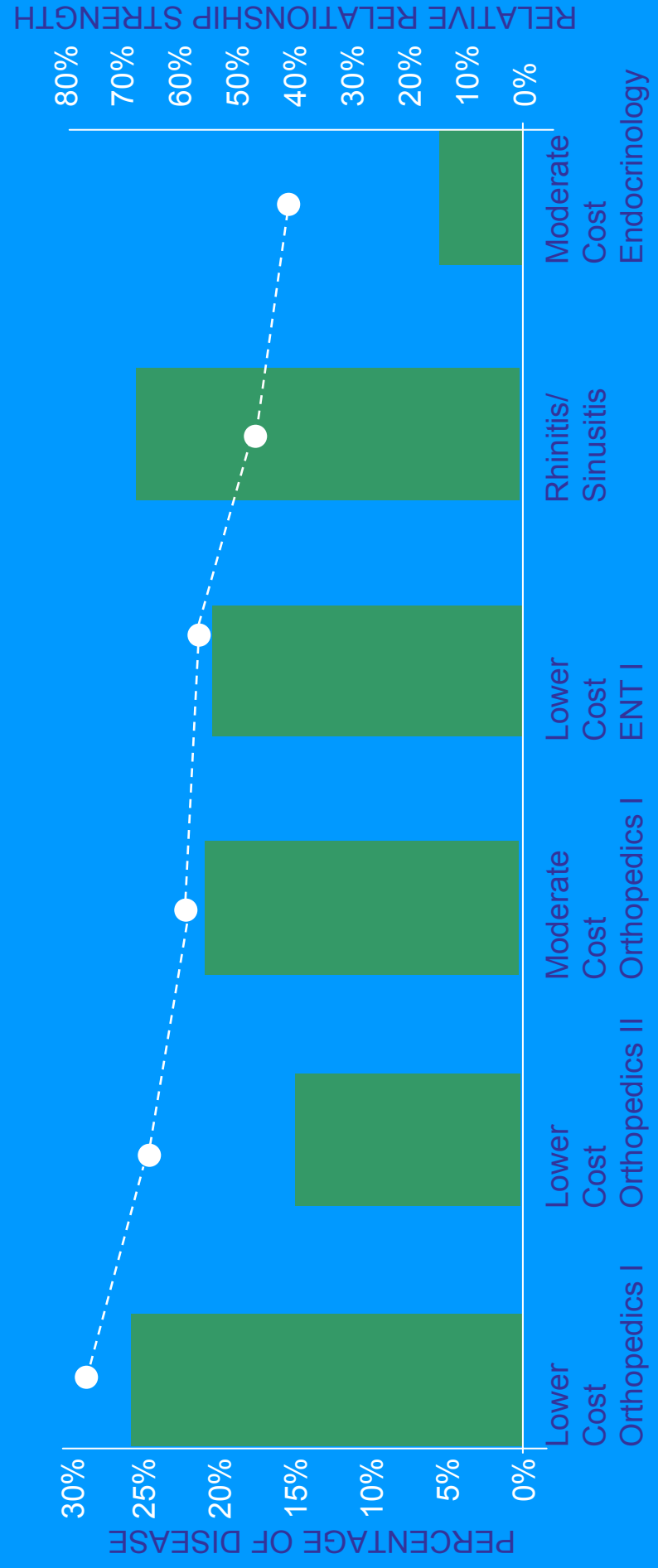
Quality Networks

managing
to total health



Disease Prevalence: Northeast Region

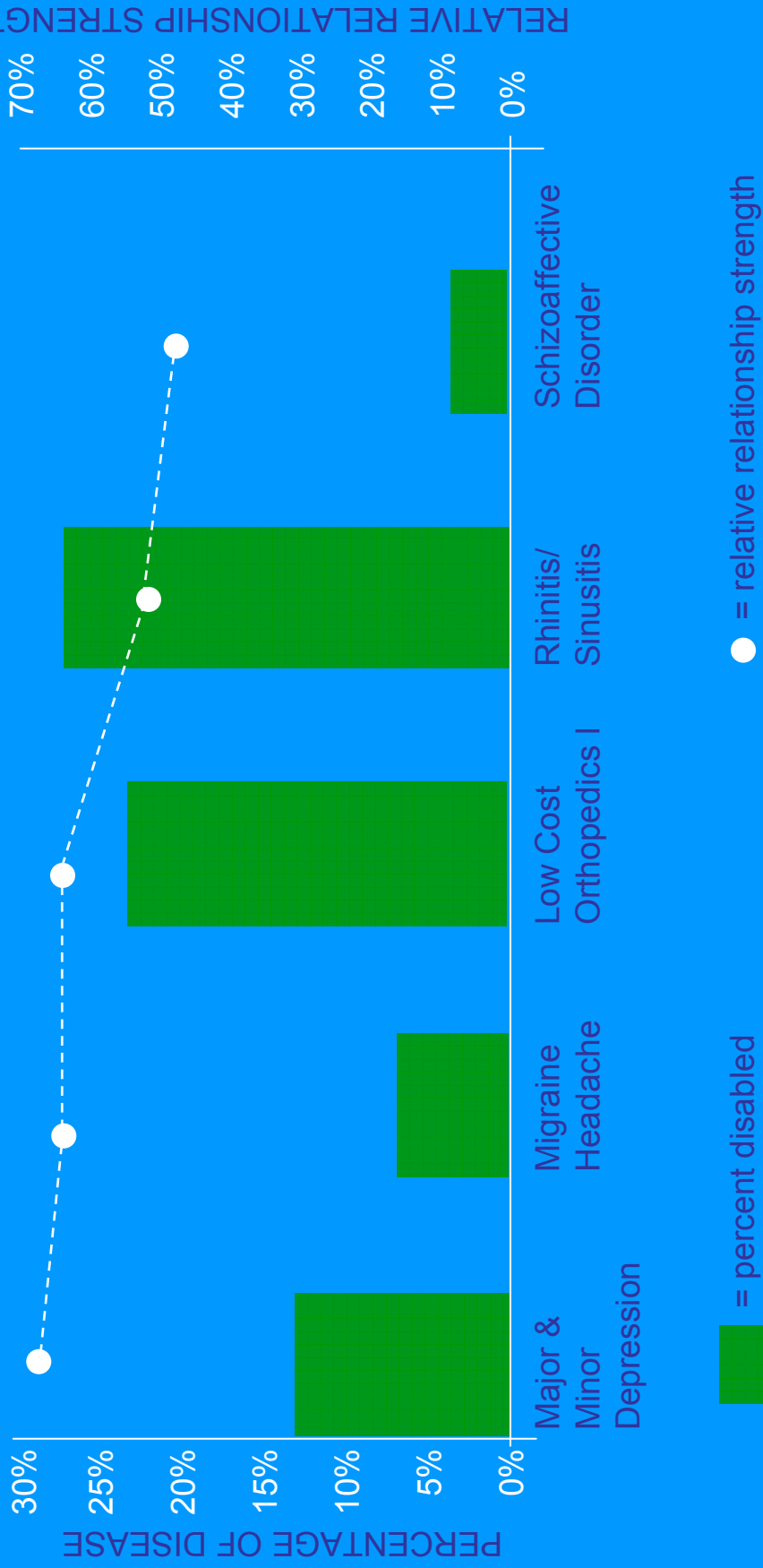
ActInfo



■ = percent disabled

● = relative relationship strength

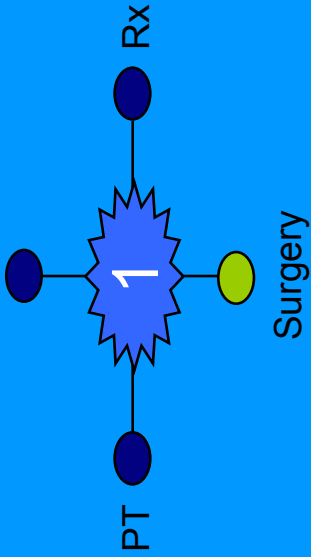
Disease Prevalence: Legal Profession



A New Predictive Model: Integrated Health and Disability

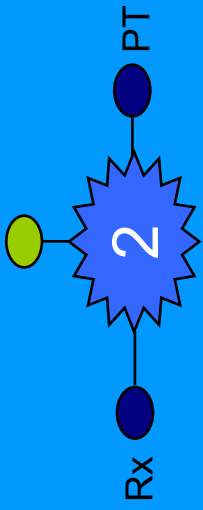
LOW BACK PAIN

Office Visit



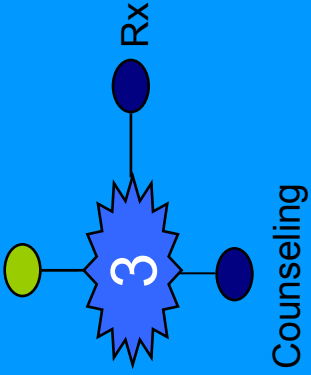
DISABILITY

Office Visit



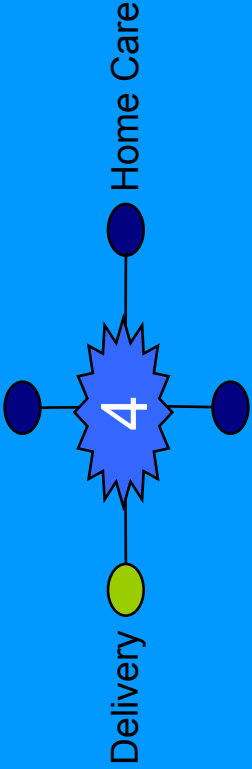
DEPRESSION

Office Visit



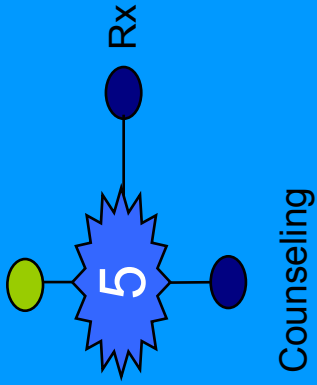
PREGNANCY

Office Visit



POSTPARTUM DEPRESSION

Office Visit



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Predictive Modeling

Linking Health & Disability

Identifying Gaps: MedQuery

Information Therapy

Racial & Ethnic Disparities

Quality Networks

preventing
medical errors

“...thank you so much for calling. I will call the patient immediately to discontinue the Metformin.”

M.D., a Nephrologist

50 year old male

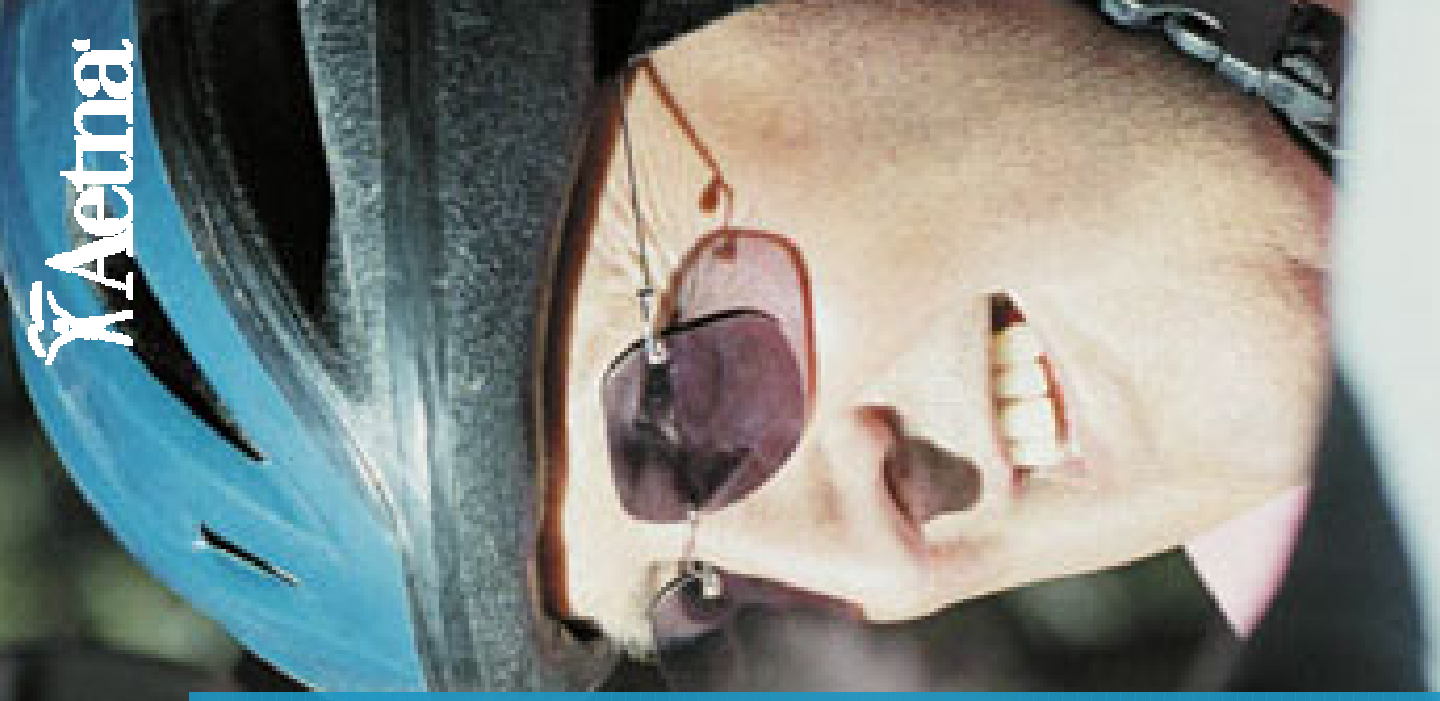
History of Diabetes, Hypertension

Recent lab tests demonstrate worsening kidney function

Patient taking Metformin – contraindicated with kidney disease

[MedQuery 2:1 Return](#)

Transformation
Outreach
Change



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Data transformation

+ Outreach = Change

Predictive Modeling

Linking Health & Disability

Identifying Gaps: MedQuery

Information Therapy

Racial & Ethnic Disparities

Quality Networks

informed
consumers



Information Therapy: Enhanced MD

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DEMO

“Quick View”

General overview of conditions, treatments

“What’s best for me?”

Personalized condition and treatment analysis based on medical history, current prescription drugs, symptoms

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Data transformation

+

Outreach

=

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Predictive Modeling

Linking Health & Disability

Identifying Gaps: MedQuery

Information Therapy

Racial & Ethnic Disparities

Quality Networks

By 2005, people
of color will
represent 40% of
the American
workforce

Health Disparities: Case Example

One of our largest plan sponsors

60% of employees indicate English is not their primary or preferred language

1 of 5 Cuban Americans older than 45 have diabetes

50% Latino children in Texas are overweight or obese

20-27% difference in vaccination coverage levels between ethnic groups



Cultural Competency At Aetna

African American pre-term labor initiative

African American and Latina Mammogram Outreach

Hypertension in African American population Program

Customer Specific support

IHL in Spanish

Outcomes management

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“Aetna is committed to addressing racial and ethnic disparities in health care.”

JOHN W. ROWE, M.D.
CHAIRMAN AND CEO

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Outreach

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Physician

Group Practice

Hospital

Pharmacist

Case Manager

Patient

Consumer

Employer

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Data transformation +

Outreach

= Change

Physician

Group Practice

Hospital

Pharmacist

Case Manager

Patient

Consumer

Employer

MedQuery

Aexcel

Leapfrog

Safety

Predictive Modeling

Quality Information

HealthFund

Productivity

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Data transformation + Outreach =

Change

Improved outcomes

Increased quality of life

Productivity gains

Projected savings

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The Future
Precision
Value
Change

Delivering
Data
Solutions

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