

# Challenges in Building a Knowledge-Based Technology Infrastructure for Population Health



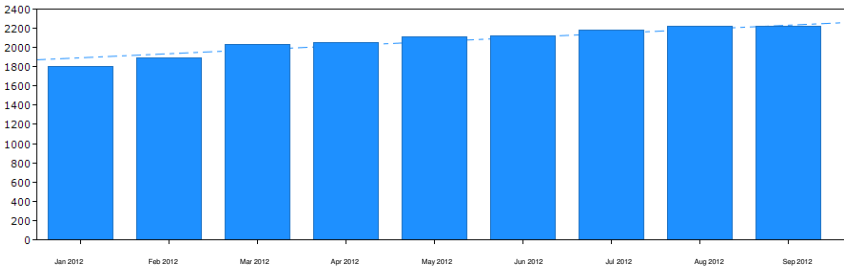
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Chief Medical Officer, MedVentive (now a part of McKesson Corporation)  
VP, Executive Medical Director, Population Health, McKesson  
May 8, 2013

## Learning Objectives

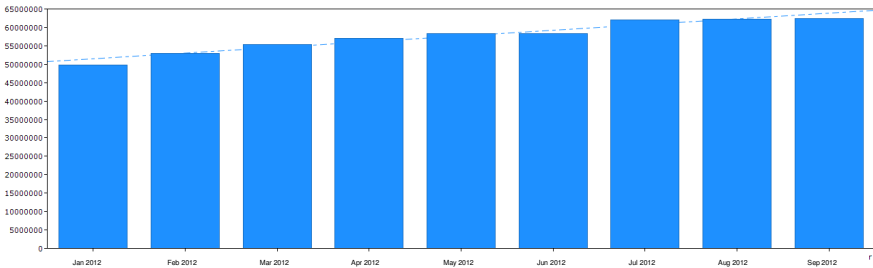
- Describe ways to achieve organizational alignment and manage through healthcare transformation
- Identify what tools and data are needed for successful population management
- Discuss how to achieve credibility with physicians and meaningful engagement

# Performance Metrics

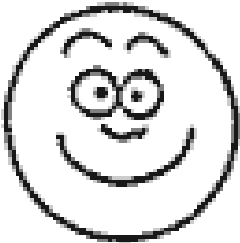
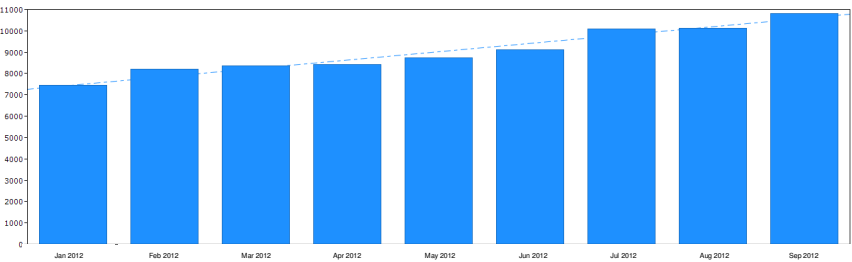
### INPATIENT ADMISSIONS BY MONTH



### INPATIENT CASES BY MONTH



### GROSS IP REVENUE BY MONTH



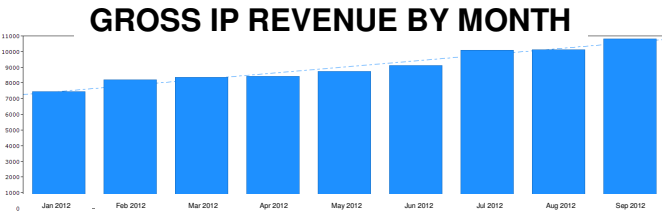
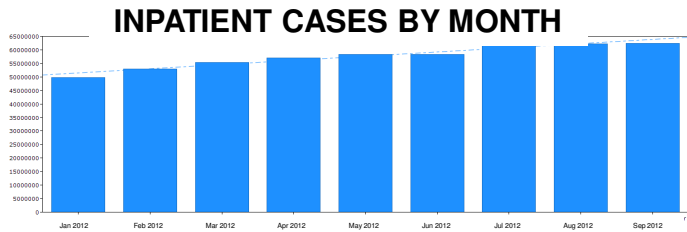
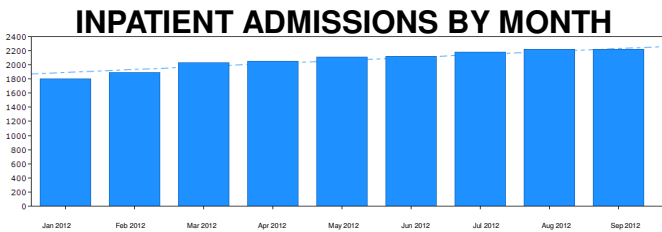
**GOOD**

or

**BAD**



# Good or Bad: It Depends

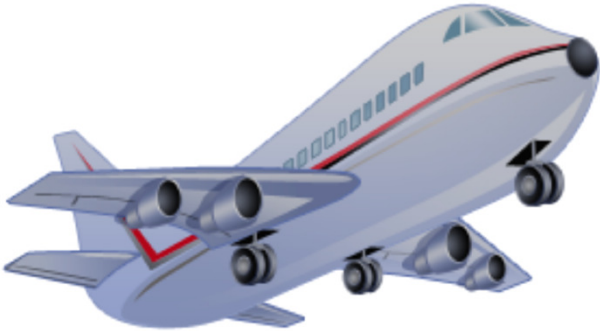
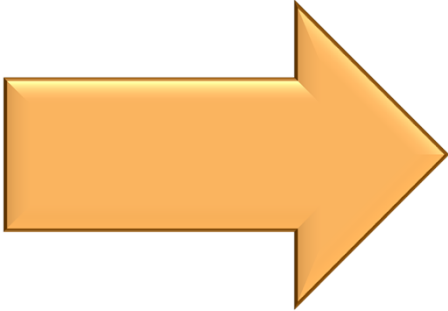


OON FFS Tertiary Referrals

Leakage Repatriation

ACO Patients

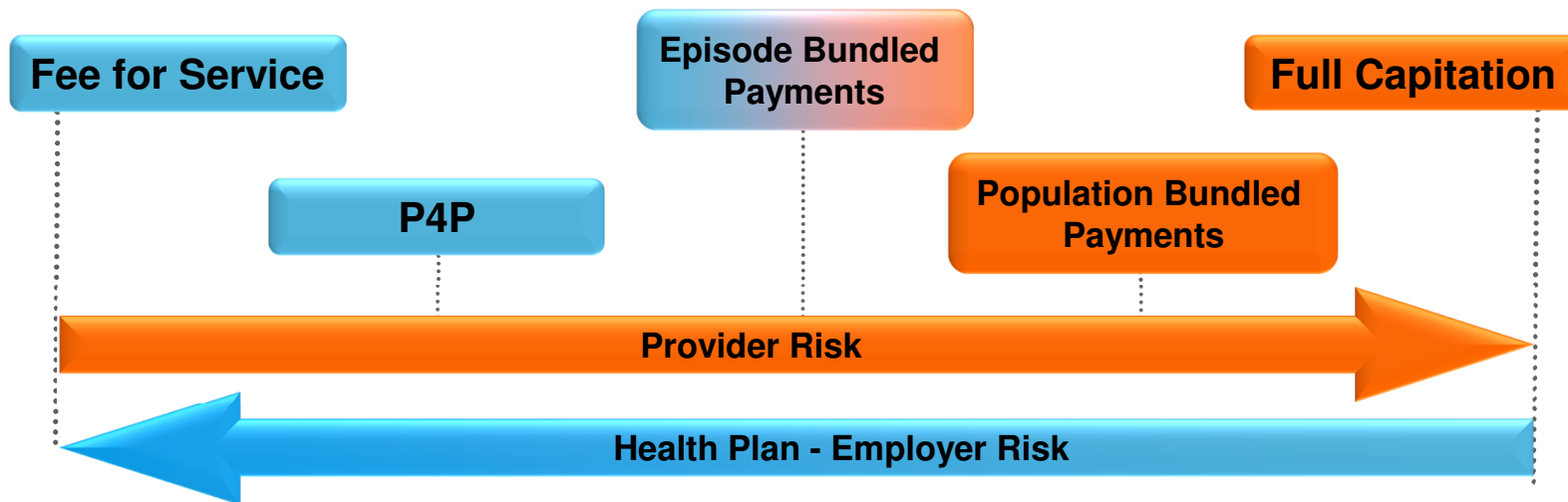
# Why? New Contract Models



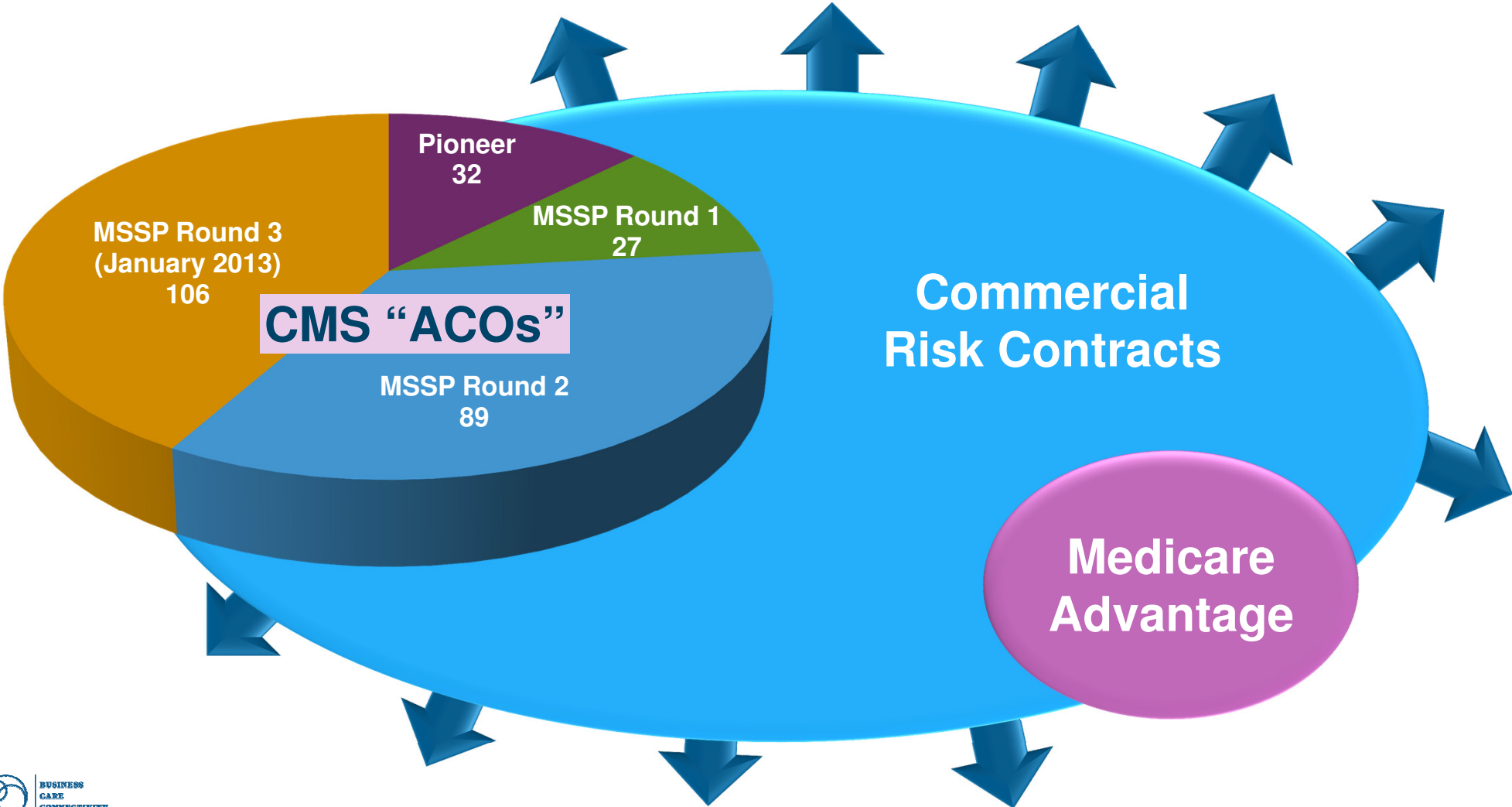
# Changing Environment – The Challenge & Opportunity

Risk is transitioning to providers

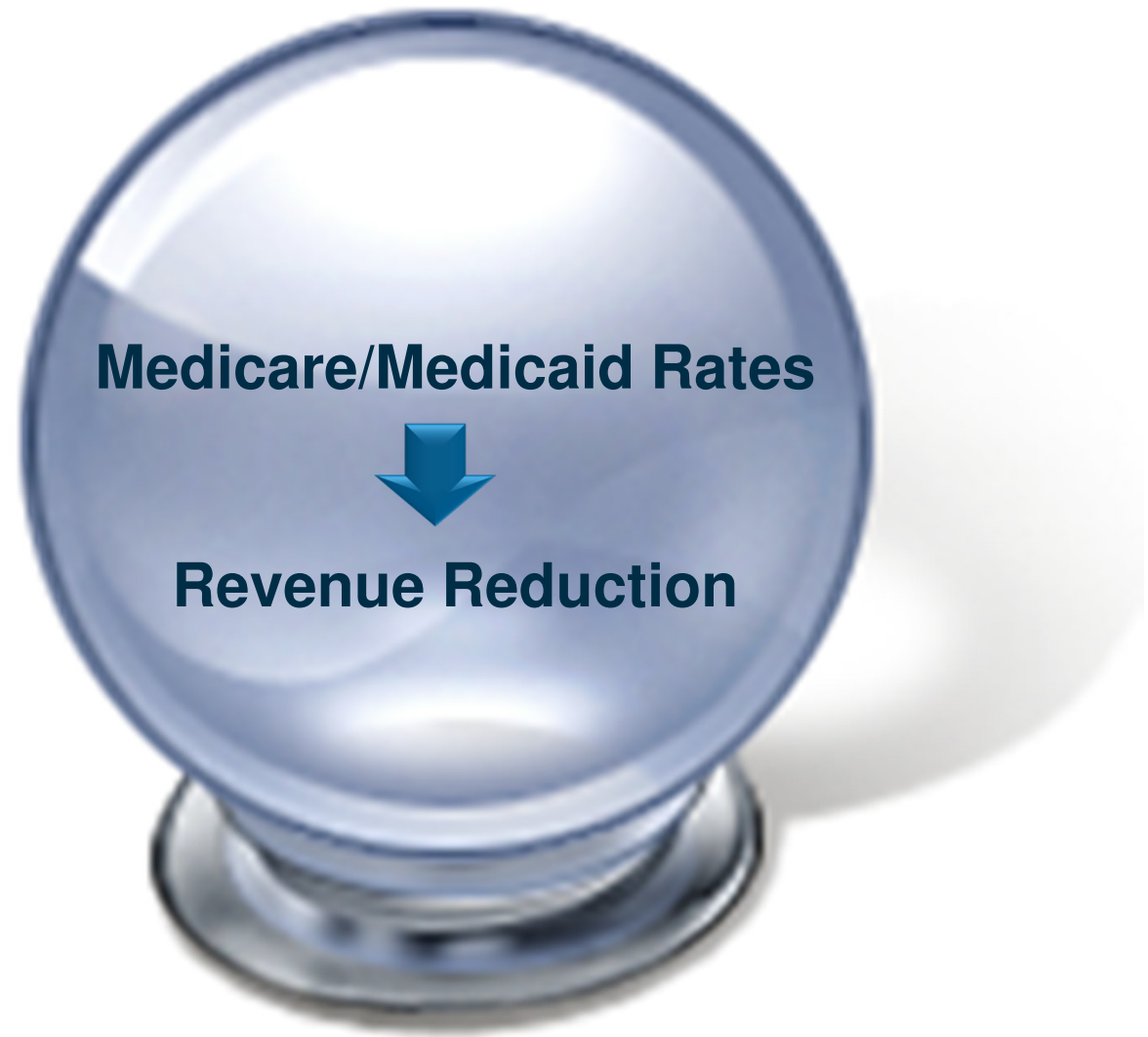
- Providers are managing populations of patients with ***risk for cost and quality***



# Accelerating Adoption

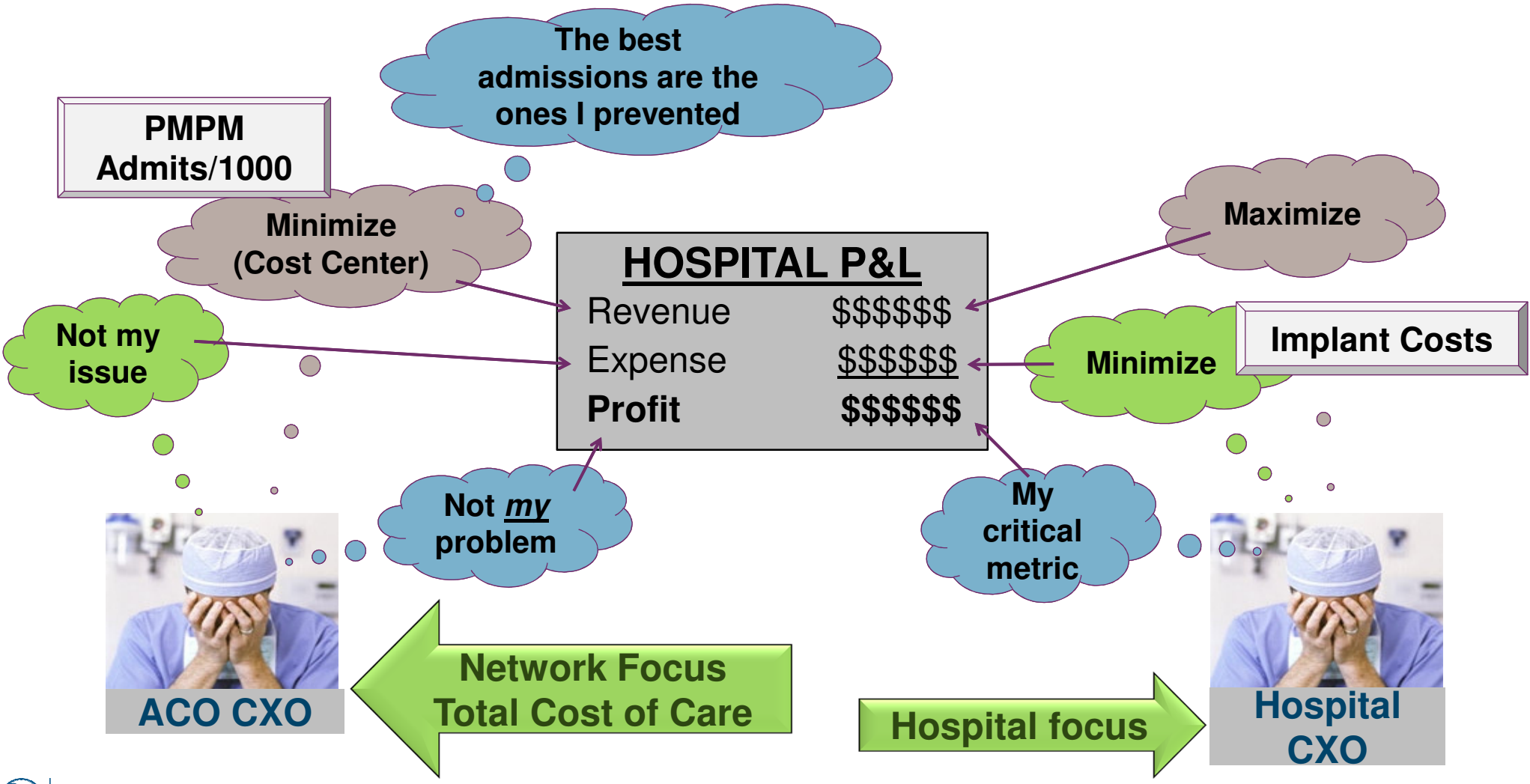


## The Future of Reimbursement





# Two ways to think about the world



## Alignment and buy-in among all constituents is critical

- All constituents need to be on board
- The message needs to be consistent
- Physicians can only manage one way
  - Cannot manage patients selectively
- Incentives must be aligned

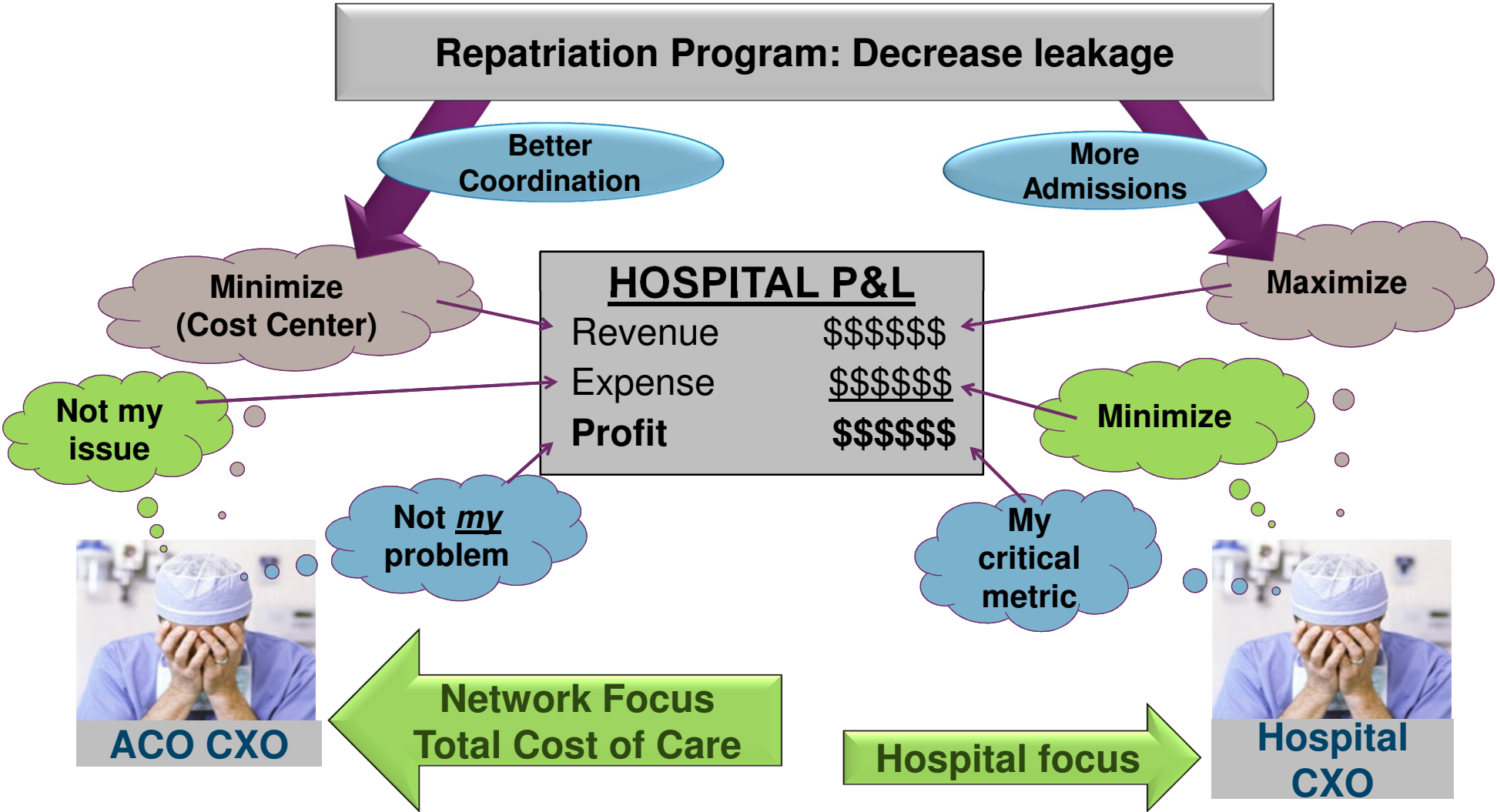
## Transition Challenges

- Conflicting contract models

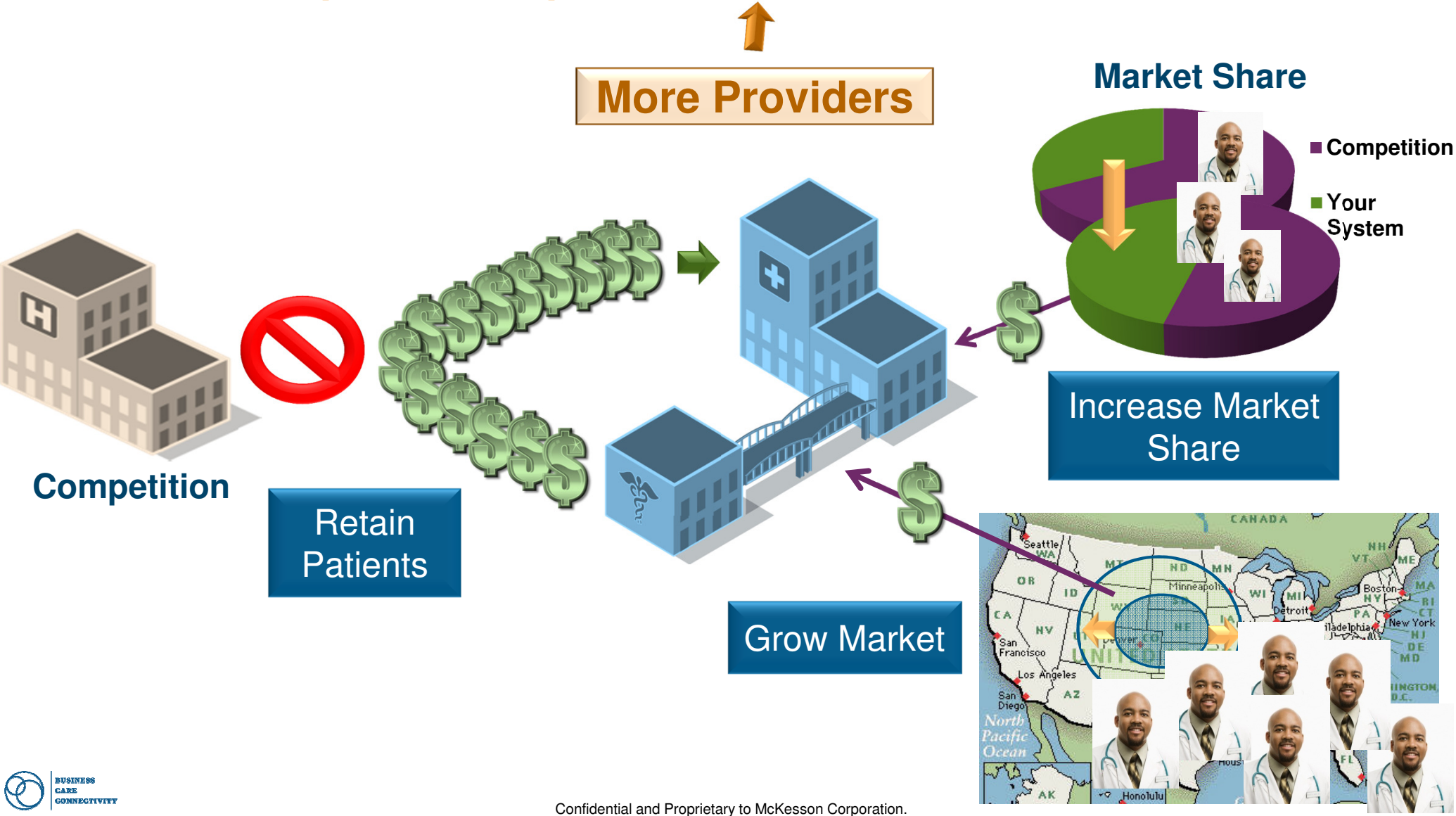


- Conflicting incentives
  - Physicians
  - Hospitals: long-term investments in bricks and mortar

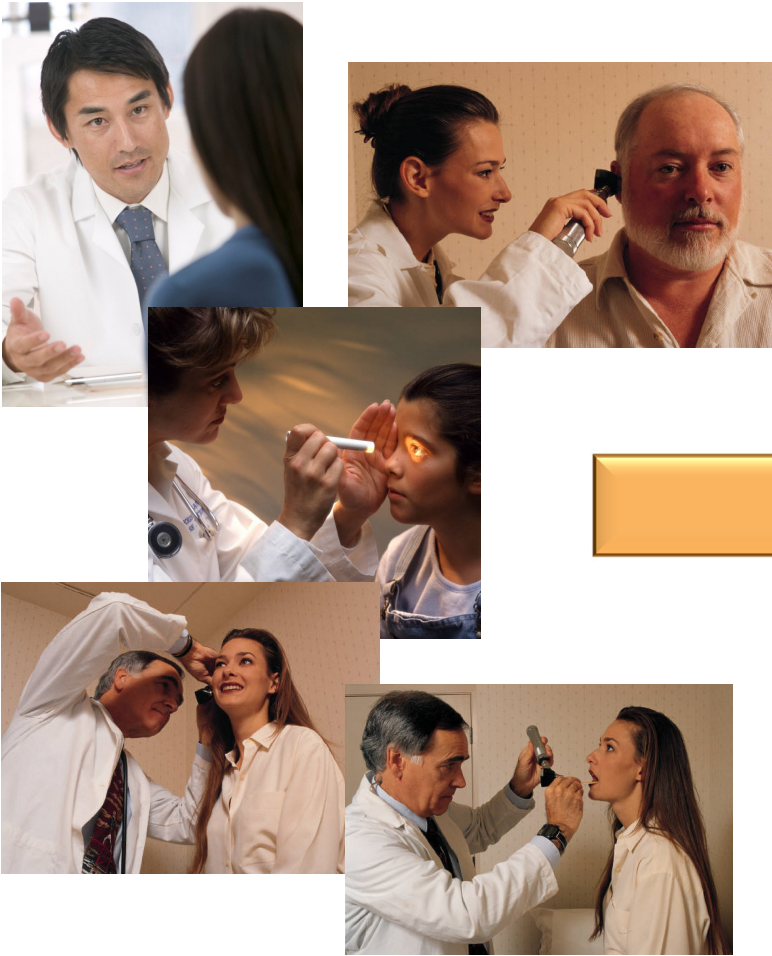
# Alignment and Mitigation Strategies



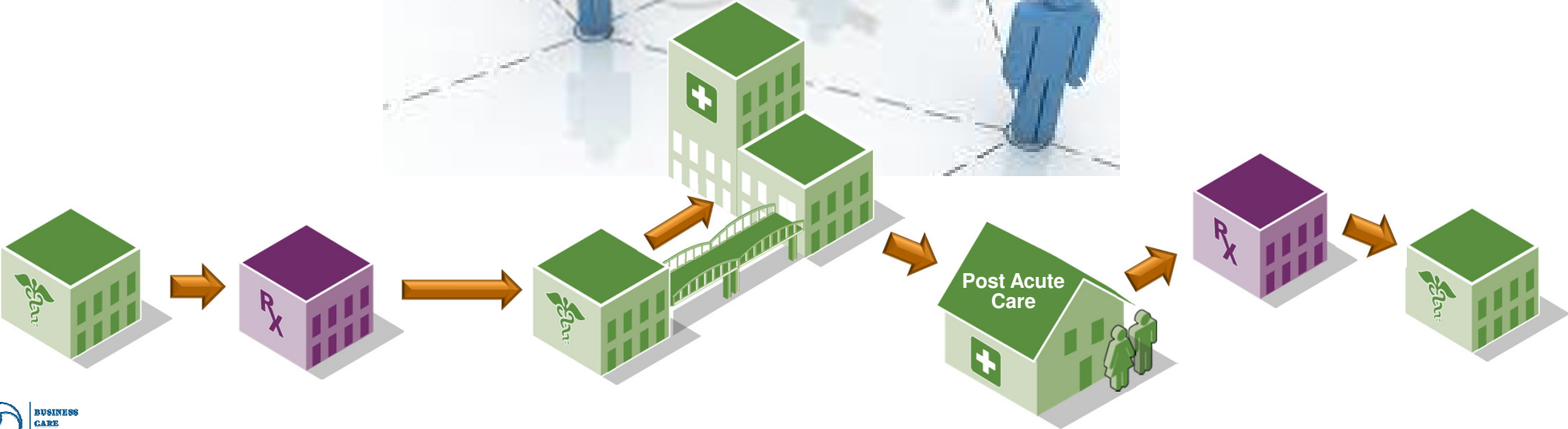
# Less Revenue/patient Requires More Patients



# New Care Model: Transactional Care to Population Management



# Population Management Across the Care Continuum



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## Network Strategy

### Goals:

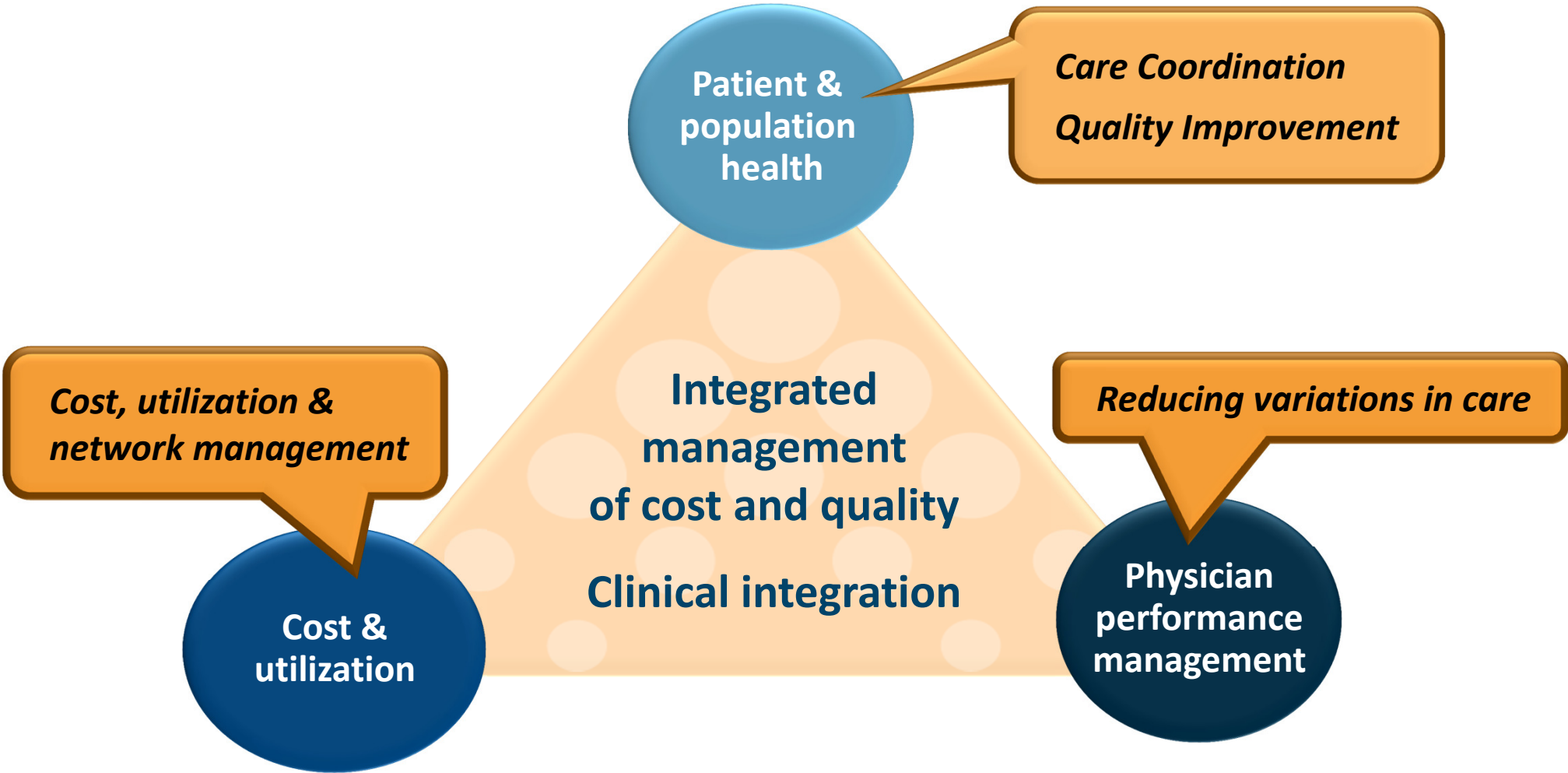
- Increase Market Share to help protect admissions
  - Align PCPs and specialists
- ACO performance

### Tactics:

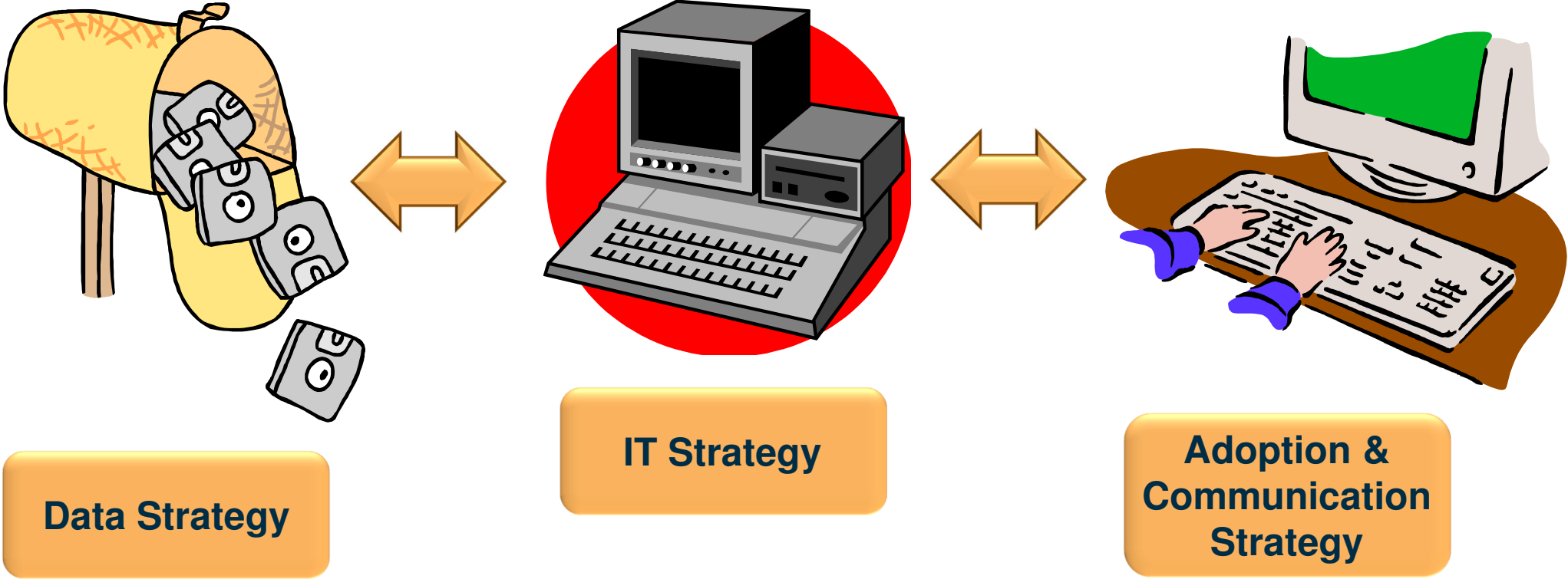
- Consolidation
- Clinical Integration
  - For Collective Bargaining
  - Align independent PCPs & specialists
  - Support population management
  - Manage ACO performance
- Risk (cost and utilization) management
  - Leakage management/repatriation
  - Practice pattern variation reduction
  - Care management



# ACO Management Strategies



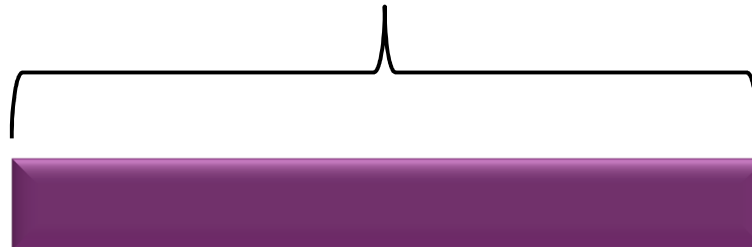
# Success Requires Multiple Interrelated Strategies



**Managing Across the Continuum: What data/analytics do you need?**

**CHF Patient  
Coronary Artery Bypass Graft**

**Hospitalization**

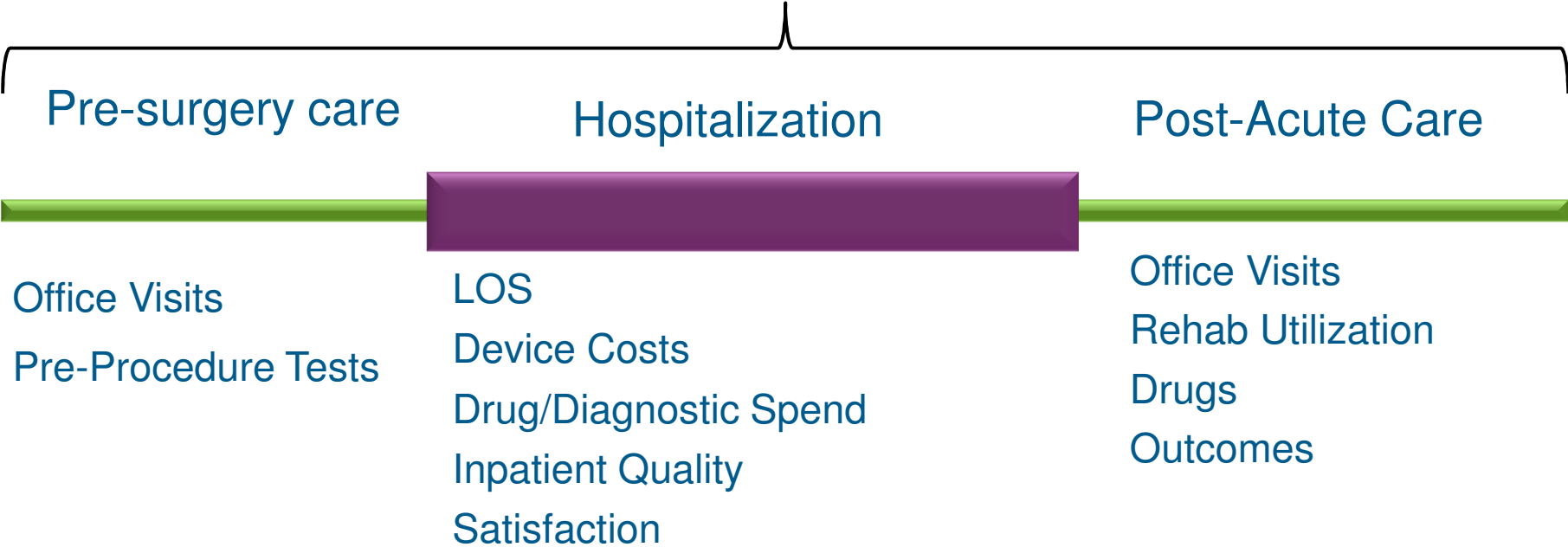


- LOS**
- Device Costs**
- Drug/Diagnostic Spend**
- Inpatient Quality Metrics**
- Patient Satisfaction**

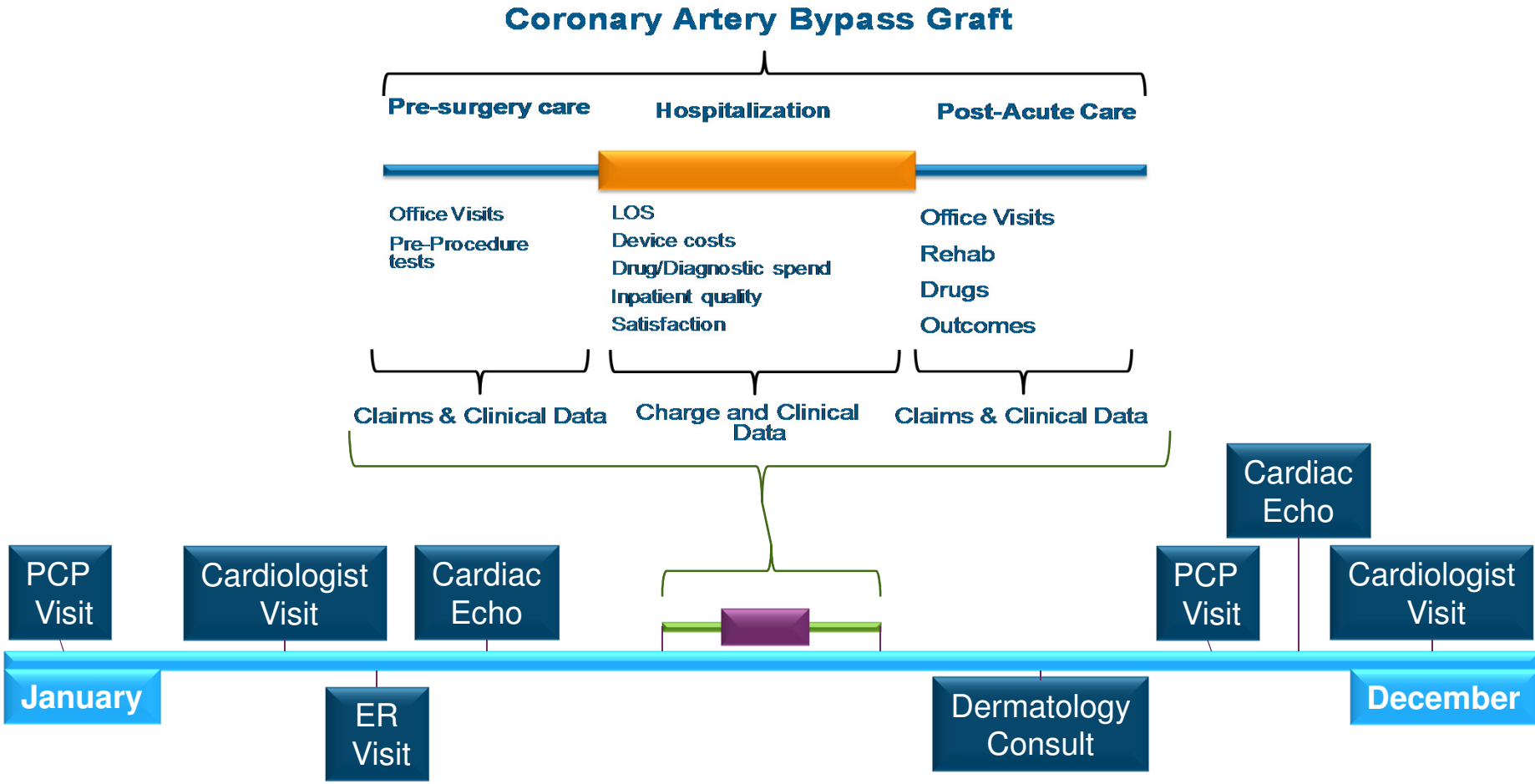
**Managing Across the Continuum: What data/analytics do you need?**

**CHF Patient Needing  
Coronary Artery Bypass Graft**

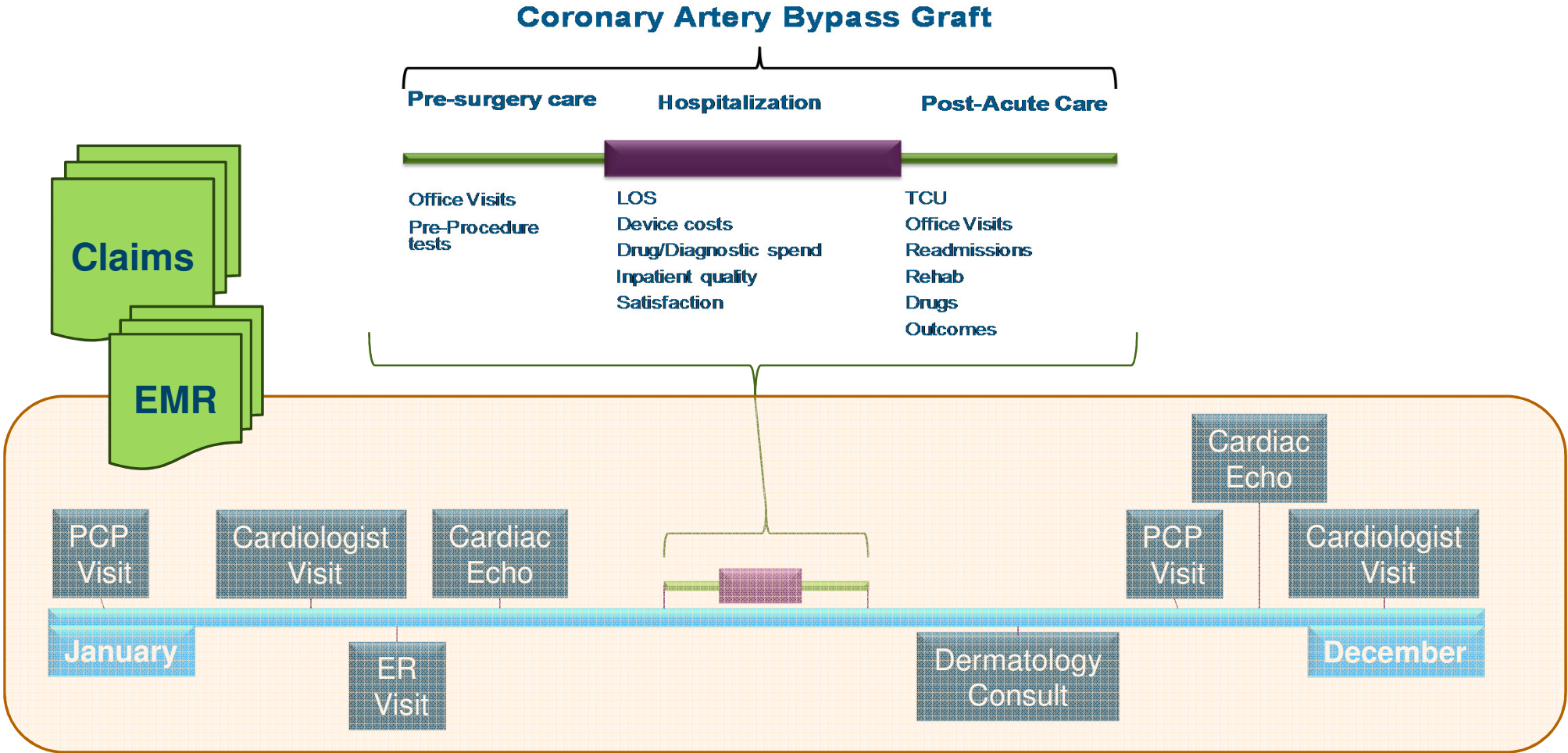
**Episode of Care**



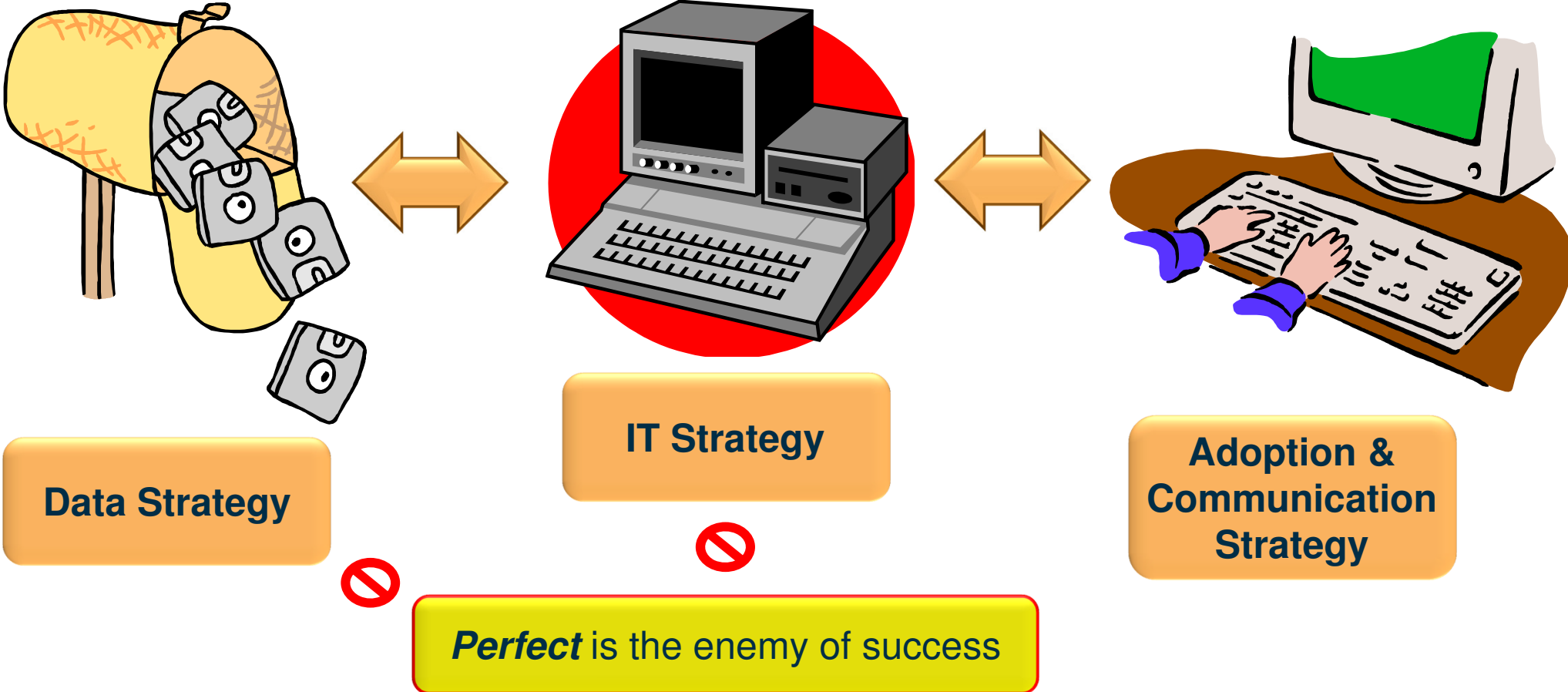
# Managing Across the Continuum and Time



# Analytics Across the Continuum Requires New Data Sources

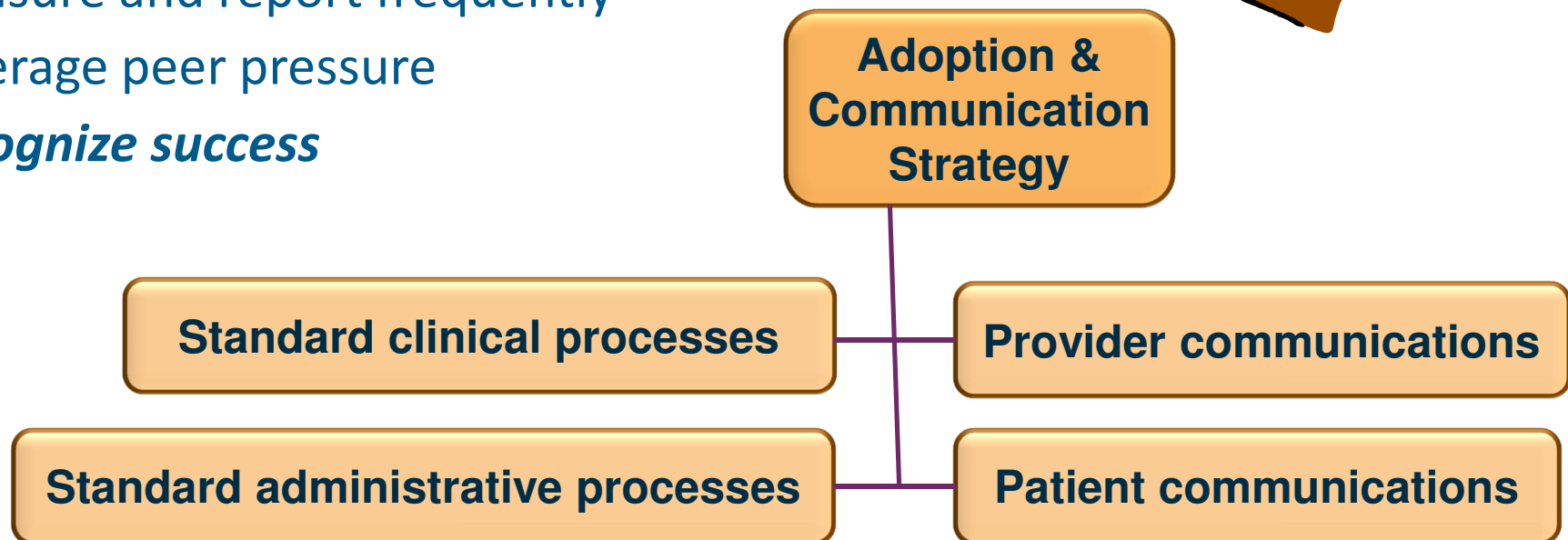


# Multiple Interrelated Strategies



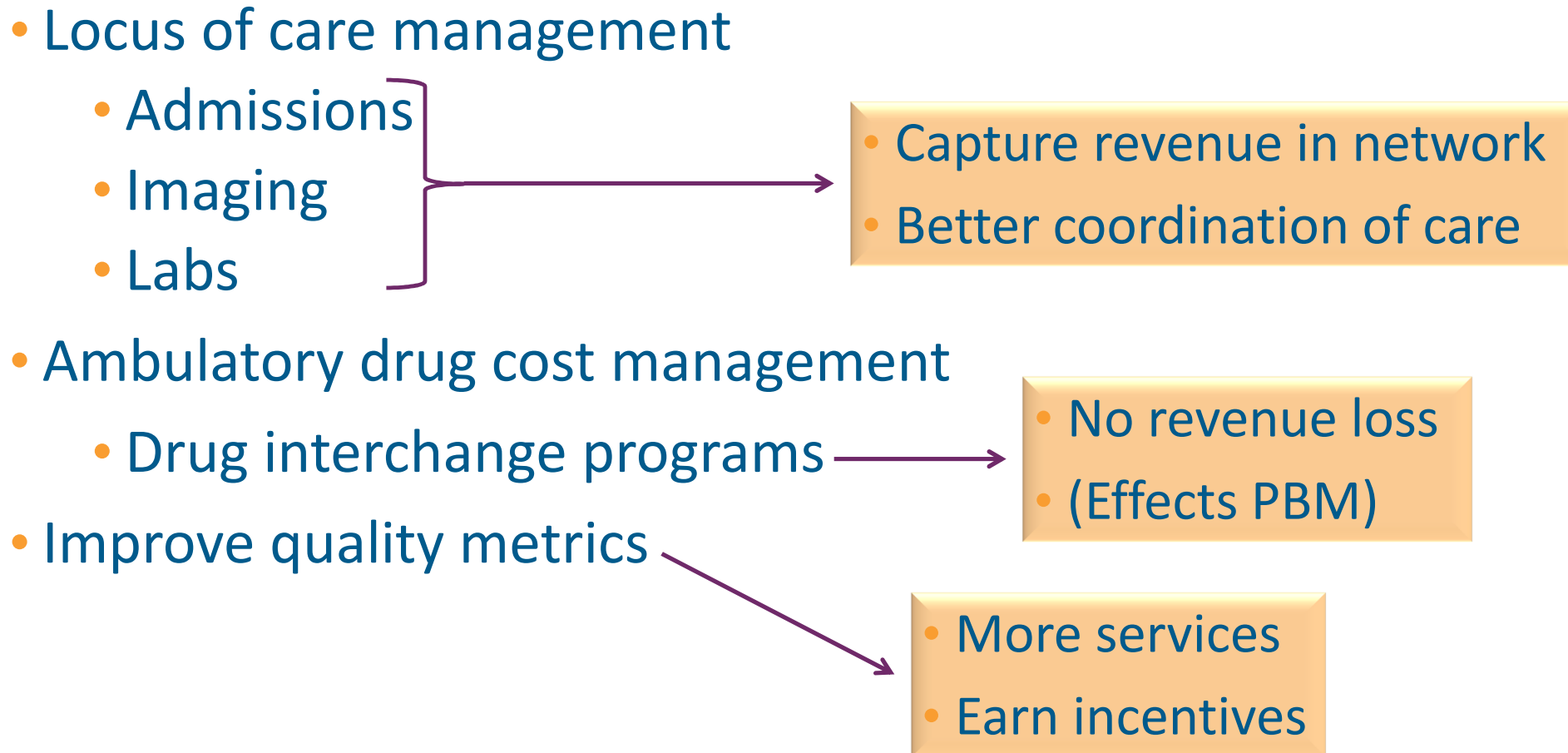
## Success Factors

- Resources
  - Domain expertise/experience
- Phased approach
- Prioritize to meet success strategy
- Measure and report frequently
- Leverage peer pressure
- ***Recognize success***





## First Initiatives: Easy is better than hard



# Physician Engagement

- Focus – Don't try to do too much all at once
  - Prioritize
  - Need to be clear about what they should do
  - Can only do so much - Sensitive to “extra” work
    - » Program design
  - Progressive roll out

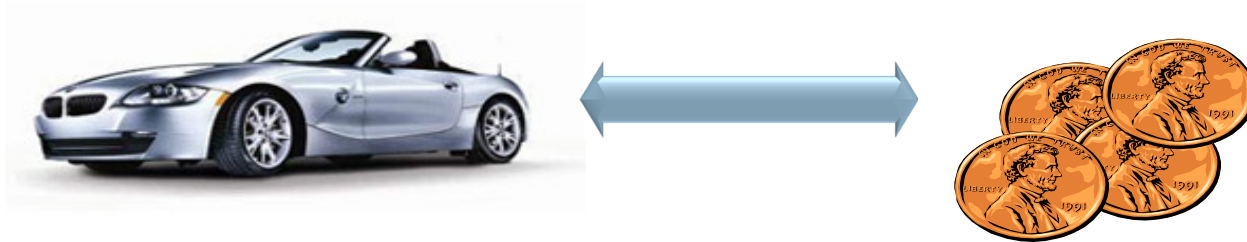
- Make it easy
  - Actionable data
  - Workflow
  - Leverage staff

NOTE: Only Work Items for the patients whose data you are allowed to view will be displayed

Work Item	Patient	DOB	Phone	Assigned To	Registry	Care	Time	Date Wt	Days In	Work Item Status	Outreach Performed	Actions
716	Daniels, Ben	7/25/1975	(617) 499-8595	Abott, John	Coronary Artery Disease	Anti - Platelet Therapy	■	10/12/2009	6	Needs Appointment Outreach	0	Update
713	Benson, Clark	2/2/1974	(900) 485-8857	Abott, John	Diabetes	BP Systolic	■	10/7/2009	11	Care Scheduled	0	Update
654	Automan, John	7/14/1921	(617) 883-9393	Abott, John	PQGL - Congestive Heart Failure	BP Systolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
655	Automan, John	3/24/1923	(617) 244-8729	Abott, John	PQGL - Congestive Heart Failure	BP Systolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
656	Automan, John	3/24/1923	(617) 244-8729	Abott, John	PQGL - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
657	Automan, John	7/14/1921	(617) 883-9393	Abott, John	PQGL - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
658	Test16, Autoassign	7/1/1930	(771) 777-7777	Abott, John	PQGL - Congestive Heart Failure	BP Systolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
660	Test16, Autoassign	7/1/1930	(771) 777-7777	Abott, John	PQGL - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
640	Automan, John	3/24/1923	(617) 244-8729	Abott, John	PQGL - Congestive Heart Failure	Assess Ejection Fraction (EF)	■	10/2/2009	16	Needs Appointment Outreach	0	Update
641	Olderman, Robert	4/21/1932	(617) 839-2827	Abott, John	Diabetes	Foot Exam	■	10/2/2009	16	Care Scheduled	0	Update

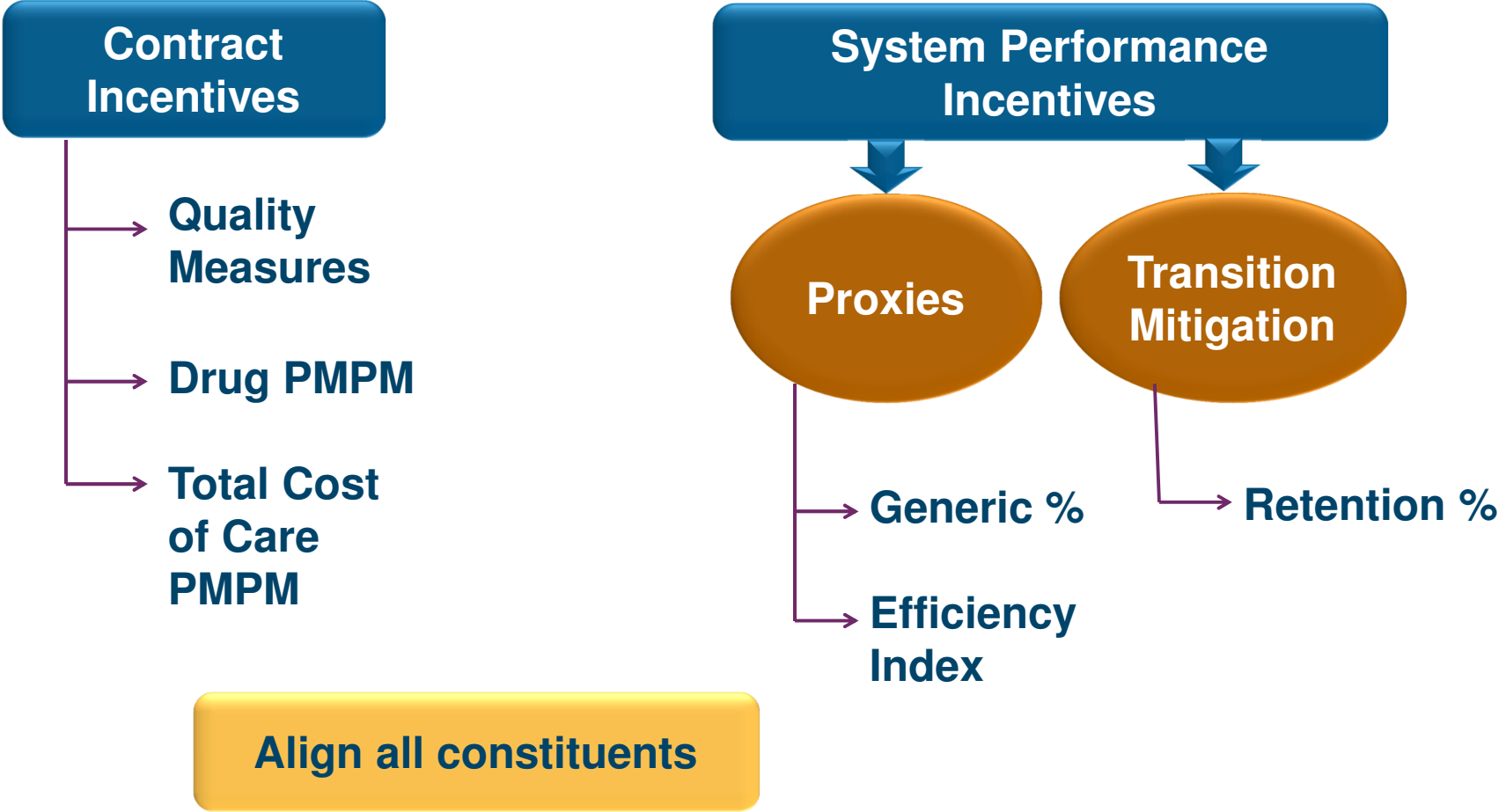
## Physician Engagement

- Leadership
- Education
- Transparency
- Leverage peer pressure
- Incentives
- Timely reporting and payment



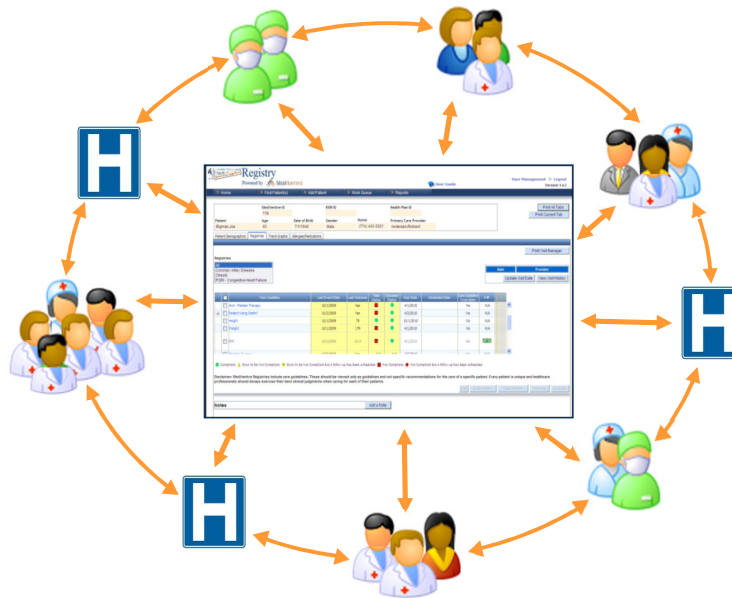
***Early wins!***

# Incentives – to align or not to align?

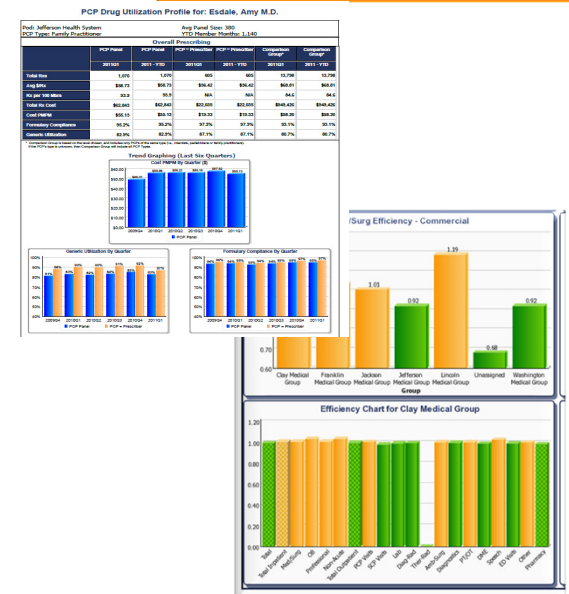


# What do you need for success? New programs and new technology

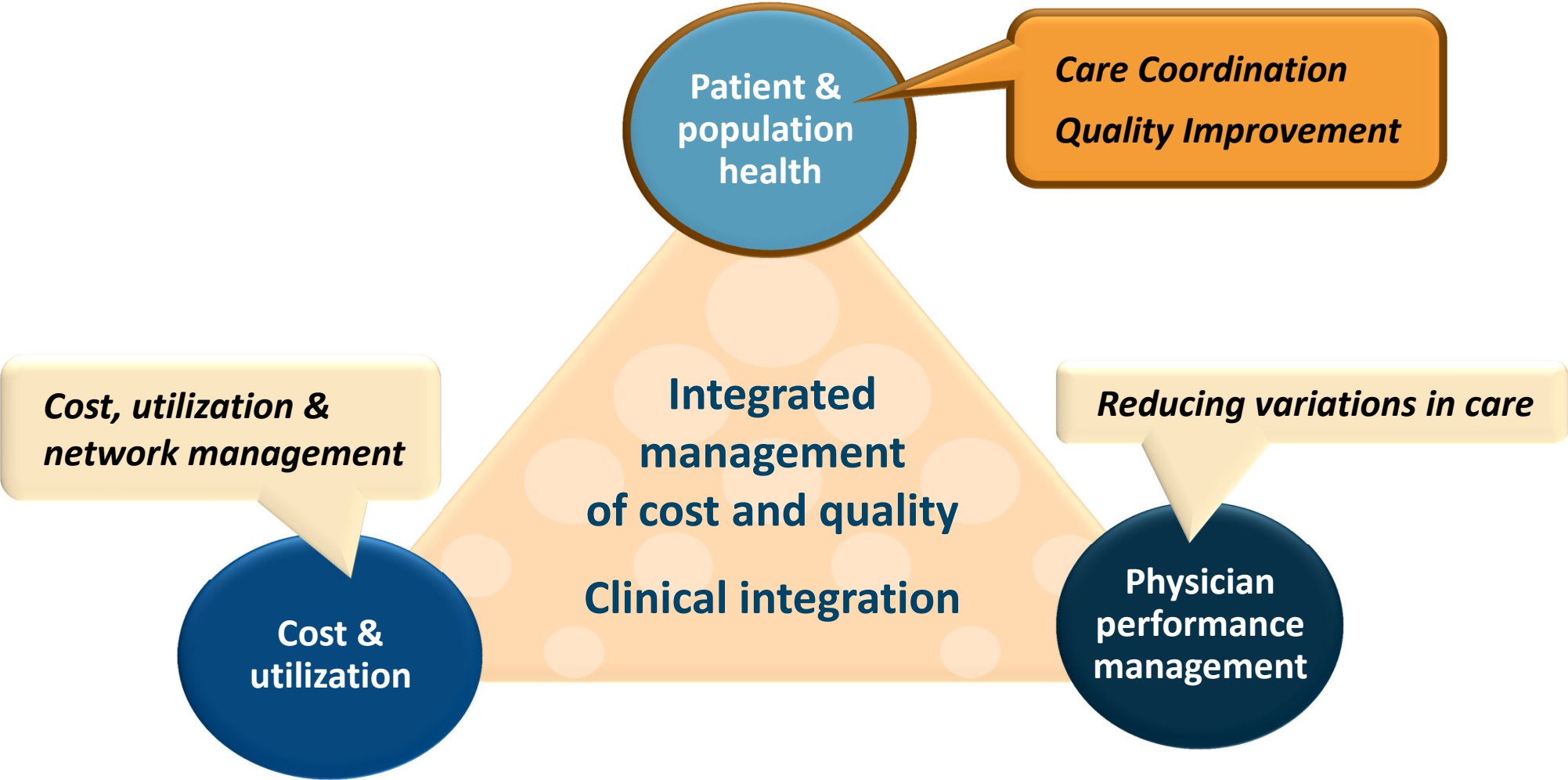
- CI program focused on guideline compliance, coordination of care
  - Enterprise clinical registry
- Programs to manage cost and utilization



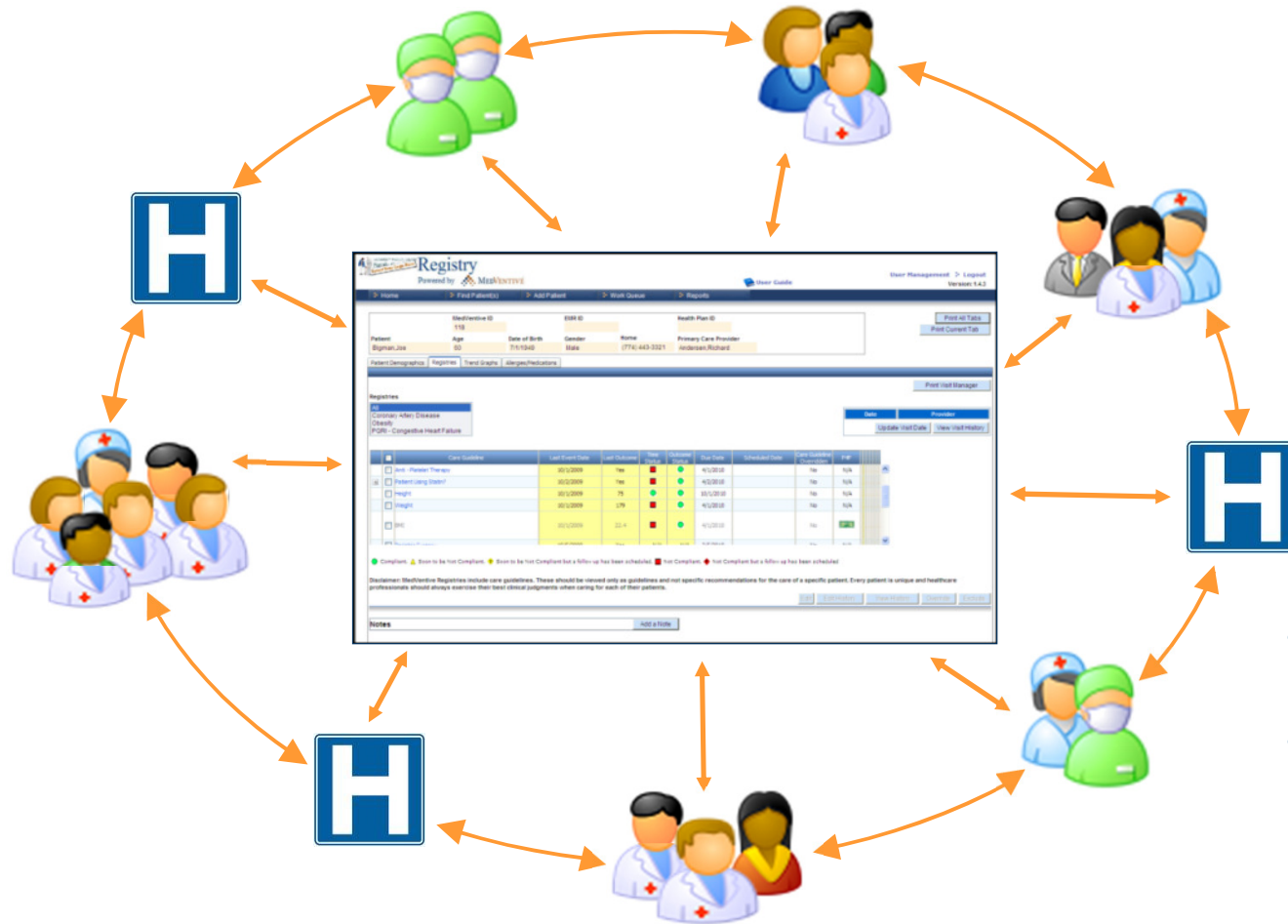
## Risk Management Solution



# ACO Management Strategies



# Enterprise Registry Solution



Simple Search    Advanced Search

Search By: Assigned To: [v]    Work Items Assigned to Me: [x]    Registry: [v]    Select Work Item Status(es): [v]

Patient Assigned To: [v]    Organization: [v]    Care Guideline: [v]    Needs Appointment Outreach: [v]    Outreach Response Pending: [v]    Escalated Outreach Response Pending: [v]

Health Plan: [v]    Time Status: [v]    Health Plan: [v]    Capital District Physicians Health Plan: [v]    Commercial-Aetna: [v]    Commercial-Anthem Blue Cross/Blue Shield: [v]

Created Date: From: [ ] To: [ ]

Find

NOTE: Only Work Items for the patients whose data you are allowed to view will be displayed.

Work Item	Patient	DOB	Primary Provider	Assigned To	Category	Code	Time Status	Date Mtd	Days In	Work Item Status	Relationships Performed	Action
718	Dankels, Ben	7/25/1975	(617) 499-8959	Abott, John	Coronary Artery Disease	BP Systemic	■	10/12/2009	6	Needs Appointment Outreach	0	Update
713	Benson, Clark	2/2/1974	(603) 493-8837	Abott, John	Diabetes	BP Systemic	■	10/7/2009	11	Care Scheduled	0	Update
654	Autman, John	7/14/1921	(617) 883-9393	Abott, John	PQ2 - Congestive Heart Failure	BP Systemic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
651	Autman, John	3/24/1923	(617) 244-8739	Abott, John	PQ2 - Congestive Heart Failure	BP Systemic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
656	Autman, John	2/24/1923	(617) 244-8739	Abott, John	PQ2 - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
657	Autman, John	7/14/1921	(617) 883-9393	Abott, John	PQ2 - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
658	Tesi16, Antonangelo	7/1/1930	(732) 777-7777	Abott, John	Congestive Heart Failure	BP Systemic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
660	Tesi16, Antonangelo	7/1/1930	(732) 777-7777	Abott, John	PQ2 - Congestive Heart Failure	BP Diastolic	■	10/2/2009	16	Needs Appointment Outreach	0	Update
640	Autman, John	3/24/1923	(617) 244-8739	Abott, John	PQ2 - Congestive Heart Failure	Assess Ejection Fraction (EF)	■	10/2/2009	16	Needs Appointment Outreach	0	Update
641	Abdman, Robert	4/21/1932	(617) 839-3837	Abott, John	Diabetes	Foot Exam	■	10/2/2009	16	Care Scheduled	0	Update

Change page: < 1 2 3 4 5 6 7 > | Displaying page 1 of 7, items 1 to 10 of 64.

- Point of care tool
- Population management tool
  - Automated outreach for gaps in care

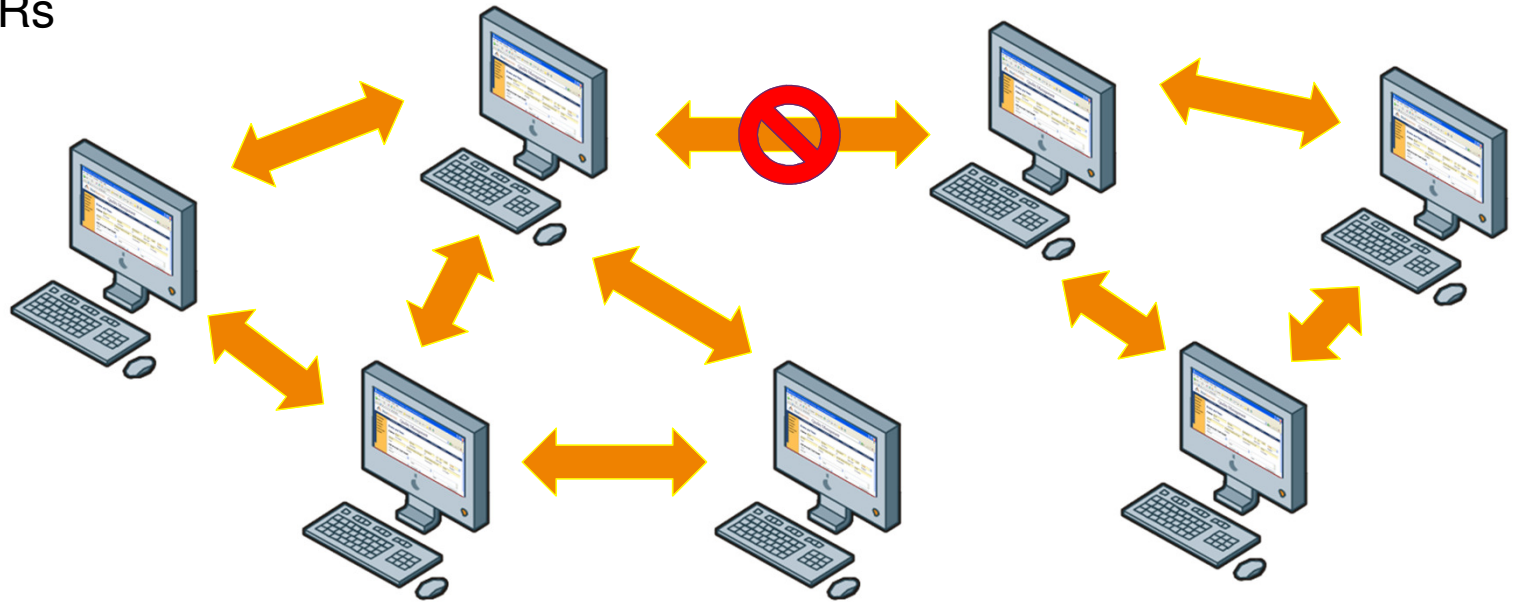
## BUT – I have an EMR!

### Challenge: Information silos

- Guideline management *across the continuum*
- *Network wide* performance measurement

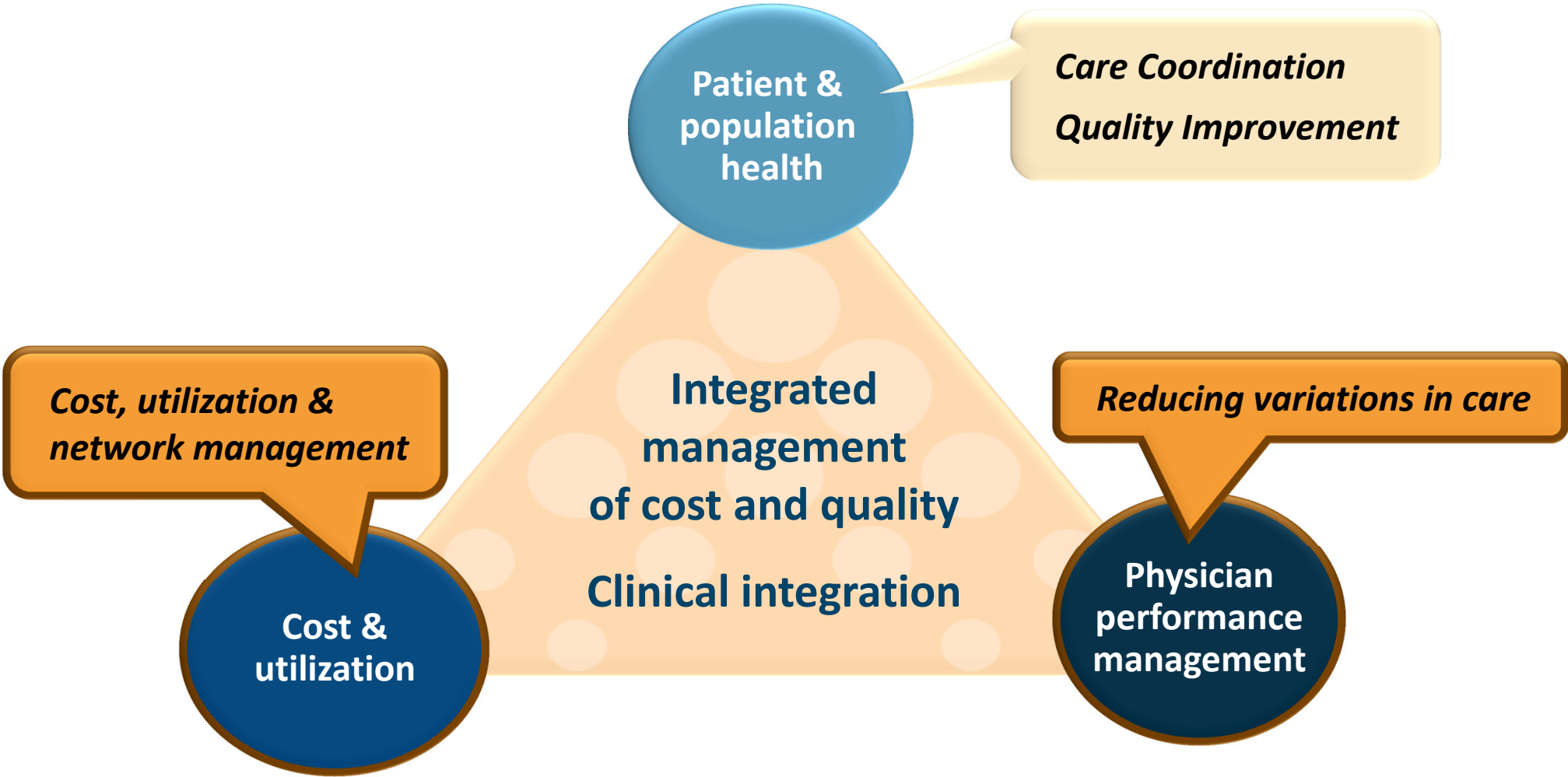
### Specialists challenges

- Participation in multiple networks
- Specialty EMRs

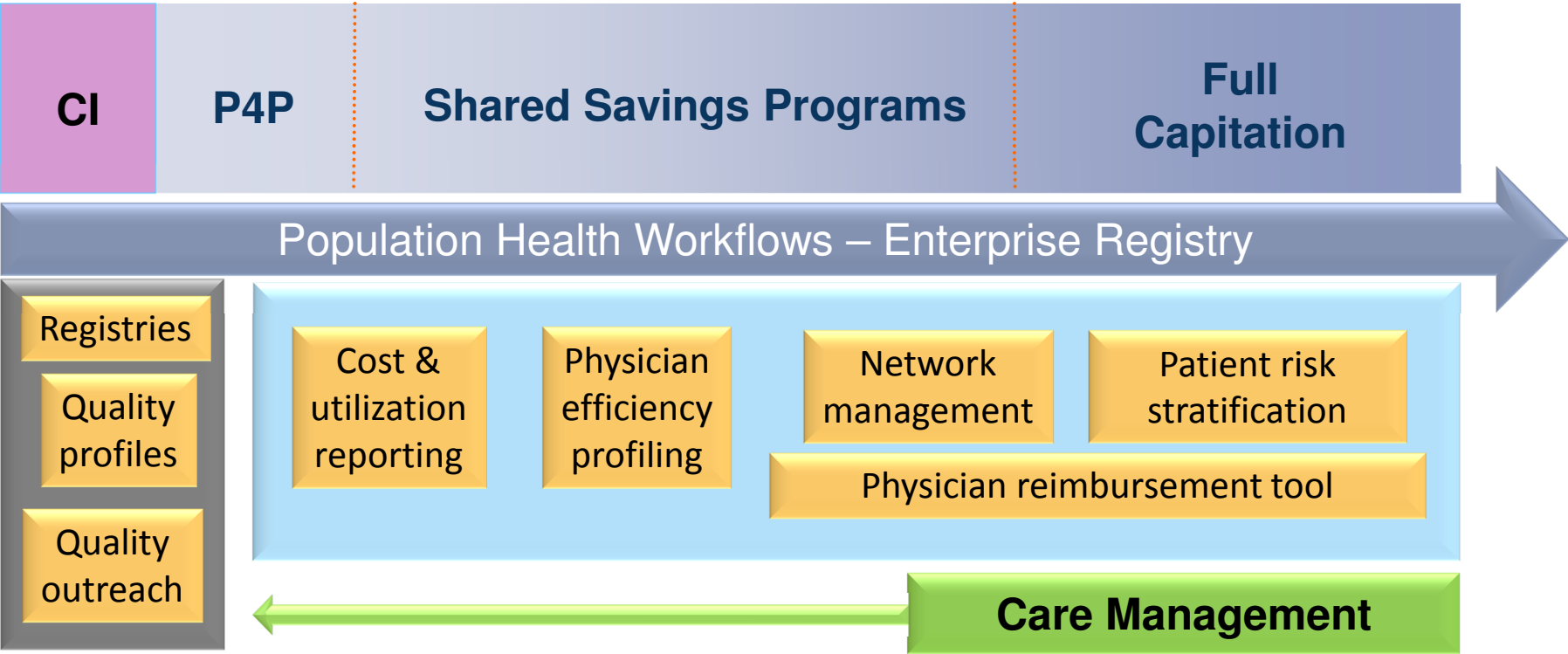




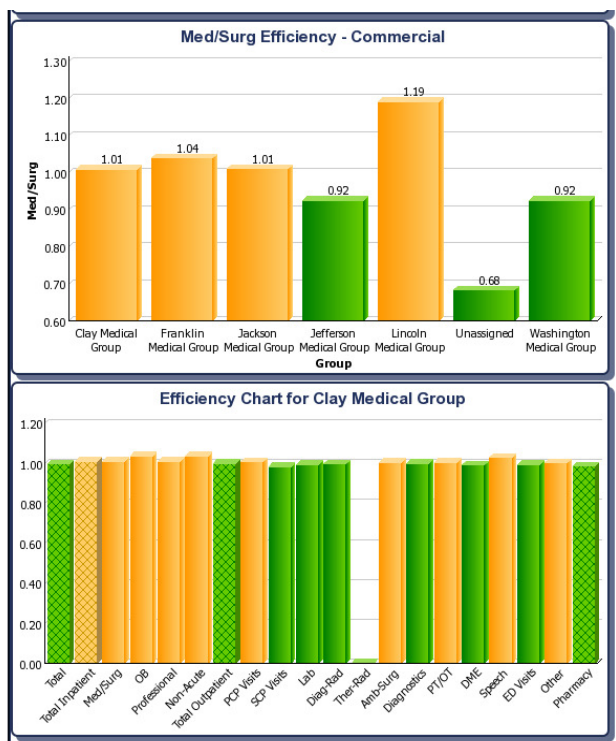
# ACO Management Strategies



# ACO Management Solutions



# Analyzing Physician Practice Pattern Variation



- Finding outlier performance to improve quality and reduce costs



## Profiling Analytics are Complex



**“This isn’t my patient”**

**“This guideline isn’t applicable to this patient”**

**“My patients are sicker”**

**“This patient was in the ICU for 6 months”**

# Who are my sickest patients?

- Identifying patients for care management programs

[Dashboards](#)
[Pharmacy](#)
[Member](#)
[Medical](#)
[Profiles](#)
[Quality](#)

Modify filters

Summary (Stratification) Report

Normalization Method:

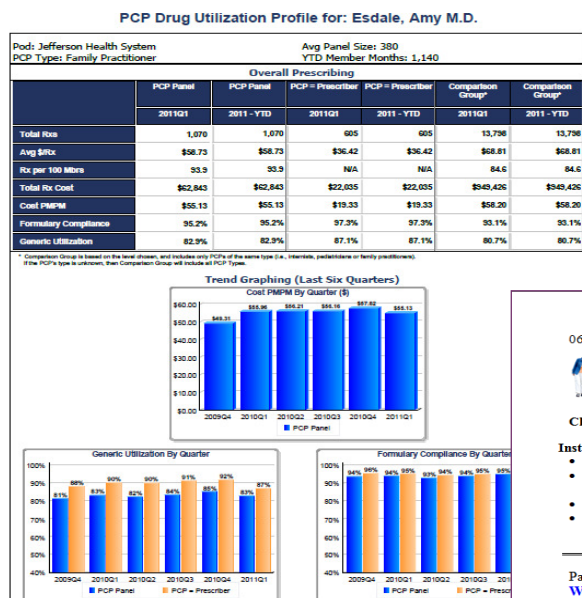
Inflation Factor:  %

Selected Population				
Risk Category	Number of Patients	Percent Distribution of Patients	Average Predicted Expenditure per Patient	Percent Predicted Expenditures
<a href="#">Low</a>	100	41.7%	\$3,221	16.5%
<a href="#">Moderate</a>	81	33.8%	\$6,904	28.6%
<a href="#">High</a>	51	21.2%	\$14,286	37.2%
<a href="#">Very High</a>				

Patient	Health Plan ID	Gender	DOB	Age	PCP Name	PCP NPI	Months Eligible	Age/Gender Risk Score	Normalized Risk Score (Pred)	Predicted Expenditure (Pred)	Eligible	New to Report	Prev Risk Cat	Curr Risk Cat
<a href="#">CASE, MICHAEL</a>	01 430086999	Female	04/08/1957	55	TURNER, MARIE MD	9979568331	8	2.00	10.87	\$30,850	Y			Very High
<a href="#">DIAS, DORETHEA</a>	01926954598	Female	03/01/1951	61	PETERSON, NICOLE MD	9976504399	12	2.00	9.80	\$27,822	Y			Very High
<a href="#">ESTES, COY</a>	01729829298	Male	01/30/1968	44	GONZALEZ, MARTHA MD	9942268966	12	0.71	11.01	\$31,251	Y			Very High
<a href="#">JOHNSTON, PEDRO</a>	01891227098	Male	11/09/1972	39	PETERSON, NICOLE MD	9976504399	12	0.71	44.94	\$127,604	Y			Very High
<a href="#">OLIVAREZ, ILLUMINADA</a>	10376811798	Female	11/09/2006	5	COOPER, JOAN DO	9955379475	11	0.31	12.11	\$34,397	Y			Very High
<a href="#">PINA, ZORA</a>	01 782174466	Female	12/06/1948	63	KELLY, DENISE MD	9907860901	12	2.00	8.88	\$25,208	Y			Very High
<a href="#">ROSALES, AHMAD</a>	31*64459809999	Male	08/20/1960	51	ROSS, MARILYN DO	9961418964	12	1.21	10.91	\$30,978	Y			Very High
<a href="#">SNELL, JACINTO</a>	01*66781409999	Male	09/29/1935	76	GONZALEZ, MARTHA MD	9942268966	12	3.67	13.38	\$37,999	Y			Very High

# Managing Drug Costs

- Reports and profiles
- Drug substitution programs



06-28-2011 Reference #: 43-65284

UNIVERSITY MEDICAL CENTER  
Family Care  
Insert Your Logo Here

**Therapeutic Interchange**  
Non-Preferred Brand to Preferred Alt. Generic

Clinician Name: SHIRLEY ALLEN, M.D. Group: Jefferson Medical Group

**Instructions:**

- Validate this information against the patient's medical record
- If drug interchange is clinically appropriate **authorize by completing the prescription and signing the letter**
- If drug interchange is not deemed appropriate indicate the reason by checking the appropriate box below
- Return all materials to your unit's designated clinical pharmacist support personnel for processing and tracking

Patient Name: **WILFORD BARRY** Member ID: 98600757800 DOB: 05-27-1939 Insurer: RHC

**Target Medication:**

Current Drug/Strength/Form	Last Claim Date on File	Qty	Days Supply	Implied # of Doses/Day	Prescriber Name
LIPITOR 10 MG TABLET	03-04-2010	90	90	1	ALLEN, SHIRLEY M.D.

**Intervention Request:**

Non-Preferred Drug/Dosage/Regimen	Preferred Drug/Dosage/Regimen	Recommended Alternative Dosing
LIPITOR 10 MG TABLET	PRAVASTATIN SODIUM 80 MG TAB	80mg Daily (37% LDL Reduction vs. Lipitor 39%)
LIPITOR 10 MG TABLET	SIMVASTATIN 20 MG TABLET	20mg Daily (38% LDL Reduction vs. Lipitor 39%)

**Not appropriate for interchange because:**

Prior adverse effects on formulary alternative   
  Prior failure on formulary alternative   
  Current medication discontinued  
 Patient refuses to switch   
  Patient clinically unstable for interchange   
  No longer my patient  
 Already changed to formulary alternative   
  Other: \_\_\_\_\_

# Managing Other Key Drivers of Costs

- Emergency room frequent flyers
- Out of network care
- Readmissions
- High cost imaging

**MCKESSON**  
Empowering Healthcare

**Risk Manager**

Dashboards Pharmacy Member Medical Profiles

**Emergency Room**

Select Patient Population

Employer: Now Selected: All Employers

Health Plan: All, HMA, LHC- HMO, LHC- Other

Age: All, < 16, 16 - 64, > 64

Region: Now Selected: All Regions

Select Physician(s)

Grouping: IPA, PCPs (Select One or More): Now Selected: 1 Group

Report Criteria

Service Date: From 5/1/2010 To 4/30/2011

ER Visit Definition\*: Facility Claim Required

Minimum Number of Visits: 3

Sort By: PCP, Cost Type: Amt Allowed

Submit

**Emergency Room**

Sort By: PCP

Health Plan	PCP	PCP NPI	Patient	Health Plan ID	DOB	Patient Phone Number	Gender	Service Date	Primary ER Facility	Primary ER Physician
LHC	GRAY, JUDY MD	9938116991	WEBER, AUSTIN	114606723QI	01/22/1982	555 555 1212	M	02/09/2011	Facility 1364089	POINTER, DELSIE
LHC	GRAY, JUDY MD	9938116991	WEBER, AUSTIN	114606723QI	01/22/1982	555 555 1212	M	02/10/2011	Facility 1364089	POINTER, DELSIE
LHC	GRAY, JUDY MD	9938116991	WEBER, AUSTIN	114606723QI	01/22/1982	555 555 1212	M	01/22/2011	Facility 1364089	MARTIN, HELEN
RHC	GRAY, JUDY MD	9938116991	ALICEA, LURLINE	11507882298	12/12/1960	555 555 1212	F	10/23/2010	Facility 1364088	MATTHEWS, LYNN
RHC	GRAY, JUDY MD	9938116991	ALICEA, LURLINE	11507882298	12/12/1960	555 555 1212	F	10/24/2010	Facility 1364088	
RHC	GRAY, JUDY MD	9938116991	ALICEA, LURLINE	11507882298	12/12/1960	555 555 1212	F	01/02/2011	Facility 1364089	CATHEY, PORSH
RHC	GRAY, JUDY MD	9938116991	JENNINGS, TED	11950934298	10/31/1957	555 555 1212	M	09/09/2010	Facility 1364088	GAGNON, MIGDAL
RHC	GRAY, JUDY MD	9938116991	JENNINGS, TED	11950934298	10/31/1957	555 555 1212	M	01/28/2011	Facility 1364088	MATTHEWS, LYNN
RHC	GRAY, JUDY MD	9938116991	JENNINGS, TED	11950934298	10/31/1957	555 555 1212	M	03/25/2011	Facility 1364088	GOLD, CLARENCE
RHC	HARRIS, HELEN MD	9973502985	GILL, CLARK	00053401398	10/19/1992	555 555 1212	M	08/01/2010	Facility 1392151	MELENDEZ, CAROL
RHC	HARRIS, HELEN MD	9973502985	GILL, CLARK	00053401398	10/19/1992	555 555 1212	M	06/07/2010	Facility 1392188	CLARKSON, DAVID
RHC	HARRIS, HELEN MD	9973502985	GILL, CLARK	00053401398	10/19/1992	555 555 1212	M	07/22/2010	Facility 1392151	BURNS, MONICA

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# Operational Efficiency Through Automation

- Automated management of incentive programs

**MCKESSON** Empowering Healthcare **P4P Adjudicator**

Home Reports View Methodologies

**Create New Adjudication Rule Group**

**Payer/Product:** HowardMV Medicare Advantage, LewisMV Health Care- HMO, LewisMV Health Care- POS, MarshallMV Health Care- HMO, MarshallMV Health Care- HMO, WebsterMV Health Care- POS

**Add Adjudication Rule**

**Rule**  
 HEDIS Breast Cancer Screening 2009 Breast Cancer Screening greater than 75 %

**Dollars**  
 Dollars Payment Type

Multiply by Measure Outcome:

Multiply by Additional Factor:

Add Rule

No rules have been added.

Finish Finish and Create Another Back Cancel

Physician	MM	Eligible Members	Measure	Performance	Base Payment	Payment
TOBIN, FLORENE M.D. 9923057551	403	24	HEDIS Glaucoma Screening 2009 Glaucoma screening	66.66%	\$0.50 ppm	\$201.50
	403	4,087	Generic Utilization by PCP 2009	75.70%	\$0.25 ppm	\$100.75
	403	3,023	ED Utilization/1000 2009	0.19/1000	\$0.50 ppm	\$201.50
	403	4,087	Rx PMPM 2009	57.03 ppm	\$0.75 ppm	\$302.25
	Total					

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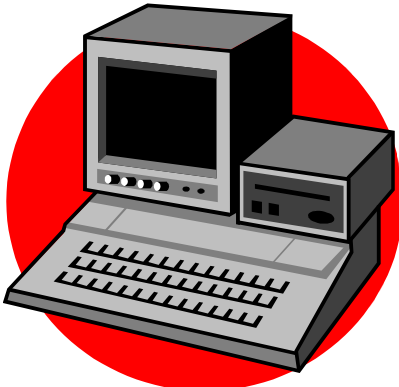
# Opportunities to use data and analytics in new ways



Alerts - Discharges and ER visits



Claims-based risk analyses  
ER Frequent Flyers  
High LOH Scores



SmartView

Name: [Redacted] DOB: [Redacted] Age: [Redacted] Gender: [Redacted] Health Plan ID: [Redacted] Product: Medicaid TANF

Last PCP Visit: 03/16/2012 Last Ambulatory EM Visit: 03/16/2012 No. of Ambulatory EM Visits in Last 12 Months: 30

Patient Summary

Prospective Risk Level		Risk Scores		DCG Medical Conditions		DCG Therapeutic Classes	
Demog Prop Risk Score	0.85	Infectious and Parasitic		Septicemia Shock		High-potency narcotic analgesics	
Concurrent Risk Score	33.93	Septicemia (blood poisoning)/shock		Other infectious diseases		Anti-infectives	
Prospective Risk Score	17.26	Other viral infections		Anti-infectives (oral)		Anti-infectives (oral)	
Predictive Risk Score	28.60	Benign Neoplasms of Skin, Breast, Eye		Neurological agents		Neurological agents	
LOH - Top 2%	Yes						
Prospective	\$37,672 \$2,170						
All Medical model							

Expense & Utilization		2011	TD 2012	Disch Date	Admission (Clinical Category/Policy)	LOS	Yr End	Gen
Overall		\$88,222.04	\$74,987.14	03/30/2012	Hematology - Memorial Hosp For Cancer And Allied	9		Yes
Inpatient		\$47,289.93	\$53,103.59	02/21/2012	Hematology - Uva Health Sciences Center (Uva Hosp)	1		Yes
Outpatient		\$28,774.03	\$19,993.31	01/24/2012	Hematology - Uva Health Sciences Center (Uva Hosp)	3		No
Imaging		\$125.14	\$148.12					
Acute Admits		10	3	02/13/2012	Thrombocytopenia NOS - Uva Health Sciences Center (Uva Hosp)	No	No	Yes
Acute Admits (Acute Admits)		39	13	02/03/2012	Peritonial disease NEC - Uva Health Sciences Center (Uva Hosp)	No	No	Yes
Acute Readmits (30 Days)		6	2	02/02/2012	Hemorrhage complic prec	No	No	Yes

Chgs in Care	Last Event Date	Last Outcome	Due Date	Last Fill Date	Current Medication	Qty	Days	Generic
HEMS Child/Adolescent Assessment and Counseling 2012				03/16/2012	PROAIR HFA 90 MICRO INHALER	17	30	No
BDI Screening 3 to 11			09/30/2012	03/08/2012	CITALOPRAM HBR 20 MG TABLET	30	30	Yes
Counseling Activity 3 to 11			09/30/2012	03/08/2012	FLUORIDE 1 MG TABLET CHEWABLE	30	30	Yes
Counseling Nutrition 3 to 11			09/30/2012	03/08/2012	NEORAL 100 MG/ML SOLUTION	50	17	No
				03/08/2012	CONDANETRON HCL 8 MG TABLET	12	2	Yes
				02/23/2012	FAMOTIDINE 20 MG TABLET	60	30	Yes

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# Questions & Discussion