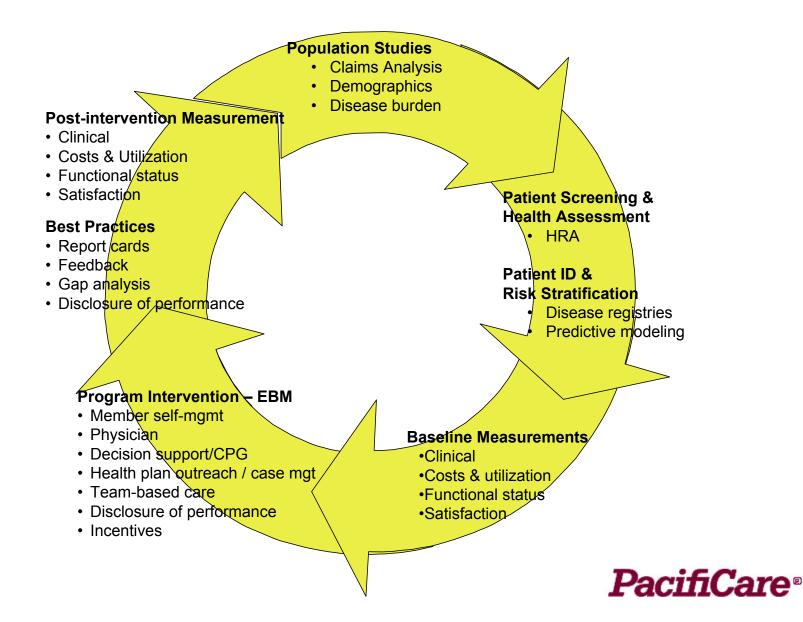
# Health Care IT and Disease Management

Sam Ho, M.D. SVP, Chief Medical Officer



# Since 1997...Chronic Care Initiatives & CQI



- Health Plan
  - Analytics
  - Portal Initiatives
  - Care Management
- Consumer / Member
  - Web-based
- Clinician
  - Workflow management
  - Disease registries
  - Web-based
  - EMR



## **Health Plan**

- Analytics
  - Demographics
  - Disease prevalence
  - Pareto groups
  - Episode grouping
  - Severity adjustment
  - Outcome analysis
  - Profiling
  - Exception reports

- Care Management
  - Biometrics
  - Nurse On-line
  - Education
  - POC functions

- Portal
  - HRA
  - Health libraries
  - PHR
  - DM flow sheets
  - Rx Svcs
  - Admin Svcs
  - RACER



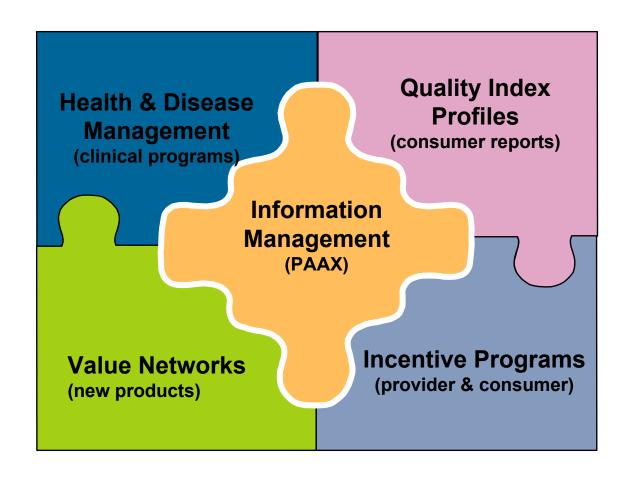
- Consumer / Member
  - Plan links
  - HRA
  - Health libraries
  - PHR
  - Self-management
  - MD links
  - Nurse on-line
  - Chat / Support



- Clinician
  - CM on-line
  - Disease registries
  - Clinical decision support
  - Rx POC
  - Gap analysis
  - CPG / EBM
  - Patient education
  - Aggregated & patient-specific reports



# Informatics = Platform for Innovation





# Disease Management Continuum



1999

**Taking** Charge of Depression

 Taking Charge of Diabetes® (1997)

1998

2001

- · Case-based CHF
- · Case-based CVD/Stroke
- · Case-based **ESRD**
- Case-based COPD

2003

Program

- Case-based Orthopedics
- Taking Charge of **Asthma**

2002

- Case-based Cancer
- Case-based NICU

2004

- Health Risk Assessment
- Health Credits
- Taking Charge of **Fitness (2005)**





- Taking Charge of
- Your Heart Health



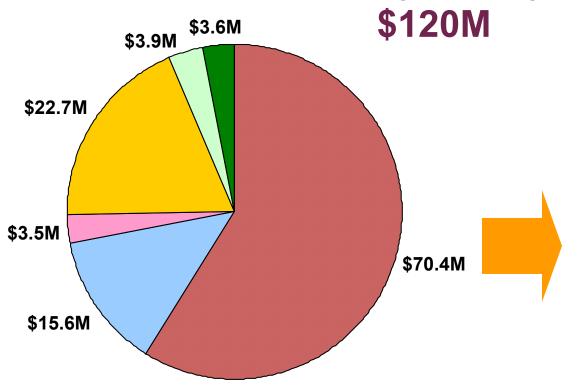
# **Quality Improvement Highlights**

- Congestive Heart Failure
  - Increased appropriate Rx by 26%
  - Reduced hospitalization in enrollees by over 50%, saving \$69M cumulatively
- Coronary Artery Disease / Stroke
  - 30% reduction in rate of heart attack & stroke
  - Appropriate Rx @ 98% vs. RAND study of US avg = 45%
- Chronic Obstructive Pulmonary Disease
  - 12% reduction in hospitalization
  - 32% quit smoking rate
- Cancer
  - 18% reduction in hospitalization
- Diabetes
  - Improved blood sugar & cholesterol control by 25-29%



# **DM Program Savings**

Current Rolling 12 Month DM Program Savings



Cumulative DM
Savings
from 12/00
Program
Inception
\$294.6



Source: DM Mgt Outcome Report August 2004 (Incurred claims through Feb 2004; paid through July 2004)



Demographic Information
Medical Claims
Pharmacy Claims
Clinical Encounters
Health Risk Assessment
Disease Management
Direct Lab Feeds
Satisfaction Survey



Member Centric
Episode Grouping
Risk Adjustment
Predictive Modeling
Benchmarking
Multiple Units of Analysis

Client Reporting

Disease Management Solutions<sup>SM</sup> Disease Management Operations

Vendor Integration

Provider Reporting



# **Pareto Group Analysis**

Top 5% M+C Members Condition	1999 Members	1999 Total Paid				
Congestive Heart Failure	1,404	\$ 47,132,359				
End Stage Renal Disease	365	\$ 13,803,889				
Chronic Obstructive Pulmonary Disease	329	\$ 10,891,398				
Cancer	660	\$ 17,885,215				
CAD and Stroke	1,114	\$ 32,028,719				
Orthopedic	26	\$ 801,883				
Diabetes	314	\$ 8,689,616				
Rare Diseases	231	\$ 6,090,595				
Other	769	\$ 18,287,072				
Asthma	78	\$ 1,801,407				
Depression	194	\$ 4,726,350				
Total - Top 5%		\$162,138,503				
		\$244.354.983				
Top 5% Cost as % of Total Institutional Cost	<u> </u>	66.4%				

Top 5% Comm. Members	1999	1999 Total			
Condition	Members	Paid			
Neonatal Intensive Care	119	\$ 9,401,406			
Congestive Heart Failure	242	\$ 5,178,253			
End Stage Renal Disease	81	\$ 2,823,448			
Chronic Obstructive Pulmonary Disease	83	\$ 2,092,288			
Cancer	909	\$ 16,415,878			
CAD and Stroke	866	\$ 12,455,147			
Orthopedic	58	\$ 1,252,481			
Diabetes	664	\$ 4,703,505			
Rare Diseases	685	\$ 5,825,854			
Other	10,131	\$ 42,879,443			
Asthma	585	\$ 2,951,761			
Depression	1,242	\$ 5,897,629			
Maternity	3,592	\$ 14,643,986			
Total - Top 5%		\$126,521,078			
		\$137,109,299			
Top 5% Cost as % of Total Institutional Cost		92.3%			



# Power of PAAX

Individual, Aggregate Current **Predictive** Individual, Aggregate Demographic Cost Severity Severity Data Score/Var. Score/Var. Data Pay Prof Med Net Pay Fac Med Member Age Avg Member Months "Diff from Plan "Diff from Plan Relative Risk Score Relative Risk Score Prospective Explanatory Net Pay Med Concurrent Net Pay Rx Med Šet Person ID Gender 8,200 48.8 \$14,725,798 \$10,188,531 Female 766 1142% 598 710% \$4,537,266 \$1,512,629 Total 1043% 51.8 Male 7,249 705 577 682% \$11,183,769 \$7,066,940 | \$4,116,829 | \$2,094,131 630340101 Male 53.9 4,351 6953% 3,279 4345% \$51,605 \$36,563 \$15,042 \$1,676 620653402 Male 10 45.9 4,942 7911% 3,182 4213% \$27,602 \$24,274 \$3,328 \$1,671 8,032 12920% \$612 484904801 Male 154.0 3,128 4140% \$21,726 \$12,261 \$9,465 485129201 Female 56.2 6,361 10211% 3,037 4017% \$476,936 \$436,496 \$40,440 \$13,823 12 604903802 Female 69.0 3,182 5058% 3,002 3969% \$968,369 \$908,267 \$60,103 \$2,035



# **Power of PAAX**

Utilization Summary Data

## Condition/Disease Registry Data

Admits Acute	Days Admit Acute	Readmissions	Visits ER	Visits Office Med	Episodes	Deliveries	Deliveries CSection	Deliveries Complicated	Patients Diabetes	Patients Asthma	Patients COPD	Patients CHF	Patients Coronary Artery Disease	Patients Hypertension	PATIENTS CANCER	Patients Breast Cancer	Patients Arthritis	Patients Low Back Disorder	Patients Ulcers	Patients Affective Disord	Patients Depress Ex Major	Patients Epis Hysterectomy
465	2,526	75	711	18,723	7,229	6	2	2	217	57	45	72	84	203	234	75	102	107	- 7	37	84	14
331	1,504	34	408	13,092	5,212	0	0	0	248	28	65	85	148	197	195	0	75	70	10	16	33	0
2	41	0	4	6	24	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	1	0
3	9	1	0	0	16	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1	1	0	1	4	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
13	132	6	6	6	19	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
5	78	1	3	28	14	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0



## e-Health Schema

# Health Plan Internet Portals

## MEMBER/CONSUMER

#### **Self-Service**

Authentication Check benefits

Enrollment

I.D. card replacement PCP/Address Change

Directory

Report cards

Rx formulary / mail svc / OTC

Claims Hx Surveys

PCP email / e-visits

Self-directed eHP's Treatment cost estimator

Benefit plan selector

### Self-Care

**Health info library** 

Virtual Health Club - Weight/fitness

Monitor Wellness / DM Par

Track HealthCredits™

Integrated data

**Customized profile/diary** 

"Push" alerts

**PHR** 

CPG / EBM

Rx evaluator

Care Mgmt Smart Card

Sensors

## **PROVIDER**

## <u>Efficiency</u>

#### Admin RACER

Authentication

Eligibility

### Referrals / COE

Pre-cert authorization Claims submission

Claims payment / EOP

Claims status

Forms

Financial Mgmt Capitation

Retroactivity

Appointments
Benefit Mgmt Profiling

## **Provider Perf Mgmt**

Contract Renewals

Credentialing Surveys

Email

Workflow mgt

## **Effectiveness**

Clinical CME

Point of prescribing (quality controls)

Formulary

Rx \$ Mgmt / DUR
CPG's / EBM

Tech Assessment

Medical Mgmt

Disease registries

Digital Disease Mgmt

Report Cards HEDIS

Best Practices

Lab, X-ray, hosp

Risk Adjustment Realtime DSS – "push"

alerts

**Clinical Data Warehouse** 

Prevention surveillance -

CDC EMR

## **DISTRIBUTION**

Brokers / Employers

Catalog Rating

Analyze needs

Pricing Forms

Smart App

**Analytics** 

# EMPLOYER / PURCHASER

Accounting Enrollment

Claims Hx

Health Improvement

Surveys

Population Health Integrated Benefits

Total Health Mgt

Non-health transactions Report Cards

eHealth Plans

Analytics



"Between now and the holy grail of electronic medical records, we need to bridge that with as much useful, credible, relevant data derived from administrative data sets as possible. Self-reported data, chart-abstracted data is cumbersome, is subject quite frankly to gaming and manipulation, and requires a phenomenal amount of infrastructure, not just to collect the data, but to report the data, to assure inter-reader reliability from the data, and to audit the data. I think that the sooner we get to administrative data as the bridge to EMR, the better off we'll be."

> Sam, Ho, M.D., SVP, CMO PacifiCare Health Systems Aug 2004 World Congress Boston, MA

