



COL Jill Phillips

**Cardiovascular Outcomes
at Walter Reed Army Medical Center**

**CVD CPG Pilot Implementation Conference
16 September 2004**

**Cardiovascular diseases rank
as America's No. 1 killer,
claiming the lives of nearly
39 percent of more than 2.4
million Americans who die
each year**

**64.4 million Americans have
some form of cardiovascular
disease**

Source: CDC/NCHS

American Heart Association 1993-2004



“President Clinton was so unaware of his condition that he spent a day last week in New Orleans “eating New Orleans food. ...”

U.S.A. TODAY 7 September 2004

"These people are twice as expensive as a healthy person ...Americans spent about \$1.6 trillion on health care last year"

Partnership for Solutions, Johns Hopkins University
Boston Globe, 29 August 2004

2020

**that figure is expected to
grow to 157 million.**

2004

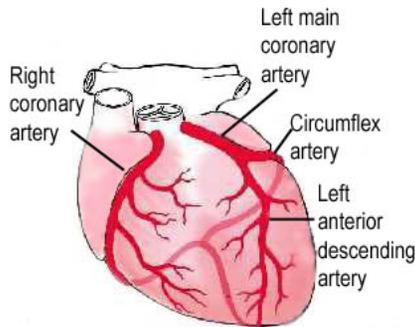
...more than 125 million Americans now live with at least one chronic health condition, and many live with more than one ... 60 million Americans have conditions such as heart disease, hypertension, cancer, arthritis, diabetes, and mental illnesses

Out of 370 conditions, **15** accounted for **56%** of the \$200 billion rise in health spending between 1987 and 2000
... many of them preventable

Kenneth E. Thorpe, Economist

Emory University, August 25, 2004

Five conditions accounted for one-third of the increase, with heart disease at the top of the list, followed by pulmonary conditions, mental disorders, cancer and hypertension.



... a stronger emphasis on prevention and following "best practices" guidelines would likely slow the growth rate in health spending and improve overall health.

HEALTHeFORCES Mission

- Initiated as an OUTCOMES problem solver
- Use information technology to:
 - Capture the patient's perspective on the status and treatment of their condition
 - Measure compliance with evidence - based medicine and clinical practice guidelines
- Improve quality of care



JCAHO Disease Specific Certification

- March 2003: JCAHO Certification
 - Diabetes Mellitus
 - Chronic Heart Failure
 - Chronic Obstructive Pulmonary Disease
 - Pediatric Asthma
 - Women's Health
 - Cardiovascular Risk Reduction
- April 2004: JCAHO intra-cycle re-certification
- Re-submit for DSC certification March 2005

DISEASE SPECIFIC CARE CERTIFICATION

Joint Commission on Accreditation of Healthcare Organizations

NATIONALLY UNPRECEDENTED SIX CERTIFICATIONS
FOR WALTER REED ARMY MEDICAL CENTER –

HEALTHeFORCES: MARCH 2003

CHRONIC HEART FAILURE

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

DIABETES

PEDIATRIC ASTHMA

CARDIOVASCULAR RISK REDUCTION

WOMEN'S HEALTH

FIRST HEALTHCARE FACILITY, MILITARY OR CIVILIAN,
TO RECEIVE SIX DSC CERTIFICATIONS

ONLY HEALTHCARE FACILITY TO BE CERTIFIED
WITH TWO PREVENTIVE HEALTH PROGRAMS

INTRACYCLE CERTIFICATION: APRIL 2004

RE-CERTIFICATION: MARCH 2005

... CERTIFICATION
REQUIRES A
STANDARDIZED METHOD
OF DELIVERING
CLINICAL CARE BASED
ON CLINICAL PRACTICE
GUIDELINES, AND AN
ORGANIZED APPROACH
TO PERFORMANCE
MEASUREMENT AND A
SUFFICIENT DATA
HISTORY THAT
SUPPORTS QUALITY
IMPROVEMENT.



HEALTHeFORCES in support of JCAHO 2004 Accreditation Standards

Legibility of documentation

Pain Assessment in all patients

Nutritional status assessed

Functional status assessed

Informed Patient about procedures

Patient Statement of Understanding of information received on care

HIPAA – Patient Information Security

Documentation of patient intervention

Interdisciplinary, collaborative, coordination of care and services among
health professionals

Patient Education: Instructional Material to promote healthy behaviors and care

Authenticated signatures and identification of providers

Tracer methodology – integration of information from various sources



Joint Commission

on Accreditation of Healthcare Organizations

The HEALTHeFORCES e-NOTE assures compliance to National Patient Safety Goals by providing “real-time” and full patient record information and medical history availability which results in reducing error from redundant patient identification entries, eliminating duplication of medications, laboratory and radiology testing, enabling evidence-based clinical guidance, and enhancing provider-to-provider communication effectiveness



2005 Disease-Specific Care National Patient Safety Goals

- Goal 1: Improve the accuracy of patient identification
- Goal 2: Improve the effectiveness of communication among caregivers
- Goal 3: Improve the safety of using medications
- Goal 4: Eliminate wrong-site, wrong-patient, wrong-procedure surgery
- Goal 5: Improve the safety of using infusion pumps
- Goal 6: Improve the effectiveness of clinical alarm systems
- Goal 7: Reduce the risk of healthcare associated infections
- Goal 8: Accurately and completely reconcile medications across the continuum of care
- Goal 9: Reduce the risk of influenza and pneumococcal disease in older adults

HEALTHeFORCES: A Single Solution for Multiple Problems

- Our Technical Commitment
 - Produce tools to maximize the efficiency of providers and staff
 - Develop tools for one specialty/initiative containing readily reusable elements
 - Accommodate clinical and administrative business processes
 - Make data accessible: report generation, data extraction, research
 - Ensure technical interface to CHCSII

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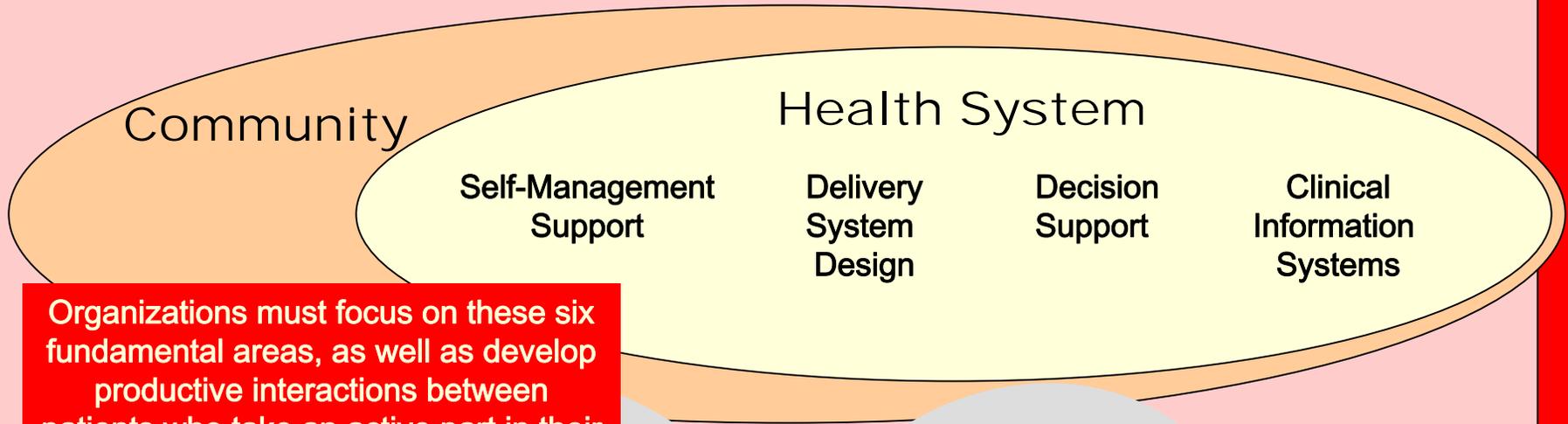
Technical Platform

Addresses information system challenges:

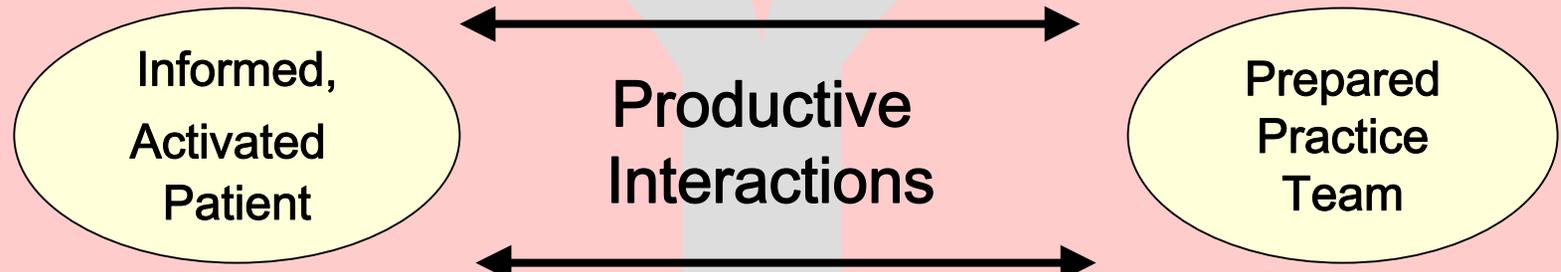
- Enables rapid application development—new functionality in weeks or months, not years
- Establishes a common, open architecture for sharing developments
- Easily accessible source of actionable information to meet MTF and service-specific missions; your data, your way, to meet your needs

Chronic Care Model

a system that encourages high-quality chronic disease management



Organizations must focus on these six fundamental areas, as well as develop productive interactions between patients who take an active part in their care and providers who have the necessary resources and expertise



IMPROVED OUTCOMES

HEALTHeFORCES

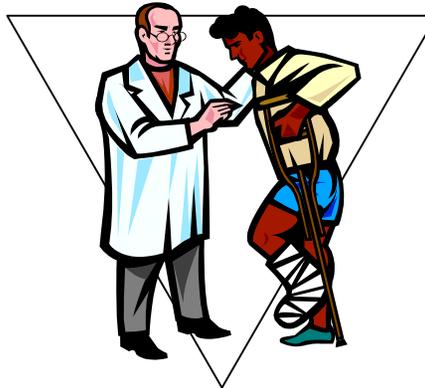
Core Modules

eSURVEYS

Patient Input
Electronic access
Hard copy output

eCARDS

Clinical Practice Guidelines
Provider Communication
Patient Education



eNOTES

Better documentation
Better provider communication
Improved coding accuracy
Better patient care

Risk Calculators

- Problem: Electronic calculators are available throughout the Internet, but do not auto-populate with data
- HEALTHeFORCES Solution: Build risk calculators that populate with CHCS and/or HEALTHeSURVEY/eCARD information
- Status:
 - Framingham risk calculator available since 2002.
 - BMI and OB's estimated due date calculator available in April 2003.
 - Well-baby growth chart calculator available in September 2003.
 - Cardiovascular Risk calculator in LHRAP note available since April 2004.
 - Breast, Colon, Cervical and Prostate Cancer Risk calculators targeted for December release.

Framingham Risk Calculator

Framingham Scoring

Risk Factor	Value	Source
Gender	Male 	
Age	43	
Total Cholesterol, mg/dL	201	
HDL Cholesterol, mg/dL	59	
Systolic Blood Pressure, mmHg	106	Value of '106' taken from ICDB vitals on (3/22/2004)
Diastolic Blood Pressure, mmHg	64	Value of '64' taken from ICDB vitals on (3/22/2004)
Diabetic?	Yes 	
Smoker?	Yes 	Value of 'YES' taken from Patient Needs Assessment Survey on 08-mar-2004

Framingham Risk Assessment

Framingham Score Result

Factor	Points
1 Age = 43 years	1
2 Total cholesterol = 201 mg/dL	1
3 HDL cholesterol = 59 mg/dL	0
4 Blood pressure = 106/64 mm Hg	0
5 Diabetic = YES	2
6 Cigarette smoker = YES	2
<hr/>	
Point Total	6
Estimated 10 Year CHD Risk	10%
Low 10 Year CHD Risk	4%
Relative Risk (step 8 divided by step 9)	2.5

Legend

Color	Risk
Green	Very Low
White	Low
Yellow	Moderate
Rose	High
Red	Very High

Automated CPG's

- Problem: Providers and patients will benefit from real-time, dynamic, alerts for applicable clinical practice guidelines and scheduled preventive medicine events.
- HEALTHeFORCES Solution: Develop automated CPG-driven alerts to prompt providers for action (lab order reminders, physical exam reminders, prompts for pertinent counseling topics or health assessment issues). Prompts will appear when the patient summary is accessed and again in the Assessment section of the HEALTHeNOTE, giving provider quick options to document the action path.
- Status: Requirements analysis underway; release date pending

Longitudinal Health Risk Assessment Program (LHRAP)

- Problem: Nov 2002, LTG Peake directed CHPPM to “Develop a campaign plan for executive health in our Army” and approved a Kimbrough pilot program Fall 2003 (LHRAP project project manager: MAJ Michael Bell, MD, MPH). Project calls for electronic capture of 100s of data elements and physical exam results; real-time assessment of cardiovascular and cancer risk components; evidence-based medical practice and accountability for outcomes
- HEALTHeFORCES Solution: Develop a Risk Assessment specialty note template to bring forward relevant clinical data, provide appropriate risk calculation tools and physical exam components and facilitate comprehensive documentation.
- Status: Electronic 2808 and various risk calculators implemented in NCA (Kimbrough only) January 2004

Cardiology Reports

- Problem: Additional login required for access to echo reports in the CTRAX system.
- HEALTHeFORCES Solution: Echo reports from the CTRAX program are downloaded nightly for review and reference within the patient summary screen of HEALTHeFORCES.
- Status: Interface live since 2002

Cardiovascular Risk Reduction HEALTHeCARD

The screenshot displays the ICDB Provider Portal interface. At the top, the user is identified as **Hernandes, Rider T** with a date of **9/8/2004**. The patient information for **BENNET, RILEY** is shown, including address (1418 FARRINGTON DR, CINCINNATI, OH 45247), FMP/SSN Cmd (20/383-61-4594), enrollment details, age (81), sex (M), and phone numbers (380-794-2230 and 937-504-0610).

The main content area is titled **Cardiovascular Risk Reduction HEALTHeCARD**. It contains a table of risk reduction questions:

Score	Question	Info	Response
x	Goal LDL reached? (LDLs not available for last 12 months)	?	Unknown
x	Target blood pressure reached (at least <140 systolic and <90 diastolic)? Edit blood pressure	?	No (BP not avail)
x	HTN on thiazide diuretic?	?	Unknown
x	Quit smoking and abstinent for > 6 months?	?	Unknown
x	Beta-blocker if prior MI? ATENOLOL--PO 25MG TAB ---> last fill date: 03/01/2002	?	Unknown
x	Patient is taking aspirin (or other anti platelet) with >= 2 risk factors or known CAD?	?	Unknown
x	LV function performed if prior MI?		Unknown
x	Assessment for reversible ischemia in patient with known EF < 50%? Cardiology Report		Unknown
x	Medical nutrition therapy assessment within the last two years if patient has hypertension or hypercholesterolemia or BMI > 25?		Unknown
x	Patient engages in regular exercise program > 20 minutes at least 3 - 5 times per week?	?	Unknown

At the bottom of the main content area, there is a section for **Links to Educational Websites**.

Note: Patient information displayed is notional and for demonstration purposes only

Disease Specific Data Points

- Data for each scorecard metric is tabulated and reviewed on a quarterly basis with feedback presented to the Service Chief for the pertinent area
- Comparison is made using national level benchmarks from organizations such as HCFA, American Heart Assoc, NIH, Duke University, VHA and others.

Disease Specific Data Points

- Prior to this technology, there was no unified, automated means of collecting most of this information
- National Benchmarks are included wherever possible, however some metrics are based on recent recommendations, therefore, benchmarks are currently being established.

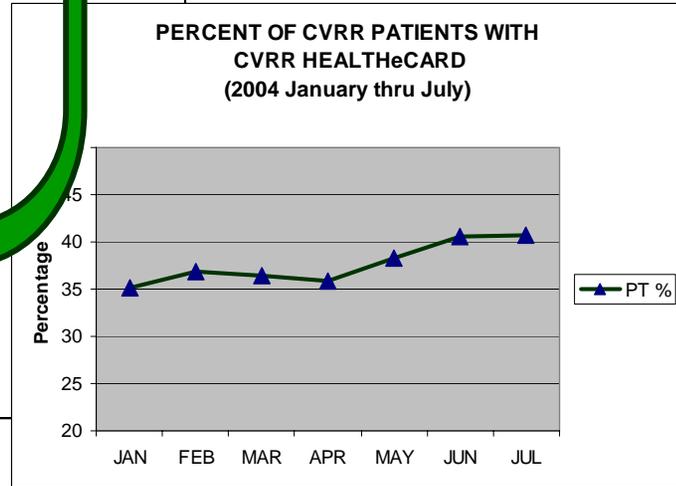
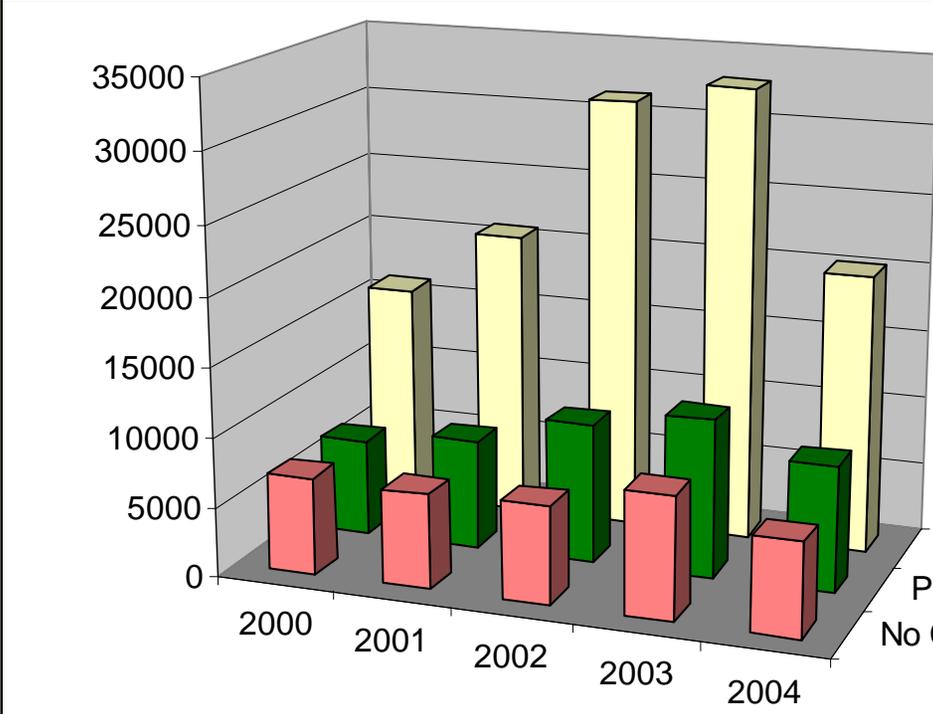
Population Based Cardiovascular Risk Reduction (CVRR)

- Cardiovascular risk reduction is population based with scorecards being captured in the Primary Care areas
- Evaluation is based on scorecards with % compliance measured
- Population is defined as patients whose blood pressure, lipid profiles and/or family history increases their risk for cardiovascular disease

CVRR HEALTHeCARD COMPLIANCE REPORT Walter Reed Army Medical Center

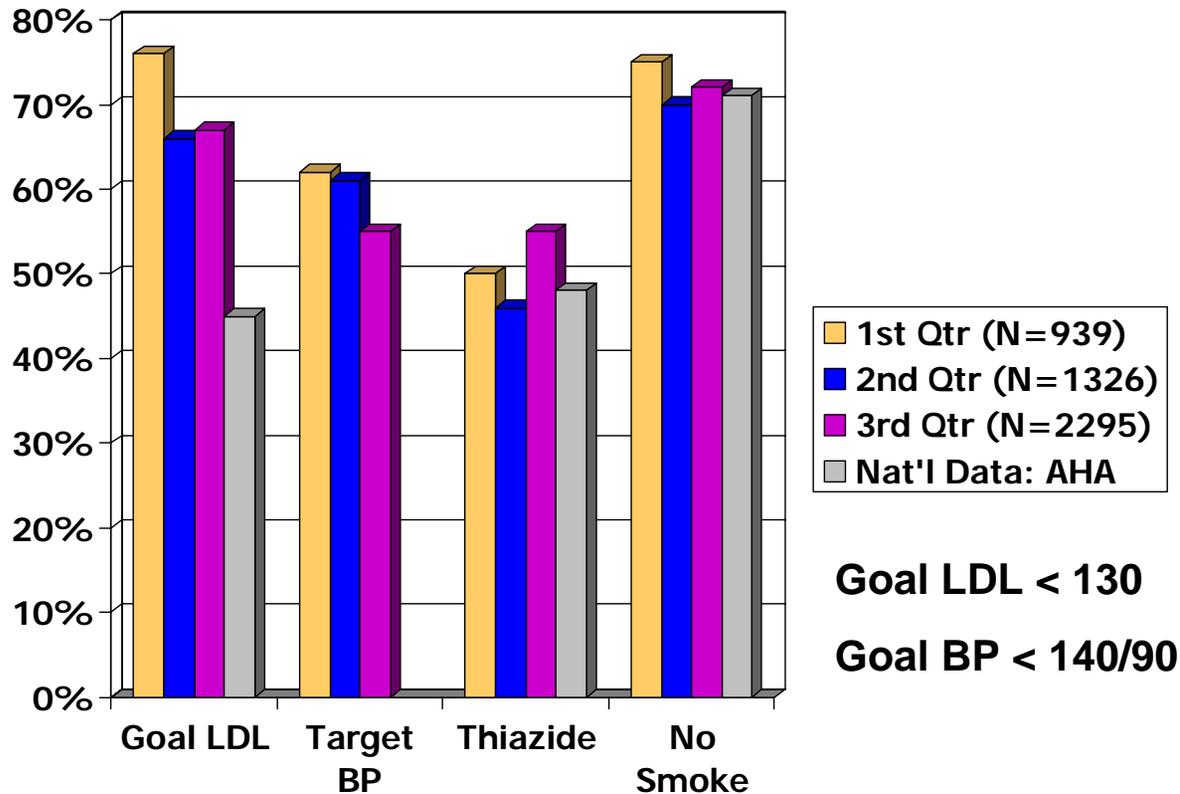
2000				2001				2002				2003				2004				
APPT#	PT#	PT%	NO CARD PT #	APPT#	PT#	PT%	PT#	NO CARD PT #	APPT#	PT#	PT%	NO CARD PT #	APPT#	PT#	PT%	NO CARD PT #	APPT#	PT#	PT%	NO CARD PT #
16101	6977	0.1%	6971	20819	7928	25.1%	3896	6849	31339	10118	42.0%	7019	32844	11400	35.8%	8839	20182	9130	34.9%	6771
APPT#	Number of appointments																			
PT # :	Number of patients who had an appointment																			
PT% :	Percent of patients who had a HEALTHeCARD																			
No CARD PT #	Number of patients who had an appointment without a HEALTHeCARD																			

Number of HEALTHeCARDS for Walter Reed CVRR coded patients is steadily increasing

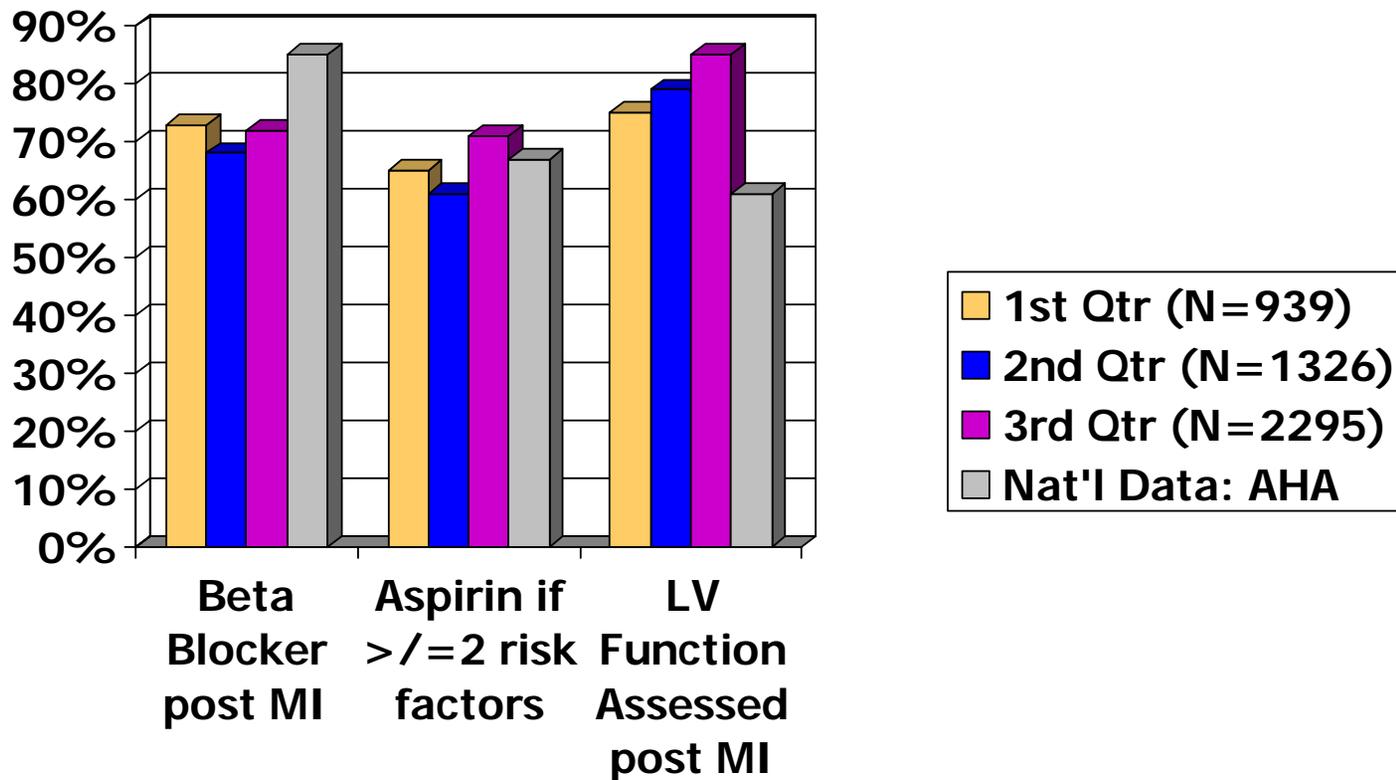


Note: 2004 Calendar year data from 1 Jan 2004 thru 31 Jul 2004 (6 months)

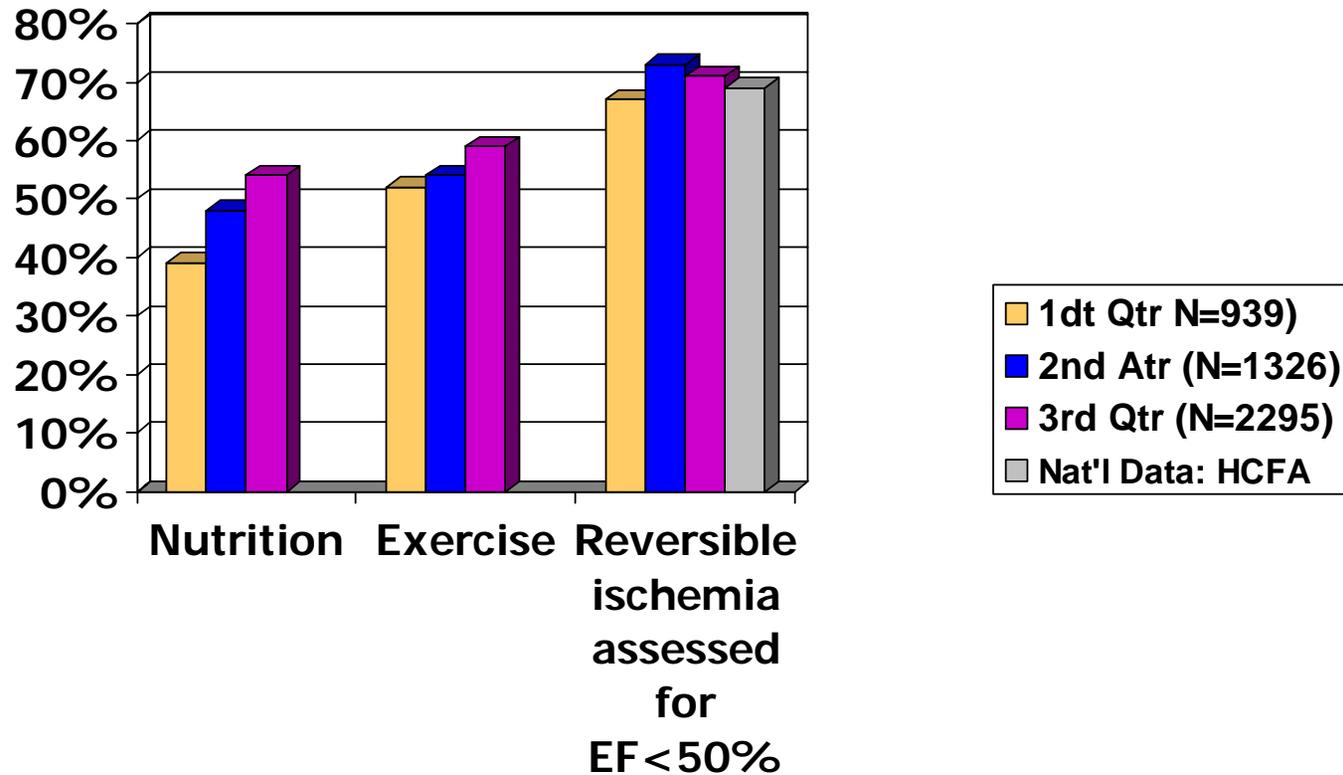
Cardiovascular Risk Reduction Metrics 2002



Cardiovascular Risk Reduction Metrics 2002



Cardiovascular Risk Reduction Metrics 2002



HEALTHeCARD
 statistics illustrated
 over longitudinal
 time frame indicate
 success in the
 uniform
 management of
 patient care

**2003 HEALTHeFORCES Percentages
 above National AHA Benchmarks
 in five
 clinical practice guidelines**

WRHCS SCORECARD SUCCESS REPORT Patient#: unique scorecard patient count Success%: Yes answers / (Yes + No)									
Question Text	2000		2001		2002		2003		AMERICAN HEART ASSOCIATION 2002 BENCHMARK
	Patient#	Success%	Patient#	Success%	Patient#	Success%	Patient#	Success%	
Goal LDL reached?	1	100.0%	439	72.5%	3744	72.1%	3458	71.0%	45%
HTN on thiazide diuretic?	19	40.0%	2346	52.6%	3744	64.3%	3458	57.7%	48%
Patient is taking aspirin with >= 2 risk factors or known CAD?	19	62.5%	2346	73.2%	3744	78.0%	3458	72.3%	72%
Quit smoking and abstinent for > 6 months?	19	71.4%	2252	75.7%	3324	76.9%	2814	76.6%	71%
Status post MI assessment of LV function performed?	19	100.0%	2346	90.7%	3744	94.8%	3458	81.8%	61% (HCFA)

Jan '00-Apr '04 data: 22,410 cards completed for 14,542 patients

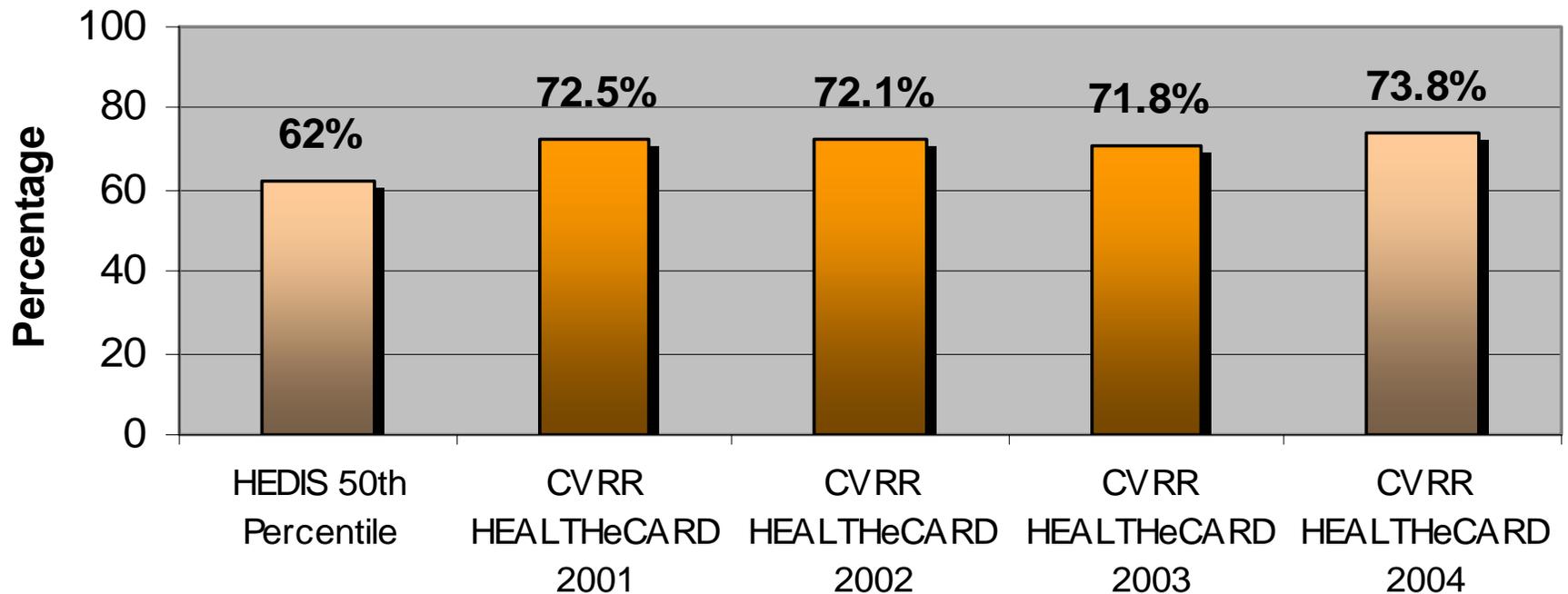
of patients indicates number of unique patients in which the CVRR HEALTHeCARD was completed.

% indicates # of questions with positive outcomes.

*Clinical Practice Guideline Compliance

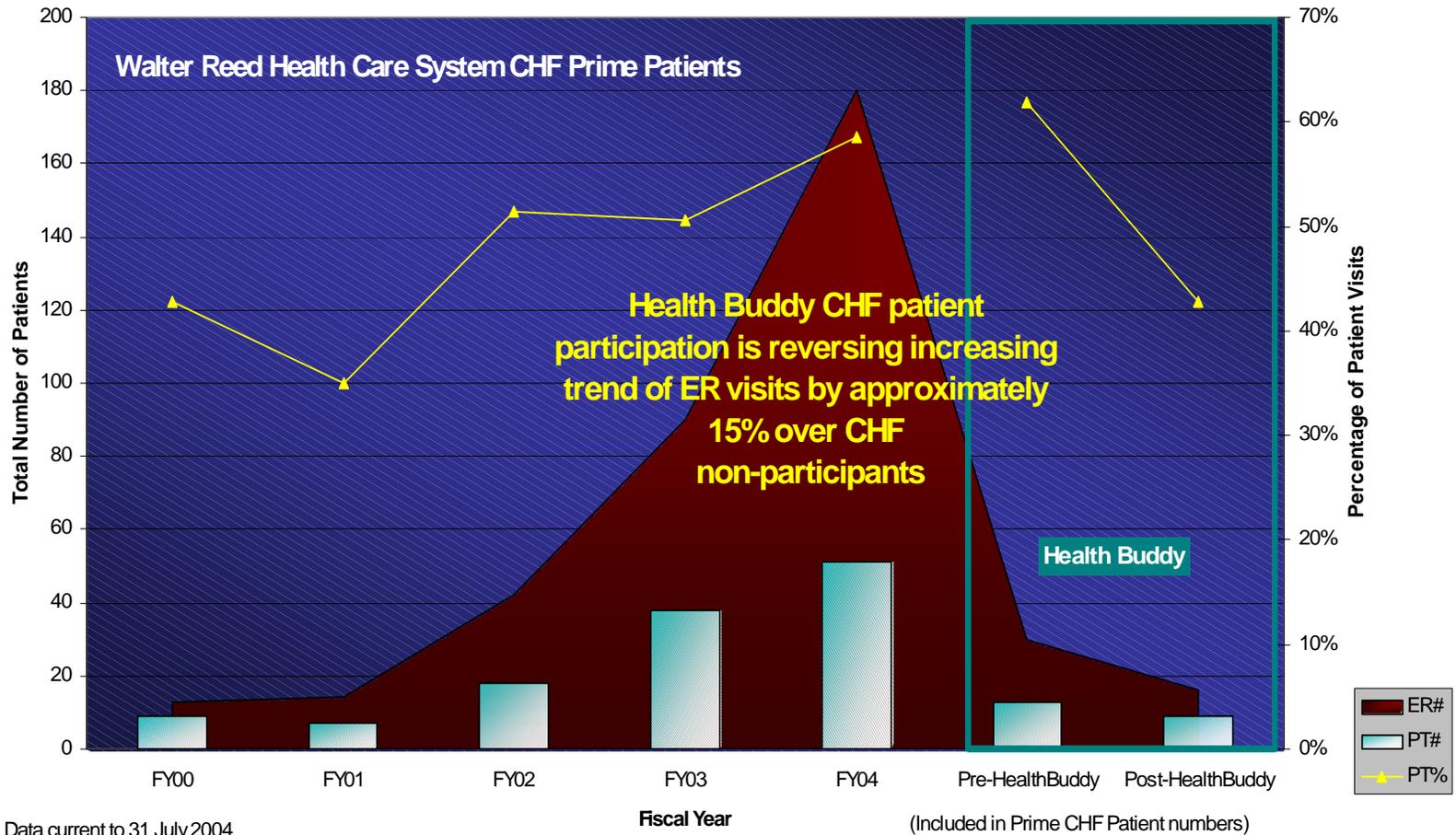
HEDIS Benchmark exceeded

CVRR: LDL Cholesterol Goal Screening Benchmark



Health Buddy

Chronic Heart Failure Overall Prime Patient ER Visits compared to Health Buddy Prime Patient ER Visits



Conclusions

- C: CVRR Program is exceeding benchmarks in LDL control, Aspirin use, thiazide use in hypertension. Decrement between quarters is due to rapid program expansion
- R: Improve use of beta blockers through education and use of scorecards.
- A: Need improvement in use of beta blockers. Need to define goals for smoking cessation and target blood pressure.
- E: Quarterly analysis to determine trends, program continues to increase use of scorecards

www.healtheforces.org

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