

# **Using Clinical Information Systems to Support Population Based Care**

Paul Wallace MD  
Care Management Institute  
Kaiser Permanente

May 12, 2003



# Managing Chronic Conditions: *Delivering Health*

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**Healthcare**



**Health**

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- **Process and experience oriented**

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- **Local and tribal**

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- **Clinician treating patients and curing acute conditions**

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- **Access: to Clinicians and Visits**

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- **Knowledge Management — Paper and Recall**

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- **Outcome and knowledge oriented**

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- **National and global**

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- **Teams — including members — managing chronic conditions**

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- **Access: to what you need, whenever you need it**

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- **Knowledge Management — Electrons and Judgment**

# ***Systems of Care: Is there Evidence that They Work?***

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- ◆ Questions to be addressed...
  - What can you get by leveraging scale to acquire systems?
    - Types of system support
    - Impact on performance
  
  - Are systems affordable?

# Kaiser Permanente: National Scope

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- ◆ 8.4 million members
- ◆ Membership growth 2002: ~120,000
- ◆ Services offered in California, Colorado, Georgia, Hawaii, Maryland, Ohio, Oregon, Virginia, Washington, and the District of Columbia.
- ◆ 29 medical centers
- ◆ 423 medical offices (315 owned, 108 leased)
- ◆ 123,000 Kaiser HealthPlan and Hospitals employees
- ◆ 11,345 Permanente physicians (not including affiliated networks)
- ◆ ~\$21 billion 2002 operating revenues

# Care Management Institute Strategy

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## ◆ Identify the right thing

- Promote and embed evidence-based medicine within systems to support practice
- Leverage measurement to guide performance improvement
- Implement better and best practices
- Deliver member centered and culturally competent care

## ◆ Make the right thing easier

- Hire and support people to lead and engage in local implementation work
- Identify, develop, and implement effective and innovative models of care
- Leverage technology to support population-based care

# Incremental Cost of Chronic Conditions

	2001 prevalence	Est. mbrs. affected 2002	Estimated Incremental Cost (\$/year/member)	Total Estimated Incremental Cost (\$ millions 2002)
Asthma	2.1%	142,654	\$2,468	352.1
CAD	2.7%	183,040	\$10,264	1,878.7
Depression	4.1%	365,267	\$1,966	718.2
<b>Diabetes</b>	<b>6.7%</b>	<b>451,575</b>	<b>\$5,035</b>	<b>2,273.5</b>
Heart Failure	1.2%	83,646	\$16,503	1,380.4

Total Incremental Cost of Chronic Conditions in "CMI Portfolio": **6,603.0**

“Incremental costs” are the annual “extra” healthcare costs per member with the chronic condition, *over and above* the healthcare costs of a member who does not have the chronic condition.

# What can you get by leveraging scale to acquire systems? Types of system support

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- ◆ Registries and databases
- ◆ Clinician support
  - Knowledge base access
  - Alerts and reminders
  - Rosters
- ◆ Patient support
  - Knowledge base access
  - Alerts and reminders
- ◆ System evaluation and improvement
  - Outcomes reports and benchmarking
  - Performance improvement
  - Value demonstration



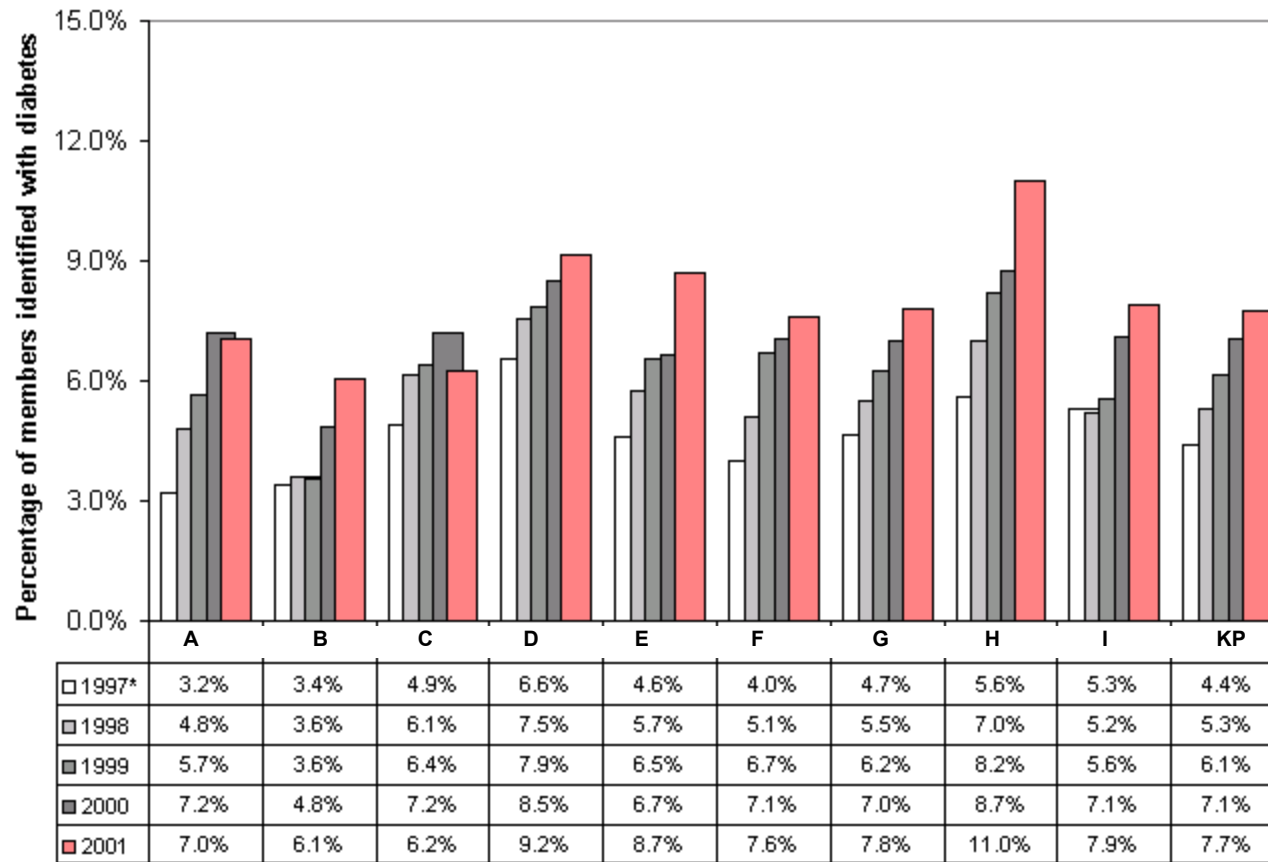
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# Registries: How many patients with diabetes are there? And, who are they?

Figure 1a. Estimated prevalence of diabetes, ages 18 and older, 1997-2001



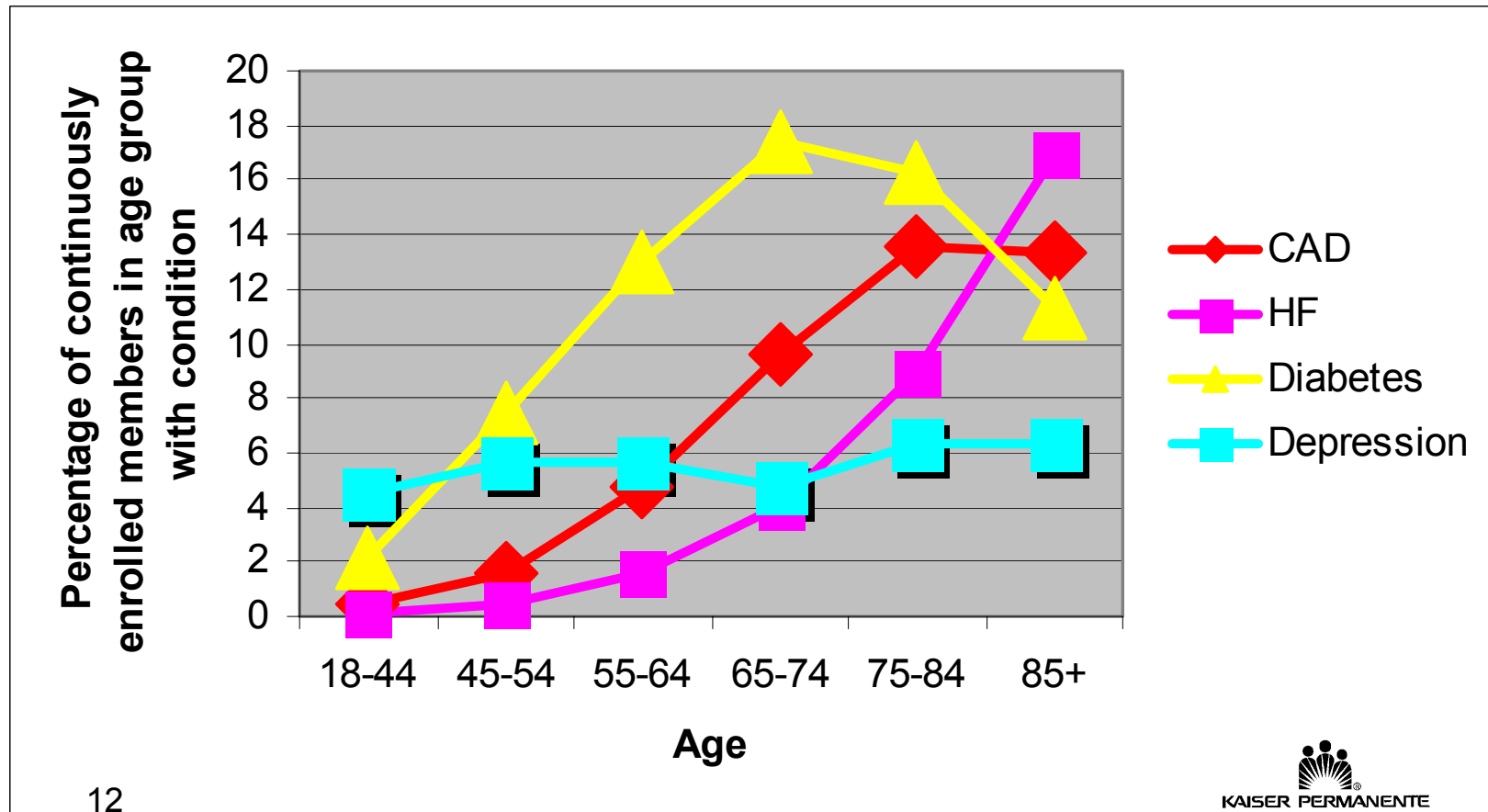
\* 1997 cohort does not include identification through outpatient diagnoses.

## The increasing prevalence of diabetes...

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- ◆ Maturation of the diabetes cohort (additional years to identify members)
- ◆ National changes in biochemical thresholds for diagnosis of diabetes
- ◆ Expanded inclusion criteria for identification of members with diabetes
- ◆ Aging of the membership (older members have a higher likelihood of having or developing diabetes)
- ◆ True increases in the prevalence of diabetes among KP membership.

# Age Related Prevalence of Chronic Conditions Within Kaiser Permanente



# Co-morbidities are common

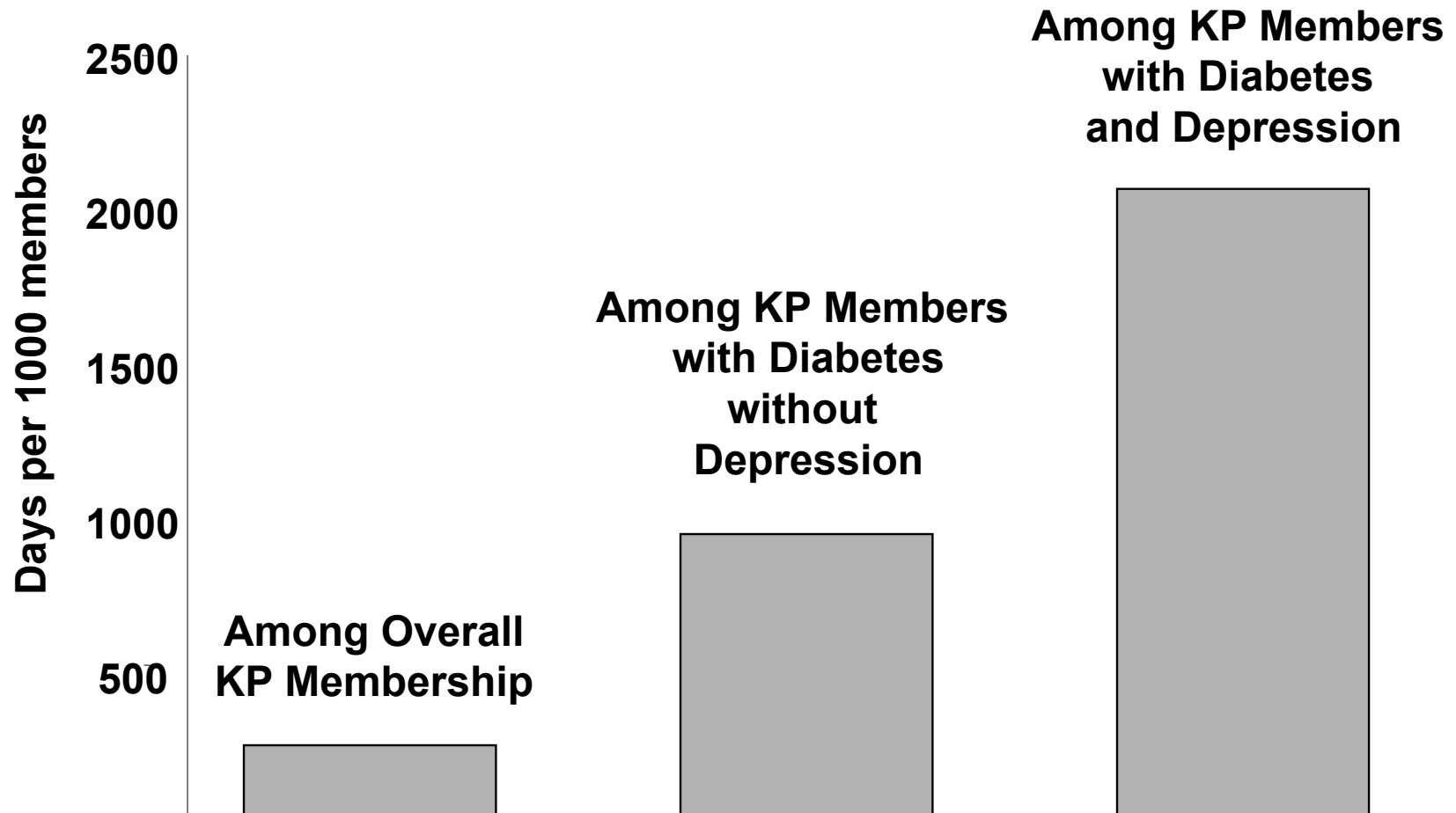
Were also in this cohort?

What percentage of  
 all members  
 those with CAD  
 those with Depression  
 those with Diabetes  
 those with HF

	CAD	Depression	Diabetes	Heart Failure
all members	3.2%	7.1%	7.9%	1.6%
those with CAD		11.9%	33.9%	22.8%
those with Depression	5.3%		11.6%	3.3%
those with Diabetes	13.6%	10.4%		8.2%
those with HF	46.3%	14.9%	41.6%	

# Co-morbidities... implications care management | institute

## Hospital Day Rates Among KP Members, 2001



Source: CMI 2002 Diabetes Outcomes Report

# Leverage of Registry Information

## Panel Feedback

### NCOA ANNUAL ASTHMA CARE MANAGEMENT REPORT (pages 5-56)

BASED ON Oct 1, 2001 - Sept 27, 2002 DATA <MONTHLY EXTRACTS (HIMS, ER, RX BENE) COVER UP THRU Aug 2002

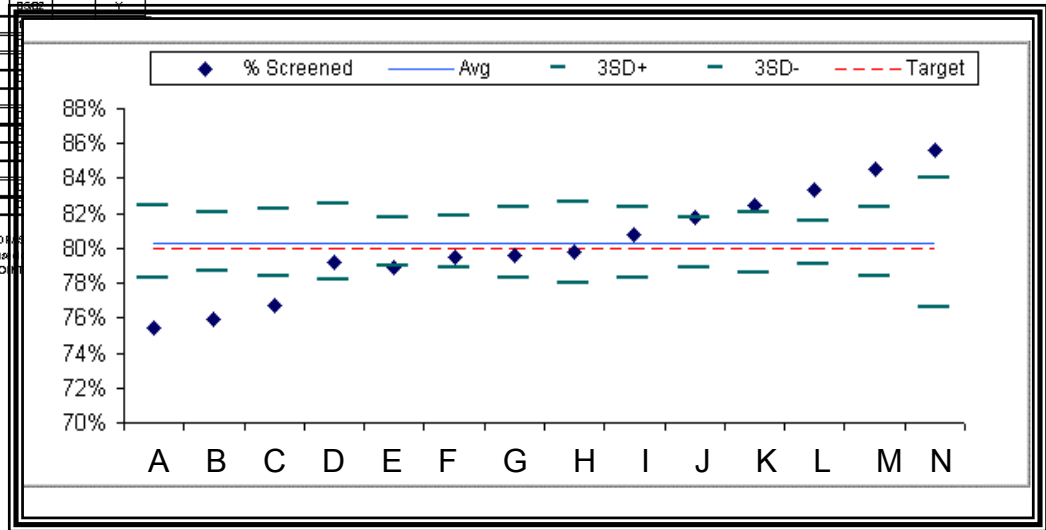
Information contained herein is taken from Kaiser Permanente legacy databases. All patients identified in the Asthma Case ID Database are assigned to you as the Primary Care Provider based on PCP information in OPAS DEMO. If any patient in this report is a CONFIRMED NON-ASTHMATIC, please check the first box by the patient's name and fax or mail the information to Randy Nakahiro, Pharm.D. Pharmacy Analytical Services, Downey Fax: 3-345-2550 or (562) 401-2550

area: \_\_\_\_\_ md name \_\_\_\_\_ clinic \_\_\_\_\_ dept \_\_\_\_\_ Asthma panel size (ages 5-66) 41

No. Asthmatic?	No. w/ disp w/ Rx	ptname	m.n.	Date of Birth	Risk Factor Score	No. Inj disp	No. Bag disp	No. Bag cans	No. PC Rx/Rtd	Total Asthma prescribers	Total ER In 12 mos	Total hosp In 12 mos	Lst Sched appt w/ you	Lst Allg P4m kept appt	KP Rx Benefit
				12/07/48	2	8	3	8	4	3	0	0	07/02	09/02	Y
				01/12/70	2	1	6	12	1	4	0	0	05/02		Y
				01/29/68	2	1	10	16	2	4	0	0			Y
				05/12/60	1	1	2	3	0	3	0	0	03/02	03/02	Y
				05/01/61	1	0	6	10	0	1	0	0			Y
				03/12/72	1	2	4	5	0	3	0	0	05/02		Y
				01/31/65	1	1	1	2	2	4	0	0	07/02		Y
				01/17/47	1	6	2	2	5	1	0	0		03/02	Y
				07/29/61	1	0	6	12	0	1	0	0			Y
				06/29/69	1	0	2	2	1	3	0	0			Y
				03/25/68	1	3	1	1	2	3	0	0		07/02	Y
				06/19/68	1	0	5	15	0	1	0	0	05/02		Y
				05/16/62	0	1	1	1	1	1	0	0			Y
				10/03/63	0	4	2	2	0	1	0	0			Y
				06/22/46	0	0	3	3	0	2	0	0			Y
				08/01/64	0	0	2	2	0	2	0	0			Y
				10/02/48	0	2	1	2	0	1	0	0			Y
				07/12/63	0	2	1	1	0	1	0	0			Y
				06/22/46	0	1	1	1	1	2	0	0			Y
				05/14/62	0	1	1	1	0	1	0	0			Y
				10/10/67	0	1	2	2	0	1	0	0			Y
				11/18/76	0	0	2	3	1	2	0	0			Y
				01/18/62	0	2	1	1	0	2	0	0			Y

NOTE: Bag = Beta-agonist inhaled; Inj = anti-inflammatory inhaled; Dispersers are inhalers and nebulizers only; Meds are based on PIMS records only; OAS by the time you get this report; Last Allg P4m appt & Lst 12 mos = implies a P4m appt otherwise Allg; 12 mos Appt data based on "kept" Inj/BAG cnt bas; \*\* Number of Risk Factors: 0 (Low Risk) 1 (Medium Risk) 2-4 (High Risk) \*\* 04-KP centers are NOT used in this list except for ORC. Refer to PCP 10/03/2002 Report to Regional Asthma Management Committee by PQM/Pharmacy Analytical Services

## Facility Performance Feedback



# What can you get by leveraging scale to acquire systems? Types of system support

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  - Rosters
- ◆ Patient support
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  - Outcomes reports and benchmarking
  - Performance improvement
  - Value demonstration



# Information-Seeking Activities of Kaiser Permanente Clinicians

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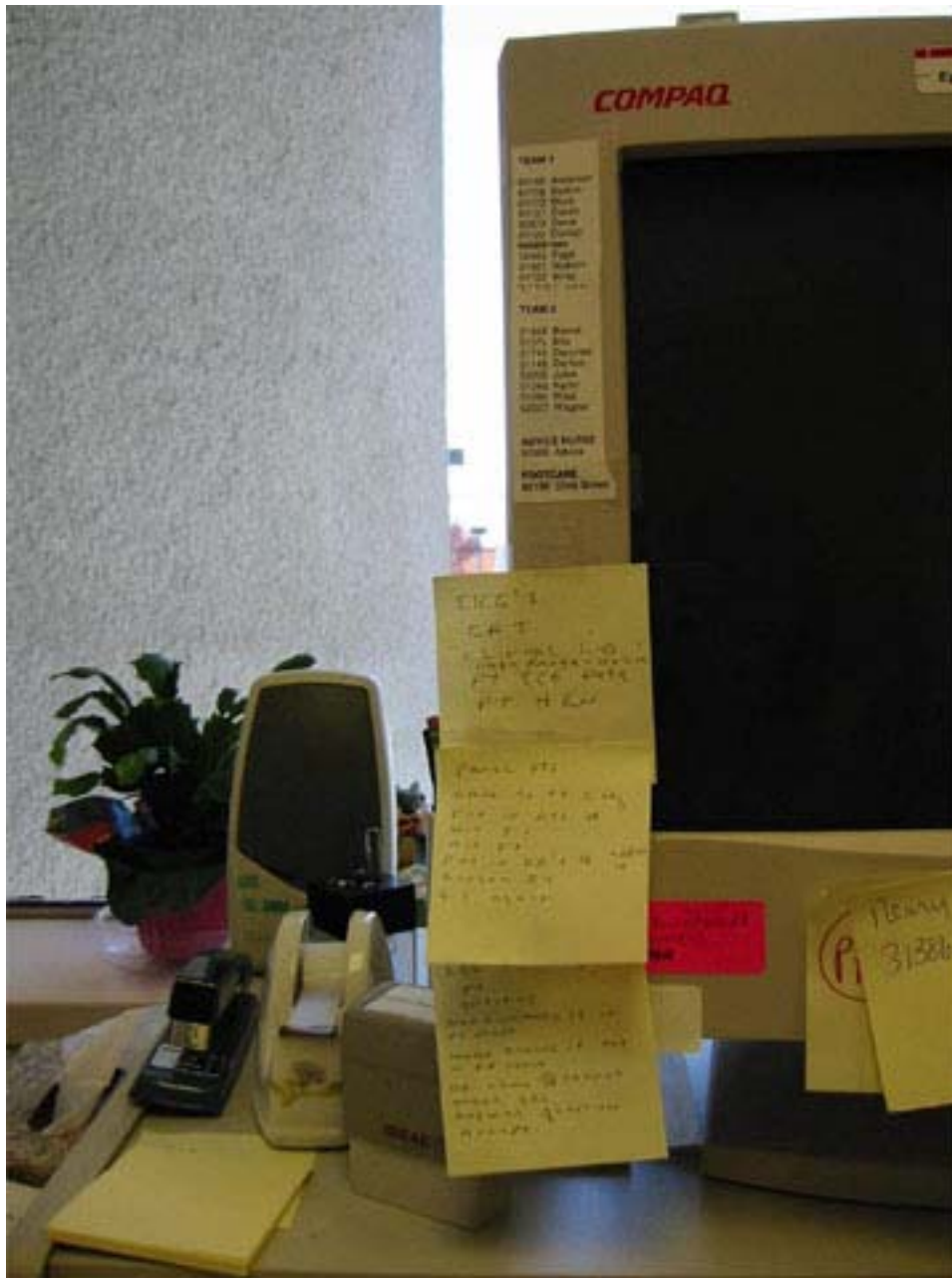
Holly Jimison, PhD, Mina Monroe, MPH, Mary-Anna Rae, PhD ABD, Aaron Snyder, MD

## ◆ Methodology

- Observed clinical day for 20 KP clinicians
  - 4 Regions (CO, NW, NC, SC)
  - 1 Physician consultant in each region
  - 1 expert computer user in each region
  - 1 Physician novice computer user in each region
  - 1 Physician Assistant or Nurse Practitioner in each region
  - 1 Medical specialist in each region
- Data
  - Ethnographic Notes
  - Pictures
  - Artifacts

# Desk Close-Up *care management | institute*





## Stickies were ubiquitous

Labels with patient information and pre-visit summaries are also used as reminders

# Need for Information at the Point of Care



Clinicians  
carry  
frequently  
used  
information  
resources  
with them

***Information systems goal: Empty the lab coat pocket***

# Why Were Questions Unanswered?

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- ◆ Features of the environment
  - Time
  - Memory (short-term and long-term)
  - Pervasive irritation with handling information
  - Risk-aversion (economics of time invested)
- ◆ Barriers
  - Design Incomplete
  - Data Incomplete
  - Access difficulties
  - Time issues
  - Communications

# Permanente Knowledge Connection

<http://pkc.kp.org>

The screenshot shows the top navigation bar with 'Permanente Knowledge Connection' and 'Home' buttons. Below the navigation is a 'Welcome to the Permanente Knowledge Connection' message. The main content area is divided into two sections: 'Regional and national resources' and 'Online references'. The 'Regional and national resources' section lists: clinical practice guidelines, complete care management programs, health education materials, handbooks for culturally competent care, successful practices, outcome studies, and formulary and drug information. The 'Online references' section lists: MD Consult - the latest news and texts, Ovid - search 158 full-text journals, Cochrane Database, Natural Medicines Database, Micromedex, and STAT!Ref. At the bottom of the page, there is a footer with 'Home Site Map Help Feedback' and '©2000 Kaiser Permanente'.

Permanente Knowledge Connection Home KAISER PERMANENTE. care management | institute

Home Site Map Help Feedback

**Welcome** to the Permanente Knowledge Connection

**Regional and national resources**

- ▶ clinical practice guidelines
- ▶ complete care management programs
- ▶ health education materials
- ▶ handbooks for culturally competent care
- ▶ successful practices
- ▶ outcome studies
- ▶ formulary and drug information

**Online references**

- ▶ MD Consult - the latest news and texts
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- ▶ Natural Medicines Database
- ▶ Micromedex
- ▶ STAT!Ref

Home Site Map Help Feedback ©2000 Kaiser Permanente



The screenshot shows the search page of the Permanente Knowledge Connection website. It features a search bar with the text 'Search PKC' and a 'Search' button. Below the search bar is a 'Welcome to the Permanente Knowledge Connection' message. The page is organized into several columns of links. The first column includes 'Clinical Practice Information', 'Clinical Practice Guidelines', 'Textbooks & Journals', and 'Non-Clinical KP Web Sites'. The second column includes 'Clinician Education', 'Member Education', 'Formulary & Drug Info', and 'Healthcare News'. The third column includes 'What's New', 'CMI and Depression Initiative', 'Asthma Outcomes', 'Natural Medicines Database', and 'New National Clinician Directory'. At the bottom, there is a footer with 'Home Site Map Help Feedback' and '©2000 Kaiser Permanente'.

Permanente Knowledge Connection Home KAISER PERMANENTE. care management | institute

Home Site Map Help Feedback

**Search PKC**

Search Advanced Search

**Welcome** to the Permanente Knowledge Connection

**Clinical Practice Information**  
CMI Care Management Programs  
Northern California Clinical Library  
Northwest Clinical Library

**Clinician Education**  
Colorado Medicare/Medicaid Training  
Oxley CME

**Member Education**  
KP Online  
NCAL Clinical Library Health Education  
Northwest COORE Health Education  
SCAL Health Ed Link

**Formulary & Drug Info**  
California CME  
Natural Pharmacy  
Natural Medicines Database

**Healthcare News**  
Kaiser Permanente/Stat  
MDConsult News

**What's New**

**CMI and Depression Initiative** collaborate to improve depression care

**Asthma Outcomes** send patients picture of KP asthma care

**Natural Medicines Database** now accessible via P4C

**New National Clinician Directory** - locate clinicians by name, location, panel status, and more

Send inquiries to [PKC.Welcome@kp.org](mailto:PKC.Welcome@kp.org) or call 510-271-6426 or 8-423-6426

Home Site Map Help Feedback ©2000 Kaiser Permanente

## Kaiser Permanente's National Clinical Website

## The Computer in the Exam Room...

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# Member Summary Print-out Sheet

## Member Summary Sheet – Population Care Registry *Confidential and Privileged Member Information*

<b>Today's Date:</b> 11/22/1999	<b>Provider:</b> Howard, Carolyn	<b>Member:</b> Banting, Bess
<b>Mbr. Phone # (H):</b> 707-555-XXXX	<b>Department:</b> Internal Med	<b>MRN:</b> 90000972
<b>Mbr. Phone # (W):</b> 707-555-XXXX		<b>DOB:</b> 2/3/1924 <b>Age:</b> 74, <b>Sex:</b> F
<b>Member is on the following registries: DIABETES ,CHF, CAD</b>		
<b>DIABETES CARE</b> <span style="float: right;">Care Manager: Martin, Alex</span>		
Date of Last Foot Exam:		
Date of Last Eye Exam: 5/20/00 <span style="float: right;">Retinal Status: <b>No Diabetic Retinopathy</b></span>		
<b>CAD CARE</b> <span style="float: right;">Care Manager: Jones, Susan</span>		
<ul style="list-style-type: none"> <li>Review aspirin therapy</li> </ul>		
<b>CHF CARE</b> <span style="float: right;">Care Manager:</span>		
<ul style="list-style-type: none"> <li>If member has systolic CHF, consider treatment with beta-blockers and spironolactone if appropriate.</li> <li>Reinforce: low sodium diet, weighing daily, regular physical activity, taking prescribe medications</li> </ul>		
CHF Type: SYSTOLIC	Ejection Fraction: 35%	Test year: 1998 <span style="float: right;">Test type: Echo</span>
<b>GENERAL CARE</b>		
Hypertension? <b>YES</b>		Date of Last Flu Shot: <b>10-20-2000</b>
Smoking Status: <b>NO</b>		Review Pneumovax status
Last Advised to Quit Smoking: <b>1-14-1996</b>		
Record indicates member has:	Peripheral Vascular Disease	Cerebral Vascular Disease
<b>SUGGESTIONS:</b>		
GENERAL CARE:		



# Member Summary Print-out Sheet...cont'd

Smoking Status: **NO**

Last Advised to Quit Smoking: **1-14-1996**

Review Pneumovax status

Record indicates member has:      Peripheral Vascular Disease      Cerebral Vascular Disease

## SUGGESTIONS:

### GENERAL CARE:

- There is no record of flu shot for current flu season
- Smoking status unknown. Capture status in records.
- Advise member to quit smoking, if appropriate provide additional support for those with some interest in quitting.

### CAD CARE:

- Most recent LDL  $\geq$  100 Review Cholesterol Guidelines
- No record of LDL test in last 6 months consider ordering fasting LDL.
- Records indicated member may not be taking a beta-blocker. If appropriate, prescribe beta-blocker therapy.

### CHF CARE:

- Records indicate member may not be taking a vasodilator. If appropriate prescribe vasodilator therapy

### DIABETES CARE:

- No record of LDL test in last 12 months Consider ordering fasting LDL.
- most recent LDL  $\geq$  100 Review Diabetes Guidelines
- Consider ordering a test for microalbuminuria. There is no record of a Renal Screening Test in last 12 months AND no record of ACE Inhibitor or Angiotensin II Receptor Blocker (ARB) dispensed in last 6 months.
- Due for diabetes Retinal Screening Exam
- Records indicate no HbA1c in last 6 months. Consider ordering HbA1c
- last HbA1c > 8.5 — Goal < 7.0
- Due for diabetes Foot Exam

KPNW,THIRTY-THREE (3193-78-56) Sex: Male DOB: 9/14/1968 Age: 34

EDD: 11/18/2000

GA: 139w 6d



Charting



Exam



Medications



Letters

Allergies/Intol: Penicillin Vk, Morphine, Naproxen, Sulfonamides

All Detail

Verified on 07/30/02



BP

BestPractice Alerts Reminder

Weight

\* This patient is overdue for an annual Hemoglobin Alc.

\* Our records indicate this patient uses Tobacco, click Yes to document advice to quit. (If patient has quit tobacco, you or your MA should update the patient's tobacco status in Social Hx)

Diagnose

Additional

Would you like to view the SmartSet?

Yes

No

Update

Query

Reports

List

Hx

Hx

Hx

Hx

Hx

Menu

Summary

SmartSets

Print AVS

Secure

Accept & Stay

Close Encounter



Cancel



Accept

KPNW, THIRTY-THREE (3193-78-56) Sex: Male DOB: 9/14/1968 Age: 34

EDD: 11/18/2000

GA: 139w 6d



Charting



Exam



Medications



Letters

## SmartSet - Decision Support

Allergies/Intol: **Penicillin Vk, Morphine, Naproxen, Sulfonamides**

All Detail

Verified on 07/30/02

● Standing ■ Future

Authorizing Provider: ZZQA, MD SCAN [5640]

 Cosign for Procedures

## BEST PRACTICE - HB A1C - SmartSet # 333

⊕ This patient is overdue for an annual Hemoglobin A1c.

## Procedures

Procedures (single)

 Order Hemoglobin A1c TODAY Order Hemoglobin A1c FUTURE Not ordering Hb A1c - Pt Instructions (Right Click to View)

## BEST PRACTICE - TOBACCO ADVICE - SmartSet # 382

⊕ Our records indicate this patient uses Tobacco, click Yes to document advice to

⊕ quit. (If patient has quit tobacco, you or your MA should update the patient's

⊕ tobacco status in Social Hx)

## Procedures

Procedures (single)

 Pt. not interested in cessation support (Clinician Advice) Pt. requested cessation support (Classes/Phone counseling)

## Update



Health Maint

## Reports



Clinical



Previous Visit



Histories



Notes



KARE2

Accept/Pend



Cancel



Accept

Note: Right click data row to edit

## Leveraging IT to Deliver Evidence Based Medicine

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- ◆ The allure...
  - If you make it easier to do the right thing, the right thing will probably happen
  
- ◆ The additional implications...
  - ***If you do make it easier, it had better be the right thing...***



Assessment Window - BATEMAN, AHMAD (7000290 )

Selections Term Complete Help



Assessment type

Lab
  Clinical
  Radiological
  Preliminary
  Pathological
  Psychological

Item entry

Nickname:

Name:

Entry:

\* Item entry list

Display Name

Medications	Imaging	Lab	EKG	Immunotherapy	Immunization	Consults	C
Performable Procedures		Procedures Hx		Findings	Dx	M	

**Knee Series**

If you do make it easier,  
it had better be the right thing...

---

## Before...

- ◆ Knee AP/Lat
- ◆ Knee Series

## After...

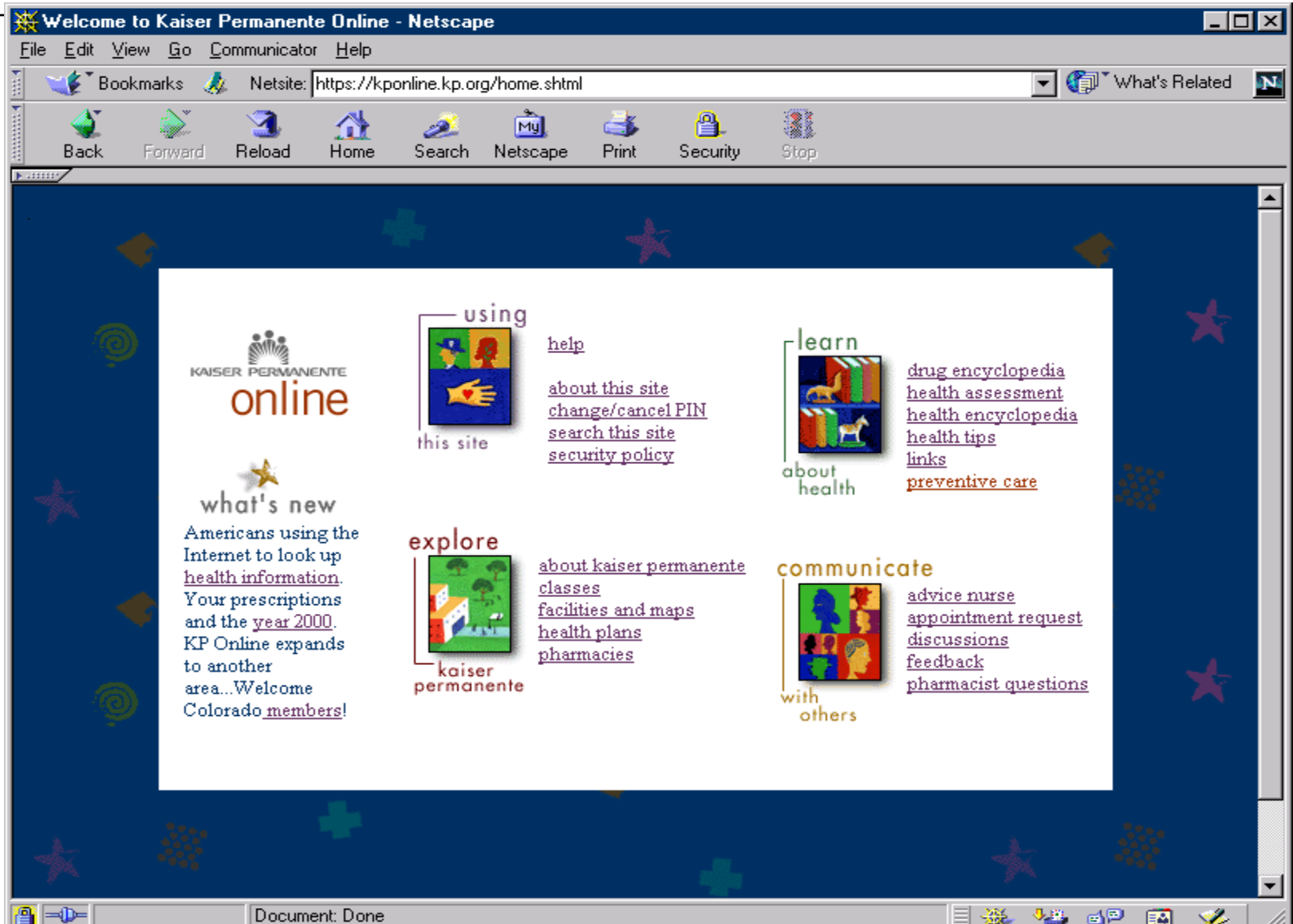
- ◆ Knee Complete
- ◆ Knee Limited

# What can you get by leveraging scale to acquire systems? Types of system support

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# Internet Tools: Self-Care





[Return to the Healthwise Table of Contents](#)




New Search

### Topic Contents

- ▶ [Topic Overview](#)
- [Health Tools](#)
- [FAQs](#)
- [Diabetic Emergencies](#)
- [Complications from Diabetes](#)
- [When to Call a Doctor](#)
- [Monitoring](#)
- [Treatment Overview](#)
- [Prevention of Complications](#)
- [Living With Diabetes](#)
- [Medications](#)
- [Alternative Medicine](#)
- [Other Places to Get Help](#)
- [Related Information](#)
- [References](#)
- [Credits](#)

## Type 2 Diabetes: Living with the Disease

### Topic Overview

This topic provides information for people who have read and understand the information in the topic Type 2 Diabetes: Recently Diagnosed. This topic will help you learn more about eating a balanced diet, monitoring your blood sugar levels, and other ways to care for yourself on a daily basis. If this kind of information is not what you are looking for, the following topics may meet your needs.

- If you have not been diagnosed with type 2 diabetes but want information on the disease, see the topic **Type 2 Diabetes** to learn about the disease, including how it is diagnosed and treated. You will also learn whether you are at risk for developing the disease and how you may be able to prevent it.
- If you have been told recently (within 3 to 4 weeks) that you have type 2 diabetes, see the topic **Type 2 Diabetes: Recently Diagnosed** for basic information about the disease, what caused it to develop, how it will be treated, and how to deal with your feelings about the diabetes diet.
- If you have type 2 diabetes, have read and understand the information in the topics Type 2 Diabetes: Recently Diagnosed and Type 2 Diabetes: Living with the Disease, and already have one or more complications (eye, kidney, heart, nerve, or blood vessel disease) related to diabetes, see the topic **Type 2 Diabetes: Living with Complications**. It will give you information about how to deal with your complications and how to stop or at least slow their progression.

### What is it like to have type 2 diabetes?

[Return to the Healthwise Table of Contents](#) **Foot care for people with diabetes**

New Search

 **Introduction**

When you have diabetes, your feet need a little extra care and attention. Diabetes damages the nerve endings and blood vessels in your feet, making you less likely to notice when your feet hurt. Diabetes also interferes with your body's ability to fight infection. If you develop a minor foot injury, it could become an ulcer or develop into a serious infection. With good foot care, you can prevent most of these problems.

Caring for your feet is so simple and easy. Most of the care can be done when you are bathing and getting ready for bed. Preventing injury to your feet is merely a matter of wearing properly fitted shoes and socks at all times.

These four things can help you keep your feet healthy.

- Check your shoes for stones or rough edges before you put them on.
- Like brushing your teeth, make looking at your feet part of your daily routine.
- Don't use home remedies to treat foot problems. Home remedies can hurt your feet.
- Get early treatment for any foot problem, even a minor one.

**WHAT?** [What is proper foot care for a person who has diabetes?](#)

**WHY?** [Why do I need to care for my feet?](#)

**HOW?** [How do I care for my feet?](#)

**WHERE?** [Where to go from here](#)

More information about diabetes can be found in these topics:



Southwest California Health Plan/Part of Kaiser Permanente  
Bellflower Medical Center

September 14, 2000

REDACTED  
REDACTED  
REDACTED

Dear Mr. [REDACTED]:

Our records indicate you have diabetes. If you do not have a history of diabetes, please call the Bellflower Call Center at 1-800-823-4040, so we can update our computerized records. To help you better manage your health and to help us detect potential health problems that may arise as a result of your diabetes, Kaiser Permanente and the American Diabetes Association now recommend you have specific laboratory tests performed each year.

Your primary care physician has determined it is time for you to have the following yearly tests:

Hemoglobin A1c Lipid profile Microalbumin

If you have recently had these tests done, they do not need to be repeated. These tests have been shown to delay or prevent complications of Diabetes. With proper testing, the appropriate medications can be ordered for you which will help lower these risks.

Please take this letter to the lab and have the tests done. Lab locations and hours are included for your convenience. The results will be sent to your primary care physician and any needed follow up will be determined at that time. Thank you for making this part of your diabetes care a priority. We look forward to being partners with you in promoting your good health.

Sincerely,  
[REDACTED]  
Physician Director, Diabetes Care Program  
Bellflower Medical Center

\*\*\*\*\* TAKE THIS PAGE TO ANY KAISER LAB \*\*\*\*\*

Patient Name: [REDACTED] Medical Record Number: [REDACTED]  
Provider: [REDACTED] Provider Code: [REDACTED]  
Location: BE IMP INT Location Code: 055

[LABORATORY: PLEASE ASK IF THE PATIENT IS FASTING, IF SO, DRAW THE FASTING TEST. IF NOT FASTING, DRAW THE NON-FASTING TEST]

- ✓ Fasting-Diabetes Panel (Procedure Code: 8371500)  
Fasting Panel includes: Microalbumin - Random, Hemoglobin A<sub>1c</sub>, and Lipid Profile
  - OR
  - ✓ If patient is Not Fasting, order Non-Fasting Diabetes Panel (Procedure Code: 8371570)  
Non-Fasting Panel includes: Microalbumin - Random, HbA<sub>1c</sub>, D-HDL, and D-LDL
- Specimen Requirements (Fasting or Non-Fasting Diabetes Panel):  
Random Urine, Red Top, and EDTA-Whole Blood



Southwest California Health Plan/Part of Kaiser Permanente  
Bellflower Medical Center

For the nearest Bellflower Laboratory location near you, please refer to the table below.

LABORATORY	LOCATION	HOURS
Bellflower Medical Center (562) 461-4567	9400 E Rosecrant North wing, First floor	7:30 a.m. to 6:00 p.m. Mon - Fri Saturdays: 7:30 a.m. to 1:00 p.m.
Cudahy Medical Office I (323) 562-6477	7825 Atlantic Ave 1 <sup>st</sup> floor	8:45 a.m. to 5:00 p.m. Mon - Fri
Imperial Medical Office I (562) 907-3525	5445 E Imperial Hwy Building A, First floor, Suite 105	7:30 a.m. to 6:00 p.m. Mon - Fri
Whittier Medical Office I (562) 907-3525	12470 E Whittier Blvd 1 <sup>st</sup> floor	8:45 a.m. to 5:00 p.m. Mon - Fri

In addition, Kaiser Permanente and the American Diabetes Association recommend a yearly eye examination or a retinal photograph to check the retinas of the eyes to prevent blindness. If you have not had an eye examination or retinal photograph in the past 12 months, please plan to have a retinal photograph performed by either calling the phone number below for an appointment or coming to a walk-in visit. (It is possible to arrange having this important screening test on the same day that you come for your laboratory tests.)

Retinal Photographs:

Appointment or Walk-In Exam:	Phone Number:
Imperial Medical Office I 5445 E Imperial Highway, Downey, Ca. 90242 3 <sup>rd</sup> Floor, Building B, Suite 327	Call (800) 823-4040 for Walk-In Clinic Hours or Appointment

By Appointment Only:	Phone Number:
Bellflower Rosecrant Medical Office I Ophthalmology and Optometry Department 9383 E Rosecrant Avenue, Bellflower, Ca. 90706	Call (562) 461-3084 for an appointment
Cudahy Medical Office I 7825 Atlantic Avenue, Cudahy, Ca. 90201	Call (323) 562-6400 for an Appointment
Whittier Medical Office 12470 E Whittier Blvd., Whittier, Ca. 90602	Call (562) 907-3553 for an Appointment

~~Henrietta M. [redacted]~~  
~~1313 Mockingbird Lane~~  
~~UNIVERSAL CITY, CA 91608~~

Dear Mr. ~~[redacted]~~:

Our records indicate you have diabetes. If you do not have a history of diabetes, please call the Bellflower Call Center at 1-800-823-4040, so we can update our computerized records. To help you better manage your health and to help us detect potential health problems that may arise as a result of your diabetes, Kaiser Permanente and the American Diabetes Association now recommend you have specific laboratory tests performed each year.

Your primary care physician has determined it is time for you to have the following yearly tests:

Hemoglobin A1c Lipid profile Microalbumin

If you have recently had these tests done, they do not need to be repeated. These tests have been shown to delay or prevent complications of Diabetes. With proper testing, the appropriate medications can be ordered for you which will help lower these risks.

Please take this letter to the lab and have the tests done. Lab locations and hours are included for your convenience. The results will be sent to your primary care physician and any needed follow up will be determined at that time. Thank you for making this part of your diabetes care a priority. We look forward to being partners with you in promoting your good health.

Sincerely,  
~~Agnes V. Szekeres, M.D.~~

needed follow up will be determined at that time. Thank you for making this part of your diabetes care a priority. We look forward to being partners with you in promoting your good health.

Sincerely,

~~Agnes M. Szekeres, M.D.~~  
Physician Director, Diabetes Care Program  
Baltimore Medical Center

\*\*\*\*\* TAKE THIS PAGE TO ANY KAISER LAB \*\*\*\*\*

Patient Name: ~~MONSTER, HERMAN~~

Medical Record Number: ~~4848-4848~~

Provider: ~~ASUSTINES, JOHN J. MD~~

Provider Code: ~~83-837~~

Location: ~~BE IMP INT~~

Location Code: 059

[LABORATORY: PLEASE ASK IF THE PATIENT IS FASTING, IF SO, DRAW THE FASTING TEST. IF NOT FASTING, DRAW THE NON-FASTING TEST]

✓ Fasting-Diabetes Panel ( Procedure Code: 837 1580 )

Fasting Panel Includes: Microalbumin - Random, Hemoglobin A<sub>1c</sub>, and Lipid Profile

OR

✓ If patient is Not Fasting, order Non-Fasting Diabetes Panel ( Procedure Code: 837 1570 )

Non-Fasting Panel Includes: Microalbumin-Random, HbA<sub>1c</sub>, D-HDL, and D-LDL

Specimen Requirements ( Fasting or Non-Fasting Diabetes Panel):

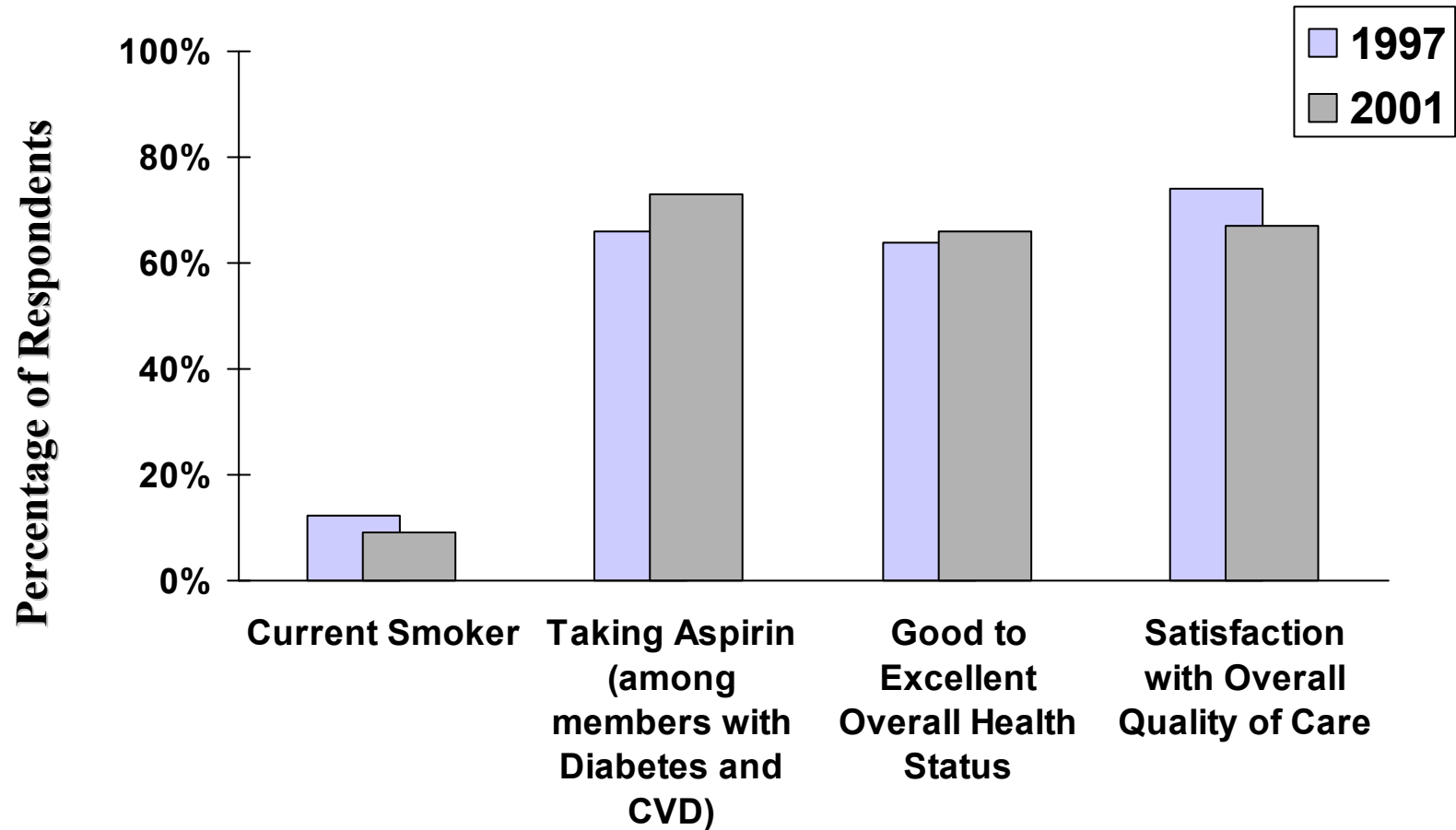
Random Urine, Red Top, and EDTA-Whole Blood

# Automated Telephonic Outreach

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# Self-Reported Responses Among KP Adult Members with Diabetes



Among 6,000 randomly sampled KP adult members with diabetes

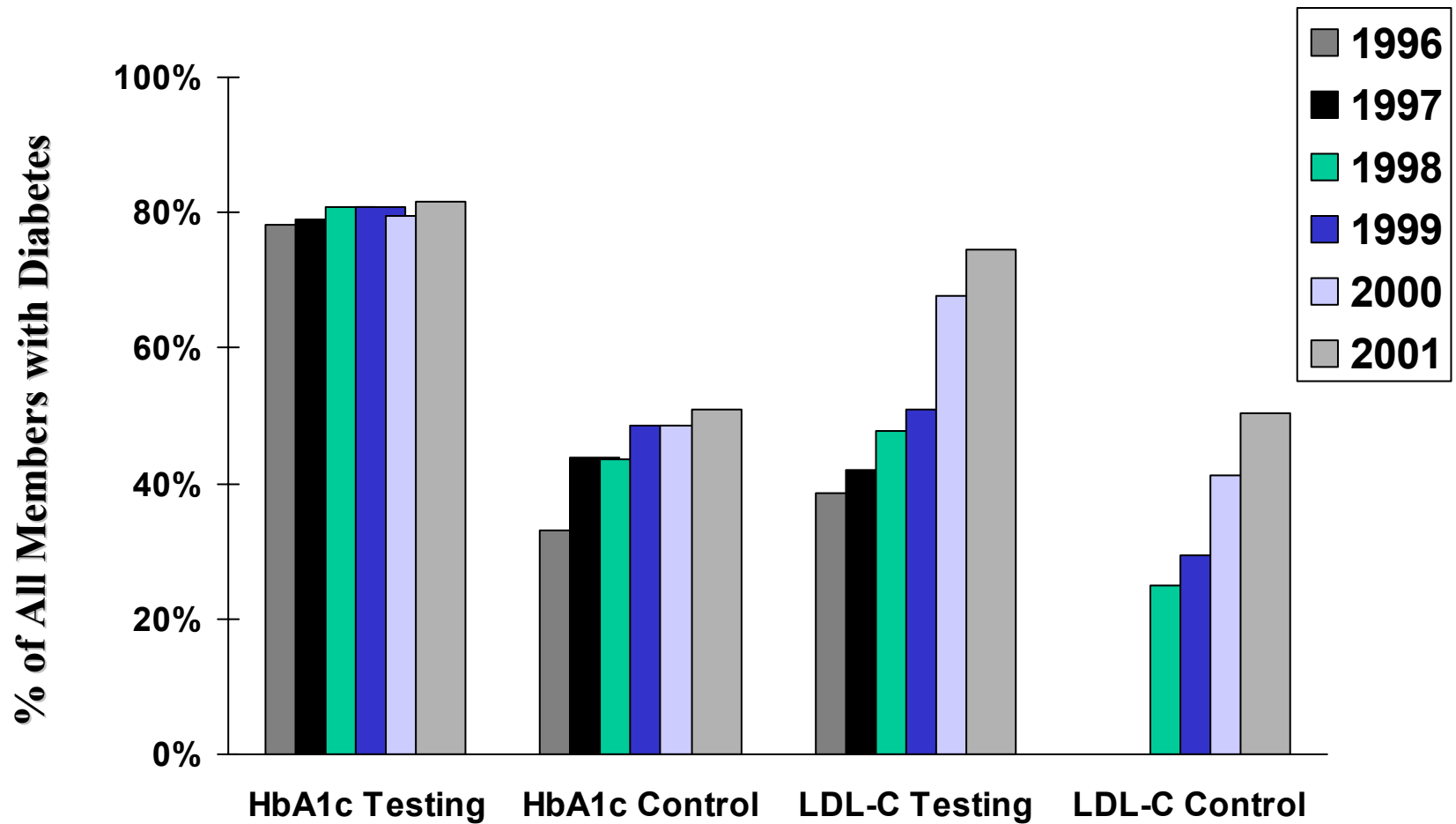
# What can you get by leveraging scale to acquire systems? Types of system support

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- ◆ Registries and databases
- ◆ Clinician support
  - Knowledge base access
  - Alerts and reminders
  - Rosters
- ◆ Patient support
  - Knowledge base access
  - Alerts and reminders
- ◆ System evaluation and improvement
  - Outcomes reports and benchmarking
  - Performance improvement
  - Value demonstration

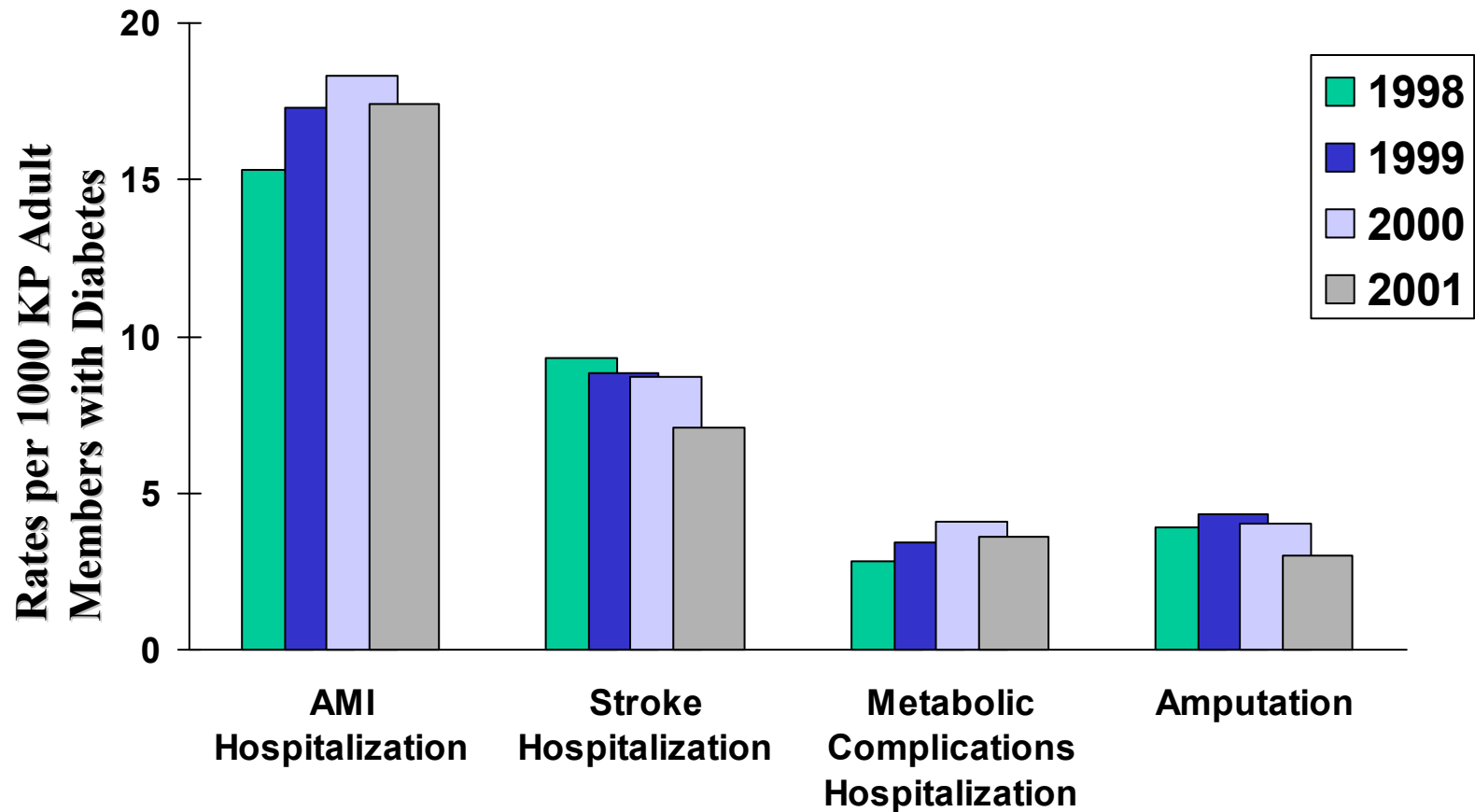


# 1996-2001 Performance Measures for KP Adult Members with Diabetes



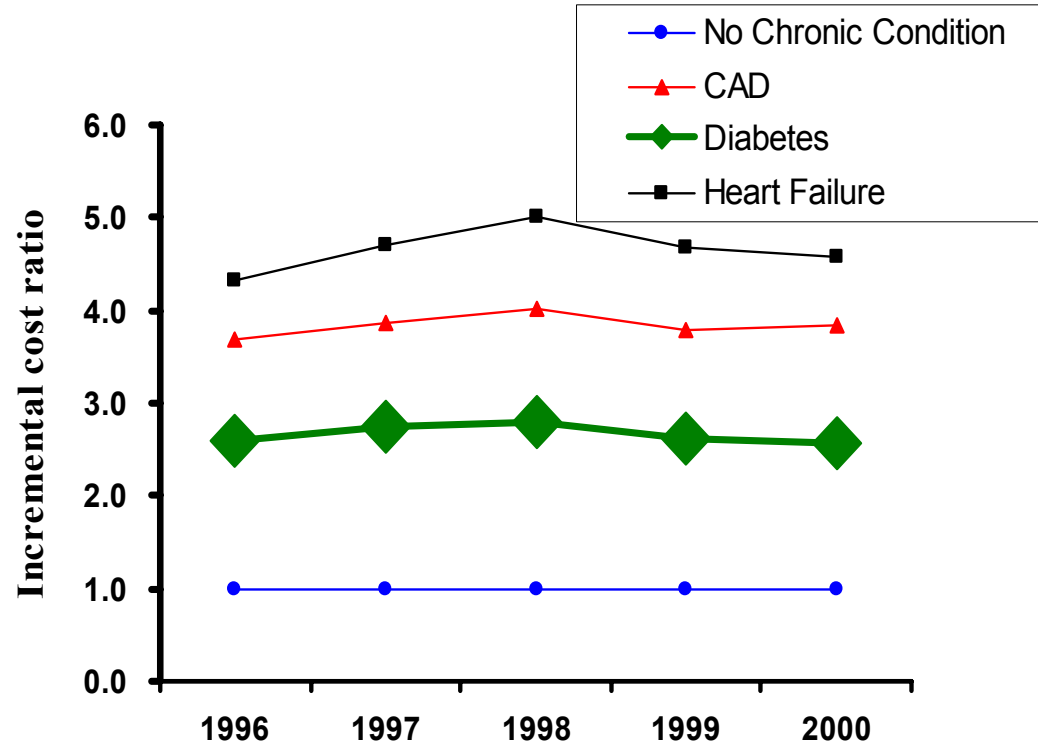
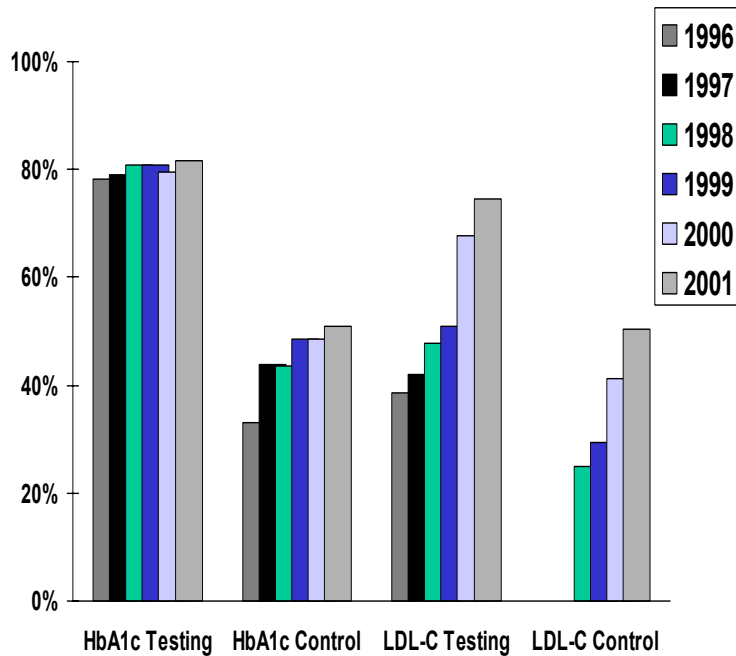
Among KP's 420,000 adult members with diabetes

# Incidence Rates Among KP Adult Members with Diabetes



Among KP's 420,000 adult members with diabetes

# Cost Trends in the Care of Diabetes and other Chronic Conditions



# Impact...

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- ◆ Evidence\* indicates that performance improvements to date amongst KP's 450,000 members with diabetes would be expected to yield:
  - 1,300 fewer MIs<sup>1</sup>
  - 1,800 fewer other cardiovascular events<sup>2</sup>
  - 1,100 fewer cases of neuropathy<sup>3</sup>
  - 1,500 fewer cases of retinopathy<sup>3</sup>
  - 2,100 fewer cases of nephropathy<sup>3</sup>

\* Including:

<sup>1</sup> LIPID Study Group *NEJM* 339:1349-57.

<sup>2</sup> 4S Study *Diabetes Care* 20(4):614-620.

<sup>3</sup> DCCT Research Group including *Diabetes* 46:271-86.

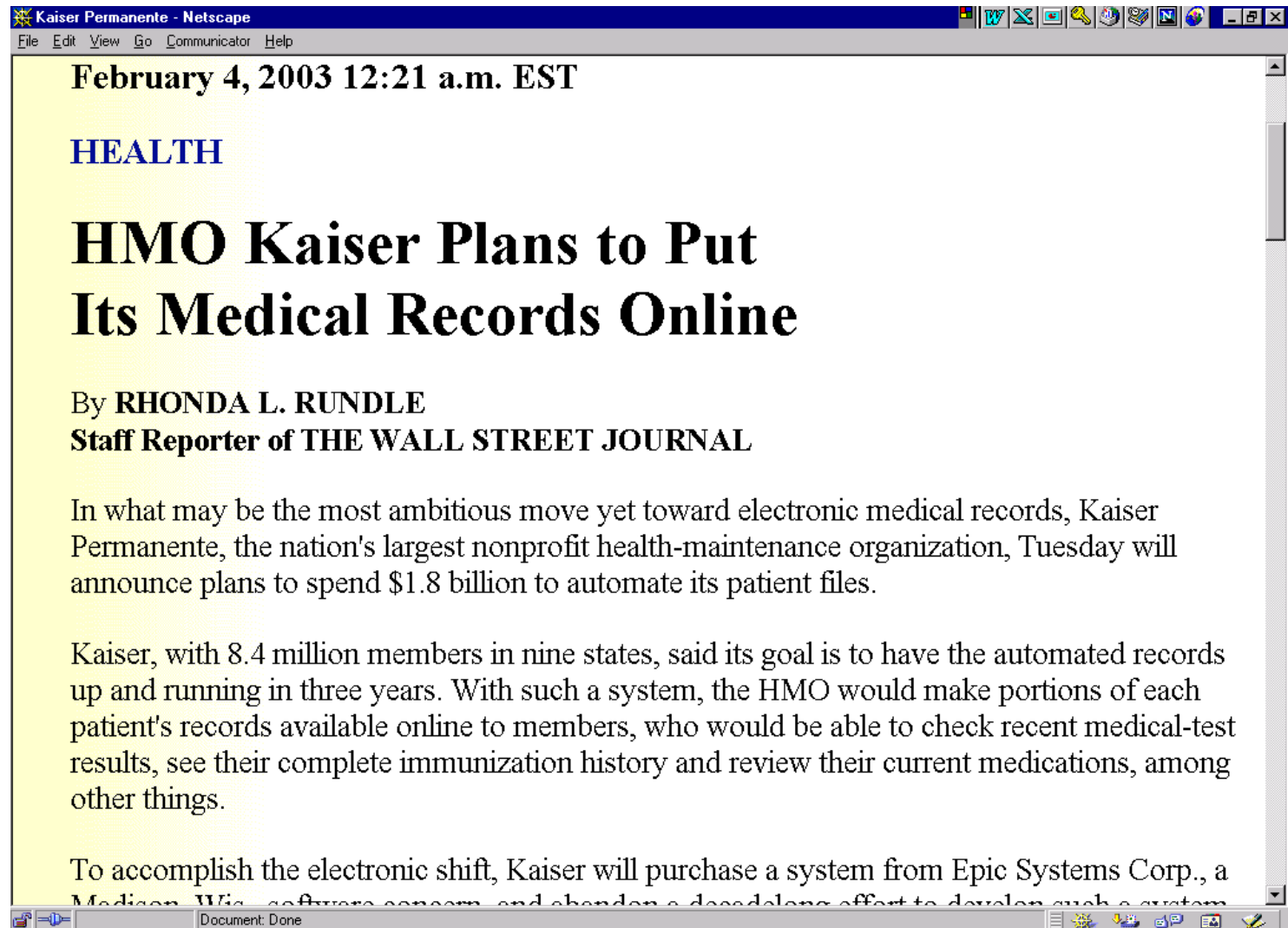
# ***Summary: Is there Evidence that Systems of Care Work?***

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- What can you get by leveraging scale to acquire systems?
  - Types of system support
  - Impact on performance

***Are systems affordable?***

# Kaiser Permanente's investment in the information enabled future...



***The first people to cross the  
quality chasm will be individuals.***

***The goal has to be to get entire  
populations across.***