
Connecting Payers, Providers and Patients

John D. Halamka MD
Chief Information Officer



State of the Art

- Content is no longer king - consider the fall of the content ehealth portals
- Workflow improvement is the focus
- Cost reduction is the driving force



Major Themes

- Business Process improvement -
 - Administrative simplification
 - Managed Care Business process
 - Clinical Care
 - Utilization Review
- Dynamic data delivery - outcomes measurement and dashboards
- Patient Relationship Management



Administrative Simplification


- Internal – <http://home.caregroup.org>
 - Provider portal
 - Phone directories
 - Org Charts
 - Automated Paging
- External
 - NEHEN








Sunday, May 21, 2000



CAREGROUP
HEALTHCARE SYSTEM

Beth Israel Deaconess 

-  [CareWeb](#)
-  [Cyberprise](#)
-  [Web Email](#)
-  [COV EIS](#)
-  [Lit Search](#)
-  [Online Reports](#)
-  [Find a DR](#)
-  [STARS](#)
-  [Eligibility](#)

Create Myportal

Myportal Log In

Username

Password

Log in 

Announcements

- [Dr. Frank LoGerfo, Surgeon in Chief](#)
- [Employee Referral Bonus Program](#)
- [HealthPoint Offers Free Week's Pass](#)
- [Lesbian & Gay Achievement Award](#)

News and Publications

- [BIDMC Creates Liver Center](#)
- [Landmark -BIDMC Partnership](#)
- [Press Releases **NEW**](#)
- [Windows of Hope Grand Opening Publications](#)

Daily Updates

- [BeWell!](#)
- [Cafeteria Menu](#)
- [Traffic](#)
- [Weather](#)

Institutions

- [CareGroup](#)
- [BIDMC](#)
- [Mount Auburn](#)
- [New England Baptist](#)
- [Deaconess-Glover](#)
- [Deaconess-Nashoba](#)
- [Deaconess-Waltham](#)
- [Education and Research](#)
- [Joslin Diabetes Center](#)
- [More Institutions](#)

Clinical Resources

- [BIDMC Paging Directory](#)
- [Drug Information](#)
- [Guidelines](#)
- [Library Resources](#)
- [Medical Resources](#)
- [Nursing Resources](#)
- [Reference](#)
- [UptoDate](#)

Patient Education

- [BIDMC Fact Sheets/Instructions](#)
- [BIDMC HealthLinks](#)
- [Care! TV Education Channel](#)
- [CareNotes Health/Drug Information](#)
- [External Health Web Sites](#)
- [Learning Center Services](#)
- [Seminars and Support Groups](#)

Employee Resources

- [Administrative Reference](#)
- [BIDMC Shuttle Schedules](#)
- [CareWeb Personal Audit](#)
- [Continuing Education](#)
- [Human Resources](#)
- [Office Depot Purchasing](#)
- [Publishing Tools](#)
- [Send Feedback/Comments](#)

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[Create Myportal](#)**Myportal Log In**

Username

Password



Search Results

Name	Pager	Phone	Division	Location
John D Halamka	35415			

CareGroup Phone Directory Search Results - Microsoft Internet Explorer

File Edit View Favorites Tools Help

**Beth Israel Deaconess Telephone Directory**

Search Detail

John D Halamka**Position:**

Chief Medical Information Officer

Reports to:

James Reinertsen

Employed By:**Department:**

Information Systems

Division:

Information Systems

Operating Unit:

CG

Location:

W/MS-3

Office Phone:

(617) 975-6047

Office Fax:

(617) 975-6046

Patient Phone:**Patient Fax:****Pager:**

35415

Cell Phone:

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Myportal Log In

Username

Password

Log in



CAREGROUP
HEALTHCARE SYSTEM

Sunday, May 21, 2000

[Lookup Another Patient](#)

JOHN HALAMKA: Eligible

Service Date: 1/1/00

Patient Demographics

Name:	HALAMKA, JOHN	Member ID:	HPCG02815-00
Sex:	M	Date Of Birth:	5/23/62
Address:	11 ALDEN RD WELLESLEY HLS MA 02481-6702		
Start Date	1/1/00	End Date	12/31/9999

Primary Care Provider Info

PCP Name:	DUPEE,RICHARD	PCP Plan ID:	2928
Address:	65 WALNUT STREET WELLESLEY MA 02181		
PCP Phone:	(781) 235-9089		

Benefits

Plan:	HPHC	Product:	
-------	------	----------	--

Copay Info

Transaction time:2 Seconds

Managed Care Business Process

- Leakage reduction
- Formulary enforcement
- Instant referrals
- Instant claims




CareGroup Net - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address C:\WINDOWS\DESKTOP\Prototype-981108\top.html Links



PROVIDER SERVICE NETWORK
Affiliated with CAREGROUP

ELIGIBILITY
[Inquiry](#)

AUTHORIZATIONS
[Quick Search](#)
[General Search](#)
[Request Referral](#)
[Request Admission](#)
[Request Service](#)

REPORTING
[Activity](#)

OTHER
[Provider Directory](#)
[Help](#)
[Logout](#)

Member ID: Plan: select a plan [SEARCH](#) [CUSTOMIZE](#)

Referring PCP: Select One [CUSTOMIZE](#)

Provider Details

Member ID: [CUSTOMIZE](#)

Admission: [CUSTOMIZE](#)

Admission: [CUSTOMIZE](#)

Admission: [CUSTOMIZE](#)

Type of Admission: [CUSTOMIZE](#)

Admission Category: Medical [CUSTOMIZE](#)

Primary Admission Dx: [SEARCH](#) Secondary Admission Dx: [SEARCH](#)

Reason for Admission:

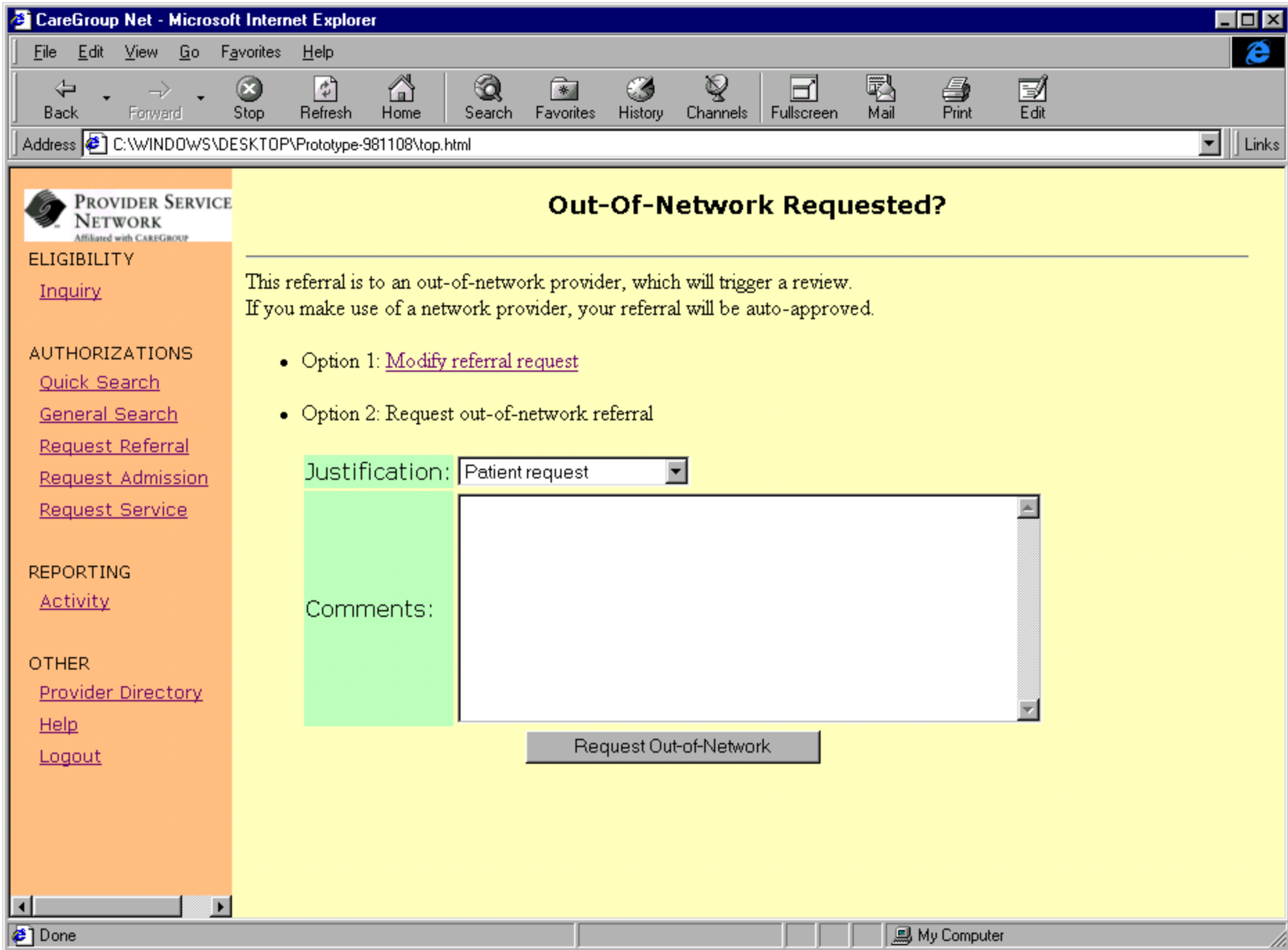
Select to route this request to your CareGroup PSN Case Manager:

Liability and Recovery: Select One

ICD9 Search - Microsoft Internet Explorer

ICD9 Search

Search for ICD9 codes about:



Out-Of-Network Requested?

ELIGIBILITY

[Inquiry](#)

AUTHORIZATIONS

[Quick Search](#)

[General Search](#)

[Request Referral](#)

[Request Admission](#)

[Request Service](#)

REPORTING

[Activity](#)

OTHER

[Provider Directory](#)

[Help](#)

[Logout](#)

This referral is to an out-of-network provider, which will trigger a review.
If you make use of a network provider, your referral will be auto-approved.

- Option 1: [Modify referral request](#)
- Option 2: Request out-of-network referral

Justification:

Comments:

Request Out-of-Network

Done


My Computer

CareGroup Net - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address C:\WINDOWS\DESKTOP\Prototype-981108\top.html



PROVIDER SERVICE NETWORK
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ELIGIBILITY
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AUTHORIZATIONS
[Quick Search](#)
[General Search](#)
[Request Referral](#)
[Request Admission](#)
[Request Service](#)

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[Help](#)
[Logout](#)

Temporary Tracking Number **A682432**

Patient Details

Member ID:	0277883612	Plan:	BCBSMA
Name:	Carter, John	Product:	HMO Blue
Referring PCP:	Taussig, Helen	PSN ID:	16351
Risk Unit:	BIDMC		

Provider Details

Refer To Provider:	Woo, John	PSN ID:	12786
Risk Unit:	BIDMC		

Referral Details

Start Date:	10-07-1998		
End Date:	12-31-1998		
Services Requested:	Consult only	Visits:	1
Reason for Referral:	Worsening symptoms over the past 5 days. Patient complaining of severe chest pain and shortness of breath.		

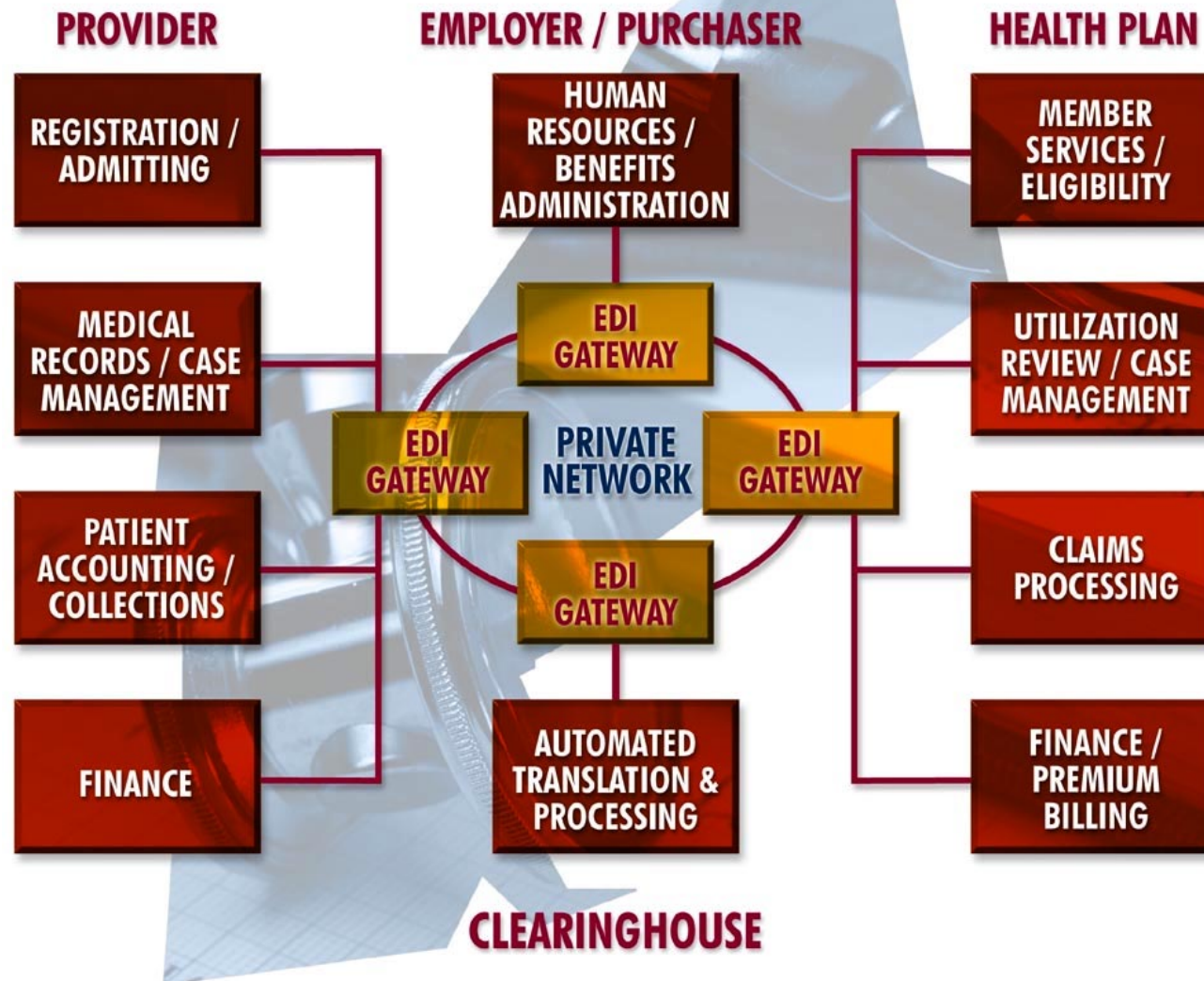
Diagnosis

Primary Diagnosis:	413.1	Description:	Prinzmetal Angina
Secondary Diagnosis:		Description:	

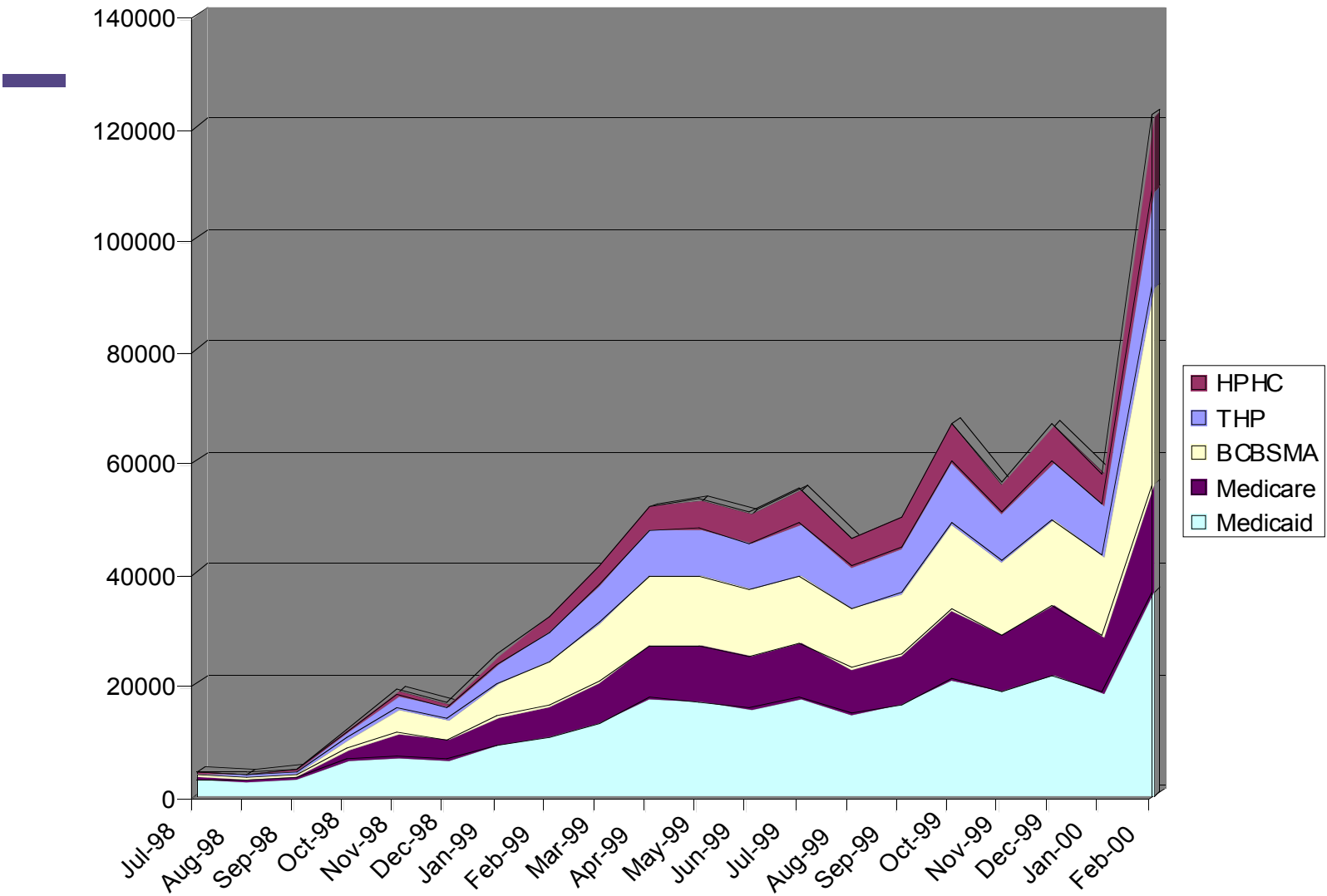
This referral is

Done My Computer

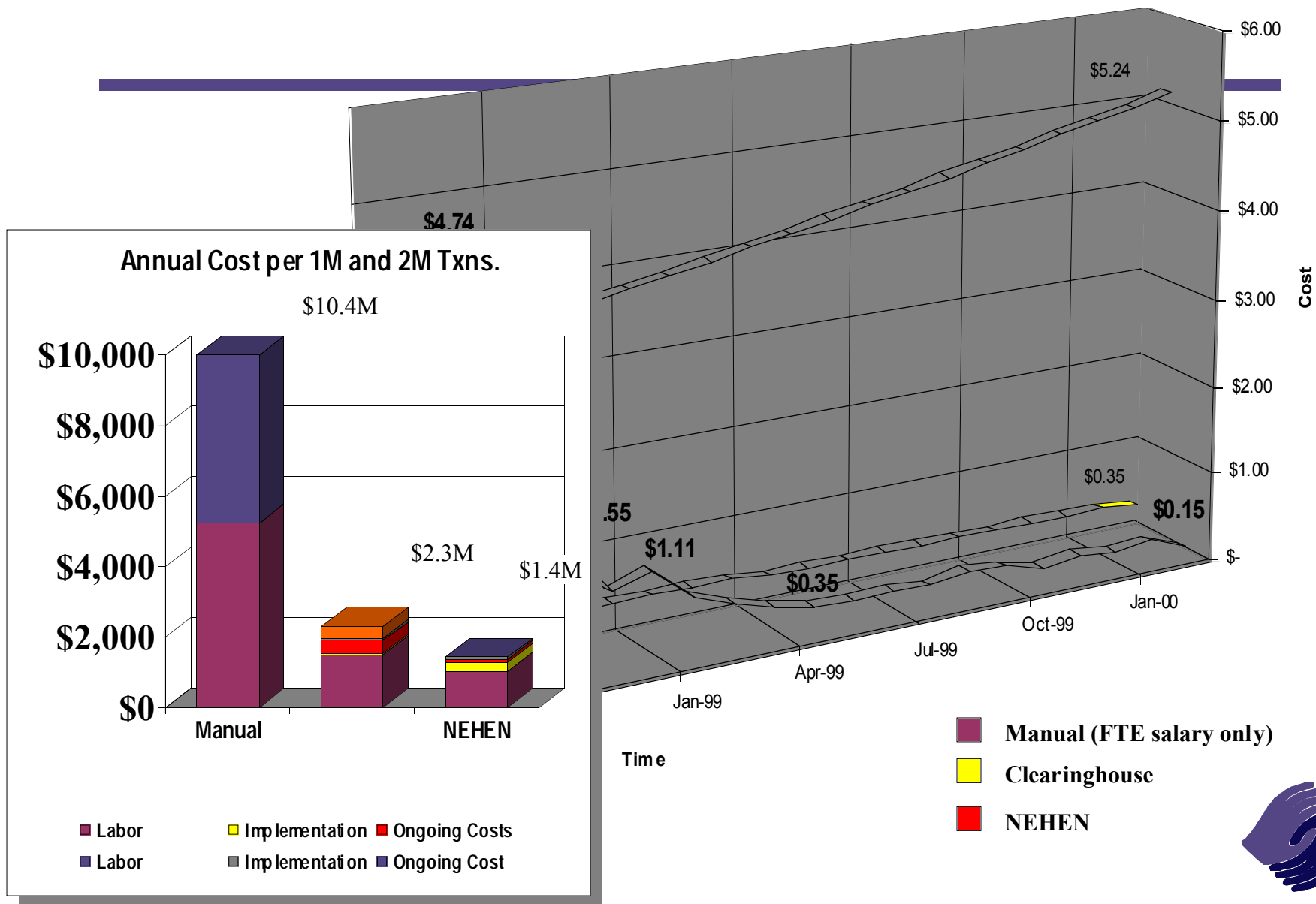
The NEHEN Model



Volume Statistics



Costs per Transaction



NEHEN experience

- EDI Solution Assumptions
 - Performed <3 minutes
 - Support at least 70% of the payor mix
 - 40% of current claims rework to be eliminated
 - Burdened rate of \$30K per FTE and 15% overtime
 - Cost of capital at 6%



Eligibility Results

Salary and overtime: \$845,250
x 40% claims rework labor reduction = **\$338,100**

- Reduction in claim rework

Salary and overtime: \$110,250
x 70% payor Mix = \$77,175
x 80% labor reduction (from current 15 mins. To 3) = **\$57,875**

- Eligibility verification process improvement

Current rejections: \$4,416,000
x 30-day A/R reduction (at 6% cost of capital) = **\$21,770**
+ 1.5% reduction in write-offs = **\$66,240**

- Improved collections



Eligibility ROI

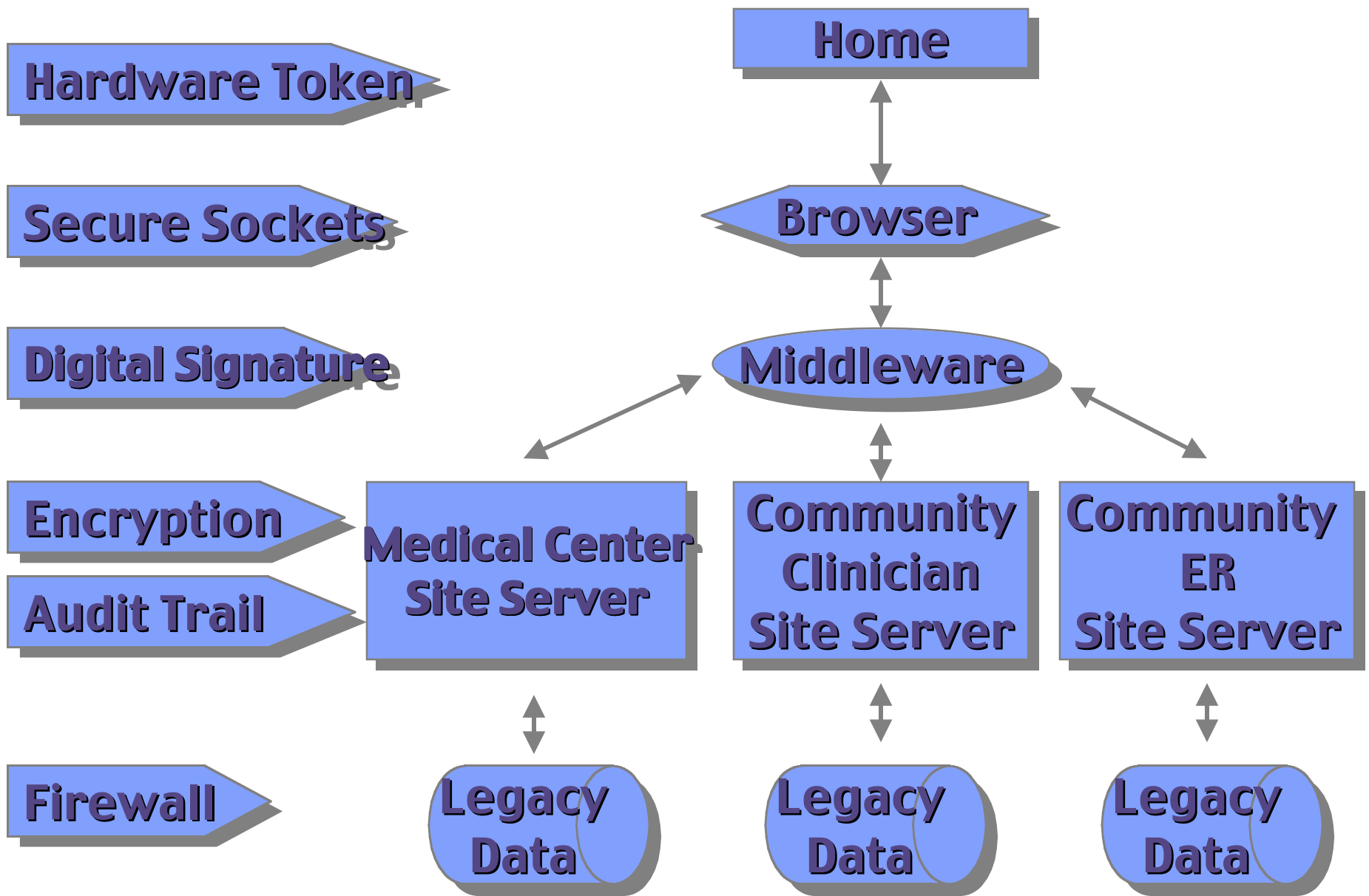
Eligibility ROI	Year 1	Year 2	Year 3
Labor savings:	\$397,975	\$ 397,975	\$ 397,975
+ Improved collections:	\$88,010	\$88,010	\$88,010
Gross savings:	\$485,985	\$485,985	\$485,985
- NEHEN program mgmt. fees:	\$72,000	\$72,000	\$72,000
- Implementation costs (H/W, network, labor):	\$250,000	\$10,000	\$10,000
Net savings (cumulative): (+ incidence avoidance)	\$163,985	\$568,905	\$972,890
	ROI: 1.5X	2.4X	3X



Workflow Integation

- Clinical Care
- Virtual Medication Records
- Security and Confidentiality are paramount







Patient Lookup

CCC

ODISY

Exit

Demog

Probs

Meds

Allergies

Visits

Notes

Reports

Xrays

Labs

Micro

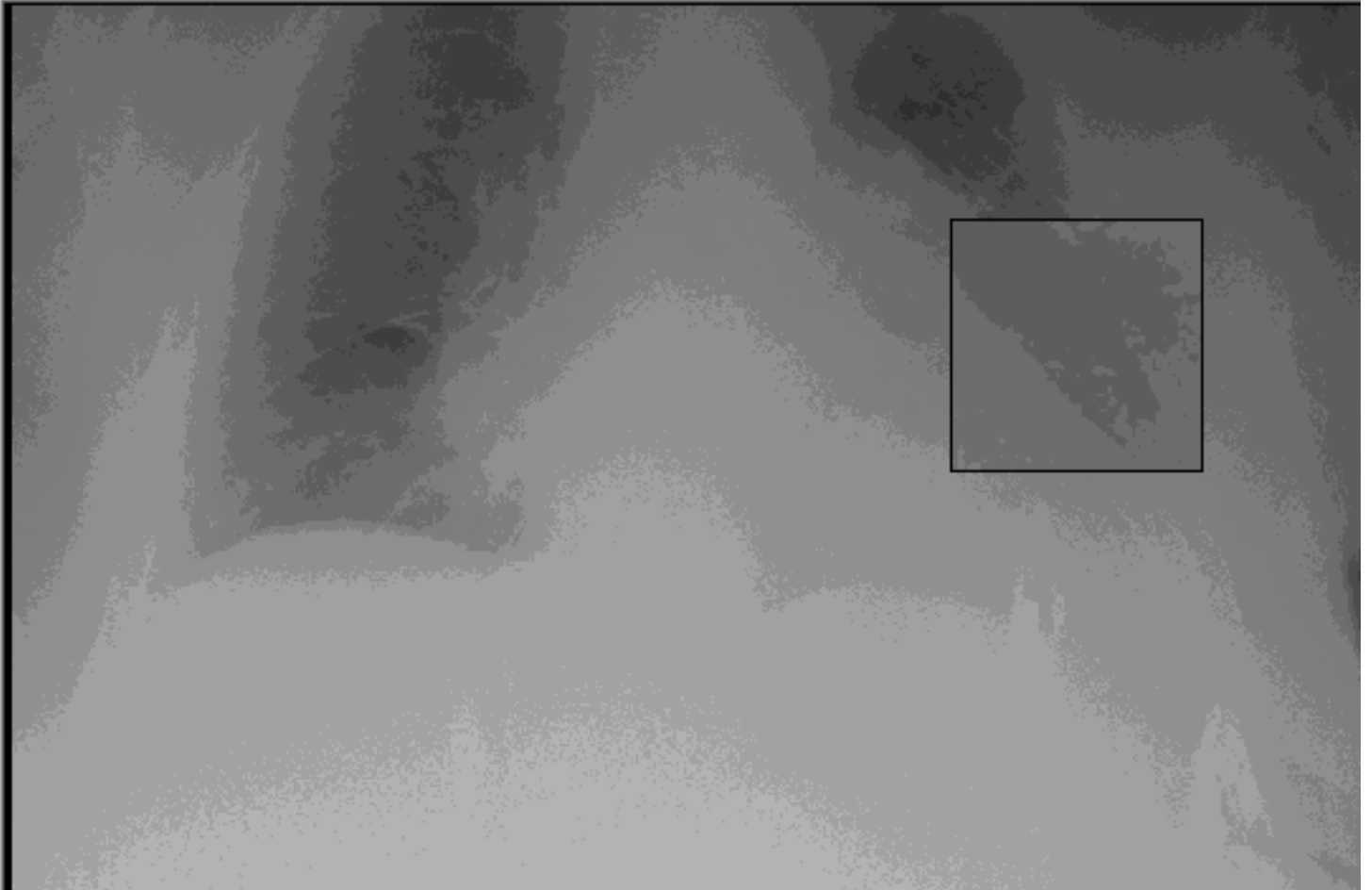
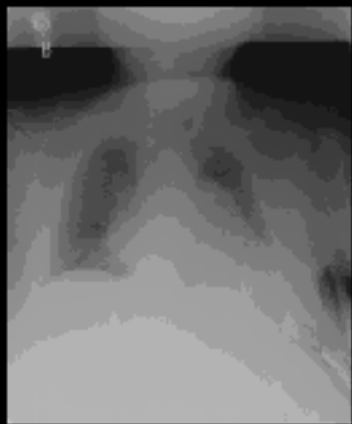
FORD, MARTHA: Outpatient Medication List [Click Here](#) for Inpatient Medication List

- 02/22/2000 [FOLIC ACID](#) 1 MG PO ONE TABLET BY MOUTH EVERY DAY
[#30 R5]
- 03/28/2000 [IBUPROFEN](#) 400 MG PO ONE BY MOUTH THREE TIMES A DAY AS NEEDED – TAKE WITH FOOD
[#40 R0]
- 02/22/2000 [NITROGLYCERIN](#) 400 MCG (1/150 GR) SL ONE UNDER THE TONGUE AS NEEDED FOR CHEST PAIN, MAY REPEAT EVERY 5 MINUTES X 2, THEN GOT TO ER IF PAIN PERSISTS
[#100 R2]
- 02/22/2000 [LEVOTHYROXINE](#) 50 MCG PO
[#30 R5]
- 02/22/2000 [PREDNISON](#) 2.5 MG PO
[#100 R5]
- 02/22/2000 [ASPIRIN E.C.](#) 325 MG PO
[#30 R5]
- 02/22/2000 [FLUOXETINE](#) 10 MG PO
[#30 R5]
- 02/22/2000 [VERAPAMIL SR](#) 240 MG PO
[#30 R5]
- 02/22/2000 [ATORVASTATIN CALCIUM](#) 10 MG PO
[#30 R4]
- 02/22/2000 17 GM INHALATION
[#17 R5]
- 02/22/2000 [CILOSTAZOL](#) 100MG PO
[#60 R1]

The screenshot shows a Microsoft Internet Explorer browser window with the address bar containing <http://home.caregroup.org/leaflet.asp?drugname=FOLIC>. The page content includes the CareGroup Healthcare System logo, the date "Sunday, May 21, 2006", and the location "Beth Israel Deaconess". A search link "Search for New Drug" is visible, followed by the drug name "folic acid" in a large font. Below the name, the pronunciation "Pronunciation: FOE lick A sid" is provided. A section titled "What is the most important information I should know about folic acid?" contains a bullet point: "• Take this medication only under the supervision of your doctor."

Non-reversible Wavelet compressed images: for reference only (25 :1)

No Significant image.
Displaying all thumbnails



Internet

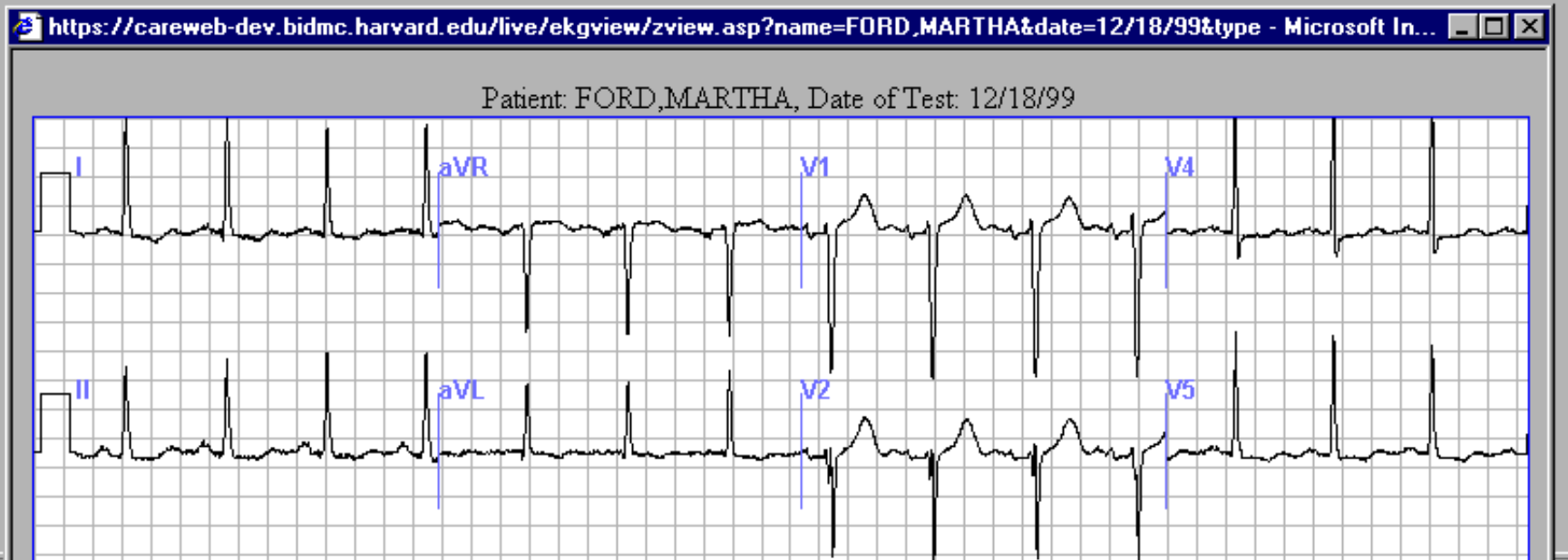
FORD, MARTHA: EKG Report # 99-44253F - CCC

ELECTROCARDIOGRAM PERFORMED ON: 12/18/99

Sinus rhythm. Left ventricular hypertrophy. Prior anteroseptal myocardial infarction. Compared to the previous tracing of 2-16-99 there is less prominent lateral ST segment depression and T wave inversion, and slight slowing of the rate, suggesting resolution of prior inferolateral ischemia. Clinical correlation is suggested.

Read by: MARKIS, JOHN E.

Intervals				Axes		
Rate	PR	QRS	QT/QTc	P	QRS	T
87	158	92	400/444	65	21	159



Workflow Integration

- Utilization Review



Patient: 101 **Component:** Discharge
Crit: Obstetrics - Term (≥ 38 wks) (Acute)

Criteria Met Save Check Criteria

(At Least Last 12h)

RULE

Both: Clinical and Level of Care

Clinical

\geq One:

Undelivered, \geq one:

Abruptio placenta, both:

Bleeding resolved, all:

Contractions $\leq 4/h$ for $\geq 24h$ and no ROM

Fetal compromise resolved

Gestational DM, both:

Lab values w/in acceptable ranges, \geq one:

Preeclampsia controlled, all:

Ruptured / Leaking membranes, all:

Seizures controlled $\geq 24h$

T 97-100.4F (36.1-38.0C) PR

Urine output > 350 ml last 24h

Vomiting controlled and able to maintain

Delivered (NSVD / C-section), \geq one:

Level of Care

\geq One:

Undelivered, \geq one:

Patient / Primary caregiver able to provide

Diagnosis(es) and medical treatment plan

Dietary / Hydration requirements










Medication(s) administration

Home care / Alternate setting arranged

Dynamic Data Presentation

- Outcomes, Performance and Quality Measurement



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-  [Cyberprise](#)
-  [Web Email](#)
-  [COV EIS](#)
-  [Lit Search](#)
-  [Online Reports](#)
-  [Find a DR](#)
-  [STARS](#)
-  [Eligibility](#)

[Create Myportal](#)

Myportal Log In

Username

Password



PROVIDER SERVICE NETWORK

Click on a report category to show the list of reports, click again to hide the

[Administration](#)

[BIDMC Key Indicators Reports](#)

[CareGroup Clinical Quality Measures](#)

- [Cardiac Bypass Mortality Rate](#)
- [Inpatient Admission after Unscheduled Return to ED](#)
- [Mammography Rate](#)
- [Pneumonia Mortality](#)
- [Primary C-Section Rate](#)
- [Repeat C-Section](#)
- [Unscheduled Hospital Readmission w/i 15 days](#)
- [Unscheduled Return to the operating Room](#)
- [Vaginal Birth after C-Section Rate](#)

CAREGROUPSM

Center for Quality and Value

- [CareWeb](#)
- [Cyberprise](#)
- [Web Email](#)
- [CQV EIS](#)
- [Lit Search](#)
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- [Find a DR](#)
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[Create Myportal](#)

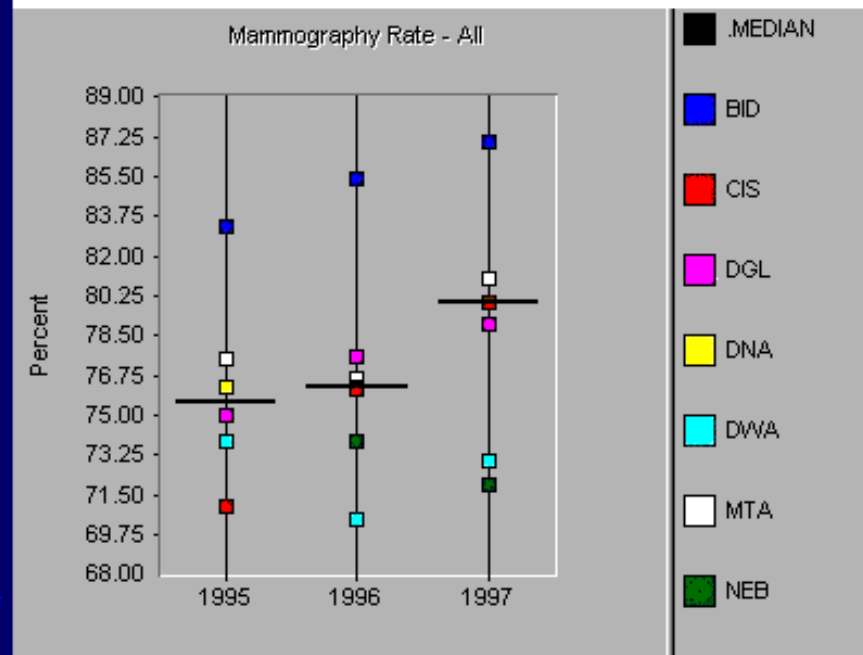
Myportal Log In

Username

Password

Log in

Report Name: Mammography Rate



Measurement Mammography Rates

Data Source Charles Goheen

Updated Annually

Footnotes 1. Mammography data based on mammography claims information reported by Tufts Health Plan for 1995-1997

CareWeb

Cyberprise

Web Email

COV EIS

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STARS

Eligibility

Create Myportal

Myportal Log In

Username

Password

Log in

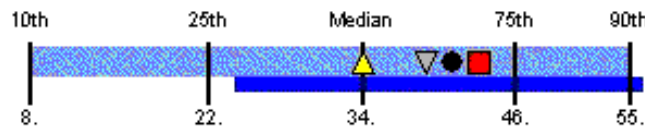
Risk Unit: BID Pod:06

Reporting Period:7/1/1998 - 6/30/1999

Data Source: BCBS, HPHC Integrated Data, Tufts

Overall Summary:Makadon, Harvey J., MD

Age Distribution by member

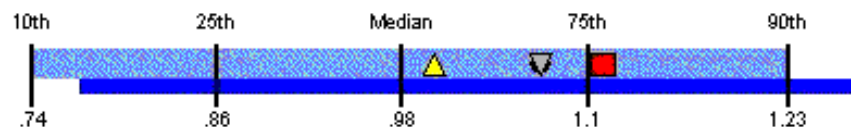


DCG Risk Score Distribution by Member

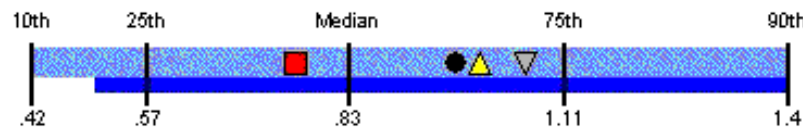


Efficiency Indices

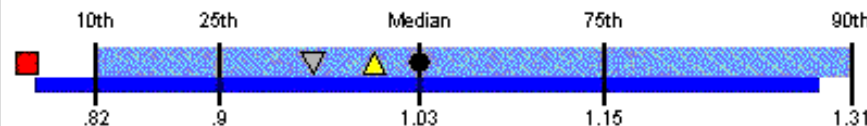
Total Expenditures (Actual/Predicted)



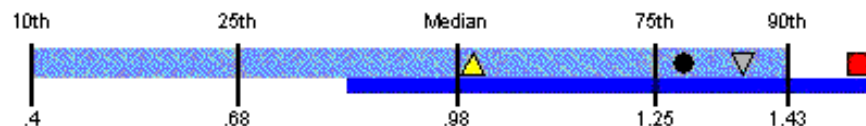
Total Inpatient Expenditures (Actual/Predicted)



Total Outpatient Expenditures (Actual/Predicted)



Total Pharmacy Expenditures (Actual/Predicted)



Range Key
(Range of 10th to 90th Percentile)

- Physician (Red square)
- Pod (Inverted triangle)
- Risk Unit (Black circle)
- PSN (Yellow triangle)
- PSN Range (Light blue shaded area)
- Risk Unit Range (Dark blue shaded area)

Patient Relationship Management

- PatientSite
- **<https://patientsite.caregroup.org>**
- Click on the ‘Take a Tour’ button



MyHealth

 MyMail

 MyRecord

 MyTasks

 Search

 MyProfile

MyHealth

 Help

 Sign Out



CareGroup's Personal Health Web Site for
Ignacio Gende, a patient of Dr. Steven Flier
You have 6 messages

MyReferences

[Womens Health](#)

[Patient Advocacy and Consumer Issues](#)

[Medications](#)

[News and Publications](#)

[Digestive Disease](#)

[Smoking Cessation](#)

[Searching the Literature](#)

[Online Pharmacies](#)

Mylinks

[BIDMC](#)

[Look at this information](#)

[inbox](#)[draft](#)[sent](#)[archived](#)

inbox-6 messages

 Check Mail Help Sign Out

Archive Selected Items

Compose New Message

<input checked="" type="checkbox"/>	Type	From	Subject	Date	Replied?
<input type="checkbox"/>	clinical	Busch, Jordan	Dr. Press - Neurol	5/18/00 2:40:32 PM	N
<input type="checkbox"/>	receipt	Test, Appt	We are working on	5/16/00 2:55:39 PM	N
<input type="checkbox"/>	receipt	Luker, Barbara	We are working on	5/15/00 7:04:18 AM	N
<input type="checkbox"/>	clinical	Pellaton, Diann	Using the Services	5/9/00 4:28:21 PM	Y
<input type="checkbox"/>	receipt	Test Office Man	We are working on	5/9/00 2:09:40 PM	N
<input type="checkbox"/>	receipt	Pellaton, Diann	We are working on	5/9/00 2:02:32 PM	N

MyHealth

 MyMail

 MyRecord

 MyTasks

 Search

 MyProfile

MyRecord  Exit

 Help

 Sign Out

[Review my allergies \(CCC\)](#)

[Review my appointments \(CCC\)](#)

[Review my cultures \(CCC\)](#)

[Review my labs \(CCC\)](#)

[Review my medications \(CCC\)](#)

[Review my problem list \(CCC\)](#)

[Review my radiology results \(CCC\)](#)

MyHealth

 MyMail

 MyRecord

 MyTasks

 Search

 MyProfile

MyTasks

 Exit

 Help

 Sign Out

[Check my Insurance Benefits](#)

[Make an appointment](#)

[Patientsite Survey for Patients](#)

[Refill a prescription](#)

[Request a referral](#)

MyHealth

 MyMail

 MyRecord

 MyTasks

 Search

 MyProfile

Search

 Exit

 Help

 Sign Out

1. Select folder


Search in

2. Choose criteria

Find messages whose contains

3. Choose date (optional)

Restrict to:

 Search

Settings

Exit

Save

Help

Sign Out

My Account Information

My Contact Information

Username: igende

Password:

Name:

Address:

City:

State:

Zip:

Phone:

Fax:

Email:

Date of Birth:

Inpatient MRN#: 0638435

Outpatient MRN#:

Insurance:

Gender:

Pharmacy:

Address:

City:

State:

Zip:

Phone:

Next of Kin:

Address:

City:

State:

Zip:

Phone:

Primary Clinician:

http://localhost/insurance.asp - Microsoft

File Edit View Favorites Tools Help

Insurance Name:

Name
HPHC 1ST SENIORITY IPA SR RK
HPHC 1ST SENIORITY NIPA SR
HPHC ASO
HPHC NEW GROUP / HEALTH CTR
HPHC NON RISK
HPHC RISK

MyHealth

MyMail

MyRecord

MyTasks

Search

MyProfile

MyTasks

✕ Exit

? Help

✕ Sign Out

[Admin Survey Comments](#)

[Admin Survey Results](#)

[Ask a Question/Acknowledge Results](#)

[Check Benefits/Eligibility](#)

[Check Clinical Guidelines](#)

[Clinician Survey Comments](#)

[Clinician Survey Results](#)

[Edit Appointment Calendar](#)

[Help a patient make an appointment](#)

[Help a patient request a prescription](#)

[Help a patient request a referral](#)

[Maintain all groups](#)

[Maintain all persons](#)

[My Health Calendar](#)

[Patient Survey Comments](#)

[Patient Survey Results](#)

[Patientsite Statistics](#)

[Prescribe information and web sites](#)

[Review My Bill](#)

[Review unread messages](#)

[Set forwarding preferences](#)

[Write Prescriptions \(For Testing Purposes Only\)](#)

Summary

- CareGroup has web-enabled its major business processes
- Costs of operating Information Systems have been reduced 40% and FTEs have been reduced from 283 to 160
- All projects have already paid from themselves
- Consumer empowerment is a reality and will redefine the future practice of medicine

