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Quality improvement – Evaluation & Innovation

at Kaiser Permanente's Program Office

Jim Bellows, PhD
Director, Center for Evaluation & Innovation
Carol Cain, PhD
Principal Consultant, Incubation
Estee Neuwirth, PhD
Senior Manager, Evaluation & Innovation

KP Care Management Institute
June 23, 2009

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Talk outline:

Our team: R&D at KP

Case study #1: Complex Chronic Conditions

Background on KP and informatics

Case study #2: Panel management

Case study #3: Transitions in Care

KP CMI's
Center for Evaluation and Innovation

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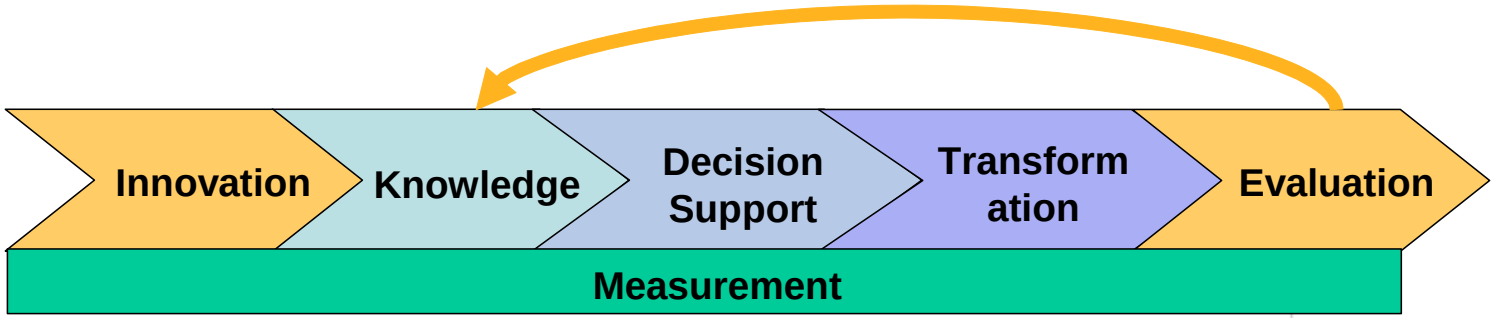
CMI's Mission and Principles

CMI works with its Regional partners to build a superior integrated care delivery system for KP members

- Keeping patients at the center
- Harnessing technology
- Integrating capabilities across KP
- Applying evidence
- Measuring results
- Spreading successful practices

CEI Mission

CMI's Center for Evaluation and Innovation (CEI) supports performance improvement across KP by providing performance metrics, identifying success factors, evaluating impact, and supporting innovation



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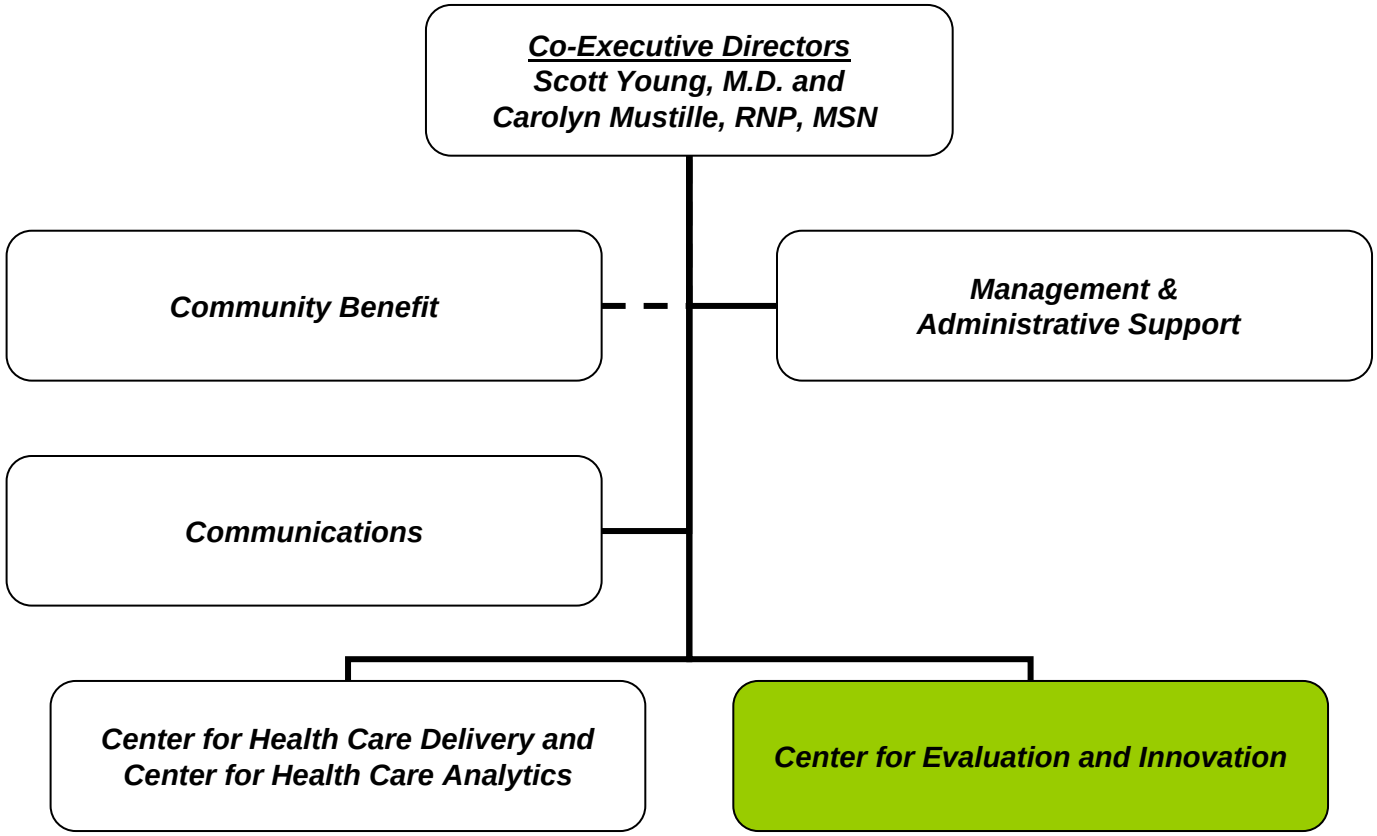
CMI Organizational Structure



CMI Portfolio

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- Initiatives
  - Palliative Care
  - Complete Care for Complex Conditions
  - Transitions in Care
  - Cardiovascular Disease
- Region-specific projects
- Services
  - Knowledge Services
  - Clinical Library
  - Network maintenance – Implementation, Analytic, etc.

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Our Mission

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- Spreading successful practices

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Center for Evaluation and Innovation

Jim Bellows, PhD, Director
Eric Tom, Manager - Analytics
Sybil Soghoian, Operations Specialist
Christopher Jentz, Program Evaluation
Gregory Nah, Program Evaluation
Estee Neuwirth, PhD, Program Evaluation
Maggie Wang, PhD, Program Evaluation
Carol Cain, PhD, Incubation
Erin Dirks, Analytics
Jennifer Kallenbach, Analytics
Lori McGilchrist, Analytics

cmi.kp.org

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Our staff

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- 12 FTEs

- By education
  - 4 PhD
  - 7 Masters-level (2 ABD)

- By training
  - 3 Health services research
  - 1 Sociology
  - 1 Biomedical informatics
  - 2 Statistics
  - \+ Public policy, public administration, business

- By work area
  - 5 Analytics
  - 3 Quantitative evaluation
  - 1 Qualitative evaluation (+ contract support as needed)
  - 1 Innovation support and incubation

Our team

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KP Care Management Institute's
Center for Evaluation & Innovation

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Talk outline:

Our team: R&D at KP

Case study #1: Complex Chronic Conditions

Background on KP and informatics

Case study #2: Panel management

Case study #3: Transitions in Care

Program evaluation reveals variations in implementation

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Key Components	A	B	C
Patient identification			
Patient engagement			
Multi-disciplinary care planning			
Case management/Coordination			
Proactive clinical management			
Psychosocial support			
Transitions management			
End of life care			
Health information technology			
Program management			

Key: dark = robust; light = mechanism in place; N/A = not part of program objectives

Evaluation at each stage is focused on supporting further spread

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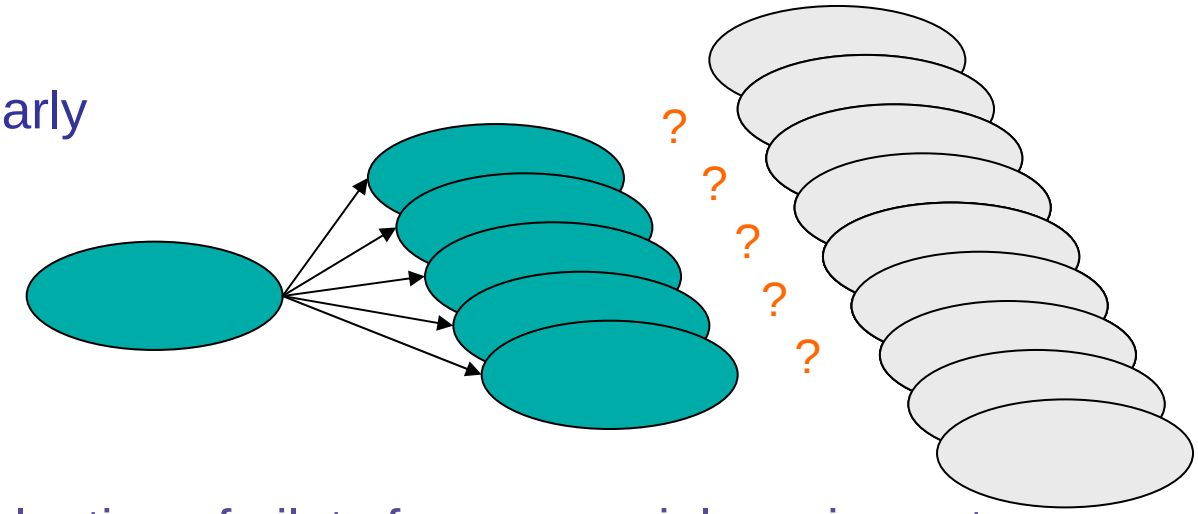
For example:
What does the early majority want to learn from early adopters?



- Typical evaluation of pilots focuses mainly on impact
- Potential adopters have other questions
  - Does the innovation work once it is transferred, or was its initial promise mainly due to specific factors at the innovation site?
  - How will the innovation affect our patients? Our staff? Our costs? Our roles and relationships?
  - Which version seems to work best?
  - What site-specific factors are important?

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Case study #1: Home monitoring for Complex Chronic Conditions

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HomMed Home - Central Station Current Status

Navigator

8 1 2

Test, Patient

Memorial Hospital - North Side C

Condition	Patient Name	Weight	Blood Pressure	SpO2	HR	Temp	Answers	Additio
ALERT		245.0	160 / 105 (123)	86	115	-	2 Yes, 8 No	-
ALERT		162.0	157 / 90 (112)	87	105	99.1	10 No	-
ALERT		133.5	151 / 95 (114)	93	110	-	1 Yes, 9 No	-
ALERT		222.0	118 / 66 (83)	89	84	-	10 No	Glucose within limits, Spirometry within limits
ALERT		139.5	120 / 85 (97)	87	75	98.6	8 No	Glucose within limits
ALERT		125.0	124 / 82 (96)	88	70	-	6 No	-
ALERT		112.0	115 / 71 (89)	95	103	99.0	5 No	Glucose within limits
ALERT		150.5	125 / 75 (92)	95	72	98.6	9 No	-
No Limits Set		150.4	124 / 75 (103)	95	76	99.0	2 No	-
NDR		-	-	-	-	-	-	-
NULL		-	-	-	-	-	-	-
Incomplete		162.0	125 / 75 (92)	95	80	-	7 No	-
Incomplete		-	120 / 85 (97)	92	70	-	10 No	-

Condition	Patient Name	Weight	Blood Pressure	SpO2	HR	Temp	Answers	Additional Devices
Within Limits		150.5	125 / 75 (92)	94	66	-	10 No	PT/INR within limits
Within Limits		136.0	134 / 88 (106)	97	79	98.6	8 No	-
Within Limits		182.0	115 / 75 (88)	93	69	-	6 No	Spirometry within limits
Within Limits		158.5	125 / 75 (92)	97	72	98.8	9 No	Glucose within limits
Within Limits		160.5	131 / 90 (104)	96	63	99.0	5 No	-
Within Limits		170.0	125 / 75 (92)	95	70	98.6	10 No	-
Within Limits		150.5	124 / 74 (91)	94	66	-	10 No	PT/INR within limits
Within Limits		124.0	115 / 75 (88)	97	79	98.6	8 No	-
Within Limits		133.5	134 / 88 (105)	93	69	-	6 No	Spirometry within limits
Within Limits		163.0	125 / 75 (92)	97	72	98.6	9 No	Glucose within limits
Within Limits		155.5	131 / 90 (104)	96	63	98.4	5 No	-
Within Limits		133.0	126 / 76 (93)	95	70	99.0	10 No	-

Alert Limits | Respond

Patient List | Tabular Trends | Demographics | Equipment Setup | Notes

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America's Largest Non-Profit Health Care Program

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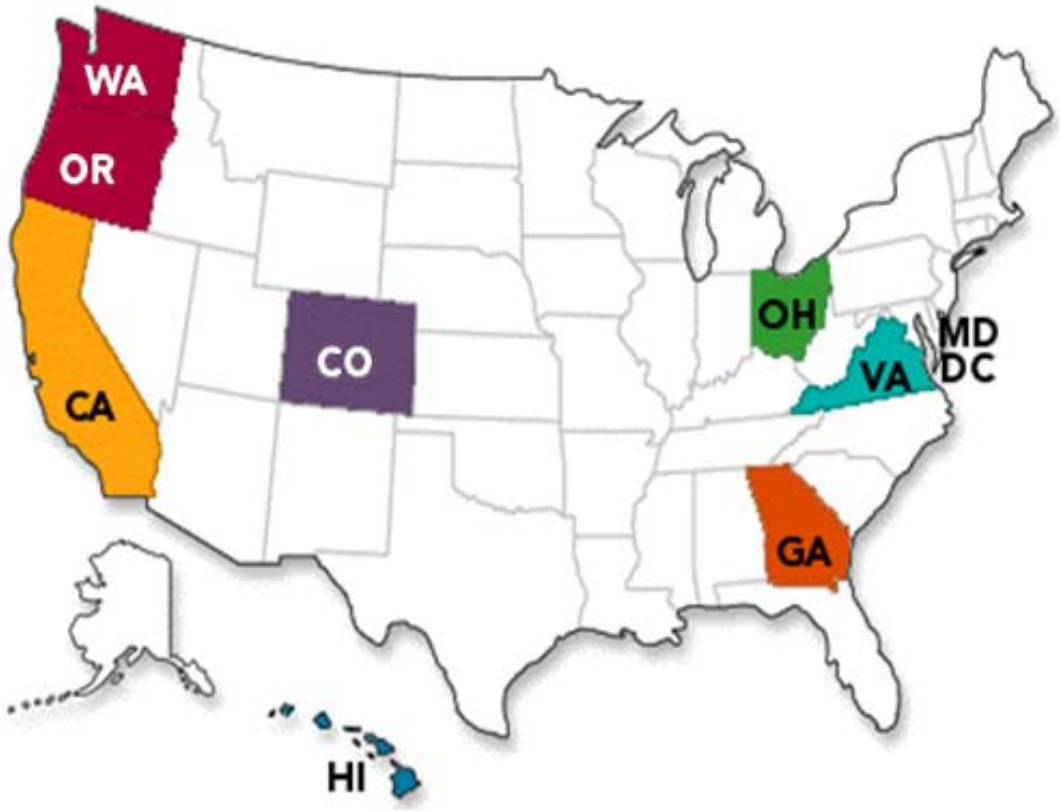

- Integrated health care delivery system
- 8.7 million members
- 14,000 physicians
- 160,000 employees including 41,000 nurses
- 8 regions in 9 states and D.C.
- 32 hospitals and medical centers
- 421 medical offices
- $38 billion operating revenue (2007)

A focus on information technology

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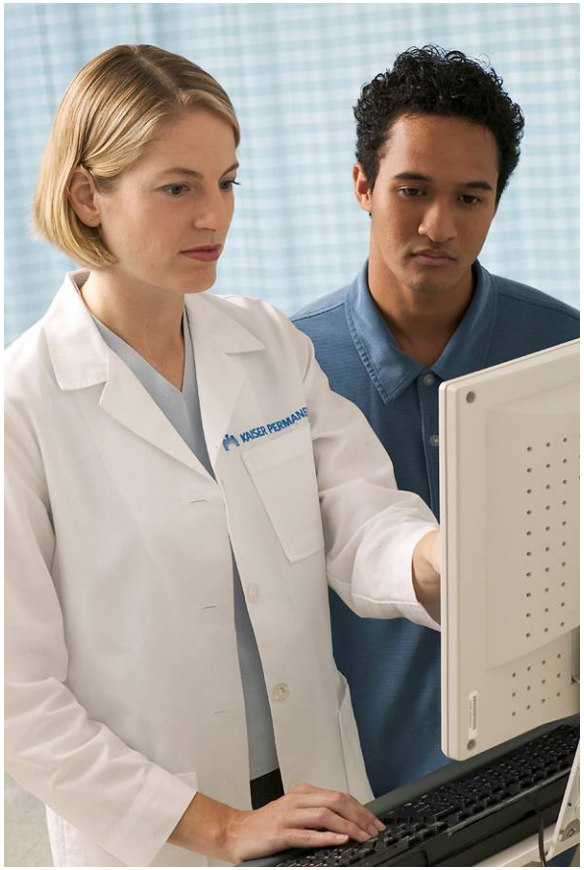

Kaiser Permanente has made a multibillion dollar investment in KP HealthConnect, a secure nationwide electronic data system that is:

- More than just an electronic record
- A highly sophisticated information management and delivery system
- A programwide system that integrates the clinical record with appointments, registration, and billing
- A complete health care business system that will enhance the quality of patient care

Clinical decision support: SmartSets

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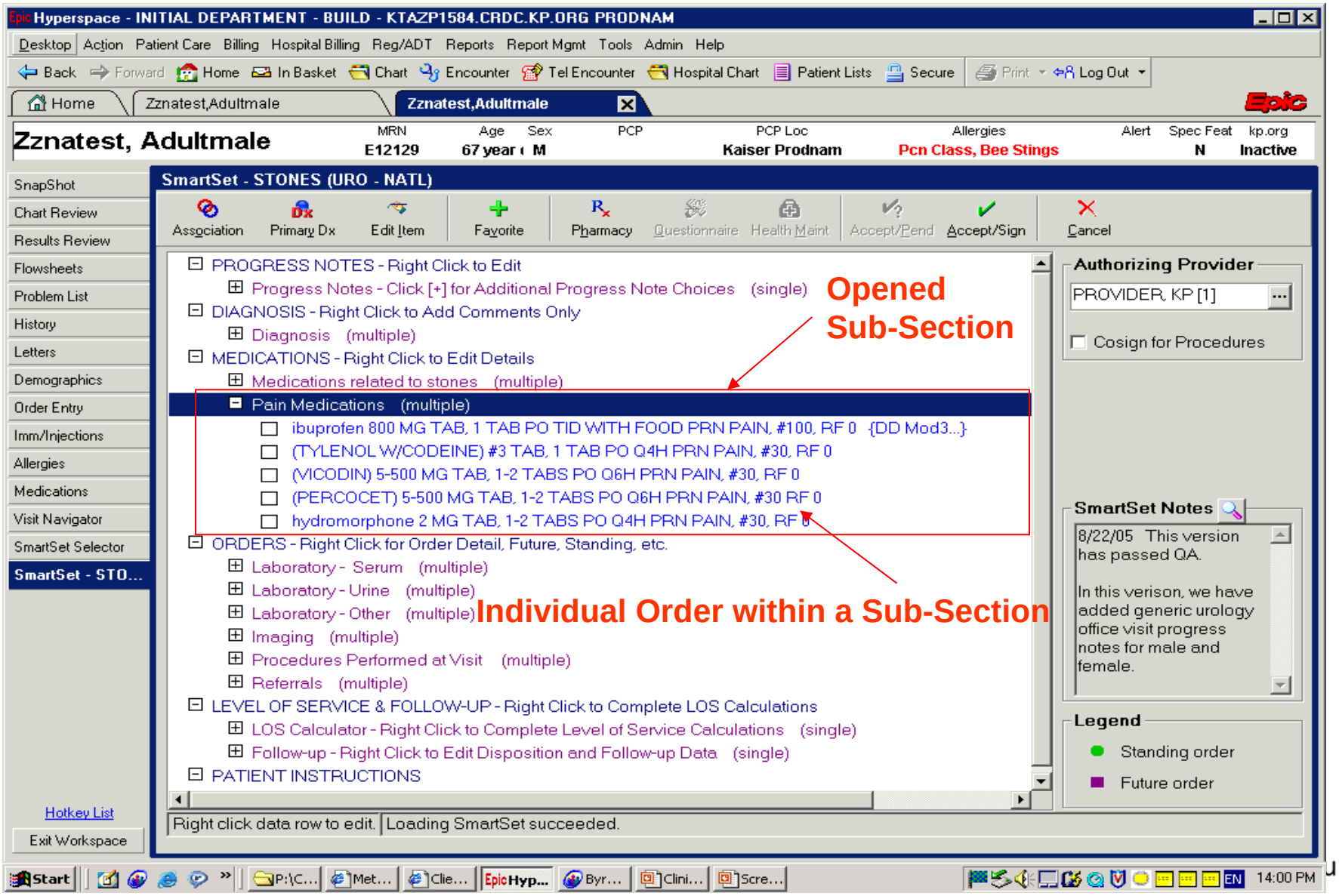

Clinical decision support: Best Practice Alerts

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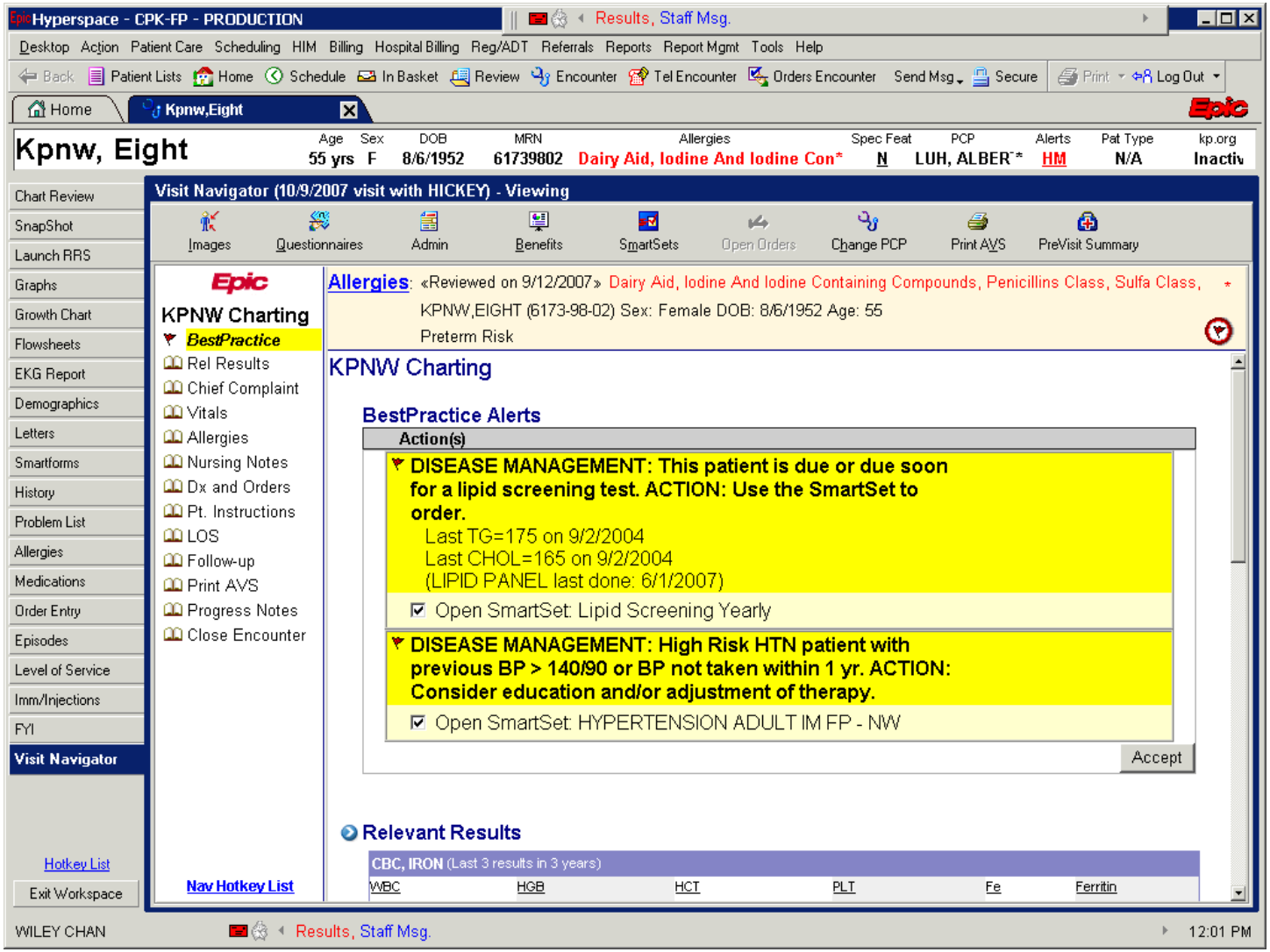
Best Practice Alerts	Pop-up that alerts clinicians to patient safety or health maintenance reminders, utilization reminders, and quality reminders.



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SmartText Used in Patient Instructions

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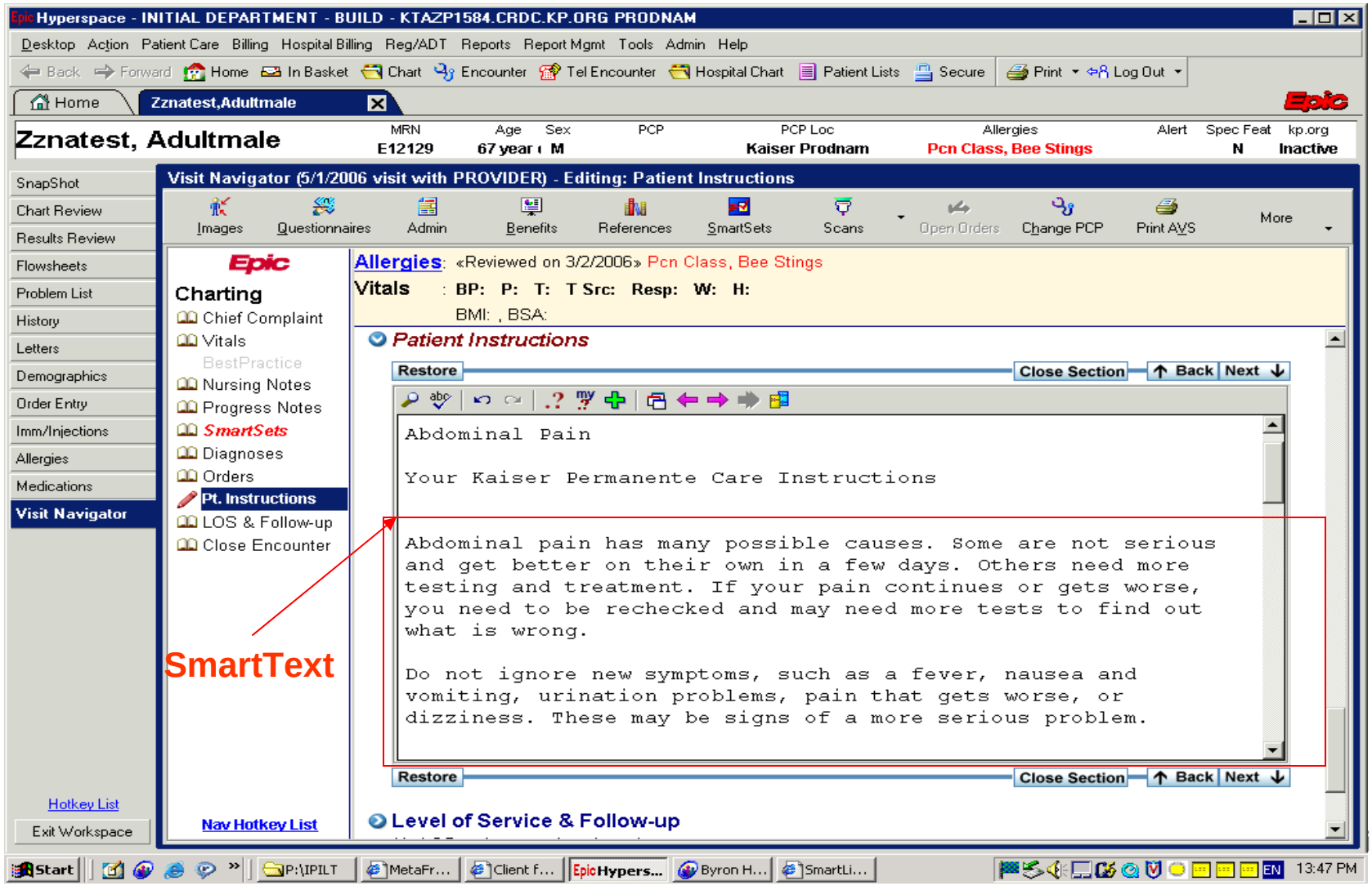
SmartText (ETX)	Text block that can include SmartLinks and SmartLists, and can be restricted by age/gender. Multiple Types (such as Progress Notes, Letter, Patient Instructions).



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kp.org: MyChart
Personal health record (PHR)

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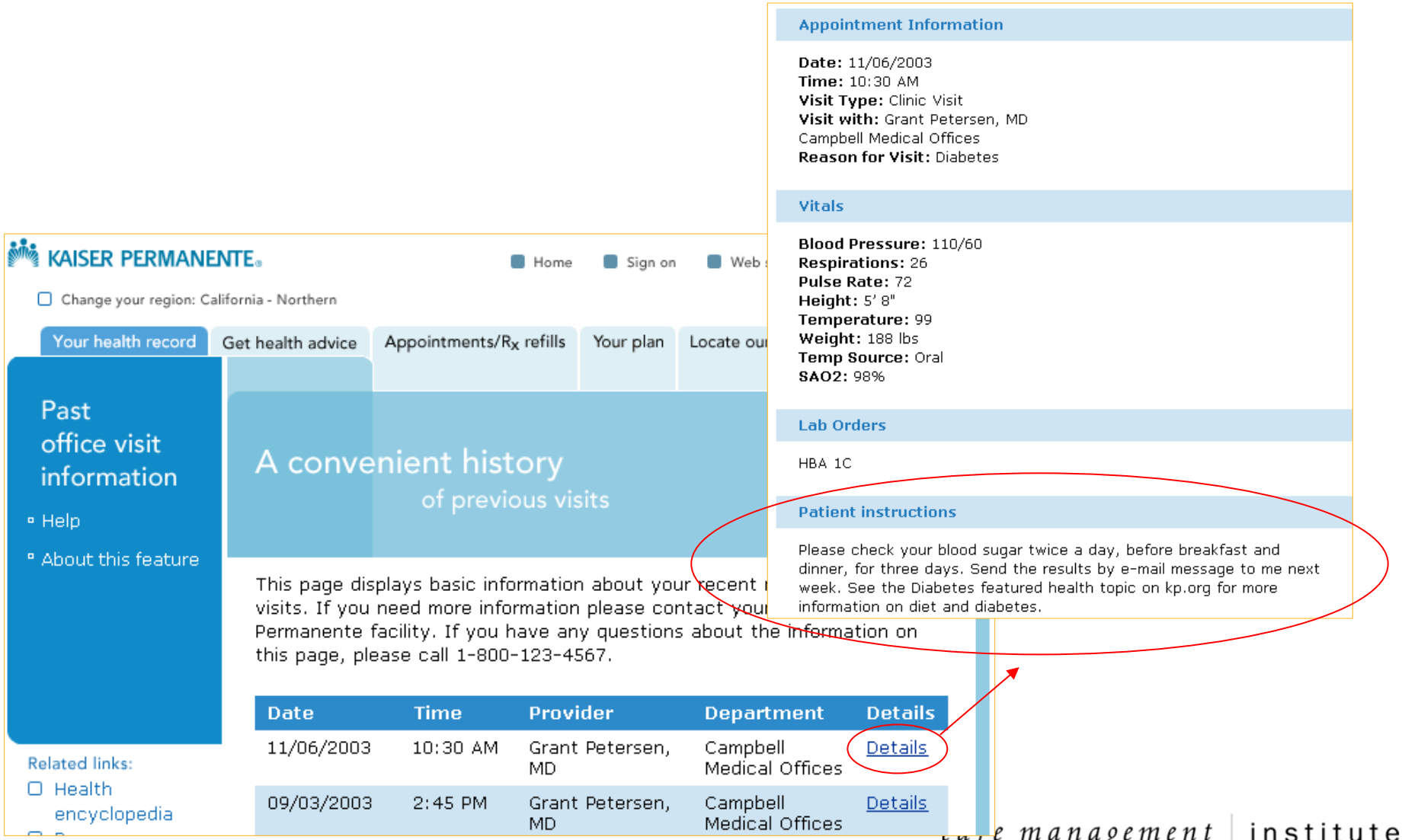

CDS Infrastructure: Groupers

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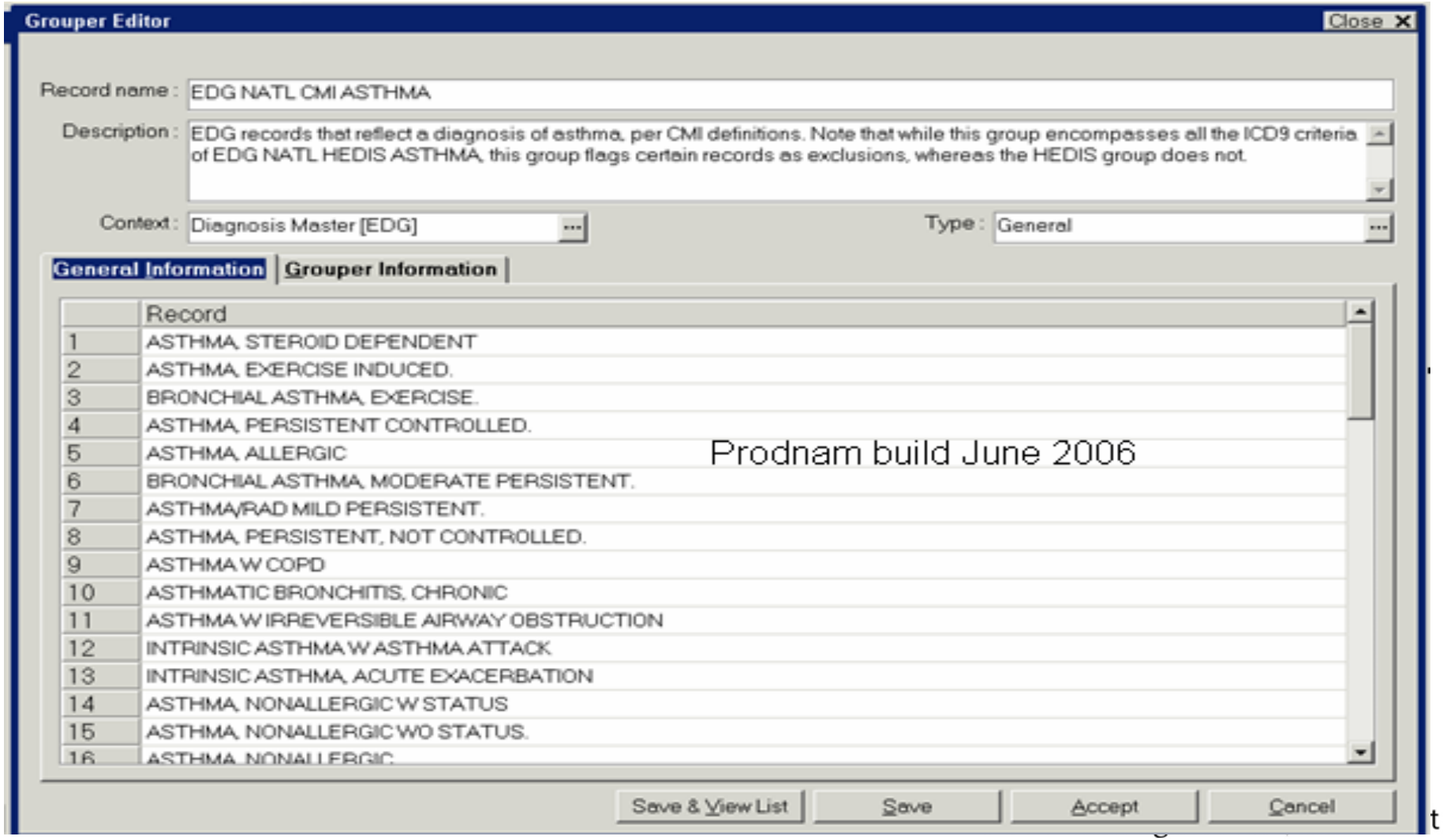
Groupers (VCG)	**Grouper master file that defines groups of other master files; for example, over 200 EDG terms for asthma can be placed into one VCG record.**



KP HealthConnect
Community Library

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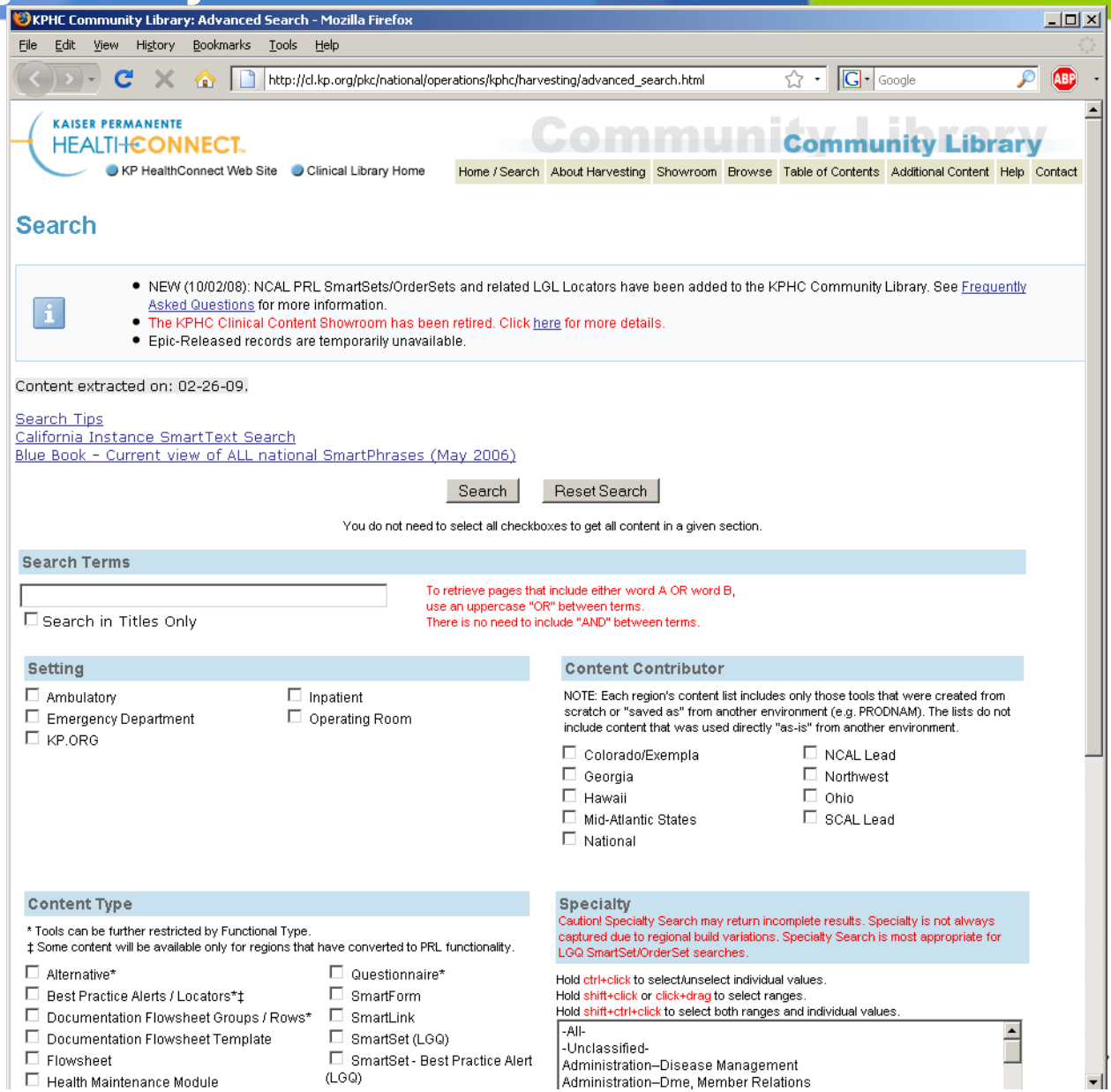

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KPHealthConnect is one of many IT Systems

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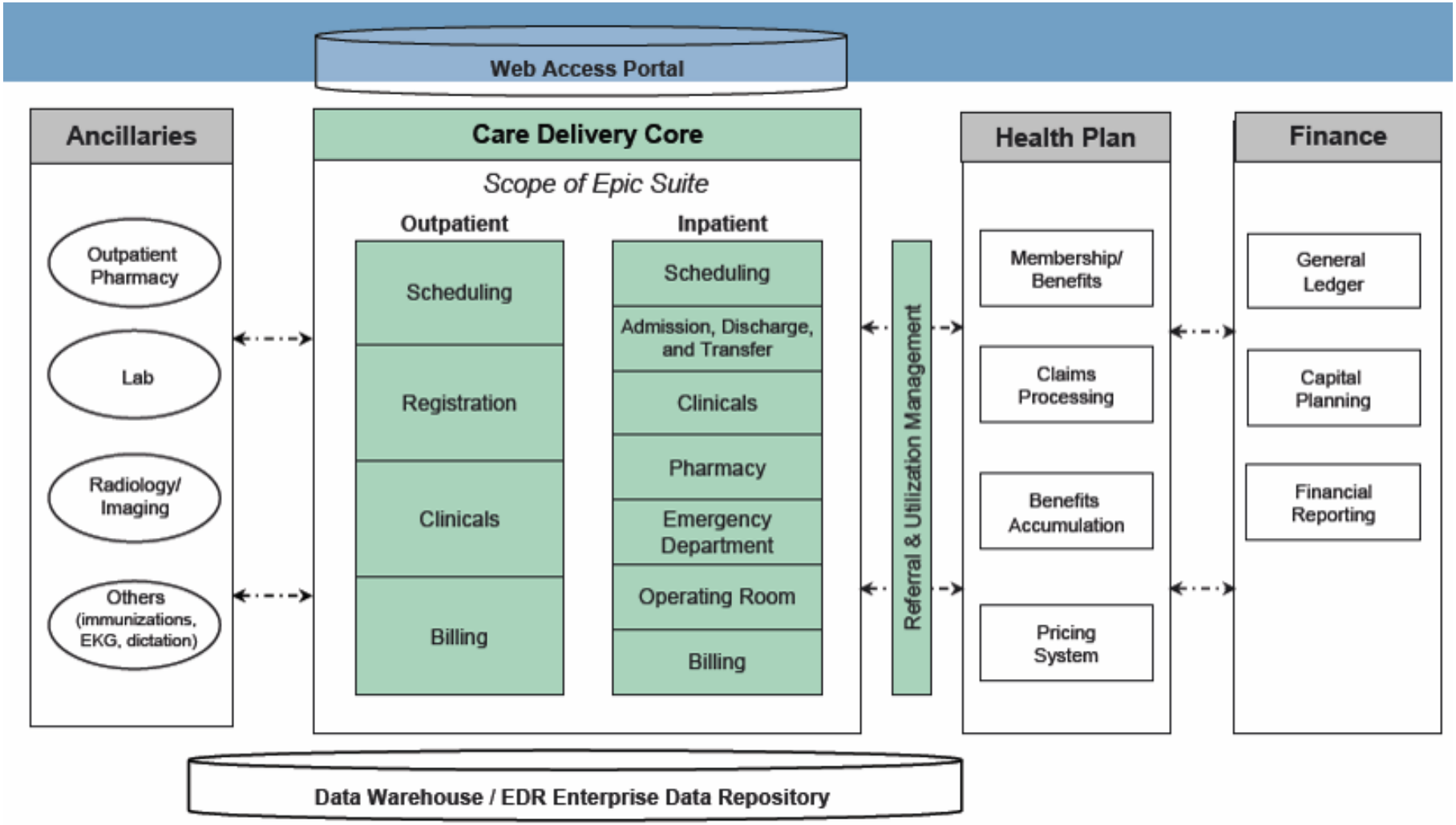

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Culture change: PCP responsibility for patients who do not present

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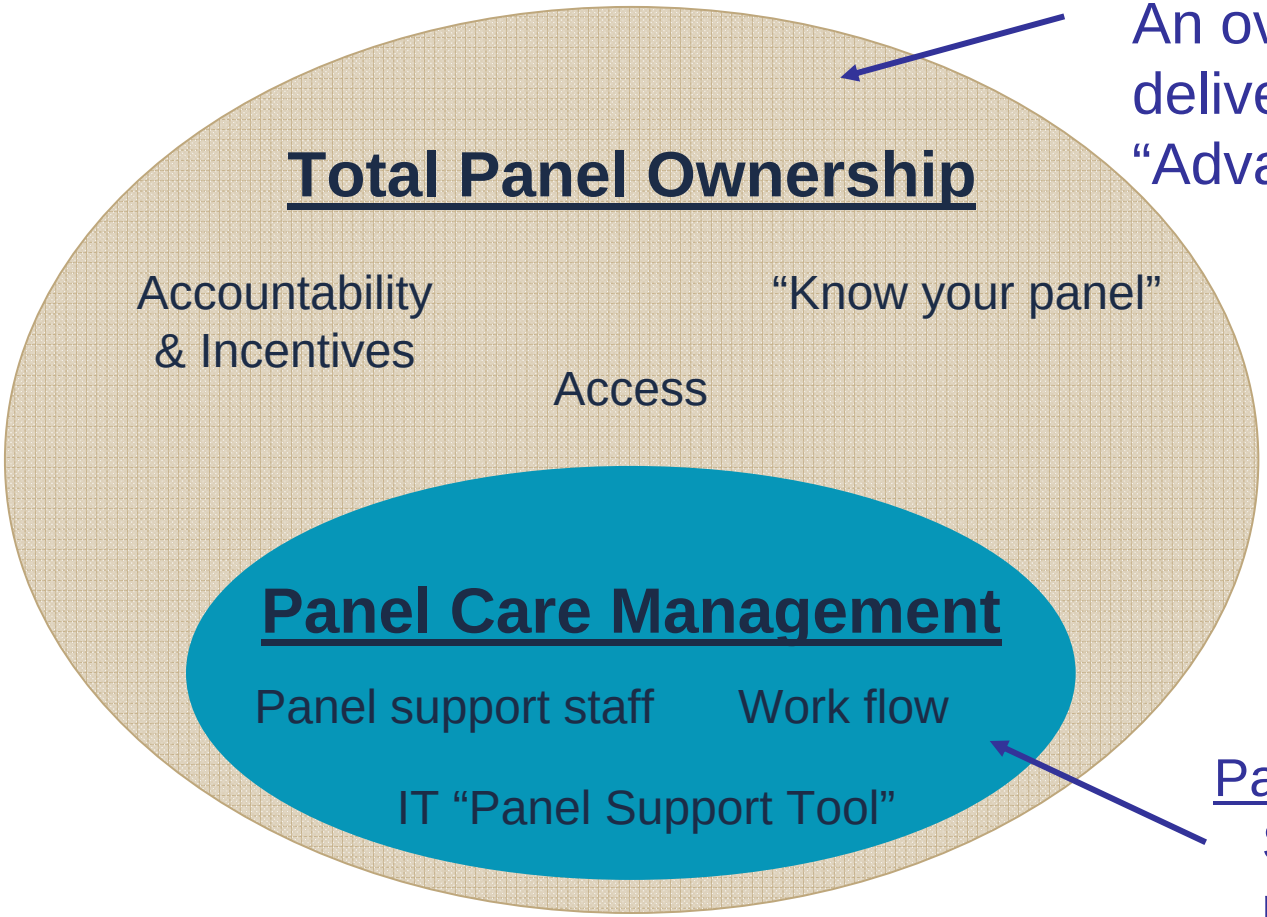

Total Panel Ownership:
An overall approach to delivering care, based on "Advanced Medical Home"

Panel Management:
Specific tools and processes for finding and closing "care gaps"

Team-based population care

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Kaiser Permanente uses evidence-based guidelines, registries, and team-based population care for patients with chronic conditions, such as:

- **Asthma (2.7% of members)**
- **Cardiovascular artery disease (3.4%)**
- **Chronic pain (5.1%)**
- **Depression (7.1%)**
- **Diabetes (9.3%)**
- **Heart failure (1.4%)**
- **Obesity (30% of adults)**

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PHASE:
Proven preventive therapies

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4 Drug Interventions

- Antithrombotic medication
  - Treatment with aspirin 81-325 mg daily unless contraindicated
  - If contraindicated, use of clopidogrel is recommended
- Lipid-lowering medications
  - Treatment with statin is recommended even if LDL-C is <100 mg/dL
- ACE inhibitors
  - Treatment with ACE inhibitor long-term unless contraindicated
- Beta blockers
  - Treatment with a beta blocker for members with CAD, PAD, and AAA unless contraindicated

PHASE
PREVENT HEART ATTACKS AND STROKES EVERYDAY

Controlling 3 risk factors

- Blood pressure
- Lipids
  - Statin dose sufficient to bring LDL-C levels < 100 mg/dL
- Blood glucose control
  - HgA1c < 7.0 is optimal for members with diabetes

4 Lifestyle Changes

- Tobacco Cessation
- Physical Activity
- Healthy Eating
  - Recommend a diet rich in fruits, vegetables, legumes, nuts, whole grains, and n-3 polyunsaturated fat
- Weight Management
  - Weight management reduces multiple risk factors

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Panel Management process

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People

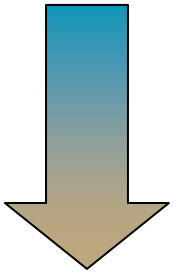
Dedicated PCP time Support staff (MA, RN), protected time

Process

Identifying patients with care gaps and conducting outreach

IT Tool

Internally developed, linked to electronic data sources



Generate list of patients, by care gaps → Prepare clinical data summaries → Review patient status, decide on treatment → Execute orders, communicate

RN or other licensed staff – clinic-based or centralized

Primary Care MD

Clinic-based staff

Early signs of success

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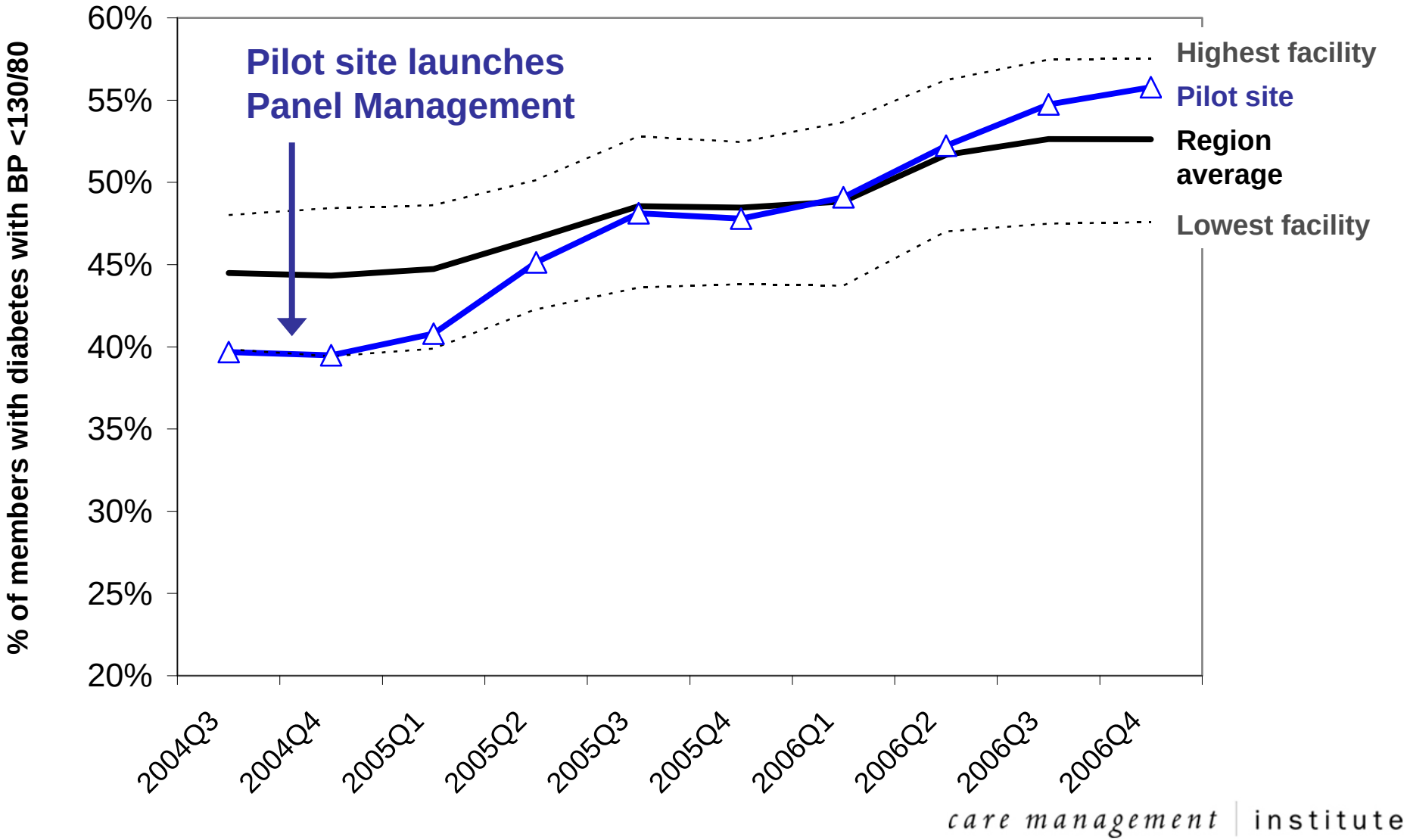
Diabetes - Blood Pressure Control



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Key features in the model of care

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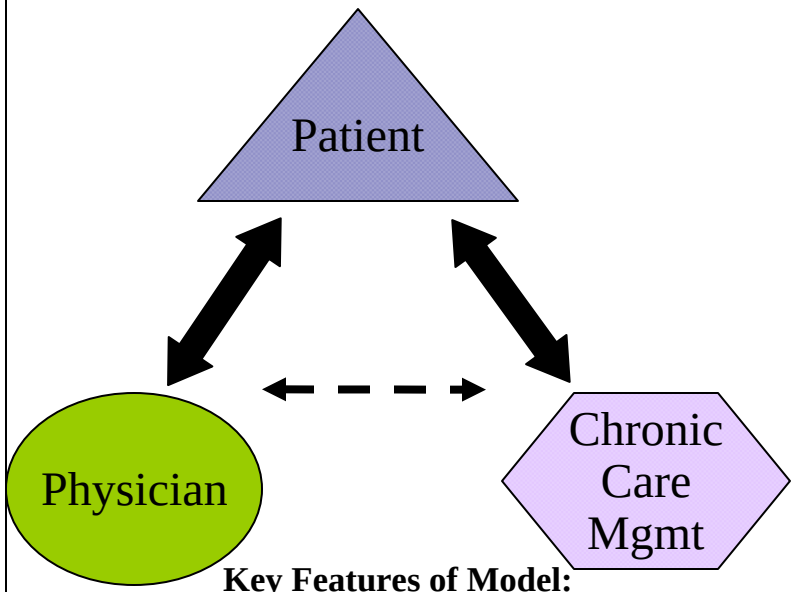
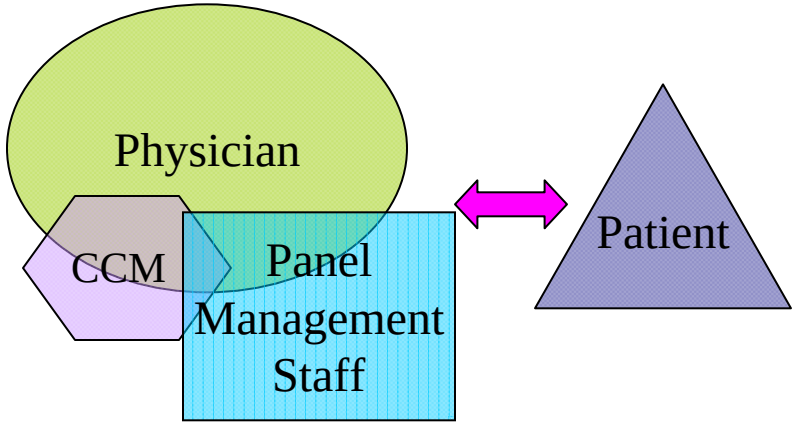
Previous Model



Key Features of Model:

- Physician care primarily reactive – visit based and responsive
- Limited capacity for risk stratification or proactive care management interventions
- Care management program siloed (more or less) from primary care team with ancillary staff "offloading" physician
- Minimal communication and coordination between physician and care manager

Panel Management



Key Features of Model:

- Physician and team proactive, accountable for clinical outcomes and patient satisfaction
- Systematized process for coordinating physician and panel management team activities
- Increased capacity & options for chronic care, leveraging physician time and ancillary staff support to extend physician
- Sophisticated I.T. infrastructure supporting population-level chronic care

Population care gaps

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Therapy Gaps

Therapy

Asthma	☐ Consider start/increase of inhaled steroids
Heart Protection	☐ Heart Protection (Statins, ACE-I, Aspirin) for High Risk Populations
Statins	☑ CVD & DM populations ☐ Based on 10yr CAD risk score
ACE/ARB	☑ CVD risk (HOPE and EUROPA trials) ☑ DM Nephropathy ☑ Heart Failure
Aspirin	☐ Daily Aspirin for High Risk Populations ☐ Based on 10yr CAD risk score
Betablockers for	☑ Post-MI ☑ Heart Failure
Glycemic control	☐ Insulin consideration when A1c >9 and on Orals > 1yr ☐ Metformin consideration when BMI > 27 and A1c > 8
BP control - Consider adding BP meds when BP > 140/90	☐ High Risk populations ☐ Uncomplicated HTN
Osteoporosis	☐ Women 65+ with T-score =< -2.5 ☐ Post-fracture - osteoporosis per HEDIS

Monitoring Gaps

Chronic Condition - Monitoring

DM	☑ HbA1c screening due ☑ Renal screening due ☐ Eye screen due ☐ Foot screen due
High Risk Populations	☑ LDL screening for high risk populations due
Monitoring Meds (HEDIS)	☐ Annual Labs Due
CKD	☐ Lab(s) due - Creatinine, microAlb/Cr or UPr/Cr, Hgb, Lytes

Prevention Gaps

Primary Prevention

High Risk Populations	☐ Flu shot due (during flu season) ☑ Pneumovax due
General Population	☑ Mammo due ☑ Pap smear due ☐ Colorectal screening due ☑ Cholesterol screening due q 5yrs ☑ Tetanus shot due ☐ Osteoporosis screening due

A focus on health promotion

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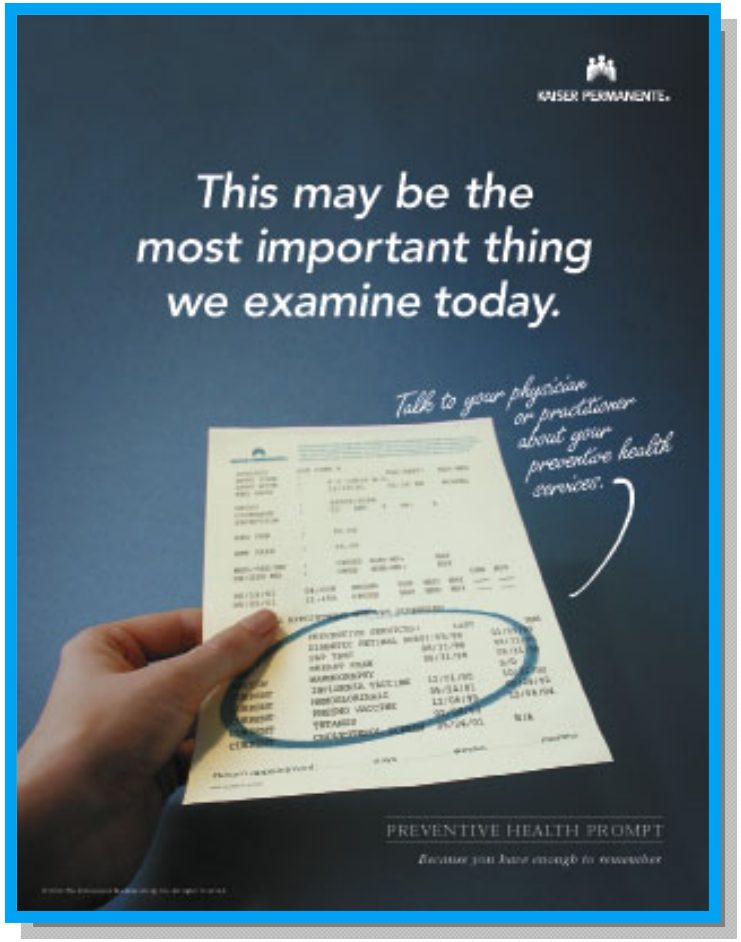
Preventive Health Prompt (PHP) printed at every visit to track preventive services. A shared tool with copy to patient and to clinician. Includes due dates for:

- Mammogram
- Sigmoidoscopy
- Pap smear
- Immunizations
- Cholesterol check
- Routine physical
- Pneumonia vaccine, etc.



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Whole-panel views –
vital signs for the primary care team

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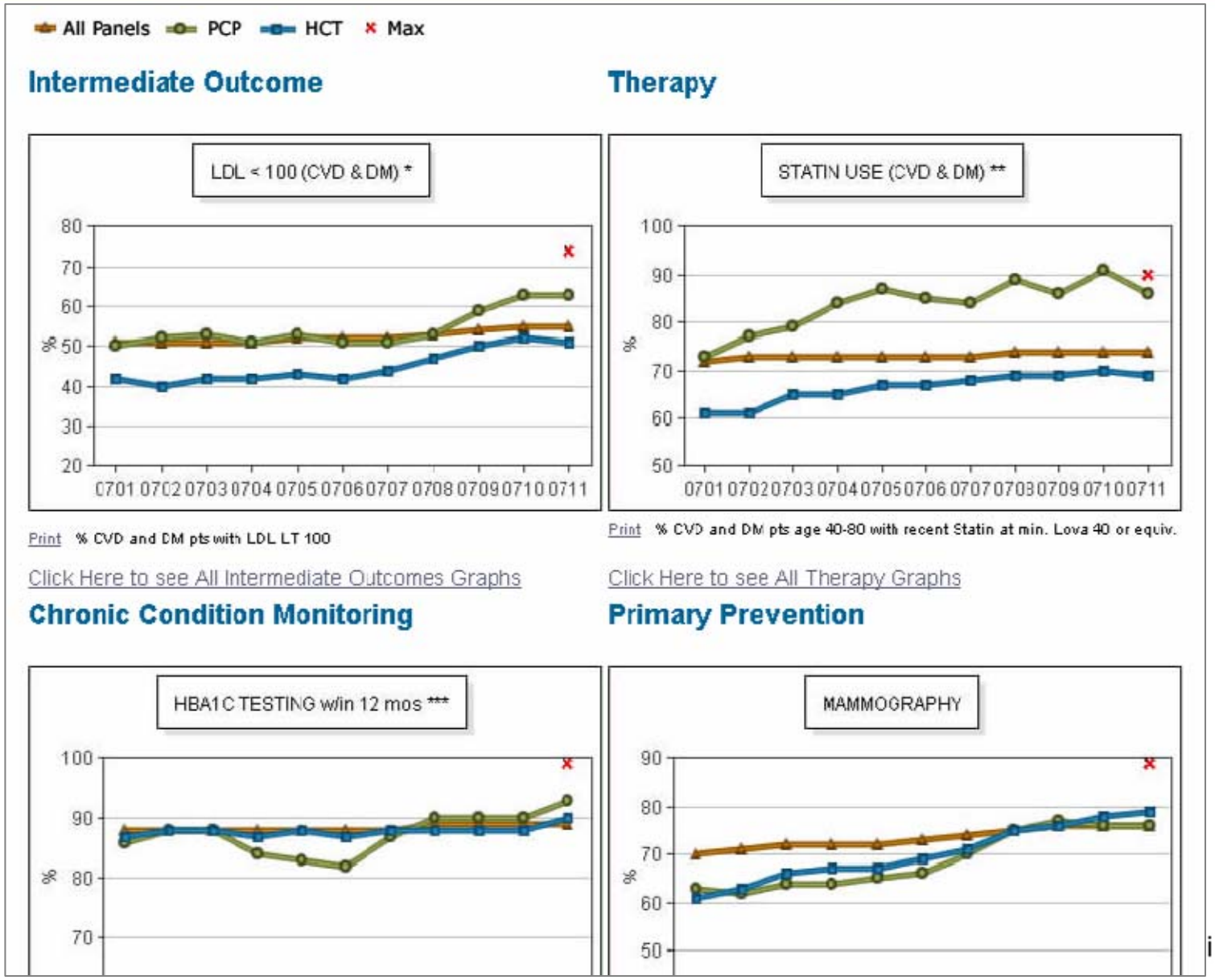

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Rapid Region-wide improvement after full transition to panel management

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HEDIS Measure Effectiveness of Care	Q4 2006	HEDIS 90th %ile	Q4 2007	Change
DM HBA1c Screening	90.8%	92.7%	93.5%	2.7%
DM LDL Screening	85.4%	85.4%	90.9%	5.5%
DM Retinopathy Screening	69.6%	69.3%	75.3%	5.7%
DM Nephropathy Screening	89.4%	91.2%	92.6%	3.2%
DM LDL <100 (Commercial)	46.6%	52.6%	52.8%	6.2%
DM LDL <100 (Medicare)	60.2%	64.5%	66.4%	6.2%
DM HbA1c >9% (poor control)	24.9%	< 20.4%	23.6%	1.3%
Breast Cancer Screening	82.0%	80.1%	82.9%	0.9%
Cervical Cancer Screening	81.4%	87.1%	84.5%	3.1%

Panel management – Qualitative results

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- Patients like it – they appreciate the outreach and reminders
  - "When someone reminds you of your health, it's really important, and I really appreciate it."
- PCPs feel more effective… but still feel crunched for time

  "Panel management doesn't make my day any easier, but it makes my day better."
- A surprise on staffing: The PMA role may be better suited to unlicensed medical assistants than to registered nurses
  - The PMA role can feel like a broadening of role for a medical assistant, but a restricted role for an RN
  - Physicians tend to lean on RNs to make routine clinical recommendations, but…

  "It sounded like the nurse and the doctor were not talking to each other. I don't want the nurse knowing something that the doctor doesn't know."

Spreading knowledge

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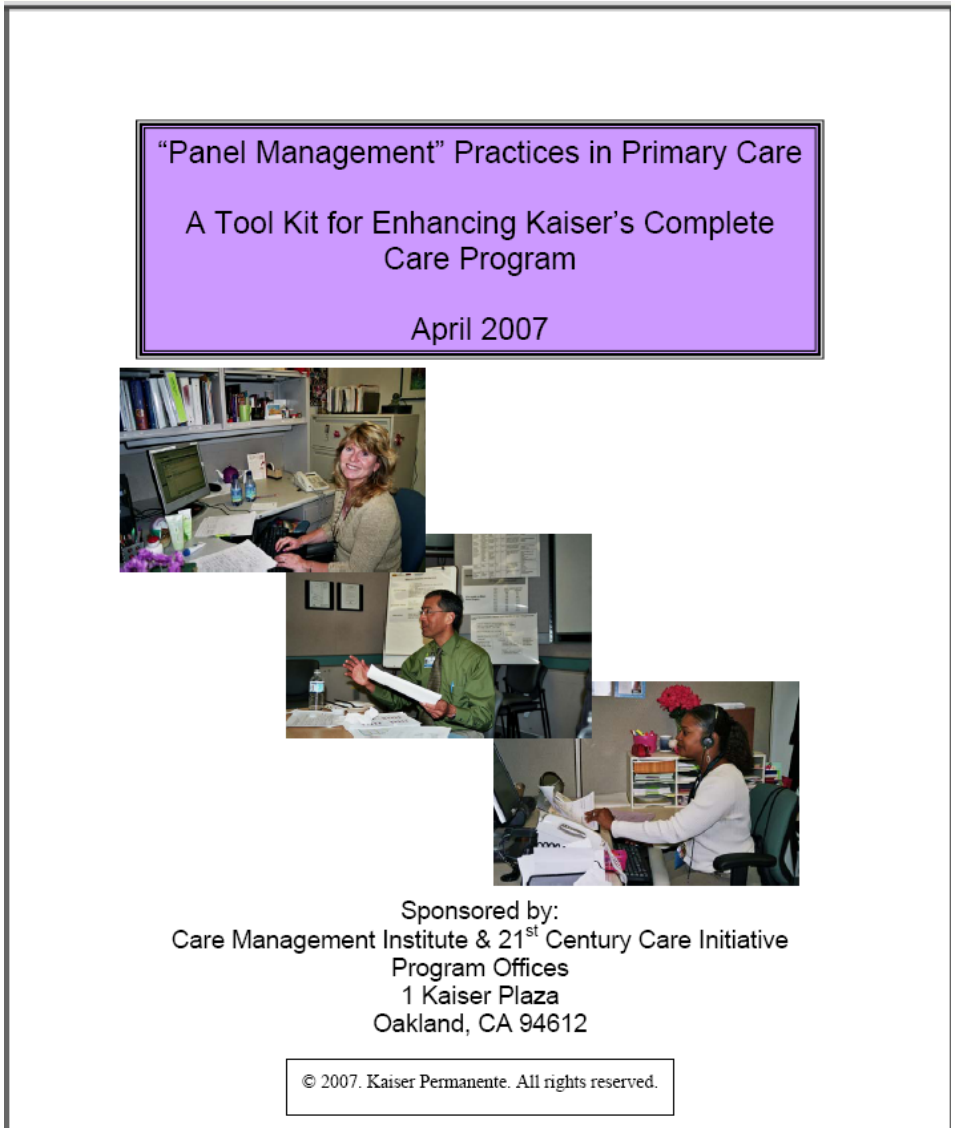
- "Understanding Panel Management: A Comparative Study of an Emerging Approach to Population Care." Neuwirth EB, Schmittdiel JA, Tallman K, Bellows J. *Permanente Journal* (2007) 11:3
- http://xnet.kp.org/permanentejournal/SUM07/panel-management.html



"Panel Management" Practices in Primary Care

A Tool Kit for Enhancing Kaiser's Complete Care Program

April 2007

Sponsored by:
Care Management Institute & 21st Century Care Initiative
Program Offices
1 Kaiser Plaza
Oakland, CA 94612

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Case study #1: Complex Chronic Conditions

Background on KP and informatics

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Patient-centered transitions design

CMI & Innovation Consultancy

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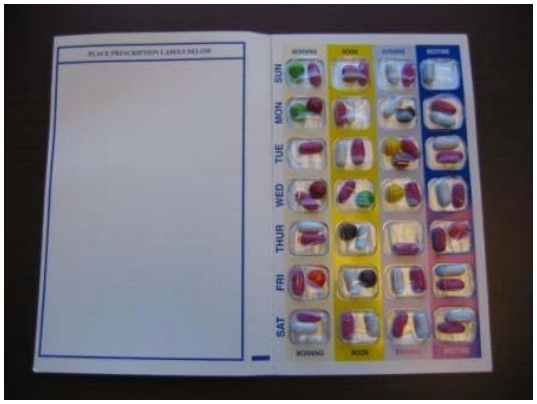
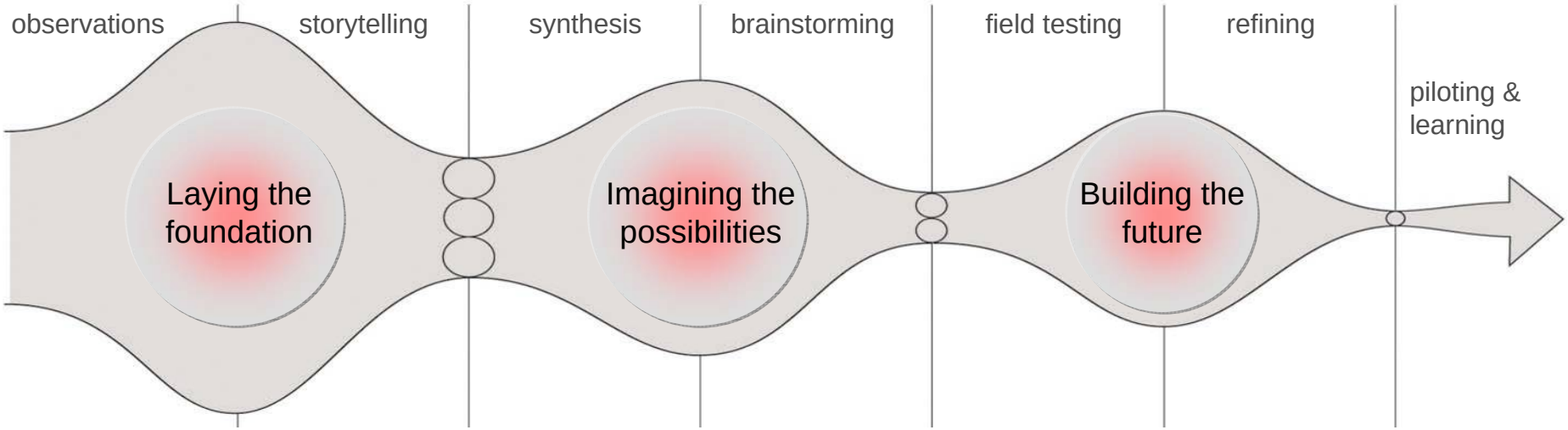


May - Jun

Aug 4-5
Deep Dive

Sep - Dec

Dec +



http://ideabook.kp.org/groups/pt-transitions

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2008 methodology breakthrough: Video ethnography

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Storytelling: “My blood pressure is lower than your blood pressure”

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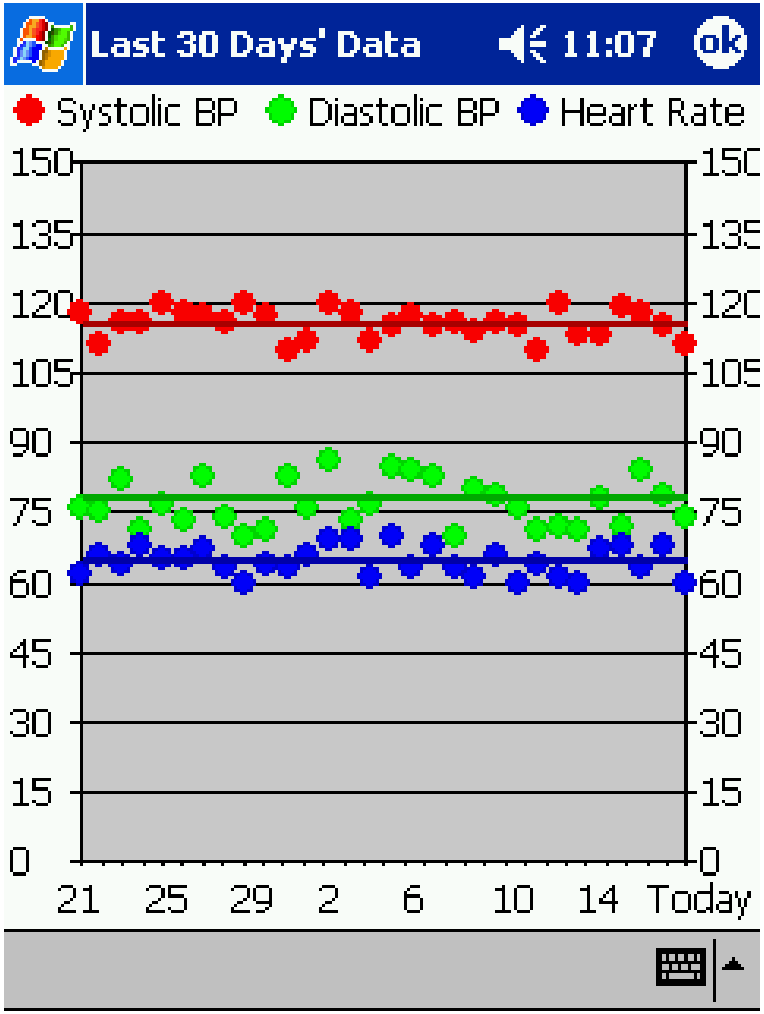

- One way Dr. Kuyawe tries to keep his patients out of the hospital is by using the panel support tool
- He actually shows patients how they rate compared to other patients.
- “Everyone wants to be competitive,” he explains.
- He may show a patient their blood pressure on a graph and point out that it is the highest of his whole panel.
- No one wants this distinction so they will actually work harder to lower their blood pressure, for the end goal of coming back and seeing how they’ve moved lower on the graph.

Findings | The Patient Perspective

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- Patients focus on and value other things, not the transition itself:
  - they are concerned about their condition and "getting well", "going home" and "getting back to normal"
  - their hospitalization is an interruption of their normal life—it's an "artificial" setting
- "One foot out the door"
  - On the day of discharge, patients are emotionally focused on going home and are not capable of efficiently absorbing information
- The discharge process is often a "bad ending"
  - lengthy and unpredictable time span
  - poor coordination between hospital floor and pharmacy
- Only after they get home and start to experience their recovery do patients really recognize and understand they face barriers to optimal recovery
  - care information that is skimpy or hard to understand and interpret in relation to their individual circumstances
  - complex medication regimes
  - re-contacting the right person or department at Kaiser
- Caregivers play a far larger role in managing "transition" and recovery than seems to be recognized by providers

Brainstorming & Enacting:
tools, roles, space, and processes

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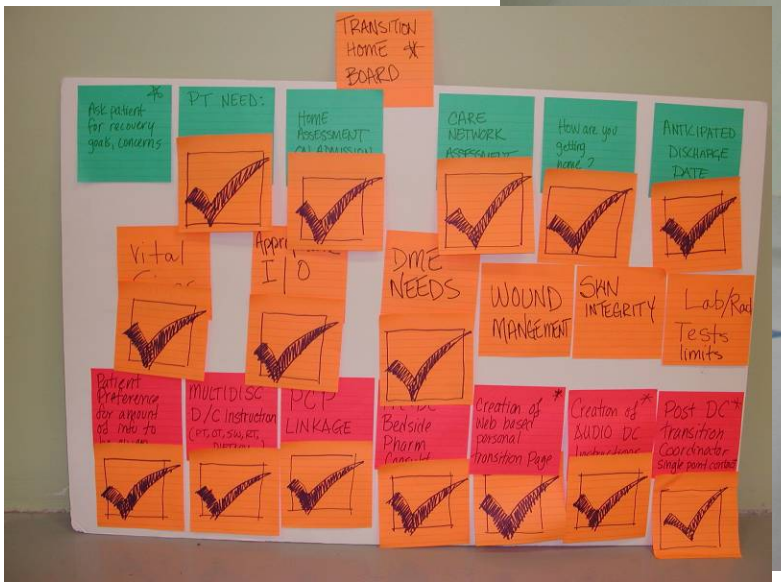

Field testing in West LA

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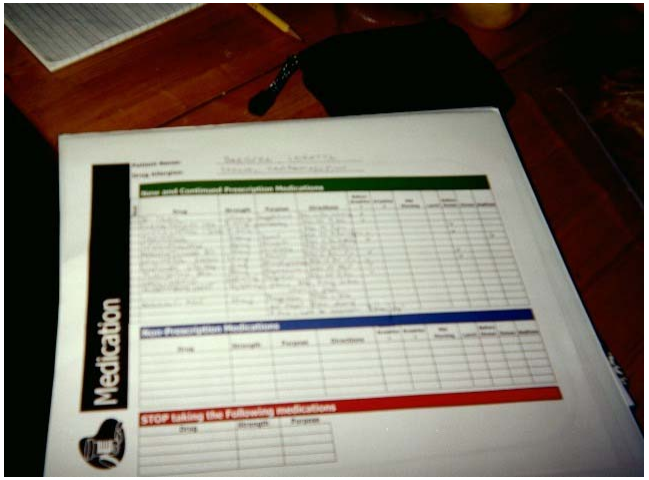

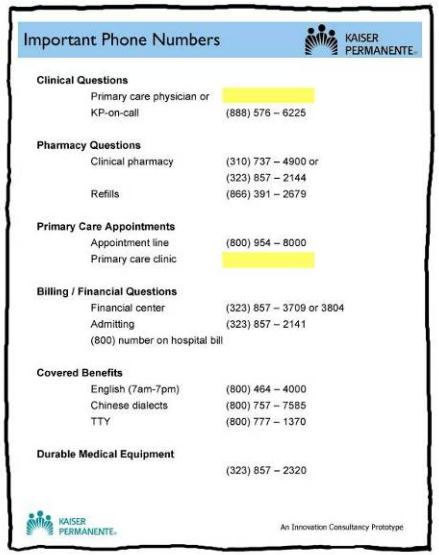

Ideas evaluated & field tested

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CONCEPT

An online listing of patient care and home needs.

Halted Idea - **ELECTRONIC REGISTRY FOR PATIENT NEEDS**

Caregivers are often overwhelmed and overtaxed with all of the patient care needs. Friends and family can sign up for these activities in order to help spread the responsibilities of the patient & caregiver's needs among many people.

Real-time knowledge management: Blogging

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Address http://nharfile002.har.ca.kp.org/tic

Transitions in Care

Care Management Institute (CMI) 2008 Initiative: From hospital

The Deep Dive

July 21st, 2008

We have completed the observations, shared stories and learnings with all of you in the regional sites, and now it is time for West Los Angeles, Colorado and Hawaii to come together for a 2 - day activity we call a "Deep Dive."

OBSERVERS are invited to the first morning of the Deep Dive, August 5th from 8:30-10:15 am.

During the Deep Dive you will:

1. Hear the themes of our patient centered observations

Favorites | Gmail - Inbox (2) - squibble... | uk west midlands - Google M... | The Abbey Hotel Gallery | KP IdeaBook: Innovation...

Posted by Chris McCarthy on Sep 24, 2008 11:25:40 AM

This prototype is gives a visual indicator to the patient (in the hosptial room) and care team as to what educational for the patient. The current categories are: basics, diet, medication, home needs and follow-up. Each section has t indicate the level of understanding : **Red - not taught,** Yellow - taught, **Green - understood.** In the picture below the "tiles" that are on the left and right of the Care Board.

PLAN: Have one patient try the JHB protytpe for one hosptial stay.

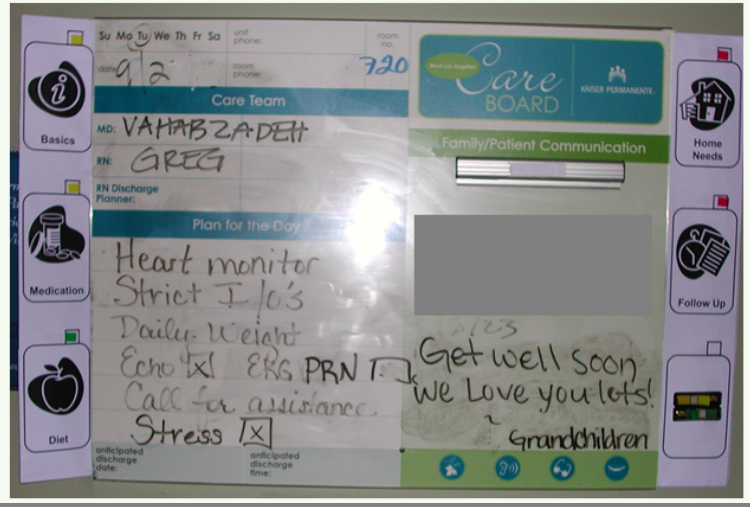
PREDICATIONS: 1) Nurses will have a hard time incorporating new tasks into their workflow. 2) Patients will like the information display.

DO: Posted one journey home board in a CHF's patient room, and backfilled one nurse to aid in prototyping and test the prototype.

STUDY:

Took 15 minutes to go ever all sections of the board
RN was surprised about how quickly she was able to do the education
RN used board as visual to teach each section
RN used the red/yellow/green as a guide to keep the patient engage
RN used the board to keep each section focused
Family loved that they easily could understand "where" in terms the patient is in their understanding of info
Family liked that they quickly understood what the baseline was
Family/patient liked the simplicity

ACT Plan test board with two patients and two nurses who are on the roster week of 9/29



Suggest Ideas

Support Forum

Internet

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Our approach

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- What's distinctive about our approach?
  - Partnership among improvement, innovation, and evaluation
    - Evaluation not arms-length, but with sufficient independence
  - Relevance and timeliness
  - Patient focus
    - Voices of Our Members

Questions?

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Thank you!

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