

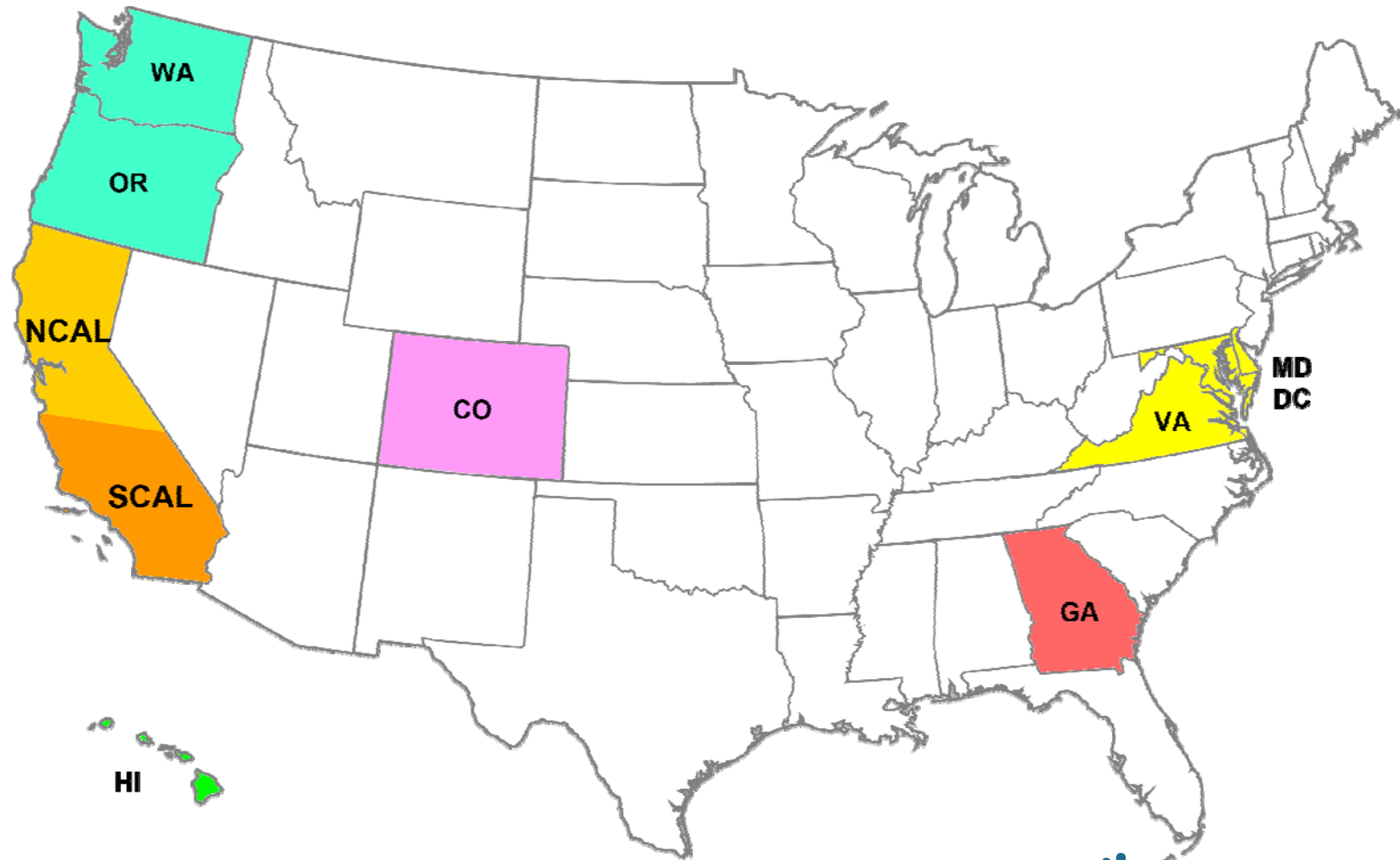


HealthCare Systems Kickoff Meeting-INCOSÉ

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Kaiser Permanente

Eight Regions



Kaiser Permanente

Southern California

3.762 Million Members

209 Medical Offices

14 Hospitals

6,035 Physicians

20,393 Nurses

61,897 Employees

US health care system

- 100,000 deaths per year in hospitals due to errors
- Costs more than any other country
- Outcomes are one of the lowest among developed countries

Lack of systems

- Most physicians open a “practice”
- There are few systems in place in the “practice”
- 2/3 of physicians admit to not having confidence in how they manage lab results
- Lack of systems allows for suboptimal outcomes
- Culture of physician autonomy

Lack of systems in lab testing

- Physician orders a lab test
 - Patient fails to go the lab to get it done
 - At KP this is 1.4M patients per year
- Physician gets lab test result back
 - Result either not read or acted upon

Difficulties in patient management

- Humans are generally not good at management large amounts of information accurately
- The large amount of patient data needs to be correlated with large amounts of medical knowledge
- Most physicians operate at a 2 sigma level or less

Issues in patient management

- Patients may have multiple diseases, be on large numbers of medications, and have massive medical records with hundreds of laboratory tests and dozens of imaging studies
- Medical records are usually not shared among physicians
- Medical documentation is not standardized, illegible, and the location of information haphazard
-

Evidence-based Medicine

- Research

- 50% of all treatments delivered not supported by evidence
- Literature emphasizes efficacy, not effectiveness
- Focus on the individual vs. the average
- More head-to-head studies

Knowledge management

- randomized controlled trials have
- errors in identifying the statistical methodology, describing which patients were eligible for the trial, and describing important methodologic issues such as whether the studies were blinded and how patients were allocated to interventions.
- A significant percentage of the time, initial studies are either contradicted by subsequent studies
- Most physicians are not well trained in statistics and statistical errors are not uncommon in publications
- Lastly, concern has been expressed that financial relationships between investigators and vendors may influence the "results" of research publications..

Medical Education

- Mostly based on memorization of large numbers of facts
- 50% of what is taught is incorrect
- Little to no systems thinking

PCAST: BETTER HEALTH CARE AND LOWER COSTS:

ACCELERATING IMPROVEMENT THROUGH SYSTEMS ENGINEERING

- Accelerate the alignment of payment incentives and reported information with better outcomes for individuals and populations
- Accelerate efforts to develop the Nation's health-data infrastructure
- Provide national leadership in systems engineering by increasing the supply of data available to benchmark performance, understand a community's health, and examine broader regional or national trends.
- Increase technical assistance (for a defined period—3-5 years) to health-care professionals and communities in applying systems approaches.

PCAST

- Support efforts to engage communities in systematic health-care improvement.
- awards, challenges, and prizes to promote the use of systems methods and tools in health care.
- Build competencies and workforce for redesigning health care.

Systems Science and Health Care

- What is the goal of the system?
- What is the system?
- What should we work on?

Crossing the Quality Chasm - Six Aims

IOM Quality of Healthcare in America

Safe

Effective

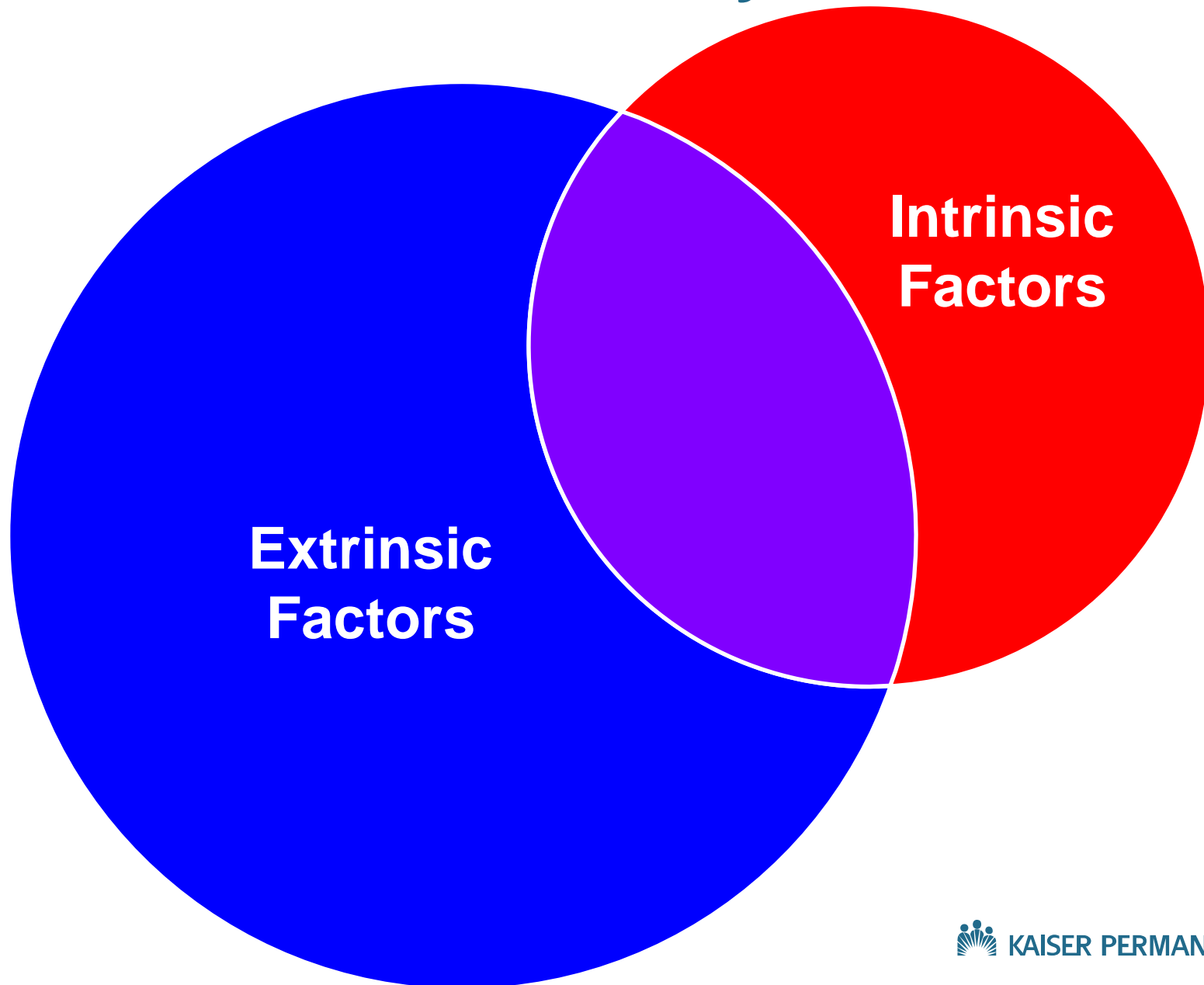
Patient Centered

Timely

Efficient

Equitable

What is the health care system?



Is this part of the health care system?

- 10% of Kaiser members prefer to speak Spanish
- Literature shows that if the physician and patient do not speak the same language outcomes are compromised even when interpreters are used.

Language disparities

LEP patients are more prone to

- Medical error
- Extra diagnostic testing
- Overly aggressive hospital admissions
- Health disparities
- Miscommunication issues



2009

Language Concordance

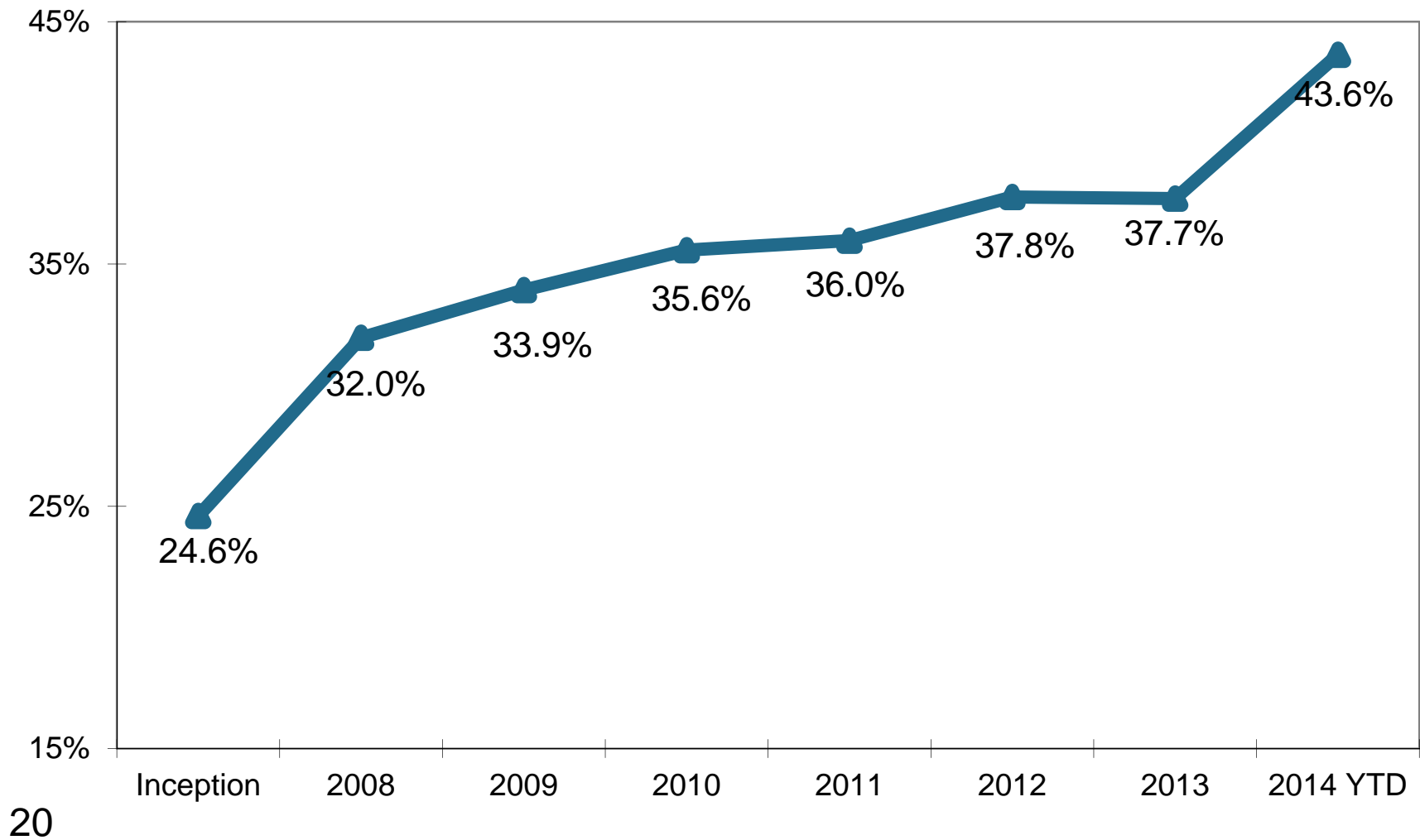
Language concordance

Exists when a bilingual physician is fluent in the language that his/her patient prefers to speak

- Physicians pass a standard language test
- Physicians have option to increase the % of LEP patients in practice
- Annual incentives to qualifying concordant physicians
- 23 language fluency programs offered

Primary care program trends

Concordant Visits

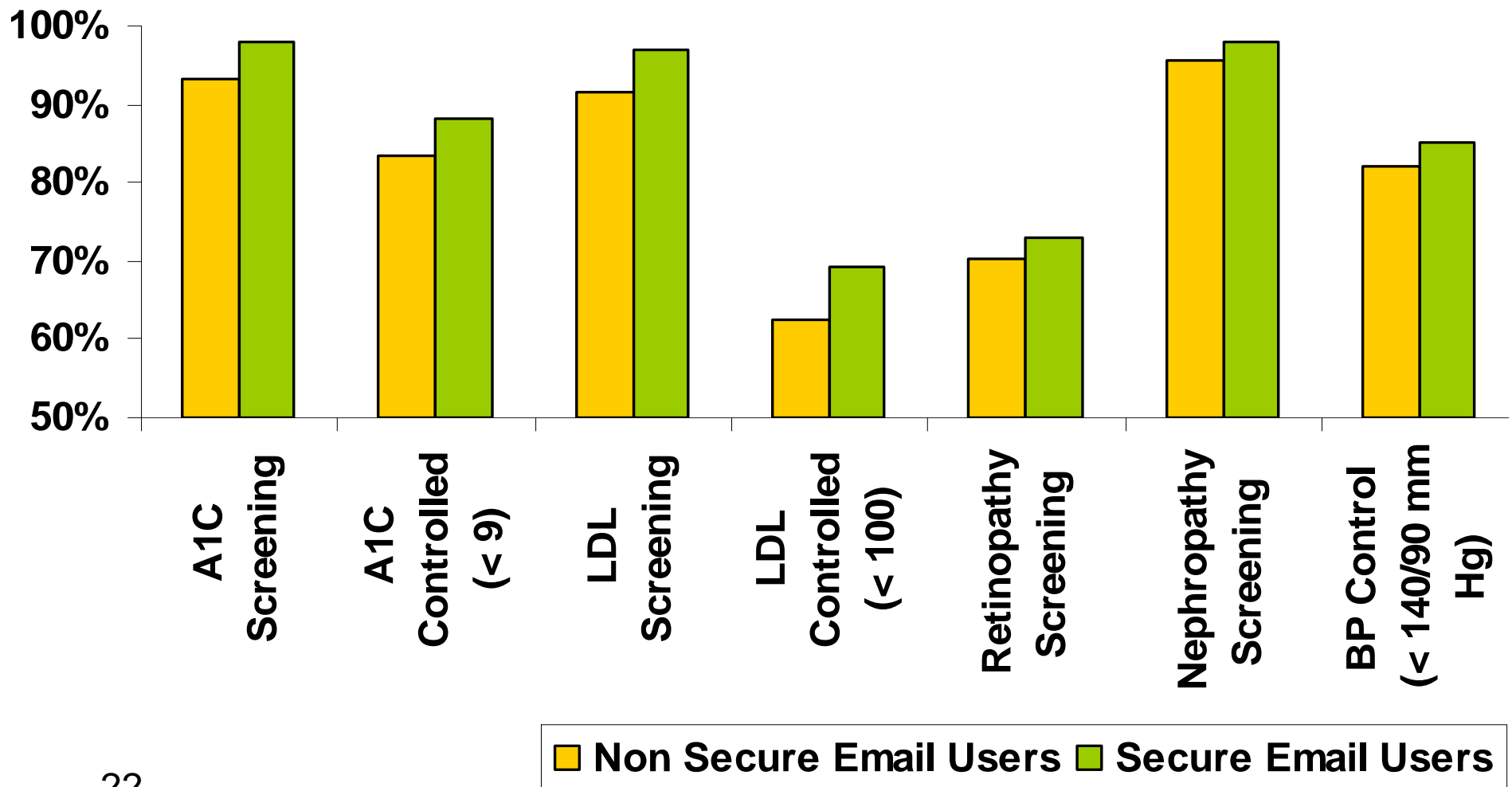


Patients are the main part of the system

- Patients take medications, not the physician
- Patients and not physicians :
 - undergo treatment
 - make follow up appointments
 - decide when to call a physician
 - describe their symptoms
 - Get cancer and other health screenings
- Lifestyle issues drive most health care costs
 - Smoking
 - Obesity
 - Lack of exercise
 - Seat belts

Patients as part of the system

Matched Control Study: Secure Email Users vs Non-Users



Multiple participants= Suboptimization + poor handoffs+ waste

- patients
- Physicians vs specialists
- Multiple departmental units
- Multiple disconnected practices
- Multiple disconnected ancillary services
- Multiple disciplines
 - Nurses, pharmacists, technologists, physical therapists, others

Making the Business Case for Specialty POE

Opportunities for Breast Cancer and Diabetes Management in Adult Primary Care

Test	Total	Seen in Primary Care	%
Needing Mammogram	47,294	18,222	38%
Needing A1c test	10,530	3,911	37%

Approximately 60% of members seen in Specialty Care

Organizational Change and Learning

Complete Care at Kaiser Permanente: Transforming Chronic and Preventive Care

Michael H. Kanter, MD; Gail Lindsay, RN, MA; Jim Bellows, PhD; Alide Chase, MS

The Chronic Care Model (CCM) aims to transform care for patients with chronic illnesses through six interrelated system changes: health system, delivery system design, decision support, clinical information systems, self-management support, and community resources.¹⁻³ It has stimulated innovative models

Article-at-a-Glance

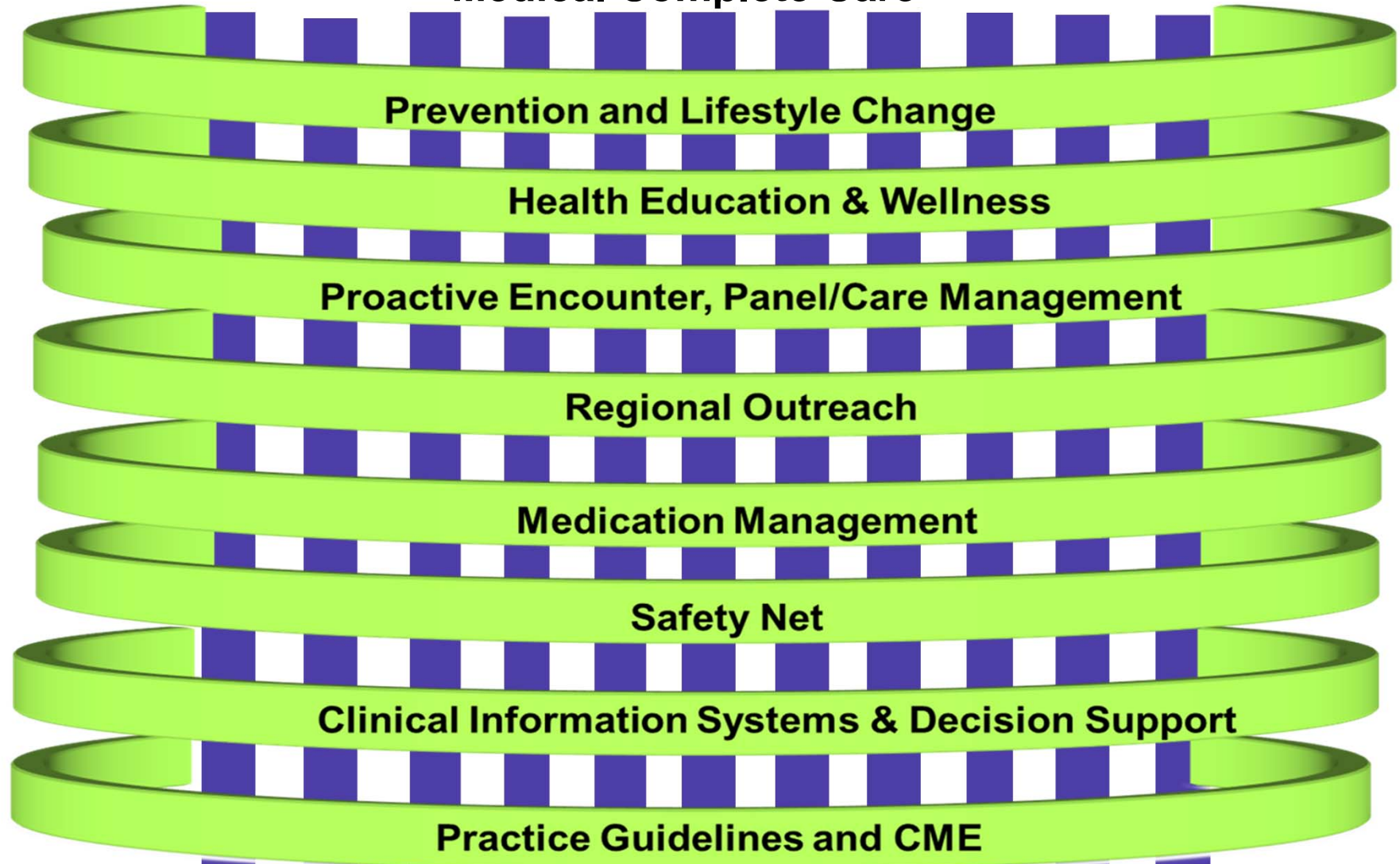
Background: In 2004 Kaiser Permanente Southern California (KPSC) recognized the potential to improve the quality of care. Healthcare Effectiveness Data and Information

Jt Comm J Qual Patient Saf 2013;39(11):484-494

Results	Commercial	Medicare
Total measures	25	26
Above US 90 th percentile at baseline	10 (40%)	11 (42%)
Above US 90 th percentile by 2012	19 (76%)	22 (85%)
Average KPSC improvement, baseline to 2012	13.3%	12.8%
Average improvement in US median, baseline to 2012	5.6%	5.4%

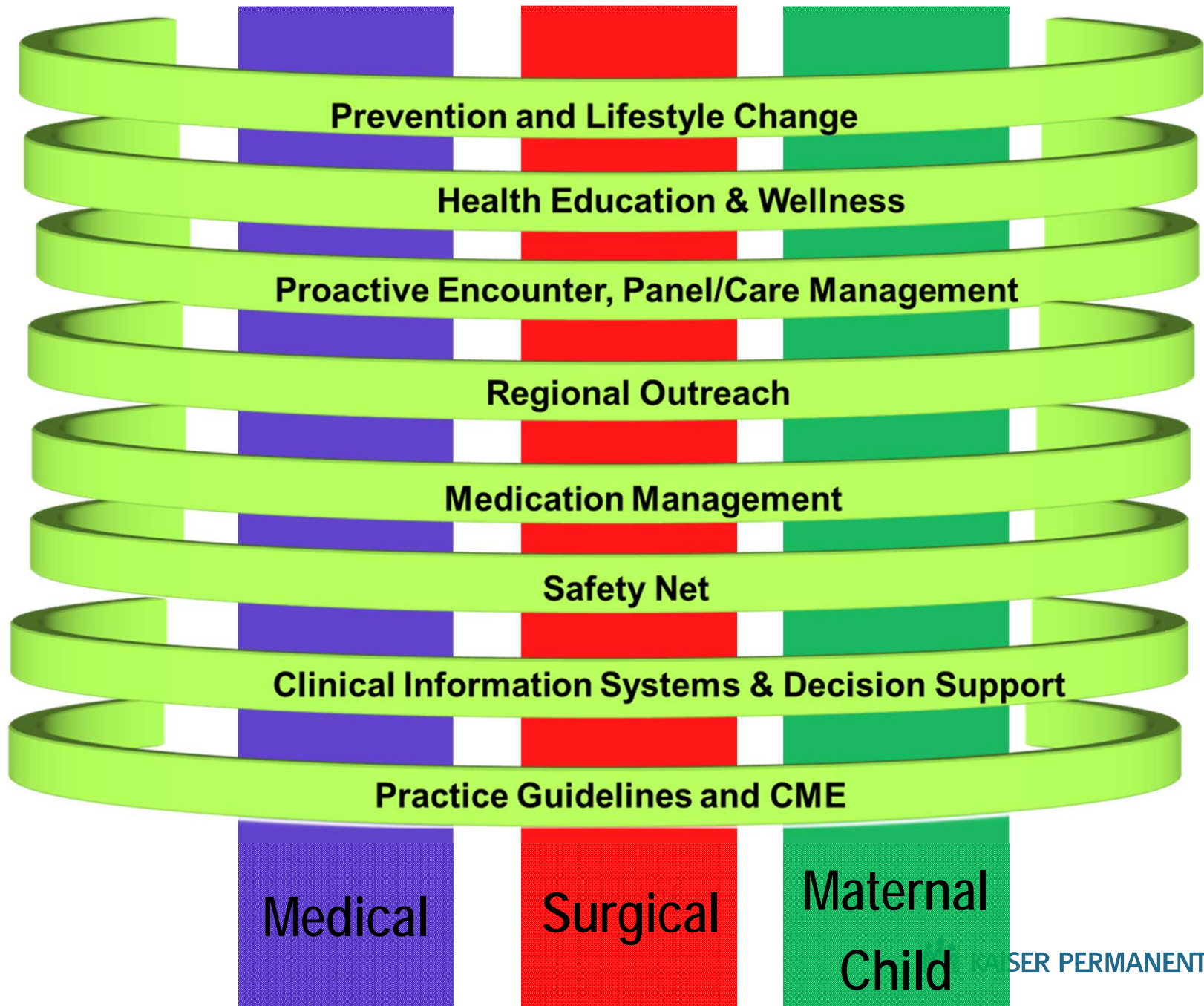
KPSC improvement was 2-3 times greater than median US health plans

Medical Complete Care

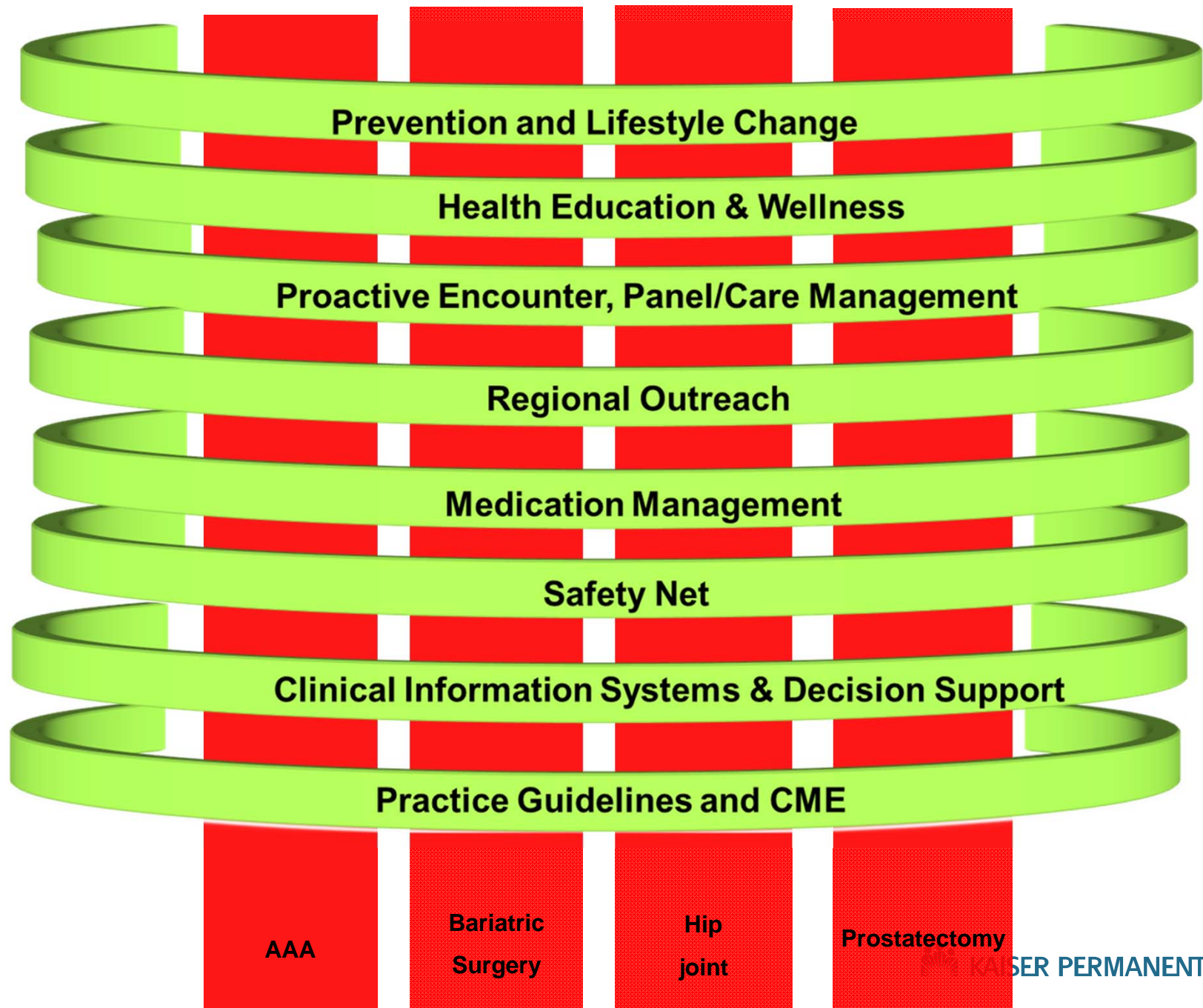


- Asthma
- Breast Cancer
- Cervical Cancer
- CAD
- CKD
- Colon Cancer
- COPD
- CVD
- Depression
- Diabetes
- Geriatrics
- Hepatitis C
- HF
- HIV
- Hypertension
- MS
- Obesity
- Osteoporosis
- Pneumonia
- Rare Diseases
- Sepsis

KP SCAL Complete Care



Surgical Complete Care



AAA

Bariatric
Surgery

Hip
joint

Prostatectomy

Suppose a new regional initiative was to be launched the following way

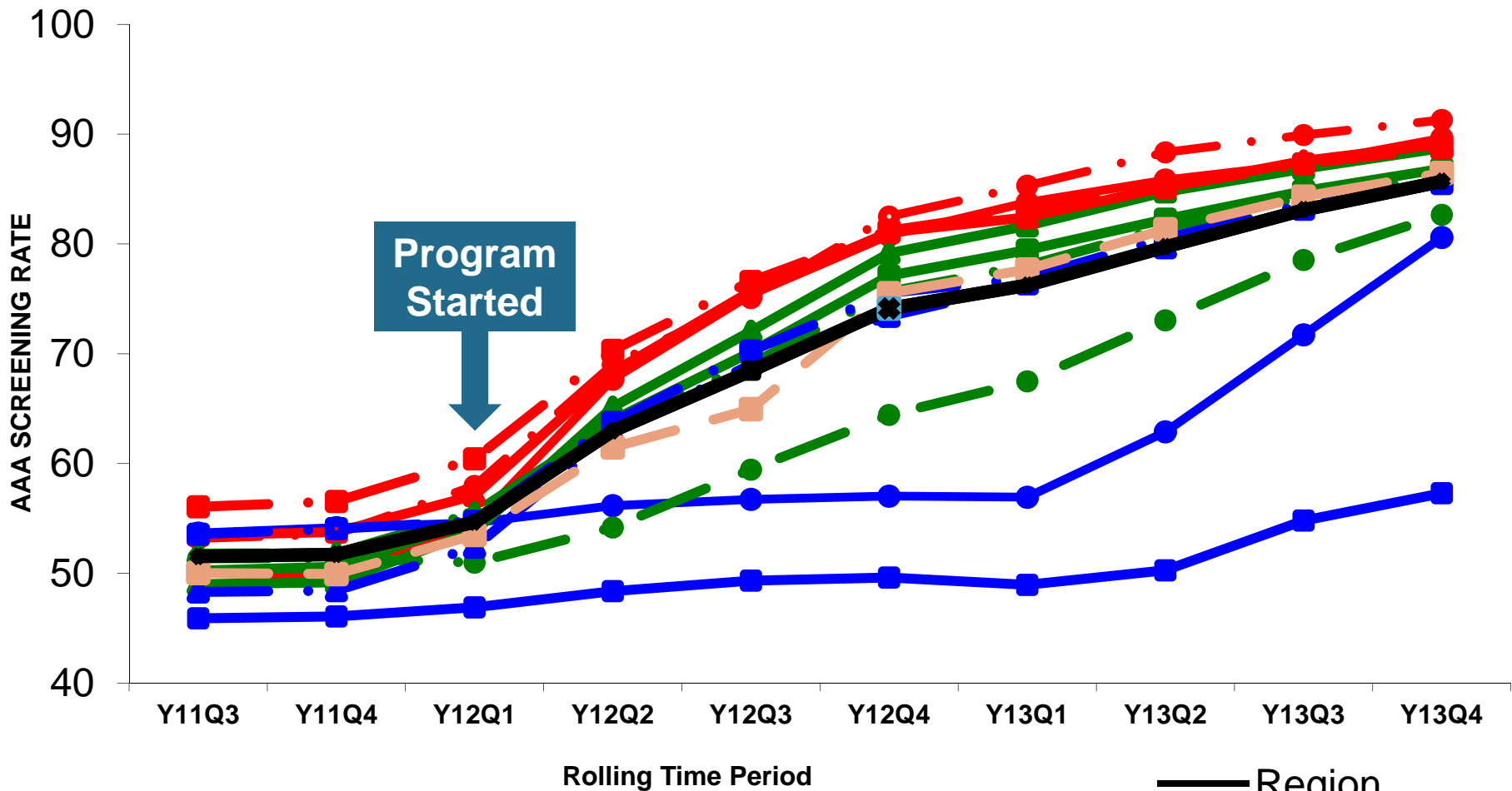
- Input from only a handful of physicians
- No medical center champions
- No regional physician champion
- Minimal feedback on performance by med center or physician
- Minimal physician education
 - What would happen?

Standard Work

- Contrary to the idea of physician autonomy
- May be incorrectly interpreted as inhibiting creativity and innovation
- Difficult to show that one way of doing things is better than another
- Standardized processes are not necessarily reliable

Abdominal Aortic Aneurysm – Maximum Results from Minimum Resources

AAA SCREENING RATE TREND



Potential places to start using systems engineering approaches-general

- Supply chain management
 - Blood products, drugs, supplies
- Increasing throughput
 - OR, exam rooms, other services
- Manufacturing like departments
 - Laboratory, optical dispensing, pharmacy

Potential places to start using systems engineering approaches-medical specific

- Patient safety
- Patient outcomes or treatment
 - Statistical process control, decision analysis, Markov processes
- Diagnosis
 - Computer assisted diagnosis, data collection and organization, EMRs,