CER in an Integrated System The Kaiser Permanente Experience

Fourth National Comparative Effectiveness Summit

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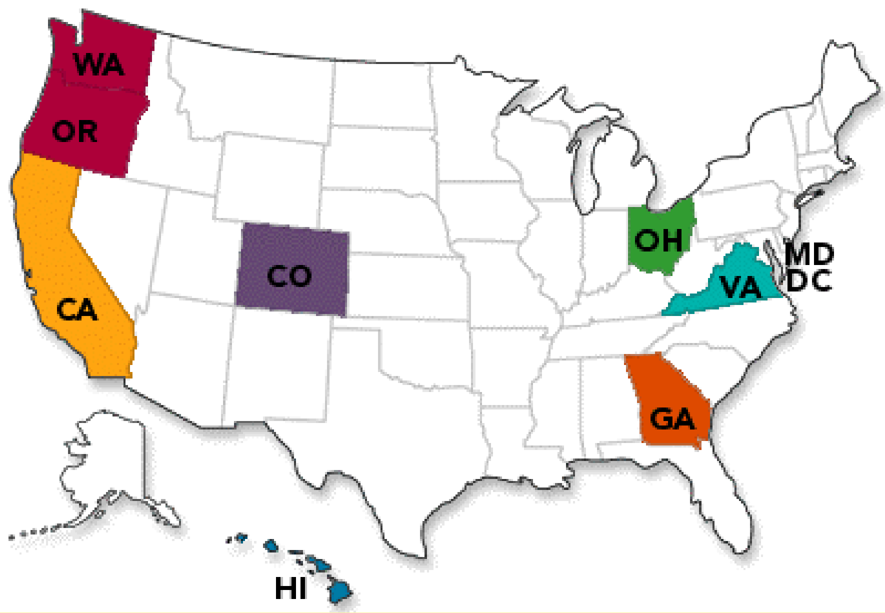
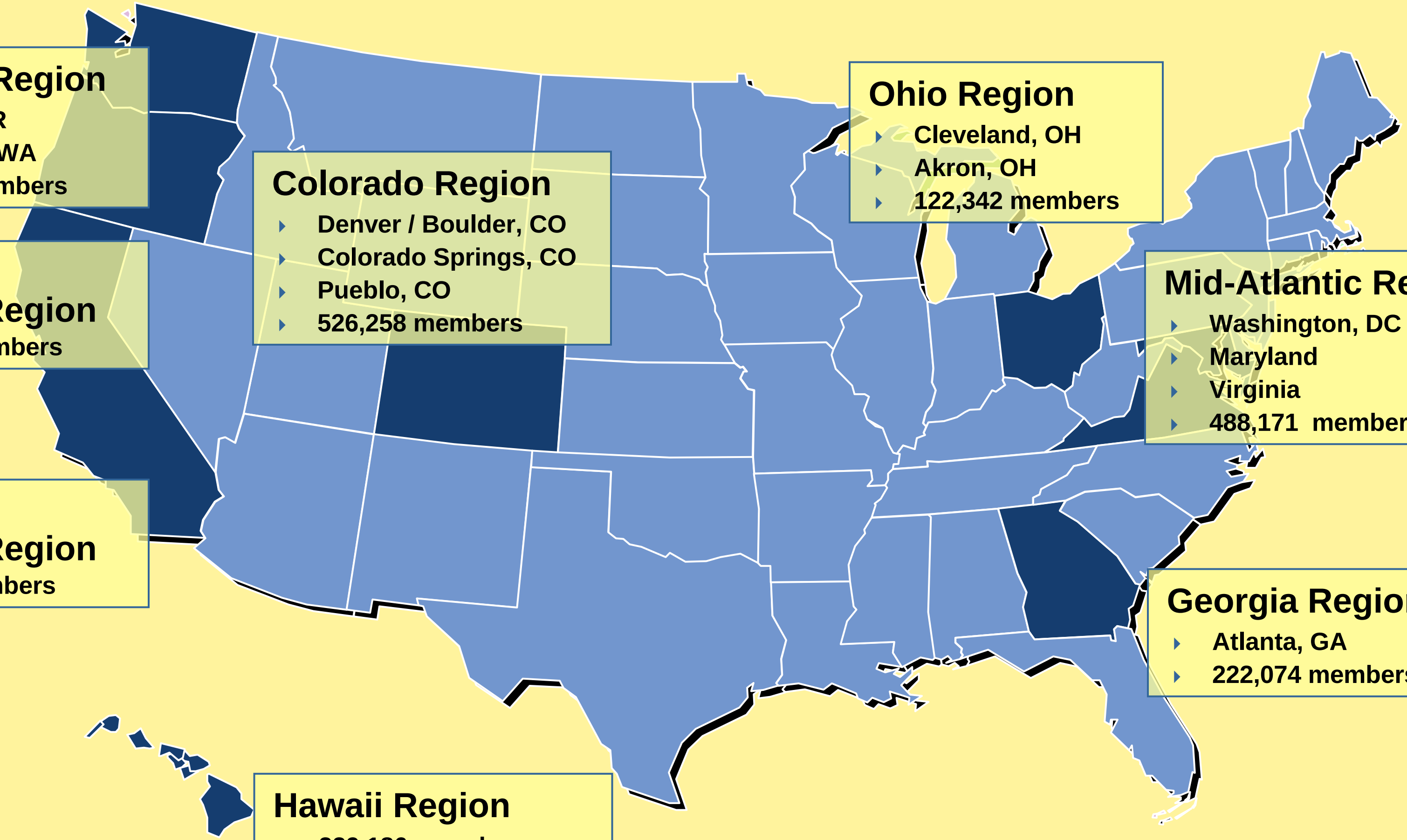
Kaiser Permanente by the Numbers

- 8 regions serving 9 states & DC
- ~9 million members
- 15,853 physicians
- 167,178 employees
- 36 hospitals
- 533 outpatient facilities
- $44 billion operating revenue
- $2 billion net income
- $1.8 billion invested in our communities
- 65 years of providing care



KP by the Numbers: Markets and Membership



Northwest Region

- Portland, OR
- Vancouver, WA
- 476,345 members

Northern California Region

- 3,263,619 members

Southern California Region

- 3,341,646 members

Colorado Region

- Denver / Boulder, CO
- Colorado Springs, CO
- Pueblo, CO
- 526,258 members

Hawaii Region

- 229,186 members

Ohio Region

- Cleveland, OH
- Akron, OH
- 122,342 members

Mid-Atlantic Region

- Washington, DC
- Maryland
- Virginia
- 488,171 members

Georgia Region

- Atlanta, GA
- 222,074 members

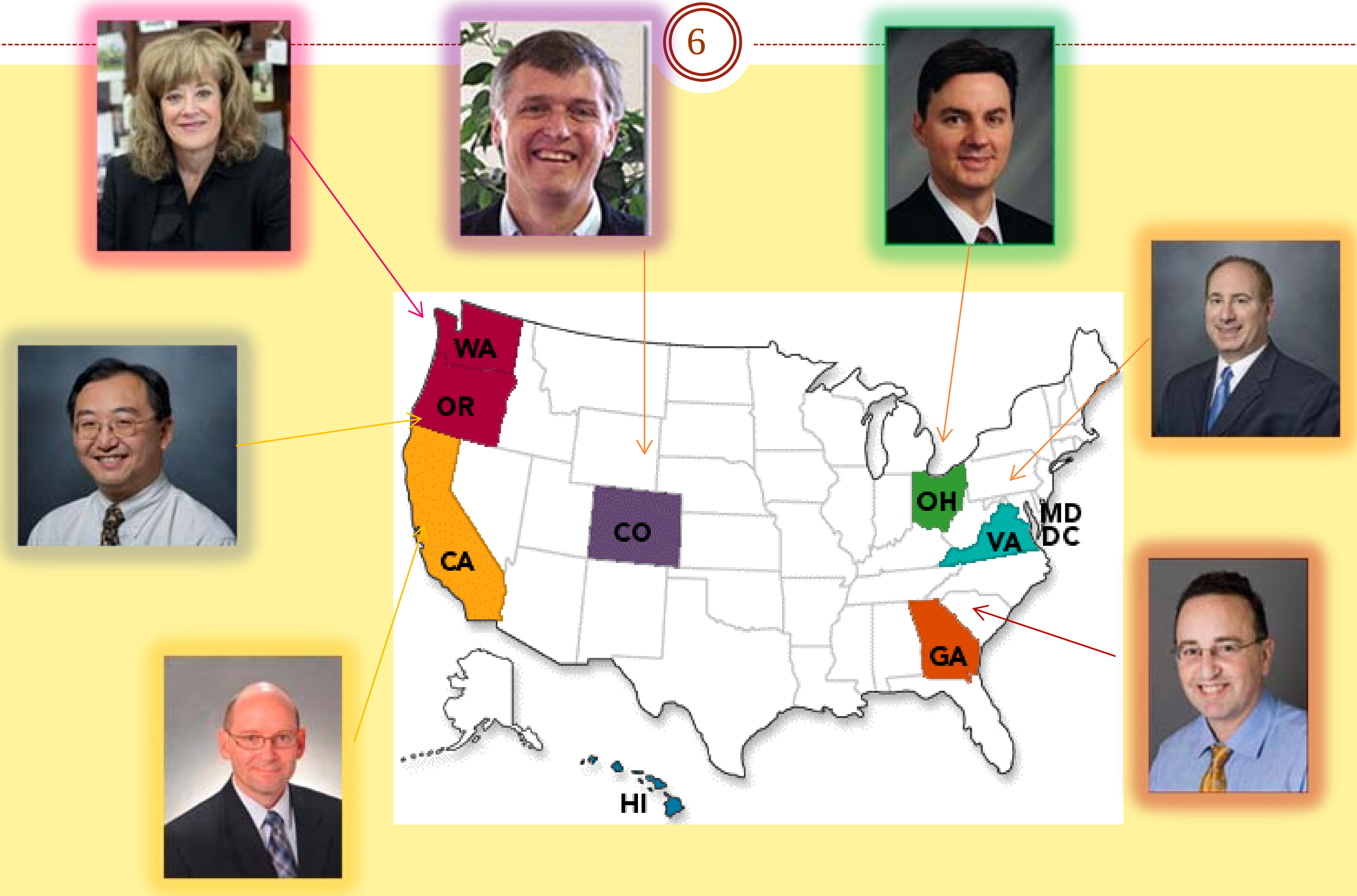
Kaiser Permanente by Design

- Comprehensive medical, surgical, hospital and ambulatory care, and pharmaceutical services
- Integrated financing (health plan) and delivery (medical groups and hospitals) scheme, global budget, prospective payment to the delivery system
- Population based health care organization
- Three separate legal entities (Health Plan, Hospitals, Medical Group), bound together in *partnership* and *mutually exclusive contractual relationships*
- Unique in almost all the markets we serve; "…like a *national health system for almost 9 million beneficiaries/patients/citizens.*"

Major “producer” of science, comparative effectiveness research and evidence

- Regional research entities in 7 of 8 Regions, e.g. The Division of Research, Northern California, est. 1962
- KFRI (Kaiser Foundation Research Institute)
- PORG (Pharmacy Outcomes Research Group)
- KPOCT (Kaiser Permanente Oncology Clinical Trials Group)
- KP Total Joint Registry/Clinical Care registries
- Clinician investigator-initiated trials
- CMI (Care Management Institute)
- CESR (Center for Effectiveness and Safety Research), est. 2009

CESR Builds on a Rich Tradition of Research at KP



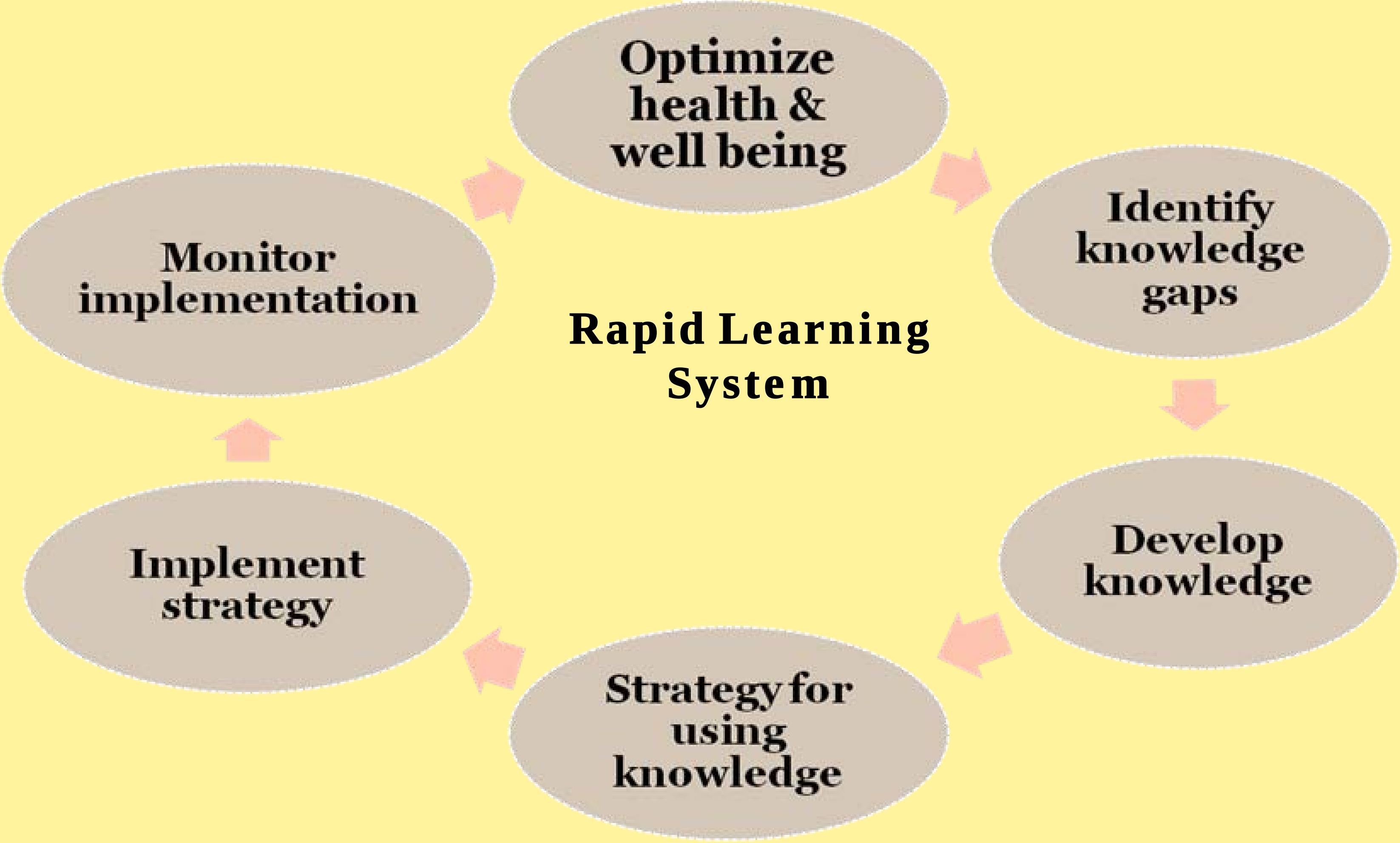
CESR Vision Statement

To optimize the health and well being of our members and the public

by understanding what works best for different groups of people

and translating that knowledge into policy and practice

CESR Conceptual Framework



Optimize health & well being

Identify knowledge gaps

Develop knowledge

Strategy for using knowledge

Implement strategy

Monitor implementation

Rapid Learning System

CESR's Strategic Priorities

- Ensure high quality data systems
- Develop research knowledge management system
- Advance innovations in research methods
- Create effective partnerships with internal/external partners
- Enhance career trajectories
- Build sustainable relationships with funders
- Produce usable knowledge

Major "Consumer" of Science, CER, and Evidence

- Mission critical "… to provide high quality, affordable healthcare services, and improve the health of our members and the communities we serve."
- Essential to commitment to evidence-based care, evidence-informed decision making.
- Responsive to growing demands of patients and clinicians for research which deliver answers to questions deemed important and relevant to them.

CER in an Integrated System

- Delivering the right care, to the right patient, at the right time, in the most appropriate setting
- Decreasing uncertainty, and increasing confidence, in evidence that is relevant to clinical practice
- Demonstrating "what works best" - for individuals, subgroups, populations among available options
- Clearly and transparently communicating probabilities, uncertainty, risks and benefits, and trade-offs

Evidence most likely to impact clinical decision making in the real world

- Research questions move from investigator- generated to patient and clinician generated, based on unanswered questions and unmet needs of impacted individuals and communities
- Patients and clinicians increasingly involved in all phases of the research enterprise
- Proliferation of therapeutic options, with competing claims of **efficacy**, driving demand for comparative clinical **effectiveness research**, comparing interventions (drugs, devices, care pathways, care delivery models, surgical interventions etc.)

For evidence to generate clinical benefit…

- 30% science : finding the "right things to do" (evidence generation)

  closing the "**knowledge gap**"

- 70% "sociology" : making the right information easy to access (dissemination)

  closing the "**knowing gap**"

making the right thing easy to do (uptake)

closing the **" knowing-doing gap"**

From “Learning Organization” to “Rapid Learning Healthcare System”

Build upon 50 year investment in data capture: KP Databases

- Detailed, complete clinical and administrative databases; no “carveouts”; >97% capture of prescription drug info (70 million prescriptions in 2011) for 25 years
- Unique identifier (MRN) across time, databases
- Enrollee data geocoded to US census block data
- Self-reported race/ethnicity data on almost 90% of membership

KP Databases

- Fully deployed EMR (KPHealthConnect, EPIC platform) in 2009 for ambulatory care, inpatient in process in 36 KP-owned and operated hospitals
- Complete outpatient capture of dx, tx, procedures, lab, x-ray and clinical measures (BP, BMI, smoking status etc) for >15 years, pre-EMR
- Hospital discharge data: complete capture of hospital discharge data in 36 KP-owned and operated hospitals (90%), and claims data from non-KP hospitals (10%)
- Growing importance, and role, of registries in answering clinically important questions, and the need for methodologic advances in observational *in silico* research to fully exploit the value of registries and database research

Registries in QI and *in silico* Research (CER)

- "..organized system that uses observational study methods to collect uniform data (clinical and other) to evaluate specified outcomes for a population defined by ..disease, condition or exposure, and that serves one or more predetermined scientific, clinical or policy purposes." (AHRQ:2007, Rpt #07-EHC001-1)
- Foundation for research, comparative effectiveness research, as well as quality improvement - with direct feedback, at a provider level, into care delivery system
- TJRR (Total Joint Replacement Registry) est 2001; largest in the US: 95% capture of hips/knees of 400 participating KP orthopedic surgeons (95,331 knee replacements, 53,015 hips); voluntary participation
- Identify and track device utilization; patient and device outcomes; develop risk calculators for poor outcomes; manage recalls/advisories; adverse event surveillance

Registries in QI and *in silico* Research

- ACL reconstruction 2005; total shoulder 2006; hip fx and spine 2009; cardiac ICD and pace makers 2000; bariatric surgery 2006
- Patient safety: identification of early failures; recalls/advisories; risk factors associated with outcomes of interest; patient-specific risk calculator; infection and adverse event surveillance; patient reported outcomes
- Quality improvement: hospital and surgeon-specific outcomes profiles; rapid feedback to surgeon community re needed changes in practice
- Evidence base for development of device formulary, based on performance of devices over time

Examples of Non-surgical Registries

- **Population/ Registries Size**
- HTN 575,000
- Diabetes Management 221,000
- Preventing Heart Attacks and Strokes Everyday (PHASE) 205,000
- Multi-fit (cardiac rehab) 10,000
- Asthma (adult and pedi) 162,000 Osteoporosis –
- Osteoporosis – screening 240,000; post fx 1500
- Hepatoma ~30,000
- Heart Failure 41,000
- Tobacco Cessation ~340,000
- Breast Cancer Screening ~530,000
- Breast Cancer Survivors – Adherence to AET ~6,500
- Colorectal Cancer Screening ~837,000

Learnings from > a decade of registry experience

Clinician commitment to complete and accurate data capture contingent on:

- organized with clinician input to make data entry as easy as possible, eliminate need for “double entry
- organized to answer real-world concerns of patients and clinicians, and answer clinically important questions
- direct feedback loop into clinical practice, quality improvement
- clinician and site-specific feed back/profiles used for QI purposes: “P4P” = pride for performance; culture of mutual accountability for the quality, safety and effectiveness of care

In Summary

- Growing multi-stakeholder consensus on the need for a transformed, accountable rapid-learning healthcare system; rapidly improve the quality, consistency and value of care delivered, everywhere
- Substantial public and private investments in data infrastructure, data capture and research infrastructure – and methodologic research –essential to closing "knowledge gap"
- Advances in dissemination and implementation science essential to closing the "knowing gap", and the "knowing doing gap" – and to move from "learning systems" to a "learning system"

QUESTIONS ?