



COOK COUNTY HEALTH & HOSPITALS SYSTEM

Presentation on Clinical Research
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May 17, 2016



COOK COUNTY HEALTH
& HOSPITALS SYSTEM
CC+HHS

Principle Objectives

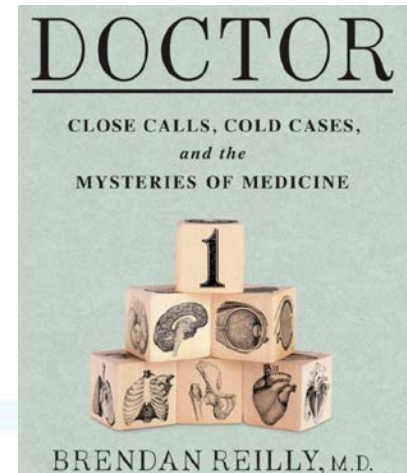
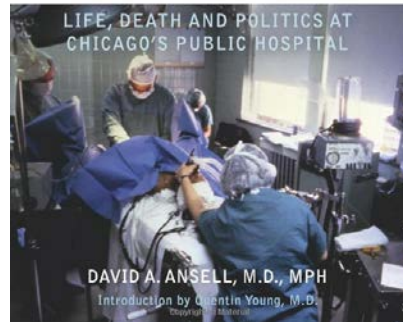
- Improve health equity
- Provide high quality, safe and reliable care
- Demonstrate value, adopt performance benchmarking
- Develop human capital
- **Lead in Medical Education & *Clinical Investigation* Relevant to Vulnerable Populations**



Legendary Health System



COUNTY



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Risks of Research at CCHHS

- Vulnerable patient population
 - Susceptible to economic coercion
 - Language barriers
 - Low health literacy
- Study fatigue
 - Community and partner research
- May contribute to operational inefficiencies



Benefits of Research at CCHHS

- Clinical innovation – better patient care
 - HIV & cancer therapeutics
 - Introduction of information technology
- Institutional reputation
 - Critical for housestaff training program
 - Faculty recruitment and morale
- External partnerships
 - Public health agencies, foundations



Research Portfolio at CCHHS, 2015

- IRB
 - 242 projects reviewed
- Extramural funding
 - 81 funded projects: \$16 million during 2015
 - Split between research (2/3) & service (1/3) grants
 - <1% of Federal funding for Chicago area



Vulnerable Patient Research at CCHHS

- **Housing for Chronically Ill Homeless**
 - Case management & housing: ↓ ED visits & hospitalizations JAMA, 2009
- **Heroin Triggers Life Threatening Asthma**
 - Urine tox screen + for opiates, 60% vs 7% Chest, 2003
- **Death among Women with HIV in Antiretroviral Era**
 - Depression, injection drug use, smoking increased mortality Am J Med, 2002



HIV Care: CORE Center Funding

- Optimizes care-from rapid HIV testing through engagement in care and therapy trials
 - Reduces community transmission
 - Less toxic therapies provided for patients whose virus is resistant to available drugs
 - In the last five years, patients enrolled in therapy trials (~\$1.98 million for drugs)



Pre-exposure HIV Prophylaxis: CORE

- ~1 in 4 young black men in Chicago who have sex with men are HIV infected.
- 3-7% in CCHHS community acquire HIV per year
- Pre-exposure prophylaxis (PrEP) 90% effective
 - PrEP failures due to non-adherence
 - Acceptability to high-risk individuals, including women
 - Increase adherence through social media & texting
 - Evaluate long-acting injectable PrEP (every 2 months)
 - 160 patients enrolled to date (drug costs ~\$1.3million)



Hepatitis C: CORE Center

- CCHHS: 13% infected
- New agents cure disease with low toxicity
 - Twenty patients enrolled over 5 years (~\$80k each), ~\$1.6 million
- First use of Fibroscan in IL. Stages liver fibrosis without a liver biopsy, avoiding costs and risk to the patient



Emergency Medicine Research Program

- Asthma Action Plan
 - Partnership with undergrads as research assistant volunteers
- Expertise in bedside ultrasound
 - Leading enrollment site to evaluate use of ultrasound to diagnose kidney stones



Oncology Research: Provides State of the Art Cancer Care

- Minority Underserved Community Oncology Research Program: One of 12 sites, 2002-2019
- 1400 Patients enrolled, 80% minorities
- Current trials
 - Lung (13); Breast (10); Colorectal (4); Head & Neck (3); Prostate, Hematologic, Gyne (2); Pancreas (1)



Infrastructure for Learning Health System



Infrastructure for Learning Health System

Research Data Warehouse
(RDW)



Investigators & Clinicians Committed to Underserved Populations
Homelessness, Substance Use, Detainees, HIV, Asthma, Cancer



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RDW Funding: Chicago Prevention Epicenter

- CDC funded: 1999-2020
- Promote patient safety through infection prevention

Healthcare-associated Infections: Prevention Epicenters Program

Healthcare-associated Infection Research

Prevention Epi-Centers
Program

About

► Cook County Health &
Hospital System and

[Healthcare-associated Infection Research](#) > [About](#)



Cook County Health & Hospital System and Rush University
Medical Center



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- * **Augments graduate medical education**

Since 2014, the RDW provided data for >55 research requests

- * **Patient safety**

Bloodstream infection detection algorithm

Algorithm to flag ventilator associated events

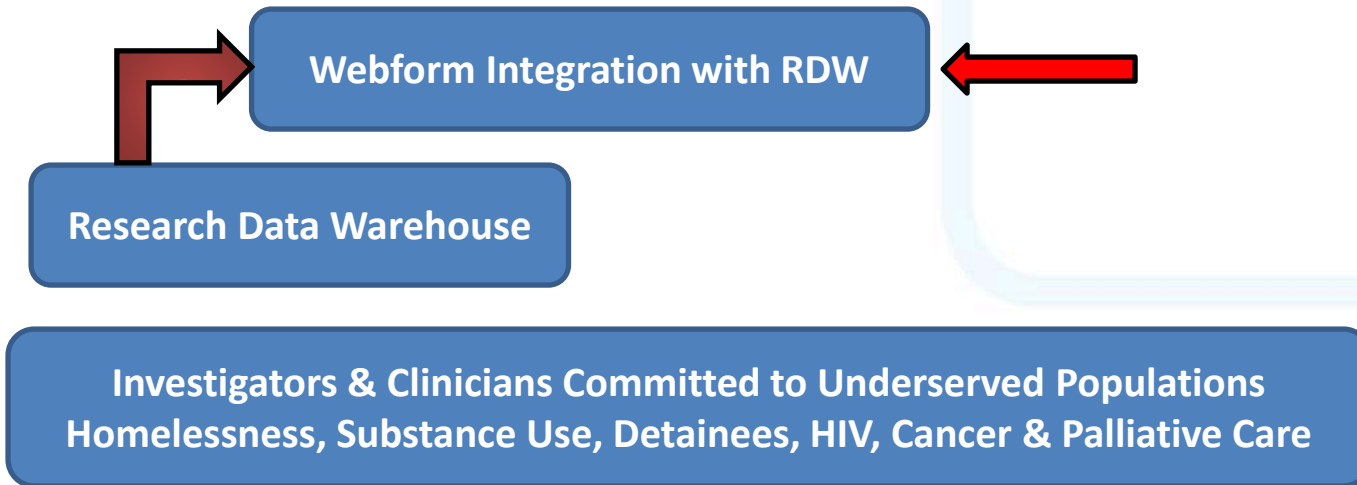
Research Data Warehouse

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Screening, Intervention & Referral for Substance Use Disorders (SBIRT)

- Funded by Substance Abuse & Mental Health Services Administration
- Over 25,000 patients evaluated by counselors
 - Over 3k referred for specialized treatment
 - 1.4k for methadone; 1.2 for alcohol treatment
- Medication Assisted Treatment
 - Over 100 treated in house since 2/2016



Infrastructure for Learning Health System

Legacy

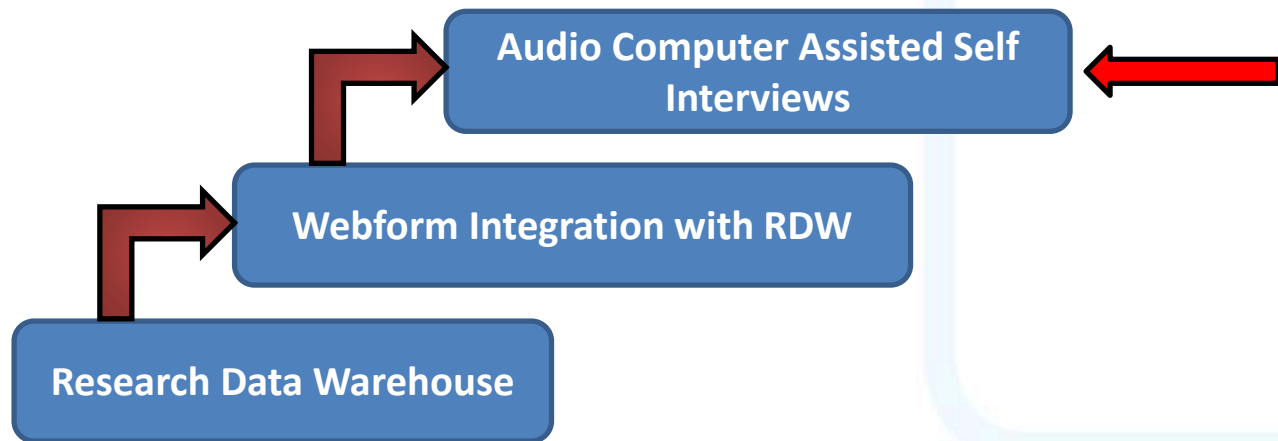
- Ongoing substance use evaluations, 10+ years
- Smoking cessation
 - Quit rate ~50% higher than national estimates
- Asthma evaluation & education
- Colon cancer screening: Mailed tests pre-appointment
- Stroke center certification



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20
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Multilingual Audio Computer-Assisted Self Interviews

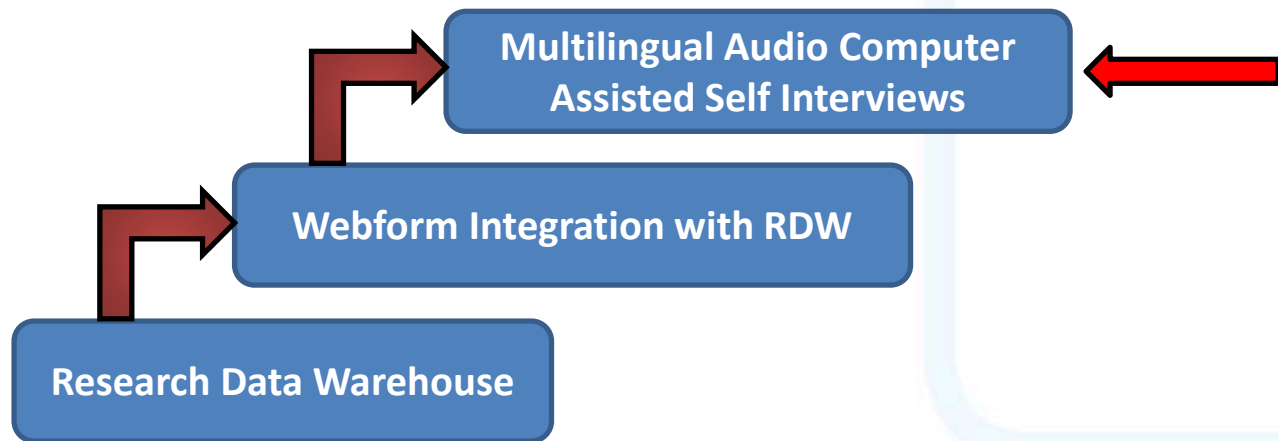
- CDC funded trial evaluated screening patients for intimate partner violence
- AHRQ funding evaluated patient-reported outcomes in complex patients
 - Quality of life & symptom burden



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Ongoing use of ACASI

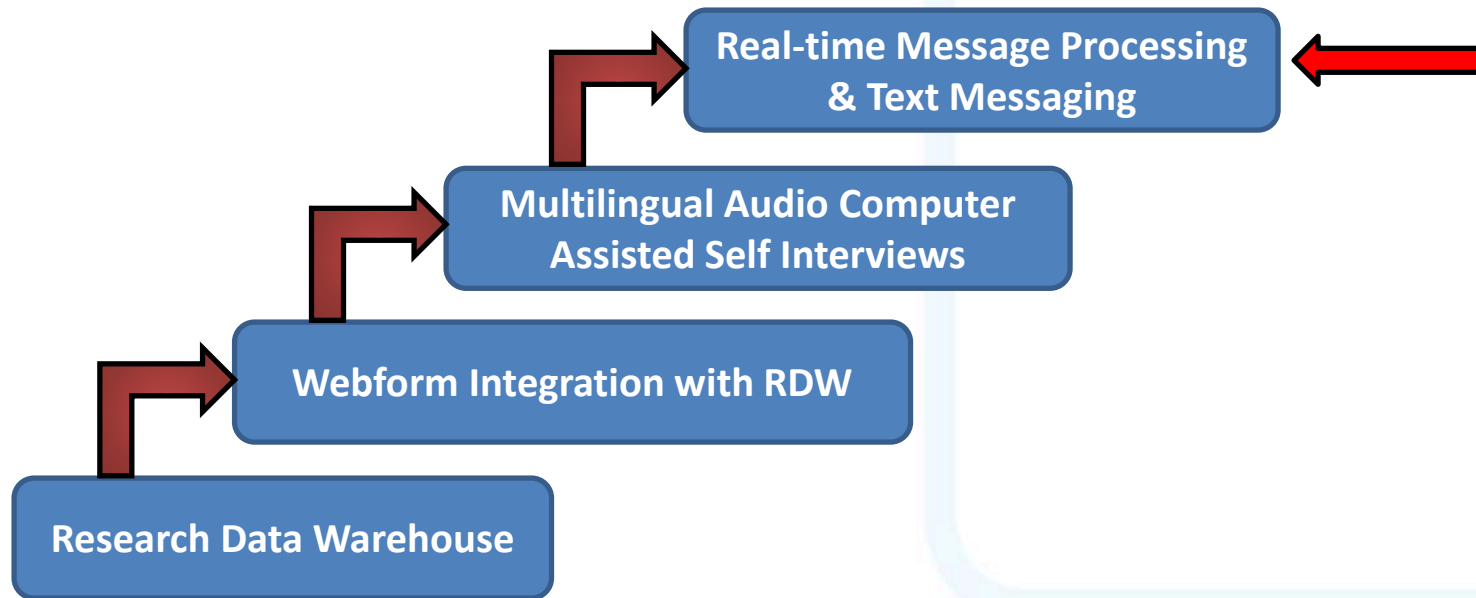
- Assessment of social support needs for cancer patients
- Symptom burden used in model to predict hospital readmission



22
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23
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Text Messages: Retain HIV Patients in Care

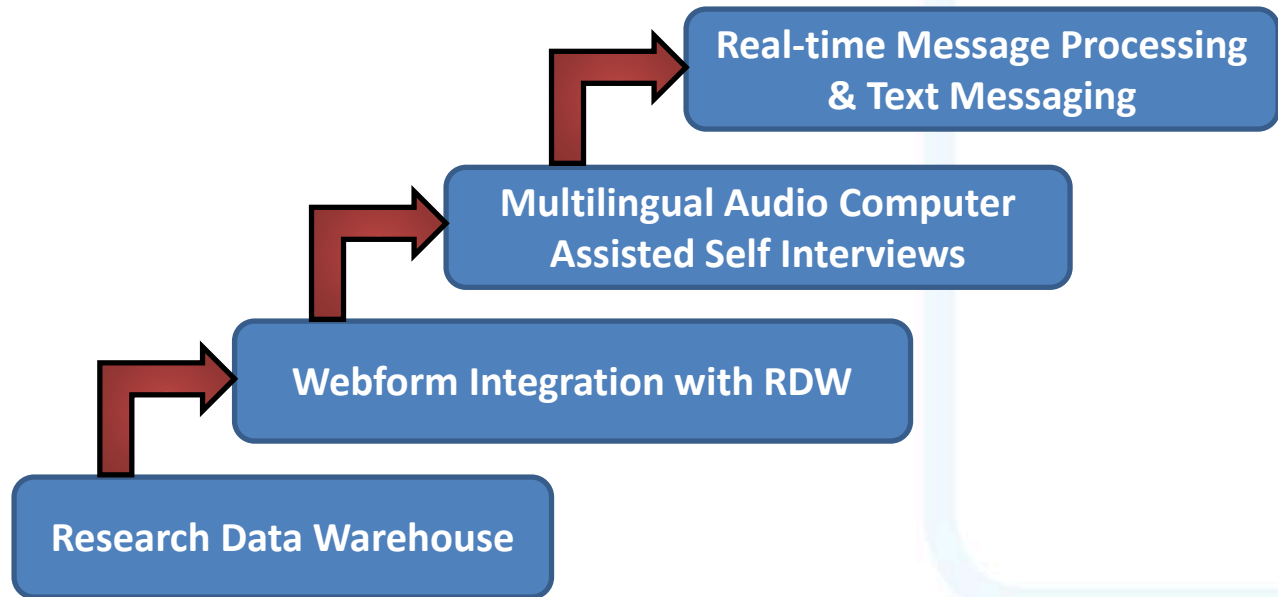
- Funder: Center for AIDS Research
 - Patients off treatment have poor outcomes and increase transmission
 - Real-time messages sent to a case manager when out-of-care patients present to CCHHS
- *83% of contacted patients re-engaged in care**



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Chicago Community Trust

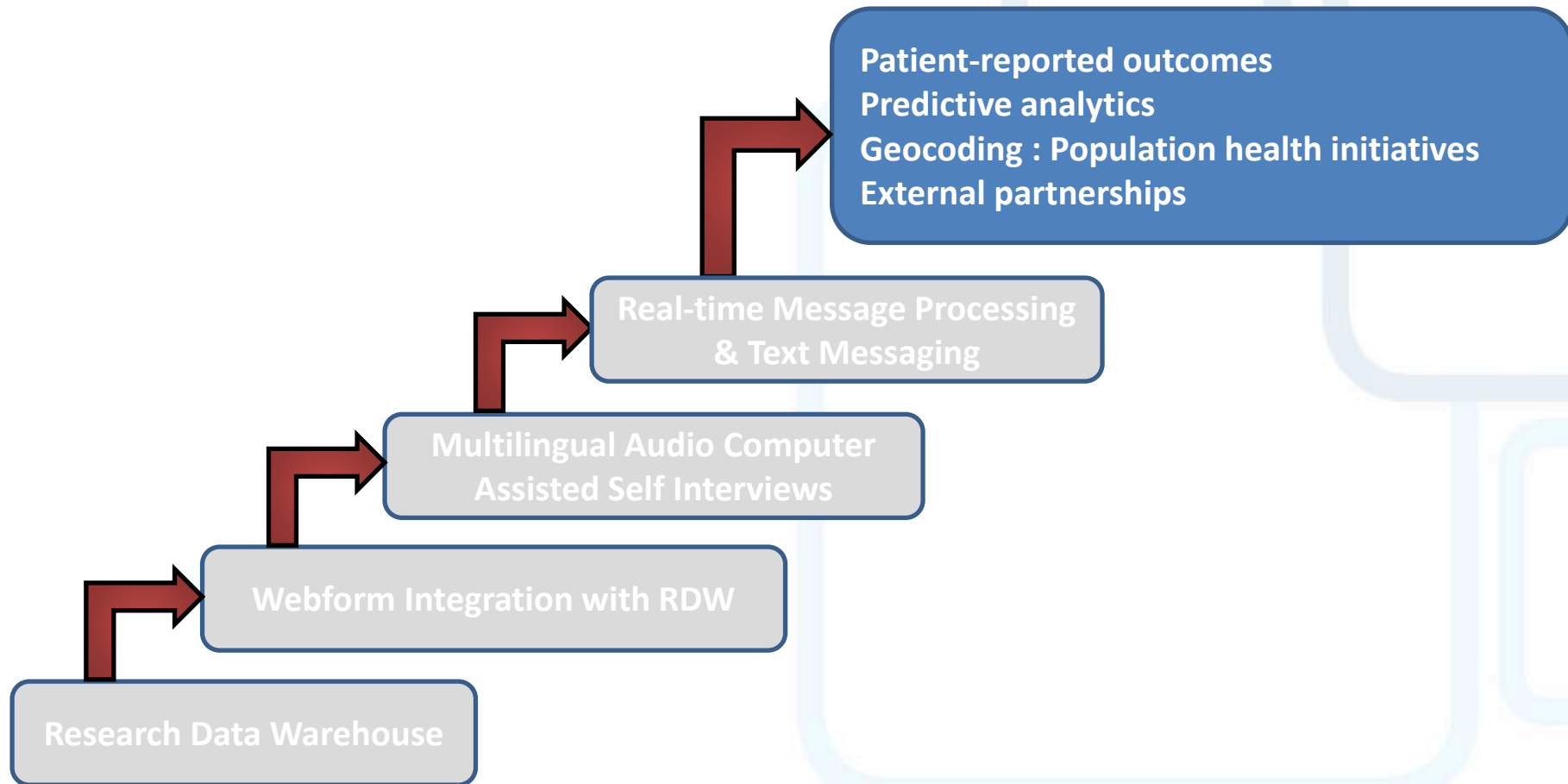
- Funded ongoing use of system, evaluated for multicenter use



25
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Next Steps



Research Data Warehouse

Webform Integration with RDW

Multilingual Audio Computer Assisted Self Interviews

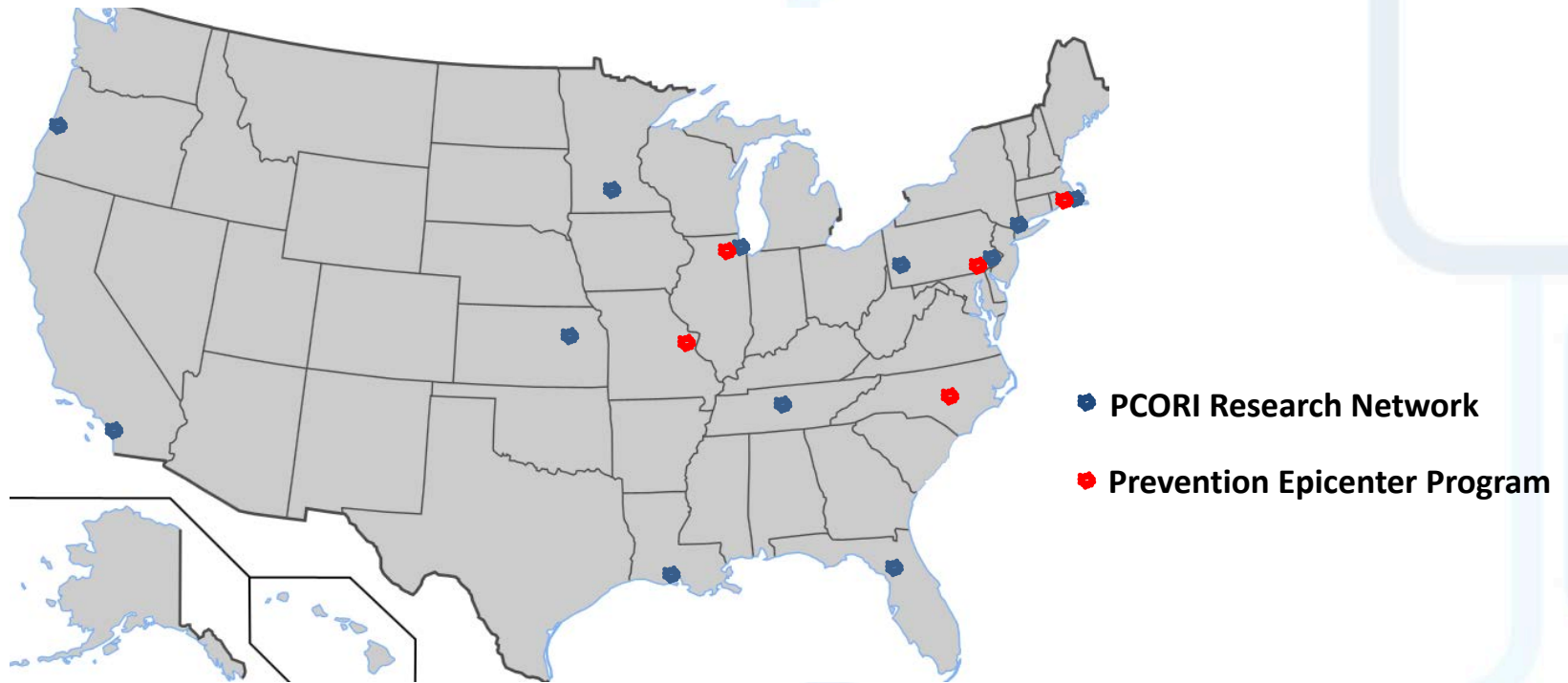
Real-time Message Processing & Text Messaging

Patient-reported outcomes
Predictive analytics
Geocoding : Population health initiatives
External partnerships

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PCORI & CDC: Multicenter Networks



Ethical Research

~ Subjects should not be selected due to privilege or vulnerability

Emanuel, JAMA, 2000

CCHHS IRB

- Advocates for vulnerable subjects (e.g., detainees, HIV+, impaired decisional capacity)
- Appropriate, but not coercive, compensation
- Promotes inclusion of Spanish speakers
- Jail and mental health representatives protect such populations
- No recent suspension of activities



Research challenges within CCHHS

- Research timelines require responsive entity
 - Rapid hiring, part-time & temporary workers, and no hiring freezes
 - Purchasing of supplies critical
- Fiscal intermediary
 - Difficult for system to receive funds directly and efficiently allow PIs to expend funds
 - Lost indirect cost capture
- Provision for CCHHS staff time dedicated to research



Recommended strategies

- Develop CCHHS dept. of research to support:
 - Pre-grant (application & biostatistics)
 - Post-grant (biostatistics, IRB, accounting, reporting)
 - Research compliance
- Develop capacity to receive, use and track funds in dedicated departmental research budget lines
- Employment process to hire into time sensitive positions (e.g. research assistants)
- Supply chain/purchasing solution



Recommended strategies

- Pursue extramural funding for innovative care delivery solutions (HRSA, CMS)
- Develop Innovations Center
 - Improve translation of research to provision & evaluation of high quality, safe, efficient care
 - For CCHHS as a provider & CountyCare population





Investigators & Clinicians Committed to Underserved Populations

**Homelessness, Substance Use, HIV, Cancer,
Asthma, Detainee Health**

