

Envisioning the Network's Research

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Envisioning PCORnet's research

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pcornet

The National Patient-Centered Clinical Research Network

Our Clinical Research System is Not Generating the Evidence we Need to Support Practice!

- ⚙️ High % of decisions not supported by evidence
- ⚙️ Poor health status of US population
- ⚙️ Great disparities
- ⚙️ Questions about reliability of the system growing
- ⚙️ Current clinical research system is great except:
 - Too slow
 - Too expensive
 - Unreliable
 - Doesn't answer the questions important to patients
 - Unattractive to providers and administrators in the system

Which Treatment is Best for Whom?
High-Quality Evidence is Scarce
< 15% of guideline recommendations
supported by high quality evidence

ORIGINAL CONTRIBUTION

Scientific Evidence Underlying the ACC/AHA Clinical Practice Guidelines

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CLINICAL PRACTICE GUIDELINES are systematically developed statements to assist practitioners with decisions about appropriate health care for spe-

Context The joint cardiovascular practice guidelines of the American College of Cardiology (ACC) and the American Heart Association (AHA) have become important documents for guiding cardiology practice and establishing benchmarks for quality of care.

Objective To describe the evolution of recommendations in ACC/AHA cardiovascular guidelines and the distribution of recommendations across classes of recommendations and levels of evidence.

Data Sources and Study Selection Data from all ACC/AHA practice guidelines issued from 1984 to September 2008 were abstracted by personnel in the ACC Science and Quality Division. Fifty-three guidelines on 22 topics, including a total of 7196 recommendations, were abstracted.

Age-Standardized Years of Life Lost Relative to Comparator Countries and Ranking by Cause in 2010

	Sweden	Italy	Spain	Australia	Norway	Netherlands	Austria	Luxembourg	Germany	Canada	France	Ireland	Greece	UK	Finland	Belgium	Portugal	Denmark	USA
Ischemic heart disease	10	5	3	6	7	4	13	8	15	12	1	16	19	14	17	9	2	11	18
COPD	5	3	7	9	14	15	8	12	10	11	1	13	4	17	2	16	6	18	19
Other cardiovascular and circulatory	4	2	10	1	6	13	7	19	16	3	17	9	8	14	5	15	18	11	12
Congenital anomalies	3	11	10	9	5	12	14	1	6	17	2	19	15	16	7	8	4	13	18
Aortic aneurysm	15	7	2	10	16	14	3	6	4	8	5	12	13	18	17	9	1	19	11
Diabetes	10	14	7	12	6	13	15	2	11	17	8	5	3	1	4	9	18	16	19



Lower than mean



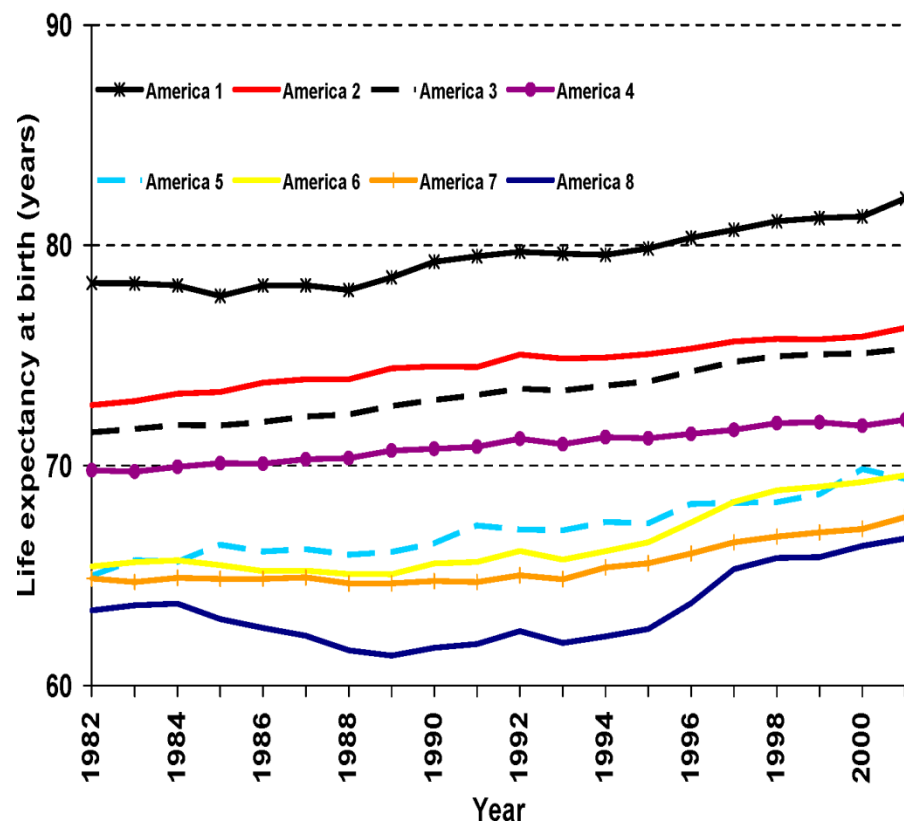
Indistinguishable from mean



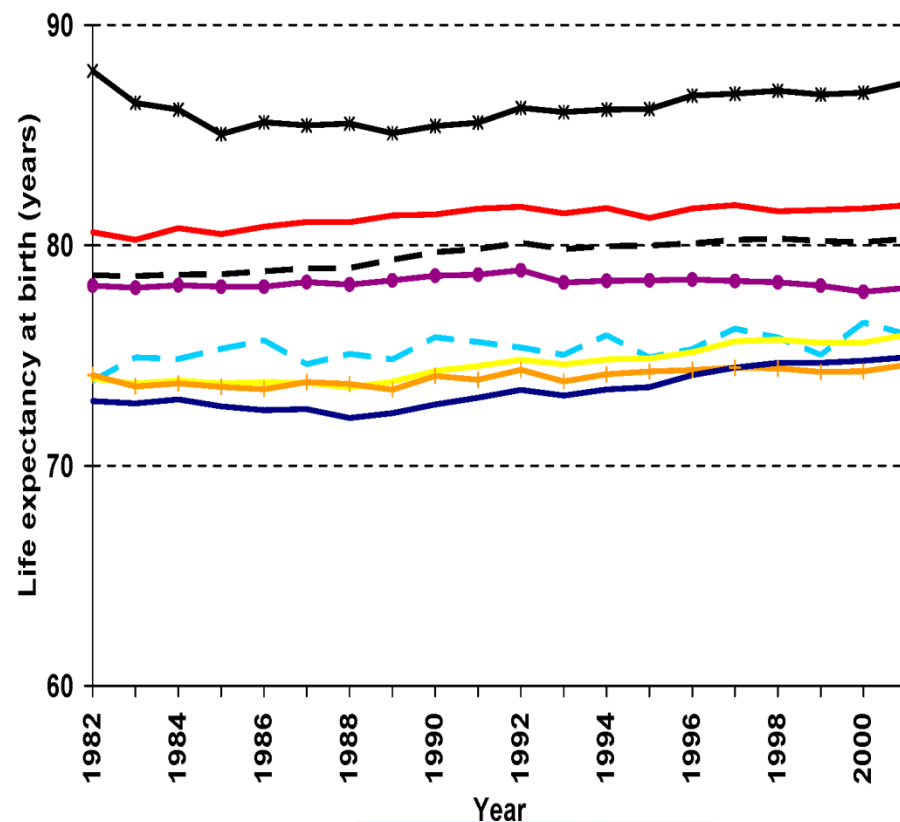
Higher than mean

Mortality Experiences of the 8 Americas

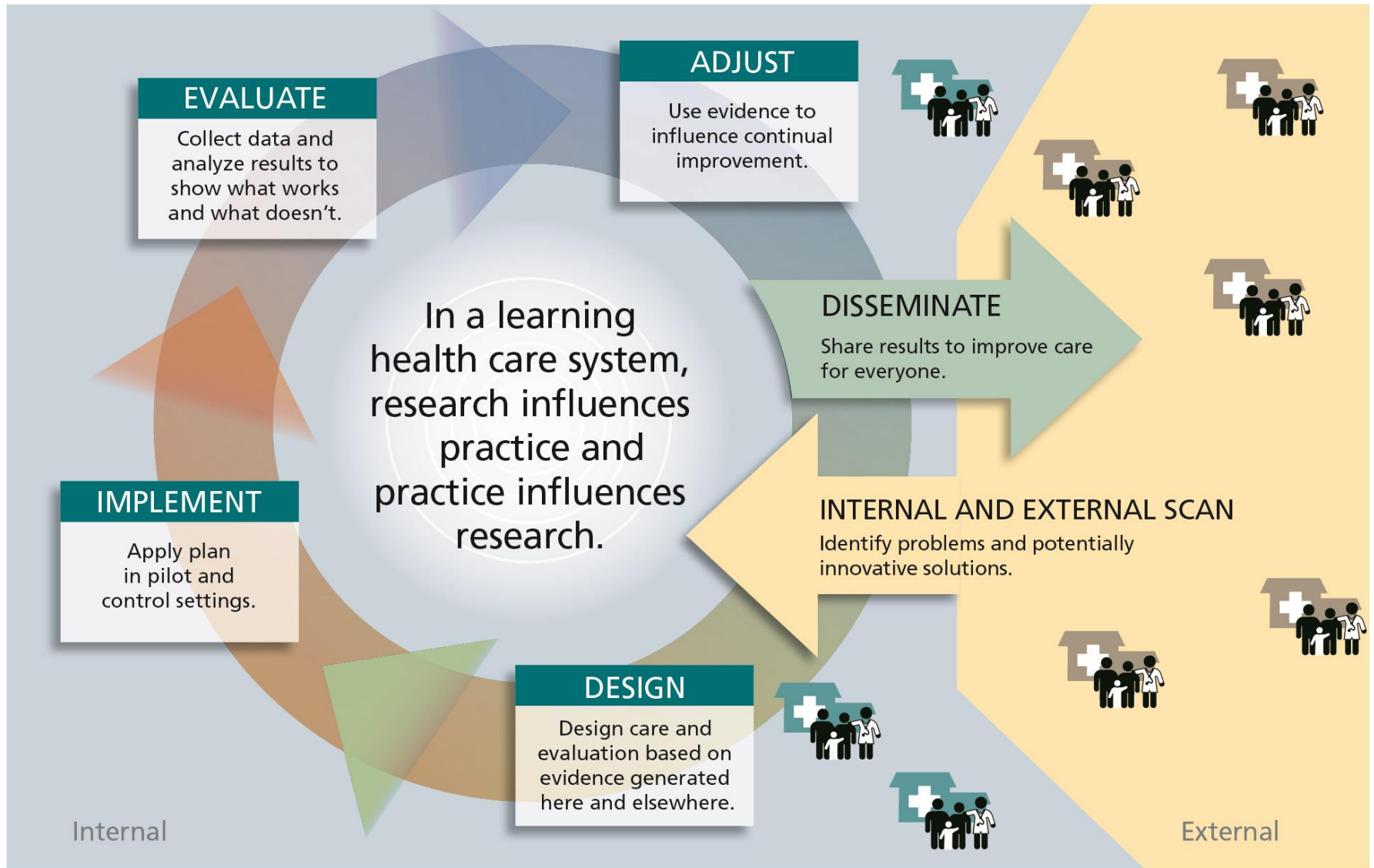
Males



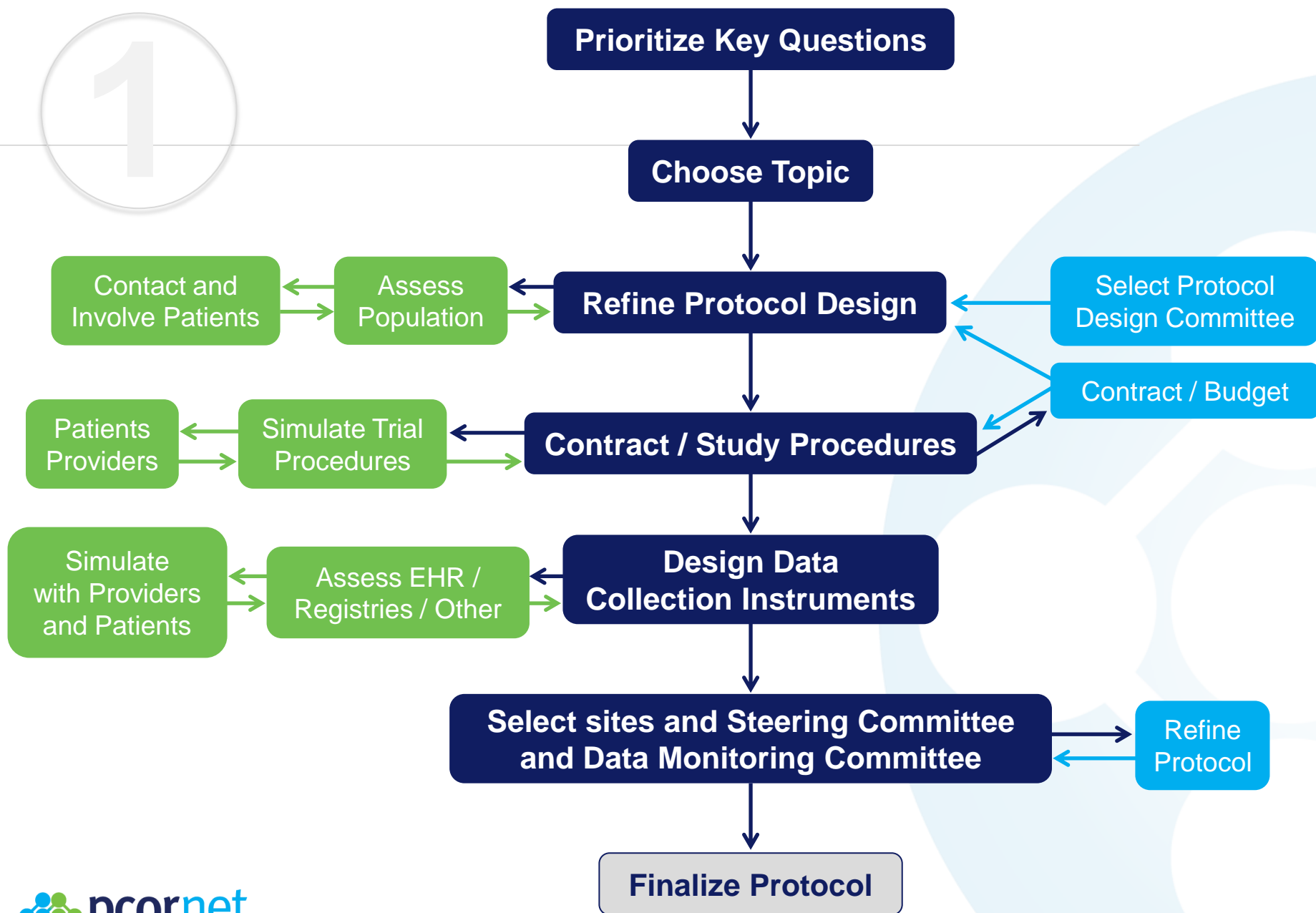
Females



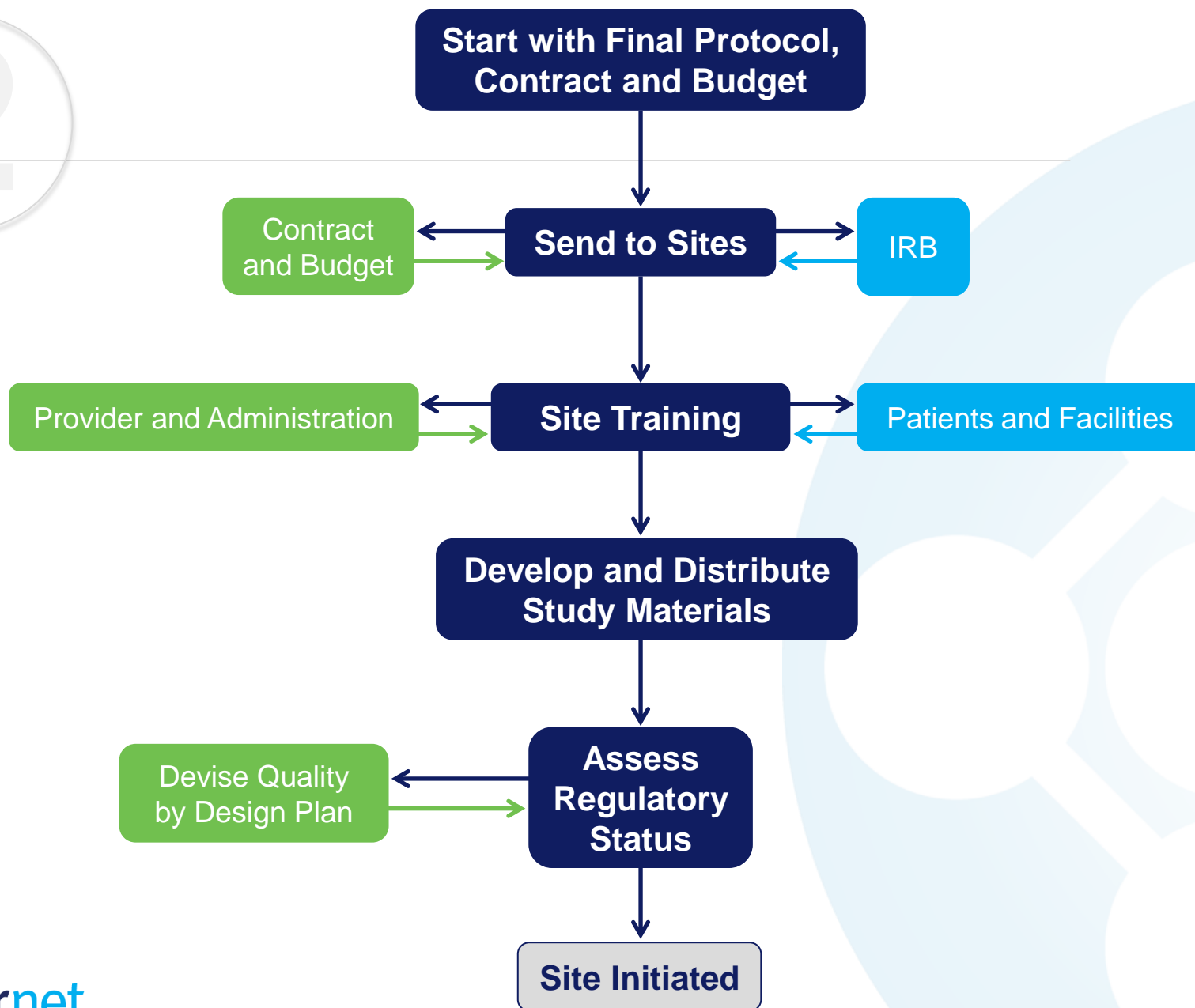
Learning health care systems



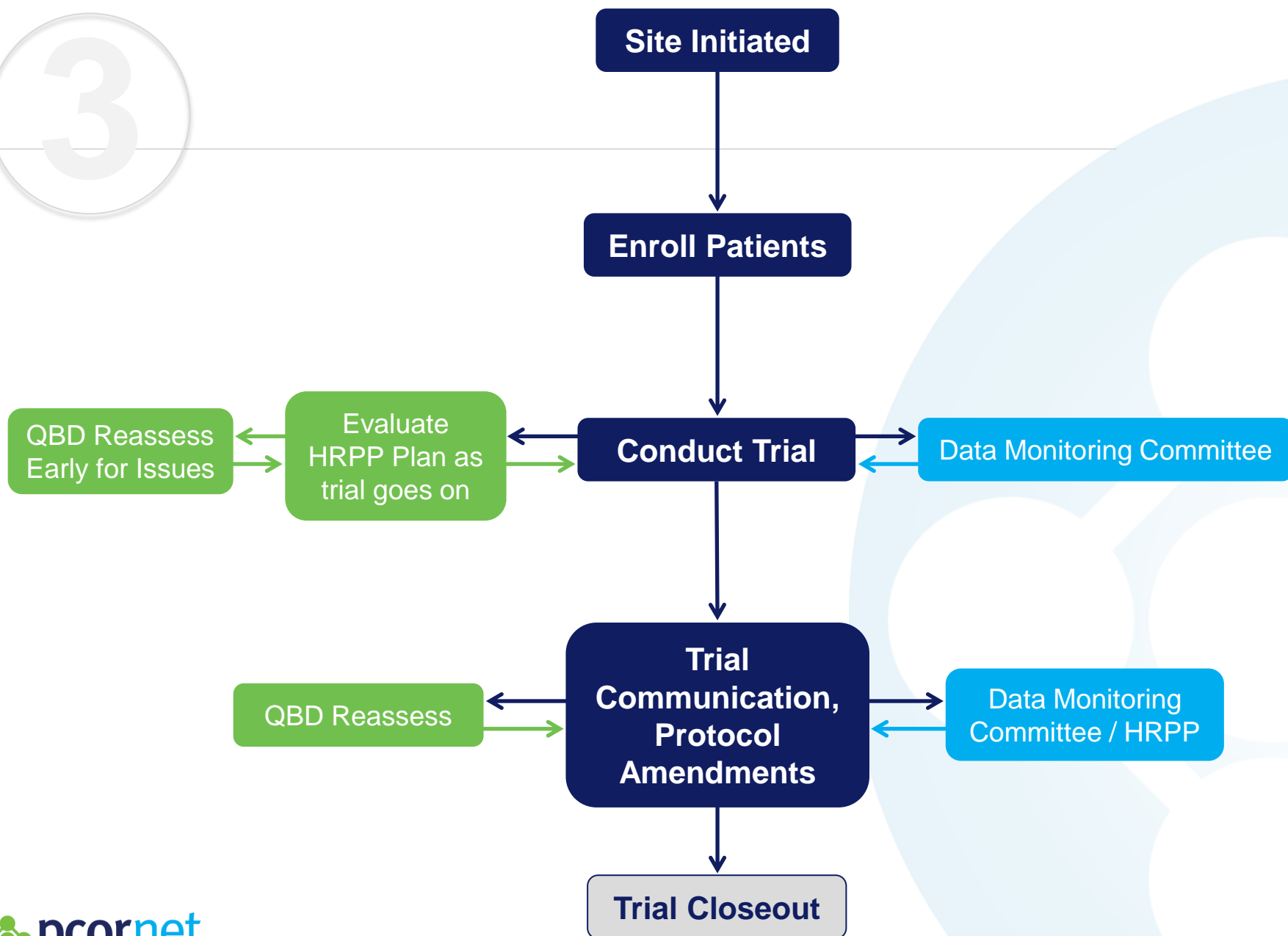
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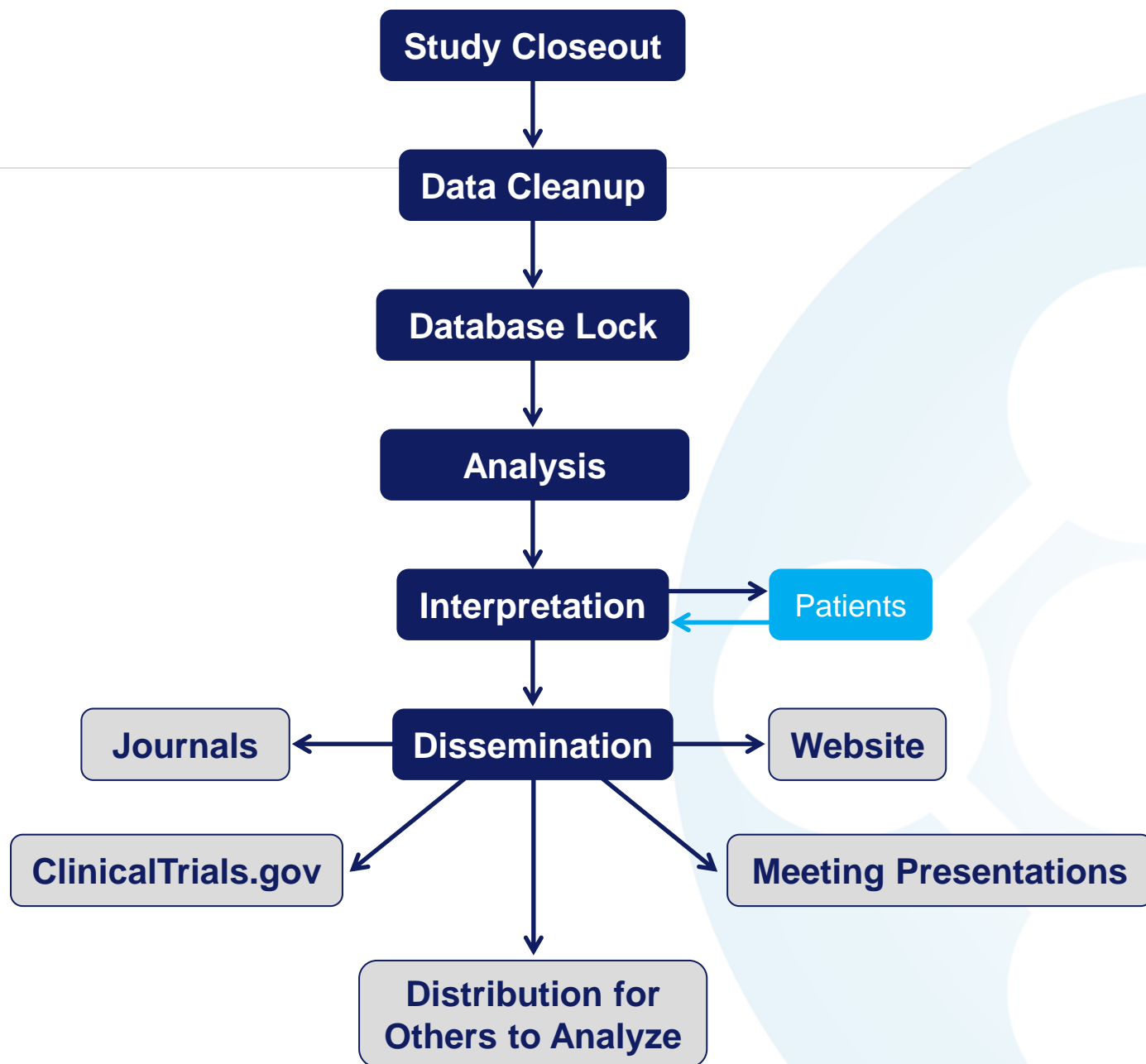
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Obesity-related Questions Suited for PCORnet: Rare Exposures or Outcomes

- ❁ To what extent is gestational diabetes associated with offspring obesity and type 2 DM?
 - Using sib-pair design to control for confounding
 - Among subpopulations at higher risk of GDM
- ❁ Which antipsychotics are most associated with weight gain and incident type 2 DM?
 - Are there class effects? Single drug effects?
- ❁ Which types of bariatric surgery result in best outcomes with least cost and risk?
 - Better biochemical outcomes
 - Lower utilization, cost, adverse events, morbidity/mortality

Obesity-related Questions Suited for PCORnet: Practice Variation

- What explains variation in bariatric surgery type and frequency?
 - Is regionalization or high volume associated with better benefit/risk?
- How much variation exists in uptake of new weight-loss drugs?
 - What are the determinants of this variation at the health plan, delivery system, provider, and patient levels?

Obesity-related Questions Suited for PCORnet: Natural Experiments

- ❁ To what extent does introduction of state policies on school nutrition or child BMI screening, which vary widely across states, influence maternal and child obesity rates?
 - How much does extent of implementation drive the results?

Obesity-related Questions Suited for PCORnet: Dissemination

Dissemination

- How well do delivery system interventions that are proven to prevent childhood obesity (or change obesity-related behaviors) in local cluster RCTs perform in broader settings?

Obesity-related Questions Suited for PCORnet: Simulation of Best Practices



Simulation of best practices

- How well do systems science models of implementation of multiple-component obesity prevention interventions perform in widely varying settings?

Obesity-related Questions Suited for PCORnet: Clinical Trials

Cluster randomized controlled trial

- EMR-based identification, monitoring, evaluation, referral and knowledge transfer
 - E.g., to moderate excessive gestational weight gain
 - E.g., to treat obesity in school age children
 - [EpicCare has created tools for each of these examples]

Individual randomized controlled trial

- Comparative effectiveness trial of the 2 newly approved drugs for obesity treatment in adults: lorcaserin vs. phentermine/topiramate
 - Weight loss, improvements in metabolic parameters
 - Adverse events, toxicity