Pragmatic EHR-Embedded Trials (PEET) Element E Research Program

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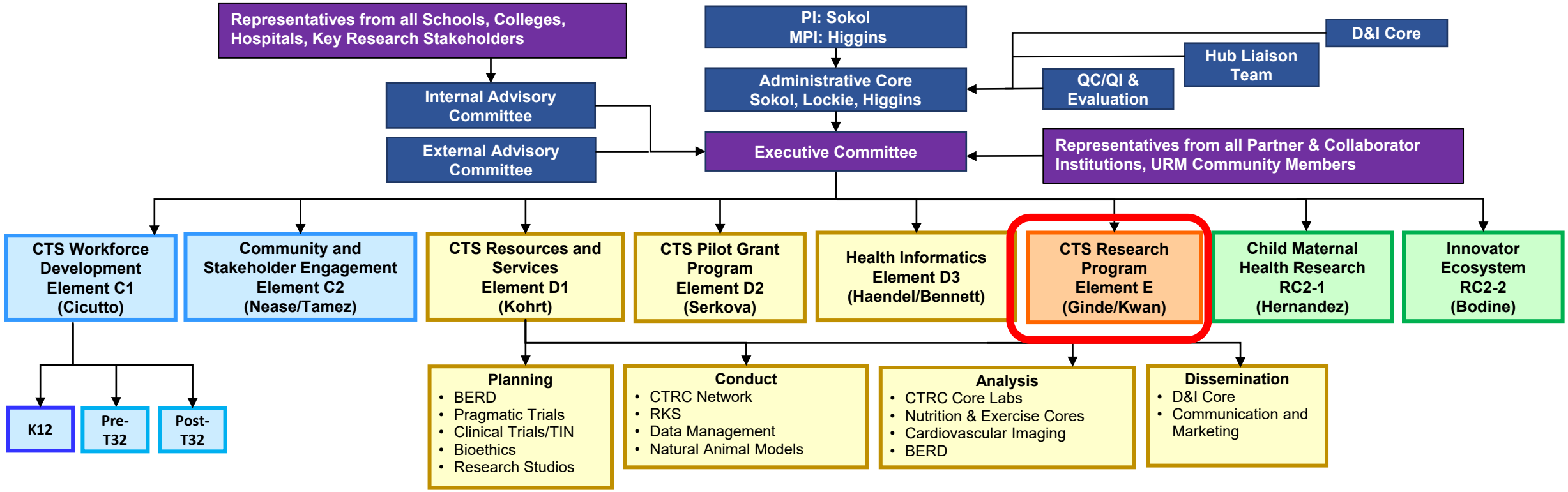

Representatives from all Schools, Colleges, Hospitals, Key Research Stakeholders
PI: Sokol
MPI: Higgins
D&I Core
Hub Liaison Team
Internal Advisory Committee
Administrative Core
Sokol, Lockie, Higgins
QC/QI & Evaluation
External Advisory Committee
Executive Committee
Representatives from all Partner & Collaborator Institutions, URM Community Members
CTS Workforce Development Element C1 (Cicutto)
Community and Stakeholder Engagement Element C2 (Nease/Tamez)
CTS Resources and Services Element D1 (Kohrt)
CTS Pilot Grant Program Element D2 (Serkova)
Health Informatics Element D3 (Haendel/Bennett)
CTS Research Program Element E (Ginde/Kwan)
Child Maternal Health Research RC2-1 (Hernandez)
Innovator Ecosystem RC2-2 (Bodine)
K12
Pre-T32
Post-T32
Planning
• BERD
• Pragmatic Trials
• Clinical Trials/TIN
• Bioethics
• Research Studios
Conduct
• CTRC Network
• RKS
• Data Management
• Natural Animal Models
Analysis
• CTRC Core Labs
• Nutrition & Exercise Cores
• Cardiovascular Imaging
• BERD
Dissemination
• D&I Core
• Communication and Marketing

Strategic Goals

- **Goal 1:** To build infrastructure and governance needed for prioritization and support of the Pragmatic EHR-Embedded Trials (PEET) Program throughout the UCHealth system.
- **Goal 2:** To engage stakeholders in co-design of user guidance materials and protocols for implementation of PEET infrastructure and designing for dissemination across the CTSA consortium.
- **Goal 3:** To conduct pragmatic EHR-embedded triasl and use lessons learned to inform user guidance for a broad range of subsequent pragmatic EHR-embedded trials (up to 2 ongoing per yr to be funded over the 7 years of the UM1 award).

Innovation

- PEET innovations will increase efficiency, reduce cost, and enhance diverse participation in clinical trials, providing more generalizable evidence to inform real-world care.

  •Build, test, and disseminate an **innovative model for scalable, sustainable infrastructure and governance** for pragmatic EHR-embedded trial prioritization and conduct in the context of usual care processes that will **reduce health system and participant burden**

  •Co-design and implement **patient-centered user guidance materials and protocols**, including recommended e-consent adaptations and alternatives, that will **enhance diversity in trial participation**.

  • Development of an **automated real-time study dashboard** directly from the EHR data to monitor accrual, demographics, balance of randomization, special safety labs, to monitor diversity in real time**.**

Impact

ELEMENT E addresses the following Translational Science Roadblocks:

1) The high participant and provider burden and costs associated with randomized, controlled clinical trials (RCTs)

2) The current inability to harness an entire health system, such as University of Colorado Health (UCHealth), for research beyond the central academic hospital

3) Limited stakeholder engagement and access to studies for those living outside of major urban areas, which limits participation by rural and minority populations and, thereby, limits broad translation of such research

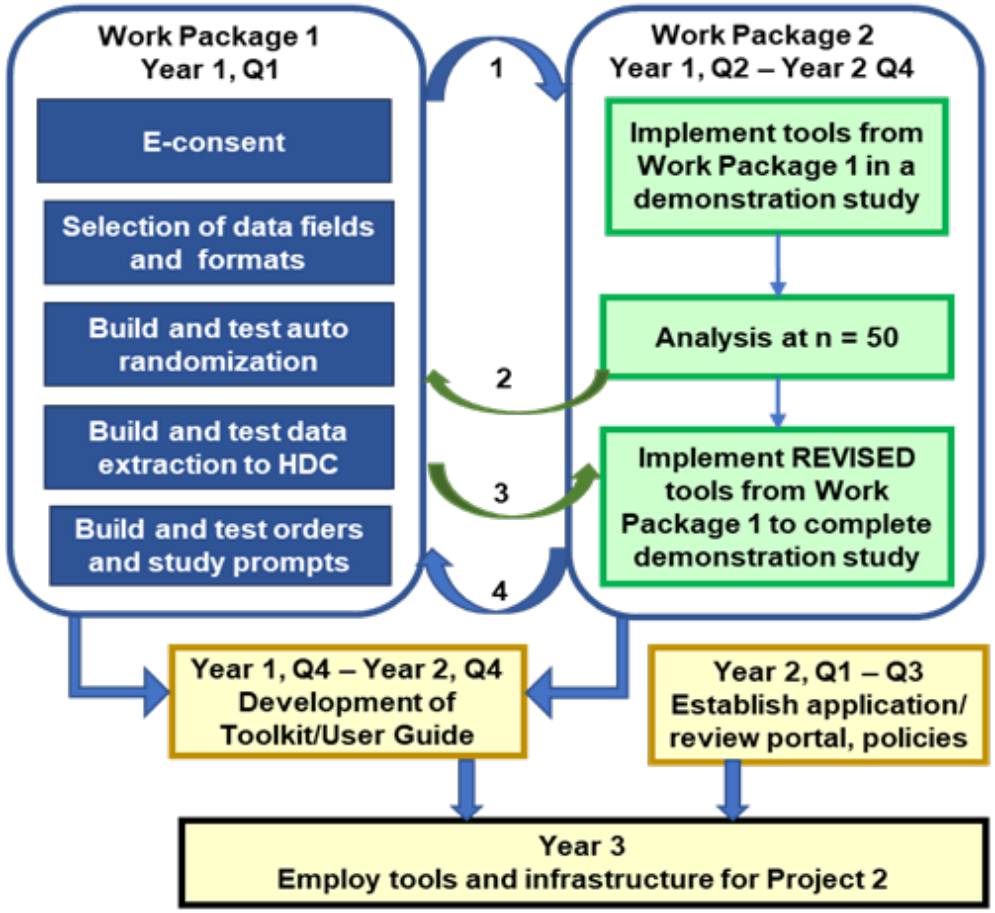
4) The lack of clinical trial expertise within hospital IT departments, making it difficult to appropriately review and prioritize requests for EHR embedded trials

5) The high cost and intense resource needs of RCTs.

Approach:
Goal 1 Build Program Infrastructure

- **Structure, Governance, Integration**
  - Dr. Ginde and Dr. Kwan, Co-leads
  - Dr. Flaig, PI of Goal E3 Demonstration Study
  - Implementation Team: Bennett (Element D3), Nease (CEHE), Hess (UCHealth CIO)
  - Steering Committee: Campbell (UCHealth CCRO), Sokol, Bennett, Brooks (Health Data Compass Director), Mimnall (UCHealth IT), Holtrop (pragmatic research), Gonzalez-Fisher (CEHE), Walden (e-consent)
  - Request for Applications (RFA)
    - 1-2 ongoing PEET-supported projects/year (trials up to Phase 2B only; $150k/year)
    - Element E Start-Up Package

Figure E1. Workflow and timeline for PEET Research Project



Approach: Goal 3

A Randomized, Pragmatic, Adaptive trial of Metformin for Glucose Intolerance or Increased Body Mass Index in Prostate Cancer Patients (PI: Thomas Flaig, MD)

- **Primary Objective:** *To assess the feasibility of a randomized, pragmatic, adaptive, interventional trial in a multi-center hospital system with a goal accrual of 200 evaluable patients in 2 years*

- **Study Enrollment:** *200 patients signing consent to enroll in the metformin/lifestyle study (consent #2 or #3) in My Health Connection (MHC) or otherwise in Epic*
  - *Adaptive with ability to increase subject number after initial 200 enrollees*

Trial Background and Rationale

- Metformin is used widely in the treatment of type 2 diabetes.
  - It has off-label indications for use in the prevention of diabetes and in hyper-insulinar obesity.
- Multiple retrospective investigations have also shown a clinical benefit in men with prostate cancer who are incidentally treated with metformin.
- This pragmatic study will test the feasibility of enrolling patients who have glucose intolerance and/or who have increased BMI (BMI $\geq$ 25 kg/m^2) to a randomized study of metformin plus lifestyle modification information versus lifestyle modification information only.
- For purposes of the scope of this project and the study's feasibility, this will be implemented in a group of prostate cancer patients, who may have additional benefits from metformin.

Rationale for Selection for Element E

We have institutional strengths in this area

- Health system EMR integration
- Past e-consent efforts (biobank)
- Health Data Compass
- Institutional engagement

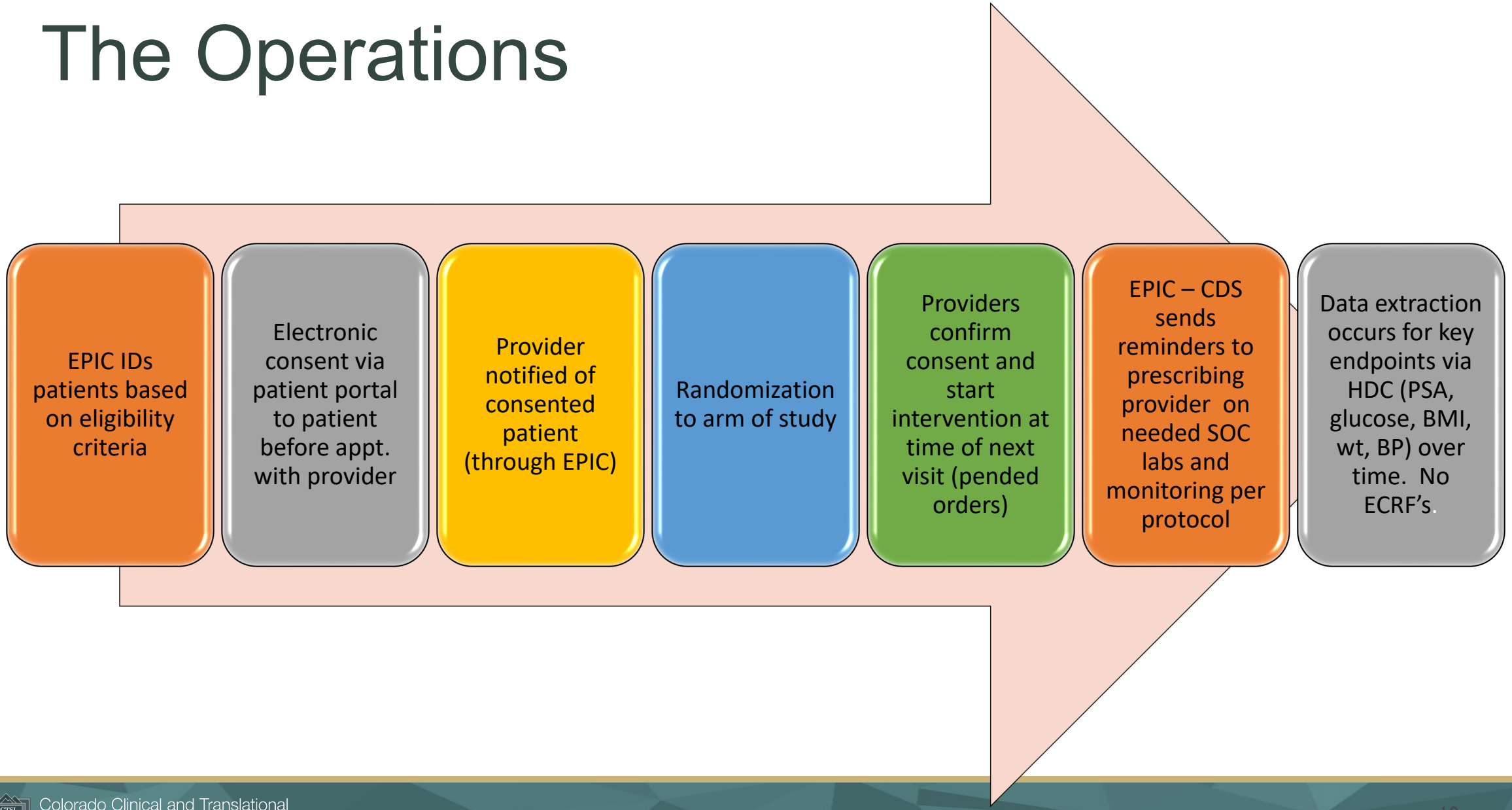
Novel clinical trial design

- Less impact on providers and patients
- Imbedded in EMR
- Less data transcription

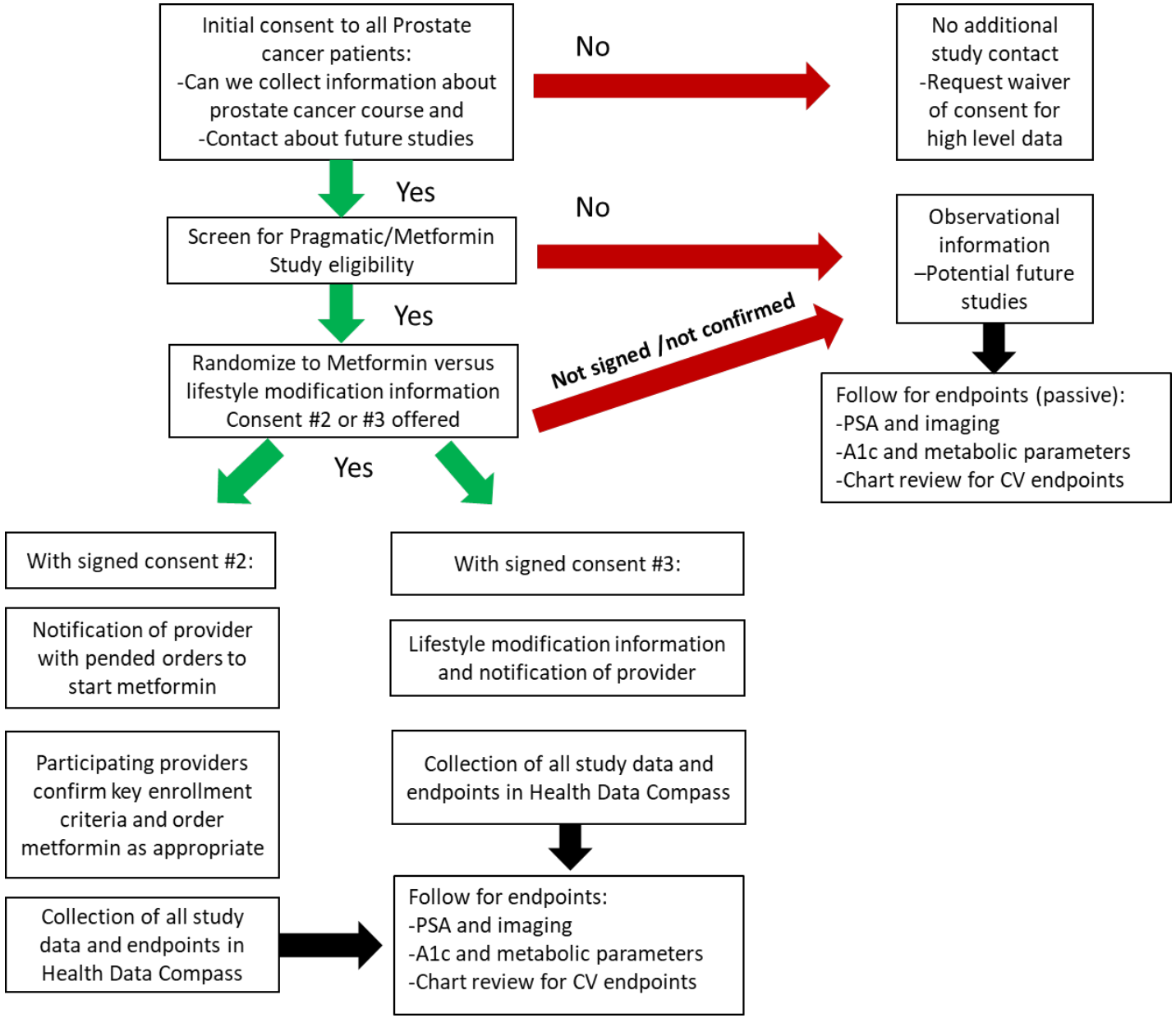
Chance to disseminate

- Plan to use this project as a model
- Assess patient engagement
- Assess provider experience

The Operations

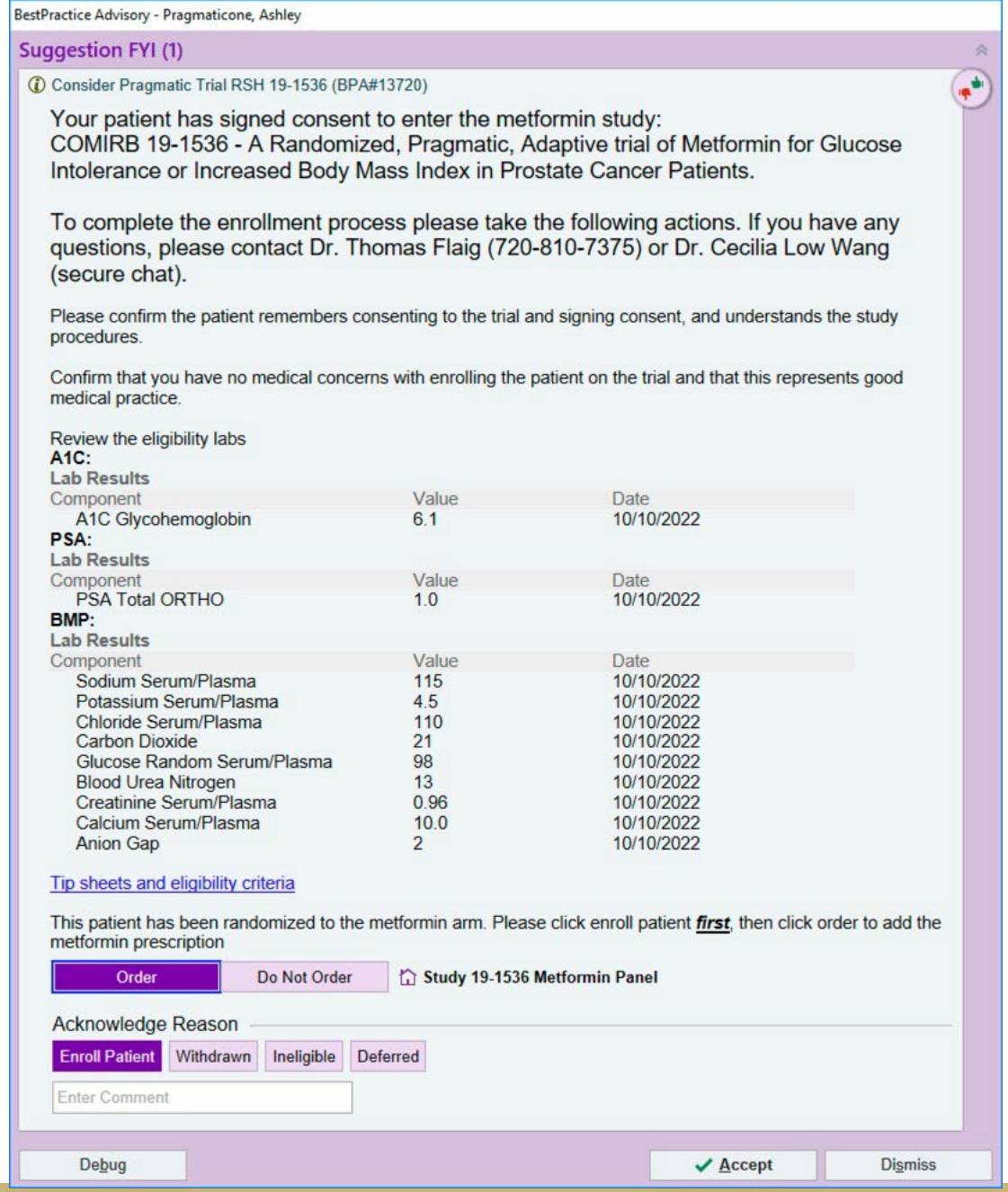


Study Schema

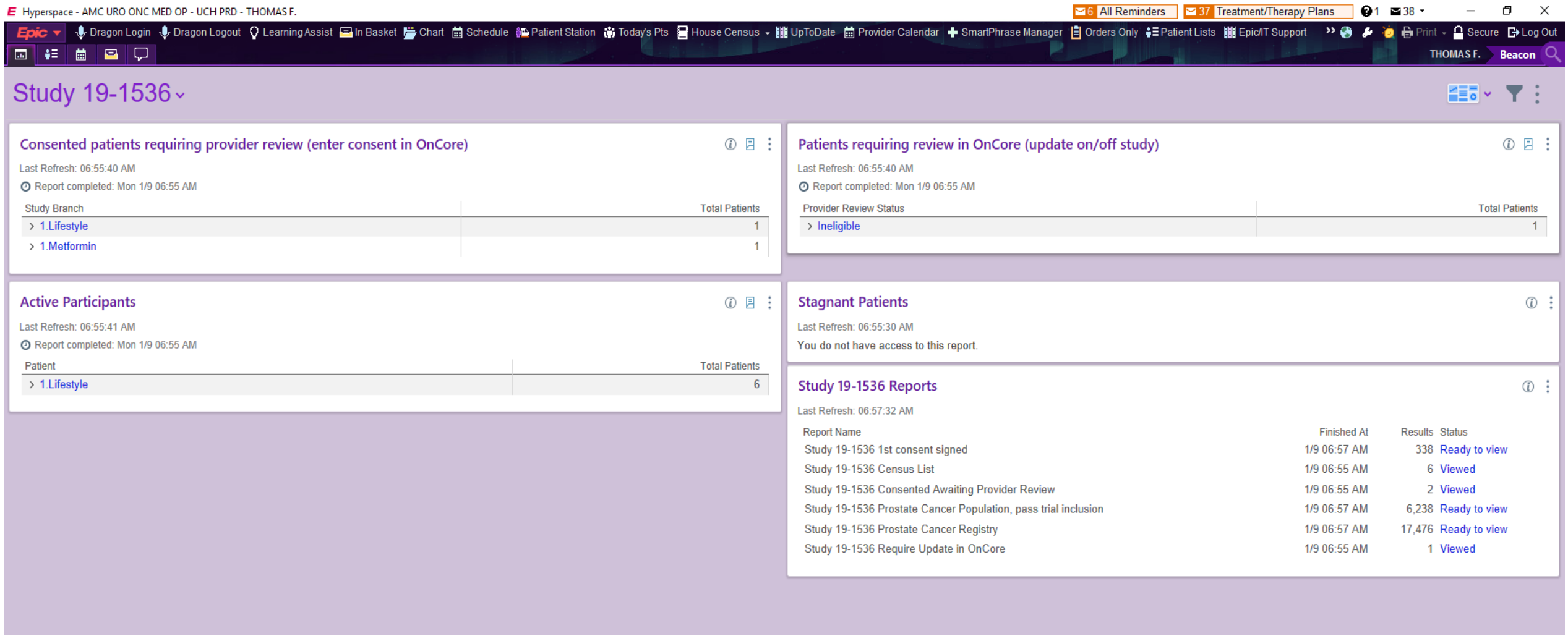


Best practice advisories

- Working closely with hospital IT
  - Integrated clinical “pop ups”
  - Customized to needed labs/screening information
  - Customized study dashboard



Study Dashboard development



Goal 2 Co-Design User Guidance Materials

- Establish a Multi-Stakeholder Panel, including researchers, providers, patients, and health system leaders.
- Conduct Community Engagement Studios (CE Studios)
  - PEET investigator user guidance materials and protocols
  - Strategies for promoting trust and equitable participation among diverse communities
  - User testing with think aloud techniques
- Conduct Customer Discovery & Value Proposition Design
  - Messaging about value of PEET program incorporated into RFA
- Package and distribute PEET infrastructure and user guidance materials across the CTSA Consortium

DEIA and Health Equity

- Enhanced equitable access to participation in clinical research
  - Minimize selection bias occurring with in-person consent
  - Leverage trusted relationship between patient and provider
  - Ease of access for patients living in areas farther from UCHealth physical sites
- Addressing potential concerns regarding the "digital divide"
  - Engage communities in co-design of adaptations and alternative strategies for e-consent
- Enhance community and other stakeholder engagement in research
  - Integrate guidance on engaging stakeholders in planning, conduct, and dissemination of research into PEET user guidance materials

Expected Outcomes

Benchmarks	Deliverables/metrics
Development of EHR & HDC infrastructure for PEET	Date of first PEET demonstration study launch
Iterative improvement to EHR and HDC resources	Launch date for each integrated change Number of changes/yr
Establishment of the Steering Committee	Date of first full meeting to work on Element E
Creation of the PEET application portal and policies	Policy ratification by CCTSI and UCHealth Date of portal activation
Development of PEET user guidance materials	PEET SC approval of each module and lessons learned
SC review of PEET applications	Number of protocols reviewed per year Number of protocols approved, sent to UCHealth Time from application to SC approval
Implementation of new PEET protocols	Number of new PEET studies launched per year
Ongoing additions/improvement to PEET resources	Number of changes recommended by SC/yr Number of changes launched per yr
Rate of patient enrollment	Enrollment of 200 patients in 2 yrs Patient demographics > state averages

Metrics and Evaluation

- Trial Dashboard in Epic
  - Accrual and participant demographics
    - Goal E3 Demonstration Study: 200 patients in 2 years
    - Representative of Colorado demographics
  - Feedback from participants
- Acceptability and Usability of User Guidance Materials
- Number and Quality of PEET Proposals/Year
- Adoption and Use of PEET Model across CTSA Consortium

Integration and Collaboration

- Element E integrates across multiple CCTSI cores
  - Informatics
  - Dissemination & Implementation
  - Community Engagement & Health Equity
  - Resources & Services: Pragmatic Trials, TIN, Dissemination Service
- Element E leverages and fosters collaboration across the UCHealth system

Dissemination and National CTSA Involvement

- Plans to package and disseminate the PEET model across the CTSA consortium
- Collaborate and share experiences with other CTSA programs implementing pragmatic EHR-embedded trials
- Leverage the expertise, methods, and resources of the CCTSI D&I core