Workshop to Advance the Use of Electronic Data for Conducting PCOR

Lessons from the Field: DARTNet

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Thanks and acknowledgements to:

- Wilson D. Pace, MD
  CEO, DARTNet Institute

- Lisa Schilling, MD
  PI, SAFTINet
  University of Colorado

- Michael Kahn, MD, PhD
  Director, Biomedical Informatics Core, Colorado Clinical Translation Science Institute

DISCLOSURE STATEMENT

- I have no financial investments in and receive no funding from any of the companies mentioned in this presentation.

- No off label medication use will be discussed.

- I have made many mistakes in my professional career, and expect to continue doing so.

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Distributed Ambulatory Research in Therapeutics Network (DARTNet)

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Why DARTNet?

- Concept developed by Wilson Pace at the University of Colorado, as a mechanism to leverage commercially available clinical decision support technology to meet the needs of primary care clinicians and researchers

- An outgrowth of the Primary Care Practice-Based Research Movement - to link physician practices together to provide them with the tools for improving quality and performance, independent of integrated healthcare systems or third party payers

- To create linked clinical data to provide an improved/ enriched data source for Comparative Effectiveness Research (both observational and prospective)

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What is DARTNet?

- A Federated Network – Launched with support from AHRQ as a prototype to extract and capture, link, codify, and standardize electronic health record (EHR) data from multiple organizations and practices

- Now a Research Institute (a not-for-profit corporation) that "houses" a Public/private partnership including:
    9 research networks,12 academic partners, American Academy of Family Physicians, QED Clinical, Inc., and ABC – Crimson Care Registry

- A Learning Community

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eNQUIRENet
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FREENet
MSAFPRN
SAFTINet*
STARNet
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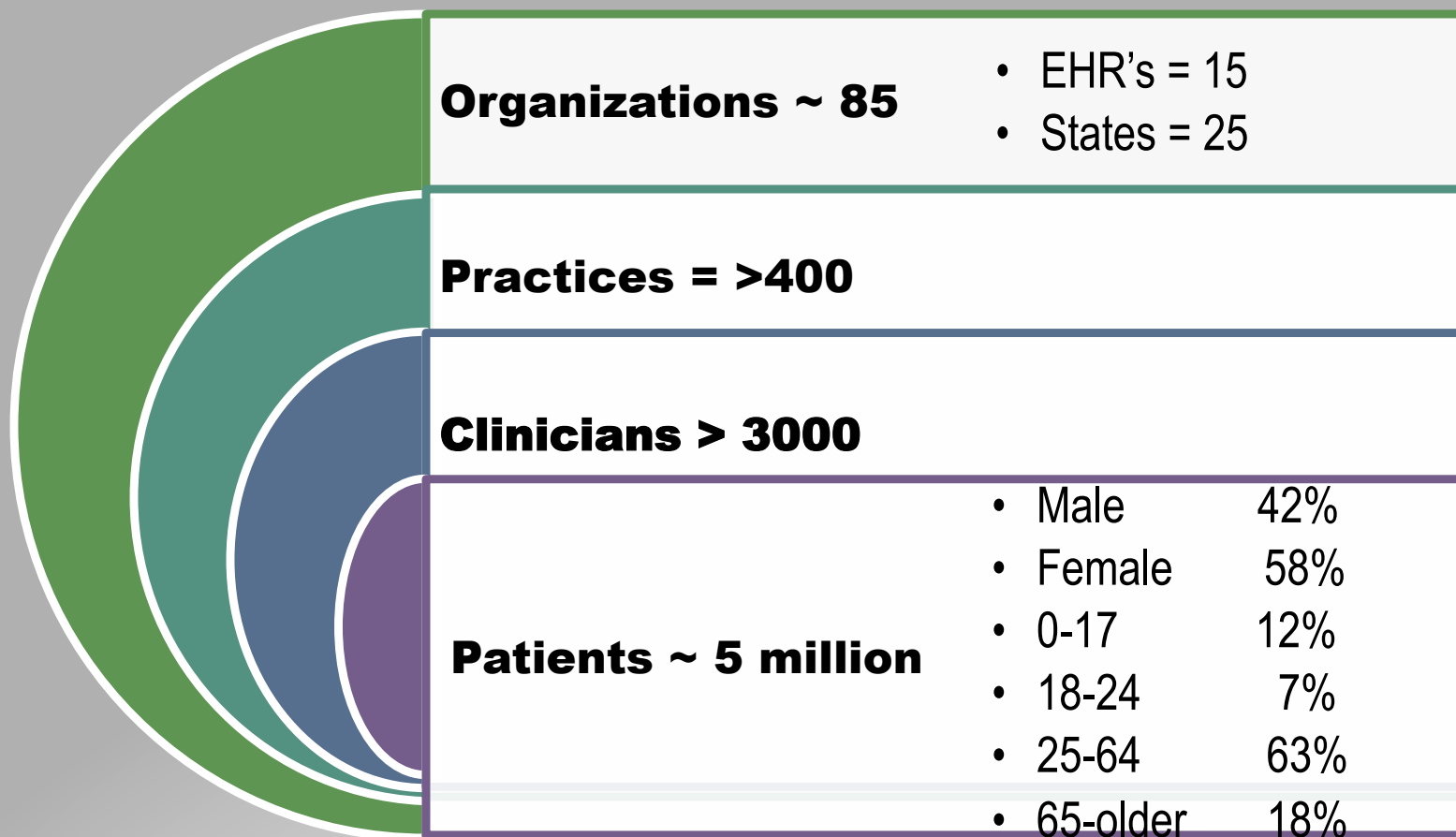
*Technical Partner

DARTNet Governance

Legal

- A not-for-profit corporation
- Participant model rather than membership model
- Ability to independently contract and secure grants
- Ability to charge indirects to cover infrastructure needs
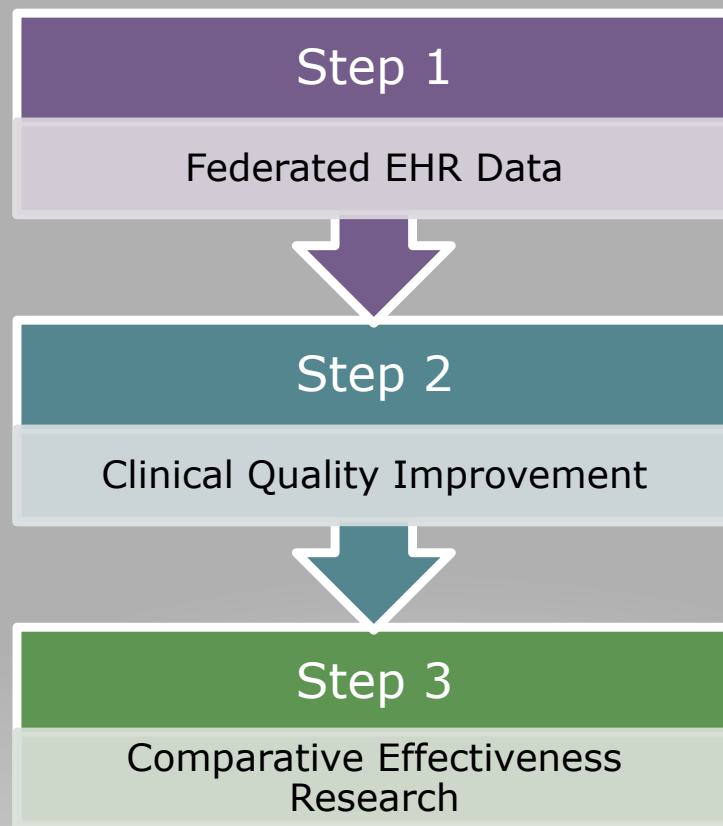
Practical

- BOD with Committee structure for decision-making
- Speed boat rather than oil tanker
- Customer service driven
- Learning/Translation focus
- Centralized Expertise/ Support: BA, DUA, LDS, PHI protection, IRB, HIPAA, Security, Intellectual Property, Master Collaborative Agreements

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DARTNet Scope and Scale

Organizations ~ 85
- EHR's = 15
- States = 25

Practices = >400

Clinicians > 3000

Patients ~ 5 million
- Male   42%
- Female   58%
- 0-17   12%
- 18-24   7%
- 25-64   63%
- 65-older   18%

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How does DARTNet work?

Step 1

Federated EHR Data

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Step 2

Clinical Quality Improvement

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Step 3

Comparative Effectiveness Research

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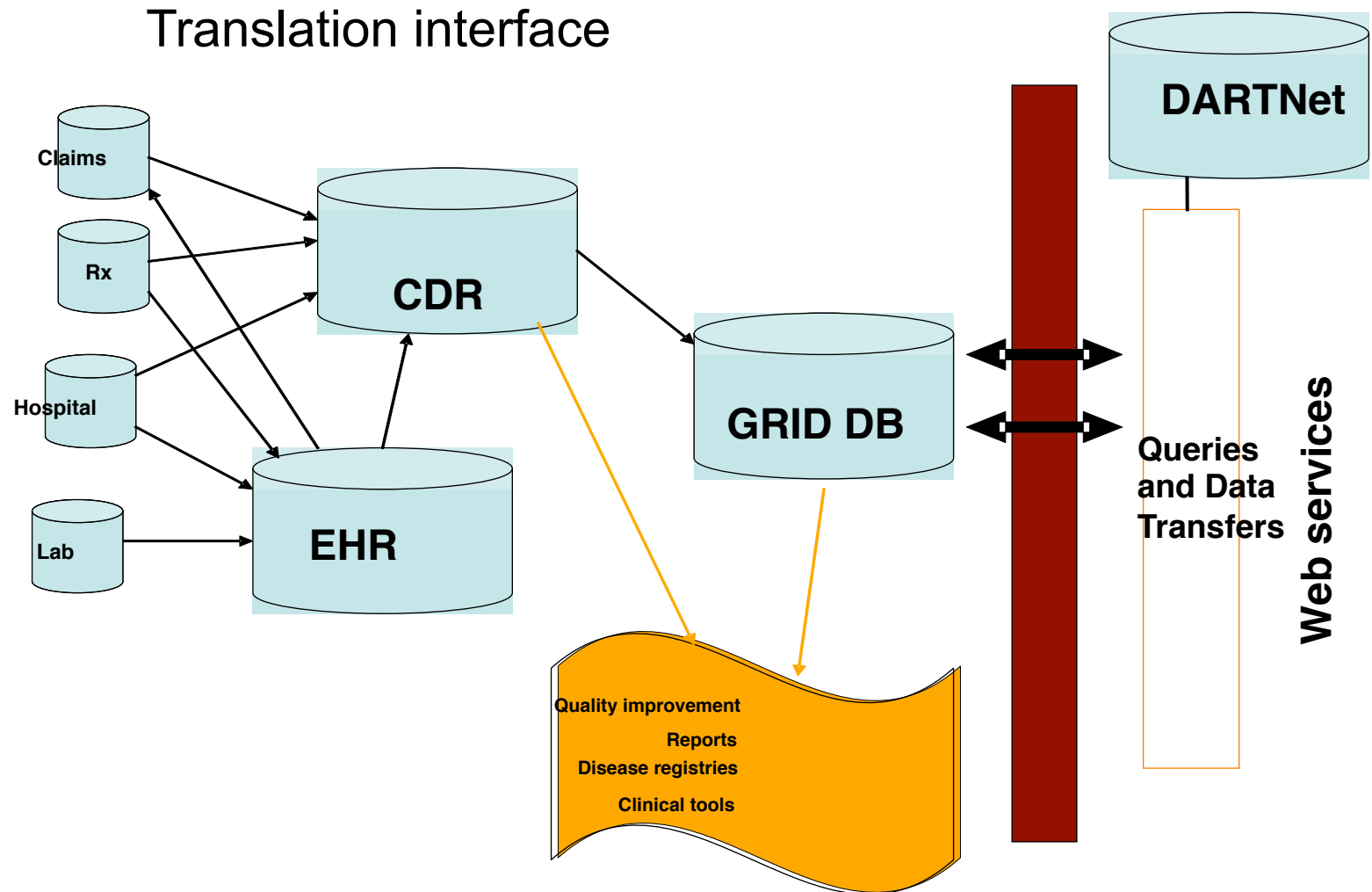Informing Practice Improving Care

Data management overview

- Data stays locally
- Standardized locally with retention of original format for both:
  - Quality checks
  - Recoding in future
- Each organization retains control of patient level data
- Local processing allows expansion and scale up

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Technical overview

- EHR independent
- Data standardization middle layer tied to clinical decision support at most sites
- Exploring alternative data collection approaches
- Adding multiple data sources

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Single Practice Perspective

Translation interface

Claims

Rx

Hospital

Lab

CDR

EHR

GRID DB

DARTNet

Queries and Data Transfers

Web services

Quality improvement

Reports

Disease registries

Clinical tools

Technical Advancement : SAFTINet

AHRQ R01 HS019908-01 (Lisa Schilling- PI)

- New Grid Services
  o Based on TRIAD
  o Underlying database extension of OMOP
  o Provider, visit, claims extensions
- Data moving to OMOP terminology
- Adding clear text and privacy protected record linkages for 3rd party data
- Incorporation of Patient Reported Outcomes
- Focus upon the underserved

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Introducing ROSITA

Reusable **O**MOP and **S**AFTINet **In**t**erface **A**daptor

..and ROSITA it the only bilingual Muppet

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Why ROSITA?

Converts/Translates EHR data into research limited data set

1. Replaces local codes with standardized codes
2. Replaces direct identifiers with random identifiers
3. Supports clear-text and encrypted record linkage
4. Provides data quality metrics
5. Pushes data sets to grid node for distributed queries

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ROSITA-GRID-PORTAL
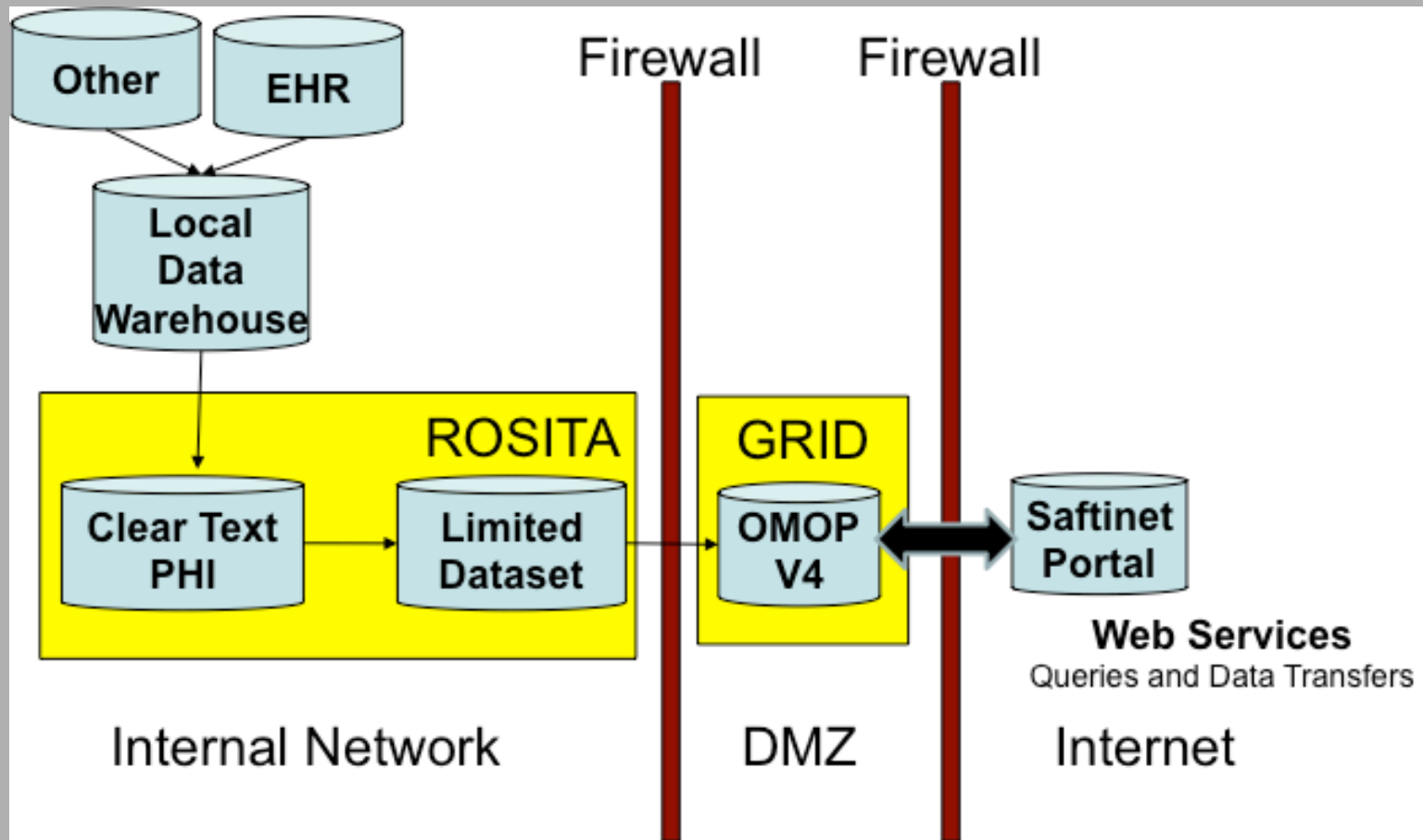
Key Achievements

- Successful completion of pragmatic trails
- Successful completion of observational studies
- Numerous publications and monographs
- Successful funding record from AHRQ, NIH, others…Spawned SAFTINet (ROSITA)
- Practices achieved significant performance improvement (with tangible returns via PQRS, MOC IV, and Meaningful Use)

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Opportunities/Gaps/Needs

- Unlimited scale-up potential
- GRID Computing Technology is not yet mature – but holds tremendous promise
- Enhancing Technology and Culture to collect Patient Reported Outcomes: A research terms that encompasses so much
- Testing, using, sharing ROSITA – an important contribution
- Sorting out linkage to Medicaid data