Quality Improvement and Research Perspective

Innovation in Electronic Health Records for Oncology Care, Research, and Surveillance: A Virtual Workshop

Session 1: Overview of the Use of EHRs in Oncology Care, Research, and Surveillance National Cancer Policy Forum

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Disclosures

Employment by Flatiron Health, Inc., an independent subsidiary of the Roche Group

Equity interest in Flatiron and Roche

Medicine + Research + Technology

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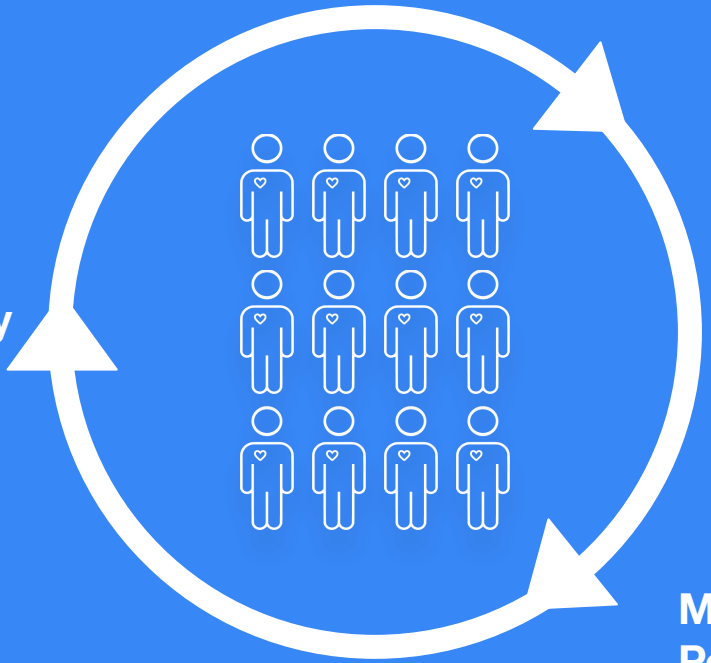
Quality Improvement (QI) Flywheel



Define Quality Metric

Performance Improvement Interventions

Measure Performance

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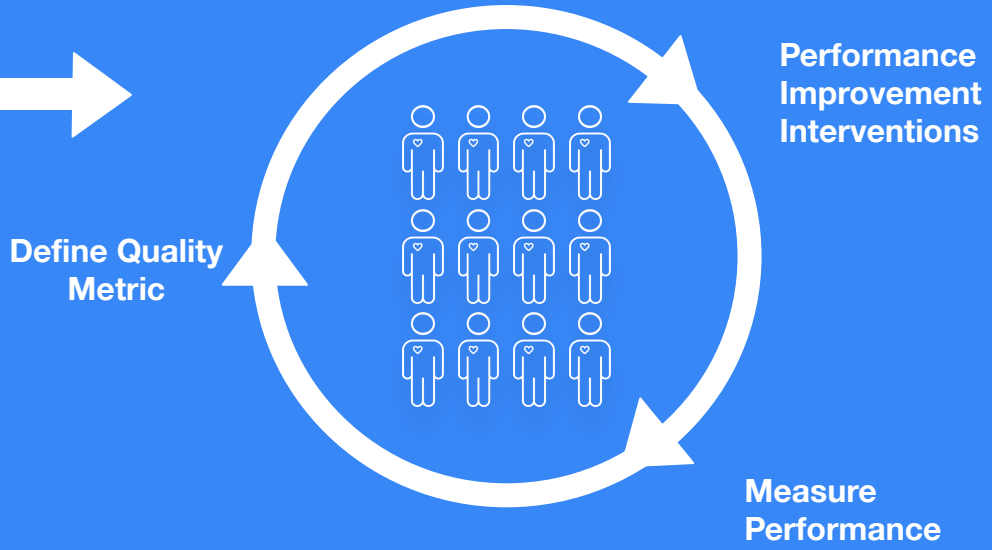
Research informs Quality Improvement

Research

- New innovations
- Benchmarking
- Evidence-based best practices
- Evidence-based interventions
- Meaningful outcome measures



Both QI and Research require rigor regarding project design, populations, endpoints, & analytic plan

EHRs were not built for quality improvement or research

However…

- ✓ **Rich source** of patient-level data
- ✓ **Integrate** multiple data sources
- ✓ **Real-time** documentation
- ✓ **Digital** information
- ✓ Key component of **point-of-care workflow**
- ✓ **Representative** of all patients

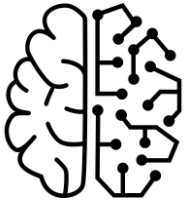
Basic tools that enable EHRs for QI and Research

Privacy framework that respects patients

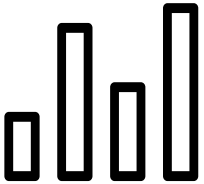
Curation capabilities for structured & unstructured data

Front-end and back-end EHR access

Linkage to data not documented in the EHR



Careful application of ML and NLP



Relentless appetite for context-specific characterization of data quality and fitness-for-purpose

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Examples of EHR-enabled Cancer Quality Initiatives

- Guideline / Quality Metric Concordance Measurement
- Benchmarking
- Treatment Decision Support
- Risk Prediction Modeling
- Prompting / Nudging
- Patients Like Mine

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EHRs for Retrospective Research

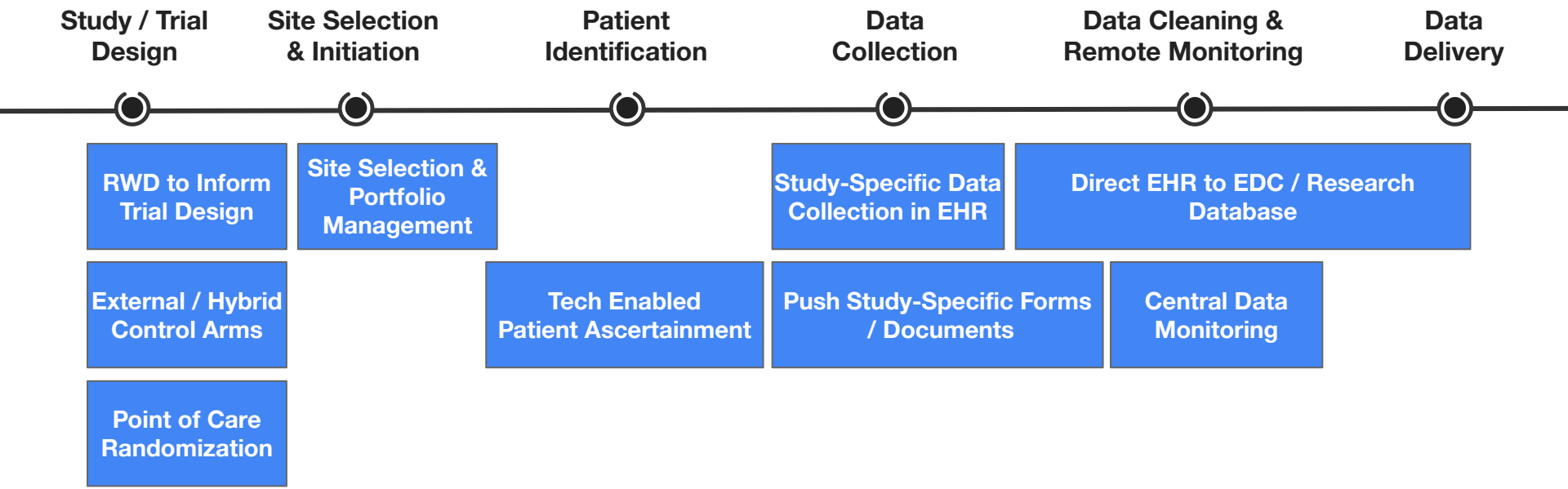
Retrospective RWD has many successes…

- Understanding real-time practice patterns and outcomes
- Comparative effectiveness
- Policy impact on patient care & outcomes
- Supporting regulatory and HTA decision making
- Understanding healthcare disparities
- Design of prospective studies

…but also some limitations

- Missingness
- Bias (selection, confounding)
- Causal inference
- Outcome measurement (timing, characterization)
- Exposure inconsistency

EHRs in prospective research - a new opportunity to bridge research and practice



Implement pragmatic design elements and leverage routinely collected data whenever possible

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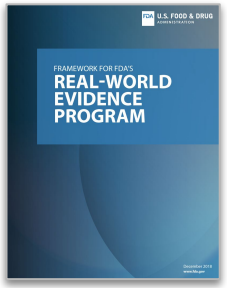
Momentum is Building

FDA Program & Draft Guidances

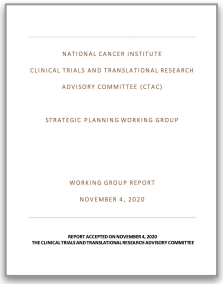
2018



2021

NCI CTAC Strat Plan

2020



- Decentralized trial activities
- New data collection approaches
- Operational burden

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How can we realize an Integrated EHR-based Evidence Generation Platform and Quality Improvement System?

Incentivize high quality **data entry**

Legislate **interoperability**

Promote adoption of **data standards**

Normalize data sharing with privacy protections

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Thank You

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