OHDSI Educational Efforts within a Learning Health System at JHU

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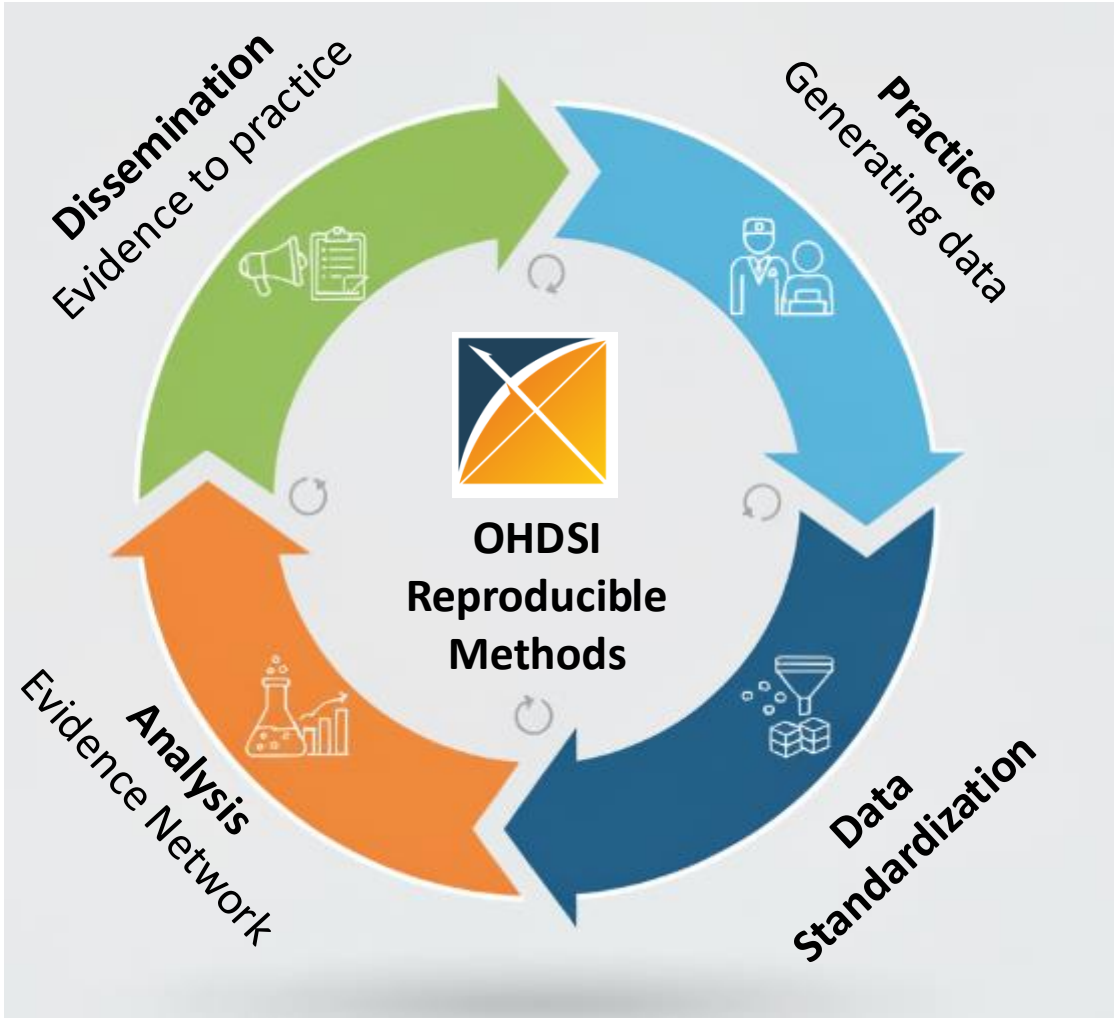
OHDSI Community at JHU

1. JHU OHSDI Community Building
2. JHU Graduate Courses
3. JHU Resident Data Science Scholars Program
4. The OHDSI Maternal Health Fellowship

OHDSI at JHU

OHDSI is at the heart of our efforts to empower a learning health system.

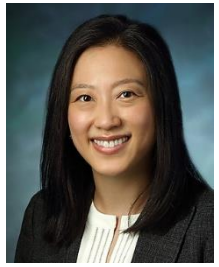


If you are a learning health system, we would love to collaborate with you.

Biomedical Informatics & Data Science (BIDS)

bids.jhmi.edu

JOHNS HOPKINS SCHOOL of MEDICINE



ME 250.782 Observational Health Research Methods on Medical Records (OMOP)

Q1

- OMOP CDM fundamentals; messy data → large-scale analytics
- Research question framing; data quality & characterization
- Reproducible/interoperable studies with Athena/ATLAS, vocabularies, cohorts

ME.250.961 Large Scale Observational Research Preparation

Q2

- Team-based prep for OHDSI network studies using OMOP CDM
- Pipeline: use case → design → IRB → protocol → preliminary phenotypes

ME.250.788 Observational Research Methods in R

Q3

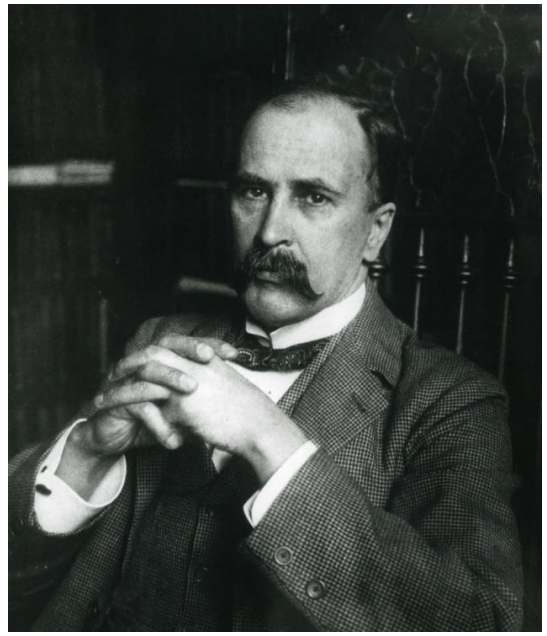
- R-based EHR analytics: characterization, time-at-risk, causal inference
- HADES Suite for cohort building and statistical analysis on de-identified EHR

Lead by: Asieh Golozar, Cindy Cai, Ben Martin, Danielle Boyce, Robert Koski, Erik Westlund

If you are a program director, we would love to partner with you and share our curriculum.

Data Science Track in Osler Internal Medicine Residency

- **Osler Internal Medicine Residency:**
  - The first formal residency program in the US founded in 19th century
- Introduced a data science residency concentration
- 2-week OHDSI Palooza
  - 26 presenters across disciplines
  - 7 Residents
- Dual projects
  - Short feasible OHDSI network study in the area of their fellowship interest
  - A 2nd enriched OMOP study that would help line up K award (Early clinical scientist).



L-R, Drs. Christopher Mecoli, Matthew Robinson, and Paul Nagy, directors of the new Data Scientist track in the Osler Internal Medicine Residency Program

If you are a resident director, we would love to partner with you and share our curriculum.

OHDSI Palooza 2025

The OHDSI Maternal Health Leadership Fellowship

- Synchronous calls 1/month + PHReG WG 1/month
- 18-month leadership faculty development program
- Call went out for applications February 2024
- Notice of acceptance July 2024
- 21 Fellows from 20 Institutions!
- Program launched September 2024

Andreea Creanga, MD, PhD

Maternal Health Data Innovation & Coordination Hub

NIH National Institutes of Health
Turning Discovery Into Health

Home › News & Events › News Releases

Thursday, August 17, 2023

NIH establishes Maternal Health Research Centers of Excellence

The OHDSI Maternal Health Fellowship

Learning to…

- *Work with EHR data (observational research)*
- *Lead Network Studies*
- *Participate in the OHDSI Community*

Education

- *The Book of OHSI*
- *EHDEN Courses*
- *Monthly speakers*
- *YouTube Videos*
- *Seminal publications*

Networking

- *Access to experts*
- *PHReG*
- *Symposium*
- *Mentoring*
- *Cohort collaboration*

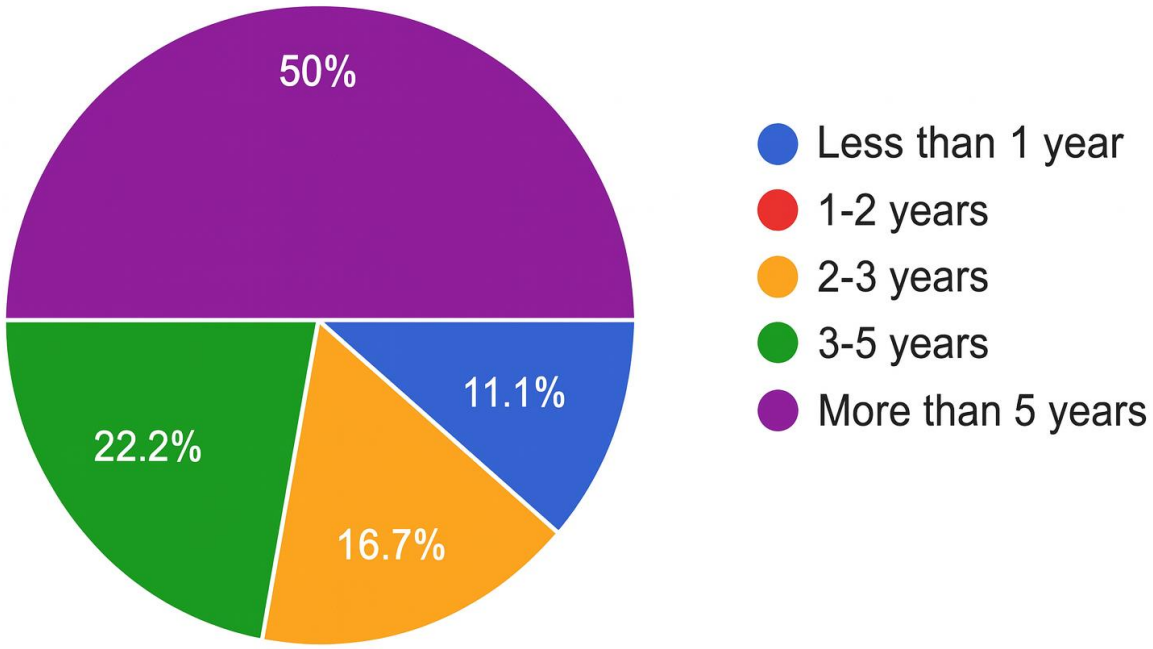
Practice

- *Research projects*
- *Office Hours*
- *Training Environment*
- *Teamwork*
- *Organizational capacity building*

This is a great way to supercharge a clinical working group.

Fellowship Cohort Background

Clinical Research Experience (N = 17)



Professional Roles

Part I : Foundational Knowledge & Design

Part 1: Foundational Knowledge & Design *Research Concepts, Ethics, and Protocol Development*				
Domain	**Competency Area**	**Before Training**	**After Training**	**Improvement**
1. Scientific Concepts & Research Design	Identify Research Questions for Maternal Health EHR Studies	4.9	7.3	+2.4
	Understand OHDSI Study Designs	2.8	6.7	+3.9
	Design Cohorts Using ATLAS	2.1	5.8	+3.7
2. Ethics & Governance	Human Subject Protection Principles	5.4	7.8	+2.4
	Ethics in Maternal Health Research	7.8	8.7	+0.9
	Data Governance & Regulatory Requirements	4.5	7.0	+2.5
3. Protocol Development	Formulate Research Questions & Hypotheses	5.8	8.1	+2.3
	Define Inclusion/Exclusion Criteria	5.6	7.9	+2.3
	Define Computable Phenotypes	4.2	6.9	+2.7
	Select Appropriate Data Elements	6.1	7.8	+1.7
	Develop Statistical Analysis Plans	6.7	7.9	+1.2
	Understand Protocol Components	7.3	8.6	+1.3

Part II : Operational & Technical Skills

Part 2: Operational & Technical Skills *Study Operations, Site Management, and Data Analysis*				
Domain	**Competency Area**	**Before Training**	**After Training**	**Improvement**
4. Study Operations	Manage Multi-institutional Study Execution	2.2	4.9	+2.7
	Understand OHDSI Network Team Roles	3.5	6.2	+2.7
	Use GitHub for Collaborative Research	2.8	4.0	+1.2
5. Site Management	Coordinate Timelines Across Sites	2.8	5.1	+2.3
	Manage Communication with Data Partners	3.2	5.6	+2.4
	Track Study Progress Across Sites	2.9	4.9	+2
6. Informatics & Data Analysis	Understand OHDSI Data Flow Process	2.6	5.1	+2.5
	Use Standardized Vocabularies & Concept Sets	1.7	5.6	+3.9
	Understand OMOP CDM Structure	2.1	6.8	+4.7
	Use OHDSI Tools (ATLAS) for Cohorts	1.5	5.6	+4.1
	Conduct Characterization Tasks	1.5	4.4	+2.9
	Conduct Population-level Estimation Studies	1.8	4.1	+2.3
	Apply Statistical Methods for Large-scale Analysis	4.8	5.9	+1.1

Part III : Leadership & Communication

Part 3: Leadership & Communication *Professional Leadership and Team Collaboration*				
Domain	**Competency Area**	**Before Training**	**After Training**	**Improvement**
7. Leadership & Professionalism	Take Initiative in Research Planning	1.9	5.2	+3.3
	Apply OHDSI Guidelines & Conventions	2.1	5.6	+3.5
8. Communications & Teamwork	Understand Network Communication Protocols	2.5	5.6	+3.1
	Communicate Findings to Non-technical Audiences	6.1	7.5	+1.4

Average Improvement by Domain

Research Competency Assessment Results *Pre and Post Training Evaluation*			
Research Competency Area	**Before Training**	**After Training**	**Improvement**
Scientific Concepts & Research Design	3.3	6.6	+3.3
Ethics & Governance	5.9	7.8	+1.9
Protocol Development	6.0	7.9	+1.9
Study Operations	2.8	5.0	+2.2
Site Management	3.0	5.2	+2.2
Informatics & Data Analysis	2.3	5.4	+3.1
Leadership & Professionalism	2.0	5.4	+3.4
Communications & Teamwork	4.3	6.6	+2.3

Key Training Impact *Summary Statistics*	
Key Metrics	**Value**
Overall Average Before	3.7 / 10
Overall Average After	6.2 / 10
Average Improvement	+2.5 points
Highest Improvement	+3.4 points
Top Performing Domain	Leadership & Professionalism

The next cohort is coming! The application process will open in February 2026