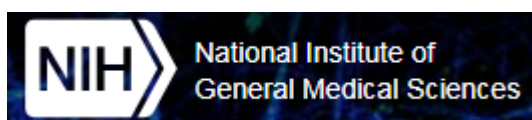# Leveraging OUHSC
Clinical Data Warehouse
for Emergency Medicine Research

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Biomedical & Behavioral Methodology Core (BBMC)

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2020

Terms

- **EMR** (or EHR): Electronic Medical/Health Records

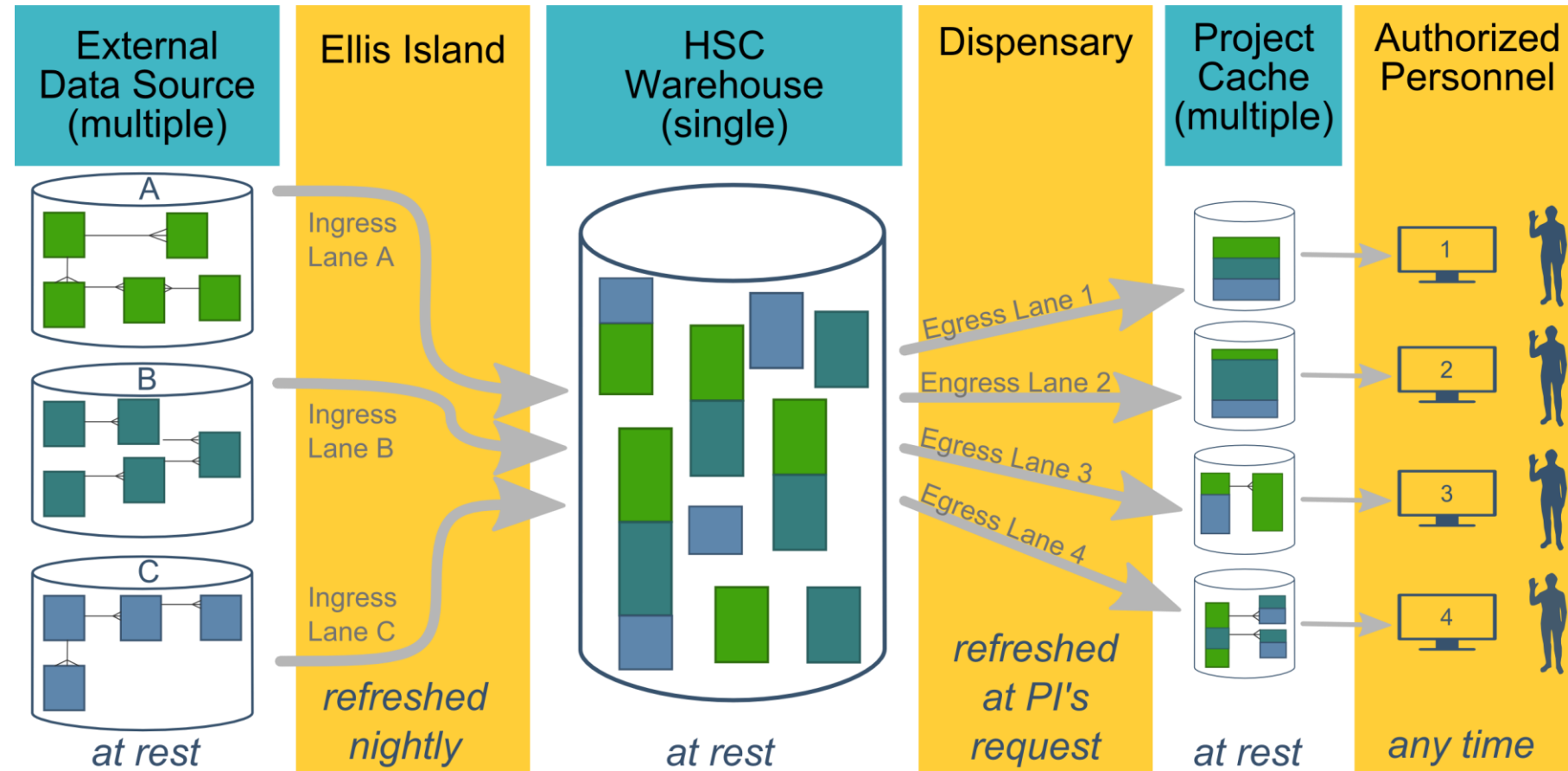 A huge database with patient records used by providers

- **CDW**: Clinical Data Warehouse

  A collection of databases (such as EMRs and project-specific datasets) that has been transformed to make research more efficient and complete

Prairie Outpost – CDW (Clinical Data Warehouse)

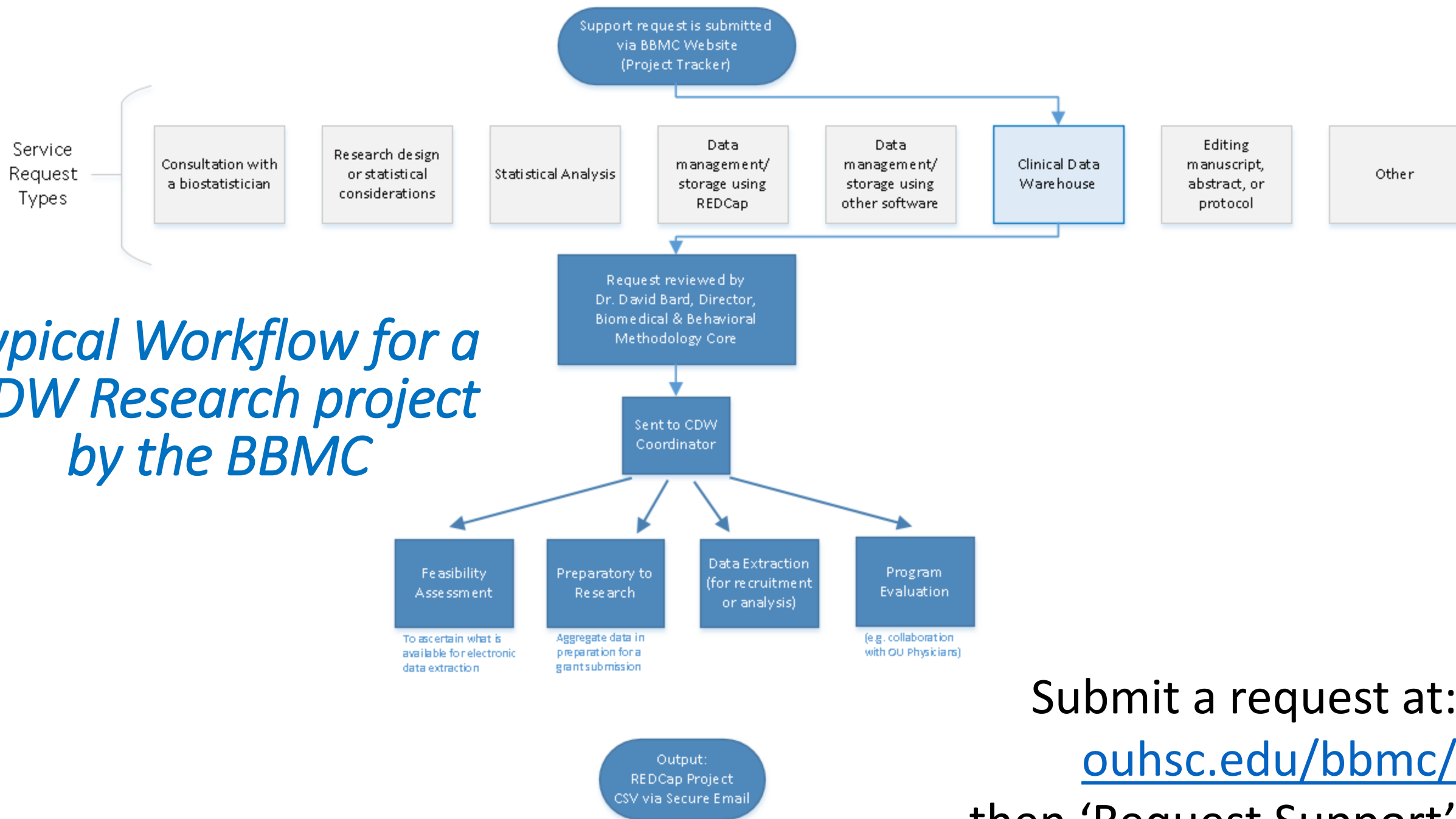https://github.com/OuhscBbmc/prairie-outpost-public

Ecosystem Architecture

◦ **Data Source** (column 1): contains unique info

◦ **Warehouse** (column 3): contains copy after manipulation

◦ **Project Cache** (column 5): contains copy of copy after a lot of manipulation

HSC Data Sources

- Patient
  - Outpatient (Centricity)
  - Billing and Claims Data
  - Inpatient (Meditech)
  - *Dozens* of departmental sources
  - Biomedical Research Data
  - Epic (in ~1 year)
- Provider
- External Agencies
  - Service Provided (by the Health Dept of Oklahoma)
  - Child Protective Services (Oklahoma Dept of Human Services)
  - Immunization (Health Dept of Oklahoma)
  - Vital Records (Health Dept of Oklahoma)
  - …
  - Multi-state collaborations (in the future)
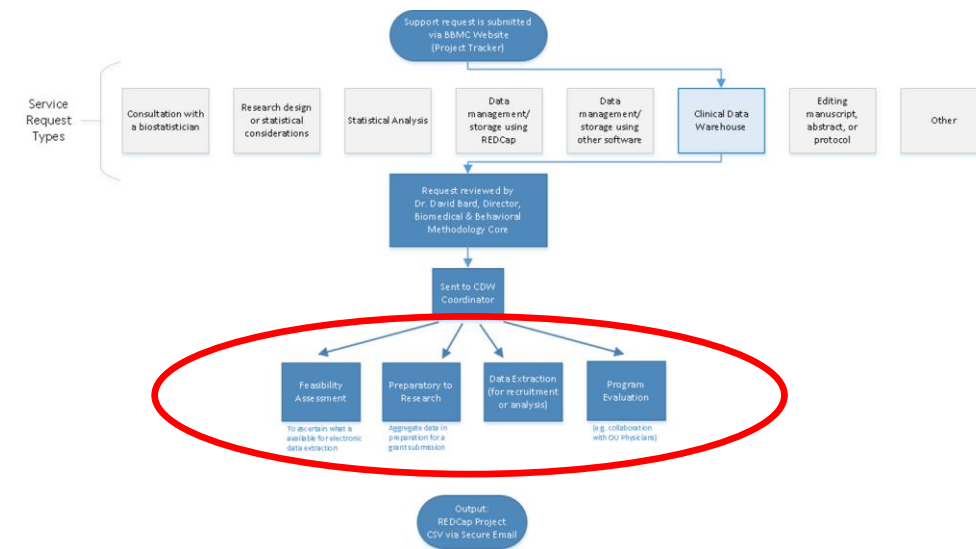- Administrative Cost
- Employee & Student

Typical Workflow for a CDW Research project by the BBMC

Support request is submitted via BBMC Website (Project Tracker)

Service Request Types
- Consultation with a biostatistician
- Research design or statistical considerations
- Statistical Analysis
- Data management/ storage using REDCap
- Data management/ storage using other software
- Clinical Data Warehouse
- Editing manuscript, abstract, or protocol
- Other

Request reviewed by Dr. David Bard, Director, Biomedical & Behavioral Methodology Core

Sent to CDW Coordinator

- Feasibility Assessment — To ascertain what is available for electronic data extraction
- Preparatory to Research — Aggregate data in preparation for a grant submission
- Data Extraction (for recruitment or analysis)
- Program Evaluation — (e.g. collaboration with OU Physicians)

Output: REDCap Project CSV via Secure Email

Submit a request at: ouhsc.edu/bbmc/ then 'Request Support'

Commonly Requested CDW Support Services

- Feasibility assessment in preparation for research
  (20% of projects; 10% of CDW staff time)

- Static eligibility
  (70% of projects; 20% of CDW staff time)
  - Virtually all projects require identification of a patient pool

- Rolling eligibility
  (30% of projects; 30% of CDW staff time)
  - Remember study team's assessment of eligibility as well as the participant's response
  - Daily automation requires stability & good logging;
    e.g., a 3 hour delay might mean zero subjects are enrolled

- Clinical outcomes for retrospective investigations
  (50% of projects; 30% of CDW staff time)

- Administrative outcomes for quality improvement
  (10% of projects; 2% of CDW staff time)

- Program evaluation
  (20% of projects; 8% of CDW staff time)

Starting a CDW Project

Submit a request at https://ouhsc.edu/bbmc/, then click "Request Support"

Please complete the form and a representative will contact you soon.
Thank you!

Date of request: Click now.
* must provide value
[   ] [📅][🕐] [Now] Y-M-D H:M

Project Title
* must provide value
[   ]
Expand

Do you have any deadlines regarding this request?
○ Yes
○ No
reset

Primary Contact Information

Primary Contact: First Name
* must provide value
[   ]

Primary Contact: Last Name
* must provide value
[   ]

Primary Contact: Phone Number
* must provide value
[   ]
(555) 123-4567 ext89012

Primary Contact: E-Mail Address
* must provide value
[   ]

Principal Investigator Information Complete if different from Primary Contact

Principal Investigator: First Name

Requestor Information

Requestor Type
* must provide value
☐ Principal Investigator
☐ Research Nurse
☐ Research Coordinator
☐ Faculty
☐ Staff
☐ Other

The following question is for the person filling out this request form:
○ Yes
○ No

Are you a BBMC member?
reset

Do you have a BBMC member that you would prefer to work with on this request?
○ Yes
○ No
reset

Please upload your research protocol or grant research plan.
⊕ Upload document

This helps us prep for the initial meeting w/ you

College
* must provide value
○ Medicine
○ Other
reset

Please indicate the services requested:

Check all that apply.
☐ Consultation with a biostatistician
☐ Research design or statistical considerations
☐ Statistical Analysis
☐ Data management/storage using REDCap
☐ Data management/storage using other software
☐ Clinical Data Warehouse
☐ Editing manuscript, abstract, or protocol
☐ Other

This box routes it to the CDW team

[Submit]

Rule of Thumb for Involving CDW Team

- A one-time Meditech extract:
  contact OU Medicine directly *or* we're happy to help structure the request
  Meditech request: https://ouhealth.service-now.com/sp?id=sc_cat_item&sys_id=79c250c74f652300ed7229dd0210c7d9

- Recurring Meditech extracts for rolling recruitment:
  please contact the BBMC about the CDW (https://ouhsc.edu/bbmc/)

- Research involving merged Centricity & Meditech:
  please contact the BBMC about the CDW (https://ouhsc.edu/bbmc/)

- Research involving (a) data collection outside the EMRs or (b) supplementing chart review:
  please contact the BBMC about REDCap (https://ouhsc.edu/bbmc/)

Terms

  - Centricity EMR: clinical info for outpatients since ~2010

  - Centricity Business: scheduling & billing info for outpatient since ~2010

  - Meditech: EMR for ED & inpatients since the bronze age

  - Epic: Upcoming EMR that will replace Centricity, Meditech, and many others. May not be useful for your research (at least in time to start your fellowship research project)

  - REDCap: campus-recommended software for collecting PHI outside the EMRs (https://www.project-redcap.org/)