

MHRN DATA MODEL and DATA RESOURCES

Data Model

MHRN extended work on the well-established [HMO Research Network Virtual Data Warehouse \(VDW\)](#) to facilitate and support use of this rich resource to conduct mental health research. The VDW is a model for a comprehensive federated data infrastructure to facilitate multi-site research. The HMORN leadership conceived of the VDW as an infrastructure to produce comparable data across sites for feasibility studies and full-scale research projects. The warehouse is “virtual” in the sense that the raw data remain at the local sites but are translated into a common language. The VDW is a series of dataset standards and automated processes at each participating site that allows a program written at one site to be run against data at other sites quickly and with minimal site-specific customization.

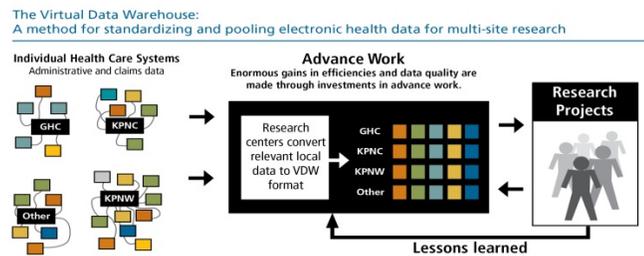


Figure 1_VDW Model

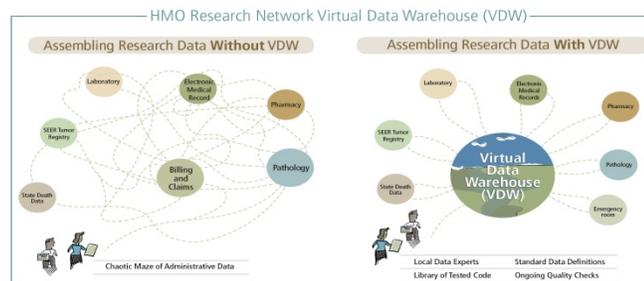


Figure 2_Assembling VDW Data

To learn more about the VDW, read “[The HMO Research Network Virtual Data Warehouse: A Public Data Model to Support Collaboration](#)”, a recent article published in eGEMs describing this resource.

MHRN Data Resources

MHRN infrastructure work supported an MHRN VDW Workgroup that enhanced the HMORN VDW by improving the quality and availability of data regarding mental health diagnoses and treatments, making it easier to access and use these data. Work included the following:

- Evaluating the availability and quality of VDW data regarding mental health diagnoses and treatment
- Developing standard tools and procedures for defining mental health dx and treatments from VDW data

- Validating definitions for new episodes of psychotherapy and new episodes of antidepressant treatment
- Establishing an efficient process for ongoing assessment of VDW data quality
- Developing a simple query tool for investigators and delivery system leaders to ask and answer questions regarding rates of mental health diagnoses and treatments
- Developing an efficient process for distributed data analysis
- Conducting analyses regarding specific scientific questions. Examples include:
 - Diagnoses associated with antidepressant prescriptions
 - Psychotropic drug prescribing to children and youth
 - Use of health services prior to suicide death
 - Association between response to PHQ item 9 and subsequent suicidal behavior

Data Tools & Materials Developed to date:

Data tools and materials are posted on the MHRN website for general distribution. Go to [MHRN Resources](#) for links to our various tools. These tools include the following:

- Mental Health Diagnoses Table (2009_aggregate for all sites combined)
- Prescription Tables by member characteristics (2009_aggregate for all sites combined)
- MHRN Denominator Populations (2009-2011_all sites combined)
- List of diagnoses
- List of drugs
- Psychotherapy Definition - MHRN definition based on CPT codes
- SAS Programming Code for generating denominator, prescription, and diagnoses tables
- SAS programming Code for identifying new psychotherapy and antidepressant episodes
- SAS programming Code for identifying suicide deaths
- SAS programming code for identifying suicide attempts (coming soon)

What's Next for MHRN with the Virtual Data Warehouse?

- Engage with external research investigators who would like to use this unique resource to answer new research questions
- Engage with delivery system leaders to understand how MHRN can be a resource to support quality assessment and quality improvement
- Share resources and best practices with other HMORN projects and research networks
- Continue conducting data analyses to support future papers and research proposals
- Continue regular assessments of data quality

The [HMO Research Network \(HMORN\)](#) website provides more information on the [Virtual Data Warehouse](#) resource: