

A journey through VA's uptake of the OMOP common data model

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Background

The Department of Veterans Affairs (VA) Health Services Research & Development (HSR&D) mission is to “identify and evaluate innovative strategies that lead to accessible, high quality, cost-effective care for Veterans and the nation.”¹ The VA Informatics and Computing Infrastructure (VINCI) is one of HSR&D's four resource centers and seeks to “improve researchers' access to VA data and to facilitate the analysis of those data while ensuring Veterans' privacy and data security.”² As one of its signature initiatives to pursue these goals, VINCI began transforming the VA electronic health record data in 2015 into the OMOP common data model and released its first version to VA researchers in July 2017.³ The transformation of VA data into the standardized vocabularies (i.e.—RxNorm, LOINC, SNOMED, etc.) of the OMOP common data model improves the reproducibility and generalizability of research results. Further, VINCI's ability to provide this as a resource for VA researchers increases the utility of VA data for observational analyses. The goal of this paper is to describe the outreach strategies VINCI utilizes to facilitate uptake and implementation of the OMOP CDM within the VA research community.

Methods

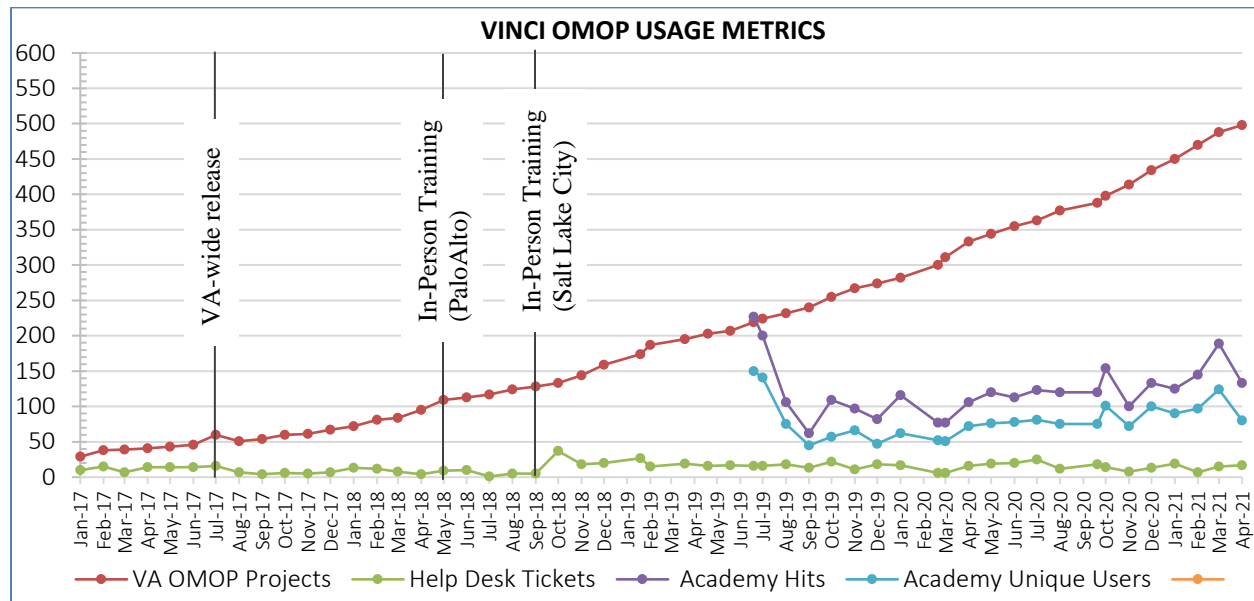
Facilitating uptake of OMOP among a large, national user community includes many aspects in parallel to the core data transformation process. A full discussion of all aspects is beyond the scope of this work; here we focus on aspects of education, guidance, and feedback employed to support use of a nationwide VA OMOP instance.

Our educational initiatives have included a combination of in-person and online trainings and presentations. VINCI organized three meetings between September 2016 to September 2017, in which VA researchers and data users around the country were invited to participate and learn the VA OMOP data from the VINCI team in an in-person, hands-on training. VINCI also created OMOP Academy, an online, self-paced resource containing videos, training exercises, and documentation of the model and its relationships to VA source data. This resource was developed as complementary to the general OHDSI educational materials, in order for VA data users to learn about aspects of the data model and transformation process that are specifically relevant to VA data and users. Accompanying the OMOP Academy, the VA OMOP sandbox is a database containing synthetic data to enable open access for users who want to get more familiar with the model without requiring regulatory approval. Finally, VINCI personnel present regular cyber-seminars regarding specific OMOP usage scenarios to any VA data users who wish to attend virtually, which are also recorded and uploaded to the VINCI site.

To provide specific guidance to users and to create an avenue for feedback, VINCI also created a dedicated VA OMOP helpdesk. Any VA OMOP user who needs help, clarification, or who has general questions about OMOP can contact the helpdesk and receive a response specific to their issue. The help desk is staffed by two nurse informaticians and responds to all tickets within 48 hours. In addition to questions, VINCI receives tickets for helpdesk requests and data quality feedback that inform subsequent updates of VA OMOP. For instance, when a user provides feedback on an issue regarding specific concepts incorrectly mapped from source data, the feedback will be relayed to the ETL group to investigate and rectify in the subsequent OMOP release, if necessary. This continuous feedback loop is a necessary element of VA

OMOP, both to increase user engagement and to improve VA OMOP as a data resource.

Results



OMOP REFRESH TRACKER:

1 st	July 2017	6 th	July 2020	11 th	January 28, 2021
2 nd	June 2018	7 th	August 12, 2020	12 th	March 6, 2021
3 rd	April 2019	8 th	September 24, 2020	13 th	March 31, 2021
4 th	Mar 2020	9 th	October 22, 2020	14 th	April 28, 2021
5 th	June 2020	10 th	December 20, 2020		

Figure 1. Usage Metrics of VINCI OMOP since January 2017

Since the first release in July 2017, there have been 13 more releases as of May 1, 2021, with the last 5 releases approximately monthly. The number of projects has increased linearly across time, totaling over 500 VA research projects across 382 unique principal investigators having requested access to the VA OMOP data at present. After the initial enthusiasm over the new resource release, monthly usage of the VINCI OMOP academy has slowly increased over the last 18 months from approximately 50 monthly users to 100. The average number of site hits of OMOP ACADEMY is 129 per month in the last 12 months with an average of 86 unique users each month. Since the beginning of 2020, over 230 helpdesk tickets have been received and answered. Since query logging began in June 2020, the VA OMOP database has been queried 9,141 times by 148 unique users.

Conclusion

Transforming and releasing a healthcare system’s electronic health record data (or an insurer’s claims’ data) is not sufficient to promote effective use. As a complement to transformation, providing education, guidance, methods for input and feedback, and promoting transparency and ease of use for OMOP as a data model can increase the utility and practicality of VA OMOP. This is evident by its continued increase in access requests over time. Standardization and expansion of how resources are developed that are source data specific and source system user relevant can improve adoption of OMOP among data partners and help provide clear guidance for how to extend more general OHDSI educational offerings.

References/Citations

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3. Lynch KE, Deppen SA, DuVall SL, Viernes B, Cao A, Park D, Hanchrow E, Hewa K, Greaves P, Matheny ME. Incrementally Transforming Electronic Medical Records into the Observational Medical Outcomes Partnership Common Data Model: A Multidimensional Quality Assurance Approach. *Appl Clin Inform.* 2019 Oct;10(5):794-803. doi: 10.1055/s-0039-1697598. Epub 2019 Oct 23. PMID: 31645076; PMCID: PMC6811349.