GUSTO Data Vault: *Working Towards OMOP Data Standardization*

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INTRO:

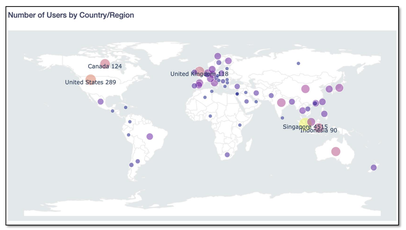
- Growing Up in Singapore Towards healthy Outcomes (GUSTO) aims to understand how conditions in pregnancy and early childhood influence the subsequent health and development of women and children.
- The GUSTO Data Vault platform have advanced data exploration capabilities for research data, biospecimens and publications asset management.

METHODS

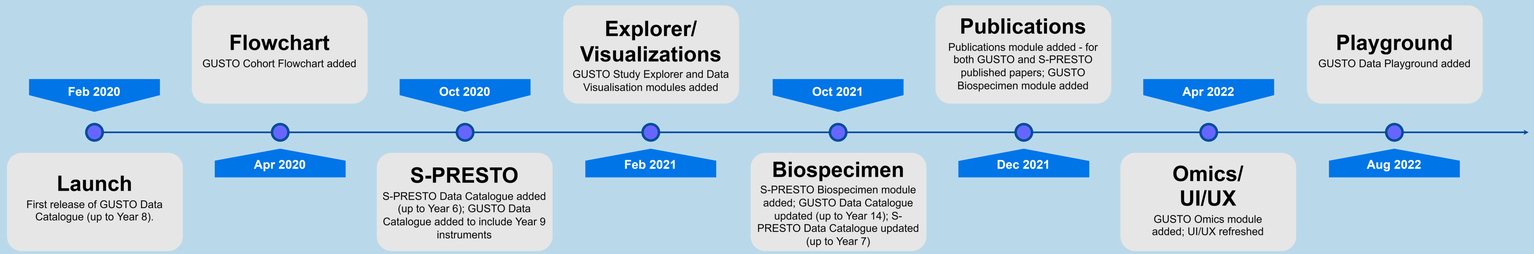
- Data Vault (containerized web application with Docker) was built using PostgreSQL database and Django framework.
- Tools used: HTML, CSS, jQuery, Ajax, Python, Plotly Dash, Dashboard engine in Dash Enterprise.

RESULTS

- GUSTO Data Vault platform showcases data across Demographics, Women's Health, Children's Health, Metabolic, Neurodevelopment, Imaging and Omics domains.
- Researchers can browse and discover curated datasets and use the data visualizations to aid with hypothesis construction/discoveries.
- Applicants can submit their data access request to the GUSTO executive committee for approval, after exploring the Data Vault platform.
- Data Vault is refreshed with data updates about every 4 months.
- Data Vault sees around 5,500 unique visitors in a year, mostly from Singapore, with 20% based in countries across Asia, Australia, Europe, and North America.



Applying the **FAIR** (Findable, Accessible, Interoperable, Reusability) data principles, an *open interactive platform* (**GUSTO Data Vault**) was created using *open-source technologies* for population health studies.



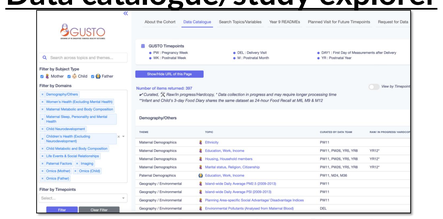
Take a picture to visit GUSTO Data Vault

Take a picture to download the abstract

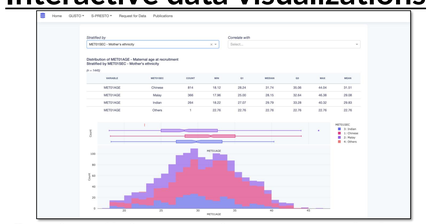
Our future work includes the implementation of OMOP Common Data Models (CDM) in Data Vault for expansion of real-world data access.

Snippets of Data Vault

Data catalogue/study explorer

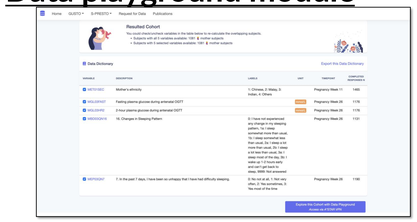


Interactive data visualizations

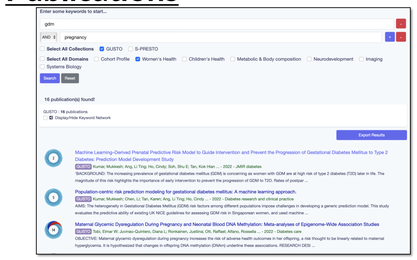


Omics/biospecimen modules

Data playground module



Publications



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