DATA FLOWCHART

From Data Demand to Data Use

VERMONT INSIGHTS
Communities Connected by Data

1 IDENTIFY DATA DEMAND

Assess the data interests and needs of stakeholder organizations, groups and individuals. What data will help stakeholders become more informed about their questions? These questions can vary in complexity (simple, complicated and complex) and in type (e.g. policy, practice, research, outcomes and socio-demographics).[1]

2 SEARCH, FIND AND REVIEW DATA

Scan the data landscape for available data sources (local, state and national) and the characteristics of the data. Assess the relevance, quality[2] and availability of the data source(s).

3a DATA LOOKS PROMISING: **AVAILABLE THROUGH OPEN DATA[3] (e.g., Data.gov)**

Create a function and a process (e.g., API – Application Program Interface) to pull the open data and its documentation into Vermont Insights. Whether the open data is from a national or state source, Vermont Insights seeks out a Vermont content and analytic expert to assist in the use of the data.

3b DATA LOOKS PROMISING: **ACQUIRE DATA THROUGH A DATA SHARING PROCESS**

Discuss data sharing with the data source organization(s).[4, 5] Data Sharing Agreements[6] specify the management of the data and includes an analytic document[7] that describes the data, the organizational context of the data and how the data will be used in VT Insights.[8] All sensitive and/or protected non-public data are received through secure channels and then explored and reviewed by the VT Insights data analyst(s) in secure environments.

3c DATA GAP: Data may have significant limitations or no data are found.

Document the data gap results in Vermont Insights data catalogue and communicate the results with relevant individuals and groups interested in this data. Discuss with the BBF Data and Evaluation Committee if this should be considered for inclusion as a data development agenda item and/or a topic for the Mind the Gap: Data Asset and Gap Analysis Technical Reports.

4 WRITE THE CODE[9] AND PREPARE THE DATASET

Prepare data report mock-ups and complete review session #1 with data stewards (analytic and content expert).[10] Requirements for the new report are developed and a ticket entered in the Tech Team's communication hub, JIRA.[11] At the same time, the Data Team prepares (the file structure, assures data quality,[12] adds geography codes and makes it easily readable using statistical software such as SPSS or in the case of the Census Bureau ACS data using the VT Insights Report Generator) the dataset for VT Insights, public consumption and hands off data to Technology Team.[13]

Pull dataset in the VT Insights database, write the code that understands when someone enters a query in VT Insights, the right data is returned into the report. Complete the regression[14] testing of the new code's impact on the existing software within the development environment and the QA environment.

Test the report in the QA environment and apply additional styles and design features. Once coding and software system regression testing is completed, the report is posted in a staging environment where the design and styling coding completed.

Complete review session #2 with data stewards (analytic and content expert) in the staging environment. Any changes needed are sent to Technology Team to modify or add new code.

5 DEVELOP THE NARRATIVE

The purpose of the narrative is to help the user make sense of the data visuals (charts, tables and maps). Draft narratives — introduction, metadata (data about the data like source, methodology and limitations) and a summary of findings — help the user begin to make sense of the data. All narratives are entered using Vermont Insights' CMS (content management system) function. The data stewards review (in sessions 1 and 2) and finalize (in session 3) the narrative.

6 SIGN-OFF ON QUALITY ASSURANCE CHECKLIST

Complete a final data quality review check including sign-off by the data stewards. The metadata is added to the VT Insights data dictionary, and tags are added for search function. The data are included in VT Insights data report tracking tool, data cycle calendar and built into future deliverables schedule.

7 PUBLISH DATA

Push the data to VT Insights public site. Push to production schedule is every two weeks.

8 SUPPORT DATA USE

Send communications to data users, data contributors and other stakeholders announcing the availability of the new data in Vermont Insights.

Build a function (under development) so that users can compile various data points (visuals and narratives) into their own report.

Strategies needed but not yet in place are: outreach and training to promote use of the data, monitoring the activity of the specific data pages using Google Analytics and engaging a small group of users to review the design content and narrative as part of Vermont Insights' agile, continuous quality improvement process.

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Endnotes

1 Many stakeholders can raise questions. The following are some early childhood system examples: advisory and governance groups (e.g., BBF State Council and Data and Evaluation Committee), state and local plans (e.g., Early Childhood Action plan and BBF regional plans), community initiatives (e.g., Promise Communities), policy analysis (e.g., BBF Policy Briefs), legislation (e.g., Act 166 publicly funded pre-k), public awareness campaigns (e.g., Let's Grow Kids), advocacy (e.g., Early Childhood Alliance), independent review groups (e.g., Blue Ribbon Commission on Financing High Quality, Affordable Child Care), stakeholder meetings and interviews (e.g., BBF sponsored annual Data Steward and Stakeholder Meeting), Early Learning Challenge grant (e.g., Prenatal to Grade 12 Data Governance Needs Assessment).

2 Quality includes the currency, completeness, reliability and validity of the data.

3 Open data is providing unrestricted data to everyone. See project-open-data.cio.gov/principles.

4 Not all discussions result in a data sharing agreement due to a number of issues such as interest, time and capacity.

5 The types of data sharing agreements are: 1. Non-public data (e.g., Adoption and Foster Care Analysis and Reporting System (AFCARS) and 2. Public data but not yet available as an open dataset (e.g., Annual Kindergarten Readiness Survey).

6 Vermont Insights has established a standard data sharing agreement template and process.

7 Data Stewards are responsible for the data owned by the organization or enterprise and sometimes referred to as "keepers of the flame" in terms of data quality. Both the organization's content and data experts are included as data stewards. In the case of open data generated by a national source, the Vermont Insights team looks to a Vermont content and/or data expert to assist in the development of the data report.

8 This includes the question(s) being answered with the data, data elements in the data file, data dictionary, data assumptions, limitations, and report specifications for publication on Vermont Insights.

9 The programming code allows the user to query the Vermont Insights database and return the logic with data results.

10 Determine if a new functionality is required to publish the data. If no, then move on forward. If yes, then the business case is made considering economic, technical, operational and political factors. If business case is accepted then move forward. If the business case is not accepted then it is held and we document and communicate the results with relevant individuals and groups interested in this data.

11 Vermont Insights issue tracking and software project management tool.

12 For example, not all data steward organizations have a consistent cell suppression standard. Vermont Insights uses the common standard of cell suppression for individual level data between 1and 10 (inclusive).

13 The Technology Team designs, writes, tests, debugs/troubleshoots, and maintains the source code of the Vermont Insights software system.

14 Whenever developers change or modify their software, even a small tweak can have unexpected consequences. Testing existing software applications to make sure that a change or addition hasn't broken any existing functionality is called regression testing.