
GOLDILOCKS DEEP DIVE

Using Administrative Data for Monitoring and Evaluation



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Introduction

Administrative data refers to data collected for the administration of programs. It should be systematically collected, stored and used for program operation and management decisions. While administrative data is designed to track a program's implementation—primarily the project's activities and expenses—it can also include indicators on program outcomes. Examples of administrative data include educational records, client information from financial institutions, and hospital records of patient visits and health outcomes. Other examples include information held by government agencies, such as tax filings and Medicare claims.

The CART principle of responsibility tells us that organizations should find the right balance between collecting enough data necessary to obtain credible, actionable information about a program, and the costs of doing so. Administrative data, due to its low cost and accuracy, can be an important part of a data collection strategy, useful for both monitoring and evaluation.

The advantages of using administrative data include time and cost savings, and the possibilities of obtaining accurate data and a large sample size at low cost. Because administrative data are already being collected, they can reduce or eliminate the need to collect data through additional monitoring activities or surveys. And because they already exist in the management information system and are usually updated regularly, incorporating administrative data into your monitoring activities can enable a more timely response to implementation issues or faster analysis of key indicators.

The content of administrative data presents other potential advantages. Because administrative data typically cover the entire population of beneficiaries, they imply a large sample size. And by reducing the likelihood of social desirability bias, poor recall, and other data quality issues, administrative data can be more accurate than self-reported survey data.¹

While administrative data have many advantages, ensuring that they are accurate and reliable is more important than their low price tag. Recall the principle of Responsibility—that all data have costs—which emphasizes the balance between data quality, actionability, and the resources spent to collect it. In this article, we discuss the tradeoffs associated with using administrative data for M&E. We also provide a checklist for organizations interested in using administrative data; while the checklist is most relevant when collecting administrative data from a partner or third party, it also applies when gathering administrative data from within your own organization.

¹ Sometimes, administrative data can be more accurate than survey data. For instance, borrowing is typically underreported in surveys, and administrative records are likely to be more accurate.

Administrative Data for Monitoring or for Evaluation?

Administrative data can be used both for program monitoring and for impact evaluation.

Administrative data consists largely of **financial** and **activity tracking data**, which are core data in many monitoring plans. Examples of these data include the number of chlorine dispensers distributed or trainings conducted, attendance rates at schools, or default rates on microloans. These can be used to monitor program performance, manage staff, and identify implementation issues.

Administrative data may also include **take-up, engagement, and feedback data**. Utilizing these types of data can help managers and evaluators understand how individuals use and interact with the program. And because administrative data often includes basic demographics or **targeting data**—such as age, gender, marital status, business activity, PPI score, or other demographic information—it can be used to identify if the program is reaching its target population, or to identify possible differences across groups.²

Occasionally, administrative data may exist for outcome indicators and can be used for measuring impact or for rapid-fire testing (see Appendix). For example, banks track information on individual savings accounts, so a program trying to increase personal savings may be able to use bank records for measuring outcomes.

Challenges of Using Administrative Data for Monitoring and Evaluation

Three main issues are common among administrative data sources: limited scope, low data quality, and the challenges of obtaining the data.

Limited scope

Administrative data are usually available only for a specific group of people or clients. They typically exclude non-participants, those who were not eligible, or those who declined to participate. For instance, bank records will not have information on non-clients, which limits the types of evaluation questions that can be answered.

Administrative records rarely have detailed information on socioeconomic characteristics of the beneficiaries. There are exceptions: Medicaid application forms, tax records, and credit reports all contain data that could provide important socioeconomic characteristics for monitoring and evaluation. Generally, though, survey data is more comprehensive and flexible than administrative data and is designed to capture a wide range of behaviors, preferences, and socio-economic indicators.

² Care should be taken when drawing conclusions from any differences that emerge between groups—unless the differences are statistically significant, and without a counterfactual, they cannot be attributed to the program.

Administrative records are often restricted to a program's lifecycle, which may or may not be a problem. If you're using administrative data to monitor inputs or if the outcome of interest is product take-up or usage, then administrative data may be sufficient. However, if the outcome of interest is expected to occur after the program ends—for example, if you are interested in tracking employment outcomes for students of a jobs training program—this information would have to come from follow-up surveys of former students rather than administrative records.³ Often, administrative data comprise an important component of an M&E strategy, but are rarely sufficient to fulfill all of the strategy's goals.

Data quality

Poor data quality is a key challenge in using administrative data for M&E. The quality of data may be uneven and unknown, because data-tracking systems are often decentralized and many have few quality-control mechanisms in place. Different units within the same organization may use different systems for collecting, checking, cleaning and reporting information, resulting in little consistency in quality across an organization. And sometimes people collecting or entering data falsify that data, particularly if they face incentives (such as rewards or bonuses) to meet targets. It is important to be aware of these challenges, investigate whether they apply to your administrative data, and take steps to correct the data quality problems they pose.

If the data comes from your own organization, you may be able to propose quality assurance measures and streamlining across departments as part of an overall M&E strategy. And if you are working with partners who collect this data, it can be worthwhile talk with them about data quality – they may just need some encouragement or instruction to improve. If you cannot be assured of the data quality, the Responsible principle suggests you search for other, more credible, data sources.

Obtaining administrative data

Obtaining administrative records is often a challenge. Just because data have been collected doesn't mean they are easy to find or use. Administrative data may exist on paper forms stored haphazardly in different locations; finding and digitizing these can be time consuming. Where digital records are available, data must be extracted (often by the only person in the organization trained to do so) before they can be shared and integrated into your monitoring or evaluation system. This often takes a significant amount of time, and must be planned for in advance. Turnover in staff who understand the data, know the data storage system, or who can make corrections to faulty data can also complicate and delay efforts. Gaining access to usable administrative data in a timely manner may be difficult and requires will, coordination, planning, and resources.

³ Exceptions exist. For example, tax records have been used to track program participants for nearly 20 years and demonstrate a program's long-term effect on participant income, as in the moving to opportunity experiment. Chetty, R., & Hendren, N. (2015). The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effects and County-Level Estimates. Working Paper. Available at: http://scholar.harvard.edu/files/hendren/files/nbhds_paper.pdf

Despite the many difficulties of obtaining and using administrative data, it can provide many benefits. It is worth considering the value of hard-to-access administrative data and the options that exist for procuring it. If the data fit your needs and you have reasonable assurance of the quality, you may want to consider the costs of paying for data entry against the costs of conducting your own survey to obtain the same information. You should also consider what value the data bring to your monitoring activities or evaluation strategy—if they would add significant depth to your analysis or provide critical but missing monitoring information, the benefits may balance the effort you spend in obtaining the data.

Administrative data hold untapped potential for M&E, but obtaining and using them is often fraught with challenges. One must carefully weigh the benefits against the drawbacks when deciding to make administrative data a part of a CART M&E strategy.

Using Administrative Data for M&E: Checklist

In this section we present a general list of the steps involved when preparing to use administrative data.

Step 1: Identify data source

After defining your monitoring objectives or research question, the first step is to define a set of indicators you would like from administrative records and the frequency at which you would like this data collected from participants. Your organization or a partner organization may already be collecting relevant data, or there may be other data sources worth consulting, such as banks, insurance companies, mobile providers, or government records (although developing-country governments may lack the institutional capacity to produce reliable statistics).

Step 2: Understand data type, frequency, and sample

Next, it is important to ask if the sample, available indicators, and frequency of data collection meet your needs. If a key indicator is defined differently in administrative records, or if data are not available as often as needed, you should consider other data sources. Similarly, if you are trying to use administrative data for an impact evaluation but learn that data on a comparison group are not available, or that a different data collection strategy was used with the comparison group, consider collecting survey data or using a different data source.

If you are considering using administrative data for impact evaluation, it is important to understand who is included in the dataset and why, and how this inclusion/exclusion might affect the results you draw from your analysis. You should consider whether the available data is a sub-sample from a larger group of program participants or beneficiaries and if so, whether the sample is representative of the population of interest. Similarly, you may have to consider program eligibility requirements or exclusion criteria when deciding whether the data is relevant to your uses. If what you are monitoring or evaluating is correlated with whether an individual is eligible for a program or remains involved in it, you will face selection bias and the credibility of your analysis will be compromised. If this is the case, you should identify another source of data for your outcome indicators.

Finally, if data are collected at several points of time for a given sample (panel dataset), it is important to find out if any mechanisms are in place to address or lower attrition. It is also important to assess which individuals are more likely to disappear from the dataset—systematic attrition could bias your results.

Questions to keep in mind:

- What is the unit of analysis you are interested in (e.g., individuals, households, individual transactions, phone calls, etc.)? How are specific indicators defined?
- How is the sample defined? How large is the sample?
- Is the sample representative of the population of interest? What method was using for sampling?
- What is the frequency of data collection (daily, monthly, annual, etc.)?
- If data are collected over time for the same group, is there information on sample attrition? How high is it? Who is more likely to drop out of the sample?

Step 3: Review data documentation

Next, request data documentation from your data provider. Data documentation is important for assessing data quality and reliability, in addition to understanding the data you're receiving. Ideally, the documentation will: provide concise and clear explanation of the datasets, including variable definitions and value codes; review survey instruments or collection forms and collection protocols; and document any changes that occurred to data collection procedures and tools. While this is the ideal, the reality is usually different—sometimes there is no documentation, or the data doesn't match the documentation, or the documentation is confusing or even unintelligible.

Reading through systems manuals and codebooks will take time and patience. Once you have reviewed data documentation, plan to reach out to several people in different departments with questions and for clarifications. Administrative data may come from large and complex systems, and often no single person understands them all. Even when a description seems clear to you, it may mean something entirely different to the person who wrote it.

Reviewing data collection methodologies is particularly important when using administrative data for impact evaluation—one has to ensure procedures are consistent in treatment and control groups to avoid biases. Often, forms and questionnaires undergo changes from one round to the next, and these changes should be properly documented. For instance, if a new item was added to a picklist without documentation, problems may arise during analysis.

Requesting a data extract can help to check the format of the dataset, availability of key indicators, and number of missing values, among other things. When working with multiple data sets, a good practice is to create a table, summarizing each source, number of observations, how frequently the data are received, key variables that exist in the data set or those that will be created from it.

Questions to keep in mind:

- Is there documentation for the data? Are codebooks available? Documentation should include:
 - List of all variables and variable definitions
 - Value codes
 - Re-code rules and effective dates; change in variable definitions and effective dates (if applicable)
 - Are missing values imputed or how are imputations treated?
- Who can you speak with about the data? Which departments were involved in its collection, entry, and extraction? In the design of the system?
- What data collection instruments were used (if applicable)? Have they remained consistent over time? How are version changes documented?
- Are the data collection instruments consistent (i.e., new questions added, some deleted, additional options for answers are included, etc.)?
- What method was used for collecting data?
- How quality control was done (if at all) during data collection?
- How was data entered into the database?
- How will the data be extracted and what is the format of the final data set? Is it possible to share an extract of the dataset?

Step 4: Assess data quality

One should never assume that data are high quality. A first step for assessing data quality is to find out what quality controls were used to collect the data. Investigate whether anyone at the organization was doing quality control and what it consisted of. Find out how the quality controls were enforced during the data collection (for example, was there anyone to verify that staff or enumerators were identifying the correct respondents, and how were corrections made). If possible, observe how the data are collected or to speak to someone involved in the data collection directly.

To check data quality manually, request a prototype dataset and checking the following, ideally using statistical software:

- Are there any typographical errors (e.g., incorrect dates, misspellings)?
- Are there any systematic errors (e.g., incorrect code)?
- Are delimiters in the right place (if applicable)? Are long numbers split in several columns?
- Are there any other obvious mistakes or inconsistencies (person's name instead of his birth date, etc.)?

Finally, if possible, identify whether there are any other datasets that can help you "triangulate" or confirm quality of the administrative data. For instance, if there are other researchers studying teacher attendance, do their numbers look similar to the numbers you're seeing? Can you afford to randomly select some households for an audit, to see if their responses match the data you received? While not perfect measures of data quality, reviewing your data in these ways could help you assess if they are roughly accurate.

Step 5: Determine how unique observations will be identified

Prior to requesting the data, it is important to find out how unique observations will be identified in the dataset (i.e., schools, students, patients, MFI clients, households, etc.) Using names as identifiers can be complicated. Multiple individuals may have the same name; individuals may give different names to different people (such as nicknames to friends, organization staff, and enumerators, and official names to banks and government agencies); last names may change, particularly in the case of marriage or divorce; and typos may complicate identification. Without a clear identification method, there is the possibility of counting the same observation multiple times or merging one person's data with that of another.

Using unique identifiers can help avoid these problems, particularly when combining data from multiple sources (such as administrative data with other monitoring or survey data) or from several points in time. You can create a unique ID using a number of different combinations, such as full name + date of birth.

Questions to keep in mind:

- Are there unique identifiers in the data set? Are they consistent across data sets?
- If there are not unique identifiers, can you generate them?
- Are there quality controls on data entry of the unique identifier, such as double entry?
- Do unique identifiers require encryption?

Step 6: Complete a Data Use Agreement

If you are getting administrative data from another department or organization, the data provider may require a formal Data Use Agreement (DUA), Non-Disclosure Agreement (NDA), or Memorandum of Understanding (MOU). These legal documents will generally describe the data that will be shared, how they will be used, and specify certain required data security measures and data access rights. Obtaining a DUA, NDA, or MOU may take time and resources—for defining the parameters of use, checking with both parties' legal teams, and reaching agreement—so make sure that you begin this process as soon as you determine that you want to use administrative data.

Questions to keep in mind:

- What elements should be included in the DUA—the use description, who the users are, data security procedures, timeframe, etc.
- How quickly can a DUA be reached?
- How long is the agreement valid?
- Does the DUA give the data provider the right to review or alter your findings?

Step 7: Determine if additional legal requirements exist to access data

If you intend to use administrative data to create “generalizable knowledge,” your work will likely be considered human subjects research and require additional review to ensure that it meets certain

ethical standards.⁴ This means that, depending on the local laws and regulations, access to administrative data may be subject to certain legal requirements. For example, local laws may require permission from an Institutional Review Board (IRB) and sometimes, informed consent from the respondents themselves.

Questions to keep in mind:

- Is the monitoring or evaluation you do with the administrative data for internal use, or will it be used to create “generalizable knowledge”?
- What are the requirements for and restrictions on encrypting, transmitting, analyzing, de-identifying, and destroying the data?
- Are you required to comply with IRB requirements?
- How long will the IRB process take?

Step 8: Prepare to receive the data

Before receiving the data, you will need a data management plan. This involves setting a timeline for receiving the data, keeping track of incoming data, ensuring that the data are securely stored and can only be accessed by those who have permission, and thinking about how the data will be integrated with the rest of your data.

It is a good idea to prepare code early on to check incoming data for completeness, perform quality checks, and analyze the data. It will allow you to identify if you will need to create new variables, aggregate the data, recode variables, etc. Develop a set of data quality checks to perform each time you receive a data set to identify any errors. This could include verifying the number of observations, number of variables/columns, checking for duplicates, setting the maximum and minimum values of some variables, and using logic checks (e.g., age should not exceed 100 years, or a working age adult should be more than ten years old) If data are collected over time, it is important to track the number of observations in every data set to spot any missing respondents, and to run logic checks to evaluate inconsistencies.

Incoming data should always be checked for unique identifiers and duplicates. It is also a good practice to create a second “study ID” that is not based on any identifiable characteristic (it is common to use a randomly generated number). This allows analysis of data without using personally identifiable information in the analysis dataset, which helps to safeguard the privacy of individuals in your analysis.

Questions to keep in mind:

- How will you secure the data? Who will have access to the data?
- How frequently will the data be received? How will the incoming data be integrated with internal systems/databases?

⁴ Consult <http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html#46.101> for more information on human subjects research regulations in the United States.

- What are the minimum data quality checks to run on the incoming data?
- What do you need to do to analyze the data (create new variables, recoding, aggregating, etc.)?
- What, if any, correction procedures should be triggered by problems with incoming data?

Conclusion

Relying on administrative data for monitoring and evaluation can considerably reduce data collection costs and can supply you with useful data. However, using administrative data requires having systems in place for managing the data flow, and, most importantly, ensuring that data are of high quality.