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# Evaluation, Data Analytics, Quality Improvement, and Research

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# Introduction

Evaluation, data analytics, quality improvement, and research are approaches used in the health care system to assess the performance of programs, for program or project improvement, and/or to learn from a program's implementation. Since these approaches share common features and look similar in some aspects of practice, they are often conflated. This is exacerbated by the fact that words used in each of these respective fields (e.g., evaluation, quality, research) also have colloquial uses. The absence of a common understanding of these data-driven strategies leads to confusion and duplication of efforts, leading to sub-optimal results and inefficient use of resources.

This document provides tips to help differentiate between each of the approaches and understand where and how they can work together. Clarifying the similarities and differences among these data-driven strategies helps us better understand the best approach for a given project and how these strategies complement each other. In addition, this understanding will help prevent duplication of effort and maximize the value of the different strategies.

## Similarities

Each of these approaches:

- are systematic
- data-driven
- focus on understanding the performance of programs or projects
- and can be used to inform decision-making to enhance health care delivery

	EVALUATION <sup>1-4</sup>	DATA ANALYTICS <sup>4</sup>	QUALITY IMPROVEMENT (QI) <sup>1-4</sup>	RESEARCH <sup>1-4</sup>
<b>Purpose</b>	Systematic assessment of a program (including its activities and data) to determine its value, for accountability, improvement, and/or for decision-making and/or learning.	Analyze data to derive trends, patterns, and/or insight about a program, for program improvement, and/or decision-making.	A systematic data-driven approach to making changes that create better results (Dimensions of Quality*) for the people we serve and the system we work in (Areas of Care*)  *Refer to <a href="#">Health Quality BC Quality Matrix</a>	Generate new insights on existing knowledge, generate new knowledge, and/or validate existing knowledge in a new context or setting.
<b>Interested or relevant parties</b>	All parties with significant insight and contribution to the design of a program and its evaluation, such as program operations personnel, evaluators, people who use the program, patient and family partners, people with local insight on culture, policymakers, decision-makers, etc.	Program operations personnel, researchers, policymakers (Ministry of Health), and health care administrators.	Individuals directly involved in the program or process, such as program operations personnel, health care administrators, and project sponsors. Depending on the project, patient and family partners may also be involved.	Academics, health professionals, social science professionals, health care administrators, policymakers, community members, patient partners, community organizations, and industries.
<b>Research Ethics Approval and ethical consideration</b>	Research ethics approval is not required. However, research ethics board approval might be needed if the team plans to publish or present the evaluation	Research ethics approval might be required depending on the purpose of the data. For example, data used for a research project will require research ethics board	Research ethics approval is not required. However, research ethics board approval might be needed if the team plans to publish or present the QI findings,	Research ethics approval is required from the <a href="#">UBC-PHC Research Ethics Board (REB)</a> .

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	<p>findings, depending on whether the journal or conference requires it. Some funders may also require research ethics approval for evaluation funding.</p> <p>Evaluation should be conducted ethically. Consult <a href="#">ARECCI</a> for ethical considerations.</p>	<p>approval, while data used for an evaluation project might not. The requester of the data analytics project is required to obtain REB approval when needed.</p> <p>Data Analytics is conducted with ethical consideration and Freedom of Information and Protection of Privacy Act (FOIPPA) considerations.</p>	<p>depending on whether the journal or conference requires it.</p> <p>QI should be conducted with ethical consideration (<a href="#">ARECCI</a>). The respondent's safety (respect, privacy, and confidentiality) should be prioritized.</p>	<p>Consult <a href="#">Tri-Council Policy Statement (TCPS 2)</a>, 2022 for ethical considerations.</p>
<b>Process</b>	<p>Develop an evaluation plan, gather data in response to the evaluation question(s), synthesize the data to answer the evaluation question(s), and uphold <a href="#">program evaluation standards</a></p>	<p>Define objective(s), question(s), or hypothesis. Obtain, clean, analyze, interpret, and communicate/share data findings.</p>	<p><a href="#">PHC's QI Framework</a> has five high-level stages: Get Started, Understand Current State, Design &amp; Test Solutions, Implement &amp; Sustain Changes, and Spread Improvement. At the core is the Model for Improvement (by the Associates in Process Improvement). In addition to QI tools and methods, it may also use tools from communications, measurement, project management, change</p>	<p>Develop the research proposal, find funding, obtain research ethics approval, request access to or gather data, synthesize findings, and publish results.</p>

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			management, and sustainment planning.	
<b>Length of Time</b>	Varies from months to years, depending on the complexity of the evaluation design and the specifics of the program, including the type of information necessary to answer the evaluation question.	It heavily depends on the duration necessary to gather the data, the amount of data, and the reporting frequency. It could be within weeks to years.	With rapid cycle improvement, it can be completed in a short amount of time.	It depends on the research protocol and the time necessary to gather and synthesize the research data.
<b>Outputs</b>	Evaluation reports, presentations, recommendations, and action plans for program improvement and decision-making on future program planning and implementation. Enhanced leadership competency of 'evaluative thinking'.	Reports, presentations, and dashboards on data for program improvement and/or decision-making.	Reports, presentations, recommendations on effective and efficient processes, and an improvement culture.	A wide range of knowledge translation products, such as peer-reviewed publications, conference presentations, etc.
<b>Generalizability</b>	Although results may be useful to others, they are not meant to be generalized outside of the specific program being evaluated.	It varies; some data analytics output can be generalized to the broad population or a subgroup of people, while some results cannot be generalized outside of the project.	The resulting improvement may be used in other units or programs, but may require some modification.	It varies; some research findings can be generalized to the broad population or a subgroup of people, while some results may not be generalizable outside of the project, but they must be reproducible.

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<b>Knowledge Translation</b>	Recommendations are provided based on the evaluation findings; the program finalizes the actionable steps. Results may be published if deemed fit for publication and a useful addition to literature.	Data analysis result interpretation is provided, and the program finalizes the actionable steps. Results may be published if deemed fit for publication and a useful addition to literature.	Application of QI findings, ascertaining real changes or improvement.	Various products, such as presentations at conferences, peer-reviewed journal articles, and public forums, among others.
<b>Influence on Practice or Policy</b>	Improve the design and/or implementation of the current program and may influence design and/or implementation of future programs.	Maintain or change program implementation or decision-making.	Change the program activities immediately.	Expand knowledge.
<b>Example</b>	<a href="#">Evaluation example<sup>5</sup></a>	<a href="#">Access and Flow Dashboard</a>	<a href="#">PHC QI Projects QI example<sup>6</sup></a>	<a href="#">Research example<sup>7</sup></a>
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