Data Literacy Webinar Series

Webinar #1: Introductory Concepts and Problem Identification

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Presenters

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Agenda

- Introduction
- Why is this topic important?
- Data collection and sources
- Measurement and data literacy
- Measurement for the purposes of quality improvement
- Assessing data culture within an organization
- Overview of core and advancing competencies
- Setting the stage for webinars #2 and #3
- Questions and curiosities

Introduction

Welcome to part 1 of our 3-part series on data literacy, offered as part of the Excellence through Quality Improvement Project (E-QIP).

Today our content focuses on two broad questions:

- How do I know if I have a problem?

- Why is data literacy important, and how can it help to solve the problem?

Why is this Topic Important?

- **Data literacy is "the ability to collect, manage, evaluate, and apply data in a critical manner."**

- This definition encompasses several aspects, which must be considered in its entirety, but we'll break down why each of these components is important.

- Ultimately, these skills are designed to be used for application purposes: how are you using the data, and what can be done with it?
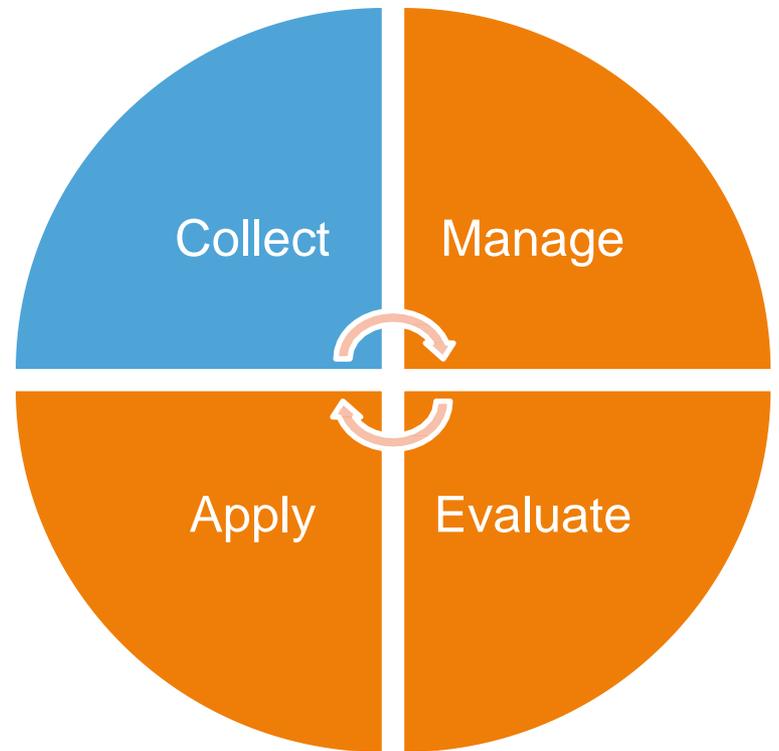
Remember – data is power

Data Literacy

Component #1: Collection

- "That which is measured, improves."

- Collect information in a routine and organized manner

- Must be findable and usable when you need it
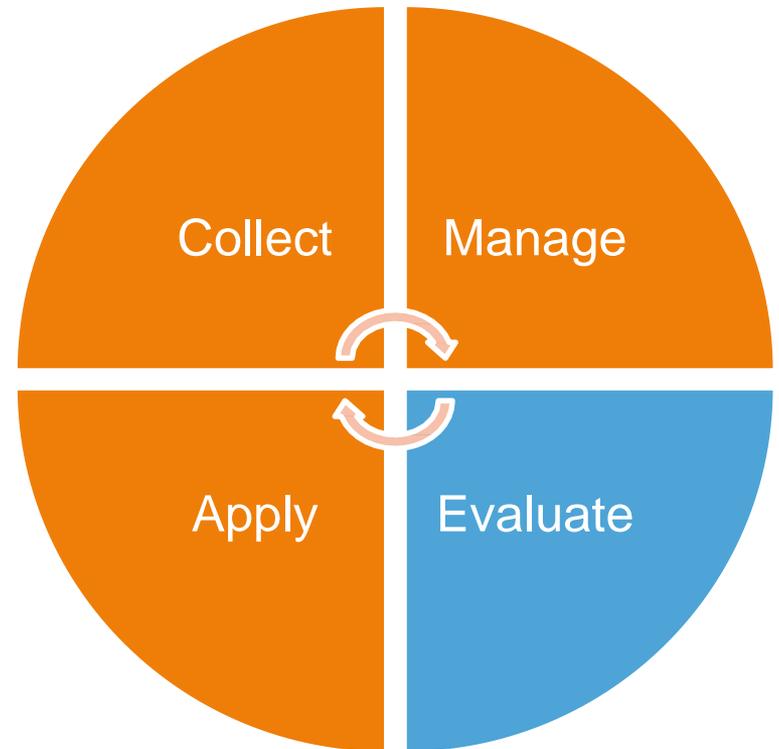
Data Literacy

Component #2: Manage

- Ability to transform, summarize, or repurpose data for different audiences and purposes

- Create visualizations and outputs that are accessible to different audiences

- Look at the quality of data and how this can be improved by data collection
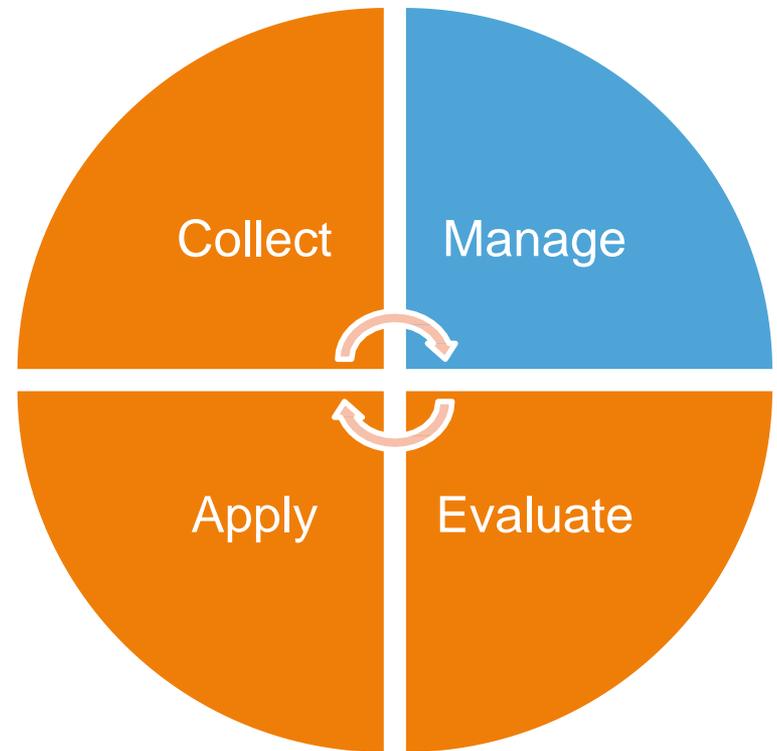
# Data Literacy

Component #3: Evaluate

- Use technical skills to draw insights from the data that has been collected and presented

- Ability to translate the data into information that can be used to inform decisions

Data Literacy

Component #4: Apply

- Ability to examine data that has been presented with a healthy skepticism, and use it to inform data-driven decision making

- Begins to get at the 'so what' question and how we will use the information
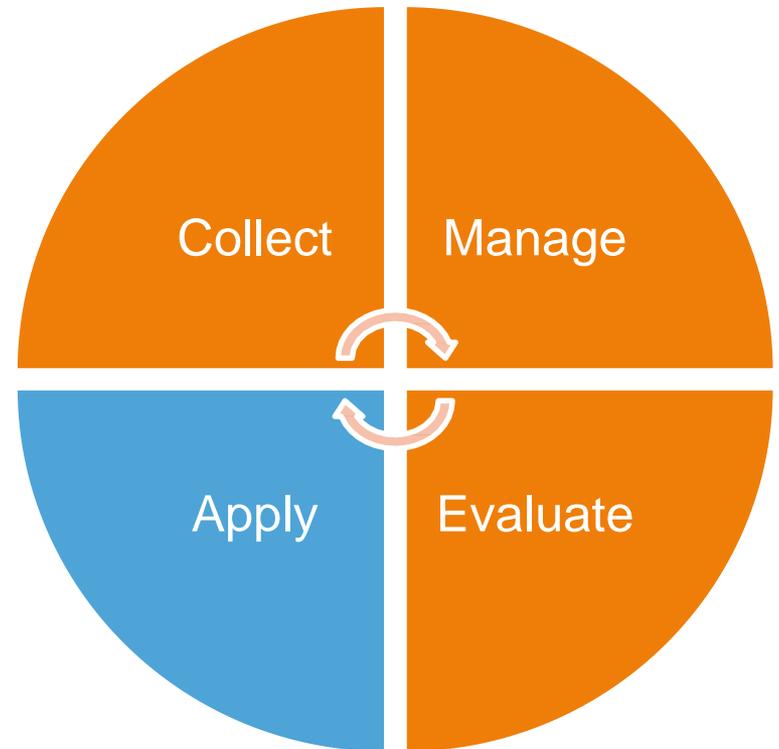
Example: Virtual Care

- **Collect:** usage data, client and staff experience data, technology incident reports, visit volume, time of use

- **Manage:** summarizing and reporting to staff, Board of Directors, and funders; reporting to Ministry and the Centre of Excellence on availability of services

- **Evaluate:** analyzing data to compare to prior service metrics, assess effectiveness and efficiency for the purpose of comparison; client experience as an outcome; identify areas of improvement

- **Apply:** use the evaluation of programs for planning and funding; Use the results of client experience to determine program models; comparable data for in person vs virtual delivery

Why is this Topic Important?

Data literacy is "the ability to collect, manage, evaluate, and apply data in a critical manner."

- A critical skill for the 21ˢᵗ Century, as more and more people and organizations embrace data as a language to communicate with

- A focus on data literacy is inextricably linked to a focus on digital health, big data, artificial intelligence (AI), and algorithms

- Use of data to inform local and regional planning, system efficiency and measurement-based care

- Use of data for integrated care, bundled service models and cross sector planning (e.g., OHTs)

- Importance of an organizational culture that focuses on quality improvement and accountability

Data Collection and Sources

- Accountability Agreements, data for Accreditation requirements and compliance reporting

- Sector specific indicators, especially when paired with or validated by another data source, such as stakeholder feedback

- Stakeholder feedback from Board of Directors, senior executives, staff, clients, families, caregivers, and community partners

- Administrative data and surveys of client and staff experience

- Standardized tools (e.g., OPOC, OCAN, InterRAI)

- Client demographic information and standardized reports from clinical management systems, and community census data

Measurement and Data Literacy

Data Literacy	Measurement
Foundational knowledge	Advanced competency
Ability to: • Collect, • Manage • Understand data	Ability to: • Develop scales, • Select methods/approaches • Apply best practices
Execute basic tasks and organize, present, and use data as information	May include modelling, projections, and advanced forms of data analysis

Measurement For Quality Improvement

- Data can be used to calculate indicators for many purposes including accountability, public reporting and quality improvement

- When we are collecting data and developing indicators keep in mind the purpose

When selecting indicators and data – what makes for good QI measurement?

Indicator Selection Criteria

Criteria	Definition
Important / Relevant	The indicator reflects an issue that is important to the general population and to relevant stakeholders AND is consistent with HQO mandate
Measureable	There are data sources that could potentially be used to measure the indicator
Actionable	Performance on the indicator is likely to inform and influence policy or funding, alter behaviour of health care providers, or increase general understanding in the community in order to improve quality of care and population health
Evidence-based	There is good / strong evidence to support the process or evidence of the importance of the outcome
Feasible	Indicator is calculable; data are timely
Interpretable	The indicator (as defined) is clear and interpretable to a range of audiences and the results of the indicator are comparable and easy to understand including what constitutes improved performance (clear directionality)
Data quality (including validity, reliability and timeliness)	At this stage, HQO would explore the indicator in greater detail including the technical definition, calculation methodology, validity and reliability of measurement and timeliness of data Construct validity: Does the indicator perform well in identifying true (or actual) quality of care problems? Minimum bias: Is there either little effect on the indicator of variations in patient disease severity and comorbidities, or is it possible to apply risk adjustment and statistical methods to remove most or all bias? Precision: Is there a substantial amount of provider or community level variation that is not attributable to random variation?

Quality Improvement Data

When selecting indicators for QI:

- Consider what is **important** to clients and to staff

- Measure what you plan to measure (Validity) BUT sometimes you may compromise and use data that are already collected. ***This is a good plan!***

- For quality improvement, internal consistency (**reliability**) and **ease of calculation** may be more important than peer comparison

- Indicators should have a clear **direction** for improvement

- Data need to be **timely**

- Indicators need to be **actionable**

What is Data Culture?

- New concept becoming pivotal as we speak

- In simple terms it implies decisions made based on real data evidence, not just on "gut instinct"

Data Culture

Ways to Build Data Culture

- Choose metrics with care

- Make proof of concept simple & robust

- Understand and quantify uncertainty: is data reliable, review your data collection for errors

- Get in the habit of explaining analytical choices; simplify your approach when possible

- Use information to help employees and clients – make it relevant

- Don't pigeonhole your data person

- Real time training

- Fix basic data-access issues quickly: OPOC, other reporting portals

- Start at the top (*the very top*)

- Confirm your instincts / intuition with data

Harvard Business Review Feb 2020

So what do we need to create a data driven culture?

Q **Which strategies have proved successful in promoting a data-driven culture in your organisation?**
(% respondents)

Top-down guidance and/or mandates from executives	49
Promotion of data-sharing practices	48
Increased availability of training in data analytics	40
Communication of the benefits of data-driven decision-making	40
Recruitment of additional data analysts	17

Source: Economist Intelligence Unit survey, October 2012.

What is the single most important strategy in your organization to drive data driven culture?

A. Top down guidance from executives

B. Promotion of data sharing practices

C. Increased availability of training in data analytics

D. Communication of benefits of data driven decision making

E. Recruitment of additional data analysts
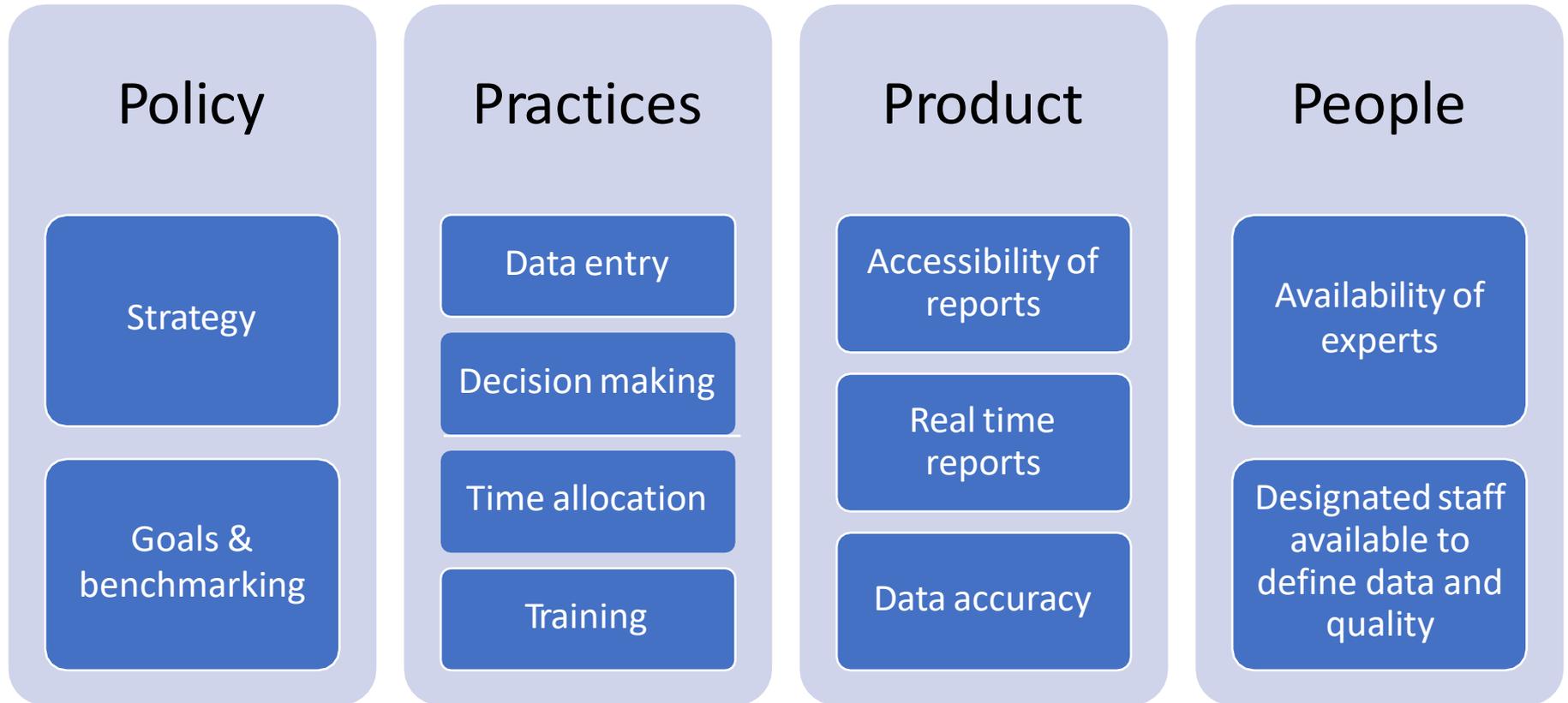
Individual Poll Results

Meeting:

    Topic: Introductory Concepts and Problem Identification Webinar

Q1.Data culture: What is the most important strategy in your organization to drive data driven culture?

	Answers	Results	%
A	Top down guidance from executives	26/118	22
B	Promotion of data sharing practices	20/118	17
C	Increased availability of training in data analytics	9/118	8
D	Communication of benefits of data driven decision making	33/118	28
E	Recruitment of additional data analysts	3/118	3
	No Answer	27/118	23

Data Culture Assessment Tool

Policy	Practices	Product	People
Strategy	Data entry	Accessibility of reports	Availability of experts
Goals & benchmarking	Decision making	Real time reports	Designated staff available to define data and quality
	Time allocation	Data accuracy	
	Training		

http://www.ihi.org/resources/Pages/Tools/HowtoGuideSustainabilitySpread.aspx
https://www.careinnovations.org/resources/?article_type=knowledge-share&fwp_resource_search=Data%20Governance
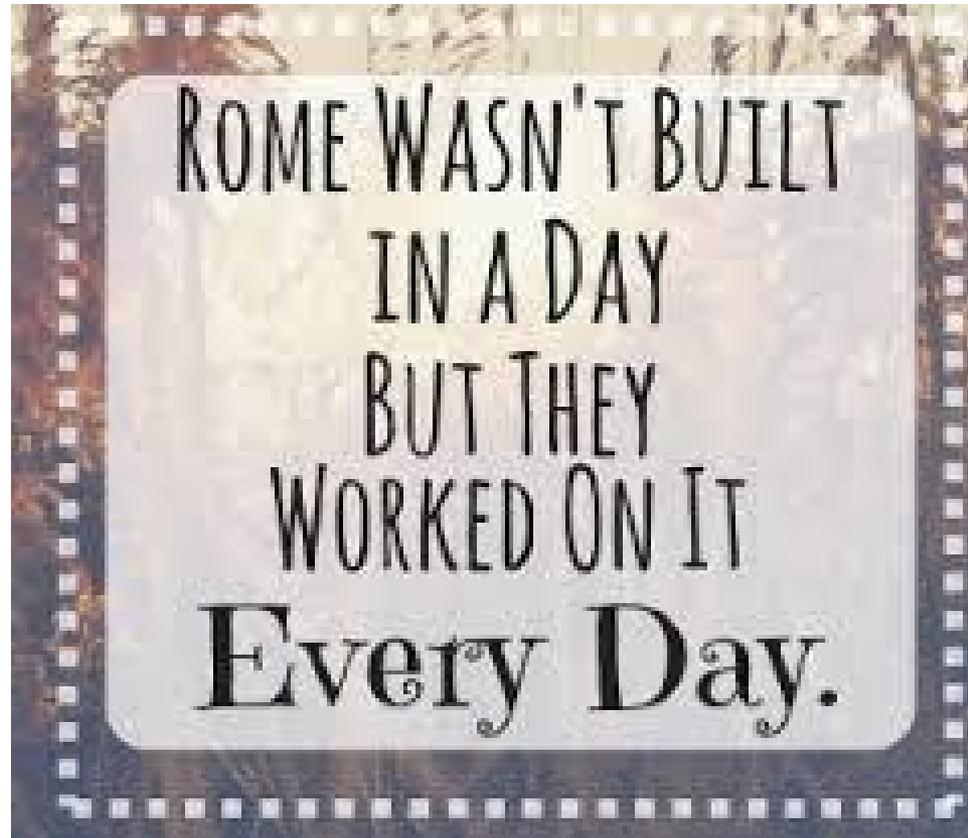
Data Culture Assessment Tool Snapshot

Data Culture Assessment Tool Result
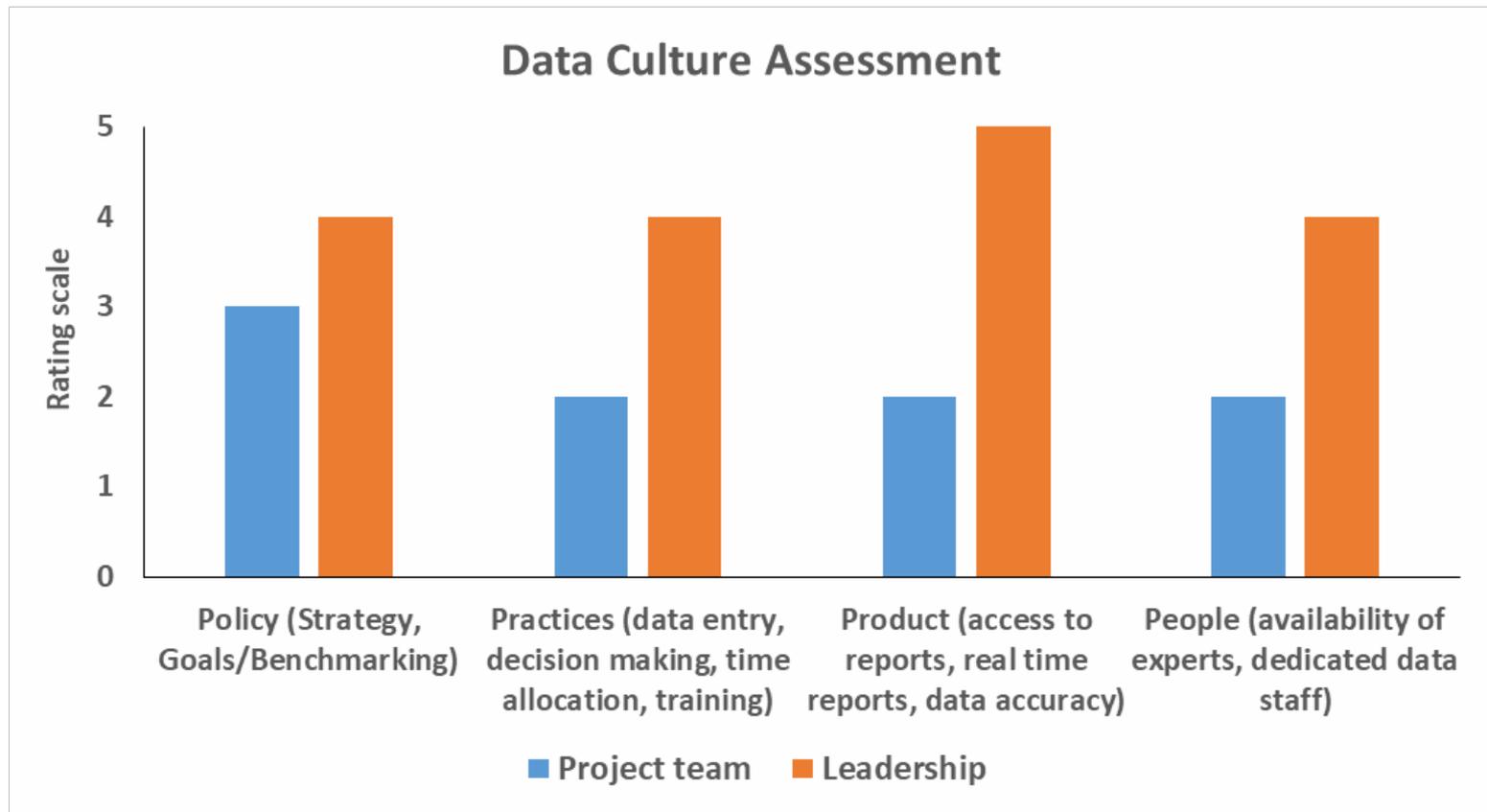
Identify the gaps to bridge between the staff and management

Remember

Core and Advancing Competencies

Identifying problems → Organizing and storing → Collecting and reviewing quality

Data visualization and reporting → Understanding uses and applications → Evaluating decisions based on data

Critical thinking
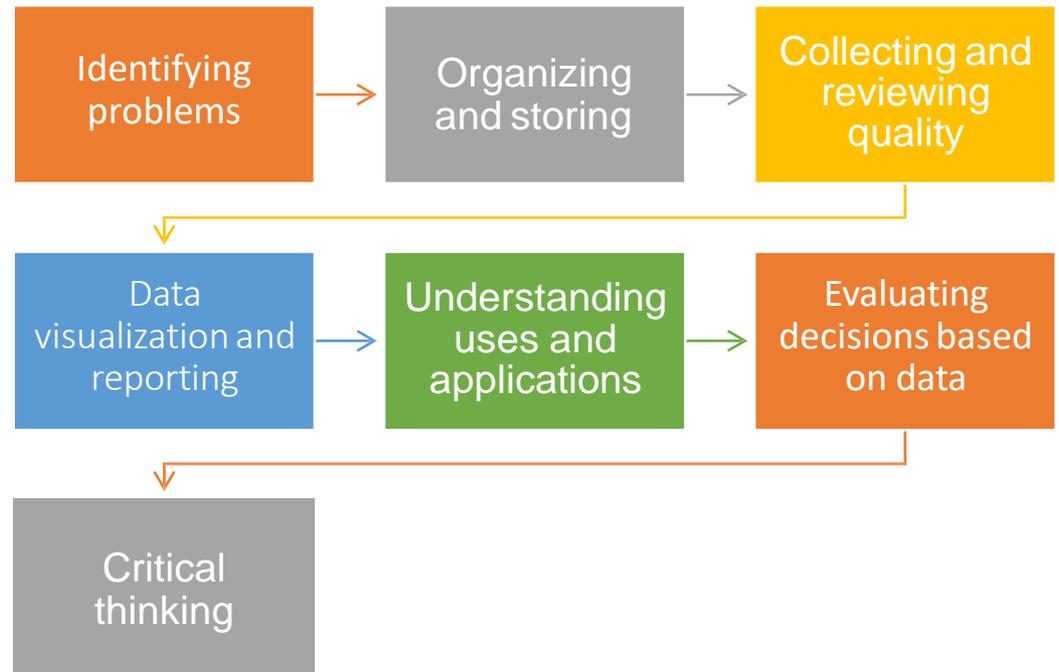
Setting the Stage for Webinars #2 and #3

Webinar #2: Basics of Quality Improvement

Fundamental question: What do I need to know to use data for quality improvement purposes?

Date: Tuesday, January 26, 2021 at 1:00 pm

Core competencies: Evaluating and ensuring quality of data; data analysis and interpretation; identifying problems in practical situations

Setting the Stage for Webinars #2 and #3

Webinar #3: Data Visualization and Reporting

Fundamental questions: How do I share and report data in an accessible way? What are my next steps to build an organizational culture of data literacy?

Date: Tuesday, March 9, 2021 at 1:00 pm

Core competencies: Create meaningful data visualizations and evaluate effectiveness; prioritizing information gathered for data-driven decision making; understanding data privacy and confidentiality; collecting follow-up data to assess effectiveness of decisions based on data

Further Reading

Bonikowska, A., Sanmartin, C., & Frenette, M. (2019). *Data literacy: What it is and how to measure it in the public service.* **Catalogue no. 11-633-X. Ottawa, ON: Statistics Canada.**

Retrieved from https://www150.statcan.gc.ca/n1/pub/11-633-x/11-633-x2019003-eng.htm

Ridsdale, C., Rothwell, J., Smit, M., Ali-Hassan, H., Bliemel, M., Irvine, D., Kelley, D., Matwin, S., & Wuetherick, B. (2015). *Strategies and best practices for data literacy education: Knowledge synthesis report*. **Dalhousie University, Halifax, NS.**

Retrieved from: https://dalspace.library.dal.ca/handle/10222/64578

Wolff, A., Gooch, D., Cavero Montaner, J.J, Rashid, U., Kortuem, G., (2016). Creating an understanding of data literacy for a data-driven society. *The Journal of Community Informatics*, *12***(3), 9-26.**

Retrieved from http://ci-journal.net/index.php/ciej/article/view/1286