Quality Improvement Basics: Data Basics Example

Slide 1 Solar Health System
Let's review an example scenario based on what was covered in the QI Basics Data Basics module.

Solar Health is a fictional health care system comprised of two hospitals and three clinics. After reviewing preliminary data, the leadership team enacted a multi-year initiative for the Quality Improvement department to systematically measure, monitor, and improve cancer outcomes within their patient population. The facilities at Solar Health System that will be involved are Sun Hospital, Moon Hospital, Clinic Mercury, Clinic Venus, and Clinic Mars. The QI team is tasked with identifying what quantitative and qualitative data to utilize and establishing process and outcome measures to track throughout the project.

Slide 2 Quantitative Data
As identified earlier in this module, quantitative data is in objective, measurable units. With the objective from Leadership of "Improving cancer outcomes," the QI team must determine how to assign specific values to cancer outcomes. Two potential sources of quantitative data that they may want to include as part of the project are:

- The percentage of patients that have a cancer diagnosis.
- The cancer mortality rate within their patient population

Incorporating objectively measurable data means the QI team can collect, track, and display information that is less likely to have inherent biases and assumptions.

Slide 3 Qualitative Data
Qualitative data is observable and descriptive but not in objectively measurable units. The QI team at Solar Health System is interested in collecting data for their QI project that helps them better understand the strengths and challenges in care provided. Three sources of qualitative data they may want to include as part of the project are:

- Surveys or interviews with patients describing their experiences.
- Observations of clinical care processes, such as treatment pathways
- How patients across different REL categories experience cancer and cancer treatment

Incorporating subjective, descriptive data and feedback allows for introducing new ideas and concepts that might not be discovered if only quantitative data collection methods are used.

Slide 4 Outcome Measures
Outcome measures are metrics that help us understand how well we meet our desired outcomes. In healthcare, we are typically interested in the impact on patient health. Since Solar Health QI is focused on impacting cancer diagnosis and cancer mortality rates, they identify the outcome or "result" data of interest as the following three measures:

- Cancer deaths prevented.

- Rate of complications from surgery, radiotherapy, and chemotherapy
- Survival rate after 1,2, and 5 years of initial diagnosis

Slide 5 Process Measures

The Solar Health QI staff understands that the cancer pathway can occur over many years. They know they will need to implement various processes that help them achieve the goals of reducing cancer diagnosis and mortality rates. Since they do not want to wait years to start reviewing their data, they will measure and track their outcomes and the activities and processes in place that they believe will impact the outcome of interest.

Process measures are essential to this particular project in order to have more frequent monitoring, as well as to better understand which processes are effective in having a desired impact on health outcomes. If the QI team at Solar Health is exceptionally successful in improving the performance of their process metrics, but their outcomes do not improve, is the project actually successful in achieving its goals? In that instance, it may be a good idea for them to re-evaluate the process measures they have selected.

Slide 6 In Summary

- Measuring the effectiveness of healthcare interventions is crucial to any health system. A well-rounded understanding is essential, where quantitative and qualitative data for process and outcome measures come into play.
- The Solar Health team has two powerful tools for their QI project: quantitative and qualitative data. Quantitative data gives them numbers and metrics, while qualitative data provides context and insights. By using both, they get a more holistic view of the situation.
- By selecting both process and outcome measures, the QI team can better understand the steps taken to achieve their goals and the actual results.
- Selecting the suitable measures is a process in itself. It involves careful planning, data collection, analysis, interpretation, and, most importantly, continuous improvement.

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling $740,000 with 0% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official view of, nor an endorsement, by HRSA, HHS or the U.S. Government. (June 2023)