

## **Using Six Sigma to increase health care enrollment**

### **A process evaluation for Minneapolis Public Schools**

Students without health insurance often lack timely access to health services which can result in delayed treatment, lost class time, and decreased participation in extracurricular activities. School districts often lose money because their staffs coordinate or provide students with basic medical services that could otherwise be charged to insurance.

Many low-income students in the Minneapolis School District have no health insurance, but are eligible for MinnesotaCare or Medical Assistance public health plans.

Minneapolis Public Schools sought to boost enrollment in these health plans, but found traditional outreach and assistance such as information tables at resource fairs and newsletters did not allow them to effectively reach the families who most needed assistance. They proposed using a “Six Sigma” business improvement model, an approach they had not tried before, but that has been used successfully by many corporations, to create a standardized way to identify problems and to approach solutions.

Minneapolis Public Schools’ Family Resource Center obtained a grant from the Minnesota Department of Human Services and partnered with Cummins Power Generation (CPG), a locally-based international company that regularly uses Six Sigma. They also contracted with Wilder Research to collect data, provide analysis, and evaluate the process.

This is a summary of the effort, lessons learned, and insights into how the process could be used to address other human service issues.

### *Implementing Six Sigma*

CPG provided training and staff support to help the Family Resource Center apply Six Sigma methods to more effectively target outreach resources. To accomplish this, they sought to identify the number of uninsured students eligible for public health insurance and compare their characteristics with those of students who had enrolled and maintained coverage.

The project was led by a designated school staff member who ushered a group representing different school departments and agencies through a structured data-driven process, using specific tools and deadlines. Throughout the process, the group noted where Six Sigma was adapted to best address a human service issue.

At the start, the school district acknowledged that enrolling students and helping students maintain coverage were two separate issues, but the school district decided to address them as one Six Sigma project to meet the grant requirements. A tiered work group allocated responsibility for working through the process to a few individuals but kept a larger group of stakeholders involved for input and decision making.

The process involves making decisions based on data. For this project, collecting data proved to be more complicated and time intensive than expected because of the negotiations required to share data between school departments and public agencies and the large quantity of data in the data sets. To better inform the solution steps, qualitative data were collected from those involved in enrolling students in health care and families seeking health care coverage.

## SIX SIGMA

Six Sigma is often adopted in an effort to standardize how problems are identified and solved. The process provides organizations a way to set clear expectations for approaching problem-solving as well as a common language for employees and managers to use.

DMAIC is one of the Six Sigma process improvement methodologies used to improve an existing business practice. It has five stages:

- **Defining** the problem and the project goals
- **Measuring** existing aspects of the current process and collecting relevant data
- **Analyzing** the data to assess the relationships between variables and determine what causes the existing error or defect
- **Improving** the current process by designing and testing experiments based on the data
- **Controlling** future processes so that they do not result in errors or defects.

The Six Sigma process is managed by a series of quality management tools and methods that are monitored by a Project Tracker tool. Based on the project start date, the Project Tracker identifies when each step in the process should be completed.

But the results were enlightening: The analyzed data revealed that about one-quarter of Minneapolis Public Schools students whose family income level, as reported for free and reduced lunch eligibility, make them eligible for public health care are not enrolled. The qualitative data identified barriers to enrollment. This information, along with detailed demographic information about students, allowed the Family Resource Center to develop solutions to systematically approach families in an attempt to increase enrollment and maintain coverage.

### *Implications for future implementation of Six Sigma*

Although Six Sigma was not designed to address issues in the human service sector, the majority of the participants said they would consider using the process to address future issues.

However, the project was not without positive and negative unexpected results. Some people spoke about the unprecedented ability to share data and use data to identify the depth of the issue. Others expressed concern about the time involved and delays, especially with procuring the data. Possibly the most unexpected result was learning from the data that the school district had about 10,000 students who were projected to be income eligible for subsidized medical care but not enrolled.

The positive feedback about the process indicates that Minneapolis Public Schools and other human service agencies should consider what other issues could be addressed using a systematic data-driven continuous improvement process.

This research reflects the Minneapolis Public Schools' experiences implementing Six Sigma and the lessons learned are directed towards future implementations within the school district. However, the lessons learned are universal and should be considered by any human service agency thinking about implementing Six Sigma.

**Resource commitment** – The Six Sigma process requires intense effort on the part of key players. Participants in the health care enrollment project commented on the time involved as well as the training needed for the staff person to lead the team. Before using Six Sigma, the district should consider whether adequate staff resources are available to implement the process on time.

Also, as experience in the method grows, continue to adapt the model to best fit the group. For instance, rather than have all participants involved in the process attend every meeting, the project worked with a two tiered project team. Participants were complementary of the model of a core work group working

through the process and bringing completed steps back to the bigger group for review and approval. The district should consider what other steps of the model can be streamlined or completed in a different way to preserve resources.

*“People were able to be drawn in to the pieces that impacted them, without having to be a part of many conversations that didn’t impact them.”*

**Learning curve** – Six Sigma is a complex process that can be learned, although participants mentioned the steep learning curve. To effectively implement the process, one Minneapolis Public Schools employee attended three weeks of Six Sigma training offered by CPG which provided little information about applying Six Sigma in a non-manufacturing setting. Minneapolis Public Schools needs to consider the most effective way to train staff to implement the process including the possibility of training multiple staff on-site with a condensed or more targeted version of the training.

When the process is used again, it would be helpful to prepare a presentation about the experience to help introduce the method and expectations for participation. Asking individuals involved in this effort to talk about the process and the results with others contemplating using Six Sigma could reduce some concerns about learning a new process.

*“It was a huge learning curve since it had not been used before in this way. I am sure that some of the obstacles may be less if used again.”*

**Leadership** – Tracking the paperwork of Six Sigma is not inconsequential. Key informants for this project spoke of the benefits of having one person in charge of the project who provided information to the group and solicited feedback as necessary. In the future, the district will need to follow the Six Sigma model of designating a project leader.

Regularly implementing Six Sigma within the school district will require the district to either develop internal expertise so a staff member can act as the project sponsor or partner with an external agency that has the staff capacity to sponsor projects. The district should consider options for increasing internal capacity or strategize how it can partner with

corporations who use Six Sigma and would be willing to offer expertise and oversight on projects.

**Culture shift** – Human service staff often approach concerns through group processing, task forces, and decisions based on experience, territories, emotion, and gut feelings. Decisions are often reactive rather than proactive. Addressing problems in a defined step-by-step process dependent on data may be a culture shift for some staff. This health care enrollment project has shown that the shift can happen. In fact, one participant mentioned that the process of making decisions based on data disarmed conflict and territorial issues.

Another culture shift involved the staff working collaboratively across departments. Six Sigma requires identifying and involving participants from each department that has a stake in the issue and the solutions.

*“The process was compact, had tools that disarmed conflict and territorial issues, focused on data, and [allowed us to] understand the problem before moving forward.”*

**Defining the problem** – Six Sigma is most effective when focused on solving one defined problem. The problem presented in the grant proposal - enrolling eligible students in health care coverage and maintaining coverage over time - should have been addressed as two separate Six Sigma projects. Future applications of Six Sigma should either better define a single problem at the outset, or have the flexibility to change or focus a project based on the data. In addition, those involved should remain open to the option of implementing sequential Six Sigma projects when additional problems are identified by the first project.

**Funding** – Should the district seek state or philanthropic funding for future Six Sigma projects, staff should carefully consider how the project is presented in the proposal and contract stage. Traditional grant applications that ask for specific activities, outputs, products, and outcomes do not align with the Six Sigma methodology of letting the data drive the process and determine the process or final product. Submitting grants for a Six Sigma process may take some education of funders. Additionally, district development staff should consider what funders,

possibly those in the corporate sector, may resonate with using Six Sigma in a non-corporate setting and approach them to support future Six Sigma projects.

**Data privacy** – Unlike the manufacturing or business sectors that work with objects or processes, school districts work with students and families. Some of the data needed to answer future questions are protected by state and federal laws. How data are accessed, shared, and used demands careful thought to protect privacy and dignity.

*“Asking for identifiable data for targeted outreach forced us to consider what precedent we were setting and how to carefully protect the data of students and families.”*

**Quantitative data analysis** – As a data-driven process, Six Sigma requires substantial data analysis. Before embarking on a Six Sigma project, assess the district’s internal capacity to clean, manipulate, and analyze large data sets. If other commitments prevent internal staff from helping with the data analysis, consider what resources are available for soliciting external help.

Also consider what data are available and what permissions are needed to share the data among different school departments or different public agencies. To keep the project from stalling, get approval for data sharing before the project starts. Also be sure to obtain specific agreements about whether a third party is needed to handle the data transfer and analysis.

**Qualitative data analysis** – Six Sigma provides prescriptive guidelines for collecting qualitative data through key informant interviews. While the guidelines can be useful, this is one step of the process where good human service experience and training is probably sufficient for quality data collection.

**Timing** – Six Sigma requires a tight timeline. In fact, the Project Tracker is designed to schedule most Six Sigma projects for six months. Experience shows that partnering with multiple departments adds time to the project. When constructing a project timeline, be sure to adjust the Project Tracker to accommodate different schedules and work locations. In addition, any schedule should accurately reflect the rhythm of the school year as it is unwise to schedule an experiment to coincide with vacations or standardized testing. Likewise, the availability of data can affect the plan so any data analysis needs to coincide with the availability of district data.

*“The imposed discipline, thoroughness, and accountability of the process kept us on track and moving ahead. We have come up with new opportunities and answers to questions I did not expect.”*

**External reach** – Some issues that Six Sigma could address may attract interest from other human service entities, elected officials, tax payers, or the media. District staff should assess potential Six Sigma projects, especially those involving student data, for ripple effects in the community or media. Adding a communications planning step to the process may be necessary for projects likely to attract attention or those dependent on external funding.

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**For more information**

This summary presents highlights of the *Using Six Sigma to increase health care enrollment: A process evaluation for Minneapolis Public Schools*. For more information about this report, contact Laura Martell Kelly at Wilder Research, 651-280-2667. To learn more details about how Minneapolis Public Schools’ Family Resource Center implemented Six Sigma to increase health care enrollment, please contact Thaddeus Lesiak at [Thaddeus.Lesiak@mpls.k12.mn.us](mailto:Thaddeus.Lesiak@mpls.k12.mn.us)

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