



Wildcat Public Health Region

MLC-2 IN KANSAS

MCH Oral Health Screening Quality Improvement Project

(Storyboard: May 2007–February 2008)

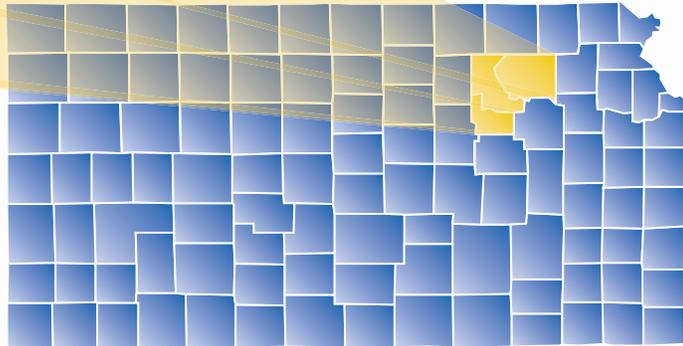
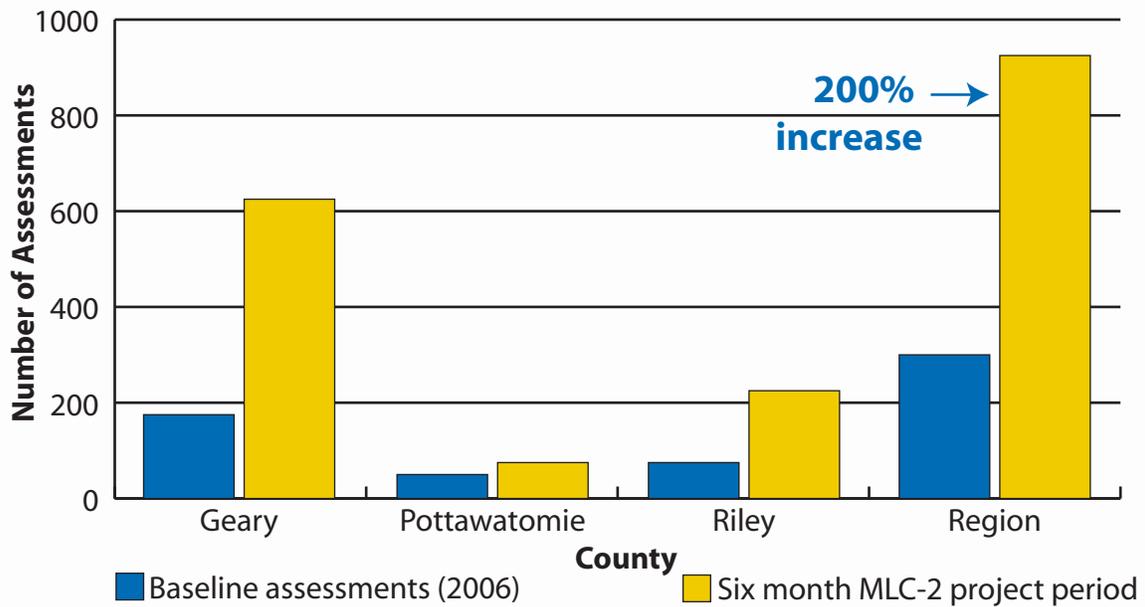


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Snapshot Results of this Quality Improvement Project

Oral health assessments from Wildcat region, before and after intervention



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THE SITUATION

Poor oral health and untreated oral diseases can have a significant impact on quality of life. No one can be truly healthy unless he or she is free from the burden of oral and craniofacial diseases and conditions.¹

Oral health is vital for healthy children. According to research conducted by the Centers for Disease Control and Prevention (CDC), oral health problems may be linked to systemic diseases, delayed learning and poor socialization skills. Research findings also emphasize the importance of oral health, and offer compelling reasons why local health departments (LHDs) should monitor oral health status and increase access to dental care. Health department medical practitioners are front-line sentinels who monitor oral health by providing dental screenings, preventive dental services and dental referrals during children's visits to the health department. In addition to dental screenings, LHD medical practitioners provide oral health education that includes information about medical and dental insurance programs.

According to the CDC, fewer than one in five Medicaid-covered children received at least one preventive dental service in a recent year. The research shows that tooth decay or dental caries are preventable, and existing dental caries require timely treatment to prevent further decay. A 2004 Kansas Health Institute (KHI) and Kansas Department of Health and Environment (KDHE) study found that 52 percent of school children in the Northeast region, including the Wildcat region, have or have had tooth decay. Data from the 2000 Census shows that the Northeast region has about 378,455 school children; and about 196,797 of these children have or have had tooth decay. Untreated dental caries, resulting from limited access to dental care and insufficient oral health education, is a significant problem for children living in the region. The low number of dentists who take Medicaid-insured patients in the region is a major barrier for access to dental care.

As part of a pilot project of the Kansas Multi-State Learning Collaborative II (MLC-2), the Wildcat region decided to address low preventive dental screening rates in the region. The Wildcat team aimed to learn and utilize Quality Improvement (QI) techniques to increase the preventive dental screening rate by 20 percent over the previous year's average in oral health assessments.

At the first QI training in March 2007, the Wildcat region, along with the 15 other Kansas public health regions, was introduced to QI tools such as the Fishbone Diagram, Brainstorming, Know/Don't Know Chart, Tree Diagram and Affinity Diagram. After conducting an initial root cause analysis using a Fishbone Diagram and exploring possible reasons for the low preventive dental screening rates in the region, the team found that staffing shortages were a major concern for the region.

¹Healthy People 2010. 21 Oral Health



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STEP 1: DESCRIBE THE PROBLEM

Problem statement:

The number of children who receive preventive dental screening in the Wildcat region is too low.

Reason selected:

Oral health is vital for healthy children. According to the CDC, oral health problems may be linked to systemic diseases, delayed learning and poor socialization skills. Based on the 2004 study conducted by KHI and KDHE, 52 percent of school children in the Northeast region, including the Wildcat region, have or have had tooth decay.

Target population:

Children from birth through adolescence who are residents of the Wildcat region

Measures of project success:

1. Increase the number of oral health assessments by 20 percent above the previous year (2006)
2. Develop a regional oral health screening protocol
3. Develop a regional oral health screening consent form
4. Increase awareness of the target population and the need to continue educating and promoting preventive dental screening to this population
5. Increase collaboration between local health departments and private providers
6. Learn and utilize QI techniques to strengthen the regional capacity to provide certain public health service functions that could not be easily provided by each individual local health department

Milestones:

- Completed first working/learning session: Two-day QI workshop held in March 2007
- Conducted regional training:
 - Committed to problem statement
 - Established team purpose, guidelines, goals and expectations
 - Developed project's timeline
 - Discussed roles and contribution of project manager and team members
 - Selected QI tools (Affinity Diagram, Brainstorming, Fishbone Diagram, Tree Diagram)

“Increase the proportion of low income children and adolescents who receive any preventive dental service during the year.”

— *Healthy People 2010 objective*

MCH Oral Screening QI Team Members:

Barbara Berry: Regional Coordinator

QI County Leaders:

Patricia Hunter: Geary

Leslie Campbell: Pottawatomie

Charles Murphy: Riley



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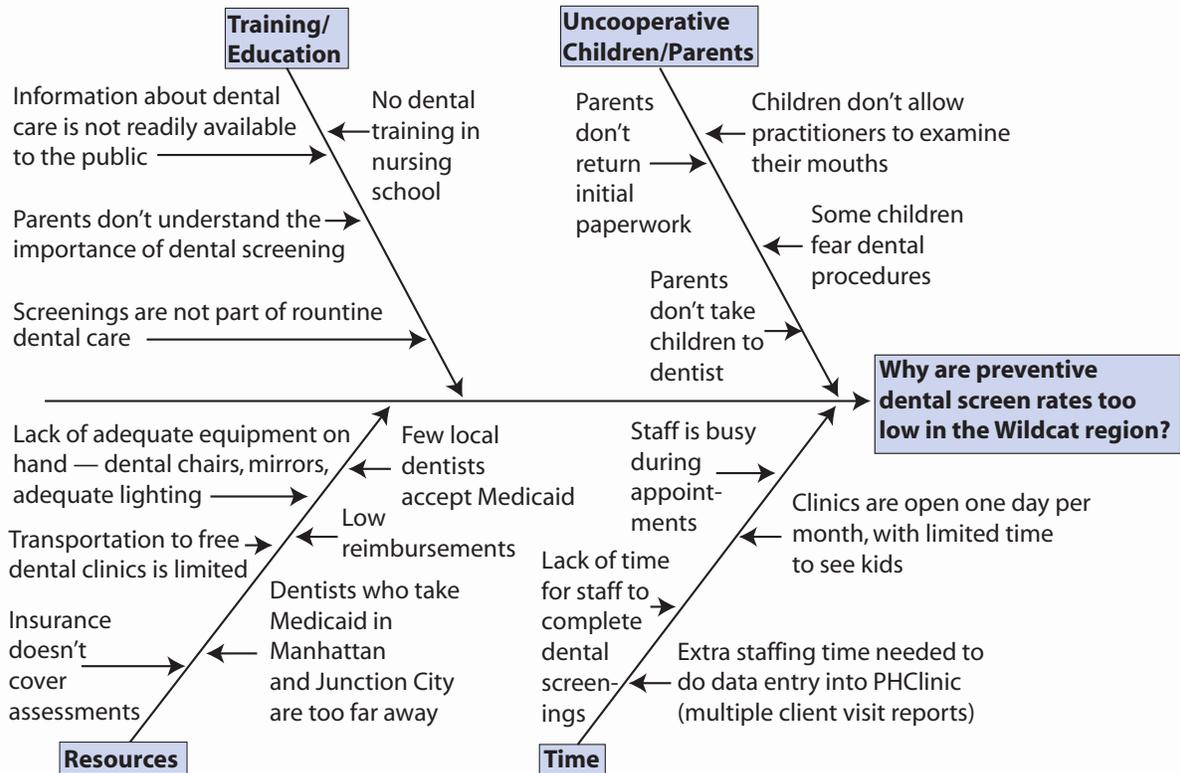
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STEP 2: IDENTIFY ROOT CAUSE(S) OF THE PROBLEM

Problem statement:

The number of children who receive preventive dental screening in the Wildcat region is too low.

Cause and Effect (“Fishbone”) Diagram: Root causes for low preventive dental screening rates in the Wildcat region



Root causes of low preventive dental screening rates in the Wildcat region:

- Information about dental care is not readily available for the public.
- LHD staff doesn't have sufficient time to complete dental assessments.
- LHD staff lacks sufficient level of training to perform dental assessments.
- LHD staff doesn't have adequate dental equipment and supplies to conduct dental procedures.
- LHDs have not previously directed efforts to educate the public regarding the importance of preventive dental screening.
- The region does not have printed materials about dental care.
- LHD electronic data systems need revisions to capture oral health assessment data.

QI tools used in this step: Fishbone Diagram, Brainstorming, Tree Diagram

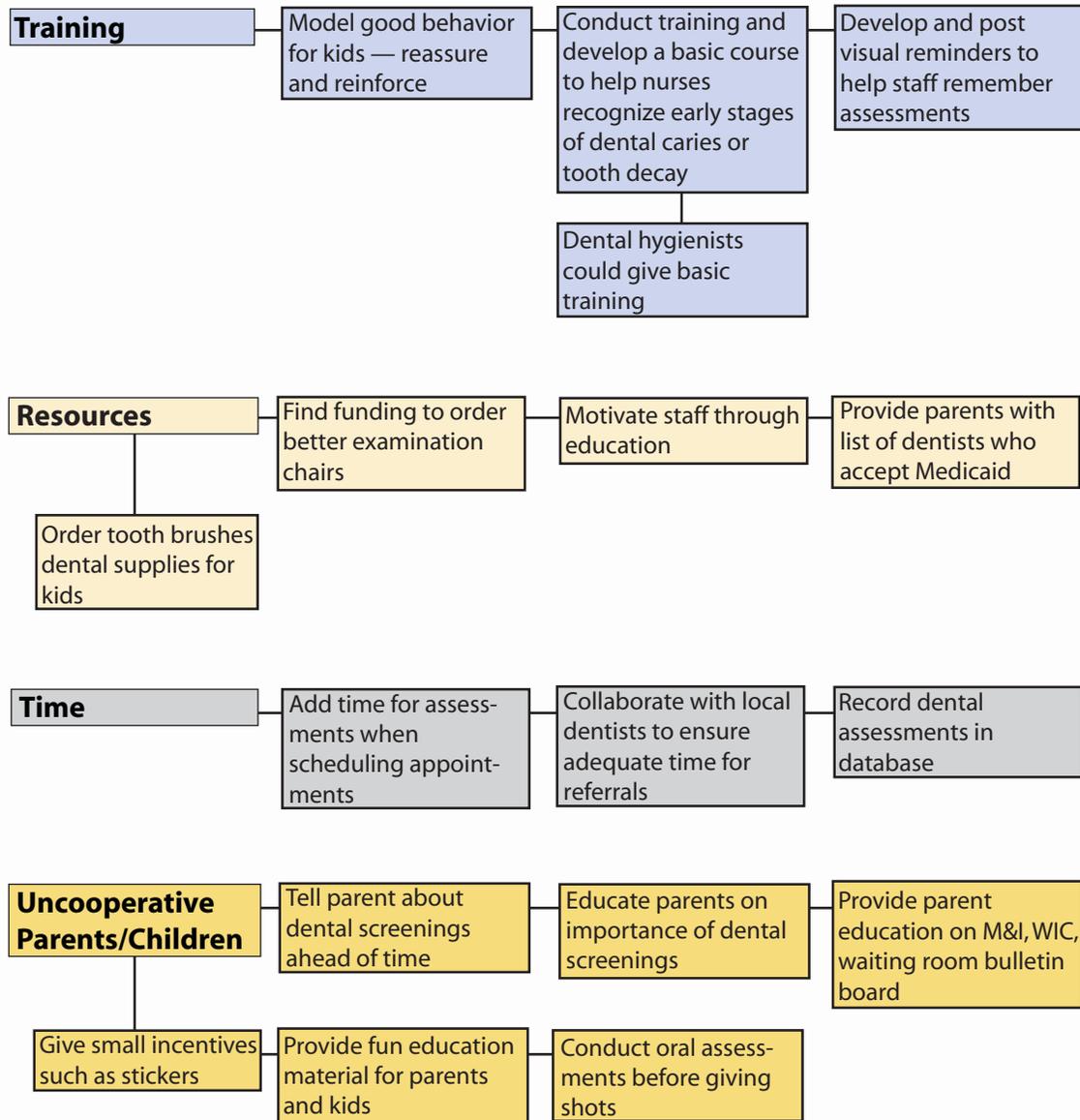


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STEP 2: CONTINUED

Tree Diagram: Select Goals and Identify Strategies



“After conducting the initial root cause analysis (Fishbone Diagram) of the possible reasons for the low preventive dental screening rates in the region, the team found that staffing shortages were a major concern for the region.”



STEP 3: DEVELOP A SOLUTION AND ACTION PLAN

In order to develop a solution and action plan, the team reexamined the Fishbone and Tree Diagrams, and found that in addition to the problem of staff shortages, there were two more areas of concern:

- Lack of dental training among LHD staff
- Lack of parents knowledge regarding the importance of oral health screenings

To address low preventive dental screening rates in the region, the team utilized three additional QI tools:

- Brainstorming
- Logic Model
- Affinity Diagram

Based on the findings listed above, the team proposed an action plan broken into the following steps:

- Conduct two trainings for the LHD staff
 - Diagnodent and fluoride varnish training
 - Oral health assessment training
- Review clinical workflow routine to accommodate new procedures and personnel shortages
- Order dental supplies
- Develop a dental kit for parents that has educational material explaining the necessity of regular oral hygiene practices and nutrition
- Develop a list of resources and available dental providers including those that accept Medicaid in the region
- Develop a list of dental procedures that are necessary and appropriate for the target population
- Develop a regional oral health screening protocol
- Develop a regional oral health screening consent form

“This is important because oral problems can impact self-esteem for children and lead to problems eating, speaking and attending to learning.”

— Michael McGuire, D.D.S., president of the American Academy of Periodontology (AAP)



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STEP 3: CONTINUED

Milestones:

- Analyzed maps of current processes to determine the areas of improvement
- Pulled up information and statistics regarding tooth decay in the region
- Conducted regional training:
 - Established team purpose, guidelines and expectations
 - Discussed roles and contribution of project manager and team members
 - Identified issues using QI tools (Affinity Diagram, Brainstorming, Fishbone Diagram, Tree Diagram)
 - Developed goals, timeline, protocols, interventions, solution and action plan
- Reviewed evidence and recommendations for decreasing cavity and tooth decay rates in the region
- Identified two additional priority areas for action plan to address root causes for low preventive dental screening rates in the region:
 1. Lack of dental training among LHD staff
 2. Lack of parental knowledge regarding the importance of oral health screenings
- Abstracted oral health assessment data from PHClinic, QS Insight electronic database and Client Visit Records (CVR) system to determine baseline in each county

QI tools used in this step: Brainstorming, Affinity Diagram, Logic Model, Tree Diagram, Fishbone Diagram



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STEP 4: IMPLEMENT THE SOLUTION

As the first step, the team chose to tackle some small, easily-solved problems in order to generate broader support for the approach. As much as possible, the team also tried to devise practical solutions that could be implemented with little or no additional resources or outside help.

As a result, the team decided to start the “implementation process” with training for the LHD staff. The training served as a foundation for future activities and prepared the health departments’ practitioners for administering fluoride varnish applications and oral health assessments.

Next the team implemented several activities, such as ordering dental supplies, developing a dental kit for parents, and creating a regional oral health screening protocol and a consent form for parents. The team felt that these preventive interventions would aid in increasing the number of preventive oral health assessments as well as educating parents regarding the necessity of regular oral hygiene and nutrition.

After addressing the problems listed above, the team decided to shift their focus to the issue of staff shortages. Unfortunately, the team felt that that this problem couldn’t be resolved because of limited resources. As a result, the team introduced only a few initial intervention activities. As the first step, the team reviewed the workflow routine of the LHD staff and introduced the following changes:

- Developed a plan to improve time management skills
- Developed a plan to improve communication between managers and staff
- Started developing a plan that would enable LHDs to build templates that define complex services and project workflows and use them to schedule and assign duties that maximize workforce utilization across multiple service delivery projects

Milestones:

- Conducted two trainings for the LHD staff:
 - Diagnodent and fluoride varnish training
 - Oral health assessment training
- Designed and printed regional promotional brochure of dental screening
- Adopted a regional oral health examination form
- Developed a regional oral health screening protocol
- Developed a regional oral health screening consent form for parents
- Obtained promotional materials
- Identified locations suitable for outreach activities
- Conducted a public information campaign

QI tools used in this step: Fishbone Diagram, Tree Diagram, Brainstorming, Logic Model



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STEP 5: REVIEW AND EVALUATE RESULTS OF THE CHANGE

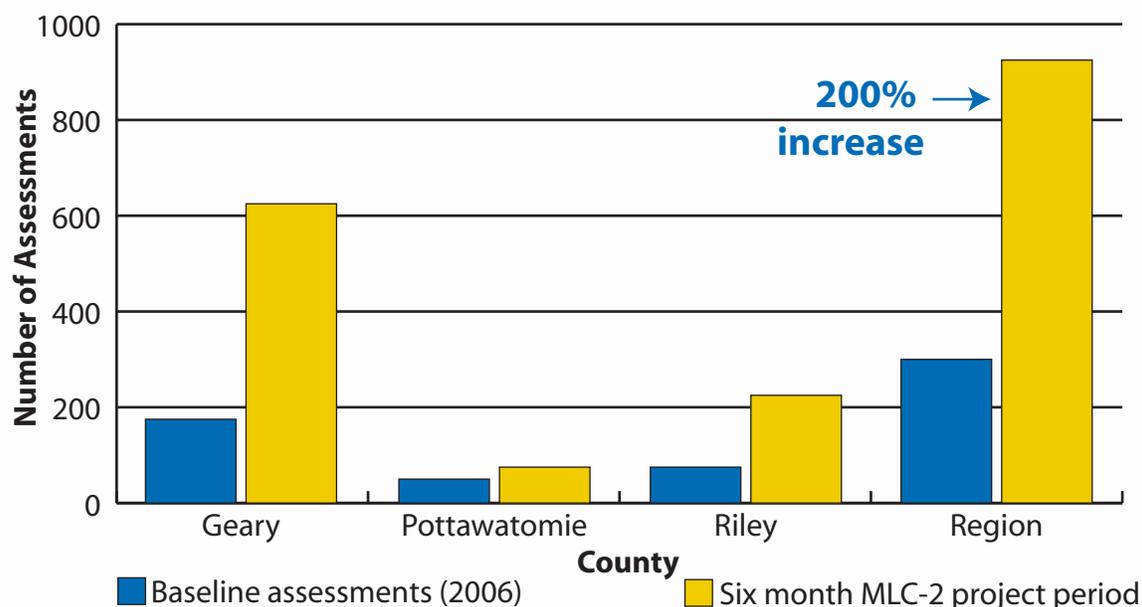
Results:

- By the end of the project period, there was an increase of 200 percent over the previous year's average in oral health assessments (see chart below)
- Developed a regional oral health screening protocol
- Developed a regional oral health screening consent form for parents
- Increased collaboration between local health departments and private providers
- Learned and utilized QI techniques to strengthen the regional capacity for providing certain public health functions that could not be easily provided by each individual local health department

Milestones:

- Gathered data and charted progress on the QI indicators
- Reviewed Fishbone Diagram and Tree Diagram on staff shortages and agreed that those causes had been addressed by the team

Oral health assessments from Wildcat region, before and after intervention



QI tools used in this step: Brainstorming, Fishbone Diagram, Tree Diagram



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STEP 6: REFLECT AND ACT ON LEARNINGS

Some challenges identified by the team:

- Dedicating staff for full attendance at team meetings
- Existing process and systems are not geared toward QI
- Collecting appropriate and reliable data for measuring outcomes:
 - The difficulty to obtain timely data to use both in the “plan” (e.g., baseline) and in the “check” (e.g., evaluation) stages
 - Data are scattered throughout multiple systems that have difficulty communicating with each other, and the information is often outdated and hard to abstract
- Establishing a QI culture within the everyday work of a public health practice

Lessons learned:

The project greatly benefited the region as it facilitated an understanding of the existing quality improvement opportunities and helped local health departments learn how to identify the root causes of problems and successfully overcome barriers. As part of this project the team learned the following lessons:

- Applying quality improvement methods requires just-in-time training for LHD staff
- Additional practice and reinforcement are needed to become comfortable with QI tools and to utilize them routinely
- Additional technical assistance is needed to support the planning and implementation of quality improvement efforts
- Consultation delivered on-site is very helpful and in some cases critical
- Consistency in meeting attendance is critical to using time efficiently and understanding the direction the group is moving
- The role of the project coordinator is critical
- Networking and sharing experiences are beneficial to the project team

Future plans:

- Examine the long-term effects of QI methods and oral health assessments and education on the reoccurrence of dental cavities in the same population of children. Compare the average number of caries for children in the region in the following categories:
 1. Category A: Number of reoccurring or new caries in population sample of children examined by health department medical staff using QI to improve outcomes
 2. Category B: Number of reoccurring or new caries in population sample of children examined by school nurses who do not use QI
- Conduct a study to see if race, gender and socioeconomic status are significant indicators for recurring or new caries in categories A and B

Milestones: Shared successes through agency presentations, staff meeting and story-board.



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