



CITE Project: Case Western Reserve, 2000–03

Case Western Reserve University's [CITE project](#) (entitled Catalyst for Kids) partnered its Bolton School of Nursing; its medical school's departments of pediatrics and pharmacy; and MetroHealth System, a managed care organization. Both schools and the managed care organization are located in Cleveland.

The goal of Catalyst for Kids was to implement and evaluate a model educational experience in which learners (Case Western Reserve's pediatric residents, nurse practitioner students and pharmacy residents), medical faculty and clinic staff learned to work as teams of six to eight individuals to provide and improve the care of children. The project engaged learners in two separate roles:

- Patient-level care (developing collaborative patient plans of care).
- System-level care (process improvement of clinical systems).

Initially the teams' system-level work focused on decreasing emergency room utilization through the improvement of care for pediatric asthma patients.

Pediatric patient care took place in the pediatric outpatient clinics of the MetroHealth system at six locations in downtown Cleveland. These are urban clinics serving a predominantly lower socioeconomic Medicaid insured population. All of the Medicaid contracts at these clinics were managed care with a fixed amount of funds available to cover all health costs.

Project learners provided care in the mornings at the clinics. This intervention group consisted of 30 individuals: 19 residents, 10 advanced practice nurse students and one pharmacy resident. A control group of similar learners worked afternoons at the clinics.

Faculty initiated a pilot phase of the project for five months (January through May 2001) at one morning clinic in the MetroHealth outpatient area. Then in September 2001, they rolled it out to the system's five morning pediatric outpatient clinics (Monday through Friday), occurring at two locations within the system. The project learners worked together as teams at these clinics during that academic year and continued working together the following academic year.

Project faculty gathered data on patients' emergency department asthma visits for a year prior to the project and for a year during the project. They also gathered pre- and post-project data on learners' teamworking attitudes and skills.

Structure of the Model

At the beginning of the project, learners joined their team in a six-hour workshop taught by participating faculty on the basic concepts and methods in:

- Collaborative team care.
- Improving the system of care in the clinic.

The workshop included a short teaching session on basic aspects of managed care developed with help from the MetroHealth staff. Over the next eight months, these teams of eight to 10 individuals spent four hours each week in an assigned clinic together providing care; often only three to four were present at any one patient assessment.

Physician, nurse practitioner and pharmacist faculty supervised the interactions of these faculty/student teams.

All team members and supervising faculty also participated in a half-day "reflection retreat" at the midpoint and at completion of the eight-month experience.

Each week, the team's activities began with a 75-minute pre-clinic meeting led by faculty. During this meeting, 45 minutes were dedicated to systems-level process improvement work to enhance the care of pediatric patients with asthma.

Faculty provided team members with data about the pediatric asthma patients to use as a basis and rationale for change.

Each interdisciplinary clinic team designed and implemented a series of improvement initiatives.

The remaining 30 minutes of the pre-clinic meeting were dedicated to discussions of patients: those who received teamwork care the previous week and those to be seen that day in the clinic. The latter were reviewed and the need for teamwork anticipated.

During clinical work that followed the meeting, each student clinician had his/her own schedule of patients. Once a clinician (usually a resident or nurse practitioner student) identified a patient who would benefit from teamwork, other team members—those who were in the vicinity seeing other patients—were notified.

The three to four team members present then each reviewed the existing plan of care, if any, and made a patient assessment. When these steps were completed, they huddled for a brief discussion of the patient. These individuals agreed on a problem list, identified needs and formulated an ICP, under faculty guidance.

The initiating clinician then returned to the patient to share with him or her the recommendations and finalize a plan. The initiating clinician also was responsible for

summarizing the care plan in the electronic medical record. This visit-based collaboration took about 20 minutes.

Learners participated in a core curriculum that consisted of instructional modules addressing particular components of interdisciplinary collaborative team care for pediatric patients in managed care environments.

The modules were presented on a project Web site; some were optional and others were required. The four required modules were:

- Microsystems in health care.
- Conflict management.
- Psychology of change.
- A managed care case study.

Results

- **Project learners developed better teamwork skills when compared with a control group.** Faculty found statistically significant differences between the intervention and control groups on measures of team skills and the use of authority in teamwork. They found no differences, however, on measures of attitudes toward teamwork or interdisciplinary collaboration.
- **Faculty found that patients treated by the intervention group had slightly fewer visits to the emergency department—but this difference was not statistically significant.**
- **Case Western incorporated the project model, Catalyst for Kids, as a permanent part of resident training at MetroHealth.** In the project's third year (2003) learners in the project's control group, practicing in the afternoon clinics five days a week, also began using the project model—thus extending the team model to all 10 MetroHealth pediatric outpatient clinics (mornings and afternoon clinics, five days a week). The change affected all Case Western's pediatric residents, all its advance practice nursing students and those pharmacy residents who trained at MetroHealth. According to the project director:

By incorporating this training model into the existing pediatric resident continuity clinics, we assisted all of our learners to achieve the recently required ACGME competencies in practice-based improvement and systems-based practice in a cost-neutral training experience.

(ACGME is the Accreditation Council for Graduate Medical Education, a nonprofit council that evaluates and accredits medical residency programs in the United States.)

During 2002–04, project faculty presented three papers on the project at national meetings, including the December 2002 14th National Forum on Quality Improvement in Health Care. Faculty also presented information about the projects at four poster sessions at national gatherings held during 2003–04.

Project Strengths

According to the PQE program staff, the Case Western project was the most successful of the CITE projects in developing a model for teamwork. While it was not as effective (in terms of either patient or learner outcomes) as faculty there had hoped, it had enough success to warrant continued investment by MetroHealth.

PQE program staff concluded that the success likely was due to a number of factors, including:

- The faculty's previous experience with team-based interventions.
- The collegial nature of the faculty's personal relationships.
- The fact that faculty were able very early to focus their attention on a model that appeared to make sense to the learners.

In addition, according to PQE program staff, because the learners who participated in the intervention were already working in the clinic, they had somewhat fewer scheduling challenges than did those at other CITE projects for whom faculty created new training slots in the clinic.

Challenges Faced

The problems faced by the Case Western team were not atypical of other CITE projects. These included difficulties in:

- Scheduling meetings of the faculty leadership.
- Having all the disciplines represented at all times in the clinic.
- Having enough depth of membership in the faculty leadership to deal with inevitable changes in team membership.
- Rolling out the team care model to all MetroHealth clinics as quickly as they had expected. It took more time than project staff expected to develop adequate faculty leadership for all teams at each clinic. Staff members found the sustained engagement of faculty required a significant investment of time.

Stories in Team Care

Clinical Improvement

A 10-year-old female presented with severe persistent asthma that included nightly symptoms and exercise intolerance. Her past medical history included one urgent care visit and two hospitalizations in the previous two years, multiple missed appointments and many social issues.

The medical resident and nurse practitioner examined the patient and then met with the medical faculty and pharmacist. The team agreed on a collaborative plan, and the patient's clinician discussed the plan with the family.

A social worker assisted with social issues, and the pharmacist provided medication education and therapeutic recommendations on key issues that contributed to problems in the prior care plan.

The patient returned for a follow-up visit two weeks later. At the return visit, her asthma severity had decreased to mild persistent, the patient was tolerating gym class well and the social issues were being addressed.

The patient had no further hospitalizations and had only one emergency department visit approximately 18 months after the intervention. Two years after the intervention, the patient manages her asthma.

Process Improvement

One of the patients with mild persistent asthma was selected to participate in a process improvement project. After her caregiver completed the pre-intervention survey, team members learned that she had been using her rescue inhaler up to 100 times in one month.

Clearly, the patient and caregiver did not understand the use of daily medications vs. the rescue inhaler for asthma attacks.

The team treating her made a small alteration to clinical process. During a clinic visit, the team educated the patient and her caregiver about all her asthma medications and gave them a plastic card and refrigerator magnet with pictures of her medications and doses on it.

As a result, in a post-intervention survey about six weeks later, the patient's use of the rescue inhaler had decreased dramatically, to about 10 times in a month. She also used the daily medications more than in the past.

The caregiver provided positive feedback about the value of the plastic card and magnet as a reference.

Improvements for Clinician Learners

A clinic nurse who participated in a Catalyst for Kids team said that since being involved she felt more comfortable approaching providers with issues in the clinic and that her recommendations were welcomed. She also gained an expanded network of members from other disciplines whom she could contact about clinic issues.

A resident physician—a reluctant participant—was involved in a Process Improvement (PI) project with the goal of teaching children with mild persistent asthma and their caregivers the difference between their daily regimen of medications and those only for emergency use.

The resident used several PI tools in this project. After graduating from residency training and accepting a position in a group practice, he contacted two of the remaining team members to get additional information about PI tools. He said that he had come to value the experience he had in the team even more when he got out into practice and was asked to work on improving the care of his patients.

According to the project director at Case Western, "learners reported that the two-pronged project of learning new skills in both process improvement and collaborative interdisciplinary clinical problem solving complemented each other and produced a synergy that would not have been achieved had only one of the training elements been included."

Lessons Learned

1. **It is important to start slowly in a new project.** Faculty found controlled application of its model to be useful in:
 - Working out the "bugs" in one team's process before applying the model to several teams.
 - Maintaining the support of faculty preceptors and administrators.
 - Facilitating an oversight group to keep the project on track regarding organizational needs and changes.
 - Helping refine early on those techniques that proved to be important to the model—for example, requiring individual learners to undertake process improvement projects.

For the future, faculty suggested "staging" the model's clinical teamwork component before the introduction of the quality improvement effort. The latter is far more complex and time-consuming, and can overshadow the clinical learning.

2. **Team "facilitators" are critical to this work.** The project's facilitators—faculty from each of the involved disciplines—were important in keeping the teams directed and moving forward, while also learning to reflect on the care the teams provided and on their processes in providing it.
3. **Try to defuse preconceived attitudes about teamwork on the part of project participants.** Faculty did not anticipate the impact of the learners' prior experience with teamwork. It had engendered a lot of negative perceptions and prejudices, especially among the medical residents. To dispel this negativity, faculty found it useful to engage learners in exercises that defined the unique expertise, contributions and philosophy of each team member's discipline. It helped learners become more aware of and sympathetic to the clinical approach of team members from "other" disciplines.

Looking Ahead

In a March 2006 interview, former faculty member Shirley Moore, R.N., Ph.D., of Case Western's Bolton School of Nursing noted:

We still try to place nursing students with the residents in the pediatric clinics for their training. They still give collaborative care using our model. I would say that there is less emphasis now on improving the quality of care together as part of the training of the nurses and residents, than in our original experiment.