



Evaluating an Intervention to Reduce Unnecessary Medical Services

Looking at the effectiveness and return on investment of a regional improvement program

SUMMARY

From November 2010 through March 2012, [California Quality Collaborative \(CQC\)](#), part of the Pacific Business Group on Health, conducted an evaluation of its regional improvement effort aimed at reducing unnecessary services and engaging physicians in improving efficiency of resource use.¹ The study received funding through the Robert Wood Johnson Foundation (RWJF) solicitation Improving Quality and Value in Health Care.

The evaluation studied the work of five medical groups in California, four focused on reducing avoidable emergency department room visits and one seeking to increase prescribing of generic, as opposed to brand name, prescription drugs.

The RAND Corporation worked on the evaluation under a subcontract. A large health insurance company in California provided comparison data on emergency department (ED) utilization and generic prescribing rates of nonparticipating physicians.

Key Findings

The researchers cited the following findings in the evaluation report, *The Effectiveness of the Regional Collaborative in Reducing the Emergency Department Utilization and Increasing Generic Prescribing*, and in a separate report to RWJF:

- Medical groups participating in the improvement effort were very positive about the experience and the approaches learned. All groups reported that they continued many implemented activities and were applying the tools they learned to other issues.
- The effectiveness of the groups' efforts was mixed. Of the four groups focused on emergency department overuse, two saw a reduction while the other two had no improvement and even experienced an increase. The group that worked on increasing

¹ California Quality Collaborative is a statewide health care improvement initiative of the [Pacific Business Group on Health](#) located in San Francisco.

generic prescription rates saw improvement for each of the three classes of medications on which it focused.

- Researchers estimated that the program generated from \$2 to \$14 in savings for every \$1 spent on the cost of participating in the improvement effort and implementing changes, even though not all groups saw improvement.

Funding

An RWJF grant of \$219,053 to the Pacific Business Group on Health supported the project. It received funding through [Improving Quality and Value in Health Care](#), a 2010 solicitation, and was one of 12 funded projects focused on how to achieve better health care quality and lower costs.

CONTEXT

Patients with similar conditions often receive very different care depending on where they live, studies such as the [Dartmouth Atlas of Health Care](#) have shown. Variations exist at the regional level, but also within health care organizations and among individual physicians. By one estimate, some 30 to 40 percent of health care spending in the United States goes toward services that are unnecessary, inappropriate, and even potentially harmful.² Working to reduce these variations in care is one strategy for containing the growth of health care costs.

Reducing Unnecessary Care

In 2008, California Quality Collaborative conducted a one-year regional improvement program—the Cost Efficiency Collaborative³—modeled on the Institute for Healthcare Improvement’s Breakthrough Series.⁴ The [IHI model](#) is a short-term learning system, designed to help health care organizations make “breakthrough” improvements in quality while reducing costs. It brings together organizations to learn from each other and from experts in topic areas in which they want to make improvements. A key element is to test changes quickly on a small scale, see how they work, and refine the changes as necessary before implementing them on a broader scale.

Five medical groups in California used the IHI improvement process to identify unnecessary high-cost services and to implement improvement strategies. Three of the groups were in northern California and two in southern. The groups ranged in size from

² Lawrence D. “Building a Better Delivery System: A New Engineering/Health Care Partnership” in *Bridging the Quality Chasm*. Washington: National Academy of Sciences, 2005. Available [online](#).

³ In this report referred to as “the improvement program” to distinguish it from the sponsoring organization, California Quality Collaborative.

⁴ *The Breakthrough Series: IHI’s Collaborative Model for Achieving Breakthrough Improvements*. Boston: Institute for Healthcare Improvement, 2003. Available [online](#).

approximately 280 to 3,000 physicians and together served approximately 600,000 patients. See [Appendix 1](#) for a full description of the groups.

Four of the medical groups focused on reducing avoidable ED visits and one group focused on increasing prescription rates for generic drugs.⁵ The groups employed an array of strategies to make improvements.

The groups focused on ED overuse:

- Increased availability of alternatives to the ED through new contracts with urgent care facilities and eliminated the requirement for prior approval for seeking care at urgent care centers
- Educated physicians about the appropriate use of urgent care
- Created patient education materials regarding urgent care options
- Provided incentives to physicians to offer extended practice hours
- Provided incentives to physicians for reducing their ED utilization
- Implemented care management for patients identified as frequent ED users

The group focused on increasing generic prescribing:

- Provided lists of generic substitutes and lists of patients on brand name drugs to primary care physicians
- Posted generic drug information for patients on their website

All physicians received reports tracking their own and their peers' use of the ED and/or generic vs. brand name prescription use.

RWJF's Interest in This Area

This project is one of 12 that RWJF supported to respond to heightened concern across the country about the ballooning costs and poor quality of health care. In April 2010, the Foundation issued a broad call for proposals from the field to rein in spending without jeopardizing patient care. The solicitation was called [Improving Quality and Value in Health Care](#).

It sought to promote learning and knowledge about innovative efforts that address health care quality and value problems, by studying such efforts in the following specific areas, in order to understand how they may lead to better health care quality and lower costs:

- Value-based purchasing

⁵ This group targeted three commonly prescribed drugs: nasal steroids, proton pump inhibitors, and statins.

- Data collection and aggregation for performance measurement
- Quality improvement support
- Public reporting of provider performance

RWJF received 277 proposals and, based on input from independent reviewers, selected the most novel ideas and those most likely to engender far-reaching change. The grants, totaled \$3.1 million.

THE PROJECT

The 2010 evaluation of California Quality Collaborative's regional quality improvement project that ran for one year (2008–2009) included three components:

- *A qualitative evaluation of the effectiveness of the approach in building capacity.* The researchers conducted group interviews with key staff at each medical group and phone interviews with the collaborative leaders to document their experiences with the program, and gathered information on the cost of resources expended for personnel, training, supplies, outreach and communication, travel, and external consultants.
- *A statistical analysis of the changes in emergency department utilization and generic prescription rates.* The researchers used groups' data on ED use and generic prescribing rates and collected data for 12 quarters prior to, and 10 quarters after, the start of the improvement effort, to assess the effect that participation in the program had on these measures. A large insurance provider's data for the same period served as the comparison group for both emergency department use and generic prescription rates.
- *A return-on-investment analysis to quantify the level of investment to achieve the associated gains.* The researchers compared the savings with the costs of participation in the improvement effort. Since the accuracy of the reported costs was uncertain, they created a 50 to 200 percent range of cost estimates and used these to calculate a range for return-on-investment for each group and the improvement effort as a whole.

FINDINGS

The researchers cited the following findings in the evaluation report, *The Effectiveness of the Regional Collaborative in Reducing the Emergency Department Utilization and Increasing Generic Prescribing* (not available online), and in a separate report to RWJF:

Effectiveness of the Approach

- **Medical groups participating in the improvement program were very positive about the experience and the approaches learned.** All groups reported that they

continued many implemented activities and were applying the tools they learned to other issues.

- The groups viewed the nonjudgmental and respectful approach of engaging physicians as the most useful strategy, resulting in physician buy-in for the effort in most cases.
- Networking among participants in the improvement effort offered some peer pressure and accountability that one group described as “painful but useful.”
- **The groups faced challenges in all stages of the improvement effort.**
 - All struggled to decide which problem should be the focus of their activities and how to measure effects of improvement actions.
 - All but one group found that generating reports, meeting with physicians, and preparing for and attending the joint improvement sessions were very time-consuming, especially given the program’s one-year frame.
 - A few groups encountered physician apathy or resistance, and some felt that they had limited influence on physicians not employed by or exclusive to the group.
- **The effectiveness of the efforts was mixed.** Two of the groups reduced ED use, while two had no improvement and even experienced an increase. The group that worked on increasing generic prescription rates saw improvement for each of the three classes of medication on which it focused. When compared to the data from the large health insurance provider:
 - The two groups that reduced ED use had an estimated 2,118 to 3,861 and 2,874 to 3,615 fewer ED visits, respectively, than would have occurred without their participation in the improvement effort.
 - The two groups achieved highest ED use reduction among nonelderly adults; only one achieved reduction for all age groups.
 - The group focused on generic prescribing had 16,267 to 17, 213 additional generic prescriptions filled over the 10-quarter period.

Participation Costs and Return-on Investment

- **The two groups that reduced ED overuse and the group that increased generic prescribing all experienced positive returns on their investments.** The groups focused on ED use achieved substantial savings, possibly over \$1,000,000 each. The group that increased generic prescribing may have saved roughly \$2,000,000.
- **There was a positive return on investment in the program for the improvement effort as a whole.** Researchers estimated that the program generated from \$2 to \$14 in savings for every \$1 spent on participation in the program and implementing changes.

Limitations

The estimates for the return on investment have to be regarded with caution, the researchers reported. The groups participating in the quality improvement project did not track costs on an ongoing basis, and staff members had problems recalling the resources involved in participating in the program, such as the staff time of those involved in the implementation team. Some staff worked extra hours, and some took on the improvement work as part of their normal duties.

LESSONS LEARNED

1. **Initiate an evaluation during an improvement effort, if possible.** That way participants can capture their costs as they occur rather than trying to recall them later. This would result in a more precise return-on-investment analysis. (Project Director/Stewart)
2. **Engage groups in the evaluation early and consider reimbursement.** Payment for participating in interviews, completion of evaluation worksheets and submission of missing data ensured groups' involvement and accountability. (Project Director/Stewart)
3. **Document specific actions and challenges in a standardized format on an ongoing basis.** This allows researchers to better understand why some groups improve and others do not. (Project Director/Stewart)
4. **Request comparison data well in advance, and investigate alternative sources, such as publicly available data.** CQC requested data from two health plans and was only successful in obtaining data from one, despite its good relationship with the health plan leaders. The reimbursement was not sizeable enough to be a motivating factor. (Project Director/Stewart)

For more lessons learned/recommendations for others undertaking a similar effort, see [Appendix 2](#).

AFTERWARD

Since the project ended, CQC staff at Pacific Business Group on Health has taught the skills for engaging physicians in managing cost of care and clinical resource use that emerged from the improvement program. CQC plans to offer more programs targeting unnecessary medical services—one in 2012 focused on reducing hospital readmissions and another in 2013 aimed at reducing ED overuse.

In June of 2012, CQC staff presented the evaluation and findings in a poster session at AcademyHealth's Annual Research Meeting.

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APPENDIX 1

Participants in the Cost Efficiency Improvement Effort

(Current as of the end date of the program; provided by the program's management; not verified by RWJF.)

Hill Physician Medical Group is Northern California's largest independent practice association (IPA), with 3,000 primary care physicians and specialists serving approximately 335,000 patients in the East Bay, San Francisco, Sacramento, Solano, and Stockton areas at the time of the improvement program.

Mills-Peninsula Medical Group had approximately 350 primary care physicians and specialists in their network at the time of the improvement program providing care to approximately 50,000 members in San Mateo County area.

Monarch Health Care is a large IPA in Orange County, Southern California, with approximately 2,300 primary care physicians and specialists providing care to approximately 165,000 individuals at the time of the improvement program. The group serves commercial, Medicare, and Medi-Cal populations.

Physicians Medical Group of Santa Cruz County is a multi-specialty group with approximately 280 physicians and 27,000 members in Santa Cruz County at the time of the improvement program. The group serves commercial and Medicare Advantage populations.

Torrance Hospital IPA, serving the South Bay area of Greater Los Angeles, had approximately 300 primary care physicians and specialists in its network and provided care for approximately 57,000 commercial HMO and Medicare members at the time of the improvement program.

APPENDIX 2

Lessons Learned/Recommendations

In *The Effectiveness of a Regional Collaborative in Reducing Emergency Department Utilization and Increasing Generic Prescribing*, the evaluators reported the following recommendations by the participating groups to others undertaking a similar effort:

Resources/Return

- Divide the responsibility for implementation so that there is less time spent in meetings with the whole group.
- At the start of the initiative, identify what you want to implement, the team that will be responsible for implementation, and the anticipated payoff.
- Be mindful of the resources that you will have to devote to participation in the improvement effort and to implementing the initiatives.
- Consider measures that have a potential for a substantial payoff.

Team Composition

- If focusing on Emergency Department utilization, involve a practicing ED doctor from the start.
- A multidisciplinary team is critical. In addition to clinical staff, involve quality improvement, information systems, and data analysis departments.
- A physician champion is necessary for success.

Implementation

- If focusing on ED use, consider including hospitals as partners.
- Consider engaging with patients to ensure you understand drivers of patient behavior.
- Engage with physicians broadly, and hold more physician meetings and focus groups than you might think are necessary to involve a greater number of physicians.
- Don't inundate physicians with too many new initiatives or interventions—do one or two things to start and gradually add over time.
- Agree on data and report formats with physicians before distribution to reduce pushback and to enhance physician buy-in.

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