Commonwealth Corporation
Research and Evaluation Brief

Improving Quality of Care: A Closer Look

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Report Focus

Effects of the Massachusetts Extended Care Career Ladder Initiative (ECCLI) on Quality of Care Outcomes for Nursing Home Residents

Introduction

Massachusetts initiated the Extended Care Career Ladder Initiative (ECCLI) in 2001 as part of its Nursing Home Quality Initiative. ECCLI was designed to reduce high turnover and vacancies among direct care workers in long term care facilities by providing them with career ladders. In 2003, Commonwealth Corporation contracted with researchers at Hebrew SeniorLife Institute for Aging Research (IFAR) in Boston to evaluate the effects of ECCLI on nursing home residents.

The results showed that the rate of "worsening behavior problems" was significantly reduced among residents in nursing homes that participated in ECCLI, compared to those that did not participate but were equally likely to do so if they had the opportunity. The odds of a resident in an ECCLI facility (generally, a nursing home) having worsening behavior problems was about 12% lower per year after ECCLI participation, compared with non-ECCLI facilities, a statistically significant difference. Conflict between residents and staff also tended to be lower in ECCLI facilities.

The researchers concluded that ECCLI participation may improve the quality of care for nursing home residents, and, consequently, improve their quality of life. More research is needed to better characterize the difference between facilities that participate in ECCLI and those that do not, to clarify and codify the content of ECCLI programming, evaluate the effects over a longer period of time after training, and to better characterize changes un-related to ECCLI in the nursing home environment during the period of time ECCLI was underway.

Researchers at IFAR evaluated ECCLI's effects on nursing home residents using data from the Resident Assessment Instrument Minimum Data Set (MDS). The MDS is a standardized clinical assessment containing over 350 items, including demographics, medical condition, physical, emotional and social functioning, therapies and medication use, which is collected on all nursing home residents by the U.S. Center for Medicare and Medicaid Services (CMS). The MDS contains assessments of individual nursing home residents that are completed by each nursing home's staff. MDS data are used to create quality indicators that are reported publicly by Center for Medicare and Medicaid Services.

The researchers were asked to determine whether MDS data indicated an improvement in the quality of care given to residents in ECCLI facilities. CMS regulates nursing home quality of care through "Quality Measures" or QMs that are estimated by aggregating resident data for each facility. IFAR researchers have developed measures for the CMS efforts and are knowledgeable about MDS data.

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Methodology

In the absence of a random assignment experiment the only way to show an effect of ECCLI related training is to compare ECCLI facilities with other, similar facilities in Massachusetts that did not participate in ECCLI.

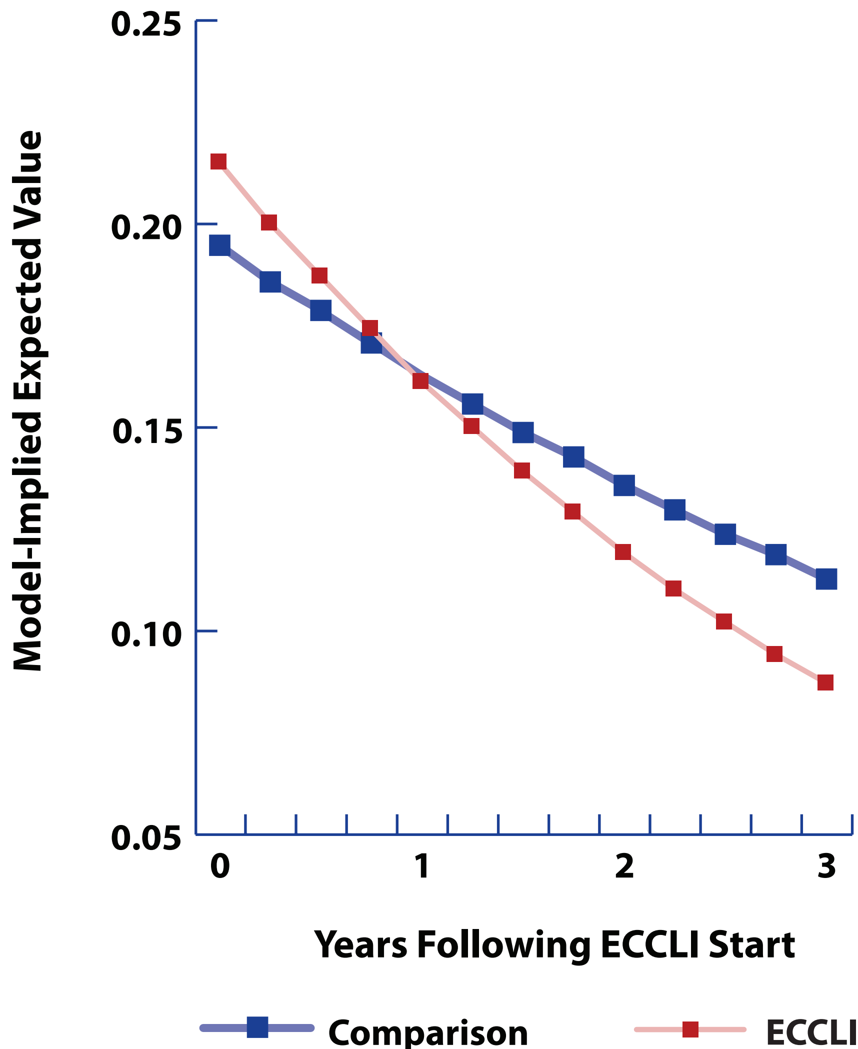
The approach used was to:

1. identify selected quality indicators that were most likely to be affected by ECCLI training;
2. obtain access to quality indicators data that was already collected by CMS from all Massachusetts nursing homes;
3. identify comparison facilities that did not participate in ECCLI through statistical modeling of Provider of Services (POS) data obtained from CMS; and
4. to model the effect of ECCLI by comparing selected quality indicators for ECCLI and selected non-ECCLI facilities before, during and after ECCLI implementation.

A resident in an ECCLI facility was likely to have 12% fewer cases per year of exhibiting worsening behavioral symptoms following ECCLI participation than a resident in a comparison facility.

The analysis used data on 69 nursing homes that participated in ECCLI and identified 161 nursing homes as the comparison group from a total of over 450 nursing homes in Massachusetts. Factors that seem to be common to ECCLI facilities included number of beds (or facility size), location, legal form (for profit or not-for-profit), number of registered nurses, and the existence of a nurses aide training program. ECCLI participation was also associated with the overall level of functional impairment of the facility's residents, the level of behavioral problems exhibited by residents in the facility, and the mean level of clinical complexity.

Chart 1: Behavioral Worsening Quality Indicator



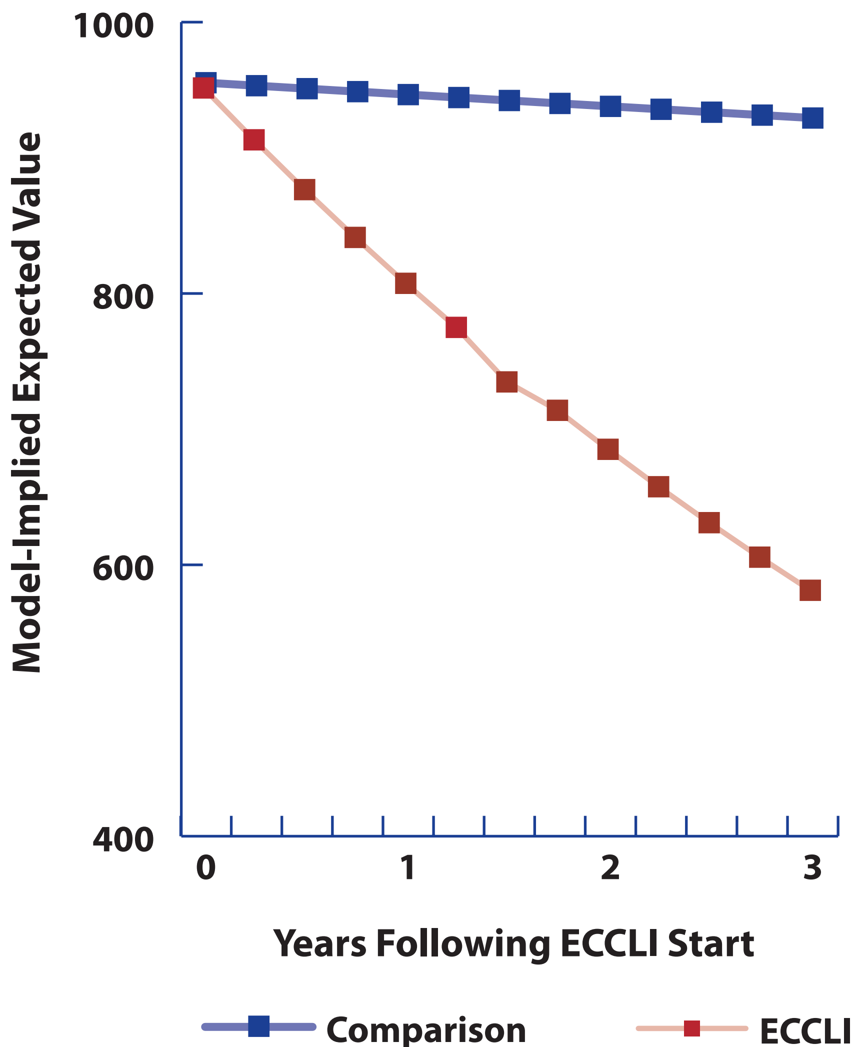
Findings

The key findings were that ECCLI participation may have reduced worsening behavioral symptoms during the period for the analysis (2000–2003). The study had hypothesized that ECCLI might change the slopes for the selected outcomes after the start of ECCLI.

There was evidence that ECCLI participation reduces behavior problems among facility residents, as assessed by the presence and frequency of four behavioral symptoms—wandering, verbally abusive behavior, physically abusive behavior, and socially inappropriate or disruptive behavior. A resident in an ECCLI facility was likely to have 12% fewer cases per year of exhibiting worsening behavioral symptoms following ECCLI participation than a resident in a comparison facility. Our inference is based on comparing the slope of the outcome curve before and after the start of ECCLI. (Chart 1) For the Behavior Worsening Quality Indicator (QI), we see that on average both ECCLI-participating and comparison facilities improved on this outcome but ECCLI facilities improved at a faster rate. This finding is supported by the presence of dementia care training programs as an element of the ECCLI training programs implemented by individual facilities.

The fact that outcome trajectories or slopes changed for non-ECCLI facilities implies that a factor other than ECCLI, perhaps differences in the reimbursement and/or care giving environment (e.g., the National Nursing Home Quality Initiative) may have had an impact on quality of care measures or the types of residents that received care in nursing homes in Massachusetts during the period of observation.

Chart 2: Conflict with Staff (per 100,000 residents)



Besides "Behavior Worsening QI," the only other outcome from which there was there a significantly different slope after the start of ECCLI was "Walking Improvement." While the gain was actually greater for the comparison facilities, ECCLI-participating facilities showed better results during most of the period of observation. It is possible that there is an upper limit to a given facility's ability to improve walking performance among its nursing home residents, and that ECCLI facilities achieved this limit near the start of ECCLI while the comparison facilities approached this limit over the period of observation. None of the other outcome areas demonstrated a meaningful pattern of difference across ECCLI participation status that would suggest a benefit of ECCLI participation.

Another variable with interesting results is related to an outcome measuring "conflict (of resident) with staff." However, it is very difficult to draw any significant conclusions from this outcome, because this outcome is only measured annually at the resident level, not being expressed as a facility-level quality measure. Also, the number of reported instances of this outcome are too few (fewer than 1 in a 1000) to risk drawing any conclusions.

The study had hypothesized that ECCLI might change the trajectories or patterns of change for the selected outcomes after the start of ECCLI. However, the most remarkable finding was that the outcome trajectories changed for non-ECCLI facilities also, although less so for two outcomes.

The fact that outcome trajectories or slopes changed for non-ECCLI facilities implies that a factor other than ECCLI, perhaps differences in the reimbursement and/or care giving environment (e.g., the National Nursing Home Quality Initiative) may have had an impact on quality of care measures or the types of residents that received care in nursing homes in Massachusetts during the period of observation. It is also possible that further refining the method for this study or using alternate methodologies may lead to improved results.

Implications for Future Evaluations

ECCLI may have had an important effect on the experience of behavior symptoms by nursing home residents. It may also have improved relationships between residents and direct care workers. However, there were several limitations to the study. Most importantly, it should be kept in mind that the ECCLI evaluation was not a true experimental design. A true experiment would require randomization of facilities. Commonwealth Corporation is interested in conducting an experiment with randomization of facilities and has developed preliminary plans for the purpose.

Currently, Commonwealth Corporation is undertaking qualitative interviews with key administrative staff at ECCLI facilities to learn more about the programs at those facilities. Results from this and other qualitative work can be used to create structured surveys. These structured surveys would have a list of 20–30 questions that attempt to determine commonalities across ECCLI facilities in terms of programming offered to staff. To support the evaluation, this survey could then be sent to key administrators in all ECCLI and all comparison facilities and used to define operationally ECCLI programming. It is essential to inquire about similar programming in comparison facilities to validate the comparison and add strength to the causal inference.

See the August 2004 Research and Evaluation Brief, Volume 2, Issue 1, for more information about the ECCLI program.

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