

Research and Evaluation Brief

Facts, figures, and insights for workforce development practice and policy

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Improving Quality of Care

What is the ECCLI Program?

In 2000, the Nursing Home Quality Initiative was enacted by the legislature. This comprehensive \$50 million initiative was created to improve the quality of care to seniors and disabled individuals, and to address key health industry problems of attracting and retaining skilled direct care workers. Three key components comprise this initiative:

- 1) A wage pass-through program,
- 2) A scholarship program, and
- 3) The Extended Care Career Ladders Initiative (ECCLI).

This report looks specifically at the ECCLI Program, a competitive grant program for nursing homes and other long-term care organizations administered by Commonwealth Corporation.

The primary goal of ECCLI is to improve the quality of care, while addressing the dual problems of recruiting and retaining Certified Nursing Assistants (CNAs). ECCLI includes skill development, the establishment of career ladders, and promotion of workplace practices that support and develop workers and enhance patient care quality and outcomes. Since November 2000, ECCLI has helped over 142 different organizations train more than 4,000 individuals. As a result, more than 20% of all nursing homes in Massachusetts are ECCLI sites.

Since 2000, ECCLI has received funding totaling \$7.2

million through January 2004 with an additional \$8.2 million appropriated for fiscal 2004-2006.

Evaluation Goals

The evaluation component of ECCLI was set up to determine its effectiveness in meeting the initiative's major goals of improving quality of care, employee skills, and employee retention. In addition, the evaluation plan was designed to identify best practices, to examine the impact of ECCLI on business performance and to examine whether the program leads to cultural change and improvement of work/care practices in long-term facilities.

Commonwealth Corporation developed a comprehensive evaluation plan in close collaboration with the ECCLI Statewide Advisory Committee, and with the participation of leading scholars who focus on quality of care and staffing issues in the long-term care sector.

The evaluation plan consists of several studies, three of which have been implemented and are summarized below:

- The ECCLI Baseline Evaluation,
- The ECCLI Interim Evaluation, and
- A preliminary analysis of facility reported impact data.

Six additional studies are underway or planned. These studies are described in the last section of this brief.

REPORT FOCUS

*The Status of
Research and
Evaluation of the
ECCLI Program*

Report Released: April 2004

Author: Navjeet Singh

1. Wages in the Long Term care sector are constrained because reimbursement rates for Medicaid are fixed and low and Medicare supports most residents.

Findings to date

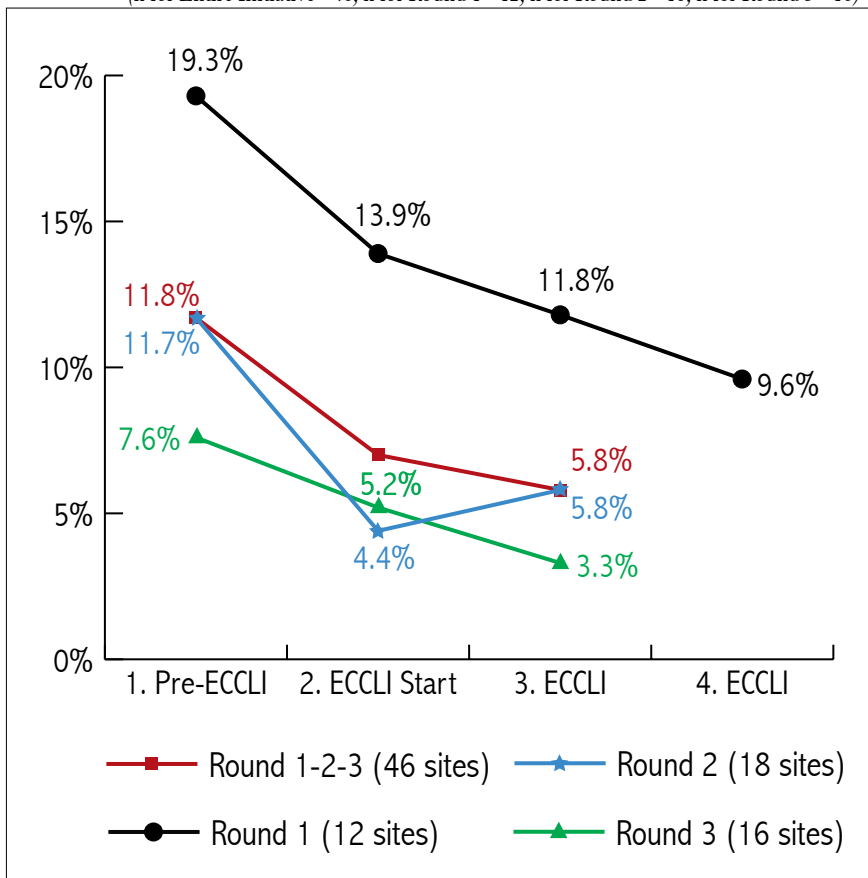
Summaries of the findings from two formal studies and a preliminary analysis of Management Information Systems (MIS) data reported by nursing homes through November 2003 follow. Evaluation was formally introduced as a component of the program in Round II. This particular round was chosen for its consortium approach where each included multiple facilities and workforce development partners. Round II also included funds and time for planning activities, which other rounds of the grant did not.

The Baseline Evaluation

The baseline evaluation covered the start-up period of Round II from March through June 2001. The late Dr. Susan Eaton (Harvard University) and Claudia Green

Figure 1: Six-Month Vacancy Rates for ECCLI for Entire Initiative and by Funding Round

(n for Entire Initiative=46, n for Round 1=12, n for Round 2=18, n for Round 3=16)



(University of Massachusetts, Boston) were the principal investigators on this evaluation that reported on proposals, plans and baseline conditions at the seven consortia and 27 participating facilities in Round II.

1. The hypothesized effects of ECCLI consortia fall into four categories:
 - ◆ Changes expected in work organization and career ladders,
 - ◆ Development of partnerships between employers and workforce development organizations,
 - ◆ Organizational change leading to better care, and,
 - ◆ Improved quality of patient/resident care.
2. ECCLI consortia have a core set of common goals:
 - ◆ Promoting workers' internal job mobility by establishing career ladders,
 - ◆ Enhanced skills of licensed and non-licensed staff, and,
 - ◆ Increasing the quality of care and quality of life for residents.

Additional goals, adopted by a few of the consortia, include improvement in recruitment and retention.

3. ECCLI consortia designed a unique path to reach these common goals. All include adult basic education, employee counseling, and career planning. Other activities planned include career steps beyond the CNA ladder, training for entry-level staff; care team participation, management training, college preparation and support, soft skills training, computer based training, support services (such as, child care and transportation) and mentoring.

4. ECCLI consortia face several key challenges:
 - ◆ Projects will operate under very challenging environment as nursing homes operate in severe financial constraints.¹
 - ◆ Nursing assistants have difficult life and wage conditions.
 - ◆ There exist severe staffing shortages.

The primary goals of ECCLI are to improve quality of care, promote skill development, institute career ladders and other workplace practices that support and develop workers, improve retention of Certified Nursing Assistants (CNAs), and ultimately lead to better patient care quality and outcomes.

◆ Generating buy-in among charge nurses and CNAs was difficult.

Interim Evaluation

The Interim evaluation of Round 2 was lead by Randall Wilson and Amara Kamanu (University of Massachusetts Boston), and Dr. Susan Eaton (Harvard University), and covered the progress during the first year (July 2001 – April 2002) of ECCLI's operation based on extensive interviews. This evaluation was designed as a follow-up study to the Baseline Evaluation.

1. At the end of July 2002 more than 600 workers in 27 facilities or home care agencies received training in a wide array of clinical, language, communications and workplace skills.
2. Seventy percent of trained workers surveyed had received a wage increase.
3. Facilities found it easier to recruit and keep nurse aides and ancillary staff since implementing the program.
4. Most consortia have established career ladders to guide frontline direct care and service workers.
5. There are positive changes in the practice of care giving but progress is not uniform across the participating consortia.
6. The most significant challenge regarding training appears to be scheduling training and other activities in

a short-staffed environment.

Preliminary analyses of Self-Reported MIS Data

CommCorp staff completed a preliminary analysis of MIS data reported every six months by nursing homes. The analysis covers the first three rounds of funding, utilizing data for the six month reporting periods where data was available for equal periods. This exploratory analysis showed the following trends:

- *Vacancy Rates for Certified Nursing Assistants in the first three rounds consistently went down—*
 - ◆ Round 1 facility show a decline from 19.3% in Period 1 (pre-ECCLI) to 9.6% in period 4.
 - ◆ Round 2 facilities show a decline from 11.7% in Period 1 to 5.8% in Period 3.
 - ◆ Round 3 facilities show a decline from 7.6% in period 1 to 3.3% in Period 4.
- *Retention rates for (full-time and part-time) Certified Nursing Assistants showed improvement after ECCLI for Round II and III facilities, interestingly, in Round I facilities, the retention rate declined initially for reasons that are currently unknown:*
 - ◆ Round 2 facilities show an improvement from 77.7% retention in Period 1 (Pre-ECCLI) to 80% retention in Period 3.
 - ◆ Round 3 facilities show consistent improvement in retention from 80.4% in Period 1 to 82.4% in period 3.
 - ◆ Round 1 facilities showed a considerable decline

Figure 2: CNA Retention Rate All (Full-Time and Part-Time)

	No. of Facilities Reporting	ECCLI Reporting Period			
		1. Pre-ECCLI	2. ECCLI Start	3. ECCLI	4. ECCLI
Round 1	12	82.5%	77.0%	80.7%	78.3%
Round 2	18	77.7%	78.2%	80.0%	N/A
Round 3	16	80.4%	81.6%	82.4%	N/A

in the period after the introduction of ECCLI from 82.5% to 77% and a general improvement subsequently to 80.7% in Period 3 and 78.3% in Period 4.

- *Agency fees (paid to agencies providing contract and per diem workers) paid on average by a facility for every six month reporting period declined significantly after the introduction of ECCLI.*
 - ◆ In Round 1 the average amount paid in agency fees for the 10 reporting facilities declined by 60% from \$40,067 in Period 1 (pre-ECCLI) to \$16,198 in period 4.
 - ◆ In Round 2, the average amount paid in agency fees declined by 71% from \$73,735 in Period 1 to \$21,178 in period 3 for the 18 reporting facilities,
 - ◆ In Round 3, the average amount paid in fees

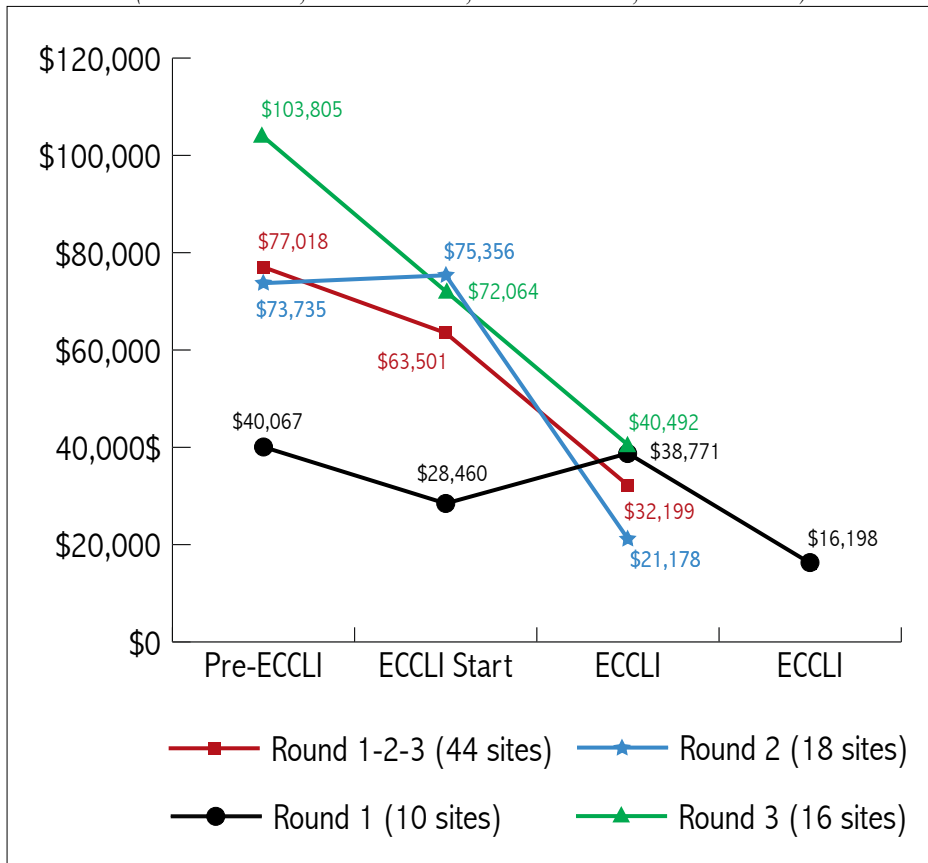
declined by 61% from \$103,805 in Period 1 to \$40,492 in Period 3 for the 3 reporting facilities.

- *Recruitment Costs –there was significant improvement (decline) in recruitment costs in only one of the three rounds.*
- *Overtime costs. There was no discernible pattern of improvement in overtime costs.*

While these initial results are encouraging, they must be treated with caution because there are several limitations associated with the data and the analysis. Specifically, the data for ECCLI facilities cannot be compared with data from similar facilities in a comparison group at this time. Further study of the causal relationships between ECCLI and the facility, worker and patient care outcomes are called for.

Figure 3: Six-Month Average Agency Fee per Facility for ECCLI for the Entire Initiative and by Funding Round

(n for initiative=44, n for Round 1=10, n for Round 2=18, n for Round 3=16)



This analysis has identified a number of possible ways ECCLI can affect business performance measures that appear to be highly relevant. These findings have greatly informed the design of the next generation of studies to determine the outcomes of ECCLI. For instance, one of the follow-up studies will establish a longitudinal data set that includes data on ECCLI and non-ECCLI facilities on costs including agency fees, recruitment fees, and overtime costs.

The Theoretical Framework for Nursing Home Quality

Commonwealth Corporation staff has built on the work of Dr. Susan Eaton and others to develop a theoretical framework for Nursing Home Quality to facilitate its ECCLI evaluation studies. This theoretical framework represents a yet untested theory about nursing home operation and other determinants of quality of resident care. The framework hypothesizes that environmental conditions, nursing home

2. The framework has been developed by Navjeet Singh and Johan Uvin, based upon the following:

- Dr. Susan Eaton's proposed "Model of nursing home quality" on p. 609 in *Beyond 'unloving care': linking human resource management and patient care quality in nursing homes*, *Int. J. of Human Resource Management* 11:3 June 2000, pp591-616
- The *Baldrige Health Care Criteria for Performance Excellence, 2003*, with a description on Page 5-6
- Input from ECCLI staff at Commonwealth Corporation and from John Morris and Richard Jones of the Hebrew Rehabilitation Center for the Aged

3. Gary S. Becker, *Investment in Human Beings*, 1962, *National Bureau of Economic Research Special Conference, 15 Supplement to the Journal on Political Economy*, October 1962, pp9-49; Gary S. Becker, *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. The National Bureau of Economic Research, 1964.

4. The MDS is managed by the Center for Medicaid and Medicare Services of

or facility characteristics (including management, staff and work organization), and entering patient condition influence nursing home quality of care, patient outcomes, and other aspects of business/facility performance. These relationships are illustrated in Figure 4.

Specifically, the framework hypothesizes that the nursing home facility and the patient are the primary determinants of quality of care and patient outcomes. The facility itself has a particular philosophy of care, and physical and information infrastructure. Within the facility the direct instrumentality for patient quality of care are its work practices and staff, especially the frontline workers – nursing assistants.

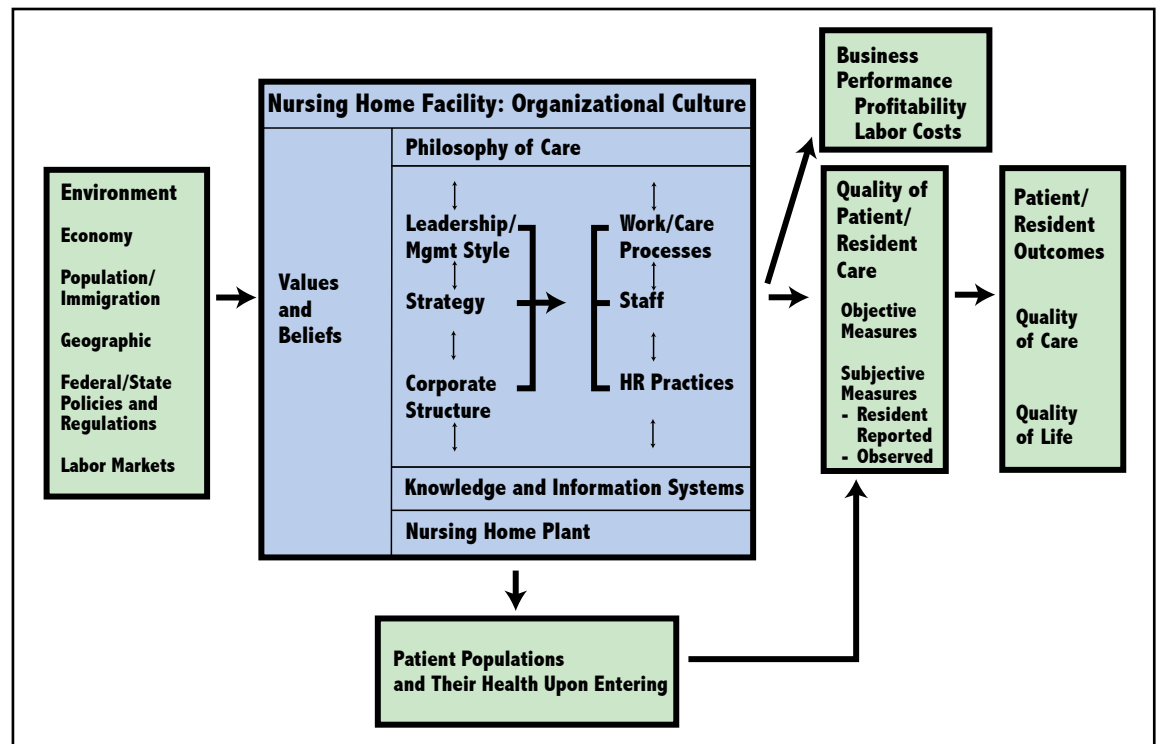
It is implied in the model that interventions aimed at augmenting staff skills, job retention, career advancement, and wage rates will benefit individual staff members. This underlying hypothesis draws on pioneering work done by Gary Becker on human capital theory and related research.³

Details of ECCLI Evaluation Studies?

Testing the different hypotheses embedded in the framework in Figure 1 requires multiple studies to test the effect of ECCLI career ladders and training, all other things being constant, on the following:

- 1) Standardized measures of clinical quality outcomes (or Quality Indicators) as included in the Long Term Care Resident Assessment Instrument Minimum Data Set (or MDS)⁴
- 2) Employee recruitment and retention, especially CNA recruitment and retention
- 3) Facility expenses
- 4) Organizational culture, as evident in leadership and management, work processes and human resource practices
- 5) Employee skills, job/career advancement, hours worked, and wage rates

Figure 4: Theoretical Framework for Nursing Home Quality²



The following research and evaluation plan will enable Commonwealth Corporation and its contractors to:

- 1) Determine if ECCLI has led to improved quality of care as measured by selected indicators from MDS for ECCLI facilities. Rich Jones and John Morris from the Hebrew Rehabilitation Center for the Aged (HRCA) Research Institute are expected to complete this study in 2004.
- 2) Conduct an analysis of the MIS data based on an upgrade of the ECCLI MIS system to an Internet based system and gathered from all ECCLI facilities.
- 3) Examine the impact of ECCLI on facility business performance measures, such as costs and profitability, using longitudinal data set on nursing home financial data from the Massachusetts Department of Health Policy. This research will be conducted by CommCorp in 2005.
- 4) Identify and document changes in organizational culture, leadership, management work/care processes and human resource practices in nursing homes due to ECCLI.
- 5) Evaluate the effect of ECCLI on individual skills, career progress, hours worked, and wage rates for participants using longitudinal unemployment insurance (UI) wage records and MIS data.
- 6) Explore the implementation of a proposal under review by the Statewide Advisory Committee to establish evidence of the causal relationship between ECCLI and nursing home quality measures, patient outcomes, and trainee outcomes using a rigorous, randomized experiment, to be conducted by Rich Jones and John Morris from the Hebrew Rehabilitation Center for the Aged (HRCA) Research Institute.

In addition, the Statewide Advisory Committee is discussing whether to extend these evaluation plans to more recently funded organizations, which include home health and other organizations besides nursing homes.



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