

The Effect of Continuous Quality Improvement Using the abaqis Quality Management System on Nursing Home Survey Results

Objective: abaqis® is a patented quality management system for nursing homes that uses a web-based application to guide staff in assessing resident quality of care and quality of life, identifying quality problems, and investigating root causes of quality problems. The purpose of this study was to determine if continuous use of abaqis improves nursing home survey performance in a wide range of facilities and states.

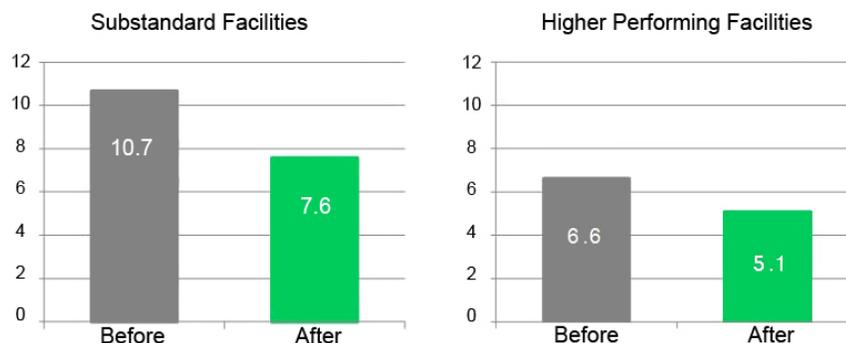
Sample: National sample of 289 nursing facilities from 31 states. Eighty two percent (82%) of facilities were for profit. Twenty-two percent (22%) were single facilities, 26% were from chains of 2-10 facilities, and 52% were from chains of 11 or more facilities.

Four of the study facilities were on the CMS Special Focus Facility list. All facilities included in the study were continuous users of abaqis, consistently conducting quality assessments of 30-50 residents per quarter through a combination of interviews, observations, and record reviews.

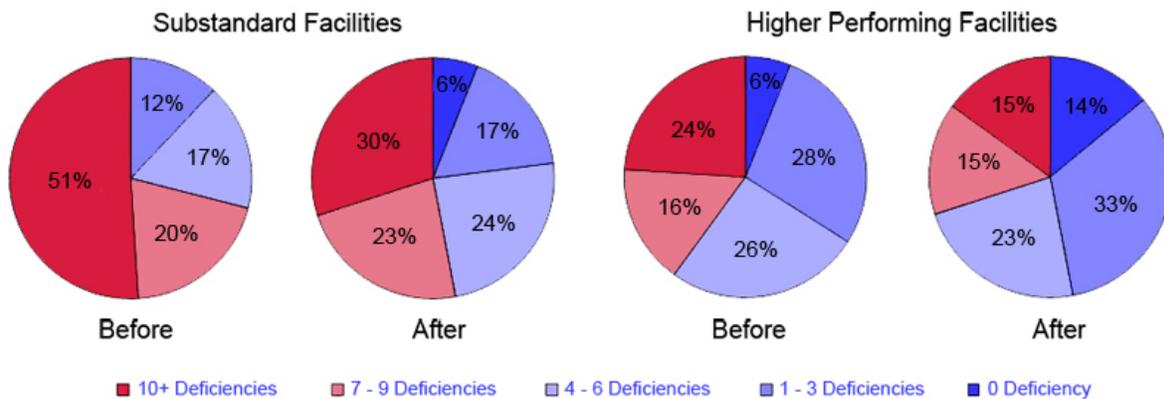
Methods: For each facility, three survey periods were specified based on the annual survey dates and the use of abaqis. A typical annual survey period is about 12 months because states are required to average 12 months between annual surveys. The Before Period was defined as the most recent period with no abaqis use prior to an annual survey. The Transition Period was the time period following the Before Period, when abaqis was implemented at some time prior to the next annual survey date. The After Period was the time period following the Transition Period, when abaqis was implemented for the entire time. Analyses involved comparing survey results at the conclusion of the Before Period with those at the conclusion of the After Period. For analysis purposes the sample was stratified on whether or not facilities had a substandard survey in the Before Period. This resulted in 129 "Substandard Facilities" and 160 "Higher Performing Facilities." For each stratum, matched pairs t-tests were performed to test the difference in the number of deficiencies in the Before vs. After period, and McNemar's test was performed to test for Before vs. After differences in categories of deficiency numbers (eg. zero deficiencies, 1-3 deficiencies, etc).

Results: After abaqis use, the average number of deficiencies significantly decreased in both Substandard Facilities (10.7 to 7.6; $p < .001$) and Higher Performing Facilities (6.6 to 5.1; $p = .002$)-see Figures 1 and 2, respectively. This represents a 29% and 23% decrease, respectively, in

Annual Survey Deficiencies. The percentage of deficiency-free surveys increased significantly from 0 to 6.2% ($p < .01$) in the Substandard facilities and from 5.6% to 14.4% ($p = .007$) in the Higher Performing facilities. The percentage of surveys with 6 or fewer deficiencies



increased significantly ($p < .01$) in both Substandard and Higher Performing Facilities- represented in blue in Figures 3 and 4. The number of surveys with 10 or more deficiencies decreased significantly from 51.2% to 30.2% ($p < .001$) in the Substandard stratum and from 23.8% to 15.0% ($p < .05$) in the Higher Performing stratum.



Conclusions: Continuous use of the abaqis quality assurance system resulted in substantially improved survey results that persisted for a full year after implementation. The system was effective in reducing deficient practice in facilities designated by CMS to have Substandard Quality before implementation of abaqis, and included facilities designated as Special Focus Facilities based on prior survey results. The potential for continuous quality improvement was apparent from the increase in deficiency-free surveys and average deficiency reductions in already higher performing facilities. The varied facility types, mix of both QIS and traditional surveys, and diversity of states strongly suggest that continuous quality assurance using abaqis leads to widespread quality of care and life improvements in organizations committed to fully utilizing the system.

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