

Title of Project: *Light Up My Life*

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The Fountain View long term care facility in Eldorado, Il. was awarded an Illinois Department of Public Health *Innovations in Long Term Care Quality Grant* to improve behaviors that affect the quality of life for the residents of Fountain View. A plan was implemented to change lighting conditions in the facility, and to develop an assessment plan that could provide measurable outcomes that would be useful to the entire long term care community.

More specifically, the lighting changes for this 135-bed long term care facility were designed to 1) decrease disruptive and negative behaviors common to those with Alzheimer's disease and related disorders, 2) increase positive behaviors for that special population, and 3) increase positive behaviors of normally healthy elderly residents of the facility.

Neuroscientists and environmental behaviorists now know that the built environment can affect human behaviors and the structural organization and physiological actions of the brain. Lighting in the built environment is known to influence the production of various neurotransmitters, enzymes, and hormones in the brain that, in turn, affect mood disorders in adults, adolescents, and children, and affect the agitated and disruptive behaviors in patients with dementia and related disorders.

The quality of light in an interior environment is determined by 1) the light source (is it yellowish, white, bluish, greenish in color), 2) management of the light source (is it direct, indirect, or does it cause glare), and 3) the reflectance and color of all major surfaces in a space (walls, ceilings, floors). Therefore, the entire environment becomes the light source, and design of that luminous environment must give very careful consideration to the effects of light that are known to affect human behavior, particularly in special care environments.

The lighting interventions designed for the project included electric white daylight lamps and wall and ceiling surface coatings in a color that did not alter the color appearance of the electric lights. A month of baseline assessment was made by video recording 100 hours of participating residents' behaviors before the lighting interventions were installed to determine both negative and positive behavior markers. Eight negative behavior markers and seven positive behavior markers were identified. Of the 654+ hours of taped behaviors after the lighting interventions were installed, 100 hours were randomly selected for the comparative study. Assessment methods included systematic behavior observations made by trained observers, direct observation by the principal investigator, and interviews with residents, staff, and family members as appropriate.

The comparative study found that eight of the eight negative behavior markers were reduced by an average of 83% and seven of the seven positive behavior markers were increased by an average of 90%.

The assessment methods used for this study provide measurable outcomes that should be useful to the entire long term care community. The results of the study provide sufficient evidence to warrant careful consideration for broad implementation of these interventions in the long term care community. Decreasing negative and disruptive behaviors and increasing positive behaviors for those with Alzheimer's disease and related disorders, and for normally healthy elderly residents of the facility reduces care and pharmacological costs for families and the state, and increases the quality of life for all residents and caregivers.

THANKS TO THE WONDERFUL PEOPLE OF FOUNTAIN VIEW ~ ~ ~

