

senior programs, but 86% said aging programs were needed in their counties (2005 Aging Workgroup, unpublished data).

Process. Our research protocol and evaluation tools were approved by UC Davis Office of Research Institution Review Board. An existing UC-approved food safety curriculum was adapted to reflect the needs and circumstances of the elderly and to effectively teach knowledge and skills to seniors, food handlers in senior programs and in-home caregivers. Cooperative Extension educators assessed and trained 696 participants from 10 counties (379 caregivers, 218 seniors and 99 food handlers) (fig. 2). Participants were from senior centers, senior food programs, in-home supportive services, and kinship caregivers. Ethnic composition of the study group was diverse (fig. 3), and the representation of seniors, food handlers and caregivers within each ethnic group is shown in figure 4.

Data collection. Baseline data were collected between January 2008 and March 2009 with an 11-question pre-test of food safety knowledge and practices; the same questions were asked in the post-test later. Participants ($n = 696$) received 2 to 3 hours of interactive education in groups ranging in size from 10 to 22 participants. The education included information on the incidence of foodborne illness, which groups are at greater risk, causes and sources of foodborne illness, as well as the four basic components of food safety: cleanliness (personal hygiene, hand-washing and washing foods); proper cooking and chilling temperatures; keeping food at the right temperature and use of thermometers; and storing food to prevent cross contamination of raw and cooked meat or contamination by chemicals or objects.

Baseline food behavior data also were collected before the food safety education with a USDA-approved food behavior checklist that was filled out by 506 of the 696 study participants. The checklist contains 21 questions about meal planning, food buying, food safety practices, healthy food choices, food preparation practices, reducing salt and fat intakes, eating fruits, vegetables and whole wheat bread, food availability and food security, eating out, and eating breakfast.

Data analysis. The change in food safety knowledge as a result of the training was derived by comparing the pre-test and post-test scores of correct responses

The Nutriture of People

From *The Yearbook of Agriculture* (USDA 1959), "The Nutriture of People"

1959 "... Although more Americans over 60 own their own homes than do younger people, institutions for older persons also are increasing more rapidly than for any other age group.

"Institutional food service generally is planned to provide approximately the amounts of nutrients recommended for the largest group in the institution. Several studies between 1948 and 1956 of older groups in institutions have indicated however, that the daily meals, as served, may provide recommended amounts of nutrients, but the actual nutrient intake levels of the older individuals often are below the recommended amounts.



"This situation is not unlike comparisons of intake levels of families as a whole and of the individual members of families. Among the groups in large institutions, however, there is less consideration of individual food habits and food preferences in planning menus than there would be for family groups.

"Studies by the California, Florida, and Rhode Island Agricultural Experiment Stations between 1950 and 1956 indicated that the nutrient intake levels of older groups in institutions generally are substantially lower than the nutrient intake levels of older persons in individual homes. Most of the residents in public institutions consumed considerably less than recommended amounts of all nutrients. . . .

"When their intakes of iron and of protein were adequate, some relationship was evident between the intake of iron and protein and the hemoglobin. When intakes of iron and protein are generally high, hemoglobin levels may be rather consistent — an indication that hemoglobin beyond certain intake levels does not generally increase with higher intakes."

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UC Professor Agnes Fay Morgan.

or debunk common household customs of cookery, clean living and good order by scientific means, and in that way promote sound practices in this tradition-bound arena. Those who studied under Morgan were well qualified to teach science and nutrition courses, along with the cooking and sewing classes one might expect of a home economics graduate.

Morgan's service to the University has been recognized in many ways, including a special symposium held on the 50th anniversary of her joining the faculty and the naming of Agnes Fay Morgan Hall, UC Berkeley's nutrition building, in her honor.

Agnes Fay Morgan, co-author of the essay excerpted above, was a pioneer among women in American science. Morgan came to UC Berkeley's faculty in 1915. The next year, she became a founding co-chair of the Department of Home Economics. Two years later she was sole chair of the new Department of Household Science, within UC Berkeley's College of Agriculture. Her goal was to validate



A Celebration of Science and Service