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INTRODUCTION

The student's field placement with the Jefferson County Department of Health (JCDH) in Birmingham, Alabama introduced him to the broad scope and complexity of providing programs to protect the public health of a large heavily populated county. This helped the student to fulfill his goal of learning how to set priorities and to allocate limited resources to create the greatest impact on the health status of the public. His experience there also helped the student to prepare for his goal of advocating proper nutritional guidance as one of the most effective aspects of any public health program.

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RESEARCH TITLE: Report of Block Field Experience at Jefferson County Department of Health Bureau of Nutrition Birmingham, Alabama

AUTHOR: James Franklin Goodman

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Report of Block Field Experience at
Jefferson County Department of Health
Bureau of Nutrition
Birmingham, Alabama

by
James Franklin Goodman
Summer 1985
Report of Block Field Experience at
Jefferson County Department of Health
Bureau of Nutrition
Birmingham, Alabama

by

James Franklin Goodman

A paper submitted to the faculty of
the University of North Carolina at
Chapel Hill in partial fulfillment
of the requirements for the degree
of Master of Public Health in the
Department of Nutrition.

Chapel Hill
1985

Approved by

Mary Browning
Advisor

This Paper was presented to the students and faculty of the
Department of Nutrition at a seminar on July 18, 1985.

Mildred Kaufman
for the Seminar Committee
ACKNOWLEDGEMENTS

The student would like to thank his field counselor, Gaye Joyner, R.D., for her patience, guidance and understanding during his field experience. In addition, he would like to thank W. James Alexander, M.D., Director of the Bureau of Communicable Diseases for his interest and for helping the student prepare for his future career. The student is also grateful to the entire staff of the Jefferson County Department of Health for their helpful guidance and cooperation.

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INTRODUCTION

The student's field placement with the Jefferson County Department of Health (JCDH) in Birmingham, Alabama introduced him to the broad scope and complexity of providing programs to protect the public health of a large heavily populated county. This helped the student to fulfill his goal of learning how to set priorities and to allocate limited resources to create the greatest impact on the health status of the public. His experience there also helped the student to prepare for his goal of advocating proper nutritional guidance as one of the most effective aspects of any public health program.

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CHAPTER II
PROFILE OF JEFFERSON COUNTY

Description of the Area

Jefferson County is located in the North Central portion of Alabama. It covers an area of 1,141 square miles. The average altitude in the county is 620 feet above sea level. The average annual temperature and rainfall in the county are 62°F and 52.25 inches, respectively (1).

Jefferson County is one of the leading counties in the nation in terms of population and economic growth. The 1984 population of 690,000 reflects an increase of 7.1% since 1970. It is projected that the population will show a similar increase before the turn of the century (2).

Economically, the Birmingham area is Alabama's leading retail and wholesale trade center. It is also the state's center for finance, education, manufacturing, health care, research, engineering, transportation, and distribution. By April 1, 1985, employment reached 367,200, compared with 263,400 in 1970 -- an increase of more than 307%. The mean family income in the county is presently $22,187 (3).

Jefferson County's unemployment for June, 1985, was 7.8% which is a full 4.0% lower than the same rate for the state of Alabama (4). One important reason for this difference is the number of new businesses springing up all over the county. Since January 1, 1985, 315 new businesses have opened, hiring a total of 721 new employees (5).
In an area once largely dependent upon manufacturing, the economy of Jefferson County has fully diversified. Presently, 85% of the area's jobs are non-manufacturing. Half of the nation's Fortune 500 companies now operate in the area with the largest employers listed in Figure 1 (6).

**Political Characteristics of the County**

Jefferson County includes 34 separate municipalities who have independent municipal governments, each headed by a mayor and city council. Recently, there has been an active annexation war between these cities to expand their limits and collect more ad volorem property taxes to support their governments. Police, fire, water and sewage, and refuse collection departments are independently operated by each city (7). There are nine independent school systems in the county with Birmingham's and Jefferson County's representing the largest two (8).

The county is autonomous and largely free of state rule. The county's government is headed by three County Commissioners who are elected at large after running for specific offices; i.e., President of the County Commission, Commissioner of Public Works, and Commissioner of County Welfare. Each commissioner serves a four year term which is staggered with the other two (7).

It is of interest that Birmingham, which once was the center of racial unrest, is now headed by a black mayor who is serving his second consecutive term in office. As indicated from my personal interviews, most people agree that his performance is not affected by racial bias.
Characteristics of the Population Served

The population of Jefferson County is approximately two-thirds (65.7%) white and one-third (34.3%) non-white. Females represent just over one-half (53%) of each race. The average age for residents of both sexes is 31.5 years. The median age of death is 78.0 years for all residents (9).

Despite the recent economic growth of Jefferson County, poverty still abounds. In 1980, 12% of the families lived below the poverty level and some 14,000 residents had inadequate housing.

In housing comparisons, blacks fare worse than whites. There were 72,379 black households in the county in 1980. Of these, 18,000 housing facilities were built before 1940. Necessities are not available to every household since 1159 lack complete plumbing, 229 have incomplete kitchens and 101 do not have any source of heat. At the same time, there are 171,000 white households in the county and 31,000 of these housing facilities were built before 1940. Complete plumbing is lacking in 482 of these households while 1703 have incomplete kitchens and 61 do not have any source of heat. Transportation is also a problem to both races since there were no vehicles available to 21,000 (29%) black households and to 12,000 (7.1%) white households (10).

Health Care Provision

Birmingham and Jefferson County have more health care providers than any other area in the state. These include 41.1% of the state's physicians, 35.2% of the state's dentists, and 32.7% of the state's nurses (11).
Birmingham is one of the biomedical, research and treatment centers for the Southeastern United States. The area's 22 hospitals and other highly specialized health care facilities have made it a major international medical center (3).

The University of Alabama in Birmingham (UAB) is among the top 20 public universities in the nation in terms of federal research dollars granted. Its Medical Center is world-renowned for its research and treatment of cardiovascular disease, diabetes, cancer, dental disease and arthritis. In addition, its Obstetrical (OB-GYN) Complications Clinic is one of the best. More than 20 research "centers" have been established at UAB by national organizations. UAB's organ transplant program is one of the most extensive in the Southeast. Here they perform approximately 2500 open heart surgeries annually, and have performed more than 60 heart transplants in the past two years, as well as a number of kidney transplants (3).

Southern Research Institute (SRI), headquartered in Birmingham, is the largest non-profit, independent research laboratory in the Southeast. SRI has received national recognition for its cancer research programs and virus studies. Of the 30 anti-cancer drugs used in the world today, four were developed at SRI (3).
CHAPTER III
HEALTH PROBLEMS OF THE AREA

The health problems of Jefferson County are similar to those existing in other heavily populated metropolitan areas. Many of these exist among residents of the lower socio-economic status.

Infant Mortality

The total neonatal mortality rate is a major problem. In 1983 it was 8.5 per 1000 live births with a range of 7.0 per 1000 for white males to 12.0 per 1000 live births for non-white males. As seen in Figure 2, the infant mortality rate is improving over recent years but immaturity, respiratory disease, and sudden infant death syndrome are on the rise (9). Factors contributing to this problem are teenage pregnancy, illegitimate live births and insufficient prenatal care.

The ratio of illegitimate live births to legitimate births has more than doubled in the past 20 years for both white and non-white residents. The most recent data (1983) shows this ratio to be 55.7 per 1000 live births in whites and 551.1 per 1000 in non-whites (9).

Leading Causes of Death

Table 1 shows the leading causes of death among residents of the county and those compared to the nation. The death rates from malignant neoplasms, cardiovascular disease and diabetes mellitus are higher than those for the United States (9). These may be associated with the
FIGURE 2

PERCENTAGE DISTRIBUTION OF INFANT MORTALITY BY SPECIFIED GROUPS OF CAUSES
JEFFERSON COUNTY RESIDENTS
1983 AND AVERAGE FOR 1978-1982

YEAR 1983
TOTAL 123

YEAR 1983
TOTAL 123

AVERAGE 1978-1982
AVERAGE 143
Table 1 Ten leading causes of death by number and rates
Jefferson County residents and United States, 1983

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Diseases of the Heart</td>
<td>2,079</td>
<td>296.9</td>
<td>327.1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td>1,467</td>
<td>215.9</td>
<td>189.1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Cerebrovascular Disease</td>
<td>575</td>
<td>84.4</td>
<td>67.0</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Accidents</td>
<td>215</td>
<td>31.6</td>
<td>38.8</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Pneumonia and Influenza</td>
<td>150</td>
<td>22.0</td>
<td>22.9</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Chronic Obstructive Lung Disease</td>
<td>143</td>
<td>21.0</td>
<td>N/A</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Mental Disorders</td>
<td>114</td>
<td>16.7</td>
<td>N/A</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Diabetes Mellitus</td>
<td>107</td>
<td>15.7</td>
<td>15.2</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Homicide</td>
<td>98</td>
<td>14.4</td>
<td>8.4</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>Suicide</td>
<td>71</td>
<td>10.4</td>
<td>12.0</td>
<td>7</td>
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<tr>
<td>Certain Causes of Perinatal Mortality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nephritis and Nephrosis</td>
<td>61</td>
<td>8.9</td>
<td>8.0</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Cirrhosis of the Liver</td>
<td>54</td>
<td>7.9</td>
<td>11.8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Arteriosclerosis</td>
<td>46</td>
<td>6.8</td>
<td>11.2</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

*Rate per 100,000 population
significant prevalence of obesity in the residents of this area. Although there is no data supporting the prevalence of obesity, a causal glance at the public will confirm it.

**Reportable Diseases**

During recent years, certain reportable diseases have shown a slight increase in Jefferson County. Table 2 compares the incidence of these diseases in 1983 to their incidence in the preceding five year period.

Slight increases in these disease cases may be the result of increased population numbers, improved diagnostic techniques, better reporting, or increased surveillance programs. Changing lifestyles of the residents, including more mothers returning to work, may contribute to the spread of some of these diseases by allowing children to have close physical contact in day care centers. Others may be increasing as a result of increased sexual activity among teenagers or adults.
Table 2  Number of cases of selected reportable diseases in 1983 compared to the previous five year period

<table>
<thead>
<tr>
<th>Disease</th>
<th>1983 Cases</th>
<th>Rate Per 100,000 Population</th>
<th>Average 1978-1982 Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquired Immune Deficiency Syndrome</td>
<td>2</td>
<td>41.2</td>
<td>198.2</td>
</tr>
<tr>
<td>Aseptic Meningitis</td>
<td>280</td>
<td>218.4</td>
<td>1,435.2</td>
</tr>
<tr>
<td>Cancer</td>
<td>1,482</td>
<td>93.1</td>
<td>450.2</td>
</tr>
<tr>
<td>Dysentary, unspecified</td>
<td>633</td>
<td>3.7</td>
<td>9.4</td>
</tr>
<tr>
<td>Encephalitis, primary Infections</td>
<td>25</td>
<td>11.0</td>
<td>60.6</td>
</tr>
<tr>
<td>*Gonorrhea</td>
<td>6,445</td>
<td>948.0</td>
<td>7,212.6</td>
</tr>
<tr>
<td>Hepatitis, Serum</td>
<td>116</td>
<td>17.1</td>
<td>100.2</td>
</tr>
<tr>
<td>Meningococcal Infections</td>
<td>75</td>
<td>11.0</td>
<td>60.6</td>
</tr>
<tr>
<td>Mononucleosis, Infections</td>
<td>46</td>
<td>6.8</td>
<td>46</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1,866</td>
<td>274.5</td>
<td>1,595.8</td>
</tr>
<tr>
<td>Rocky Mountain Spotted Fever</td>
<td>5</td>
<td>0.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Syphilis</td>
<td>346</td>
<td>50.9</td>
<td>155</td>
</tr>
<tr>
<td>Tetanus</td>
<td>1</td>
<td>0.1</td>
<td>-</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>96</td>
<td>14.1</td>
<td>114</td>
</tr>
<tr>
<td>Typhoid Fever</td>
<td>1</td>
<td>0.1</td>
<td>1</td>
</tr>
</tbody>
</table>

*incidence is decreasing
CHAPTER IV
ORGANIZATION OF THE STATE HEALTH DEPARTMENT

In Alabama, the State Medical Association is the State Board of Health. Twelve members of the State Committee of Public Health are selected by the State Board of Health, one from each of the United States Congressional Districts, and the remainder from the state at large. The State Committee elects and works closely with the State Health Officer to combat statewide health problems (12).

In 1980, an organizational structure was adopted which divided the state into six public health areas. Figure 3 shows the divisions. This was an effort to provide more coordinated medical services. Each division represents a health systems agency planning area and has its own Assistant State Health Officer assigned. This officer is responsible for coordinating health services in the area and reports directly to the State Health Officer. Area health officers serve in an advisory capacity only and decisions about county services and policies are still left to local boards of health (7).
CHAPTER V

BRIEF HISTORY OF THE JEFFERSON COUNTY DEPARTMENT OF HEALTH

The JCDH was founded in 1918. The county's first health officer established a reputation for courage and determination in fighting for the health of the public. He was once tarred-and-feathered, (in 1924) by those whose financial interests were involved, after his efforts to prohibit distribution of milk from diseased cows and to enforce laws requiring pasturization. In spite of this, he returned to his position which he held for 23 years (13).

With similar determination, nine other health officers have served to date in Jefferson County. Both the present one and her immediate predecessor are women. Through the efforts of these people, Jefferson County has had an aggressive one-half cent county sales tax in effect since 1976 with its proceeds earmarked for the Health Department. This tax combined with a portion of the county ad valorem taxes, which is variable at the discretion of the County Commission, means that the near $19 million estimated budget revenue for fiscal year 1984-85 only depends upon state and federal money for 13.5% of its funding. The estimated revenue sources are shown in Figure 4.
JEFFERSON COUNTY DEPARTMENT OF HEALTH
Estimated Revenue Sources for Annual General Fund
Budget Fiscal Year 1984-85

ESTIMATED BUDGET REVENUE 1984-85
$18,891,103

Taxes
$10,926,922
(Ad Valorem) $3,055,900
(Sales) $7,871,022

State & Federal Funds $2,548,305
Charges for Services $1,085,677
Third Party Payments $1,993,848
Miscellaneous $551,850
Special Contracts $194,890
Unrestricted Fund Balance $1,692,871
CHAPTER VI
ORGANIZATION AND STAFFING OF
JEFFERSON COUNTY DEPARTMENT OF HEALTH

Similar to the state's organization, the County Board of Health is made up of five physicians chosen by the County Medical Society. Each member of the board serves for a five-year period with one being rotated off each year. The President of the County Commission contributes information to this board and is active in voting and directing programs. The County Board of Health appoints the County Health Officer for a period of not less than three years. This officer heads the Department of Health and devotes full time to the duties of the office. A Deputy Health Officer is selected by the Health Officer to aid with the responsibilities of the position (14).

An organizational chart for the JCDH is shown in Figure 5. The total staffing of the department includes 526.18 full time equivalent (FTE) positions. The staff is divided among seven health centers located in different areas of the county (see Appendix A). This allows residents in all parts of the county to be served by the department in a center relatively close to their homes. Comprehensive health care is available to all county residents with the charge for services being based on a sliding fee scale. Those at or below 150% of poverty level are charged only a minimum fee.
CHAPTER VII

ORGANIZATION AND FUNDING OF THE BUREAU OF NUTRITION

The Bureau of Nutrition at JCDH has one of the largest nutrition staffs in any local agency in the United States. Presently, it consists of 44.85 full time equivalent (FTE) positions (see Figure 6). Staff members in the Central Office include the Director, a Nutrition Services Coordinator (Assistant Director), a Training Coordinator, a Community Coordinator, an Education Coordinator, and a Secretary. Fifteen Nutritional Consultants are divided among the seven Health Centers belonging to the JCDH. Additionally, one is assigned to the Department's Home Health Program and another provides nutritional guidance to patients at UAB's OB-GYN Complications Clinic. Additional staff members include two Registered Nurses who examine WIC patients and nineteen Intermediate Clerks who complete the paperwork necessary to provide nutrition services to recipients of the WIC program.

Funding for the Bureau of Nutrition is primarily supported by the WIC program but half of the Director's salary and the full salaries of the Nutrition Services Coordinator and the Secretary are paid by county taxes. Those positions below the broken lines in Figure 6 are paid by WIC funds. The proposed budget for fiscal year 1985-1986 includes approximately $1.3 million from the WIC program and $94,000 from the county fund.
Figure 6

Office of the Director
- 0.50 Director Nutrition Services
- 1.00 Director Coordinator
- 1.00 Secretary
- 0.50 Director Nutrition Consultants
- 2.00 Intermediate Clerks

Deputy Health Officer

Clinical Division
- 17.25 WIC Home Care Nutrition Consultants
- 19.00 Intermediate Clerks
The Director of the Bureau of Nutrition also serves as a member of the Administrative Board for the JCDH. Her aggressive support of Nutritionists and their importance has resulted in salaries for her staff which are considerably higher than those earned by nutrition staff members of other agencies. Her involvement in various nutrition related committees from the local to the national level helps to create a positive image for other nutritionists.
CHAPTER VIII
PROGRAMS AND SERVICES AVAILABLE AT JEFFERSON COUNTY
DEPARTMENT OF HEALTH TO MEET HEALTH NEEDS

Solutions to health problems of the county residents are being
provided by the combined efforts of several bureaus of the JCDH. Most
of these solutions require an interdisciplinary approach to prevent
new problems and to treat those presently existing.

Neonatal Mortality

The problem of neonatal mortality is being addressed by efforts
to control adolescent pregnancy. The Department was awarded a three
year grant by the Maternal and Child Health (MCH) Branch of the Depart-
ment of Health and Human Services to develop a program on adolescent
pregnancy prevention. The program is called ADAPT which stands for
Avenues of Dialogue for Adolescents, Parents and Teachers. ADAPT
offers workshops for teachers, classes for students, and seminars for
parents. The goal of ADAPT is to decrease adolescent pregnancy by
providing accurate information, encouraging responsible decision
making, and increasing communication between adolescents and parents
(15).

The problem of adolescent pregnancy is also being addressed by
family planning clinics which are just for teens. The clinics offer
a class on contraception, pap smears, and other aspects of reproductive
health. Following the class, patients who want a contraceptive method
are examined. The goal is to prevent teenage pregnancy by offering
teens services which are tailored to their needs (15).
Once pregnancy occurs, early prenatal care is encouraged by the Department. Women with normal pregnancies are examined, provided with needed vitamin and mineral supplements, and enrolled in prenatal education classes. Those eligible are referred to the federally funded Supplemental Food Program for Women, Infants and Children (WIC) where they are given vouchers for purchase of nutritious foods and provided with nutrition education.

Women with high-risk pregnancies are referred to the Special Obstetrical Complications Clinic at UAB. Here they are followed closely and are carefully monitored to improve their chances to deliver normal healthy babies. Criteria for referral to this clinic include thirteen separate diagnoses ranging from suspected herpes infection to known epilepsy. Nutrition consultants provide nutritional assessment, counseling and education to patients at this clinic.

After childbirth occurs, classes are offered by JCDH Pediatric Clinics providing information about growth and development of infants and young children. These classes are directed by members of the nursing and nutrition staffs.

Communicable Diseases

The Bureau of Communicable Diseases at JCDH is actively working to prevent the spread of infectious diseases among county residents. Staff members of this Bureau are highly trained to perform specialized duties in disease prevention. The Disease Surveillance Program is focused on determining the cause of illness and preventing its spread. Activities in this program include maintaining a system for collecting
and reporting data on communicable diseases. The Bureau is actively participating in several studies conducted by the Center for Disease Control (CDC). Emphasis is placed on investigating and controlling disease outbreaks. Much of this control is done through public education.

The Bureau's Immunization Program maintains an immunization level of 98% among the county's 128,000 school age children. In addition, it provides disease immunization to nearly 2000 international travelers per year.

The Sexually Transmitted Diseases Clinic provides premarital blood tests for couples and clinical care for patients who have a suspected or confirmed sexually transmitted disease. Investigations are conducted of individual cases and sexual contacts are traced down and treated to prevent further spread of the disease. In the past year, there have been over 21,000 patients treated in this clinic.

The Tuberculosis Control Program provides leadership in the field of tuberculosis control with innovative approaches to contact epidemiology, treatment compliance, and the application of short-term treatment regimens. Presently the program is participating in three major multi-center research projects to evaluate shorter treatment regimens, to study factors associated with the reactivation of disease, and to determine residential and occupational characteristics of persons developing tuberculosis.

During the past year, more than 300 suspected cases of tuberculosis were investigated and 122 of these were confirmed. Approximately 1,900 contacts of verified cases were examined and preventive
chemotherapy was prescribed to 40% of these persons. Outreach workers made field visits to insure treatment compliance of persons under active or preventive treatment (15).

**Promoting a Safe Environment**

The Bureau of Environmental Health at JCDH helps to prevent the spread of diseases by insuring that county residents have a safe environment. Sanitation inspections are made in boarding homes, motels, hotels, mobile home parks, schools, and jails. The Sanitary Engineering Division inspects installation of new septic tank systems, and inspects repairs and clean-outs of existing systems. This division also evaluates and inspects installation of alternate on-site waste water disposal systems.

The Bureau's Food and Milk Service conducts a vigorous program of food service inspections and milk sample bacteriological analysis. As a result of this program, not a single food borne disease epidemic was confirmed in Jefferson County in the past year and no health-related problems were associated with milk products (15).

**Public Health Nutrition Programs**

The major emphasis of the Public Health Nutrition Programs at JCDH is on disease prevention. These programs are designed to educate the public on the importance of proper nutrition to improve an individual's health status and to avoid physical disability.

WIC, the largest program, targets its benefits toward the most vulnerable sectors of the population - pregnant or nursing women, infants, and children up to the age of five years. Participants in
this program are given nutritional counseling, vouchers for nutritious foods, and referrals to appropriate services. The caseload for these high risk individuals has recently grown to a monthly average of over 12,000.

The Consultation and Education Division of the Bureau provides current and accurate nutrition information to the residents of Jefferson County. Services include weight control classes for adolescents and adults, and classes for patients with diabetes. Through the Speakers Bureau, arrangements can be made for a home economist, health educator, or nutrition consultant to make presentations to community groups on nutrition-related topics.

The Bureau of Nutrition produces a variety of pamphlets, posters, and teaching tools on topics such as nutrition during pregnancy, budget food buying and others. Recently, a puppet show was designed which teaches children facts about good nutrition while entertaining them. This show will be available at schools, libraries, and other public meeting sites, on request.

Counseling is available for clients with special dietary needs who are referred by private physicians. Once a client is referred, nutritionists complete a dietary assessment to determine eating habits and patterns. Based on this information and nutritional need, clients are provided with a dietary plan. The client's physician receives a comprehensive report on the assessment, the dietary plan, and follow-up recommendations.

A home care nutritionist counsels homebound clients who have special dietary needs. Nutrition information is also provided to the client's family to help with meal planning and meal preparation.
CHAPTER IX

ANALYSIS OF STUDENT PERFORMANCE

During this field placement, the student had the opportunity to develop needed managerial abilities and to test these abilities in a broad range of situations. He learned how to use communication skills to consult with other professionals, to interview patients, and to speak appropriately within the comprehension levels of different audiences.

Several group presentations were made and each required the student to choose words which would be easily understood by the particular group while relaying as much information as possible. At one educational level, the student spoke to a group of women belonging to a weight-loss group called Take Off Pounds Sensibly (TOPS). He developed this presentation around the goal of being informative, interesting, and easily understood. At a higher educational level, the student spoke to a group of Professional Nutritionists on the topic of osteoporosis (see Appendix B). His presentation to this group was prepared with the goal of presenting relatively new scientific information geared to an audience competent in the area of nutrition.

The student's ability to communicate appropriately was measured by the use of pre-tests and post-tests to determine if the audiences understood the presentations and gained knowledge from them. The students presentation of a case study to a group of professional epidemiologists further challenged his ability to speak appropriately to specialists in a separate area of health care.
The student developed the ability to use his knowledge of nutrition through participation in professional meetings at several levels. He participated in the Section Chiefs' meeting of the Bureau of Nutrition, the weekly Central Office Nutrition Staff meetings, and a WIC Vendor training session. At the Department level, the student attended the Bureau Director's meetings and the Medical Records Board meeting. County level meetings the student attended included those of the Board of Health and the County Dietetic Association. The student also attended a district level WIC-MCH Public Hearing, a workshop for District Food Service supervisors and managers, a meeting for Dietetic Intern Preceptors for nutrition students attending the University of Alabama (UAB), and the Red Cross Nutrition Instructors Certification Course. At the state level, the student attended the 1985 Joint Meeting of the Alabama Public Health Association and the Southern Health Association, the Alabama Council for the Chronically Ill and/or Handicapped Child, and the student represented JCDP at the State Advisory Council for WIC. At each of these meetings, the student's knowledge of nutrition and supporting areas enabled him to ask pertinent questions and to join in the discussion of nutritionally related issues.

As a service to the Bureau, the student designed two teaching tools geared to the client's level based on a need defined by the nutritionists. These were posters which showed the actual size of different volumes of fluid in a glass and a cup. These allowed clients to more accurately determine how much they or their children drank. The posters proved to be useful and are presently being duplicated for use by nutritionists in all health centers.
The student gained experience in patient care consultation with health providers in a wide range of specializations. These included specialists in the areas of nutrition, epidemiology, immunization, tuberculosis control, venereal disease treatment and prevention, environmental health, and in health administration.

The student developed administrative abilities in the areas of program evaluation, needs assessment, and planning for the future. He helped the field counselor to evaluate the present services provided by reviewing computer data of past Bureau activities. He then helped to determine the needs of the clients, and to plan how to allocate limited funds in the next fiscal year.

As a major project, the student assisted the field counselor in developing updated short and long range objectives for the Bureau of Nutrition which would be realistic but challenging (see Appendix C). These objectives were designed to be easily measurable and to allow different methods of approach for reaching them. Existing objectives were being reviewed at the request of the Health Officer. As an outsider, the student was able to evaluate these objectives and suggest needed changes. The student's recent classroom training and previous experience with other health programs, enabled him to suggest new and innovative approaches to developing these objectives.
CHAPTER X
SUMMARY AND CONCLUSIONS

By working with the Directors and personnel in several Bureaus, the student fulfilled his goal of learning how to set priorities and to allocate limited resources to have the greatest impact on the health status of the public. By working with and observing the actions of his field counselor, the student was prepared for his goal of advocating proper nutritional guidance as one of the most effective aspects of any public health program.

Working closely with the Director of a large Public Health Nutrition Program helped to fulfill the student's major objective for the field placement which was to gain insight into administration of a public health program which included nutrition services. His work with specialists in several health related fields helped the student feel prepared to accept a broad range of responsibilities as an Air Force Environmental Health Officer.

Much of the knowledge the student gained during this field placement resulted through observing the example set by others. Staff members were very professional in their appearance, mannerisms, and desire to excel in their job performance. Relationships among employees and their employers were positive and together they worked toward a common goal. In spite of the fact that professional workloads were often heavy, the student heard very few complaints during his
field placement period. The above average salaries and benefits paid by the JCDH help to keep employee morale high. Such high employee morale may be a primary factor in JCDH's excellent reputation in providing health services.

This field experience helped the student to look forward to his future responsibilities. He realizes now that in a diversified program, like the one he expects to manage in his Air Force career, responsibilities must be assigned to individuals and they must be given the opportunity to make needed decisions to fulfill those responsibilities.
REFERENCES


Appendix A

PUBLICLY SUPPORTED HEALTH FACILITIES
IN JEFFERSON COUNTY

Jefferson County Department of Health

Bessemer Health Center (3) (4)
2201 Arlington Avenue
Bessemer, AL 35020

Central Health Center (1)
1400 Sixth Avenue South
Birmingham, AL 35233

Eastern Health Center (1)
5720 First Avenue South
Birmingham, AL 35202

Leeds Health Center (1)
210 Park Drive
Leeds, AL 35094

Northern Health Center (1)
2817 North 30th Avenue
Birmingham, AL 35207

Western Health Center (3) (4)
1700 Avenue E, Ensley
Birmingham, AL 35218

Morris Health Center (1)
Morris, AL 35116

Other Publicly Supported Health Care Centers

Cooper Green Clinics (3)
1515 Sixth Avenue South
Birmingham, AL 35233

Community Health Services Foundation (3)
4500 Horace Drive
Birmingham, AL 35211

Family Practice Center (2)
Community Health Services Building, 1st Floor
930 South 20th Street
Birmingham, AL 35205

Morris Medical Associates
100 Morris Magerstic Road
Morris, AL 35116

(1) Services limited to those of traditional public health departments. May include: family planning, nursing assessments, maternal and child health care, immunizations, pregnancy tests, pap smears, nutritional counseling, TB screening, pediatric dental care, etc. (possible income eligibility limitations for some services).

(2) Offers diagnosis and treatment of basic health care problems for all ages on a walk-in, walk-out basis.

(3) Services more comprehensive than (2) and may include pediatrics, obstetrics, gynecology, other medical specialties, X-ray, medical laboratory, and pharmacy.

(4) There may be income eligibility limitations for some services.
APPENDIX B

PRESENTATION TO NUTRITIONISTS

OSTEOPOROSIS

This is an issue with a lot of public awareness, and Nutritionists must have answers for people's questions. Why the recent awareness? Everyone has a parent, family member or friend who is affected and/or they, themselves, have been exposed to advertisements by calcium supplement manufacturers trying to push their product.

What is Osteoporosis? Primary osteoporosis is an age-related disorder characterized by decreased bone mass and by increased susceptibility to fractures in the absence of other recognizable causes of bone loss. All bones are affected but fractures most commonly are seen in the thoracic and lumbar vertebrae, the hip bones and the wrists.

What are the symptoms? There are few or no symptoms until the disease is well advanced. Those commonly seen are the result of compression fractures of the thoracic and lumbar vertebrae. These conditions may or may not be painful. A diagnosis is often not made until obvious fractures and/or disability reveal an advanced state. These fractures can occur with as little trauma as stepping from a curb, sitting down, coughing, or receiving an overly aggressive hug.

Who is affected? There are 15-20 million Americans with osteoporosis today. It is predominant in thin, fair-skinned, postmenopausal, white women of Northern European ancestry. Osteoporosis is responsible for 1.3 million fractures per year, which cost the American people $3.8 billion annually. By age 65, 25% of the white females in this country have had one or more osteoporotic fractures. When the fracture affects the hip bones, 50% of the elderly will never fully recover and approximately one-third of them will die within one year. A fracture of this area seems to be the beginning of the end!
Genetics aside, what other factors cause individuals to be at risk?

1. Poor dietary calcium intake - average intake for American women is less than 500 grams per day.

2. Smoking - nicotine hurries the intestine, decreases appetite, and reduces absorption of most nutrients.

3. Alcohol consumption - reduces appetite, causes steatorrhea, decreases vitamin D absorption and damages the liver, which limits absorption even more.

4. Caffeine - leads to urinary calcium loss. One cup of coffee per day leads to the loss of 6mg. of calcium in the urine.

5. Too much dietary protein - the average intake is twice the RDA. Intakes greater than the RDA lead to increased urinary calcium loss due to decreased renal calcium reabsorption.

6. Improper calcium-phosphorus ratio in diet. Ratio should be 1:1 to 2:1. Milk is often replaced with soft drinks high in phosphorus, which upsets this ratio and reduces calcium absorption.

7. Insufficient or excessive vitamin D intake. We need 400-1000 I.U. per day. More or less can decrease calcium absorption.

8. Excessive aluminum containing antacids. Aluminum in certain antacids hampers the intestine's ability to absorb calcium. Popular antacids containing aluminum include Maalox®, Mylanta®, Gelusil®, and Riopan®.

9. Sedentary lifestyles. Exercise is very important in the deposition of calcium into the bones.
10. Iathroganic causes. Prolonged use of corticosteroids, excessive thyroid supplements or unnecessary enforced immobilization. Dispensing medications which impair judgment or balance to the elderly.

11. Environmental hazards. Cause slips, trips and falls - trailing wires around the home, steep or broken stairs, loose rugs, poor lighting, unstable furniture and slippery or uneven surfaces; e.g., bathtubs.

12. "Host" factors with age - decreased visual or auditory acuity, co-incident illness with reduced neuromuscular, mental or perceptual capabilities.

How can we prevent osteoporosis? We must educate the public about research findings as they become available and substantiated. The present RDA for adult calcium intake is 800 mg. per day. It has recently been found that pre-menopausal women need 1000 mg. per day and post-menopausal women need 1500 mg. per day. Younger women who must have their ovaries removed also need 1500 mg. of calcium per day.

There are a wide variety of calcium supplements on the market today. Included are listings of the supplements with their costs, advantages and disadvantages. It should be pointed out that the "chelated" calcium tablets sold in health food stores are of no extra benefit. Chelation anchors the calcium to other chemicals which supposedly improves absorption in the intestine. Chelation does no more than jack up the price of the tablets. Pay close attention to the warnings about bone meal and dolomite which may be contaminated with toxic metals.
Estrogen therapy is a highly controversial issue since it may lead to endometrial cancer, hypertension, thromboemboli and possible breast cancer. If used, it must be under the close supervision of a physician, and the risks should be fully explained to women taking it.

The following strategies for prevention may be kept in mind when dealing with the public:

1. Primary: to prevent the development of osteoporosis by addressing programs to younger persons:

   A. women under 45: exercise, proper diet with 1 gm calcium per day, no smoking, minimize caffeine and alcohol, avoid prolonged used of aluminum containing antacids or corticosteroids.

   B. women over 45: same as above, but use estrogens for women at high risk of osteoporosis and who understand the risks of estrogens (endometrial cancer, hypertension, thromboemboli, possible breast cancer), and who will be available for frequent medical follow-up; also increase calcium to 1.5 gm/day.

   C. men: exercise, proper diet with 1 gm calcium/day, no smoking, decrease caffeine, avoid aluminum containing antacids and corticosteroids, and in particular, avoid excessive alcohol consumption (the most common factor underlying osteoporosis when diagnosed in men).

2. Secondary: to prevent falls among elderly with osteopenia (thin bones on X-ray) and osteoporosis (thin bones and evidence of susceptibility to fractures):

   A. decreasing environmental hazards through public education

   B. decreasing iatrogenic causes through physician awareness

   C. decreasing "host" factors by trying to optimize elderly person's function (difficult)

   D. Much research needed in area of preventing falls

3. Tertiary: to increase the strength of bone in women who have demonstrated OP by one of any sophisticated measuring devices for bone density showing thin bones; i.e., osteopenia, coupled with evidence of fracture on X-ray or by history).

   A. combination therapy of calcium, vitamin D, flouride, and estrogen when allowable

   B. exercise (weight bearing, moderate).
CALCIUM SUPPLEMENTS

Listed by types, within types, listed in order of increasing cost.

<table>
<thead>
<tr>
<th>Product (manufacturer)</th>
<th>Calcium per tablet</th>
<th>Cost of 1000 mg.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Calcium Carbonate Tablets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tums Antacid (Norcliff-Thayer)</td>
<td>200 mg.</td>
<td>$ .12</td>
</tr>
<tr>
<td>Caltrate 600 (Lederie)</td>
<td>600</td>
<td>.18</td>
</tr>
<tr>
<td>Biocal (Miles)</td>
<td>500</td>
<td>.32</td>
</tr>
<tr>
<td>Calcium Carbonate (Lilly)</td>
<td>260</td>
<td>.23</td>
</tr>
<tr>
<td>Alka-2 Chewable Antacid (Miles)</td>
<td>200</td>
<td>.27</td>
</tr>
<tr>
<td>Os-Cal (Marion)</td>
<td>500</td>
<td>.27</td>
</tr>
<tr>
<td>Biocal (Miles)</td>
<td>250</td>
<td>.34</td>
</tr>
<tr>
<td><strong>Calcium Lactate Tablets</strong></td>
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<td></td>
</tr>
<tr>
<td>Calcium Lactate (General Nutrition Corp)</td>
<td>100</td>
<td>.26</td>
</tr>
<tr>
<td>Natural Calcium Lactate (Schiff)</td>
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<td>Formula 81 (Plus)</td>
<td>83</td>
<td>.40</td>
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<td>Calcium Lactate (Lilly)</td>
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<td>.55</td>
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<td><strong>Calcium Cluconate Tablets</strong></td>
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<td>Calcium Cluconate (Pioneer)</td>
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<td>Calcium Cluconate (Lilly)</td>
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<tr>
<td><strong>'Chelated' Calcium Tablets</strong></td>
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<tr>
<td>Chelated Calcium (Solgar)</td>
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<tr>
<td>Calcium Orotate 2000 (Nature’s Plus)</td>
<td>100</td>
<td>1.70</td>
</tr>
<tr>
<td>Calcium Orotate (KAL)</td>
<td>50</td>
<td>2.33</td>
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Calcium Supplements (96-100)

<table>
<thead>
<tr>
<th>Form</th>
<th>% Calcium</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate</td>
<td>40</td>
<td>Relatively insoluble. Not absorbed well in individuals who lack sufficient stomach acid. May cause constipation. Used in several antacids.</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>36</td>
<td>Rarely given orally. May irritate the stomach.</td>
</tr>
<tr>
<td>Calcium Lactate</td>
<td>13</td>
<td>Contains relatively little calcium.</td>
</tr>
<tr>
<td>Calcium Gluconate</td>
<td>9</td>
<td>Very little calcium.</td>
</tr>
<tr>
<td>Bone Meal</td>
<td>31</td>
<td>Also contains phosphorus, sodium, magnesium, potassium, sulphur, copper, and iodine. May be contaminated with toxic metals such as arsenic, mercury, lead, cadmium, and others, although the significance of this is unknown.</td>
</tr>
<tr>
<td>Dolomite</td>
<td>22</td>
<td>Also contains magnesium, chloride, iron, and phosphorus. May be contaminated with toxic metals such as arsenic, mercury, lead, cadmium, and others. Major ingredient in several antacids.</td>
</tr>
</tbody>
</table>
1. It is now known that post-menopausal women need more calcium than the current RDA.
   True ______
   False ______

2. Inadequate calcium absorption can be due to
   A. Smoking
   B. Aluminum-containing antacids in excess
   C. Caffeine
   D. Insufficient or excessive vitamin D
   E. All of the above

3. Environmental hazards play a major role in the cause of fractures in elderly persons.
   True ______
   False ______

4. What is the incidence of bone fractures in females by the age of 65 years?
   1. 5%
   2. 10%
   3. 25%
   4. 50%

5. Most elderly persons with hip fractures will heal sufficiently to lead productive lives
   True ______
   False ______
Selected References


6. "Osteoporosis," Consumer Reports, Oct. '84:576-580. (includes good illustrations of the effect on the body. --lists calcium product types and price per 1000 mg.)


8. White, M. K. and B. S. Rosenberg, "What the Research Says About Exercise and Osteoporosis," Health Education, Feb/Mar. '85, pp. 3-5. (useful summary of current data crediting exercise both with maximizing peak bone mass, and with building new bone in later life)
JEFFERSON COUNTY DEPARTMENT OF HEALTH
OBJECTIVES
Fiscal Year 1985 - 86

BUREAU/HEALTH CENTER (Cost Center) | FUND | CODE
Nutrition | 01 | 35

MISSION STATEMENT:
To improve the health status of the community through the provision of current and accurate nutrition information to the public and health care providers.

LONG RANGE OBJECTIVES:

I. To increase staff professional knowledge and level of practice.

II. To coordinate and provide appropriate nutrition activities for programs/services through the Department's Health Center System.

III. To participate on the Department's administrative team which determines the agency's long and short-range program plan; integrating Nutrition into the overall agency plan and budget.

IV. To administer the Supplemental Food Assistance Program for Women, Infants and Children (WIC).

V. To increase public awareness of the importance of proper nutrition.

VI. To enhance other health providers' awareness of the importance of proper nutrition.

VII. To provide consultation and services to other agencies/programs with a nutrition component.

VIII. To arrange and provide concurrent and block field experiences for Public Health Nutrition students and other health discipline trainees.

IX. To increase revenue for the Department.
JEFFERSON COUNTY DEPARTMENT OF HEALTH
OBJECTIVES
 Fiscal Year 1985 - 86

<table>
<thead>
<tr>
<th>BUREAU/HEALTH CENTER (Cost Center)</th>
<th>FUND</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTRITION</td>
<td>01</td>
<td>35</td>
</tr>
</tbody>
</table>

**LONG RANGE OBJECTIVE 1:**

TO INCREASE STAFF PROFESSIONAL KNOWLEDGE AND LEVEL OF PRACTICE.

**SHORT RANGE OBJECTIVES:**

A. Evaluate performance of nutritionists and support personnel on expected level of performance.

B. Review and update quality assurance system.

C. Identify staff training needs and develop a plan for appropriate continuing education.

D. Develop new and update existing educational materials for clients and staff.

E. Delegate appropriate program responsibility and make staff assignments.

F. Update the Bureau orientation program for new employees and students.

Revision:

JCDH-195-OPA-Objectives 5/85
LONG RANGE OBJECTIVE II:

TO COORDINATE AND PROVIDE APPROPRIATE NUTRITION ACTIVITIES FOR PROGRAMS/SERVICES THROUGH THE DEPARTMENT'S HEALTH CENTER SYSTEM.

SHORT RANGE OBJECTIVES:

A. Provide prenatal diet counseling to 90% of prenatals at initial visit.
B. Assess and counsel prenatal clients referred for breastfeeding guidance or specific nutrition-related problems.
C. Assess and counsel referred postpartum and breastfeeding women.
D. Counsel mothers of 90% of all infants at least once during the first year of life.
E. Assess and counsel caretakers of infants and children referred for problems of a nutritional nature.
F. Provide appropriate information for prenatal and infant feeding classes.
G. Provide preventive and therapeutic nutrition services to referred adults.
H. Establish weight control classes at five of seven Health Centers.
I. Establish an infant/child feeding problems clinic at at least one Health Center.
J. Establish a breastfeeding support system.

REVISION
LONG RANGE OBJECTIVE III:

TO PARTICIPATE ON THE DEPARTMENT'S ADMINISTRATIVE TEAM WHICH DETERMINES THE AGENCY'S LONG AND SHORT-RANGE PROGRAM PLAN; INTEGRATING NUTRITION INTO THE OVERALL AGENCY PLAN AND BUDGET.

SHORT RANGE OBJECTIVES:

A. Serve as Department's resource Bureau on nutrition/food related issues.

B. Coordinate preparation of nutrition component of Health Department's policies, procedures and protocols.

C. Represent the Department on relevant agency and/or community boards, committees, and task forces.

D. Represent Nutrition on relevant Health Department committees and task forces.

E. Coordinate Department's nutrition services with other related agencies, institutions, and groups in the community through the development of inter-intra agency information and referral systems.

F. Prepare required administrative reports.

Revision:
LONG RANGE OBJECTIVE IV:

TO ADMINISTER THE SUPPLEMENTAL FOOD ASSISTANCE PROGRAM FOR WOMEN, INFANTS AND CHILDREN (WIC).

SHORT RANGE OBJECTIVES:

See WIC Objectives.
JEFFERSON COUNTY DEPARTMENT OF HEALTH
OBJECTIVES
Fiscal Year 1985 - 86

BUREAU/HEALTH CENTER (Cost Center) | FUND | CODE
NUTRITION                                | 01   | 35

LONG RANGE OBJECTIVE V:

TO INCREASE PUBLIC AWARENESS OF THE IMPORTANCE OF PROPER NUTRITION.

SHORT RANGE OBJECTIVES:

A. Participate in the Health Department's Speakers' Bureau.
B. Provide accurate and up-to-date information to Jefferson County residents.
C. Participate in public health education special events sponsored by the Jefferson County Department of Health or other health-related agencies.
D. Develop nutrition programs that can be used by other organizations; i.e., schools, libraries, etc.

Revision:

JCDH-195-OFA-Objectives 5/85
LONG RANGE OBJECTIVE: VI:

TO ENHANCE OTHER HEALTH PROVIDERS' AWARENESS OF THE IMPORTANCE OF PROPER NUTRITION:

SHORT RANGE OBJECTIVES:

A. Provide a major continuing education program on nutrition to other health professionals.

B. Provide inservice on timely nutrition topics to appropriate Health Center staff.

C. Provide nutrition information to individual health professionals.

Revision:
LONG RANGE OBJECTIVE. VII:

TO PROVIDE CONSULTATION AND SERVICES TO OTHER AGENCIES/PROGRAMS WITH A NUTRITION COMPONENT:

SHORT RANGE OBJECTIVES:

A. Provide or arrange for technical assistance to personnel in other agencies that have a nutrition component.

B. Provide or arrange for educational programs to staff of other agencies with a nutrition component.
LONG RANGE OBJECTIVE: VIII:

TO ARRANGED AND PROVIDE CONCURRENT AND BLOCK FIELD EXPERIENCES FOR PUBLIC HEALTH NUTRITION STUDENTS AND OTHER HEALTH DISCIPLINE TRAINEES.

SHORT RANGE OBJECTIVES:

A. Revise and update orientation sessions and materials appropriate for different types of students.

B. Plan and schedule appropriate concurrent and block experiences.

C. Meet with faculty from appropriate schools/departments to coordinate field experience.

D. Coordinate field placement special projects of benefit to the Department.

E. Periodically evaluate students' participation in programs/learning experiences and provide guidance as needed.

Revision:

JCDII-195-OFA-Objectives 5/85
LONG RANGE OBJECTIVE IX:

TO INCREASE REVENUE FOR THE DEPARTMENT.

SHORT-RANGE OBJECTIVES:

A. Generate $1500 through the provision of nutrition classes on a fee basis to Department clients and other county residents.

B. Produce $5000 by providing nutrition counseling to private physician referrals using the Board of Health established fee schedule.

C. Generate a minimum of $250 in FY 85-86 through the marketing of Bureau-developed nutrition education materials to other health agencies, hospitals, private care providers, and industry health promotion programs.

D. Collect a minimum of $25 in fees for community nutrition programs/services.