OVERVIEW

In the complex environments of community-based settings, the nurse is increasingly being challenged by the many factors that must be taken into consideration in the delivery of care to community populations. From the inner city to the most remote rural regions, the nurse is called upon to appropriately establish approaches to addressing community health needs. Nurse-managed clinics have become recognized as cost-effective alternatives to the delivery of primary care services. Moreover, mobile nurse-managed clinics are uniquely positioned to address the traditional barriers to care: transportation, finance, language, and cultural issues. This session will present concepts related to the design, implementation, evaluation, and financing of mobile healthcare delivery systems using a university-based, mobile nurse-managed clinic as an exemplar.

OBJECTIVES

At the completion of this presentation the learner will be able to:

➢ describe the infrastructure and implementation of mobile nurse-managed clinics
➢ identify funding and revenue sources
➢ define evaluation and outcome measures

TOPICAL OUTLINE

I. Why Mobile Health Care
   A. Current Statistics
   B. Barriers to Care

II. Targeted Populations
   A. High risk groups
   B. Medically underserved

III. Mobile Services
    A. Type of services provided
    B. Service sites
    C. Staffing requirements

IV. Community Partnerships
    A. Public Health Departments
    B. Community health centers
    C. Hospitals and other tertiary care centers
    D. Churches and schools
    E. Homeless shelters
    F. Public housing units

V. Types and Designs of Mobile Units
   A. Truck
   B. Recreation vehicle
   C. Passenger Van
D. Bus

VI. Funding Streams
A. Grants: federal, state, local, foundations
B. private insurers
C. CMS

VII. Outreach and Marketing
A. community outreach
B. consumer participation
C. publicity
D. site locations

VIII Challenges
A. financial resources
B. equipment failure
C. inclement weather
D. wireless clinical information systems
E. staffing needs
F. parking and plug ins
G. CLIA-waived laboratory procedures

IX. A Model for Mobile Healthcare Delivery Systems
A. Community Based
1. Mission
2. Goals and Objectives
3. Primary Care Team Composition
4. Services Provided
B. Phases of Operation
1. Phase I – Planning
2. Phase II – Implementation
3. Phase III – Evaluation
C. Calculating the Return on Investment (ROI)

X. Conclusions

REFERENCES


UMDNJ-SN Mobile Healthcare Project

Project Director
Gloria J. McNeal, PhD, ACNS-BC, APN,C, FAAN
Professor of Nursing and Associate Dean for Community and Clinical Affairs
University of Medicine and Dentistry of New Jersey
School of Nursing

UMDNJ-SN Mobile Healthcare Project

I. EXECUTIVE SUMMARY

*Overview:* The University of Medicine and Dentistry of New Jersey School of Nursing (UMDNJ-SN), in a collaborative, joint partnership initiative with the Children's Health Fund, has implemented a nurse-faculty managed Mobile Healthcare Project, designed to reduce the morbidity and mortality of medically underserved residents of the greater Newark area. This grant-funded Project utilizes an interdisciplinary collaborative approach and outcomes oriented focus for a nurse-faculty managed, university-based mobile healthcare project, in collaboration with the UMDNJ University Hospital. The Project cost effectively utilizes faculty-supervised student nurses and an interdisciplinary mobile health team staff, in association with the clinical affiliates of UMDNJ, community-based organizations (CBOs) and faith-based healthcare initiatives. Situated within the UMDNJ School of Nursing, this initiative uniquely creates public-private partnerships, in the mutual goal to improve access to care for urban at-risk populations. The broad objectives of this nurse-faculty managed mobile healthcare project are: 1) to screen, identify and provide health promotion/disease management services for at-risk populations, 2) to foster community involvement in the health assessment and referral process; and, 3) to provide culturally and linguistically sensitive health promotion/disease management health education.

II. NARRATIVE

A. Background

*History and Mission:* The UMDNJ School of Nursing was established as the seventh school within the University system in 1992. Through a variety of partnerships and collaborative degree programs, the School of Nursing offers a statewide nursing educational system with academic programs offered in several locations. Providing academic nursing programs of study at all levels of higher education, degrees are granted at the baccalaureate, master’s and doctoral levels. The mission of the School of Nursing (SN) is to provide leadership to meet the needs of the diverse populations it serves. Its mission is consistent with the University’s commitment to excellence in education, research, practice, and community service.

Dr. Gloria J. McNeal, Associate Professor and Assistant Dean for Student Affairs, has more than 25 years of academic and clinical experience in nursing; is a member of the editorial board of the *Journal of Cultural Diversity*; and, is widely published in the field of nursing on issues related to cultural competence, critical care and community-based projects. She is a past Director of the MercyCARE Mobile Health Program, which operated a fleet of ambulatory clinics on wheels providing primary care services for the medically underserved populations residing in Philadelphia and its surrounding counties (McNeal, 1997a; McNeal, 1997b; McNeal, 1997c). Additionally, she is the recipient of $3.5 million in grant funding from the Department of Health and Human Services to establish traineeships, academic support service, graduate curricula of study addressing the needs of culturally diverse students, and mobile healthcare projects. Dr. McNeal (1998a; 1998b; 1998c; 1998d) has published clinical findings associated with the use of telemedicine technology in the care of at-risk populations.

III PURPOSE, AIM, and POPULATION

*Statement of Purpose:* This Project is a joint collaborative venture partnering a university-based school of nursing with community-based organizations. The broad objectives of this nurse-faculty managed Project are: 1) to screen, identify and provide health promotion/disease management services for at-risk populations, 2) to foster community involvement in the health assessment and referral process; and, 3) to provide culturally and linguistically sensitive health
Aim: This innovative approach to health care delivery is designed to improve access to care and to reduce the morbidity and mortality rates of medically underserved adults residing in the greater Newark area.

Population to be Served: This project is designed to meet the needs of the underserved residents of Newark who lack access to care. It is well recognized that there are several factors that contribute to the barriers that limit access to healthcare delivery among which are the following:

Physical barriers to care: Often location of healthcare delivery sites necessitates the use of transportation. For those who have ambulatory difficulties secondary to aging or physical disability, transportation is problematic. Additionally, the costs of transportation are prohibitive, especially for low-income families living at or below the poverty level.

Cultural barriers to care: Many cultures hold negative perceptions regarding the current health care delivery system, a finding that is particularly noted in those whose health beliefs are grounded in magicoreligious or holistic theories of illness causation. Additionally, the health-seeking behaviors of culturally diverse populations are different from those of the dominant society. Some cultures hold disparate views regarding illness symptoms and some individuals from these cultures do not seek health care until late in the disease trajectory.

Financial barriers to care: Currently, there is little incentive for health care providers to offer services to low-income populations, secondary to inequitable reimbursement fee schedules of third-party payors. Many minority group members are either under- or uninsured, and further, many insurers do not provide coverage for preventive health care.

Language barriers to care: Spanish is spoken in 12.3 percent of New Jersey households and Asian or Pacific Island languages are spoken in 3.5% of households

IV OBJECTIVES

Strategies to Implement the Project: This project contributes to the overall mission of the UMDNJ School of Nursing, to meet the needs of the diverse populations it serves, through the objectives outlined below.

OBJECTIVE I: To screen, identify and provide health promotion/disease management services for at risk populations

Health Promotion Services – This Project healthcare team will conduct free general screenings. Screenings will include assessment of: body weight; peak flow meter measurement; PAP smears; routine blood work; hearing and vision testing; blood pressure readings; electrocardiogram (ECG) evaluation; prostate cancer screening in males ≥40 years of age; breast cancer screening in women ≥ 35 years of age; and screening for HIV/AIDS, tuberculosis, hepatitis, and sexually transmitted diseases (STDs).

Sub-objectives - To conduct 300 screenings/patient encounters per month
   To promote lead poisoning awareness in families with at-risk children
   To serve as a school-based clinic for targeted school districts

Strategies:
A fully licensed Project Staff will be onsite at each mobile healthcare van location. All patients with positive indicators will be referred to the UMDNJ hospitals and affiliates. Immediate treatment and referral will be made for those patients demonstrating acute illness. All positive findings of clinical breast exam will be referred for mammogram tests; and prostate cancer exams, using digital and PSA, will be referred to urology clinics for further diagnosis and treatment. The Project Director will provide an annual report for these services that will include the number of patients examined; number and kind of patients with positive disease findings; and referral compilations. The Project team will conduct ECGs for those that exhibit at risk conditions. Health screenings of school children will be conducted at targeted public schools

Disease Management Services – This Project will provide primary care services to medically underserved individuals to include clinical assessment, treatment and evaluation

Sub-objectives – To identify and treat existing disease states with appropriate follow up care
   To prevent the spread of communicable diseases, including vaccine-preventable diseases, tuberculosis, sexually transmitted diseases, and HIV/AIDS
   To assure access to health services in collaboration with the University Hospital
Strategies:
Care will be provided on site by the Project Team clinical staff for all primary care medical disorders. Appropriate treatment for communicable diseases will be implemented. Age-appropriate vaccines will be administered by the clinical Project Staff. Home visits will be conducted as needed to assess the home environment and to follow up care Public school site will be visited to conduct physical examinations and health screenings and administer age-appropriate immunizations

OBJECTIVE II: To foster community involvement in the health assessment and referral process.

Sub-objectives - To maximize communication and ensure that the mobile healthcare schedule is well publicized
To support existing public health programs through outreach initiatives, education, media coverage, and coordination of services with University Hospital

Strategies:
Flyers will be posted in at least 10 homeless shelter locations close to the mobile healthcare site. Announcements of the mobile healthcare schedule will be placed in church bulletins. The bulletin boards in public housing units will used to post locations and dates of arrival of the mobile healthcare van. Service agreements will be developed with homeless shelters, the Newark Housing Authority, and religious entities. With established agreements made with all community site locations, community leaders will become integral components of the health assessment and referral process, assisting with the identification, notification and follow up of at risk individuals the Project team will meet with tenant council leaders, religious leaders, homeless shelter administrators, and community leaders to promote community involvement.

OBJECTIVE III: To provide culturally and linguistically sensitive health promotion/disease management health education.

Sub-objectives - To provide health teaching related to weight control, exercise, disease management, and health care information, the Project team will collaborate with health care organizations, government agencies, and the pharmaceutical industry to obtain instructional materials in the languages of those served.
To improve community awareness of public health issues by providing health education

Strategies:
SN faculty, student nurses and Project Staff will work with translators and community leaders to develop culturally appropriate instructional aids. Alliances will be developed with American Diabetic Association, Johnson and Johnson, Merck and other pharmaceuticals entities and health care organizations to obtain existing culturally sensitive teaching materials. Currently existing linguistically sensitive educational materials will be obtained and disseminated to those served.

IV PROJECT IMPACT

Outcomes: A $250,000 grant from the Healthcare Foundation of New Jersey, with matching funds provided by UMDNJ-SN, covered the cost of start-up operations in April 2006. A HRSA grant for $1.7 million over five years was awarded to the Project at the start of FY ‘08. In partnership with the Children’s Health Fund, the Project has joined with a national network of mobile healthcare programs to leverage support for addressing the healthcare needs of the underserved. Following a year of planning, the Project initiated the delivery of primary care services in early March, 2007, at five clinical sites located in the greater Newark area, a sixth site was added in July, 2007. Analysis of the Project preliminary data findings indicates a current caseload consisting of 1200 patients, with encounters ranging from 5 to 14 visits daily. The Project serves a predominantly minority population of 71% (n=142) Black, 28% (n=56) Hispanic, and 2% (n=2) White. Fifty-nine percent of the patients seen are female. While the Project services patients in all age groups, the largest percentage of patients are those in the 0-5 age category (73%). To date, the majority of visits (31.5%) are made to perform physical examinations for health clearance to permit attendance at elementary and preschool. Dental screening and referral comprise the second most frequent reason (18%) for patient encounters. Project sustainability will be achieved through third-party reimbursement mechanisms, capitated rates for managed care organization fee structures, and continued extra mural funding.

V. EVALUATION

To successfully evaluate the Project, data analyses of clinical findings will be conducted. This will include, but will not be limited to, the number of screenings/patient encounters conducted on a monthly basis; number and type of primary
care services rendered; number and category of culturally and linguistically sensitive health educational tools disseminated; responses on participants surveys; number and type of treatment modalities implemented. Data will be used to establish baseline information for participants and the program. It is anticipated that the outcomes of the Project will indicate: 1) an increase in the number of referrals to acute care facilities for follow up from at-risk participants as measured by clinic appointments, 2) an increase in participant satisfaction with health care delivery as measured by survey instruments, 3) an increase in community involvement in the health assessment and referral process as measured by service agreements executed, 4) an increase in the dissemination of culturally and linguistically sensitive health care information as measured by number of informational packets distributed, and 5) a decrease in county/city mortality/morbidity rates associated with identified ambulatory care sensitive conditions

VI PROJECT SUSTAINABILITY

In order to maximize the delivery of health services and maintain revenue beyond the requested funding period, the Project Director will obtain and administer other grant funding, state/federal aid, and third party payment plans.

Third Party Payors -
Social services consultation will be made for all patients treated to determine eligibility for third party reimbursement. Mobile clinic revenues will be generated by billing Medicaid, Medicare and private insurance companies under fee-for-service or capitated payment plans.

Charity Care -
Proportional, retrospective reimbursement will be determined based on the share of clinical services provided to uninsured patients. Social work consultation will be implemented to establish eligibility on a case-by-case basis.

Grants -
Grant proposals will be submitted in response to RFP announcements appearing in the Federal Register to acquire competitive state and federal governmental grant funding awards. Additionally, private foundation grant proposals will be submitted to those funders whose mission addresses concepts related to improving access to care.
## VII EXPENSE BUDGET FOR THE PROJECT

### A. Expenses

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Time/Effort</th>
<th>Dollar Amount Requested</th>
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<tr>
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<tr>
<td>Project Director</td>
<td>20% 8 hours/week</td>
<td>17,680 5,481 23,161</td>
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<td>Project Coordinator</td>
<td>40% 16 hours/week</td>
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<tr>
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<tr>
<td>APN</td>
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<td>Registered Nurse</td>
<td>50% 20 hours/week</td>
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<tr>
<td>Van Driver/EMT</td>
<td>100% 40 hours/week</td>
<td>45,000 13,950 58,950</td>
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Subtotals Personnel $339,070 $105,112 $444,182

Consultant Costs 3,000

Mobile Health Vehicle and Maintenance Contract, charger line hook-up, gasoline, vehicle insurance, parking space 500,000

Contracts 0

Supplies (Itemize by category) Office supplies = $2,700; Peak flow meters ($300) audiometric testing equipment, vision charts ($100), 2 ophthalmoscope ($500), 2 sphygmomanometers ($200), 3,800

Equipment: electronic weight scales, ECG, computer/printer with internet access, mobile phones, reflotron 8,944

Other Expenses (Itemize by category) Recruitment Advertising = $4,000; Mailing costs = $1,500; Brochures = $3,000; Telephone/fax = $1,800; Instructional materials = $1,400; Advisory Committee expenses & meeting Refreshments = $630. 10,831

Subtotals Consultant, Van, Supplies, Contracts, other $526,575

Grand Total $970,757