MULTNOMAH COUNTY
AUDITOR'S OFFICE

Home Visiting

Focus resources for healthier families

February 1998

GARY BLACKMER
Multnomah County Auditor

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MEMORANDUM

DATE: February 25, 1998

TO: Beverly Stein, Multnomah County Chair
Gary Hansen, Commissioner, District 2
Sharron Kelley, Commissioner, District 4

FROM: Gary Blackmer, Multnomah County Auditor

SUBJECT: Audit of Visiting Nurses

The attached report covers our audit of Field Services in the Health Department, which was included in our FY97-98 Audit Schedule. These staff provide important assistance to mothers and infants in our community. Research has shown that these kinds of efforts can improve the well-being of program participants while reducing future health and social costs.

Our report recommends a number of changes that can increase the effectiveness of Field Services. We have discussed our findings and recommendations with managers in the Health Department. As part of our follow-up procedures, we will request they prepare a written description on the status of the recommendations in this report. This response should be circulated to the Commissioners.

We appreciate the cooperation and assistance extended to us by the management and staff of the Health Department.

Audit Team: Kathryn Nichols, Senior Management Auditor
John Hutzler, Senior Management Auditor
Ellen Haines, Management Auditor

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Summary

This report covers our review of the Health Department's home visiting efforts. Current efforts may not significantly improve the health and welfare of at-risk mothers and babies. More visits are needed to achieve the levels that have been shown to be successful elsewhere. By using paraprofessionals, increasing productivity, and generating more revenues, the program can increase service levels, but it must also target its efforts to the number of clients it can serve effectively.

Home visiting builds a caring relationship with a family while providing health advice, preventive health care, and assistance with social needs. The research literature indicates that home visits to pregnant women and young children can make dramatic improvements in the health of newborns, child development, parenting, child abuse, welfare dependency, and even criminality. As a result, home visitation can produce net savings in public expenditures.

Field Services has the equivalent of 83 full-time personnel serving over 10,000 individuals per year. It relies on the County general fund for about two-thirds of its $7.1 million budget. Field Services primarily serves at-risk pregnant women and families with young children.

To their credit, Field Services staff provide a wide range of health and social services to their clients. The program strives to provide culturally appropriate services, but staff could more closely reflect the population served.

We also believe that, in trying to serve more families, Field Services has reduced its ability to serve them effectively. Field Services staff provided a level of service to each family that is only 35% of that provided in programs which were shown to produce improvements for high-risk families. Field Services could also improve efforts to reach women prenatally. Further, staff may not be systematically planning services for clients due to inconsistent use of service protocols, and there is no method for ensuring that services are targeted to high-risk families.

We believe that Field Services could use paraprofessionals to increase the number of staff available to conduct home visits. Currently, Field Services has 16 budgeted paraprofessionals who are used for limited or specialized purposes. We found that less than 2% of the visits made in 1996 by Field Services nurses involved procedures requiring technical

nursing skills. Most visits involved families in which social needs were more prevalent than medical needs. If recruited from the community served, paraprofessionals may be better able to reach at-risk women, especially minority populations. Paraprofessionals are increasingly used by other jurisdictions to supplement nursing staff as a cost-effective way of making home visits.

In addition, staff productivity should be examined. Overall, field staff average 1.4 visits for each eight hours worked. Nurses assigned primarily to home visiting achieve a higher productivity at 1.9 visits. Each home visit takes a total of 3.5 hours of nurse time, with about 50 minutes spent with each family. Field Services has established productivity standards, but these have not been consistently applied. Some nurses within Field Services are able to achieve a significantly higher number of visits than other nurses. Management could also explore the methods of other programs that achieve greater productivity. And, although Field Services has reduced paperwork, there may be additional ways to reduce the time spent on duties related to home visits, or other duties performed by staff.

There may also be opportunities to increase state and federal revenues for home visits. During the audit, Field Services billed the State for a maximum of four maternity visits based on a conservative reading of Oregon Medical Assistance Program regulations. At current activity levels, we estimate that the program can generate $118,000 in additional revenues on an on-going basis, and can retroactively bill this amount for services last year. Increasing the number of visits will increase these revenues. Staff have been limiting the number of visits to families based upon the perceived Medicaid billing restriction. Further, on some field teams, the belief that visits completed by paraprofessionals could not be reimbursed has affected tasks that are assigned to them and limited the activities of these staff.

Using paraprofessionals, increasing productivity, and generating more revenues are probably not sufficient to raise the intensity of home visiting to the level of those programs that have been proven effective. Field Services should also focus its efforts on the number of at-risk clients that the program can serve effectively.

Introduction

History of Home Visiting

The mission of Multnomah County Field Services is to improve the health of families and communities. Home visiting is a major strategy for delivering health, social support, and educational services directly to individuals in their homes. Home visitors have worked with families in the United States for more than 100 years, providing a variety of services, including prenatal visits, health education, parenting education, home-based preschool, and referrals to other agencies and services. In the early 1900s, fueled by a new awareness that adequate prenatal and infant care could reduce infant mortality, settlement houses began to send visiting nurses, teachers, and social workers into the homes of families to provide education, preventive health care, and acute care.

The first field nurse was hired by Multnomah County in 1923. In the 1940's nurses from the City of Portland, the County, and the private Visiting Nurses Association monitored tuberculosis patients and provided basic preventive health care to families in schools and at home. By 1955 the County Health Department had 22 nurses who provided about 12,000 home visits to about 8,000 persons.

In 1968 the City and County Health Departments were merged. Five years later, the County hospital was sold to the State, and the new consolidated County Health Department began building a network of community-based clinics. In 1983, when demand for nursing services in the clinics began to limit field services, the Health Division was reorganized into Field Services and Clinic Services.

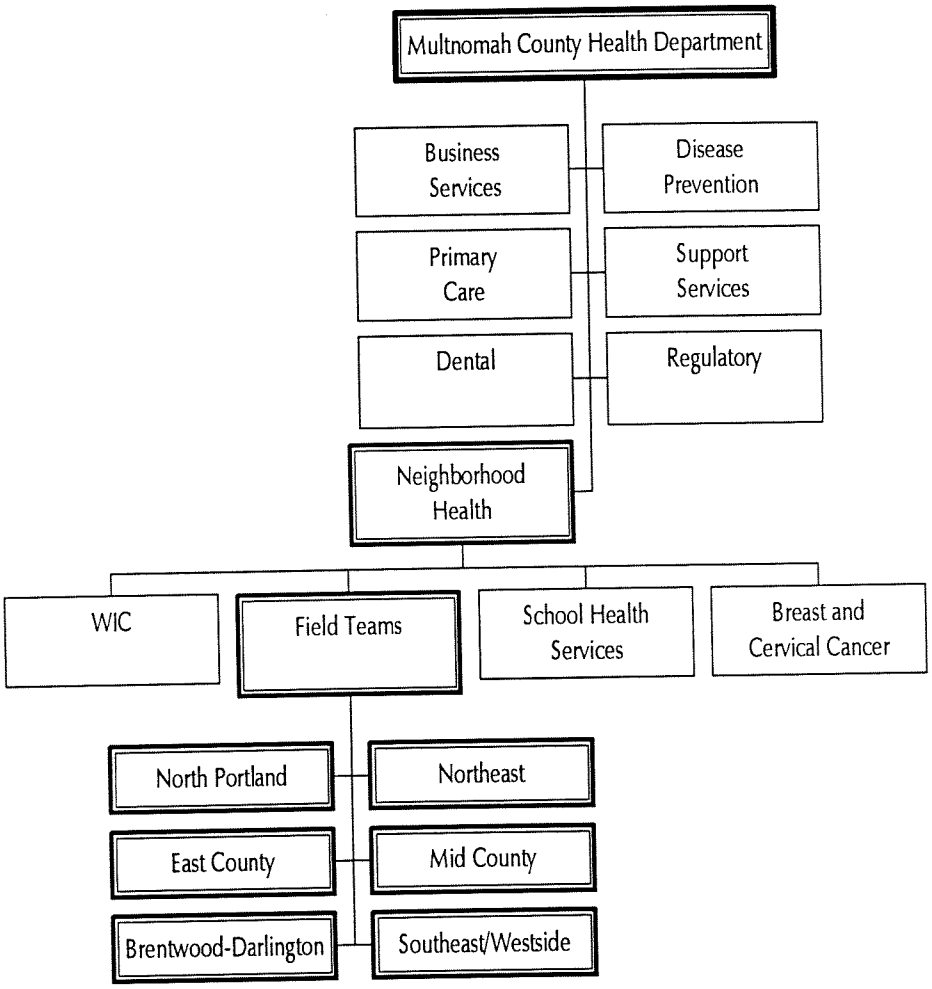
Current Program Organization and Financing

The County's Field Services has grown to a $7.1 million program, which annually serves over 10,000 people. The program is located organizationally in the Health Department's Neighborhood Health Division, which also includes the County's School-based Health Clinics and the federal food supplemental program for pregnant women and children (WIC). There are currently five primary field teams corresponding roughly to the County's integrated services districts: East County, Mid-County, North Portland, Northeast, Southeast/West. Each field team has an average of 10 community health nurses (CHNs), one paraprofessional outreach worker, one mental health counselor,

and one or two clerical staff. There are three supervisors for the five teams. The North Portland and Northeast teams share a supervisor, as do the Mid and East County teams. A smaller neighborhood-based team in Brentwood-Darlington is co-located with other social service agencies serving that area.

Multnomah County Health Department Organizational Chart

Exhibit 1



As illustrated in the chart below, the Field Services program has relied on County General Funds for about 64% of its revenues. Other sources of revenue include grants for special programs, Medicaid funding for maternity case management (MCM) visits to women on the Oregon Health Plan, and State reimbursements for visits to children under four years of age. Increases in FY98 are due to two additional programs: one to focus on African American birth outcomes, and the other a new Family Support and Preservation program.

Expenditures, General Fund revenues and FTE

Exhibit 2

	FY93-94	FY94-95	FY95-96	FY96-97	FY97-98
Expenditures	$4,596,523	$5,500,887	$4,732,377	$5,331,853	$7,130,594
General Fund	$3,301,271	$3,877,289	$3,173,344	$3,730,583	$4,549,635
Total Contacts	26,872	26,118	24,453	24,651	NA
Total Staff (FTE)	72	67	64	68	83

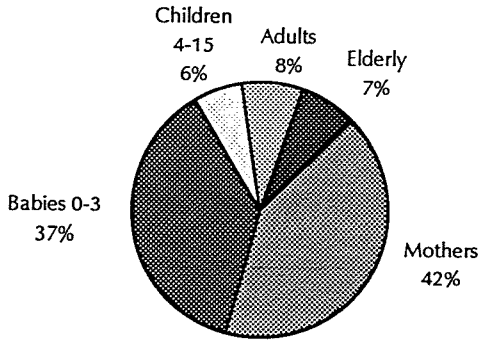
Source: Compiled by Auditor's Office from actual expenditures, except FY98, which is budgeted, and from program documents.

Families and Services

The Field Services program focuses primarily on pregnant women, mothers, and young children. Pregnant and parenting teens are given special priority. Maternal and child health services include prenatal and postpartum care for mothers, educating new parents, making referrals, and screening babies for developmental progress. The program also serves some elderly clients, homeless families, and children at risk of abuse and neglect. The chart below shows the general classifications of clients served in CY96.

1996 Clients

Exhibit 3



Source: Auditor's analysis of Field Services client contact data.

Over the last six years, the program has increased its focus on pregnant women, mothers, and young children. In FY92, 10,351 contacts with these populations made up 47% of all program contacts. In FY97,

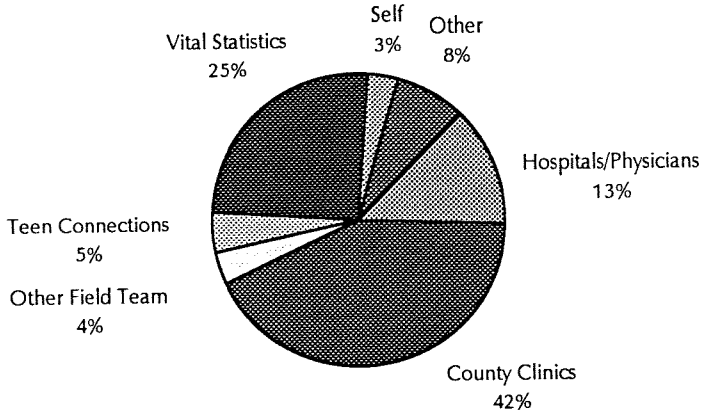
16,368 contacts with pregnant women, mothers, and children represented 66% of all program contacts.

About 44% of the clients currently served by Field Services are on the Oregon Health Plan, and 37% are uninsured. About 10% are on Medicare, and the remaining 9% have private insurance.

Most families served by the program are referred to Field Services for home visits when they apply for WIC, by a provider in one of the Health Department's clinics, identification through birth records, or by a health professional outside the County. Other clients are self-referred or brought to the attention of the Health Department by other social service agencies. About 50% of Field Service clients also receive health or WIC services in one of the County's clinics. The number of referrals to Field Services increased by 39% between 1994 and 1996. The breakdown of 1996 referrals by source is illustrated below.

1996 Field Services Referrals by Source

Exhibit 4



Source: Auditor's analysis of Field Services referral data.

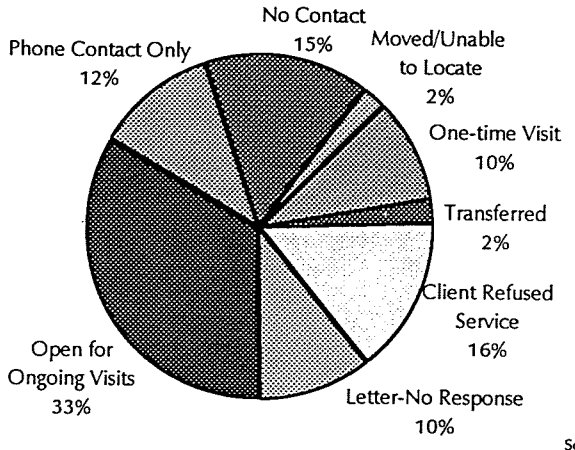
Until recently, referrals were classified using a standard prioritization tool, which took into account medical and social risk factors. New referrals were placed into one of four priority levels. Priority One clients included fragile/premature infants, failure-to-thrive babies, high-risk pregnancies, prenatal teens, history of child abuse and neglect, and neonatal deaths. Priority Two clients included complicated deliveries, teen mothers, and substance abusing parents. Priority Three included those with chronic health problems or normal pregnancies and deliveries. Priority Four included chronic multi-problem families with a history of unsuccessful results with a field nurse. Based on priority,

referrals were to be responded to within 10, 15, 20, or 30 working days. Because of limited resources, teams seldom provided services to Priority Three and Four clients. During our audit, the program stopped using priority categories on the referral form.

Field Services provided ongoing home visits to about one-third of the referrals received in 1996. Sixteen percent of those referred refused services. In 10% of cases referred, nurses made a single home visit and decided not to open the case for additional services. The graph below illustrates the outcomes of 1996 referrals.

1996 Field Referrals by Outcome

Exhibit 5

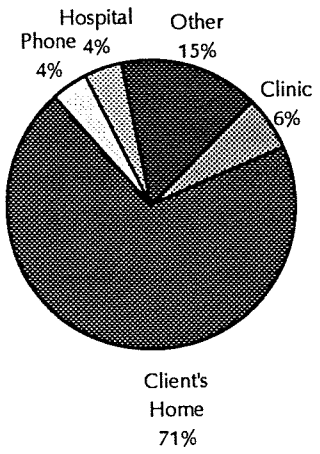


Source: Auditor's analysis of Field Services referral data.

Although the majority of visits to clients occur in their own homes, field staff may also make contact with clients at health clinics, hospitals, family centers, and other service delivery sites in the community. The graph below shows the breakdown of 1996 client contacts by service location.

1996 Client Contacts by Location

Exhibit 6



Source: Auditor's analysis of client contact data.

Field Services strives to develop a supportive and trust-based relationship with the families it serves. Field staff provide a range of specific services during home visits. They assess family medical and social needs, conduct developmental screenings, provide health information, make referrals to health clinics and social service agencies, teach and counsel, and advocate for families. They may also certify a woman and her children for WIC services.

In 1996 field staff visited an average of 1.4 families each eight hours worked. We estimated that the cost of a home visit, including administrative costs, was about $220 in 1996.

Community Activities and Special Programs

According to the American Public Health Association, field nursing is one element of public health nursing which has the purpose of improving the health of the community through nursing intervention. This can be achieved by working with and through community leaders, health-related groups, groups at risk, families and individuals, and by becoming involved in relevant social action. One of the missions of the Neighborhood Health Division, of which the field teams are a part, is to promote community health goals in partnership with other public and private agencies.

Approximately 31 of the 55 community health nurses in Field Services work as "general field nurses" and focus their efforts working with families. The remaining nurses and outreach workers visit families, but are also assigned to work on special programs targeting special populations or with other County and community-based agencies to simplify and streamline client access to services.

Some of the inter-disciplinary teams and special programs are described below:

Alcohol and Drug Abuse Prenatal Treatment (ADAPT) - Serves pregnant and postpartum substance abusing women involved with the criminal justice system. Field nurses work in collaboration with staff from Corrections Health and Community Corrections Women's Transition Services.

Teen Connections - Designated field nurses on each team make visits to teen mothers with newborns at the hospital. Teens are screened, and those with multiple risk factors are referred to community-based agencies for case management services.

Family Support Teams (FST) - Three field nurses work with the State Office of Services to Children and Families (SCF), serving families who are reported for child abuse and neglect. Each team includes a nurse, an alcohol and drug specialist, and a SCF caseworker. Two teams focus specifically on families with substance abuse problems.

Multidisciplinary Teams (MDT) - Aging Services funds half the cost of four field nurses, who provide supportive services to elderly clients so they can remain in their homes. There are four teams, each with a field nurse, a social worker from Aging Services, and a mental health counselor from Community and Family Services.

Parent Child Development Services (PCDS) - About 6.5 field nurses are assigned to work at one of the County's seven Family Centers, which are run by community-based non-profit agencies under contract with the County's Department of Community and Family Services (CFS). These field nurses make an initial home visit to all families with a new baby within the Family Center catchment areas. Families are offered additional services at the Family Centers. In addition to their home visits, PCDS nurses provide some direct services at the centers, such as developmental screenings, well-baby clinics and health education classes.

Caring Communities - The Leaders Roundtable, a group of business, community, and school leaders, initiated Caring Communities to increase graduation rates. Caring Communities work within high school districts, and several operate Family Resource Centers in the schools. Some field nurses and outreach workers spend portions of their time with other service providers at these Centers.

Program Goals

The mission of Field Services, developed in 1996, is: "In partnership with our diverse communities, Field Services Staff strive to assure, promote and protect the health of the people of Multnomah County by:

- Assessing the individual, family and community to identify health status and strengths;
- Developing plans and policies to mobilize community partnerships for action: providing leadership to address key areas for community health improvement and to develop needed services;
- Assuring the availability of health services by providing selected services, linking people with existing services, and advocating for and supporting increased service capacity; and
- Promoting individual, family and community wellness and safety."

Field Services are also linked with the following outcomes, all of which are Countywide Benchmarks:

- Improved access to health care
- Reduction in teen pregnancy
- Improved birth outcomes
- Reduction in drug-affected babies
- Improved child development
- Improved child immunizations
- Reduced child abuse and neglect

Trends in Maternal and Child Health

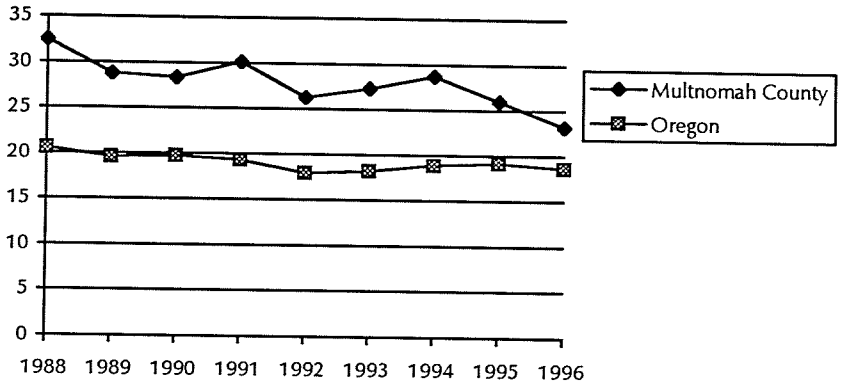
Although several favorable trends suggest improvements in maternal and child health in Multnomah County, these cannot be attributed directly to Field Services, since so many other programs and services can also impact them. One of the most notable changes is the increase in access to health care under the Oregon Health Plan. In 1996, 88% of Multnomah County residents had health insurance, up from 83% in 1992. There may be undocumented and homeless persons not reflected in these numbers.

While the levels of maternal and child health are generally lower in the County than the State because of its urban nature, County trends are similar to those at the State level. The one exception is that, over the last 10 years, the County's teen pregnancy rate has declined faster than the State rate. An increasing percentage of pregnant women in the County have adequate prenatal care. Rates of reported smoking and use of drugs and alcohol during pregnancy also show improvements. In 1996, 18% of women giving birth in the County reported smoking during pregnancy, compared to 27% in 1989. Similarly, reported rates

of maternal alcohol use dropped from 10% in 1989 to 2% in 1996. Although infant mortality rates have declined, the rate of low birthweight babies remains unchanged. Trend data on immunizations and child development are not yet available. Some of these trends for the County and the State are illustrated graphically below.

Teen Pregnancy Rates per 1000 aged 10-17

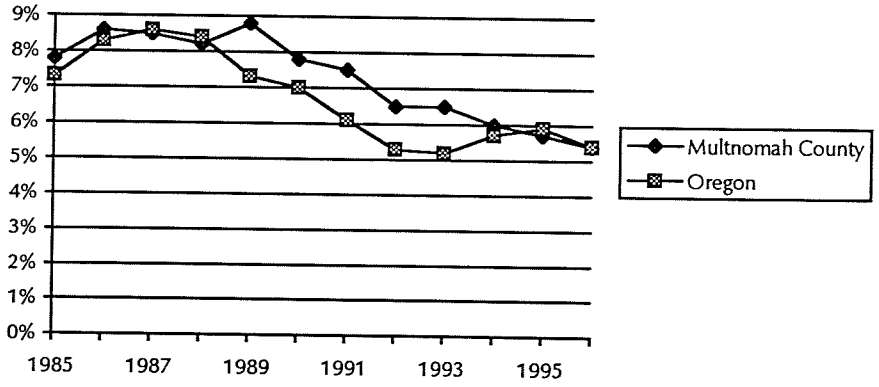
Exhibit 7



Source: Compiled by Auditor's Office from State Vital Statistics data

Percentage of Births with Inadequate Prenatal Care

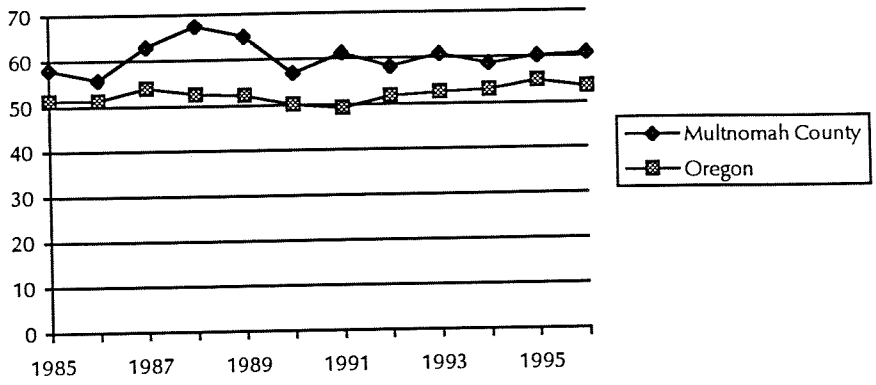
Exhibit 8



Source: Compiled by Auditor's Office from State Vital Statistics data

Low Birthweight Rate per 1000 births

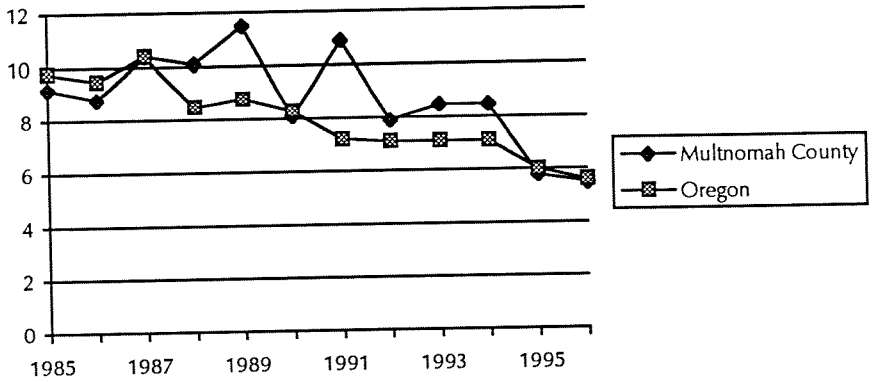
Exhibit 9



Source: Compiled by Auditor's Office from State Vital Statistics data

Infant Mortality Rate per 1000 births

Exhibit 10



Source: Compiled by Auditor's Office from State Vital Statistics data.

Audit Scope and Methodology

The objectives of this audit were to evaluate the productivity and efficiency of field staff, the program's success in reaching targeted populations, the feasibility of using additional paraprofessionals as home visitors, and the extent to which the program was effectively billing the State and Medicaid for services delivered. We analyzed whether the Multnomah County program contained elements which experts identify as critical to success. We did not directly evaluate client outcomes.

Our audit focused particularly on maternal and child home visitation services. We did not, however, exclude staff working in other program areas in our evaluation of productivity and staff diversity. Although we assessed the amount of staff time devoted to community-building activities, we did not assess their management or impact.

To better understand the qualitative dimensions of field nursing, we interviewed all managers and team supervisors. We interviewed 14 field nurses and 7 Outreach Workers and observed home visits.

We utilized several different databases to address our audit questions. We analyzed the Health Department's automated records of all field contacts from July 1993 through February 1997. Except where otherwise noted, our analyses were based on services delivered in CY96. We excluded immunization clinics and childbirth classes. We also analyzed referral data for September 1993 to February 1997. The analysis of productivity was based on program assignments and monthly contact standards reported by Field team supervisors, automated payroll data, and contact data from the Health Department's management information system (HIS). The analysis of client needs and services delivered was based on automated data on nursing diagnoses and procedure codes. Analyses of birth outcomes were based on automated records of births to residents of Multnomah County obtained from the State Office of Vital Statistics.

We interviewed managers and supervisors in other health departments including: Clackamas County, Oregon; Arlington County, Virginia; Charlottesville County, North Carolina; Oakland County, Missouri; Sacramento County, California; San Bernardino County, California; Santa Clara County, California; Seattle-King County, Washington; and Tacoma-Pierce County, Washington. We also examined standards and practice data from visiting nursing programs operated by private managed care plans, including Tuality Home Health program and Legacy Visiting Nursing Association (VNA) program.

We also contacted prenatal outreach programs in the tri-county area, including Neighborhood Health Inc.'s Prenatal Outreach program and Washington County's Opening Doors program. We interviewed the program director for the National Healthy Families America program.

We reviewed State laws relating to public health services and the practice of nursing, billing regulations published by Oregon's Office of Medical Assistance Programs (OMAP), and the Health Department's Policies and Procedures manual. We also reviewed literature on the effectiveness of home visiting programs and attended a national conference on research evaluation of home visiting programs.

We reviewed Field Services budgets and estimated the cost of a visit based on expenditure and visit data for FY96. Our estimates included management and support costs. We factored out time spent on community-building activities.

During our initial review, we identified two additional areas that could benefit from further study. We identified potential inefficiencies which increase the costs of operating the Department's Primary Care Clinics. We decided not to audit this area because we were impressed by the new Primary Care manager's recognition of these problems and proposed solutions. Unfortunately, implementation of these solutions was delayed by discussions about clinic closures. We encourage the Health Department to consider clinic benefits, costs, and efficiencies as they evaluate the County's future in primary care.

We also found Corrections Health costs to be high, and budget constraints due to tax limitations raised the possibility that accreditation might be sacrificed, which could increase the County's liability. One possibility for reducing costs while maintaining an accredited service would be to contract for corrections health services. The Health Department looked into this possibility in the 1980's but determined it would not be cost-effective. Several large national firms now compete to provide such services. The Health Department should consider issuing an RFP to determine whether corrections health services could be obtained cost effectively from a private provider. During the audit, the Department hired a consultant to examine the costs and benefits of privatization of Corrections Health.

The audit was conducted in accordance with generally accepted government audit standards.

Audit Results

Field Services Could Improve Maternal and Child Outcomes

The research literature on home visiting indicates that providing services in the home to pregnant women and young children can have dramatic effects on birth outcomes, child development, parenting, child abuse, and even criminality. By reducing welfare dependency, home visitation can result in net savings in public expenditures. Despite the positive findings from some studies, many other evaluations have been unable to demonstrate any effects, or only marginal effects. This has lead researchers and program managers to focus on key programmatic elements of those programs that have demonstrated results.

Field Services may not be achieving the intended maternal-child outcomes because it lacks several of the key elements of effective home visiting programs. We found that the program successfully collaborates with other social services to address a range of family needs. However, the program could improve effectiveness by reaching more women prenatally, reducing caseloads, increasing service levels, better targeting of services, developing service protocols, and increasing staff diversity.

Research about successful programs

A series of clinical trials conducted by Dr. David Olds from the University of Rochester's Department of Pediatrics provide the most convincing evidence of the effectiveness of home visiting programs. The first Olds study, conducted in the 1970's, provided home visits to pregnant white women who were either teenagers, unmarried, or economically disadvantaged. Families who received home visits had comparatively better outcomes than the control group. Among young women and smokers, the program had positive impacts on preterm labor and birth weight. Compared to the control group, visited families had fewer reports of child abuse, fewer emergency room visits, and fewer visits to a physician for accidents. Women visited by nurses also returned to school more quickly, were more likely to be employed, and postponed the birth of their second child an average of 12 months longer than non-visited women.

Olds also conducted a cost-benefit analysis. By the time the children were four years old, government savings were estimated in 1980 dollars at $1,800 per family overall and $3,500 for low-income families. Savings were calculated based on the treatment differences in government expenditures and tax revenues due to maternal employment.

Olds recently published research on long-term impacts. By the time their children reached fifteen years of age, home visited women had lower rates of subsequent pregnancy and greater spacing between children. Compared to non-visited women, they had significantly longer periods of cumulative employment, and shorter periods on welfare, food stamps, and Medicaid. They also had fewer arrests and fewer alcohol and other drug problems. Home visited children had 90% fewer reports of child abuse and neglect and 50% fewer arrests.

To permit generalization to more urban and culturally diverse settings, Olds tested the same program model on African-American women during the early 1990's. Although no program effects on premature or low birthweight babies were demonstrated, visited women had lower rates of pregnancy-induced hypertension. Two years after their first birth, women visited by nurses had fewer second pregnancies, and their children had fewer hospitalizations. Although the short-term program effects on maternal education and employment demonstrated in the earlier study were not found, the researchers will continue to track these families for fifteen years.

In 1990 the General Accounting Office (GAO) published a comprehensive review of maternal-child home visiting programs. Drawing heavily on the Olds research, GAO highlighted a number of critical elements of effective programs. Several years later, the National Committee to Prevent Child Abuse launched their Healthy Families America (HFA) campaign to offer all new parents support following the birth of a child and to offer at-risk families more intensive home visiting services. HFA also defined a set of critical program elements which "represent the current knowledge base for best practice in home visitation". The critical elements from HFA and the GAO study are substantially similar and serve as the basis for our evaluation of Field Services' maternal and child program. These elements are:

- Comprehensive services
- Services initiated prenatally
- Limited caseloads
- Intensive services
- Services targeted to high-risk families
- Service protocols
- Culturally appropriate services

Services are comprehensive

One critical element identified by both the GAO and the Olds research is that home visitation programs should address a wide range of family needs. Home visiting programs with narrowly defined objectives tend to be less successful. Multnomah County's Field Services program is particularly strong in this regard. The field staff view family needs broadly and address social as well as health needs. Further, they collaborate extensively with other County and community agencies to insure families they visit have access to a variety of community services.

Services are not always initiated prenatally

The Olds study and other reviews of clinical trials indicate that programs are more successful when services begin during pregnancy. In order to engage women in early prenatal care and improve birth outcomes, Multnomah County's Field Services program strives to reach women as early in their pregnancies as possible. However, only 65% of the women receiving maternity services were visited during pregnancy. Field Services has additional goals, to serve all teen mothers and to visit all new mothers in certain areas, which directs some of their efforts away from serving families prenatally.

Caseloads are too large

Small caseloads assure that home visitors have adequate time to devote to each family. The full-time nurses in the Olds programs were responsible for visiting about 25 families. HFA recommends that home visitors carry a maximum caseload of 15 families at the most intense service levels. A full-time field nurse in Multnomah County carries an average caseload of 37 families and has additional responsibilities. Only 3 of 25 general field nurses had caseloads at or below the Olds standard. Ten nurses had caseloads in excess of 40 families, with the highest at 64 families.

Field Services should increase service levels

Successful programs provide frequent and long term visits. The Olds study recommends visits bi-weekly during pregnancy, weekly for 6 weeks postpartum, and then gradually reduced to once every six weeks by the child's second birthday. Families in the Olds program received an average of 8 prenatal visits and 24 visits between birth and the child's second birthday. HFA suggests weekly visits. Some researchers attribute the lack of demonstrated effects in many home visiting programs to less intensive visitation.

Our analysis indicates that families visited more than once receive an average of 11 visits in Multnomah County. This includes about 2.8 prenatal visits, 2.2 postpartum/newborn visits, 2.5 mental and general

health visits, and 3.6 visits to children 0-3. This level of service is about 35% of that provided in the Olds programs.

Services also should be long-term. Olds' research confirmed that program effects were enhanced when visits continued beyond the prenatal period and to the child's second birthday. HFA suggests that visit last until the child is three to five years of age. Field Services has a suggested schedule for visits to children 0-3, adapted from the State's Targeted Case Management (TCM) program, which calls for an initial newborn visit, and visits at 4, 8, 12, 18, 24, and 36 months. Our analysis indicates that 35% of children born in 1994 who received more than one visit were visited for 3 months or less. About 54% were visited 6 months or less. Less than 30% were visited after their first birthday.

Services need to be better targeted to high-risk families

Services are more effective when targeted to high-risk families. HFA programs generally use two standardized tools to target services. Families are initially screened using a 15-item questionnaire and those with higher risk scores are assessed in the home using a more detailed standardized tool.

During the 1980's the Field Services program used a risk classification tool to determine the client's level of need for services based on their "acuity". Each family was assessed in a number of areas and scores were associated with levels of service. The acuity tool was similar to some of the screening tools used by other home visiting programs.

In 1991 the program replaced this tool with a simpler priority tool to rank its referrals because of complaints about paperwork. Referrals were classified in one of four categories. Priority 1 included fragile/premature infants, failure-to-thrive babies, high-risk pregnancies, prenatal teens, history of child abuse and neglect, and neonatal deaths. Priority 2 clients included complicated deliveries, teen mothers, and substance abusing parents. Priority 3 included those with chronic and mental health conditions. Priority 4 included chronic multi-problem families with a history of previous Field Services involvement with poor results. Based on priority, referrals were to be responded to within 10, 15, 20, or 30 working days.

The priority tool provided a way to respond more quickly to certain types of clients, and may have operated as a way to target services. In general, higher priority referrals were more likely to receive at least one visit, and Priority 1 and 2 referrals accounted for 88% of the visits to clients referred to Field Services in 1996. Decisions about how much

ongoing service to provide to each client were based largely on the professional judgment of individual nurses, and varied significantly among teams.

During our audit, the Field Services program discontinued use of the priority tool. Without a priority tool that relates risks to service levels, the program cannot insure that services are systematically targeted to the highest risk families.

Available service protocols are not consistently used

The GAO stressed the importance of written protocols to guide services by objective, foster consistency and accuracy of information provided to clients, and enable visitors to systematically plan services for clients. The nurses in Olds studies followed detailed visit-by-visit protocols. HFA also stresses the importance of using well-defined criteria for increasing or decreasing visit intensity. In recommending the development and use of service protocols, neither Olds nor the GAO advocates that they be used rigidly. Protocols should be used flexibly taking into account the professional expertise of staff, and families' needs.

The Health Department has some of the most detailed and comprehensive policies and procedures we have reviewed. However, the section of the manual for Field Services is minimal. The only procedures included relate to abuse and neglect reporting, foot care, blood glucose screening, and maintaining records. The Field Services program has internally developed certain protocols to guide elements of their maternal-child practice. However, they are not comprehensive, up-to-date, or consistently used. One of the more senior field nurses uses a set of visit protocols that were developed in the 1970's and 1980's, but the more recently hired nurses do not. Although all of the nurses are required to develop a nursing diagnosis for each client, which should be related to an intervention plan, nurses do not always use these diagnoses consistently. In the late 1980's, a Multnomah County Field Services manager worked with other nurses in the region to develop assessment forms and protocols to standardize practices. We found that these forms are not consistently used in the County.

Nurses do not reflect the diverse clients they serve

HFA stresses the importance of providing a culturally relevant service. Overall, the Health Department places a high value on diversity, both in terms of its own staff and providing culturally appropriate services to the diverse communities it serves. Consistent with this commitment, the Health Department staff is among the most diverse of the County's Departments. Minority staff make up 22% of the Health Department.

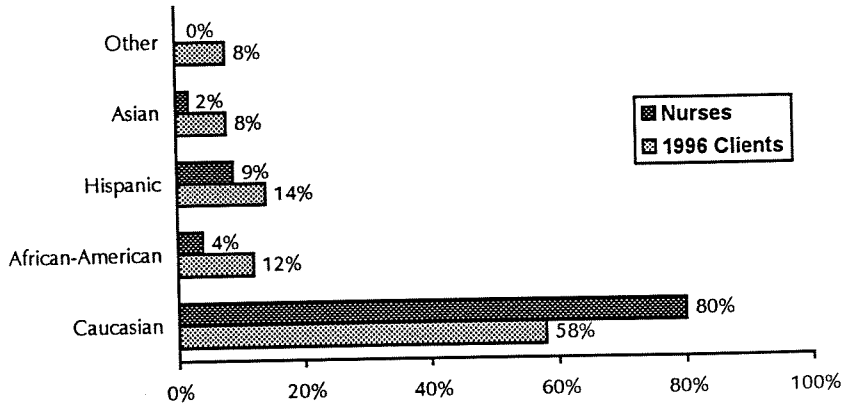
About 11% of the Health Department's professional staff are minorities.

Although Field Services is committed to a diverse staff in its Vision Statement, this program is significantly less diverse than the Health Department overall. As of October 1997, minority staff made up 12% of Field Services. Among the professional nursing staff, the minority percentage is only 7%. Of 59 permanent nurses, two are African-American and two are Asian. The City/County Affirmative Action Office sets minority targets for County programs based on a number of factors, including the number of minorities graduating from professional schools in the area, and the number of minority applicants for similar jobs. Their affirmative action target for nurses in the Neighborhood Health Division, of which Field Services is a part, is 12%. The current 7% rate of minority nurses in Field Services is considerably below the target established by the Affirmative Action Office.

The families served by Field Services are much more diverse than the nurses. The graph below compares the racial and ethnic distributions of clients and nurses in CY96. About 12% of the clients are African-American, compared to 4% of the nurses. About 8% of the clients are Asian, compared to 4% of the nurses. Field Services has made an effort to recruit Spanish-speaking nurses to serve the increasing number of Hispanic families in Multnomah County. About 9% of the nurses are Spanish speaking and 14% of the clients are Hispanic. While this helps to bridge the language barrier, none of these bilingual nurses is Hispanic. There may still be cultural barriers between the nurses and the Hispanic population as a result.

Comparison of Clients to Nurses

Exhibit 11



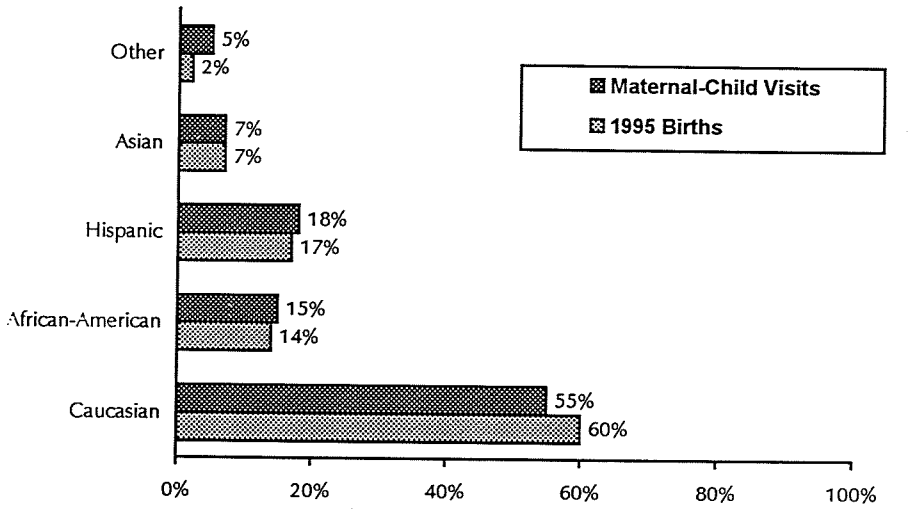
Spanish-speaking nurses are counted as Hispanic.
Source: Compiled by Auditor's office from program and payroll data.

Although it is not one of the minimum qualifications, the program prefers to hire experienced field nurses rather than new graduates because of the independence exercised in the field. This may make it difficult to enhance the diversity of the nursing staff.

The lack of diversity among field nurses has two potential effects on service: underserving certain populations at risk, and reducing the effectiveness of home visits to at-risk minority populations. We did not find that minority clients were any less likely to receive services. We compared the distribution of families receiving maternal-child services to the distribution of births to mothers on Medicaid. As the graph below suggests, the racial mix of families served by Field Services closely reflects the distribution of newborns on Medicaid.

Comparison of Medicaid Births to Maternal-Child Visits

Exhibit 12



Source: Compiled by Auditor's office from program and Vital Statistics data

However, we did find that services to Hispanic families may be closed prematurely because of the limited bilingual staff. Limited staff resources were cited as a reason for closure in 27% of the Hispanic cases, compared to 14% overall.

The effectiveness of services might be enhanced with more minority home visitors. The visitor's relationship with the family is the means through which the program can succeed. When the services are delivered in the family's home, the client controls when visits will occur, the length of the visit, and its agenda. Maintaining access to

minority families and keeping them engaged may be a challenge when home visitors come from a different culture or social class.

Opportunities to Increase Service Levels

To improve the effectiveness of its maternal-child home visiting, Field Services must increase the intensity (length and frequency) of the home visits provided to high-risk families. To accomplish this, Field Services can increase the total number of home visits provided by its staff, reduce the number of families served, or both.

Short of allocating additional general fund support, increased service levels can be achieved by:

- Increasing the number of home visits by using more paraprofessionals,
- Increasing the number of home visits provided by each staff member, and
- Increasing Federal and State revenues supporting the program.

Even if each of these is pursued, it may still be necessary for Field Services to:

- Reduce the numbers of families served in order to make a difference in the families that are served.

Increase Use of Paraprofessionals

An increasing number of programs use paraprofessionals to perform many services historically performed by nurses. These paraprofessionals are often recruited from the community and trained in nutrition, infant care, growth and development, and maternal health. They generally do not have nursing certifications. Although the Olds program used nurses to conduct home visits, several of these paraprofessional programs also have documented favorable results. Many of these home visiting programs use teams comprised of a nurse or social worker with several paraprofessionals. The professional staff provide supervision, assist in assessment and development of treatment plans, and may make home visits when necessary. Several of these programs have documented favorable results.

The Resource Mothers program in South Carolina provides home visits to rural teenaged pregnant girls at risk of inadequate prenatal care and poor birth outcomes. The Resource Mothers are indigenous lay visitors--mothers and paraprofessionals from the immediate community. Using a matched sampling technique, the evaluators of this program found favorable effects on birth outcomes.

Hawaii's statewide home visiting program was implemented in the late 1980's. This program uses paraprofessional home visitors and served as the prototype for the national HFA program model, now operating in all 50 states. A randomized clinical trial of the Hawaii program found measurable benefits in several areas: parental attitudes toward children, parent-child interaction patterns, and the type and quantity of child maltreatment.

The Field Services program currently has 16 budgeted paraprofessional positions with the title of outreach worker. Unlike paraprofessionals in other programs we reviewed, the outreach workers in Field Services generally have undefined roles and a narrow range of responsibilities. Some were transitioned from other programs and grants and were not provided adequate training. Except for those working in Brentwood-Darlington, outreach workers are not effectively integrated into the field teams.

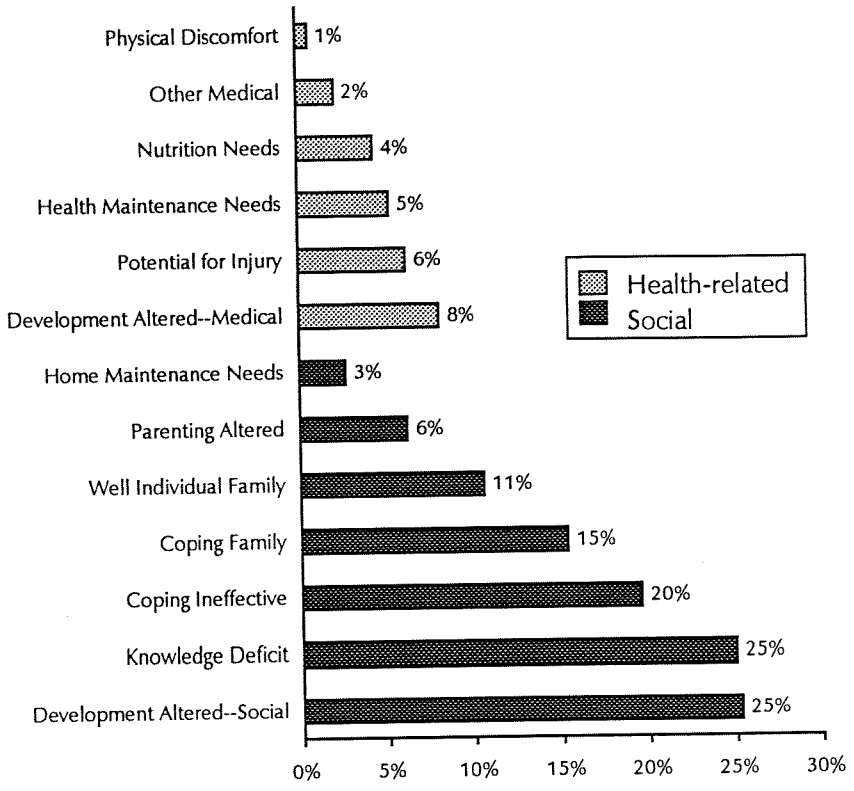
Home visits may not always require nurses

Based on our qualitative observations of home visits, analysis of the program's contact data, and review of other programs, we concluded that many home visit activities could be performed by trained paraprofessionals. We analyzed nursing diagnoses to identify the needs of families and the types of services provided during home visits.

We found that most maternal-child visits involved families in which social needs were more prevalent than medical needs. Overall, 26% of home visits involved clients with a health-related diagnosis. The remainder, almost three-quarters of the visits, involved clients with more social diagnoses. The graph below shows the percentage of visits with each nursing diagnosis.

Percentage of Maternal-Child Visits by Diagnostic Category

Exhibit 13



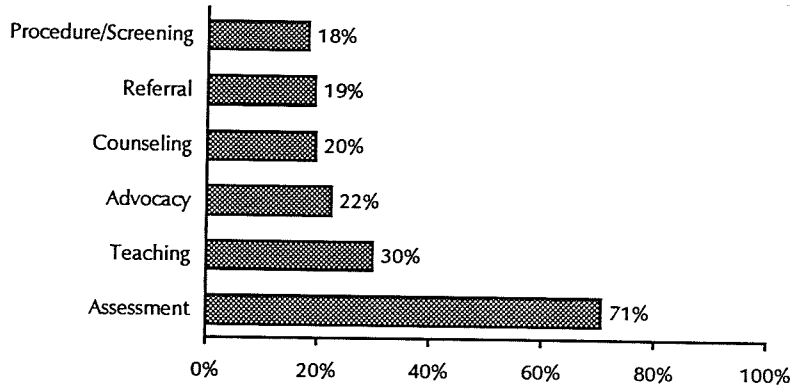
Percentages total more than 100 because more than one category was diagnosed in some visits.

Source: Compiled by Auditor's office from program data.

Field staff provide six broad types of services: assessment, advocacy, counseling, referral, teaching, and procedures/screening. As shown in the graph below, the most frequent intervention is assessment. Overall, about 71% of all the visits involved some form of assessment. Procedures and screenings, which may require a nurse, were performed in only 18% of maternal child visits. The most frequent combination of interventions was assessment and teaching. About 17% of all visits involved this combination.

Percentage of Maternal-Child Visits with each Service

Exhibit 14



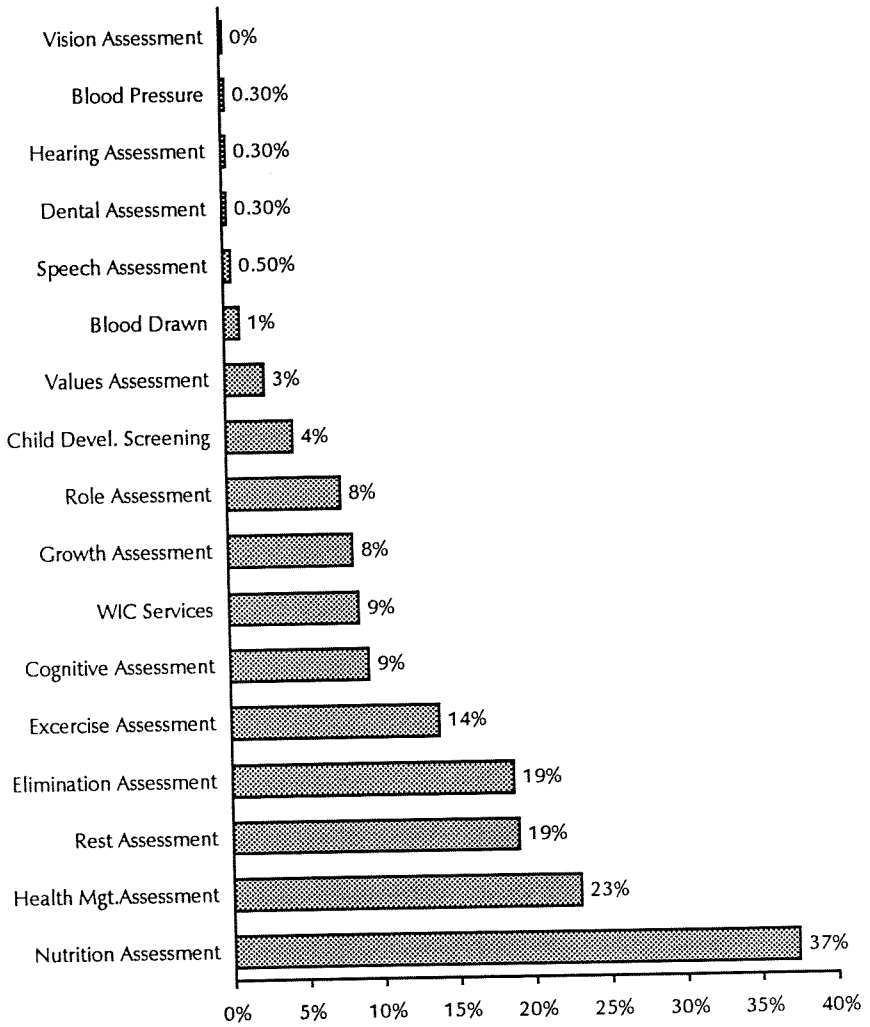
Source: Compiled by Auditor's office from program data.

Client assessment is an important element of the nursing profession. In many of the programs we reviewed, paraprofessionals have also been trained to use a variety of screening and assessment tools traditionally used by nurses.

Nurses have a broad range of skills relating to physical health, mental health, and community resources. However, we believe that a large portion of field activities could also be performed by trained paraprofessionals. We found that field staff performed relatively few procedures that drew on technical nursing skills. Less than 2% of the maternal-child visits involved immunizations, drawing blood, or taking blood pressure. The most frequent procedure was a nutrition assessment (37%), followed by health management assessment (23%) or rest assessment (19%). These assessments are frequently performed by paraprofessionals in other programs we examined. The chart below shows the percentage of visits by procedure. Percentages may not sum to 100% because more than one procedure can be performed on each visit.

Procedures Performed at Maternal-Child Visits

Exhibit 15



Source: Compiled by Auditor's office from program and Vital Statistics data

Paraprofessionals could reduce costs to increase effectiveness

Increased use of paraprofessionals could make it more affordable for Field Services to raise the level of service to the families they serve. As indicated in the chart below, all of the other programs we contacted pay paraprofessionals about 40-50% of a nurse's salary.

Exhibit 16

Salaries of Paraprofessionals in other home visiting programs

Program	Annual Salary	Percent of Field Nurse Salary
Neighborhood Health Inc.	$23,000	50%
Portland Impact Advocate	$18,374 to $20,462	42%
Healthy Start Hawaii Family	$19,000 to $21,000	40%
Indianapolis County Health Dept..	$18,000	51%
Pima County Lay Health Workers	$16,600	51%

Source: Compiled by Auditor's Office

Some of the savings in reduced salaries may be offset by additional training and supervision costs. HFA programs typically use a ratio of professional supervision to paraprofessional of 1:5. Hawaii Healthy Start provides its outreach workers with a 6-week orientation, an additional two weeks of training after three months on the job and one day of in-service per quarter on an ongoing basis.

Advocates argue that there could still be net savings and potential gains in more effectively reaching high-risk and minority populations. Use of paraprofessionals has been seen as a way to improve access and increase preventive services. Those providing health services to minority and rural populations advocate the use of indigenous "lay workers" because of their effectiveness as role models and their increased empathy with clients.

The Health Department is exploring increased use of paraprofessionals in home visiting. During our audit, Field Services received Federal funding and began implementation of its African-American Birth Outcomes project. The goal of the project is to identify the factors associated with poor birth outcomes for African-American women and develop a program model based on these findings. The plan is to use teams of paraprofessionals and nurses to provide home visits. This program is grant-funded and will be organizationally integrated with the rest of Field Services and used as a model for expansion to the other field teams.

Productivity Should be Examined

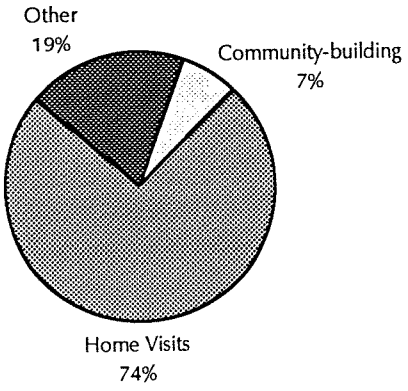
Field staff include general field nurses, nurses assigned to special programs, and outreach workers. While all staff make home visits, general field nurses have this as their primary responsibility. Overall, field staff make an average of 1.4 visits per eight-hour working day.

We analyzed productivity data of general field nurses in particular and found that they made an average of 1.9 visits per eight-hour working day. Each visit requires an average of 50 minutes with the family, and about 2.5 hours for scheduling, travel, record keeping, and follow-up.

This 2.5 hours includes a share of time spent on visit attempts, which do not result in client contact because clients cancel or are not home when the nurse arrives. The remainder of a field nurse's average day is spent on activities such as training, meetings, and community-building efforts. The exhibit below shows the percentage of time recorded for general field nurse activities. Department managers note that community-building activities may not be accurately covered by time and effort reports.

Proportion of Time Devoted to Nursing Activities

Exhibit 17

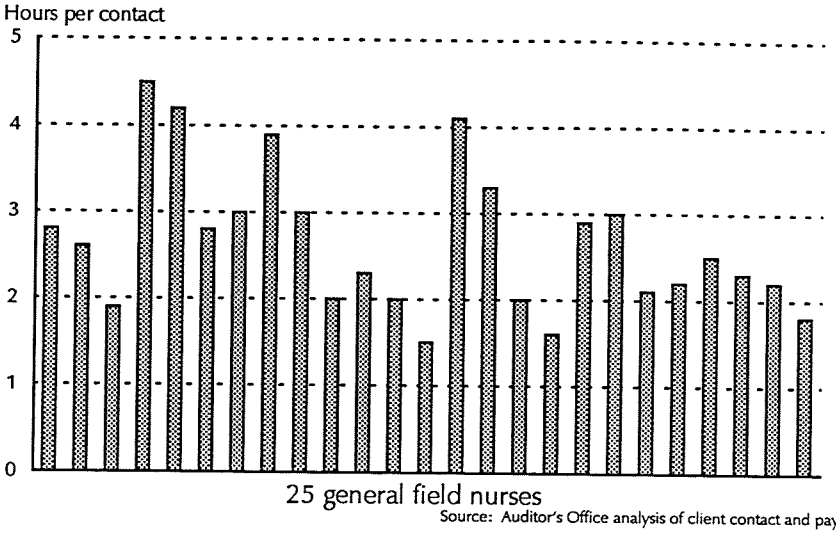


Source: Auditor's Office analysis of Time and Effort data.

The time nurses spend on each client contact is closely related to the number of contacts they can make. We found variation in the average time each nurse spends per client contact, including related activities such as travel and paperwork. Exhibit 18 shows some nurses spending over four hours per contact, while others spend less than two hours.

Variation in Time per Contact by Nurse

Exhibit 18



Source: Auditor's Office analysis of client contact and payroll data.

We contacted similar field nursing programs in other jurisdictions, as well as home visiting programs operated by Legacy and Tuality, two local health maintenance organizations. When calculated on a comparable basis, Multnomah County home visit productivity levels appeared comparable to most of the other jurisdictions, except Pierce County which is higher, as are the Legacy and Tuality programs. While some of the difference may be due to dissimilar client profiles or service activities, our observations of the Legacy program indicated that the needs of the clients and their families were as complex as those served by Field Services.

Comparison of home visit productivity

Exhibit 19

Program	Visits per day
Public Health Nursing Programs	
Tacoma-Pierce Co., WA	2.1 to 2.3
Seattle-King Co., WA	1.6 to 2.4
Multnomah Co., OR	**1.9**
Clackamas Co., OR	1.8
San Bernardino Co., CA	1.8
Private Home Visiting Programs	
Legacy Visiting Nurse Assoc.	2.7
Tuality Home Health	2.4
Denver, CO (Olds Program)	1.8 to 2.1

Source: Compiled by the Auditor's Office

Activity standards are weak

In general, when productivity has failed to meet projections, management has lowered expectations, but when productivity has exceeded expectations, contact standards have not been increased to reflect and preserve efficiency gains.

Before 1989 Field Services management maintained a standard of 65 client service contacts per month per full-time nurse. The majority of nurses were unable to meet this standard consistently. To address this disparity, two mid-level managers, with the assistance of a management consultant, conducted a time productivity study in 1989. The study was based upon information from 14 field nurses, who estimated the time required for each element of a client visit. Management adopted a new standard of 50 client service contacts per month for a full-time nurse.

However, many of the facts and assumptions on which the standard of 50 contacts per month was based are no longer valid. For example, the standard assumed that each maternal-child visit involved an average of 2.5 client contacts (counting the mother and children) whereas data for 1996 indicates that each visit produced only 1.3 contacts. In addition, the standard was developed when 10% of a general field nurse's practice was devoted to elderly clients. Now all elderly clients are referred to Multi-Disciplinary Team nurses, and general field nurses focus almost exclusively on pregnant women, mothers and children.

We found that current standards are not consistently developed by supervisors and are not always achieved by staff. Most field staff have a monthly standard based on the 50 contact standard, which is adjusted by the supervisor for time devoted to special assignments and community-based activities. The average monthly standard for a full-time nurse in 1996 was about 42 client contacts. We examined these 1996 contact standards and found inconsistencies among teams and staff with the same program assignments. We also found that, for various reasons, visit expectations for the field nurses on the Mid and East County teams were generally lower than for those on other teams. Monthly visit standards for the nurses assigned to the Family Centers ranged from 24 to 52. One Family Center nurse did not have a visit standard.

Higher productivity may be possible

Based upon our examination of the standards and productivity differences among nurses, we believe there may be opportunities to increase the efficiency of home visiting. The cost of about $220 per

visit suggests opportunities for automating record keeping, scheduling, and other functions, which could free nurses to spend more time with clients.

Efficiency could also be improved by reducing the amount of administrative work (preparation, charting, case management follow-up) associated with each home visit. Nurses complained about the paperwork burdens of charting and record keeping. Field Services has made an effort to reduce charting time by developing simpler forms.

Since we began our audit, the Health Department and Field Services have taken steps to reduce certain non-visit responsibilities of field nurses. In the fall of 1996, the Health Department made a concerted effort to reduce meeting time by requiring that all existing departmental committees be re-chartered or disbanded. In February 1997, Field Services eliminated the referral intake responsibility of field nurses, which could increase home visit productivity by 1,200 contacts per year. Such actions have reduced field nurse time for direct and departmental overhead by over 50%.

Another factor that reduces productivity is visits to clients who are not home. In some cases nurses make unscheduled visits to clients who have no phone or to clients they think might refuse service if contacted by phone. Unannounced visits can also provide the opportunity to observe the home and family in a more "natural" state. However, a nurse making an unannounced visit is also far more likely to find that the client is not home.

In 1995 Field Services began to collect automated data on not-at-home visits, but does not record whether the visit was unannounced. Although we could not verify that reporting is complete, for some nurses not-at-home clients represented 15-20% of maternal-child visits.

We recommend that Field Services continue to monitor not-at-home visit rates to determine whether the cost of unsuccessful unannounced visits outweighs the value of the successful surprise visit.

Field Services and the Health Department are committed to another county goal, community-building efforts. These efforts are closely related to the principles of public health nursing. In 1996 field nurses devoted about 7% of their time to community connection activities. Nonetheless, commitment to these activities by field nurses may reduce the program's ability to deliver effective levels of home visits to high-risk families.

Federal and State Revenues Could Increase Visits

Field Services could also increase visits by increasing State and Federal revenues. Increases in these revenues could be used to increase service levels to those that are likely to have an impact. Field Services has been highly reliant on County general fund dollars and Medicaid is one of the few alternative sources of revenue.

Several years ago, Field Services made an effort to maximize "billable visits" by prioritizing services to clients on the Oregon Health Plan and identifying insurance status promptly. As a result of this effort, revenues increased by 24% between FY95 and FY97 from $655,000 to just over $791,000.

Until the end of our audit, Field Services was billing the State for a maximum of four maternity case management visits, based on a conservative reading of Oregon Medical Assistance Program regulations. We found these regulations do not apply to the Department because of its status as a Federally Qualified Health Center. We clarified this interpretation with the State Office of Medical Assistance.

When the State Health Division first established the mechanism for local health departments to bill for targeted case management services to children, the regulations required that services be delivered by a registered nurse. In early 1995, these regulations were revised to permit billing for services to children by paraprofessional staff. Despite this change, the Field Services program has not billed for these visits.

We believe that the program could retroactively bill for Maternity Case Management services back one year. This would generate at least $118,000 in revenues immediately, and $118,000 in additional revenues on an ongoing basis. The projected revenues for additional services to children are minimal, but we recommend that they be pursued. All of our estimates are conservative, since they are based on current practices under restrictive billing constraints. We believe that the County's FQHC status removes restrictions on the number of prenatal and postpartum visits that can be reimbursed.

The current interpretation of Medicaid regulations may also limit program effectiveness. Billing for only four maternity case management visits creates a limit on services that may not be clinically appropriate in all cases, and may reduce the effectiveness of the service. In the most effective programs, pregnant women received an average of 8 prenatal visits and 6postpartum postpartum. Under the currently understood billing constraints, Field Services provided an average of 2 prenatal and 2 postpartum visits to the pregnant women served. With the ability to get Medicaid reimbursements, Field Services could cover

the cost of additional staff, allowing them to increase the number of visits.

Further, the belief that visits to children by paraprofessionals are not billable has affected the tasks that are assigned to them. Despite the extended experience that several outreach workers have in the area of child development, they are directed not to deliver services to children.

In June 1997 we issued a preliminary memorandum on billing issues to the Health Department. We recommended that the Department bill retroactively for all eligible perinatal visits in the last year that had not already been submitted for reimbursement. We also recommended that the Health Information System be reprogrammed quickly to allow billing for all maternity case management services and child visits by outreach workers. The Health Department began retroactive billing in August and began billing for eligible maternity visits in November. The recommended change for child visits by outreach workers has been made.

We also identified some lost revenue for services to clients on certain Health Plans. Both the Good Health Plan and Kaiser receive a capitated amount of Medicaid funding to support maternity case management services for clients on their plans. The Good Health Plan contracts with the Health Department for one of their nurses who focuses on home visits to Good Health clients. Until quite recently Field Services has conducted home visits to Kaiser clients and has been reimbursed directly by OMAP. If the program continues to provide services to these clients, it should develop a way to bill Kaiser, or set up a contract similar to the one with the Good Health Plan.

Target services to ensure results

Increased use of paraprofessionals, greater productivity, and additional revenues may not be sufficient to raise service levels to those delivered in the Olds programs. Bringing current service levels in Multnomah County to levels proven to be effective would require about $11.7 million in additional resources, given the number of families currently served. It is clear that Field Services must also concentrate its services on a smaller number of clients.

Over the past several years, Field Services has shifted staff resources to focus increasingly on pregnant women, mothers, babies, and young children, and away from general health visits for adults and the elderly. Special programs have been developed to visit more families, either with short-term services or through collaborative work with other agencies. From FY92 to FY97 the total number of contacts provided

to pregnant women, mothers, babies, and children increased from about 10,000 per year to 16,000 per year. However, the overall level of service per family has declined.

During the 1980's, Field Services used a risk classification tool that tied service levels to the family's needs. In 1991 the program replaced this tool with a simpler priority tool to rank its referrals. During our audit, the Field Services program discontinued use of the priority tool. In order to ensure that visits are effective, Field Services will need to develop new methods and criteria for targeting families so that a sufficient level of services can be provided to those who are at highest risk.

The program currently serves a small portion of the maternal-child population in the County due to limited resources. Targeting more services to fewer families will exclude even more women and children. Nonetheless, Field Services must balance the desire to serve more families at a lower service level with the knowledge that divergence from the Olds model increases the risk that their efforts will have little measurable effect. To minimize adverse impacts on families, Field Services should refer those families not eligible to other agencies in the community.

Field Services should also reconsider its policy that clinics refer to them all new prenatal clients and instead rely on the clinics to assess clients and refer only the highest risk clients. Clinic and WIC staff already collect a broad range of background data on prenatal clients, and Field Services could provide them with clear guidelines on which clients to refer.

Recommendations

To improve the health and well-being of families served, Field Services should modify its Maternal-Child program to be more consistent with successful programs.

I. Field Services should ensure that home visit efforts are conducted in a manner similar to programs that have proven to be effective. Specifically Field Services should:

   A. Develop criteria to insure that services are targeted to high-risk pregnant women, mothers, and babies.

   B. Establish and maintain maximum caseloads.

   C. Adopt a more intensive visit schedule with well-defined criteria for increasing or decreasing visit frequency.

   D. Begin services prenatally and insure that services are delivered until children are at least 2 years of age.

   E. Develop service protocols and train staff in their use.

   F. Strive to hire more minority staff.

II. To raise the level of services to one which is likely to have an impact on high-risk families, Field Services should:

   A. Use paraprofessionals recruited from the community.

      1. Field Services should study the use of paraprofessionals in other jurisdictions to develop a job classification, appropriate nurse/paraprofessional ratios for teams, service protocols, and adequate training and supervision methods to insure effective services.

   B. Examine the productivity of its nurses for possible improvement.

      1. Field Services should conduct time studies, monitor the practices of the most productive nurses, review productivity levels of other agencies, and establish standards that can be used as a basis for evaluating performance.

2. Field Services should continue to identify administrative and other duties that could be reduced to provide more time for home visits.

3. Field Services should investigate automation or other means to reduce the amount of paperwork and other duties related to home visits.

4. Field Services should evaluate the costs and benefits of unannounced visits.

5. Field Services should evaluate the importance of its community-building and other activities compared to home visitation for high-risk families.

C. Continue its efforts to maximize the State and Federal resources supporting the program.

1. Field Services should insure that all eligible services are billed and reimbursed by Federal or State resources

2. Field Services should develop the capability of billing services to third party insurance providers.

D. Insure that it serves its high-risk clients at an intensity that produces intended results.

1. Field Services should develop a priority system to allocate its limited resources to the maximum number of families it can effectively serve.

Performance Data and Customer Access

Shortly after she was elected Chair of Multnomah County's Board of Commissioners, Beverly Stein announced her commitment to promote continuous quality improvement and high productivity in the County. The initiative is called the RESULTS campaign, to capture the goal of Reaching Excellent Service Using Leadership and Team Strategies.

The Auditor's Office contributes to the RESULTS campaign by including analyses of the use of performance data and customer access when it audits specific County programs and services.

Performance data

As part of the RESULTS initiative begun by the County Chair, all County Departments received training in performance measurement and were asked to develop and submit measurable outcomes (Key Results) for their programs with their budget proposals for FY94-95. These measures are tracked in subsequent budgets. Key Results are intended to assist policy makers in evaluating programs and provide a tool for management and staff to monitor their progress toward the achievement of goals related to the program.

We evaluated the four Key Results submitted by the Health Department's Field Services program based on criteria defined in the literature on performance measurement.

In their FY97-98 Budget the stated goal of Field Services is to "increase the chance that children will live in safe, supportive families and communities and that their growth and development is age-appropriate."

Many of the field staff were not familiar with the Key Results for their programs, and it was not clear that managers were tracking them. Field managers were not able to provide us with documentation on how all Key Results were calculated. However, we were able to validate measures published in the budget with other automated data used in our audit.

Three out of four of the program's Key Results relate to service levels rather than outcomes. One of these measures, increase in high-risk women served, is affected more by State-level changes in Medicaid eligibility than in program efforts. The basis for measurement of this Key Result has not been clearly defined. We recommend that the program develop an alternative outcome measure or measures related to the overall goals of Field Services. The Healthy Start program

operating in 12 other Oregon counties has defined a number of intermediate outcomes which could also be used by the Field Services program.

Our specific evaluations of each Key Result follow. Detailed recommendations are included under each of the criteria we reviewed.

Measure #1

Annual percentage increase in the number of high risk pregnant women (i.e. Medicaid-eligible) who receive maternity case management services through home visits.

	1994-95 Actual	1995-96 Estimate	1996-97 Actual	1997-98 Projected
Reported levels	NA	15%	12%	5%

Criteria	Met?
Clear, concise and closely related to mission and goals *Program should develop an alternative measure that is more closely related to mission and goals, and affected by program activities. If retained, wording of measure should be better aligned with what is measured.*	No
Focused on outcomes and results *Program should develop a measure that is related to outcomes and not merely service levels.*	No
Oriented toward customers	Yes
Data readily available	Yes
Data reliable and valid *If retained, document how the measure is calculated including data sources and specific definitions of terms*	No
Useful and used by personnel *If managers do not find useful, develop a new measure*	No
Understood at all organizational levels *Ensure that staff are aware of the measure for their program.*	No
Analyzed over time against reasonable standards *This measure is affected more by State-level changes in eligibility for the Oregon Health Plan than by program activities.*	No

Measure #2

Increase percentage of families with newborns living in Family Center (PCDS) service area offered initial growth and developmental assessment and/or referral for health care community based services.

	1994-95 Actual	1995-96 Estimate	1996-97 Estimate	1997-98 Projected
Reported levels	80%	85%	85%	85%

Criteria	Met?
Clear, concise and closely related to mission and goals *Program should develop an alternative measure that is more closely related to mission and goals for entire Field Services program. This measure relates to the activities of only four nurses who are assigned to work with the Family Centers.*	No
Focused on outcomes and results *Program should develop a measure that is related to outcomes and not merely service levels.*	No
Oriented toward customers	Yes
Data readily available	Yes
Data reliable and valid	Yes
Useful and used by personnel *If managers do not find useful, develop a new measure.*	No
Understood at all organizational levels *Ensure that staff are aware of the measure for their program.*	No
Analyzed over time against reasonable standards *It is not clear whether the program could realistically expect improvement above the 80-85% level achieved over the last three years.*	No

Measure #3

Rate of adequate prenatal care in the Brentwood-Darlington area

	1994-95 Actual	1995-96 Actual	1996-97 Actual	1997-98 Projected
Reported levels	87%	73%	NA	85%

Criteria	Met?
Clear, concise and closely related to mission and goals	Yes
Focused on outcomes and results	Yes
Oriented toward customers	Yes
Data readily available	Yes
Data reliable and valid.	Yes
Useful and used by personnel	Yes
Understood at all organizational levels	Yes
Analyzed over time against reasonable standards	Yes

Measure #4

Increase percentage of teen mothers assessed for health, social and parenting needs

	1994-95 Actual	1995-96 Actual	1996-97 Actual	1997-98 Projected
Reported levels	83%	83%	85%	90%

Criteria	Met?
Clear, concise and closely related to mission and goals	Yes
Focused on outcomes and results *Program should develop a measure that is related to outcomes and not merely service levels.*	No
Oriented toward customers	Yes
Data readily available	Yes
Data reliable and valid.	Yes
Useful and used by personnel	Yes
Understood at all organizational levels	Yes
Analyzed over time against reasonable standards.	Yes

Public Access

In the 1995 audit, *County Services: Help citizens find their way*, we examined five health clinics. As follow-up to this audit, we returned to these sites to determine if recommendations had been followed and public access improved. We found substantial improvement in most areas with a few problems still unresolved.

In the previous audit and in this follow-up we found deficiencies that were the result of remodeling. In our prior review, a citizen trying to access the East County clinic from the street could have become confused due to inadequate signage. An employee parking lot was not adequately identified and a substitute entrance was difficult to find. Since our audit, these conditions have been greatly improved and a citizen can easily find parking and the main entrance from any approach. Inside signage could still be improved. Signage over the reception desk only states "Form one line." Signage for the appointment desk is small, not easily identifiable or professionally done.

In this follow-up, the Northeast Clinic was being remodeled. A lack of signage from the north approach has not been corrected. Signage from the south approach has been improved, and confusing signage in the parking lot has been removed. While there is signage for two other programs in the same building to guide the citizen from the parking lot, there is no signage to identify the Health Clinic. Further, signage on the door is easily missed. Once inside the entrance, a citizen would most likely have to enter the eye care clinic and ask directions to the health clinic, on the 2nd floor. As noted previously in our audit, a reassurance sign in the entryway or on the landing directing the citizen to the health clinic would be an improvement. The manager indicated that obtaining temporary signage was slow and that the building had been under construction for a considerable period of time. We would recommend that the Health Department direct special attention to citizen access when building construction or remodeling is underway.

The Health Department has substantially improved citizen access to the McCoy Building. The awning over the main entrance accurately identifies the County occupants – the Health Department – and is easily recognizable from the street and both street corners. Once inside, remodeling to add the Food Handlers Program and a small convenience store to the street level reduces the impersonal and confusing nature previously found. The directory near the elevators is alphabetical, except that the Health Clinics are listed out of order at the beginning. The directory information is helpfully repeated at the elevator entrance and once inside.

Signage for the STD clinic on the 6th floor is also improved. Upon exiting the elevator, clear and readily visible signage immediately guides the citizen to "Reception/Check-in." The addition of this type of signage to the East County clinic would be helpful.

Citizen access to the Mid-County clinic is probably as good as can be obtained. The building is not situated well to the street, but building and parking lot identification are greatly improved. Signage inside the clinic is more than adequate and a citizen would easily find the clinic they were seeking.

Access to the North clinic is also improved. As one nears the building, a large sign on the front lawn identifies the program, and the parking lot has an additional sign that is very easy to interpret. Any confusion that might arise from seeing two opposing entranceways is avoided with further signage. Once inside, the lobby is so small that additional cues are not necessary.

We noted additional problems with field offices specifically. Relatively few clients are visited in an office setting and the need for public access may not be as strong. Two of the offices for field nurses are unidentified and inaccessible to the public. At one office, it was clear that staff are routinely parking in the portions of the parking lot closest to the clinic requiring citizens to park further away.

In our 1995 audit, we noted that several programs used automated answering systems despite the fact that call volume averaged less than 1 call per hour. We recommended that managers consider not using automated systems unless the call volume was high enough to affect staff productivity. Five of the telephone numbers with less than 1 call per hour were to Health Department programs. Automated answering systems are still being used for these five numbers. We did not examine new usage statistics to determine if volume was as low as in 1995, but would hope that the Health Department has reviewed these numbers since our audit.

Use of information

Systems for collecting and analyzing data are critical for effective monitoring of program performance and results. We found the Health Department to be stronger than many County departments in its collection and analysis of automated data. The Department has an extensive staff of analysts in the Planning and Development Unit. However, we found that neither the Health Information System (HIS) nor the Planning and Development Unit adequately support effective management of Field Services.

The mainframe-based HIS was developed in the late 1980's . It was designed primarily to meet grant requirements and billing of services in the primary care clinics. Very few of the field staff have the hardware or the training to use automation to manage their caseloads effectively. Each team has a limited number of PCs and these are used primarily by clerical staff to enter service data. Field Services managers did not begin regularly receiving their own management reports until 1996. Since that time, their requests for special analysis or modifications to reports or billing systems generally receive low priority.

We attribute some of the problem to the lack of flexibility in the HIS. However, we also believe that the fact that Field Services does not have enough staff with expertise in automation and data analysis has made it difficult for them to advocate for their needs in this area. The Health Department is presently conducting a needs assessment and has received funding to either replace or substantially upgrade its information system. It is critical that Field Services have input in this process so that the new system will meet their needs. We thus recommend that management provide Field Services with the support of data analysts.

We identified several specific problems relating to measuring outcomes in this program. First, although the Field Services program views its customer as the family, and not the individual client, the automated information system does not presently have the capability to link the records of family members. Without this, the program cannot evaluate services and outcomes at the family level. As the Health Department seeks to upgrade its system, this capability should be a priority.

Second, the field services program has defined a set of closure codes that needs to be modified to capture service outcomes adequately. The codes are not mutually exclusive, and not all staff have been trained to ensure that they are consistently used. We recommend that program managers and staff develop a new set of closure codes that will better capture outcomes. Another related problem is that staff are not consistently getting closure data onto the HIS. Overall, about 35% of

the clients we analyzed had missing closure data. These included clients who had not been visited for at least six months and as long as 3 years. The problems with closure data were especially frequent on the Brentwood-Darlington and Southeast Field Teams.

Third, because the program seeks to impact birth outcomes, it would be useful for staff to develop the capacity to merge their contact data with the County's vital statistics data. We recommend that this be pursued.

Responses to the Audit

Beverly Stein, Multnomah County Chair

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February 13, 1998

To: Gary Blackmer, County Auditor

From: Beverly Stein, County Chair

Re: Audit on Home Visiting: Focus Resources for Healthier Families

Thanks to you and your staff for your audit on Field Services. It is consistent with the high quality of research, analysis, and thoughtful process that the County has come to value and expect from your office.

I am pleased that you chose field services, because county personnel working in this area are a particularly crucial point of access for some of our residents who find it difficult to receive information or services by more conventional means. We know from the literature and common sense that reaching individuals and families who are not otherwise connected to health, mental health, employment, and socialization resources can be both humane and cost effective.

You have given us several concrete ways to improve our service and our effectiveness. I am particularly excited about the enhanced use of outreach workers. Implementation of this recommendation will assist on many fronts - cost effective expansion of services, creating entry level position for members of the community who want to help their neighbors, challenging others who deliver home based services to look at the range of skills and experience needed, and whether this is a model that can be used in other places.

I also believe we need to do more work as a county on the use of automation to reduce the amount of paperwork and increase the accessibility of information. I have asked Ben Berry, the County's CIO, to work with the health department on models which might assist their efforts.

I am please with the thorough response from the Health Department. They have embraced your recommendations and are already starting to implement the administrative and financial changes you recommend.

Thanks again for your work in the public interest.

c. Billi Odegaard
c. Jan Sinclair
c. Vickie Gates
d. Ben Berry

Health audit. Doc.

MULTNOMAH COUNTY OREGON

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February 12, 1998

Mr. Gary Blackmer
Multnomah County Auditor
1120 SW Fifth, Room 1410
Portland, OR 97204

Dear Mr. Blackmer:

Please accept my sincere appreciation for the audit conducted of Multnomah County's Health Department, titled "Home Visiting: Focus resources for healthier families." The Audit Team: Kathryn Nichols, John Hutzler and Ellen Haines, are to be commended for producing a professional and objective report, which will be incredibly useful to us as we continue our efforts to improve our field services.

Our Health Department is in the process of Strategic Planning efforts. We have completed the Department's overall goals on which we plan to focus for the next several years:

--Improvement of key community health indicators as measured by specific risk factor, morbidity, and mortality rates

--Improvement of access to health care for all residents

--Integration of departmental core management values into service delivery

--Identification and achievement of best business practices

Recommendations contained in this audit are consistent with key departmental initiatives (as noted above) to improve our program outcomes and our business practices.

I have asked Jan Sinclair, Director of Neighborhood Health Division—which includes Field Services—to prepare for me initial strategies in which recommendations from the audit are incorporated (attached).

I am particularly interested in pursuing increased use of paraprofessional home visitors, to be integrated into all of our field teams. Such a strategy might indeed assist in increasing the diversity of our field teams, and enhancing our effectiveness in reaching high risk and minority populations.

Again, thank you for a competently prepared report, which will serve as a blueprint for our agency in future years.

Sincerely,

Billi Odegaard

Billi Odegaard, Director
Health Department

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TO: BILLI ODEGAARD, Director Health Department

FROM: JAN SINCLAIR, Director Neighborhood Health Division

RE: Response to Audit Report: 'Home Visiting: Focus resources for healthier families'

DATE: February 12, 1998

Field services management also thanks the audit team for their thoughtful analysis and review of field services. Many of their comments and recommendations mirror the issues and concerns field managers and staff have deliberated over the past few years. The report provides some structure to the issues and recommendations to pursue. We will incorporate these recommendations in our strategic planning for the program. We have developed plans that include some immediate actions as well as long term actions. Some will require reprogramming of current budgets and staffing. In addition we will look for opportunities for additional revenues. This is an exciting opportunity to improve our service delivery to achieve our mission of healthy people in healthy communities.

Initial strategies to address specific recommendations are outlined below.

Audit Recommendation I

Field Services should ensure that home visit efforts are conducted in a manner similar to programs which have proven to be effective, specifically develop criteria to focus services, maintain maximum caseloads, adopt intensive visit schedule, provide services prenatally through 2 years of age, use service protocols, increase diversity of staff.

Plans

1. The audit report references the work done by David Olds as one of the primary program models to follow. David Olds will be in Oregon in May to do a presentation to at the Association of Oregon Public Health Nurse Supervisors spring meeting. In addition to attending his presentation, we will

arrange for some individual consultation with him to review the current field services program and seek his recommendations. Oregon Health Division is also arranging for him to consult with Department of Human Resources administrators and Jan Wallinder, Field Manager will participate in those meetings.

2. We have recently learned that the David Olds research group is looking for 25 sites around the country to be demonstration sites to test the replication of their research and program model. Although they do not have funding for staff, they would provide protocols and training for implementation of their model. We will further research this option and evaluate its appropriateness for the department at this time.

3. We will identify a staff person who has responsibility to review our current protocols and priority system and make recommendations regarding criteria for eligibility for services, what caseload size should be and develop appropriate service protocols. These recommendations will need to be reviewed against our current funding source requirements, which may have other priorities and expectations.

4. Hiring more minority staff is an ongoing concern to Field Services management. Since the conclusion of the audit we have been successful in recruiting two Hispanic nurses. One of the ways to recruit more diverse staff has been to designate language requirements for a position. As we refill positions we will continue to review language needs to increase both Spanish and Vietnamese speaking. As the Health Department and Employee Services change the recruitment responsibilities, we will advocate for more assistance for recruitment of minority professional staff. This may mean more assertive work with schools of nursing both in Oregon and other states. Another option for increasing the diversity of staff is the increased use of paraprofessionals, particularly staff from the community. This will be a key consideration in the development of the paraprofessional role, described below.

Audit Recommendation 2

To raise the level of services to one which is likely to have an impact on high risk families, Field Services should: use paraprofessionals recruited from the community, examine the productivity of its nurses, maximize State and Federal resources, insure that they serve the high risk clients at an intensity that produces intended results.

Plans

1. Have hired a coordinator with previous experience of developing a paraprofessional family home visitor program. Position is responsible to

develop a family home visitor paraprofessional role, including service protocols, job expectations, job description and classification, supervision needs, training needs and recommended implementation plan.

2. For 98/99 budget, will add 6 family home visitors to Field teams by January, 1999 using existing funding, by decreasing community health nurse staffing.

3. A requirement of the Department's strategic plan is to establish appropriate productivity standards across all Divisions. Our objective is to have baseline productivity data and standard by July, 1999.

4. Using the experience of the Connections program which currently has CHNs doing their hospital assessments on laptops and sending electronically we can explore other options for automating paperwork. Currently only one field office is on the Department's LAN with limited number of personal computers available. We will request assistance from the Department's medical records consultant to review automated record keeping options.

5. Another key objective in the Department's strategic plan is to modernize accounts receivable management practices. We have been working closely with our Business services to review Medicaid billing and make the recommended changes in billing procedures. The Department concurs with the audit report that improvements may be made in billing revenues with a more aggressive interpretation of Medicaid regulations.

As noted in the audit, retroactive billing has been initiated. We are currently resetting visits from the six month period ending June 30, 1997. Visit counts at FQHC(Federally Qualified Health Center) billing rates support the dollar estimate in the audit, an estimated $118,000 annually.

Permanent changes to our Health Information System have been made. All Maternity Case Management (MCM) visits have been sent on initial billing at FQHC rates since November.

Finally, Kaiser ended its capitation agreement with OMAP (Oregon Medical Assistance Program) in February 1998, for MCM services. This change in the Kaiser contract will allow us to continue billing OMAP directly for these services. We anticipate getting a letter from OMAP allowing us to back bill for all perinatal visits to Kaiser clients since October 1997.

6. The Oregon Health Division is considering preparing a legislative concept for the 1999 session about home visits. One of the field managers is participating in the workgroup sessions looking at the Babies First program

and the Commission on Children and Families Healthy Start program for potential expansion.

These are initial strategies to address the recommendations. Additional strategies will be developed as teams develop action plans as part of the Health Department's Strategic Plan development.