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ABSTRACT

The Medically Fragile Inservice for Related Services Teams (M-FIRST) project developed, evaluated, and disseminated model inservice practices centering on the provision of competency-based training to school and community personnel working with young medically fragile children in school settings. The M-FIRST goals focused on developing an inservice training model that utilized current knowledge of best practices regarding adult learning, state of the art technical skills and service delivery models, and interdisciplinary team development strategies. The teams typically included school nurses, occupational therapists, physical therapists, parents, teachers, administrators, paraprofessionals, and other school agency and community personnel. The teams participated in team development activities and team-based evaluative assessments designed to track and analyze team functioning over time. Training was provided through a series of formal training sessions and technical assistance follow-ups. Project evaluation activities focused on the following areas: best practices in inservice education, knowledge change in competency areas, team process development, impact on district services, consumer satisfaction with training activities, team member assumption of the trainer role, validation of instrumentation, and project dissemination and material development. (Contains 11 references.) (Author/JDD)

I. Title Page

Inservice Training for Related Service Personnel Serving Medically Fragile Children Ages 0-8

The Medically Fragile Inservice for Related Services Teams Project (M-FIRST)

Final Report

Inservice Training Programs for Related Service Personnel
Early Education Program for Children with Disabilities (EEPCD)
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II. Abstract

The Medically Fragile Inservice for Related Service Teams (M-FIRST) project developed, evaluated, and disseminated model inservice practices centering on the provision of competency-based training to related services and other school and community personnel working with young medically fragile children in school settings. Collaboration between Oregon Health Sciences University (OHSU) University Affiliated Programs (UAP) and the University of Washington (UW) University Affiliated Programs as well as the SEAs of Oregon and Washington allowed for state of the art, broad based support for project activities.

The M-FIRST project goals and activities focused on developing an inservice training model that utilized current knowledge of best practices regarding adult learning, state of the art technical skills and service delivery models, and interdisciplinary team development strategies. M-FIRST staff recruited six broadly varying urban, suburban, and rural sites (three in Oregon, three in Washington) to utilize in the model development and training components of the project. In each site, a team of interdisciplinary services providers (typically including school nurses, OTs, PTs, parents, teachers, administrators, paraprofessionals and other school agency and community personnel) was developed. The teams, averaging six to seven members, participated in team development activities and team based evaluative assessments designed to track and analyze team functioning over time. The team members also gave periodic formal feedback regarding perceived training needs utilizing an exhaustive needs assessment tool developed by OHSU and Oregon Department of Education staff.

From this data and project staff's knowledge of current trends in the field of service provision to young medically fragile children, training activities were planned and provided through a series of formal training sessions and numerous technical assistance follow-ups. Other data gathering tools focused on looking at the number, severity, and technical needs of young medically fragile children in school settings, as well as staffing patterns and district or agency protocols and guidelines.

Project evaluation activities validated M-FIRST as an effective model of staff inservice training. Evaluation of the effectiveness of the model development focused on the following areas: 1) best practices in inservice education, 2) knowledge change in competency areas, 3) team process development, 4) impact on district services, 5) consumer satisfaction with training activities, and 6) team member assumption of the trainer role, 7) validation of instrumentation, and 8) project dissemination and material development.

Dissemination activities have brought the M-FIRST model to national attention. Through project staff presentations at regional and national conferences, articles describing the model, and the completion and dissemination of a training manual (currently in press), the M-FIRST model has emerged as an innovative force in the field for personnel working with young, medically fragile children.

Funding was requested and approved for 3 years of Outreach activities for the M-FIRST project, beginning July 1, 1993.

III. Table of Contents

IV. Goals and Objectives of the M-FIRST Project

OBJECTIVE 1.0 to develop a model inservice training program for related service personnel that is based on best practices that are recommended for inservice training.

Activity 1.1 Hire needed personnel, a .25 FTE secretary at each project site (CDRC and CDMRC) to do the routine secretarial activities connected with the project

Activity 1.2 Assemble an advisory committee comprised of representatives from Washington and Oregon to help guide the activities of the project

Activity 1.3 Monitor the literature on best practices

Activity 1.4 Develop the training curriculum

Activity 1.5 Contract with consultants

Activity 1.6 Select training materials

Activity 1.7 Develop a resource library

OBJECTIVE 2.0 Implement the model inservice training program in the states of Oregon and Washington

Activity 2.1 Recruit participants

Activity 2.2 Arrange for university credit

Activity 2.3 Identify personal goals

Activity 2.4 Conduct training

Activity 2.5 Conduct follow-up activities

Activity 2.6 Provide participants with technical assistance needed to complete follow up plans

OBJECTIVE 3.0 Evaluate the effectiveness of the training model

Activity 3.1 Repeat the self-assessments

Activity 3.2 Conduct pre-post tests at the beginning and end of each training event to measure change in knowledge of factual information as a result of participating in the training program

Activity 3.3 Conduct Consumer Satisfaction Surveys following each training event
Activity 3.4 Analyze data from the evaluation activities to identify strengths and weaknesses in the training program and to determine needed changes

Activity 3.5 Make revisions in the training program based on conclusions drawn from the evaluation data

OBJECTIVE 4.0 Develop materials that will enable others to replicate part or all of the training model

Activity 4.1 Draft materials

Activity 4.2 Submit draft to field readers

Activity 4.3 Revise materials

Activity 4.4 Prepare materials for printing

Activity 4.5 Print materials

OBJECTIVE 5.0 Disseminate the materials nationally

Activity 5.1 Distribute publicity and advertising

Activity 5.2 Disseminate materials

V. Conceptual Framework

With the advent of P.L. 94-142 (EHA) in 1977 and more recently IDEA and the amendments reflected in P.L. 99-457, the population of children with special needs in public school early intervention programs has grown markedly. Not only has it grown, the severity and types of enrolled children have changed. Children with multiple and severe disabilities, including those with significant, life threatening medical problems, are now attending early intervention programs. Schools are now expected not merely to admit, but to educate safely "medically fragile" children who would have been confined to intensive care units of hospitals a few years ago (Rosenfeld, 1989), and those who emerge from state operated residential hospital and training schools as a result of the nationwide deinstitutionalization movement (Brodsky & Wilson, 1989). Although procedural requirements of existing law apply equally to all young handicapped children and the resulting individualized program decisions will affect each child's educational progress, the decisions made on behalf of the medically fragile child may also determine whether or not life is sustained (Billings, 1989).

Definition:

This project used the generic term medically fragile (in place of terms such as other health impaired, technology dependent, chronically ill and medically at risk) to refer to young children with significant health problems. Since the project involved the development of an inservice training program for related services personnel from both Oregon and Washington, a combination of the Oregon definition and the Washington description was used. Both are consistent with definitions appearing in PL 94-142 (20USC1401(1), (15), Sec 300.5) and the one more recently advanced by the Office of Technology Assessment, (U.S. Congress, 1987).

> Medically fragile refers to:
>
> a condition in which the absence of immediate health-related special skills care threatens the life or health of the child and the child requires a medical protocol to ensure his or her safety; and there is no foreseeable end to this condition (Brodsky & Wilson, 1989).
>
> Those diagnosed medically fragile fall within one of the following categories:
>
> 1. those whose chronic or urgent health related dependence continually or with unpredictable periodicity necessitates 24 hour/day skilled health care supervision and the ready availability of skilled health care providers for the individual's survival. Further, if the technology, support and services being received by the individual are interrupted or denied, he or she may, without immediate health care intervention, experience irreversible damage or death:
>
> 2. those individuals whose chronic health related dependence does not require 24 hours of supervision by a skilled health care provider, but for whom life threatening incidences are unpredictable. Without regular monitoring and the availability of licensed providers, the individual's condition will deteriorate such that the intensity of medical needs will increase:
>
> 3. those individual whose chronic health related dependence is predictable but necessitates

regular monitoring by skilled health care providers.

Problems Faced by Schools

Increasing Numbers. Nationally, the number of children with severe health impairments has doubled in the last 20 years. Most of the increase is a result of medical advances which have lengthened the life span of these children and the higher incidence of newborns who are drug dependent or have AIDS. About 80% of children with a chronic illness now survive childhood (U.S. Department of Education, 1986). Hobbs, Perrin & Ireys (1985) estimate that there are one million children under 18 years of age with a severe chronic illness that regularly interferes with activities on a daily basis. Generally, a 1-2% range is used to estimate the national prevalence figure (Brodsky & Wilson, 1989). Assuming a fairly equal distribution across this age span, the number of medically fragile children from 0-8 years would be approximately 529,000 nationally.

Recent surveys in Oregon tend to corroborate national estimates. Both the Oregon Department of Education and Providence Child Center (Brodsky & Wilson, 1989) found that there are approximately 1,000 medically fragile children in the state, a figure which closely parallels the 1-2% national estimate. A 1988 survey by the Association for Severely Other Health Impaired Children (Brodsky & Wilson, 1989), revealed a fairly even distribution of children with chronic illness across age ranges in Oregon. Therefore, there is good evidence that there are close to 500 medically fragile children in Oregon, 0-8 years of age. Although similar survey data is not available from Washington, it can be assumed Washington has approximately 875 medically fragile children in the 0-8 age range (based on the fact it has 75% more school age children than Oregon). Data from the Office of the Superintendent of Public Instruction reveals that in the last five years, handicapped enrollment is up 15% while regular school enrollment has increased less than 7%. Of particular concern, the Health Impaired category has grown by 108%. Procedures such as suctioning, catheterizations and gastrostomy feedings are done in 15-20% of districts (J. Maire, Personal Communication. Dec. 19, 1989).

Whether considered separately or together, school districts in Oregon and Washington are faced with providing appropriate early intervention programming for a large number of young medically fragile children. Are these children being adequately served? Consider the following:

Rural Nature of States. Although Oregon's and Washington's major urban areas contain approximately half their populations, a significant portion of their residents reside in rural areas along the coast and eastern portions of the states. In Washington, approximately two thirds of the school districts are second class districts with fewer than 2,000 students. Special education support statewide is generally adequate for most children who meet state and federal eligibility guidelines, but it is woefully inadequate for medically fragile children particularly outside of either state's urban centers. Otos and Maire (J. Maire & M. Otos, Personal Communication, Nov. 29, 1989) report that, for the most part, medically fragile children residing outside the metropolitan areas of Portland and Seattle/ Tacoma are underserved and do not receive the kind or amount of health related services they need.

Not only are school district services in Oregon and Washington inadequate for this special needs

population, health services provided by public and private agencies and individuals tend to be skimpy and scattered as well. It is not uncommon in either state to find a county health officer, responsible for providing school health/coverage, serving several large sparsely populated counties, each receiving once or twice a week coverage. Public health nurses are bogged down with large case loads scattered over wide geographical areas. Occupational and physical therapists, if available, are on the staffs of community hospitals, often miles from the school attended by the medically fragile child. Consequently, the medically fragile child in rural Oregon and Washington is usually denied not only the direct classroom health support needed, but also the services of someone who is able to coordinate the widely scattered community health services which might be made available to help ensure a safe and supportive education environment (J. Maire & M. Otos, Personal Communication, Nov. 29, 1989).

Lack of Staff Training Models. In testimony before the Task Force on Technology - Dependent Children in March, 1987, then Deputy Assistant Secretary for Special Education, Carol Inman (Inman, 1987) stated that the principles of "least restrictive environment" need to be emphatically reinforced in regard to children who are dependent on technology for survival, recognizing that it is these children who are most frequently found in restrictive environments -- hospitals, nursing homes or intermediate care facilities. She said the more we do to train school health personnel and the more we do to develop technology that can be attended to by school staff, the more it will allow technology dependent children to participate in non-restrictive classroom settings. She saw the role of the USDOE as being to support training and model development activities, leaving to state-education agencies the role of developing guidelines and training models.

The Oregon State Special Education Advisory committee has identified five priority areas. One of the five priority areas is low incidence with emphasis on children who are medically fragile. In May of 1989 the Department held a state planning conference to develop recommendations that will address the five priority areas. These recommendations were incorporated into the State Special Education Plan. This includes a commitment for state and federal resources being devoted to services for children who are medically fragile and their families. The state coordinator of regional services has developed a regional consulting nurse program and is providing supervision of this program through the Department of Educations regional program structure. This was made possible through the receipt of funding from the Oregon legislature for seven consulting nurse positions.

Washington is even further along in its efforts than Oregon. In July, 1986, then Assistant Superintendent of Public Instruction, Dr. Judy Schrag, formed an advisory group to begin addressing the many concerns of school districts, parents and the medical community regarding the medically fragile. This group has published a technical assistance manual (Billings, 1989) designed to assist Washington school administrators in the decision-making process when programming for these students. Although not comprehensive in scope, it does an excellent job of addressing administrative concerns such as district responsibility, evaluation/ assessment process, placement considerations. staffing for health services and planning for emergency procedures.

Other good training materials are available. As an example, Haynie, Porter and Palfrey (1989), in their book Children Assisted by Medical Technology in Educational Settings: Guidelines for Care, emphasize the need for close coordination among the medical community, the school community and

the family. This book, when used in a comprehensive training format is a valuable resource to help people become better trained in the application of medical technology in school settings and to manage the equipment used by technology dependent children.

A few excellent training materials are emerging to assist school district staff in their efforts to provide safe and supportive education environments for medically fragile children. Unfortunately, not all have been validated through field tests; a review of the literature reveals no well described and validated in-service training models through which these newly developed materials can be assimilated and applied by school staff responsible for early intervention programming for the young medically fragile child.

Lack of Trained Staff. In the 1988 survey of SOHI members (a group of 200 concerned parents, educators and health professionals organized to improve the quality of life for medically fragile children and their families), some of the greatest concerns expressed by parents in Oregon was the need for informed administrators and staff trained to provide services to medically fragile students (Brodsky & Wilson, 1989).

The Washington Advisory Committee also recognized the demands for related services for medically fragile children in Washington public schools. Although health services, denied a few years ago, have become routine in many schools as a result of landmark court decisions, eg., catheterization as determined in Tatro vs. state of Texas, 625F2d 557 (5 Cir 1980), many administrators lack knowledge of this and of the public schools' obligation to serve the medically fragile in the least restrictive environment. As a result of these and other factors, the Committee points out that there are conflicts among school districts, parents and the medical community regarding program determination and supervision, financial responsibility, liability, and interpretation of state and federal guidelines.

The lack of trained school personnel to meet the unique needs of the medically fragile child also has been identified by a number of nationally recognized leaders in the field of education of the handicapped (Conner, 1987; Inman, 1987; Palfrey, 1989; Sirvis, 1987; Schrag, 1989).

Conner (1987), identified barriers to appropriate school placement and programming for medically fragile children that continue to exist. These include lack of, or inadequate:

knowledgeable staff;
access to personnel who can handle management problems such as catheterizations, administration of medication, seizures, gastrostomy feedings and other medical conditions which require special attention;
access to appropriate support personnel trained to work with medically fragile children;
parents and professionals with knowledge and skills necessary to assist all involved persons during transition times in the child's life.

Conner (1987) and others have discussed the impact these students have on a variety of school staff:

Building level administrators, faced with unfamiliar problems and tasks, will need help learning about the medically fragile child's variety of equipment needs which may demand

major adaptations to current operations. Particularly in rural areas, plans must address special transportation needs that may include a vehicle modified to accommodate a secured stretcher or wheelchair or the hiring of a special bus attendant. The school building may require modification such as ramps for access to the building or making a restroom wheelchair accessible. Special equipment may have to be purchased and installed, for example, an emergency generator to power life sustaining equipment during power failures, a nebulizer, a mist tent or mechanical percussor. Administrators may have to make arrangements for related service personnel from the ESD or a non-education agency within or outside the community in which the school is located.

School nurses presented with responsibility for medical procedures that are not normally part of their job descriptions, will need more information/training in order to be able to provide the child with appropriate medical care.

Sirvis, (1987) stressed the need for educators prepared to deal with a variety of issues surrounding student death:

> Traditionally, death and dying was thought to be an issue to be faced by medical personnel. However, now children with high risk for early death are enrolled in regular school settings and school staff, unprepared to deal with their death, need help from community resources to deal with their own attitudes about death as well as questions from students who have lost a peer. Parents increasingly turn to school staff for guidance as they face the potential early death of their children.

Summary

Between 1 and 2% of children between the ages of 0-8 have health problems sufficiently severe to limit or prevent them from engaging in major usual activities at home, school or in the broader community. The medically fragile child has tremendous impact on family, school personnel and other community service providers concerned with meeting his unique health, social and educational needs. For the child, his family and school staff, the result is often stressful. Treatment and education regimes may be complex, demanding and not always successful. People involved face a variety of problems ranging from frequent school absences to dealing with death and dying. The problems include those associated with physical accessibility, lack of knowledgeable staff, filling non-traditional roles and dealing with a fragmented community health service delivery system.

There is no single simple solution. This project started to address these issues by formulating a training program that would develop the level of skills in school district (and associated community) related service personnel, and administrators, needed to address the unique needs of medically fragile children and in working with their parents. Given a validated inservice training program for conveying a solid base of information, both parents and professionals will be better able to determine how to integrate medically fragile children more fully into the home, school and broader community and to provide them with appropriate, effective and cost efficient services through a collaborative effort.

Prior to this project, such an inservice training model did not exist.

By addressing the needs outlined above through the development of a comprehensive, competency based training model, M-FIRST was able to validate the effectiveness of the certain strategies, needs assessment techniques, and training formats and content. Use of best practices that embrace sound principles of adult learning theory, including participants' involvement in the planning process and practical applications of training content strengthened the project's efficacy.

VI. Description of Training Model

The M-FIRST training model. The model of training developed in the Medically Fragile Inservice for Related Services Teams (M-FIRST) project is the result of a three year collaborative effort of the UAPs at Oregon Health Sciences University and the University of Washington, and the SEAs in Oregon and Washington. The major goals accomplished during this project were:

The development of a model inservice training program for related services personnel, educators, and administrators working with young medically fragile children;

The implementation of the model inservice training programs in selected, representative sites in Oregon and Washington;

Evaluation of the effectiveness of the training model;

Development of materials that enable others to replicate all or parts of the training model; and

National dissemination of the materials.

Advisory Committee. The M-FIRST Advisory Committee met seven times during the course of the project. The committee was comprised of staff from the Washington and Oregon State Education Agencies, administrators and other personnel from participating school districts and field sites, and a parent of a medically fragile child. The purpose of the Advisory Committee has been to provide the project guidance and feedback re: project direction and activities. Meetings took place at differing locations that were convenient for members traveling large distances in order to accommodate the needs of the Advisory Committee members. The format of the meetings included a debriefing of the Advisory Committee of the status of the project and the development and assignment of certain tasks necessary to complete project activities. Issues for the Advisory Committee's consideration and input were then submitted for review and discussion. Sub-committees addressed specific tasks relating to issues such as evaluation, team development, dissemination, and training activities.

The Advisory Committee provided the project staff with input relative to the project's design, implementation and evaluation. Committee members assisted the project in establishing the training priorities, along with the needs assessment data collected and analyzed by the project participants, developing the District Services Profile - a key development effort for the project in assisting districts in profiling their medically-fragile student population and the services they provide to those students, as well as a self-evaluation of the degree to which the districts are implementing preferred practices relative to the delivery of medically fragile services.

An estimated 245 person-hours is represented by the efforts of the Advisory Committee members and an estimated 150 person-hours is represented by the project staff effort in implementing the Advisory Committee meetings. These figures do not include commute time or preparation time for

the advisory committee meetings.

Site Selection. Six representative urban, rural, and mid-size communities were selected as field sites for the development and implementation of the training model. The school districts in each community agreed to collaborate with the project and served as the host for the project activities. Sites were selected based on their representative demographic profile (primarily population and geographic region), their willingness and ability to collaborate with the project by providing personnel to take part in project activities, and their perceived need of training in the area of service provision to medically fragile children. Participating school districts also selected representatives to serve on the project advisory committee.

Assessment of Training Needs. A comprehensive listing of competencies and sub-competencies specific to issues surrounding the service provision to young medically fragile children was drawn up and infused into the Statewide Inservice Project/Alternative Communication for Severely Handicapped (SIPAAC) self-rating/selection of competencies model.

This needs assessment tool asks respondents to rate "Where I am" and "Where I want to be" on all presented items. M-FIRST staff developed twelve large competency areas with numerous sub-competencies in each section. Team members were asked to respond to the items during each year of the project. The resulting data indicated to project staff which topics were seen as highly needed in the field. This information, along with input from the advisory committee, and the project staff's research into current trends, issues, and best practices, formed the basis for the development of the training content and format.

Detailed data from the Needs Assessment is shown and analyzed in Section VIII, Research and Evaluation Findings.

Training Content. Training was designed to meet documented service provision needs and prepare participants to become trainers and resources within their local regions. Content topics centered around three major areas. These were:

Technical Skills. This area encompassed issues such as technical clinical procedures, management of medical conditions in the classroom and home settings, and certain functional approaches to providing education within the child's health care environment.

Team Process. Team leadership, interdisciplinary and multi-disciplinary team functioning, team support, case management, and issues surrounding grief and loss were addressed in this topic area.

Service Delivery. Topics involving the management of transitions, safety measures, and the legal and ethical issues re: technological dependence and chronic illness were grouped into this topic area.

Training Formats. Given the diverse disciplines and levels of training represented in the M-FIRST team members, training activities took several formats in order to best meet the needs of the learners. The project planned and delivered, as designed in the original project proposal, two Summer Institutes, two Fall Conferences, three Spring conferences and one special topic training event. These training events represent 81.55 hours of training time delivered over 8 special project training events. These are independent of the local onsite training conducted by project staff to the teams and the training which was planned and implemented within the team sites with consultants or with team members acting as trainers.

Formal training conferences were held which brought team members together from all field sites in Oregon and Washington. These large combined meetings took the form of a **four day Summer Institute** in years one and two. They included topics of general and regional relevance, as well as discipline-specific training. There was a mix of interactive, hands-on training, panel discussions, case presentations, and didactic training. The project provided room and board for the 35 to 40 training participants for this intensive training session.

One day training conferences were also held in each state throughout the school year. These sessions, usually held in the spring and fall, tended to focus on issues of state or regional importance but also were useful in providing training in discipline-specific topics. Follow-up training to themes addressed in the Summer Institutes were also included in the one day sessions.

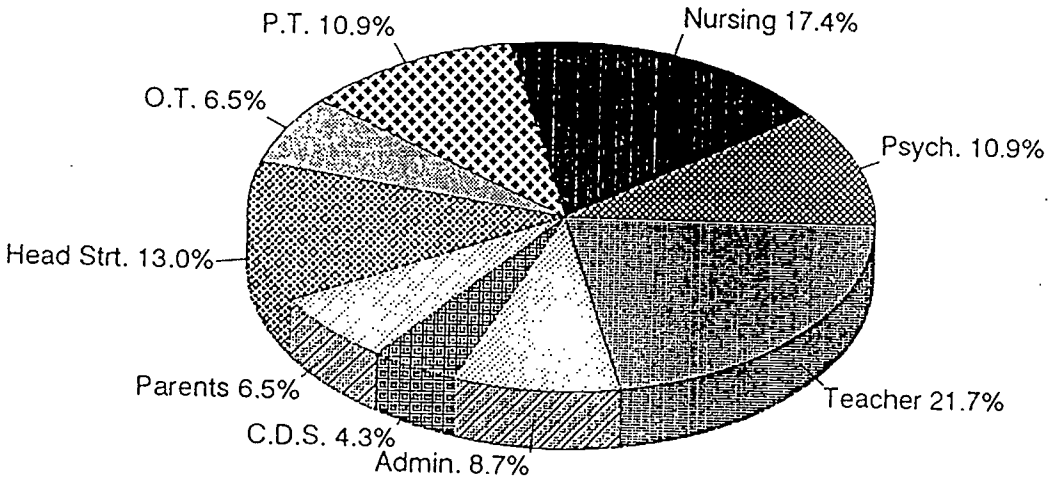
Each team and each member of each team developed **follow-up goals** and plans to be completed during the school year. Project staff provided technical assistance, further training, resources, or materials to teams and their members in order to assist them in completing their planned activities. The follow-up planning allowed teams and their members to personalize and further develop the concepts introduced in the training sessions. Many teams offered inservices to their own and other school districts as an outgrowth of their follow-up plans.

Onsite Team Acitivites. Key local onsite team activities were documented by project staff. An estimated 38 hours of onsite team efforts were conducted during the course of the project by the project team members. These smaller, more intensive activities included meetings and training events. Project staff were often in attendance at these sessions, but as the teams became more functional, many teams were able to organize and implement such activities on their own. An estimated 42 people were involved with these events during the course of the project.

Team Selection and Development. Because early intervention and early childhood special education services are delivered best through the efforts of well functioning teams, participating communities were required to field a multidisciplinary team of service providers in order to participate in the project. Teams of personnel from the school district, local and state agencies, head start, and the community were developed or selected. The teams were recruited by project staff with the assistance of special services directors of the participating school districts. Care was taken to insure an multidisciplinary profile on all teams. Membership on field site teams typically included related services personnel, teachers, administrators, agency staff, Head Start personnel, and parents of medically fragile children. In Figure A below, the multidisciplinary nature of the M-FIRST Teams is shown.

FIGURE A

M-FIRST Project Participants By Discipline
1990-93



While teachers (both special education and regular classroom) and nurses make up nearly forty per cent of the team memberships, other related services personnel were well represented. Project staff were pleased to have the strong invovlement of administrators, parents, and school psychologists. Head Start participation also helped greatly in exploring issues of transition from preschool to school age programming.

In some cases, existing multidisciplinary teams seeking further training were selected for participation. In other cases there were no existing teams, and new teams of service providers were developed only because the sponsoring district had agreed to project participation.

Team function, mission, and members' roles were developed and assessed utilizing the Team Development Profile, a qualitative examination of team formation and design, and the Project Bridge Profile, an adaptation of the Project Bridge Team Assessment Tool which measures team characteristics and dynamics. The Project Bridge Profile was administered bi-annually.

Contact Logs. A contact log was developed to record and track key project activities throughout the course of the M-FIRST Training Project. The purpose of the contact log was to allow some recordkeeping, monitoring and followup of key activities and to track to some extent the level of effort required to deliver the M-FIRST training effort for future dissemination purposes.

Over the course of the project, the project staff recorded a total of 134 contacts which include project training, technical assistance and consultation activities to the project teams, as well as dissemination activities reaching beyond the project. Recorded contacts reflected 177.70 hours of documented contact time which addressed approximately 1473 participants.

VII. Methodological/Logistical Problems

Throughout the three year course of M-FIRST, few significant problems arose that had potential to affect the overall outcome or quality of the project activities or products. Of the issues that did arise, all were dealt with expediently and with consultation from OSERS grant and education program staff.

The initial problem that appeared was the later than expected starting date of the project. Project staff had anticipated a July 1, 1990 start date, which would have allowed time for planning and working closely with potential field sites before the beginning of the school year. This would have meant that related services teams could form right away during the early part of the school year, providing the project with opportunities to gather team and needs assessment data and begin concomitant training and technical assistance activities.

However, the project was assigned an October 1, 1990 start date, which made the hiring of project staff at the University of Washington, the team development process, assessment activities, and training and T/A activities begin several months later than originally expected. School district field sites and other participating agencies were supportive of the program even though the projected start date of July 1st was pushed back to October 1st.

This also had implications for the yearly major training activity, the M-FIRST Summer Training Institute. The Summer Institute was originally scheduled for August of 1991 (early in the second year of the grant project). The August date was maintained, but this meant that funds earmarked for the institute, originally projected to come from year two dollars, were expended from the year one budget. This was accomplished, through consultation with OSERS staff members Gail Houle and Constance Tynes. The strategy for minimizing costs was to rely more heavily than projected on training consultants from the two respective UAPs in Oregon and Washington, rather than hiring outside consultants. UAP staff were able to provide excellent training to project participants, and were able to do it for a much reduced overall cost to the project. This made up a significant portion of the funds necessary to pay for the Summer Institute out of year one funds.

Project staff also encouraged advisory committee members to find alternative forms of reimbursement for advisory committee meetings, rather than relying on project funds for mileage and other costs associated with their participation. Some members were able to find reimbursement through their sponsoring agencies, or simply did request reimbursement funds from the project. This is indicative of the high level of support from collaborating agencies and advisory committee members.

Also, since team development activities and subsequent training and T/A began four months later than originally anticipated, some funds that would have expended in the early part of year one were still available to meet project goals, including the Summer Institute, later during year one.

Late in the first year of the project the Washington component was compromised by the unfortunate circumstances surrounding a statewide teachers' strike. Washington project staff had made excellent progress in working towards the project goals until this occurrence. Since M-FIRST teams, by

design, include an interdisciplinary focus of related services personnel, teachers, administrators and other school and agency staff, the interplay between some of the members of the teams was strained, at best, due to strike conditions. In many cases, since the school personnel chose not be or were not allowed on-site, certain project activities including team development, training, data gathering, and technical assistance that would have normally taken place were postponed.

Project staff were able to complete the delayed activities after resolution of the teachers' strike, later that project year or during the following project year. Some funds earmarked for these activities that were not expended during the strike weeks, were carried forward into the next project year through assistance and consultation from Denise Earl, OSERS grant specialist.

Changes also occurred during the final year of the project as a result of a helpful technical assistance visit from Martha Bryan, of the OSERS education program staff. Dr. Bryan made specific suggestions re: certain evaluation activities and the use of previously gathered data. These welcomed suggestions did mean that project staff needed to re-design and re-tool certain evaluation components. This caused a delay in the completion of some evaluation activities, and the ultimate preparation and dissemination of project products. Since certain activities were not completed on time, project staff, working again with Denise Earl, requested and were granted a no-cost extension in order to complete these vital activities.

The very nature of developing interdisciplinary service provision teams, assessing these diverse groups re: training needs, and providing training to them, means that many personalities, school and agency guidelines, and "turf" issues get mixed into the bargain. Overall, team development activities were extremely fruitful, and generally produced many positive outgrowths leading to improved services to families and children, as well as interagency cooperation. Yet, project staff anticipated the inherent friction contained in these project activities and monitored the effect on progress toward project goals. In many cases the dynamic nature of differences and even disagreements among team members added to the net growth of the teams as functional units of service provision. Team meetings and training activities often functioned as an open forum and created supportive environments for sharing diverse viewpoints leading to effective problem solving.

Another difficulty of the project teams was the variability of some team members' participation over time. There were some teams whose members were constant throughout the project on all six teams, but some teams experienced variability in membership and/or variability in completion of the evaluation instruments. While project staff worked to maintain consistent membership, it was found that some teams had a high rate of turnover due to many circumstances. Some are re-assigned based on the varying needs of the district or agency they work for, while others, especially paraprofessionals and other assistants have a relatively short "job-life" and may move on to other employment when opportunities present themselves. Job related burnout is another factor that must be considered when determining why team membership was not consistent. Project staff anticipated this phenomena and included training activities relating to team support to minimize the impact of these issues. In most cases, replacements were recruited and brought on to the teams in the place of those that had left over the course of the project.

The third year of the project saw a change of the Washington Co-director. Dr. Clifford J. Sells,

who served in this role at the University of Washington, took a new job, which coincidentally, was located at Oregon Health Sciences University. Dr. Sells chose another pediatrician, Dr. Forrest C. Bennett, to take over the Washington Co-directorship of the project. This transition was relatively smooth and no project activities were compromised.

This project, like many others, also underwent minor disruptions and changes due to common issues that occur regularly. Examples of these minor problems were delayed hiring of project staff, turnover within the training teams and advisory committee personnel (resulting in renewed and repeated efforts in recruitment, orientation, and team development), and turnover and juggling of FTE of part time support staff. Although these problems did account for some focused effort on the part of the project coordinators and directors, each challenge was met successfully with no intrinsic damage to the overall quality of the project.

VIII. Research/Evaluation Findings

The purpose of this section is to present and discuss the summative evaluation data collected as part of the M-FIRST Training Project. These data focus on changes in **knowledge and skills** in M-FIRST teams members as measured by the M-FIRST Needs Assessment and changes in the **team functioning** as a result of team development efforts as measured by the Project Bridge Team Assessment.

Team membership varied to some extent in some of the project teams over time. Each team experienced variability in membership and/or variability in completion of the evaluation instruments. The project was successful in having sufficient data for team members who were present in the project over the life of the project to be able to conduct the analyses. Conclusions are based on analyses using these complete data sets.

Knowledge and Skills

The M-FIRST Needs Assessment comprises eleven competencies which have been organized, for analytical purposes, into three "Mega-Competency" areas. The three areas and the competencies which comprise them are:

1. Technical Skills: Management of Medical Conditions in the School Setting, Functional Approaches to Classroom Management, and Clinical Procedure

2. Service Delivery Issues: Classroom Safety Measures, Legal Issues, Managing Transitions, Grief and Loss

3. Team Process: Working with Families, Working as Part of Multi-disciplinary Team, Team Leadership, Team Support

The Needs Assessment presented these competencies for self-rating in relation to where the resondent percieves themselves to be at the time of administration (referred to as the "AM" scale) and where the respondents feel they would like to be sometime in the future (referred to as the "WANT" scale). Team participants completed the M-FIRST Needs Assessment annually to determine the areas of need for training and to document growth in their skills and knowledge.

Statistical analyses have been performed on each of these two scales for each of the 11 competencies and the three mega-competencies. Average ratings (means) and standard deviations for each administration have been calculated. ANOVAs have been applied to the data to determine the level of significance in changes reported by the participants over the life of the project.

TABLE A

Summary of ANOVA's of M-FIRST Needs Assessment Results by Mega-Competencies - "AM" Scale

Time 1, 2, and 3 Administrations

N=11

	TIME 1		TIME 2		TIME 3		
Subscales	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills	2.94	0.69	3.60	0.56	3.97	0.44	< 0.0001*
Team Process	92	0.64	3.72	0.43	3.96	0.46	< 0.0001 *
Service Deliver	2.65	0.75	3.52	0.58	3.96	0.45	< 0.0001 *

*Statistical significance defined $p \leq 0.005$.

Designed to focus on both technical skills required for medical management of medically fragile children in a classroom setting and an interdisciplinary team approach to case management, the project has demonstrated significant increases in competency rating for skills utilized in providing care and service delivery to medically fragile children.

Results of the data analyses point strongly to the positive impact M-FIRST has had on the self-rated competency of project participants for each of the three Mega-competencies. Significant differences were found to exist in the average level of skill/knowledge on each of the three mega-competencies over the three administrations of the M-FIRST Needs Assessment. These data are displayed above in Table A. As an example, the mean rating of the participant's skills and knowledge increased from 2.65 at the Time 1 administration on mega-competency "Service Delivery" to a mean of 3.96 at Time 3 administration. These analyses included the eleven participants for whom there were completed needs assessments for each of the three administrations over the course of the project.

TABLE B

Summary of ANOVA's of M-FIRST Needs Assessment Results by Mega-Competencies - "WANT" Scale

Time 1, 2, and 3 Administrations

N=10

	TIME 1		TIME 2		TIME 3		
Subscales	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills	4.25	0.71	4.33	0.65	4.33	0.53	0.5777
Team Process	4.20	0.66	4.40	0.38	4.46	0.34	0.1749
Service Deliver	4.22	0.60	4.38	0.54	4.44	0.50	0.1022

***Statistical significance defined $p \leq 0.005$**

There were no significant differences found in the mean ratings of participants on the "WANT" scale on any of the three mega-competencies over the three administrations of the M-FIRST Needs Assessment. Participants were fairly consistent over time in the level of expertise they reported wanting to obtain over the life of the project. These data appear above in Table B.

Tables C and D display the average self-ratings of the 11 participants for whom there was a completed M-FIRST Needs Assessment for each of the three administrations during the life of the project for each of the ll competencies of the Needs Assessment for the "AM" and "WANT" scales, respectively.

As presented in Table C (below), there were increases in the average mean rating of participants' skills/knowledge on each of the eleven competencies over the three administrations of the M-FIRST Needs Assessment. Each of these increases were found to be statistically siginficant. The highest relative increases in the average ratings is reported on "Managing Transitions," "Legal Issues," and "Inter-disciplinary Teams." On each of these three competencies, the participants rated themselves lower relative to the other 8 competencies on Time 1 administration. On Time 3 administration, the participants rated themselves the highest on "Working with Families" and "Managing Transitions." "Grief and Loss," "Management of Medical Conditions in School Settings," and "Interdisciplinary Teams" were all rated similarly high as third runner to the other two competencies. Increases were found on all eleven competencies.

As presented in Table D (below), no significant changes were found to exist in where participants "WANT" to be over the three administrations of the needs assessment.

TABLE C

Summary of ANOVA's of M-FIRST Needs Assessment Results by Competency - "AM" Scale

Time 1, 2, and 3 Administrations

n=11

	TIME 1		TIME 2		TIME 3		
Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Management of Med. Conditions in School Setting	3.09	0.72	3.74	0.71	4.07	.057	< 0.0001 *
Grief and Loss	2.98	1.14	3.73	0.95	4.05	0.44	0.0005 *
Managing Transitions	2.50	0.93	3.70	0.46	4.14	. 0.75	< 0.0001 *
Working with Families	3.14	0.75	3.93	0.54	4.15	0.46	0.0001 *
Interdisciplinary Training	2.80	0.68	3.91	0.50	4.04	0.71	0.0001*
Functional Approaches	2.97	0.78	3.66	0.42	3.97	0.35	0.0005*
Safety measures	2.78	0.76	3.51	0.73	3.92	0.58	< 0.0001*
Legal Issues	2.29	0.88	3.22	0.78	3.80	0.57	< 0.0001*
Clinical Issues	2.68	0.98	3.33	0.90	3.81	0.75	< 0.0001*
Team Leadership	2.73	0.79	3.38	0.69	3.78	0.52	0.0002*
Team Support	3.01	0.76	3.57	0.65	3.82	0.61	0.0002*

*Statistical significance defineds $p \leq 0.005$.

TABLE D

Summary of Results of ANOVA's of M-FIRST Needs Assessment Results by Competency - "WANT" Scale

Time 1, 2, and 3 Administrations

n = 10

	TIME 1		TIME 2		TIME 3		
Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Management of Medical Conditions	4.45	0.65	4.30	0.76	4.41	0.68	0.3637
Grief and Loss	4.35	0.99	4.48	0.67	4.58	0.49	0.4709
Managing Transitions	4.25	0.50	4.53	0.45	4.64	0.46	0.0292
Working with Families	4.31	0.69	4.50	0.45	4.63	0.46	0.1019
Interdisciplinary Training	4.24	0.62	4.47	0.41	4.44	0.49	0.5323
Functional Approaches	4.24	0.60	4.40	0.52	4.39	0.36	0.4806
Safety Measures	4.23	0.62	4.27	0.73	4.34	0.76	0.6229
Legal Issues	4.09	0.82	4.38	0.75	4.32	0.53	0.2206
Clinical Issues	3.96	1.16	4.28	0.84	4.14	0.88	0.3450
Team Leadership	4.12	0.78	4.27	0.56	4.34	0.53	0.3647
Team Support	4.36	0.66	4.44	0.51	4.39	0.44	0.8959

*Statistical significance defined at $p \leq 0.005$.

TABLE E

Summary of M-FIRST Needs Assessment Results of T-Tests on First and Second Administration for all Participants by Mega-Competencies AM and WANT Scales

n = 27

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
AM	3.08	0.71	3.51	0.66	< 0.001 *
WANT	4.45	0.54	4.23	0.55	0.004 *
Team Process					
AM	3.04	0.77	3.66	0.63	< 0.001 *
WANT	4.29	0.58	4.24	0.46	0.04 *
Service Delivery	2.76	0.78	3.43	0.72	< 0.001 *
AM					
WANT	4.37	0.57	4.32	0.51	0.02 *

***Statistical significance determined to be $p \leq 0.05$.**

In Table E, the means and standard deviations are presented for each mega-competency area for all participants' first and second administrations, regardless of the time at which those administrations occurred within the life of the project. Twenty-seven participants had a first and second administration. Table E displays the averages for both the "AM" and the "WANT" scales for the three mega-competencies.

Significant changes were found in the participants' self rating of where they are on the competency areas ("AM") and where they "WANT" to be for each of the three mega-competencies. It suggests that regardless of what point in time participants entered into the project, participants were able to benefit from the process of the M-FIRST project. All participants gained in their skills and knowledge as reported on the "AM" scale for each of the three mega-competencies.

Mega-Competencies by Discipline, State, and Density. Analyses were performed for participants' first and second administration for each of the three mega-competencies on the "AM" and "WANT" scales testing for significant differences in the changes reported by participants based upon their membership in groups defined by professional discipline, state, and density of area of teams. These results are displayed in Tables F through K which appear below. Narrative summaries appear with each of the tables.

Project participants were assigned membership into two broad discipline groups, either "Educator" (n=8) or "Related Services Personnel" (n=18). No significant differences were found in the changes reported by participants in their level of skills and knowledge (as reported on the "AM" scale) based upon their membership in these two professional groups on the three mega-competencies as measured by the M-FIRST Needs Assessment. See Table F below.

TABLE F

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "AM" Scale
First and Second Administration
by Discipline

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Educators	3.06	0.73	3.31	0.70	
Related Services	3.09	0.72	3.63	0.63	0.1724
Team Process					
Educators	3.24	0.82	3.72	0.83	
Related Services	2.95	0.75	3.63	0.54	0.4832
Service Delivery					
Educators	2.84	0.77	3.22	0.85	
Related Services	2.72	0.80	3.53	0.65	0.0495

*Statistical significance determined to be $p \leq 0.05$.

TABLE G

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "WANT" Scale
First and Second Administrations
by Discipline

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Educators	4.66	0.34	4.01	0.51	
Related Services	4.34	0.60	4.34	0.55	0.0011*
Team Process					
Educators	4.66	0.45	4.21	0.68	
Related Services	4.16	0.57	4.25	0.39	0.0423*
Service Delivery					
Educators	4.54	0.45	4.12	0.55	
Related Services	4.29	0.61	4.41	0.48	0.0160*

*Statistical significance determined to be $p \leq 0.05$.

Table G presents the means of educators and related services personnel on each of the three megacompetencies on the "WANT" scale. Both Technical Skills and Service Delivery are significantly different between the two professional groups in where they want to be. Team Process approaches significance. This may suggest some specific training needs of the respective professionals involved in the teams. The project responded to these indicated needs through onsite technical assistance visits and discipline specific training events which occurred later in the life of the project.

TABLE H

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "AM" Scale
First and Second Administrations
by State

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Oregon	2.91	0.75	3.26	0.69	
Washington	3.29	0.62	3.83	0.48	0.3781
Team Process					
Oregon	3.05	0.85	3.54	0.73	
Washington	3.02	0.68	3.81	0.43	0.2261
Service Delivery					
Oregon	2.70	0.71	3.22	0.69	
Washington	2.82	0.86	3.65	0.71	0.1391

***Statistical significance determined to be $p \leq 0.05$.**

Participants were grouped according to their state membership. As displayed in Tablel H, above, no significant differences were found in the pattern of changes in participants' self-assessment of their knowledge and skills (as reported on the "AM" scale) over time based upon state membership. The results of the data analyses of the M-FIRST Needs Assessent validate that the M-FIRST model does work effectively in two different states despite some crucial differences between the two state systems in the deployment and role of school nursing consultants and educational support service provision. The information gathered by project staff indicate the potential for a broad application of M-FIRST's tenets of team development, assessment of training needs, and training provision to teams working with young medically fragile children.

TABLE I

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "WANT" Scale
First and Second Administrations
by State

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Oregon	4.40	0.61	4.03	0.58	
Washington	4.51	0.43	4.50	0.37	0.084
Team Process					
Oregon	4.36	0.62	4.22	0.48	
Washington	4.17	0.52	4.28	0.47	0.314
Service Delivery					
Oregon	4.34	0.62	4.15	0.55	
Washington	4.41	0.52	4.49	0.42	0.245

*Statistical significance determined to be $p \leq 0.05$.

No significant differences exist in the changes reported by participants by state on the mega-competencies "WANT" scale.

TABLE J

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "AM" Scale
First and Second Administrations
by Density

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Rural	2.92	0.71	3.20	0.91	
Suburban	3.25	0.63	3.61	0.60	
Urban	3.02	0.81	3.63	0.55	0.4273
Team Process					
Rural	2.92	0.71	3.20	0.91	
Suburban	3.25	0.63	3.61	0.60	
Urban	3.02	0.81	3.63	0.50	0.3579
Service Delivery					
Rural	2.64	0.77	3.21	0.91	
Suburban	3.02	0.70	3.56	0.54	
Urban	2.61	0.86	3.48	0.73	0.3616

***Statistical significance is determined $p \leq 0.05$.**

Teams were categorized according to their density of the area in which the teams served for purposes of data analysis. Two teams were categorized into each of the three categories of Rural (n=16), Suburban (n=14) or Urban (n=22). No significant differences were found to exist in the reported changes over time of where paraticpants self-assessed their level of knowledge and skills to be at the time of administration ("AM") based upon density. See Table J above.

TABLE K

Summary of M-FIRST Needs Assessments Results
by Mega-Competencies - "WANT" Scale
First and Second Administrations
by Density

	FIRST ADMINISTRATION		SECOND ADMINISTRATION		
Mega-Competencies	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Technical Skills					
Rural	4.49	0.45	3.94	0.58	
Suburban	4.62	0.37	4.45	0.56	
Urban	4.21	0.70	4.20	0.45	0.1069
Team Process					
Rural	4.31	0.74	3.93	0.56	
Suburban	4.52	0.41	4.46	0.35	
Urban	4.09	0.51	4.34	0.32	0.0672
Service Delivery					
Rural	4.37	0.65	4.06	0.59	
Suburban	4.59	0.39	4.57	0.45	
Urban	4.18	0.61	4.30	0.43	0.2945

***Statistical significance determined to be $p \leq 0.05$.**

No statistical significant differences were found to exist among the geographical areas served on the "WANT" scale of the M-FIRST Needs Assessment.

Team Characteristics and Team Functioning

The M-FIRST Project has also demonstrated its effectiveness in improving team process. The Modified Bridge Team Assessment, comprised of 6 sub-scales measuring team characteristics and team functioning, was administered four times throughout the life of the project. Analyses of the data indicate a significant change in the level of team functioning in selected areas as measured by the Modified Project Bridge Team Assessment. As displayed in Tables L and M below significant positive change in overall team functioning was measured. The analyzed results on two subscales, Decision-Making and Group Characteristics, indicate notably significant positive change toward improved team functioning.

TABLE L

Summary of Results of the Modified Project Bridge Team Assessment Means, Standard Deviation and P-values

N=11

	TIME ONE		TIME TWO		TIME THREE		TIME FOUR		
Subscale	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	p-value
Practice	3.68	0.35	3.97	0.36	3.70	0.69	4.15	0.68	0.15
Decision Mkg.	3.11	0.81	3.73	0.70	3.60	0.73	4.09	0.55	0.001*
Membership	4.09	0.78	4.27	0.76	4.30	0.91	4.00	0.97	0.27
Group	3.55	0.64	3.92	0.75	3.98	0.95	3.94	1.02	0.02*
Situation	3.34	0.88	3.11	1.05	3.57	1.08	3.52	.092	0.12
Group Process	3.57	0.88	3.80	0.92	3.90	0.75	3.72	0.94	0.14
Team Dynamics	3.64	0.74	3.78	0.81	3.94	0.89	3.80	0.89	0.14
Total	3.49	0.58	3.75	0.69	3.80	0.79	3.89	0.84	0.01*

*Statistical significance determine to exist when p-value ≤ 0.05

For the 11 participants for whom there were completed assessments on which to perform the analyses over all four administrations of the instrument, significant increases were reported on the Decision-Making and Group Functioning ("Group") Subscales as well as the Total Score. Practice and Membership subscales may not be appropriate to this model of team as the M-FIRST teams worked across districts and ESDs rather than within single-site situations for which these two subscales may be better designed. This will be re-evaluated and revised as necessary during the M-FIRST Outreach Project.

As a result of preliminary analyses which suggested that increases in the group's scores might be more pronounced between Time 1 and Time 2 and then not sustained further over time, additional analysis was performed. The group's scores were compared between the first administration of the instrument and the average of the second, third, and fourth administration. This resulted in a much larger number of data elements on which to perform the analysis. A summary of the analysis is displayed below in Table M.

TABLE M

Summary of Results of the Modified Project Bridge Team Assessment

First Administration versus the Average of the Second-Fourth Administrations Means, Standard Deviations and P-values

N=30

	TIME 1		TIMES 2, 3, 4, (Avg.)		
Subscale	**Mean**	**S.D.**	**Mean**	**S.D.**	**p-value**
Practice	3.83	0.61	4.03	0.42	0.11
Decision Mkg.	3.48	0.72	3.86	0.48	0.003*
Membership	4.20	0.73	4.37	0.67	0.16
Group	3.74	0.69	4.02	0.65	0.002*
Situation	3.55	0.81	3.60	0.72	0.65
Group Process	3.88	0.80	4.07	0.75	0.05*
Team Dynamics	3.860	0.71	4.02	0.64	0.04*
Total	3.76	0.63	3.96	0.54	0.01*

*Statistical significance determine to exist when p-value $\leq$ 0.05

Consistent with the analyses of the groups' differences over all four administrations, a statistically significant difference is found between Time 1 and the average of Times 2, 3 and 4, in Decisions-Making and Group Functioning. In this analysis the means of the group on Time 1 administration versus the Time 2,3 and 4 administration for Group Processes and Team Dynamics are also statistically significant.

The M-FIRST Project has successfully increased the skills of teams to function effectively as measured by the Modified Bridge Team Assessment.

Conclusions.

* Significant increases in competency rating for skills utilized in providing care and service delivery to medically fragile children has been demonstrated by the M-FIRST Project.

* There are significant positive changes in all M-FIRST participants' assessment of their skills and knowledge on each of the three mega-competencies (Table C).

* There are no sigificant differences in the pattern of positive change of the acquisition of skills and knowledge as assessed by the M-FIRST Needs Assessment on the "AM" scale by discipline (Educators vs. Related Services Personnel), state (Washington vs. Oregon), or population density of the team's area (Urban, Suburban, or Rural).

* The results of the data analyses of the M-FIRST Needs Assessent validate that the M-FIRST model does work effectively in two different states despite some crucial differences between the two state systems in the deployment and role of school nursing consultants and educational support service provision. The information gathered by project staff indicate the potential for a broad application of M-FIRST's tenets of team development, assessment of training needs, and training provision to teams working with young medically fragile children.

* The M-FIRST Project has demonstrated its effectiveness inimproving team process as measured by the Modified Bridge Team Assessment.

IX. Project Impact

Impact on Services. The M-FIRST Outreach project provided significant national impact in the fields of personnel preparation, model inservice training, and service provision to young medically fragile children.

Through **product development and dissemination**, development of **integrated educational sites and programs, training and technical assistance**, and **interagency coordination** including **family involvement**, the project has **increased public awareness** of the needs and program options for young medically fragile children. These children, by definition, include **traditionally underserved groups** such as those **effected by drugs and alcohol** and **infected by HIV**.

Contribution to Current Knowledge. Service to medically children fragile present schools with unique and complex problems. Although a variety of guidelines pertaining to inservice training of school staff relative to students with disabilities are available in the literature, with the exception of the M-FIRST project, none focus on preparing multidisciplinary staff to ensure safe, healthy supportive educational environments for medically fragile children. This project made a significant contribution to the body of knowledge on current best practices for inservice training and state wide systems change.

National Dissemination Activities. National dissemination of project-produced materials is integral to the goal of this project. Disseminable materials take the form of a comprehensive replication and training manual, described later in this section. A set of guidelines and plans for implementing statewide systems change using the M-FIRST model will be deferred for development in the M-FIRST Outreach project.

The plan for national dissemination includes the distribution of materials and presentations to SEAs, OSERS groups and other national groups. Materials also will be made available, at the cost of printing and handling, through the dissemination vehicle operated by Oregon Health Sciences University's CDRC Publications at least five years beyond the grant period. Other publishers have shown interest in project-generated training content and format. Staff continue to explore other creative marketing and publication strategies to help further and strengthen the dissemination effort.

In addition, project staff have made twenty-three formal presentations regarding the project, its materials and issues relating to medically fragile children and their families at regional and national meetings of professional groups. These groups include:

Makah Native American Tribe

American Occupational Therapy Association, National Conference

Washington State Staff Development Council

Marysville (Wa) School Board

University of Washington Child Development Mental Retardation Center, Core Curriculum

Olympic Education Service District (two presentations)

Washington State Directors of Special Education

Washington School Nurses' Association

U of W CDMRC Department Heads

Washington State Office of the Superintendent of Public Instruction Summer Institute

Snohomish County PT/OT Special Interest Group

Oregon Juvenile Department Directors' Association

Region X Head Start Resource Access Project (three presentations)

Oregon Criminal Justice Association

Pacific Northwest Regional Genetics Group

Oregon School Nurses' Association

Oregon Health Sciences University Child Development Rehabilitation Center, Interdisciplinary Forum

Care Coordination (CaCoon) Program

University of Oregon's statewide "Oregon Conference"

Confederation Oregon School Administrators

Project staff, through their respective UAPs will continue to be available as resource consultants to professional groups, SEAs, and other educational agencies.

OSERS News In Print published a feature article on the M-FIRST project, authored by project coordinators and co-directors, which appeared in the Spring 1993 issue. The article generated national interest in the project and the development of the M-FIRST training model. Reprints are available from OSERS and the project.

Working closely with Head Start agencies allowed project staff to become involved in training

of Head Start providers and authoring a publication on medically fragile children widely distributed through Region X (Idaho, Alaska, Oregon, and Washington). The 21 page publication Serving Medically Fragile Children in Preschool and School Settings is available through the RAPsource program of the Region X Resource Access Project (RAP) located at Portland State University.

Statewide Systems Change Development and Implementation. The Oregon and Washington SEAs discuss in their letters of collaboration for the recently funded M-FIRST Outreach project, that the significant need for systematic training of personnel working with medically fragile children can be addressed, in part, by further implementation of the M-FIRST model. The states are currently making some excellent efforts to meet some of these challenging training needs, and see the M-FIRST Outreach project as an important vehicle to assist them in the development of service delivery, team development, and technical skill acquisition strategies on a statewide level. By combining the resources of two SEAs and the two participating UAPs, a significant impact on the current system of personnel preparation, inservice training, and level of service provision is being delivered. Great potential for wider application of this validated model exists through national dissemination activities.

Application of Values Associated with Early Intervention and IDEA. The project objectives are consistent with the values inherent in P.L. 99-457 and P.L. 101-476, and the project has demonstrated methods for putting these values into practice. Implementation of M-FIRST activities help ensure that predictable and **consistent** services are available from county to county and from age level to age level. It advocates for **flexible** programming for children to allow for local control and to accommodate individual differences among children and families. It stresses a **collaborative** effort ensuring that all appropriate agencies and disciplines work together with families in the provision of services. The model promotes a **responsible investment attitude** among all key participants and the M-FIRST Outreach project will evaluate this aspect and all others on a regularly scheduled basis.

Well Trained Group of Service Providers and Family Members. Training participants from six diverse sites in Oregon and Washington received thorough, competency based training in the areas of technical skills, team process, and service delivery. They, in turn, will impact another projected 500 service providers and family members in local communities through inservice training and technical assistance during and after the life of the project. This has already begun as training participants have made several presentations at state conferences in Oregon and Washington, as well as smaller, more focused presentations at local school boards and Education Service Districts. A parent participant has been among the most dedicated and prolific participants to take on these activities.

The "train the trainers" component has proven very successful and as a result of the continued interest and involvement of M-FIRST participants, a large portion of personnel working with medically fragile children in Oregon and Washington will directly benefit.

Regionally Specific Team-Generated Materials and Products. Several M-FIRST field site teams generated materials used within their school district, community, or area that address

special local or regional needs. While these products may or may not replicable over a wide area of distribution, they fill critical voids within the local/regional context.

Examples of the products that were collaboratively developed and implemented under the auspices of the M-FIRST project were:

Health Plan Resources. This "file cabinet in a three-ring binder" contains 28 sections of information used in developing health plans for medically fragile children in school settings. Topics include heading such as: Feeding, Head Injuries, Clean Intermittent Catheterization, Nebulizers, and Blood Borne Pathogens. Health Plan Resources was developed by the **Bend, Oregon** team.

Marysville (Wa) Health Services Manual. This comprehensive manual deals with issues from intake to transition and has been adopted by the district as the "bible" of working with medically fragile children. Many other school districts in the region have shown interest in developing a similar manual or utilizing Marysville's.

Vancouver (Wa) Information Resource Guide. This local/regional resource guide pools information used by schools and agencies in developing and providing service to medically fragile children and their families. The **Vancouver ESD #112** put together this well utilized tool.

Eugene (Or) Pediatric/Community Survey. The Eugene team developed a survey instrument to gather information from local pediatricians about services relative to children with medically fragile conditions. This instrument served as a fruitful introduction to articulating collaboration between schools and the medical providers in the community.

Demonstration of Positive Impact of Family Involvement. Parents and family members continue to be important members of core teams and training activities utilizing the M-FIRST model. Data gathered on team functioning and dynamics, knowledge change, and service provision to children reflect the involvement and positive impact of family members on the overall outcome of model replication and success. Conference evaluations also pointed out the importance of family involvement as trainers, participating trainees, and as team members in the planning and implementation of services for children with chronic health needs.

Replicable, Validated Training Materials. The project evaluated the effectiveness of existing training materials from M-FIRST and other sources regarding the training of staff to meet the needs of medically fragile children through replication of M-FIRST activities. Materials found to be useful will be referenced and described in the **project replication manual**, to be described below. Development and use of the **District Services Profile** and the **M-FIRST Needs Assessment**, discussed later in this section, are key components of developing training for those working with young medically fragile children.

The District Services Profile. It was determined early in the project that neither Washington nor Oregon, at the state or local level, had a method by which to identify and document the presence of medically fragile children or the services delivered to these children. Information gathering on these children and their need for services and the delivery of the services at the district level

was nonexistent in any systematic or comprehensive manner. Identification of the targeted population and the services they receive are crucial to the evaluation of services. Therefore, the M-FIRST project developed and piloted a process for assessing the presence of the targeted population and the services rendered. Utilizing the project-developed District Services Profile, based in part on the Project School Care (Palfrey, et.al.) the M-FIRST teams implemented the information gathering process. This process allowed the teams to look at the numbers and types of children with medically fragile issues, identify services that are provided to these children, assess who provides which services, and evaluate the overall level frequency, quantity, and intensity of services provided.

All teams successfully identified the medically fragile children served in their areas and documented services received. The process resulted in the identification of 263 students who are medically fragile. The results of that assessment are displayed below in Tables N-1 through N-4, describing the age category of the students, level of fragility of the students and the frequency with which students require the services performed.

Team members were requested to complete the District Services Profile (DSP) a second time before the close of the project period. Two of the six teams were able to complete the task. The changes in the responses were minimal and have not been incorporated into the tables displayed within this section.

Part C of the District Services Profile allows districts to record which personnel assess, provide and supervise each of the services delivered within the district. The number of unique types of services delivered by the teams documented relative to who assessed, provided and/or supervised the delivery of that services ranged from 9 to 18 distinct services. The teams reported a duplicated count of 6 types of services delivered. The data from Part C was summarized in Table N-5 to yield a simple count of the number of services any one position provided and/or supervised. Of the 66 duplicated services delivered across the teams, registered nurses are responsible for delivering 18, or 27%, of those services. More than one position may be listed as responsible for providing a service - as many as four or five positions are indicated providing any one service.

The development and implementation of the District Services Profile has resulted in a beginning effort on the part of Oregon and Washington to create and systematic and replicable process by which medically fragile children, their needs and the services delivered to these children can be assessed and documented.

The final version of the DSP will allow users to:

a. identify medically fragile students in their respective service areas,
b. identify services received by the students and the extent to which they need those services performed,
c. delineate the direct service providers by discipline,
d. assess processes involved in delivery of services such as performing suctioning, seizure management and diabetes management among many others, and
e. evaluate the degree to which those services are delivered according to agreed upon "best practices".

TABLE N-1

Summary of District Service Profile, Part B
Number and Percent of Medically Fragile Students by Age Category

n = 263

Age Category	Number	Percent
0 - 3 years	22	8.4
> 3 - 5 years	31	11.8
> 5 - 9 years	94	35.7
> 9 - 12 years	37	14.1
> 12 - 21 years	78	29.7

TABLE N-2

Level of Fragility
Number and Percent of Students

n = 263

Fragility	Number	Percent
Chronic/Urgent	28	10.6
Unpredictable	126	47.9
Predictable	87	33.1
Not Reported	22	8.4

TABLE N-3

Frequency With Which Technologies Required by Students

Frequency	Number	Percent
Continuous	29	8.4
Several time a Day	104	30.0
Once a Day	62	17.9
Several times a Week	4	1.2
Weekly	24	6.9
Other	124	35.7

TABLE N-4

Number of Students (n=243) Utilizing Each Technology and the Percent of Times Each Technology Utilized

[illegible]	[illegible]	SERVICES DELIVERED
10	2.9	Tracheostomy
7	2.0	Resp. (continuous)
7	2.0	Resp. (intermittent)
5	1.4	O_2 (continuous)
1	0.3	O_2 (intermittent)
15	4.3	Suctioning
35	10.1	Gastrostomy
0	--	Jejunostomy
0	--	Ilio-Colostomy
4	1.2	Urethral Cath. (continuous)
13	3.7	Urethral Cath. (intermittent)
1	0.3	I.V.
1	0.3	Peritoneal dialysis
14	4.0	Asthma
84	24.2	Seizure Management
15	4.3	Diabetes Monitoring
2	0.6	Allergic Response
38	11.0	Other (not specified)
1	0.3	Port-a-cath
7	2.0	Shunt
10	2.9	Choking Monitoring
13	3.7	Feeding
15	4.3	Cardiac Monitoring
1	0.3	Skin Care
2	0.6	Injury Prevention
4	1.2	Diet/Nutrition
30	8.6	Assessment
10	2.9	Epi-Pen
2	0.6	Blood Dyscracia

TABLE N-5

Summary of District Services Profile, Part C

Services Provided and Supervised by Position
for 66 Services Delivered
by Six Northwest Medically Fragile Teams

	PROVIDES		SUPERVISES	
POSITION	NUMBER	PERCENT	NUMBER	PERCENT
Private Duty Nurse	10	15	3	5
Registered Nurse	18	27	41	62
L.P.N.	14	21	7	11
Regular Teacher	10	15	1	2
Special Ed. Teacher	26	39	25	38
Physical Therapist	6	9	3	5
Occupational Therapist	6	9	-	-
Speech	5	8	-	-
Psychology	-	-	-	-
Building Administrator	2	3	4	6
District Administrator	1	2	3	5
Social Worker	-	-	1	2
Counselor	1	2	-	-
M.D.	-	-	4	6
Transportation	2	3	-	-
Classroom Aide	28	42	-	-
Therapy Aide	2	3	-	-
other	3	5	-	-
Parent	4	6	16	24
Other Family	2	3	-	-
Other Volunteer	2	3	5	8

This information, in and of itself, would allow a school system or agency to develop a more clear understanding of their program, services and the children and families they serve, and provide a vehicle for planning needed training activities for their staff. However, when combined with the discrete, competency base information garnered from the M-FIRST Needs assessment, an extremely focussed, well thought out set of training parameters can be developed and implemented.

The M-FIRST Needs Assessment. Much of the data from the Needs Assessment is shared in Section VIII, Research and Evaluation findings. This data gathering tool comprises thirteen major competency areas with well over one hundred sub-competencies, specific to the care, education, and related service provision to medically fragile children is school settings. The project has found the Needs Assessment a useful and accurate tool to gather information about training participants' perception of training needs, current level of expertise, and desired levels of competency.

Currently, The M-FIRST District Services Profile and Needs Assessment are being further refined and developed through the activities of the M-FIRST Outreach project. The final versions, suitable for use in a broad array of situations, will be available nationally through scheduled M-FIRST anbd M-FIRST Outreach activities.

The M-FIRST Training and Replication Manual. This publication will include the District Service Profile and the M-FIRST Needs Assessment with instructions for proper implementation and analysis. It will also include a resource list of books, video tapes, and other appropriate training materials, guidelines re: cost analysis of implementation activites, as well as information that will address issues of site selection, team formation, training content and format, team activities, and program evaluation. The manual will take the user through an organized, step by step process which leads to replication of all or part of the project training model. Information provided in this publication will help the user become familiar with the population of medically fragile children and their families, discuss current legal and ethical issues associated with service provision, and point out common obstacles, disincentives, and problems that may be encountered by those replicating the model. The M-FIRST Training and Replication Manual, the District Services Profile, and the M-FIRST Needs Assessment are disseminated through the publishing arm of the Child Development and Rehabilitation Center of Oregon Helath Sciences University, CDRC Publications. To order these and many other materials germane to training of allied health professionals, and developmental disablities please contact:

CDRC Publications
Oregon Health Sciences University
Child Development and Rehabilitation Center
PO Box 574
Portland, Oregon 97207

X. Future Activities

Dissemination activities outlined in the original proposal are either completed or are currently being completed. The M-FIRST Training and Replication Manual is nearing completion and will be printed by the Oregon Health Sciences University press, and disseminated nationally by CDRC Publications, the dissemination and publishing arm of OHSU's Child Development and Rehabilitation Center. The manual will detail components of the M-FIRST model development process, their applications and the expected outcomes associated with model implementation. The training manual will address the following topic areas:

1. Developing a functional, non-categorical definition of children with chronic health needs or issues of medical fragility.

2. Selecting appropriate sites for implementation of all or parts of the M-FIRST model.

3. Recruiting and developing diverse teams service providers, including issues of team leadership, group dynamics, maintaining membership, and team assessment.

4. Assessment of current and desired district/agency policies re: service provision to the target population.

5. Development and utilization of needs assessment tools to develop a prescriptive and systematic program of training for participating team embers.

6. Training strategies focusing on content, format, and cost effectiveness.

7. Follow-up team activities after formal training has occurred.

8. Evaluation measures.

9. Further reading and resources.

Project staff have been contacted by and are continuing to look for other appropriate publication venues for project products. This includes the possibility of outside publishing agencies taking on the publishing, editing and marketing of products which the field would find useful and innovative. Interest has been especially strong in the content of training sessions provided by project staff and training participants at regional and national conferences.

As noted in the Abstract portion of this report, funding was requested and approved for three years of continued funding through OSERS under the CFDA classification 84.024D Outreach. The new project, Medically Fragile Inservice Training for Related Services Teams-Outreach (PR/award # H024D30045), will provide further opportunities to utilize the model training strategies developed under the original M-FIRST project and continue many valued activities in up to fifteen new, larger sites throughout the target states of Oregon and Washington.

Specifically, M-FIRST Outreach will allow project staff and others who have previously benefitted from the original M-FIRST project to continue building a network of information and

resources regarding current trends and best practices concerning young medically fragile children in the school setting. Training consultants will be able to continue to provide regional and national technical assistance and instruction to service providers through the auspices of the project. Data focusing on the number and severity of medically fragile children, the services they require, and training needs of service providers will continue to be gathered and aggregated with data from the original project.

The new M-FIRST Outreach project works collaboratively with many of the Education Service Districts (ESDs) in the two states. ESDs provide a number of specialized services to local school districts and are often the main provider of intensive special education and health-related services for low incidence populations in schools. Participating ESDs have agreed to work closely with the project in developing networks of interdisciplinary teams, assess training needs, and make their team members available for intensive training and technical assistance. Each ESD, with direction from the project staff, has identified a coordinator within their system who functions as the lead contact with project staff and organizer of the ESD's collaboration, team development, training, and evaluation. Project staff work with the ESD coordinators to helkp them address local issues of service provision and training.

Project staff continue to be called upon to consult, provide training and technical assistance regionally and nationally based on the work completed in the initial three years of the M-FIRST project. The new Outreach project will allow even more activities of this nature to be initiated and continued.

XI. Assurance Statement

In addition to the three copies of this full final report being sent to:

Ms. Mary Vest
Office of Special Education Programs
U.S. Department of Education
400 Maryland Avenue SW
Switzer Building Room 3516
Washington DC 20202-2626

One copy of the full final report is also being sent to:

ERIC/OSEP Special Project
ERIC Clearinghouse on Handicapped and Gifted Children
Council for Exceptional Children
1920 Association Drive
Reston Virginia 22091

One copy of the title page and abstract is also being sent to:

NEC*TAS
Suite 500
Nations Bank Plaza
137 E Franklin Street
Chapel Hill North Carolina 27514

National Clearinghouse for Professions in Special Education
Council for Exceptional Children
1920 Association Drive
Reston Virginia 22091

National Information Center for Children and Youth with Disabilities (NICHCY)
PO Box 1492
Washington D.C. 20013-1492

Technical Assistance for Parent Programs Project (TAPP)
Federation for Children with Special Needs
95 Berkeley Street
Suite 104
Boston Massachusetts 02116

National Diffusion Network
555 New Jersey Avenue NW
Washington D.C. 20208-5645

Child and Adolescent Service System Program (CASSP)
Technical Assistance Center
Georgetown University
2233 Wisconsin Avenue NW, Suite 215
Washington D.C. 20007

Northeast Regional Resource Center
Trinity College
Colchester Avenue
Burlington Vermont 05401

MidSouth Regional Resource Center
University of Kentucky
Mineral Industries Building
Lexington Kentucky 40506-0051

Great Lakes Area Regional Resource Center
Florida Atlantic University
1236 North University Drive
Plantation Florida 33322

Great Lakes Area Regional Resource Center
The Ohio State University
700 Ackerman Road
Suite 440
Columbus Ohio 43202

Mountain Plains Regional Resource Center
1780 North Research Parkway
Suite 112
Logan Utah 84321

Western Regional Resource Center
College of Education
University of Oregon
Eugene Oregon 97403

Federal Regional Resource Center
University of Kentucky
114 Porter Building
Lexington Kentucky 40506-0205

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