

**FINAL REPORT OF THE
INTERFACILITY/CRITICAL CARE TRANSPORT UNIT (IF/CCTU) TASK FORCE**

February 1997

Introduction

Traditionally, the primary reason for patient movement has been the need for additional care, typically care at a higher level, involving services, technology, or specialists not available at the patient's present location. Transport of critically ill or injured patients from one healthcare facility to another may involve risk to the patient. Therefore, the benefits of transporting these types of patients must be weighed against the risks of not doing so.

Another reason for interhospital transfer is patient preference. The patient or his/her family wishes to be treated by a physician who does not have privileges at the facility where the patient is hospitalized. Patients who were hospitalized out of their home area may wish to be closer to home, so visits aren't burdensome to family and friends. These types of transfers are generally of stabilized patients and the risk to the patient during the transport may be minimal.

An emerging reason for patient movement between facilities is the growth of managed care organizations, which prefer to have members treated in affiliated or "network" facilities. These types of transfers may be of a critical or non-critical nature. This trend will continue for the foreseeable future, as more and more people join, or are being moved into, managed care plans. The development of regionalized medical care nationally also has exacerbated the need for specialty transportation between facilities, using both aeromedical services and ground vehicles.

The IF/CCTU issue has been tackled by several national organizations. For instance, the American College of Emergency Physicians' patient transfer policy says, "The patient should be transferred in a conveyance staffed by qualified personnel and containing appropriate equipment." "Guidelines for the Transfer of Critically Ill Patients" is a joint publication of the American College of Critical Care Medicine, the Society of Critical Care Medicine, and the American Association of Critical-Care Nurses. This document outlines criteria (e.g., personnel, equipment, monitoring) necessary for transfers both within the institution and between facilities. The Commission on the Accreditation of Air Medical Services (CAAMS) has been working to develop "ground interfacility accreditation standards", based upon its current aeromedical standards, which can be integrated into its site visit process for aeromedical services which also provide ground transportation. The Emergency Medical Treatment and Labor Act (EMTALA), formerly known as the COBRA legislation, also has an impact on the subject: if a hospital transfers an emergency patient with an unstable condition, the transfer must be done with appropriate personnel and technology and the receiving hospital must agree to the transfer. The "qualified" personnel must be at a level to manage "foreseeable" problems during the transport.

Anecdotal reports indicated that several states had either begun discussions toward adopting standards for interfacility transports (e.g., Maine) or had recently adopted pertinent guidelines or regulations. To ascertain the status of several universal issues pertinent to development of New Jersey's EMS system, the Office of Emergency Medical Services conducted a survey of the 56 members of the National Association of State EMS Directors. Fifty-one (51) states/territories responded either by mail and/or telephone. One of the questions asked, "Does your state have statewide critical care transport (CCTU) regulations?" Eight jurisdictions replied affirmatively: Alaska, Florida, North Carolina, Rhode Island, Utah, US Virgin Islands, Washington, and West Virginia. Of those states/territories, one said its regulations are not specific, one said its regulations are specific only to neonatal cases and one said its regulations are specific only to training. Copies of these have been requested for future reference. An additional feature is that existing plans often call for regional or local discretion in adoption or implementation of the plans, so IF/CCTU transports actually may not be occurring statewide.

New Jersey's Background in Interfacility/CCTU Care

Prior to 1975, transfers were rare. Patients were taken from the scene to the closest hospital, where they usually stayed. Currently, patient transfers in New Jersey primarily are occurring using proprietary or occasionally volunteer basic life support ambulances and crews, with advanced life support care supplied by a staff nurse and/or other personnel from the sending or receiving facility, under that facility's license. Stipulations of the ambulance licensing regulations (N.J.A.C. 8:40) reference the personnel required during some types of transfers. Special units have been formed for neonatal and burn victim retrieval; other patient categories have not been addressed. In most cases, there are no consistent standards for staffing or equipment and the sending or receiving facility decides what is needed on a case-by-case basis. The responsibility for the patient remains with the sending facility until the patient arrives at the receiving facility and care is transferred or if the receiving hospital retrieves the patient the transfer of care occurs at the bedside. A survey of all New Jersey hospitals was requested during the course of the Task Force's deliberations to ascertain information about patient transfers; this information is related later in this report. Historically, if a patient is in critical condition and ground transport would be inadvisable or in cases when appropriate hospital staff are unavailable, the state's Emergency Medical Response Program helicopters (NorthSTAR and SouthSTAR) have been used for IF/CCTU transports. The helicopters are staffed with a flight nurse and a flight paramedic. The state also relies on licensed out-of-state backup helicopters to perform interfacility transports to specialty centers.

New Jersey's method of transferring critically ill or injured patients is restrained by the enabling legislation of its mobile intensive care system. Mobile intensive care units (MICUs) were first authorized to operate in New Jersey in 1973 (P.L. 1973, c.229). The initial law permitted hospitals with an accredited coronary care unit to develop a pilot program to provide MICU services "in cooperation with voluntary health agencies, including, but not limited to, the American Heart Association (New Jersey Affiliate) and first aid, rescue or emergency squads

under regulations promulgated by the commissioner." Nine demonstration projects, covering various parts of the state, were then developed, emphasizing prehospital treatment of cardiac emergencies.

The original law did not specifically define "advanced life support," but enumerated several permitted and prohibited skills and procedures which a paramedic could perform. Since it was a pilot program, a "sunset" provision, later extended to June 30, 1979 by P.L. 1978, c.132, was included. In June 1979, the MICU program was made permanent by P.L. 1979, c.116. Over the years, it became evident that the MICUs were treating a wide variety of traumatic and medical emergencies. The physicians running the programs also determined that radio failure protocols were needed (the initial law required radio contact in order to treat a patient).

In 1984, new legislation redefined the advanced life support program in the state. The new law says "[o]nly a hospital authorized by the [c]ommissioner with an accredited emergency service may develop and maintain a mobile intensive care unit, and provide advanced life support services utilizing licensed physicians, registered professional nurses trained in advanced life support nursing, and mobile intensive care paramedics." As before, paramedics are only allowed to practice their advanced life support skills when they were operating as part of the MICU program. Additionally, the law defines "advanced life support" as "...an advanced level of pre-hospital, inter-hospital, and emergency service care which includes basic life support functions, cardiac monitoring, cardiac defibrillation, telemetered electrocardiography, administration of anti-arrhythmic agents, intravenous therapy, administration of specific medications, drugs and solutions, use of adjunctive ventilation devices, trauma care and other techniques and procedures authorized in writing by the [c]ommissioner" (P.L. 1984, c.146, N.J.S.A. 26:2K-7(a), see Attachment 1). By April 1995, the MICU system had expanded statewide, without duplication of coverage areas, and all citizens were covered by advanced life support care.

In the intervening years, the interfacility/CCTU issue arose several times. In 1986, the Department of Health received a certificate-of-need application from a Philadelphia-based private ambulance company, which applied to provide advanced life support, including interfacility care, in New Jersey. The application was rejected, based on the strict language of the 1984 law. In 1989, the Department proposed MICU certificate-of-need rules (N.J.A.C. 8:33N), which included language which would have allowed hospitals to apply to provide IF/CCTU services. Significant comments were received, especially from the licensed ambulance community, because the proposal precluded entities other than hospitals from applying for the IF/CCTU component. As a result of this feedback, the advanced life support regulations went forward with only the prehospital MICU component; however, the Department promised it would further study the IF/CCTU issue.

About the same time, several advisory bodies also made recommendations regarding IF/CCTU. The Governor's Council on Emergency Medical Services advised in its 1988 final report, "Develop efficient critical care inter-hospital transfer services, including maternal and neonatal transport" (Recommendation #7, see Attachment 2). The intent was to "...assure the provision of adequate transport with appropriate level of personnel for patients requiring inter-hospital

transport." The recommendation was echoed by the Emergency Medical Services Interim Committee in its 1990 report to the Commissioner of Health. At that time, it was noted that "[c]hanges to the certificate-of-need regulations and critical care transport units put this activity on hold (CCTU was removed from the pending regulations). There is some interhospital transport being done, but the system is not cohesive and there are no standards." (See Attachment 3.)

In October 1993, the National Highway Traffic Safety Administration's (NHTSA's) EMS Technical Assessment Team conducted an evaluation of New Jersey's EMS system. In the "Transportation" section of its final report, the team wrote, "[a]lso of major concern is the inability to efficiently move ALS patients from one facility to another due to existing regulations. This creates problems for hospital staff who must send trained personnel with BLS ground units in order to accomplish these transports. In many cases helicopters are used due to a lack of ground transport resources." The team recommended, "[e]stablish the capability to provide ground advanced life support interfacility transports statewide." (See Attachment 4.) The same recommendation was echoed in the report's "Resource Management" section, where it was noted there was "no...interfacility ALS critical care ground transportation system in place."

The Medical Transportation Association of New Jersey (MTANJ) approached the Office of Emergency Medical Services in late 1993 with a proposal which would enable non-hospital EMS services to offer their own arrangements for interfacility transports. The MTANJ wanted permission for its members to provide registered nurses (and possibly paramedics) to effect these transfers in proprietary ambulance service vehicles. It was the membership's opinion that volunteer first aid squads were increasingly unable to provide transfer services, due to staffing shortages, especially during the daytime, as evidenced by the increase in the number of requests the proprietary services were receiving. Additionally, the MTANJ noted that reimbursement issues with Medicare and other insurers were prohibiting the proprietary ambulance services from billing for the extra cost of returning nursing staff to the hospital, once the transfer had been completed. No action was taken on the proposal due to the nature of New Jersey's advanced life support law.

During 1994, the Office of EMS increasingly received complaints from several of the licensed ambulance companies alleging that some other companies were offering to provide nursing staff, equipment, and medical control for IF/CCTU transfers. These non-compliant providers were usually out-of-state services (which were dually licensed in New Jersey, too) which were already providing these services in their home states. Some hospitals were also adding standard "Request for Proposals" (RFP) language, requiring bidders for ambulance service to include these services in their bid packages. The complainants felt they were at a competitive disadvantage, because adhering to state law would preclude them from bidding successfully. On February 23, 1995, the Department's Senior Assistant Commissioner Paul R. Langevin, Jr., sent a letter to all New Jersey health care providers, including licensed ambulance services and hospitals, summarizing the State law and reminding them of the prohibition against providing ALS care by an entity other than a qualified hospital. Mr. Langevin stated,

"Please be advised that current New Jersey law prohibits licensed ambulance services from offering critical care transportation by providing advanced life support staff, which is inclusive of registered nurses. State law provides that only approved hospitals, operating a mobile intensive care unit (MICU) may provide advanced life support either in the prehospital environment or in interfacility transfers (N.J.S.A. 26:2K-7, et seq.). The only acceptable procedure under current law, would be for the receiving or sending hospital to provide the nurse to effectuate the transfer of care from facility to facility. This nurse must be an employee of the facility, and cannot be contracted through the ambulance service." (See Attachment 5.)

Following distribution of that letter, OEMS continued to work with the MTANJ and others on the IF/CCTU issue. The Department received two separate proposals for IF/CCTU during 1995: an updated proposal from the MTANJ (see Attachment 6), and another from the Critical Care Transport Unit subcommittee of the MICU Advisory Council (see Attachment 7). Both aimed to provide the highest quality of interhospital care, without excluding any interested services from participation. When the proposals were evaluated, however, it was determined that neither met the statutory requirements of N.J.S.A. 26:2K-7, et seq. A compromise proposal, taking portions of both proposals was drafted as a suggested solution. In that document, it was proposed that IF/CCTU be considered a separate healthcare service, licensed under the authority of the Health Care Facilities Planning Act (N.J.S.A. 26:2H-2, see Attachment 8). Unfortunately, after the proposal was sent to the Department's legal counsel, it was determined that the advanced life support law and its evolution demonstrated that the Legislature had intended that this type of service be specifically included, and could neither be interpreted narrowly nor be regulated separately. It became apparent it would be necessary to study the current system before any suggestions for changing the ALS law could be sent to the Legislature.

During this same time, Medicare was rejecting non-hospital operated proprietary services Part B claims for IF/CCTU transfers, because New Jersey law only allows hospitals to provide ALS services. Additionally, proprietary basic life support services remained concerned that they were being unfairly prohibited from providing IF/CCTU service. In June 1995, Departmental representatives met with representatives of the MTANJ to discuss the matter. The providers were again informed that the Department had no discretion in the matter, as it was prohibited by law for any agency other than an MICU to provide advanced life support services. This prohibition could not be waived by the Department. During that meeting a question arose, and was clarified, concerning the use of agency nursing personnel. In a followup letter (July 7, 1995) to all health care providers, Mr. Langevin identified the criteria necessary so that agency personnel could be used in interfacility transfers. Essentially, "[i]t is permissible to use agency nurses to make these transfers, provided it is clear that the agency nurse is an agent of the sending or receiving hospital." A number of conditions were spelled out. (See Attachment 9.)

During 1995, an advisory committee worked to revise Chapter 12 of the hospital licensure rules, which cover emergency departments. Revisions were made to also include trauma care, pediatric EMS, and other concerns, including patient transfer between facilities and "anti-dumping" rules mirroring those of the federal government. The recommendations were

forwarded to a larger Department of Health and Senior Services advisory committee which was coordinating the entire process of hospital licensure revision, and underwent review within the Department as well. The rules have not yet been finalized for publication in the New Jersey Register.

Summary of IF/CCTU Task Force Deliberations

Recognizing that further study was needed on the whole IF/CCTU issue, the Office of Emergency Medical Services formed a broad-based task force early in 1996 to examine the various IF/CCTU issues. (List of members - Attachment 10.) The group was charged with formulating a comprehensive plan to present to the Department, through the New Jersey EMS Council, which would assure that patients could be moved safely and efficiently from one healthcare facility to another. The plan had to address the transporting vehicle and equipment, staffing, and training requirements, as well as the statutory and regulatory matters that might need modification. In order to assure the widest possible input into its plan, the group met six times and heard reports from many affected portions of the EMS system. It also collected information from the healthcare literature and from other sources (see attached bibliography). At its seventh meeting, the task force finalized its report and recommendations. During the task force's deliberations, the members agreed the information discussed at the meetings would be kept confidential until the task force recommendations were finalized. Summaries of the meetings follow.

March 1996

The task force's organizational meeting was held March 7, 1996. Members received a packet of information and briefings during the meeting to update them on the IF/CCTU issue, including the history of New Jersey's MICU program and applicable laws and regulations. Discussion followed. The number of IF/CCTU transfers by ground units was unknown; however, it appears that many of these patients seemed to require advanced life support care only because they had an active intravenous line (patients with heparin or saline IV catheter plugs can be transported by basic life support services). Each year, about 20% of SouthSTAR's flights and 40% of NorthSTAR's flights are IF/CCTU completed missions. Approximately 400 aeromedical patients were transported out of New Jersey by out-of-state helicopters. The Office of Emergency Medical Services presented the issues that needed to be addressed in developing an IF/CCTU system. The proposals from the MTANJ and the MICU Advisory Council were also discussed, along with the pros and cons of each proposal.

April 1996

A lengthy discussion took place at the group's April 11, 1996, meeting concerning the need for statistical information. A compromise was reached, whereby the group would move ahead, but begin to collect data simultaneously. During a sample period (calendar 1995), West Jersey Health System reported there were 2,999 interfacility transports of all types. Of those, 19 (0.6%) used the receiving facility's RN/CRIT staff and 252 (8.4%) used a hospital RN, for a total of 271

(9.0%) transports using an RN. Specialized equipment used included 232 (7.7%) of all transports where a monitor/defibrillator was used and 65 (2.2%) of all transports where an IV pump was used. Only 113 (3.8%) of all transports used supplemental oxygen.

A Robert Wood Johnson University Hospital representative reported that of 2,300 patients transported into the facility within a one year period, 330 were pediatric patients. Of the 2,300 patients, 50% were classified as critical care patients and 80% of the 2,300 were cardiac patients of all types. The Department was asked to send out a survey to all New Jersey hospitals to gather retrospective information on patient transfers during any three-month period. Preliminary discussion began to look at the level of IF/CCTU care needed for particular patient classifications. Three levels of patient acuity were considered, focusing on patient classification, minimum staffing and points to explore further.

May 1996

Representatives from the EMS for Children community were guests at the May 3, 1996, meeting. In preparation for the meeting, a Committee on Pediatric Critical Care Transportation was formed by the EMS for Children Advisory Council. Task force members heard a presentation on the goals of pediatric critical care transports, including the components of a pediatric critical care transfer system: medical control, team composition, program director, medical director, nursing director, dispatch center, and quality improvement program. Recommendations were made on the training and experience levels for Pediatric Intensive Care Unit (PICU) transport teams, configuration of the service provider, and necessary equipment. It was noted that eight hospitals had certificates-of-need to provide Pediatric Intensive Care Unit services, but that another six hospitals also were providing PICU care. Of the eight approved hospitals, seven had a transport team for IF/CCTU patient retrieval. Discussion followed the presentation.

June 1996

Task Force members heard a discussion on interfacility transport of trauma patients and were updated on the use of the aeromedical helicopters at their June 14, 1996, meeting. The New Jersey Trauma Center Council representative stressed that the main goal of a trauma system is to get the right patients to the right hospitals in a timely fashion. Trauma surgeons recommend that, when in doubt, prehospital providers should transport their patients to a trauma center. In New Jersey, there was an average prehospital undertriage rate of 13% for trauma patients taken to non-designated hospitals and an overtriage rate to the trauma centers of approximately 15%. Data from October 1, 1991 - September 30, 1994, compiled from a review of 9,362 trauma patient records, showed that 4,211 of these patients were transported to hospitals which were not designated trauma centers. Of that group, 222 patients were transferred: 58 (26%) by helicopter and 74 (33%) by ground ambulance. Transfer data was not available for the remainder of the group (90 patients). Generally, the Department-approved Trauma Triage and Transport course has contributed to improved triage; however, it appears that trauma patients are still being held at nondesignated hospitals. Trauma surgeons believed that a major reason more patients were not moved was because a transfer mechanism was not readily available. The Trauma Center

Council's recommendations for transport team composition and training were distributed, as contained in "Indications for Transfer of Trauma Patients from Non-Trauma Center to Trauma Center Care." In that document, they endorsed the model of a paramedic/nurse team and recommended that the training of the transport team mirror the training of the flight crew. When transporting trauma patients, the IF/CCTU team should be under the medical control of the receiving trauma center.

The second major topic at the June meeting was aeromedical services. It was reported that 60% of SouthSTAR's interfacility missions were cardiac-related. An activity report for the New Jersey Emergency Medical Services Helicopter Response Program for calendar year 1995 was distributed to the task force members. Discussion ensued on the applicability of the current aeromedical training program for future use as an interfacility transportation training course.

July 1996

The first topic of business at the July 19, 1996, meeting was an MICU Advisory Council report. As managed care and regionalization grow, transportation between facilities and the reimbursement for this service will be affected. The acuity level of the transported patients may also be higher than it is for the typical prehospital advanced life support patient. Diverse staff may be needed to meet these needs. The MICU Advisory Council recommended three levels of patient classification: stable (possibly with IV therapy), intermediate (with more extensive needs), and specialized (such as neonates or balloon pump transfers). While standing orders could be used routinely during IF/CCTU, patients may deteriorate during transfer, so on-line medical command should be available. This might be implemented with simple modifications to the current MICU system.

The New Jersey Association of MICU Program Administrators noted that there were no set criteria for transporting IF/CCTU patients. MICUs were frequently being activated by the 9-1-1 system to respond to physicians' offices and nursing homes for transports, only because the patient had an intravenous line. This appears to be an inappropriate allocation of resources, but there are few alternatives with the current system. Paramedics would like to participate in IF/CCTU programs and would like to expand their scope of practice. The group continued to support the March 1995 proposal of the MICU Advisory Council. In the opinion of the MICU Program Administrators, the three levels of care needed are: stable (perhaps with IV line, or by BLS with an IV catheter plug), advanced transfers (falling under the paramedic's scope of practice, possibly with an expanded medication list), and acute/special needs (requiring special equipment and or staff).

St. Barnabas Medical Center has operated a specialty burn transport unit for nine years. During that time the unit has transported over 1,500 patients. Paramedic staff for the burn transport unit, part of St. Barnabas' MICU, receive additional training, including clinical experience in the burn unit. The transport team receives medical command from a St. Barnabas burn surgeon, who authorizes transportation and speaks directly with the sending physician, thus providing continuity of care. A St. Barnabas physician stressed that if proprietary services provide

IF/CCTU care, any physician providing medical command must be licensed in New Jersey. Further, staffing levels for IF/CCTU should be determined by the sending or receiving physician, and not by the transporting agency.

An MICU EMS Educator, who currently provides critical care transport services in Maryland, stressed the importance of consistent on-line medical command, ideally by the receiving physician. Some cases will fall outside the paramedic's scope of practice, and require a registered nurse or other specialized staff. In Maryland, as many as 30% of all patient transfers require an RN. Discussion followed concerning staffing levels, training programs, and the additional burden of providing on-line medical command for interfacility transfers.

November 1996

Prior to the meeting, the Office of EMS mailed survey results to task force members: 45 hospitals participated, reporting 4,483 patients transported. Of those, 35% were reported as emergency transports and 60% were non-emergency (5% were not categorized). Transportation was provided in 95% of the cases by proprietary services, 1% by volunteer services, 1% by the EMS helicopter, and 1% by invalid coach (transport mode was unknown for the remaining 2%). Additional staffing required was 48% of all calls required a registered nurse to accompany the patient, 9% required a physician, 3% required a respiratory therapist, and the remaining 40% required miscellaneous personnel (e.g., nurses aide) or required no accompaniment other than the vehicle's usual staff (see Attachment 10).

The November 1, 1996, agenda included presentations from representatives of cardiology, aeromedical, hospital administration, and basic life support. The cardiology presentation noted there was a large population of cardiac patients who required transportation to a tertiary center for diagnostic procedures, other cardiology procedures, or heart surgery. Although most of the patients were stable, they required qualified staff to monitor cardiac rhythms and infuse medications during transport. The transfers were usually performed by physicians or nurses, but could have been performed by paramedics, except in a small proportion of cases (e.g., balloon pump transfers). Additionally, using on-duty hospital staff is becoming more difficult as hospital staffing levels are kept to a minimum. Cost is also a factor to consider. Mr. Leggett reported that additional cardiac-related information would be sought from the Department of Health and Senior Services' Cardiovascular Health Advisory Panel (CHAP) at its November 20 meeting.

A representative from the NorthSTAR portion of the New Jersey EMS Helicopter Response Program noted that about 25% of NorthSTAR's flights are interfacility transfers; of those, the majority are cardiac patients. The cardiac patients which are transferred range from those who are pain-free, but failed hospital cardiac-related testing, to those who need cardiac catheterization. Some patients probably should have been on a balloon pump at the sending hospital (the New Jersey EMS Helicopter Response Program helicopters do not transport patients on balloon pumps, although Hahnemann, Alleghany, and Skyflight do transport such patients). In any event, there have been only about a dozen requests for NorthSTAR to transport balloon pump

patients.

Most of the helicopter's interfacility transfers are distance-related. The aeromedical helicopters are staffed with a flight nurse and a flight paramedic. The nurse's expertise is valuable when patients are being transferred between Intensive Care Units. It is essential for the nurse to be a team member to maintain the level of care between facilities, even though a nurse's salary is about 30% more than a paramedic's. A bed must be available at the receiving hospital before the transport can take place. Equipment on board includes a defibrillator, ventilator, external pacer, and three intravenous pumps; lidocaine and dopamine IVS have both been started inflight. Many of the patients could have safely gone by ground. The proposed IF/CCTU service will be complementary to, rather than competitive with, the aeromedical helicopters. Using the aeromedical helicopters costs about \$2,500 per flight hour.

An administrator from Jersey City Medical Center, an MICU-affiliated hospital, said that area hospitals will have to network to accomplish transfers to the growing number of speciality centers without depleting existing staff. While not disputing the need for IF/CCTU services in New Jersey, the methodology was questioned. The presenter's hospital felt that IF/CCTU services should be required by regulation to be hospital-based. Or, if regulations allow proprietary services to provide IF/CCTU services, those companies should be required to conform to the same regulations that a hospital-based system would. Additionally, there must be checks and balances, including a medical director with global monitoring responsibility for the practitioners. The Robert Wood Johnson University Hospital representative said the major concerns would be easy access to the transport team, appropriately trained staff with appropriate equipment, and a fast response, while at the same time continuing to maintain in-hospital standards of care. Insurance companies do not want to pay for "day before" testing or procedures, so patients are brought in early in the morning and procedures are done in one day.

The Medical Transportation Association of New Jersey representative reaffirmed support for the organization's original proposal and stated that a system for moving patients is currently in place, but needs direction. If patients are not being moved, the association is not aware of it. He questioned whether hospitals may be keeping patients because they did not want to release staff for the transport. Discussion followed that perhaps hospitals are delaying notification of ambulance providers until an hour or so before the transport. Additional discussion revolved around whether paramedics might need additional training to perform IF/CCTU transports. Then nurses might only be needed on 20% of all calls, if medical direction were available to a trained IF/CCTU paramedic. Everyone agreed that pediatric intensive care and neonatal intensive care transports were specialized situations which would need specially qualified staff.

A Multicare spokesman, noted his company was currently the largest independent EMS provider in New Jersey. He said Multicare has a good working relationship with its contract hospitals, although sometimes it seems the transports all come at once. The majority of patients transferred are stable, but have an IV line which needs to be monitored. A nurse from the hospital floor joins the ambulance staff to provide continuity of care, in the meantime the floor has less coverage. He felt that a paramedic with additional training could handle most calls. Currently,

Medicare is reimbursing \$292, which is inadequate to cover costs of the present system. Multicare would like to be given the opportunity to hire paramedics and to form an alliance with hospitals for medical control, training, and quality assurance.

Representatives from two separate dually licensed (both Pennsylvania and New Jersey) EMS services described how IF/CCTU operates in Pennsylvania. The Life Support Ambulance, Inc., representative noted that her service's typical team was a critical care nurse and a paramedic, with an EMT driver. Some runs were with two paramedics and an EMT driver (the drivers have Emergency Vehicle Operations training). Only a few required a physician or a nurse practitioner. Calls are normally scheduled as emergent, urgent, or non-urgent and back-up is available. This allows them to provide IF/CCTU care for patients with various levels of acuity in the most cost-effective manner. She explained the training of her staff and the equipment generally carried. All staff are familiar with the back of the vehicle. Quality assurance is performed at least quarterly. In Pennsylvania, hospital rather than ambulance companies decide who is needed on a particular transport, and this varies from county to county. A specialized prehospital registered nurse (PHRN) course is available in Pennsylvania through the Department of Health. Her company has continuing education courses so the nurses can challenge the paramedic test. They have specialized protocols (e.g., for spinal cord injuries). In Pennsylvania the ambulance companies can expand their medication lists with the approval of their medical director, although extra training may be needed.

The hospital-based transport company representative said his service (JeffSTAT) consists of a subcontract for the vehicle and a paramedic; Thomas Jefferson University hospital supplies the nurse or a critical care health practitioner (HP). Once the nurse is paged concerning a particular call, he/she performs a triage and decides what staffing is needed for the transport. Some interfacility transfers can be scheduled in advance and calls are prioritized as they come in. JeffSTAT does not allow family members to ride in the vehicle. He felt they worked well with the SouthSTAR portion of New Jersey's aeromedical program. The service has only received two balloon pump transfer requests in five years. He reiterated that Medicare's reimbursement rate is low for this type of service. Any IF/CCTU service will probably also have to perform basic life support calls as well.

Other testimony was received from visitors regarding specialized staffing and training needed, the length of time which a typical transfer takes (about three hours), the difficulty of triaging calls, the necessity for driver training, the need for medical control and command, the question of liability, and the need to make IF/CCTU cost-effective.

November Work Session

In its afternoon work session that same day, task force members noted that IF/CCTU protocols have already been developed for the New Jersey Emergency Medical Services Helicopter Response Program. The task force members acknowledged there were two ways a patient could be considered to be critical: time (when time is of the essence) and acuity (how sick or injured the patient is). They reaffirmed their view that an intravenous line should not automatically

mean ALS care is needed. However, the Department of Health and Senior Services has told them that IV monitoring is not included in the new EMT-Basic curriculum being taught in New Jersey. In their final deliberations they agreed to look back at the proposals from the MTANJ and the MICU Programs. They agreed upon the three levels of IF/CCTU which may be needed and further agreed that changes would have to be made in the paramedic law for this scenario to occur.

Cardiovascular Health Advisory Panel (CHAP) Input

Mr. Leggett met with the CHAP on November 20, presenting information regarding how the current transport system operates and answering questions regarding his presentation. However, the presentation was made near the end of the meeting and several physicians had to leave prior to Mr. Leggett's talk. Therefore, he was invited back to the CHAP's December 18 meeting in order to ensure that CHAP members had appropriate input into the IF/CCTU process. The CHAP complimented the Department on its attempt to improve IF/CCTU in New Jersey, and applauded the efforts of the task force. They indicated their main concern was developing an effective system which would ensure the appropriately trained staff necessary for transport would be available. They stated they realized this probably could not be accomplished by a hospital sending hospital staff, but the individuals probably would be employees of a proprietary ambulance company operating under medical oversight. In that way, the service would be available on short notice. Another positive aspect was that staff would become more competent and efficient because of the increased caseload. The CHAP requested a copy of the final task force report, as soon as it was available.

February 1997

On February 13, 1997, the task force members met for the final time. They discussed the input they had received and finalized the draft report and recommendations. The names of task force members, and those of the Office of EMS staff who assisted them, are listed in Attachment 11.

Recommendations of the IF/CCTU Task Force

The task force recognized that basic life support services already are providing interfacility transport. The services currently provided by those agencies were identified as being part of the "interfacility," but not the "critical care transport unit," portion of the recommendations. The following table shows the task force's recommendations regarding levels of IF/CCTU care.

Patient Acuity	Staffing	Discussion
<p>Level 3 (BLS Interfacility Transfer Level) Clearly and completely stable patient (minimal risk of decompensation), BLS only, including saline/heparin IV catheter plug and oxygen therapy (no changes required to N.J.A.C. 8:40)</p>	2 EMTs	This level of care currently provided under N.J.A.C. 8:40. Infusing IV line not in NJ EMT-B curriculum
<p>Level 2 (CCTU Level 2) Patient stabilized at facility, but potential to deteriorate en route; continuous monitoring required; medications and skills for any intervention within scope of MICP, as defined in N.J.A.C. 8:41</p>	1 EMT <u>and</u> 1 Paramedic (<u>or</u> 1 MICN)	Licensed BLS services allowed to hire MICPs; 1 paramedic could be used on IF/CCTU (because in interfacility the patient has a definitive diagnosis)
<p>Level 1 (CCTU Level 1) Patient unstable or with high potential for complications (e.g., going to a critical care area, hemodynamic instability, invasive monitoring, high level of care); medications or interventions beyond the present scope of N.J.A.C. 8:41)</p>	1 EMT driver (EVOC trained) 2 ALS providers (1 must be RN, other determined by sending physician - could be paramedic or RN)	Additional staff as needed: physician, physician assistant, nurse practitioner, respiratory technician, etc. Could provide specialized services (e.g., burns, neonatal, pediatrics) if desired, but not mandated

The following recommendations specifically cover the CCTU portion of IF/CCTU care (i.e. CCTU Levels 2 and 1)

Medical Command

Basic life support services currently are not required to have either medical command (on-line) or medical control (off-line). MICU base station physicians report that it is difficult to provide a timely response at the base station radio, due to increasing patient volume in the emergency departments. Therefore, it was recommended that a set of statewide IF/CCTU standing orders and radio failure protocols be developed so that medical command is only necessary in an emergency or when a situation does not fit the standard protocols. The current MICU standing orders could be modified and expanded to fit this need. Services which are not MICU-based could contract with a medical control physician or arrange for the sending physician or the receiving physician to provide on-line medical command during the transfer. This might not necessarily be the local MICU hospital, but could be a physician group meeting the same qualifications for medical direction which the MICUs currently meet. Specialty transfers, such as pediatric, neonatal, or trauma, may need special medical command. Only a few transfers are expected to be Level 1 (most serious).

Medical Direction

All participating agencies would have to have a medical director, either through contracting with an MICU hospital or an acceptable physician or physician group for quality assurance. This would also be an opportunity for assuring provider competency.

Training

Conduct specialized competency-based orientation/training for paramedics and registered nurses performing the new IF/CCTU role.

Equipment

Suitable equipment and medication lists should be developed at the ALS transport levels (taking into consideration the patient acuity levels recommended). The vehicle and service must be licensed as an emergency ambulance under N.J.A.C. 8:40, but the vehicle would need to carry the specialized equipment and medications only when operating as a CCTU vehicle.

Communications

On-line telemetry is not necessary for IF/CCTU, since these patients have known diagnoses. Communications capability is required. Any communications system needs redundancy. Cellular telephones do not work in all locations, so a backup system is necessary.

Conclusions/Future Directions

New Jersey needs a comprehensive Interfacility/Critical Care Transport Unit system. Such a system should include all interested EMS providers, adhering to statewide standards for training, vehicle staffing, and equipment. Fully implementing the IF/CCTU system will require several changes, especially in the advanced life support enabling legislation and in the applicable regulations governing advanced life support care. Three levels of care have been identified by the task force. It appears appropriate that Level 3 (BLS) transfers are currently being provided. Continuing this level of care will not require changing either the law or applicable regulations (adequately addressed by N.J.A.C. 8:40 now), although anything which may be decided will have to agree with the national EMT-Basic curriculum. For Levels 2 (intermediate) and 1 (most serious), the advanced life support law will have to change to allow paramedics to be employed by non-hospital providers. Also the law will need changing to allow non-hospital providers to provide an advanced level of IF/CCTU care. The paramedic formulary may also need to be expanded to address Level 2 transport needs. This report will now be forwarded to the New Jersey Emergency Medical Services Council for review, comment, and sign-off, before going to the Commissioner of Health and Senior Services for approval.

List of Attachments

- Attachment 1 ALS Law (P.L. 1984, c.146; N.J.S.A. 26:2K-7 et seq.)
- Attachment 2 Recommendation #7, Governor's Council on Emergency Medical Services (1988)
- Attachment 3 Comments on Recommendation #7, Emergency Medical Services Interim Council (1990)
- Attachment 4 "Transportation" section recommendations, NHTSA EMS Technical Assistance Team report
- Attachment 5 Paul R. Langevin, Jr., letter to NJ hospitals, Feb. 23, 1995
- Attachment 6 Medical Transportation Association of New Jersey IF/CCTU proposal
- Attachment 7 Critical Care Transport Unit subcommittee of the MICU Advisory Committee IF/CCTU proposal
- Attachment 8 Applicable sections - Health Care Facilities Planning Act (N.J.S.A. 26-2H-2)
- Attachment 9 Letter from Paul R. Langevin, Jr., July 7, 1995
- Attachment 10 Interfacility/CCTU survey results
- Attachment 11 List of Task Force Members and OEMS Staff Assisting

Selected Bibliography (in addition to list of attachments)

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