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**UNITED NETWORK FOR ORGAN SHARING MEMBERS ATTITUDES AND
BARRIERS TOWARD TRAINING**

A Research Paper Presented to the Graduate Faculty of STEM Education and
Professional Studies at Old Dominion University

In Partial Fulfillment of the Requirement for the Masters of Science Degree

By

Mary Wyche

December 2010

Signature Page

This research paper was prepared by Mary Wyche under the direction of Dr. John Ritz in OTED 636, Problems in Occupational and Technical Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Masters of Science.

Approval By: _____

Dr. John Ritz

Date

Advisor and Graduate Program Director

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Mary Wyche

TABLE OF CONTENTS

Signature Page	ii
Acknowledgements.....	iii
CHAPTER I. INTRODUCTION.....	1
Statement of Problem.....	3
Research Goals.....	3
Background and Significance	3
Limitations	5
Assumptions.....	5
Procedures.....	6
Definition of Terms.....	6
Overview of Chapters	8
CHAPTER II. REVIEW OF LITERATURE	9
Training at UNOS	9
Training Delivery Methods.....	10
Summary	14
CHAPTER III. METHODS AND PROCEDURES	15
Population	15
Instrument Design.....	15
Method of Data Collection.....	16
Statistical Analysis.....	16
Summary	16
CHAPTER IV. FINDINGS	18
Response Rate.....	18
Report of Survey Findings	19
Summary.....	28
CHAPTER V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	30
Summary.....	30
Conclusions.....	32
Recommendations.....	35
REFERENCES	v
APPENDIX.....	vi
Appendix A - UNet Training Survey.....	vii
Appendix B - Cover Letter	xi

CHAPTER I INTRODUCTION

United Network for Organ Sharing (UNOS) is the private, nonprofit membership organization that brings together medicine, science, public policy, and technology to facilitate every organ transplant performed in the United States. UNOS assists transplant doctors, patients, and members of the public by helping to ensure that organs are procured and distributed in a fair and timely manner.

UNOS coordinates the nation's transplant system through the Health Resources and Services Administration's (HRSA) Organ Procurement and Transplantation Network (OPTN) contract. In 1987, Congress passed the National Organ Transplant Act that mandated the establishment of the OPTN and Scientific Registry of Transplant Recipients (<http://optn.transplant.hrsa.gov>). The purpose of the OPTN is to improve the effectiveness of the nation's organ procurement, donation, and transplantation system by increasing the availability of and access to donor organs for patients with end-stage organ failure. The Network is a non-profit, private sector entity comprised of all U.S. transplant centers, organ procurement organizations, and histocompatibility laboratories. A Board of Directors governs these members along with professional and voluntary healthcare organizations and the representatives of the public, which reports to the Division of Transplantation, HRSA, and ultimately U.S. Department of Health & Human Services (HHS). As an OPTN contractor, UNOS is responsible for meeting all contract requirements. As a contractor since the first OPTN contract award in 1986, UNOS strives to improve tools, systems, and quality processes that support OPTN contract objectives and requirements. These tools, systems and processes include managing the

national organ transplant waiting list, collecting, managing, and reporting of sensitive clinical data in a secure, and fail-safe environment. Additional areas include facilitating an open, inclusive forum for development, and continuous refinement of evidence-based policies and standards and member and policy performance assessment to ensure equitable, safe treatment of candidates and recipients (<http://www.unos.org>, 2010).

Under the contract, UNOS uses its UNet system to meet the information collection and dissemination needs of the OPTN. The UNet system is currently capable of collecting and utilizing time-critical information related to the OPTN, including information about transplant candidates for organ-specific waiting lists and information concerning all cadaveric and living donor organs. UNet is used 24 hours a day, 7 days a week by the nation's 852 organ transplant programs, 60 organ procurement organizations, and 159 histocompatibility (tissue matching) laboratories that work cooperatively to efficiently share the limited number of donated organs among thousands of patients. UNet unifies all transplant institutions in a single network, yet allows each OPTN member to operate independently and manage its organization's transplant databases (<http://www.unos.org>, 2010).

The requirements focused upon in this paper are on OPTN's contract deliverables that pertain to providing and evaluating training and education to the approximately 11,000 members and other professionals using the UNet system. The contract requires UNOS to provide and UNOS members to attend ongoing training and education on the continuous modifications of UNet functions, system notices, and vendor/data user notices and policy changes necessary for the dissemination of criteria for potential donors, protocols for clinical management, and guides for organ procurement.

Statement of Problem

The problem of this study was to identify the needs, preferences, effectiveness of training, and existing barriers that result in low participation among the UNOS member population in their continuous UNet training program.

Research Goals

To guide the study, the following questions have been developed:

1. What are the training needs as perceived by the members?
2. What are the participants' preferences regarding delivery methods?
3. Do respondents feel the training offered is effective?
4. Do UNOS members perceive specific barriers to attending training?

Background and Significance

In the early days of transplant medicine, there were few rules and guidelines regarding procurement sources and organ usability. Rules applied primarily to the need for immediacy in transporting organs after brain death had been declared and verifying that the condition of organs being transplanted did not represent a risk to the recipient. As improvements in transplant outcomes increased, economic pressures drove rapid growth in transplant medicine and related technologies (Casper, & Berg, 1995). Expansion continued with the social acceptance of both brain death and the idea of placing the organs of one person into another. This was followed closely by new legal and financial arrangements at the state and federal levels. As transplant technology spread and stabilized, the informal, ad hoc way of doing things had to change (Lathe, 1987). As the number of transplants being performed increased, payers and policy-makers demanded proof of efficacy. UNOS and various transplant medicine professional

groups (Hogle, 1995) became the formal organizations responsible for the formulation and dissemination of criteria for potential donors, protocols for clinical management, and guides for organ procurement.

UNet maintains the nation's organ transplant waiting list, which consists of highly confidential biologic and medical profiles of the more than 67,000 patients currently registered and waiting for transplants (UNOS/OPTN contract, 2003). As donor organs become available, genetic information and other matching criteria are entered into UNet. The system generates a list of potential recipients, ranked according to established criteria. Human organs remain viable for extremely short periods. The entire national matching, procurement, and delivery process must be completed within a very limited period of time. UNet uses state-of-the-art technology to accomplish this mission-critical process in the shortest possible timeframe. UNet also enables transplant teams to customize match criteria to meet the particular needs of each patient. Customizing match criteria speeds placement to appropriate recipients because no time is wasted offering organs to the patients who will not be able to use them because of physiological incompatibilities.

The UNet environment is national in scope but provides individual user-institutions with the ability to manage their own records, privately and in a highly secure network environment. With UNet now online, institutions are able to internally manage and store their own patient and donor records with the knowledge that their records are consistent with the national database. Through its past experiences with the UNet system, UNOS recognizes that users of the UNet system need ongoing training and documentation support to ensure continuing success in using the system and its

information accurately and efficiently (UNOS/OPTN contract, 2003). The UNOS Information Technology department employs an experienced technical writing and training staff to create and maintain all technical and user documentation of the OPTN system. UNOS has carried out the OPTN professional education initiative by preparing educational materials and presenting classes and seminars for 1072 member organizations (UNOS Proposal for the Continuation of the OPTN, 2006).

Limitations

The limitations to this study were as follows:

1. Because this study was limited to a sampling of member OPOs and transplant centers, the results were restricted to those medical facilities only and are not relevant to other areas.
2. The members are of varying professional levels and educational backgrounds.
3. There sampling did not include laboratories, about 7% of UNOS's membership.

Assumptions

The assumptions of this research study were as follows:

1. Key persons (clinical coordinators) attend training led by UNOS and then perform in house training to their data coordinators.
2. The online help documentation, web based tutorials, and recorded sessions are used to learn and teach needed information.

Procedures

This research focused on the attitudes toward training and education provided to UNOS member organizations and participation barriers that may exist. The participants of a 15 member controlled sample user group was given a questionnaire. This group was representative of persons working at UNOS member organizations. The data/results was analyzed and tabulated to determine whether a follow-up survey to total member population was warranted.

Definition of Terms

To assist the reader, the following terms were defined:

UNOS – United Network for Organ Sharing - The private, nonprofit membership organization that coordinates the nation's transplant system through HRSA's OPTN contract.

UNet – the UNOS computer system, which operates the nation's transplant system, matching organs from deceased donors to patients on the national waiting list.

OPTN – Organ Procurement and Transplantation Network - purpose of the OPTN is to improve the effectiveness of the nation's organ procurement, donation, and transplantation system by increasing the availability of and access to donor organs for patients with end-stage organ failure.

OPO – Organ Procurement Organization - An organization designated by the Centers for Medicare and Medicaid Services (CMS) and responsible for the procurement of organs for transplantation and the promotion of organ donation. OPO is the vital link between

the donor and recipient and are responsible for the identification of donors, and the retrieval, preservation and transportation of organs for transplantation.

TXC – Transplant Center – is a hospital that performs transplants, including qualifying patients for transplant, registering patients on the national waiting list, performing transplant surgery, and providing care before and after transplant.

Histo-compatibility Labs – are labs that test for tissue compatibility.

System Notice – communicates changes relating to policy coding, allocations, end-user functionality, and the way end-users do business.

Vendor Notice – targets vendors to communicate changes to business rules, file layouts, look-up tables, and schema and import/export functions.

ELM – E-Learning Module communicate changes to how end-users do business, functionality, and changes to the user interface.

Help Documentation – communicates changes relating to allocations, end-user functionality, and the way end-users do business.

Waitlist – The list of candidates registered to receive organ transplants. When a donor organ becomes available, the matching system generates a new, more specific list of potential recipients based on the criteria defined in that organ's allocation policy (e.g., organ type, geographic local and regional area, genetic compatibility measures, details about the condition of the organ, the candidate's disease severity, time spent waiting, etc.)

Placement and Matching – Component through which users can add, remove, or modify information on donors and donor organs, execute match runs, and provide refusal information.

Tiedi[®] – Component through which users can enter and modify transplant data forms.

Overview of Chapters

This chapter introduced the research problem and identified key questions to be answered in the research. A brief introduction of UNOS and OPTN was provided. The importance of training was identified and was be the foundation of which the remainder of the research was based. Chapter II was the review of literature; it reviewed and identified the concepts of training and training methods and information about turnover rates of transplant community population.

These key concepts will be linked to UNOS and their training process. Chapter III addressed the methods used to gather and tabulate the data used for this research. Chapter IV addressed the findings and Chapter V addressed the researcher's conclusions and recommendations based on the findings.

CHAPTER II REVIEW OF LITERATURE

Chapter II was the Review of Literature section of this research study. In this chapter, the reader was introduced to concepts of training in the workplace. The chapter defined and discussed key terms and factors that are important to the training process. The chapter also gave an overview of the importance of policy and systems training and education for organ procurement and transplantation.

Training at UNOS

Training is important to every organization. Well trained employees are most likely to be efficient employees as well as happy employees. Training, as defined by Manpower Services Commission in 1981, is a planned process to modify attitude, knowledge or skill behavior through learning experience to achieve effective performance in an activity or range of activities. In work situations, the purpose of training is to develop the abilities of the individual and to satisfy the current and future needs of the organization (Wilson, 1999). Research has shown there are several factors that have a direct impact on training within an organization. These factors are globalization, need for leadership, increased value placed on knowledge, attracting and retaining talent, customer service and quality emphasis, changing demographics and workplace diversity, technological advances, economic change, and high performance models of work systems (Noe, 2005). At UNOS, the OPTN contract is the primary factor that impacts what is trained, delivery method options, subject matter, and the training audience. Training at UNOS generally refers to classes and communications on various

aspects of OPTN policy changes, UNet enhancements, and changes that apply to a large number of users.

There are many different ways to train. The method by which training is delivered often varies based on the needs of the company, the trainee, and on the task being performed. The method should suit the audience, the content, the business environment, and the learning objective. Ideally, the method chosen will motivate employees to learn, help employees prepare themselves for learning, enable the trainees to apply and practice what they have been taught, help trainees retain and transfer what they have learned, and integrate performance with other skills and knowledge (Bray, 2006). At UNOS, the Professional Development team has organized training topics and delivery methods to meet the requirements of the contract.

Training Delivery Methods

Modern training has adapted and adopted technological advances for classroom, online, and individualized study. Particularly in corporate environments, delivery methods have been a growing concern as traditional instruction is not always available or even desirable. Choosing a training delivery method requires examination of multiple factors for both those responsible for delivering the training and the participants.

At UNOS, once a training request is received, the training team works closely with business analysts, IT designers and developers, and policy analysts to determine content, population, and delivery options for training. System notices and vendor notices are developed to respond to changes to policy that require coding, changes to allocation, changes to how end user do business, or to changes to end-user functionality. Vendor notices are developed to notify third party software vendors of changes in code.

In accordance with the UNOS Proposal for the Continuation of the OPTN, the Professional Development (formerly known as Technology Implementation) staff provides the following contract deliverables in the area of training and education:

- Hands-on training sessions customized to users' particular training needs.
- Microsoft® Live Meeting® training as a way to conduct UNOS meetings/training sessions while attendees log in remotely.
- Record the Microsoft® Live Meeting® sessions and post them in UNet for users to access at anytime, anywhere.
- Tutorials for how to use key UNet functions.
- Help documentation that offers systematic instructions for using all UNet functions.
- Routinely evaluate the success of training options through evaluations and the annual Satisfaction Survey.
- Provide transplant database vendors and UNet import or export data users with notification of changes made to related processes in the system.
- Provide targeted emails, as a cost-effective way to give users applicable information.
- Provide system notices, as a central method of communication with the community regarding changes and enhancements to UNet, OPTN policy changes, training opportunities and scheduled system maintenance.
- Exhibit OPTN technologies at national meetings to provide member learning opportunities.

- Training opportunities at regional forums/meetings, to discuss and demonstrate new and upcoming functions and enhancements, interact with members, and address their questions.

The UNOS IT Department coordinates and provides user training initiatives to assure that the OPTN system user is knowledgeable and accurate in the use of the system.

Core based training topics are offered in four categories on a quarterly basis. The following classes are offered as online tutorials (ELM) or as LiveMeeting sessions.

1. Transplant Center Functions in UNet

- ALL101 – Introduction to UNet
- ALL102 – Help Resources in UNet
- TX103 – Adding/Removing Candidates from the Waitlist
- TX103IN – Listing Intestine Candidates
- TX103KP – Listing Kidney, Pancreas and Kidney/Pancreas Candidates
- TX103PI – Listing Pancreas Islets Candidates
- TX103TH – Listing Thoracic Candidates
- TX103LI – Listing Liver Candidates
- TX104 – Managing Candidates’ Data
- TXREC1 – Transplant Center Functions in Tiedi

2. OPO Functions in UNet

- ALL101 – Introduction to UNet
- ALL102 – Help Resources in UNet
- OPO103 – Managing Donor Hospitals
- OPO104 – Adding Deceased Donors/Verification
- OPO105 – Match Runs
- OPO106 – Entering Potential Transplant Recipient (PTR) Data
- OPO107 – Entering Donor Organ Disposition Data (Donor Feedback)
- OPO108 – Enter Donation Referral Data
- OPO109 – Viewing Payback Data
- OPOREC1 – OPO Functions in Tiedi

3. Lab Functions in UNet
 - ALL101 – Introduction to UNet
 - ALL102 – Help Resources in UNet
 - LAB101 – Entering PRA and Unacceptable Antigen Data (Manually/Electronically)
 - LAB102 – Importing and Applying Cross match Results
 - LABREC1 – Lab Functions in Tiedi
4. Elective Based Training – See below:
 - GEN101 – Resources Overview
 - SAF101 – Site Administrator Functions in UNet
 - TIE101 – Importing and Exporting Tiedi Data
 - TX105 – Customizing and Creating Reports in Waitlist
 - OPO110 – Organ Specific Donor Matches
5. Upcoming Changes (a training session on a core based course and incorporate the new changes.)

Educating transplant community members continues to have a positive impact on organ sharing in the United States (Bray, 2006). User advisory groups are used when possible, to get input on the creation of user-friendly, effective reference materials, and training experiences that result in higher participation. The Kress study found the transplant community experiences a high turnover rate for transplant coordinators. Coordinators employed by OPOs are critical to the success of organ donation. They typically arrange the recovery and distribution of organs, obtain informed consent, manage the physiological needs of potential donors, and support donor families. The limited and dated research on turnover showed the coordinators attrition rate ranging from 17% to 28% per year, based on a 4 year study period (1990 -1993); mean job tenure for all coordinators was less than 3 years. Further findings suggest methods that

can help OPO directors recruit more appropriately, interview more knowledgeably, train more effectively, and supervise more prudently (Kress, 2009).

Even though both seasoned and novice transplant administrators indicate a growing need for training and education, only a small percentage of the 11,000 members attend training sessions when offered. Additionally, there is high turnover of transplant administrators. New administrators need access to training in order to use UNet effectively. Without knowledge of new policy and application implementations valuable time could be wasted offering organs to the patients.

Summary

Chapter II has provided an overview of training and the important concepts and factors associated with training. Chapter II described the core topics and methods required contractually to educate members using the UNet system. In general, based on the research and the federal contract under which UNOS/UNet operates, it is clear that educating and training transplant community members are important. However, there are approximately 11,000 members and of those who attend instructor led training classes, the percentage averages 5 -10%. The research discussed in Chapter II could serve as the foundation on addressing the research goals of this study. Training has been defined and Chapter III will address the methods and procedures that will be used in this research study. Chapter III will include population, description of instrument, methods of collecting data, procedures, statistical analysis, and the summary.

CHAPTER III

METHODS AND PROCEDURES

Chapter III of this study examined how the researcher intended to study the attitudes of employees at UNOS and their perceptions of the current training methods used. This chapter included a description of the research population and the instrument design. This chapter also details the procedures used to gather and analyze data.

Population

The population of this study consisted of a UNOS user group currently working with the Professional Development team. There were 15 active members. These members were representative of transplant facility organizations that were invited to training events. The roles of the members included: transplant center liaison, transplant center coordinators, OPO coordinators, donation coordinators, clinical specialists, cardiothoracic coordinators, surgical services coordinators, and a nurse practitioner.

Instrument Design

The problem of this study was to identify existing barriers that result in low participation among the UNOS members population in the continuous training program. The instrument used in this study was a survey. The survey questions were based on the goals of the research study. The survey questions were designed to solicit information regarding training needs, training methods, and employee perceptions toward when training is offered, perceived barriers, duration, and follow-up needs. To assess member attitudes and perceptions the survey consisted primarily of multiple-choice questions, ranking scales to identify the importance of items to the survey respondents, and Likert Scale as a rating method to allow survey respondents to express different feelings,

opinions and agreements or disagreements. An example of the survey is included in Appendix A.

Method of Data Collection

After meeting with the user-group to discuss the survey and its importance, the survey was delivered electronically. Prior to getting the survey, a communication explaining the purpose of the study, Appendix B, was sent. This cover letter also gave directions for the completion and the return of the survey. These members were given the opportunity to complete the secure survey electronically through Survey Monkey, an application currently approved for use by the organization when surveying its members. The participants were advised that all answers would be confidential and the research findings would be reported as group data.

Statistical Analysis

The responses to the survey questions were analyzed and tabulated to determine the attitudes of the user group representing the member population at UNOS. Responses were based on multiple choice, ranking scales, and Likert Scale. The number, frequency, and the mean of the responses were determined. The open-ended questions were reviewed and like responses were recorded in number and frequency.

Summary

Chapter III detailed the methods and procedures used to determine the attitudes and perceptions of employees at UNOS. Chapter III reviewed the basis of how the data was collected and how the data was reported utilizing the Likert scale with number, frequency, and mean. The population and instrument were described in Chapter III as well as data collection and analysis. Chapter IV reports the findings from data collected

through the survey. Chapter IV will complete the statistical analysis of the data and discuss what the researcher found.

CHAPTER IV

FINDINGS

This chapter is a presentation of the finding of the research study conducted. It includes information on the response rate and analyzes the responses to each survey question.

Response Rate

The findings presented in this chapter are the results of a survey sent by email to 15 members of UNOS. The data presented with the accompanying tables indicate the perceptions and needs of the members reported by the participants. Participants were given the end of August as the survey completion date. Nine surveys were returned. Because initial response was low, the researcher sent follow-up reminder emails in order to to ensure maximum participation in the survey. The follow-up email was sent on September 30th.

Nine out of fifteen participants from organ transplant centers and organ procurement organization responded to the survey, representing a 60% response rate. The researcher received six responses via email and three responses via fax. Survey responses were sent to the researcher's attention. Six participants chose not to participate in the research. Table 1 shows the response rate.

Table 1

Percentage of surveys returned

Surveys sent	Surveys received	Percentage
15	9	60%

Report of Survey Findings

Survey findings are reported to correlate with the research questions for the study. A description and tabulation of each survey response is provided along with a corresponding table. The researcher designed the survey questions in the following categories: training needs, preferences, perceptions, and barriers. The survey concluded in October 2010.

Participants provided the organization type represented and their position or title. Of the organizations, six were organ procurement organizations and three were transplant hospitals. Participants' titles included clinical coordinators, donation coordinators, procurement manager, and transplant coordinator. In this section, survey questions were aligned with the research goals: needs, preferences, effectiveness, and barriers. Each survey question was discussed.

Training needs

Research Goal 1 was *to identify the training needs as perceived by the members*. In order to fulfill this objective, there were six entries on the survey included to address training needs. Results of these six questions are presented here. Only those items selected were analyzed.

Question 3: *What is the best time of day for you to attend training?* Participants were asked to choose from a list of choices to indicate their perceived need regarding the best time of the workday to attend a training session. The most frequent time slot *Afternoon 1 – 5 p.m.* was selected 5 times (55%). *Anytime during working hours* was selected 2 times (22%), *After normal working hours* was selected 1 time (11%), and

Other was selected 1 time (11%). The response frequencies and percentages are included in Table 2.

Table 2

Best time for training

	f	rf	%
Afternoon 1 – 5p	5	3/9	56%
Anytime during working hours	2	2/9	22%
After normal working hours	1	1/9	11%
Other	1	1/9	11%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Question 16, *Beyond the on-the-job training required for your specific position, what is a realistic expectation of the total time you can devote to training within your normal working hours each quarter (3 month period)?*, 6 reported 4 hours (66%) most frequently. The response frequencies and percentages are included in Table 3.

Table 3

Time for Training-Quarterly

	f	rf	%
2 hours	2	2/9	22%
4 hours	6	6/9	66%
Other	1	1/9	11%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Question 17: *How much time could you be away from your regular duties for training in a given day?* Participants were asked to choose from a list of choices to indicate their class duration needs. The most frequent response for *the amount of time to*

allot for training sessions were 1 hour (44%) and 2 hours (44%), Other was selected 1 time (11%). The response frequencies and percentages are included in Table 4.

Table 4

Time allotment for training sessions

	f	r f	%
1 hours	4	4/9	44%
2 hours	4	4/9	44%
Other	1	1/9	11%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Question 4 listed the methods used to announce upcoming training. Respondents were asked *to check the best place to learn about upcoming training sessions*. The most frequently selected method, system notice, was reported 5 times (56%). Monthly newsletter was selected 3 times and website was selected 1 time respectively (33% and 11%). The response frequencies and percentages are included in Table 5.

Table 5

Best means of training notification

	f	rf	%
System notice	5	5/9	56%
Monthly Newsletter	3	3/9	33%
Website	1	2/9	11%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Question 7 addressed the two ways used to communicate upcoming system or policy changes at UNOS. Respondents were asked *which do you find most useful: (select*

one). The most frequently selected method, live meeting, was reported 6 times (67%) followed by system notice, selected 3 times (33%). The response frequencies and percentages are included in Table 6.

Table 6

Most useful delivery method

	f	r f	%
LiveMeetings	6	6/9	67%
System Notice	3	3/9	33%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Additional needs based questions were asked using Likert-scale responses of strongly agree, agree, neutral, disagree and strongly disagree. For Question 10 respondents were asked to *circle the most appropriate response indicating how much you either agree or disagree with the statement in order to rate: if hands-on training is needed, if timing of training with respect to change implementation was sufficient, if additional training is needed, and if sufficient training and education is offered*. The most frequent response to *needing hands on training* was *agree* which was chosen 5 times (56%) with a mean of 2.6. The most frequent response to *timing of training* was *agree*, chosen 4 times (44%) with a mean of 2.6. The responses *neutral* and *disagree* were both selected 3 times (33%) for *my team needs additional training*, with a mean of 3.0. For Question 15, *I think there is sufficient training and education offered on UNet*, the most frequent selection was *neutral*, selected 4 times (44%), a mean of 2.9. The response frequencies and percentages are included in Table 7.

Table 7

Circle the most appropriate response indicating how much you either agree or disagree with the statement.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
	f (%)	f (%)	f (%)	f (%)	f (%)	M
Need hands-on experience during training	1 (11%)	5 (56%)	2 (22%)	0	1 (11%)	2.4
The timing of training is sufficient	1 (11%)	4 (44%)	2 (22%)	2 (22%)	0	2.6
There are additional areas in which my team needs re-training	1 (11%)	2 (22%)	3 (33%)	3 (33%)	0	2.9
I think there is sufficient training and education offered on UNet	1 (11%)	2 (22%)	4 (44%)	1 (11%)	1 (11%)	2.9

Note. f = frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9; M= mean (rounded one decimal value)

Question 23, *How many employees require UNet training in your organization?*, provided the following responses: 2 respondents *could not provide an exact number*, 1 respondent – 100, 2 respondents – 40 plus, 1 respondent – 12, 1 respondent – 4, and 2 respondents – *did not answer the question*. The nine respondents reported approximately 200 employees requiring UNet training in their respective centers and programs.

Training preferences

Research Goal 2 was *to identify the training preferences as perceived by the members*. In order to fulfill this objective, participants were asked to rank delivery methods 1 – 5 with 1 being the most preferred and 5 being the least preferred method.

Five delivery methods offered by UNOS training were listed in random. The most frequent method selected for *most preferred* was web-based distance learning 5 times with a mean of 1.6. Web-based self-study rated preferred (44%) with a mean of 2.1, *paper-based self-study* was *neutral* (33%) with a mean of 3.3. Respondents selected *online help documentation* 5 times as *least preferred* method with a mean of 4.3.

Respondents were asked to rate whether they felt the classroom setting was best for learning. Selections indicated 44% neutral and 44% strongly disagreed. Results of these are presented in Tables 8 and 9.

Table 8

Top 5 preferences for delivery on a scale of 1 – 5 with 1 being the most preferred.

	1	2	3	4	5	
	f (%)	M				
Instructor-Led (Classroom)	0	1 (11%)	2 (22%)	2 (22%)	4 (44%)	4
(Distance Learning-LiveMeeting, WebEx/ Meeting Place)Instructor led	5 (55%)	2 (22%)	2 (22%)	0	0	1.6
Web-Based Self Study	3 (33%)	4 (44%)	0	2 (22%)	0	2.1
Paper-Based Self-Study	0	2 (22%)	3 (33%)	3 (33%)	1 (11%)	3.3
On my own- Help Documentation	0	1 (11%)	0	3 (33%)	5 (55%)	4.3

Note. f = frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9; M= mean (rounded one decimal value)

Table 9

How much you either agree or disagree with the statement.

	1	2	3	4	5	
	f (%)	f (%)	f (%)	f (%)	f (%)	M
The classroom setting is a better atmosphere for me to learn.	0	1 (11%)	4 (44%)	0	4 (44%)	2.7

Note. f = frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9; M= mean (rounded one decimal value)

Training Effectiveness

Research Goal 3 was to determine respondents' attitudes toward training effectiveness. Question 8 asked respondents to use the Likert scale to indicate, *How much you either agree or disagree with the statements; I am aware of training opportunities: being aware of learning expectations and if there was an overall positive reaction to training.* The most frequent response rate for *I am aware of training opportunities* was *agree*, 55%. Question 12 asked, *How much you either agree or disagree with the statements; I am aware of what is expected of me during training.* The most frequent response was *neither agreed nor disagreed*, 44%. Question 14 asked respondents to rate, *My training experience with UNOS has been positive.* The most frequent response was *agreed*, 33%.

Table 10

Is UNOS training effective?

	1	2	3	4	5	
	f (%)	M				
I am aware of training opportunities	1 (11%)	5 (55%)	1 (11%)	1 (11%)	1 (11%)	2.1
I am made aware of what is expected of me during the training	0	3 (33%)	4 (44%)	0	2 (22%)	3.1
My training experience with UNOS has been positive	2 (22%)	3 (33%)	2 (22%)	0	2 (22%)	2.7

Note. f = frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9; M= mean (rounded one decimal value)

Question 19, *I have used online help documentation available within the UNet system*, revealed that 77% of the respondents used the option *occasionally*, while 11% used online help documentation *often* and 11% *never* used online help documentation to

learn about the system. The response frequencies and percentages are presented in Table 11.

Table 11

Help documentation usage

	f	rf	%
Occasionally	7	7/9	77%
Often	1	1/9	11%
Never	1	1/9	11%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Question 20, *I read system notices*, revealed that 55% of the respondents used the option occasionally, while 44% read system notices every time to learn about the system.

The results frequencies and percentages are presented in Table 12.

Table 12

System notices

	F	rf	%
Every time	4	4/9	44%
Occasionally	3	5/9	55%
Never	0	0	0

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

Barriers

Research Goal 4 was to determine respondents' attitudes toward training barriers. To fulfill this goal, the survey included three open-ended questions and a list of possible barriers was provided. Respondents were asked to select barriers that applied that prohibited training attendance. The top two barriers selected were *too busy* and *no one to provide coverage*; both were selected 3 times (33%). The resulting frequencies and

percentages are presented in Table 13 followed by the results of the open-ended questions.

Table 13

What are the barriers to you attending training? (Select all that apply)

	f	rf	%
too busy	3	3/9	33%
no one to provide coverage	3	3/9	33%
dissatisfied with the quality/ content	1	1/9	11%
do not want or need anything more than updates	2	2/9	22%

Note. f = frequency; rf = relative frequency; % = percentage (rounded one decimal value; total number of respondents; n = 9

There was a 100% response rate indicating *Yes* for Question 5, *Are we targeting the right persons in your organization for training?* See Table 14.

Table 14

Targeting the right population

	f	rf	%
Yes	9	9/9	100%
No	0	0	0

To identify other possible barriers to attending training and to learn how other UNet users were being trained, the following three questions were asked:

Question 21, *Do you supervise employees?* The responses were Yes, 33% and No, 77%.

Question 22, *If you supervise employees, how do you manage their UNET training*

needs? Responses indicated that the respondents handle training for other employees

after attending the session facilitated by Professional Development trainers or they attend

training with other employees. Question 24 asked, *What is your current work schedule?*

Schedules were *varied from Monday – Friday with call, rotating schedules that varied, and averaged 55 hours per week with call.*

Summary

Chapter IV presented the findings of the survey, which had an overall response rate of 60%. The data were presented by research goals. The survey questions addressed training needs, preferences, effectiveness, and barriers. Additional questions addressed how training other employees in their organizations is managed, the number of other employees requiring training, and the work schedules of respondents. The open-ended questions allowed for expansion on certain responses by asking for additional information or clarification. Using frequency of responses, percentages, and mean on the data collected, findings indicated that the majority of respondents required sessions in the afternoon (1 – 5 p.m.), and through Instructor-led distance learning, that includes some hands on activity. The majority of respondents indicated they needed to limit training events to one or two hours per session, and to limit training to 4 hours or less per quarter. All respondents (100%) indicated that UNOS was targeting the right persons in their organization for training. The majority of respondents (55%) were aware of training opportunities while 22% were not. The same rate (55%) was true for the timing of training. The most significant barriers to training were too busy or not having anyone to provide coverage, while 11% revealed dissatisfaction with quality/content and 11% stated I do not want or need anything more than updates. The data showed that 77% of the respondents have other employees in the organization that needed training. The majority indicated that the key person who attended UNOS led training does training for other employees.

Chapter V will present the Summary, Conclusions, and Recommendations. This chapter will summarize previous chapters and draw conclusions on the findings.

Recommendations will be made based on the conclusions drawn from the research.

CHAPTER V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter will provide a review and summary of the research conducted. The researcher will draw conclusions based on the data reported and make recommendations for future studies.

Summary

This study was conducted due to a low participation of members using the UNet system to manage transplant donors, candidates, and follow-up care in classes developed and implemented by the UNOS Professional Development team. In solving the problem of low member participation, research goals were established to assist in answering the problem.

The research goals were:

1. What are the training needs as perceived by the members?
2. What are the participants' preferences regarding delivery methods?
3. Do respondents feel the training offered is effective?
4. Do UNOS members perceive specific barriers to attending training?

The limitations to the study were as follows:

1. Because this study was limited to a sampling of member OPOs and transplant centers, the results were restricted to those medical facilities only and are not relevant to other areas.
2. The members are of varying professional levels and educational backgrounds.
3. The sampling did not include laboratories, about 7% of UNOS's membership.

The assumptions of this research study were as follows:

1. Key persons (clinical coordinators) attend training led by UNOS and then

perform in house training to their data coordinators.

2. The online help documentation, web based tutorials, and recorded sessions are used to learn and teach needed information.

A review of the literature revealed that training members to use the UNet application is a contractual requirement. Members are also required to participate in training sessions. Training classes are driven by new or modified policies, procedures, or system changes. The delivery method is contingent upon the audience, the content, the business environment, and the learning objectives. UNOS has over 11,000 members, yet only a small percentage of them attend scheduled training events. This study was done to determine attitudes toward training delivered by the UNOS IT Professional Development team.

The study was open to 15 UNOS members employed at organ procurement organizations or transplant hospitals located throughout the United States. The job titles of the participants were transplant center liaisons, transplant center coordinators, OPO coordinators, donation coordinators, clinical specialists, cardiothoracic coordinators, surgical services coordinators, and a nurse practitioner. The instrument used was a 24-question survey. The measuring scales included the Likert scale, closed-ended questions, and open-ended questions. The surveys were emailed to members. The response rate was 60%. Survey return options included email or fax. Once results were received, data were organized to align with research goals and presented in the form of percentages, number, and mean.

Conclusions

This portion of the study will evaluate information found as it aligns with each research goal and draw conclusions based on the statistical findings. Conclusions drawn will be categorized in the order of the four research goals and the findings.

Research Goal 1 was to identify *what the training needs are as perceived by the members*. Survey Questions 3, 4, 7, 10, 11, 13, 15, 16, and 23 addressed this goal.

Members selected the time slot *Afternoon 1 - 5 p.m.* most frequently, 5 times (55%), as the best time for attending a training session. When asked to choose from a list of choices to indicate their class duration needs, the highest responses were *1 hour* (44%) and *2 hours* (44%). Responses from Question 16, *beyond the on-the-job training required for your specific position, what is a realistic expectation of the total time you can devote to training within your normal working hours each quarter (3 month period)?*, reported *4 hours* (66%) most frequently. Question 7, asked *which method do you find most useful*. The most frequently selected method, *live meeting*, was reported 6 times (67%), followed by *system notice*, selected 3 times (33%). The most frequent response to Question 10, *needing hands on training* was *agree*, chosen 5 times (56%), with a mean of 2.6. The most frequent response to Question 11, *is timing of training appropriate* was *agree*, chosen 4 times (44%), with a mean of 2.6. The responses *neutral* and *disagree* were both selected 3 times (33%) for Question 13, *my team needs additional training*, with a mean of 3.0. Question 15, *I think there is sufficient training and education offered on UNet*, the most frequent selection was *neutral*, selected 4 times (44%), with a mean of 2.9. Question 23, *How many employees require UNet training in your organization?*, provided the following responses: 2 respondents *could not provide an exact number*, 1

respondent – 100, 2 respondents – 40 plus, 1 respondent – 12, 1 respondent – 4, and 2 respondents *did not answer the question*. The conclusions were that 1-2 hours LiveMeeting training sessions held in the afternoon, no more than 2 – 4 hours per quarter that include hands-on training met UNOS member needs. Upcoming training notifications were best when delivered using a system notice. Additionally, there were substantial instances where key persons attended training and then trained other employees in their organizations. Finally, there were unmet training needs.

Research Goal 2 was to identify training preferences as perceived by the members. Questions 6 and 9 addressed participants' preferences regarding delivery methods. The most frequent method selected for *most preferred* was web-based distance learning 5 times with a mean of 1.6. Respondents selected online help documentation 5 times as the *least preferred* method with a mean of 4.3. Respondents were asked to rate whether they felt the classroom setting was best for learning. Selections indicated 44% *neutral* and 44% *strongly disagreed*. Most respondents preferred to learn about upcoming initiatives through system notices and monthly newsletters. Respondents preferred to participate in instructor-led distance learning followed by web-based self-study and find web-based training (Live Meetings) more useful than system notices. The conclusions were members preferred online instructor-led training and distance learning such as Live Meeting, or WebEx. Classroom settings were preferred more often than self-study. System notices were the best method identified to receive notification of upcoming training.

Research Goal 3 was to determine member attitudes toward training effectiveness. To address training effectiveness, survey Questions 8, 12, 14, 19, and 20 were asked.

The most frequent response rate for, *I am aware of training opportunities* (55%) *agreed*, *I am aware of what is expected of me during training* (44%) *neither agreed or disagreed*, and *my training experience with UNOS has been positive* (33%) *agreed*. Question 19, *I have used online help documentation available within the UNet system* revealed that 77% of the respondents used the option *occasionally*, while 11% used help documentation *often* and 11% *never* used online help documentation to learn about the system. The conclusions were most members are aware of when training was being offered but a third of respondents stated that they were not sure or unsure. Most members used the online help documentation tool occasionally or not at all.

Research Goal 4 was to determine specific barriers members had to attending training. Questions 5, 18, 21, 22, and 24 identified barriers to attending training. The top two barriers selected were *too busy* and *no one to provide coverage*; both were selected 3 times (33%). Question 5, *Are we targeting the right persons in your organization for training?* had a 100% response rate for *yes*. *Do you supervise employees?* Three respondents are responsible for supervising employees. If you supervise employees, how do you manage their UNET training needs? *The respondents handle training for other employees after attending the session facilitated by UNOS trainers or attend training with other employees*. What is your current work schedule? Schedules of participants *varied from Monday – Friday with call, to schedules that varied, averages 55 hours per week with call*. The conclusion was barriers do exist. The most reported barriers to training were that they were unable to attend sessions because they were either too busy or because of a lack of coverage to attend. Hospitals and medical center employees can be called away at any time to perform emergency procedures or other critical duties.

To identify other possible barriers questions were asked to identify information about work hours and other employees in their organizations. One respondent supervises other employees and two respondents reported an additional 12 to 100 employees that needed to be trained but do not participate in UNOS led training. Two respondents were not sure of the number of other employees requiring UNet training. All reported regular hours in addition to an on-call schedule. Experienced coordinators must take time away from their duties to educate and demonstrate new UNet changes and updates to other employees. The existing training program for UNet members is both extensive and thorough. However, as some of the responses indicated, it was evident that certain enhancements must be made.

Recommendations

After reviewing the findings, it was recommended that training modules be reduced to shorter, multiple sessions to accommodate the busy schedules and the absence of coverage for coordinators of transplant programs. The feedback indicated that key persons attended the sessions then those persons provided training to staff who was unable to attend. It was recommended that facilitator notes and handouts were made available for those organizations to help with training other employees who require training. To increase the use of online help documentation, it was recommended to make members more aware of the valuable tool. Awareness of help documentation could be raised at the end of training sessions, in the newsletter and when system notices were sent. In consideration of the responses indicating that there was need of retraining some topics and additional training needed, it was recommended that a research study targeting specific training needs be conducted. Additionally, research should be conducted to

study and obtain feedback from a wider sample of the member population. It was incumbent upon the Professional Development staff to provide multiple forms of training options in order to meet the needs of the users. By implementing multiple online training opportunities and by continuing to offer face-to-face training at a range of venues, all OPTN members will have an assortment of training options available to them.

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APPENDIX

Appendix A – UNet Training Survey

UNet Training Survey

Name: (optional) _____

Demographics:

1. Organization type:	2. Position/Job Title
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Needs Assessment Questions:

3. What is the best time of day for you to **attend** training?

- Morning 8 – Noon
- Afternoon 1 – 5p
- Lunch Break
- After normal work hours
- Anytime during normal business hours
- Before normal work hours
- Other: Please Describe _____

4. Where is the best place for you to learn about upcoming training initiatives?

- Website
- System Notice sent via E-mail
- Monthly Newsletter
- Other _____

5. Are we targeting the right persons in your organization for training?

- Yes
- No (Explain) _____

6. Please select your top 5 preferences for training on a scale of 1 – 5 with **1 being the most preferred**.

Rank	Training Methods
	Instructor-Led (Classroom)
	Instructor-Led (Distance Learning-LiveMeeting, WebEx/ Meeting Place)
	Web-Based Self Study (delivered over the Web)
	Paper-Based Self-Study (delivered to you to be completed on your schedule)
	On my own – Help Documentation
	Other

7. Which do you find most useful: (**select one**)

- LiveMeetings (1 hour)
- A well written System Notice

Circle the most appropriate response indicating how much you either agree or disagree with the statement.

1 – Strongly Agree	2 – Agree	3 – Neutral	4 – Disagree	5 – Strongly Disagree
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8. I am aware of training opportunities available from UNOS.

1	2	3	4	5
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9. The classroom setting is a better atmosphere for me to learn.

1	2	3	4	5
---	---	---	---	---

10. I prefer hands-on experience during training.

1	2	3	4	5
---	---	---	---	---

11. I think the timing of training with respect to the implementation of new policy or processes is sufficient.

1	2	3	4	5
---	---	---	---	---

12. I am made aware of what is expected of me during the training.

1	2	3	4	5
---	---	---	---	---

13. There are additional areas in which my team needs retraining.

1	2	3	4	5
---	---	---	---	---

14. My training experience with UNOS has been positive.

1	2	3	4	5
---	---	---	---	---

15. I think there is sufficient training and education offered by UNet®.

1	2	3	4	5
---	---	---	---	---

16. Beyond the on-the-job training required for your specific position, what is a realistic expectation of the total time you can devote to training within your normal working hours each quarter (3-month period)?

- None
- 2 hours
- 4 hours
- 16 hours
- Additional comments _____

17. How much time could you be away from your regular duties for training in a given day?

- 1 hour
- 2 hours
- 4 hours
- Full day

18. What are the barriers to you attending training? **(select all that apply)**
- I feel I am too busy
 - There is no one to provide coverage for me
 - The training offered does not meet my needs so I don't participate
 - I have attended training in the past and was dissatisfied with the quality/ content
 - I do not want or need anything more than updates
 - Other
19. I have used the online help documentation available within the UNet system:
- Once
 - Occasionally
 - Often
 - Never
 - Didn't know it existed
20. I read system notices:
- Every time
 - Occasionally
 - Never
21. Do you supervise employees?
- Yes
 - No
22. If you supervise employees, how do you manage their UNET training needs?
- By attending classes with them
 - Providing their training myself
 - One on One sessions
 - Appointing a 'super user' who disseminates updates/training to team
 - Other _____
23. How many employees require UNet training in your organization? _____
24. What is your current work schedule? _____

Thank you for your participation in this survey. Your honest feedback will help us develop training to meet the needs of the UNet users. If you have any **additional comments** regarding any aspect of training, please use the space below.

Appendix B - Cover Letter

To: Members of Pediatric Lung Allocation User Group

Hello: UNOS Members:

I am currently conducting research for the Department of STEM Education and Professional Studies at Old Dominion University. The goal of my research project was to identify perceptions and attitudes members have towards UNet training at UNOS.

As an employee of UNOS in the Professional Development Department, I would first like to thank you for agreeing to participate as a member of the Pediatric Lung Allocation User group. Your feedback to date has been invaluable. As we discussed, I am inviting you to participate in this survey so that your opinion can influence the development of training and communications in a positive way. Your participation in this survey was completely voluntary and all responses will be held confidential. Data will be reported as aggregate information and no individual names or responses will be disclosed. Each of you will be provided a survey electronically via email. Please return the survey to my attention. The success of this study depends on your input.

Please return all completed surveys by 09/20/2010. Thank you for your participation and contributing to the success of this research.

Respectfully,

Mary Wyche

Cc: Gloria Taylor, Resource Manager, Information Technology, Professional Development