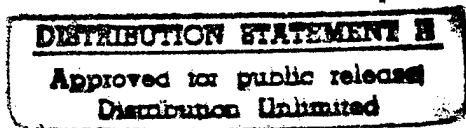


**FINAL PROGRESS REPORT**

**October 1, 1994 through September 30, 1997**

**OFFICE OF NAVAL RESEARCH GRANT NO:**

**N00014-95-1-0055**



National Marrow Donor Program®  
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This final progress report covers activities supported by Grant #N00014-95-1-0055, as modified, from October 1, 1994 through September 30, 1997.

## **I. PROJECT DESCRIPTION**

### **A. Specific Aims**

Under this grant, the National Marrow Donor Program® (NMDP) used grant funds to support activities directed toward the following goals:

1. Enhance an already effective system which rapidly identifies and tracks the availability of matched donors for patients requiring marrow transplants.
2. Increase the total number and racial diversity of the NMDP's volunteer donor file and provide HLA-DR typing on as many donors as possible in an effort to reduce patient search time and costs.
3. Perform HLA typing of the donor/recipient samples stored in the NMDP's research sample repository, and compare the detailed molecular typing results with patient outcome data to determine the correlation between post-transplant outcome and degree of HLA match.

### **B. Budgeted Categories**

1. **\$5,224,188 Scientific Studies of Allele-Specific Typing of Donor\Recipient Samples.**
2. **\$0 NMDP HLA Match Vs. Outcome Research (Reallocated)**
3. **\$16,130,099 Histocompatibility Laboratories for DNA HLA-DR Typing**
4. **\$24,000 Histocompatibility Laboratories for HLA-A, B & DR Typing**
5. **\$0 NMDP Staff Immunogeneticist (Reallocated)**
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## II. RESULTS BY CATEGORY

### A. HLA Typing and Research

#### 1. Scientific Studies of Allele-Specific Typing of Donor/Recipient Samples.

This project's primary objective was to determine the impact of HLA matching, defined by the highest resolution of molecular typing, on transplant outcome. Secondary objectives included expanding the capacity and technology for high resolution Class I and Class II HLA typing and increasing the accuracy of these typings. The project was initiated with funding from Navy Grant N00014-93-1-0658 and continued under funding from this grant. The three phases of this study involved allele level Class I typing, allele level Class II typing and data analysis and transplant outcome correlation. During this grant period 1,000 donor recipient paired sample were characterized for HLA Class II alleles (HLA-DRB, DQB1, DQA1, DPB1 and DPA1) and approximately 1,626 donor/recipient paired samples were characterized for HLA Class I alleles (HLA-A, B and C). The results of these typings generated 15 abstracts that were presented at the 1996 and 1997 American Society of Histocompatibility and Immunogenetics annual meetings, 7 abstracts at the 12th International Histocompatibility Workshop and Conference, 3 abstracts to the 1996 and 1997 American Society of Hematology Meeting, 1 abstract at the 1996 American Society of Blood and Marrow Transplantation Meeting and 3 manuscripts.

#### 2. NMDP HLA Match Vs. Outcome Research

The typing timeline on the Scientific Studies of Allele-Specific Typing of Donor/Recipient Samples was extended to accommodate technical difficulties in achieving the desired typing resolution. Consequently data were not available until early 1996 to analyze. The required funding projected for this category was based on the assumption that outside subcontractors would be required to perform the work. However the delay in performing the typing allowed time for the NMDP to develop the in-house expertise to manage these complex analyses. As a result, the analyses performed during this grant period were performed by NMDP staff without the use of subcontractors and Request Number 8 reallocated the entire amount of \$500,000 from this category to other projects.

#### 3. Histocompatibility Laboratories for DNA HLA DR Typing

In February 1992, the NMDP began implementing DNA-based HLA-DR typing utilizing Polymerase Chain Reaction (PCR) Sequence Specific Oligonucleotide Probe (SSOP) typing. This project was a continuation of that initial program and its primary objective was to facilitate large-scale prospective DNA-based HLA-DR typing of NMDP donors to increase the likelihood that a searching patient will find a 6 of 6 antigen match. Secondary objectives included increasing the accuracy of HLA-DR typing and expanding the technology of DNA-based HLA-DR typing. During this grant period a total of 527,674 HLA-DR typings were performed of which approximately 322,500 were funded by this grant. During the period of this grant, the percentage of searching patients who identified at least one 6 of 6 antigen matched donor increased from 62% to 78%. This increase was in large part due to the prospective HLA-DR typing performed under this grant. Blind quality control of these DNA-based typings demonstrated an overall error rate of consistently less than 2%. Two manuscripts reporting these results were published in the journal *Tissue Antigens*.

**4. Histocompatibility Laboratories for HLA-A, B & DR Typing**

A final request to reallocate all but \$24,000 of the funds from this category to projects with a higher priority was made and approved on 8/28/97. The remaining \$24,000 funded DNA-based HLA-A, B typing of 240 samples that were selected from the samples analyzed in the HLA-A, B & DR Pilot Project. These typings were performed to establish an overall error rate for serologic typing performed at the time of recruitment and to investigate the nature of the discrepancies identified in that project. The DNA-based HLA-A, B typing results were reported to the NMDP and a preliminary report was presented at the 1997 American Society of Histocompatibility and Immunogenetics meeting in October 1997.

**5. NMDP Staff Immunogeneticist**

Due to difficulties recruiting candidates for this position, requests for reallocation of all funds in the category were made and approved.

**6. Repository**

The NMDP established its first DNA repository in 1992 at the American Red Cross National Histocompatibility Laboratory. A second DNA repository was added in 1993 at the Rangos Research Center at the Children's Hospital of Pittsburgh, however funding for this Repository is provided under a separate Navy Grant. During this grant period a total of 1,259,581 donors had samples stored for future HLA typing at one of the two NMDP DNA Repositories. The use of stored samples to facilitate patient-directed HLA-DR typing is one key factor to decreasing the overall search time. From the initiation of the repository in 1992, the median time for a search has decreased from 6 months to 4.2 months.

**7. Feasibility for Confirmatory Class I DNA Testing**

The benefit of utilizing molecular Class I typing lies in the ability to perform a very accurate, detailed molecular typing on a stored sample, to confirm a questionable result or to implement confirmatory typing while the donor is completing other parts of the search process, such as the information session or physical examination. An RFP was released November 1, 1996 to solicit proposals from laboratories capable of performing DNA-based HLA-A, B typing. Typing began for this project in early June, 1997. A total of 6,000 DNA-based HLA-A, B typings were facilitated with funding from this grant.

**8. Contract Laboratory for Reference/Pre-Test Cells**

To further the overall objectives of this grant, a request to reallocate the funds from this category to projects with a higher priority was made and approved on August 18, 1996. Funding for this project was requested and provided in the Navy Cooperative Agreement N00014-96-2-0016.

**9. Class I Sequencing Database**

With the initiation of the high resolution class I allele level typing of the donor-recipient pairs, the NMDP and its contract laboratories require access to a current database containing all HLA Class I sequences. This information is used to design probes and primers for characterizing HLA Class I alleles and to identify new alleles. A contract was executed with Stanford University (Peter Parham, Ph.D.) to provide this information in various formats on a quarterly

basis to the NMDP via diskette and hard copy. The data are then distributed to the contract laboratories by the NMDP. During the duration of this grant period the NMDP has consistently received quarterly updates of the sequence database on diskette and in hard copy format on time.

## **B. Electronic Communication**

### **1. Donor Center Hardware/Software**

Hardware, comprised of computers, printers and ancillary equipment, was purchased and distributed, according to plan, to domestic donor centers. This was done at the time that these centers were converted from older software to the newly developed STAR Link™ client software application.

The development and implementation of the STAR Link application was accomplished under this category. All domestic donor centers formerly utilizing software called DMAT were converted to STAR Link following a successful Beta Test and subsequent enhancements of the application along with upgrades to the host STAR® system.

### **2. Facilitation of Rapid Communication with Foreign Registries**

During the period of this grant, the STAR system was successfully modified and installed at the ABMDR in Australia. Report and message transfer automation with the France Greffe de Moelle (FGM) registry in France and the Anthony Nolan Bone Marrow Trust registry in England (ANBMT) was also performed under this category.

### **3. Probability of A, B, DR Identical Matches**

Through issuance of a grant (#5208) to researchers at the University of Utah (Drs. Patrick Beatty, Motomi Mori and Edgar Milford), the NMDP coordinated the development of a computer program to predict the likelihood of finding an HLA-A, -B and -DR identical match from a pool of HLA-A, -B typed donors on the NMDP registry. The program has been used by the NMDP Search Coordinators and by various researchers at NMDP Transplant Centers in a pilot study, delivered via the world wide web.

### **4. Revision of Search Algorithm**

The Search Algorithm incorporated in the NMDP STAR system was modified to address the revised standards established by the NMDP Histocompatibility Committee to the extent provided by the allocated funding. Work continues under the Cooperative Agreement, N00014-96-2-0016, on these modifications to incorporate molecular typing results and DNA-based matching within the STAR system.

### **5. Data Management for the International Consortium on the Effects of Radiation/Studies of effects of Exposure to Ionizing Radiation**

During the term of this contract, the NMDP played a key role in the design, development and pilot testing of various instruments (forms and questionnaires) to be used in the field. These forms include coverage of health and follow-up indicators (such as: cytogenetic tracking; thyroid laboratory findings; demographics; general health; fish translocation and diet issues; ultrasonic results; leukemia findings; hematological results; occupational reviews; tracking

of specimens; dosimetry; etc.) The NMDP continues its involvement in support of data management issues.

**6. HR/HW Search**

Specific enhancements were made to the STAR Link and STAR applications under this category to include the tracking of donors who were managed specially during the final stages of the workup process. HW refers to "Held for Workup" an assignment made by a donor center to a potential donor being designated as a "reserve donor" to be used should the primary donor become unavailable prior to transplant. The designation HR is given to a donor selected by an international registry for whom HR (high resolution typing) has been specifically requested prior to the CT (Confirmatory Typing) stage.

**7. Resolution of Discrepant HLA Typing on Donors**

Enhancements supported under this category were designed to address the tracking and resolution of discrepancies between HLA typings in the STAR system performed at different times by various laboratories. In accordance with NMDP policy (established 1994), discrepant typings were removed from the registry and not searched for patients until the discrepancies were resolved. Therefore, 100% of the funds in this category were reallocated for DNA HLA-DR typing.

**8. Donor HLA Override Modifications**

The STAR system's HLA override process compares current search antigen with any new HLA typing data reported/stored on a donor to determine whether the new typing data should replace (override) the previously stored value. Modifications aimed at modernizing this routine were initiated during the term of this grant and continue under the Cooperative Agreement, N00014-96-2-0016, towards the development of an override logic that accounts for DNA/molecular typing at various resolutions.

**9. Enhancements to BMDW Processing**

Due to a shift in priorities, 100% of the funds associated with this category were reallocated in March of 1996 to support the development of Alternative Blood Product (ABP) logic in the STAR system. ABP logic allows the STAR system, originally created to handle only marrow transplant data records, to manage the flow of events associated with other forms of blood product donations (e.g. G-CSF stimulated peripheral blood stem cells, white blood cells, whole blood, cord blood stem cells, etc.) by NMDP volunteer donors.

**10. Cord Blood Repository Software**

Due to emphasis on other Cord Blood Software development stages, 100% of the funds associated with this category were reallocated in March of 1996 to support the development of Alternative Blood Product (ABP) logic in the STAR system. The expansion of the scope of this project ensured that changes to the STAR system would benefit all future ABP management by making the handling of blood products fit a generic model rather than requiring custom programming during the introduction of each new ABP.

**11. Transplant Center Software**

Due to increasing the size of the ABP project and a shift in priorities and interest by Transplant Centers, 100% of the funds associated with this category were reallocated in March of 1996 to support the development of Alternative Blood Product (ABP) logic in the STAR system.

**12. Modify Repository Software**

Due to a shift in priorities and the fact that the repository software was stable and supportable at the time, 100% of the funds associated with this category were reallocated in August of 1996 to fund other priorities.

**13. Alternative Blood Products Software**

The business of the NMDP was originally focused on the provision of volunteer unrelated marrow as a sole source of stem cells. In recent years, the scope of therapies has changed to include peripheral blood stem cells, cord blood stem cells and other blood products used during or after transplant. Major enhancements to the STAR system were begun during the period of the contract to provide search, tracking and registry functionality for management of these alternative blood products (ABPs). This work effort was continued during the subsequent Cooperative Agreement, N00014-96-2-0016.

**C. Donor Services Activities**

**1. Minority HLA-A, B Typing**

During the course of Navy Grant N00014-95-1-0055, there were approximately 9,165 minority-focused recruitment events. A total of 252,135 minority donors were added to the NMDP registry through the use of funds available through this grant.

**2. National Minority Campaigns**

Each focused campaign had targeted markets. The markets were selected based on demographics, previous recruitment in the area and interest of the donor center or recruitment group in participating in the campaign. Attachment 2 provides a listing of targeted markets for each campaign. This same information was also used to determine the overall and individual center goals for the campaign.

With each campaign, public relations firms, owned and operated by the targeted population, were hired to develop brochures, fliers, videotapes and other materials to support the campaigns and deliver a consistent message throughout the country. In addition to English, and depending on the campaign, materials were translated into Spanish, Korean, Vietnamese, Japanese and Chinese.

At the beginning of each campaign, kick-off events and meetings took place involving community leaders, the media and NMDP staff in the targeted markets. The meetings served to launch the particular campaign and provide training and guidance to the centers involved to help them in their individual markets.

The results of the campaigns are as follows:

The *African Americans Uniting for Life (AAUL)* campaign was launched in June, 1993 in eleven markets, with a goal of 35,300 new donors. At the end of the campaign December 31, 1995, 39,633 new African American donors had been recruited to the Registry, 12% over goal. The African American focused recruitment groups were also active in the campaign.

An additional component of this campaign was the education and recruitment efforts conducted at Black Expo USA. Black Expo USA was a national effort for three years with active recruitment of new donors in 18 cities across the USA. During the NMDP's relationship with Black Expo USA, over 11,000 new donors have been recruited at these events.

The *Asian/Pacific Islanders Can Save Lives (API)* campaign was launched in March 1994, in five markets with a goal of 35,600 new donors. By the end of the campaign on August 31, 1996, 36,183 new Asian/Pacific Islander donors had been recruited to the Registry, 1% over goal. This campaign had heavy involvement from the Asian focused recruitment groups, who served as the lead in their markets.

The *Hispanics Giving Hope/Hispanos Dando Esperanza (HGH)* campaign was launched August, 1995 in six markets with a goal of 36,540 new donors. Four markets completed the campaign on April 30, 1997 and 39,502 new Hispanic donors had been added to the Registry, 8% over goal.

The American Indian/Alaska Native (AI/AN) Initiative, *Keep the Circle Strong*, was the last of the four focused campaigns launched in August, 1996 in 14 markets. This was originally a two year initiative, with Alaska being phased in during year two. Funding constraints have prohibited a formal initiative beyond November, 1997, however, education and materials to support education will continue. The goal for year one was 4,500 donors. As of September 30, 1997, 5,086 new AI/AN donors have been added to the Registry, 13% over goal.

Although recruitment was an objective of this initiative, more emphasis was placed on professional education, and focused on AI/AN opinion leaders, physicians, nurses, social workers and community health clinic staff. The objective was to increase the preliminary and formal searches for AI/AN patients. Along with significant recruitment, an NMDP special project with American Indian Research and Development (AIRD), played a large role in this professional education.

To enhance the efforts of the NMDP in targeting minority populations during these campaigns, there was outreach to Minority National Organizations. The NMDP targeted 13 national minority organizations for outreach and collaboration. The objective was to create awareness and provide education on a national level and encourage support and participation on the regional and local levels.

Organizations focused on included: National Association for the Advancement of Colored People (NAACP), National Council of Negro Women, Inc., Association of Asian Pacific Community Health Organizations (AAPCHO), League of United Latin American Citizens (LULAC), National Council of LaRaza, United Nations Indian Tribal Youth (UNITY), American Association of Indian Physicians, National Indian Education Association, National Congress of American Indians, and the National Indian Health Board.

Although recruitment was not the major focus, over 3,000 new donors have been recruited from efforts with these organizations.

The funding made available under this category allowed the NMDP to focus on specific minority populations to do thorough education, awareness and recruitment of underrepresented donors to the Registry. Although the campaigns have come to a close, recruitment and retention efforts will continue, including the use of targeted education materials developed with Navy grant funding.

### **3. Pilot Recruitment/Retention Program**

In 1993, the NMDP requested Navy funds to continue minority focused recruitment efforts after the targeted campaigns were completed. The goal was to develop models for each racial/ethnic group that would maximize the numbers of donors recruited onto the registry and also improve retention of these donors when they were contacted for further testing on behalf of a patient.

The NMDP sought to build on previous programs funded by the Navy with special attention to those recruitment strategies and programs that have proven to be most successful and appear to provide the greatest opportunity for replication in other areas. Based on these criteria the NMDP funded the following:

- An opportunity for eight existing NMDP recruitment groups that focus on minority recruitment to receive funding for one recruitment staff position. The RFP was let and responded to by July, 1996. Four recruitment groups were awarded subcontracts for a Coordinator for Minority Public Education/Awareness, based on proposals submitted and reviewed through September 1997. Recruitment groups awarded the position were: Asian American Donor Program, Asians for Miracle Marrow Matches, South Asian Marrow Association of Recruiters and Cammy Lee Leukemia Foundation. This project was very successful and allowed the awarded recruitment groups an opportunity to provide more education and awareness to the communities with which they work.
- Provided staff support for the American Indian/Alaska Native initiative, especially for health professional education about unrelated marrow transplantation. This provided the NMDP the opportunity to reach American Indian communities previously untapped. These funds supported the professional education workshops conducted in areas with high American Indian/Alaska Native populations, on reservations, Indian healthcare clinics and hospitals.
- Funding was utilized for media relations and recruitment through Black Expo USA events in 1996. These funds allowed the NMDP to continue its relationship with the hired consultant to work with Black Expo USA and to support the cost representation at the expos in the 18 cities.

### **4. Community HLA-A, B Matching Funds**

During the course of this Navy Grant, there were approximately 4,810 recruitment events funded with Community Matching Funds. Funds were accessed by 97 donor centers. A total of 288,939 Caucasian donors were added to the Registry using these funds.

## **5. Donor Center Waiting Lists**

With the exception of \$5,859 which was used to cover the cost of adding new donors to the Registry, the remaining funds were reallocated to Community Matching Funds.

### **D. Public Education and Awareness**

#### **1. Physician Histocompatibility and Transplant Center Coordinator Education**

This grant provided funding for three separate NMDP Transplant Coordinator Spring Meetings: 1995 (Orange, CA), 1996 (St. Petersburg, FL) and 1997 (Tucson, AZ). The funding pays for hotel lodging costs (two to three nights), meeting materials, and limited food and beverage for one representative from each participating transplant center. Each Spring Meeting dedicates several hours of its agenda to a Search Strategies session, where HLA typing experts focus on approaches to donor searches when the recipient has an unusual or hard-to-identify HLA type.

This grant has also provided funding for sponsorship of an Education Symposium at the corporate Friday session preceding the American Society of Hematology (ASH) meetings in 1995 (Seattle, WA), 1996 (Orlando, FL). These half-day sessions are targeted to hematologists, oncologists and transplanters. Of the over 10,000 international attendees at ASH, the NMDP was pleased to draw approximately 400 (1995) and 500 attendees (1996). The objective of these sessions are to introduce and reinforce the concept and success of unrelated donor transplantation. Funding was used to pay the symposium fee to ASH, and associated meeting fees such as materials, audio-visual fees, and speaker travel.

Funding was also used to underwrite the costs of a special session added to the 1997 Council Meeting in Minneapolis on September 26, 1997 for NMDP transplant center coordinators. Coordinators were invited to attend a DNA Symposium for approximately four hours, led by Carolyn Hurley, Ph.D. Approximately 200 people attended the session. Dr. Hurley presented the advantages of DNA-based typing, how the NMDP has incorporated DNA testing into its operations and search algorithms, and how search determinants would be used in the donor/patient matching calculations. Transplant center coordinators will use this information in their day-to-day interactions with the NMDP Search Coordinating Unit and in review the daily workflow management reports that provide search updates on their patients. Ninety percent of the evaluations for this session rated the speaker and presentation "excellent". Navy funding from Cooperative Agreement N00014-96-2-0016 was used to cover additional expenses.

#### **2. Registry Wide Newsletter**

This grant provided money for two editions of the newsletter, *The Marrow Messenger*, which is mailed annually to volunteers on the Registry. The newsletter is designed to reconfirm for volunteers their commitment to help save a life. The story content has been expanded to include more emphasis on donor retention and educational information about new donation options. Addresses from non-deliverable copies are forwarded to the appropriate donor center so they can update their donor address files. Nearly all of the domestic donor centers are now participating in this effort.

**3. Transplant and Collection Center Newsletter**

This funding was initially provided for the Transplant and Collection Center Newsletter copying expenses. The newsletter was copied in-house, therefore, no Navy funds were needed for this project. One hundred percent of the funds were reallocated and used for Community HLA-A,B Matching Funds.

**4. Physician Education**

Money from this grant paid for the reprinting of the Hematologists/Oncologists Guide to Unrelated Marrow Transplantation. In addition, the NMDP produced a set of slides illustrating NMDP operational information (number of donors recruited, search process, etc.) and transplant outcome data, which were distributed to NMDP participants for use in local and national scientific meetings.

**5. Patient Education**

This grant provided money for the development of new materials as well as the reprinting of several existing communications pieces. New materials produced were: *Unrelated Bone Marrow Transplant: A Patient's Guide* and the video "The Challenge of A Lifetime." Reprints of existing materials include the *Transplant Center Access Directory*, *A Patient's Resource: Information About Unrelated Marrow Transplant*, and the five pack of informational brochures about the various services provided by the Office of Patient Advocacy.

**6. NMDP Speaker Support Materials**

A set of slides for use by physicians and other NMDP network members was paid for under the "Physician Education" category. Therefore, all funds under this category were reallocated and used for Minority HLA-A,B typing.

**7. Targeted Group Awareness and Education Activities**

Communication and Education (C&E) staff continues to create new opportunities to generate visibility in the media and help our local centers increase the potential success of events and activities designed to raise awareness of the need for volunteers, particularly minorities, to join the Registry.

Activities supported through this grant have included participation in ethnic journalist conferences, materials and supporting promotional activities for Black EXPO USA, the Asian/Pacific Islander poster design contest, annual promotions released during ethnic celebrations such as Native American Heritage Month and new initiatives such as creating an umbrella of communications strategies designed to support recruitment activities during Juneteenth and other ethnic celebrations.

Stories about the need for minority donors have been featured in local mainstream and ethnic media outlets around the country and major ethnic publications such as *Essence*, *Jet*, *Latina Style*, *Indian Country Today* and others.

The results of these activities are reflected in the media coverage and the calls to the public information 800 number. Currently, more than 20% of the newspaper clipping received each month focus on the need for ethnic and minority donors, and 20 to 30% of the callers to the public information number are minorities. The volume varies depending on levels of media coverage.

## **8. Integrated Communications for Targeted Campaigns**

The NMDP uses firms with cultural experience and resources specific to each targeted audience. The expertise of C&E staff and the firms enables development of culturally sensitive, recruitment materials in languages key to each audience. These materials are tested among representative groups for cultural sensitivity and effectiveness. Additionally, the firms provide a resource with non-English speaking ethnic media. This grant provided money for support services from two communications firms, Valencia, Perez and Echeveste (VPE) and Red Eagle Productions.

VPE provided communications support for the Hispanics Giving Hope/Hispanos Dando Esperanza campaign. The firm helped to develop recruitment materials including a brochure, poster, flier, and television public service announcement. They also translated and distributed news releases to ethnic media, and provided support for several localized activities in selected markets. The materials for this campaign recently won an award from the Los Angeles Chapter of the International Association of Business Communicators.

Red Eagle Productions provided communications support for the Keep the Circle Strong initiative. The firm helped to develop campaign materials including a brochure, poster, flier, stationery, media kit and fact sheet.

## **9. Phase II National Public Service Campaign**

Phase I of the Public Service Campaign was very successful, lasting longer than anticipated. Phase II development was delayed to better fit the strategic plan of the organization. Therefore, all funds under this category were reallocated for use on other projects.

## **E. Long Term Blood Storage Alternative Investigations**

A contract (#6030) with Coriell Institute for Medical Research was issued on March 1, 1995, to evaluate alternative methodologies of long term whole blood storage and to compare them with the current protocol of freezing whole blood in 1 ml aliquots. Based on less than satisfactory performance, this contract was terminated for convenience of the NMDP on November 7, 1995. An amount of \$6,989 was made to Coriell as complete payment for services performed. An RFQ was sent in May 1997 to the DNA-based HLA-A,B and HLA-DR typing contract laboratories to provide typing services for this study. Samples were distributed to the participating laboratories on July 8, 1997. The baseline testing results have been received and are being analyzed. The six month testing results are due January 7, 1998.

## **F. Program Administration**

Under this grant, funds were expended to cover the salary, office rental, and related expenses of the administrator of Navy funded programs. The final reallocation detail is in Attachment 1.

### III. SUMMARY

Navy Grant #N00014-95-1-0055 supported NMDP projects which decrease the time and expense required for patients to find compatible unrelated donors, while funding research designed to increase understanding of the role of HLA matching on patient outcome post-transplant. Many of the activities described in this report represent continuations of successful projects implemented previously, and many are ongoing.

ATTACHMENT 1

\$45,000,000 NAVY GRANT  
SUMMARY OF ACTIVITIES

NATIONAL MARROW DONOR PROGRAM  
 \$45.6 NAVY GRANT - N00014-95-1-0055  
 October 1 1994 - September 30, 1996

REALLOCATION DETAIL SCHEDULE

	ORIGINAL GRANT	ADDED BY MODIFICATION P00001	MODIFIED GRANT	#1 2/14/95	#2 4/6/95	#3 3/6/96	#4 5/10/96	#5 6/5/96	#6 8/1/96	#7 8/28/96	#8 8/28/96	#9 11/15/96	#10 04/15/97	#11	PR 09/92	APPROPRIATED \$5,224,188
1	Scientific Studies of Allele-Specific Typing of Donor Rept (Class II)	\$3,100,000	\$1,450,000	\$4,550,000												\$5,224,188
2	NMDP HLA Match Vs. Outcome Research	\$500,000	\$0	\$500,000												\$0
3	Histocompatibility Laboratories for DNA HLA DR Typing	\$6,700,000	\$5,300,000	\$12,000,000												\$16,130,099
4	Histocompatibility Laboratories for HLA-A, B & DR Typing	\$2,300,000	\$500,000	\$2,800,000												\$24,000
5	NMDP Staff Immunogeneticist	\$200,000	\$200,000	\$400,000												\$0
6	Repository	\$0	\$700,000	\$700,000	(\$96,375)											\$553,625
7	Feasibility for Confirmatory Class I DNA Testing	\$0	\$0	\$300,000												\$600,000
8	Contract Laboratory for Reference/Pre-Test Cells	\$0	\$100,000	\$100,000												\$100,000
9	Class I Sequencing Database	\$0	\$100,000	\$100,000												\$653,620
10	Donor Center Hardware/Software	\$1,000,000	\$1,000,000	\$2,000,000												\$498,023
11	Facilitation of Rapid Communication with Foreign Registries	\$500,000	\$0	\$500,000												\$12,717
12	Probability of A, B, DR Identical Matches	\$50,000	\$0	\$50,000												\$200,000
13	Revision of Search Algorithm	\$200,000	\$0	\$200,000												\$209,316
14	Data Management for the International Consortium on the Effects of Ra	\$250,000	\$150,000	\$400,000												\$34,680
15	HLA/B Search	\$0	\$0	\$0	\$34,680											\$0
16	Resolution of Discrepant HLA Typing on Donors	\$0	\$75,000	\$75,000												\$67,545
17	Donor HLA Overwrite Modifications	\$0	\$75,000	\$75,000												\$0
18	Enhancements to BMDW Processing	\$0	\$100,000	\$100,000		(\$100,000)										\$0
19	Card Blood Repository Software	\$0	\$150,000	\$150,000		(\$150,000)										\$0
20	Transplant Center Software	\$0	\$100,000	\$100,000		(\$100,000)										\$0
21	Modify Repository Software	\$0	\$75,000	\$75,000												\$0
22	Minority HLA-A, B Typing	\$4,400,000	\$5,750,000	\$10,150,000												\$11,425,000
23	National Minority Campaigns	\$250,000	\$750,000	\$1,000,000												\$67,153
24	Pilot Recruitment/Retention Program	\$1,000,000	\$500,000	\$1,500,000												\$231,844
25	Community HLA-A, B Matching Funds	\$2,100,000	\$3,300,000	\$4,400,000												\$6,328,157
26	Donor Center Waiting Lists	\$450,000	\$103,000	\$553,000												\$5,859
27	Physician Histocompatibility and Transplant Center Coordinator Educator	\$100,000	\$160,000	\$260,000												\$135,000
28	Registry Wide Newsletter	\$400,000	\$650,000	\$1,050,000												\$903,540
29	Transplant and Collection Center Newsletter	\$20,000	\$20,000	\$40,000												\$0
30	Physician Education	\$30,000	\$30,000	\$60,000												\$0
31	Patient Education	\$20,000	\$25,000	\$45,000												\$0
32	NMDP Speaker Support Materials	\$20,000	\$0	\$20,000												\$0
33	Targeted Group Awareness and Education Activities	\$150,000	\$0	\$150,000												\$0
34	Integrated Communications for Targeted Campaigns	\$550,000	\$0	\$550,000												\$0
35	Phase II National Public Service Campaign	\$0	\$50,000	\$50,000												\$0
36	Long Term Blood Storage Alternative Investigations	\$300,000	\$337,000	\$637,000												\$96,663
37	Program Administration	\$0	\$0	\$0												\$315,625
38	Alternative Blood Products Software	\$24,600,000	\$21,000,000	\$45,600,000												\$293,738
																\$45,600,000

ATTACHMENT 2

NMDP TARGETED CAMPAIGN MARKETS

**NMDP Targeted Campaign Markets**

***African Americans Uniting for Life (AAUL)***

Atlanta	Baltimore
Chicago	Dallas
Houston	Jacksonville
Kansas City	Memphis
New Orleans	Tampa/St. Petersburg
Washington D.C.	

***Asian/Pacific Islanders Can Save Lives (API)***

Hawaii  
Los Angeles  
New York  
San Francisco  
Seattle

***Hispanics Giving Hope/Hispanos Dando Esperanza (HGH)***

Dallas (year one)  
Houston (year one)  
Fort Worth  
Los Angeles  
Puerto Rico  
San Antonio

***Keep the Circle Strong (KTCS)***

Portland	Spokane
Boise	St. Paul
Minneapolis	Milwaukee
Appleton	Fort Collins
Denver	Salt Lake City
Tulsa	Oklahoma City
Scottsdale	Tucson
Albuquerque	Columbia