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TITLE: RETROSPECTIVE STUDY OF HIV INFECTION IN HUMAN TISSUES

SUBTITLE: Computer Survey of the AFIP Repository for Cases of Acquired Immunodeficiency Preceding the HIV Pandemic

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Subtitle: Computer Survey of the AFIP Repository for Cases of Acquired Immunodeficiency Preceding the HIV Pandemic

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Frederick, MD 21702-5012

11 SUPPLEMENTARY NOTES

FY93 Funds which were rolled over to FY94 have been obligated for pesonnel contracts (Mr. Moroz).

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13 ABSTRACT (Maximum 200 words)

To seek, review, identify, and retrieve repository materials (slides, blocks, wet tissues, and information) of cases fulfilling the CDC definition of AIDS in the absence of demonstrable HIV infection. Identify cases for potential use in basic research on the chronology of HIV retroviral infection in human tissues.

14 SUBJECT TERMS

RA I, HIV-1, Tissue Infection, Humans, Repository Samples, Early HIV-Infection, Genomic Material, PCR Analysis, Demographic Info —

15 NUMBER OF PAGES

16 PRICE CODE

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Unclassified	Unclassified	Unclassified	Unlimited

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____ In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

____ In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

PI - Signature 5/10/94 Date

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ATTACHMENTS

INTRODUCTION

The objective of this project is to seek, review, identify, and retrieve repository materials (slides, blocks, wet tissues, and information) of cases fulfilling the CDC definition of AIDS in the absence of demonstratable HIV infection. These cases could the be used in basic research of the chronology of HIV retroviral infection in human tissue. To meet this objective, the AFIP's master database in the mainframe computer will be searched for cases accessioned before 1959 with any diagnosis indicative of immunodeficiency in the absence of proven HIV infection (MMWR, August 14, 1987/VOL. 36/No. 1S -- revised MMWR, 1992/41:1-19). Case selection criteria will be: clinical, pathological, and demographic information available for correlation with pathological diagnoses, geographic origin, anatomic source, patient's age and medical and social factors demonstrated to influence the spread and distribution of HIV infection and AIDS.

BODY

Cases will be transferred onto a floppy disk for importation into a custom-designed database for additional analysis at the Division of AIDS Pathology. Cases with adequate materials and sufficient clinical documentation will be identified and retrieved for review at the AIDS Pathology Division. Records from cases accessioned before 1970 will be reviewed manually for entry into the study database. Records on microfilm will be scanned into digitized images and, when possible, translated into word processing files for conversion into other suitable formats for import into database records. We plan to develop and implement a simplified and more practical approach to data retrieval from the AFIP mainframe computer for importation into personal computer workstations, thereby maximizing efficiency in reviewing and retrieving pathological material that is suitable for collaborative research in all aspects of pathology and basic science and potentially usable by other AFIP investigators.

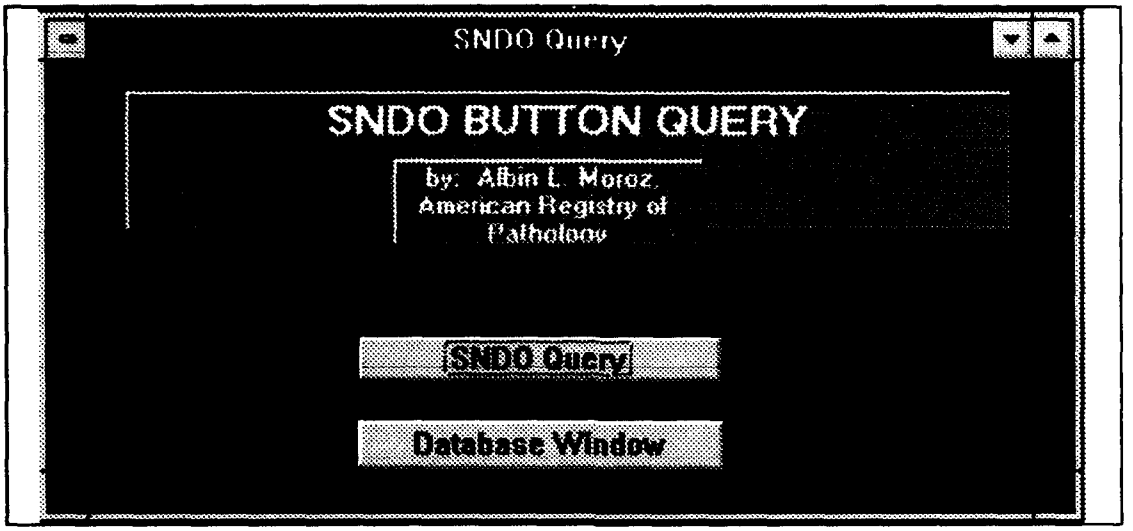
Thus far, the implementation phase (Phase I) is now complete. This consisted of outlining the infrastructure requirements, technical support requirements, and purchasing hardware and software. It should be noted that these purchases were based on the existing technology at the time. Some modifications will be required as the project progresses. Preliminary prototypes for data retrieval from the mainframe computer were also produced during Phase I. Mr. Moroz, a computer programmer/analyst, was hired in November 1993 to develop a user data retrieval system for the project (Phase II). He has completed a prototype that is extremely flexible, easy to use, and yet very sophisticated. The application is written using embedded structured query language (SQL). This makes it compatible with the existing mainframe table format. Designed as a graphical user interface (GUI) to data stored on the AFIP network, the system has many advantages that go well beyond original expectations. Information is available to anyone who has access to the network. Files are password protected. And, because data is restricted to "read only" for the user, integrity is maintained. Yet, data can still be easily merged into new database structures as improvements are made. The GUI itself allows the user to randomly compose queries based on simple field searches or complex criteria. Results are seen within seconds, thus providing instant feedback if modifications to the query should be necessary (See Attachment A, Sample SNDO Query).

CONCLUSIONS

We are now ready to begin the actual information gathering. A first-pass download of the original AFIP database will be made. This database, which was based on Standard Nomenclature of Diseases and Operations (SNDO) coding, includes all cases received prior to 1970. The queries for this download will be broad-based to include all possible AIDS related cases. Consecutive passes of the downloaded data will be made using the new retrieval system, and those cases which have no relevance to the study will be eliminated. As the process progresses, the computer program can be fine tuned to accommodate any unforeseen circumstances. After probable cases of AIDS are identified by this search, a decision will be made in collaboration with the U.S. Army Retroviral Group to determine the optimal use of the material. Possibilities include PCR and/or in situ testing for the presence of HIV viruses and viral sequencing. In addition, the protocol and software for this study can serve as a model for other projects.

RETROSPECTIVE STUDY OF HIV INFECTION IN HUMAN TISSUES

Computer Survey of the AFIP Repository for Cases of Aquired Immunodeficiency Preceding the HIV Pandemic



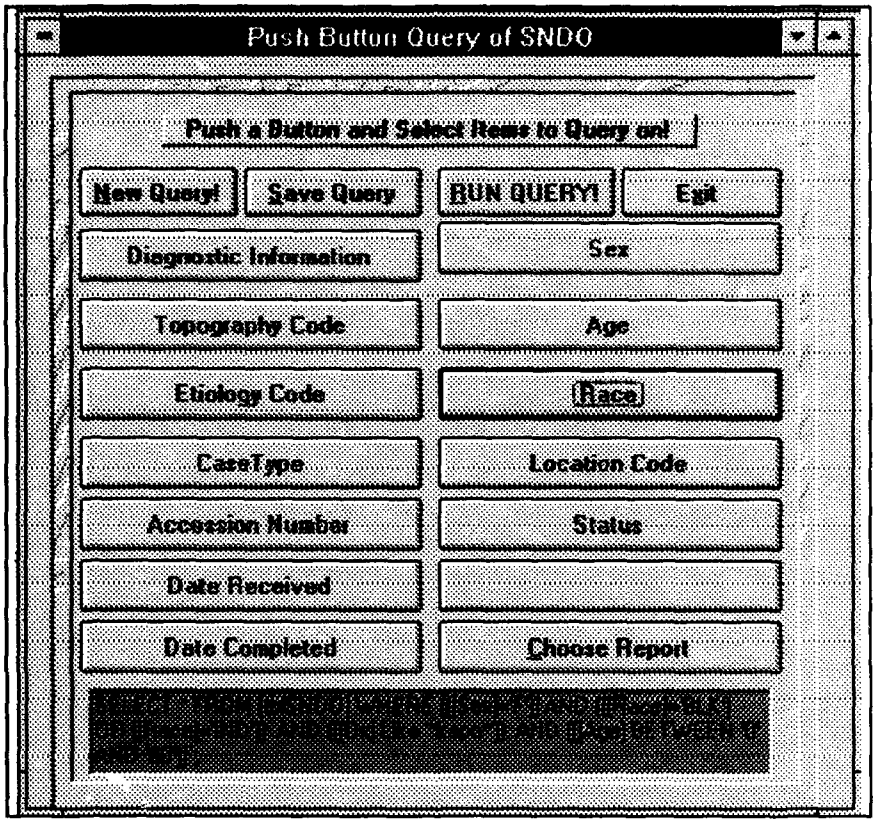
***Standard Nomenclature of Diseases and Operations* (SNDO) Database Retrieval System.**

Written by
Albin L. Morez

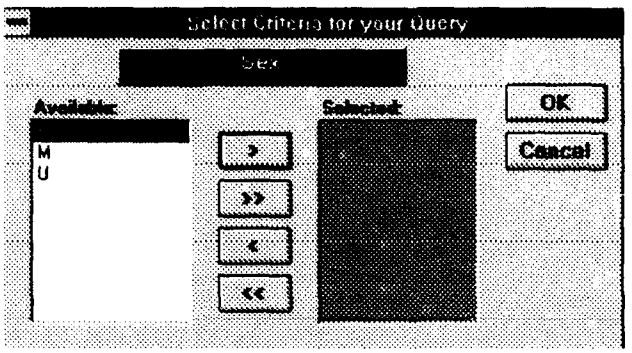
Armed Forces Institute of Pathology
Washington, DC 20306-6000

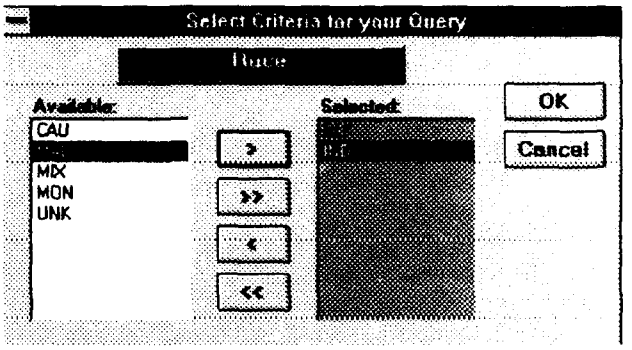
INTRODUCTION: Prior to 1970, all cases entered into the AFIP mainframe computer database were Standard Nomenclature of Diseases and Operations (SNDO). The SNDO retrieval system is designed as a graphical user interface (GUI) to that data. It allows maximum flexibility and ease of use for the investigator. Queries are built by selecting field criteria and entering filters as prompted by program. Query results are returned to the screen within seconds. They can then be printed or saved.

All queries are activated by pressing a button and entering a filter. Filters are selected from a pick list or entered mannually.

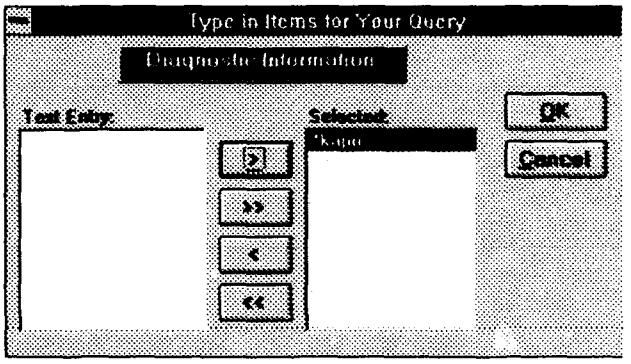


Sex and Race are examples of a pick list. The user simply makes selections from the available side and transfers them to the selected side by pressing the direction button.

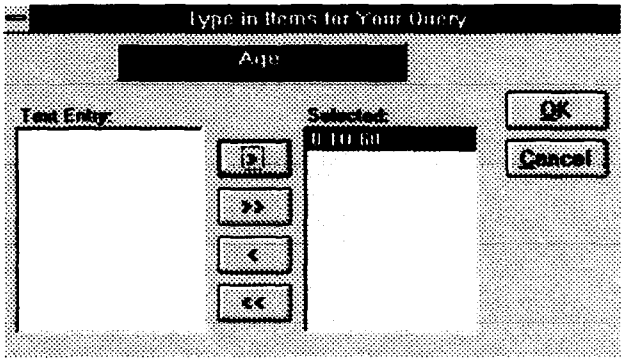




Diagnosis is an example of a text string search. Notice the use of an asterisk "*" as a wildcard.



AGE can be entered as a single number or a range.



Master Overview

19-May-94

Case Type	Accession No	Age	Race	Sex	Topography	Etiology	Diagnostic Nomenclature	Location
S								
	1245261	15	BLK	M	14812	8675	*534 SOLE KAPOSIS SARCOMA*	GEO
	1245261	15	BLK	M	1472	8675	*534 KNEE KAPOSIS SARCOMA*	GEO
	1248343	60	BLK	M	1411	8675	*KAPOSIS SARCOMA HAND*	
	1249795	40	BLK	M	X51	8675	*KAPOSIS ANGIOSARCOMA ORBIT*	
	1272253	60	BLK	M	14812	8675	*503 KAPOSIS SARCOMA SKIN SOLE FOOT*	GEO

Total Records Selected 5

SELECT * FROM [tblSNDO] WHERE (([Race]='BLK') OR ([Race]='IND')) AND (([Dx] Like '*kap**')) AND (([Age] BETWEEN '0' AND '60')) ;