



YOUR GUIDE TO VA DATA

# Insights

Intranet addresses have been removed from this document. Intranet links are available on the Intranet version of this publication. For more information, please go to VIREC's Redaction Information web page: <http://www.virec.research.va.gov/References/Redactions.htm>

## NPCD: The VA National Patient Care Database

### What is the NPCD?

The National Patient Care Database (NPCD) contains information on each episode of care provided by the Veterans Affairs health care system. The development of a single national database that would

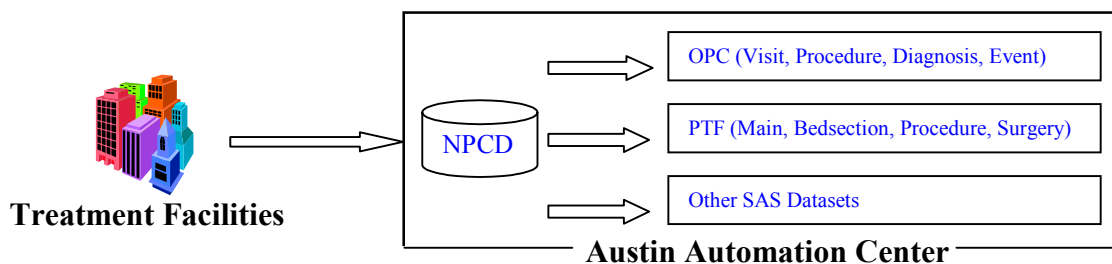
- ◆ incorporate the best properties of multiple national databases,
- ◆ eliminate fragmented and overlapping systems,
- ◆ resolve inconsistencies among previous data systems,
- ◆ implement coding systems that are health care industry standards,
- ◆ collect full diagnostic and procedural information on patients,
- ◆ improve timeliness of national data and
- ◆ take advantage of state-of-the-art technologies for information analysis

were the major reasons for the creation of this new system. VA architects and modeling teams decided to create a relational database format using Oracle™ to capture patient information. The NPCD is housed at VA's Austin Automation Center (AAC). The earliest record for outpatient encounters is Oct 1, 1996. The earliest record for inpatient care is Oct 1, 1998.

Besides basic demographic and utilization data, NPCD contains specific variables for Ambulatory Care Groupings (ACG), Global Assessment of Functioning (GAF), Agent Orange Exposure (AOR), Environmental Exposure (ENV), Radiation Exposure (RAD) and variables for Unique Provider Identifiers, Primary Care Providers and Enrollment Priority.

For any given year the exact set of variables may change. Visit the VIREC Web site (end page) to view current and comprehensive lists of variables.

Data Flow - Data are directly loaded into the NPCD tables via electronic transmission. Twice monthly, the table data are used to manufacture/update the national SAS datasets for OPC and PTF.



## Access to NPCD

Access to the Oracle database is currently limited to system developers. Data are generated out of NPCD tables into publicly accessible SAS datasets where care information is separated by fiscal years and location of care (i.e. inpatient and outpatient). Currently, the VA's **outpatient data** are stored in 4 files:

1. Visit – A visit is defined as all outpatient encounters occurring within the same 24 hour day. There are 15 variables for clinic in each Visit record, allowing for noting 15 separate encounters within that day. This file was created before NPCD and data are stored back to FY 80.
2. Diagnosis – This file contains a record for each encounter (i.e., one clinic). Up to 11 diagnoses may be recorded. This file was added in FY 97.
3. Procedure – This file also contains one record for each encounter. Up to 12 procedures may be recorded. This file was added in FY 97.
4. Event -- This file also contains one record for each encounter. Up to 12 procedures and up to 11 diagnoses may be recorded. This file was added in FY 99, but is currently stored on tape thereby limiting its access to one user at a time. Beginning in FY 01, this file should be stored on disc and be widely accessible.

Currently, the VA's **inpatient data** are stored in 4 files.

1. Main – This file contains one record for the entire inpatient stay. Main contains demographic data, including exposure and treatment variables as well as diagnostic information. This file was created in FY 70.
2. Surgery – This file contains one record for each surgery, where surgery is defined as the entire set of operations performed within one operating room visit. Up to 5 surgical codes may be recorded. This file was added in FY 84.
3. Procedure – This file contains one record for each day within the inpatient stay for up to 5 procedures. Procedures in this file were not performed in an operating room. This file was added in FY 88.
4. Bedsection – This file contains one record for each stay in a particular bedsection (i.e. ward) within the stay. Data are similar to Main. This file was added in FY 84.



## Strengths and Weaknesses of NPCD SAS Datasets

VA health services researchers use the SAS datasets for many analytic purposes. These purposes can be program specific, cohort-related, performance defined and/or focus on patient outcomes. Outcomes research refers to measurement and evaluation of the results of interactions within the health care system, including: patient, employee, and provider satisfaction; quality of care; access to care; resource use; operational efficiency; cost effectiveness; and cost of care. Post discharge mortality was the first outcome to be measured on a large scale using the inpatient Patient Treatment File (PTF), but other outcomes of interest include functional status, rates of complication and/or readmission, length of stay, and length of recovery.

Among the documented strengths of the inpatient and outpatient SAS system databases are that the files provide clinical detail and depth of information for each discharge or ambulatory clinic encounter in the VA health care system. The information is generally complete and can be linked to generate episodes of care for individual veterans. VA medical administrative databases make long-term follow-up of a patient cohort's health care utilization, as well as long-term survival analyses, possible.

One of the most obvious disadvantages to using secondary databases for outcomes research is that these systems were not created for research purposes and, in most cases, researchers did not have input into the design or types of information collected by the systems. Such databases lack some of the details that researchers might want. For example, they include limited data on the severity of a patient's condition at admission, information that would greatly enhance risk-adjusted outcomes measures. Such shortcomings are not unique to VA administrative databases.

In the outpatient files, the most significant weakness is that, prior to October, 1996 (i.e., FY 97), data do not include diagnosis or provider information. Another weakness is that before FY 93, there was a 10% over-counting of no-show visits. A third weakness is especially problematic for investigators who are interested in longitudinal studies: prior to FY 86, only a 20% sample of clinic visits was used instead of a 100% data transmission. A fourth weakness of the outpatient data concerns reliability for some elements.

## To Find Out More About NPCD

### VA Web Sites:

There are several web sites that provide information on NPCD. The following sites offer more complete information and are useful to researchers who want to know more about this database:

#### NPCD Web Page- National Data Systems

[REDACTED]

(VA Intranet Only)

#### NPCD Web Page – Austin Automation Center

[REDACTED]

(VA Intranet Only)

#### Veterans Affairs Information Resource Center

<http://www.virec.research.va.gov>

(Internet and VA Intranet)

#### National Data Systems Service

[REDACTED]

(VA Intranet Only)

### Contacts:

For specific information on NPCD not found on the above Web site, you may wish to contact the following individuals:

Gail Graham, e-mail: [Gail.Graham@mail.va.gov](mailto:Gail.Graham@mail.va.gov)

NPCD System Manager of Record

VHA Chief Information Offices

Telephone: (202) 273-9220

Tom Crase, e-mail: [Tom.Crase@mail.va.gov](mailto:Tom.Crase@mail.va.gov)

NPCD Project Manager

AAC Enterprise System, Austin Automation Center

Telephone: (512) 326-6364

Mike Kerr, e-mail: [kerr@research.hines.med.va.gov](mailto:kerr@research.hines.med.va.gov)

Health Information Analyst

VA Information Resource Center

Telephone: (708) 202-2413



Visit our Website

[www.virec.research.va.gov](http://www.virec.research.va.gov)

#### **VA Information Resource Center**

Telephone: (708) 202-2413

FAX: (708) 202-2415

Hours: M - F, 7:00 A.M. - 5:30 P.M. CST

Address: Hines VA Hospital

VIReC (578/151V)

P.O. Box 5000

Hines, IL 60141-5000

#### **Editorial Staff**

Editorial Directors: Diane C. Cowper, MA,  
Denise Hynes, PhD

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