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# Manual for Hospitals Participating in the North Carolina Trauma Registry through ISSAC

*(Last Revised 06 April 2005)*

This information is intended to be a guide for hospitals interested in participating in the North Carolina Trauma Registry (NCTR) through ISSAC. ISSAC is a mechanism for participating in the NCTR through automated daily data downloads of a 34-element dataset. No data entry is required.

This document is under development. Future additions will include information on the web interface for obtaining reports from the NCTR. Suggestions for inclusions are welcome.

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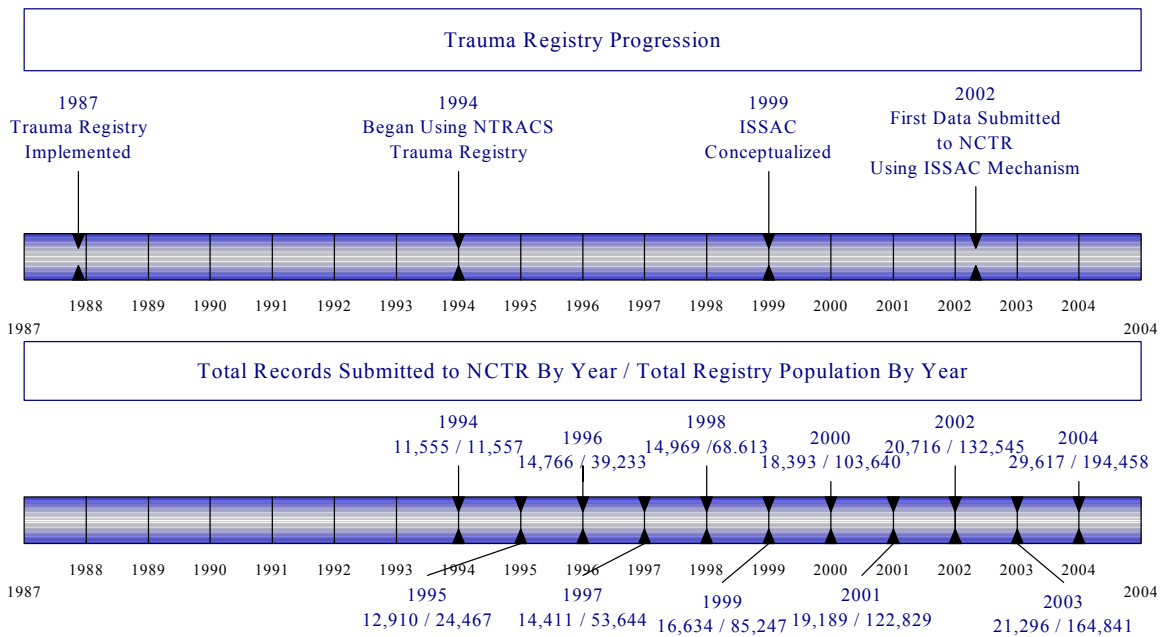
# Project Overview

## History

In 1987, North Carolina implemented a state trauma registry (NCTR) using customized software and largely funded it through a grant from the Governor’s Highway Safety Program. Since that time, the registry has not only collected data, but also used the data routinely. Local, state and national research projects are common and members of the North Carolina trauma community have published and presented widely using registry data.

As of late 2004, the NCTR has nearly 200,000 patients. NCTR includes trauma data from many North Carolina hospitals, including all designated trauma centers and several community hospitals. It is a vital tool for these hospitals that use it for performance improvement activities and development of injury prevention programs.

**Figure 1: Trauma Registry Timeline**



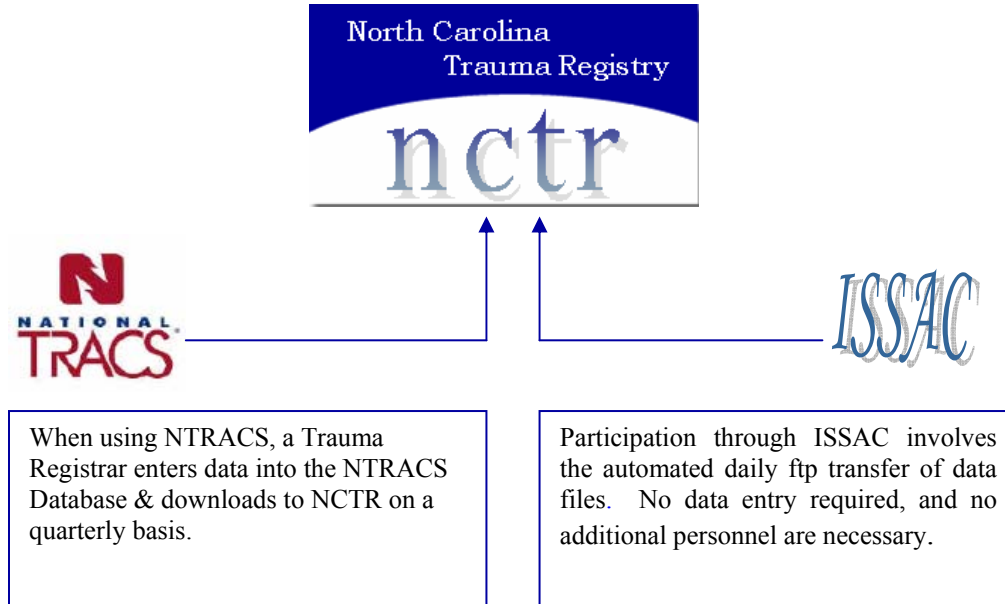
In 1994 the NCTR switched from the customized software and began using a trauma registry developed by the American College of Surgeons in Chicago, Illinois known as NTRACS. This program is still being used today by all trauma centers in the state as well as several other hospitals voluntarily collecting data through NTRACS.

It was clear that a more accurate picture of trauma in North Carolina was needed for trauma system development, yet budgeting and staffing concerns often limit the possibilities of collecting the necessary data. In 1999, a program was conceptualized to address the gaps in trauma patient data with minimal impact on a hospital’s staff and budget. ISSAC was the mechanism devised to meet this goal.

**Ways to Participate**

Currently, there are two different ways to participate in the North Carolina Trauma Registry, NTRACS and ISSAC. The ISSAC mechanism for submitting data to the NCTR involves downloads of existing data, and thus does not require any data entry.

**Figure 2: Mechanisms of Participation**



**Purpose**

The purpose of the ISSAC is to provide data through the NCTR for statewide trauma system performance improvement by expanding the registry through daily, secure, electronic data submission of a small number of data points from existing data systems at every North Carolina hospital.

A second purpose of the expansion of the NCTR is to provide data for the Regional Advisory Committees (RACs) for regional trauma system development. See Appendix 1 for a further information on the RACs.

**Cost**

There is no charge for participation in the NCTR through ISSAC, neither for data submission nor access to data. However, it is recognized that there is an inherent cost for the time required of each hospital’s Information Systems department for development of the automated report file and setup of the ftp process.

## ***Hospital Benefits***

Participation in the NCTR through the ISSAC mechanism will meet many needs both at the individual facilities as well as statewide. Some of these needs include, but are not limited to:

- Statewide trauma system development
- Individual site trauma system development
- Trauma system performance improvement
- Benchmarking on a local, regional and state level
- Development of injury prevention programs on a local and regional level
- Enhancement of risk management efforts on a local level
- Data to support potential funding opportunities

## **Security**

### ***Overview***

The ftp program used for data transfer is WS-FTP Pro. This software provides 128-bit SSL encryption, which is the encryption level required by HIPAA. Files also may be sent to the NCTR using a hospital's existing ftp software, as long as that software meets the 128-bit SSL encryption level requirement. All activity on the ftp server is password protected and logged.

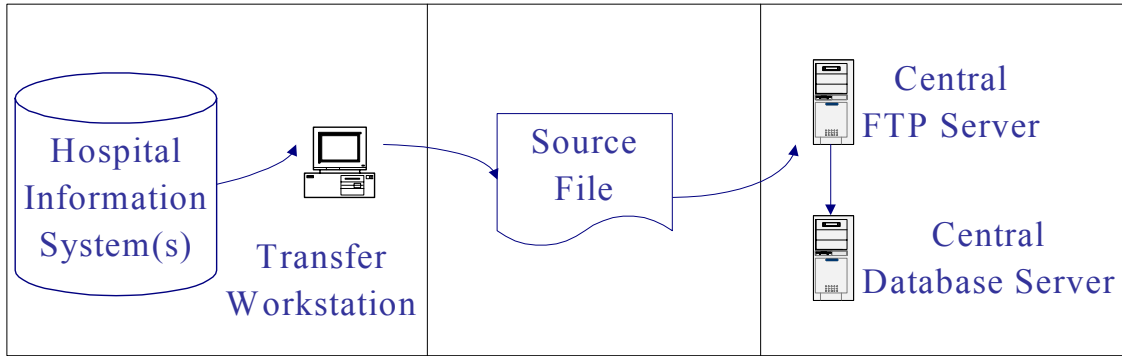
All hospital identifiers are coded and patient identifiers are removed from the file and replaced with a unique identifier. This identifier will allow the NCTR records from different hospitals to be linked. The identifiers are stored in a separate, secure database.

Any person wishing to use the NCTR reporting web site must register as a NCTR user. Registering as a user requires completion of the NCTR User Information form.

A NCTR hospital contact/administrator will be identified for each hospital that contributes data to the NCTR. This individual will determine what levels of access other users have to their hospital's data.

The following four diagrams illustrate the security in place to protect the NCTR data.

**Figure 3: Security Architecture – FTP**



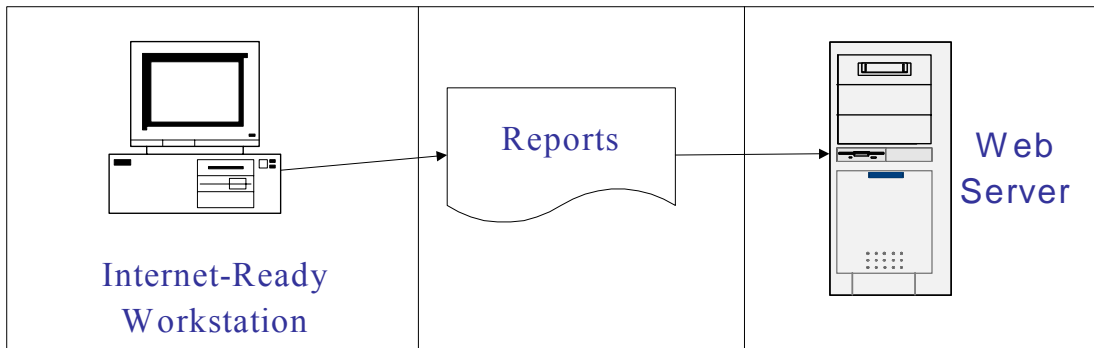
**Transfer Workstation**

- ◆WS\_FTP Pro
- ◆Transfers automated through scripting or scheduling
- ◆Activity logging

**Central Server**

- ◆WS\_FTP Pro Server
- ◆Secure Sockets (SSL) Certificate
- ◆Transfer Workstation IP address
- ◆Predefined Site upload folder
- ◆Activity logging

**Figure 4: Security Architecture – Reporting**



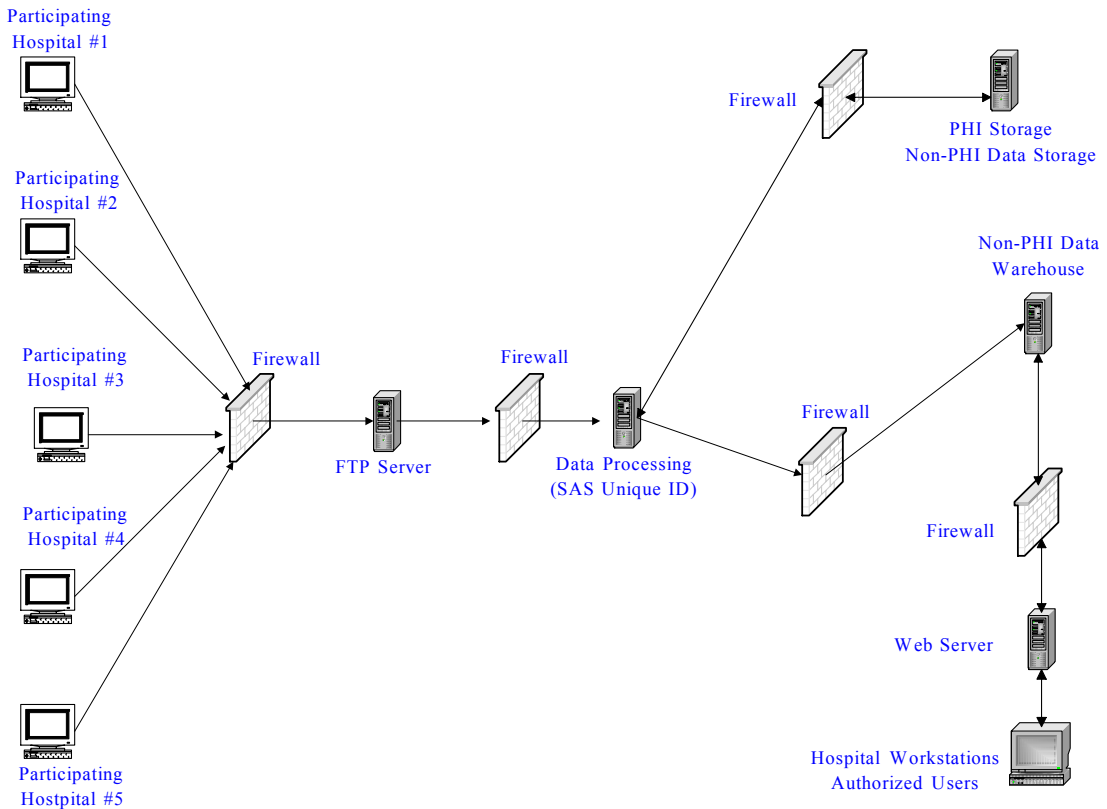
**Report Workstation**

- ◆SSL-capable browser
- ◆Logon ID/Password entry required
- ◆Restricted to Hospital data or aggregate RAC or State data
- ◆Reports restricted by Role

**Web Server**

- ◆Secure Sockets Layer (SSL) Encryption
- ◆Inactive session timeout

**Figure 5: Security Architecture – Server & Firewalls**



**Data Storage**

Since the NC Office of Emergency Medical Services is the lead agency for trauma in this state, the registry is operated under its auspices and administered, under contractual agreement, by the UNC Department of Surgery. Data are stored on a server located on the UNC Campus. The server is physically secure, with access limited to NCTR staff.

**Why Do We Ask For Records on Non-Trauma Patients?**

Occasionally, patients are transferred to a trauma center before receiving a trauma diagnosis code at the initial treatment facility. Patients who do not receive a trauma diagnosis code at the initial treatment facility are tracked to determine if they were transferred to another hospital for definitive care. If a record at a transfer facility is identified, then the records from the initial facility and the transfer facility are retained.

For those patients receiving a trauma diagnosis code at the hospital providing the initial care, the patient’s record is retained in the NCTR.

For those patients who do not receive a trauma diagnosis code at any facility, all data is deleted for that patient-event.

### ***PHI Retention***

Each patient is assigned a unique identifier for the NCTR. The identification of a person is based on SSN, name, race, gender, and date of birth. Probabilistic linking is used to ensure that different people are assigned different identifiers, but that name changes or errors in coding do not result in one person acquiring multiple unique identifiers.

The assignment of a unique identifier to a person, as opposed to an event/injury, allows the entire picture of care to be obtained through links to other records in the NCTR and the State EMS database (PreMIS). This unique identifier also allows for analysis of recidivism.

### ***Patient Confidentiality***

The NCTR staff and users are obligated to ensure that medical information is not disclosed inappropriately, accidentally, or negligently. Thus, the following guidelines apply to all NCTR users and staff:

1. All users of the NCTR web-based reporting system are required to read and sign the NCTR Confidentiality Contract (see Appendix 2).
2. Passwords are strictly confidential.
3. Patient-specific information will not be available to users in the initial implementation of the web-based reporting system. Non-confidential summary data or other data that do not identify a patient or hospital may be released in accordance with the guidelines established by the NCTR Data Access/Research Committee.
4. All inquires regarding patient-specific information must be directed to the hospital responsible for the patient's care. NCTR staff may not release any medical record information.

Failure to abide by these guidelines may result in removal of NCTR reporting system user privileges.

### ***Access to Records***

The following section details records access guidelines and procedures.

#### **Research**

The NCTR supports the research and quality management efforts of the North Carolina Trauma System, yet recognizes the responsibility to safeguard confidential patient information. Any data released from the NCTR for research purposes must be approved

by the NCTR Data Access/Research Committee and must have approval or exemption from a governmental or university institutional review board (IRB).

The policies and procedures for requesting data for research purposes from NCTR are outlined in a separate document titled “NCTR Data Access Procedures”. This document may be found by visiting the North Carolina Office of Emergency Medical Services’ website:

<http://www.ncems.org/trauma/trauma%20registry%20data%20access%20procedures.doc>

### ***User Registration***

Any person wishing to use the NCTR reporting web site must register as a NCTR user. Registering as a user requires completion of the NCTR User Information form (see Appendix 3).

### ***User Privileges***

An NCTR hospital contact/administrator will be identified for each hospital that contributes data to the NCTR. This person will determine access (who and at what level) to their hospital’s data and will be responsible for all ramifications of these decisions.

Access levels are listed on the “NCTR User Authentication” form (see Appendix 4).

## **HIPAA Concerns**

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) was enacted to provide legal protection against the inappropriate use of individually identifiable health information. The major emphasis of HIPAA is on patient confidentiality and privacy through a standardized approach to physical and software data security and through a structured approach to transmitting data with patient identifiable components.

A Privacy Officer has been appointed for the NCTR, who is responsible for oversight of all privacy-related issues.

A security officer also has been appointed who will be responsible for the oversight of all security-related issues, including revocation of user privileges, and technical and physical security plans. Technical security measures include user access and authorization, password protection, data encryption and transmission, and monitoring of NCTR use. Physical safeguards include protection of NCTR hardware and data, backup plans, and disaster recovery plans.

### ***Legislation***

The North Carolina Office of Emergency Medical Services (NCOEMS), under the authority of Section 143-518 of the North Carolina General Statutes, as implemented by

10A N.C.A.C. 13P.201(7), has the legal authority to collect and maintain identifiable data at the state level. The NCTR is a function of the NCOEMS, which is an agency of the North Carolina Department of Health and Human Services. ***As a state public health authority, NCOEMS is not a covered entity under the Health Insurance Portability and Accountability Act of 1996 (HIPAA).*** Hospitals who provide data to the NCOEMS may do so pursuant to 45 C.F.R. 164.512(b)(1). ***No business associate agreement is required.*** The applicable legislation is as follows:

Section 143-518. Confidentiality of patient information

- (a) Medical records compiled and maintained by the Department or EMS providers in connection with dispatch, response, treatment, or transport of individual patients or in connection with the statewide trauma system pursuant to Article 7 or Chapter 131E of the General Statutes may contain patient identifiable data which will allow linkage to other health care-based data systems for the purpose of quality management, peer review, and public health initiatives.

These medical records and data shall be strictly confidential and shall not be considered public records within the meaning of G.S. 132-1 and shall not be released or made public except under any of the following conditions:

- (1) Release is made of specific medical or epidemiological information for statistical purposes in a way that no person can be identified.
- (2) Release is made of all or part of the medical record with the written consent of the person or persons identified or their guardians.
- (3) Release is made to health care personnel providing medical care to the patient.
- (4) Release is made pursuant to a court order. Upon request of the person identified in the record, the record shall be reviewed in camera. In the trial, the trial judge may, during the taking of testimony concerning such information, exclude from the courtroom all persons except the officers of the court, the parties, and those engaged in the trial of the case.
- (5) Release is made to a Medical Review Committee as defined in G.S. 131E-95, 90-21.22A, or 130A-45.7 or to a peer review committee as defined in G.S. 131E-108, 122C-30, or 131D-21.1.
- (6) Release is made for use in a health research project under rules adopted by the North Carolina Medical Care Commission. The Commission shall adopt rules that allow release of information when

an institutional review board, as defined by the Commission, has determined that the health research project:

- a. Is of sufficient scientific importance to outweigh the intrusion into the privacy of the patient that would result from the disclosure;
- b. Is impracticable without the use or disclosure of identifying health information;
- c. Contains safeguards to protect the information from redisclosure;
- d. Contains safeguards against identifying, directly or indirectly, any patient in any report of the research project; and
- e. Contains procedures to remove or destroy at the earliest opportunity, consistent with the purpose of the project, information that would enable the patient to be identified, unless an institutional review board authorizes retention of identifying information for purposes of another research project.

(7) Release is made to a statewide data processor, as defined in Article 11A of Chapter 131E of the General Statutes, in which case the data is deemed to have been submitted as if it were required to have been submitted under that article.

## Data Files

Data submitted to the NCTR via ISSAC should contain the elements listed in Appendix 4 for each case. The data set was designed so that most of the items could be downloaded from existing hospital data systems. These data points generally are those used for billing purposes.

### **Data File Contents**

The data points least likely to be available through existing hospital computer systems are PreMIS\_ID (the patient's unique EMS identifier), the EMS provider information (agency number, name, and county), the hospital to which the patient was transferred, and the reason for transfer. Participating hospitals are encouraged to provide as many of these data elements as possible from existing hospital data systems. *No manual entry of data is required.*

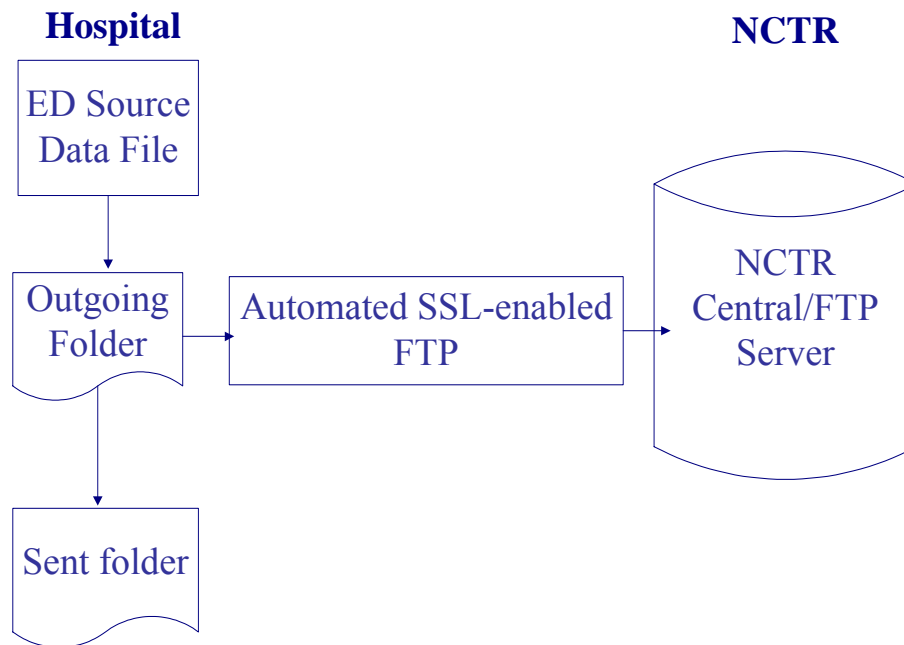
Per the section on Security above, patient identifiers are required as part of the NCTR dataset. Inclusion of patient identifiers allows linkage to other NCTR records, as well as

recidivism studies. All patients in the NCTR are assigned a unique identifier, and all patient identifiers will be removed from the NCTR dataset and replaced with the unique identifier to ensure the privacy of the patient records.

### **Data File Creation**

The NCTR staff will assist in data file creation as needed. Figure 6 illustrates a sample of data flow; though this flow may vary slightly from facility to facility.

**Figure 6: Sample of Data Flow**



### **Data Set Criteria**

Through the ISSAC mechanism, the NCTR collects data from hospitals on all patients who arrive in the Emergency Department and who are admitted to the hospital, are transferred to another hospital, or who died in the ED. This includes both trauma and non-trauma patients, to decrease the possibility of missing patients who are not in the ED long enough to receive a trauma diagnosis code. Patients may get transferred to a trauma center prior to receiving a definitive trauma diagnosis. Ultimately non-trauma patients are removed from the database by linking the patients to those submitted by the trauma centers. Those patients never receiving a trauma diagnosis at any NC hospital are deleted from the NCTR database. (See the section on “Why do we ask for records on non-trauma patients?” for further information.)

## ***Download Contents***

Hospitals will download information to the NCTR on a daily basis using the file transfer protocol (ftp) process (described in the next section).

The download should consist of three files:

- Demographic info
- Diagnosis info
- Procedure info

An additional Comment file may be submitted if necessary. These download files should be comma- or column-delimited text files. The files should contain no quotation marks. The end of record marker is a paragraph marker or line break. See Appendix 5 for additional information on file structure.

The data points that should be included in each of the data files listed above are listed in Appendix 5. A detailed description of all of the NCTR/ISSAC data points is included in the ISSAC Data Dictionary (Appendix 6).

## ***Data File Transfer***

Participating hospitals will download information to the NCTR on a daily basis using the file transfer protocol (ftp) process. The NCTR uses WS-FTP Server on the ftp server. See Appendix 7 for FTP Site setup instructions. This software provides 128-bit Secure Sockets Layer (SSL) encryption. This transfer system allows each hospital to log in to a secure site, access a folder specific to their hospital, and copy the data file to this secure folder. This process can be automated, so that the file transfer process does not require human interaction.

Information on how to access the ftp site will be sent to the hospital contact person responsible for setting up file transfer.

## **Report Interface**

A secure interface for generating reports from the NCTR database is under development. The interface and all reports are generated using SAS.

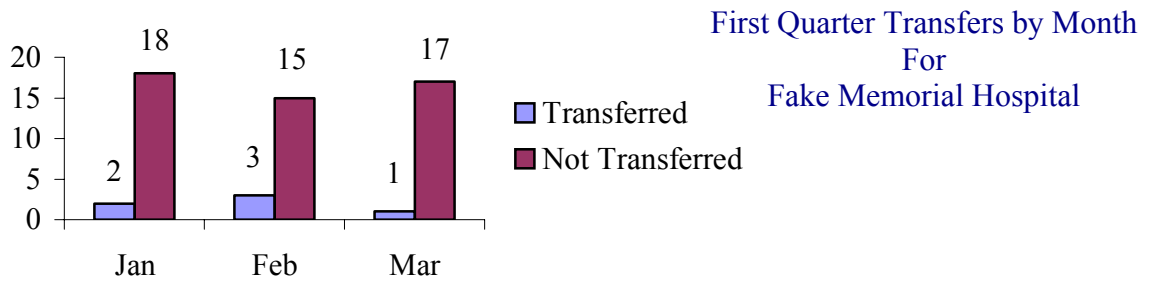
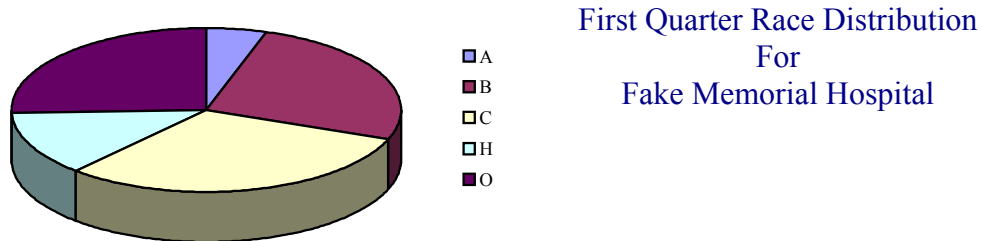
The interface will require the user to log in to the site, and to identify which hospital or RAC for which they are choosing to look at data. Once they have designated their hospital or RAC of interest, the “Report Selection” page will appear.

The “Report Selection” page will display the reports that the user is authorized to view for the designated hospital or RAC. Clicking on a report will result in display of the chosen report, based on the current data in the NCTR.

Members of the NC State Trauma Advisory Committee (STAC) recommended the reports that currently are offered. Additional reports may be requested. Reports can be generated inclusive of all patient ED admission dates represented in the NCTR or for records with ED admission dates from the last calendar year. Reports can be generated at the STAC, RAC, or hospital level, depending on the user’s level of access. The current reports include:

1. Frequency of ED length of stay (LOS) in hours
2. Age distribution
3. Age range by ED LOS (hours) (Age range in years: <= 5.9, 6.0-12.9, 13.9-19.9, 20.0-39.9, 40.0-59.9, 60+ )
4. Race distribution
5. ED disposition
6. Hospital LOS by E-Code or 1<sup>st</sup> diagnosis
7. Survival rate by ED LOS
8. Number of transfers
9. Frequency of age range and 1<sup>st</sup> diagnosis for non-transfers
10. Insurance distribution for transfers vs. non-transfers
11. E-Code distribution for transfers vs. non-transfers
12. Frequency of penetrating injuries to the head, neck, abdomen, or torso
13. Procedure frequency

**Figure 7: Sample Reports**



In addition to viewing reports for your hospital you may also view reports for your RAC; however, in order to view aggregate data reports for your RAC, a minimum of three hospitals must be participating in the NCTR from your RAC. This minimum ensures confidentiality of hospital data.

### ***Data Access / Research Committee***

The NCTR Data Access Committee is a standing sub-committee of the STAC. This committee will be responsible for approving the process for data access and for approving specific data requests.

## **Steps Toward Participation**

Participation in the NCTR requires several steps, both administrative and technical. The administrative steps include identifying a primary contact at each hospital and obtaining signatures on the Memorandum of Participation. The technical steps involve the development of the process for extracting data from existing hospital data systems, and setting up the connection to the NCTR ftp server. See Appendix 8 for a checklist of these administrative and technical steps. .

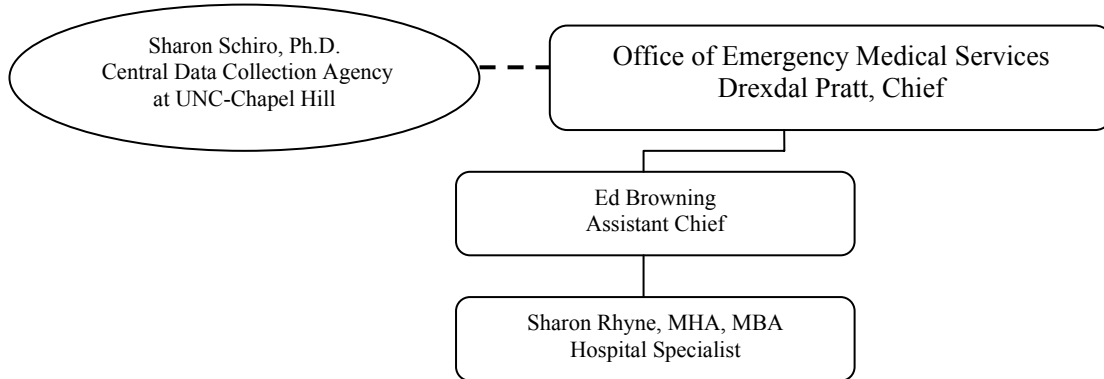
# Appendices

## Appendix 1: Trauma System Governance

### NCOEMS

Since NCOEMS is the lead agency for trauma in North Carolina, the NCTR is operated under the auspices of NCOEMS and is administered, under contractual agreement, by the UNC Department of Surgery.

**Figure 8: NCOEMS**



### STAC

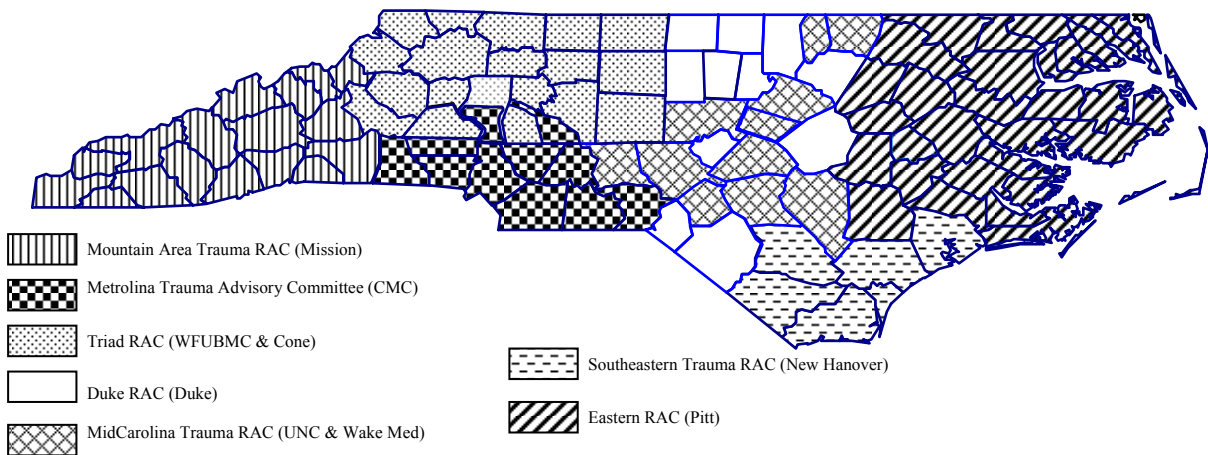
The STAC is responsible for providing guidance and feedback on NCTR progress and guidelines to the NCTR staff. Sub-committees may be appointed for specific tasks, not limited to development of data access guidelines and development of security and privacy guidelines.

### RACs

The Regional Advisory Committees (RACs) were established, and their responsibilities outlined, in North Carolina’s Administrative Code (see 10 NCAC 13P .1101, .1102 and .1103). The purpose of the RACs is to maintain a coordinated regional trauma system.

Currently there are seven RACs, with each of North Carolina’s 100 counties and all acute care hospitals included in at least one RAC. Each RAC is affiliated with a Level I and/or II trauma center.

**Figure 9: RAC MAP**



**Appendix 2: NCTR Confidentiality Contract**

**NCTR**  
*Confidentiality Statement*

A user of information in the North Carolina Trauma Registry (NCTR) reporting system may use or maintain patient records (for health care, quality improvement, education, administration, and research). Patient and hospital information from any source and in any form is strictly confidential. Access to confidential patient and hospital information is permitted only on a need-to-know basis.

It is the policy of the NCTR Administration that users shall respect and preserve the privacy and confidentiality of patient and hospital information. Violations of this policy include, but are not limited to:

- Accessing information that is without a legitimate need-to-know reason within the scope of job responsibilities.
- Misusing or disclosing without proper authorization patient or hospital information.
- Disclosing to another person your log-on code and password for accessing the NCTR.
- Attempting to access the NCTR reporting system without proper authorization.

Violation of this policy may constitute grounds for disciplinary action, such as revocation of NCTR reporting system access privileges. Unauthorized release of confidential information also may have personal, civil, and/or criminal liability and legal penalties attached.

I have read and agree to comply with the terms of the above statement.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

NCTR Office Use Only:  NCTR ID : _____
--

Affiliation:  <input type="checkbox"/> RAC Affil Hosp Employee <input type="checkbox"/> RAC Coord TC Liaison <input type="checkbox"/> OEMS Staff <input type="checkbox"/> Other: _____
---

**Appendix 3: NCTR User Information Form**

**NCTR  
User Information Form**

Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_ MI: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

ZIP Code: \_\_\_\_\_ - \_\_\_\_\_

Home Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_      Work Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

Email Address: \_\_\_\_\_

Date Completed: \_\_\_\_\_

<p>NCTR Office Use Only:</p> <p>NCTR ID :</p> <p>_____</p>
--

**Appendix 4: NCTR User Authentication Form**

**NCTR  
User Authentication Form**

Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_ MI: \_\_\_\_\_

NCTR ID#: \_\_\_\_\_

Hospital: \_\_\_\_\_

User's Relationship to this Hospital:

- Employee
- EMS Provider
- RAC Liaison
- Other: \_\_\_\_\_

Administrators at the hospital level should indicate which of the following things this user should be allowed to do on the NCTR reporting system:

- Attach Users to Hospital and Assign Privileges, Detach Users, Edit Privileges
- Hospital Reports: Aggregate Patient Information

Hospital Administrator (signature - required): \_\_\_\_\_

Administrator's name (printed): \_\_\_\_\_

Administrator's title (printed): \_\_\_\_\_

Date Completed: \_\_\_\_\_

## **Appendix 5: NCTR ISSAC Download File Structure**

# ISSAC Download File Structure

### **General Information:**

Comma delimited text file  
 No quotation marks  
 Paragraph marker/Line break at end of record

Download consists of three files, with an optional fourth file:

- Demographic info
- Diagnosis info
- Procedure info
- Comment file

The Comment file is included for hospitals that may have information (such as TransHosp) stored in their data systems as part of a comment field, but not as a discrete field. If a Comment file is included in the download, the NCTR staff will develop software to extract the information from the “Comment” field.

### ***Demographic file:***

HospNo, MedRecNo, VisitID, SSN, LName, FName, MI, DOB, Sex, Race, PtAddress, PtCity, PtState, PtZip, Insur, PreMIS\_ID, ProvNum, ProvName, ProvCo, EDArrDate, EDArrTime, InjDate, ECode, ED\_Dis, ED\_DCDate, ED\_DCTime, HospDisp, HospDCDate, HospDCTime, HospChrg, TransHosp, TransReas

### ***Diagnosis file:***

HospNo, MedRecNo, VisitID, SSN, DxCode, DxNum, DxDescr

### ***Procedure file:***

HospNo, MedRecNo, VisitID, SSN, ProcCode, ProcNum, ProcDescr

### ***Comment file:***

HospNo, MedRecNo, VisitID, Comment

**Appendix 6: ISSAC Data Dictionary**

<b>Name</b>	<b>Description</b>	<b>Values</b>	<b>Format</b>
HospNo	ID number of the receiving hospital, as assigned by the state.	10 digit hospital ID number Not Recorded (V) Not Available (X). Default = V (Not Recorded).	C10
MedRecNo	Patient's medical record number at the initial hospital	MR number up to 15 char Not Available Not Recorded (Default)	C15
VisitID	Unique visit id	Unique visit id up to 20 char, assigned by hospital.	C20
SSN	Patient's social security number.	###-##-#### V = Not Recorded (Default) X = Not Available	C11
LName	Patient's last name.	up to 15 char Not Available Not Recorded (Default)	C15
FName	Patient's first name	up to 15 char Not Available Not Recorded (Default)	C15
MI	Patient's middle initial	1 char Default = blank.	C1
DOB	Patient's date of birth.	MM/DD/YYYY Default = blank.	Date 8
Sex	Patient's gender	M = Male F = Female V = Not Recorded (Default) X = Not Available	C1
Race	Patient's race/ethnicity.	W = White B = Black H = Hispanic A = Asian I = American Indian O = Other V = Not Recorded (Default) X = Not Available	C1
PtAddress	Patient's home street address.	up to 25 char. Not Recorded (Default) Not Available	C25

<b>Name</b>	<b>Description</b>	<b>Values</b>	<b>Format</b>
PtCity	Patient's home city.	up to 15 char Not Recorded (Default) Not Available	C15
PtState	Patient's home state	2 char abbreviation VV = Not Recorded (Default) XX = Not Available	C25
PtZIP	Patient's home zip code.	#####-##### -4 = Not Recorded (Default) -5 = Not Available	C10
Insur	The insurance provider for this incident.	Auto Commercial HMO/Managed Care Medicare Medicaid Military/Champus None/Self Pay Not Available Not Recorded (Default) Other Private Charity Shriners State Health Plan Workers Comp	C17
PreMIS_ID	A number assigned by the PreMIS system.	##### Not Recorded (Default) Not Available	C25
ProvNum	EMS provider number for this patient for this incident.	##### V = Not Recorded (Default) X = Not Available	C7
ProvName	EMS Provider Name, as assigned by state.	up to 25 char Not Recorded (Default) Not Available	C15
ProvCo	EMS Provider's County	up to 15 char Not Recorded (Default) Not Available	C15
EDArrDate	Date of patient's arrival at ED.	MM/DD/YYYY Default = blank. Required.	Date 8
EDArrTime	Time of patient's arrival at ED.	HH:MM Not Recorded ( :-4) (Default) Not Available ( :-5)	C5
InjDate	Date of the injury/incident. Date 8	MM/DD/YYYY Default = blank.	Date 8

<b>Name</b>	<b>Description</b>	<b>Values</b>	<b>Format</b>
ECode	E codes for the incident. E codes are external causes of injury and poisoning.	###.# -4 = Not Recorded (Default) -5 = Not Available	C5
ED_Disposition	Disposition status of patient from ED.	Death Death(DOA) Floor Hosp Transfer Transfer Trauma Transfer Burn ICU OR Telemetry Not Recorded (Default) Not Available	C15
ED_DCDate	Date of patient's discharge from ED.	MM/DD/YYYY Default = blank	Date 8
ED_DCTime	Time of patient's discharge from ED.	HH:MM Not Recorded ( :-4) (Default) Not Available ( :-5)	C5
DxCode	ICD-9-CM codes for the incident. ICD-9 codes are classification codes for diseases and injuries.	###.## None NR = Not Recorded (Default) NA = Not Available Multiple entries allowed.	C6
DxNum	Counter for diagnoses	1 - total # of diagnoses for this patient for this visit	N3
DxDescr	Text description for DxCode		C24
ProcCode	Procedure codes for the incident.	###.## None NR = Not Recorded (Default) NA = Not Available Multiple entries allowed.	C5
ProcNum	Counter for procedures	1 - total # of procedures for this patient for this visit	N3
ProcDescr	Text description for ProcCode		C24

<b>Name</b>	<b>Description</b>	<b>Values</b>	<b>Format</b>
HospDisp	Disposition status of patient from hospital.	Death Death(DOA) Home Home Health Hosp Transfer Transfer Trauma Transfer Burn Jail Nursing Home Rehab Not Recorded (Default) Not Available	C15
HospDCDate	Date of patient's discharge from hospital.	MM/DD/YYYY Default = blank	Date 8
HospDCTime	Time of patient's discharge from hospital.	HH:MM Not Recorded ( :-4) (Default) Not Available ( :-5)	C5
HospChrg	Total charges for patient for this visit.	in dollars -4 = Not Recorded (Default) -5 = Not Available	N10
TransHosp	Hospital to which patient is transferred, if applicable.	up to 25 char Not Recorded (Default) Not Available	C25
TransReas	Reason patient was transferred to another hospital, if applicable.	Definitive treatment/diagnostics required (lack of specialty resources) Repatriation (Patient/Family/Patient's Physician request) Payor request (Managed Care, Military) Hospital on bypass/diversion Not Recorded (Default) Not Available	C72
Comment	“Catch-all” field for information to be extracted to fill other ISSAC fields.		C100

## Appendix 7: WS FTP Site Setup Instructions

WS FTP site set up for sending files to the NCTR via ISSAC:

1. Create a directory on your computer called c:\SSL.
2. Unzip the Copernicus.zip zipfile that you received from the NCTR Director - save the files to the c:\SSL directory.
3. In the main WS-FTP window, at the bottom, click on "Options".
4. In the left-hand side of the "Program Options" window, click on the + sign next to "SSL" so that "Client Certificates" and "Trusted Authorities" show up.
5. Click on "Client Certificates".
6. Click on the "Import" button.
7. Click on the "Browse" button, and navigate to the c:\SSL directory. Click on the *Copernicus.crt* file.
8. Click on "Next".
9. Click on the "Browse" button next to the "Private Key" line, and navigate to the c:\SSL directory. Click on the *Copernicus.key* file.
10. Click on "Next".
11. In the "Pass Phrase" box, *enter the pass phrase you got from NCTR Director*.
12. Click on "Next".
13. In the "Certificate Name" box, type *Copernicus*.
14. Click on "Next".
15. Click on "Finish" and then click on "OK".
16. In main WS-FTP window, click on Sites, then Organize Sites.
17. In the Organize Sites window, click on "Create New Site".
18. Enter the site name: *ISSAC*. (or you may need to click on "Browse" and click on "My Sites")
19. Where do you want to save the new site profile? *MySites*
20. Click "Next".
21. Host address: *Get from NCTR Director*.
22. Click "Next".
23. User ID: *Get from NCTR Director*.
24. Password:
25. Leave Account blank.
26. Be sure Anonymous and Save Account are unchecked. Check *Save Password*.
27. Click "Next".
28. Server type: *FTP/SSL (AUTH SSL)*.
29. Port: *Don't change*.
30. Click "Next".
31. Host type: Leave as *Automatic Detect*.
32. Leave "Passive Mode" checked.
33. Click "Next".
34. Firewall: Leave as *<no firewall>*.
35. Click "Finish".
36. In "Organize Sites" window, click on *ISSAC*, then click on Edit.
37. In the left window, click on *Startup*.
38. Remote site folder: *Get from NCTR Director*
39. In left window, click on the + sign next to *Advanced* so that *SSL* shows up underneath *Advanced*. Click on *SSL*.
40. In Client Certificate box, click on arrow to right of box and choose *Copernicus*.
41. Click on box to left of *Use only 128bit SSL for secure connections*. Click "OK" & Click "Close"

## **Appendix 8: Checklist**

### ***Administrative***

- \_\_\_ Identify NCTR site coordinator/primary contact. This person will be responsible for determining who has access to their hospital's data through the NCTR reporting system.
- \_\_\_ NCTR site coordinator/primary contact: obtain and read "Manual for Hospitals Participating in the North Carolina Trauma Registry through ISSAC" document.
- \_\_\_ Provide NCTR staff with contact information (name, phone, address, email) for site coordinator
- \_\_\_ Obtain local approval (legal, medical records, .etc as needed) to participate in the NCTR. Communicate approval to technical contact (see Technical section below).
- \_\_\_ Review and sign Memorandum of Participation (MOP) for the NCTR. Forward three original copies of the signed MOP to NCTR staff. NCTR staff will obtain NCOEMS and NCTR staff signatures on the MOP and return an original to the hospital.

### ***Technical***

- \_\_\_ Identify technical contact person (e.g. database manager or network administrator)
- \_\_\_ Technical contact: obtain and read "Manual for Hospitals Participating in the North Carolina Trauma Registry through ISSAC" document.
- \_\_\_ Provide NCTR staff with contact information (name, phone, email, address) for technical contact person
- \_\_\_ Report to NCTR staff on which data elements will be provided
- \_\_\_ If file structure and field values from the "Manual for Hospitals Participating in the North Carolina Trauma Registry through ISSAC" document will not be used, then work with NCTR staff to develop data dictionary with information about data in ASCII files (field names, position, size of fields in file, field values).
- \_\_\_ Develop software to extract data from hospital information systems to create ASCII files for transfer. Automate process to run on a daily basis.
- \_\_\_ Provide and document site location (computer workstation) to house non-translated hospital ED files until ready for secure FTP ("Outgoing" folder) and to store copies of files that have been transferred to the NCTR server ("Sent" folder).
- \_\_\_ Provide Internet access to send ASCII data file from hospital to NCTR central server
- \_\_\_ Work with NCTR staff to facilitate installation of secure FTP client on hospital workstation, or notify NCTR staff that hospital will use it's own ftp software. Test secure ftp of file from hospital to NCTR server.
- \_\_\_ Send test file of ASCII files of data from hospital to NCTR to ensure proper transmission and data format.
- \_\_\_ Ensure data integrity and quality by addressing any feedback from NCTR staff re: potential need for changes to file structure, and/or re-sending data.
- \_\_\_ Send ASCII file of hospital data from site to central server on a daily basis.

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