## The Neurosequential Model of Therapeutics©

## About the NMT Web-Based Applications and Database

The NMT Clinical Practice Tools (aka: NMT Metrics) are a set of web-based assessments and related metrics and forms.  The ChildTrauma Academy (CTA) created and developed these to assist clinicians and clinical teams in their clinical practice.  The NMT Metrics can help with treatment planning, psychoeducation, tracking of outcomes for individual clients, tracking aggregate outcomes for program assessment, evaluation and improvement (QI: Quality Improvement and QA: Quality Assurance).

All users across the world using the NMT Clinical Practice Tools enter data into a common database.  The advantage of this is the opportunity to do cross-organization benchmarking and collective QI/QA or archival research.  The data are stored on the application server in an encrypted database.  All data at entry by the user are SSL encrypted and reside on the application server in a secure location.  The data are routinely backed up.

*SSL (Secure Sockets Layer) is a standard security technology used to establish encrypted links between a server and a client—typically a web server (website) and a browser (e.g., when making an online purchase).*

## *Confidentiality and Security of Data*

The NMT Clinical Practice Tools Web-based Application is constructed to provide high confidentiality and anonymity in multiple ways. Only the first name of the client is entered; the CTA recommends that even this be a pseudonym. Age rather than Date of Birth (DOB) is entered.  The only unique identifying information is an optional client ID number (that the user creates and enters).  There is no way for the CTA or anyone with the dataset (aside from the user) to link individual records to specific individuals (see below). Further, all fields related to developmental history or symptoms or any other meaningful clinical information are populated by numbers and would have no meaning to anyone without advanced training in the NMT.

A select (and small) set of individuals within the CTA has access to the application data. A digital audit trail is created and stored when they login, when they access data, or perform any other operations.

The application is browser based in order to access and use.  The application supports modern web browsers so it will continue to function as end user systems get upgrades. Each user's account access is password protected and the app keeps a complete digital audit trail that documents time, duration and user accessing the app.

*Standard QA/QI and Archival Research Use*

The NMT assessment metrics have high face validity and reliability (the bi-annual Fidelity Exercise determines user fidelity and high, acceptable or low fidelity ratings are assigned to specific users).  These psychometric properties mean that program administrators, clinicians or researchers may find the NMT Metric data a useful component of a QI/QA analysis or for archival research.  The default setting for the NMT Metrics is 'opt-in' for using deidentified data for QA/QI and archival research purposes.

The CTA recommends the inclusion of a sentence or brief paragraph within the clinician or organization's standard *Consent to Treat (or Consent to Evaluate)* forms that briefly explains the NMT Assessment process and states that the de-identified and anonymous data may be used for future QA/QI evaluation or archival research.  An opt-out option should be provided for the client within this modification of the user's standard consent forms.

Archival research can be defined as the study of existing data.  Archival data are any data that are collected prior to the beginning of a research study. The data contains information that can be linked to individuals (but in the case of the NMT Metric Database not to the individual's identity). As such, it is not considered human subjects research and does not qualify for IRB review, although we recommend obtaining a qualifying letter from an appropriate IRB confirming this when using the data provided by the CTA (see below).

2.6 Research Using Public or Non-Identifiable Private Information about Living Individuals: The activity is limited to analyzing data about living individuals (1) where the data have been retrieved by the investigator from public, non-restricted data sets or (2) where the private data have been provided to the investigator without any accompanying information by which the investigator could identify the individuals.

(Northwestern University IRB materials)

## _Use of the NMT Data for Research_

<u>The NMT Datasets</u>: The CTA has a routine database cleaning process (extracting cases that are practice, Fidelity exercises and obvious errors) that creates several sub-sets of the data for analysis.  _Site-specific raw_ –includes all data from a given user/site and includes all of their practice, Fidelity and low, acceptable and high fidelity user cases; _Cleaned Site-specific_ includes only acceptable and high fidelity user cases and excludes all practice and Fidelity cases.  _Clean De-identified_ (Full) – includes only acceptable and high fidelity users and all cases from initial and repeat assessments from all sites and individual users.  This dataset is most appropriate for outcomes evaluation. _Clean De-identified T1_ (Full) includes only the initial assessment data from all sites and individual users with acceptable and high fidelity users.  This dataset is most useful for archival research examining potential correlates of development (e.g., timing, nature, severity of adversity and brain development).

As of April 2016 the database contained more than 20.000 records and is growing.  There are over 1000 certified users and each month roughly 350 new cases are entered.  All users have access to their data and can obtain updated datasets by contacting The ChildTrauma Academy.

<u>Human Research using the NMT Datasets</u>: If a researcher team or a specific site or group of sites is interested in including the NMT data as part of a research project it is likely that this would be considered "Human Research" and an IRB application and approval needs to be obtained from the investigator's institution.  These studies often will involve the use of other assessment instruments (e.g., CANS, CAFAS, TSCC, PSI) in addition to the NMT metrics.  Data from individual records on the NMT database can be linked to other datasets or records of individual either manually or by merging exported .cvs files using the unique client ID created by the user/organization.

Due to the complex and non-linear nature of the typical values used in the NMT metrics and metric formulas (e.g., increases in "typical" norms in various brain-mediated functions reflect normal development and are often more exponential than linear) analyses of NMT data requires appropriate statistical and analytic process.  The ChildTrauma Academy has the expertise to provide input and, if needed, consultation for appropriate analysis of NMT-related data.

For more information contact The ChildTrauma Academy at CTA@ChildTrauma.org

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