American College of Surgeons Committee on Trauma

Needs Based Assessment of Trauma Systems (NBATS) Tool

Developed by the Needs-Based Trauma Center Designation Consensus Conference convened by the American College of Surgeons Committee on Trauma[1]

August 24-25, 2015

Introductory Notes

The Needs-Based Trauma Center Designation Consensus Conference was held in Chicago on August 24-25, 2015. The conference was convened by the American College of Surgeons Committee on Trauma, and was comprised of a broad group of people involved in the process of trauma center designation in the context of an inclusive regional trauma system. The group was unanimous in support of the principle that trauma center designation within a regional trauma system should be based upon the needs of the population served, as outlined in the recent position statement put forward by the American College of Surgeons Committee on Trauma. The group was also unanimous in its opinion that there is immediate need for a practical tool, based upon data that is currently available, that can be used to assist regions currently struggling with this issue of new trauma center designation.

The group worked to develop such a model tool to assist regions in the performance of an assessment and the determination of the number of trauma centers needed in a region. The conference workgroup was fully cognizant of the challenges involved in this process, not the least of which is a lack of proven metrics of need. The goal was to produce a pragmatic and relatively simple tool that could be used based upon data currently available, while also starting the process that would lead to future improvements and refinements in the approach. This was constructed to aid in the performance of an assessment of the number of trauma centers needed in a specified geographical region, which will be called a Trauma Service Areas (TSA). This tool presumes that the TSA to be evaluated has already been defined, and could range in size from a small county to a multi-state region. In Louisiana, the TSA is the Louisiana Department of Health Region. There are 9 LDH Regions. The tool is designed to evaluate the number of centers needed within the TSA, starting from a clean slate and then making adjustments for existing trauma centers (Level I, II, and III) in the TSA. In Louisiana, This tool is being used to determine if another trauma program is needed in a defined region. A trauma program is distinct and different from the Trauma Center certification by the state which requires verification by the American College of Surgeons. This tool does not attempt to specifically assess the impact of adding an additional center to a TSA, nor does it attempt to determine the relative merit of a particular facility becoming a trauma center within the TSA.

The tool assigns points based upon four elements: population, transport time, community support, and number of severely injured patients (ISS > 15) discharged from centers in the

[1] The participants in the conference are listed in Appendix 1.

TSA that are not Level I, Level II, or Level III trauma centers. This raw score is then adjusted based upon the number of existing Level I, Level II, and Level III centers, and based upon the volume of severely injury patients seen at those existing centers. The final score provides a guideline for the number of trauma centers needed in the TSA.

The conference working group acknowledges that there is no clear evidence to support the use of any of the specific measures proposed, and as a result all recommendations reflect the expert opinion of the convened group, derived through a deliberative group process. The tool itself, along with point assignments for each element, and the point totals to determine trauma center need in this draft are for initial evaluation purposes only. It is anticipated that both the individual element scores as well as the final target ranges will vary depending upon the demographics of the particular TSA (e.g. population, population density, size, geography) and will also reflect the balance of priorities within the specific trauma system. The tool is being circulated to a larger audience of people and groups involved in the trauma center designation process for comment and for initial testing in a range of existing systems; as proof of concept and to begin to collect data that can be used to improve and refine the tool.

Please review the tool and try it out in your particular circumstances. You may modify any of the parameters used if you feel this will improve the accuracy of the model in your region. Please feel free to submit any comments, as well as any trial data generated, to the conference working group through the Feedback Form. Please also feel free to contact Maria Alvi, Manager, Trauma Systems and Quality Programs (malvi@facs.org) with any additional questions or concerns.

Thank you for your interest and your willingness to participate in this important project.

Robert J. Winchell, MD FACS
Chairman
Trauma Systems Evaluation and Planning Committee

Ronald M. Stewart, MD FACS
Chairman
Committee on Trauma

On behalf of the Needs-Based Trauma Center Designation Consensus Conference working group.

ACS NBATS Tool
Preliminary Draft 1 – September 4, 2015

1. Population

a. total TSA population of less than 600,000 received 2 point
b. total TSA population of 600,000 to 1,200,000 received 4 points
c. total TSA population of 1,200,000 to 1,800,000 received 6 points
d. total TSA population of 1,800,000 to 2,400,000 received 8 points
e. total TSA population of greater than 2,400,000 received 10 points

Points Assigned: _____

2. Median Transport Times (combined air and ground – scene only no transfer)

a. Median transport time of less than 10 minutes received 0 points
b. Median transport time of 10 – 20 minutes receives 1 points
c. Median transport time of 21- 30 minutes receives 2 points
d. Median transport time of 31 – 40 minutes receives 3 points
e. Median transport time of greater than 41 minutes receives 4 points

Points Assigned: ____

3. Lead Agency/System Stakeholder/Community Support

Lead agency support for a trauma center (if none exist) or an additional trauma center or trauma program in the TSA – 5 points.

Trauma System Advisory Committee (or equivalent body) statement of support for a trauma center (if none exist) or an additional trauma center or trauma program in the TSA – 5 points.

Community support demonstrated by letters of support from 25- 50% of city and county governing bodies within the TSA – 1 points

Community support demonstrated by letters of support from over 50% of city and county governing bodies within the TSA – 2points

Points Assigned: ____

4. Severely injured patients (ISS > 15) discharged from acute care facilities not designated as Level I, II, or III trauma centers.

a. Discharges of 0-200 severely injured patients receives 0 points
b. Discharges of 201 – 400 severely injured patients receives 1 points
c. Discharges of 401 – 600 severely injured patients receives 2 points
d. Discharges of 601- 800 severely injured patients receives 3 points
e. Discharges of greater than 800 severely injured patients receives 4 points

Points Assigned: ____

5. Level I Trauma Centers

a. For the existence of each verified Level I trauma center already in the TSA assign 1 negative point
b. For the existence of each verified Level II trauma center already in the TSA assign 1 negative point
c. For the existence of each verified Level III trauma center already in the TSA assign 0.5 negative points

Points Assigned: ____

6. Numbers of severely injured patients (ISS > 15) seen in trauma centers or trauma programs (Level I and II) already in the TSA

The expected number of high-ISS patients is calculated as:

500 x (# of Level I and Level II centers or programs in the

TSA) = _____

a. If the TSA has more than 500 severely injured patients above the expected number assign 2 points
b. If the TSA has 0-500 severely injured patients above the expected number assign 1 point
c. If the TSA has 0-500 fewer severely injury patients than the expected number assign 1 negative point
d. If the TSA has more than 500 fewer severely injured patients than the expected number assign 2 negative points

Points Assigned: ____

The following scoring system shall be used to allocate trauma centers within the TSAs:

1. TSAs with scores of 5 points or less shall be allocated 1 trauma center
2. TSAs with scores of 6-10 points shall be allocated 2 trauma centers
3. TSAs with score of 11-15 points shall be allocated 3 trauma centers
4. TSAs with scores of 16-20 points shall be allocated 4 trauma centers

If the number of trauma centers allocated by the model is greater than the existing number of trauma centers in the TSA, efforts should be undertaken to recruit and designate additional trauma centers.

If the number of trauma centers allocated by the model is greater than the number allocated by the model, the lead agency should not designate additional trauma centers in the TSA.

Appendix 1: List of Participants

Eileen Whalen, MHA, RN	President and COO; Acting CNO	The University of Vermont Medical Center
Michele Ziglar, RN, MSN	Vice President of Trauma Services	HCA Healthcare
Betty J Bartleson, MSN	Vice President of Nursing and Clinical Services	California Hospital Association
Robert Gfeller	Executive Director	Childress Institute for Pediatric Trauma
Robert Fojut	Editor	Trauma System News
Charles William Mains, MD, FACS	Surgeon	Surgical Specialists of Colorado
Dennis Maier, MD	Medical Director	Surgical Associates PC
Robert Todd Maxson, MD	Pediatric Surgeon	Arkansas Children's Hospital
Debra Perina, MD, FACEP	Director	American College of Emergency Physicians (ACEP); NAEMSP
N. Clay Mann, PhD, MS	Professor of Surgery	NEMSIS TAC PI, University of Utah
Ellen Mackenzie, PHD	Fred and Julie Soper Professor and Chair	Johns Hopkins Bloomberg School of Public Health
Robert Mackersie, MD	Professor of Surgery and Director of Trauma Services	University of California San Francisco; San Francisco General Hospital and Trauma Center
Eric Chaney, MBA	Representing the Deputy Director (Acting), Workforce Health and Medical Support Division	US Department of Homeland Security (DHS)
Gregg S Margolis, PhD, NRP	Director of the Division of Health System Policy, Office of the Assistant Secretary for Preparedness and Response	US Department of Health and Human Services (HHS); ASPR
Brendan G Carr, MD, MA, MS	Director of ECCC; Division of Health System Policy	US Department of Health and Human Services (HHS); ASPR
Beth Edgerton, MD, MPH	Director of the Division of Child, Adolescent and Family Health (DCAFH)	Health Resources and Services Administration (HRSA)
Cathy Gotschall, ScD	Senior Health Scientist	National Highway and Traffic Safety Administration (NHTSA)
Drew Dawson	Director, Office of EMS	National Highway and Traffic Safety Administration (NHTSA)
Fergus Laughridge, Captain, CPM	Professional Services and Compliance Officer	Humbolt General Hospital EMS and Rescue, State of Nevada
Eric Epley	Executive Director	Southwest Texas Regional Advisory Council (STRAC); Regional Structure
Robert Jex, RN	Specialty Care Program Manager	Utah Dept. of Health, Bureau of EMS; Utah Office of Rural Health
John Armstrong, MD	Surgeon General; Secretary of Health	Florida Department of Health
Chuck Kearns, MBA	President	NAEMT
Ronald M Stewart, MD, FACS	Chair COT	ACS Trauma
Leonard J Weireter, MD, FACS	Vice Chair COT	ACS Trauma
Robert J Winchell, MD, FACS	Chair TSEPC, COT	ACS Trauma
Jean Clemency	Administrative Director of ACS Trauma Programs	ACS Trauma Programs
Nels D Sanddal, PhD, REMT	Manager of Trauma Systems and Trauma Centers Verification Programs	ACS Trauma Programs
Maria Alvi, MHA	Manager of Trauma Systems and Quality Programs	ACS Trauma Programs
Jane Ball, RN, DrPH	ACS Trauma Consultant	ACS Trauma Programs
Justin Rosen	State Affairs Associate; COT Advocacy Committee	ACS Advocacy and Health Policy
Molly Lozada	Manager of Trauma Centers Quality VRC Programs	ACS Trauma Programs
Matt Coffron	Manager of Policy Development	ACS Advocacy and Health Policy
Melanie Neal	NTDB Manager	ACS Trauma Programs
Scott Matthews	Graphic Recorder, Company Co-founder	Tremendousness