

“TISS-28”

Information Guide and Resources for Nurses working in the ICU

**WRHA
Critical Care Program
December.2012**

12 Facts about TISS-28 for the ICU Nurse

- 1) On January 1, 2013, the WRHA Critical Care Program will adopt TISS-28 which includes “49” therapeutic variables for establishing nurse-patient ratios in the ICU.
 - a. Every patient in the ICU up until **midnight, December 31, 2012** will require the completion of TISS-76 (old form).
 - b. Every patient in the unit on or after **January 1, 2013 (beginning at 0001)** will require the completion of **TISS-28** (new form).
- 2) The Therapeutic Intervention Scoring System (TISS) is a method of “quantifying” the intensity of Nursing interventions and workload in a 24 hour period.
- 3) TISS does not include everything that is done by ICU nurses but has been demonstrated to correlate with total nursing workload.
- 4) Measuring the intensity of nursing care required provides important information about the allocation of resources and supports nurse-patient staffing ratios in the ICU. For example, new ICU RN staff positions were made available at the Grace, Victoria and St. Boniface hospitals as a result of their TISS scores.
- 5) TISS-28 has 49 rather than 89 questions (TISS-76) but provides the same level of information and reduces the amount of time spent completing the form by the ICU nurse.
- 6) There is NO “2 hr rule” If the patient arrives 10 minutes before midnight or leaves the ICU 10 minutes after midnight, the TISS form needs to be filled out for that date on the calendar. This means that a patient will need a TISS form completed for both calendar days. It is important that we reflect our nursing efforts regardless of the amount of time spent in the ICU.
- 7) TISS is verified and collected for the patient’s entire LOS in the ICU. A TISS form should be completed upon a patient’s discharge, transfer or expiration.
- 8) Nothing is mutually exclusive. Fill-in every bubble completely with a black pen or dark pencil that applies to each patient for every calendar day (midnight to midnight).
- 9) Blood is captured elsewhere, not on TISS (it is still part of the patient’s data profile).
- 10) Items **46-49 are time-dependent and captured at 2300 as a “point in time”** snapshot of the patient.
- 11) The ICU nurse assigned to the patient is the expert, and is in the best position to accurately identify which nursing interventions have been performed that day. Data Collectors are not responsible for completing the TISS form. They perform quality assurance checks on TISS forms that have been completed by ICU nurses.
- 12) Data should be collected at the same time every day. Ideally, every ICU nurse should begin to complete the TISS form during the day shift. The only items that must be completed after 2300 are the last 4 items (46-49) which are time-dependent items.

TISS-28: “Questions and Answers” for the ICU

What is TISS?

- 1) The Therapeutic Intervention Scoring System (TISS) is a method of “quantifying” the intensity of Nursing (and Medical) care required by ICU patients in a 24 hour period.
- 2) It is a Tool which classifies patients according to the severity of their illness. It is based on the principle that the number of therapeutic interventions is related to the severity of the clinical conditions. The more severe the state of the patient, the larger the number of therapeutic interventions necessary for treatment and consequently, the higher the TISS score, the longer the nursing time spent on providing patient care.
- 3) TISS is accepted world wide as a validated method for objectively measuring nursing workload. TISS does not include everything that is done by ICU nurses but has been demonstrated to correlate with total nursing workload.

Why do we measure severity of illness and intensity of care?

- 1) The number of therapeutic interventions reflects the patient’s severity of illness and the amount of time and nursing workload required for care. This will influence the number and type of nurses required to provide care to critically ill patients.
- 2) The amount of work that is performed by a nurse is specific to every patient that is in the ICU during a given shift. Higher patient scores means higher nursing workloads and higher workloads indicate the amount of time that is required to perform nursing care activities.
- 3) Measuring the intensity of care required provides important information about the allocation of resources and supports nurse-patient staffing ratios in the ICU.
- 4) Nurse-patient ratios that are supported through research will result in improved patient outcomes.
- 5) Expressing nursing work activities in statistical terms assists us with bed utilization and staffing issues.

What is TISS-76?

TISS-76 is a data collection Tool developed in 1983 which contains 76 therapeutic variables. It is the Tool that we have been previously using in ICU at HSC since 1988 and in ICU's across the Region since 1999. It has a total of 89 items, 6 of which were tallying of blood products and volume expanders.

What is TISS-28?

TISS-28 is a data collection Tool developed in 1996 which contains 28 therapeutic variables. The Tool is validated and contains equally comparable information to the TISS-76. It has fewer questions than TISS-76 and reduces the amount of time spent completing the form by the ICU nurse.

Who developed the revised TISS-28 form that we will be using?

A TISS-28 Steering Committee comprised of ICU nurses, ICU nurse educators, physicians, ICU data collectors from across the Winnipeg Region, and a member from the Quality and Process Engineering Group contributed to the development of our revised TISS-28 form, which contains 49 items.

What is different about our revised TISS-28 form?

- 1) Less items (89 reduced to 49) to collect than our previous form but provides the same level of information.
- 2) No “2 hr rule” If the patient arrives 10 minutes before midnight or leaves the ICU 10 minutes after midnight, the TISS form needs to be filled out for that date on the calendar. This means that a patient will need a TISS form completed for both calendar days. It is important that we reflect our nursing efforts regardless of the amount of time spent in the ICU.
- 3) TISS is verified and collected for the patient's entire LOS in the ICU.
- 4) Nothing is mutually exclusive. Mark everything that applies to the patient for every calendar day.
- 5) Blood is captured elsewhere, not on TISS (it is still part of the patient's data profile).

- 6) Items **46-49** are captured at 2300 as a “point in time” snapshot of that patient. These items may be repetitive elsewhere on the TISS form.

What do the points/scores mean?

- 1) One TISS-28 point equals 10.6 minutes of nursing time spent on direct patient care, thus permitting a more accurate estimation of nursing workload in an ICU (Miranda, et al., 1996:72).
- 2) TISS scores are related to patient care outcomes, length of stay, mortality, post-ICU prognosis and prevention.

How will the scores be used?

- 1) Our TISS-28 contains 49 questions. It consists of 28 variables and an additional 21 items that our Regional Critical Care Program has identified for Quality Improvement initiatives.
- 2) TISS-28 scores will be used by WRHA Nursing and Medical Administrators, Outcomes Improvement Team and Researchers, and the Critical Care Vital Signs Monitoring (CCVSM) cross-Canada ICU collaborative.
- 3) TISS-28 has been incorporated as an integral part of the APACHE II (Acute Physiologic and Chronic Health Evaluation) classification system. Comparative scores of TISS and APACHE allow the identification of trends in the type of nursing care provided for certain acuity levels, related to a specific type of diagnosis.

How will this information help reduce the workload for nurses?

- 1) The WRHA Critical Care Program uses the information for monitoring nursing workload and expected nurse-patient ratios in the ICU.
- 2) The information obtained through TISS scores support the addition of nursing Staff. As a result of their TISS scores, new ICU nurses were hired at the Grace, Victoria and St. Boniface hospitals.
- 3) TISS scores identify the future needs of our ICU and will be used to project the appropriate number of ICU nurses required to better serve our Regional needs.

When do we begin using the new TISS-28?

On January 1, 2013 @0001 hours, the WRHA Critical Care Program will adopt TISS-28 which includes “49” therapeutic variables for establishing nurse-patient ratios in the ICU.

Why can't the Data Collectors complete the TISS-28?

- 1) The ICU nurse assigned to the patient is the expert, and is in the best position to accurately identify which nursing interventions have been performed that day.
- 2) The responsibilities of the Data Collector do not include completion of the TISS form. They are responsible for collecting a plethora of other information (demographics, diagnosis, tests, medications, co-morbidities, APACHE, VAP, CLI, Septic Shock, IABP, complications; includes surgical and medical interventions) on every patient during their entire LOS in the ICU. They also perform quality assurance checks on TISS forms that are completed by ICU nurses.
- 3) An ICU nurse can complete the TISS-28 form in less than 5 minutes, whereas a Data Collector would need much more time (15-30 minutes) to review the chart and clarify the interventions given by the bedside nurse before they could complete the form with accuracy.

General Guidelines and Tips for Nursing

- 1) The ICU nurse is responsible for identifying which interventions were used, and completing the daily TISS form.
- 2) Data should be collected at the same time every day. Ideally, every ICU nurse should begin to complete the TISS form during the day shift. The only items that must be completed after 2300 are the last 4 items (46-49) which are time-dependent items. This practice is especially important when a patient will be discharged later that same day.
- 3) TISS items should be checked to see if they were performed at any time during the calendar day (midnight to midnight).

- 4) A TISS form must be completed by the ICU nurse when a patient is discharged from the ICU. This includes every ICU patient who is transferred or expires. TISS reflects the nursing workload from midnight up until the time when ICU interventions are no longer required.
- 5) Do not send completed TISS forms to the Ward with the chart. Please give the completed form to the Unit Clerk who will then file it in the Research Forms binder, located at the front desk in your Unit.
- 6) Never staple TISS forms together. Stapling interferes with the Scanner's ability to read the document. Give the completed form to the Unit Clerk and start a new form when indicated.
- 7) Do not send the TISS form to another ICU or another hospital when a patient is transferred.
- 8) Do not use colored pens/pencils to complete the TISS form. A Scanner can not recognize certain colors. Use only a dark HB pencil or black pen, and fill in the bubble completely. A dot in the center of the bubble is misread by the Scanner.
- 9) If an error is made on the form, put a clear "X" over the bubble/circle that is incorrect.
- 10) TISS item #1; "No TISS items applicable for today" should be marked when there are no applicable interventions during a calendar day. This is not common but happens with a small percentage of patients who are waiting for transfer out of the ICU.

Recommended Reading and Additional Resources

- 1) "Simplified Therapeutic Intervention Scoring System: The TISS-28 items—Results from a multicenter study." Dinis Reis Miranda, MD; Amgelique de Rijk, BSSC; Wilmar Schaufeli, PhD. *Critical Care Medicine*, 1996, Volume 24, No. 1, 64-73

<http://www.wilmarschaufeli.nl/publications/Schaufeli/076.pdf>

- 2) “Retrospective evaluation of the simplified Therapeutic Intervention Scoring System (TISS-28) in a surgical intensive care unit.” Rolf Lefering, Michael Zart, Edmund A.M. Neugebauer. *Intensive Care Medicine* (2000) 26, 1794-1802

<http://www.ncbi.nlm.nih.gov/pubmed/11271087>

- 3) “Nursing activities score.” Dinis Reis Miranda, MD, PhD, FCCM; Raoul Nap, MSc, Biostat; Angelique de Rijk, MA, PhD; Wilmar Schaufeli, MA, PhD; Gaetano Iapichino, MD; and the members of the TISS Working Group. *Critical Care Medicine*, 2003, Volume 31, No.2, 374-382

<http://www.intensivregister.no/LinkClick.aspx?fileticket=oAXMjsCuiX8%3D&tabid=76&mid=428>

- 4) J Graf, C Graf, KC Koch, P Hanrath and U Janssens. Cost analysis and outcome prediction with the Therapeutic Intervention Scoring System (TISS and TISS-28). [German]. *Medizinische Klinik* 98(3):123-132, 2003. ---- this good paper compares TISS76 with TISS28, and showed use of TISS to track ICU costs

<http://link.springer.com.proxy2.lib.umanitoba.ca/article/10.1007/s00063-003-1235-3>

- 5) KB Laupland, R Shahpori, AW Kirkpatrick and HT Stelfox. Hospital mortality among adults admitted to and discharged from intensive care on weekends and evenings. *Journal of Critical Care* 23(3):317-324, 2008 ---- this paper from Calgary shows that TISS is correlated with mortality (a use of TISS that we don't routinely exploit).

<http://www.sciencedirect.com.proxy2.lib.umanitoba.ca/science/article/pii/S0883944107001475>