EVALUATION OF A MATERNAL FETAL TRIAGE INDEX IMPLEMENTATION PROGRAM

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BACKGROUND/PURPOSE

- The Maternal Fetal Triage Index (MFTI) algorithm is a standardized tool used to **implement** obstetrical triage. Previous obstetrical practices highlighted a variability in triage procedure and assignment. Evidence from the Agency for Healthcare Research and Quality (AHRQ) has shown that an Emergency Index tool decreases the overall mean triage time for patients seen in the Emergency Department. The MFTI decreases the overall time in obstetrical triage, increases nursing knowledge, and decreases the time from arrival to when seen by the provider.

- Training the labor and delivery nursing staff in a standardized triage protocol followed by implementation of the protocol better prepares nurses to care for its beneficiaries—including pregnant active-duty soldiers. The current OB capabilities did not align with this mission statement.

- December, 2019 needs assessment findings: 41 staff members, 10% the lack **knowledge** of obstetrical policies, 30% -lack of triage education, and 50% - concern with multiple documentation systems, triage lag time, and the experience level of nurses and residents. Nurses indicated they would complete online training: 59% said they would very likely complete the training.

- July 2020 Army Nurse Corps Association (ANCA) grant of $3,500 for the MFTI algorithm training.
- January 1, 2021 MFTI algorithm implemented.
- February 2021 30-day data analysis. and re-education.
- March 2021 30-day analysis nursing re-education.
- In April 2021, the team evaluated the project and evaluate the outcome measures: nursing knowledge, overall time in triage, and time according to acuity level.

- **PURPOSE STATEMENT AND PICOT**
- For a military medical labor and delivery unit nursing unit (P), did the implementation of the evidence-based Maternal Fetal Triage Index (MFTI) (I), compared to current non-standardized triage practice (C) 1. decrease the overall time from admission to discharge O), 2. increase accuracy of categorization according to acuity level. 3. increase compliance with the algorithm tool.

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MATERIALS AND METHODS

- The quality improvement (QI) project involved a review of 1284 records. The setting is the labor and delivery unit of Tripler Army Medical Center and the participants are the labor and delivery nurses.. The inclusion criteria are all the patients that were seen for STAT, URGENT, PROMPT, ROUTINE, and SCHEDULED. The exclusion criteria: records not meeting categorical criteria. The intervention is measured through overall triage time, and accuracy of acuity level., and compliance with algorithm tool. The barriers to the project are the coronavirus epidemic, a new electronic health record deployment (within the next 6 months), and military leadership turnover.

- The data was measured using an ANOVA, Kruskow-Wallis, independent t-test, and Pearson R test to assess the MFTI categories: (STAT, URGENT, PROMPT, NON-URGENT, ROUTINE to identify any statistically significant trends. Charts without full categorization were excluded from the data. The data was collected via an excel spreadsheet and entered in a SPSS database.

RESULTS
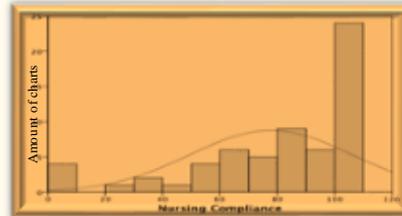
MFTI compliance scores (overall).
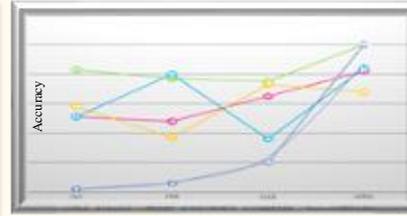
MFTI accuracy scores (per acuity level)

Overall time in triage The MFTI implementation decreased the overall time from triage admission to discharge by over 35% (145 minutes). (t-value 7.716, p< .05). STAT shortest overall time. NONURGENT had the longest overall time. STAT decreased by 105 minutes. URGENT decreased by 27 minutes, PROMPT decreased by 31 minutes, and NONURGENT decreased by nine minutes. The OB time from admission to triage room time averaged of 3.42 minutes (recommended average 10 minutes). ***Accuracy:*** There was no statistical difference in the accuracy of the categorization (f(4,15) = 2.07, p = 0.13). A Kruskow-Wallis test revealed a 64% homegenity and rejects the claim of statistical variance. Cohen's Kappa score was 0.868 showing almost perfect agreement between each classification An independent t- test (Jan and Apr) showed a 15% increase in the STAT and SCHEDULED categories (t=3.02, p<0.05). ***Compliance:*** Statistically significant difference between the groups (f (3,61) = 3.31, p = 0.026). The test revealed no homogeneity of variance rejecting the null hypothesis of no statistical variance in compliance. The Pearson correlation (0.47) showed slight correlation.

RESULTS

Nursing compliance and accuracy averages Pearson-T correlation.

CONCLUSIONS/RECOMMENDATION

- Continue to educate and assess nurses' understanding of the MFTI to increase accuracy and compliance.
- When average mean of accuracy and compliance is above 85% can begin PI implantation into workflow.
- The use of the tool shows a decrease in overall triage time.

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Introduction: The program evaluation examined the Maternal Fetal Triage Index (MFTI) algorithm educational implementation to examine if it decreased the overall time from admission to discharge, 2. Improved the accuracy of categorization according to acuity level, and 3. increased compliance with the Algorithm tool. The MFTI program was implemented in January of 2020.

Method: A review of 1,284 records was conducted over 4 months comparing the central tendencies. A Cohen's Kappa measured the degree of accuracy and reliability between each classification. The data were measured with an ANOVA test, t-test, and a Kruskow-Willis to assess statistically significant difference between the means.

Results: *Overall time in triage* MFTI implementation decreased the overall time from triage admission to discharge by over 35% (145 minutes). Comparing acuity data from January to April showed a 35% decrease the overall time from triage admission (145). (t-value 7.716, $p < .05$). STAT times had the shortest overall time in triage while the NONURGENT had the longest overall triage time. The OB time from admission to triage room time averaged of 3.42 minutes which is than the recommended average time of 10 minutes.

Accuracy: There was no statistical difference in the accuracy of the categorization according to acuity level ($f(4,15) = 2.07$, $p = 0.13$). The Levene's test revealed homogeneity of variance. A Kruskow-Wallis test revealed a 64% chance the data does not have any effect on the data which retains the null hypothesis and rejects the claim of statistical variance among each category. Cohen's Kappa score was 0.868 showing almost perfect agreement between each classification. An independent t- test (Jan and Apr) showed a 15% increase in the STAT and SCHEDULED categories ($t=3.02$, $p<0.05$).

Compliance: For compliance with the algorithm tool, there was a statistically significant difference between the groups ($f(3,61) = 3.31$, $p = 0.026$). The test revealed no homogeneity of variance rejecting the null hypothesis of no statistical variance in compliance, supporting the statistical significance The Pearson correlation (0.47) showed slight correlation.

Conclusion: Two of the three objectives were achieved. Findings were consistent with the literature review. The outcomes support the need for continuous triage education and process improvement to increase nursing compliance and accuracy.