

Clinical Characteristics and Outcomes of Elective Gynecologic Cases Using Modified Medically Necessary, Time Sensitive (MeNTS) Scoring System in the Prioritization of Surgery at the Philippine General Hospital during the COVID-19 Pandemic

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ABSTRACT

Objectives. The use of a scoring system that integrates various factors helps in decision-making and triage for Medically Necessary, Time Sensitive (MeNTS) surgical procedures during the COVID-19 pandemic. This study aimed to determine the clinical characteristics and outcomes of cases who were screened and underwent elective gynecologic surgery at a tertiary hospital using the MeNTS tool for prioritization.

Methods. A cross-sectional study was carried out using data collected through medical chart review of all gynecologic cases screened in a 6-month period, from June 18, 2020 to December 18, 2020.

Results. A total of 155 gynecologic cases were screened, with 134 (86.4%) MeNTS cases and 21 (13.5%) non-MeNTS cases. The median length of stay (5 days), the median operating room time (3 hours and 30 minutes), and median estimated blood loss (400 ml) were within the acceptable expected outcome as with the scoring system, albeit with some cases (53%) requiring blood transfusion attributed to low baseline hemoglobin levels. There were no cases with post-operative COVID-19 transmission, needing ICU care and intubation, nor mortalities reported.

Conclusions. The MeNTS scoring system allowed efficient handling of the backlog of elective gynecologic cases with minimal morbidity and absence of mortality. The study supports the utility of this scoring system in addressing the need of the healthcare system not just to optimally utilize and fairly allocate hospital resources but also to ensure the safety of the patient with the best health service delivery during the pandemic.

Keywords: MeNTS, medically necessary time sensitive scoring system, gynecologic elective surgery, COVID-19



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INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic had a profound impact on the healthcare systems globally, leading to delays or even complete shutdowns of services. Low- to middle-income countries including the Philippines, have not been exempt from these challenges.¹ Local health institutions faced the arduous task of reallocating personnel and resources to cater to COVID-19 positive patients, resulting in the suspension of scheduled or elective surgeries and non-urgent procedures. Consequently, a backlog of elective surgical and gynecologic cases emerged. As the surge of COVID-19 patients subsided, institutions gradually resumed these services, albeit with limitations imposed on the number of procedures performed. In order to resume the provision of essential healthcare services, including elective surgeries, health institutions and healthcare providers had to adapt and implement new measures to make certain the delivery of quality medical and surgical care while ensuring patient and staff safety.² This necessitated the prioritization of elective surgical cases as part of the healthcare system's transition to the "new normal" while still in the acute period of the pandemic.³

In our institution at the University of the Philippines - Philippine General Hospital (UP-PGH), the country's largest government hospital designated as one of the main COVID-19 referral centers, prioritization of all departments' surgical cases during the pandemic was carried out using the Medically Necessary, Time Sensitive (MeNTS) scoring system. This scoring system integrates various factors, including resource limitations to guide decision-making and triage for MeNTS procedures. It aims to balance individual patient risks with the need to optimize public health concerns.²

During a pandemic, it is important to continue the delivery of healthcare services while ensuring the safety of both the patients and healthcare providers. This study was conducted to evaluate the effectiveness of the MeNTS scoring system in appropriately prioritizing patients for gynecologic surgery in our institution during the pandemic. Specifically, we aimed to review the clinical characteristics and MeNTS scores of all screened cases, as well as the outcomes of patients who eventually underwent elective gynecologic surgery at our institution where prioritization was determined using the MeNTS tool. The evaluation of the performance of the MeNTS scoring system in our institution may provide valuable insights that can guide future decision-making processes in similar healthcare settings.

METHODS

Study design

The study employed a cross-sectional design to describe the clinical characteristics and outcomes of the elective gynecologic surgical cases screened using the modified MeNTS scoring system and who eventually underwent

surgery. This was conducted at the Department of Obstetrics and Gynecology of the Philippine General Hospital (PGH). The UP-PGH Ethics Review Board approved the study protocol (UPMREB code 2020-0793-01).

Study population

The study involved all patients who consulted at the outpatient clinic during the pandemic over a 6-month period from 18 June 2020 to 18 December 2020, and who were considered candidates for elective gynecologic surgery.

Conduct of the study

Data were collected through a comprehensive review of patient medical charts and their computed MeNTS score were retrieved and reviewed. The MeNTS score was determined based on three components, procedure factors, disease factors, and patient factors, and these were calculated using a modified 5-point scale, (adapted and modified from Prachand 2020, Appendix Tables 1-3). The lowest possible score is 21 and the highest is 105, with higher scores related to worse outcomes or increased risk of transmission and/or increased resource use.

In the scoring system, the patient factor was used as a pre-screening tool. The patient factor scores ranged from 5 to 25 with lower scores given priority. The patient factors included the following: age, lung disease (asthma, chronic obstructive pulmonary disease, cystic fibrosis), obstructive sleep apnea, cardiovascular disease (hypertension, congestive heart failure, coronary artery disease), and diabetes.

The next factor that was considered was the procedure factor. The variables in this factor contain the burden on the limited hospital resources during the pandemic. The procedure factors included the following: operating room (OR) time, postoperative ICU need, surgical site, estimated postoperative length of stay, and anticipated blood loss. This factor had a 40% weight in the scoring system.

The last factor that was considered was the disease factor. The variables in this factor contain clinical burden for the patient whose surgical treatment was already delayed during this pandemic crisis. This factor had a 60% weight in the scoring system. The disease factors included effectiveness of non-operative treatment option, availability/accessibility of an effective non-operative treatment option/modality, non-operative treatment option resource/exposure risk, impact of a further 4-week delay in disease outcome, impact of a further 4-week delay on surgical difficulty/risk, and predicted patient functionality 30 days after surgical intervention.

The scores obtained in the procedure factor and disease factor became the composite score of the patient. The patients were then arranged from lowest to highest and eventual prioritization was given to those with the lowest score.

Of the cases who underwent screening and surgery during the study period, the following outcomes were collected: peri-operative morbidities (including increased length of hospital stay >5 days, increased operating room time >5 hours, total

blood loss >400 ml and need for blood transfusion, need for ICU admission and requiring mechanical ventilation, and COVID-19 transmission), and mortality. Other relevant information (primary diagnosis and pelvic organ involved, and the department service in charge of the case) was also obtained.

Statistical Analysis

The statistical summary was expressed in median and means with corresponding standard deviations for continuous variables. The categorical variables were summarized using frequency and percentage. Multiple logistic regression was used to determine factors associated with MeNTS. Null hypothesis of no association was tested at 5% level of significance. Adjusted odds ratios (ORs) were estimated at 95% confidence level.

RESULTS

A total of 155 gynecologic cases were reviewed during the 6-month study period. Among these cases, 134 cases (86.4%) were qualified based on MeNTS and subsequently operated on while 21 cases (13.5%) were considered non-MeNTS. The average scores for patient factors, procedure factors, and disease factors for the MeNTs and non-MeNTS cases are summarized in Table 1. No differences were observed in the mean scores of the procedure factors and disease factors between the two groups.

Based on the patient factors (Table 2), most of the patients who were considered MeNTS cases were aged 51-65 years (43.3%) and had no co-morbidities (55.2%). In contrast, the non-MeNTS cases were mostly 21-40 years old (42.9%) and had existing co-morbidities (61.9%). The most

common co-morbidity for both MeNTS and non-MeNTS cases is cardiovascular disease including hypertension, congestive heart failure, and coronary artery disease.

For both MeNTS and non-MeNTS cases, there were more malignant cases (68% and 57.1%, respectively), mostly involving ovarian pathology (Table 3). Nevertheless, benign pathologies were likewise prioritized for surgery (31.3% of MeNTS cases). Among these MeNTS cases, the benign case of the vulva was a fibroepithelial polyp of the clitoris. The primary uterine cases involved abnormal uterine bleeding secondary to myoma, polyp, and adenomyosis, as well as pelvic organ prolapse. There was one case of myoma uteri with final histopathologic diagnosis of sarcomatous degeneration. The benign cases of the ovary included mucinous cystadenoma, endometriotic cyst, and ovarian fibroma, while the only benign case of the fallopian tube was a case of a large hydrosalpinx. Among the non-MeNTS cases, the benign cases of the vulva were labia minora polyp and paraurethral mass. The benign cases of the uterus and the ovaries had diagnoses similar to the benign MeNTS cases.

To determine if the variables (age, presence of co-morbidity, and diagnosis of malignancy) were associated with the classification to MeNTS, multiple logistic regression was performed (Table 4). Overall, patients older by 10 years were 1.32x more likely to be MeNTS than those younger by 10 years. Patients with co-morbidity had an OR=0.44, less likely to be MeNTS than patients without co-morbidity. In the primary diagnosis distribution, the odds of malignancy cases were 1.5x more than the odds of benign cases. However, these values could all be due to chance at 5% level of significance (p-values >0.05).

The Department of Obstetrics and Gynecology has several subspecialty services requiring regular operative

Table 1. Mean Scores by Factors that Contributed to Prioritization

Contributing Factors	MeNTS Cases (n=134)	Non-MeNTS Cases (n=21)
	mean scores \pm SD (range)	
Patient factors	9.6 \pm 1.98 (8-14)	11.3 \pm 2.4 (8-16)
Procedure factors	7.9 \pm 1.87 (5-15)	8.6 \pm 2.7 (7-15)
Disease factors	9.4 \pm 4.7 (6-22)	8.6 \pm 3.7 (6-16)
Total MeNTS score	26.9 \pm 5.05 (21-41)	28.5 \pm 4.07 (21-35)

MeNTS: Medically Necessary, Time Sensitive; Patient factors: age, lung disease, obstructive sleep apnea, cardiovascular disease, and diabetes; Procedure factors: operative room time, postoperative ICU need, surgical site, estimated postoperative length of stay, and anticipated blood loss; Disease factors: effectiveness of non-operative treatment option, availability/accessibility of an effective non-operative treatment option/modality, non-operative treatment option resource/exposure risk, impact of a further 4-week delay in disease outcome, impact of a further 4-week delay on surgical difficulty/risk, and predicted patient functionality 30 days after surgical intervention

Table 2. Patient Demographic Characteristics (Patient Factors) of MeNTS and Non-MeNTS Cases

Characteristic	MeNTS Cases n=134 (%)	Non-MeNTS Cases n=21 (%)
Age (years)		
<20	2 (1.5)	0
21-40	26 (19.4)	9 (42.9)
41-50	35 (26.1)	2 (9.5)
51-65	58 (43.3)	8 (38.1)
>65	13 (9.7)	2 (9.5)
Co-morbidities		
None	74 (55.2)	8 (38.1)
With co-morbidities	60 (44.8)	13 (61.9)
Lung disease (asthma, COPD, cystic fibrosis)	11 (8.3)	2 (15.4)
Obstructive sleep apnea	0	0
Cardiovascular disease (Hypertension, CHF, CAD)	32 (53)	10 (76.9)
Diabetes	9 (15)	6 (46)

MeNTS: Medically Necessary, Time Sensitive; COPD: chronic obstructive pulmonary disease; CHF: congestive heart failure; CAD: coronary artery disease

Table 3. Distribution of MeNTS and Non-MeNTS by Primary Diagnosis and Pelvic Organ Involvement

	MeNTS Cases n=134 (%)	Non-MeNTS Cases n=21 (%)
Benign	42 (31.3)	8 (38.1)
Vulva and Vagina	1 (2.4)	3 (37.5)
Uterus	32 (76.2)	2 (25)
Ovary	8 (19)	3 (37.5)
Fallopian Tube	1 (2.4)	0
Malignant	91 (68.0)	12 (57.1)
Vulva and Vagina	3 (3.3)	0
Cervix	9 (9.9)	3 (25)
Uterus	37 (40.7)	2 (16.7)
Ovary	40 (43.9)	7 (58.3)
Fallopian Tube	1 (1.1)	0
Trophoblastic Disease	1 (0.7)	1 (4.8)

MeNTS: Medically Necessary, Time Sensitive

Table 4. Multiple Logistic Regression Analysis to Determine Factors Associated with MeNTS

MeNTS Factor	Odds ratio	95% CI	p-value
Age 10	1.32	0.91 – 1.92	0.140
Malignancy	1.49	0.56 – 3.94	0.424
Co-morbidities	0.44	0.17 – 1.16	0.097

MeNTS: Medically Necessary, Time Sensitive

schedule to serve their patients. Table 5 provides a summary of MeNTS cases attended to by the different services. Most services were provided by the Gynecologic Oncology (48%) and the General Service (35%).

The outcomes of the MeNTS cases during the period of restricted surgery were evaluated (Table 6). The median length of stay (5 days) and the median operative time (3 hours and 30 minutes) of the cases were within acceptable limits. The estimated blood loss ranged from 100 to 500 ml (mean of 400 ml), however 53% of the cases required blood transfusion. There were no cases necessitating ICU care and intubation. Likewise, there were no reported cases of COVID-19 transmission post-operatively and there were no mortalities.

DISCUSSION

The state of Public Health Emergency was declared throughout the Philippines on March 2020 due to COVID-19.⁴ As a result, all elective surgical procedures were halted, and this resulted in a backlog of gynecologic elective surgical cases. After three months, the state of emergency was lifted, and non-urgent medical and surgical procedures were slowly resumed. Throughout the pandemic, the UP-PGH operating room management team remained proactive, conducting regular performance reviews, identifying challenges, and seeking opportunities for process improvement. Their primary objective was to achieve the

Table 5. Distribution of MeNTS Cases by Gynecologic Specialty

Subspecialty	Patients n=134 (%)
Gynecologic Oncology	65 (48.6)
General Service	47 (35.2)
Urogynecology and Pelvic Reconstructive Surgery	12 (8.8)
Reproductive Endocrinology and Infertility	8 (6.0)
Infectious Diseases	1 (0.7)
Trophoblastic Diseases	1 (0.7)

MeNTS: Medically Necessary, Time Sensitive

Table 6. Outcomes and Morbidities of MeNTS Cases Operated on during the Period of Restricted Surgery

Patient outcome characteristics	Number (%) or Median (IQR)
Median length of stay (range)	5 days (2-20 days)
Blood transfusion	76 cases (53%)
Median OR time (Range)	3.5 hours (1 to 11 hours)
Need for ICU care	0
Need of intubation	0
Mortality	0
COVID-19 transmission	0
Estimated blood loss	400 ml (100-500 ml)

MeNTS: Medically Necessary, Time Sensitive

optimal utilization and fair allocation of operating room resources. To achieve this, the screening team adopted the MeNTS scoring system, a centralized scheme designed to prioritize surgical cases across various specialties, including gynecology electives.² The MeNTS surgical prioritization scoring system, originally developed by the University of Chicago during the COVID-19 pandemic, involved pre-screening patients for elective surgery. This comprehensive system systematically incorporates various factors into the decision-making and triage process for MeNTS procedures. It considers individual patient risks while also addressing the ethical responsibility of optimizing public health concerns and resources. By effectively prioritizing patients, particularly during periods of resource scarcity, the team aimed to prevent the accumulation of cases in the backlog. Ultimately, the implementation of this prioritization scoring system sought to ensure the appropriate utilization of resources and enhance perioperative outcomes. This study was conducted to evaluate whether the implementation of the MeNTS scoring system successfully met the institution's requirements and addressed the challenges faced during the pandemic.

Evaluation of the MeNTS scoring system

The MeNTS scoring system was examined by some authors in terms of its overlap with other methods of patient prioritization, such as consensus/expert opinion-based and individual surgeon-based systems.⁵ The researchers found that each approach to prioritization has its own strengths

and weaknesses. The MeNTS scoring system offers the advantage of creating objective measures of case priority that can be compared across different surgical specialties. However, the challenge lies in the implementation of individually scoring the 21 distinct factors, as these factors can vary significantly depending on the specific disease or procedure. While the MeNTS scoring system incorporates objective factors, it still involves an element of subjective decision-making, which can have a significant impact on case prioritization. While such complex systems may seem appealing, as some of these authors suggested, these may result in a larger number of backlogs.

The incorporation of the MeNTS scoring system with the Elective Surgery Acuity Scale (ESAS) was previously evaluated.⁶ The ESAS scoring system involved the assessment of urgency by the Department Chairs and a surgical committee, while the MeNTS score was primarily used to distinguish between “Urgent MeNTS cases” requiring completion within a two-week timeframe and “Priority Non-MeNTS cases” that could be delayed. Remarkably, the study findings revealed no discernible differences in outcomes between MeNTS surgeries and elective surgeries performed during the same period in 2019. This indicates that the implementation of the MeNTS scoring system successfully identified urgent cases while maintaining favorable safety outcomes and appropriate resource utilization.

Based on a prospective observational study, some authors have proposed the enhancement of the MeNTS scoring system by incorporating cardiorespiratory functional capacity measures to improve predictive accuracy in addition to objective prioritization.⁷ The results of our study found that a significant proportion of the cases included in the analysis had comorbidities related to cardiovascular disease. Interestingly, no cases necessitated mechanical ventilation or admission to the ICU. While these observations may suggest that functional studies among patients for screening purposes may not be necessary, it is important to note that the current study had a limited number of patients, precluding inclusion of cases with severe cardiovascular problems. Therefore, further investigations involving larger populations and multicenter studies are warranted to validate the inclusion of cardiorespiratory functional capacity measures as part of the MeNTS scoring system. These additional studies would provide a more comprehensive understanding of the potential benefits and relevance of incorporating such measures into the scoring system, ensuring its appropriateness for accurate patient prioritization.

Prioritization process of elective surgery in UP-PGH during the pandemic

During the period of restricted surgery, each cutting specialty/department was required to use the MeNTS scoring system. The chief resident of each specialty collected the list of patients and applied the scoring system. The final MeNTS scores of the gynecologic cases as provided by the

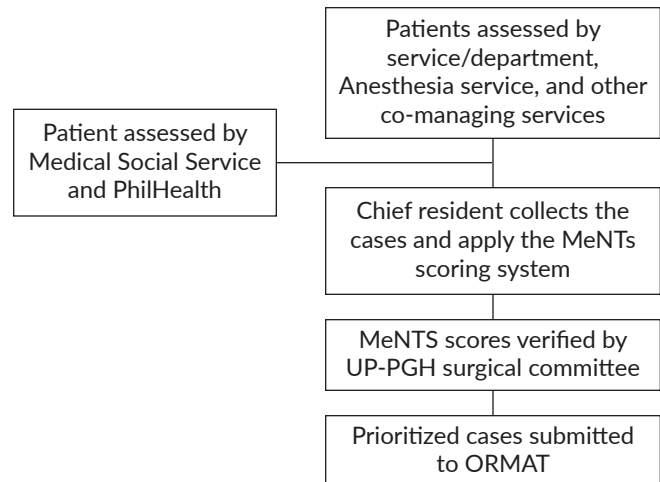


Figure 1. Prioritization process of elective surgery in UP-PGH during the pandemic.

department chief resident were submitted for verification to the UP-PGH surgical committee in charge of the elective surgery scheduling during the pandemic. The list of patients prioritized was then submitted to the Operation Room Management Action Team (ORMAT) for elective operation scheduling. The cases in the list were expected to have been assessed as ready for admission and surgery by the service/department, Medical Social Service, PhilHealth, Anesthesia Service, and other medical services as deemed necessary (Figure 1).

During the study period, the department utilized the MeNTS score primarily to differentiate between MeNTS cases and non-urgent surgical procedures. For scheduled MeNTS cases, COVID-19 screening and testing had to be completed within 48 hours prior to surgery. The screening process considered various factors, including backlog of malignancy cases, non-deferrable non-malignancy cases, and patients preoperative evaluation and preparation such as recent diagnostic imaging, co-managing services evaluations, and negative COVID-19 swab testing. If multiple cases were considered, those lower MeNTS scores were given priority. These considerations were reflected in the study's results, where the majority of operated cases were malignant cases rather than the less urgent benign conditions.

A total of 134 gynecologic elective cases were operated on out of the 155 cases reviewed, which accounted for only 22.8% of the elective cases admitted in the department during the same period in 2019 (679 elective cases seen at the out-patient department). The study clearly shows that there were significantly fewer cases during the pandemic compared to the previous year, indicating a decrease in patient consultations. This could be attributed to the reported avoidance and consequent delays in routine medical care due to fear of contracting COVID-19 or may have been brought about by difficulties in accessing healthcare due to

community mitigation efforts such as stay-at-home orders or temporary closures of health facilities.¹

Clinical and demographic characteristics and outcomes of MeNTS cases

The results of the study demonstrated that older patients were more likely to be classified as MeNTS cases. Additionally, most non-MeNTS cases had comorbidities compared to MeNTS cases. Patients with comorbidities were less likely to be categorized as MeNTS cases, which is a significant factor as comorbidities are typically associated with higher postoperative complications and poorer outcomes. Nevertheless, the association of these patient factors or variables to MeNTS were not statistically significant and may likely be due to chance.

In terms of procedure factors, no difference was observed between the types of cases. This could be attributed to the similarity in procedure requirements, resulting in similar scores. Similarly, for the disease factors, a very small difference in the average scores was found between the two groups. This could be due to the similarity in the primary diagnoses of the cases, leading to the same alternative management approaches and impact of delayed surgical intervention.

Among the benign MeNTS cases, of interest were the cases under vulva and fallopian tube. The MeNTs case under vulva had a primary diagnosis of a fibroepithelial mass which measured 3.0 x 2.0 cm. The urgent need for surgery was based on the increased risk of malignancy given the advanced age of the patient (44 years old). The other case under fallopian tube had a primary diagnosis of hydrosalpinx who underwent laparoscopic unilateral salpingectomy. This was an infertility case due to tubal factor. For both these cases deemed MeNTS, the decision was based on the understanding that surgery would significantly influence the management of the patients while requiring minimal resources, thus making them priority cases.

Regarding the outcome of the MeNTS cases, the morbidity was primarily related to the need for blood transfusion. Considering that the reported mean blood loss was only 400 ml (range of 100-500 ml), it can be inferred that the need for transfusion may be attributed to the patients' preoperative status, specifically low baseline hemoglobin, rather than massive intraoperative blood loss. Additionally, no mortality was reported, which is an encouraging finding. It is important to note that in this study, it is impossible to compare the outcomes of the MeNTS cases with the outcomes of the non-MeNTS (in terms of the rate of perioperative morbidities and mortality) who may have eventually undergone surgery. Likewise, no comparison was made in terms of the outcomes during the same period in the previous non-pandemic year. Nevertheless, the results of this study indicate that the scoring system effectively allowed the team to identify and prioritize patients, resulting in minimal morbidity, absence of mortality and of COVID-19 transmission.

Limitations of the study

This study focused exclusively on patients who underwent elective gynecologic surgery, with prioritization based on the MeNTS scoring system. This study was unable to examine the consequences of postponing surgeries for cases that were considered non-MeNTS. Furthermore, the study was conducted at a single tertiary hospital, considering the potential risks of COVID-19 infections, and conducted during the 6-month acute phase of the pandemic, a period of significantly limited resources. These conditions reflect the real-life circumstances faced by a tertiary hospital in a low- middle-income country such as the Philippines. Therefore, the findings and insights obtained from this study may hold relevance only to similar healthcare settings.

CONCLUSIONS

This study provides insights based on the clinical characteristics and outcomes of patients who underwent elective gynecologic surgery at a tertiary hospital utilizing the MeNTS surgical scoring system. The findings revealed that non-MeNTS cases had a higher prevalence of comorbidities compared to MeNTS cases. Malignant cases were also more common among MeNTS cases. However, these variables were not significantly associated with MeNTS. Likewise, no differences were observed in procedure factors and disease factors between the two groups. In terms of outcomes, MeNTS cases demonstrated favorable results, with expected lengths of stay, minimal need for blood transfusion, and appropriate operating room time. Notably, the study recorded no mortalities, requirement for mechanical ventilation and ICU admissions, or instances of COVID-19 transmission among the patients. These findings highlight the safety and effectiveness of the MeNTS scoring system when implemented in a tertiary hospital setting in the Philippines. The scoring system facilitated the efficient management of the elective gynecologic case backlog, resulting in minimal morbidity and no mortality. Overall, the study supports the utility of the MeNTS scoring system for optimizing resource allocation and ensuring safe healthcare delivery during the pandemic.

Recommendations

Further research on MeNTS scoring system should be conducted involving larger populations, other surgical specialties, and multicenter local studies. This will help establish significant differences if any in the clinical characteristics and outcomes among elective cases in gynecology and other specialties. The results can provide a more comprehensive understanding of the scoring system's impact and efficacy across diverse healthcare settings. The scoring system should likewise be continuously evaluated and refined through research in order to help healthcare professionals enhance decision-making while improving patient outcome.

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Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

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APPENDICES

Appendix Table 1. MeNTS Scoring System Patient Factor

Factor	1 pt	3 pts	5 pts
Age (years)	Below 50 y.o.	51 to 65 y.o.	above 65 y.o.
Lung disease (asthma, COPD, CF)	None	Minimal (rare inhaler)	More than minimal
Obstructive sleep apnea	None	Mild (no CPAP)	Moderate (on CPAP)
CV disease (HPN, CHF, CAD)	None or Mild (1 med)	Moderate (2 meds)	Severe (≥3 meds)
Diabetes	None or Mild (no meds)	Moderate (PO meds)	> Moderate (insulin)

Appendix Table 2. MeNTS Scoring System Procedure Factor

Variable	1 pt	3 pts	5 pts
OR time, in hours	3 hours or less	More than 3 hours to 5 hours	More than 5 hours
Postoperative ICU need (%)	<10%	11-25%	>25%
Surgical site	Other sites	Abdominopelvic	OHNS, upper GI, thoracic
Estimated postoperative length of stay	1-2 days	3-4 days	5 days or more
Anticipated blood loss	<500 ml	500 – 1 Li	>1 Li

Appendix Table 3. MeNTS Scoring System Disease Factor

Variable	1 pt	3 pts	5 pts
Effectiveness of non-operative treatment option	None available	Available, <50% as effective as surgery	Available, >50% as effective as surgery
Availability/ Accessibility of an effective non-operative treatment option/modality	Not available and/or inaccessible	Moderately available and/or accessible	Readily available and/or accessible
Non-operative treatment option resource/exposure risk	Significantly worse/ not applicable	Equivalent	Significantly better
Impact of a further 4-week delay in disease outcome	Significantly worse	Moderately worse	No worse
Impact of a further 4-week delay on surgical difficulty/risk	Significantly worse	Moderately worse	No worse
Predicted patient functionality 30 days after surgical intervention	ECOG 0-1 Karnofsky 70-100	ECOG 2-3 Karnofsky 50-60	ECOG 4 Karnofsky 20-40