

Indicators of care quality for critically ill maternal patients in a secondary care hospital

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ABSTRACT

Introduction: Quality control of obstetric care is a social requirement. **Objective:** To evaluate the quality of medical care for women with highly severe maternal morbidity at Dr. Agostinho Neto Hospital from 2015-2022. **Method:** A descriptive, cross-sectional study was carried out. 976 exits from this institution were studied. Those for whom it was impossible to compile all the necessary information were excluded (n = 6). The study of the variable "quality of the medical care process for patients with extremely severe maternal morbidity" was structured in three dimensions: a) structure, b) process, and c) outcomes. **Results:** The structure and results dimensions were rated "partially satisfactory," with 81.8% of the indicators for each dimension falling into this category. The process dimension was rated "satisfactory," with 87.5% of the indicators assessed in this category. Overall, the quality of medical care was rated "partially satisfactory," with 83.3% of the indicators assessed in this category. **Conclusions:** At Dr. Agostinho Neto Hospital, during the period 2015-2022, the quality of medical care for pregnant or postpartum women with extremely severe maternal morbidity is partially satisfactory, although it is affected by limitations in material resources to provide excellent care.

Keywords: Maternal morbidity; Severe maternal morbidity; Quality of care; Quality indicators.

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Indicadores de calidad asistencial a la paciente materna grave en un hospital de segundo nivel

RESUMEN

Introducción: el control de la calidad de la atención obstétrica es una exigencia social. **Objetivo:** evaluar la calidad de la atención médica a mujeres con morbilidad materna extremadamente grave en el hospital Dr. Agostinho Neto durante el periodo 2015-2022. **Método:** Se realizó un estudio descriptivo, de corte transversal. Se estudiaron 976 egresadas de esta institución. Se excluyeron aquellas en las que no fue posible compilar toda la información necesaria para realizar el estudio ($n = 6$). El estudio de la variable calidad del proceso de atención médica a la paciente con morbilidad materna extremadamente grave se estructuró en tres dimensiones: a) estructura, b) proceso y c) resultados. **Resultados:** Las dimensiones estructura y resultados se calificó en la categoría «en parte satisfactoria» pues para cada una, el 81.8% de los indicadores se evaluaron en esta categoría. El 87.5% de la dimensión proceso se evaluaron en la categoría «satisfactoria». En general la calidad de la atención médica se evaluó en la categoría «en parte satisfactoria» pues el 83.3% de los indicadores evaluados (83.3 %) se calificaron en esta categoría. **Conclusiones:** En el hospital Dr. Agostinho Neto durante el periodo 2015 - 2022, la calidad de la atención médica a la mujer gestante o puerpera con morbilidad materna extremadamente grave es en parte satisfactoria, pues se ve afectada por limitaciones en los recursos materiales para aplicar una atención de excelencia.

Palabras clave: Morbilidad materna; Materna grave; Calidad de la atención, Indicadores de calidad.

Indicateurs de qualité des soins prodigués aux patientes maternelles gravement malades dans un hôpital de soins secondaires

RÉSUMÉ

Introduction: Le contrôle de la qualité des soins obstétricaux est une exigence sociale. **Objective:** Évaluer la qualité des soins médicaux prodigués aux femmes présentant une morbidité maternelle extrêmement grave à l'hôpital Dr Agostinho Neto au cours de la période 2015-2022. **Méthode:** Une étude descriptive transversale a été menée. 976 sorties de cette institution ont été étudiées. Ceux pour lesquels il n'a pas été possible de compiler toutes les informations nécessaires à la réalisation de l'étude ont été exclus ($n = 6$). L'étude de la qualité variable du processus de soins médicaux pour les patientes présentant une morbidité maternelle extrêmement sévère a été structurée en trois dimensions : a) structure, b) processus et c) résultats. **Résultats:** Les dimensions de la structure et des résultats ont été évaluées dans la catégorie « partiellement satisfaisante », avec 81,8 % des indicateurs pour chaque dimension entrant dans cette catégorie. 87,5 % de la dimension processus a été évaluée dans la catégorie « satisfaisant ». Dans l'ensemble, la qualité des soins médicaux a été évaluée comme « partiellement satisfaisante » puisque 83,3 % des indicateurs évalués (83,3 %) ont été classés dans cette catégorie. **Conclusions:** À l'hôpital Dr. Agostinho Neto, au cours de la période 2015-2022, la qualité des soins médicaux pour les femmes enceintes ou en post-partum présentant une morbidité maternelle extrêmement sévère est partiellement satisfaisante, bien qu'elle soit affectée par des limitations de ressources matérielles pour fournir d'excellents soins.

Mots clés: Morbidité maternelle ; Maternelle grave; Qualité des soins, Indicateurs de qualité.

Indicadores de qualidade do paciente materno grave em um hospital de segundo nível

RESUMO

Introdução: o controle da qualidade dos cuidados obstétricos é uma demanda social. **Objetivo:** Avalie a qualidade dos cuidados médicos para mulheres com morbidade materna extremamente séria no Dr. Hospital. Agostinho neto durante o período 2015-2022. **Método:** Foi realizado um estudo descritivo e cruzado. 976 graduados desta instituição foram estudados. Aqueles em que não foi possível compilar todas as informações necessárias para realizar o estudo ($n = 6$) foram excluídas. O estudo da qualidade do processo de assistência médica para o paciente com morbidade materna extremamente grave foi estruturada em três dimensões: a) estrutura, b) processo e c) resultados. **Resultados:** As dimensões da estrutura e dos resultados foram descritas na categoria "parte satisfatória" porque para cada uma, 81,8% dos indicadores foram avaliados nesta categoria. 87,5% da dimensão do processo foram avaliados na categoria "satisfatória". Em geral, a qualidade dos cuidados médicos foi avaliada na categoria "parte satisfatória", pois 83,3 % dos indicadores avaliados (83,3 %) foram descritos nesta categoria. **Conclusões:** no Dr. Agostinho neto durante o período de 2015 - 2022, a qualidade dos cuidados médicos para mulheres grávidas ou a luta com a morbidade materna extremamente grave é parcialmente satisfatória, pois é afetada pelas limitações nos recursos materiais para aplicar excelente atenção.

Palavras -chave: morbidade materna; Materno grave; Qualidade do atendimento, indicadores de qualidade.

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INTRODUCTION

The presentation of complications during pregnancy, childbirth, and the postpartum period, when they involve putting the woman's life at risk and require immediate attention to prevent death, is defined in the literature as highly severe maternal morbidity (ESMM).⁽¹⁾ It is estimated that they occur in 40% of pregnant and postpartum women, and up to 10% die from them, depending on the level of social, cultural, and economic development of the countries;⁽²⁾ Therefore, MMEG is assumed to be a marker of mortality risk and, above all, of the quality of obstetric medical care.^(3, 4)

In Cuba, although maternal morbidity and mortality are recorded, the incidence of maternal mortality is not explicitly reported in health statistics yearbooks. Despite the country's legal foundations, these laws support the challenge of ensuring and assessing the quality of maternal and child care.^(5, 6)

Articles published on MMEG in Cuba^(4, 8) and abroad^(9,10) point to the relevance of assessing the quality of obstetric care. However, how to conduct this assessment in light of the complexity and diversity of health services is not always clear. Additional efforts are needed to identify indicators for systematic monitoring of maternal health care.

The tangible need for this intention lies in the fact that, beyond its impact on people's lives, insufficient quality care increases healthcare costs, the global burden of disease, and unmet health needs; it generates dissatisfaction among individuals, families, the community, and society. Regarding the latter, the World Health Organization estimates that high-quality care could prevent more than half of maternal deaths each year.⁽⁹⁾

In the field of research related to the evaluation of the quality of medical care in Guantanamo, there are research results^(4, 11) However, at Dr. Agostinho Neto Hospital, the most common avenues for quality perception are those offered by the Population Care Office based on concerns, survey results, or interviews with patients and family members; opinions gathered at accountability meetings of People's Power delegates; or those endorsed on social media and by political and mass organizations. However, the authors' theoretical systematization revealed that, to date, in Cuba,

no scientific avenue containing indicators and standards for the objective measurement of the medical care provided is available.

All of the above raises the following question: How can we improve the assessment of the quality of medical care for women requiring care for complications related to pregnancy, childbirth, or the postpartum period, defined in the medical literature as patients with severe maternal morbidity (P-MMG)? Therefore, this study aims to evaluate the quality of medical care for women with SMM at Dr. Agostinho Neto Hospital from 2015 to 2022.

The research contributes to studies assessing the quality of medical care provided or perceived by the population, managers, and society. Furthermore, the results allow for developing a standard for obstetric care in the institution and identifying problems that limit its quality. This promotes scientifically based decision-making within institutions. If used consistently, this will foster the development of a continuous quality improvement program.

METHODS

A descriptive, cross-sectional health system and service research study was conducted. The study population consisted of patients discharged from Dr. Agostinho Neto Hospital from 2015 to 2022 who presented with MME (N = 982). Those for whom it was impossible to collect all the necessary information for the study (n = 6) were excluded, so a convenience sample of 976 analysis units was analyzed. The clinical criteria for MME were those established by Say et al.⁽¹²⁾

The research was conducted in two stages: Stage 1. Study design (operationalization of the variable "quality of medical care for patients with MME": precision of the dimensions to be assessed, their indicators and measurement standards; preparation and validation of data collection instruments; conduct of a pilot study); and Stage 2 (Study execution: information search by reviewing patients' medical records, processing the compiled data, summarizing them in tables, and interpreting them).

The search for information related to the topic was conducted on the Internet, using sources such as Infomed, EBSCO, PubMed, SciELO, Medline, Scopus, Dialnet, and LILACS. The keywords used were perinatal care, postpartum hemorrhage, Near miss, maternal mortality,

quality of services, and quality of health care. The Boolean operators "AND" and "OR" were used. A total of 125 articles were reviewed, of which 51 were ultimately selected for inclusion in the study.

Theoretical methods (analysis, synthesis, induction, and deduction) and empirical methods (document analysis and percentage calculations) were used. The study of the variable "quality of the medical care process" for patients with MMEG was structured into three dimensions:

a) structure (how it is organized and the resources needed to provide care), b) process (what is done and how the procedures for this care are executed), and c) outcomes (what happens to the patient and what has been achieved with the care in terms of meeting expectations for improved health and care). Indicators and the desired level of satisfaction (standard) were established to measure each dimension through consensus among researchers and the opinions of the institution's directors and faculty.

Quality assessment was considered satisfactory if the indicator was met in 85.0% of patients, except for the maternal mortality indicator, where a proportional mortality rate of less than 8% was assumed. The quality of the care process for patients with MMEG was then established by specifying the mean value observed for each quality dimension (**structure, process, and outcome**):

a) Satisfactory quality: if the percentage of indicators evaluated was equal to or greater than 85.0%;

b) Partially satisfactory quality: if the percentage of indicators evaluated was between 70 - 84.9%;

c) Unsatisfactory quality: if the percentage of indicators evaluated was equal to or less than 69.9 %.

A database was created in Excel using the Microsoft Office suite on Windows XP, which allowed the results to be processed and expressed in absolute numbers and percentages. The data were presented using statistical tables.

The study was approved by the participating hospital's ethics committee and scientific council, and the recommendations of the Declaration of Helsinki for biomedical research were followed. Informed consent was not requested from the patients because the source of information was their medical records, and data confidentiality and honesty in reporting were ensured.

RESULTS

Table 1 shows the results of evaluating the structure of the maternal patient care process. Overall, the institution has the resources to meet the requirements for this care. Some resource gaps were identified, which, while not meeting the expectation of excellent care, were rated "partially satisfactory," as only 18 of the 22 indicators evaluated (81.8%) were rated satisfactory.

Table 1. Evaluation of the structure for the maternal patient care process.

	Indicators	No.	%	Assessment
Human resources available for PAM-PM	Nurse : patient relationship 1 : 1.1	976	100	S
	Doctor: patient relationship 1 : 1.1	976	100	S
	Prepared nurse/maternity care	976	100	S
	Prepared doctor/patient care	976	100	S
	Multiprofessional care for PM	976	100	S
	Existence of the commission/attend PM	976	100	S
Material resources available for PAM-PM	Existence of protocols to carry out the PAM-PM	976	100	S
	Media/assess organ and system function	819	83.9	I
	Media/evaluate internal environment	926	94.9	S
	Media/evaluate immune profile	188	19.2	I
	Media for microbiological studies	935	95.9	S
	Invasive media/monitoring	114	11.3	I
	Non-invasive monitoring/media	932	95.5	A
	Media/oxygenation and ventilation	976	100	S
	Media/perform electrocardiogram	976	100	S
	Media/perform portable X-ray/CT	900	92.2	S

	Indicators	No.	%	Assessment
	Means for performing ultrasound	900	92.2	S
	Parental nutrition solutions	192	19.6	I
	Volume expansion solutions	976	100	S
	Massive transfusion package	976	100	S
	Immediate application of the necessary drug	902	92.4	S
	Application of the necessary surgical treatment	976	100	S

Table 2 assesses the maternal patient care process. It shows that the institution is developing this process satisfactorily [14 of the 16 indicators evaluated (87.5%) were rated

satisfactory], but infrastructure deficiencies jeopardize this possibility.

Table 2. Evaluation of the development of the care process for the maternal patient

	Indicators of the development of the care process	No.	%	Assessment
Deployment of the agents participating in the process	Multidisciplinary care for maternal patients	976	100	S
	Maternal care function/commission	976	100	S
	Correct preparation/patient medical history	163	16.7	I
	Patient's evolution in clinical history	976	100	S
	Patient stratification	976	100	S
	Maternal evaluated by the psychologist	902	92.4	S
	Nursing care for patients 1 : 1.1	976	100	S
	Physician-to-patient care 1 : 1.1	976	100	S
Actions executed during the process	Pregnant woman with LE stabilizes in the ICU	976	100	S
	Adherence to protocols for performing the PAM-PM	976	100	S
	Evaluation of organ and system function	819	83.9	I
	Monitoring according to the severity of the patient	932	95.5	S
	Imaging/examinations	900	92.2	S
	Perform/proceed with the necessary diagnosis and therapy	976	100	S
	Patient assurance/nutrition	976	100	S
	Correct prescription/necessary drugs	976	100	S

Legend: EO: obstetric emergency, ICU: intensive care unit.

Table 3 reveals that 9 of the 11 indicators (81.8%) used to evaluate the outcome of the maternal patient care process were rated as "satisfactory"; dissatisfaction was revealed by

the agents involved in the process through the considerations they showed in the clinical history.

Table 3. Evaluation of the outcome of the care process for the maternal patient

	Indicators related to the structure required for the maternal patient's medical care process	No.	%	Assessment
AO process	Mothers who exit alive	966	98.9	S
	Mothers who died	10	1.1	S
	Mothers evaluated/multidisciplinary team	976	100	S
	Time requesting admission to the room ≤ 4 hours	976	100	S
	Mothers treated well/according to the action protocol	976	100	S
	Maternal deaths analyzed by the MM committee	10	100	S
	Satisfied need for EO care	976	100	S

Indicators related to the structure required for the maternal patient's medical care process		No.	%	Assessment
Participants satisfied with the AO	Commission/PM service functionality	976	100	S
	Evidence in the HC of satisfaction with E for the AO	825	84.1	I
	Evidence in the HC of satisfaction of the AO of P	825	84.1	I
	Evidence in the HC of satisfaction with R of AO	202	100	S

Source: Medical Records

Legend: HC: clinical history, E: structure dimension, P: process dimension, R: outcome dimension, AO: obstetric care

Table 4 reveals that 83.3% of the indicators in the structure and outcome dimensions of P-MMEG care were evaluated in the "partially satisfactory" category. Overall, the P-MMEG care

process was assessed in the "partially satisfactory" category, with 41 of the 49 indicators evaluated being "partially satisfactory."

Table 4. Evaluation of the medical care process for the maternal patient

Dimension of the process	Evaluated indicators					Quality assessment
	Adequate		Inadequate		Total	
	No.	%	No.	%	No.	
Structure	18	81.8	4	18.2	22	Partly satisfactory
Process	14	87.5	2	12.5	16	Satisfactory
Results	9	81.8	2	18.2	11	Partly satisfactory
Total	41	83.7	8	16.3	49	Partly satisfactory

DISCUSSION

Triangulation of the compiled information showed that the medical care process for P-MMEG demonstrates consistency between good obstetric care practices and the strong emphasis on ensuring the health and lives of these patients. This is a tangible result of the Cuban state and government prioritizing quality care for pregnant and postpartum women. The social relevance of the study is reflected in various governing documents for the functioning of the Cuban health system. ^(5, 6) International guidelines ^(1, 2) establish that people and communities must receive quality medical care.

The authors consider measuring healthcare quality indicators at the P-MMEG appropriate because it enables comparison of results across institutions. It also serves as a scientific avenue for self-assessment and peer assessment of this type of hospital activity. The system of indicators used in this study is viable for assessing the gap between what is known about healthcare and how it is delivered. It also assesses the achievements or what is missing to meet the expectations of professionals and the recipients of care. This allows for improvement actions

within the local context, but it could also be used in other Cuban or foreign contexts.

A wide variety of indicators related to health management can be found in the literature. ^(8, 13, 14) None are considered definitive, and their application may not be feasible in all contexts; therefore, any proposal must be adapted to the evaluation's intentions and as new scientific evidence regarding clinical practice is incorporated.

This study revealed contradictory situations in obstetric care. On the one hand, there were uncertainties in the quality of care during MMEG due to limited material resources. However, these did not necessarily lead to fatal outcomes for any patient. It also noted that no evidence was found of a specific statistical registry for MMEG, which is explained by the fact that its implementation is not included in the Health Statistics Information System. While this did not determine quality, it is noted that maternal morbidity and mortality are recorded. Furthermore, the intensive care unit maintains a database of admitted pregnant and postpartum women.

The research results are consistent with those proposed by other scholars ^(13, 14, 15, 16). They identify inadequate compliance with obstetric care processes, which is primarily related to organizational and cultural aspects, and point to a lack of material resources as the main determining factor in dissatisfaction with the quality of health care processes.

The information compiled in the research acquires validity because it is consistent with the idea that quality must be measured to diagnose what is happening and plan actions to project necessary and pertinent corrective actions based on systematic and continuous monitoring of the results achieved, as other researchers have indicated. ^(14, 15)

One limitation of the study was that its retrospective nature did not allow for measuring the technical competencies of healthcare personnel, so this remains a key aspect to be evaluated. Nor was the perception or expectations of the care received by the professionals involved, the patients, and their families assessed, an element to which great importance is attached, as assessing satisfaction provides evidence of the service's functionality and what is needed to meet the expectations of patients and professionals.

Furthermore, it was impossible to appreciate the humanized approach to the care process, a determining factor in perceived quality. For this reason, various researchers are considering the development of indicators to measure medical care from the perspective of appropriateness, timely reconciliation, safety, accessibility, reliability, security, effectiveness, efficiency, empathy, and satisfaction, among other aspects. ^(11, 16)

Furthermore, the research was conducted at a single center, which is interpreted as a limitation. Multicenter studies that provide insights into the phenomenon's behavior in other healthcare settings would enrich the information. It is essential to consider the bias in the information revealed in medical records.

CONCLUSIONS

At Dr. Agostinho Neto Hospital, during the 2015-2022 period, the quality of medical care for pregnant or postpartum women with extremely severe maternal morbidity was partially satisfactory. However, it was limited by limited material resources to provide excellent care. This indicates the need to continue efforts to ensure the material requirements necessary to achieve excellence in this process.

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Conflict of interest

The authors declare no conflicts of interest.

Declaration of originality of the work

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Authors' contributions

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