



**EPIDEMIOLOGICAL PROFILE OF PERINATAL MORTALITY AND PREVENTABILITY**  
**PERFIL EPIDEMIOLÓGICO SOBRE MORTALIDADE PERINATAL E EVITABILIDADE**  
**PERFIL EPIDEMIOLÓGICO DE MORTALIDAD PERINATAL Y EVITABILIDAD**

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**ABSTRACT**

**Objective:** describe the epidemiological profile of perinatal deaths and preventability in Pernambuco, Brazil, in the triennium 2009-2011. **Method:** ecological study, carried out by using the Brazilian Mortality Information System (SIM), the Brazilian Live Birth Information System (SINASC), and the list of preventable causes of death through interventions from the Brazilian National Health System (SUS). **Results:** the perinatal mortality rate was 18.8 deaths/1,000 births. The higher proportions of deaths were among premature babies, vaginal births, mothers with more than nine years of school education. Conditions within the perinatal period were associated with the group of causes of death with the higher percentage (87.5%) and 77.4% of deaths were classified as preventable. **Conclusion:** the high prevalence of preventable perinatal deaths points out the need for planning and executing actions to promote health and prevent such mortality. **Descriptors:** Perinatal Mortality; Health Information Systems; Causes of Death.

**RESUMO**

**Objetivo:** descrever o perfil epidemiológico sobre óbitos perinatais e evitabilidade em Pernambuco, no triênio 2009-2011. **Método:** estudo ecológico, realizado utilizando o Sistema de Informações sobre Mortalidade (SIM), o Sistema de Informações sobre Nascidos Vivos (SINASC) e a lista de causas de morte evitáveis por intervenções do Sistema Único de Saúde (SUS). **Resultados:** a taxa de mortalidade perinatal foi de 18,8 óbitos/1.000 nascimentos. As maiores proporções de óbitos foram de prematuros, nos partos vaginais, de mães com mais de nove anos de estudo. As afecções no período perinatal estiveram associadas ao grupo de causas de morte com maior percentual (87,5%) e 77,4% das mortes foram classificadas como evitáveis. **Conclusão:** a alta prevalência de mortes perinatais evitáveis aponta a necessidade de planejamento e execução de ações para promoção da saúde e prevenção dessa mortalidade. **Descritores:** Mortalidade Perinatal; Sistemas de Informação em Saúde; Causas de Morte.

**RESUMEN**

**Objetivo:** describir el perfil epidemiológico de muertes perinatales y evitabilidad en Pernambuco, Brasil, en el trienio 2009-2011. **Método:** estudio ecológico, llevado a cabo mediante el uso del Sistema de Información de Mortalidad de Brasil (SIM), el Sistema de Información de Nacidos Vivos de Brasil (SINASC) y la lista de causas prevenibles de muerte a través de intervenciones del Sistema Único de Salud de Brasil (SUS). **Resultados:** la tasa de mortalidad perinatal fue de 18,8 muertes/1.000 nacimientos. Las proporciones más altas de muertes estaban entre bebés prematuros, partos vaginales, madres con más de nueve años de educación escolar. Las condiciones en el período perinatal se asociaron con el grupo de causas de muerte con mayor porcentaje (87,5%) y 77,4% de las muertes se clasificaron como evitables. **Conclusión:** la alta prevalencia de muertes perinatales prevenibles señala la necesidad de planificación y ejecución de acciones para promover la salud y prevenir esta mortalidad. **Descriptor:** Mortalidad Perinatal; Sistemas de Información de Salud; Causas de Muerte.

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## INTRODUCTION

Perinatal mortality comprises both fetal deaths (occurring from the 22<sup>th</sup> complete week of pregnancy and/or weighing from 500 g) and early neonatal deaths (occurring within the period from 0 to 6 days of life), since these deaths share the same circumstances and etiologies, which affect fetal viability, in the end of pregnancy, and infant viability, in the early hours and days of life, something which justifies their analysis together.<sup>1</sup>

Knowledge of the death profile in early life allows highlighting critical areas, identify and monitor factors associated with such mortality, as well as formulate hypotheses about the quality of health services, this can help planning and redirecting actions aimed at maternal and child health.<sup>2,3</sup>

Thus, perinatal deaths are regarded as sentinel events concerning the quality of care and the health system itself, because they represent unnecessary events with potential intervention if the health service works properly and according to the medical technology available. So, we notice the close relation between perinatal mortality and quality of care, as well as access and use of health services.<sup>4,5</sup>

A significant percentage of perinatal deaths are associated with clearly preventable causes<sup>2,3,6</sup>, among which maternal conditions occupy a prominent position, mainly hypertensive disorders and syphilis, and fetal conditions, such as complications in the placenta, membranes, umbilical cord, as well as asphyxia.<sup>6</sup> It is noteworthy that these causes have greater potential to be prevented if appropriate care is provided.<sup>7</sup>

From the perspective of identifying preventable causes and determinants of infant and fetal deaths, the Ministry of Health issued the Brazilian 'Portaria' 72, on January 11, 2010, which establishes the obligation of health services, both public and private which are included in the Brazilian National Health System (SUS), to investigate these deaths, to support the adoption of measures that can prevent these events.<sup>8</sup>

A preventable death is a case whose occurrence is directly related to medical intervention and good quality health services. Preventability came to be classified according to various criteria, in order to systematize and grasp the different factors contributing to the occurrence of these deaths, in addition to assess the effectiveness of the health system.<sup>1,4</sup>

In Recife, capital city of Pernambuco, in Northeastern Brazil, a study was conducted within the area covered by the Sanitary District VI, where it was found that neonatal mortality rates (NMRs) in 2006 and 2007 were, respectively, 8.4 and 6.7 per 1,000 live births (LBs), and that perinatal conditions still prevail as the main cause of death (50%).<sup>3</sup>

In Brazil, early fetal and neonatal mortality rates have decreased. Within the period from 2000 to 2012, there was a 9.64% drop in the fetal mortality rate and a 33.6% drop in the early neonatal mortality rate.<sup>3</sup> In the same period, in the state of Pernambuco, the fetal mortality rate decreased by 21.1% and the early neonatal mortality decreased by 41.4%.<sup>9</sup>

Given the increased participation of the early neonatal element in child mortality and the availability of effective interventions capable of reducing fetal and neonatal deaths, it is relevant to investigate perinatal mortality. Thus, this study aims to describe the epidemiological profile classifying perinatal deaths in Pernambuco, in the triennium 2009-2011, according to their preventability.

## METHOD

The study area concerns the state of Pernambuco, Brazil, which has a land area of 98,148 km<sup>2</sup>, and it consists of 185 municipalities. The state, in 2013, had a resident population of 9,208,550 inhabitants, corresponding to a population density of 92.8 inhabitants/km<sup>2</sup>.<sup>10</sup> According to the Pernambuco State Master Plan for Regionalization (PDR), Pernambuco is divided into 12 sanitary regions<sup>11</sup>, which are continuous geographic spaces, with groups of neighboring municipalities, delimited through cultural, economic, and social identities, and shared communication networks and transportation infrastructure.<sup>12</sup>

This is an ecological, descriptive, and cross-sectional study on perinatal mortality in the state of Pernambuco, within the period from 2009 to 2011. The data sources were the Brazilian Live Birth Information System (SINASC) and the Brazilian Mortality Information System (SIM), provided by the Pernambuco State Health Department (SES/PE). The research included information on live births and fetal and early neonatal deaths within the study period.

From the SIM database, we extracted, by using the software *TabWin*, maternal variables (age and educational level) related to pregnancy and childbirth (type of pregnancy, type of delivery, and delivery-related death)

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and the stillborn/newborn infant (sex, weight, and length of pregnancy), according to the objectives proposed. The variables extracted were entered into a secondary database, whose quality was analyzed to check for data consistency and completeness. To resume variables ignored and/or not informed on the SIM, and a deterministic linkage to the SINASC was performed.

For constructing the epidemiological profile, an excellent level of information

concerning the variables was assumed, complying with the parameters proposed by Romero e Cunha<sup>13</sup>, namely: excellent (less than 5% of incompleteness), good (5% to 10%), and regular (10% to 20%).

The perinatal mortality coefficient of Pernambuco and those specific for each Regional Health Management (GERES) were calculated as advised by the Ministry of Health<sup>1</sup>, excluding deaths without the municipality of residence (Formula 1).

$$\text{Perinatal mortality} = \frac{\text{fetal deaths } (\geq 22 \text{ WP or weight } \geq 500) + \text{neonatal deaths (0-6 days of life)}}{\text{live births} + \text{fetal deaths}} \times 100$$

Formula 1. Calculation of the perinatal mortality coefficient

Regarding the causes of death, all deaths were listed by the underlying cause according to the Tenth Review of the International Classification of Diseases (ICD-10).<sup>14</sup> Then, early perinatal and neonatal deaths were classified according to the list of preventable causes of death among children aged below 5 years, through interventions from SUS, categorized into: 1) reducible by (a) vaccine prevention actions, (b) adequate women's care, during pregnancy and childbirth, fetus and newborn infant, (c) appropriate actions of diagnosis and treatment, (d) appropriate actions to promote health, combined to appropriate health care actions; 2) poorly defined causes of death; and 3) other causes (not clearly preventable).<sup>4,15</sup>

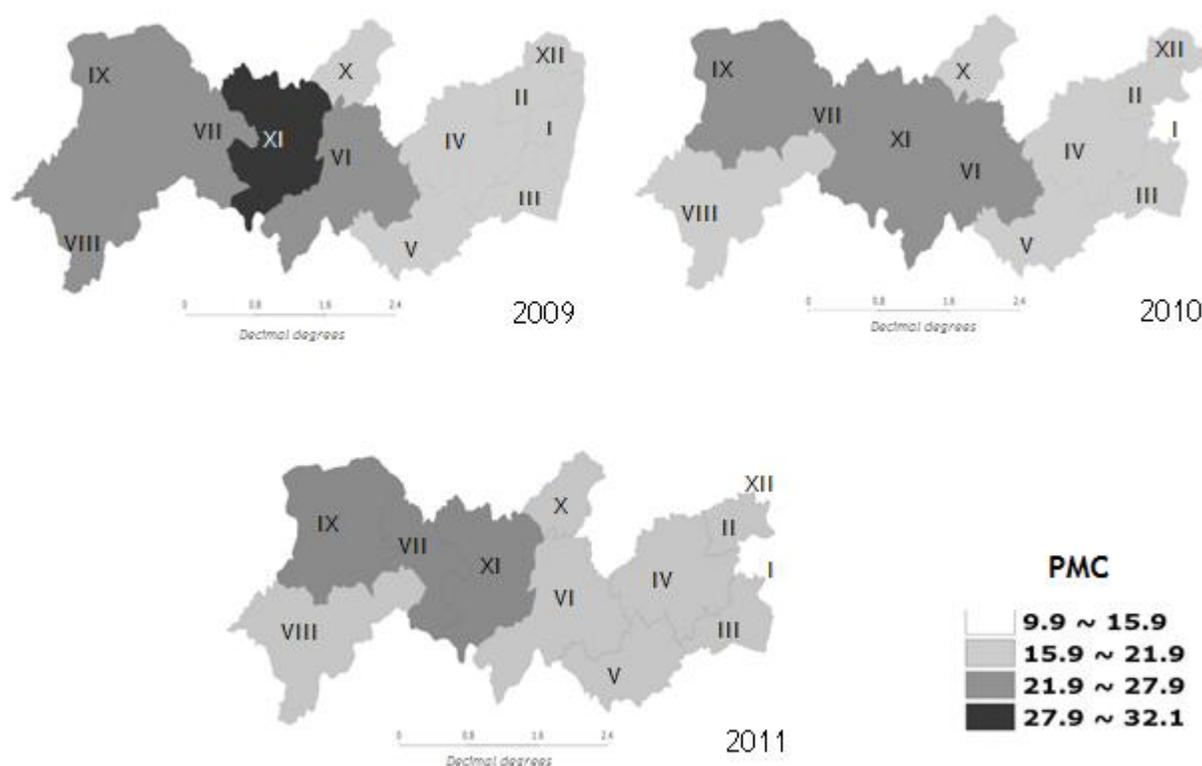
This study was approved by the Research Ethics Committee of the University Hospital "Oswaldo Cruz" (HUOC), under the Opinion 232,946 e the Brazilian Certificate of Submission for Ethical Assessment (CAAE) 12078413.9.0000.5192, in April 2013.

## RESULTS

Within the study period, 8,380 deaths of children under 1 year of age were registered in the SIM. Out of these, 325 records were

excluded due to incompleteness (3.9%), which resulted in 8,055 deaths, 4,595 of them were fetal (57.0%) and 3,460 were early neonatal deaths (43.0%). After analyzing data consistency, two records previously classified as stillbirths were reclassified as early neonatal deaths, because they had a Brazilian statement of live birth (DNV).

By analyzing the coefficient for the triennium (2009-2011), it was noticed that the perinatal mortality rate in Pernambuco was 18.8 deaths/1,000 births. Among the GERES, the XI had the highest rate in the period (27.1/1,000) and the I had the lowest (16.3/1,000) (Figure 1). Regarding evolution, comparing the years 2009 and 2011, there was a 12.9% drop in the state as a whole. For the period 2009-2010, there was a marked reduction in the perinatal mortality coefficient in GERES XI, as well as in GERES VIII, but lower. In the period 2010-2011, there was a reduction in this rate in GERES VI, and the improvements were maintained.



**Figure 1.** Distribution of perinatal mortality coefficients by GERES. Pernambuco, 2009-2011.

Regarding maternal characteristics (Table 1), the highest proportion of perinatal deaths were among mothers aged from 20 to 34 years. The educational level of 57% of them was High School and incomplete Higher Education. There was a marked predominance of single pregnancy and vaginal delivery, but cesarean section still has a significant percentage.

As for the conceptuses, there was strong polarization of deaths in relation to the occurrence period taking birth as a reference.

Thus, a high percentage of deaths are observed before and after childbirth, while the occurrence trans-childbirth is rare. These deaths were mainly among low weight conceptuses, but they were also observed among conceptuses with proper weight and in both cases there was a predominance of boys.

It was found that deaths were more common in pregnancies with less than 37 weeks, but it is worth highlighting a percentage above 20% of conceptuses with gestational ages from 37 to 31 weeks.

**Table 1.** Perinatal deaths according to sex, weight, gestational age, type of pregnancy, type of delivery, maternal age, and maternal education. Pernambuco, 2009-2011.

Related	Variables	n	%
To the mother	<b>Maternal age</b>		
	10 to 19 years	1,676	20.8
	20 to 34 years	4,642	57.6
	≥ 35 years	947	11.8
	Not informed	790	9.8
	<b>Maternal educational level</b>		
	No school education	47	0.6
	Elementary School I (1 <sup>st</sup> to 4 <sup>th</sup> grade)	572	7.1
	Elementary School II (5 <sup>th</sup> to 8 <sup>th</sup> grade)	919	11.4
	High School	2,217	27.5
	Incomplete Higher Education	2,374	29.5
	Complete Higher Education	565	7.0
	Not informed	1,361	16.9
	To pregnancy and childbirth	<b>Type of pregnancy</b>	
Single		7,135	88.6
Double		501	6.2
Triple or more		26	0.3
Not informed		393	4.9
<b>Type of delivery</b>			
Vaginal		5,472	67.9
Cesarean		2,163	26.9
Not informed		420	5.2
<b>Death related to childbirth</b>			
Before		4,127	51.3
During		165	2.0
After		3,222	40.0
Not informed		541	6.7
To the stillborn/newborn infant	<b>Sex</b>		
	Male	4,364	54.2
	Female	3,420	42.5
	Not informed	271	3.3
	<b>Weight</b>		
	Low weight (< 2,500 g)	5,083	63.1
	Proper weight (2,500-3,999 g)	2,101	26.1
	Overweight (≥ 4,000 g)	219	2.7
	Not informed	652	8.1
	<b>Length of pregnancy</b>		
	< 37 weeks	4,983	61.9
	From 37 to 41 weeks	2,275	28.2
	≥ 42 weeks	88	1.1
	Not informed	709	8.8

As for the causes of death according to the ICD-10 (Table 2)<sup>14</sup>, it was identified that those in Chapter XVI, "Certain conditions originating in the perinatal period," accounted for the highest percentage of total deaths, and the predominant causes were asphyxia at birth and intrauterine hypoxia, as well as a percentage greater than 10% of fetal death due to unspecified causes.

Congenital malformations, deformations, and chromosomal abnormalities, corresponding to Chapter XVII of the ICD-10<sup>14</sup>, constituted the second biggest group of primary causes, mainly congenital

malformations not classified elsewhere, followed by cardiac abnormalities, as well as anencephaly and similar malformations.

Differences were observed between the components of perinatal mortality concerning the causes of death. Among fetal deaths, the most frequent cause was asphyxia/hypoxia, followed by fetal death due to unspecified cause and maternal conditions, however, for early neonatal deaths, maternal conditions were the leading cause.

**Table 2.** Number and proportion of perinatal deaths in relation to the ICD-10. Pernambuco, 2009 to 2011.

Chapters and causes in the ICD-10	Fetal		Early neonatal		Perinatal	
	n	%	n	%	n	%
Chapter I - Certain infectious and parasitic diseases (A09, A50)	76	1.7	21	0.6	97	1.2
Congenital syphilis (A50)	76	1.7	18	0.5	94	1.2
Other causes of Chapter I	0	0.0	3	0.1	3	0.0
Chapter XVI - Certain conditions originating in the perinatal period (P00-P96)	4,270	92.9	2,779	80.3	7,049	87.5
Asphyxia at birth and intrauterine hypoxia (P20-P21)	1,064	23.2	294	8.5	1,358	16.9
Fetus and newborn infant affected by maternal conditions, which may be related to the current pregnancy (P00)	740	16.1	390	11.3	1130	14.0
Fetus and newborn infant affected by complications in the placenta, umbilical cord, and membranes (P02)	723	15.7	270	7.8	993	12.3
Fetal death due to unspecified cause (P95)	908	19.8	7	0.2	915	11.4
Fetus and newborn infant affected by maternal complications of pregnancy (P01)	221	4.8	282	8.2	503	6.2
Other conditions originating in the perinatal period (P96)	323	7.0	42	1.2	365	4.5
Respiratory distress of the newborn infant (P22)	0	0.0	324	9.4	324	4.0
Disorders related to short gestation and low birth weight, not classified elsewhere (P07)	11	0.2	287	8.3	298	3.7
Bacterial sepsis of the newborn infant (P36)	0	0.0	209	6.0	209	2.6
Neonatal aspiration syndrome (P24)	0	0.0	143	4.1	143	1.8
Other respiratory conditions originating in the perinatal period (P28)	0	0.0	138	4.0	138	1.7
Fetus and newborn infant affected by other complications of labor and delivery (P03)	99	2.2	33	1.0	132	1.6
Other causes of Chapter XVI	181	3.9	360	10.4	541	6.7
Capítulo XVII - Congenital malformations, deformations, and chromosomal abnormalities (Q00-Q99)	241	5.2	570	16.5	811	10.1
Other congenital malformations not classified elsewhere (Q89)	111	2.4	158	4.6	269	3.3
Other congenital heart malformations (Q24)	18	0.4	117	3.4	135	1.7
Anencephaly and similar malformations (Q00)	56	1.2	73	2.1	129	1.6
Other causes of Chapter XVII	56	1.2	222	6.4	278	3.5
Capítulo XVIII - Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (R09, R63, R95, R98, R99)	0	0.0	44	1.3	44	0.5
Death without care (R98)	0	0.0	25	0.7	25	0.3
Other causes of Chapter XIII	0	0.0	19	0.6	19	0.2
Other causes	3	0.1	39	1.1	42	0.5
Unknown	5	0.1	7	0.2	12	0.1
<b>Total</b>	<b>4,595</b>	<b>100.0</b>	<b>3,460</b>	<b>100.0</b>	<b>8,055</b>	<b>100.0</b>

Out of the perinatal deaths weighing more than 1,500 g (Table 3), 77.4% were deaths from preventable causes. It was found that most of these deaths were regarded as reducible through adequate women's care throughout the gestational process,

complemented by care to the fetus and newborn infant.

It is noteworthy that the ill-defined causes of death and those not clearly identified as avoidable represented together a percentage of 22.6% of the deaths.

**Table 3.** Distribution of perinatal deaths according to the classification of the Brazilian list of causes of preventable deaths through interventions from the Brazilian National Health System in children aged below 5 years. Pernambuco, 2009-2011.

Causes	n	%
1. Preventable causes	3,131	77.4
1.1. Reducible by vaccine prevention actions	0	0.0
1.2. Reducible by adequate women's care, during pregnancy and childbirth, and care for the fetus and newborn infant	3,110	76.9
1.2.1. Reducible by adequate women's care during pregnancy	791	19.6
1.2.2. Reducible by adequate women's care during delivery	1,383	34.2
1.2.3. Reducible by adequate care for the fetus and newborn infant	936	23.1
1.3. Reducible by appropriate actions of diagnosis and treatment	5	0.1
1.4. Reducible by adequate actions to promote health, linked to appropriate health care actions	16	0.4
2. Ill-defined causes of death	171	4.2
3. Other causes (not clearly avoidable)	743	18.4
<b>Total</b>	<b>4,045</b>	<b>100.0</b>

Note: Deaths with weight at birth < 1,500 g or not informed were excluded.

## DISCUSSION

Despite the reduction in perinatal mortality observed in this triennium, the study showed that the rate is still high (18.8/1,000 live births), with a predominance of fetal deaths (57%). In the same period, the states of Paraíba (9.6/1,000 births), Rio Grande do Norte (11.8/1,000 births), Ceará (12.7/1,000 births), and Bahia (14.9/1,000 births) had lower perinatal mortality coefficients.<sup>9</sup>

In Pernambuco, perinatal mortality was not evenly distributed across the twelve GERES. Socioeconomic and cultural differences, as well as unequal access to health services, have contributed to the heterogeneity in the distribution of perinatal mortality in the state.<sup>16</sup> Lower rates observed in GERES I, II, and XII, may be assigned to higher income due to availability of jobs, higher educational level, and, at least partly, to their closeness to the state's capital city, which concentrates the health services of greater complexity and it provides a larger number of beds in intensive care units (UCIs). A different situation occurs in GERES VI, VII, IX, and XI, located in the 'Sertão' region, where the higher rates may reflect worse socioeconomic status and availability of medium and high complexity services.

In addition to the high mortality rate in these regions, underreporting of deaths is also noticed, because there are burials in clandestine cemeteries, no death certificate is required, and due to the regional culture of regarding a stillborn infant as a newborn infant.<sup>17</sup>

As for maternal status in terms of age and educational level, some studies report that educational level and age group do not directly influence on perinatal mortality, but they are related to lack of primary care and low socioeconomic status, situations which

negatively affect maternal and child health.<sup>18,19</sup>

Regarding the aspects involved in pregnancy and childbirth, this study showed a higher percentage of deaths preceding delivery, since the mortality rate of the fetal component was higher than the early neonatal one. It is noteworthy that many of these deaths resulted from complications in pregnancy and maternal diseases<sup>20</sup>, something which requires attention by reflecting the quality of prenatal care.

Concerning the variables related to stillborn/newborn infants, identifying a higher proportion of perinatal deaths among conceptuses with low birth weight and premature babies is justified because these are factors with a high impact on child survival.<sup>7,18,19</sup> These characteristics also explain the higher mortality among boys, since their lung maturity is later than among girls, thus increasing respiratory issues, one of the main causes of perinatal mortality.<sup>16</sup> Among the neonatal variables, it is worth mentioning a significant proportion of deaths among fetuses showing proper weight, emphasizing the preventability of such deaths, regarded as sentinel events.<sup>7</sup>

It is worth highlighting that weight and length of pregnancy may not be regarded as risk factors separately, but rather as mediators along with other factors such as maternal education, socioeconomic status, biological features, maternal lifestyle, access to and quality of care during pregnancy.<sup>18</sup>

The cause of death from conditions originating in the perinatal period had the highest proportion, a finding similar to that of a study conducted in Rio de Janeiro city<sup>6</sup> and those of other studies on neonatal death.<sup>6,21,22</sup>

The influence of maternal causes on perinatal deaths allows discussing the role of primary care and quality of life among this population. Hypertensive and bleeding

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disorders (placental detachment and placenta previa) still remain as prevalent causes that may influence, alone or associated, on such mortality, as premature placental detachment usually corresponds to a complication of hypertensive syndromes.<sup>23</sup>

It is worth highlighting that the occurrence of deaths from congenital syphilis is inadmissible, and this condition is regarded as a sentinel event in terms of quality of services, due to ease of maternal diagnosis and low cost of treatment. This issue is a result of lack or low quality of prenatal care, and also neglect of health professionals regarding the disease.<sup>23</sup>

The low percentage of congenital malformations, deformations, and chromosomal abnormalities, when compared to the total number of perinatal deaths, deserves attention because the study was conducted in a developing country. In developed countries, these conditions show a proportionally greater amount of perinatal deaths, due to the low percentage of deaths from preventable causes.<sup>24</sup>

The high rate of *fetal death from unspecified cause* found is frequent, also in other studies.<sup>5,23</sup> Although there are some difficulties, it is crucial that these deaths are evaluated in order to identify the etiology and adopt preventive measures. It is recommended, in addition to the autopsy, to investigate such deaths, something which allows us to explain the circumstances that may have led to this outcome.

In the classification of potential preventability, in Pernambuco, deaths from preventable causes call into question the quality of prenatal, obstetric, and neonatal care. A study on the magnitude of neonatal deaths from preventable causes that took place in an ICU in Teresina, Piauí, Brazil, found that 72% of the deaths could have been prevented through appropriate care during pregnancy.<sup>22</sup> In turn, in the state of Pernambuco, within the period from 2002 to 2008, most perinatal deaths could be prevented if newborn infants and women, during pregnancy and childbirth, were provided with adequate care in this proportional order.<sup>3</sup>

In Piripiri, Piauí, Brazil, in 2008, among perinatal deaths, there was a predominance of deaths classified as having an antepartum cause (38.1%), followed by asphyxia (28.6%), related to lack or inadequate prenatal care and failure in obstetric care or neonatal resuscitation, respectively.<sup>2</sup> In turn, in a location in Rio de Janeiro city, there was a

prevalence of antepartum cause (56.0%), followed by immaturity (14.8%).<sup>6</sup>

The analysis of preventability of deaths allowed us to determine that potential failures related to the occurrence of deaths are concentrated in care provided to women during childbirth, something which explains the high percentage of asphyxia/hypoxia.<sup>7,25</sup>

The adoption of primary and effective measures, such as structuring hospitals, sufficient human resources, and qualified staff, adequate monitoring of labor and the fetus, use of the instruments available for this monitoring, humanization of care, adopting the best practices for a healthy birth, and early identification of signs of neonatal conditions could certainly reduce the occurrence of perinatal deaths resulting from failures in obstetric and neonatal management.<sup>2,5,7</sup>

## CONCLUSION

In this study, we identified favorable birth conditions, set by the high frequency of mothers with good educational level, gestational age was greater than 37 weeks, births were single and vaginal, conceptuses weighed more than 1,500 g at birth. Despite these features of high preventability of deaths, high rates of care failure concerning the mother, pregnancy, childbirth, and the conceptus were observed.

As a strategy to reduce perinatal mortality, we highlight strengthening of the surveillance of fetal and child death, as well as structuring of the fetal and child death prevention committees. The surveillance, working along with health care, comprises the procedures for notification, research, discussion, and classification of preventability of these deaths, in order to identify potential problems at the various levels of care, propose measures to improve the quality of care, and encourage other actions aimed at this area. The committees can monitor compliance with the recommendations made by the technical groups for discussion of deaths. The work of this group enables providing the epidemiological databases with information, whose analysis contributes to plan and execute health actions aimed at reducing perinatal mortality.

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