



Health actions in primary care to reduce child mortality

Ações em saúde na atenção básica para redução da mortalidade infantil

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Objective: to identify the health actions aimed at reducing child mortality in primary care in a county of São Paulo, Brazil. **Methods:** an exploratory study with a quantitative approach. 54 health professionals (nurses, doctors and community health agents) participated in this study in three health units selected. **Results:** most participants reported to develop actions to encourage breast-feeding; of the children assisted, 59.3% had their vaccination updated; 72.2% of doctors and nurses confirmed that the children have at least one appointment in their first week of life. For planning in health care, 51.9% reported that sometimes there is health team participation in the meetings. **Conclusion:** several actions correspond to those recommended by the child-care public policies. However, there are weaknesses pointing at the need to enhance the vision of the health professionals for greater planning, adapting to the needs of the child population in order to reduce the deaths. **Descriptors:** Infant Mortality; Quality of Health Care; Pediatric Nursing.

Objetivo: identificar as ações em saúde que visam à redução da mortalidade infantil na atenção básica em um município do interior paulista. **Métodos:** estudo exploratório, com abordagem quantitativa. Participaram 54 profissionais (enfermeiros, médicos e agentes comunitários de saúde) de três unidades de saúde selecionadas. **Resultados:** a maioria dos participantes afirmou desenvolver ações de incentivo ao aleitamento materno; para 59,3%, as crianças atendidas estão com a vacinação em dia; 72,2% dos médicos e enfermeiros confirmaram que a criança recebe ao menos uma consulta na sua primeira semana de vida. Para planejamento das ações em saúde, 51,9% afirmam que às vezes há participação da equipe nas reuniões. **Conclusão:** várias ações correspondem ao preconizado pelas políticas públicas de atenção à criança. Entretanto, existem fragilidades apontando a necessidade de ampliar a visão dos profissionais de saúde para maior planejamento, adequando-se às necessidades da população infantil visando à redução dos óbitos. **Descritores:** Mortalidade Infantil; Qualidade da Assistência à Saúde; Enfermagem Pediátrica.

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Introduction

In recent decades, there has been a breakthrough in the organization of health services in Brazil, which directly affected maternal and child health. Such transformations influenced on child health indicators in a positive way; the coefficients of child mortality showed a significant reduction, the access to health services and to the health interventions directed at this population, were expanded, regional inequalities have been reduced and the duration of breastfeeding has increased substantially⁽¹⁾.

Even with the advances achieved through the organization of health services and public policies to protect the health of children, reducing the coefficient of child mortality is still a major challenge in the country for managers, health professionals and society, once even presenting an important decrease over the past decade, the rates are still high and there is a stagnation of neonatal mortality⁽²⁾. The situation is aggravated by recognizing that most of the early deaths can be prevented by timely access to resolute and qualified health services⁽²⁾

As the coefficient of child mortality is directly related to living conditions, including sanitation, nutrition, immunization and quality of care provided to the child, to discuss the average value in a country the size and contrasts of Brazil may mask important regional variations. Thus, the analysis should be disaggregated at least according to geographical regions, with the highest values found in the northeast and the lowest in the South and Southeast regions⁽¹⁾.

For the state of São Paulo, data from the Interagency Network of Information for Health showed fall; in 2000, the child mortality rate was 17.3 deaths/1000 born alive. In the year 2009 it was 12.4 deaths/1000 born alive in 2010 and 2011, the child mortality rate accounted for 12.0 and 11.6 deaths/1,000 born alive, respectively. Regarding the early neonatal mortality rate, the data also showed

reduction during this period. In 2000, the rate was 8.9 deaths/1000 born alive, in 2009 it was 6.1, in 2011 the rate was 5.7 deaths/1,000 born alive⁽³⁾.

Data from the County Health Department of Ribeirão Preto, Sao Paulo, Brazil, show this reduction in the time series of child mortality in dwellers in that county. In 2005 the child mortality coefficient was 10.93 deaths/1000 born alive, in 2009 it was 8.65 deaths/1,000 born alive. For 2010 and 2011, the figures were 9.4 and 9.75 deaths/1,000 born alive, respectively. In 2012, the child mortality coefficient decreased, accounting for 8.6 deaths/1,000 born alive, and in 2013 there was an increase, with a record of 9.8 death/1,000 born alive⁽⁴⁾, not reaching one of the targets of the Health County Plan for the period 2010/2013, which aimed at reducing child mortality to 8.2 deaths/1,000 born alive⁽⁵⁾. Concerning the Early Neonatal Mortality coefficients, the county presented variations over time. In the year 2000 it was 8.48 deaths/1,000 born alive; in 2009, 6.5 deaths/1,000 born alive; in 2011 it was 6.0, in 2012 it was 5.0 deaths/1,000 born alive showing decrease over time⁽⁴⁾.

A study carried out in 2012 and aimed at analyzing the profile of child mortality of dwellers in Ribeirão Preto, Sao Paulo, between 2009 and 2011, found that in that period, there were 224 deaths, 58 (25.9%) of those classified as preventable. Children less than one week old, low weight at birth and gestational age below 30 weeks represented most deaths; Prenatal was considered insufficient for the vast majority of cases⁽⁶⁾. The data point to the need for alternatives that allow more and more quality care to this clientele.

The search for information leading to the analysis of the health situation and the actions that are being developed provides visibility to where the operation is to be carried out more effectively⁽⁷⁾. A study reveals that even when the routine and the number of prenatal appointments were adequate,

there were avoidable deaths, reaffirming the need to review the actions being carried out in primary care⁽⁸⁾.

The reduction of child mortality, especially neonatal, is linked to the recognition of their importance by the managers of the health system. Providing visibility to this situation constitutes a major step aimed at taking decisions. In addition, the health actions contribute to the improvement of living conditions and health of the child, with an impact in reducing child mortality⁽¹⁾.

Facing that and considering the situation of child mortality in Brazil, in the state of São Paulo and specifically in the county of Ribeirão Preto, SP, associating the importance of the neonatal component in this rate to perinatal care conditions, the need to conduct a study aimed at assessing the care of children in Ribeirão Preto was noticed, from actions to reduce child mortality, from the perspective of primary care health professionals.

From the identification of the actions reported by health professionals directly involved in the assistance to children under one year, it will be possible to keep those whose answers are being beneficial to this clientele, as well as to identify weaknesses that are liable to intervention, transposing the results to similar situations and helping their regional and/or national visibility. Thus, the objective of this study was to identify the health actions aimed at reducing child mortality, pointed out by health care professionals who treat newborns and children under one year.

Methods

A cross-sectional study with a quantitative approach, developed in Ribeirão Preto, medium-sized county in the state of São Paulo, a regional and national reference for health care. The county is organized into five health districts, each having a county Basic Health Unit and several Basic Health Units, with primary care (medical, dental and nursing fields) to the population

of their area. In addition, the county Basic Health Units assist specialties and first aid service.

The choice of fields for data collection was based on the results of a study that identified a higher number of deaths that occurred between 2009 and 2011 in one of the Health Districts, indicating the need to seek for alternatives that enable increasingly skilled assistance to this clientele⁽⁶⁾. Within this district, eight health units are maternal and child care referral; three health units that had more deaths in that period were included in this study in the research field⁽⁶⁾.

Nurses, doctors (gynecologists and pediatricians) and community health agents of the selected health units participated in this study, directly involved with attention to children under one year old. Two health units have a Family Health Team. In those, doctors, nurses and community health agents were interviewed. The other Health Unit works as a Health Center School, attending the traditional care model, doctors and nurses participated in that unit. The three health units have a total of 14 pediatricians and gynecologists, nine nurses and 41 community health agents, totaling 64 potential study participants.

Data were collected between September and December 2014, at their work site, after prior contact and scheduling. Self applied semi-structured scripts, developed by the authors, were used. In the script, there is similarity of certain actions undertaken by doctors, nurses and community health agents; however, there are other care actions that belong only to physicians and professional nurses. In this sense, a script for doctors and nurses was used and another one for community health agent. Both based on the Likert scale, assigning values: 1 (always), 2 (sometimes), 3 (never), 4 (do not know) and 5 (not applicable).

The scripts contain affirmations, adapted from technical documents of the Health Department and of the Health Unit, both related to primary care⁽⁹⁻¹⁰⁾, dedicated to the care of the pregnant woman, the

postpartum, newborn and child under one year. Both scripts were tested beforehand as to the response time and suitability, understanding and clarity of statements and responses by three professionals, one from each professional category. There was no need for changes in the initial planning. It is highlighted that at that time, the results for the care of newborns and children under one year and the Health Unit will be presented.

Data had double entries in the spreadsheet subsequently validated. Then they were processed in Statistical Package for the Social Sciences, version 22. The variables contained in the script that are related to the actions undertaken in primary care to reduce child mortality were processed by category: Attention to newborns and children up to one year (vaccination, monitoring of children under risk, child consultation, investigation of deaths and prevalence of breastfeeding) and health units (team meetings and continuing education), proceeding to the analysis by descriptive statistics.

The study complied with the formal requirements contained in the national and international regulatory standards for research involving human beings.

Results

Of the 64 health professionals contacted, 54 (84.4%) agreed to participate; of those, 10 (18.5%) were doctors (gynecologists and pediatricians), eight (14.8%) nurses and 36 (66.7%) Health Community Agents. The majority (46; 85.2%) was female.

Within the medical professional category, half have specialty in gynecology; the other in pediatrics. Regarding the time of work in the health units studied, most (70.4%) has been operating for ten years or more. In the nurse and physician Professional categories, 44.4% of participants did not have another job before

working in the health units. Of these, 44.4% work in Basic Health Unit, 44.4% in other health services, such as private hospitals and only one participant (11.1%) worked both in Basic Health Unit, as well as in Basic Health Unit Program with Community Health Agents and Family Health Unit.

Attention to newborns and children up to one year

When approached about the actions of newborns and children under one year and that have the potential to reduce child mortality, the majority (79.6%) of the participants reported that the records of children up to one year, the coverage area are updated; 9.3% answered sometimes to the same statement, while 11.1% could not answer.

Given the importance of Child Health Records to monitor the growth and development of children, it was found that 80.6% of the participants always checked it; 10 (55.6%) nurses and doctors always register during the care of the child; six (33.3%) sometimes and two (11.1%) did not know what to answer.

Regarding monitoring the growth and development of children up to one year by doctors and nurses, 16 (89.0%) professionals reported that there has always been monitoring; one (5.5%) reported sometimes and one (5.5%) did not know what to answer and, when asked, reported that due to his specialty (gynecologist), had no such information.

Table 1 showed that most professionals always perform monitoring of children at risk and/or vulnerability. Regarding appointments in the first week of life, the newborn always has at least one appointment. Regarding the investigation of deaths, less than half of the nurses and doctors always carry out such research; it is worth highlighting that part of the health professionals did not know how to answer.

Table 1 - Care to newborns and children up to one year provided by community health agents, nurses and doctors in health units

Actions	Community Health Agent (n = 36)		Nurses and Physicians (n = 18)	
	n(%)	IC95%	n(%)	IC95%
Updated vaccination				
Always	24 (66.7)	49.0-81.4	8 (44.4)	21.5-69.2
Sometimes	12 (33.3)	18.6-51.0	8 (44.4)	21.5-69.2
Do not know	-	-	2 (11.1)	1.4-34.7
Monitoring of children under risk				
Always	32 (88.9)	73.9-96.9	12 (66.7)	41.0-86.7
Sometimes	4 (11.1)	3.1-26.1	4 (22.2)	6.4-47.6
Do not know	-	-	2 (11.1)	1.4-34.7
Appointment in the 1st week of life*				
Always	-	-	13 (72.2)	46.5-90.3
Sometimes	-	-	2 (11.1)	1.4-34.7
Do not know	-	-	3 (16.6)	3.6-41.4
Two appointments in the 1st month life*				
Always	-	-	12 (66.7)	41.0-86.7
Sometimes	-	-	2 (11.1)	1.4-34.7
Do not know	-	-	4 (22.2)	6.4-47.6
Death investigation*				
Always	-	-	7 (38.9)	17.3-64.3
Sometimes	-	-	3 (16.7)	3.6-41.4
Never	-	-	1 (5.6)	0.1-27.3
Do not know	-	-	5 (27.8)	9.7-53.5
Not applicable	-	-	2 (11.1)	1.4-34.7

*Specific items of the script for nurses and doctors

Regarding home visits to newborns, made by a doctor or a nurse in the first week of life, eight (44.4%) participants answered sometimes; three (16.7%) never carry out; five (27.8%) reported not knowing and two (11.1%) have defined the item as “not applicable”. When asked, some participants reported that there is only home visit of the nurse or doctor in an emergency situation.

The prevalence of maternal breastfeeding

is reinforced both by nurses and doctors and by community health agents. Table 2 shows that most of the study participants check such prevalence, either during the appointment or home visit.

Table 2 - Checking the prevalence of maternal breastfeeding in the first year of life by community health agents, nurses and doctors

Prevalence of Breastfeeding	Community Health Agent (n = 36)		Nurses and physicians (n = 18)	
	n(%)	IC95%	n(%)	IC95%
At 30 days of life				
Always	33 (91.7)	77.5-98.2	11 (61.1)	35.7-82.7
Sometimes	3 (8.3)	1.8-22.5	1 (5.5)	0.1-27.3
Never	-	-	1 (5.5)	0.1-27.3
Do not know	-	-	4 (22.2)	6.4-47.6
Not applicable	-	-	1 (5.5)	0.1-27.3
At six months of life				
Always	32 (88.9)	73.9-96.9	10 (55.6)	30.8-78.5
Sometimes	4 (11.1)	3.1-26.1	3 (16.7)	3.6-41.4
Never	-	-	1 (5.5)	0.1-27.3
Do not know	-	-	3 (16.7)	3.6-41.4
Not applicable	-	-	1 (5.5)	0.1-27.3
At 12 months of life				
Always	29 (80.6)	64.0-91.8	7 (38.9)	17.3-64.3
Sometimes	7 (19.4)	8.2-36.0	6 (33.3)	13.3-59.0
Never	-	-	1 (5.5)	0.1-27.3
Do not know	-	-	3 (16.7)	3.6-41.4
Not applicable	-	-	1 (5.5)	0.1-27.3

Health unity

Regarding the team meetings to discuss the care plan and evaluate the actions developed, most participants reported that the Health Unit always has meetings for that purpose, as shown in Table 3.

Table 3 - Actions of community health agents, nurses and doctors in health units

Actions	Community Health Agent (n = 36)		Nurses and doctors (n = 18)	
	IC95%	n(%)	IC95%	IC95%
Team meetings				
Always	29 (80.6)	64.0-91.8	7 (38.9)	17.3-64.3
Sometimes	6 (16.6)	6.4-32.8	10 (55.5)	30.8-78.5
Do not know	-	-	1 (5.5)	0.1-27.3
Did not answer	1 (2.8)	0.1-14.5	-	-
Permanent Education actions				
Always	21 (58.3)	40.8-74.5	6 (33.3)	13.3-59.0
Sometimes	13 (36.1)	20.8-53.8	11 (61.1)	35.7-82.7
Never	1 (2.8)	0.1-14.5	-	-
Do not know	-	-	1 (5.5)	0.1-27.3
Did not answer	1 (2.8)	0.1-14.5	-	-
Team participation in continuing education				
Always	17 (47.2)	30.4-64.5	5 (27.8)	9.7-53.5
Sometimes	17 (47.2)	30.4-64.5	11 (61.1)	35.7-82.7
Never	1 (2.8)	0.1-14.5	-	-
Do not know	-	-	1 (5.5)	0.1-27.3
Not applicable	-	-	1 (5.5)	0.1-27.3
Did not answer	1 (2.8)	0.1-14.5	-	-

Concerning the actions of community health agents, 11 (61.1%) nurses and doctors reported they are always planned, managed and evaluated by the nurse together with the team, two (11.1%) reported sometimes, two (11.1%) did not know how to answer and three (16.7%) reported not applicable. Regarding the continuing education of health professionals, most participants reported that there have always been permanent education actions. However, they reported that, sometimes, there is the participation of the team.

Discussion

Measures of promotion, protection and recovering of health in the early years of childhood are seen as key to reducing mortality and occurrence of proper child growth. Among them, there are the actions aimed at promoting healthy birth, growth monitoring, development, immunization, breastfeeding and

healthy eating, with a priority focus for monitoring the health of children under greater risk⁽²⁾.

In order to reduce mortality and provide adequate child growth, monitoring of growth and development carried out by health professionals and most of them reported that this action provides the child with the necessary evaluations in the first years of life, allowing the same to have access to comprehensive care and be referred to another service when needed^(2,11).

As an instrument for monitoring the growth and development of children, the Child Health Record should always be registered in all appointments, so that there is a complete history of their health⁽¹²⁾. Most doctors and nurses reported to always assess and register in the child's record in all situations of search for care, which differs from other studies⁽¹³⁻¹⁴⁾, which also demonstrate that the register of the in the Child Health Record is unsatisfactory by part of the health professionals, who often prioritize only immunization and development growth charts. The authors also point out the importance of training these professionals for proper registration in this instrument⁽¹³⁻¹⁴⁾.

The Health Department recommends the "First Week: integral health", aiming at carrying out a wider approach of the mother and the baby one week after birth, including actions to encourage breastfeeding, vaccination, carrying out the Neonatal heel prick and evaluation risks related to the health of the baby. For such, a home visit and the first appointment are recommended in the first week of life of the newborn^(2,12). However, it is noticed in this study that in the home visit, made by a nurse or a doctor in the first week of life of the newborn occurs only sometimes, according to some of the participants, when there is need for special attention.

Considered as an important tool enabling closer professional with the child's family, the home visits make the understanding of the process health disease and its determinants easy⁽²⁾. Regarding the appointment in the first week of life, most professionals

reported that newborns always have at least one appointment in their first week of life, meeting the recommendation of the Health Department⁽¹¹⁾ and this study⁽¹⁵⁾.

Breastfeeding has been a great ally to reduce child mortality especially in children under one year and for the achievement of the fourth Millennium Development Goal. There are several benefits both for the mother, as well as for the baby, scientifically proven⁽¹⁶⁾. Therefore, the importance of addressing this issue during home visits and appointments has been highlighted, when actions of incentive of breastfeeding are taken, which are of utmost importance to increase prevalence and motivation of breastfeeding⁽¹⁶⁾. A positive response was obtained as to this issue, since most professionals reported that such actions are always taken, and its prevalence is observed at 30 days and six months as exclusive food for the baby, and also at 12 months when other kind of foods were already included in the child's diet.

The deaths configured as a strategy to reduce child mortality, since the causes are investigated, classifying them in preventable and not preventable. When preventable, their cause is identified in order to prevent other related deaths. In this study, 38.9% of physicians and professional nurses reported that the deaths of children assisted by the health unit are always investigated. However, 27.8% could not provide such information. A study conducted in the state of Bahia stresses the need for training of health team members to focus their attention on the deaths of children under one year, with the purpose of improving the quality of assistance for maternal and child health, triggering the reduction of child mortality⁽¹⁷⁾.

Among the aspects that can influence in the health of children, are the risk factors for their healthy growth and development. These can incur before, during and after birth and interfere in the health and development of the child⁽¹¹⁾. Most professionals demonstrated that children in situations of risk or vulnerability are always assisted by the health unit, opposed to a study⁽¹⁸⁾ that shows that there are still

difficulties in the supervision of children under risk, and the need for incessant monitoring of this population by the health unit team.

The situation of vulnerability are as follows: children who live in risk areas, with the weight at birth under 2,500 gr, who presented prematurity (less than 37 weeks of gestation), Apgar under seven in the fifth minute, teenage mothers, children with a history of hospitalization, family history of death of children under five years and mothers with little education, children with malnutrition, there are still other situations which represent vulnerability to the children, such as twin pregnancy, lack of breastfeeding, lack of prenatal care, vaccination out of date, among other situations^(2,11).

Given the importance of approaching signs of risk/danger to mothers who take children for care in the primary care unit the present study found that 66.7% of nurses and doctors always have such approach, establishing priority assistance to those situations.

Aspects of the organization of health units were brought in this study, once this may contribute to, or forsake, the actions for growth and development of child health, aiming at reducing child mortality.

Regarding the professionals' participation in team meetings and continuing education, it was evident that there was little interest and involvement in these activities, and 30.8% and 35.7% of doctors and nurses, reported they sometimes participated in activities such as meetings for the planning of team actions in continuing education, respectively, not in accordance with the document of the Brazilian Health Department⁽¹⁰⁾ and corroborating with this study⁽¹⁹⁾.

Conclusion

The results obtained from this study indicate that multiple actions match what the recommendations of the official documents of the Health Department, as well as by a research aimed at child care. However, there are still weaknesses, indicating the need to

widen the health professionals' vision for the planning of these actions, adapting to the needs of mothers and children assisted in the health units investigated.

Professionals report that they monitor the growth and development of the children, registering in the Child Health Record, checking the immunization schedule, and identifying and monitoring children under risk and providing a complete approach of the child, under the perspective of the diseases prevalent in this population. However, home visits made by nurse and / or physician to children in the first week of life only happen when there are specific needs.

Despite the various actions taken by health professionals here described, many of them may seem independent; that is, they raise the non integration of all health unit team. They are actions directed to the child and do not involve the gynecologist, as reported by one of the participants; or they are actions turned to the pregnant and that do not involve the pediatrician. However, it should be highlighted that they seem to be isolated, but they are actions that impact, directly or indirectly, in the health of the child. Hence the importance of having all the health professionals feeling involved and committed with the care of the child, even before his birth, in order to reduce deaths.

It is concluded that identifying the actions in primary healthcare represents an important tool in reducing child mortality, especially in children under one year, once it is understood that such actions allow the provision of continuous and comprehensive care for maternal and child health. The need to strengthen and adapt actions, which do not comply with what is recommended in the public policies of health turned to this population is emphasized, aiming at meeting the specific needs of each woman and child who seek, at the health unit, assistance of quality and, therefore, minimize occurrences that result in early child deaths, which are potentially preventable.

Collaborations

Careti CM and Furtado MCC contributed to the design, collection, analysis and interpretation of data, critical revision of the final writing of the article. Barreto JC contributed to data collection. Vicente JB and Lima PR contributed to the relevant critical revision and final approval of the version to be published.

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