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Death surveillance as an indicator of the quality of health care for women and children

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Abstract *The study aimed to evaluate the implementation of a regional death surveillance network, reflecting on challenges and potentialities of performance as observatory of violence against women. The research involved nine municipalities of a health region set at the Zona da Mata, Minas Gerais, Brazil. We followed the meetings of the regional death surveillance committee and conducted semi-structured interviews with professional members of the committee and municipal health managers. Furthermore, we analyzed information concerning investigations conducted and, in one municipality, we analyzed the notifications of deaths and cases of violence against women. The results point to some difficulties: lack of recognition of the death surveillance activity; work overload; failure in communication between institutions and poor resources, infrastructure and professional training. There were also improvements, namely: greater interaction between municipalities; increased investigations and greater awareness of the importance of death surveillance among workers. We identified cases of domestic, obstetric and institutional violence through the investigation of deaths. The experience as a regional committee reinforces the strategy of strengthening death surveillance and the network of care for women in situation of violence.*

Key words *Interview, Information systems, Health Surveillance*

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Introduction

In Brazil, only ten years into the enactment of the 1988 Constitution, more effective actions in the field of women's health began to be implemented, but were focused on prenatal care, delivery and births. As of 2004, the National Comprehensive Health Care Policy recognized the gaps within public policies with regard to women sexual and reproductive health. The Ministry of Health and the Special Secretariat for Women's Policies are developing joint actions, with emphasis on: Pact for Reducing Maternal and Neonatal Mortality; National Policy on Sexual and Reproductive Rights; standardization of humanized care for legal abortion; compulsory notification in the health services of cases of violence; emergency contraception; addressing the feminization of sexually transmitted diseases and AIDS, and specifically-targeted policies for the health care of lesbian and women of African descent.

We also highlight the National Health Promotion Policy (PNPS), published in 2006, which, among other issues, encourages intersectoral actions seeking partnerships that foster the comprehensive development of health promotion actions; strengthening of social participation, which is fundamental in achieving health promotion outcomes, especially equity and individual and community empowerment; promoting changes in the organizational culture with a view to adopting horizontal management practices and establishing "networks of commitment and co-responsibility for the quality of life of the population in which all are participants in health care"[1].

One of the specific actions that constitute PNPS is the "Prevention of violence and fostering peace culture", which includes, among other objectives, the expanded network for the prevention of violence and health promotion; sensitization and training of health managers and professionals in the identification and adequate referral of situations of intrafamily and sexual violence; implementation of the report card for interpersonal violence and monitoring and evaluating the development of State and Municipal Plans for Violence Prevention through the collection, systematization, analysis and dissemination of information[1].

Thus, in addition to compulsory notification, an entire information system on violence, together with training strategies for health professionals, involve health promotion. As of 2010, domestic violence, sexual violence and other forms of violence have become part of the national list of diseases requiring compulsory notification[2], revealing an effort to integrate violence surveillance into the national Health Surveillance System, giving it the same priority.

In 2014, maternal and child deaths are included in the list of problems requiring compulsory notification, with the enactment of Ordinance Nº 1.271[3], also representing the effort to give visibility to these events. The obligatory nature of surveillance of these events by municipalities, defined by Ordinance Nº 1.399/1999[4], is a consequence of initiatives to operationalize women and children rights and achieves international agreement with the Millennium Development Goals (MDGs) in 2000. It is recognized that maternal and child deaths determinants reflect important social inequalities, such as income, education, sanitation and timely access to quality health care[5]. Consequently, several deaths are avoidable, meaning that they are preventable by timely actions and health systems[6]. On the other hand, fetal deaths did not receive the same attention. In Brazil and in the world, there were few investments in actions that could affect avoidability or even give greater visibility to this event that remains neglected[7,8].

In Brazil, the operationalization of maternal and child death surveillance has gained specific place with the creation of prevention committees. These bodies are true spaces of social control and management support and are today essential to reduce these events through the knowledge of their magnitude and determinants and proposed actions to qualify health care. Several municipalities, mainly capitals, have successful experiences. The State of São Paulo was the leader in the establishment of the first Maternal Death Study Committees in Brazil in 1988, which, in 1995, became part of the State Maternal Death Epidemiological Surveillance System. In that State, the Maternal Mortality Ratio (MMR) fell from values above 140 in the early 1960s to around 50 in the 1980s. Subsequently, throughout the 1990s and early 2000s, this indicator showed a slower decline; however, in any period, it was lower than the coefficients for Brazil. The time analysis of this indicator also reveals the influence of the death surveillance action from the increased detection of maternal deaths from 1996[9].

With regard to child mortality, the first initiatives to implement committees for the investigation of these events are from the mid-1990s, and the State of São Paulo is again the leader, with the establishment of the first Regional Committee for the Investigation of Child Mortality, in 1999[10].

Ciência & Saúde Coletiva, 22(10):3457-3465, 2017

IBGE data showed that child mortality in Brazil dropped from 69.1% in 1980 to 13.8% in 2015, a fall of 80.0%[11,12]. Despite advances, however, the MDG targets for maternal mortality (35 deaths/100 thousand LB) and child mortality (15.7 deaths/1,000 LB) by 2015 were only achieved for the latter, with Brazil achieving 54.6 maternal deaths/100 thousand LB and 13.82 child deaths/1,000 LB[12].

Another important aspect to be observed in relation to the characteristics of maternal, child and fetal deaths relates to their avoidability. Research and analysis of data shown by mortality committees as well as by health services have shown that, despite the drop of mortality rates, especially in the post-neonatal component (in the case of child deaths), as shown previously, most continue to occur due to causes that would be avoidable by interventions of the health services or by health promotion actions, as is the case of the deaths associated with domestic, obstetric and institutional violence. In addition, the high number of deaths which underlying cause has been poorly defined contributes to data concealment, hiding avoidable cases, including those associated with domestic, obstetric and institutional violence[13,14].

Thus, insofar as Health Surveillance invests in actions related to non-communicable diseases and problems and health promotion, it is increasingly close to the commitment to combat violence against women and children, radically rooting the concept of health proposed at the Eighth National Health Conference. The complexity of the concept of health notion requires the approximation and dialogue between agencies and institutions such as the legal, educational and social assistance system in the interface with health, especially in the case of violence. One of the ways of mediating a dialogue between the various levels involved is through the information generated through the notification of cases.

However, despite the undeniable advances, Brazilian heterogeneity produces and maintains marked differences in the indicators between and among regions, states and municipalities. Still, with regard to municipal committees, small and medium municipalities face challenges for their constitution and maintenance. The Audit Report of the Court of Accounts (TCU), whose theme "Monitoring and Prevention of Maternal Mortality" revealed that committees are not operating in a number of States (24 officially deployed, of which 14 were active) and most Brazilian municipalities. Paraná was the best-structured state in terms of organization of committees, with 22 regional committees and 160 municipal committees, totaling 399 municipalities[15].

In the municipality of Viçosa-MG, the Municipal Committee for the Prevention of Maternal, Fetal, and Child Deaths (CMPOMFI) has been working since 2004 in coordination with the committees of the two hospitals in the municipality, aligning itself with the priorities of the Strategic Agenda of the Secretariat of Health Surveillance of the Ministry of Health and the Health Surveillance Strengthening Program of the State Health Secretariat of Minas Gerais (SES-MG). Since it is the seat of the health region, the municipality of Viçosa is the reference city in maternity and medium and high complexity actions; thus, the activities related to the prevention of mother and child deaths in the municipality end up affecting the other eight municipalities Therefore, in 2014, the Committee for the Prevention of Maternal, Fetal, and Child Death of the Viçosa Health Region (CPOMFI-Viçosa Health Region) was proposed, consisting of the nine municipalities of this region, all of which are small and medium-sized. The CPOMFI-Viçosa Health Region aims to provide agility to death surveillance by providing investigations and case discussions, giving visibility to identified problems and seeking solutions for municipalities with the organization of the health care network and improved information. In addition to the specific actions related to the events (maternal, fetal and child deaths), the CPOMFI-Viçosa Health Region activities also aim to monitor the death as a late sentinel event of domestic violence against women and children, producing information for the orientation of measures to prevent and control deaths from preventable causes and to address violence against women and children.

Following the effort to ensure the implementation and full functioning of the CPOMFI-Viçosa Health Region, as a regional surveillance network for the death of women of childbearing age and maternal, fetal and child deaths, this study aimed to evaluate the implementation of this network, reflecting and discussing the challenges, advances and potential of acting as observatory of violence against women.

Methodological course

The construction of qualitative data presupposed the intention to understand the involvement of the members of the CPOMFI-Viçosa Health Re-

gion in the discussions and propositions of the Committee, the interaction and circulation of information on death and violence, and to analyze the political and technical realms of this information. Thus, we relied on participant-research procedures, considered a methodological strategy of social research in which there is ample interaction between researchers and people involved in the situation investigated. Their principles are oriented towards meeting the needs of social groups in common work and study situations and presuppose the collaboration and exchange of information, with a view to achieving a communication that is as horizontal as possible among all the participants. Thus, the dialogical realm, as a structure of the dynamics with the research subjects, proposes to trigger the realization of a learning process. Such learning can be understood as contributing to the social transformation of groups vis-à-vis their situation and needs, so that they can improve through their organization and political action. The participant research emphasizes the socialization of knowledge through the participation of subjects in the analysis and solution of their problems, promoting the collective production of knowledge. By using sorted and classified information, one can determine the roots and causes of problems and the ways of solving them, establishing relationships between individual and collective and functional and structural problems as part of the search for joint solutions for the addressed issues[16].

The participant observation technique was used in the follow-up of the meetings of the CPOMFI-Viçosa Health Region and the Municipal Committee for the Prevention of Maternal, Fetal and Child Death of Viçosa (CMPOMFI-Viçosa) and semi-structured interviews were carried out with members of the committee and municipal health secretaries of the municipalities involved (Araponga, Cajuri, Canaã, Paula Candido, Porto Firme, São Miguel do Anta, Pedra do Anta, Viçosa and Teixeiras). Semi-structured interviews are based on a previously prepared script, with the function of guiding a "purposeful conversation", in which the respondent is able to discuss the subject in question without being attached to the question asked; this tool facilitates the establishment of an environment of dialogue and enables respondents to express themselves freely without the limitations created by a questionnaire[17].

Statements were transcribed and handled through the thematic content analysis[18]. This technique facilitates the review of the set and the particularities, the classification of information into categories and the identification of "meaning cores" understood as a unit of meaning in the set of a communication[18].

In a complementary way, we analyzed the information regarding maternal, fetal and child deaths investigated by the municipalities and discussed at the CPOMFI-Viçosa Health Region, seeking to better qualify the review of the qualitative data in relation to death avoidability. In addition, data from the Mortality Information System (SIM) and the Information System for Notifiable Diseases (SINAN) were analyzed in an integrated manner, seeking to relate the deaths of women to the notification of violence against women. This was only possible for the municipality of Viçosa and comprised the period between 2010 and 2014.

The Human Research Ethics Committee of the Federal University of Viçosa approved the research protocol.

Results

Between 2015 and 2016, eleven meetings were attended, seven of which were CPOMFI-Viçosa Health Region and four from CMPOMFI-Viçosa. In the case of the CPOMFI-Viçosa Health Region, the professional indicated by health management should participate and is usually the technical death surveillance reference in the municipality. At the meetings, the representatives of the nine municipalities that underpin the Viçosa Health Region were never present at the same time. In general, the reason for not attending was due to the lack of time. Only one of the nine municipalities did not participate in any meeting held during the period.

Regarding the CMPOMFI-Viçosa, the committee is composed of professionals from the municipal health service (Epidemiological Surveillance, Family Health Strategy, State Center for Specialized Care - CEAE), the Regional Superintendence of Health of Ponte Nova (1 representative), the Federal University of Viçosa (2 representatives), the Municipal Health Council, the Medical Association and the hospital-based committees (2 representatives). In general, all representatives are assiduous in these meetings.

The CPOMFI-Viçosa Health Region meetings aimed to discuss cases of fetal, child and women of childbearing age deaths (WCA) among residents in their area of coverage and whose hospital-based, outpatient-based and

Ciência & Saúde Coletiva, 22(10):3457-3465, 2017

household-based investigations had already been performed. The committee defined no criteria for this selection, only the difficulty (any) experienced or perceived by the professional in the investigation or conclusion of the cases. Between 2015 and 2016, 24 WCA deaths occurred in the Health Region of Viçosa, 83% of which were maternal deaths; 10 fetal deaths, of 80% were investigated and 13 child deaths, of which 53.8% were investigated. All the fetal deaths investigated were avoidable, and 57.4% of children deaths were preventable, according to the list of causes of deaths preventable by interventions of the Unified Health System[19]. While the number of deaths with ill-defined causes remains high, even after the investigation and discussion of the cases by the CPOMFI-Viçosa Health Region, in all other cases, avoidability was related to adequate care to women during pregnancy and delivery.

Sixteen interviews were carried out, including death surveillance technical references (eight municipalities in the Health Region of Viçosa) and managers (secretaries of health of five municipalities), as well as the coordinator of the Family Health Strategy and the person in charge of Epidemiological Surveillance Service, both of the municipality of Viçosa, and the death surveillance technical reference of the Regional Superintendence of Health of Ponte Nova.

The main and recurrent problems reported by respondents were related to the lack of recognition of the death surveillance activity by managers; lack of time for analysis, discussion and investigation of deaths; failure of communication between care network institutions; poor resources, infrastructure, professional training and commitment of those involved. On the other hand, improved interaction among municipalities, increased investigations carried out and greater awareness of the importance of death surveillance among workers were reported. It was also possible to identify, from the investigation of women of childbearing age, maternal, fetal and child deaths, cases of violence against women and children, making domestic violence part of the daily life of discussions about deaths.

With regard to the integrated review of data on death and violence against women, 57 deaths of women of childbearing age registered in the municipality of Viçosa in the period 2011-2014 were identified, which were 9.0% of all women deaths in the same period. Of WCA deaths, 19.3% were from external causes, 63.6% from assault and 18.1% from accidents. Regarding deaths due to external causes among WCA, we observed that 71.0% of women who died from assault had a record of domestic violence in SINAN, and violence was recurrent in at least 60.0% of these cases.

Discussion

In the Viçosa Health Region, an area that is part of the Ponte Nova Regional Health Superintendence, Minas Gerais, the municipality of Viçosa led the implementation of actions to prevent maternal, fetal and child death. Municipal law established the municipal committee in 2003[20] and activities started in 2004. Initially, maternal, fetal and child death prevention actions performed by CMPOMFI-Viçosa coordinated local health services (Health Surveillance Service/SVS-SMS-Viçosa, State Center for Specialized Care-CEAE and the two hospitals in the municipality) and included notification, investigation, data systematization and analysis and communication of information generated with a view to improving the quality of care actions for women and children.

Coordination in the municipality of Viçosa was enough to subsidize interventions at the local level. However, because Viçosa is the seat municipality of the Health Region, deaths and births of other municipalities in the region occur primarily in Viçosa, which implied the need to increase the scope of actions, linking health services and professionals from all municipalities in the region. Thus, the CPOMFI-Viçosa Health Region was established in 2014, integrating all nine municipalities in the region in order to allow the formation of a regional network for death surveillance. The performance of mortality committees has been pointed out by different authors as an important technical and political space in the reduction of maternal and child mortality[9,21]. In general, the actions of the committees imply, initially, greater notification of these events, increasing maternal death and infant mortality indicators; however, this increase is only the result of visibility of events that are known to be underreported despite improved records[22,23].

Despite the advances observed in the establishment of maternal and child mortality committees in Brazil, several still are a mere monitoring space, as indicated by the survey conducted by the Brazilian Court of Accounts[15]. Work by Rodrigues and Siqueira[21], when analyzing the history of implementation of the Maternal Death Study Committee of the State of São Paulo, points out the need to reconsider the perfor-

mance of the committees, in addition to a strategy of Epidemiological Surveillance alone, and its political and institutional new take is imperative.

In fact, the various problems pointed out by respondents regarding the fragility of CPOM-FI-Viçosa Health Region's work evidence that surveillance actions, despite sensitization about the importance of death surveillance, are still little valued as a tool to plan health interventions. So much so that there is little material and/or personal investment by local management, which prefers to invest in welfare actions, either by the enormous demand (which actually exists), or by the theoretical-political perspectives of understanding health actions. Thus, delays in the production of information and the poor quality of the information produced are perpetuated, and this process is reproduced as an undesirable and difficult-to-break cycle.

In addition, in the case of small and medium-sized municipalities, aspects related to personal relationships that influence labor relationships and, in the case of death and violence surveillance can produce tensions that freeze actions. Thus, if on the one hand, personal relationships can gather and facilitate interaction between institutions, which is fundamental in the investigation procedures (hospital-based, outpatient-based), the events addressed, because they often evidence problems in service, cause suspicion and estrangement.

Considering the analysis of avoidable child deaths, we can see that the difficulties are similar to those already identified for large municipalities and capitals, residing in the poor quality of prenatal and childbirth care, which are also conditions that affect maternal mortality[5,24]. These events, coupled with death due to ill-defined causes, may also signal situations of violence against women, such as obstetric violence. The interrelation between these events (maternal, fetal and child death) and the experience of violence can be an important factor that implies the quality of notification, which in turn has historical and social reasons that make explicit the gender issues that mark relationships and produce inequalities in women and children care in different procedures, services or settings.

Moreover, given the experience of the municipality of Viçosa in surveillance and in addressing violence against women, the possible regionalization of the analysis of deaths integrated into the notification of violence has enabled expanded actions to combat violence against women. The work done in Viçosa started in 2009 and was a partnership of different services of the municipality and the Federal University of Viçosa[25]. With the actions implemented, especially with regard to the active search for cases in entities that address cases of violence against women, especially the Civil and Military Police, it was possible to identify hundreds of cases of violence, against only three cases reported in SINAN. The historical series between 2009 and 2013 show steadily increasing recorded cases, from 247 to 650 notifications (increase of more than 160%)[26]. In the following years, we had 276 (2014), 746 (2015) and 77 (2016-through June)[26] notifications. The fluctuation observed in the last three years was due to difficulties such as Civil Police strike and no access to the Social Security Events Records (REDS), from which records were obtained on reports of violence against women cases for subsequent inclusion in SINAN; in addition, the shutdown of the Work Education Program – PET Saúde / Health Surveillance of the Federal University of Viçosa, coordinated by the Interdisciplinary Center for Gender Studies – NIEG, in 2015 reduced the capacity to update the reports of cases of violence in SINAN.

This work gave visibility to violence against women, insofar as a network of care services for women in situations of violence was being implemented and strengthened over time. However, for the other municipalities in the Region of Health of Viçosa, the "violence against women" event is still poorly addressed, and case reports have shrunk. This situation points to the invisibility of violence and the difficulty of health services to incorporate this event in the routine of Health Surveillance work, despite compulsory notification dates back to 2003[27].

Moreover, the perspective that violence against women is a public health problem, as it began to be recognized from the beginning of the 2000s[28,29], brought several challenges to the health sector, including the perception that such recognition could limit, restrict or, worse, fragment care to women in situations of violence.

Furthermore, the integrated analysis of data on death and violence against women must be improved and expanded. Studies on mortality from external causes, for example, focus on the impact of violence on deaths of young men, often leaving out the detailed analysis of violent deaths among women, hampering data discussion. This is because most deaths due to external causes consist of men; however, recent research shows that deaths of women due to external causes should be better studied[30,31].

Ciência & Saúde Coletiva, 22(10):3457-3465, 2017

Final considerations

While death surveillance has been in place in the municipality of Viçosa since 2003, and in the Health Region of Viçosa since 2014, high rates of deaths from ill-defined causes are still prevalent, indicating the poor quality of the information produced, as well as high WCA, maternal, fetal and child death rates due to preventable causes. Consequently, the poor quality of data produced and lagging case analysis and data systematization do not allow timely and consequent intervention in order to avoid new cases. They also prevent the identification of death as an extreme consequence of domestic violence eventually suffered by women and children.

Currently, death surveillance actions have confirmed death as a sentinel event of domestic violence against women and children, and the potential of maternal, fetal and child death prevention committees to act as observatories of this violence, and they should receive the attention of local health managers in order to implement them and keep them active.

However, poor quality of information on death, specifically high rates due to ill-defined causes, makes it difficult to analyze this event as a sentinel of other forms of violence, such as obstetric and institutional, affecting the expanded understanding of violence and its consequent confrontation. Therefore, effective production of 'information for action' (the ultimate goal of surveillance) is limited in that it does not effectively influence interventions in the different services that provide care to women and children and can effectively contribute to addressing violence and reducing preventable deaths.

We can see that the main tension nodes are also in the misinformation of managers (health secretaries, who mostly stated that they were unaware of the activities of the committee) and workload of professionals. However, despite hardships, the coordination work of municipalities allows the exchange of experiences, which contributes to overcoming difficulties, which, in general, are common to municipalities.

The experience as a regional committee expands the strategy of strengthening death surveillance and the network of care for women in situations of violence. Crosswise, there is a need to deconstruct women health care focused on reproductive roles, gender and sexuality discussions, valuing professionals involved and rethinking the health care model focused on prevention and cure, seeking health promotion development.

The results also show that committee work gathers professionals with technical qualification, which positively influences the production of information. However, political actions are still shy as a group with intervention capacity. It is also important to highlight the challenge of addressing violence against women as a complex phenomenon and that professionals, services and policies in a specific area cannot alone account for or be held accountable for addressing the issue with a resolubility that is effectively capable of interfering with elevated statistics.

Collaborations

CM Melo, MS Quaresma and PD Bevilacqua participated in the study's design, data review and interpretation and writing and critical review of the paper. TIS Aquino participated in data collection, systemization, review and interpretation and writing of the paper.

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