

PROCESS OF PRIORIZATION OF OCCURRENCES IN THE MOBILE EMERGENCY SERVICE

PROCESSO DE PRIORIZAÇÃO DE OCORRÊNCIAS NO SERVIÇO DE ATENDIMENTO MÓVEL DE URGÊNCIA

PROCESO DE PRIORIZACIÓN DE OCURRENCIAS EN EL SERVICIO DE ATENCIÓN MÓVIL DE URGENCIAS

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Objective: identify characteristics of the events prioritized by the Regulation Office of the Mobile Emergency Care Service in a major city and understand which factors influence the regulating physicians in the ambulance dispatch prioritization process. **Method:** retrospective study with a mixed-methods design, undertaken between 2012 and 2014. The variables dispatch and regulation time were investigated. The interviews held were submitted to content analysis. **Results:** the nature of the demand is mainly clinical, classified with high-priority determinants, mainly from public safety services. The response time is inversely proportional to the priority. Physicians prioritize cases with: risk of death; clinical deterioration; need for transport; vulnerability associated with age and violence. **Conclusion:** clinical conditions, vulnerability and risk determine the type of care and the response time. In a scenario of few resources, the regulating physicians' activities in the prioritization process is intended to adapt the demand to the available supply.

Descriptors: Emergency Operations Center. Emergencies. Emergency Medical Services. Ambulances.

Objetivo: identificar características das ocorrências priorizadas pela Central de Regulação do Serviço de Atendimento Móvel de Urgência de uma grande metrópole e compreender quais fatores influenciam os médicos reguladores no processo de priorização de despacho de ambulância. Método: estudo retrospectivo com métodos mistos, entre 2012 e 2014. As variáveis despacho e tempo de regulação foram investigadas. As entrevistas realizadas foram submetidas à análise de conteúdo. Resultados: a demanda é majoritariamente clínica, classificada com Determinantes de alta prioridade e prioritariamente dos serviços de segurança pública. O tempo resposta é inversamente proporcional à prioridade. Médicos priorizam casos com: risco de morte; deterioração clínica; necessidade de transporte; vulnerabilidade associada à idade e violência. Conclusão: condições clínicas, vulnerabilidade e risco determinam o tipo de atendimentos e o tempo de resposta. Diante de um cenário de poucos recursos, a atuação dos médicos reguladores no processo de priorização visa adequar a demanda à oferta disponível.

Descritores: Centro de operações de emergência. Emergências. Serviços médicos de emergência. Ambulâncias.

Objetivo: identificar características de las ocurrencias priorizadas por el Centro Regulador del Servicio de Atención Móvil de Urgencias de una gran metrópolis y comprender cuales factores influyen en los médicos reguladores en el proceso de priorización de despacho de ambulancia. Método: estudio retrospectivo con métodos mistos, entre

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2012 y 2014. Las variables despacho y tiempo de regulación fueron investigadas. Las entrevistas realizadas fueron sometidas al análisis de contenido. Resultados: la demanda es principalmente clínica, clasificada con Determinantes de alta prioridad y prioritariamente de los servicios de seguridad pública. El tiempo de respuesta es inversamente proporcional a la prioridad. Médicos priorizan casos con: riesgo de muerte; deterioro clínico; necesidad de transporte; vulnerabilidad asociada al edad y violencia. Conclusión: condiciones clínicas, vulnerabilidad y riesgo determinan el tipo de atención y el tiempo de respuesta. Ante un escenario de pocos recursos, la actuación de los médicos reguladores en el proceso de priorización visa adecuar la demanda a la oferta disponible.

Descriptor: Centro de Operaciones de Emergencia. Urgencias Médicas. Servicios Médicos de Urgencia. Ambulancias.

Introduction

Prehospital care (EMS) began in the military context, when soldiers started treating the wounded on the battlefield and transported them to the hospital. Since then, a number of initiatives have emerged to transfer the knowledge acquired, predominantly trauma related, to the civilian population. In 1960, the scope of EMS activities expanded, with the inclusion of care for clinical problems, due to technological advances in the care for sudden death⁽¹⁾.

In Brazil, the Fire Department was, for a long period, the predominant EMS in the country, with timid participation of the health sector. A joint effort between health and public safety occurred in São Paulo with the Rescue Project in 1989. In 1990, the Ministry of Health proposed this model, involving two departments, through the Integrated Care Service for Emergency Trauma (SIATE), being initially set up in Curitiba and, in 1995, in Belo Horizonte⁽²⁾.

From the 1990s, through the Franco-Brazilian Technical and Scientific Cooperation, cities implemented EMS focused on the regulatory physician, with the participation of nursing in care, within the health departments. The development of EMS was linked to health, with the creation of the Mobile Emergency Care Service (SAMU 192) in 1992, within the scope of the Unified Health System (SUS) and in the context of Operational Health Care Standard (NOAS) 1/2002⁽³⁾.

The National Emergency Care Policy (PNAU), published in 2003, made SAMU a priority of the federal government, considering its potential as an organizer of the emergency care flow,

establishing itself as a gateway and, upon receiving the demands of the population, as an observatory, highlighting the deficiencies of the network and supporting planning actions⁽⁴⁾. A study conducted in Ribeirão Preto (SP) showed that the implementation of SAMU improved the access of severe patients to tertiary hospital referral and reduced the hospital's low complexity demand⁽⁵⁾.

The implementation of SAMU varied among states⁽⁶⁾, also with regard to the integration with the Fire Department⁽⁶⁻⁷⁾. Despite increasing federal funding, the lack of structuring of the care network and the delay in the decentralization of federal resources reproduce regional inequalities and overburden the municipal management⁽⁸⁾. Weaknesses related to the collective management capacity, structure and lack of material in ambulances, due to bureaucratic obstacles, besides political weakness in the work management, were found in an assessment research carried out in Santa Catarina⁽⁹⁾.

Most studies published in relation to SAMU concern the demand profile. Clinical emergencies make up the majority of services in different regions, ranging from 50.2% to 77.2% of all cases⁽¹⁰⁻¹⁴⁾. Traffic accidents constitute the majority of events related to external causes, varying from 53.5% in Teresina (PI) to 86.6% in Olinda (PE)^(10,12,15-16). Among the studies surveyed, only two studies presented data regarding the severity of events. In Catanduva (SP), the researchers classified the occurrences attended by the basic and advanced units of SAMU using

the Simple Triage and Rapid Treatment (START) method and found that 2.1% of the cases were severe, 28.1% moderate and 69.6% minor⁽¹⁴⁾.

Another study, which presented data on the presumed severity, was a doctoral dissertation. Developed in the SAMU of Porto Alegre (RS), 79.6% of the cases that received ambulance dispatch were evaluated as medium severity, 3.0% severe and 14.1% minor severity⁽¹⁷⁾. Nevertheless, the lack of a tool to collect data on a national scale hampers comparisons⁽⁹⁻¹⁰⁾.

SAMU has been established as a gateway to the SUS and, after more than a decade since its deployment, it is important to take a critical look at this service in order to identify the potentialities proposed in the PNAU. Research into the work process of the Regulation Offices would allow us to understand how SAMU is the gateway to the Emergency Care Network (ECN).

The objective of this study was to identify characteristics of the events prioritized by the SAMU Regulation Office of a large metropolis and to understand which factors influence the regulating physicians in the prioritization process of ambulance dispatch.

Method

A retrospective study was carried out between 2012 and 2014, involving the mixed-methods strategy, in an integrated and sequential way to the quantitative and qualitative approach⁽¹⁸⁾. This strategy was chosen in order to identify/seek support in the analysis of the different types of data⁽¹⁹⁾.

The study was conducted at SAMU in the city of São Paulo (SAMU/SP), Brazil, under municipal management, which offers 100% coverage to more than 11 million inhabitants and acts as a complement to the Fire Department.

The prioritization process begins with the telephone attendants operating the Medical Priority Dispatch System (MPDS® Salt Lake City, UT, Version 12.1), a computerized dispatch system. A main complaint is selected in the software, which in turn determines the algorithm

with pre-established questions asked by the attendants. At the end of the questionnaire, a Priority Determinant is assigned to the event: Echo, Delta, Charlie, Bravo, Alpha and Omega. These determinants explain a gradient of priorities, in which Echo represents top-priority events and Omega minor priorities.

The telephone call is terminated and the information is transferred to the regulating physicians. These should keep the priority set or change it, and identify the unit to be dispatched (basic or advanced life support). After this decision, the information is transferred to medical regulatory assistants (TARM) for ambulance dispatch.

The first stage of data collection was direct observation, which permitted characterizing the work process. Secondly, a base with secondary data stored in the Regulation Office of SAMU/SP was created, referring to the events of October 2012. The research team received these data in November 2012, followed by validation for the construction of the database. This month was chosen because it received the highest demand verified in the time series.

Data from this database were submitted to descriptive statistical analysis, which involved calculating the absolute and relative frequencies of the categorical variables, expressed as percentages (day of the week, shift, main complaint, region, priority determinant, gender, resource dispatch, reason for closure, resource dispatched). The mean, median, minimum, maximum, first and third quartiles of the variables time and age were calculated. The BoxPlots technique made the measures visible. Two time intervals were calculated: (t0) between the opening of the event and the dispatch of the ambulance (*regulation time*); and (t1) between the dispatch of the ambulance and the arrival at the place of occurrence (*travel time*). The *response time* is the sum of these two intervals (tR = t0 + t1) and consists of the time elapsed between the opening of the occurrence and the arrival at the occurrence site.

The third step consisted of semistructured interviews with regulatory physicians, key informants, after the signing of the Informed Consent Form, in order to qualitatively describe the patterns observed in the descriptive analysis related to the prioritization process. The key informants were identified according to three criteria: extensive experience as a regulatory physician; commitment to the service; practical experience in prehospital care.

The interviews took between 50 minutes and 1 hour and 10 minutes, were recorded, transcribed and analyzed using the content analysis technique⁽²⁰⁾. To apply this technique, the steps followed were: pre-analysis, coding and treatment of results, inference and interpretation.

The analytical markers that guided the reading of the interview information were intended to understand the work process of the regulator in the following aspects: administration of the calls, relation with the protocol, telephone evaluation of the patient, decision making process on prioritization of the calls. This procedure permitted the identification of the subjective characteristics of the work process and the factors that influenced the physicians in the prioritization process.

The categories that emerged from the analysis of the interviews guided the fourth stage, which consisted of a second statistical analysis intended to quantify the factors involved in the prioritization, exploring the existence or not of ambulance dispatch and the *regulation time* (t0) of the six priority determinants.

Each determinant was analyzed separately, using the most frequent main complaints (representing at least 10% of total occurrences) as the dependent variable, and the dispatch (percentage of occurrences dispatched) and *regulation time* (percentage of occurrences with *regulation time* under 10 minutes) as independent

variables. The chi square test was used for statistical significance. Statistical significance was set as $p < 0.05$. These two variables were used as a proxy to infer the prioritization criteria. A higher percentage of events dispatched within 10 minutes indicates greater agility of SAMU in the regulation process for that complaint. To quantify the dimension of the differences, the variation rate was calculated, defined as the percentage superior or inferior to the total average of the sample. This research received approval from the Research Ethics Committee at the University of São Paulo School of Public Health (COEP/447/10).

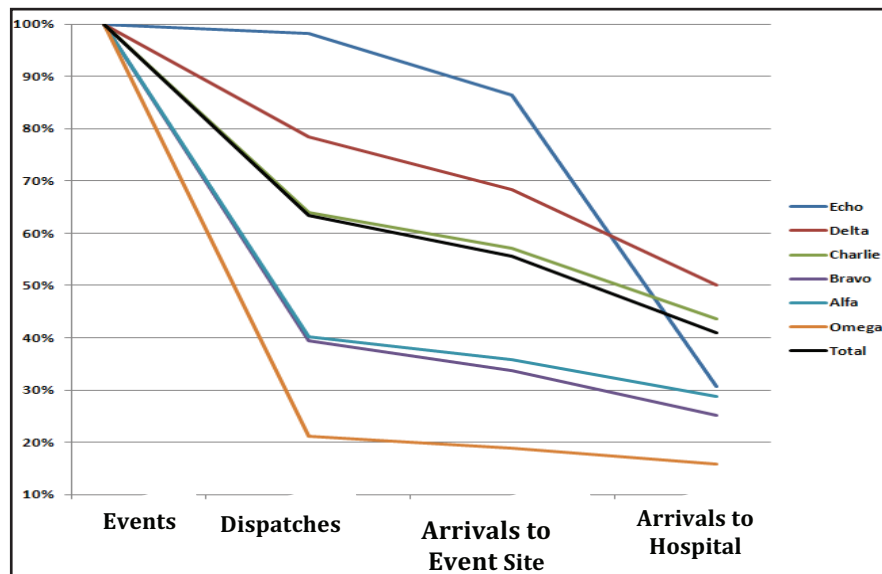
Results

In October 2012, the SAMU / SP Regulation Office received 202,186 telephone calls. Of this total, 38,211 (18.9%) were considered as occurrences and classified according to the protocol. After the validation of the base, 664 occurrences (1.7%) were excluded due to the quality of the time variable. Thus, 37,457 occurrences were included.

The clinical events corresponded to 59.2% of the demand. The external causes corresponded to 26.1%, with Falls and Traffic Accidents being more frequent. Despite the low completeness of the age and sex records (42.3%), the mean age was 50.2 years (median 49), and the proportion of men and women was 52.2% and 47.8%, respectively.

The proportions of the Priority Determinants were: Echo 1.3%, Delta 50.2%, Charlie 14.4%, Bravo 15.5%, Alpha 18.2% and Omega 0.4%. Not all occurrences completed the EMS stages (Figure 1), with decreasing percentages as the care phase progressed towards transportation to the hospital.

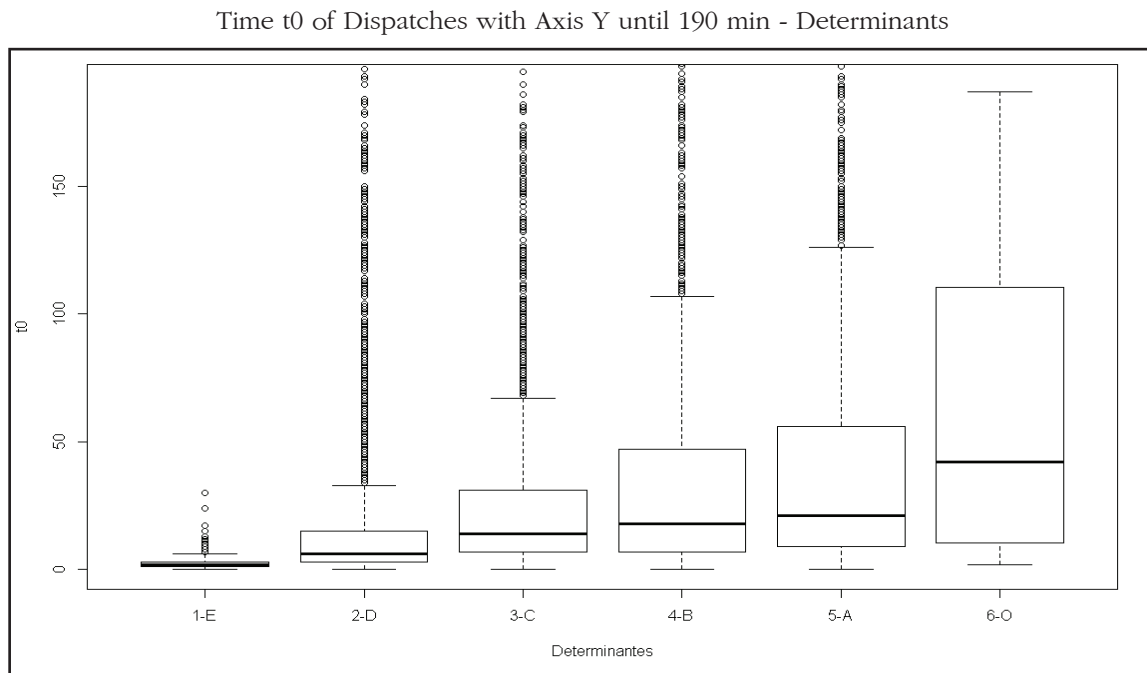
Figure 1 – Evolution of the percentage of events according to the care phases per Determinant, SAMU SP. Oct. 2012 (N=37,457)



Source: Created by the authors.

The dispatch frequency decreases with the priority, ranging from 98.1% (Echo) to 21.2% (Omega). Among the cases that did not receive the dispatch (36.6%), the regulatory physicians considered 387 (2.8%) cases as non-urgent; the majority (61.4%) was canceled by the applicants, who found other means of transport (police, firemen or their own family). This data suggests the belief that the SAMU was not agile enough, according to the criteria considered as an emergency for the population.

The *response time* varied according to the determinant, that is, the higher the priority, the shorter the *response time*. There was no difference in *travel times*, indicating that ambulances moved evenly throughout the city. It was identified that the *regulation time* determined the differences in *response time* (Figure 2). The Regulation Office takes less time to regulate and dispatch ambulances for the top-priority events.

Figure 2 – Boxplot t0 of SAMU SP ambulances. Oct. 2012 (N=23,736)*

Source: Created by the authors.

*A cut was made in axis Y (at 40 min.) to highlight the distribution of the times per determinant until the third quartile. The outliers are not fully represented in the figure.

In Figure 1, it is noticed that 98.1% of the Echo events received an ambulance dispatch and that a large part of these ambulances arrived at the event site (86.5%). Only a small portion was transported to the hospital though (30.8%). The closure codes indicated that 73.5% of these ambulances did not reach the hospital due to the patient's death, indicating the clinical severity.

When evaluating the regulation times, it is identified that the third quartile was below three minutes. This indicates that SAMU SP presents agility in prioritizing Echo cases, dispatching without medical evaluation. Cardiopulmonary arrest (CPA) corresponded to 90.3% of Echo occurrences and received dispatches in 97.9% of the cases, obtaining a median regulation time of two minutes.

According to the MPDS, the dispatches should follow the order established by the classification. Due to the restricted number of ambulances, the function of the regulator is to evaluate each occurrence and carry out the prioritization process.

The analysis of the interviews revealed the following categories related to the factors that influenced the regulating physicians in the process of prioritizing ambulance dispatch: Clinical conditions reported; Specific risk conditions; Conditions intrinsic to SAMU.

Clinical conditions reported

Regulating physicians reported that they looked for signs and symptoms reported by the petitioner that indicated the imminent risk of death. Unconsciousness and difficulty breathing are warning signs for a possible CPA or pre-collapse. Table 1 compares the proportions of occurrences dispatched in less than 10 minutes among the top three complaints in Charlie occurrences. This proportion was higher in the Unconsciousness complaint than in the others (14.9%, $p = 0.0142$)

Table 1 – Number and percentage of Charlie events dispatched with regulation time superior and inferior to 10 minutes for the complaints Abdominal Pain, Ill Person and Unconscious, SAMU SP. São Paulo, Brazil – Oct. 2012 (N=1.399)

Main complaint	TO≤10 min		TO>10 min		Total		Variation rate	p-value
	n	%	n	%	n	%	%	
Abdominal Pain/Abdominal Problems	182	35.7	328	64.3	510	36.5	-6	0.0142
Ill Person (Specific Diagnosis)	161	35.2	297	64.8	458	32.7	-7.4	
Unconscious / Fainting (Almost)	188	43.6	243	56.4	431	30.8	14.9	
Total	531	38	868	62	1.399	100	0	

Source: Created by the authors.

When analyzing the proportions of dispatch for the most frequent complaints in Delta events, it was inferred that the complaint Respiratory Problems was prioritized. Respiratory complaints had more frequent dispatches, with an ambulance dispatch frequency 14.7% higher than the average of the most frequent complaints ($p < 0.001$).

What is most important is the breathing. (MR2).

Unconsciousness and absence of breathing or presence of agonal breathing are the symptoms investigated first, as they indicate absence of life.

By valuing these conditions, doctors are alert to a possible non-detection of CPA.

In addition to Unconsciousness and Respiratory Problems, Falls stood out in the analysis of quantitative and qualitative data. It was one of the most frequent complaints in SAMU SP (8.5%) and was prioritized between Bravo and Alpha. In these two determinants, the statistical analysis of the dispatch and *regulation time* variables presented significant differences in relation to the other more frequent complaints (Tables 2 and 3).

Table 2 – Number and percentage of Bravo (N=3301) and Alfa (N=3619) events dispatched and not dispatched in the most frequent main complaints, SAMU SP. São Paulo, Brazil – Oct. 2012

Main complaint	Dispatch		Non dispatch		Total		Variation rate	p-value
	n	%	n	%	n	%	%	
Bravo								<0.001
Falls	704	55.7	561	44.3	1265	38.3	55.6	
Psychiatric/Abnormal behavior / Suicide attempt	477	23.4	1559	76.6	2036	61.7	-34.5	
Total	1181	35.8	2120	64.2	3301	100	0	
Alfa								<0.001
Ill Person (Specific diagnosis)	861	39.5	1321	60.5	2182	60.3	-8.1	
Falls	406	53.6	352	46.4	758	20.9	24.7	
Back Pain (Not traumatic or Non-recent trauma)	287	42.3	392	57.7	679	18.8	-1.6	
Total	1554	42.9	2065	57.1	3619	100	0	

Source: Created by the authors.

Table 3 – Number and percentage of Bravo (N=1181) and Alfa (N=1554) events dispatched with regulation time superior and inferior to 10 minutes in the most frequent main complaints, SAMU SP. São Paulo, Brazil – Oct. 2012

Main complaint	TO≤10 min		TO>10 min		Total		Variation rate	p-value
	n	%	n	%	n	%	%	
Bravo								<0.001
Falls	306	43.5	398	56.5	704	59.6	41.8	
Psychiatric/Abnormal behavior / Suicide attempt	56	11.7	421	88.3	477	40.4	-61.7	
Total	362	30.7	819	69.3	1181	100	0	
Alfa								<0.001
Ill Person (Specific diagnosis)	225	26.1	636	73.9	861	55.4	-8.1	
Falls	151	37.2	255	62.8	406	26.1	30.8	
Back Pain (Not traumatic or Non-recent trauma)	66	23	221	77	287	18.5	-19.1	
Total	442	28.4	1112	71.6	1554	100	0	

Source: Created by the authors.

A fall may have been the result of some medical condition or the aging process, causing physicians to value events in which a fall is the main complaint.

70-year-old who fell in the bathroom, you cannot leave him as Alpha, right? Regardless of what the person answered in the interview [...] a fall in the elderly is always severe. (MR1).

Specific risk conditions

Regulatory physicians considered another group of specific vulnerability and risk criteria associated with the event in the prioritization of dispatches, which mainly included aspects of age, violence, population agglomeration, local needs of the territory where the call is made and interaction with other services. The patient's age is a demographic criterion taken into account in the evaluation of occurrences, with priority for children and the elderly.

Any patient under 3 years old or over 70 years old we have to worry; in the extreme ages there is great clinical liability. (MR1).

The physicians took into account the need for therapeutic intervention or diagnostic procedures. The interviews indicated that patients classified as low priority, although not presenting a risk of death, would benefit from prehospital care.

It is an accident [...] or the person fell and is bleeding a lot, and then you may think it might be an exposed fracture, then you already prioritize it too, because sometimes, when they put it in the protocol, the person does not enter as a high priority. So, we have to be careful. (MR2).

The physicians' posture is confirmed by the statistical analysis, showing that, among the cases that actually arrived at the event site, the highest percentages of transportation to the hospital were found in the low-priority determinants (range between 35.6% in the Echo to 84.0% in Omega), even with longer regulation times.

Concern with symptoms of clinical severity causes minor complaints from the clinical point of view, even in case of suffering, to remain in the waiting line for dispatch. This is the case of psychiatric occurrences.

There are always more severe cases, which imply the risk of death. Psychiatry is severe, it upsets, it's a drama, but it has no risk of death. So he's always put off. (MR1).

Almost all psychiatric complaints were classified as Bravo and Alpha (96.7%). According to the interviewees, the occurrences related to Mental Health were prioritized only when there was risk of death of the patient or when there was the presence of violence and vulnerability of third parties, with the presence of the Military Police.

Psychiatrists need SAMU provided that it involves a threat to life. (MR2).

Cases of psychiatry are attended to in these conditions: violence, began to break things; for some reason the family called the police and the police restricted it. (MR1).

The complaint called “Request for Numeral” refers to occurrences triggered by public security services, such as the Police or Fire Department. These corresponded to 4.0% (1,508) of the demand, being the 10th most frequent complaint. When these services request the presence of SAMU, these occurrences are prioritized and automatically classified as Delta. In the analyzed period, they were dispatched in 97.9% of the cases.

Intrinsic conditions of SAMU

The restriction of SAMU resources also influenced the prioritization of occurrences. Due to the lack of sufficient resources, the doctors took into account the waiting time and the number of repetitions by the applicants. They considered that, during that time, the patient’s clinical condition could have deteriorated, requiring prioritization of the event.

The first thing I do is look who reiterated it more often [...] I, in particular, do not neglect any reiteration. The person calls, there are a lot of people who call to relieve their conscience, but when the person calls again, there is something going on. So, as I told you, because of the lack of human material here in the regulation, I value the largest number of reiterations. (MR1).

It’s hard for us to keep on calling everyone, except for some case you see that’s down there that’s waiting for too many hours, because it’s not a top priority, like, to be sending a quick resource. Then we call. (MR2).

Sometimes we even take time into account. It’s taking long, I do not know, there’s been a call, there, Delta half an hour ago, and there’s another one that arrived now. So you’ll first see the thirty minutes one, what it is, to see if the one that arrived now is more or less severe than the one that’s waiting for thirty minutes. (MR3).

The key informants reported getting cooperation from the various professionals at the office, such as dispatchers, TARM and nurses who, with their experience in the service, drew attention to some specific cases that would benefit from a medical evaluation by telephone.

They [TARM] help a lot [...] they open the case; sometimes they call attention, “oh doctor, there’s a case like that, and so, do you want to take a look?” Then we call the patient and decide. Many times they are right. (MR1).

Sometimes they [TARM] are in doubt about something and then they talk to us. So there is this dialogue, this exchange. (MR2).

This collaborative work influences the prioritization process, facilitating the work of the regulatory physicians, whose function is to guarantee access to prehospital care for patients who need this level of care. In a scenario of few resources, whether material (ambulances) or human (doctors), the regulators’ performance becomes even more important, as it serves as a safety net for the system.

Discussion

Qualitative research data revealed that SAMU SP, using MPDS, strengthened the survival chain, expedited the ambulance and started cardiopulmonary resuscitation for CPA cases. Several studies have demonstrated the efficiency of MPDS to detect CPA⁽²¹⁻²⁵⁾.

The protocol used guarantees that, given a large demand, it is possible to detect and quickly respond to this type of request. It avoids queuing without proper classification, as observed in Rio de Janeiro⁽²⁶⁾. The use of other levels of severity defined by the software’s determinants helps the decision process about the ambulance dispatch, but has different response times.

The demand usually dammed in SAMU is queued, but already ranked by the priority classification given by the MPDS. This classification supports the work process of the regulatory physician who acts as a safety net, as only he has the health authority to include the patient in the ECN or to consider it unnecessary to send resources. He fine-tunes the prioritization, correcting deficiencies in the protocol, adapting the situations to the local reality and the current situation, based on available resources (ambulances and support professionals in the Regulation Office)⁽²⁷⁾.

The reported clinical conditions show that Respiratory problems are the most frequent main complaint among EMS services that use MPDS and correspond to a range of conditions⁽²²⁾. Studies appoint that dispatchers and applicants

experience difficulties to evaluate respiratory distress^(24,28,33). These two facts justify the attention the physicians pay to this symptom. Another reported clinical condition is a fall, both in the analysis of the database and in the interviewees' discourse. This apparently unspecific complaint presented, in one study, a high number of CPA diagnoses after the ambulance reached the site⁽²⁹⁾. The fall may have been the result of some underlying clinical condition, such as syncope caused by AMI or cerebrovascular diseases. This study highlights the importance of questions related to breathing and consciousness in the Falls protocols⁽²⁹⁾. The prioritization of falls with valuation of clinical complaints and signs of death is extremely important, as the interviewees described.

Under specific risk conditions, the physicians' prioritization of low priority cases permits attention to cases of lower life risk, but with other needs. Although studies have shown that MPDS is safe for patients of low clinical severity⁽³⁴⁾, most of the EMS that use it are able to dispatch for all cases, including those of low priority. Therefore, regulator evaluation becomes even more important in the context of SAMU SP, ensuring patient safety. Need for hospital interventions or diagnostic procedures, age extremes and interaction with public safety services are factors that prompt regulators to dispatch recourses to low priority events.

The prioritization of Mental Health cases only when the presence of risk of death and violence is identified indicates that SAMU's actions aim at the preservation of life and the control of bodies⁽³⁵⁾. In relation to this complaint, different SAMU procedures were identified. Thus, in Tocantins, for example, there was a predominance of agitated patients among the psychiatric events⁽¹⁵⁾. In SAMU located in Sobral, professionals indicated police support as one of the facilitators of care when aggressiveness was present⁽³⁵⁾. In SAMU SP, the request for dispatch by the Military Police and Fire Department is prioritized.

According to the interviewees and the direct observation, the conditions intrinsic to the work process within the Operations Center of SAMU SP also influenced the prioritization process of events. Regulatory physicians were confronted with a high demand, which made the medical evaluation of all events more difficult. The work process was organized around the need for prioritization, and the regulatory physician, besides counting on the pre-screening performed by means of the MPDS protocol, counted on the cooperative work of dispatchers, TARM and nurses. These signaled occurrences that needed more attention, thus inducing the prioritization of certain cases. The role of dispatchers in the Echo occurrences, as well as the nurses' actions in low-priority events, supported the decision-making process of the regulatory physicians, indicating that the responsibility for the ambulance dispatch process was shared with the staff of the regulation office.

In the case under study, in a scenario of few resources, the actions of the regulatory physicians in the prioritization process aimed to adapt the demand to the available supply. While the priority classification was performed in a prescriptive/objective manner using the MPDS protocol, medical evaluation was performed in a more thorough and qualified manner, based on the technical-scientific knowledge of the regulatory physician, as well as the situation of the waiting line and the availability of ambulances. The regulator doctor, with the help of other professionals at the office, fine-tuned the prioritization and ambulance dispatch process, aiming to correct possible protocol failures, adapting the situations to the local reality and the situation of the moment.

Conclusion

This research permitted understanding the scope of SAMU SP as a gateway to the ECN. The regulatory physician dispatches ambulances for cases with risk of death, prioritizes cases

with clinical deterioration (unconsciousness, respiratory problems and falls), requiring transport to hospital, including vulnerabilities associated with age and cases of violence, and primarily attends to the demands of the public safety services.

This fine-tuning consists of the decision-making process of the regulatory physician, which is influenced by the factors discussed in this research. It is clear that the clinical conditions and the vulnerability and risk of emergency events determine the type and response time SAMU offers to its users. Given the scenario of high demand, the available resources are directed more agilely to the patients who are most in need from the biomedical point of view, mainly considering cardiorespiratory arrest.

The results of this study can support the organization of the work process of the SAMU Regulation Offices, promoting the debate about the way in which the SAMU offers access to the health system and is part of the Emergency Care Network. The identification of the criteria for access to SAMU can contribute to the configuration of the ECN and the articulation of this service with the health care network of cities and health regions, especially regarding the demand the service does not absorb.

Collaborations:

1. conception, design, analysis and interpretation of data: Flavia Saraiva Leão Fernandes and Oswaldo Yoshimi Tanaka;

2. writing of the article and relevant critical review of the intellectual content: Flavia Saraiva Leão Fernandes and Oswaldo Yoshimi Tanaka;

3. final approval of the version to be published: Oswaldo Yoshimi Tanaka.

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