

## **TRANSFER OF PRE-HOSPITAL CARE AND ITS POTENTIAL RISKS FOR PATIENT SAFETY**

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### **ABSTRACT**

**Objective:** to identify potential risks to patient safety during the transfer of pre-hospital care.

**Method:** a descriptive-exploratory study, with a qualitative approach. Data collection occurred between April and June 2018, with non-participant observation and semi-structured interview, in a Mobile Emergency Care Service in the Southern Brazil. Twenty-eight professionals were interviewed, including nursing technicians/auxiliaries, nurses and physicians, and 135 hours of care were observed. The data were submitted to thematic analysis.

**Results:** two interrelated categories emerged a) Stakeholders in patient and team safety; and b) The (inter) personal/professional dimension of the transfer of care. The study's findings showed that, in addition to the inherent vulnerabilities to traffic and urban violence, patients are exposed to circumstances that include potential risks related to falling on stretchers, medication errors and clinical judgment. The vertical communication by hierarchies, influenced by personal and emotional factors of each professional, generated implications for the continuity of care.

**Conclusion:** given the potential risks to patient safety at the time of transfers of pre-hospital care, one should invest in effective communication strategies, as well as in forms of interpersonal relationships and links between services in the emergency network.

**DESCRIPTORS:** Emergency medical services. Pre-hospital emergency care. Patient safety. Transitional care. Patient transfer. Communication barriers.

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# TRANSFERÊNCIA DO CUIDADO PRÉ-HOSPITALAR E SEUS POTENCIAIS RISCOS PARA SEGURANÇA DO PACIENTE

## RESUMO

**Objetivo:** identificar potenciais riscos para a segurança do paciente durante a transferência do cuidado pré-hospitalar.

**Método:** estudo do tipo descritivo-exploratório, com abordagem qualitativa. A coleta de dados ocorreu entre abril e junho de 2018, com observação não-participante e entrevista semiestruturada, em um Serviço de Atendimento Móvel de Urgência da região Sul, Brasil. Foram entrevistados 28 profissionais incluindo técnicos/auxiliares de enfermagem, enfermeiros e médicos e observadas 135 horas de atendimentos. Os dados foram submetidos à análise temática.

**Resultados:** emergiram duas categorias inter-relacionadas: a) Intervenientes na segurança do paciente e da equipe; e b) A dimensão (inter) pessoal/profissional da transferência do cuidado. Os achados do estudo mostraram que, além das vulnerabilidades inerentes ao trânsito e à violência urbana, os pacientes estão expostos a circunstâncias que incluem potenciais riscos relacionados à queda de macas, aos erros de medicação e de julgamento clínico. A comunicação verticalizada pelas hierarquias, influenciada por fatores pessoais e emocionais de cada profissional, geraram implicações para a continuidade do cuidado.

**Conclusão:** diante dos potenciais riscos à segurança do paciente no momento das transferências do cuidado pré-hospitalar, deve-se investir em estratégias de comunicação eficaz, bem como em formas de melhorar as relações interpessoais e a articulação entre os serviços na rede de urgências.

**DESCRITORES:** Serviços médicos de emergência. Atendimento de emergência pré-hospitalar. Segurança do paciente. Cuidado transicional. Transferência do paciente. Barreiras de comunicação.

# TRANSFERENCIA DE ATENCIÓN PREHOSPITALARIA Y SUS RIESGOS POTENCIALES PARA LA SEGURIDAD DEL PACIENTE

## RESUMEN

**Objetivo:** identificar riesgos potenciales para la seguridad del paciente durante la transferencia de la atención prehospitalaria.

**Método:** estudio descriptivo-exploratorio, con enfoque cualitativo. La recopilación de datos se produjo entre abril y junio de 2018, con observación no participante y entrevista semiestructurada, en un Servicio móvil de atención de emergencia en el sur de Brasil. Se entrevistó a 28 profesionales, incluidos técnicos / auxiliares de enfermería, enfermeras y médicos, y se observaron 135 horas de atención. Los datos fueron sometidos a análisis temático.

**Resultados:** surgieron dos categorías interrelacionadas a) Partes interesadas en la seguridad del paciente y del equipo; y b) La dimensión (inter) personal / profesional de la transferencia de atención. Los hallazgos del estudio mostraron que, además de las vulnerabilidades inherentes al tráfico y la violencia urbana, los pacientes están expuestos a circunstancias que incluyen riesgos potenciales relacionados con la caída en camillas, errores de medicación y juicio clínico. La comunicación vertical por jerarquías, influenciada por factores personales y emocionales de cada profesional, generó implicaciones para la continuidad de la atención.

**Conclusión:** dados los riesgos potenciales para la seguridad del paciente en el momento de las transferencias de atención prehospitalaria, uno debe invertir en estrategias de comunicación efectivas, así como en formas de relaciones interpersonales y vínculos entre los servicios en la red de emergencia.

**DESCRIPTORES:** Servicios médicos de emergencia. Atención de emergencia prehospitalaria. Seguridad del paciente. Cuidados transitorios. Transferencia de pacientes. Barreras de comunicación.

## INTRODUCTION

Emergency mobile prehospital care is characterized by occurring in an unstable environment, with fewer possibilities for technological resources available than in hospitals, in addition to often targeting more than one victim, who often has many symptoms and/or varied clinical conditions, with a high level of severity. In addition, it is not uncommon for the team that provides pre-hospital care to encounter little information and limited time to work. This combination of factors has implications for patient and professional safety.<sup>1</sup>

Unsafe health care results in significant rates of morbidity and mortality that could be avoided, with consequences for the patient, family, community and the State. To make them safe, one must invest in risk prevention through some basic patient safety strategies, such as professional safety training, organizational and institutional awareness, the distribution of resources and effective communication between health professionals.<sup>2</sup>

A systematic review included 14 studies that made it possible to highlight barriers and facilities for implementing a learning system on patient safety from the perspective of health professionals. The main barriers described in the literature were fear of blame, legal penalties, the perception that incident reporting does not improve patient safety, as well as insufficient organizational support, lack of knowledge about incident reporting systems and lack of understanding about what constitutes a clinical error. Facilitators included a non-accusatory environment, the health team's perception that incident reports improve safety, legislated protection for those who report errors, the ability to report anonymously, education opportunities, training and clear guidelines on what must be notified.<sup>3</sup>

A study carried out in the United States, with a pre-hospital team, identified factors that contribute to the safety of care in emergencies, which refer to medication, equipment, scene and environment characteristics, the patient's safety culture and the communication of information. The importance of initial assessment, decision-making and training to transmit safe care was highlighted.<sup>4</sup>

The concern with the subject of patient safety in mobile emergency services is still emerging, although there is international literature, most involve actions directed to a professional category, and not to multidisciplinary work or between teams.<sup>5-6</sup> Reinforcing the existence of gaps in the knowledge about the theme, one study highlights the need for patient safety guidelines aimed specifically at emergency mobile prehospital care, as the unhealthy and hostile environment where the actions are carried out also requires specific guidance and several other health care services.<sup>7</sup>

The international literature presents guidelines for the promotion of patient safety in various care environments. However, the particularities of the Brazilian context require modeling in view of the different needs and resources of each region, thus requiring national research that analyzes and suggests interventions to improve patient safety in pre-hospital care transfers, focused on the reality of patients in Brazilian health services.<sup>8</sup>

The continuous increase in the number of calls and the performance of increasingly complex treatments and procedures increase the risk of adverse events during care and the transfer of pre-hospital care. However, the literature does not reflect this reality, because despite the growing number of evidences about the occurrence of adverse events in intra-hospital environments, the data corresponding to patient safety do not include situations that occurred in the list of hospitals when receiving ambulance services.<sup>9</sup>

In response to these challenges, research<sup>10-11</sup> show concern about the timing of pre-hospital care transfers, revealing the loss of significant clinical information, flaws related to the use of confusing language or jargon, unidirectional transfers that are often inaccurate, incomplete and not relevant to the patient's condition.

The transfer of care involves the coordination and continuity of health care as patients are transferred between different health services, or different units in the same place.<sup>12</sup> It is prone to several weaknesses due to the vulnerabilities of the system, personal attitudes, team dynamics and various external pressures and restrictions, which combine to produce a distance from the best practices. Thus, the safe transfer of care can be considered one of the challenges of prehospital care.<sup>13</sup>

In view of the issues described in the literature, it is possible to affirm that there are gaps regarding the aspects that interfere with patient safety during the transfer of pre-hospital care, especially with regard to the Brazilian context. In view of the above, it was asked: during the transfer of pre-hospital care, what circumstances can be identified as potential risks to patient safety? Thus, the objective was to identify potential risks to patient safety during the transfer of pre-hospital care.

## METHOD

A descriptive-exploratory study, with a qualitative approach and methodological orientation of content analysis.<sup>14</sup> The study was developed at the Mobile Emergency Care Service – SAMU in southern Brazil, using non-participant observation techniques and semi-structured interviews. The research participants were professionals from the SAMU health team involved in treating victims, i.e. doctors, nurses and nursing technicians/assistants.

The research was conducted in accordance with the required ethical standards. The research team consisted of a nurse and two nursing graduates, all with previous experience in the emergency area (residency in emergency and trauma, courses and extracurricular practical activities in trauma care). The researchers had no employment or other connection with the service where the study was developed. For the purpose of standardizing data collection procedures, the research team was properly trained on the techniques adopted.

Data collection took place from April to June 2018. The approach to the field took place through non-participant observation, performed by time sampling. There were a total of 135 hours of observation of the teams at the SAMU bases, at the scene of care and in the transfers of care, with information saturation being the defining criterion of the sample. Each observation period was approximately four hours, covering the morning, afternoon and night shifts, in a total of 53 calls from 33 different teams. Among these, eight services were provided by the Advanced Life Support team (SAV) and 45 by the Basic Life Support team (BLS), according to the proportional distribution of the number of teams in the municipality.

Non-participant observation contributed to the contact with the participants and the choice of the interviewees, which were defined intentionally. The inclusion criterion for the sample of professionals interviewed was to work in the service for more than six months. Professionals who were on leave or for any reason during the data collection period were excluded. Information saturation was the criterion used to define the total of 28 professionals.

The interview data were collected using a semi-structured script, the first part of which captured the participants' identification data, such as: age, sex, professional category, training time, post-graduation, work shift and time working in the SAMU. The second part consisted of questions that addressed the factors that interfere with patient safety during the transfer of care from SAMU to the Urgency and Emergency Network, the main challenges faced during the transfer of care and elements that could make transfers safer for the patient.

Both observations and interviews were carried out after reading and signing the Free and Informed Consent Form. In order to maintain the anonymity of the participants, the alphanumeric codes were used: "E" for nurses, "TE" for nursing technicians/assistants, "ME" for doctors, followed by a number relative to the order in which the interviews were carried out. For the observations, the letter "O" was used.

The analysis of the material resulting from the non-participant observation and the transcription of the interviews took place by thematic content analysis.<sup>14</sup> Three stages were followed: pre-analysis, exploration of the material and treatment of the results. In the pre-analysis, systematic tables were created in order to visualize the data collected in general. The next step was the exploration of the material, allowing the organization of the results according to the most discussed themes. Finally, the data were processed and interpreted, grouped into two thematic categories and based on other studies.

## RESULTS

Among the study participants, 19 were nursing technicians (67.86%), six were nurses (21.43%) and three were doctors (10.71%), with 15 women (53.57%) and 13 men (46.43%). The age range was between 31 and 60 years, with an average age of 41.57 years. Regarding the length of experience at SAMU, the average was 16.32 years, with a predominance of day shift (64.29%). Among the 28 professionals, 13 had graduate degrees (46.43%), the majority of whom were in the accident and emergency area. The sample of observations was characterized by 33 different teams, with 24 (72.73%) of these teams composing the (BLS) and 9 (27.27%) the (SAV).

The phenomenon of the study emerged from the analysis and systematic data integration process, supported by two interrelated categories: Stakeholders in patient and team safety; and The (inter) personal/professional dimension of care transfer. The first category is supported by two subcategories: Risks for the patient and staff during transport and transfer of care; and Different perspectives and implications for the continuity of care. The second category is supported by three subcategories: Vertical communication by hierarchies; Person-dependent communication; and Emotional care interface.

### Stakeholders in patient and staff safety

The characteristics of the service make care prone to potential risks, both for the patient and the team. The sirens and lights in emergency vehicles should function as an efficient negotiation in traffic, between the ambulance driver and other drivers and users of the roads and the areas around them, however situations of recklessness that can put at risk SAMU professionals and transported patients are not uncommon:

*... depending on the situation, the service is very dynamic, I have already transported the patient to a standstill, and then PCR doing maneuvers with a belt? You can't do this, so it's dangerous for both the patient and the team, in traffic you don't know what's going to happen ... (E-23) Traffic is very cruel, for example, on the last shift I saw a lady 78 years old who had a hip fracture. The driver, as a measure of comfort for the patient, drove at low speed to reduce the bumps because of the holes in the streets. At the same time, drivers who were driving, honked and cursed the driver for being so slow. They shouted "this ambulance is useless". We were only with the lights on, without the siren, because if it was on, then you would be attacked more than you are already in traffic. [...] They always want you to go on with a siren on, which is a stress for the patient and for the professionals, imagine driving around for 12h with a siren on to attend to the patients, to remove a stabilized patient, who is well, for another siren service on, I think that at 7pm I would be go mad because of all the noise ... (TE-25)*

*The interviewees reinforced that in addition to the journey taken in the transportation of the patient, the safety risks continue when the patient enters the service:*

*Our stretcher that came now, it is very worrying, it is not safe to leave a patient and many times you arrive at the hospital and they want to keep the stretcher, at any time the patient may fall off that stretcher, it lifts up. (TE-10) We have no resources [...] so we must try to do the best with what*

*we have, always try to set up the stretcher well, keep all drains and catheters in conformity during the entire transfer process to avoid damage, there are drivers who made a support to be fitted to the stretcher to hold the IV fluids. (E-27)*

SAMU professionals evaluate patients with many different symptoms and clinical conditions on a daily basis. Errors in clinical judgment may be associated with the difficulty in identifying diseases in such a short time, and with the fact that the professional does not carry out sufficient data collection with the family and/or patient:

*Sometimes, we do not know if the patient has a disease that needs isolation, for example, the one I told you we manage as if it were a stroke, it was a young man who had anisocoria, his wife said he did not take medication, was healthy and then suddenly he is comatose, [...] then the hospital team said it was meningitis, we were exposed, and then we take him to the emergency and stay there in the middle of everyone [...] we come to see a patient at home who has KPC, is colonized, the family member does not give us this information, the patient is unable to speak [...] I did not do any contact isolation because either I didn't collect or the family member didn't say it, nobody knows, they'll find out, I don't know, two or three days later, there will be a hospital infection, I think we're very wrong about that, in the data collection or in the wrong clinical exam. (E-09)*

The findings showed that some transfers have little information since the data collection on the scene was done quickly due to the circumstances of the place, in which professionals are forced or intimidated by the population to expedite the transport of the patient to the health service of reference:

*After the call, the doctor said that they left quickly, we did not collect as much information, as the driver warned that it was a place where drug dealing occurs, and the population becomes aggressive, contrary to some interventions carried out or not carried out by SAMU. (O-28)*

In this context, it is emphasized that the professionals who will continue the care started outside the hospital do not experience the same experiences as the SAMU teams, therefore they have different perspectives on the situations:

*It gets annoying, people asking about your service. I decide whether to immobilize, you [receiving team] decide whether to leave it like that or not. There is also that thing, you are in the middle of Ipiranga, crossing the perimeter, there are 300 thousand people around you, the patient is not reporting anything, in doubt you will immobilize, because there are always those who judge, even if the patient has not nothing, it will appear on TV shortly. (TE-09)*

*They think that we take the victim without venous access because we want to, now for a few years now, even the medical residency has been at SAMU. It's good, they need to see what we're going through outside the hospital. Depending on what I have to say, "look, I couldn't get access because I was in a cubicle, there was no light, I couldn't even get next to the patient and then we brought the patient here quickly" [...] I have to say, even to justify care or lack thereof for the colleague who is going to receive the patient. (E-15)*

The impression of not having your decision valued causes the feeling that the information transmitted is also being neglected, as shown in the excerpt:

*You saw that the patient had an arrhythmia, you reversed it, the patient arrived well at the hospital, but whoever is there tells me: you told me it was an arrhythmia, but look here the patient is fine. So, in a little while there will be almost negligence in receiving that patient. When I pass on the case, the person may not hear much, because she looked and thought: the patient is fine, he is lying to me, just for me to accept the patient. (ME-14)*

The risk classification of emergency services was seen by the interviewees as essential to determine the patient's journey through the emergency service, but the study participants expressed the opinion that nurses do not give due value to the kinematics reported by the SAMU professional, leading to conflicts among professionals regarding the patient's risk classification:

*I remember once when I was called to an accident scene between a car and a cyclist. [...] he hit his head on the car body and his helmet cracked on the back, a serious cinematic. I immobilized the patient on the rigid stretcher, put on a cervical collar, arrived at the hospital, talked about severe cinematics, passed the case on to the nurse and he asked the patient: when you turn your neck to the sides, are you in pain? Put your neck against your chest, are you in pain? It's okay, you can get up and go to the blue room to wait. I insisted to him that the cinematics were serious, and he said that the patient had nothing. (TE-19)*

The findings of the study showed that, often, while waiting for care transfers, or even after doing so, patients remain on the SAMU stretchers in hospital corridors, due to overcrowding in emergencies. In addition, many patients do not have the clinical conditions to be involved in the management of their medications, which reveals the importance of the SAMU team to inform everything that was performed and administered during pre-hospital care, since the omission of a medication can result in an equal or similar prescription during hospitalization, resulting in therapeutic duplication. The professionals said they were concerned with passing on this information, especially because they recognize that they prioritize the stabilization of the clinical condition and the agility in removing the patient.

*I feel bad [concern about safety] about the identification of patients who do not speak, who are bedridden, many do not have an ID band, if he stays on our stretcher, he has no defined place, he stays here, he goes there, it is very easy for them to miss the medication. (TE-16) I worry about not forgetting to say everything I did, I say the time I gave such medication, that this is the second serum that is running, because we do things and there is no label, there is no nothing, in the pre-hospital you do not identify anything, it is very fast, I say if I gave Midazolam 5 minutes ago, because then they know that they cannot do it now. (E-15)*

## **The (inter) personal/professional dimension of care transfer**

Power relations between professional categories can have negative effects on the safety of care provided. Analyzing these relationships from a communicational point of view, it is understood that they are often determined by hierarchical identities and professional privileges.

*When the doctor is there fighting and cursing us, we ask him to call the regulating doctor and they refuse, when it is from doctor to doctor, things change. If they are going to talk to another doctor it is full of affection on the phone and with the team, with the patient and the family member it is something else. (TE-11)*

*The nurse from a UPA comes to receive us and the SAMU doctor starts the case transfer, and at that moment the doctor on duty arrives, she interrupts the transfer with the nurse and goes to the doctor. (O-06)*

*Today we have little motivation in the group to participate in training, people do not participate, doctors even less, there is no culture of saying, everyone must go through training, there is a culture of saying the opposite, doctors do not need to undergo training. This is a little distressing. (E-15)*

The perception that the hierarchy directly interferes in the communication between the teams, and reflects on the safety of patients, was not revealed only by the professionals who feel deprived of this prestige, but also by the doctors themselves:

*After an appointment, the doctor tells me that an advanced ambulance is different from the basic one. With the basic, they [hospital team] do not respect so much because they are professionals with a technical level, while in the advanced they are two professionals with higher professional levels. (O-18)*

In addition to communication being interfered with by professional hierarchies, it also depends on the quality of the interaction between teams and people. Feelings of dislike and rejection tend to

decrease professional interactions, and results in withdrawal and impaired communication, negatively impacting patient care safety:

*Among professionals there are a lot of tempers, personality, something about behavior, not so much the physical part itself. (E-05) If there is a certain professional there, we already know that it will be well accepted, that there will be a good conversation, if it is someone else, that tense atmosphere already exists, he himself refuses to listen to you, that thing remains, you are talking to him and he turns around and goes to talk to the patient or does something else, he doesn't want to hear what you are saying. (TE-11)*

*Unfortunately, the human gets in the way, because if you have a doctor who is very closed off, communication will not happen, no one learns, neither you, nor the team and neither saves the patient. (ME-14)*

SAMU professionals also reported that the reception of those who receive them in the service and who will continue the care is not uniform. Professionalism is sometimes overcome by the humor of the workers, significantly interfering in care transfers:

*Sometimes, you think it will be very quiet and everyone gets sulky, it depends on each situation, whether it is day, night, weekend, Christmas, New Year. The equipment can even fail, but it happens, even if you keep doing it, it can happen, but what interferes more is the state of each human being at that moment, the situation that was created until the patient arrived at that moment, in the passage to the inside from the hospital [...] I'll give you an example, as I work in a hospital this also happens. It is a heavy environment and the regulator didn't have time to warn us, another team arrives out of the blue and you look and have nowhere to put it, all that frustration sometimes comes to the fore, because we are human, with our virtues and failures, so this is something I notice. (ME-14)*

In view of the mentioned aspects, some professionals are able to identify strategies to rescue the commitment to offer the patient safe and quality care:

*Everyone knows what to do, but this honesty, sincerity and calmness is the most important, because, when we get angry, the tendency is to forget something that may be really important ahead. (ME-14)*

*There is that situation that if you are not satisfied, leave, there are many people who want to work, there are people who love what they do, now the patient is not to blame, he has to go to some entrance door. I can't harm a patient because I'm tired, because I came from another job, because I'm 24 hours on duty, the patient is not to blame. (E-26)*

Personal experiences and feelings accompany the professional in the work context and, when there are no appropriate spaces for these feelings to be elaborated, whether in private refuges, as coping strategies, support in therapy, or even in group dynamics, they can negatively imply technical interactions - assistance that the activity requires. The findings denote the lack of emotional support for professionals, as well as the standardization of conduct during the transfer of pre-hospital care in order to qualify relationships, attention and patient care.

## DISCUSSION

The findings of this study highlighted circumstances in which it was possible to identify potential risks to patient safety during the transfer of pre-hospital care. Study participants identified the risks of acting while moving, during patient transport, and the resources needed to make the journey feasible and/or safe. They recognized that the circumstances related to the lack of material resources, the diagnostic difficulty, the characteristic of mobile pre-hospital care, the pressures of the population, the conflicts between the teams, the attitude of the professionals and the effective communication interfere in the patient's safety and, consequently, in the continuity of care.

Communication between health teams is crucial for providing safe care to individuals. Communication failures have been one of the main factors that contribute to the occurrence of adverse events and, consequently, decreased quality of care. Effective communication, which is timely, accurate, complete, unambiguous and understood by the recipient, reduces the occurrence of errors and results in improved patient safety.<sup>15</sup>

Weakened communication causes tension between the teams, which has implications for the effectiveness of continuity of care, since the disagreement between the parties is capable of generating conflicts that may harm the patient. Conflicts can occur between teams (between two different teams) and between teams (within the team). Its origins can be disagreements about therapeutic conduct, lack of collaboration and lack of recognition of the work of others.<sup>16</sup>

A Brazilian study carried out with nurses working at SAMU in a municipality in Rio Grande do Norte, which analyzed the risks in pre-hospital care, highlighted difficulties in packaging equipment and materials; work specificities in mobile pre-hospital care; risk of infection; risks of trauma and falls; and risks for medication administration.<sup>17</sup> The risks for medication administration were one of the main concerns of the professionals who participated in the study, followed by the risks of trauma and falls, due to the current conditions of the service stretchers.

Another Brazilian study carried out in an Intensive Care Center of a hospital in the Brazilian Network of Sentinel Hospitals corroborates this statement, as the participants in this study mentioned that the lack of communication between the multiprofessional team, especially between medical and nursing staff, leads to medication errors. The error reported by nurses, which occurs most frequently, is the change of medication, usually between the prescription and what is in the infusion pump.<sup>18</sup>

Prescribing errors at the hospital level have been a source of concern, as they may be caused by poor communication and lack of access to documentation or information within the teams. The use of new technologies would assist in the reduction of medication errors, as failures are more easily detected and intercepted due to the use of electronic and computerized systems for checking medications, including potential drug interactions.<sup>19</sup>

In an emergency hospital service in Paraná, nurses reported that the main difficulties are related to the lack of human and physical resources in view of the great demand of critically ill patients, with difficulties in maintaining patient privacy and handling equipment. The main interference in the sector's routine with the presence of the critical patient was in relation to staff sizing.<sup>20</sup>

It is noteworthy that the professionals of pre-hospital care, due to the adverse conditions of the work environment, face situations that leave them more vulnerable to occupational risks. They refer to difficult access to the victims, insecurity at the accident scene, carrying out procedures with the vehicle at a halt or in motion, unfavorable conditions of light, rain, heat, cold, vehicle flow, poor hygiene, presence of animals, aggressive people and social turmoil. These factors are conditions that differentiate SAMU's work from that performed in the hospital environment.<sup>17</sup>

In contrast, the main occupational risks in mobile pre-hospital care were those related to accidents with sharps, involving puncture accidents with contaminated material after the venipuncture procedure. In addition, contact with chemical substances, represented by sodium hypochlorite and glutaraldehyde, was mentioned. The risk related to automobile collision was also identified, since the ambulance drives at high speed to rescue the victim in the shortest time possible.<sup>21</sup>

Regarding SAMU in Piauí, it was identified that the greatest risk of traffic accidents is in the collision of automobiles. Several factors influence it, including: scrapping of the ambulance fleet, due to the lack of systematic renewal, the misuse of the vehicle by the drivers, the "improvising" by the mechanic workshops, the inadequate qualification of the drivers in defensive driving. The authors emphasize the disrespect of the population, which negatively affects the ambulance and eventually causing accidents.<sup>22</sup>

The professionals who participated in the study also reported the presence of psychosocial risks. A study performed with professionals who work in ambulances in Chile, identified that the main verbal abusers are patients, their families and the general public, while the majority of the authors of bullying are members of the team and external colleagues (emergency units that receive patients who are transferred by SAMU professionals and technicians). Public aggressiveness was associated with a lack of knowledge about how the health system works, waiting lines for medical treatment and the severity of health problems.<sup>23</sup>

A Brazilian study carried out with professionals from SAMU in Belo Horizonte identified that the professionals highlighted the perception of the resistance of other services in their discussions. The most mentioned justification is based on the fact that they are responsible for the increase in the volume of work in hospital services, which would generate dissatisfaction among professionals. Perceptions of a bad relationship were found, associated with inadequate receptivity in Emergency Care Units and emergency hospitals.<sup>24</sup>

The lack of protocols between the emergency services also generated non-conformities between the teams. The use of clinical-care protocols contributes to improving the quality of patient care.<sup>25</sup> A systematic literature review, performed in emergency services, addresses that, to improve patient safety, care practices must be based on evidence and use a multidisciplinary approach in order to guarantee standardized care.<sup>26</sup> Thus, it is evident that the lack of standardization of protocols for continuity of care represents an important risk to patient safety, leading to errors and weakening the crucial communication in the transfer of care.

There are also other risks to patient safety, such as errors in diagnosis, procedural complications and investigative errors on the part of professionals working in the emergency departments. A study carried out in Australia reported the difficulty in diagnosing the patient, this was partly due to the fact that the material and technological resources available within an ambulance are extremely limited in relation to other services in the network, in addition to the fact that the service time is limited and the objective is to provide adequate care and/or transportation to a adequately hierarchical health service. Therefore, the study demonstrated that the assertion in the diagnosis, the performance to perform procedures and the interpretation of results can reduce errors in the emergency departments.<sup>27</sup>

With regard to interprofessional relations, an Australian study highlighted the importance of good interactions between professionals for effective communication between two hospital emergencies. Still, they identified that the professionals' contemptuous behaviors during interactions had a negative impact on the transfer of care.<sup>28</sup>

A Brazilian study, carried out in a hospital in Rio de Janeiro, evaluated notifications related to international patient safety goals, where the highest number of notifications was related to Safe Surgery, followed by Effective Communication. The notifications related to Effective Communication were related to the deficiency or absence of communication, highlighting that the contact, even if by telephone, or even the return of the contact, make the information reliable, rectify and ratify it.<sup>29</sup>

Regarding the repercussions of the professionals' behavior, the results of a study carried out in Iran converge with the facts observed in this research. The study cited revealed that disruptive behaviors were reported: doctors reported that nurses have the most disturbing behavior, while nurses reported the opposite. These findings may be due to the hierarchy or distance of power between them. The results of this study suggest that doctors and nurses face moral conflicts, due to the differences between their own professional and institutional values. In addition, there is an imbalance of power between them due to differences in their work objectives. Doctors have sufficient authority and responsibility to act independently of other employees, while nurses do not have this independence.<sup>30</sup>

Study participants also reported that the errors present in the transfer of care are often attributed to their own limitations. A study carried out with professionals from pediatric inpatient units

in a hospital in southern Brazil, clarifies that the first step in preventing health errors is to admit that it is possible and is present in care. An important aspect is that, in this area, future professionals are prepared to get it right, as they start from the premise that the work developed will be error free, incorporating the notion that making mistakes is unlikely. It is noticed that the context of health care aggregates numerous cultural issues, especially in the hospital environment, which can interfere with patient safety, such as: hierarchy of positions, praise of the medical professional, focus on the disease, individual errors, punishment of professionals, concealment of care errors, inadequate or outdated practices, among others.<sup>31</sup>

The construction of partnerships and commitments is shown as a way to stimulate the development and strengthening of a culture of safety in the institutions. The ability to accept the possibility of an adverse event occurring is one of the first steps to be taken by health professionals who intend to evolve into a culture which promotes patient safety. To promote patient safety, it is necessary to promote a good relationship and team cooperation, with unity, respect and motivation. Therefore, teamwork is a prerequisite for patient safety.<sup>31</sup>

This study may represent a means of sensitizing the scientific community and instigating new studies focused on the theme, overcoming the design limitations found here, which do not allow inferring cause and effect relationships or even greater territorial coverage. The scarce national literature on studies with a similar focus was also a restriction found at the time of the discussion. Given the complexity of this topic, and the scarcity of literature, the results of this work contribute to reflection and discussions on the transfer of care and patient safety in pre-hospital care in the country.

From the analysis of the intervening circumstances in the communication of information between the teams, during the transfer of pre-hospital care, there is more support on the process and the context in which the transfers of care occur in the care of accidents and emergencies, which can contribute to the redesign of strategies to qualify care, communication, patient safety, the connection between services and transfers between the Emergency Care Network services.

## CONCLUSION

The present study made it possible to identify potential risks to patient safety during the transfer of pre-hospital care, which refer specially to weakened communication between teams and the lack of care protocols that, like the safe surgery checklist, favor the integrated and effective performance of the team. Patients are also exposed to the risks inherent to the characteristics of this service, such as the performance of care while in movement during transportation, the weather and diagnostic difficulties related to the brevity and available resources of the service. Risks to safe transfer occur due to scarce material resources, but also due to non-conformities in communication between the teams.

In the context studied, in which SAMU operates and transfers care to the services of the Emergency Care Network, patients are often not evaluated according to the same criteria adopted by these professionals, which generates conflicts and discussions between the teams. Communication based on professional hierarchies, influenced by the personal and emotional characteristics of each worker, has implications for patient safety during the transfer of care.

It is important to highlight that, in view of the results found in this study, there were challenges to be overcome in the transfer of prehospital care: qualifying verbal and written communication processes, systematizing and standardizing prehospital care transfers, through the SBAR (Situation-Background-Assessment-Recommendation) method, and foster permanent education strategies involving patient safety themes, with an emphasis on transferring care and effective communication. These strategies may increase the quality and safety of the agile and decisive care required by the pre-hospital care and the entire Urgency and Emergency Network. In addition, the study highlights the need for its replication and expansion in other scenarios of action, to confront and make advancements in relation to the knowledge of care transfer.

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## NOTES

### ORIGIN OF THE ARTICLE

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### AUTHOR CONTRIBUTION

Study design: Miorin JD, Dal Pai D.

Data collection: Miorin JD, Dal Pai D, Indruczaki NS.

Data analysis and interpretation: Miorin JD, Dal Pai D.

Discussion of results: Miorin JD, Dal Pai D.

Writing and/or critical review of the content: Miorin JD, Dal Pai D, Ciconet RM, Lima MADS, Gerhardt, Indruczaki NS.

Review and final approval of the final version: Miorin JD, Dal Pai D, Ciconet RM, Lima MADS, Gerhardt, Indruczaki NS.

### APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beings of the Municipal Health Department of Porto Alegre, opinion no.2,603,469, Presentation Certificate for Ethical Appreciation 82452318.3.3001.5338

### CONFLICT OF INTEREST

There is no conflict of interest.

### HISTORICAL

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## **ERRATUM: TRANSFER OF PRE-HOSPITAL CARE AND ITS POTENTIAL RISKS FOR PATIENT SAFETY**

Regarding the article “**TRANSFER OF PRE-HOSPITAL CARE AND ITS POTENTIAL RISKS FOR PATIENT SAFETY**”, with DOI number: <https://doi.org/10.1590/1980-265x-tce-2019-0073>, published in *Texto & Contexto Enfermagem*, vol 29 in 2020, elocation e20190073:

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