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# Implantation of the emergency ambulance service in Salvador, Bahia: reality and challenges

A IMPLANTAÇÃO DO PROJETO DE ATENDIMENTO MÓVEL DE URGÊNCIA EM SALVADOR/BA: PANORAMA E DESAFIOS

LA IMPLANTACIÓN DEL PROYECTO DE ATENCIÓN DE URGENCIA MÓVIL EN SALVADOR/BAHIA: PANORAMA Y RETOS

Célia Maria Sales Vieira<sup>1</sup>, Fernanda Carneiro Mussi<sup>2</sup>

## ABSTRACT

The goal of this study was to describe the implementation of the emergency ambulance service of Salvador, Bahia (SAMU-192). The Ministry of Health provided the legal basis and regulations for its implementation. The main purpose of this service is the provision of free primary level healthcare to individuals, with clinical, surgical, traumatic and psychiatric aggravations that cause suffering, sequels or death and occur outside the hospital environment. The specific goals of SAMU-192 was to grant free healthcare to urgency and emergency situations, under the hierarchy and regulations of the Single Health System (SUS) of the Brazilian government, assuring that public resources will be available and integrated to the complementary healthcare network. Investments for the installation of the service were agreed on in the city and with federal and state management commissions. To turn SAMU-192 into reality, several challenges need to be accomplished, including community education, professional qualification and evaluation of human and material resources so as to provide basic emergency care with the appropriate quality.

## KEY WORDS

Emergencies.  
Emergency medical services.  
Emergency treatment.  
Health services needs and demand.

## RESUMO

O estudo objetivou relatar a experiência na implantação e estruturação do projeto do Serviço Móvel de Urgência (SAMU-192), em Salvador, cujas bases legais foram portarias do Ministério da Saúde e a Norma Operacional de Assistência à Saúde 02/2002. O serviço tem como finalidade prestar assistência gratuita ao indivíduo, em um primeiro nível de atenção, com agravos de natureza clínica, cirúrgica, traumática e psiquiátrica que acarretam sofrimento, seqüelas ou morte e ocorrem fora do ambiente hospitalar. O objetivo específico foi garantir o atendimento às situações de urgência e emergência por meio do SAMU-192, regulado, hierarquizado e integrado ao Sistema Único de Saúde, assegurando recursos públicos inclusive integrados à rede complementar de assistência. Despesas para sua instalação foram pactuadas no município e em comissões intergestoras federal e estadual. Os desafios do serviço incluem educação comunitária, capacitação profissional, avaliação de recursos humanos e materiais, na dinâmica e qualidade da atenção.

## DESCRIPTORES

Emergências.  
Serviços médicos de emergência.  
Tratamento de emergência.  
Necessidades e demandas de serviços de saúde.

## RESUMEN

El estudio tuvo por objetivo narrar la experiencia sobre la implantación y estructuración del proyecto de Servicio de Urgencia Móvil (SAMU-192) en Salvador, basado legalmente por decretos del Ministerio de Salud y la Norma Operacional de Asistencia a la Salud 02/2002. La finalidad del servicio es brindar asistencia gratuita fuera del hospital al individuo en un primer nivel de atención, en casos de tipo clínico, quirúrgico, traumático y psiquiátrico que provocan sufrimiento, secuelas o muerte. El objetivo específico fue garantizar la atención en casos de urgencia y emergencia a través del SAMU-192, reglamentado, jerarquizado e integrado al Sistema Único de Salud, asegurando recursos públicos, inclusive integrados a la red complementaria de asistencia. Gastos por instalación fueron establecidos entre la municipalidad y comisiones inter-gestoras federales y estatales. Como retos en la dinámica y calidad de la atención: educación comunitaria, capacitación profesional, evaluación de recursos humanos y materiales.

## DESCRIPTORES

Urgencias médicas.  
Servicios médicos de urgencia.  
Tratamiento de urgencia.  
Necesidades y demandas de servicios de salud.

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## INTRODUCTION

Urgency and emergency are an important component of healthcare. The increasing number of accidents, urban violence and the insufficient structure of the network are factors that have contributed for these services to be overloaded when providing care to the Brazilian population <sup>(1)</sup>.

This scenario has justified initiatives and investments by the Ministry of Health - *Ministério da Saúde (MS)*, in partnership with state and municipal Health Secretariats, aiming at structuring, organizing, assuring and qualifying services for urgencies and emergencies. The following were implemented in this sense: Regulation GM/MS 2048, November 5<sup>th</sup>, 2002, instituting the Technical Regulation of the State Urgency and Emergency Systems; Regulation 1.863 GM/MS, September 29<sup>th</sup>, 2003, which institutes the National Policy of Care Delivery to Urgencies, determining, in article 3, the organization of local-regional networks of integral care for urgencies, the links of the life support chain, establishing its many components: Fixed pre-hospital service, mobile pre-hospital service and post-hospital<sup>(a)</sup>; Regulation 1.864/GM, September 29<sup>th</sup>, 2003, which institutes the mobile pre-hospital service, with the implantation of the Mobile Urgency Services - *Serviços de Atendimento Móvel de Urgência (SAMU-192)* – and its associated rescue services throughout the national territory, with their Medical Urgency Regulation Centers, with a single national telephone number for medical urgencies – 192 (SAMU central – 192) and its Centers for Education in Urgencies <sup>(1-3)</sup>.

SAMU-192 is the main component of the National Policy of Urgency Services, created in Brazil in 2003 for the life of people and to assure the quality of the service provided by the Single Health System - *Sistema Único de Saúde – SUS* <sup>(1-2)</sup>. According to its principles and guidelines, it coordinates the resources, processes and flows that aim at guaranteeing the patient's survival, interacting with all components of the local healthcare network.

SAMU-192 is the way used by the Ministry of Health to implement pre-hospital services (PHS) within the scope of the SUS, provided as the first level of healthcare, to individuals with acute clinical, traumatic or psychiatric situations occurring outside the hospital environment, with the possibility of causing suffering, sequelae or death. In this

context, a strong potential for healthcare organization is needed, as the way to respond to urgency demands occurred at home, at the workplace, in public streets or whenever the individual needs the SUS, with necessary and adequate resources for the complexity of the patient's condition <sup>(1)</sup>. It is worth noting that, historically, the level of pre-hospital response to urgencies and emergencies has been insufficient, overcrowding hospitals and emergency services, even when the clinical situation is not characterized as an emergency <sup>(4)</sup>. This reality, allied to the lack of adequate or sufficient orientation to the population contributes for these services to be unable to offer qualified and humanized healthcare.

The SAMU Regulation Central is an open door for the public to communicate with the Health System, which receives the call for help, prioritizes and responds in the shortest possible time, at the most adequate place to solve the health problem. Pre-hospital services should be structured to improve and qualify urgency healthcare, reduce hospitalization times and improve rehabilitation prognoses. Quick response to traumatic and clinical acute situations, by dispatching basic and advanced health support ambulances (mobile ICUs) with healthcare teams can contribute to a significant reduction in the rate of early deaths<sup>(1,3)</sup>.

According to the above, and in conformity with the aforementioned regulations by the Ministry of Health, the Director Plan for Bahia was implemented, including its capital Salvador, regarding the reorganization process of urgency and emergency services in order to assure SAMU-192 in this city, as well as the Urgency Medical Regulation Centers and the Centers of Urgency Education.

Therefore, this study aimed at reporting the experience in the elaboration of the project to enable the implantation and structuring of SAMU-192 in Salvador/BA, highlighting the challenges to be conquered during its implementation.

## METHOD

This is a case study containing conceptual and legal aspects, goals, justifications, challenges and descriptions of actions and intervention strategies relevant for the implantation project of SAMU-192 in Salvador/BA, from 2002 to 2004.

## RESULTS

### *The implantation and structuring of SAMU-192 in Salvador/BA*

The city of Salvador is located on the state's coastal area, with an area of 324.53 Km<sup>2</sup> and a population of 2,520,505 inhabitants. It is divided in 12 Health Districts, according to the SUS criteria <sup>(5)</sup>.

Pre-hospital services should be structured to improve and qualify urgency healthcare, reduce hospitalization times and improve rehabilitation prognoses.

<sup>(a)</sup> Fixed pre-hospital (basic healthcare and family healthcare units, community health agent teams, specialized outpatient clinics, diagnosis and therapy services and non-hospital units for urgency service); Mobile pre-hospital (Mobile Urgency Services and associated rescue services, under medical regulation of urgencies and the single national telephone number for medical urgencies – 192); Hospitals (hospital buildings with urgency services in type I and II general hospital units and type I, II and III referral units, as well as the whole range of hospitalization beds – specialized general, reserve, long-permanence, semi-intensive and intensive beds); Post-hospital (home care and day hospital modalities, total rehabilitation projects with a community-based rehabilitation component).

This city was chosen by the Ministry of Health as one of the core cities in the Northeast for the implantation and structuring of SAMU-192, the Urgency Medical Regulation Centers and the Center for Permanent Urgency Education, considering aspects like: risk of accidents due to mudslides and floods in rainy seasons; high traffic volume, with records accident levels; predominantly low-income population, without private health insurance and with transportation difficulties regarding medical help; overcrowding of emergency services in large hospitals; lack of ambulances in the basic healthcare networks to transport patients to hospitals; an estimated incidence of 99/100,000 acute myocardial infarctions in adults aged 25 or older; possibility of hospital and post-hospital support, i.e. existence of medium and high complexity and the necessary beds to establish referral and counter-referral for patients in the many healthcare components<sup>(5-6)</sup>.

Regulations 737/2001; 2048/2002; 1863/2003; 1864/2003 by the Ministry of Health<sup>(1-3,7)</sup> and the Operational Healthcare Standard NOAS/SUS 01 and 02/2002<sup>(8)</sup>, which establish and regulate the National Policy of Urgency Services, were the legal support for the implantation of the project.

The goal of the project in Salvador was to assure human beings' survival through early healthcare in clinical, surgical, traumatic and psychiatric problem situations and/or adequate transportation to a healthcare service that works according to the regulations and hierarchy of the SUS<sup>(9)</sup>. The general goals consisted in: implanting the mobile pre-hospital component (SAMU-192); structuring the Urgency Medical Regulation Center; creating the Center for Permanent Urgency Education; formalizing the City Management Committee of Urgency Service, in technical cooperation with areas acting in rescue, disasters and accidents with multiple victims; guaranteeing the sustainability of the City Emergency and Urgency System, emphasizing the strengthening of the 12 health districts, creating the axis of integrality; implementing both fixed and mobile pre-hospital interactions. As specific goals, the following are noted: guaranteeing public service for situations of urgency and emergency and other occurrences through the free service SAMU-192 and assuring the existing public resources and others, agreed upon, regionalized and divided into hierarchies.

The project was designed by the Salvador Secretariat of Health in 2003<sup>(9)</sup>, approved by the Salvador City Council of Health, and voted on by the Bipartisan inter-managerial commission in Bahia. Later, it was submitted to the Ministry of Health and approved in December, 2003, with reserves regarding the contracts for the services involved with the urgency services and the guarantee of shared funding and hiring human resources by the city. Finally, it was published in the official newspaper of the city - *Diário Oficial do Município* – on April 28<sup>th</sup>, 2005<sup>(10)</sup>.

Regarding material resources, the *physical space* was provided by the State Secretariat of Health - *Secretaria de Saúde do Estado (SESAB)* – located at Largo do Tamarinerio,

in the Pau Miúdo neighborhood in Salvador. The *equipment* was agreed on in the inter-managerial commissions to be purchased with 50% of federal resources, 30% of state resources and 20% of city resources. For the *vehicles*, 25 Basic Support Vehicles (VSB) were purchased to provide inter-hospital transportation for people with known or presumed risk of death, and six Advanced Support Vehicles (VSA) were purchased to provide care and transportation to high-risk patients, in emergencies demanding intensive care. The vehicles were purchased in agreement with the Ministry of Health, and were intended to be equipped and maintained by the state and the city, each contributing with 30 and 20%, respectively. According to the Ministry of Health, the calculated ratio was one VSB for every 100-150 thousand inhabitants and one VSA for every 400-450 thousand inhabitants.

Regarding human resources, it was predicted that 977 professionals would be necessary to compose the SAMU-192 staff, including coordinating, regulating and healthcare physicians, coordinating and healthcare nurses, nursing auxiliaries, computer operators, general services, dispatchers and drivers. The monthly personnel costs were estimated as follows: Basic Life Support: US\$ 5,555.00; Advanced Life Support US\$ 12,731.00; SAMU-192 Central US\$ 8,796.00.

The challenges in the implantation process of SAMU-192 in Salvador were strategic for the implementation of healthcare management in the city, inserted in the full management of the healthcare system. This means that it is a challenge for the city to guarantee the whole program of city healthcare / in outpatient clinics, specialized, pre-hospital and hospital referral institutions, by providing actions and services in this field under a single management in this governmental sphere, following the decentralization process according to Law 8080/90 and the aforementioned Basic Operational Standards. Thus, among the main challenges faced for the implementation of the service, the following are noted: the city assumed the reorganization of the healthcare model, strengthening the shared management concept and consolidating the city function of healthcare manager, at outpatient clinic, pre-hospital and hospital levels; the establishment and maintenance of technical cooperation with the firefighter service, the highway, military and civil police, the city guard, the state and city civil defense services in the rescue, disaster and multiple-victim accident areas; guarantee of organization and offer of local urgency service systems, structured by the city and confirmed by the SUS, with organized supply and demands met in the urgency and emergency areas of the city.

### **Challenges for SAMU-192 / Salvador -BA**

As seen, SAMU-192 in Salvador was a long-term achievement, becoming a relevant step to optimize treatment, care and the prognosis of individuals struck by sudden events, often potentially deadly.

SAMU-192 has been active in this city recently. However, simply making the service available to the population

does not attest its efficacy and efficiency. Its success demands that it be based on the local necessities of the community, adequately-trained professionals for first care delivery in urgencies and emergencies, material resources that are indispensable to the treatment provided, integration and operational compatibility of devices within the higher system of healthcare delivery regulation. Therefore, SAMU-192 requires constant planning and evaluation of the local communities' service needs; definition of priorities and management of the available resources to meet those needs; critical evaluation of operating policies, medical procedures and protocols, service statistics and the case registry system; evaluation and continuous education of professional skills and competences, including the offer of permanent educational programs, with simulated scenarios to improve the retention of skills; identification and execution of strategies to improve the action of the system and evaluation of its occurrence, based on the changes made. It is worth noting that the best way to determine the solidity of the survival chain is through the evaluation of the survival rates achieved by the emergency medical service system. Therefore, its work processes and service protocols should be submitted to constant evaluations by scientific and technical organs.

Another extremely relevant point regards the education and training of the public. SAMU-192 is on the streets of the city of Salvador, but it is necessary to question how the community is being (and will be) prepared to obtain the benefits of this service. Simply offering healthcare services is not enough. It is crucial for the population to be educated about its responsibility to use this service. Therefore, the public needs to be able to quickly recognize clinical situations requiring the activation of SAMU-192, reducing risks and delays of personal transportation for the execution of basic life support techniques, recognizing the importance of advanced cardiology life support to minimize incapacities and sudden death. Qualification programs for laypeople should involve individuals who work in schools, companies, public institutions, churches, airports, transportation facilities, healthcare services, etc. In addition, several community groups should be approached with educational actions that are compatible with their possibilities of learning. Educational textbooks available in the public and private healthcare network of the city and the aforementioned centers, and public campaigns to increase com-

munity awareness about the functions and resources of SAMU-192 could contribute with important information about actions and decisions to be made in the personal scope regarding the utilization of this service<sup>(11)</sup>. If the population is not prepared to use SAMU-192 adequately, calls may not be made or be inadequate, causing an excessive demand of the healthcare system and making it impossible for the population to benefit from its best response.

Another point worth noting is the preparation of the public healthcare network with resources to receive the patient, in case the complexity of the service is not within the reach of SAMU-192. This includes, minimally, the full functioning of the Medical Urgency Regulation Central, hospitals with available beds, qualified professionals and adequate material resources and equipment to provide care, including therapeutic and diagnostic resources.

Hence, it is still very challenging to achieve valuation by individuals at risk, the search for early medical care and to identify gaps that can be improved in the initial pre- and intra-hospital service, in an effort to reduce morbidity and mortality rates. Studies aiming at identifying the decision-making process and judgment of the clinical situations by the community and the necessary improvements in the pre-hospital service system could bring important social contributions.

## FINAL CONSIDERATIONS

SAMU-192 needs to be constantly thought of as a political and ethical action that focuses on the improvement of coverage and quality of the community pre-hospital service, recognizing the individuals as citizens with rights and conditions to access healthcare services that can assure the dignity of their survival with technical-scientific competence. Therefore, the challenges of SAMU-192 will be permanent, in the sense of guaranteeing the care quality it is meant to provide. SAMU-192, recently implemented in the city of Salvador, is expected to respond with efficiency and efficacy to the population's demands in cases of urgencies and emergencies, which implies technical-scientific, ethical and humanistic competences in the healthcare team, public education, material resources, technologies and constant evaluation processes.

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