Pediatric Outpatient Teaching Clinics in Healthcare Networks: Enhancing Medical Education and Patient Care

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Abstract: ***This systematic review examines healthcare networks with a specific focus on pediatrics, highlighting the role of outpatient teaching clinics in medical education. It concludes that integrating theoretical learning with practical experience enhances the training of general practitioners***

Keywords: Healthcare networks, Pediatrics, Unified Health System, Outpatient teaching clinic, Medical education.

1. Introduction

The Unified Health System (SUS) was established due to the 8th National Health Conference (CNS) in 1986. It was a response to the need to strengthen the public health sector, expand healthcare coverage for all citizens, and integrate social security medicine with public health. The system was created to be a single, unified system. The 1988 Brazilian constitution included the implementation of the Unified Health System (SUS), which was regulated from 1990 onwards with the Organic Health Law [1].

Currently, it is one of the largest public health systems in the world, which guarantees comprehensive care for the entire population in Brazilian territory. The principles of the SUS are based on universality, completeness, and equity. Furthermore, its guidelines include decentralization, comprehensive care, and community participation. Its financing includes resources from the Social Security budget, the Union, the States, the Federal District, and the Municipalities, in addition to other sources [2]. Therefore, it is based on the Beveridge health model, which is based on universal coverage and financed by society through the collection of taxes and duties.

Universities contribute to health services either by complementing or executing actions in the delivery of care. Various assistance modalities have been part of the service provided by the SUS in universities, such as public, private, or private institutions of public interest. Among the services listed, specialized hospitals, general hospitals, and outpatient services stand out [3].

An outpatient teaching clinic is a service that aims to train health professionals following the National Curriculum Guidelines. Therefore, it is a place where students from various courses in the health sector consolidate their theoretical and practical learning through services provided to the city's population, the majority of which come from the Care Networks of the Unified Health System. The services are supervised and guided by preceptors with a degree in the health field. In this way, they highlight the commitment and co-responsibility in care in the teaching-learning process in health. They are characterized by a secondary healthcare model, where different medical specialties can be found [3].

In a pediatric outpatient teaching clinic, monitoring covers different age groups. It includes childcare, vaccination schedules, education, treatment of complications, early detection of pathologies, and guidance on accident prevention. Care information is attached to a medical record, where it can later be reviewed to consider longitudinally, one of the attributes of basic healthcare [4].

This investigation aims to identify the importance of pediatric outpatient teaching clinics in the education of medical students and their role within the healthcare network.

2. Methods

This study employs a qualitative descriptive research approach, utilizing an applied and exploratory literature review. Data were collected from scientific journals, literature from the Brazilian Ministry of Health, and previous dissertations. The review focused on publications from 2010 to 2024, including articles in Portuguese and English.

3. Discussion and Results

3.1 Healthcare Network

The World Health Organization, although it does not specifically mention the word network, notes that when the health units of a system become more autonomous, there is a risk of disintegration, justifying that fragmentation presents negative consequences for the efficiency and equity of health systems. Furthermore, fragmented systems determine significant allocative inefficiencies. In conceptual terms, the definition used for integrated care is a concept that brings together inputs, management, and organization of services related to diagnosis, treatment, care, rehabilitation, and health promotion [5]. Integrated care is a means to improve services concerning access, quality, user satisfaction, and efficiency.

Eugênio V. Mendes, one of the pioneers in the country in studies of healthcare networks, presents a systematic proposal for healthcare networks, in the form of integrated health systems, posed as the microeconomic dilemma between fragmentation and integration of the SUS [6]. Vertical integration is the articulation of services at distinct levels of care, from any federative entity, whether profit-making or not, through a single management.

According to Ordinance 2479/2010, Healthcare Network (HCN) is defined as organizational arrangements of health service actions, of different technological densities, integrated through technical, logistical, and management support systems, which seek to guarantee care comprehensiveness.

Within its characteristics, all points in the network will have a horizontal relationship and the APS will be the communication center between the points, acting as organizer and coordinator. Furthermore, there is a central focus on the population's health needs. Care is continuous and comprehensive, in addition to being multidisciplinary. There is a sharing of objectives and commitments to health and economic results.

The objective of the HCN is to allow a systemic integration of health actions and services, thus allowing continuous, comprehensive, quality, responsible, and humanized care [6]. Furthermore, it allows for increasing the System's performance in terms of access, equity, clinical, health, and economic effectiveness.

The HCN has as its principle the centrality of the population's health needs, that is, health actions and services must be directed to meet the health needs of the population of a given territory. There is responsibility for continuous and comprehensive care, health professionals must be responsible for the continuous and comprehensive care of users, accompanying them throughout the entire care process [5]. Multidisciplinary care, with the health team being made up of professionals from different areas, working together to offer quality care to users. There is also a sharing of objectives and commitments, all health professionals and users must share the same objectives and commitments to the health of the population.

Within HCN we have healthcare points, with different technological densities, however, each exerts its due importance. As already mentioned, within the network, Primary Health Care takes over the center, and around it is points of care such as homes, Basic Health Units, specialized outpatient units, chemotherapy and hematology services, Psychosocial Care Centers, and Therapeutic Residences. Hospitals can house different healthcare points, such as, for example, emergency outpatient clinics, ambulatory surgery units, surgical centers, maternity wards, and Intensive Care Units.

To ensure this commitment to improving the population's health and the relationship between health points, formal contractual mechanisms between regulatory/financier entities and service providers are necessary.

The operationalization of the HCN occurs through the interaction of its three constituent elements: population/health regions, operational structure, and health care model [6].

The health population refers to the described and registered population, whereas health regions are specific geographic areas made up of a group of neighboring municipalities, defined by cultural, socioeconomic identity, and transport infrastructure. Within the operational structure, it covers PHC at the center and governance system, logistical system, support system, and secondary and tertiary care. The coordination system encompasses the user's identification card, clinical records, health regulation system, and transport systems. The support system comprises diagnostic and therapeutic support systems, a pharmaceutical assistance system involving organization and assistance at all stages, and the health information system, such as the Mortality Information System (MIS), Health Information System Live Births (HISLB), Disease Information and Notification System (DINS), among others [6]. The governance system encompasses the organizational arrangement with the regional management board. The Health Care model is a system that organizes the HCN. There is a current hospital-centric model, focused on illness and acute conditions. Currently, there is an ongoing redirection towards a person-centered health model, PHC at the center, and initiative-taking. The Family Health Strategy represents the main model of healthcare; therefore, it is extremely important to strengthen this model, allowing a decline in spending and an important expansion of resolution within the HCN.

Healthcare Networks are an important strategy to strengthen the SUS and improve the health of the Brazilian population. By integrating different points of care and promoting continuous and comprehensive care, HCNs contribute to the provision of quality health services, with greater equity and efficiency [5].

3.2 Healthcare Network in Pediatric

In 2015, the Ministry of Health (MH) through Ordinance No. 1,130 established the National Policy for Comprehensive Healthcare for Children (NPCHC), ensuring care up to nine years of age. NPCHC aims to promote and ensure children's health, through actions that involve everything from the

child's pregnancy to the environment in which they live [7].
To analyze childcare, access to mortality and morbidity coefficients is necessary, as the main objective is to guarantee comprehensive care with a reduction in morbidity and mortality and to guarantee a favorable environment for providing care, with dignified conditions. Based on data together with ordinances, technical notes, laws, and guidelines, the manager works within his area of coverage to carry out the main indicators: number of deaths of children under 5 years old, proportion of investigated deaths of children under 5 years, number of deaths of children under 1-year-old and by components (early neonatal, late neonatal and post-neonatal), the proportion of investigated deaths of children under 1-year-old and by components (early neonatal, late neonatal and post-neonatal), the proportion of low birth weight, the proportion of prematurity by gestational age, the proportion of children under 6 months with exclusive breastfeeding, the proportion of premature children under 6 months with exclusive breastfeeding, the proportion of children under 2 years with breastfeeding, the proportion of premature children under 2 years of age who are breastfed, the proportion of children with adequate growth and development for their age, the proportion of children free of cavities in the first 5 years of life, proportion of children with 1 or more hospitalizations in the last year, the proportion of children registered and captured for monitoring by the team, the proportion of children from families with an approach to the system's determinants ecological environment (family, community, society, physical environment, nutrition, biological agents, health practices), the proportion of newborns who were discharged with a care plan, the proportion of newborns who completed the consultation and actions on the fifth day, the proportion of children with updated risk stratification, the proportion of children per risk stratum, the proportion of children in a risk stratum, the proportion of high-risk children sharing care with the specialized team, the proportion of high-risk children with a care plan prepared and monitored, the proportion of children with a scheduled follow-up schedule, the proportion of children with nutrition assessment at every scheduled appointment, the proportion of children with development assessment at every scheduled appointment, the proportion of children with a complete vaccination schedule for their age [8].

Acting on the indicators involves knowing the child's development, the environment in which they live, their family, and their social determinants. Initially, it is necessary to register families in the region covered and classify them by socio-sanitary risks, followed by linking these families to the team, identifying the subpopulation of children, and, finally, stratifying by risk according to risk factors and diagnosed diseases [7]. Furthermore, children are classified as usual risk, intermediate risk, elevated risk, and high-risk children with special situations.

To deepen stratification, it is necessary to identify the social determinants of each child, that is, the social conditions in which they live, as well as the social characteristics within which life takes place. The importance of social determinants is that they indicate the greatest proportion of variations in health status - health inequity, shape health-related behaviors, and interact mutually in the generation of health [8]. Currently, the social determinants model used in Brazil is that of Dahlgren and Whitehead, which is composed of layers, the first being non-modifiable factors, related to age, sex, and genetic load, the second layer being composed of intermediary factors related to the family environment, the third layer is related to the environment of the community where the family lives, the school, living spaces, and social and health services, finally, the last layer involves the most distal factors, referring to society and their general socioeconomic, cultural and environmental conditions [7].

Additionally, it is necessary to evaluate the evolutionary risk factors throughout the child's life, which range from risk factors in the neonatal period, risk factors at birth according to intrauterine growth, to diseases of the family cycle itself. These factors must be evaluated throughout the child's life to change the care plan, this must be conducted in the first consultation and all subsequent scheduled consultations or whenever a new risk factor is identified. The classification reflects a multidimensional context of factors that can determine a child's health and life and refers to broad and multifactorial interventions to protect and promote the potential for their growth and development [8].

Within the NPCHC there are seven strategic axes. Strategic Axis I is humanized and qualified care for pregnancy, childbirth, birth, and the newborn, covering improved access, coverage, quality, and humanization of obstetric and neonatal care, integrating prenatal and follow-up actions of the child in Primary Health Care with those developed in maternity wards, forming a joint care network [8].

Strategic Axis II is breastfeeding and healthy complementary feeding, this strategy aims to promote, protect, and support breastfeeding starting during pregnancy, exposing the advantages of breastfeeding for the child, the mother, the family, and society, such as the importance of establishing healthy eating habits [8].

Strategic Axis III is the promotion and monitoring of growth and development to stimulate and monitor the child's growth and development, especially early childhood development, by PHC, under the guidelines of the Child Health Handbook, including actions to support families to strengthen family ties [8].

Strategic Axis IV comprehensive care for children with diseases prevalent in childhood and with chronic diseases consists of a strategy for early diagnosis and qualification of the management of diseases prevalent in childhood and actions to prevent chronic diseases and care for diagnosed cases, with the promotion of care and home hospitalization, whenever possible [8].

Strategic Axis V – Comprehensive Care for Children in Situations of Violence, Prevention of Accidents, and Promotion of a Culture of Peace It consists of articulating a set of actions and strategies of the health network to prevent violence, and accidents and promote a culture of peace, in addition to organizing methodologies to support specialized services and training processes for the qualification of care for children in situations of sexual, physical and psychological violence, neglect and/or abandonment, aiming

at the implementation of Lines of Care in the RAS and in the network of social protection in the territory [8].

Strategic Axis VI – Health Care for Children with Disabilities or in Specific and Vulnerable Situations It consists of articulating a set of intersectoral and intersectoral strategies, for the inclusion of these children in thematic Health Care networks, through the identification of vulnerable situations and risks of injuries and illness, recognizing the specificities of this public for resolute care [8].

Strategic Axis VII – Surveillance and Prevention of Infant, Fetal, and Maternal Deaths Consists of contributing to the monitoring and investigation of infant and fetal mortality and enables the assessment of the measures necessary to prevent preventable deaths [8].

Furthermore, it is necessary to record care, complete anthropometric data, and continue monitoring to monitor improvements in coefficients and indicators.

3.3 Outpatient Teaching Clinic

Health is a right for every Brazilian citizen, linked to the principles of the SUS such as comprehensiveness, universality, and equity. Therefore, the training of health professionals capable of facing the priority health problems of the Brazilian population is increasingly necessary. Therefore, the contribution of Teaching Hospitals and Outpatient Teaching Clinics is essential to guarantee the quality of teaching and support the practical-theoretical knowledge essential for care. Such assistance is constituted by the integration between health faculties, Health Departments that provide SUS services, or even private services, since the 1970s [9].

According to Húngaro, the process of implementing the teaching-services binomial in health units allows scientific and academic knowledge to permeate among the various professionals who make up the health team, who end up getting used to participating in constant processes of updating and recycling, adapting reality to the use of protocols of excellence in health, providing a direct increase in the quality of assistance provided [10].

The internship, the field of activity for medical graduates, in which the first contacts with users and health services occur, acts as an educational and guiding instrument for the actions of future general practitioners, aiming to offer optimized care, suited to real health needs. of that population [9].

The pediatrics outpatient teaching clinic plays a fundamental role in the training of doctors. This environment not only facilitates practical learning and the application of theoretical knowledge but also promotes an integrated and humanized approach to the care of children and adolescents. Interaction with patients in outpatient teaching clinics allows the development of specific clinical skills, in addition to strengthening the empathy and communication skills of professionals in training [10].

In the 1980s, teaching-assistance integration programs were encouraged in the country, by the Ministry of Education and Culture (MEC), and developed in several states, involving faculties and public health services, sometimes covering districts of health, as well as proposals for bringing teaching and local health care closer together through collective or rural health internships, as well as medical residencies in community health [9].

An outpatient teaching clinic is defined as an academic space prepared to meet the population's health demands. Students conduct this service can take care of the patient, under the supervision of a graduated and qualified professional to direct the actions to be taken [9]. Furthermore, by promoting access to different specialties, outpatient teaching clinics are characterized by different technological densities of health care, promoting access to health for the population and learning for students, to contribute to the decentralization of health services.

Concerning outpatient teaching clinics in pediatrics, they are intended to serve children and adolescents comprehensively and longitudinally, from their follow-up through childcare to more specific complaints about health problems. Health education and guidance include issues such as breastfeeding, pediatric safety, accident prevention, food introduction, vaccination, choking techniques, and other topics addressed to guarantee the quality of life of patients and their families [9]. Regarding medical consultations, subspecialties such as neonatology, gastroenterology, endocrinology, cardiology, and pediatric pulmonology, among others, can also be found. Therefore, we emphasize the importance of this type of service and the sharing of the benefits achieved by it, on both sides of the participants in this teaching-learning structure, which involves the family, society, and science in this process [9].

4. Conclusion

This investigation concludes that pediatric outpatient teaching clinics are crucial for the practical education of medical undergraduates and enhance the effectiveness of the healthcare network.

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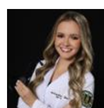

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