Matrix support strategies: the experience of two Family Health Support Centers (NASFs) in São Paulo, Brazil

Juliana de Oliveira Barros ¹
Rita Maria de Abreu Gonçalves ²
Ronaldo Pires Kaltner ¹
Selma Lancman ¹

Abstract  The aim of Family Health Support Centers (NASFs) is to expand and qualify primary health care initiatives. Working together with Family Health Teams (EqSFs) they use matrix support strategies. This paper discusses how NASF professionals develop their work, emphasizing how matrix support approaches are appropriated and incorporated into daily working practices. The results that are presented are based on a case study of the work process of NASFs in a region of the city of São Paulo, Brazil. In order to investigate this issue, specific questions were introduced at different stages of the ergonomic work analysis.

The implementation of the NASF, without a review of the guidance documents provided by the EqSF, created the following paradoxes: the different requirements of productivity and the working strategies between the NASF and the EqSF; the different demands of care for the population and different priorities for action, which were reflected in the division of tasks and the time allocated to each of them, etc. The practices that have been accumulated since the creation of the NASF suggests a review of these documents in order to transform the organization of planned work of these organizations in order to create better conditions for shared working practices.

Key words  Matrix support, Family Health Support Center (NASF), Primary health care, Health work
Introduction

The purpose of this article is to present and discuss how the professionals involved in Family Health Support Centers (NASFs) develop their work, with particular regard to the use and incorporation of matrix support strategies in daily working practices.

NASFs were established in 2008 in order to integrate, strengthen and expand primary health care (PHC). Based on the principles of an integral approach, universal access to care, social participation and fairnessPHC was established as a gateway to the Brazilian National Health Service (SUS) and it has been defined as “a group of health actions, at the individual and collective levels, which range from the promotion and protection of health to disease prevention, treatment, rehabilitation and health maintenance”. Matrix support as the main strategy for the development of work practices.

Multidisciplinary teams are essential in order to respond to the range of needs of PHC users. Consequently, it is through the work of the Family Health Teams (EqSFs), supported by NASF teams and in partnership with the population and other social and health resources, that it is possible to provide health care. The professionals who work within this framework are allocated to Basic Health Units (UBSs); they are responsible for a defined population with specific needs and they are expected to promote wide-ranging and comprehensive health care practices.

EqSFs consist of a minimum of a family doctor, a nurse, a nursing assistant and 4-6 community health workers. Depending on the type of NASF and the contracting institution, the number of professionals working in a NASF and their specialization can vary. It can include the following disciplines: social work, pharmacy, physiotherapy, speech therapy, psychology, occupational therapy and medicine, etc.

The NASF acts as a support team but it also offers specialized help to the EqSF and uses matrix support as the main strategy for the development of work practices. The terms “matrix support” and “matrix approach” have been used in the relevant specialized literature which relates to PHC since the 1990s. This article, these terms will be used interchangeably.

In general terms “matrix support” means sharing, supporting, and assuming joint responsibility for a specific demand for health from a person, a family or a community. It is a strategy linked to a mode of operation, i.e., ways to facilitate and organize the development of work between two teams. One of these teams is related to the individual or group of people that requires care; the other team does not necessarily have a direct relationship with service users but when assistance is requested it can help to broaden the understanding of a case, as well as devising possibilities for action and resolution.

This process can be demonstrated in health practices in different ways, such as discussions of cases and topics that are considered to be relevant for teams; joint individual and group visits; joint home visits and care; and, where necessary, the support team can directly attend the individual in question.

This type of organization of work aims to promote the guidance of health care as an ongoing, longitudinal process that is based on integrated actions designed to produce better results.

Campos and Méry consider that in order for health professionals to substitute actions which were previously epistemologically focused on biomedical models with new perspectives that are based on biopsychosocial models it is essential that work processes are transformed and that this is based on the incorporation of interdisciplinary practices. Matrix support is a fundamental strategy for de-territorializing professionals from their specific areas of knowledge and encouraging the search for new ways to improve health and the consolidation of a new paradigm.

Thus, the work of the NASF and the EqSF depends on taking responsibility for and developing shared actions, which, in turn, should be planned by taking into account the demands of the areas for which the two teams are responsible. The process of sharing, and constructing reflections and actions, requires not only time but also the willingness of those who make up such teams.

The work of the NASF is directly related to that of the EqSF, which is a fact that by definition influences the working dynamics of the two teams. The work of both is shaped by guidelines contained in ministerial and municipal documents. These documents are only a starting point because working practices develop in specific ways and they depend on factors such as the teams themselves (training, work experience, integration, etc.), the area that is covered, resources, the working conditions available and the characteristics of the population that is served.

Because the implementation period of an EqSF is significantly longer than that of a NASF, the work processes of the former are more consolidated. Thus, the pioneering proposals con-
tained in the work of NASFs and the working strategies that they utilize are still in the process of being recognized and implemented by all the professionals who are involved and also by the communities that they serve.20,21

Even though NASFs have been the subject of some studies in Brazil, and there have been pilot projects in various municipalities in different Brazilian states,6,22,23 it is noteworthy that the strategies and other forms of work organization that they propose are innovative in nature. The everyday work of NASFs in Brazil has led to a better understanding of the work that they provide and also improvements in that work.

This scenario triggered the interest of researchers about knowing more about the work of NASFs, especially regarding the use of matrix support and also the challenges that are encountered on a daily basis.

The context in which this study was developed

The city of São Paulo has a population of 11.4 million. With regard to management, it is organized into 32 boroughs, which in turn are subdivided into administrative districts.24,25 By delegation of the Municipal Health Secretariat (SMS) there are five Regional Health Coordinators (CRS) that manage the SUS in their respective areas of coverage through Technical Health Supervisors (STS), who are responsible for the technical and operational aspects of the operation of services.

In São Paulo, there are partnerships between the SMS and some Social Health Organizations (OSS), which are private sector, non-profit institutions that work in partnership, and in a complementary way, with the municipality in health care management. However, such services remain public and belong to the municipality.24

This study was conducted in the administrative district of Butantã, which comes under the jurisdiction of the Center-West CRS, which is responsible for the health of 1,483,322 inhabitants, of whom it is estimated that 44.4% exclusively use the SUS.25 The management of the main services in this region, as well as the hiring of teams, was organized by an OSS linked to a medical school. As a result of this partnership, and also because the studied region is a teaching and research area, there was a constant presence of students, tutors and teachers in the different work carried out in the region.

Method

Between 2011 and 2012 we developed a qualitative case study about the working processes of the only two NASF teams working in the studied area. Together, these two teams totalled 30 workers from different professional categories; all of them were invited to participate. Throughout the study, 22 professionals were involved with at least one of the procedures that were performed.

The research was entitled “The work processes of Family Health Support Centers (NASFs) and their effects on the mental health of workers”; it was supported by the National Council for Scientific and Technological Development (CNPq) and approved by the Ethics Committees of the Faculty of Medicine at the University of São Paulo (USP) and the Municipality of São Paulo. All the workers who agreed to participate in the study signed informed consent forms (ICFs).

This study sought to examine the complexity of the work processes of the NASFs. Therefore, methodological theoretical references related to the psychodynamics of work, ergonomics and the organization of work in services were used. Despite the fact that the latter all use different methods and procedures, all of them refer to real work situations and the inseparable relationship between work and the people who perform that work.

This article is based on specific goals, and it was decided to focus on certain issues arising from ergonomics and the various stages and procedures used in ergonomic work analysis (EWA).

The fundamental aim of EWA is to construct a diagnosis of actual work activity in order to contribute to proposals to transform that work by improving its quality, as well as improving the health of those who perform that work and also improving productivity. Therefore, the main points are as follows: the relationship between the work that is prescribed and the work that is performed; the organization of work and the production processes; the operational difficulties; the recognition of the knowledge of workers and different points of views about work; and the collective dimension of work etc.29

The EWA method consists of several stages, such as the analysis and reformulation of demand; the survey and analysis of data related to the company and its employees; the analysis of tasks and activities; as well as diagnosis, validation and recommendations. Consequently, the EWA approach uses different resources and pro-
cedures, such as analysis of documents, meetings, interviews, open observations, systematic observations, photos and filming, etc. Due to the specific characteristics of this research only some of the stages and procedures that make up an EWA were used.

Data analysis in ergonomics is configured as a comparative, normative activity and it is performed from objective information that is obtained during data collection, with a view to understanding the gap between the work that is prescribed (guidelines from ministerial and municipal documents) and real work (the work that workers actually do based on the resources that are available to them, the variability and division of work, working conditions and the time allocated for the development of activities). In this context, it is verified if there are practices that exceed those set out in guidelines, and if those practices become references to other similar activities, thereby advancing the prescribed work. The analysis is completed through a process of validation of the findings in meetings with the workers involved in the study.

In order to assist the fieldwork and to facilitate communication between the researchers and the teams, a management group was established at the beginning of the research, which was made up of four representatives from the technical staff and four from the research team. This group met when necessary and assisted in bringing researchers and workers together, in scheduling interviews, in work observation, and in the participation of the researchers in selected activities.

In order to understand the nature of the prescribed work, a survey and analysis of the ministerial and municipal local documents that were used as guidelines for the work of the NASF was performed. To characterize the region and the working population that was studied, a documentary survey was made of the organizational structure of the UBS in which the NASF operated, as well as the data related to the profile of the workers, such as age, gender, education, working time in the NASF, etc.

To understand more about the actual work that was performed, two meetings were held with the coordinators of the NASF and five meetings were held with the management group responsible for the research. These meetings were designed to provide an initial contact with the nature of the work itself and the daily routine of the workers; with the meetings and groups that were developed with the local population; and with the other actions performed by the NASF. A further eight semi-structured interviews were carried out with workers from the different professional categories; six of these interviews were with individuals, one was a group interview, and one interview was with the coordinators of the NASF teams. These interviews were guided by scripts that, in general terms, were intended to obtain data about the work that was prescribed and the work that was actually performed; the time management and the production of each professional; the division of tasks and the content of those tasks; the relationships and the strategies used by NASF to support the EqSF; the main issues discussed at meetings between the two teams; and the distribution of working hours, etc.

After the aforementioned information had been obtained, open observations of some tasks were performed (a meeting of the NASF team, two meetings between the NASF and the EqSF, a meeting with a group of pregnant women). The tasks that were observed were those that were considered by the team to be least invasive for service users and provided the least interference in the work dynamics. The schedules of some professionals were also checked in order to note the type and nature of the performed duties as well as other activities that were performed.

It should be noted that, except for the observations, which were only transcribed, the other procedures were recorded, transcribed and subsequently analyzed. The individual and group interviews, meetings and observations totaled approximately 52 hours of fieldwork.

After compiling and analyzing the data that were collected, they were presented, discussed, modified and finally validated with the teams at two meetings. The NASF and the respective coordinators subsequently received the final report.

**Results**

The presentation of the results will start with a characterization of the studied teams, followed by an analysis of some aspects of the work that was performed, highlighting matrix support strategies as the central and radial axes of the actions that were developed. Finally, to better understand the scope of matrix support in the studied context, the practices developed by the workers and their representation are organized into three main themes: the design of NASF teams based on the idea of matrix support strategies; the everyday experience of matrix support in PHC practices; and the possibilities and limi-
tations of the use of matrix support in the development of NASF practices.

**Characterization of the studied teams**

Both NASF teams had 30 workers from different professions (doctors, occupational therapists, physiotherapists, psychologists, a speech therapist, a physical educator and a nutritionist). They were mainly young people (50% of them were aged between 31 and 40) and women (69%), who, to a large degree, already had experience in the field of PHC, and more specifically with the matrix support strategies in other practices, especially within the NASF.

With regard to weekly working hours, 62.5% worked 20 hours and the others worked 40 hours from Monday to Friday between 7 am and 5 pm. At the time, the two NASFs respectively supported 9 and 10 EqSFs, which were distributed in 4 UBS’s. Both NASFs were allocated to the same region of São Paulo and were implemented in 2010: one in May and the other in October. In the first team, all the professionals who participated in our study started working in the NASF at the same time. In the second NASF, only half of them were there when the NASF was set up.

The two NASF teams had similar profiles and responded to the same coordinators and OSS, who were also involved in the management of the UBSs. The geographical areas that were covered, and the EqSFs for which they were a reference, were also similar, which allowed the results to be grouped and generalized.

**The work that was performed and matrix support as the central axis**

Being in a team and/or developing activities of a collective nature was one of the priorities of the work done by the teams that were studied, which required that agreements were also made collectively. Most of the workload of the teams was related to attendance at meetings with the respective EqSFs.

Using a matrix support approach (Figure 1) at these meetings it was possible to:

- Collectively identify the priority needs to support the planning of subsequent actions;
- Discuss cases considered by the EqSF to be more complex and to define roles and responsibilities through the development of specific therapeutic projects (PTS), which addressed multidisciplinary actions and developed the idea of responsibility in the workers;
- Identify the need to articulate the social and health services and to develop actions and strategies with a view to intersectorality;
- Use practical experiences to theoretically discuss issues of collective interest.

The dynamics of the meetings varied depending on the relationship between the teams, the number of and complexity of the issues to be discussed, etc. Figure 2 systematizes how the health demands of the population and those of EqSF came to the NASF, as well as how the possibilities unfolded.

**Design of the NASF teams based on matrix support strategies**

Despite the fact that matrix support was considered to be a recent strategy within the actions of the PHC, there was homogeneity among the NASF workers in relation to the conceptual understanding of the proposal, its importance, and the mission to implement it.

For the workers, this strategy was based on the exchange of experiences and theoretical and practical knowledge, which was intended to expand the possibilities of understanding and action in relation to cases. In this sense, using matrix support implied the democratization of knowledge, discussion and reflection, and also of agreements about responsibility for the continuity of actions.

Starting from the specific demands of a particular case or situation, all the actors involved in the process exchanged their expertise, either through case reviews or through shared discussions.

**By participating in shared care, and seeing a professional doing a specific orientation several times, the other professional can subsequently reproduce that orientation, without the same spec-**
This strategy strengthens interdisciplinary exchanges and fresh approaches to problems from new perspectives, which enables the construction of new work practices among professionals and especially between teams. Therefore, it is necessary that there is a simultaneous approach towards the transformation of professional practices and the organization of work.

**Matrix support is the logic of sharing and the deconstruction of the logic of reference and counter-reference that exists in public services.** (group interview No.1)

In addition to discussions about cases and shared care, so-called “technical and pedagogical support” or “educational support”, which make up the matrix support approach, occurred in all the actions undertaken by the partnership between the EqSF and the NASF.

**The everyday experience of matrix support in PHC practices**

Within the NASF, all the actions that were performed, including assistance, were configured within a matrix approach, not only in relation to the EqSF or between professionals within the NASF team, but also in partnerships with professionals in other health services

... *When we are discussing a case in the PHC centers we are constructing an action, exchanging knowledge, we are using a matrix approach with each other all the time ... everything we do is based around that type of approach* (individual interview No.4)

According to the NASF teams, the EqSF teams also used a matrix approach in their relationship with the NASF, especially with regard to the knowledge that they had about the area under their control and the demands of families and of the community.

It was possible to observe that some actions that were considered to be fundamental in the development of work in the NASF involved matrix support. Among the main actions, we would highlight the meetings, which were the starting point for any subsequent action; these meetings were also the location where the agreements necessary to resolve the specific problems of individuals or communities were held. Some of the most important of these meetings were those that took place on a weekly basis between the NASF and the EqSF, and between the teams within the NASF, as well as those that happened every month, such as technical meetings with health professionals from the UBS, and more specifically those that occurred with the participation of the NASF doctors, and doctors and nurses from the EqSF.

In the meetings held between representatives of the NASF and the EqSF the priority demands for the construction of specific care projects, which addressed the uniqueness of each situation, were identified. The outcomes of these discussions were varied and were sometimes resolved in a shared way between the NASF and EqSF or sometimes by individual members of each team. The main actions that were agreed included the development of therapeutic and educational groups; workshops with specific themes; individual assistance and/or evaluation of cases; and home visits or consultations.

---

**Figura 2. Flow of demands on the NASF.**
The possibilities and limitations of using matrix support as a priority development strategy for NASF practices

The daily work of the NASF produced challenges to putting matrix support strategies into practice. Some of them were related to objective aspects connected to the organization of work between the two teams (NASF and EqSF); others referred to subjective aspects linked to how each professional or team could express their needs without feeling weakened in relation to their peers.

According to workers in the NASF, the novelty represented by the matrix support approach had still not been fully assimilated by some professionals working in the EqSF, which hampered the introduction and utilization of this way of working. In the opinion of some of those working in the NASF, many EqSF workers felt that they were being audited and monitored, and that when there were discussions with the NASF, in one form or another, their failures to develop work and even incompetence were being highlighted. In this context, “the role of the NASF should be to demonstrate other possibilities of providing matrix support but the EqSF finds it difficult to discuss this or reflect on it” (group interview No. 2).

From the point of view of the organization of work, one of the main difficulties in implementing a matrix support approach was in terms of the work that was planned for both teams, which was based on the relevant guidance documents and the time each team allocated for their actions. For example, shared actions were a priority for the NASF but not for the EqSF, especially in relation to the demand of service users for individual attention.

What is seen by one team as a waste of time, given the huge demand for services, is seen by the other team as being essential to completing their work (individual interview No.2).

Another challenge was the dialogue regarding agreement over actions, which should be consensual in terms of the needs of the teams, and the uniqueness of the individuals and areas that were served. However, it was precisely when professional boundaries were blurred and everyone felt responsible for certain issues that practices which were collective and more appropriate to the needs of the population were constructed.

Over time, using matrix support, professionals set aside their area of expertise and become just another professional working in the NASF ... matrix support makes this possible (individual interview No.2).

The diversity of occupational categories that made up the NASF team encouraged dialogue, reflection and increased understanding about the complexity of each case and, consequently, improved the effectiveness of solving those cases.

The contact with, and proximity to, other professionals allows for more viewpoints and reflections (individual interview No.6).

A deeper discussion about cases encourages a wider view of individual and collective health (individual interview No.1).

In addition, after working together for some time the NASF and EqSF teams were able to accumulate knowledge that, in the future, could be used autonomously in the handling of other cases.

The systematic manner in which meetings took place to discuss cases encouraged closer working relationships between professionals, and consequently, the improvement of work processes and the expansion of the scope of the actions that were developed.

The possibility of jointly creating services that meet the demand of the EqSF, in order to broaden perspectives about care, and also taking into account prevention, facilitates the work (individual interview No.6).

In order to respond to the complexity of demand from service users and the community, using matrix support the NASF was able to promote cooperation with the network of social and health services. Such joint working, and also the autonomy to carry it out, was critical to strengthening a mutual support network which, in the medium and long term, would result in the improvement of living conditions and the health of service users.

It is possible to make various links with teams outside the UBS without being questioned and/or controlled. You can leave the unit during working hours to make connections with the network (individual interview No.5).

The fact that NASFs have only been created relatively recently, both in the studied area and in Brazil as a whole, means that their work can be carried out in a longitudinal manner over a long period, thus producing significant cultural changes in health care.

In the specific case of the studied region, because it was an area used for teaching and research, matrix support strategies can also contribute to the processes of teaching and learning.
Discussion

One of the main challenges experienced by NASF professionals was how to continuously use matrix support and how to effectively incorporate it into everyday actions together with the EqSF. Using a matrix support approach implies exchanging ideas and information, setting expectations and agreeing on decisions. In this sense, using this approach not only exposes doubts, difficulties and a lack of theoretical and practical knowledge but it also requires the availability, trust and cooperation of professionals. According to the NASF teams, some professionals working in the EqSF showed limited availability for this type of working approach and this created limitations in relation to carrying out joint activities.

One of the potential advantages of matrix support is to promote professional integration; however, for this to occur it is necessary that the existing hierarchy and relationships between professionals are less bureaucratic and more horizontal in nature. In order to construct a more permeable and professional approach to new work processes it is necessary for daily practices to be organized in such a way that cooperation and trust are encouraged, in order to enable the understanding and acceptance of such changes.

Cunha and Campos point out that health care workers tend to want to deal only with the problems for which their core of knowledge is sufficient to intervene and that when they are given opinions about their performance they see this as intrusive and invasive. Thus, these professionals have a limited capacity to deal with uncertainty and interdisciplinarity, which makes work both within and between teams difficult. However, it is when boundaries between different centers of knowledge are undefined that it is possible to constitute collective practices which are more suited to the needs of the population and the characteristics of the area that is being served. Silva et al. emphasize the importance of avoiding hierarchy, specialism and fragmentation between the various professionals working in NASF and EqSF teams.

Using a matrix support approach requires a change in the priorities for action of teams: what was previously only offered by a professional to an individual or a community should not only be implemented but also planned in a shared, collective manner. However, this study indicates that because the priorities of the NASF and the EqSF teams regarding actions were different there were difficulties in developing shared work.

These issues can be summarized as follows: the supervision of the work of the two teams, which was the result of specific guidance documents for each team, and which determined both differences and a great heterogeneity from the point of view of the organization of work; the planned work; the priorities for action; the time allocated for the completion of activities; the goals; the required productivity; the performance indicators used; and the technical coordination and administrative organization of each team.

It is also noteworthy that the priority of collective actions, which was provided for in the guidance documents of the NASF, conflicted with the demands of the population for specific attention, such as rehabilitation for example; this resulted in an overload of work for professionals due to the lack of support to respond to these demands.

Nevertheless, after the establishment of the NASF the introduction of matrix support in the work practices of the EqSF allows for new processes to facilitate dialogue, as well as the ability to take on new commitments to the health of service users. It is worth noting in this regard that the use of matrix support by both teams strengthens the paradigm shift in the field of PHC by proposing a new approach to work. It implies transforming existing professional practices, deconstructing the existing logic of reference and counter reference, as well as encouraging major changes in the organization of work.

Campos and Domitti report that the matrix support approach results in an overhaul in the organization of services, so that specialized areas, which were once vertical in nature, are able to offer horizontal, pedagogical support to staff working in primary care. They state that for matrix support to be successful, changes, or even a global transformation, are necessary in the way that health services are organized and operated.

Campos and Campos argue that matrix support is an important tool for clinical and trans-disciplinary work. It implies a dialogical mode of operation and it constructs a new logic of action in relation to PHC. However, it is important to note that throughout this research, a great theoretical and practical heterogeneity was observed regarding the understanding and use of this strategy. This configuration ends up trivializing the very term “matrix support”, which is now used generically to represent the development of each and every action performed by these professionals.
Final considerations

Matrix support was established as the main strategy of NASF teams for completing their work. In order that such a strategy can be successful within the area of PHC it is necessary that all the stakeholders, especially the NASF and EqSF, foster collective spaces for reflection, discussion and practice to occur. In this context, it is crucial that there is significant investment in communication processes both within and between teams on a daily basis so that workers can build spaces of trust and respect and that the partnerships necessary for work to develop can be consolidated.

The implementation of the NASF, without reviewing the guidance documents related to the practices within the EqSF, created some paradoxes that need to be reviewed, such as the different requirements regarding productivity and the working strategies between the NASF and the EqSF; the different demands related to assistance to the population, given that the EqSF is the gateway to PHC and the NASF is not; the different priorities for action in the NASF and the EqSF, which are reflected in the division of tasks and the time allocated to each of them, etc. Thus, the practices that have accumulated since the establishment of the NASF may encourage a review of these documents in order to create better conditions of belonging and confluence, especially regarding the organization of work.

It is important to stress that in order to reflect on the limits and potential of the work of the NASF, many factors must be evaluated, including the following: the different realities of cities and regions in Brazil; the number of EqSFs in relation to each NASF team; the characteristics of each of the teams; the number of professionals and their specialities in each team; the network of secondary and tertiary care, etc. Nevertheless, regardless of the above-mentioned factors, the matrix support approach is fundamentally important and it should be incorporated into the work of all teams providing health care within Brazil.

Thus, taking into consideration the initial objectives that were embodied in the creation of the NASF, it is important to conduct further studies from the EqSF standpoint to understand issues such as what was the impact of the creation of the NASF; what were the initial expectations; how were the initial proposals incorporated, especially regarding matrix support; so that positive changes can be implemented in the work processes of the two teams. Such changes could result in the improvement of health care and also advances in Brazilian public policies related to PHC.

Collaborations

JO Barros helped in the design of the article, the analysis and interpretation of data, and drafting and revising the manuscript. RMA Gonçalves contributed in the writing, design and design of the article, as well as the analysis and interpretation of data. RP Kaltner contributed to the collection and analysis of data. S Lancman contributed to the writing and design of the article, the analysis and interpretation of data, as well as performing the critical review and writing the conclusion.

Acknowledgements

The authors would like to thank the National Council for Scientific and Technological Development (CNPq) for funding.

References


