



## PHARMACEUTICAL SERVICES IN PHYTOTHERAPY: DIAGRAM OF INPUTS, PRODUCTS AND SERVICES



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### ABSTRACT

The diversity of terms in the area of medicinal plants and the multiplicity of concepts and terms, expressed in pharmaceutical and sanitary legislation in Brazil, can sometimes hinder the understanding of texts, generate ambiguities in scientific articles from various areas, including standards and public policies. Facilitating this clarification is important to reduce the problem. To this end, it is possible to seek the creation of instruments that promote greater clarity of the concepts used in stages of production and dispensing of products and in establishments involved in a production chain. The uniformity in the use of terms and concepts based on health legislation recognizes the Unified Health System as a major reference as a definer of public policies and guidelines for health and pharmaceutical care, including Phytotherapy. The objective of this article is to present a teaching-learning instrument to offer theoretical-conceptual, methodological, scientific and pedagogical subsidies to health professionals, to different actors of popular organizations that deal with medicinal plants and to the management of public policies, projects and institutions linked

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to the SUS care network and other organizations. This work was derived from a study with an exploratory descriptive approach that developed a diagram elaborated from a mental map about flows, products derived from medicinal plants and establishments that produce and dispense them, with a focus on pharmaceutical assistance in phytotherapy. Bearing in mind the scenario triggered in 2006 with the institution of the National Policy on Medicinal Plants and Herbal Medicines, this diagram can be used as a guide to situate products in the pharmaceutical field and to assist professionals, offering technical support and guidance to managers for the qualification of pharmaceutical services and phytotherapy.

**Keywords:** Pharmaceutical Services. Phytotherapy. Medicinal Plants. Herbal. Pharmaceutical Inputs.



## INTRODUCTION

Phytotherapy and medicinal plants make up a complex field of knowledge, the target of public policies, research programs and notices, among many other contexts of action, whose appropriation of the various concepts involved, products and services is not always fluid. The diversity of terms in the area of medicinal plants can sometimes generate ambiguities and difficulties in understanding the field and its relations. It is assessed that this understanding can be aided by the creation of instruments that seek to promote greater clarity in the concepts and their associations with the broad theme of medicinal plants, their use and availability.

The use of medicinal plants in healing processes originates from multiple cultures, ethnicities, countries, and is absorbed by science and its criteria, in order to give them legitimacy for care protocols. These are also the basis for the regulation of health systems and public policies, in addition to defining parameters for technological development and production of inputs for health care and legislation in the area.

The Brazilian Ministry of Health defines Phytotherapy as the "study of medicinal plants and their applications in the promotion, protection and recovery of health. As a therapeutic, it is characterized by the use of medicinal plants in their different pharmaceutical forms, without the use of isolated active substances, even if of plant origin" (BRASIL, 2018a).

The National Policy for Pharmaceutical Services – PNAF – (Brasil, 2004) is "understood as a public policy that guides the formulation of sectoral policies, among which the policies of medicines, science and technology, industrial development and training of human resources stand out, among others, ensuring the intersectorality inherent to the country's health system, the Unified Health System - SUS (BRASIL, 1990) and whose implementation involves both the public and private health care sectors". The PNAF defines the concept of Pharmaceutical Services (PS) as "a set of actions aimed at the promotion, protection and recovery of health, both individual and collective, with the medicine as an essential input and aiming at access and rational use [...] which involves the research, development and production of medicines and inputs [...] as well as their selection, programming, acquisition, distribution, dispensation, quality assurance of products and



services, [...]” which requires considering the standardization of the language used by the different actors involved in this broad chain of activities important.

As defined, Pharmaceutical Services involves many activities centered on medicines and these have biodiversity as a powerful source of innovations for health. As highlighted by the National Policy on Medicinal Plants and Herbal Medicines, PNPMF, (BRASIL, 2006a), the broad genetic heritage and its cultural diversity are an opportunity to establish a model of sustainable use of medicinal plants. Even after the advent of chemical synthesis and other drug development technologies, medicinal plants are the source of new active ingredients and are targets of pharmaceutical corporations for the development of new drugs.

However, medicinal plants are also valued as phytocomplexes, and there is great popular adherence to their therapeutic use in many countries on all continents. This is widely documented in institutional, national and international publications, as well as in the references of the World Health Organization, and all of these referred to in the PNPMF and also in the National Policy of Integrative and Complementary Practices (BRASIL 2006b). Thus, these possibilities must be deepened and spaces and forums that contribute to the rescue, expansion and affirmation of knowledge must be provided. In this sense, it is important to provide instruments that facilitate the understanding of the multiplicity of terms and concepts about medicinal plants and Phytotherapy, whether in the traditional or scientific fields, such as scientific publications and even those of the popular media.

Bringing up the issue of the concepts that are expressed in the flows of inputs, products and establishments, it is observed that the multiplicity of terms ends up confusing the user, the health professional, the researcher and the public managers of PS. It is understood as important to demonstrate the relationships between these - inputs, products and services - from medicinal plants, for Phytotherapy, and thus contribute to the unfolding and elucidation of the texts that make up scientific articles and publications in general. They can also be useful for the improvement of public policies, programs and standards related to this theme.

Based on the challenge of the necessary conceptual alignments, several debate exercises and theoretical review were carried out in the documents used, which originated a mental map about pharmaceutical services, according to the PNAF, inserted in



Phytotherapy. This collective work made it possible to write this article, which aims to clearly present the proposed flows to academia, professionals, managers and users of health products, as well as agricultural actors.

## METHODOLOGY

This is a study with an exploratory descriptive approach that developed, from a mental map, a diagram that presents the flows of products derived from medicinal plants and establishments that produce and dispense them, with a focus on pharmaceutical services in phytotherapy, based on health legislation and the PNPMF. The idea of deriving from this process the realization of a design that would serve as a model to be applied to demonstrate the potentiality of medicinal plants by the products that give rise, by the establishments that produce or dispense them and by the flows or chains existing among all, arose in a study meeting with a group of four pharmacists with consulting activities in Phytotherapy and pharmaceutical assistance with medicinal plants. Its elaboration originated a diagram, which was called "PMFito Diagram" (of medicinal plant and herbal medicine), elaborated from the knowledge of the authors, referred to as a study group.

Ten meetings of this group were held, of pharmacists with experience in the area of medicinal plants, project management, teaching and research, who were accompanied by the sanitary and pharmaceutical legislation regarding medicinal plants and phytotherapy for the analyses and discussions. Once the systematic meetings were set up once a week, the debate aimed, based on the references, to promote reflections on the experiences accumulated as professionals and amplified in the group. The discussions and studies were recorded on a board and thus composed a mental map. From this exposition, a didactic need and a possibility of contribution to the construction of an illustrative diagram of the existing flows between products and services derived from medicinal plants was perceived. The challenge would be to effectively build a pedagogical instrument even if simplicity was not achieved due to the complexity of the object. The sanitary and pharmaceutical legislation was consulted with the purpose of being the focus of PS and directing to Phytotherapy, and bearing in mind the scenario triggered in 2006 with the institution of the PNPMF.



According to Buzan (2009), the mind map can be used to organize, connect, highlight various information, based on keywords. For Stankovic *et al.* (2011) the mind map is seen as a pedagogical tool that can be used for various purposes, promoting creativity. These maps can be built manually, using various multimodal resources, such as colors, lines with different dimensions, different shapes or even with specific digital technological applications.

Then, an instrument was elaborated, based on the mental map, with the transfer of the board on the wall to the paper and to the computer, in order to record the findings, based on the study and discussion of the legislation and on the experience of each one of the group. The meetings were then systematized, overcoming the spontaneity with which the discussion was initiated and then discovering, defining and applying this methodology for the construction of this instrument, then a proposal for presentation through a diagram.

## RESULTS AND DISCUSSION

The process of studying together, whether in a consulting work, project management or even a public policy in any area, is composed of spaces and moments of exchange and generation of knowledge, when the participation of the team involved is effective, an experience that led to this article. This process of studies and debates also provided the verification of the ambiguities, overlaps and gaps perceived in the deepening of the study of the legislation. These are more characterized when one extends the consultation to publications from other sectors, such as agriculture, where the term herbal medicine is often used as a synonym for medicinal plant, for example, following a culture of its own, absorbed and adapted by the actors of the sector, such as agronomists and the farmers themselves.

The group discussions regarding the legislation and the experience of each member of the group, as mentioned, brought considerations about the health model to which they refer, and the paradigms on which they are based. In this sense, it was sometimes important to refer to the worldview and health model of the argument, bearing in mind that pharmaceutical legislation is basically aligned with the biomedical health model and that the group's experiences also contain facts and interaction with actors from the traditional and popular field of health and the use of medicinal plants. Bearing in mind that the PNPMF is

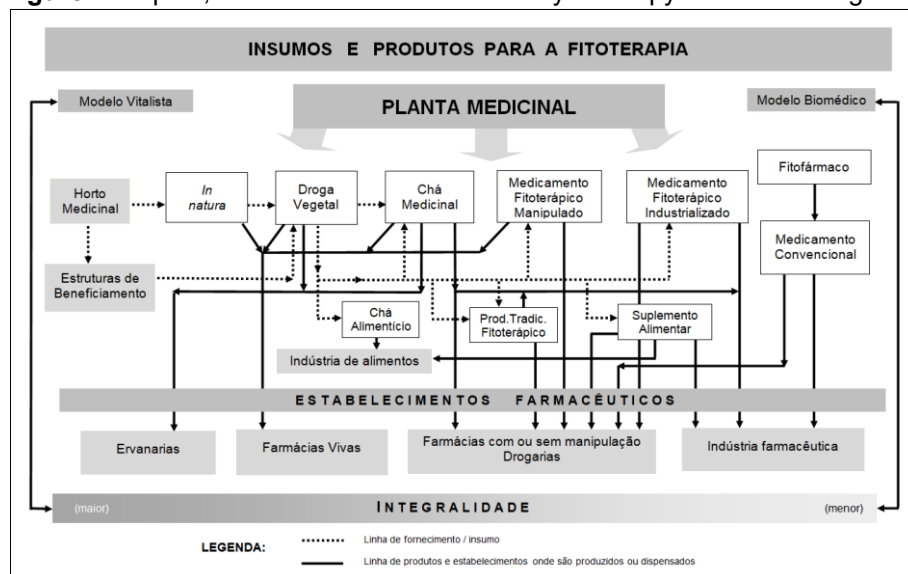




broad and intersectoral and has defined guidelines for various areas of knowledge and institutional sectors.

The diagram developed (Figure 1) resulted from the analysis of the legislation in force and the group's experiences. It was understood to highlight the health models in its design, at the top and preceding the flows derived from medicinal plants, due to the meaning and determination of use they imply.

**Figure 1** - Inputs, Products and Services in Phytotherapy – "PMFito Diagram".



**Source:** Prepared by the authors (2025) based on current legislation (BRASIL, 1973; BRAZIL, 2007; BRAZIL, 2011; BRAZIL, 2013; BRAZIL, 2014a; BRAZIL, 2014b; BRAZIL, 2018b; BRAZIL, 2022; BRAZIL, 2024).

The diagram was divided into two main approaches: on the one hand, the vitalist, integrative, as a context for the use of medicinal plants *in natura* and as medicinal tea; and on the other, the biomedical, for the use of industrialized products. This was a form adopted for visualization, which should be further explored in subsequent studies, since the approach to the caregiver/user relationship is more decisive than the product used. This led to including the principle of integrality, which was sought to be portrayed in the diagram, involving its entire set, as an idea to be kept in mind – and also to be deepened – in Phytotherapy. That is, how much this therapy can be associated with the integrative approach to care, whether with the use of medicinal plants or in the use of herbal medicines.



It is worth justifying the inclusion of comprehensiveness as a factor to be observed in these flows, when the group understood that the approach with medicinal plants and in these the use of preparations with the phytocomplex, would have greater comprehensiveness in care, as opposed to the approach with herbal medicine, and its context closer to the conventional medical-pharmaceutical practice, Biomedicine.

Toniol (2018) analyzes comprehensiveness and understands that, in addition to being a principle of the Brazilian health system, of the SUS (BRASIL, 1990), as an attribute of the health care model, there is also an approximation to holism in relation to integrative practices in care. Within this formal framework and also having as reference the studies of Pinheiro, Silva Jr. and Mattos (2008), the author summarizes that the term "integrative", derived from integrality, is presented as ambivalent, either as a principle of the Brazilian system to understand social, economic and cultural insertion in society, as well as simultaneously also expressing the holistic view that integrative practices have about care. In these practices and approaches, the subject is understood as an integral being, as opposed to therapies and medical perspectives that conceive the possibility of treating subjects in a fragmented way by specialists, in a single part of the body. It means looking at the human being as a whole, replacing the focus on the disease with attention to the person, with their life history and their own way of living and falling ill [...] (LAPPIS, 2024).

It is observed that integrality is a value present in health care in traditional and popular communities, associated with cooperation, solidarity and humanization, which distances itself from the objectivity of Biomedicine and in medical practice centered on medicine, even in the use of herbal medicines. Strongly based on the traditions of the peoples, the use of medicinal plants is one of the main health practices of many ethnic groups that address health and are based on the vision of the integrality of the human being and its multidimensionality. Thus, it is opposed to the view based predominantly on biological aspects, with a fragmented practice, which characterizes conventional Biomedicine, Medicine and Pharmacy, predominant in Western health systems.

We sought to portray the health models as the basis for the approach and the type of input used. The legislation corresponds to the demand of Biomedicine in standardized inputs and produced under specific parameters, whether manipulated or industrialized. It is proposed to relate the derivatives and thus the uses of the different products, in two





opposing models, the biomedical and the vitalist. The first is the conventional, based on the scientific model, predominant in the Western world, while the second, vitalist, defends the existence of a vital force beyond the physical body, which is found in the views on which practices and Integrative Medicine are based (LUZ and BARROS, 2012; ABREU, 2018). Cited in the PNPIC, the vitalist principle regulates the organism in a dynamic and harmonious way (TEIXEIRA, 2021).

In the study, it was reflected on the comprehensiveness in the approach in different uses of inputs and thus characterizing the type of Phytotherapy practiced, which was suggested as different intensities, for reflection purposes and not exactly because a rigid gradation was proposed.

Analyzing the construction of the diagram and the result presented, the medicinal plant is placed as the core of the design and from where the products derive, relating to each other, in supply chains, production and dispensation. These are processed in specific establishments, without more direct interaction between them, they have in common that they are part of the production chain of the medicinal plant as a recipient for different products, which even having the same therapeutic purpose, follow legislation, good production practices, registrations and specific uses.

The diagram identifies what derives from medicinal plants as pharmaceutical products – plant drug, medicinal tea, compounded and industrialized herbal medicine and phytopharmaceutical, which also give rise to conventional medicines, with an isolated substance. In addition, it has other non-pharmaceutical derived products such as food tea and food supplements.

In relation to establishments, the herbalist, the living pharmacy, the compounding pharmacy and the pharmaceutical industry are establishments and services under sanitary control and with the technical responsibility of the pharmacist. The food industry is open to other professionals.

It is analyzed that the Living Pharmacy, as a health establishment, represents the most diverse and broad possibility in relation to the types of pharmaceutical products it dispenses, and also because it is an establishment that cultivates medicinal plants. This puts it in contact with other actors in the chain, situating it in relation to other areas of



knowledge, other needs, practices and knowledge, and values such as sustainability and integrality; thus it is closer to Phytotherapy as an integrative practice.

The proposed diagram was composed for didactic purposes and provided reflection on the flows between the possible and known products of the medicinal plant as an input, as a raw material and as a final product. Its elaboration, which was intended to be a simple demonstrative drawing, resulted in a learning process also for the authors, and immersion in the field, from its simplest forms to the place of its transformation, defined by the legislation. Thus, we sought to contribute with this instrument to situate actors, whether in management, production or research, those who deal with medicinal plants in Pharmaceutical Services and Health Care.

## CONCLUSION

This article presented the process of creating a proposal for a didactic instrument and its result, which is a diagram of inputs, products and services in Phytotherapy, as a material for visualization and pedagogical support in the needs of training, research and decisions in projects, public policies and other actions with medicinal plants. It ended with many indications for deepening, whether in the legislation itself, in the production chain of these various derivatives of medicinal plants, or in the establishments that involve.

The study and the proposal of a diagram systematizing the information for didactic use in any spaces of knowledge exchange show the complexity and possible confusions that can be established in the area. Popular organizations that deal with medicinal plants, plant, harvest, process, market, prepare in an artisanal way and guide their use based on the knowledge acquired in families and communities, can have in this work a guide to situate the products in the pharmaceutical field, as well as the professionals themselves, for technical support and guidance from managers, for example, for the qualification of pharmaceutical services and Phytotherapy.



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