



Planning, conflicts, and uncertainty: an analysis of Covid-19 vaccination plans

Planejamento, conflitos e incerteza: uma análise dos planos de vacinação contra Covid-19

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Abstract: Vaccination against Covid-19 was a crucial moment in overcoming the pandemic, but its planning was marked by conflict and uncertainty. This article aims to analyze the process of developing Covid-19 vaccination plans in Brazil between 2020 and 2022, using the theoretical framework of planning problems proposed by Christensen (1985). The research method used was qualitative document analysis, with Covid-19 vaccination plans and news reports serving as the data sources. The analysis shows that vaccination planning conditions went through three distinct situations predicted by the theory. Based on the data presented, it was possible to determine that goal convergence occurred despite the interests of the Federal Government, which acquiesced in vaccination. The analysis also found that the Federal Government was partly responsible for some of the uncertainty in the planning process due to the absence of vaccination as a goal. The findings demonstrate the dynamic nature of planning conditions in the development of vaccination plans during the pandemic.

Keywords: Public Policy; Planning; Public Health; Covid-19.

Resumo: A vacinação contra a Covid-19 foi um momento decisivo para a superação da pandemia, mas teve o seu planejamento caracterizado por conflitos e incertezas. O objetivo do artigo é o de analisar o processo de elaboração dos planos de vacinação contra a Covid-19 no Brasil no período entre 2020 e 2022 com base na utilização da matriz teórica de problemas de

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planejamento proposta por Christensen (1985). O método de pesquisa utilizado foi o de análise qualitativa de documentos, tendo nos planos de vacinação contra a Covid-19 e reportagens jornalísticas as fontes de dados analisadas. A análise permitiu concluir que as condições de planejamento da vacinação passaram por três situações distintas previstas pela teoria. Com base nos dados apresentados, foi possível constatar que a convergência de objetivos ocorreu a despeito dos interesses do Governo Federal, que aquiescesse com a vacinação. A análise identificou também que o Governo Federal foi responsável por parte da incerteza no planejamento, por não ter como objetivo a vacinação. A análise do trabalho apresentou a dinamicidade de condições de planejamento no processo de elaboração dos planos da vacinação durante a pandemia.

Palavras-chave: Políticas Públicas; Planejamento; Saúde Pública; Covid-19.

1. INTRODUCTION

The respiratory infection caused by the virus known as *SARS-CoV-2*, or Covid-19, triggered the most serious global public health crisis of the 21st century (Joshi et al., 2021; Sarker et al., 2023). The high contagion rate and risk of death prompted the World Health Organization (WHO) to declare Covid-19 a pandemic on March 11, 2020, indicating that the new virus could pose a worldwide health threat (Joshi et al., 2021). The WHO announced the end of the global health emergency on May 5, 2023, due to declining hospitalizations and Covid-19 vaccination rates (Sarker et al., 2023).

Conflicting government initiatives and policies characterized the period following the declaration of the pandemic. On one side, there was the promotion of coercive government actions, such as restricting people's mobility, limiting travel, imposing lockdowns, closing private and public facilities, and enforcing mandatory rules for protective equipment (mainly masks) and social distancing (Aquino et al., 2020). On the other side, there were government measures that dismissed the health risks associated with the spread of Covid-19, mainly by denying the effectiveness of restrictions of any kind, which led to inaction in addressing the pandemic – a stance that resulted in increased infection rates and deaths (Fiocruz 2021; Sodré, 2020).

In this context marked by conflicting policies and a lack of political consensus, many analysts highlighted the lack of centralized coordination

between the three levels of government in Brazil as a characteristic feature of the administration of then-President Jair Bolsonaro when evaluating the Federal Government's actions in the early stages of the pandemic (Abrucio, Grin, Franzese, Segatto & Couto, 2020; Aquino et al., 2020; Boschiero, Palamim & Marson, 2021; Ferrante et al., 2021; Sodré, 2020). The lack of centralized coordination influenced the way in which public policies against the new coronavirus in Brazil were formed, hindering the planning and the formation of joint actions between subnational states, municipalities, and the Brazilian Federal Government (Abrucio et al., 2020; Sodré, 2020). It is noteworthy that such lack of coordination of initiatives by the Federal Government triggered fragmented and uncoordinated public actions at the national level (Aquino et al., 2020; Sodré, 2020), culminating in many political conflicts between the Federal Government, subnational states, and municipalities (Abrucio et al., 2020).

In parallel with this complex political scenario in Brazil during the early stages of the pandemic, several research centers around the world began investing heavily in the development of vaccines against the new virus (Joshi et al., 2021). In April 2020, a few months after the pandemic began, there were 115 candidates for a functional vaccine against the virus, reaching 321 vaccine candidates by September of that same year (Le, Cramer, Chen, & Mayhew, 2020). At the end of 2020, the first vaccines began to be administered in several countries, such as the United Kingdom, Germany, and China. In Brazil, vaccination began on January 17, 2021, in the city of São Paulo with the application of Coronavac, shortly after its use was authorized by the Brazilian Health Regulatory Agency (aka ANVISA).

Despite the successful epidemiological data on the application of Covid-19 vaccines from a retrospective perspective in Brazil (see Moura et al., 2022), this study aims to recover the complex political context of planning that preceded the vaccination process. During the development of vaccination plans in Brazil, conflicts and confrontations among political actors were significant and evident factors shaping the process (Abrucio et al., 2020; Aquino et al., 2020;

Ferrante et al., 2021; Sodr , 2020), although they were only partially systematized in terms of planning analyses.

The objective of this article is to analyze the process of developing vaccination plans against Covid-19 in Brazil by comparing the National Plans for the Operationalization of the Covid-19 Vaccine (PNO) throughout 2020 and 2022. Based on a qualitative analysis based on a documentary study (Coffey, 2014; Cellard, 1997), we seek to highlight uncertainty and conflict dimensions in the analysis of the Covid-19 vaccination planning process in Brazil.

This article is organized in three more sections. The next section presents the theoretical framework used in this work, based on the concepts of planning, uncertainty, and conflicts. The third section presents the methodological procedures used during the research. After, the analysis of the PNOs production process is presented. Finally, the article presents the final considerations and the main findings of this investigation, which highlights the relevance of the premeditated nature of the uncertainty produced in the context of the initial stage of vaccination planning in Brazil.

2. PLANNING, UNCERTAINTY, AND CONFLICTS: AN ANALYTICAL PERSPECTIVE

Planning plays a crucial role in both practice and theory within management and public administration. It is a human and societal need to move beyond improvisation and resignation, where individuals struggle to gain the freedom to pursue their desires (Matus, 1993). By using methods, tools, and theories that guide the process, planning becomes an anticipatory action focused on envisioning, creating, and fostering conditions for future endeavors (Abbott, 2005; Mintzberg, 2004).

The widespread acceptance of planning has developed alongside the emergence of various schools of thought and epistemological foundations (Christensen, 1985; Mintzberg, 2004). One of the main ongoing challenges in planning theory is understanding different planning contexts, which lead to a

variety of technical and political approaches to developing plans (Mintzberg, 2004; Toni, 2021).

In order to systematize an analysis of plan production, due to the variety of theoretical propositions, this article uses the concepts based on Christensen's (1985) matrix for analytical purposes. The author's proposal fosters the need to contextualize planning conditions, considering them as variables in terms of constraints.

The matrix is divided into two dimensions: one vertical and one horizontal. The vertical dimension represents technology, meaning the knowledge of how to do something, while the horizontal dimension pertains to goals or desired outcomes. For analysis purposes, it is assumed that a technology can be known or unknown, and its effectiveness in achieving a specific result can be proven or disproven; similarly, a goal or set of goals can be collectively agreed upon or not, and they may be subject to disputes and conflicts (Christensen, 1985).

Figure 01 illustrates the structure of the matrix based on the dimensions of technology and goals. Christensen (1985) proposes four contextual variations to consider in public problems, which are: (1) Box A: known technology and agreed goal, (2) Box B: unknown technology and agreed goal, (3) Box C: known technology, no agreed goal, and (4) Box D: unknown technology, no agreed goal.

Figure 01: Prototype conditions of planning problems

		Goal	
		Agreed	Not agreed
Technology	Known	A	C
	Unknown	B	D

Source: Adapted from Christensen (1985, p. 64)

In the first variation proposed by the author (Box A), where technology is known and goals are agreed upon, the context favors conditions of predictability and stability. Since there is a shared understanding of goals and how to perform tasks, it becomes easier and more feasible to form expectations about future operations during the planning process. Therefore, there are favorable conditions for invoking concepts such as predictability, productivity, accountability, efficiency, and effectiveness (Christensen, 1985). In this context, the necessary conditions for traditional planning theories, which are often based on normative and predetermined assumptions about actions in the planning process, are present (Mintzberg, 2004; Toni, 2021).

In the public sphere, however, the social process of developing plans often reveals a recurring need to understand conflicts and disputes that create uncertainty among political actors (Matus, 1989 & 1993; Toni, 2021). The presence of conflicts of interest and differing political agendas is especially typical and important in the process of public policy development and government planning (Toni, 2021). This emphasizes the inadequacy of limiting the concept of planning to situations characterized by known resolution methods and an agreed-upon goal (the equivalent of Box A).

The second variation of the matrix (shown by Box B) involves unknown technology and a common goal. In this case, the context deals with public issues that are widely recognized but lack proven solutions (technologies) that guarantee a specific outcome. Here, the uncertainty arises from the absence of demonstrated effectiveness of a technology, specifically a lack of knowledge that ensures a particular result (Christensen, 1985). Practically, to meet a social demand or achieve a goal, planning must explore options through "trial and error" (empirical solution building) or by fostering innovation (Christensen, 1985).

In Box C, we encounter a situation where the technology is known (i.e., proven methods for generating solutions exist). However, there is no consensus on the goals of a specific action or policy. Therefore, the uncertainty does not stem from the technology (means) itself, since effective and proven methods

are available. Instead, the uncertainties lie in the goal (Christensen, 1985), where conflicting or disjointed objectives create unpredictability in the process, even though technologies exist that can achieve a given end.

The condition of multiple, conflicting goals precludes replicable results. Each bargain must be tailored to its particular participants, their issues, their circumstances, and their preferences. Because each deal is thus unique, the bargaining process is antithetical to bureaucratic routines that yield identical results in any situation. (Christensen, 1985, p. 65)

The fourth variation, in which there is a context of unknown technology and no agreed goal (Box D), we find "a situation in which there are multiple, or unarticulated, goals and no known effective means for achieving them" (Christensen, 1985, p. 65). In this context, the notion of chaos and a perception of more extreme uncertainty predominate, as there is no clear sense of means or direction. There are difficulties in focusing due to the instability of goals, since goals may be conflicting or even ambiguous and nebulous, and may change over time. The context is aggravated by the uncertainty generated by the lack of proven means of resolution, making it difficult to establish a sustained course of action.

In general terms, Christensen (1985) states that the matrix (Figure 01) systematizes the different qualities that uncertainty can assume in planning processes. Based on this understanding, it is possible to assess the specific conditions of uncertainty that characterize problems in the specific planning context. Planners can employ planning approaches and styles appropriate to the concrete conditions faced (Christensen, 1985).

It is appropriate to present two additional assumptions that support the concepts of uncertainty and conflict in the theoretical view of planning discussed in this paper. First, this paper assumes that uncertainty is always present in the planning process (Matus, 1989 & 1993; Abbott, 2005). Uncertainty is a fundamental part of the social process. The future can never be entirely predetermined through planning, meaning that unexpected outcomes are always possible and some level of uncertainty will persist (Abbott, 2005;

Mintzberg, 2004). Therefore, an essential aspect of planning is to evaluate and manage uncertainties across its various forms.

Concerning conflicts, it is assumed that conflict is a constituent part of the dynamics of organizational life and work dynamics in planning in the public administration and governmental fields (Matus, 1993; Toni, 2021). Particularly regarding goals, disputes over the definition of goals to be achieved collectively are a clear manifestation of conflict of interest in the social sphere. Thus, it is important to emphasize that:

[...] planning must acknowledge that the environment in which it develops is a resistant environment, which opposes our will, and that such opposition does not come from nature, but from other men with different visions, objectives, resources, and power, who also have a calculation about the future and have equal or greater possibilities than us to lead the social process down a path that diverges from ours. (Matus, 1993, p. 13-14)

In the process of analyzing the planning process, both uncertainty and conflicts can emerge as defining elements that explain the phenomenon. Christensen's (1985) matrix elaborates a way of systematizing the contextual characteristics in planning, based on an understanding of the means and ends in the process of producing plans.

3. METHODOLOGICAL PROCEDURES

The research method employed in this study was qualitative document analysis (Cellard, 1997; Ritchie & Spencer, 2002; Coffey, 2014). This approach aims to gather insights from textual data based on written documents in policy research (Ritchie & Spencer, 2002). Therefore, we sought to uncover not only the organization of the written content in the vaccination plans but also to understand the context in which the process took place, including explanations of the actions undertaken by the political actors involved.

The analyzed written documents were divided into two groups. The first group included the National Operational Plan (PNO), which is the primary official document guiding the formal planning of Covid-19 vaccination in Brazil. The second group consisted of news reports related to vaccination during the period. These news reports provided data to understand the context and scope

of social interactions and conflicts in the vaccination planning process (Guba & Lincoln, 1981; Cellard, 1997).

The first sources of documents analyzed were the initial five editions of the PNO. Initially, each edition was read in its entirety, published by the Ministry of Health (Ministério da Saúde) between December 2020 and March 2021. For systematization, both the points of continuity and the changes between editions were recorded to enable comparisons, focusing on the following information: epidemiological situation and definition of the target population for vaccination; Covid-19 vaccines; pharmacovigilance; operational aspects of vaccination and the budget allocated for vaccination efforts. There was little significant variation between editions six to eleven regarding the objectives of this study. Subsequently, the twelfth edition of the PNO, published on February 1, 2022, was included. The inclusion of the 12th edition was justified because it was the document that incorporated childhood vaccination in Brazil.

For collecting journalistic material related to the five PNOs, publications from BBC News Brazil and CNN Brazil websites between November 1, 2020, and March 31, 2021, were analyzed. The focus was on facts and statements that helped identify uncertainties and conflicts during the initial vaccination planning phase. These two outlets were chosen because they had more reports written by journalists, more detailed content, and were publicly accessible. At least 26 reports were highlighted for containing elements of conflict and uncertainty relevant to planning during this period.

To organize the concepts of conflict and uncertainty in the planning process, the study used the analysis proposed by Christensen (1985), which highlights two key dimensions: technologies (whether the means are known and effective or not) and goals (whether the objectives are agreed upon or not). The authorization of vaccination and the evaluation of alternative treatments for Covid-19 represented the technological dimension. The goal dimension focused on identifying the suggested courses of action in response to the objectives. By cross-referencing information from the PNOs and news reports, it was possible to critically analyze the classification of each situation within the corresponding

boxes of the theoretical matrix. Any transitions between boxes were evaluated based on the evidence from the collected data.

A first version of the analysis report included excerpts from the news reports to highlight the evidence, but these were later removed from the body of the text for reasons of space and fluidity. After a new round of data analysis, a selection of the most relevant data and information for this research was made, guided by Christensen's matrix, critically reevaluating the data and theoretical analyses to finalize the research.

4. ANALYSIS OF THE PROCESS OF PRODUCING PLANS FOR VACCINATION AGAINST COVID-19

Recognized for its successful experiences with large-scale vaccination campaigns, Brazil was expected to plan and implement vaccination against Covid-19 efficiently. However, due to the political dynamics in Brazil during the pandemic, the conflicting and uncoordinated actions at the government level turned vaccination into a site of political disputes and confrontations (Ferrante et al., 2021; Sodr e, 2020).

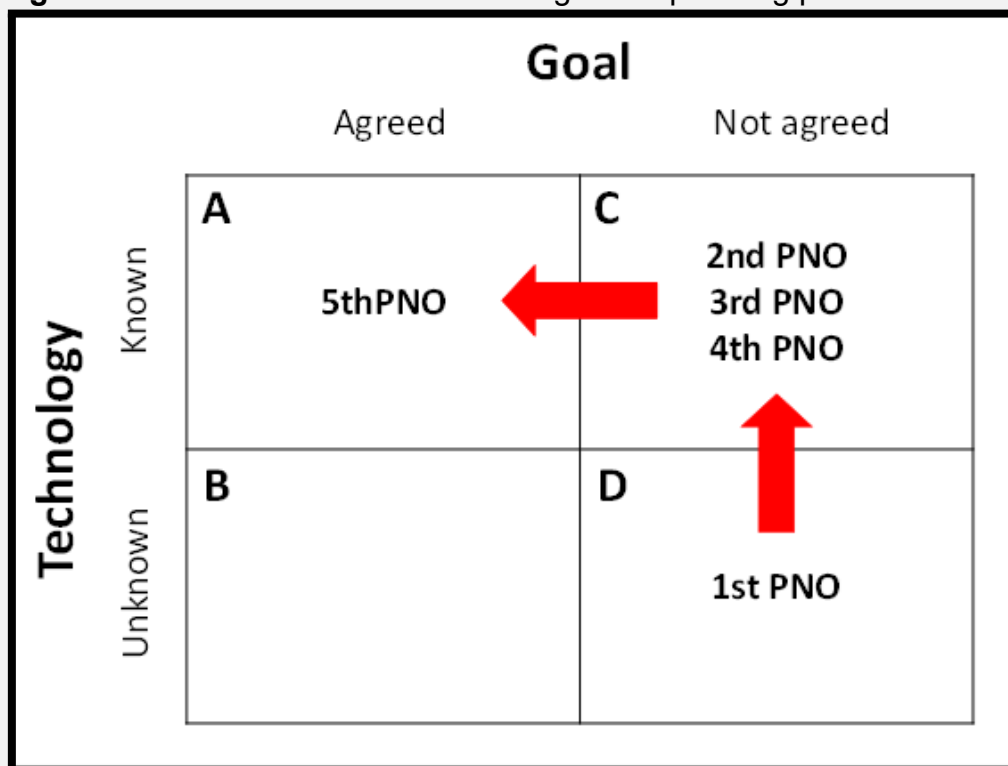
Between the publication of the first version of the National Operational Plan (PNO) against Covid-19 and the release of the fifth edition, significant changes can be observed in just 90 days. Table 01 summarizes some of these changes, from vaccines approved for use to those still in testing.

Table 01: Summary of Covid-19 Vaccines (1st to 5th PNO)

	1º PNO	2º PNO	3º PNO	4º PNO	5º PNO
Publication	16/12/2020	22/01/2021	29/01/2021	15/02/2021	17/03/2021
Technology	Fiocruz/ Astrazeneca Covax Facility	Fiocruz/ Astrazeneca, Covax Facility, Butantan/ Sinovac	Fiocruz/ Astrazeneca, Covax Facility, Butantan/ Sinovac	Fiocruz/ Astrazeneca, Covax Facility, Butantan/ Sinovac	Fiocruz/ Astrazeneca, Covax Facility, Butantan/ Sinovac, Precisa/ Covaxin, União Química/ Sputnik
Vaccines with definitive ANVISA registration	-	-	-	-	BioNTech/ Pfizer, Fiocruz/ Astrazeneca
Vaccines approved for emergency use	-	Fiocruz/ Astrazeneca Butantan/ Sinovac	Fiocruz/ Astrazeneca Butantan/ Sinovac	Fiocruz/ Astrazeneca Butantan/ Sinovac	Butantan/ Sinovac
Vaccines in preclinical research	162	173	173	179	182
Vaccines in clinical research	52	63	63	63	81
Vaccines in phase III	13	20	20	21	21

During this period of just over three months, three distinct phases of plan production were identified, based on the planning matrix proposed by Christensen (1985). Figure 02 illustrates the evolution of the different contexts that developed throughout the process, shaping the plans and execution of vaccination efforts in Brazil.

Figure 02: Evolution of PNOs according to the planning problems matrix



The data analysis shows that initially, the planning conditions were in Box D, where goals were not agreed upon and vaccines had not yet been thoroughly tested and approved for effectiveness. This situation affected the production of the first PNO. We then argue that conditions shifted to Box C, a period when the vaccination operationalization process began to progress, eventually reaching Box A, starting with the publication of the fifth PNO, when there was a change in the national organization of the immunization process.

Next, in each of the following three subchapters, we present a systematization of the analyses of these moments to provide evidence of the process that influenced the production of the PNOs and the vaccination planning.

4.1. The vaccination plan amid the social production of public conflicts and uncertainties

From the period between the World Health Organization's declaration of a pandemic and the publication of the first PNO version, Brazil underwent a

process of lack of centralized coordination of its public health actions in 2020, performed by the Brazilian Federal Government (Boschiero et al., 2021; Ferrante et al., 2021). There were episodes of open discourse discrediting the existence of the pandemic by the Federal Government, including by members of the Ministry of Health (*Ministério da Saúde – MS*), in which there was no national cohesion across the three levels of government in promoting public health policies to tackle the pandemic (Sodré, 2020).

Considering Christensen's (1985) categories of goals and technology, a complex situation arose during this period: on the one hand, the technologies available against the spread of COVID-19 did not align with the goals of the Federal Government leaders (Abrucio et al., 2020; Boschiero et al., 2021; Sodré, 2020). On the other hand, the policy options suggested by the Federal Government lacked evidence to protect the lives and health of the population (Ferrante et al., 2021; Gramacho & Turgeon, 2021).

Within this scenario, there were ongoing conflicts over the adoption of more life-saving technologies during this period. An impasse also existed in unifying the goals among different political actors, as reaching a consensus was impossible. Consequently, the characteristics of Box D were clear, characterized by chaos and a lack of direction.

This impasse is demonstrated by the controversies during the initiatives against the spread of Covid-19. At the start of the pandemic, the primary method to limit contagion was social distancing (see Aquino, et al. 2020). However, the Federal Government also proposed solutions such as promoting the idea of “herd immunity” without any form of immunization (which goes against social distancing policies) and later endorsing the off-label use of drugs (i.e., chloroquine, which was soon proven ineffective against Covid-19) (Sodré, 2020; Boschiero et al., 2021; Secretaria de Ciência, Tecnologia, Inovação e Insumos Estratégicos em Saúde, 2022).

The judicialization of Covid-19 policies added another layer by exposing conflicts among different political actors. The Federal Supreme Court (STF hereafter) played a key role in mediating and resolving political disputes during

the pandemic. From March to November 2020, the STF was called upon to decide on constitutional issues in at least 128 lawsuits related to the pandemic (see Oliveira & Madeira, 2021). Oliveira and Madeira's (2021) research highlighted the STF's support for decision-making authority at the state and municipal levels to set policies for addressing the health crisis, which was essential in allowing the development of a vaccination policy without necessarily relying on the Ministry of Health or the Federal Government.

Despite political controversies at the national level, the vaccine quickly gained global recognition as a viable solution due to its successful history of use (Le et al., 2020; Joshi et al., 2021). In April 2020, 115 candidate vaccines for Covid-19 were reported to be in development (Le et al., 2020). Although it is a technology widely recognized as safe and effective, the federal government took deliberate steps to prevent vaccines from being seen as one of the main technological tools to fight Covid-19 (Sodré, 2020; Gramacho & Turgeon, 2021).

Regarding vaccines as technology, two points are relevant here. First, it is important to correct the misconception that vaccination technology was developed with "surprising speed" that year. Technologies to combat the type of virus that causes Covid-19 were already being developed, based on prior experience with *SARS-CoV-1*, which emerged in 2002. Therefore, the existing knowledge helped accelerate the development of vaccines against *SARS-CoV-2*.

Secondly, even though the vaccine could already be considered a known technology, within the theoretical framework of Christensen's (1985), the fact remains that the different types of immunizers under development were still testing their efficacy in humans. Therefore, in the development of the immunization plan, the lack of approval from regulatory agencies characterizes Covid-19 vaccines as a specific means of efficacy that had not yet been proven at that time. As a result, the operationalization of vaccination planning relied on the approval of the regulatory agency, ANVISA, in the Brazilian case.

The Federal Government hesitated to make vaccination an official policy to fight the pandemic, opposing state governments (Gramacho & Turgeon,

2021). For example, although it had the resources to purchase vaccines early, it chose to buy ivermectin instead (Ferrante et al., 2021). As a result, the rollout of vaccination remained uncertain. However, the emergence of a technology supported by the scientific community and accepted by the public began to influence the political landscape (Gramacho & Turgeon, 2021). Although vaccination was against the then-President Bolsonaro's interests, the announcement of vaccination efforts in other countries and the anticipation of positive outcomes started to gain significant political importance.

This notoriously complex situation influenced the publication of the first PNO in December 2020. The scenario that emerged made it politically challenging to uphold the idea that vaccination was unfeasible. The looming possibility of conducting vaccine immunization without federal government involvement, with judicial approval, also created significant pressure (Oliveira & Madeira, 2021), leading to uncertainty in the planning process.

The initial PNO approved vaccination using the Fiocruz/AstraZeneca vaccine, involving the purchase of just over 100 million doses (Ministério da Saúde, 2020). However, the plan did not specify when the vaccination period would begin. The Federal Government started to accept, despite clear resistance, the existing technological bases and, consequently, the delayed procurement of immunizers (Ministério da Saúde, 2020).

The vaccination planning process took place with the presence of the striking characteristics of Box D of Christensen's matrix (1985). Divergent goals, with open conflicts characterized the period. Although vaccine was a known technology, there were no vaccines ready and scientifically proven to be effective against Covid-19.

It is important to note that the vaccination planning process began without any agreed goals among political actors, as Federal Government leaders remained openly opposed to vaccination (Ferrante et al., 2021; Gramacho & Turgeon, 2021). However, with the consolidation of vaccines as a proven means of protection, the planning conditions have fundamentally changed. At this point, there was a transition from Box D to C, as proposed by

Christensen (1985). Subsequent PNOs now have other constraints that influence the production of plans.

4.2. Covid-19 vaccination plan: vaccine approval

The acceptance of vaccine technology (transition to Box C) did not occur without ongoing conflicts, as shown by the continued divergence of goals. On January 7, 2021, Bolsonaro made new statements, claiming that vaccines approved for emergency use were not safe and, for this reason, should not be mandatory (Gramacho & Turgeon, 2021). Despite this, on the same day, the Ministry of Health signed a contract with Sinovac for 100 million doses of the Coronavac vaccine. Looking at other contracts signed by the Ministry of Health with vaccine manufacturers like AstraZeneca and Covax Facility, there were signs that technology was being accepted in Brazil. Therefore, despite the apparent conflicts, there is evidence of a shift in the acceptance of vaccination technology.

The vaccine received emergency use approval in Brazil on January 17, 2021, when ANVISA authorized the use of the AstraZeneca and Coronavac vaccines (Ministério da Saúde, 2021). After the approval, Bolsonaro stated there was nothing more to debate and that, once available, the government would purchase them.

On the same day that ANVISA approved the vaccines, vaccination started in São Paulo. At that time, the then-governor of São Paulo spoke critically against the so-called denialists (*negacionistas*), saying that science had won – explicitly referencing President Bolsonaro and the Health Minister Eduardo Pazuello – who criticized the governor's actions, claiming it was a "marketing ploy" (BBC News Brasil, 2021).

The vaccines received approval days before the release of the second edition of the PNO against Covid-19, which was published on January 25, 2021. In the second edition of the PNO (2021a), there was no longer any specification about which immunization platform (previously AstraZeneca only) would be used. Therefore, even though the vaccines were approved for emergency use, the political goals of vaccination had not yet aligned during this period, as a gap

existed between the aim of widespread and rapid vaccination and the hesitant approach to promoting immunization among the population. The Federal Government aimed to maintain a strategy of no centralized coordination of public actions, continuing to discredit the vaccines' effectiveness (Abrucio et al., 2021; Gramacho & Turgeon, 2021).

The third and fourth editions of the PNO contained the same core information due to their close release dates relative to the second edition. A new feature in the fourth edition was the addition of recommendations and measures to prevent the spread of Covid-19. The document offers guidelines for avoiding crowds. A few days after the release of the fourth PNO, vaccine technology in Brazil achieved a new milestone when Pfizer was finally approved by ANVISA on February 23, 2021.

The significant increase in Covid-19 cases and deaths in Brazil, which started in March 2021, led to a switch to Box A planning context. In the fifth PNO, released on March 15, 2021, ANVISA's final approval of two vaccines, AstraZeneca and Pfizer, was included, with only Coronavac remaining for emergency use (Table 01). The approval of vaccines for full use happened alongside the ongoing vaccination campaign in the country. The acceptance of the vaccine as a technological platform to fight Covid-19 is clear.

The vaccination plan is now advancing into a large-scale immunization phase, with a growing focus on vaccine availability and managing vaccination coverage in the Brazilian population.

4.3. Rising infections, constant (and slow) vaccination: forced convergence

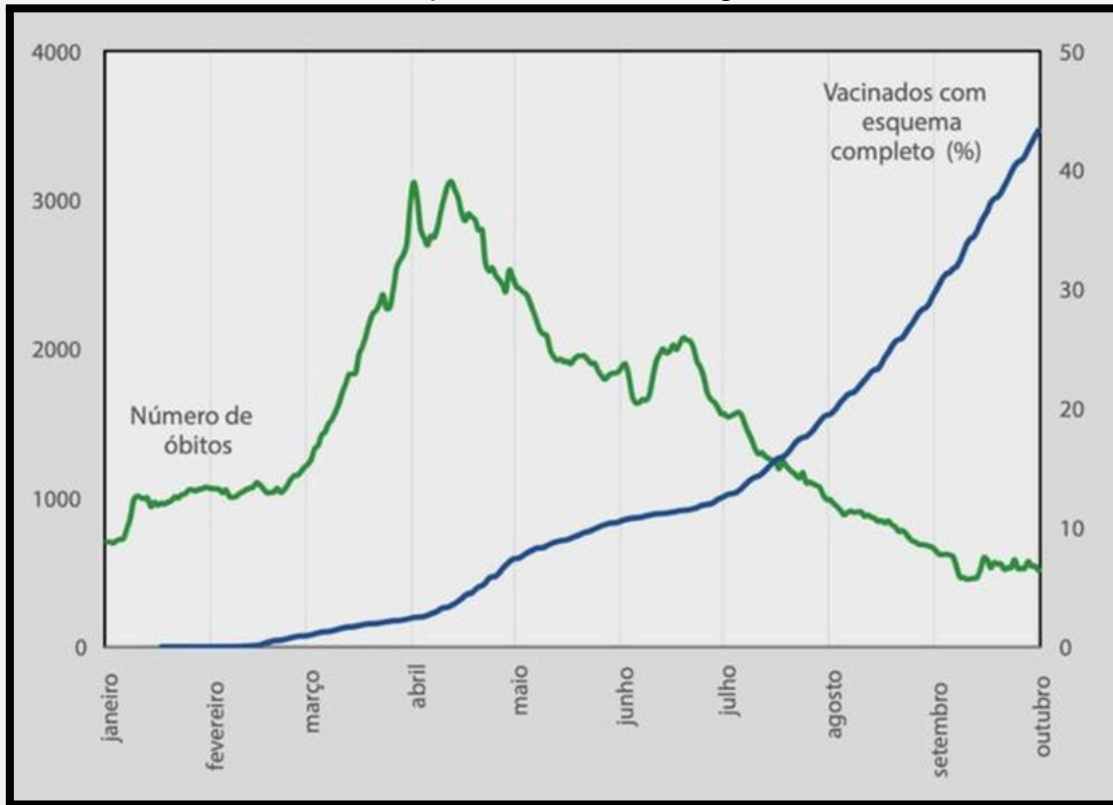
Brazil is doing its part. The federal government has shown its work and vaccines have already been delivered to 100% of seniors over 85 years of age, including my mother. By the end of the year, we will have more than 400 million doses available for Brazilians. (Jair Bolsonaro, quoted in Lara, 2021)

In March 2021, amid a worsening health crisis in the country, demand for vaccines was high. Because vaccines were not acquired in time for distribution, vaccination campaigns in some cities, such as Rio de Janeiro, João Pessoa,

and Maceió, were temporarily halted due to a lack of doses (Barifouse, 2021). As a result of this vaccine shortage, pressure on the federal government to provide adequate vaccine supplies increased. The lack of coordination by the federal government at this point becomes even more evident, as the disinterest in vaccination made it harder for vaccination efforts to succeed.

Figure 03 shows the full immunization data and compares it with death data from January to October 2021. The data indicate an increase in deaths from March to July 2021, with weekly death counts sometimes exceeding 3,000 per day (Fiocruz, 2021). As the crisis intensified and no more effective options to control the pandemic emerged, the Federal Government fully supported rapid vaccination efforts. The president himself began suggesting that vaccination would be prioritized, despite evidence to the contrary, especially concerning vaccine acquisition (Ferrante et al., 2021).

Figure 03: Number of deaths and proportion of the total population vaccinated with the complete schedule throughout 2021



Source: Fiocruz (2021, p. 3)

Despite the emergency situation in Brazil, from a vaccination planning perspective, the crisis helped align objectives. The vaccine became the most accepted public method for tackling the pandemic. A key change was the increase in collective monitoring of vaccination progress, infections, and death data using quantitative indicators. Published on March 17, 2021, the fifth PNO (Ministério da Saúde, 2021b) provided data on dose distribution, vaccination coverage, and overall campaign guidelines.

Monitoring vaccination rates by priority groups, transition in the age groups for vaccine administration, data on partial and complete immunization (broken down by municipality and region), followed by significant adherence to vaccination by the Brazilian population, became an inherent part of the vaccine administration process. Figure 3 itself is the result of the trend toward greater control over the progress of vaccination, resulting in the dissemination of

statistical information. This allowed the population to monitor the process of dose administration over time.

The shift from Box C to Box A illustrates how goals came together to fight the pandemic through vaccination. The PNOs supported this effort. The ongoing battle against opposition from the Federal Government and the former president to promote this vaccination plan concluded with the large-scale distribution of vaccines to the Brazilian population. Despite the slow start to the vaccination campaign, it became possible for them to forecast and regularly supply the doses needed to manage the health crisis (Fiocruz, 2021 and 2022).

Over time, monitoring the progress of vaccination became more transparent, with continuous production of epidemiological updates and technical reports. The positive impact of vaccination was confirmed in early 2022, as seen in declining emergency hospitalizations and fewer deaths related to the virus.

In fact, with the expansion of vaccination, especially after June 2021, there was a gradual reduction in mortality, reflecting the lower severity of cases. This effect was also felt in the lower occupancy rate of ICU beds in hospitals. From January to March 2022, the introduction of the Omicron variant in the country led to an increase in the incidence of new cases and possibly the illness of people who had been infected by previous variants. However, the reduction in disease lethality after vaccination is striking. (Fiocruz, 2022, p. 6)

Despite the positive epidemiological results of vaccination in the population (Fiocruz, 2022; Moura et al., 2022), the immunization of children and adolescents in early 2022 once again sparked controversy. After developing versions of the vaccine intended for children, the Minister of Health at the time announced plans to hold public hearings to discuss the issue. He also stated that he would require a doctor's prescription for vaccinations, despite the supportive stance on vaccination taken by scientific societies and child advisory committees (Souto, Fernandez, Rosário, Petra, & Matta, 2024).

Even though the technology was already known and had proven results, there was a new effort to discourage vaccination, this time involving children and adolescents. However, the conflict over the issue did not last long. In the

12th edition of the PNO, published on February 1, 2022 (Ministério da Saúde, 2022), vaccination for this population was included. Nevertheless, the conflict affected the implementation of future childhood vaccination programs due to the lack of doses purchased for this group. This case once again shows how federal government leaders were compelled to accept vaccines as a technological solution and vaccination as a political goal.

The shift from Box C to Box A marked the moment when vaccination efforts were unified, turning planning – which initially lacked operational details – into an effective guide for vaccinating the population in Brazil. By moving away from political conflicts and uncertainties created by the Federal Government, the PNOs also came to represent a coming together of goals. As a result, a favorable environment for predictability and consistency in Covid-19 vaccination emerged from that point onward.

5. CONCLUSION

The analysis revealed how planning conditions change rapidly as vaccination plans are developed during the pandemic, especially in its early stages. There were quick changes over roughly 90 days. Using the framework based on Christensen (1985), the planning process began in Box D, moved to C, and ultimately shifted to Box A in March 2021. From late 2021 to early 2022, efforts to prioritize vaccination for children emerged (which would be a return to Box C), but these attempts failed. Therefore, significant contextual changes influenced the development of plans in the first five editions of the PNO.

The first PNO was drafted and published under conditions typical of Box D, resulting from political conflicts and uncertainties about Covid-19 vaccines. In this context, planning was notably affected by the lack of clear shared objectives, making it challenging to foster cohesion and direction in government actions.

The shift from Box D to Box C occurred and became solidified with the availability of vaccines that had been tested and approved for use by public drug control agencies both nationally and internationally. The existence of a proven and socially accepted technology helped overcome the restrictions and

refusals imposed by the Federal Government leadership. However, at that time, planning still faced disagreements over objectives, with some refusing to implement vaccination due to a reluctance to recognize vaccination as a key government goal. It should be noted that the uncertainty surrounding vaccination was intentional and cannot be seen as mere misfortune caused by pandemic-related ignorance, exposing a darker side of authoritarian and denialist government actions that resulted in the loss of lives.

The shift from Box C to A showed a major change in focus, highlighting the increasing pursuit of predictable vaccination. In the fifth PNO, objectives related to vaccination came together. Efforts and resources were directed toward effective planning and coordination of vaccination, with the Ministry of Health involved.

Based on the data presented, it was possible to verify that the alignment of objectives occurred through resistance and persistence, with conflicts and the political-epidemiological scenario influencing the government's acceptance of vaccination. It is also important to highlight the significant participation of the National Council of Health Secretaries (CONASS) and the National Council of Municipal Health Secretaries (CONASEMS) in reducing conflicts and restoring the coordination of SUS governance across the three levels of government (see Carvalho, Rocha, Sampaio & Ouverney, 2022).

This study emphasizes the role of conflict in the planning process. On one side, conflicts created uncertainty because there were no shared goals for the actions included in the plans. On the other side, conflicts and confrontations against the authoritarian, negligent, and denialist stance of the Federal Government's leaders were key in ensuring that vaccination was eventually implemented. This was shown in the transition from D-C-A Boxes in this research. Therefore, the study contributes to both theory and practice of planning in the public and government sectors by highlighting the importance of considering conflicts throughout the process.

Since this is a qualitative documentary study, it has limitations because it relies on data from publicly available written documents. Access to more

sensitive data, which could have enriched and provided additional insights to the analysis, was not obtained. The absence of interviews and consultations with people directly involved in the vaccination planning processes, for example, limits understanding of specific episodes, situations, and examples of how conflicts and uncertainties arose, as well as their impacts. It would also help to gain a broader understanding of the kinds of discussions and both internal and external resistance faced by participants during the development of vaccination plans.

As a suggestion for future research, exploring new studies that utilize Christensen's (1985) matrix in different cases is recommended. This study is among the few that explore its potential and limitations. The findings suggest that deeper insights into changes in planning conditions can be achieved. Further research on planning phenomena involving uncertainties and conflicts in developing government plans and public health policies could improve both the theory and practice of government planning and public administration.

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