Opening the black box of time in health: analysis of temporal sorting by objects in Chile

Abrindo a caixa preta do tempo na saúde: análise da ordenação temporal por meio de objetos no Chile

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Abstract

This study explores the social and material processes involved in organizing time when developing policies and clinical practice. From the analysis of material produced during a case study focused on ethnographies and interviews on the health system in Chile, specifically of the Explicit Health Guarantees regime, we consider how the articulation between social activities and objects composes the temporal dimension in health. We analyze this by specifically considering the role of indexes and statistics in their biopolitical dimension and the local role of contingent and regular dispositions in clinical activity. We conclude with some implications on integrating a sociomaterial approach to the apprehension of time in health.

Keywords: Time; Temporal Distribution; Biopolitics; Health policy; National Health Systems.

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Resumo

Neste artigo, exploramos os processos sociais e materiais envolvidos na ordenação do tempo em cenários de desenho de políticas e de prática clínica. A partir da análise do material produzido durante um estudo de caso baseado em etnografias e entrevistas focalizadas sobre o sistema de saúde no Chile, especificamente sobre o regime de Garantias Explícitas de Saúde, consideramos o modo como a articulação entre atividades e objetos sociais compõe a dimensão temporal na saúde. Analisamos esse aspecto considerando especificamente o papel dos índices e das estatísticas na sua dimensão biopolítica, bem como o papel local das disposições contingentes e regulares na atividade clínica. Concluímos com algumas implicações da integração de uma abordagem sociomaterial na apreensão do tempo em saúde.

Palavras-chave: Tempo; Distribuição Temporal; Biopolítica; Política de Saúde; Sistemas Nacionais de Saúde.

Introduction

In the last decades, Western governments have become under increasing pressure to promote political, economic, and technical transformations to optimize the provision of health services (Pedersen; Roelsgaard, 2020; WHO, 2022), for which speed has often been the parameter for better quality (Stepanovich; Uhrig, 1999). Time itself has become the canon for managing and evaluating the legitimacy of healthcare administration. Thus, the strategies of various Latin American countries have generally been based on prioritizing medical services following epidemiological, demographic and biomedical indexes and optimizing the measurement of waiting times (Gideon, 2006). Since 1990, the World Bank has guided such transformations to enhance population longevity by recommending direct intervention in health markets, financing "a package of public health measures and essential clinical services [...] improving incentives to expand coverage and control costs, [...] [encouraging] competition and private sector participation in the provision of services" (World Bank, 1993, p. iii).

In the case of Chile, these orientations are related to the configuration of the Explicit Health Guarantees regime[1] (*régimen de Garantías Explícitas en Salud*, or GES, as it is called in Spanish). Implemented since 2004, this system is fundamentally characterized by prioritizing disease trajectories based on epistemic, technological and economic platforms that link public and private health services around the fulfilment of four legally enforceable guarantees related to conditions for access to care, financing and quality, but mainly with timing of treatments (Ministerio de Salud, 2004), reorganizing the technological and economic infrastructure of health services for this purpose.

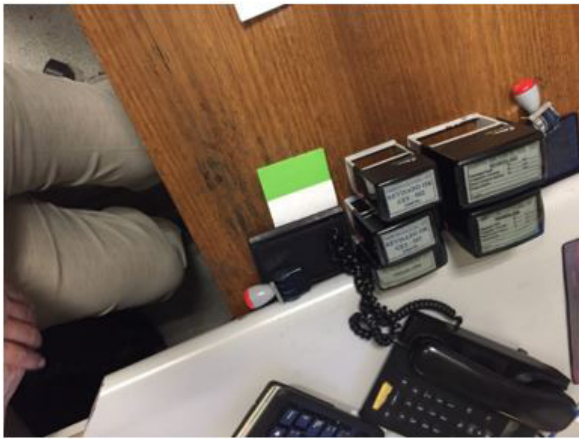
The connection between time and health systems such as GES is fundamental. This is also expressed in annual studies of its efficiency and about the differences it introduces regarding waiting times, regulations and IT platforms, triggering alarms in

1 The term "regime" is used in the sense of a set of rules and specifications (Ministerio de Salud, 2004).

care centers if a parameterized care action fails to occur in the appropriate time (Ministerio de Salud, 2023). However, the proper interpretation of such reports and technologies must understand time as a one-dimensional and homogeneous phenomenon (O'Mahony; Newall; Van Rosmalen, 2015). In other words, the temporality of health must be practiced as a "background" upon which care calculations, clinical activities and health itself flow. Time is commonly appreciated as a "matter of fact" or a reality in itself that is homogeneous for different actors in dissimilar spaces and health care interests (Latour, 2004). Following Latour's (2000) metaphor, time operates as a "black box" as it mainly serves as a plane of contrast to evaluate the efficiency of medical interventions, avoiding any consideration of its composition, possible variations or internal complexity.

However, over a case study of the GES regime, we have found situations such as the following, related to Figure 1, taken in a public hospital in the city of Santiago de Chile[2]:

Figure 1 - Photograph of stamps of the Explicit Health Guarantees regime



Source: Photograph generated by the author during the research process.

The photograph shows elements that could be part of a common desk in any administrative office: telephone, stamps, and reminders are part of the image. The center of the picture shows three of the four "GES stamps" that exist throughout the 2.6-hectare eight-floor hospital, spread over three large blocks. Their importance is only understandable from the composition of the regime: With the messages *"Revisado OK GES (Número de Timbre)"* (Reviewed OK GES [stamp number]) or *"(nombre de hospital) Unidad GES"* ([name of the hospital] GES Unit), these stamps accelerate any kind clinical activity in the entire space. Monica, a professional in charge of its management, puts it this way:

> *Monica: There are only four GES stamps in all buildings.*
> *Interviewer: Four stamps?*
> *Monica: Four stamps that authorize an examination or that receive a medicine without any questions. When patients arrive at a service window, it is checked on the screen* [or database] *the tests or prescriptions they bring with them to verify whether they are covered by the basket of benefits. According to this it is determined whether they should be given of prescription or test. When it doesn't apply, nurses come to me and say: "Mrs. Monica, these patients are not covered for their diagnosis" or "...the test does not apply". However, if we have the possibility to do it, we do it anyway, with the priority it should have. And with the stamp on, it is done.*
> *Interviewer: Does the GES stamp mandate that?*
> *Monica: The GES stamp rules.*
> *Interviewer: And why are there four?*
> *Monica: Because it is a very sensitive issue, so there are three here and one more in the Diabetes Unit which is in* [...] [another building] *(Professional, 30 November 2016)*

The professional's account evinces how a mundane object such as a stamp, once embedded in a specific epistemic and normative scenario can establish relevant temporal differences. Each GES stamp acts as a temporal agent in the socio-technical[3] relations in which it is inserted, acquiring a specific meaning and affecting the ways in which

2 Information unrelated to the analysis objectives of this study in this and other figures or images has been blurred to respect and maintain the commitment to the anonymity of the participating non-ministerial health units or organisations.

3 In this context, "socio-technical" refers to process in which social and technical aspects are co-defined reciprocally.

other elements are ordered to transform the speed of the course of clinical actions. The time of stamped processes differs from regular ones, producing social and material variations for their performance.

Situations such as the above illustrate that the time of clinical processes seem to depend, rather than only on natural or exclusively normative elements that organize it, on much more mundane and subtle matters. Time in health appears to be "folded, rather than linear" (Cloatre, 2019, p. 130) as the product of articulations between heterogeneous elements, i.e. an alliance between linguistic components, equipment, biological processes and social conventions, that participate in its elaboration (Serres; Latour, 1995). Both the creation of the dimensionality of health policies—which involves temporalization procedures—as a performative[4] process mediated by numeration routines and the clinical local practices linked to the production and reproduction of life in certain standardized times (Carvajal; Gaete, 2016) can be understood as configured by a series of adjustments involving relationships between human and non-human elements with implications for temporal sorting (Jespersen; Jensen, 2012).

Considering the above, we articulate an approach to "see inside" some of the mechanisms of the aforementioned "black boxed" operation of time, considering its composition in the configuration of health policies and everyday clinical routines. Referring to the former, we consider implications of everyday practices into intervening on the temporal dynamics of population longevity, i.e. the temporal dimension of what French philosopher Michel Foucault (2007) calls biopolitics as a politics that meets the conditions for the unfolding of life. Regarding this, we focus on the specific role played by technical entities in these configurations in adjusting habits and practices linked to producing and reproducing life in certain standardized (or not) times. Regarding clinical routines, we focus on forms in which temporality becomes apprehensible in the flow of everyday routines.

From this perspective, rather than analytically pre-empting temporal dichotomies (natural or social-regulatory) assigning normativity to temporal structures, we take an approach based on an empirical point of view to explore temporality into practice (Pedersen; Roelsgaard, 2020). Following the guidelines of science and technology studies (STS), instead of deeming time as a 'matter of fact', we develop an approach to time in health as a "matter of concern", considering that its articulation depends on the effort between different agents assembled so that it is unfolded in specific ways (Latour, 2004).

An approach to social and technical configuration of time in health

Briefly, the many approaches to the study of time during most of the 20th century share some common features. Firstly, time is understood from a dualistic perspective, that is, time obeys either a natural disposition or an exclusively social construction. Secondly, time is considered relevant insofar as it is placed in relation to other social, cultural, or symbolic processes. This means that time is usually considered in terms of its consequences for collective life, rather than as a relevant issue (Adam, 2016).

However, the subtleties in the study of temporality in medicine differ from understanding time in exclusively physical or social terms. While medicine has long relied on a shared idea of time inherited by modernity as a linear and unidirectional process (Cloatre, 2018), various works have highlighted the active role of practices and technical components in the production and coordination of temporal dimensions. For example, Armstrong (1985) reports how a specific economy of time in health emerged in the post-war period, associated with the effort to make medical practice more efficient and the slogan of saving physicians' time. In this period, the relevance given to the temporal dimension changed the way in which illness is conceived: rather than an event, a process (onset of symptoms, diagnosis, treatment, outcome) linked to continuous

4 Performativity is a theory derived from analytic philosophy that states that language and social practices not only represent or shape the world, but also constitute it.

observation and care practices; chronic illness crystallizes the union of illness and time, being linked with the evaluation of "proper progress" of the biological aspects of the body (Armstrong, 1985). Incorporating specialized technologies and objects has been fundamental for this.

Thus, based on the STS perspective, Berg and Bowker (1997) point out the importance of mundane artifacts in articulating the continuity of time in health scenarios. They show how medical records and databases "mediate" the constitution of a body with a specific history and geography of disease, constructing an immovable medical past and coordinating and aligning different temporalities (Hine, 2016). Thus, for Moreira (2007), the temporal space of health consists of the many different temporalities that are enacted by various forms of epistemic and artefactual participation. Hence, epistemologies and ontologies of health and illness depend on temporal formations that entail experiences and practices of anticipation, preparedness, resilience and response. In this whole process, the approach to the disease ceased to refer to the event itself, consisting of controlling its possibilities (prevention and early intervention to protect the future) (Moreira, 2007).

Time politics of health

Thus, the ways in which temporality is articulated takes on various political connotations. Auyero (2013) has shown how time can be manipulated in the sense of distributing waiting and acceleration in a discriminatory way for certain bodies, usually regarding clientelism and poverty. As Ost (Harrington, 2012) puts it, decisive power rests with those who can impose their construction of time on other social groups.

This political administration of time intrinsically imbued into what Foucault (2007) calls "biopolitics," a politics which "converts power-knowledge into an agent of transformation of human life" (p. 173). As Deleuze (2014) has pointed out, biopolitics intervenes in the rhythm and "makes certain choices and behaviors probable": "biopolitics never ceases to make probable [...] it implies a management of probabilistic phenomena: births, deaths, marriages, etc." (p. 84). The duration of symptoms, as biological and epistemic normativity, is associated with medical practices that define standards on the understanding of the body, its distribution in relation to other bodies and how these participate in social and material rhythms. Such associations, along with related calculations, confer a particular temporality to diseases in each situation regarding their duration, acceleration or lethargy (Moreira, 2007). However, as Moreira (2007) has highlighted, this consideration of the effects of local and subtle negotiations in the formation of biopolitical dynamics is commonly omitted in terms of its macro and micro implications.

Thus, in its macro and micro implications, time exceeds exclusive chronological logics and appears related to everyday routines of interchange with diverse types of organization. Thus, based on the STS approach, Latour (1993) has introduced the metaphor of "sorting" to account for the means of tracing the temporalities stemming from the meetings of a wide range of human and nonhuman elements and agencies: such sorting gives rise to new temporalities, acting and affecting them. As Latour (1993) states, it is "the sorting that makes the times not the times that make the sorting" (p. 76). Time unfolds by social and material agency, making time(s) through action, and practicing it as dynamic, complex and contingent process (Beynon-Jones; Martin; Buse; Nettleton; Annandale, 2020). From a material-semiotic approximation, a perspective that entails the relationality of human or nonhuman entities and the notion that both are produced by heterogeneous relations (Law, 1999), it is possible:

> [...] to pass from one temporality to the other, since a temporality, in itself, has nothing temporal about it. It is a means of connecting entities and filing them away. If we change the classification principle, we get a different temporality on the basis of the same events. (Latour, 1993, p. 75)

The point about this kind of perspective is that it enables different temporalities to emerge by different sorting processes. Therefore, time is a co-product of the agency of different social and material elements, rather than a background for action.

Calculating health, changing time: a description of case

As stated at the beginning, recent decades have significantly transformed the administration of health and health time, especially in Latin America. Chile has two major health systems: a public system (managed by a National Health Fund) and a private system (managed by diverse social security health institutions); together they serve 77.8 and 17.29% of the population, respectively[5] (Sánchez, 2021). GES is inscribed in both systems, currently establishing 87 prioritized health problems related to the national diagnostic caseload, for which it establishes four legally enforceable guarantees: *access* (meeting certain diagnostic criteria ensures incorporation into the plan), *timeliness* (the maximum times between each defined point in time for diagnostic treatment), *financial protection* (a percentage of coverage regarding the total cost of treatment), and *quality* (the review of the conditions for accreditation of health providers). Each diagnosis is selected based on complex epistemic, ethical and political tasks that generally follow evidence-based medicine. These standards produce a set of "baskets of services"—for which evidence of its efficiency has been provided—and with clinical practice guidelines for local use. The same regime establishes a temporality of three years for the analysis of the incorporation of new health problems or services (Ministerio de Salud, 2004).

In practice, the GES regime has articulated several temporal regimes, inducing acceleration vectors for health problems that meet a series of requirements of evidence and cost-effectiveness calculations, among others. This regime can be understood as a vector of biopolitical acceleration as it formulates a complex and dynamic epistemic network to prioritize certain bodies and the medical and economic activities and technologies associated with timely care. Meanwhile, other bodies are articulated in networks that produce a slowed temporality. Together, these two scenarios make up a complex and sensitive framework that configure the temporalities of health in most of the country.

Method

To explore modes in which time is sorted in health scenarios in Chile, material produced by a case study of this regime that began in 2015 up to the present has been gathered considering the development of focused ethnographies (Knoblauch, 2005) and interviews in ministerial departments and public hospitals in Chile. In this study, field notes and excerpts from interviews with experts in policy development—who were responsible for revising the diseases and benefits included in the offered services and providing methodological guidance on the development of care protocols—were especially considered (n = 13), along with 31 healthcare providers who have participated in expert committees to prioritize diseases or services, organized by ministerial departments, or who are part of the clinical treatment of prioritized diseases. Most interviews (42) were carried out in the workplaces of these experts and professionals, enabling the integration of the material components of these spaces into the conversation, developing, in each case, how they articulate their daily work. Also, during the focused ethnographies, it was possible to generate images by photographs and obtain legal documents (n = 3), protocols (n = 80), and internal dissemination bulletins (n = 2), which were also integrated in this analysis.

To consider the resources in this study, abductive analysis was used. For Tavory and Timmermans (2014), it consists of finding novel elements in the studied phenomenon, describing them, and searching for theoretical references that enable reflections on the observed elements. Thus, we return to these elements, offering new hypotheses that contribute to their understanding. Unlike the inductive (which is predicative) and the deductive (which aims to predict an event), the abductive

5 The remaining percentage is associated with exclusive health services for armed and security forces.

method focuses on producing new plausible ideas from the material.

Our analysis strategy was specifically based on reviewing situations and accounts in which experts and professionals describe or analyze how they perform activities that can intervene in speeding up, slowing down, or conducting their activities in general by considering field notes and interviews in similar terms, i.e. as the semiotic record of activities. Thus, as we aimed to broadly analyze temporal arrangements, although our case study emerges from studying the GES regime, general health situations were also included.

This research followed the ethical guidelines on participant care and the safeguard of the confidentiality of the information of interviewees and institutions. This study was reviewed and approved by an Institutional Ethics Committee.

Objects and time

> *After moving forward in line, the woman tells the nurse that a year ago she received an order for four medical tests that she is bringing today, but that she does not remember the name of the doctor. Six months ago, she brought two results, but was told she needed all the tests for diagnosis. The nurse searches through filing cabinets, enters information into the computer and looks quickly at the screen before asking the patient to wait.* (Field note in public hospital, 17 March 2017)

The above quote shows a relatively common situation in the public health service in Chile. Although it exposes problems related, for example, to the length of time required to receive specialized care and the validity or "duration" of laboratory tests, it also states how processes usually taken for granted, such as the unity and continuity of time, only occur by articulating specific practices and objects. Appreciating what is necessary for the medical situation to be realized shows the involvement of more elements than just the time of patients' biological body: both the trajectory of illness and the continuity of its pathological process as a unique case emerge as the articulation of technological equipment (such as databases), epistemic and social processes, and the biology of the body itself. Time must be recomposed and aligned from the daily work of professionals, machines, and installed routines to become objectifiable and intervenable by specific knowledge and practices.

The production of time by indexes and evidence

This is in line with the work of experts in defining and developing population health policies, which are then integrated into the activities of clinical settings. Much of the work under the GES regime is associated with epistemic matters, i.e. tasks linked to defining legitimate knowledge to guide other processes. Including a health problem in this arrangement requires experts to establish routines to search for evidence, register, and organize it and to call other specialists to establish which diseases and which benefits will be integrated into the baskets of services. In concrete terms, expertise is put into practice based on the relationship between specialists and the epistemic entities that base judgements and definitions.

Such entities have diverse elaboration processes and manifestations as the results of cost-effectiveness calculations or indicators resulting from the review and systematization of evidence. However, they all serve the purpose of generating the conditions for the management of diseases, assessed in their epidemiological and economic terms. Some of this can be seen in the following quote from an interview to an expert on policy design:

> *What do the requirements say in the prioritization logic? The pathologies have a high burden of disease and have been shown to have interventions that are effective, right? And you demonstrate this through evidence-based medicine: that the interventions are cost-effective, that they are a priority for patients and that they are implementable in the network. For all this, there must be studies or calculations carried out.* (Expert, 9 April 2017).

In short, this logic of prioritization implies an effort to align the biological conditions of the

population (pathologies) with the value assigned to specific statistics, which, based on the local interpretation of their meaning, operate as interlocutors of the diseases and their variations at experts' entanglements to compose the list of services associated with them. Thus, the role of objects, far from being only circumstantial, constitutes a prerequisite for the operations in defining policies.

The product of these relationships implies a complex interweaving of funding and provision of medical resources and differences in time: the prioritized diseases consist of distinctive practices that define their trajectory. In addition to the integration of the biological, technical and social aspects that define a pathology, prioritization affects the duration of certain processes and the *tempi* of activity and waiting. In other words, how it progressively defines the way of combining the linguistic, social, practical and material elements that establish the time course of an illness. As can be seen below:

For example, the GES serves the first episode of schizophrenia, but not chronic schizophrenia. The same is true for all anxious and behavioral disorders in people without depression, which are most of them. (Expert, October 8, 2015)

> *I would say that the problems we have do not relate to orthopedics, but to timing* [...] *i.e. the timing for treating fractures. For example, a patient who has an exposed forearm fracture can have a two-day wait; that cannot be, but that is not protected by the GES, and I think it is impossible to integrate it because the amount of money and resources involved is too high.* [...] *The advantage of the GES is that it protects your time. It's super good, especially when you put yourself in the patients' shoes.* (Professional, September 6, 2015)

Thus, the concrete effect of the relationships between specialists and objects—such as indexes, statistics, evidence and the techniques following these guarantees—consists in the way in which the technical elements and activities are *sorted* and how these are distributed at the population level. In effect, it is possible to establish that such importance of temporality lies in the very configuration of the epistemic objects that belong to these processes. If we retrieve the notion of "burden of disease" forwarded by the expert above, it is insufficient to point out that it refers to the relationship between a pathology and an indicator from statistical procedures related to previously established epidemiological assumptions. The following extract of another interview with expert explains this briefly:

> *The burden of disease is a variable that measures the years of life lost due to disability and premature death* [...] *'He died at age forty, but he had a life expectancy of eighty, seventy', I don't know, whatever his life expectancy is* [...] *Therefore, he lost forty years because he died prematurely.* (Expert, July 12, 2017)

The above quotation graphs two associated elements that seem fundamental to the way in which epistemic objects, such as indexes or statistics and time, are related. The former refers to the way in which the disease is understood. To be dimensioned, this is inscribed in a time scale. According to the specialist's definition, the calculation of the burden or intensity of a disease relates to the affection of a time continuum, estimated in statistical and epidemiological terms. The latter refers to the inscription of time as a dimension intrinsic to the estimation of vital processes: the missing of lifetime, probable lifetime and lived lifetime are linked in this quote to the understanding of the estimable relationship of the effect of a diagnosis on the vitality of a population. In other terms, this index is only comprehensible in relation to a time continuum in contrast to various estimates of other assumed or calculated temporalities around the disease. Thus, biopolitics must necessarily permeate, relate to, and produce temporal conditions to establish a relation with vital processes regarding very specific and concrete epistemic entities: different "estimated" times (e.g. years of life lost, years of life possible to live) can assess the potency of a disease on the total life span of a population, assignable both to populational and individual terms. Integrated and

sorted, these entities can locally produce a general temporality of diseases and their local sorting.

Therefore, the mode in which the matter of time is practiced in the processes of political design around health follows at least two expressions; the first of which consists of a process to estimate health in itself, the intensity or impact of a disease in terms of its affection on a population scale or the relationships of transformation between health and disease and the second of which constitutes, insofar as the very temporality of these processes is in some way produced in such relationships, the indexes and statistics that stabilize definitions and assessments of the times that are given as valid to design population health, establishing them as vectors that act relatively homogeneously in the mass of diversities that comprise the biological processes of a population.

The used indexes, statistics and evidence are inscribed in the temporality of expert routines but also participate in the very elaboration of these practices and in the construction of the very itinerary of the policies by inserting them in broader programs of action that give them consistency:

> *And she* [the reference person from another ministry] *said to me: "Look, what if we convert this indicator into a rate and generate a sustained rate of increase over time?" It is not the same as talking about benefit coverage, but the rate seems to be more attractive to whom gives the economic resources to policy, and yes, it is interesting. So, they help to give more technical criteria to the formulation, and I can measure it at the beginning, in the middle, at the end, every three months.* (Expert, September 1, 2022)

As objects, indexes or statistics participate in this temporal ordering of the biological elements to which they refer and the policy that organizes them in the health care network. Notwithstanding their importance, they do this by specific ways. These statistical entities are not directly linked to embodied biological processes, but to their regularities, in the sense of manifestations that can be registered, to compose frequencies and be linked to other scales or numbering processes. Likewise, as they are composed of regularities, they enable these regularities to dialogue in the expert domains, inserting themselves in the processes of argumentation regarding which policies to define and which interventions are in turn measurable in terms of their impact or cost-effectiveness relationship. Statistical entities are both the effect of regularities and their condition of possibility. Similarly, these objects do not in themselves produce the temporality of health but operate as a condition of possibility for establishing certain relations with experts and the elaboration of processes of argumentation that impact this production. Ultimately, from the moment they are made available, these objects are interpreted and articulated to other normative processes within which their valuation takes shape. However, something relatively present is the necessity of these objects for the possibility of giving continuity to processes. As can be seen below:

> *One thing I had to learn when I came here is that the perfect is the enemy of the good: that when they ask you for a document for now here, it must be for now because, otherwise, we lose 2 billion pesos they offer for an action at that moment. So "Oh, I'm going to check another study... I don't know what, what's missing"... doesn't matter. I am going to use the 2016 one. It's not standard but it holds the data and serves the opportunity that needs it.* (Expert, September 1, 2022)

Clinical treatment of time: contingency and reiteration

Something akin to the previous instance occurs in clinical practice settings, in which temporality seems to be heterogeneously given, emerging in practice in terms of its performance and of the registers that sustain decisions, as can be seen in the following quote:

> *We followed up on the situation* [in the hospital] *and realized that the device that is most efficient for surgery was not being used because it was left on a high shelf and the nurses were of rather short stature.* (Facility manager, November 18, 2020)

The quotation above shows a situation that might have gone unnoticed, but which has important implications for the temporality of clinical practice. It shows how material arrangements (such as spatial layouts or shelf height) that might seem subtle and contingent participate in the arrangement of practices that shape the rhythm of clinical activity, influencing its temporal sorting. In this case, the arrangement that emerges from the relationship between a space and bodies with specific qualities configures the specific ways that order a clinical activity by providing (or not) the elements that facilitate specialized activities. Temporal sorting is the co-product of the relations of continuity between all contingent and reiterative elements that elaborate the mode that deploy a concrete action both in terms of its uniqueness and the conditions that promote its reiteration.

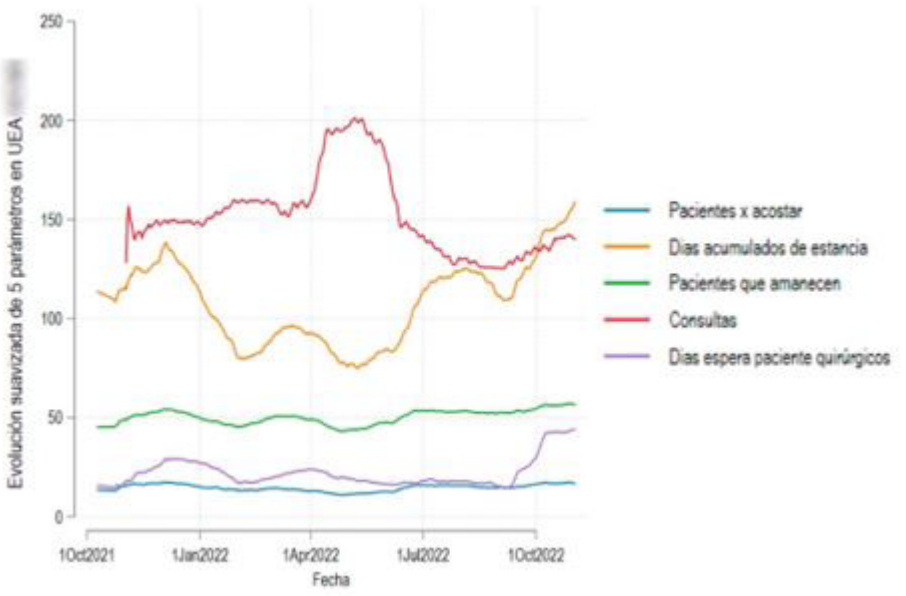
The temporality of clinical spaces acquires different modalities or flows as it depends on the material arrangements that support and sort it. As we have seen above, the GES regime has been established to reduce these variations and relatively stabilize such temporal flows. To this end, it provides regulations and technical elements that enable the construction of relatively stable disease trajectories in terms of time. However, the day-to-day operations of hospitals involve events concerning a lack of technical or spatial resources, implying the need for detours to comply with guarantees. Obtaining certain stable processes and temporal variations shape heterogeneous co-existing sorting.

However, contingency must be organized in clinical entanglements to apprehend temporality. To some extent, clinical centers define which events, out of the accumulation of heterogeneous situations in a wide space of care, are considered relevant and legitimate to guide their administration. For time to become relevant in terms of its planning, it must be treated as reiterations. This is the case, for example, in the areas in which the regularity of procedures is evaluated to determine the present and possible future state of hospitals. These specific scenarios organize time as more or less sensitive lines related to daily contingencies. Thus, temporality inhabits clinical networks in different modes: these lines fail to resemble the concrete material sorting that inhabits hospital activity; only being apprehensible in relation with them; they transform that materiality to render some aspects of it locally visible; yet they are a way in which temporality is appreciated. Thus, practitioners and clinical decision-makers access time as memory, rather than as itself. As a physician in charge of hospital data analysis with the support of statistical software points out:

> *I want to avoid losing as much information as possible. When I am telling the software to give me a moving average seven days back, I am trying to make the data have a lot of memory; an obviously slow datum because it is not going to go up so abruptly, it is going to go up slowly because it has the information of the six previous days, but the six previous days are relevant information for me today; they are not wasted information. In that sense, it is not that the hospital is restarted every day; on the contrary, I want to see how this process is moving. It's not a process because it's quite chaotic, but to see what course it follows.* (Director of Epidemiology Department, November 2, 2022)

These analyses elaborate "timelines" that express the fluctuations of events considered relevant for reporting and planning systems. These time memories are then invested in activities aimed at transforming their condition, which are then integrated into the very configuration of these variable lines. As an example of these temporal sorting, Figure 2 shows timelines of patients to be put to bed, cumulative days of hospital stay, patients who woke up in the hospital, consultations and waiting days for surgical patients in decreasing order of their chromatic expression on the right.

Figure 2 - Timelines of events relevant to the hospital



Source: Graph extracted from daily distribution report to physicians in hospital.

Thus, no single body is treated as a unit or a single temporality, but as multiple events ordered in their own linearity, which may present heterogeneous flows (a single patient may dissimilarly contribute to each line of temporality). Thus, different temporalities contingently and regularly co-exist as memory by articulating the elements that produce it, associated with heterogeneous strategic and practical purposes.

Conclusion

This study has explored the relation between objects and temporal orderings by considering that time stems from articulations between heterogeneous elements beyond a given dimension. This has at least two implications for understanding the deployment of health care processes. Firstly, the consideration that temporal socio-material sorting base and shape any approach to the general or particular relationship between health and illness. In biopolitical terms, temporality enables biological processes to be inscribed in the overall design and reflection on population processes. Biopolitics itself consists—among others—of technical objects (such as indexes, statistics or evidence) that acquire meaning from their relation to time as they elaborate it in a specific way.

Secondly, although this study offers an approximation, we consider it important to address temporality in health as a matter of concern, not only in terms of the need to accelerate and optimize processes to provide health services, but also because its very configuration in its multiple expressions follows the participation of agents that subtly enact it in health scenarios. The sorting of time is an effort of human and nonhuman entities to configure multiple flows that co-exist and reciprocally affect each other. Moreover, biological temporality depends on socio-material articulations and local agencies affect time; implying the multiple ways in which time can be practiced and valued for different agents or collectives, putting it into operation in different ways. The manners in which variable and common expressions of time are organized will depend on the sensitivity of the epistemic operations involved in their configuration to such heterogeneity.

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