# A systematic review of the process of regionalization of Brazil's Unified Health System, SUS

Guilherme Arantes Mello <sup>1</sup> Ana Paula Chancharulo de Morais Pereira <sup>2</sup> Liza Yurie Teruya Uchimura <sup>2</sup> Fabíola Lana Iozzi <sup>3</sup> Marcelo Marcos Piva Demarzo <sup>1</sup> Ana Luiza d'Ávila Viana <sup>2</sup>

> Abstract This review focuses only on specific studies into the SUS regionalization process, which were based on empirical results and published since 2006, when the SUS was already under the aegis of the Pact for Health framework. It was found that the regionalization process is now underway in all spheres of government, subject to a set of challenges common to the different realities of the country. These include, primarily, that committee-structured entities are valued as spaces for innovation, yet also strive to overcome the bureaucratic and clientelist political culture. Regional governance is further hampered by the fragmentation of the system and, in particular, by the historical deficiency in planning, from the local level to the strategic policies for technology incorporation. The analyses enabled the identification of a culture of broad privilege for political negotiation, to the detriment of planning, as one of the main factors responsible for a vicious circle that sustains technical deficiency in management. **Key words** Regionalization, Decentralization, Health services reform, Health policy

<sup>&</sup>lt;sup>1</sup> Departamento de Medicina Preventiva, Escola Paulista de Medicina, Universidade Federal de São Paulo. R. Botucatu 740/4°, Vila Clementino. 04023-062 São Paulo SP Brasil. gmello@unifesp.br <sup>2</sup> Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de São Paulo. São Paulo SP Brasil.

<sup>&</sup>lt;sup>3</sup> Escola Nacional de Saúde Pública, Fiocruz. Rio de Janeiro RJ Brasil.

#### Introduction

The regionalization of health services has, for the last decade, been at the heart of the debate on the reorganization of the SUS. This path has been well documented in the main legal framework of the period, with the NOAS (the Norma Operacional da Assistência à Saúde, or Operational Rules for Healthcare), the Pact for Health and, more recently, Decree 7508 and its Organizing Contracts. This regional vision has been strengthened by the increasing realization of the limited access and equity in a system that is exclusively municipality-based. This difficulty was foreseen in the NOB 96 (1996 Operational Rule – Norma Operacional Básica), the primary instrument that formed the backbone of municipalization policy, which referred to the: "...high risk of disordered atomization of those parts of the SUS, allowing one municipal system to develop to the detriment of another, even threatening the unicity of the SUS"1.

The disconnect between decentralization and regionalization in Brazilian health can be initially explained by the long-standing, overwhelming difference of political, historical and conceptual weight in favor of the former – decentralization<sup>2,3</sup>. The model for this municipal-based orientation, in turn, resulted from the set of circumstantial possibilities of each period in time, in which each new set of possibilities defines what how the previously sketched model might be adapted<sup>4,5</sup>.

But, given the primacy now enjoyed by regionalization, international knowledge makes it clear that it would be a mistake to view the decentralization of Brazilian health as an immutable and defined situation. Experience shows that the established order is subject to the constant movement of correlations of political forces<sup>6,7</sup>: There can be severe ideological rearrangements<sup>8,9</sup> – while there are also some aspects related to new technologies and healthcare that are "relatively independent of the political structures"<sup>10</sup>.

Equitable access is recognized as a major driving force by both the policy of decentralization in Brazilian health, and, more accentuatedly, by the discourse on regionalization. Great ambitions, great challenges. Unequal distribution of health equipment is an old and common reality in the most varied contexts – an issue that is admitted to be a difficult one<sup>11,12</sup>. The specifics of Brazil – "... the only country with more than 100 million inhabitants that has a universal health system. And [...] political, administrative and financial decen-

tralization to the local power" and its tradition of allowing political criteria in the adoption of technology, are additional elements in Brazil's case. But on the technical side, one problem is that the direct relationship between decentralization/regionalization and equity is not something simple to demonstrate – beginning with the difficulty in defining dependent and independent variables Furthermore, there is the complexity of how to read the data and factors related to the municipality 15.

As a contribution to analyses of the process of healthcare regionalization, this article presents a systematic review of the recent experiences of regional organization of Brazil's SUS, in search of the main factors conditioning this process in Brazil.

#### Methodology

The initial spark for this study was a reading of Vargas et al.<sup>16</sup>, the references in which provided six initial articles as lines to pursue. For the review a systematized search was carried out in the databases of the Virtual Health Library which include Lilacs and SciELO; and in Medline/PubMed. The descriptors "regionalization/ regional health planning" AND "Brasil/Brazil" were used in the title, abstract or subject fields, with the inclusion of original articles, theses and dissertations in Portuguese, English and Spanish. Complementary sources included the references of the articles selected, and indications of the authors' knowledge. The criteria for inclusion were: studies with a specific subject related to regionalization of the SUS; with empirical results, published since 2006 - so as to include only research already referenced to the 'Pact for Health' and so on. Criteria for exclusion were: revisions; opinion essays; and research focused on policies prior to the Pact for Health, or in which regionalization emerges as a context and not as a primary object. In the interests of an exhaustive review, all research studies covered by the review, without considering the importance of the publication or the methodology chosen, were included.

The selection was performed by two researchers independently, and cases in doubt were judged by a third researcher. Initially, texts were excluded by reading of the metadata. At this point a search was made for possible texts not included in the scientific databases through 'Google Scholar' – the 'gray literature' – without success. Then the abstracts of the texts included

in the first screening were read. All texts selected after reading the abstracts were read in full and the data extracted independently by at least two of the authors, and subsequently organized into groups. Figure 1 systematizes the process of search and identification of the works.

#### Results

The methodological criteria enabled the inclusion of 26 studies on the process of Brazilian regionalization (Chart 1). Two studies were included as exceptions: One essay, because it considered the discourse of a group of municipal health secretaries as analogous to the empirical interviews with these players<sup>17</sup>, and the other, ostentatiously addressing healthcare networks, but which after reading was considered to deal primarily with the question of regional organization in health<sup>18</sup>. One study was excluded due to duplicated subject matter and inconsistency.

As expected, most of the studies focus on the regional scope (state, macro, and region)<sup>16-34</sup>. Four present a national dimension <sup>2,35-37</sup>; two deal with metropolitan regions<sup>38,39</sup>; and only one focuses on a border region<sup>40</sup>. In general, case studies with a qualitative method, phenomenological approach and low power of analytical generalization stand

out. However, several studies can be highlighted for their originality, methodological consistency and analytical depth<sup>2,16,22,25,27,35-37,41</sup>. With the exception of the proposal for a regional typology<sup>37</sup>, the other studies represent the discursive universe of professionals related to health management. Although almost tangentially, three studies add points of view of the provider<sup>23,25,32</sup>. Chart 2 lists the main categories of analysis employed in these studies. Below are brief comments on the overall dimensions of these categories.

#### Policies and politics

In the politics, the municipal autonomy that results from the process of decentralization — with consequent fragmentation of the system — is seen as the main obstacle to the regional organization of services. The solution to this problem has to be associated with the very challenge that the federative legal framework imposes. The political culture of negotiation at the expense of planning, and of a tendency toward clientelism, is a matter of common observation in Brazil. In terms of policies, the influence of inductive federal rule-making is clear — and responsible for guiding regional policy in most states on the basis of the principle of equity — in particular in terms of access to and inequalities in funding —

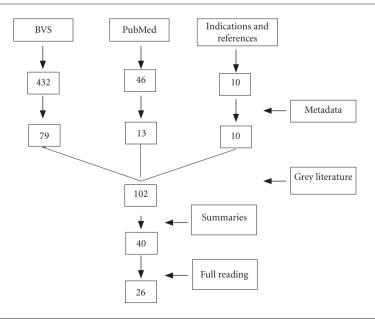


Figure 1. Research and selection of papers.

Chart 1. Studies included in the review.

JIId	Chart 1. Studies included in the review.											
N	Author	Objective / Dimension	Period	Type of publication	Methodology							
		Fede	ral dimens	sion								
1	Viana et al. (2010)	Theoretical analysis. Construction of typologies of the health regions	2010	Original paper	Theoretical essay. Analysis of secondary data by the factorial and grouping analysis methods							
2	Lima et al. (2012)	Process of regionalization in the Brazilian states	2007 to 2010	Original paper	Case study with qualitative approach. Sources: interviews linked to management (91), field visits, analysis of documents							
3	Albuquerque (2014)*	Process of regionalization in the Brazilian states	2001 to 2011	Doctoral thesis	Theoretical analysis. Case study with qualitative approach. Sources: interviews linked to management (91), field visits, analysis of documents							
4	Duarte et al. (2015)	Proposal of typology of health regions based on human development	2013 to 2015	Original paper	Secondary data							
			State-level	I	I							
5	Souto Júnior (2010)	Role of the CIBv in regionalization of the SUS of Minas Gerais	2004 to 2007	Original paper	Case study with qualitative approach. Sources: minutes of meetings of the CIB/MG							
6	Brandão et al. (2012)	Health regionalization network of PB (State of Paraíba)	2008	Original paper	Analysis of documents							

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### Principal empirical findings

#### Federal dimension

- 1 Regional typology: "two Brazils" North/South
  - 1. Less-developed socio-economic situation and less complex health system: high PSF (Programa Saúde da Família = Family Health Program) coverage; low doctors/population ratio; higher percentage SUS beds
  - 2. More developed socio-economic situation and more complex health system: more than 30% private health plans and insurance, higher number of doctors and medical faculties.
  - Service: public-private mix disseminated and without defined pattern (predominance of public provision in the North, followed by the South: "aligned with the extremes")
  - Regional question more accentuated from the economic and social point of view than in relation to health policy
  - Perception of a vector reducing the distances between the "two Brazils"
- 2 Three stages of institution nullity in the process of regionalization in the states: incipient, partial, advanced
  - Institutional impacts of the process: radical, incremental, embryonic or absent
  - Governance: polarization: between two standards coordinated/cooperative vs. conflicted/undefined
  - No state of the political context is unfavorable to the process of regionalization of health
  - Broadly speaking: N and NE have contexts unfavorable to the process
  - Regional process oriented by equity access and financing (19 states); focus also on expansion of installed capacity (17); integration with other economic and social policies (5)
  - Almost all the states: organization of networks and flows induced by the federal rules
  - · Importance of federal inducement and activity of the Health Ministry, especially in North and Northeast
  - Inducement strategies: CGR (Colegiado de Gestão Regional = Regional Management Committee) and regional/ SES (Secretaria Estadual de Saúde = State Health Department); planning; regulation; installed capacity and technical qualification
  - Actors: predominance of SMS (Secretaria Municipal da Saúde = Municipal Health Department) and SES; private (11 states), universities (3), consortia (3) and legislative (2)
  - Regulation of care fragile: general characteristic
  - Conditioning factors: historic and structural nature (socio-economic dynamics, characteristics of the systems, inequalities); political-institutional (accumulated experience, culture of negotiation, legitimacy, political power and technical qualification); context (profile of the actors, political dynamics and priority on the agenda)
- The process of regionalization tends to be more advanced and have more cooperative and coordinated governance in the States with a greater tradition of regional planning, more favorable contexts, and where priority is given in the state and municipal agendas, as well as strong activity of the SESs in planning
  - Also in the more populated, densely urbanized and modernized areas, with concentrations of technologies, professionals, material and immaterial flows, equipment and public and private health resources
  - Amazon region Less favorable contexts, incipient and intermediary institutionality of regionalization
  - Northeast more or less favorable contexts, institutionality of regionalization incipient and advanced
  - More favorable contexts, institution of regionalization intermediate and advanced
  - Concentrated region more favorable contexts, institution of regionalization intermediate and advanced
- "The typology proposed approximates to the theoretical assumptions related to the social determinants of the health-illness process adopted in the PROADESS.
  - It is compatible, also, with categories of analysis proposed by the theoretical-methodological current of the social determinants of health such as population characteristics, social inequities, living conditions, needs and contexts of health problems"

#### State-level

- CIB (Comissão Intergestores Bipartite = Bipartite Inter-managers Committee)-MG (State of Minas Gerais):
  Participation of state and municipal managers and technical staff, also representatives of inter-municipal health consortia
  - Regionalization: strong presence on agendas
  - Predominance of interests of regions with greater economic and political power in the sharing of resources, maintenance of the status quo of the system, and care-centered healthcare model
- 6 Points to deficiencies in the process of the decision on the regional design

Chart 1. continuation

Chart 1. continuation												
N	Author	Objective / Dimension	Period	Type of publication	Methodology							
			State-leve	el								
7	Vargas et al. (2014)	Factors of influence in the political implementation of Integrated Health Networks - PE (State of Pernambuco)	2010 to 2012	Original paper	Case study with qualitative approach. Sources: interviews linked to management (17), focus group, observation, analysis of documents							
8	Bretas Jr, Shimizu (2015)	Macro regional planning developed by COSEMS of Minas Gerais	2007-2012	Original paper	Case study with qualitative approach. Analysis of documents Sources: reports (26) and minutes (125) of COSEMS							
9	Guerra (2015)	Regional decentralization in São Paulo, based on the percentage of municipal management and index of outpatient and hospital dependency of the health regions	2013	Doctoral thesis	Review of bibliography and documents. Analysis of secondary data							
	I.	Macro-region	nal (intra-/	/inter-state)	<u>I</u>							
10	Stephan-Souza et al (2010)	Regulation of access in Juiz de Fora; focus on UFJF) (Universidade Federal de Juiz de Fora = Federal University of Juiz de Fora) and its Hospital. Southeast MG macro-region (94 munic./pop 1.6 mn)	2007	Original paper	Case study with qualitative approach. Sources: interviews linked to management (10)							
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#### State-level

- Financing of the CIR (Comissão Intergestores Regional = Regional Inter-managers Committee) and functioning structure undefined
  - Criteria for construction and coordination of the networks imprecise
  - Initiatives isolated by area or process, lacking a systemic outlook
  - Limited technical capacity in the municipalities
  - State activity in leading and coordinating the process fragile
  - Fragmentation of the Health Ministry harms coordination of the policy
  - Disincentives: municipal autonomy, low interest in regionalization, competitiveness for funds, party politics
  - Underfinancing
  - Turnover of managers
  - Difficulties in the process more related to municipal isolation than to the policy of networks in particular
  - More obstacles that facilitators in four groups
    - 1. Implementation based on negotiation instead of planning
    - 2. Great responsibility of the municipalities with low technical capacity
    - 3. Failings in planning and coordination of the competencies involved
    - 4. Lack of clarity on the political rules of implementation
- 8 COSEMS (Conselho Nacional de Secretarias Municipais de Saúde = National Council of Municipal Health Departments)/MG:
  - Important support role (SDS (Sistema do Departamento de Saúde = Health Department System): 22 support units directed to technical support of COSEMS)
  - Involvement of all the managers
  - Effective mechanism of communication
  - Agreement of the CIRs and CIRAs (Comissão Intergestores Regional Ampliada = Expanded Regional Intermanagers Committee): predominance of fragmented discussions; handling is bureaucratic and authoritarian
  - Agendas give priority to the formal procedures of the CIT (Comissão Intergestores Tripartite = Tripartite Regional Inter-managers Committee)-CIBs to the detriment of the local problems
  - Difficulty in making the technical committees operational
  - Fragility in the System for Requests and Accountability
- 9 52% of hospital procedures and 72% of outpatient procedures were carried out under municipal management
  - Highest indices of dependency on hospital care in relation to outpatient care
  - •The regions of the Metropolitan Region of Greater São Paulo showed greater dependence in relation to the Interior
  - The municipal management has influence over the index of dependence, but is subject to conditions of the demographic context (scale of population) and the socio-economic context (IPRS (Índice Paulista de Responsabilidade Social = São Paulo State Social Responsibility Index))
  - Importance of institutionalized agreement mechanisms and regulations between the regions in the guarantee of equity
  - In spite of the larger role of the municipalities, average hospital complexity is still shared with the SESs, with management predominantly private (majority non-profit and OS (Organização Social = Social Organization))
  - High complexity, predominantly state-related, also with a high percentage of private-sector establishments
  - Difficulty in planning and execution of care in the health regions
  - The SES: execution of care, but with low coordination of the process of regionalization

#### Macro-regional (intra-/inter-state)

- University hospitals (HUs (Hospital Universitário = University Hospital))/UFJF: informal intra- and inter-state flow
  - Intra-state PDR: Does not regulate flow from Rio de Janeiro to the MAC (Assistência Ambulatorial de Médio e Alto Custo = Medium and High Cost Outpatient Care) of the municipality
  - Working agreement/contracting of HUs: difficulty of integration and compliance with the management commitments
  - HU/UFJF: Internal resistances to the proposal for regionalization of the SUS; mismatch between thinking of the manager, and management of the HU; priority for teaching on extension and research
  - Underfinancing
  - Managers' low knowledge of management instruments

Chart 1. continuation

Chart 1. continuation												
N	Author	Objective / Dimension	Period	Type of publication	Methodology							
			Regional									
11	Pereira (2009)	Role of the SES in the regionalization of the SUS of Minas Gerais	2003 to 2007	Masters' degree dissertation	Case study with qualitative approach. Sources: interviews linked to management (18), analysis of documents							
12	Assis et al.(2009)	Constitution of the West VII Regional Committee – SP	2007	Original paper	Report of experience; signed by 11 Municipal Secretaries of the Metropolitan Region of Campinas, São Paulo state							
13	Coelho (2011)*	Public-private relationships in the regionalization of two regions in Espírito Santo State: Cachoeira de Itapemirim and Vitória	2007 to 2011	Masters' degree dissertation	Case study with quanti-quali approach. Sources: Field visit, interviews with managers and providers (17), secondary data, and analysis of documents							
14	Mesquita (2011)	Consensuses of the CIR of Caucaia, Ceará State	2009 to 2010	Masters' degree dissertation	Case study with qualitative approach. Source: minutes and decisions of the CIR							
15	Venancio et al. (2011)	Referral practices in five regions/some parlous state; difficulties in reaching agreements	2003 to 2005	Original paper	Case study with quanti-quali approach. Sources: interviews linked to management (75), secondary data.							
16	Silva, Gomes (2013)	Process of regionalization. Greater ABC region – São Paulo State	2005 to 2006 (fieldwork in 2010)	Original paper	Case study with qualitative approach. Sources: interviews linked to management (16), analysis of documents							

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#### Regional

- 11 Regionalization long-standing, but, historically, uncoordinated and fragmented
  - Failings in the state's role of controlling the process
  - SES: Source of stimulus and technical support for micro-regional management and care networks; indirect administration via Hospital Foundation of Minas Gerais State (FHEMIG)
  - CIB and micro and macro-regional CIB: Importance spaces for negotiation, in particular of the PPI (Programação Pactuada e Integrada da Assistência à Saúde = Integrated Agreed Healthcare Program). Low consensus on capacity for planning and regional regulation
  - Low technical capacity of the municipalities
  - · Local point of view, to detriment of regional
  - Discontinuity of management
- 12 Participative process: important for integration and overcoming resistances
  - COSEMS: important role
  - SES: Active participation as an essential requirement
  - SES: Notable structural and technical fragility for assuming new regulator role
  - Health Plan: importance of structuring it under a regional viewpoint
  - Absence of legal instrument that can guarantee agreements are kept
- Two predominant patterns of public-private relationships: interdependent cooperative; and multiple proposed solutions, with conflicts
  - Mutual dependency between SUS and private. Private interest in incorporation of high cost technology
  - Centralizing role of SESA (Secretaria da Saúde = Health Department). Conflict of roles between Regional Health Centers and SES
  - Low capacity for planning and regulation of contracted private-sector agents: absence of effective tools for coordination, regulation and control
  - Regionalization strongly influenced by private sector in formal and informal relationships. either due to supply, or political negotiation, or professionals' multiple links
  - Reduction in political guidance by the State
  - Inter-sector integration is only latent
- 14 CIR: Cases of consensus on legalist, government-ist and techno-bureaucratized bases
  - Agendas: Consensuses without argument, automatically approved.
  - Ad hoc decisions with low intentionality in political and planning terms.
- 15 Facilitators of regional integrality:
  - Installed capacity; stability of management; strengthening of basic healthcare/Family Health Program; strengthening of negotiation spaces; technical structures of support to the managers through regular functioning; well-delineated microregions; permanent regional regulation facility; conversion of HUs to contract status; municipal Assessment and Control Units; agreements negotiated in the DRSs (Departamentos Regionais de Saúde = Regional Health Departments); contracting for fixed resources; zero vacancy mechanism.
  - Obstacles to regional integrality:
    - Limited technical capacity of the SMSs; management suspicion on transparency of the process (supply concealment); formal and informal agreement mechanisms coexisting; technical rationality of the PPI; underfinancing; interference of municipal hospitals in regional regulation; lack of regional and municipal governability to discuss financial competencies; metropolitan regions; invasion from external locations; insufficient formal mechanisms of coordination of healthcare; lack of submission protocols; focus on MAC; medical housing model; reduction of supply in academic services; distance and transport; payment by production.
- 16 Invasion of the services of the SUS by neighboring municipalities
  - · Negotiating disputes with disadvantage for small municipalities
  - Importance of participation of by the SES
  - Clarity on the role of regulation lacking

Chart 1. continuation

Chart 1. continuation												
N	Author	Objective / Dimension	Period	Type of publication	Methodology							
			Regional									
17	Silva MJ (2014)	Analysis of the west CGR Region – Mato Grosso state (MT) (12 municipalities)	2010 to 2012	Masters' degree dissertation	Case study with qualitative approach. Sources: interviews linked to management (11), observation, analysis of documents							
18	Santos, Giovanella (2014)	Regional governance in the CIR of Vitória da Conquista, Bahia State (19 municipalities)	2011 and 2012	Original paper	Case study with qualitative approach. Sources: interviews linked to management (17) analysis of documents, focus groups, observation							
19	Silva, Gomes (2014)	Application of the PDR, PPI, and PDI in the Greater ABC Region of São Paulo	2010- 2011	Original paper	Case study with qualitative approach. Sources: interviews linked to management (10), analysis of documents							
20	Martinelli (2014)*	Process of regionalization and public-private mix in region of Tangará da Serra (Center- North of MT(State of Mato Grosso), 10 Municipalities)	2006 - 2011	Doctoral thesis	Estudo de caso de abordagem quanti-quali . Fontes: questionários auto-aplicados com gestão pública e privada, análise documental e de dados secundários							
21	Mendes (2015)	Implementation of the COAP++ in five regions of São Paulo Proposal for analysis of regional health profiles	2011	Original paper	Case study with quanti-quali approach. Sources: interviews linked to management (8), analysis of monitoring and assessment indicators							

N	Principal empirical findings
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	Regional
17	Discontinuity of the regionalization policy strengthened between 1995 and 2002.  ORD
	CGRs weakened by 're-centralization' of the SES of MT
	• Institutionalization of the intermediary CGR: instituted and organized; structure insufficient for appropriate
	functioning  Actors value the chase but its legitime as is argueble
	Actors value the space, but its legitimacy is arguable     Technical fragility of the municipal managers
	Party political and clientelist interferences
	Municipal interests to the detriment of regional interests. State interests dominate
	Highlight role of the Intermunicipal Health Consortium in the integration of municipalities
	Important technical support from COSEMS
18	CIR: Principal strategy of regional governance – conflicted, and with institutionalization of intermediaries
	CIR: Important space for debate and communication, but eminently bureaucratic
	Low degree of autonomy of managers in relation to the municipal executive power
	Priority for municipal interests, clientelist tradition and influence of party politics
	• Turnover of health secretaries
	Low technical qualification. Low capacity for regional planning
	Insufficient financial resources make compliance with PPI difficult
	• Low degree of regulation of the contracted private sector. Buying of services in the private sector market for
	prices higher than the SUS Table (direct payment to doctors of other municipalities for procedures already costed
	by the SUS)
19	PDR: need for updating to balance supply/demand
	PPI: arena of competition, rather than a space for coordination, negotiation and agreement
	PDI: low significance, due to underfinancing
	Difficulty of changing the focus from supply to demand
	CGR: innovation and point for regional mobilization and coordination  The interpolation of the coordination in the coordi
	Technical fragility of the municipalities
	Need for state-level leadership  Small provide a list of the state of the stat
20	Small municipalities: low standing for agreements/perception of low influence      Description of low influence
20	Political and administrative discontinuity in changes of management      CCP. An important group but with partial property little "compact the group."
	CGR: An important space, but with partial governability: "sum of the parts"  Fragmented health care network installed consists insufficient.
	Fragmented healthcare network, installed capacity insufficient     Absence of construction of regionalized units.
	Private sector: expansion and strengthening in the healthcare network
	MAC: Guaranteed by system of contracting with the private sector (mutual dependency)
	Low qualification of municipal managers. Low degree of culture of planning
	Party political interference
	Need for leadership of the SES
21	Vale do Ribeira. Low regional disposition to take protagonist roles. Dependency relationship with DRS. Support
	of the consortium of the region. Weakness in technical ability, administrative and political matters and installed
	capacity; and party interests
	Bauru: Municipality taking protagonist role, political, technical-operational, financial and installed-structure
	strength
	• ABC region of São Paulo: greater protagonist role, dynamics more shared and horizontalized. Relationship with
	metropolitan consortium.
	Santos region: Dismantling of prior process. Turnover of managers
	Extreme political-administrative fragility, in general, of municipal managers
	COSEMS: important role
	DRS: holder of power, but weak in taking protagonist political positions
	• State government: distant, authoritarian, bureaucratic – when not actually creating obstacles. Strong provider

 $\bullet\;$  Quality of the technical team (e.g. the Technical Chamber) is a conditioning factor for agreements and

• CIR: difficult to avoid the agenda of healthcare, municipal interests, vulnerable to private interests • COAP not widely referred to – more when raising funds than in making regional agreements

with low productive relationship with the municipalities

leadership of the municipality in the regional committee

Chart 1. continuation

Chart 1. continuation												
N	Author	Objective / Dimension	Period	Type of publication	Methodology							
			Regional									
22	Kehrig et al. (2015)	Regionalization of health from the point of view of institutionality and governance Region of Mato Grosso do Sul (MT)	1995- 2009	Original paper	Case study with qualitative approach. Analysis of documents Sources: minutes of CIB-CGR (also management regulations and instruments).							
23	Medeiros, Gerhardt (2015)	Analysis of the RAS (Rede de Assistênica a Saúde = Healthcare network) - cardiovascular - in two small municipalities.  16th health region – state of Rio Grande do Sul	2012	Original paper	Case study with qualitative approach. Sources: interviews linked to management (3); focus group (2).							
	I	Fro	ntier regi	on								
24	Preuss, Nogueira (2012)	Regionalization on the frontier between Brazil (Rio Grande do Sul), Argentina and Uruguay	?	Original paper	Case study with qualitative approach. Sources: interviews linked to management (n=?)							
			etropolita	n								
25	Spedo et al. (2010)	Metropolitan regionalization of the municipality of São Paulo (focus on Technical Supervision)	2005 to 2008	Original paper	Case study with qualitative approach. Sources: interviews linked to management (5), analysis of documents							
26	Ianni et al. (2012)	Regionalization and factors conditioning access to basic healthcare in the Santos region – São Paulo state	2007 to 2010	Original paper	Case study with qualitative approach. Main sources: interviews connected with management (n=?); analysis of the minutes of the CIR and CONDESB							

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#### N Principal empirical findings Regional • Strong inducement by SES, especially in the first eight years of the Regional CIB's existence (1995–2002) Organization of intermunicipal consortia, created by the Regional CIBs, AIH clearing chambers; audit chambers and control and assessment system Regionalization permeated by the public-private mix Distancing of the SES in the regional process after 2002 Important role of COSEMS Absence of any regional planning Obstacle factors: - non-definition of responsibilities between the spheres of government and the regional instances - turnover of managers - predominance of party political aspects Healthcare model fragmented and focused on procedures Network organized principally based on supply Sufficiency of services, but low integrality and coordination (low role for basic healthcare) CIR: Important forum for negotiation and agreements, but with limited participation of managers Low social participation Low technical capacity of the SMSs, low planning capacity Absence of monitoring and assessment SES: Centralizing, but absent on issues of regulation and limited technical support for the municipalities Frontier region Municipal Health Council: the main actor in the process of agreement Isolated integration actions, distance from the centers of decision Bureaucratic, centralizing and rule-making management Managers: superficial understanding of the Pact for Health Metropolitan Failure of the intra-municipal regional reform SMS: Centralizing nature; political-administrative separation between basic healthcare, hospital care and U/E (Urgência e Emergência = Urgency & Emergency). Did not in fact take over responsibility for management of state outpatient and hospital facilities Institutional power, and hospitals' resistance to integrating into the health system Turnover of Secretaries and coordination management jobs Lack of prior negotiation with institutional actors. Low inclusion of the various representations (e.g. users) Role of the state not clearly defined 26 "Double identity", city and region: probable regionalization vs. probable implementation of the metropolitan region "For the local and regional manager, the subject of the Metropolis is invisible. Invasion of the services of the SUS by neighboring municipalities, including MAC and basic healthcare Inefficiency of the instances, instruments and infrastructure of regional management. Underfinancing DRS: Centralizing culture, and technical and political weaknesses CIR: Important space for debate. Technical-political weakness maintains its status as a space merely for confirmation Low regulation capacity: informal and interpersonal mechanisms associated Intermunicipal competitiveness for funds from the state Municipal interests above regional

<sup>\*</sup> Articles of the theses and dissertation have been published recently. However, the abstracts of the original works have been maintained, especially because they have a wider scope than the articles initially generated<sup>42-44</sup>.

Table 2. Prevalent categories on regionalization in discourse connected with public health management in Brazil

Table 2. Prevalent categories	011 1	egi	Ulla	IIIZa	uoi	1 111	uis	cot	II se	COI	11110	Liec	1 WI	ш	Jub	IIC I	nea.	IUII .	ma	nag	eme	:11t .	111 [	naz	ш
	Pereira, 2009	Assis et al., 2009	Viana et al., 2010	Souto Junior, 2010	Stephan-Souza et al., 2010	Spedo; et al ., 2010	Venancio et al., 2011	Mesquita, 2011	Coelho, 2011	Lima Et Al., 2012	Brandão et al., 2012	Preuss; Nogueira, 2012	Ianni et al., 2012	Silva; Gomes, 2013	Albuquerque, 2013	Silva; Gomes, 2014	Santos; Giovanella, 2014	Silva, 2014	Vargas et al., 2014	Martinelli, 2014	Guerra, 2015	Mendes et al., 2015	Medeiros; Gerhardt, 2015	Kehrig; et al., 2015	Bretas Jr; Shimizu, 2015
Importance of federal inducement										х					x				х						
Underfinancing	X			x		х							х			х	x		x				x		П
SMS/SES: Bureaucratic				x	х	х		x			x	х										x	x		П
culture, centralizing																									
profile																									
SMS: Low technical	X				X		X		X			X		X	X	X	X	X	X	X		X	X	X	
capacity, turnover																									
SES: Low leadership and	X								X					X		X			X	X	X			X	
appropriation of the process																									
CIR/CGR: Importance,	X	x		x			x	x		x			x	x	x	x	x	x	x	x			x	x	
innovation	^	Α.		Α.			Λ	А		Α.			^	Λ.	Α.	Α.	^	Λ.	Λ	А			^	Α.	
CIR/CGR: Bureaucracy,	x			x				X		X			X	X	X	X	x	X	x	X		x		X	x
interests, vulnerability																									
Planning: low culture,								X	х	х	X		х		х		х		X	X	X		x	x	x
shortage of instruments																									
Regulations: low degree		X					X		X	X			x	X	X		x				X				
of clarity, shortage of																									
instruments																									
Legal: shortage of effective instruments		X																							
Influence of the state/			37						37								x			x	x			3/	
market mix (public/			X						X								A			Α	Α			X	
private)																									
Difficulty in insertion/					х		х		х																
supply of the university																									
hospitals																									
SUPPORT OF COSEMS		X																X				x		X	x
-																								_	

<sup>\*</sup> Duarte et. al (2015) are not included in the table because they did not work on elements of discourse.

and an increased existing capacity is also visible. However, this influence weakens over time, for a variety of reasons: it is difficult to continuously increase the stimulus, in proportion to new needs to strengthen the regional process – there is a consensus that there is a shortfall in funding; fragmented areas of responsibility involved in the Health Ministry; imprecise laws, rules and regulations; and initiatives with low prospects of being adopted throughout the whole system.

#### The Municipal Health Secretariat (SMS)

Municipal Health Secretariats (Secretarias Municipais de Saúde, or SMSs) are omnipresent, and are the main candidate for assuming the roles of management with solidarity, cooperativeness and regional interdependence. They are seen as bureaucratic structures with a profile tending to centralization. Their performance is further hampered by the political discontinui-

ty resulting from the turnover of appointees as municipal health secretary. Moreover, perhaps their greatest point of vulnerability is technical weakness. CONASEMS is cited as an important supporter in the regional process.

#### State Health Departments (SES)

The government of the individual State is most often seen as the absent partner. There is a certain call for the State Health Departments (Secretarias Estaduais de Saúde, or SESs) to assume a greater leadership role in coordinating the regional process, with an effective presence in regulation, mediation and negotiation. However, their structural and technical fragility for taking on such central roles is recognized.

### The Regional Inter-Management Committee (CIR or CGR)

Regional bodies are widely valued as a space for innovative policy and regional governance. But, naturally shaped by the breadth of a consolidating democracy and its historical mindsets, they suffer from a difficulty of overcoming simple reproduction of the municipal political culture with its marked electoral, clientelist, and corporate interests. From this it can be inferred that the regionalization of health suffers more influence from the comprehensive political and social dynamics and their historical accumulation than from health policy *per se*.

## The concept of the public-private (state-market) mix

In Brazil, it is not so much that there is coexistence between the market and the state – throughout the country, the relationship can perhaps be better described as interdependence. In some regions the interdependence is more predominant; in others less so – there is no definable pattern. There is a consensus that managers are not successful in regulating the contracted private sector, whose strong influence is due to its existing operational capacity, its participation in decision processes, and its multiple professional links.

#### Instruments

Another strong consensus is that there lacks a culture of planning; and planning is further hampered by the weakness of the available instruments: the Health Plan is worked in a formal and symbolic manner; the RDP (Regional Development Plan) is contaminated by considerations of lower-level policy; and the PPI (Public-Private Initiative) partnership projects are stalled by underfunding and inter-municipal disputes. The legal instruments available to guarantee agreements are weak, and practically absent at metropolitan and inter-state levels and in border regions. It becomes clear that one of the key challenges to regional governance is the development of effective tools for coordination, regulation and planning.

#### Regulation

Although this is such a commonly-used expression, the truth is there is a lack of clarity about the broader meaning of the term 'regulation'. In pragmatic terms, there is a generally agreed difficulty in regulating regional flows – insofar as they are commonly referred to by the more structured municipalities as 'invasions'.

#### Discussion

#### Homogeneity of discourse

Even if it is because they are describing the exercise of similar functions, the homogeneity and regularity of the body of discourse found in this review - across time, size and region - is remarkable, and even extends to similarity with studies prior to the Health Pact33,42. This was to some extent expected, if only because the influence of federal rules will tend to result in a certain cohesion between the activity of different entities, revealing common technical difficulties. National forums and representative bodies, such as CONASS and CONASEMS, also participate in this correspondence. But it is as if a major summary of the literature that is the subject of this review had been commissioned in the essay produced by a meeting of Municipal Health Secretaries17 - in the sense of the idea of 'organizational isomorphism'43, although we do not want here to address the institutionalist approach.

A first reason could be that the geographic and temporal cohesion of the set of studies reveals substantial external validity of the categories reviewed – so that this body of discourse is assumed as a common representation of the managerial discourse in the process of regionalization of the SUS nationwide. The most im-

mediate consequence is to reinforce a statement that the phenomena mentioned are indeed undeniable and important to the regional process, throughout Brazil.

But this does not exclude the possibility that the angle taken by the survey is mostly aimed in one direction only, ignoring possible variations of the scenario (the choice of key actors and script, for example, is a choice by the researcher – and the questioner not only knows only part of the response, but also influences the direction of discourse). As an example, only two papers mention the prospect of inter-sector regionalization, but without going at all deeply into the merits<sup>25,35</sup>. The role of providers – especially of hospitals – and, for example, issues of technology and innovation, are largely hidden.

This low degree of variation in discourse in recent years also strengthens indications that, following the inflection promoted by the NOAS, and more forcefully by the Pact for Health, the regional process has for some time reached a kind of political plateau. One of the easiest causes to propose would be the insufficiency of new stimuli – that is to say funds – to overcome the stages reached. The ubiquity of the complaint of underfunding is self-explanatory.

The sphere of the state, meanwhile, adds little to the overall calculation: it is most often regarded as amiss, and sometimes as an obstacle. In reality, however, the technical fragility of the municipal entity – and also of the individual State – is one of the most categorical obstacles to the process of regionalization in the country; and this is undoubtedly as a result of the perceived vulnerability and bureaucratization of CGRs/CIRs.

In general, the resulting thematic categories can be understood at once – there is no need for any specific discussions about each one – but the scale and continuity of this group of statements, in dialog with the historical-structural context of the country, makes it possible for us to deepen the discussion using more robust analytical categories, as follows.

### Regionalization, decentralization and re-centralization

There is a reluctant criticism of the participation of the State Health Departments (SESs) in the regional process. Although it probably originated from the context of regionalization, the problem actually comes from an earlier stage, and refers to the process of decentralization<sup>4,5</sup> – and indeed probably from broader and

older influences, since the polarization between municipalities and federation had already been characterized in policies from the era of dictator-president Vargas<sup>44</sup>. It could therefore be asked: to what extent does the regional process also depend on updating the questions of Brazil's federal structure?

It is known that municipalization has resulted in a more democratic pattern of local governance<sup>45,46</sup>. But at the same time the problem of decentralization, with its regional inequities, bureaucratization and politicization at local level, at the same time making it difficult to regulate the central level<sup>6</sup>, provides motivation to strengthen the regional issue in the country.

Brazilian states have achieved differentiated stages of decentralization in health, which translates in particular to the degree of control over medium and high complexity (MHC) treatments, affording a privileged position to the reference hospital in the organization of the system. The role that this hospital plays in regional governance is still poorly understood within the regionalization process14. There is a certain perception that the states that have made the most progress in the decentralization of their health systems nowadays experience more difficulty in regulating the regional process, which would raise the possibility that some degree of recentralization could be beneficial in some cases (though this is certainly not applicable in all cases - São Paulo has a considerable MHC component and is also seen as a fragile link in the process). This is a balance in which structural and non-structural measures are continually weighed in the search for a dynamic equilibrium<sup>10</sup>.

#### Municipal needs and regionalization

Municipal management is widely interpreted as a fragile and obstructive link in the regional process – this question naturally embodies the idea that technical improvement of the municipal situation would impact regional capacity. Of this there is no doubt. But the studies make no progress on a vital central question: why does this fragility show no signs of improvement over time? It does not seem to be just a 'how-to' problem, something for which someone would soon suggest technical, specialization, and related courses, or perhaps a problem related to staff turnover.

Looking from another angle, it can be put forward that the focus of these analyses is too concentrated on the regional content of the reform, the formation of networks and on the care given, to the detriment of stakeholders<sup>47</sup> – thinking of reversing the perspective of the municipality as a main actor interested in regionalization and its own needs (and not in the special-interest 'regionalization' within the municipality). From this new, seemingly paradoxical point of view, the need to support, reinforce and invest in municipal management seems to emerge as an inherent part of the regionalization policies themselves. This issue also highlights the discussion of the role of COSEMS, an actor not widely referred to in the studies, but always in a positive way.

The successful induction of municipal technical capacity is a concrete historical possibility<sup>48</sup>. The challenge is to think of an induction model that technically strengthens the municipality and the region in parallel, and within an acceptable period of time. It is as if there is a need – and indeed there is – to enter a post-industrial society without first experiencing industrialization; or enter into a modern public administration, without first experiencing efficient bureaucratic administration.

In a serene and reflexive position, Gilles Dussault<sup>49</sup> points out what seems to him to be the greatest managerial difference between Anglo-Saxon and Latin cultures: "the degree of professionalization and corresponding de-politicization of the management of health services and, in general, of public services"; a tradition of management training, and favor for meritocratic appointment, especially "for management positions where the latter results from competencies and experiences that correspond to the specific requirements of the function."

But if the need for greater focus on municipal needs, favoring management careers, and more appropriate managerial choices provide part of the answer, another particular feature of Brazilian politics, discussed below, also helps perpetuate the broad front of municipal incapacity revealed in the surveys.

#### Planning: linking the parts

The argument developed here benefits from the analysis of Vargas et al.<sup>16</sup>, in which they observe that the challenges of health regionalization in Brazil bring together four major categories of analysis:

- 1. Implementation based on negotiation instead of planning
- 2. Great responsibility of municipalities with low technical capacity

- 3. Failures in planning and coordination of the competencies involved
- 4. Lack of clarity on the political rules of implementation

The point is not to re-discuss these points here, but to refer those interested to the original discussion. But it should be noted that these categories are not arranged in the same historical plane of analysis; hence it is possible to specify a hierarchy of cause and effect among them. The political culture of consensus mediated by negotiation comes historically before its conceptual opposite, politics based on planning – as exemplified in the tradition of the political negotiation (bargain) model in the country, pointed our extensively since Oliveira Viana<sup>50</sup>, Victor Nunes Leal<sup>51</sup>, or Rodolfo Mascarenhas<sup>52</sup>, the latter relating to public health in São Paulo.

Vargas et al. <sup>16</sup> provide an essential element to the debate. In the pragmatism of the U.S., for example, it has long been clear that metropolitan and regional issues related to public health are primarily in planning and not in political bargaining <sup>53</sup>.

In our own public health history, which is something of an offshoot from that pragmatic historical approach in the US, Barros Barreto, the main person responsible for shaping Brazilian healthcare in the first half of the 20th century, already pointed to the need to plan the distribution of health services in the interior of the country - he was aware of what was later to be called inter-sector integration<sup>54</sup>. In the institutional culture, the SESP Foundation, which had a strong American influence, was the entity that insisted most on the need for rational organization, planning and integration of health services among us<sup>3,55</sup> - this was a school that was strongly opposed to the rise of the critical political thinking that would culminate in Collective Health. One of the main reasons was precisely the opposition to that which was seen as an eminently technical culture that disregarded the strategic importance of political intentionality in planning. In any event, although one can think of the specific implications of this schism in the formation of a public health system, the results reviewed in this study suggest that the regional dynamic is more about the social culture and open policy than the sectoral health issue per se<sup>16,35</sup>; notably, a political-administrative culture with difficulties in creating virtuous long-range planning<sup>2</sup>.

But how can one interpret the perennial character of this deficiency in planning? A central point is that ultimately the logic of bargaining keeps the concept of health planning very much subordinated to the remaining possibilities of political negotiation - of unequal conditions between municipalities. This is an imbalance that annihilates the very notion of planning (how does one improve a mutilated concept?). Thus a vicious circle is completed – of low technical and managerial qualification, high professional turnover and simple removal of the sense and purpose of planning: in other words, a reaffirmation that the primacy of political negotiation over planning ends up subordinating all other approaches. This is a context that is certainly unfavorable to the development of effective and innovative tools for regional planning and, thus, to overcoming the limitations affecting the innovative creation of new regional instances. It also helps in understanding the low possibility of the planning model replacing the current model based on supply - obviously a priority when negotiation comes first - with another based on demand, able to lead the complementary private sector to adhere to the primary objectives of the SUS.

#### Final considerations

This review has shown that the process of regionalization is now a vivid reality in health management in Brazil, in all spheres of government, but that it faces a set of challenges common to the various situations throughout the country. Value is given to the regional committee organizations as important spaces for innovation, but they are seen as still looking for ways of overcoming a bureaucratic and clientelist political culture. Regional governance needs to addressing the system fragmentation, and the historical deficiency in planning, all the way from local issues to strategic policies such as the adoption of technology. The analyses that were reviewed delivered an incisive implication of a culture giving dominant priority to political negotiation, in a vicious cycle that simply maintains the technical deficiency of the management.

The clearly maturing output of studies emphasizes the potential behind the present tension between the political priorities established in the health sector and the capacity for the reaction of academics to provide sets of evidence and indicators of the process. The gap between academic and political priorities seems to be well represented by the fact that there is a significant presence of universities in the regional process in only three states<sup>35</sup> – this is in addition to the historical difficulty of inserting university hospitals into healthcare planning<sup>23</sup>. The mismatch between the implementation of social policies and academic research has indeed been described in the international literature as a common challenge<sup>56</sup>. According to reports, an important factor in the low reflexivity of the recent dismantling of regional health processes in Canada was precisely the lack of scientific evidence about implemented policies9.

#### Collaborations

All the authors participated in the preparation, analysis and writing of the text. ALV and FLI made the initial selection of texts. PCMP performed the systematic search. GAM prepared the first version of the text.

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