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Health Surveillance in the COVID-19 pandemic and the challenges of SUS in the current scenario

Vigilancia en Salud en la pandemia COVID-19 y los desafíos del SUS en la actualidad Vigilância em Saúde na pandemia de COVID-19 e os desafios do SUS na atualidade

ABSTRACT

Objective: to describe and discussing the challenges of SUS in the current scenario and also the role of Health Surveillance in the context of the new coronavirus pandemic. Method: Theoretical essay anchored in national and international scientific literature, plus authors' critical analysis. Based on the theoretical construction on reflective thinking, the following were discussed, the Health Surveillance in the context of the epidemic of the new coronavirus; and the challenges of SUS in contemporary times. Results: The biggest challenge nowadays remains political and resisting the attacks and risks of dismantling the SUS due to fiscal adjustment policies. Other challenges including, the economic and financial interests linked to healthcare companies; political proposal for Universal Health Coverage; divestment; insufficient public infrastructure; reproduction of the hegemonic medical model. Conclusion: It is expected that the COVID-19 pandemic will arouse reflections in the population regarding repoliticization of society in defense of SUS as a UHS. **DESCRIPTORS:** COVID-19; SARS-CoV2; Unified Health System; Epidemiology; Public Health; Health Surveillance.

RESUMEN

Objetivo: describir y discutir los desafíos del SUS en el escenario actual y el rol de la Vigilancia en Salud en el contexto de la pandemia de coronavirus. Método: Ensayo teórico anclado en la literatura científica nacional e internacional, más análisis crítico de los autores. A partir de la construcción teórica sobre el pensamiento reflexivo, se discutió, la Vigilancia de la Salud en el contexto de la epidemia del COVID-19; y los desafíos del SUS en la actualidad. Resultados: El mayor desafío en la actualidad sigue siendo político y resistir los ataques y riesgos de desmantelar el SUS por las políticas de ajuste fiscal. Otros desafíos incluyen, los intereses económicos y financieros vinculados a las empresas de salud; propuesta política de Cobertura Universal de Salud; despojo; infraestructura pública insuficiente; reproducción del modelo médico hegemónico. Conclusión: Se espera que la pandemia COVID-19 suscite reflexiones en la población sobre la repolitización de la sociedad en defensa del SUS como Sistema de Salud Universal.

DESCRIPTORES: COVID-19; SARS-CoV2; Sistema Único de Salud; Epidemiología; Salud Pública; Vigilancia de la Salud.

RESUMO

Objetivo: descrever e discutir sobre os desafios do SUS na atualidade e a atuação da Vigilância em Saúde no contexto da pandemia do novo coronavírus. Método: Ensaio teórico ancorado na literatura científica nacional e internacional, acrescida da análise crítica dos autores. Com base na construção teórica sobre o pensar reflexivo, foram abordados, a Vigilância em Saúde no contexto da epidemia do novo coronavírus; e os desafios do SUS na contemporaneidade. Resultados: O maior desafio na atualidade continua sendo político, e resistir aos ataques e riscos de desmantelamento do SUS pelas políticas de ajuste fiscal. Outros desafios incluem, os interesses econômicos e financeiros ligados às empresas de saúde; proposta político-ideológica da Cobertura Universal em Saúde; desfinanciamento; insuficiência da infraestrutura pública; reprodução do modelo médico hegemônico. Conclusão: Espera-se que a pandemia de COVID-19 desperte reflexões na população em relação à repolitização da sociedade em defesa do SUS enquanto Sistema Universal de Saúde.

DESCRITORES: COVID-19; SARS-CoV2; Sistema Único de Saúde; Epidemiologia; Saúde Pública; Vigilância em Saúde Pública;

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INTRODUCTION

s a result of a series of efforts in defense of democracy from the Brazilian Sanitary Reform movement, in 1988 the Federal Citizen Constitution was promulgated, which laid the foundations for the largest public health system in the world - the Unified Health System (SUS) -, which must be understood not as a government or party policy, but as a State policy capable of guaranteeing the right and universal access to health. (1,2,3) This constitutional-legal framework favored the political struggle around the construction of SUS, regulated by means of the Organic Health Laws 8.080/1990 and 8.142/1990, and had a protective effect on the system even in periods when the neoliberal agenda gained strength, as in the 1990s. (4)

The analysis of the current situation of SUS is a task that demands, in the first place, the recognition of the complexity of the political process, of the organizational development and of the reorientation of the work processes in the various levels of management of the system. There is a tendency to diversify the strategies used by the leaders of the system in each conjuncture and sphere of government, in a continuous process of adjusting the proposals to the possibilities of action and the constraints resulting from the permanent negotiation with the various political actors involved, whether those who act internally to the system (managers, health professionals/workers), whether those who pressure the system from the outside, seeking that the decisions adopted meet their interests, demands and needs. (2,3,5-9) With that, SUS presents itself in a permanent arena of conflicts, negotiations, pacts, with which it tries, in most cases, to manage crises and introduce reforms in partial aspects of its organizational and political management structure. (1,8)

In a special issue of the journal The Lancet dedicated to SUS, researchers reaffirmed that the main problem with SUS is political. (8) Hence, several other problems arise, with an emphasis on underfunding, insofar as a low public expenditure is maintained due to the priority given to fiscal adjustment policies and economic growth and competitiveness. Ultimately, it must be considered that SUS demands, above all, a search for both institutional and political sustainability. (8,9) A recent study published evaluating the 30 years of the existence of SUS, the authors highlighted the significant contributions in access to health services, which resulted in reductions in inequalities in health indicators and in improving equity.(2)

However, today, even after 32 years of its creation, although its advances are recognized, Paim (2019) (1) highlights the main obstacles and threats to SUS, namely: a) limited social and political bases; b) economic and financial interests linked to healthcare companies; c)

political-ideological proposal for Universal Health Coverage; d) divestment; e) insufficient public infrastructure; e) reproduction of the hegemonic medical model. (10)

Despite the existence of so many challenges, SUS proves to be efficient. A point to highlight is the action of Health Surveillance, which was essential in detecting cases of microcephaly and in the causal association with the congenital Zika Virus syndrome, as well as, currently, facing the pandemic of the new coronavirus, acting in the identification, control, adequate management and prevention of Covid-19 cases. It is through it that SUS was organized to receive the identified cases, seeking to guarantee the integrality and longitudinality of care as well as the flows and counterflows between the services in the Health Care Network (RAS). (11)

The Health Surveillance Secretariat (HSS), established in 2003 by the Ministry of Health (MH), was born as a model to act as political-institutional support for the process of decentralization and reorganization of health services and practices, working together with the National Health Surveillance Agency (Anvisa - Agência Nacional de Vigilância Sanitária) in the formulation of health surveillance policies and health policies. (12) In 2006, in Brazil, the Pact for Health established the National Guidelines for Health Surveillance and proposed as its components the actions of surveillance, promotion, preven-

tion and control of diseases and health problems. Still, the concept encompasses the surveillance and control of communicable diseases: surveillance of non--communicable diseases and conditions: health status surveillance, environmental health surveillance, worker health surveillance and health surveillance. (13) Subsequently, Ordinance No. 1.378 of July 9th, 2013, is enacted in order to regulate responsibilities and define the guidelines for the execution and financing of Health Surveillance actions by the Union, States, Federal District and Municipalities, related to the National Health System. Health Surveillance and National Health Surveillance System. (14)

In recent years, an important advance in the surveillance area has been the publication of the National Health Surveillance Policy - approved through the Resolution of the National Health Council No. 588 in 2018 - which establishes it as a public policy of the State essential to SUS, which is the exclusive responsibility of the public authorities and aims to define the principles, guidelines and strategies to be observed by the three SUS management spheres. The Resolution defines Health Surveillance as a continuous and broad process of collecting, analyzing and sharing data related to health, aiming at the implementation of public health measures to protect and promote health and prevent diseases and illnesses. (15) In this context, it was questioned "How has Health Surveillance been working to face the COVID-19 pandemic and what are the challenges of SUS today? To this end, the objective of this theoretical essay was to describe and discuss the challenges of SUS today and the role of Health Surveillance in the context of the new coronavirus pandemic.

METHOD

It is a theoretical essay, whose foundation is based on the discursive formulation on the theme, supported by national and international scientific literature and critical analysis by the authors. To this end, a survey of contemporary scientific literature (16) contemporânea que foi posteriormente, submetidos ao Método de Leitura Científica: visão sincrética do texto; visão analítica; visão sintética ou leitura interpretativa. (17) Based on the theoretical construction on reflective thinking, (18) were addressed: I) Health Surveillance in the context of the epidemic of the new coronavirus in Brazil: and II) Challenges of the SUS in contemporary times.

RESULTS AND DISCUSSION

Health Surveillance in the context of the new coronavirus epidemic in

In the year 2020, in the face of the COVID-19 pandemic, numerous reflections were raised on health systems and surveillance systems around the globe. (19-21) The World Health Organization (WHO), on January 30th, 2020, declared COVID-19 as a Public Health Emergency of International Importance, and, on March 11th, 2020, as a pandemic. (22) In Brazil, measures were taken before the first case was confirmed. On January 22, the actions of the Emergency Operations Center of the Ministry of Health (MH), coordinated by the HSS/MH, began. In this first moment, the actions sought to promote information and communication for the population, in addition to training for health professionals and the expansion of SUS coverage, especially in tertiary care, with the increase of beds in intensive care units, respirators, Personal protective equipment. (23) On March 20th, 2020, the Ministry of Health declared the community transmission of CO-VID-19 and, thus, started to adopt measures to mitigate its transmission, such as isolation and social distance. (24)

It is noteworthy that the surveillance system in Brazil showed a quick response: on February 26th, 2020, the first case of COVID-19 in the country was confirmed, on March 3rd, there were already two confirmed cases and 488 suspected cases reported. In January, even before the first confirmed case in the country, HSS/MH triggered the National Focal Points of the WHO International Health Regulations (PFN--RSI/WHO), issued epidemiological bulletins, provided daily numbers on the cases (suspected, confirmed and discarded), as well as frequent interviews and press releases and the public about the pandemic. (25) More recent data show 8.488.099 confirmed cases in Brazil alone and 209.847 deaths from Covid-19 on January 18th, 2021. (26)

It is worth mentioning that the communication and dissemination of epidemiological information, through epidemiological bulletins and guidance on possible ways of preventing the disease through social media, is essential for the population's awareness and for this to be an active and co-responsible participant in their care. (27)

Therefore, it is through Health Surveillance that active case searches take place, timely testing and the capture of contacts that ensure the early identification of the disease and the possible break in the transmission chain. In addition, 80% of mild Covid-19 cases and a large portion of moderate cases seek Primary Health Care (PHC) as the first access to care, reaffirming the role of this level of care as the protagonist of care, fulfilling its role as network ordering and care coordinator, adding secondary and tertiary care, fulfilling their roles determined in the RAS, for care and case management, guaranteeing conditions for effective and quality care. (28)

Another aspect that should be highlighted is that among the recommendations of the national and international regulatory health agencies, accelerated vaccine development, therapeutic measures and diagnoses have been proposed. (29) Regarding the race for the development of a vaccine, about 200 development projects are registered with the WHO, of which 13 are or have completed phase 3 for the assessment of effectiveness, the last step before approval by regulatory agencies and subsequent immunization of the population. (30)

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In the quest to guarantee more doses for the Brazilian population, three technology transfer agreements were signed in the country: one from the Institute of Technology in Immunobiologicals of the Oswaldo Cruz Foundation (Bio-Manguinhos/Fiocruz)/Ministry of Health with the AstraZeneca laboratory (31) that it is working in partnership with Oxford University (United Kingdom), which established the initial supply of 100 million doses: another from the Butantan Institute of the State of São Paulo with the company Sinovac, China (Coronavac) (32), ensuring the supply of 46 million doses; and the last from the Paraná Institute of Technology (TECPAR) of the State of Paraná with the Gamaleya Institute, Russia (Sputinik V). (33)

The companies Pfizer and Moderna and the Instituto Gamaleya preliminarily released the results of the phase 3 studies, in which the effectiveness of their vaccines showed results above 90%, without serious adverse effects, also demonstrating the safety of these immunobiologicals. The results of the AstraZeneca provisional primary efficacy analysis point to an efficacy of 62,1% for participants who received two standard doses and 90% for those who received a first half dose and a full dose after one month. The vaccine of the Butantan Institute of the State of São Paulo against Covid-19 achieved 50,38% of global effectiveness in the study developed in Brazil. (32) These results are promising since, in this moment of urgency, WHO has defined that a vaccine with protection above 50% will be acceptable. (34)

On January 17th, 2021, the Collegiate Board of the National Health Surveillance Agency (Anvisa) unanimously approved the temporary authorization for the emergency use of the CoronaVac vaccine, developed by the pharmaceutical company Sinovac in partnership with the Butantan Institute, and of the Covishield vaccine, produced by the pharmaceutical company Serum Institute of India, in partnership with AstraZeneca/Oxford University/Fiocruz. (35)

Both Fiocruz and Instituto Butantan

must continue their studies and generate data to allow health registration at Anvisa. Likewise, both need to maintain vaccine safety monitoring, which is critical to ensuring that the benefits continue to outweigh the risks for people receiving Covid-19 vaccines. Anvisa, as a federal regulatory body, can review and adjust the conditions for emergency use in the face of results that are considered relevant, including data and information from international regulatory authorities. (35) The following day, 1/18/2021, the country has already started receiving the first doses to be used in the national territory and is preparing for the start of the Vaccination Campaign against the new coronavirus with these two immunobiologicals.

This will be another major challenge for Health Surveillance, since, despite all the acceleration of development seen so far, there are still many gaps in knowledge, imposing some difficulties in organizing the vaccination plan. Most vaccines that reached phase 3 will have a vaccine schedule with two doses, and should be applied between 14 to 29 days after the first dose is applied (29), which will require an enormous effort and organization of health services to guarantee the adherence of the high population contingent to be vaccinated in a short term, for both doses.

It will also require the identification of the person vaccinated in the vaccination posts, with the need to create a nominal system that is simplified and that manages to insert the data in a timely manner, to follow the evolution of the vaccination and that is integrated into the National Immunization Program Information System (SIPNI - Sistema de Informações do Programa Nacional de Imunizações) of the MH. At the same time, it will be necessary to implement surveillance of adverse events after active vaccination in a timely manner, in order to ensure the safety of vaccination throughout the process. Another important monitoring that should be carried out, after the start of vaccination, will be that of pregnant women who are inadvertently vaccinated, that is, at the time of vaccination they did not know they were already pregnant, therefore, they should be followed up to assess the safety of vaccination during the gestational period. (36)

Still, it will be necessary to define and prioritize the groups to be vaccinated, listed based on the risk of becoming ill, having complications and death: patients with chronic diseases, diabetes, cardiovascular diseases, cancer, kidney disease, respiratory disease, hematological diseases, obesity and elderly people (over 60 years). Health professionals, being at the forefront of the care of patients with CO-VID-19, should be the first to be vaccinated. Other groups should be included in the vaccination strategy insofar as vaccines are available, such as indigenous people, quilombolas, the riverside population and deprived of liberty, teachers, among other workers considered essential. (36)

It is worth mentioning that SUS has the National Immunization Program (PNI - Programa Nacional de Imunizações), coordinated by the Ministry of Health, in a shared way with the State and Municipal Health Departments, which has been consolidating itself as one of the most relevant public health interventions. (37) Created in 1973, in its 46-year history, PNI has a history of achievements and challenges to be told. It is characterized as an efficient public policy, increasingly impacting the morbidity and mortality profile of the Brazilian population, adapting to the changes that have occurred in the political, epidemiological and social fields. (37) In fact, PNI has extensive experience in organizing mass vaccination campaigns, achieving high vaccine coverage and its objective, which is to protect the health of the population defined in these strategies. When high vaccination coverage is achieved, in addition to reducing cases of disease in the target population established for vaccination, it contributes to reducing the circulation of infectious agents in the communities, positively impacting the health of those who will not be vaccinated, once they become

indirectly protected (collective or herd immunity). (38-39)

Challenges of SUS in contemporary times

Despite being described in the 1988 Constitution, no government has taken SUS as a political priority to be consolidated as a universal health system ⁽⁴⁾, fact reiterated by the publication of Decree No. 7.508 of 2011, which regulated Law 8.080/0 only after 21 years of its promulgation. ⁽⁴⁰⁾

SUS suffered serious obstacles in its historical development in the face of chronic underfunding for years, and still faces, in contemporary times, threats to its consolidation and the risk of dismantling in the face of ultra-liberal economic policies domestically and, internationally, before the Universal Coverage proposal in Health (from English, Universal Health Coverage-UHC) and the political action of those who defend market-oriented health systems. (1)

In the last decades, the international debate on different conceptions of universality in health has intensified, polarized in the proposals of Universal Health System (UHS) versus Universal Health Coverage (UHC). It is known that for developing countries, the term UHC is used in reference to coverage for basic services, or for health insurance coverage, public or private, indicating an emphasis on subsidizing demand, to the detriment of the construction of universal public systems. (41-43)

UHC is an ambiguous term that has led to different interpretations and approaches by national health authorities, governmental and non-governmental organizations, especially in developing countries. The UHC proposal is anchored on three pillars: i) focus on pooling funding; ii) affiliation by type of insurance; iii) definition of a limited basket of services, with a view to reducing the role of the State, restricting it to the regulation of the health system. (42) The UHS, on the other hand, is financed by public funds from revenue from gene-

ral taxes and social contributions, which provides greater solidarity, redistribution and equity. The degree of redistribution depends on the progressive tax burden, that is, a higher proportion of taxation on income and property than on consumption. (42)

Although PHC is advocated as a strategy for universal coverage, it can nevertheless have very different meanings. In the UHC agenda, PHC refers to a basic package of essential services and medicines defined in each country, corresponding to a selective approach to achieve basic universalism in developing countries. It is distinguished from the comprehensive approach of universal public systems where it corresponds to the base of the system and must order the assistance network. (42-43)

In this sense, the UHC proposal would meet the demands of Brazilian insurers and, possibly, of financial capital and international insurers by expanding participation in the 'health market'. (42) The further strengthening of the private sector represents the greatest threat to universal health systems as in the case of SUS, and to the universal right to health. UHC's proposal is unclear as to its assumptions and strategies. The use of concepts and terms similar to those envisaged for universal systems makes it difficult to understand the ongoing architectural changes.

Clearly, Brazil bluntly illustrates the tensions in the construction and defense of a universal health system, above all, considering its social and health inequalities, the situation of a peripheral capitalist country, the economic and political crisis, the institutional weaknesses, the growth of conservative and neoliberal ideologies, as well as threats to democracy. Therefore, unity, agility and effectiveness remain fundamental for the militancy in defense of SUS, democracy and the civilizing project of RSB. (1)

Despite the significant achievements, the problems, obstacles and challenges faced by SUS in the last three decades acquire even greater relevance in the face of the economic and political crises since 2014, especially due to the consequences of the 2016 parliamentary-media coup and the results of the 2018 presidential elections Thus, SUS was not consolidated as a universal health system, as proposed by the RSB and ensured by the Constitution. (1)

It should also be noted that the neoliberal agenda that has been installed in the country in recent years, mainly with the fiscal austerity measures implemented in 2016 (Constitutional Amendment 95 - a new tax regime with a limit on federal government spending, which will be in force by next 20 years (4) that is, until 2036, with the ceiling set for 2020 corresponding to the budget available for spending in 2019, plus inflation for that year mainly for spending on health, education and social policies. This, coupled with the new environmental, educational and health policies of the current Brazilian government, has threatened the sustainability and capacity of the system to offer universal access to all. (2) In the midst of the emergency scenario due to the spread of infection by the new coronavirus in the country, these measures of fiscal austerities are put in check when evidencing a lack of structure and capacity of the health system to offer social responses to the health needs of the population.

According to a study by the Budget and Financing Commission (Cofin - Comissão de Orçamento e Financiamento) of the National Health Council (CNS - Conselho Nacional de Saúde), at the end of 2019 the loss to SUS was already R\$ 20 billion with the EC, before the COVID-19 pandemic. Over two decades, the damage is estimated at R\$ 400 billion - less to pay for SUS (45), which has caused a gradual scrapping of SUS in several points of the Health Care Network.

The chronic underfunding of SUS is a constant challenge of the system, which we have observed for all these years: insufficient resources, inequity in financing conditions, health expenditures at the subnational level and low participation of investments in the public health

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sector. On the other hand, there is a persistence of high private spending subsidized by the State, in addition to the low economic and fiscal priority of federal financing in health. (4) Currently, public participation in health management in Brazil is small, equivalent to 41%, when compared to that of other countries, including the USA, which does not have a universal health system and allocates 45.5% of its GDP to health; we can also mention countries in Europe, such as Italy and the United Kingdom, which allocate 77,2% and 82% of their GDP to health, respectively. (8,40)

As for infrastructure, SUS suffers from a lack of material and human resources and from a lack of establishments and services. PHC - the gateway to RAS, has been suffering major attacks, such as: Previne Brasil - new PHC financing model based on weighted funding, the attempt to deconstruct the Family Health Strategy (FHS), with a reduction in the number of Community Health Agents (CHA), extinction of the Extended Family Health and Primary Care Center (NASF-AB) and loss of professionals with the closure of the Mais Médicos Program, which hinder the population's access to the health system. (1,8,40,46)

CONCLUSION

Brazil has not been a good example in the fight against the new coronavirus, even with the greatness and importance of SUS and the actions of Health Surveillance to control the pandemic. This is because, the lack of alignment, cohesion and coordination between state governors, president of the republic and the lack of a Minister of Health, added to the denial of science and the disrespect of the president of the republic to the evidence-based guidelines of regulatory health agencies national and international, which has greatly hindered the control of the epidemic in our country.

The biggest challenge facing SUS today is still political, that is, going through the storm, resisting the attacks and risks of dismantling SUS through fiscal adjustment policies. Although the current political scenario is betting on investments in the private sector to the detriment of strengthening public policies, it is expected that the COVID-19 pandemic will arouse reflections in the population regarding the politicization of society in defense of SUS as a Universal Health System and not as Universal Health Coverage.

REFERENCES

- 1. Paim JS. Os sistemas universais de saúde e o futuro do Sistema Único de Saúde (SUS). Saúde Debate. 2019;43(spe5):15-28.
- 2. Castro MC, Massuda A, Almeida G, Menezes-Filho NA, Andrade MV, de Souza Noronha KVM, et al. Brazil's unified health system: the first 30 years and prospects for the future. Lancet. 2019;394(10195):345-356.
- 3. Lopes-Júnior LC. Policies, epidemiology, and praxis in Brazil's Unified National Health System. Cad Saude Publica.2020;36(11):e00295120.
- 4. Machado CV, Lima LD, Baptista TWF. Health policies in Brazil in times of contradiction: paths and pitfalls in the construction of a universal system. Cad Saude Publica. 2017;33Suppl 2(Suppl 2):e00129616.
- 5. Massuda A, Hone T, Leles FAG, de Castro MC, Atun R. The Brazilian health system at crossroads: progress, crisis and resilience. BMJ Glob Health. 2018;3(4):e000829.
- 6. Barreto ML, Rasella D, Machado DB, Aquino R, Lima D, Garcia LP, et al. Monitoring and evaluating progress towards Universal Health Coverage in Brazil. PLoS Med. 2014;11(9):e1001692.
- 7. Watts J. Brazil's health system woes worsen in economic crisis. Lancet. 2016;387(10028):1603-4.
- 8. Paim J, Travassos C, Almeida C, Bahia L, Macinko J. The Brazilian health system: history, advances, and challenges. Lancet. 2011;377(9779):1778-97.
- 9. Bolina AF, Bomfim E, Lopes-Júnior LC. Frontline Nursing care: the COVID-19 pandemic and the Brazilian Health System. SAGE Open Nurs. 2020;6:2377960820963771.

- 10. Paim JS. Sistema Único de Saúde (SUS) aos 30 anos. Ciênc. Saúde Colet. 2018; 23(6)1723-1728.
- 11. Brasil, Ministério da Saúde. Coronavírus COVID-19: guia de vigilância epidemiológica emergência de saúde pública de importância nacional pela doença pelo coronavírus 2019. 1 ed. Brasília/DF: Ministério da Saúde; 2020.
- 12. Oliveira CM, Cruz MM. Sistema de Vigilância em Saúde no Brasil: avanços e desafios. Saúde Debate. 2015;39(104):255-
- 13. Brasil, Ministério da Saúde. Diretrizes Nacionais da Vigilância em Saúde. Ed. 1. Brasília: Ministério da Saúde; 2010.
- 14. Brasil, Ministério da Saúde. Portaria Nº 1.378 de 9 de julho de 2013. Brasília; 2013.
- 15. Brasil, Ministério da Saúde. Resolução Nº 588, de 12 de julho de 2018. Institui a Política Nacional de Vigilância em Saúde.
- 16. Vosgerau DSAR, Romanowski JP. Estudos de revisão: implicações conceituais e metodológicas. Rev Diálogo Educ. 2014;14(41):165-189.
- 17. Cervo A, Bervian PA. Metodologia científica. 5ed. São Paulo: Prentice Hall, 2002.
- 18. Souza RA. The foundations of pedagogy by John Dewey:a reflection on pragmatist epistemology. Rev Contraponto Eletrônica. 2012;12(2):227-233.
- 19. Silva Junior FJGD, Sales JCES, Monteiro CFS, Monteiro TAS, Lima RAG, Lopes-Junior LC. Impact of COVID-19 pandemic on mental health of young people and adults: a sys-

REFERENCES

tematic review protocol of observational studies. BMJ Open. 2020;10(7):e039426.

- 20. Lopes-Júnior LC, Bomfim E, Silveira DSC, Pessanha RM, Schuab SIPC, Lima RAG. Effectiveness of mass testing for control of COVID-19: a systematic review protocol. BMJ Open. 2020;10(8):e040413.
- 21. Lopes-Júnior LC. A Saúde Coletiva no epicentro da pandemia de COVID-19 no Sistema Único de Saúde. Saúde Coletiva. 2020;10(56):3080-3084.
- 22. Mahase E. Covid-19: WHO declares pandemic because of "alarming levels" of spread, severity, and inaction. BMJ 2020:368:m1036.
- 23. Oliveira WK, Duarte E, França GVA, Garcia LP. Como o Brasil pode deter a COVID-19. Epidemiol Serv Saúde. 2020;29(2):e2020044.
- 24. Sales CMM, Silva AL, Maciel ELN. Vigilância em saúde da COVID-19 no Brasil: investigação de contatos pela atenção primária em saúde como estratégia de proteção comunitária. Epidemiol Serv Saúde. 2020;29(4):2020373.
- 25. Croda JHR, Garcia LP. Immediate Health Surveillance Response to COVID-19 Epidemic. Epidemiol Serv Saude. 2020;29(1):e2020002.
- 26. Coronavirus Resource Center. Johns Hopkins University; [citado 18 de janeiro de 2021]. https://coronavirus.jhu.edu/ (acessado em 18/Jan/2021).
- 27. Santos JG dos, Mota FPB. A transparência governamental em tempos de Covid-19: reflexões do quadro brasileiro. Gestão Sociedade .;14(39):3716-24. Gestão E Sociedade, 14(39), 3716-3724.
- 28. Medina MG, Giovanella L, Bousquat A, Mendonça MHM, Aquino R; Comitê Gestor da Rede de Pesquisa em Atenção Primária à Saúde da Abrasco. Primary healthcare in times of COVID-19: what to do? Cad Saude Publica. 2020;36(8):e00149720.
- 29. World Health Organization. Timeline: WHO response COVID-19. https://www.who.int/emergencies/diseases/nov-el-coronavirus-2019/interactive-timeline (acessado em 30/Dez/2020).
- 30. World Health Organization. Draft landscape of COVID-19 candidate vaccines 2 December 2020. https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines (acessado em 30/Dez/2020).
- 31. Portal Fiocruz. Covid-19: Fiocruz firmará acordo para produzir vacina da Universidade de Oxford. https://portal.fiocruz.br/noticia/covid-19-fiocruz-firmara-acordo-para-produzir-vacina-da-universidade-de-oxford(acessado em 30/Dez/2020).
- 32. Instituto Butantan. Vacina contra a COVID-19. https://vacinacovid.butantan.gov.br/vacinas (acessado em 30/Dez/2020).
- 33. Tecpar: Instituto de Tecnologia do Paraná. Vacina russa será submetida à Anvisa até o fim de setembro. http://www.tecpar.br/Noticia/Vacina-russa-sera-submetida-Anvisa-ate-o-fim-de-setembro (acessado em 30/Dez/2020).

- 34. Ansede M, Galocha A, Oliveira R. As diferenças abismais entre as vacinas de Oxford, Pfizer e Moderna, a Coronavac e a Sputnik V. El País 2020; 24 nov.
- 35. Anvisa. Anvisa aprova por unanimidade uso emergencial das vacinas. https://www.gov.br/anvisa/pt-br/assuntos/noticias-anvisa/2021/anvisa-aprova-por-unanimidade-uso-emergencial-das-vacinas (acessado em 18/Jan/2021).
- 36. Domingues CMAS. Challenges for implementation of the COVID-19 vaccination campaign in Brazil. Cad Saude Publica. 2021;37(1):e00344620.
- 37. Domingues CMAS, Teixeira AMS. Coberturas vacinais e doenças imunopreveníveis no Brasil no período 1982-2012: avanços e desafios do Programa Nacional de Imunizações. Epidemiol Serv Saúde 2013;22(1):9-27.
- 38. Rochel de Camargo Jr Kenneth. Here we go again: the reemergence of anti-vaccine activism on the Internet. Cad. Saúde Pública. 2020;36(Suppl 2):e00037620.
- 39. Domingues CMAS, Maranhão AGK, Teixeira AM, Fantinato FFS, Domingues RAS. The Brazilian National Immunization Program: 46 years of achievements and challenges. Cad Saude Publica. 2020;36Suppl 2(Suppl 2):e00222919.
- 40. Lopes-Júnior LC. Desafios do SUS na contemporaneidade. In. Silva Júnior FJG, Sales JCS, Galiza FT, Monteiro CFS, organizadores. Políticas, epidemiologia e experiências no Sistema Único de Saúde (SUS): possibilidades e desafios do cenário brasileiro. Curitiba: Editora CRV; 2020.
- 41. Noronha JC. Universal health coverage: how to mix concepts, confuse objectives, and abandon principles. Cad Saude Publica. 2013;29(5):847-9.
- 42. Giovanella L, Mendoza-Ruiz A, Pilar ACA, Rosa MCD, Martins GB, Santos IS, et al. Universal health system and universal health coverage: assumptions and strategies. Cien Saude Colet. 2018;23(6):1763-1776.
- 43. Lima, LD. Crisis y neoliberalismo: desafíos y alternativas políticas para la construcción de sistemas universales de salud en América Latina. Cad. Saúde Pública. 2017;33(Suppl 2):e00047517.
- 44. Brasil. Governo do Brasil. Emenda Constitucional n. 95. Altera o Ato das Disposições Constitucionais Transitórias, para instituir o Novo Regime Fiscal. 2016. http://www.planalto.gov.br/ccivil_03/ constituicao/emendas/emc/emc95.htm (acessado em 23/Dez/2020).
- 45. Conselho Nacional de Saúde. Ministério da Saúde. Mais SUS menos Coronavirus: CNS intensifica campanha pela revogação da EC 95/2016. 2020. March 14. http://conselho.saude.gov.br/ultimas-noticias-cns/1068-maissusmenoscoronavirus-cns-intensifica-campanha-pela-revogacao-da-ec-95-2016 (acessado em 23/Dez/2020).
- 46. Silva WMF, Ruiz JLS. A centralidade do SUS na pandemia do coronavírus e as disputas com o projeto neoliberal. Physis. 2020;30(3):e300302.