Fortalecer as Atividades de Informação e Vigilância Epidemiológica é Essencial e Urgente para Reduzir a Força de Transmissão do SARS-CoV-2

Maria Glória Teixeira, Ligia Regina Franco Sansigolo Kerr, Ricardo Arraes de Alencar Ximenes, Rosa Lívia Freitas de Almeida, Maria Yury Ichihara, Maria de Fátima Militão de Albuquerque, Estela M L Aquino, Guilherme Werneck, Eduardo Hage Carmo, Roberto Andrade Medronho, Wanderson Kleber de Oliveira, Claudio Maierovitch Pessanha Henriques, Carl Kendall, Antônio Augusto Moura da Silva, Naomar M. Almeida-Filho, Wayner Vieira de Souza, Maria Amelia de Sousa Mascena Veras , Gerson Oliveira Penna, Gulnar Azevedo e Silva , Sinval Pinto Brandão Filho, Maurício L. Barreto

https://doi.org/10.1590/1980-549720210049

Submetido em: 2021-08-13
Postado em: 2021-08-17 (versão 1)
(AAAA-MM-DD)

REVISTA BRASILEIRA DE EPIDEMIOLOGIA
DOI: 10.1590/1980-549720210049
e210049
SPECIAL ARTICLE

Strengthening the surveillance and information activities is urgent and essential to reduce the transmission force of SARS-CoV-2*

Título resumido: Information and Epidemiological Surveillance for COVID-19: Essential and Urgent

Maria Glória Teixeira. https://orcid.org/0000-0003-3318-3408
Instituto de Saúde Coletiva, Universidade Federal da Bahia, Salvador
Centro de Integração de Dados e Conhecimentos para Saúde, Fundação Oswaldo Cruz, Salvador.

Ligia Regina Franco Sansigolo Kerr. https://orcid.org/0000-0003-4941-408X
Programa de Pós-graduação em Saúde Pública, Universidade Federal do Ceará, Fortaleza

Ricardo Arraes de Alencar Ximenes. https://orcid.org/0000-0002-9951-8840
Universidade de Pernambuco. Faculdade de Ciências Médicas. Recife, PE, Brasil
Universidade Federal de Pernambuco. Centro de Ciências da Saúde. Recife, PE, Brasil

Rosa Lívia Freitas de Almeida. https://orcid.org/0000-0001-6423-543X
Universidade de Fortaleza. Programa de pós-graduação em Saúde Coletiva. Fortaleza

Maria Yury Ichihara. https://orcid.org/ 0000-0001-8590-6212
Centro de Integração de Dados e Conhecimentos para Saúde, Fundação Oswaldo Cruz. Salvador.
Maria de Fátima Militão de Albuquerque. https://orcid.org/0000-0002-4999-4160
Instituto Aggeu Magalhães, Fundação Oswaldo Cruz, Recife

Estela M L Aquino. (http://orcid.org/0000-0002-8204-1249

Instituto de Saúde Coletiva da Universidade Federal da Bahia. Centro de Integração de Dados e Conhecimentos para Saúde, Fundação Oswaldo Cruz. Salvador.
Guilherme Werneck. https://orcid.org/0000-0003-1169-1436
Instituto de Estudos de Saúde Coletiva da Universidade Federal do Rio de Janeiro.

Eduardo Hage Carmo. https://orcid.org/0000-0001-6343-9967
Centro de Integração de Dados e Conhecimentos para Saúde Fundação Oswaldo Cruz. Salvador.

Roberto Andrade Medronho. https://orcid.org/0000-0003-4073-3930
Instituto de Estudos em Saúde Coletiva/Faculdade de Medicina da Universidade Federal do Rio de Janeiro

Wanderson Kleber de Oliveira: https://orcid.org/0000-0002-9662-1930
Secretaria de Serviços Integrados de Saúde, Supremo Tribunal Federal, Brasília
Claudio Maierovitch Pessanha Henriques. https://orcid.org/0000-0002-1461-7082
Fundação Oswaldo Cruz, Brasília-Distrito Federal

Carl Kendall. https://orcid.org/0000-0002-0794-4333
Programa de Pós-graduação em Saúde Pública da Universidade Federal do Ceará;
Tulane School of Public Health and Tropical Medicine, New Orleans, EUA

Antônio Augusto Moura da Silva. https://orcid.org/0000-0003-4968-5138
Departamento de Saúde Pública da Universidade Federal do Maranhão, São Luis

Naomar M. Almeida-Filho. https://orcid.org/0000-0002-4435-755X
Instituto de Estudos Avançados Universidade de São Paulo,
Instituto de Saúde Coletiva da Universidade Federal da Bahia, Salvador

Wainer Vieira de Souza: https://orcid.org/0000-0002-0939-9332
Instituto Aggeu Magalhães Fundação Oswaldo Cruz, Recife

Maria Amelia de Sousa Mascena Veras https://orcid.org/0000-0002-1159-5762

Departamento de Saúde Coletiva, Faculdade de Ciências Médicas da Santa Casa de São Paulo

Gerson Oliveira Penna – https://orcid.org/0000-0001-8967-536X,
Núcleo de Medicina Tropical, Universidade de Brasília e Escola Fiocruz de Governo, Fiocruz Brasília

Gulnar Azevedo e Silva https://orcid.org/0000-0001-8734-2799
Instituto de Medicina Social Hesio Cordeiro, Universidade do Estado do Rio de Janeiro

Sinval Pinto Brandão Filho. https://orcid.org/0000-0003-3768-2810
Instituto Aggeu Magalhães, Fundação Oswaldo Cruz, Recife

Maurício L. Barreto. https://orcid.org/0000-0002-0215-4930
Centro de Integração de Dados e Conhecimentos para Saúde, Fundação Oswaldo Cruz, Salvador.
Instituto de Saúde Coletiva, Universidade Federal da Bahia, Salvador.

Correspondência: Maria Glória Teixeira.
Email: t.gloria@hotmail.com

Declaração de contribuição dos autores no manuscrito:
Todos os autores participara da concepção do manuscrito, MGT escreveu o primeiro rascunho, todos os autores reviram o manuscrito e aprovaram a versão final.

- Declaração de conflito de interesses no manuscrito:
Nenhum conflito de interesse.

* An earlier version of this document was presented to the Scientific Committee of the Northeast Consortium of Governors

COVID-19 is caused by the SARS-CoV-2 virus, an agent that is rapidly transmitted by the respiratory route and from infected surfaces. After nearly 18 months of the pandemic and its effects, a sustained reduction in the incidence of cases, severe cases, and deaths is expected due to the increase in vaccination coverage. However, given the slow pace of vaccination 1, it is time for caution, making it necessary to implement new actions capable of reducing and maintaining the transmission threshold of SARS-CoV-2 to low levels. It must be noted that while vaccines are the most important weapon in the control of the pandemic, with high efficacy in reducing severe cases and deaths, they have lesser effects on the transmission of the virus2. Therefore, until high levels of vaccination coverage are reached, it is extremely important to maintain the use of non-pharmacological measures, in particular the mandatory use of masks, social distancing, and control of the flow of intra- and inter-urban travel 3– 5.

There is also a pressing need for measures that ensure continuous transmission control efforts by tracking cases and contacts in each community so that health professionals can guide and adopt measures indicated for each situation (isolation, quarantine, use of masks, etc.). Such measures aim to reduce to a minimum the force of transmission of the virus. as they contribute not only to the reduction of cases6-9, but also to contain the emergence or introduction of new variants to the country10, possibly more transmissible or pathogenic, as is happening with the Delta variant, recently introduced, but already actively circulating in Brazil[11].

Although Brazil's Epidemiological Surveillance System of the Unified Health System (SUS) is considered one of the best national surveillance systems compared to similar countries in terms of development and size of the population, the COVID-19 pandemic has exposed its weaknesses. It should be emphasized that, in addition to the lack of national coordination of epidemic control efforts, a large part of the resources added to SUS dealing with this Public Health Emergency have been directed towards expanding medium and high-complexity hospital care. These initiatives were of paramount importance to respond to the increase in this demand. However, in parallel, there should have been the implementation of control efforts in the primary care network to reduce the transmission of SARS-CoV-2. However, this only happened in a very timid way and, more often in municipalities that, on their own, took this initiative. For instance, the surveillance of new infections, new cases, and their contacts has been weak, although these actions, by interrupting transmission, prevent new infections, leading to a reduction in hospital demand and the number of deaths. Epidemiological surveillance

(EV) measures have a broad spectrum of action, ranging from promoting hygiene measures to active case and contact finding and notification, tracking contacts to guide and monitor the isolation of the infected, and quarantine, when indicated. Examples of success are the municipalities of Araraquara (SP)12 and Eusébio (CE)13,14, which managed to implement vigorous EV programs, with marked reductions in their infection rates.

Our proposal here aims to sensitize policymakers and implementors to the need to implement effective efforts to reduce the transmission of SARS-CoV-2 through the strengthening and expansion of traditional EV strategies at the community level. This requires identifying cases of COVID 19 - whether isolated or in clusters - and, with the support of a fast information network, adopting the necessary containment measures to reduce and maintain transmission at low levels.

Since a previously unknown agent caused COVID-19 there were technical difficulties for rapid diagnosis of cases (symptomatic or asymptomatic) both in health units and in communities. The only diagnostic procedure initially available requires collecting samples with a nasopharyngeal swab for RT-PCR, which must be sent to a specialized laboratory. Due to the overload of samples for analysis, it can take several days to return the results. Thus, there is substantial delay in the flow of information to health units about cases in their respective coverage areas, in addition to insufficient detection of cases. These problems, associated with the lack of incentives for measures to reduce community transmission, have made the efforts to contain the transmission of SARS-CoV-2 through case identification and contact tracing either non-existent or ineffective in many municipalities. Although some Governors and Mayors have adopted collective efforts to contain transmission through the implementation of non-pharmacological measures, such as social distancing, restrictions on travel and use of masks, the decisions to adopt them have been, in general, based on hospital indicators, especially the rate of occupation of ICUs, but not in epidemiological indicators related to the intensity of SARS-CoV-2 transmission.

Given this scenario, we propose that policymakers adopt mandatory active case finding, contact tracing, and prompt control efforts at the local level. Such actions must be developed by primary health care personnel in conjunction with epidemiologists 6,7. It is noteworthy that many public schools are located in the areas covered by primary health care units, favoring interventions to protect education workers, students, and their families. In turn, for interventions to be adopted universally, it will be necessary to

allocate resources for the local level, mainly to train and expand work teams to implement these activities following the daily monitored epidemiological situation. It is important to emphasize that there has been an advance in diagnostic tools and that rapid testing of virus antigens is available, enabling the rapid detection of cases in communities. These new technologies are already in use and should be accessible to teams actively tracing cases and their contacts. Speed in diagnosis is one of the main factors that enable early identification of cases, contact tracing, and better control of the SARS-CoV-2 spread.

Propositions

In order to achieve these goals, we propose that guidelines for strengthening epidemiological surveillance for COVID-19 at the local level be quickly developed.

In addition to other guidelines and activities, these guidelines should include:

1) Identification of cases in their initial phase, using systematic, consistent, and continuous monitoring (antigen testing in symptomatic individuals; active search for cases and contacts; and adoption of other control measures). Each local health system must adapt the standard(s) according to its social and economic reality and family health coverage, among other aspects.
2) Contact tracing to identify individuals who have been exposed to infection because they have had close contact with a case, being symptomatic or asymptomatic. It requires rapid antigen testing of all contacts to detect potential symptomatic or asymptomatic transmitters regardless of symptoms.
3) Adopting measures to contain transmission by isolating positive cases and quarantining negative ones and monitoring these people. In addition to health system requirements, this requires guidance for individuals and families and verification of the possibility of home isolation;
4) Ensuring social support for cases and contacts who have difficulties complying with isolation and/or quarantine. If necessary, provide alternatives for home isolation (school, shelter, neighbourhood association, sports court, among other social facilities) or through family rearrangements. Professionals from the Primary Care Units must monitor these locations;
5) Adoption of collective containment measures when there is evidence of increased transmission in an area, seeking to verify the radius of influence of

these possible clusters of cases (clusters) to expand the control action to contiguous geographic areas;

6) Immediate sharing of laboratory test results of COVID-19 produced by state and other public or private laboratories that perform PCR and/or Antigen Tests with the primary care units for the adoption of the appropriate measures mentioned above.
7) Establishing or strengthening the flow of information on cases diagnosed in UPAs, clinics, and public and private hospitals to immediately trigger the indicated containment actions.
8) Guaranteeing access and use of personal protective equipment and other hygiene measures to prevent infections among the health professionals involved in these activities following current regulations.
9) Encouraging the widespread use of efficient face masks and providing them to vulnerable populations.
10) Increasing epidemiological surveillance in workplaces so that containment efforts are undertaken there on time.
11) Increasing epidemiological surveillance in schools and using rapid communication channels links these efforts to the Primary Health Care system to rapidly and effectively control outbreaks in the school community. It must involve school and health workers, social assistance staff, students and their families.
12) Ensuring broad vaccination, with an active search for the unvaccinated and those missing a second dose.
13) Implementation of comprehensive health education and communication efforts aimed to respond to fake news and strengthen the immediate adoption of all the measures to contain transmission.

The implementation of these strategies to strengthen the Epidemiological Surveillance of cases and contacts, systemically and universally, must be adapted to the reality of each community. It can only be conducted with adequate political, financial and technical, and operational support.

References

1. Brasil. Ministério da Saúde. Vacinação contra a Covid-19 no Brasil [Internet]. [cited 2021 Jul 24]. Available from: https://www.gov.br/saude/pt-br/vacinacao?utm_source=google&utm_medium=search&utm_campaign=MS_Vacinacao_Covid&utm_term=vacinacao_coronavirus_googleads&utm_content=gads002
2. Geddes L. How effective are COVID-19 vaccines in the real-world? [Internet]. GAVI. The Vaccine Alliance. [cited 2021 Jul 24]. Available from: https://www.gavi.org/vaccineswork/how-effective-are-covid-19-vaccines-real-world
3. Aquino EML, Silveira IH, Pescarini JM, Aquino R, Souza-Filho JA, Rocha AS, Ferreira A, Victor A, Teixeira C, Machado DB, Paixão E, Alves FJO, Pilecco F, Menezes G, Gabrielli L, Leite L, Almeida MCC, Ortelan N, Fernandes QHRF, Ortiz RJF, Palmeira RN, Junior EPP, Aragão E, Souza LEPF, Netto MB, Teixeira MG, Barreto ML, Ichihara MY, Lima RTRS. Social distancing measures to control the COVID-19 pandemic: potential impacts and challenges in Brazil. Cien Saude Colet. 2020;25(suppl 1):2423-2446..
4. Howard J, Huang A, Li Z, Tufekci Z, Zdimal V, van der Westhuizen HM, et al. An evidence review of face masks against COVID-19. Proc Natl Acad Sci U S A. 2021;118(4):1–12.
5. Houvèssou GM, Souza TP de, Silveira MF da. Lockdown-type containment measures for COVID-19 prevention and control: a descriptive ecological study with data from South Africa, Germany, Brazil, Spain, United States, Italy and New Zealand, February - August 2020. Epidemiol Serv Saude. 2021;30(1):e2020513.
6. Teixeira MG, Medina MG, Costa M da CN, Barral-Netto M, Carreiro R, Aquino R. Reorganization of primary health care for universal surveillance and containment of COVID-19. Epidemiol Serv Saude. 2020;29(4):e2020494.
7. Sales CMM, Silva AI da, Maciel ELN. COVID-19 health surveillance in Brazil: investigation of contacts by primary health care as a community protection strategy. Epidemiol Serv Saude. 2020;29(4):2020373.
8. Chung S-C, Marlow S, Tobias N, Alogna A, Alogna I, You S-L, et al. Lessons from countries implementing find, test, trace, isolation and support policies in the

rapid response of the COVID-19 pandemic: a systematic review. BMJ Open. 2021;11(7):e047832.

9. Bilinski A, Mostashari F, Salomon JA. Modeling Contact Tracing Strategies for COVID-19 in the Context of Relaxed Physical Distancing Measures. JAMA Netw Open. 2020;3(8):19–22.
10. Rochman ND, Wolf YI, Faure G, Zhang F, Koonin E V. Ongoing Global and Regional Adaptive Evolution of SARS-CoV-2. bioRxiv [Internet]. 2020;2020.10.12.336644. Available from: http://biorxiv.org/content/early/2020/11/13/2020.10.12.336644.abstract
11. Platonow V. Ministro da Saúde diz que variante Delta está sendo monitorada [Internet]. Brasil. Agência Brasil. 2021 [cited 2021 Jul 24]. Available from: https://agenciabrasil.ebc.com.br/saude/noticia/2021-07/ministro-da-saude-diz-que-variante-delta-esta-sendo-monitorada
12. Figueiredo Filho DB, Silva LE de O. Social distancing and severe acute respiratory syndrome coronavirus 2 transmission: A case study from Araraquara, São Paulo, Brazil. Rev Soc Bras Med Trop. 2021;54:e01972021.
13. Prefeitura Municipal de Eusébio. Eusébio já realizou testes de Covid-19 em 26,5% da sua população [Internet]. [cited 2021 Jul 30]. Available from: http://eusebio.ce.gov.br/eusebio-ja-realizou-testes-de-covid-19-em-265-da-sua-populacao/
14. Diário do Nordeste. Eusébio tem a maior proporção de população testada para Covid-19 no Ceará [Internet]. [cited 2021 Jul 30]. Available from: https://diariodonordeste.verdesmares.com.br/metro/eusebio-tem-a-maior-proporcao-de-populacao-testada-para-covid-19-no-ceara-1.3076972

Received: 08/06/2021
Accepted: 08/06/2021
Preprint: 08/xx/2021

Este preprint foi submetido sob as seguintes condições:

- Os autores declaram que estão cientes que são os únicos responsáveis pelo conteúdo do preprint e que o depósito no SciELO Preprints não significa nenhum compromisso de parte do SciELO, exceto sua preservação e disseminação.
- Os autores declaram que os necessários Termos de Consentimento Livre e Esclarecido de participantes ou pacientes na pesquisa foram obtidos e estão descritos no manuscrito, quando aplicável.
- Os autores declaram que a elaboração do manuscrito seguiu as normas éticas de comunicação científica.
- Os autores declaram que os dados, aplicativos e outros conteúdos subjacentes ao manuscrito estão referenciados.
- O manuscrito depositado está no formato PDF.
- Os autores declaram que a pesquisa que deu origem ao manuscrito seguiu as boas práticas éticas e que as necessárias aprovações de comitês de ética de pesquisa, quando aplicável, estão descritas no manuscrito.
- Os autores concordam que caso o manuscrito venha a ser aceito e postado no servidor SciELO Preprints, a retirada do mesmo se dará mediante retratação.
- Os autores concordam que o manuscrito aprovado será disponibilizado sob licença Creative Commons CC-BY.
- O autor submissor declara que as contribuições de todos os autores e declaração de conflito de interesses estão incluídas de maneira explícita e em seções específicas do manuscrito.
- Os autores declaram que o manuscrito não foi depositado e/ou disponibilizado previamente em outro servidor de preprints ou publicado em um periódico.
- Caso o manuscrito esteja em processo de avaliação ou sendo preparado para publicação mas ainda não publicado por um periódico, os autores declaram que receberam autorização do periódico para realizar este depósito.
- O autor submissor declara que todos os autores do manuscrito concordam com a submissão ao SciELO Preprints.