

Impact of COVID-19 on Primary Health Care and Ambulatory Care Sensitive Conditions: A Scoping Review

Impacto da COVID-19 na Atenção Primária à Saúde e Suas Condições Sensíveis: Revisão de Escopo

Impacto de la COVID-19 en la Atención Primaria de Salud y en las Condiciones Sensibles a la Atención Ambulatoria: Una Revisión de Alcance

RESUMO

Objetivo: mapear e sintetizar, a partir da literatura, os impactos da pandemia da Covid-19 nas hospitalizações por *Condições Sensíveis* à Atenção Primária à Saúde. **Métodos:** trata-se de uma revisão de escopo, realizada de acordo com as recomendações do JBI. As bases de dados utilizadas na busca foram Medline (Pubmed), Lilacs, Bdenf, Scielo, EMBASE, CINAHL, Scopus e Web of Science. **Resultados:** foram identificados 1066 documentos, dos quais 11 compuseram a revisão. Os principais achados apontam para diminuição das internações por CSAP, principalmente em função das medidas sanitárias adotadas no momento; **Conclusão:** Os resultados evidenciam as disparidades sociais em razão da maior proporção de internações por CSAP em populações mais vulneráveis.

DESCRIPTORES: Condições Sensíveis à Atenção Primária; Covid-19; Atenção primária à saúde; Hospitalização; Revisão.

ABSTRACT

Objective: To map and synthesize, based on the literature, the impacts of the COVID-19 pandemic on hospitalizations due to Ambulatory Care Sensitive Conditions (ACSCs) within Primary Health Care.

Methods: This is a scoping review conducted according to the Joanna Briggs Institute (JBI) recommendations. The databases searched included Medline (PubMed), Lilacs, Bdenf, Scielo, EMBASE, CINAHL, Scopus, and Web of Science. **Results:** A total of 1,066 records were identified, of which 11 met the eligibility criteria and were included in the review. The main findings indicate a reduction in ACSC hospitalizations, primarily associated with sanitary measures implemented during the pandemic. **Conclusion:** The results highlight social disparities, as a higher proportion of ACSC hospitalizations was observed among more vulnerable populations.

DESCRIPTORS: Ambulatory Care Sensitive Conditions; COVID-19; Primary Health Care; Hospitalization; Review

RESUMEN

Objetivo: Mapear y sintetizar, a partir de la literatura, los impactos de la pandemia de la COVID-19 en las hospitalizaciones por Condiciones Sensibles a la Atención Primaria de Salud (CSAP). **Métodos:** Se trata de una revisión de alcance realizada de acuerdo con las recomendaciones del Instituto Joanna Briggs (JBI). Las bases de datos consultadas fueron Medline (PubMed), Lilacs, Bdenf, Scielo, EMBASE, CINAHL, Scopus y Web of Science. **Resultados:** Se identificaron 1.066 documentos, de los cuales 11 cumplieron los criterios de inclusión y compusieron la revisión. Los principales hallazgos señalan una disminución de las hospitalizaciones por CSAP, principalmente en función de las medidas sanitarias adoptadas durante la pandemia. **Conclusión:** Los resultados evidencian desigualdades sociales, dado que una mayor proporción de hospitalizaciones por CSAP se observó en poblaciones más vulnerables.

DESCRIPTORES: Condiciones Sensibles a la Atención Ambulatoria; COVID-19; Atención Primaria de Salud; Hospitalización; Revisión

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Literature Review

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Impact of COVID-19 on Primary Health Care and Ambulatory Care Sensitive Conditions: A Scoping Review



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INTRODUCTION

At the end of 2019 and, more precisely, in the first quarter of 2020, COVID-19 impacted the world, promoting significant changes in the reality of health services, including Primary Health Care (PHC).

These changes were experienced in numerous countries, with similarities and differences in the process, in which the type of Health System (Universal or Non-Universal) influenced decision-making on how PHC would develop its role, whether in the care of Covid-19, or even other health conditions, including Primary Care Sensitive Conditions (PCSC) ⁽¹⁾. The pandemic situation has impacted the care of health conditions, and the consequences and necessary measures, especially in PHC, will be felt over the coming years. However, it is believed that a stronger or weaker PHC may indicate better or worse quality of access, with a consequent impact on the PHC-sensitive conditions indicator ⁽²⁾.

The decrease in care for chronic conditions translates into their worsening and a consequent increase in avoidable deaths and hospitalizations, which will have significant financial costs for the SUS over the coming years ⁽³⁾.

This situation, accompanied by neoliberal policies implemented in the health sector in recent years, may promote the worst-case scenario: a false sense of compliance with sustainable development goals represent-

ed by the achievement of minimum levels of care ⁽⁴⁾, with a likely worsening of the CSAP indicator.

The challenging scenario for healthcare, especially for PHC, calls for reflection on how to act to ensure the type of care that PHC should seek for the population, including in times of pandemic, where the organization of the work process and the relevant role of all members of the health team, including Community Health Agents (CHAs), is something to be valued, as a community-based and proactive approach favors early risk identification and can lead to positive outcomes for the entire healthcare system ⁽⁵⁾.

Thus, integration with other levels of the health system and ensuring access to regular health care are "lessons" to be revisited. It is also worth reinforcing the need for efficient PHC based on its basic principles of comprehensiveness, longitudinality, and community orientation ⁽¹⁾.

There is significant criticism of the limitations of Brazil's PHC in tackling Covid-19, where, due to the national disarticulation promoted by the Federal Government and aggravated by significant local and regional differences in our country, it may "result in increased inequalities in the provision of and access to health services," contributing to the worsening of health indicators, including CSAP ⁽¹⁾.

In this sense, the objective of this study was to map and synthesize, based on the literature, the impacts of the Covid-19 pandemic on hospitalizations for Primary Health Care Sen-

sitive Conditions (PHCSC).

METHODS

Study Design

This is a Scope Review that meets the JBI 2024 and PRISMA-ScR criteria, using these criteria as guidelines in conducting the study ⁽⁶⁾. The protocol was registered with the OSF and is available for consultation at <https://osf.io/ch5s6/>.

The study design applied the PCC (P=Problem, C=Concept, and C=Context) methodology to guide the review question and data collection. The Problem (**P**): the impact of COVID-19; Concept (**C**): Conditions Sensitive to Primary Health Care; Context (**C**): Primary Health Care.

The inclusion criteria were: studies available in electronic databases with indexed journals that addressed conditions sensitive to PHC in the period from 2019 to 2024, avoidable hospitalizations in this period, and/or that were related to the quality and/or impact on PHC in the period. All types of studies were considered, except clinical trials.

Identification of relevant studies

Initially, a search was conducted in the Medical Literature Analysis and Retrieval System Online Medline database via PubMed to identify studies related to the proposed question. The search strategy was adapted according to the specificity of each database (Table 1): Medline (PubMed), Lilacs, Bdenf, Scielo, EMBASE, CINAHL,

Scopus, and Web of Science, with the support of a professional librarian from the Health Sciences Center at the Federal University of Santa Catarina. Studies published up to July 10, 2024, were considered.

The initial search yielded a total of 1,066 articles, defined with the following configuration: Medline - Pubmed (568 articles), Lilacs (74), BDENF (20), Scielo (81), EMBASE (87), CINAHL (40), Scopus (96), Web of Science (100). The search keys used and the results in each of the databases searched were validated by a librarian from the University Library of the Federal University of Santa Catarina (BU/UFSC).

Study selection

The results were exported to the web and mobile app platform for systematic reviews (Rayyan). Based on the results obtained in Rayyan, duplicate studies were eliminated, and the selection of studies was performed by two independent reviewers based on reading the titles and abstracts. Disagreements were resolved by consensus between the two reviewers and, when necessary, a third reviewer was consulted. Documents that met the inclusion criteria were read in full. Letters to the editor, abstracts in event proceedings, research protocols, and documents that did not address the study topic were excluded. The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) extension for scoping reviews and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) were used to organize the process of including documents in the analysis.

RESULTS

After this initial analysis, 554 duplicates were excluded from the total set of 1,066 articles, leaving 512 ar-

ticles for analysis and reading. The team of reviewers was calibrated for the selection of articles and then proceeded to read the titles and abstracts. Forty-eight publications that met the inclusion criteria were selected for full reading, and 11 articles that answered the research question were finally selected (Figure 1).

The analysis of the studies highlighted relevant aspects of the impact of COVID-19 on PHC through PHC-sensitive conditions, where of the 11 articles selected, eight (8) were cross-sectional studies; two (2) cohort studies, and one (1) descriptive/observational cohort study covering the following countries: Australia, Canada, Korea, Croatia, the USA, England, and Italy. (Table 1)

When evaluating the objectives of the eleven selected studies, they presented the following situations related to APSC, such as: assessment of uses and costs to the health sector before and during the pandemic and how much this impacted hospitalizations for APSC (A1); assessment of the trend in hospitalizations and mortality for sensitive conditions during this period (A2, A5, A7, A8, A10, A11); access to the health system and the resulting hospitalization for these causes (A9); introduction of virtual care and the impact on outpatient visits for these preventable causes (A3); impact on pediatric care for ACZS (A4) and the impact of related social and ethnic disparities (A6) (Table 1)⁽⁷⁻¹⁷⁾.

In evaluating the results of the studies, article A1 addressed the extent to which COVID-19 impacted new enrollments in US health insurance, where the response to the research question was given by the reduction in both the number of these visits and the reduction in avoidable hospitalizations.

Article A2 pointed to an impact on PHC through a reduction in outpatient visits, which was accompanied by a reduction in avoidable hospital-

izations, with a temporary increase in mortality in the first year of the pandemic.

Thus, considering the restrictions on movement imposed by global health authorities, another Canadian study (A3) showed a decrease in new in-person visits for sensitive conditions and an increase in follow-up visits for these causes.

The impact of the pandemic on pediatrics is something to be considered, as any delays in treating certain conditions may contribute to their worsening⁽¹⁸⁾, considering the situations imposed in the treatment of COVID-19 or even the voluntary decrease in demand for care by the population.

Thus, the article (A4), which evaluated pediatric care from 2018 to 2020, pointed to a reduction in care and hospitalizations for upper airway changes in children, while contrasting with an increase in hospitalizations.

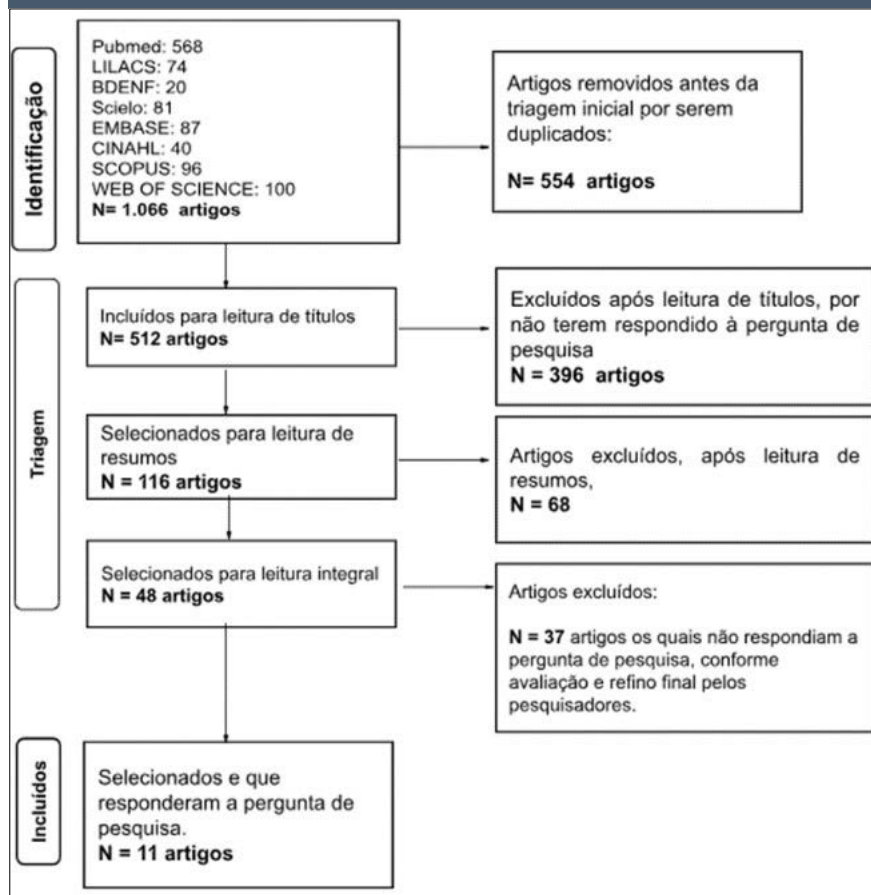
The impact of COVID-19 in the United Kingdom on avoidable hospitalizations in 2020 and 2021, with the aim of describing trends in this area during the period, found an overall decrease in such hospitalizations and showed that the periods of lockdown imposed by health authorities did not lead to an increase in inequalities in care, most likely associated with lower demand for health services (A5).

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Figure 1 - Process of inclusion and exclusion of documents found in accordance with the recommendations of the Preferred Reporting Items for Systematic Review and Meta-Analysis- PRISMA



The same study (A5) also pointed out that between the end of 2021 and throughout 2022, inequalities became more pronounced at the regional level than at the social level, pointing to issues of differences between less developed regions.

The impact of the pandemic on hospitalizations for PHC-sensitive conditions and the relationship with racial inequalities can be assessed through a study (A6) that observed more than 12,000 hospitalizations at the University of California, where, although there was an overall reduction in the absolute number and in all ethnic groups, the percentage was lower among African Americans and Asians compared to whites.

This situation becomes more striking when evaluating hospitalizations for diabetes mellitus, which, because they are a condition directly sensitive to PHC, prompt reflection on the differences in care between different ethnic groups (A6).

The reduction in the number of hospitalizations throughout the pandemic was similar across the studies evaluated (A7, A8, A10, and A11), with the Croatian study (A7) drawing attention by pointing out a decrease not only in the absolute number of hospitalizations for CSAP but also in the relative risk (RR) of hospitalization for this problem.

A review of seven longitudinal cohorts demonstrated by A9 pointed to a higher probability of hospitalization

for PHC-sensitive conditions in users who had difficulty accessing follow-up for these conditions during the pandemic, demonstrating that delays in care can be a trigger for an increase in the number of hospitalizations for PHC-sensitive conditions.

DISCUSSION

The study evaluated 11 articles that addressed the research question but pointed to the need for in-depth assessments and further studies to determine with greater robustness how much the pandemic affected the reality of this important indicator.

It is in this situation that, when evaluating article A1, we find that the actions implemented at the height of the pandemic and the fear of contamination are factors that may have contributed to the decrease in care for new Medicaid members in the US, which occurred similarly in our country, where the pandemic severely impacted our healthcare system⁽¹⁹⁾.

The reduction in outpatient visits and hospitalizations for CSAPs pointed out in A2, A4, A7, A10, and A11, and the consequent increase in mortality from these causes demonstrated in A2 and A7, especially in vulnerable populations⁽¹²⁾, were similar to aspects experienced in Brazil, where the increase in mortality rates from chronic diseases was an indicator of how severely COVID-19 affected the entire chain of care for diseases and conditions, reinforcing the need for attention to sensitive conditions in all contexts, especially during health emergencies such as the SARS-CoV-2 pandemic⁽²⁰⁾.

The changes experienced in the healthcare process over the years of the pandemic were another aspect present in the review, which was complementary data observed in study A3, where it shows the impact of the decrease in face-to-face care and a substantial increase in virtual care, which was a widely used strategy both to control

the movement of people and as a way to avoid overburdening the healthcare system⁽⁴⁵⁾.

The review also pointed out in A4 the impact on avoidable hospitalizations in the context of pediatrics in an Australian region, further reinforcing the side effects of the COVID-19 pandemic on sensitive conditions, the worsening of chronic conditions, and an increase in intensive care unit admissions for these causes. This situation, which has an impact on both the worsening of chronic or acute health conditions and the consequent negative outcomes that this may cause, especially considering CSAP, is something that needs to be addressed in the coming years.

This situation, which has an impact on both the worsening of chronic or acute health conditions and the consequent negative outcomes that this may cause, especially considering CSAP, is something that needs to be addressed in the coming years because, as presented in A4, vulnerable populations (e.g., children with diabetes mellitus) require differentiated care and follow-up.

Health inequalities were present in the study, where locoregional and social aspects were visualized and made an important contribution to the im-

pact on sensitive conditions (A5 and A6)⁽¹¹⁻¹²⁾.

The locoregional differences present in article A5⁽¹¹⁾, where parts of the northern United Kingdom were the most impacted in terms of CSAP care during the two years following the start of the pandemic (2021-2022), coinciding with the impact of Covid-19 in these same locations⁽¹¹⁾. This situation coincides with aspects and differences present in Brazil raised by Newsletter number 09 of the Health System Performance Evaluation Project (PROAD-ESS) of FIOCRUZ, where areas in the north and northeast had higher ICSAP rates than other regions⁽²³⁾.

Racial disparities were present in article A6, where population groups composed of African Americans and Asians showed greater vulnerability to ICSAP than whites, a fact that, in addition to differences in health care, points to historical inequalities that present a challenge for any health system, including the Unified Health System (SUS)⁽²⁴⁾.

The low production of research on the topic at the time of data collection can be considered a limitation of the study. On the other hand, this aspect reinforces the relevance of the topic for planning and addressing the conditions

resulting from the pandemic period. As a contribution to public health and nursing, we emphasize that this study reinforces the need to evaluate and plan policies to address public health emergencies.

FINAL CONSIDERATIONS

This review showed that among the initial impacts of COVID-19 on conditions sensitive to PHC, in the period between 2019 and 2024, was an initial decrease in hospitalizations for these causes, which were probably associated with health measures implemented by Health Systems aimed at reducing the spread of SARS-CoV-2 and which represented, at that initial moment, the main measure necessary to address the pandemic.

In addition to issues related to the number of hospitalizations (their decrease), the analysis and reading of the texts pointed to aspects of increased racial inequalities, local and regional differences, and the worsening of some chronic conditions⁽²⁵⁾ related to delays in care, in the context of countries including Brazil.

Table 1: Publication title, country of origin, and results.

Code	Title/Country	Results
A1	Comparing health care use and costs among new Medicaid enrollees before and during the COVID-19 pandemic ⁽²⁶⁾ . (USA)	New Medicaid enrollees during the COVID-19 period used significantly fewer health services compared to new enrollees before COVID-19.
A2	Trends in all-cause mortality and inpatient and outpatient visits for ambulatory care sensitive conditions during the first year of the COVID-19 pandemic: A population-based study ⁽²⁷⁾ . (Canada)	Reductions in ambulatory care visits for ACSCs, combined with decreased hospital admissions, may have been associated with the temporary increase in mortality—experienced disproportionately by immigrants and individuals with mental health conditions—during the first year of the pandemic.
A3	Outpatient visit trends for internal medicine ambulatory care sensitive conditions after the COVID-19 pandemic: a time-series analysis ⁽²⁸⁾ . (Canada)	Decrease in new in-person visits and an increase in follow-up appointments. Substantial rise in virtual visits during the COVID-19 pandemic.
A4	Changes in pediatric Ambulatory Care Sensitive Conditions in Victoria, 2018-20: the COVID-19 effect ⁽²⁹⁾ . (Australia)	Overall reduction in hospitalization rates for ACSCs. The proportion of children hospitalized for ENT infections decreased during the COVID-19 period, while there was an increase in the proportion of hospitalizations and complications related to diabetes, including ICU admissions.
A5	Trends in inequalities in avoidable hospitalizations across the COVID-19 pandemic: A cohort study of 23.5 million people in England ⁽³⁰⁾ . (England)	General decline in ACSC hospitalizations, accompanied by widening regional inequalities after lockdown periods.

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A6	Racial disparities in potentially avoidable hospitalizations during the COVID-19 pandemic ⁽³¹⁾ . (USA)	Decrease in ACSC hospitalizations across all ethnic groups during the pandemic, with smaller reductions among African American and Asian populations (–8% and –16%, respectively). Racial disparities affected ACSC hospitalizations among White and African American populations. For example, diabetes-related hospitalizations increased among Black patients (+127%) and decreased among White patients (–58%).
A7	The Influence of the COVID-19 Pandemic on Hospitalizations for Ambulatory Care-Sensitive Conditions in Split-Dalmatia County, Croatia ⁽³²⁾ . (Croatia)	Reduction in ACSC hospitalizations and in the Relative Risk (RR) of ACSC-related hospitalizations, except for admissions due to Pelvic Inflammatory Disease. Increase in the RR of death from ACSCs.
A8	Evaluation of the indirect impact of the SARS-CoV-2 epidemic on primary and ambulatory care processes using synthetic quality measures and graphic representations ⁽³³⁾ . (Italy)	Reduction in hospitalizations between 2019 and 2020, including cardiovascular events such as myocardial infarction and stroke.
A9	Associations between self-reported healthcare disruption due to COVID-19 and avoidable hospital admission: evidence from seven linked longitudinal studies for England ⁽³⁴⁾ . (England)	Individuals who were unable to access healthcare during the pandemic were more likely to experience an ACSC-related hospitalization afterward.
A10	Emergency department utilization and hospital admissions for ambulatory care sensitive conditions among people seeking a primary care provider during the COVID-19 pandemic ⁽³⁵⁾ . (Canada)	ACSC hospitalizations decreased during the pandemic; individuals on waiting lists had higher hospitalization rates compared to those not on the list, but lower than in the pre-pandemic period.
A11	Trends in the quality of primary care and acute care in Korea from 2008 to 2020: a cross-sectional study ⁽³⁶⁾ (Korea)	Case fatality rates for myocardial infarction and stroke decreased over the years; in 2020, ACSC rates declined.

Source: Own elaboration

REFERENCES

- Prado NM de BL, Rossi TRA, Chaves SCL, Barros SG de, Magno L, Santos HLPC dos, et al.. The international response of primary health care to COVID-19: document analysis in selected countries. *Cad Saúde Pública* [Internet]. 2020;36(12):e00183820. Available from: <https://doi.org/10.1590/0102-311X00183820>.
- Lamberti-Castronuovo A, Valente M, Aleni C, Hubloue I, Ragazzoni L, Barone-Adesi F. Using Ambulatory Care Sensitive Conditions to Assess Primary Health Care Performance during Disasters: A Systematic Review. *Int J Environ Res Public Health* [Internet]. 2022 Jul 27;19(15):9193. Available from: <https://pubmed.ncbi.nlm.nih.gov/35954559/>
- Mendes EV. O lado oculto de uma pandemia: a terceira onda da covid-19 ou o paciente invisível [Internet]. 2020 Dec. Available from: <https://www.conass.org.br/wp-content/uploads/2020/12/Terceira-Onda.pdf>
- Göttems LBD, Camilo LP, Mavrot C, Mollo MLR. As reformas dos sistemas de saúde da América Latina: influências neoliberais e desafios aos Objetivos de Desenvolvimento Sustentável. *Ciênc Saúde Coletiva* [Internet]. 2021 Oct 25; 26(10):4383–96. Available from: <https://doi.org/10.1590/1413-812320212610.11192021>
- Maciel FBM, Santos HLPC dos, Carneiro RA da S, Souza EA de, Prado NM de BL, Teixeira CF de S, et al. Community health workers: reflections on the health work process in Covid-19 pandemic times. *Ciênc Saúde Coletiva* [Internet]. 2020 Oct 1; 25(supl2):4185–95. Available from: <https://doi.org/10.1590/1413-812320202510.2.281020202022> Oct 7; Available from: <https://www.sciencedirect.com/science/article/pii/S016885102200272X>
- Peters MD, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. *JBIM Manual for Evidence Synthesis - JBI Manual for Evidence Synthesis* [Internet]. 2024. Available from: <https://synthesismanual.jbi.global/>
- Wright B, Anderson D, Whitaker R, Shrader P, Bettger JP, Wong C, et al. Comparing health care use and costs among new Medicaid enrollees before and during the COVID-19 pandemic. *BMC Health Serv Res*. 2021 Oct 25; 21(1):1152 Available from: <https://doi.org/10.1186/s12913-021-07027-6>.
- Kendzierska T, Zhu DZ, Pugliese M, Manuel DG, J. Mark FitzGerald, Povitz M, et al. Trends in all-cause mortality and inpatient and outpatient visits for ambulatory care sensitive conditions during the first year of the COVID-19 pandemic: A population-based study. *J Hosp Med*. 2022 Sep;17(9):726–737. Available from: <https://doi.org/10.1002/jhm.12920>.
- Pendrith C, Nayyar D, Chu C, O'Brien T, Lyons OD, Agarwal P, et al. Outpatient visit trends for internal medicine ambulatory care sensitive conditions after

the COVID-19 pandemic: a time-series analysis. *BMC Health Serv Res*. 2022 Feb 14;22(1):198. Available from: <https://doi.org/10.1186/s12913-022-07566-6>.

10. White M, Craig S, Chu WL, Hiscock H. Changes in paediatric ambulatory care sensitive conditions in Victoria, 2018–20: the COVID-19 effect? *Aust Health Rev [Internet]*. 2022 Oct 20;47(1):77–87. Available from: <https://doi.org/10.1071/AH22050>

11. Green MA, McKee M, Massey J, Mackenna B, Amir Mehrkar, Bacon S, et al. Trends in inequalities in avoidable hospitalisations across the COVID-19 pandemic: a cohort study of 23.5 million people in England. *BMJ Open [Internet]*. 2024 Jan 1;14(1):e077948–8. Available from: <https://doi.org/10.1136/bmjopen-2023-077948>

12. Leuchter RK, Villaflores CWA, Norris KC, Sorensen A, Vangala S, Sarkisian CA. Racial Disparities in potentially avoidable hospitalizations during the COVID-19 Pandemic. *Am J Prev Med [Internet]*. 2021 Aug 1; 61(2):235–9. Available from: <https://pubmed.ncbi.nlm.nih.gov/33820665/>

13. Marasović Šušnjara I, Mijaković M, Jurčev Sav-ičević A. The influence of the COVID-19 Pandemic on hospitalizations for ambulatory care-sensitive conditions in Split-Dalmatia County, Croatia. *Medicina (Kaunas) [Internet]*. 2024 Mar 22; 60(4):523. Available from: <https://doi.org/10.3390/medicina60040523>.

14. Di Martino M, D'Ovidio M, Alagna M, Balducci M, Cappai G, Lallo A, et al. Evaluation of the indirect impact of the Sars-CoV-2 epidemic on primary and ambulatory care processes using synthetic quality measures and graphic representations. *Recenti Prog Med [Internet]*. 2023 Apr;118(4):222–9. Available from: <https://doi.org/10.1701/4009.39889>

15. Green MA, McKee M, Hamilton OK, Shaw RJ, Macleod J, Boyd A, et al. Associations between self-reported healthcare disruption due to covid-19 and avoidable hospital admission: evidence from seven linked longitudinal studies for England. *BMJ [Internet]*. 2023 Jul 19;382:e075133. Available from: <https://doi.org/10.1136/bmj-2023-075133>.

16. Marshall EG, Stock D, Buote R, Andrew MK, Bretton M, Cossette B, et al. Emergency department utilization and hospital admissions for ambulatory care sensitive conditions among people seeking a primary care provider during the COVID-19 pandemic. *CMAJ Open [Internet]*. 2023 Jun 20; 11(3):E527–E536. Available from: <https://doi.org/10.9778/cmajo.20220128>.

17 Gwon YG, Han SJ, Kim KH. Trends in the Quality of Primary Care and Acute Care in Korea From 2008 to

2020: A Cross-sectional Study. *J Prev Med Public Health [Internet]*. 2023 May;56(3):248–254. Available from: <https://doi.org/10.3961/jpmph.23.015>.

18. Lu S. Ambulatory Care Sensitive Conditions in Pediatrics: Time for a Reassessment. *Pediatrics [Internet]*. 2021 Aug;148(2):e2021050598. Available from: <https://doi.org/10.1542/peds.2021-050598>.

19. Dague L, Badaracco N, DeLeire T, Sydnor J, Tilhou AS, Friedsam D. Trends in Medicaid Enrollment and Disenrollment During the Early Phase of the COVID-19 Pandemic in Wisconsin. *JAMA Health Forum [Internet]*. 2022 Feb 4; 3(2):e214752. Available from: <https://doi.org/10.1001/jamahealthforum.2021.4752>

20. Jardim BC, Migowski A, Corrêa F de M, Silva GA e. Covid-19 in Brazil in 2020: impact on deaths from cancer and cardiovascular diseases. *Rev Saúde Pública [Internet]*. 2022; 56:22. Available from: <https://doi.org/10.11606/s1518-8787.2022056004040>

21. Mendonça CS, Rosset I, Gonçalves MR, Bastos CGM, Medeiros AF de, Dias AV, et al. Resposta assistencial de um serviço docente assistencial de APS à pandemia da COVID-19. *APS em revista [Internet]*. 2020 Apr 15; 2(1):33–7. Available from: <https://aps.emnuvens.com.br/aps/article/view/63/46>

22. Alves JCT, Lopes CRC, Guzzi GP, Pinto MV, Ribeiro LMM, Silva SBIme, et al. Impacto da pandemia de COVID-19 na epidemiologia pediátrica. *Resid Pediatr [Internet]*. 2020;10(3). Disponível em: <https://doi.org/10.25060/residpediatr-2020.v10n3-382>

23. Viacava F, Carvalho CC, Martins M, Oliveira RD. Internações por Condições Sensíveis à Atenção Primária (ICSAP): análise descritiva por sexo e idade e diagnósticos principais. *Boletim Informativo Projeto de Avaliação do Desempenho dos Sistemas de Saúde [Internet]*. 2022, 9. Disponível em: https://www.proadess.iciet.fiocruz.br/Boletim_n9_PROADESS_ICSAP_out2022.pdf

24. Oliveira RG de, Cunha AP da, Gadelha AG dos S, Carpio CG, Oliveira RB de, Corrêa RM. Desigualdades raciais e a morte como horizonte: considerações sobre a COVID-19 e o racismo estrutural. *Cad Saúde Pública [Internet]*. 2020; 36(9). Available from: <https://doi.org/10.1590/0102-311X00150120>

25. Ribeiro EG, Pinheiro PC, Nascimento BR, Cacique JPP, Teixeira RA, Nascimento J de S, et al. Impact of the COVID-19 pandemic on hospital admissions for cardiovascular diseases in a large Brazilian urban center. *Rev Soc Bras Med Trop [Internet]*. 2022;55:e0264–2021. Available from: <https://doi.org/10.1590/0037-8682-0264-2021>