

*Disclaimer: We kindly ask to acknowledge that due to the diverse and heterogeneous nature of the questions and the dynamic pandemic situation some of the information might be incomplete or only correct for the time being. Thus, please consider the date with the below information. All available information was provided by a country representative from the PHIRI network during or in connection to the respective meeting.*

Date: 11.04.2022

Date of last update: 27.04.2022

Table 1: Country responses: COVID-19 pandemic evaluation

Country	<p><b>Topic: COVID-19 pandemic evaluation</b></p> <ul style="list-style-type: none"> <li>• Have any data analyses or studies been published in your country yet (on national level, or comparing several countries) that investigate direct and indirect health impacts of the pandemic (including indicators such as excess mortality, burden of disease, diminished mental health and well-being, diminished physical activity, loneliness, years of life lost, DALYs/QALYs etc.)?</li> <li>• Other than already published works, is there data analysis currently ongoing or in preparation in your country that investigates direct and indirect health impacts of the pandemic? If so, which indicators are mainly being investigated in this scope?</li> </ul>
Albania	<ul style="list-style-type: none"> <li>• Risk factors for poor outcome of patients with Coronavirus disease 2019 (COVID-19) in Albania: <a href="https://pubmed.ncbi.nlm.nih.gov/34669590/">https://pubmed.ncbi.nlm.nih.gov/34669590/</a></li> <li>• Decreased hospital visits and increased mortality rate in the emergency department during the COVID-19 pandemic: Evidence from Albania: <a href="https://www.medrxiv.org/content/10.1101/2021.10.07.21264204v1">https://www.medrxiv.org/content/10.1101/2021.10.07.21264204v1</a></li> </ul>
Austria	<p>Most (ongoing and finished) studies in Austria are listed on the following website. The list includes for example studies on psychosocial and mental health impacts, economic impacts, educational impacts but also on mortality and burden of disease: <a href="https://covid19studien.ihs.ac.at/covid19">https://covid19studien.ihs.ac.at/covid19</a></p> <p>Additional (and at least partially redundant) lists of studies can be found on the following website, the first one with a focus on medical research, the other with a focus on social sciences:</p> <ul style="list-style-type: none"> <li>- <a href="https://www.meduniwien.ac.at/web/forschung/forschung-zu-covid-19/">https://www.meduniwien.ac.at/web/forschung/forschung-zu-covid-19/</a></li> <li>- <a href="https://data.aussda.at/dataverse/covid19">https://data.aussda.at/dataverse/covid19</a></li> </ul> <p>Regarding overall mortality: There is a continuous monitoring of overall and excess mortality in Austria stratified by regions: <a href="https://wien1x1.at/mortality-provinces/">https://wien1x1.at/mortality-provinces/</a></p> <p>In addition, there is an age-stratified analysis of all-cause-mortality rates comparing (COVID-19-) vaccinated vs. unvaccinated individuals between September and December 2021 (in German): <a href="https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/gesundheit/covid19/127483.html">https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/gesundheit/covid19/127483.html</a></p>
Belgium	<ul style="list-style-type: none"> <li>- HELICON - Sciensano: Social inequalities with regard to COVID-19 testing, infection, hospitalization and mortality: <a href="https://www.brain-helicon.be/about/work-packages">https://www.brain-helicon.be/about/work-packages</a>. Status: Ongoing</li> <li>- HELICON - Sciensano: Direct long-term health impacts of COVID-19 patients (medical costs for hospitalized patients, long-term complications): <a href="https://www.brain-helicon.be/about/work-packages">https://www.brain-helicon.be/about/work-packages</a>. Status: Ongoing</li> <li>- HELICON - Sciensano: Indirect impact of the COVID-19 crisis in terms of Quality-Adjusted Life Year (QALY) losses, and changes in health care use and associated expenses, and productivity losses: <a href="https://www.brain-helicon.be/about/work-packages">https://www.brain-helicon.be/about/work-packages</a>. Status: Ongoing</li> <li>- COVID-19 Health Surveys - Sciensano: Impact of the pandemic on the health and well-being of the general population in Belgium (mental and social health, attitudes towards vaccination, changes in health-related behaviors, domestic violence, employment): <a href="https://www.sciensano.be/en/projects/covid-19-health-surveys">https://www.sciensano.be/en/projects/covid-19-health-surveys</a>. Status: Published</li> <li>- BE-HEROES - Sciensano: Impact of the COVID-19 pandemic on the mental health of healthcare workers: <a href="https://www.sciensano.be/en/biblio/impact-covid-19-pandemic-mental-health-healthcare-workers-study-protocol-covid-19-health-care">https://www.sciensano.be/en/biblio/impact-covid-19-pandemic-mental-health-healthcare-workers-study-protocol-covid-19-health-care</a>. Status: Ongoing</li> </ul>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101018317

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	<ul style="list-style-type: none"> <li>- Audits Hospital &amp; Transport Surge Capacity Committee: Estimate of non-performed care in hospitals during the 1st, 2nd and 3rd waves: <a href="https://www.riziv.fgov.be/fr/nouvelles/Pages/covid19-estimation-soins-non-effectues-hopitaux-1re-2e-3e-vagues.aspx">https://www.riziv.fgov.be/fr/nouvelles/Pages/covid19-estimation-soins-non-effectues-hopitaux-1re-2e-3e-vagues.aspx</a>. Status: Published</li> <li>- Working Group Social Impacts COVID-19: Monitoring the social impact of the COVID-19 crisis in Belgium: <a href="https://socialsecurity.belgium.be/fr/elaboration-de-la-politique-sociale/impact-social-covid-19">https://socialsecurity.belgium.be/fr/elaboration-de-la-politique-sociale/impact-social-covid-19</a>. Status: Published / Ongoing</li> </ul>
<b>Bosnia &amp; Herzegovina</b>	In the Federation of Bosnia and Herzegovina we have done research of excess mortality. With the Robert-Koch Institut we are doing on methodology Daly's and Qaly'S, Years of life lost (we are preparing data). We analysing change in life expectancy (routine statistic).
<b>Czech Republic</b>	<p>Article on physical activity among children during COVID-19 pandemic <a href="https://pubmed.ncbi.nlm.nih.gov/34237088/">https://pubmed.ncbi.nlm.nih.gov/34237088/</a></p> <p>Evaluation of effectiveness of policy measures <a href="https://khp.vse.cz/aktuality/sevcik-m-et-al-vyhodnoceni-efektivit-plosnych-restriktivnich-vladnich-opatreni-v-reakci-na-pandemii-covid-19-v-ceske-republice-vyzkumna-studie-khp/">https://khp.vse.cz/aktuality/sevcik-m-et-al-vyhodnoceni-efektivit-plosnych-restriktivnich-vladnich-opatreni-v-reakci-na-pandemii-covid-19-v-ceske-republice-vyzkumna-studie-khp/</a></p> <p>YLL was computed and published <a href="https://www.iniciativa-snih.cz/veda-proti-covid-19-2-2-2021-kolik-let-zivota-jsme-ztratili-v-teto-epidemii/">https://www.iniciativa-snih.cz/veda-proti-covid-19-2-2-2021-kolik-let-zivota-jsme-ztratili-v-teto-epidemii/</a></p> <p>Excess mortality delayed care, mainly in the area of cancer treatment, screening etc. Prevalence of current mental disorders before and during the second wave of COVID-19 pandemic: an analysis of repeated nationwide cross-sectional surveys. <a href="https://pubmed.ncbi.nlm.nih.gov/34062293/">https://pubmed.ncbi.nlm.nih.gov/34062293/</a></p> <p>Mental Health and Quality &amp; Safety of Care in Czech Residential Institutions during the COVID 19 Pandemic: A Mixed Methods Study <a href="https://rdcu.be/ch7Sd">https://rdcu.be/ch7Sd</a></p>
<b>Estonia</b>	<p>Data/prognoses are used in daily health politics, not so many published reports/articles exist about health impacts. Expected life expectancy, burden of disease, national mental health study are in works, results not final and published yet.</p> <p>Study on the prevalence of coronavirus in Estonia: <a href="#">The 1st year of the COVID-19 epidemic in Estonia: a population-based nationwide sequential/consecutive cross-sectional study - ScienceDirect</a></p> <p>Analysis of COVID-19 cases and identification of risk groups (Project CORIVA):</p> <ul style="list-style-type: none"> <li>- <a href="#">Long-Term Mortality Following COVID-19 Infection: A National Cohort Study From Estonia by Anneli Uuskula, Tuuli Jürgenson, Heti Pisarev, Raivo Kolde, Tatjana Meister, Anna Tisler, Kadri Suija, Ruth Kalda, Marko Piirsoo, Krista Fischer :: SSRN</a></li> <li>- <a href="#">Clinical Characteristics and Risk Factors for COVID-19 Infection and Disease Severity: A Nationwide Observational Study in Estonia by Tatjana Meister, Heti Pisarev, Raivo Kolde, Ruth Kalda, Kadri Suija, Lili Milani, Liis Karo-Astover, Marko Piirsoo, Anneli Uuskula :: SSRN</a></li> <li>- <a href="#">Acute COVID-19 severity and mental health morbidity trajectories in patient populations of six nations: an observational study - The Lancet Public Health</a></li> </ul> <p>Awareness of the coronavirus and related attitudes in Estonia: nationwide study:</p> <ul style="list-style-type: none"> <li>- <a href="#">Teadlikkus koroonaviirusest ja seotud hoiakud Eestis: rahvastikupõhine küsitlusuuring. COVID-19 kiiruuring   Tervise Arengu Instituut (tai.ee)</a> (report in Estonian) and article</li> <li>- <a href="#">Perceived Stress During the First Wave of COVID-19 Outbreak: Results From Nationwide Cross-Sectional Study in Estonia (nih.gov)</a></li> <li>- <a href="#">COVID-19 kaugmõjud (haigekassa.ee)</a> (in Estonian, long COVID-19 expenses)</li> <li>- <a href="#">Kui palju on vaktsineerimine hoidnud kokku tervishoiu raha (haigekassa.ee)</a> (in Estonian, COVID-19 expenses by vaccination status)</li> </ul>
<b>Finland</b>	<p>See some related links from Finland in English:</p> <ul style="list-style-type: none"> <li>- Mental health: <a href="https://thl.fi/en/web/thlfi-en/-/coronavirus-epidemic-has-caused-psychological-distress-especially-among-highly-educated-women?redirect=%2Fen%2Fweb%2Fmental-health%2Fwhat-s-new">https://thl.fi/en/web/thlfi-en/-/coronavirus-epidemic-has-caused-psychological-distress-especially-among-highly-educated-women?redirect=%2Fen%2Fweb%2Fmental-health%2Fwhat-s-new</a></li> </ul>



- Mortality: <https://thl.fi/en/web/infectious-diseases-and-vaccinations/what-s-new/coronavirus-covid-19-latest-updates/situation-update-on-coronavirus/statistics-on-deaths-related-to-covid-19>
- Among migrant – availability of information: <https://urn.fi/URN:ISBN:978-952-343-632-9>
- Impact of health of migrants: <https://urn.fi/URN:ISBN:978-952-343-683-1>

#### Some Finnish publications

- Laura Kestilä, Satu Kapiainen, Merita Mesiäislehto, Pekka Rissanen (Ed.). Effects of the COVID19-epidemic on well-being, the service system, and the national economy: Expert evaluation, spring 2022 Finnish Institute for Health and Welfare, THL Report 4/2022 [Covid-19-epidemiaan vaikutukset hyvinvointiin, palvelujärjestelmään ja kansantalouteen: Asiantuntija-arvio, kevät 2022]. 225 pages. Helsinki 2022. ISBN ISBN 978-952-343-865-1. Available online at <https://urn.fi/URN:ISBN:978-952-343-865-1>
- Pia Mäkelä, Ingeborg Rossow, Inger Synnøve Moan, Elin K Bye, Carolin Kilian, Kirsimarja Raitasalo, Peter Allebeck : Measuring changes in alcohol use in Finland and Norway during the COVID-19 pandemic: Comparison between data sources. Int J Methods Psychiatr Res. 2021 Dec;30(4):e1892. doi: [10.1002/mpr.1892](https://doi.org/10.1002/mpr.1892)
- Tiia Kekäläinen, Enni-Maria Hietavala, Matti Hakamäki, Sarianna Sipilä, Eija K Laakkonen, Katja Kokko: Personality Traits and Changes in Health Behaviors and Depressive Symptoms during the COVID-19 Pandemic: A Longitudinal Analysis from Pre-pandemic to Onset and End of the Initial Emergency Conditions in Finland. Int J Environ Res Public Health. 2021 Jul 21;18(15):7732. doi: [10.3390/ijerph18157732](https://doi.org/10.3390/ijerph18157732).
- Elina Mattila, Jaana Peltokoski, Marko H Neva, Marja Kaunonen, Mika Helminen, Anna-Kaisa Parkkila: COVID-19: anxiety among hospital staff and associated factors. Ann Med. 2021 Dec;53(1):237-246. doi: [10.1080/07853890.2020.1862905](https://doi.org/10.1080/07853890.2020.1862905).
- Palmer K, Monaco A, Kivipelto M, Onder G, Maggi S, Michel JP, Prieto R, Sykara G, Donde S.: The potential long-term impact of the COVID-19 outbreak on patients with non-communicable diseases in Europe: consequences for healthy ageing. Aging Clin Exp Res. 2020 Jul;32(7):1189-1194. doi: [10.1007/s40520-020-01601-4](https://doi.org/10.1007/s40520-020-01601-4)
- Lohiniva AL, Dub T, Hagberg L, Nohynek H.: Learning about COVID-19-related stigma, quarantine and isolation experiences in Finland. PLoS One. 2021 Apr 14;16(4):e0247962. doi: [10.1371/journal.pone.0247962](https://doi.org/10.1371/journal.pone.0247962)
- Laukkala T, Suvisaari J, Rosenström T, Pukkala E, Junntila K, Haravuori H, Tuisku K, Haapa T, Jylhä P.: COVID-19 Pandemic and Helsinki University Hospital Personnel Psychological Well-Being: Six-Month Follow-Up Results. Int J Environ Res Public Health. 2021 Mar 4;18(5):2524. doi: [10.3390/ijerph18052524](https://doi.org/10.3390/ijerph18052524).
- Partonen T, Kiviruusu O, Grainger M, Suvisaari J, Eklin A, Virtanen A, Kauppila R.: Suicides from 2016 to 2020 in Finland and the effect of the COVID-19 pandemic. Br J Psychiatry. 2022 Jan;220(1):38-40. doi: [10.1192/bjp.2021.136](https://doi.org/10.1192/bjp.2021.136).
- Hammer CC, Cristea V, Dub T, Sivelä J.: Update on: high but slightly declining COVID-19 vaccine acceptance and reasons for vaccine acceptance, Finland April to December 2020. Epidemiol Infect. 2021 Aug 3;149:e187. doi: [10.1017/S0950268821001680](https://doi.org/10.1017/S0950268821001680)
- Heiskanen T, Rinne H, Miettinen S, Salminen AL.: Uptake of Tele-Rehabilitation in Finland amongst Rehabilitation Professionals during the COVID-19 Pandemic. Int J Environ Res Public Health. 2021 Apr 20;18(8):4383. doi: [10.3390/ijerph18084383](https://doi.org/10.3390/ijerph18084383).
- Ng K, Koski P, Lyyra N, Palomaki S, Mononen K, Blomqvist M, Vasankari T, Kokko S.: Finnish late adolescents' physical activity during COVID-19 spring 2020 lockdown. BMC Public Health. 2021 Dec 1;21(1):2197. doi: [10.1186/s12889-021-12263-w](https://doi.org/10.1186/s12889-021-12263-w).
- Juutinen A, Sarvikivi E, Laukkanen-Nevala P, Helve O.: Closing lower secondary schools had no impact on COVID-19 incidence in 13-15-year-olds in Finland. Epidemiol Infect. 2021 Oct 26;149:e233. doi: [10.1017/S0950268821002351](https://doi.org/10.1017/S0950268821002351).
- Baum U, Poukka E, Palmu AA, Salo H, Lehtonen TO, Leino T.: Effectiveness of vaccination against SARS-CoV-2 infection and Covid-19 hospitalisation among Finnish elderly and chronically ill-An interim analysis of a nationwide cohort study. PLoS One. 2021 Nov 18;16(11):e0258704. doi: [10.1371/journal.pone.0258704](https://doi.org/10.1371/journal.pone.0258704)
- Raitio A, Ahonen M, Jääskelä M, Jalkanen J, Luoto TT, Haara M, Nietosvaara Y, Salonen A, Pakkasjärvi N, Laaksonen T, Sinikumpu JJ, Syvänen J.: Reduced Number of Pediatric Orthopedic Trauma Requiring Operative Treatment during COVID-19 Restrictions: A Nationwide Cohort Study. Scand J Surg. 2021 Jun;110(2):254-257. doi: [10.1177/1457496920968014](https://doi.org/10.1177/1457496920968014)



	<ul style="list-style-type: none"> <li>- Rimpelä A, Lindfors P, Kinnunen JM, Myöhänen A, Hotulainen R, Koivuhovi S, Vainikainen MP.: The Way of Distance Teaching Is Related to Adolescent Students' Health and Loneliness during the School Closure in Finland. Int J Environ Res Public Health. 2021 Nov 25;18(23):12377. doi: <a href="https://doi.org/10.3390/ijerph182312377">10.3390/ijerph182312377</a>.</li> <li>- Holm ME, Sainio P, Parikka S, Koskinen S.: The effects of the COVID-19 pandemic on the psychosocial well-being of people with disabilities. Disabil Health J. 2022 Apr;15(2):101224. doi: <a href="https://doi.org/10.1016/j.dhjo.2021.101224">10.1016/j.dhjo.2021.101224</a></li> <li>- Lohiniva AL, Sane J, Sibenberg K, Puumalainen T, Salminen M.: Understanding coronavirus disease (COVID-19) risk perceptions among the public to enhance risk communication efforts: a practical approach for outbreaks, Finland, February 2020. Euro Surveill. 2020 Apr;25(13):2000317. doi: <a href="https://doi.org/10.2807/1560-7917.ES.2020.25.13.2000317">10.2807/1560-7917.ES.2020.25.13.2000317</a>.</li> <li>- Auranen K, Shubin M, Karhunen M, Sivelä J, Leino T, Nurhonen M.: Social Distancing and SARS-CoV-2 Transmission Potential Early in the Epidemic in Finland. Epidemiology. 2021 Jul 1;32(4):525-532. doi: <a href="https://doi.org/10.1097/EDE.0000000000001344">10.1097/EDE.0000000000001344</a>.</li> <li>- Eronen J, Paakkari L, Portegijs E, Rantanen T.: Coronavirus-related health literacy and perceived restrictiveness of protective measures among community-dwelling older persons in Finland. Aging Clin Exp Res. 2021 Aug;33(8):2345-2353. doi: <a href="https://doi.org/10.1007/s40520-021-01928-6">10.1007/s40520-021-01928-6</a>.</li> <li>- Holmberg V, Salmi H, Kattainen S, Ollgren J, Kantele A, Pynnönen J, Järvinen A, Forsblom E, Silén S, Kivivuori SM, Meretoja A, Hästbacka J.: Association between first language and SARS-CoV-2 infection rates, hospitalization, intensive care admissions and death in Finland: a population-based observational cohort study. Clin Microbiol Infect. 2022 Jan;28(1):107-113. doi: <a href="https://doi.org/10.1016/j.cmi.2021.08.022">10.1016/j.cmi.2021.08.022</a>. Epub 2021 Sep 30.</li> <li>- Sarasjärvi KK, Vuolanto PH, Solin PCM, Appelqvist-Schmidlechner KL, Tamminen NM, Elovainio M, Therman S.: Subjective mental well-being among higher education students in Finland during the first wave of COVID-19. Scand J Public Health. 2022 Feb 22;14034948221075433. doi: <a href="https://doi.org/10.1177/14034948221075433">10.1177/14034948221075433</a></li> <li>- Uimonen M, Ponkilainen V, Kuitunen I, Eskola M, Mattila VM.: Emergency department visits due to coronary artery disease during COVID-19 in Finland: A register-based study. Scand J Public Health. 2022 Feb;50(1):117-123. doi: <a href="https://doi.org/10.1177/14034948211038422">10.1177/14034948211038422</a></li> <li>- Hakonen E, Varimo T, Tuomaala AK, Miettinen PJ, Pulkkinen MA.: The effect of COVID-19 lockdown on the glycemic control of children with type 1 diabetes. BMC Pediatr. 2022 Jan 19;22(1):48. doi: <a href="https://doi.org/10.1186/s12887-022-03115-6">10.1186/s12887-022-03115-6</a>.</li> </ul> <p>Finish publications:</p> <ul style="list-style-type: none"> <li>- Positive mental health: <a href="https://www.julkari.fi/bitstream/handle/10024/142761/TUTI2021_036_Psykkisen_kuormittuneisuuden_s_k.pdf?sequence=4&amp;isAllowed=y">https://www.julkari.fi/bitstream/handle/10024/142761/TUTI2021_036_Psykkisen_kuormittuneisuuden_s_k.pdf?sequence=4&amp;isAllowed=y</a></li> <li>- Cancer burden: <a href="https://www.duodecimlehti.fi/duo16035">https://www.duodecimlehti.fi/duo16035</a></li> <li>- Excess mortality of elderly: <a href="https://www.potilaanlaakarilehti.fi/uutiset/laitosvanhusten-ylikuolleisuus-covid-19-tautiin-ensiaallossa/">https://www.potilaanlaakarilehti.fi/uutiset/laitosvanhusten-ylikuolleisuus-covid-19-tautiin-ensiaallossa/</a></li> <li>- COVID-19 as a cause of death: <a href="https://www.tilastokeskus.fi/ajk/koronavirus/koronavirus-ajankohtaista-tilastotietoa/miten-vaikutukset-nakyvat-tilastoissa/koronavirus_kuolemansyyna">https://www.tilastokeskus.fi/ajk/koronavirus/koronavirus-ajankohtaista-tilastotietoa/miten-vaikutukset-nakyvat-tilastoissa/koronavirus_kuolemansyyna</a></li> </ul>
<b>Ireland</b>	<p>In Ireland the following report was recently published by the Health Information &amp; Quality Authority. It provides a descriptive analysis of COVID-19 epidemiological indicators and associated contextual factors in European countries. It is available on their website here: <a href="https://www.hiqa.ie/reports-and-publications/health-technology-assessment/descriptive-analysis-covid-19-epidemiological">https://www.hiqa.ie/reports-and-publications/health-technology-assessment/descriptive-analysis-covid-19-epidemiological</a></p>
<b>Italy</b>	<p>A huge amount of papers and reports on direct and indirect health impacts at national level, were published during the Pandemic of COVID-19 in Italy. Just some example are following reported:</p> <p>More than 100 periodic reports from the National Institute of Health-ISS on 'Covid-19: surveillance, impact of infections and vaccine efficacy. National updates' (link to the last one available: <a href="https://www.epicentro.iss.it/coronavirus/bollettino/Bollettino-sorveglianza-integrata-COVID-19_30-marzo-2022.pdf">https://www.epicentro.iss.it/coronavirus/bollettino/Bollettino-sorveglianza-integrata-COVID-19_30-marzo-2022.pdf</a>; in Italian language);</p> <p>More than 120 periodic reports from the National Institute of Health-ISS on 'Characteristics of SARS-CoV-2 patients dying in Italy based on available data' (link to the last one available: <a href="https://www.epicentro.iss.it/en/coronavirus/bollettino/Report-COVID-2019_10_january_2022.pdf">https://www.epicentro.iss.it/en/coronavirus/bollettino/Report-COVID-2019_10_january_2022.pdf</a>; in English languages);</p>



4 reports on excess mortality in Italy elaborated in collaboration between the National Institute of Health-ISS and the National Institute of Statistics (ISTAT) on "Impact of the COVID-19 epidemic on the total mortality of the resident population" (link to the last one available: [https://www.epicentro.iss.it/coronavirus/pdf/Rapp\\_Istat\\_Iss\\_gennaio-novembre-2020.pdf](https://www.epicentro.iss.it/coronavirus/pdf/Rapp_Istat_Iss_gennaio-novembre-2020.pdf); in Italian language)

3 Reports on Long-term facilities and COVID-19 (link to the last one available: [https://www.epicentro.iss.it/coronavirus/pdf/REPORT\\_STRUTTURA\\_dic2020\\_gen2022\\_08022022.pdf](https://www.epicentro.iss.it/coronavirus/pdf/REPORT_STRUTTURA_dic2020_gen2022_08022022.pdf); in Italian language);

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- Scortichini M, Schneider Dos Santos R, De' Donato F, De Sario M, Michelozzi P, Davoli M, Masselot P, Sera F, Gasparrini A. Excess mortality during the COVID-19 outbreak in Italy: a two-stage interrupted time-series analysis. *Int J Epidemiol*. 2021 Jan 23;49(6):1909-1917. <https://doi.org/10.1093/ije/dyaa169>. PMID: 33053172; PMCID: PMC7665549;
- Minnai, F., De Bellis, G., Dragani, T.A. et al. COVID-19 mortality in Italy varies by patient age, sex and pandemic wave. *Sci Rep* 12, 4604 (2022). <https://doi.org/10.1038/s41598-022-08573-7>;
- Gianicolo EAL, Russo A, Büchler B, Taylor K, Stang A, Blettner M. Gender specific excess mortality in Italy during the COVID-19 pandemic accounting for age. *Eur J Epidemiol*. 2021 Feb;36(2):213-218. <https://doi.org/10.1007/s10654-021-00717-9>. Epub 2021 Jan 25. PMID: 33495860; PMCID: PMC7832414;
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<b>Norway</b>	<p>Several relevant studies exist from Norway and are collated at the below link.  <a href="https://www.fhi.no/kk/oppsummert-forskning-for-helsetjenesten/norsk-covid-19-forskning/">https://www.fhi.no/kk/oppsummert-forskning-for-helsetjenesten/norsk-covid-19-forskning/</a></p> <p>The Norwegian Government's Management of the Coronavirus Pandemic – Part 2 — Summary in English:  <a href="https://www.regjeringen.no/en/dokumenter/nou-2022-5/id2910055/">https://www.regjeringen.no/en/dokumenter/nou-2022-5/id2910055/</a></p>
<b>Poland</b>	<p>The publication of the National Institute of Public Health entitled ""Public Health 3.0"" includes conclusions and recommendations resulting from the observation of the public health situation during the Covid-19 pandemic, from a global perspective, confronted with the existing public health paradigm (the use of the global perspective allowed for minimizing the amount of information devoted to Poland, but for the authors it was a constant point of reference ).</p>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101018317

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	<p>The authors address the following issues: paradigm evolution and pre-pandemic crisis, evidence-based public health, public health as part of an integrated health system, health system, society and economy, political conditions, and their aspects. The paper outlines a revised or enriched public health paradigm that will inspire many of the conceptual work for theory and practice. The recommendations are to refer directly to the national realities but are to be justified in the content of the paradigm presented in the publication. This study is addressed to professionals and researchers related to the subject of public health, as well as to people not professionally related to the issues, but interested in health matters.  <a href="https://www.pzh.gov.pl/publikacja-zdrowie-publiczne-3-0/">https://www.pzh.gov.pl/publikacja-zdrowie-publiczne-3-0/</a></p> <p>In 2022 on the official webpage of the Map of health needs provided by the Ministry of Health several reports were published, whose aim was to summarize the impact of the COVID-19 pandemic on implementation services and treatment of patients, analyzing the most important indicators, especially considering 2020.</p>
	<p>The analyzes used, among others, the following data:</p> <ul style="list-style-type: none"> <li>• NFZ (National Health Fund), regarding the reported benefits in 2019-2020,</li> <li>• KRPC-19, related to hospitalizations due to COVID-19 in 2020,</li> <li>• Ministry of the Interior and Administration on the number of covid beds,</li> <li>• RPWDL (Register of Entities Performing Healthcare Activities) in terms of the total number of beds,</li> <li>• WSSE (Sanitary Inspection) and the registry for the number of infections and deaths due to COVID-19.</li> </ul> <p>An important element influencing the improvement of patient safety were the activities carried out by the Minister of Health in the field of combating the pandemic and counteracting its effects. In addition, the implementation of the National Vaccine Program against COVID-19, which started in December 2020, was summarized, the main goal of which is to achieve the level of vaccination of the society enabling control of the COVID-19 pandemic and at the same time improving the availability of health services.</p> <p>The above-mentioned reports are:</p> <ol style="list-style-type: none"> <li>1. The impact of the COVID-19 pandemic on health needs in Poland, Infectious diseases,</li> <li>2. The impact of the COVID-19 pandemic on health needs in Poland, Cardiovascular diseases,</li> <li>3. The impact of the COVID-19 pandemic on health needs in Poland, Oncological diseases,</li> <li>4. The impact of the COVID-19 pandemic on health needs in Poland, Diseases of the respiratory system,</li> <li>5. The impact of the COVID-19 pandemic on the health needs in Poland, Diseases of the musculoskeletal system in Poland,</li> <li>6. The impact of the COVID-19 pandemic on health needs in Poland, Mental disorders,</li> <li>7. The impact of the COVID-19 pandemic on health needs in Poland, Mother and child.</li> </ol> <p>Several scientific institutions (eg. universities, research institutes) have been working on reports analyzing the impact of Covid-19 on healthcare system establishing recommendations for the future.</p>
<b>Serbia</b>	<p>Some papers that can be interesting are:</p> <p>Experiences and aftermath of the COVID-19 lockdown among community-dwelling older people in Serbia: A qualitative study:  <a href="https://onlinelibrary.wiley.com/doi/full/10.1111/jep.13641">https://onlinelibrary.wiley.com/doi/full/10.1111/jep.13641</a></p> <p>Performance evaluation of general public hospitals in territories of the Former Yugoslavia: An ecological study using the Pabon Lasso model:  <a href="https://pubmed.ncbi.nlm.nih.gov/35332583/">https://pubmed.ncbi.nlm.nih.gov/35332583/</a></p> <p>Children's Daily Routine Response to COVID-19 Emergency Measures in Serbia:  <a href="https://www.frontiersin.org/articles/10.3389/fped.2021.656813/full?utm_source=Email_to_authors">https://www.frontiersin.org/articles/10.3389/fped.2021.656813/full?utm_source=Email_to_authors</a></p>



	<p>The impact of COVID-19 pandemic on suicide attempts in the Republic of Serbia: <a href="http://www.doiserbia.nb.rs/Article.aspx?id=0370-81792100053S#.Yk1t03jP1aQ">http://www.doiserbia.nb.rs/Article.aspx?id=0370-81792100053S#.Yk1t03jP1aQ</a></p> <p>COVID-19 pandemic-related aspects and predictors of emotional and behavioural symptoms in youth with pre-existing mental health conditions: results from Georgia, Lithuania, Romania, Serbia, and Turkey: <a href="https://www.tandfonline.com/doi/abs/10.1080/08039488.2021.2013531">https://www.tandfonline.com/doi/abs/10.1080/08039488.2021.2013531</a></p> <p>There are numerous studies about pandemic on education, economy, daily routine...</p>
<b>Slovakia</b>	<p>Studies on the following topics has been published: Excess mortality, Direct impact of covid, Indirect impact of covid, Daly's, Qaly's, Years of life lost, Change in life expectancy and Increased smoking.</p> <p>Available indicators refer to 2020, 2021 should be available before end 2022.</p>
<b>Slovenia</b>	<p>Studies on the following topics has been published: Excess mortality, Direct impact of covid, Indirect impact of covid, Change in life expectancy, Diminished sense of well being, Deteriorated mental state, Increased smoking, Decreased physical like sports, Loneliness</p> <p><b>Illicit drugs</b></p> <ul style="list-style-type: none"> <li>- HOČEVAR-GROM, Ada, DREV, Andreja, JANDL, Mateja, LAVTAR, Darja, ROSTOHAR, Katja. Vpliv prvega vala pandemije covida-19 na uporabnike drog in ponudnike storitev obravnave v Sloveniji. Isis : glasilo Zdravniške zbornice Slovenije. [Tiskana izd.]. maj 2021, leto 30, št. 5, str. 29-31, graf. prikazi. ISSN 1318-0193. <a href="http://online.pubhtml5.com/agma/ikar/#p=29">http://online.pubhtml5.com/agma/ikar/#p=29</a>.</li> <li>- HOČEVAR-GROM, Ada, DREV, Andreja, LAVTAR, Darja, ROSTOHAR, Katja, JANDL, Mateja. Vpliv prvega vala pandemije COVID-19 na uporabnike drog in ponudnike storitev obravnave v Sloveniji. Ljubljana: Nacionalni inštitut za javno zdravje, 2021. 1 spletni vir (1 datoteka PDF (15 str.)), ilustr. <a href="https://www.nijz.si/sites/www.nijz.si/files/publikacije-datoteke/publikacija_covid_droge_novo.pdf">https://www.nijz.si/sites/www.nijz.si/files/publikacije-datoteke/publikacija_covid_droge_novo.pdf</a>.</li> </ul> <p><b>Behavioural insights</b></p> <ul style="list-style-type: none"> <li>- ŽAGAR, Janina, VRDELJA, Mitja, REHBERGER, Maruša, LAVTAR, Darja, KOROŠEC, Aleš. Nagnjenost k teorijam zarot v povezavi s COVIDOM-19 med različnimi populacijskimi skupinami v Sloveniji = Tendency to conspiracy theories in connection with COVID-19 among different population groups in Slovenia. In: GABROVEC, Branko (ed.), et al. Javno zdravje in COVID-19 : znanstvena in strokovna konferenca : Ljubljana, 29. september 2021 : zbornik povzetkov in recenziranih prispevkov. Ljubljana: Nacionalni inštitut za javno zdravje, 2021. Str. 184-193. ISBN 978-961-6945-42-4.</li> <li>- JERIČEK KLANŠČEK, Helena, HOČEVAR-GROM, Ada, KLANČIČ, Maja, REHBERGER, Maruša, LAVTAR, Darja. Tveganje za depresijo v času pandemije COVID-19 = Risk of depression during the COVID-19 pandemic. In: GABROVEC, Branko (ed.), et al. Javno zdravje in COVID-19 : znanstvena in strokovna konferenca : Ljubljana, 29. september 2021 : zbornik povzetkov in recenziranih prispevkov. Ljubljana: Nacionalni inštitut za javno zdravje, 2021. Str. 26-32. ISBN 978-961-6945-42-4.</li> <li>- KAVCIC, Voyko, PODLESEK, Anja, HOČEVAR-GROM, Ada, BELŠČAK ČOLAKOVIČ, Andreja, REHBERGER, Maruša, LAVTAR, Darja. Zaznane kognitivne spremembe med pandemijo COVIDA-19 v Sloveniji = Detected cognitive changes during the COVID-19 pandemic in Slovenia. In: GABROVEC, Branko (ed.), et al. Javno zdravje in COVID-19 : znanstvena in strokovna konferenca : Ljubljana, 29. september 2021 : zbornik povzetkov in recenziranih prispevkov. Ljubljana: Nacionalni inštitut za javno zdravje, 2021. Str. 10-18. ISBN 978-961-6945-42-4.</li> <li>- JERIČEK KLANŠČEK, Helena, HOČEVAR-GROM, Ada, REHBERGER, Maruša, LAVTAR, Darja, KLANČIČ, Maja. Well-being and depression during the COVID-19 pandemic. European journal of public health. 2021, vol. 31, no. 3, ckab165.062. ISSN 1101-1262. <a href="https://academic.oup.com/eurpub/article/31/Supplement_3/ckab165.062/6405617">https://academic.oup.com/eurpub/article/31/Supplement_3/ckab165.062/6405617</a>, DOI: 10.1093/eurpub/ckab165.062.</li> <li>- KOVAČIČ, V., LAVTAR, Darja. Effects of covid-19 on cognitive functioning. European journal of public health. [Online ed.]. 2021, vol. 31, suppl. 3, str. ckab164.294. ISSN 1464-360X. <a href="https://academic.oup.com/eurpub/article/31/Supplement_3/ckab164.294/6404881">https://academic.oup.com/eurpub/article/31/Supplement_3/ckab164.294/6404881</a>, DOI: 10.1093/eurpub/ckab164.294.</li> <li>- JERIČEK KLANŠČEK, Helena, HOČEVAR-GROM, Ada, KLANČIČ, Maja, REHBERGER, Maruša, LAVTAR, Darja. Duševno zdravje starejših v času pandemije COVID-19 = Mental health of the elderly during the COVID-19 pandemic. In: PETELIN, Ana (ed.). Zdravje starostnikov : 5. znanstvena in strokovna konferenca z mednarodno udeležbo, [17. september 2021] : zbornik povzetkov z recenzijo = Health of the elderly : 5th Scientific and Professional International Conference, [17th September 2021] : book of abstracts. Brezplačna elektronska izd. Koper: Založba Univerze na Primorskem:</li> </ul>





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<b>Spain</b>	<p><b>Direct Impact Health Indicators:</b>  The National Centre of Epidemiology (CNE) publishes a periodic update of the situation of COVID-19 in Spain, with geographical information and indicators of the evolution of the pandemic. The results presented in this panel are obtained from the declaration of COVID-19 cases to the National Epidemiological Surveillance Network (RENAVE).  <a href="https://cnecovid.isciii.es/">https://cnecovid.isciii.es/</a></p>



Also the CNE is carrying out the Spanish daily mortality surveillance system (MoMo) that estimates excess mortality. Results are publicly available at: [https://momo.isciii.es/public/momo/dashboard/momo\\_dashboard.html](https://momo.isciii.es/public/momo/dashboard/momo_dashboard.html)  
[https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Paginas/Informes\\_MoMo\\_2022.aspx](https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Paginas/Informes_MoMo_2022.aspx)

The latest papers published using MoMo:

- Garyfallos Konstantinoudis, Michela Cameletti, Virgilio Gómez-Rubio, Inmaculada León Gómez, Monica Pirani, Gianluca Baio, Amparo Larrauri, Julien Riou, Matthias Egger, Paolo Vineis, Marta Blangiardo. Regional excess mortality during the 2020 COVID-19 pandemic in five European countries. *Nature Communications* 2022. 13:482. Published 2022 Jan <https://doi.org/10.1038>  
Analyze the impact of the COVID-19 pandemic on excess mortality from all causes throughout the year 2020 in five European countries: England, Greece, Italy, Switzerland and Spain.
- León-Gómez I, Mazagatos C, Delgado-Sanz C, et al. The Impact of COVID-19 on Mortality in Spain: Monitoring Excess Mortality (MoMo) and the Surveillance of Confirmed COVID-19 Deaths. *Viruses*. 2021;13(12):2423. Published 2021 Dec 3. <https://doi.org/10.3390/v13122423>  
It compared the results from the Spanish daily mortality surveillance system (MoMo) of excess mortality estimates, using a time series analysis, with those obtained for the confirmed COVID-19 deaths reported to the RENAVE.

Experimental Statistic. Weekly death estimates (EDeS) during the covid-19 outbreak. The EDeS project aims to carry out a weekly study of deaths occurring during the covid-19 pandemic, and to compare this with the historical data on deaths since the year 2000. The online report is monthly updated: [https://www.ine.es/experimental/defunciones/experimental\\_defunciones.htm](https://www.ine.es/experimental/defunciones/experimental_defunciones.htm)

The Death statistics according to cause of death constitutes one of the most important sources of information in the field of healthcare. It is conducted following the criteria established by the WHO in the International Classification of Diseases (ICD), which covers over 12,000 diseases. Causes of death are registered by the National Institute of Statistics (INE). Last results regarding 2020 were published in November 2021. It includes COVID-19 total deaths [https://www.ine.es/dynngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736176780&menu=ultiDatos&idp=1254735573175](https://www.ine.es/dynngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176780&menu=ultiDatos&idp=1254735573175)

The key parameter to understand and model the evolution of the COVID-19 pandemic is the number of daily infections (May 2021): García-García, D., Vigo, M.I., Fonfría, E.S. et al. Retrospective methodology to estimate daily infections from deaths (REMEDID) in COVID-19: the Spain case study. *Sci Rep* 11, 11274 (2021). <https://doi.org/10.1038/s41598-021-90051-7>

Life expectancy is a widely used indicator that provides a clear and cross-nationally comparable picture of the population-level impacts of the pandemic on mortality. International study about life expectancy losses (February 2022):

José Manuel Aburto, Jonas Schöley, Ilya Kashnitsky, Luyin Zhang, Charles Rahal, Trifon I Missov, Melinda C Mills, Jennifer B Dowd, Ridhi Kashyap, Quantifying impacts of the COVID-19 pandemic through life-expectancy losses: a population-level study of 29 countries, *International Journal of Epidemiology*, Volume 51, Issue 1, February 2022, Pages 63–74, <https://doi.org/10.1093/ije/dyab207>

Other interesting publications that include direct impact health indicators (incidence, prevalence, seroprevalence, mortality rate, mechanical ventilation among non survivors, time to death, hospital admission rate, ICU admission rate, proportion of ventilation, proportion of complications...)

- Pastor-Barruso R, Pérez-Gómez B, Hernán MA, Pérez-Olmeda M, Yotti R, Oteo-Iglesias J, Sanmartín JL, León-Gómez I, Fernández-García A, Fernández-Navarro P, Cruz I, Martín M, Delgado-Sanz C, Fernández de Larrea N, León Paniagua J, Muñoz-Montalvo JF, Blanco F, Larrauri A, Pollán M; ENE-COVID Study Group. Infection fatality risk for SARS-CoV-2 in community dwelling population of Spain: nationwide seroepidemiological study. *BMJ*. 2020 Nov 27;371:m4509. <https://doi.org/10.1136/bmj.m4509>. PMID: 33246972; PMCID: PMC7690290.
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#### Indirect Impact Health Indicators:

The Carlos III Health Institute (ISCIII), in collaboration with the Ministry of Health, World Health Organization and two regional universities coordinates a behavioural insights study, the COSMO-Spain (<https://portalcne.isciii.es/cosmo-spain/>). It is the first population study focused on gathering data on knowledge, attitudes, and practices about COVID-19 in Spain.

The first round of the study was carried out between 27th July 2020 and 3rd August 2020 and it is still on going. The last data published come from Round 10 (a survey carried out between 25th February 2022 and 4rd March 2022). Between the questions included in the survey, one is related to mental health through the WHO-5 wellbeing index.

The MINDCOVID project aims to study the mental health of healthcare workers, COVID-19 patients and their close contacts, and adults from the general Spanish adult population. These represent three potentially vulnerable groups to the negative mental health impact of the COVID-19 pandemic. It aims to provide a comprehensive assessment of the impact on mental health of the current COVID-19 outbreak in Spain. Publications section:

<https://www.mindcovid.org/publications>

Since December 2020, the Spanish Ministry of Health, together with the Regional Health Authorities, have been working in the evaluation of the National Health System performance along the pandemic. Since then, a plan describing the evaluation framework for the assessment has been elaborated (defining the scope, objectives, and the required indicators to comprehensively assess the system) and four experts have been chosen to plan and coordinate the evaluation. Results are expected this year.

Further information:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101018317

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	<p><a href="https://es.scribd.com/document/563583235/Informe-del-grupo-de-trabajo-sobre-el-marco-para-la-realizacion-de-una-evaluacion-independiente-del-desempeno-del-Sistema-Nacional-de-Salud-frente-a-#from_embed">https://es.scribd.com/document/563583235/Informe-del-grupo-de-trabajo-sobre-el-marco-para-la-realizacion-de-una-evaluacion-independiente-del-desempeno-del-Sistema-Nacional-de-Salud-frente-a-#from_embed</a></p> <p><a href="https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/sanidad14/Paginas/2021/220921-interterritorialevaluacion.aspx">https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/sanidad14/Paginas/2021/220921-interterritorialevaluacion.aspx</a></p>
<b>United Kingdom</b>	<p>Studies on the following topics has been published: Excess mortality, Direct impact of covid, Indirect impact of covid, Years of life lost, Change in life expectancy, Diminished sense of well being, Deteriorated mental state and Burden of disease, although largely through indirect impact.</p> <ul style="list-style-type: none"> <li>- DelPozo-Banos M et al. Healthcare contacts with self-harm during COVID-19: an e-cohort whole-population-based study using individual-level linked routine electronic health records in Wales, UK, 2016 - March 2021. PLoS ONE (accepted 31/03/22).</li> <li>- Jolliffe D et al. Vitamin D Supplements for Prevention of Covid-19 or other Acute Respiratory Infections: a Phase 3 Randomized Controlled Trial (CORONAVIT). MedRxiv (23/03/22). <a href="https://doi.org/10.1101/2022.03.22.22271707">https://doi.org/10.1101/2022.03.22.22271707</a></li> <li>- Torabi F et al. 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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101018317

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