Sydney
Local Health District

Equity-focused health impact assessment of the COVID-19 pandemic in Sydney Local Health District

Supplementary material

Developed by the Health Equity Research and Development Unit 2023

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NSW GOVERNMENT
Sydney
Local Health District

UNSW SYDNEY

Title: Equity-focused health impact assessment (EFHIA) of the COVID-19 pandemic in Sydney Local Health District (SLHD): Supplementary Material.

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About this document:
This document provides background information and documents related to the equity-focused health impact assessment (EFHIA) of the COVID-19 pandemic in Sydney Local Health District. There is a separate Summary Report (56 pages) and Technical Report (172 pages).

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About the Health Equity Research and Development Unit (HERDU):
HERDU is a partnership between SLHD and UNSW Sydney. HERDU's mission is to work in partnership with health services, organisations and communities to identify and reduce existing inequities in health and to prevent inequities in health from arising in the future.

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Sydney Local Health District acknowledges the Gadigal and Wangal Peoples of the Eora Nation as the traditional owners of the land on which the District is located and works.

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Appendix 1

Literature reviews

1 Changes to health services

1.1 Methodology

Searches were run in four databases (PubMed, Embase, CINAHL and Web of Science) on 08/11/2021 using the search strategy in Table 1 (both Medical Subject Headings, MESH and free-text keywords, were used and adapted for each database). After duplicates were removed, studies were selected using the inclusion/exclusion criteria outlined in Table 2 below.

Table 1 Search strategy (changes to health services)

Focus	Description	Sample of search terms
Population	Health service users with a focus on health workers, older adults, CALD persons, women and young people (especially children and their families)	"health worker" OR "health workers" OR "health personnel" OR aged OR "older adult" OR "older adults" OR "ethnic group" OR "ethnic groups" OR "immigrant" or "immigrants" or "woman" OR "women" OR "child" or "children" or "family" or "families" OR MESH terms for each group
Intervention	COVID-induced changes to health services (change in access, availability, appropriateness and quality, among others)	(health OR health care OR healthcare) N3 (service* OR provision OR access OR delivery OR modality) OR elective surgery OR healthcare MESH term OR health service MESH term or Healthcare planning MESH term
Comparison (or Control)	N/A	
Outcomes	Health equity impacts Health disparity, impacts on vulnerable groups and social determinants of health	(*equit* OR disparit* OR inequalit* OR marginali*) OR (determinant* adj3 health) OR (health adj3 disparit*) OR (health adj3 inequalit*) OR "vulnerable population*"
Context	High-income countries COVID-19 pandemic	SARS-CoV-2 OR Coronavirus OR COVID* OR COVID MESH term

An additional string was added to exclude studies on vaccination and influenza (NOT vaccin* NOT influenza)

Table 2 Inclusion and exclusion criteria (changes to health services)

Inclusion criteria	Exclusion criteria
· Peer-reviewed literature · High-income country · Empirical studies and scoping reviews, systematic reviews · Describes a qualitative or quantitative association between COVID-induced changes to health service delivery and timing, or changes in access to services AND a health equity outcome · Published between 2019-2021 · Language: English	· Study protocols, commentaries, editorials, or books/theses · COVID-19 treatments and vaccination · Grey literature (i.e., not peer-reviewed) · No data on association between changes to health service delivery and equity outcome · Focus is telehealth · Does not have the potential to contribute meaningfully to answering the research question, purpose or objectives · Not high-income country

1.2 Results

Figure 1 PRISMA Diagram (changes to health services)

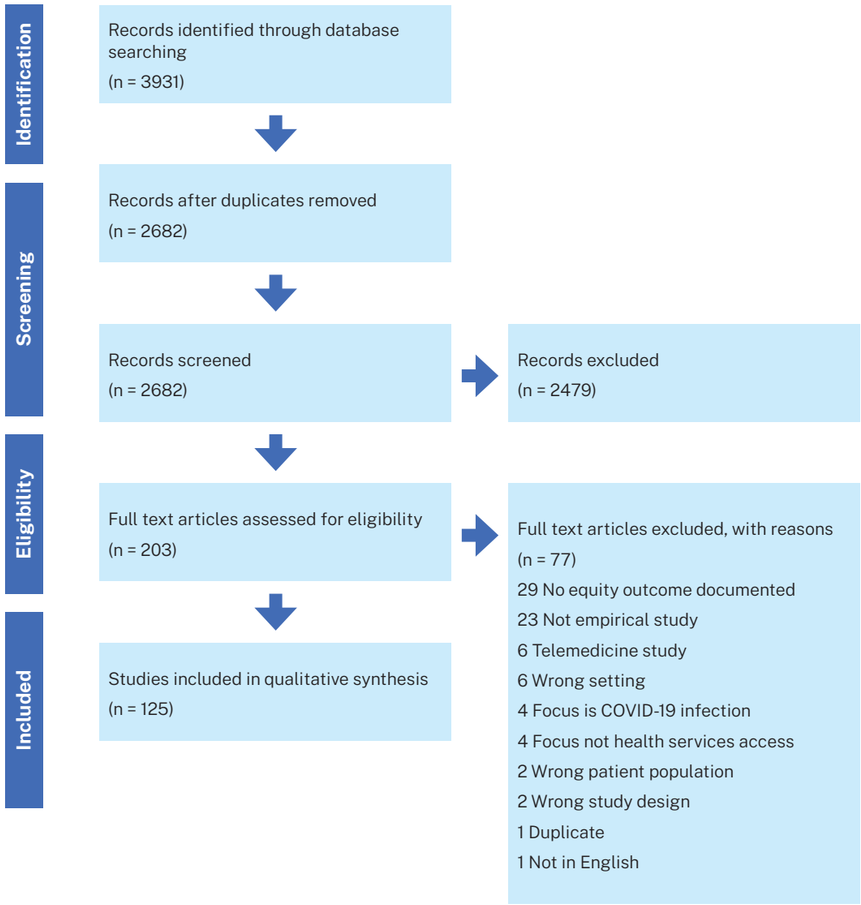

Table 3 Summary of included studies (changes to health services)

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Aboul Nour et al. 2021	Retrospective study USA	Access to emergency health services (stroke) Physical health	Overall, visits to ED for stroke declined significantly in 2020. The percentage of African Americans presenting to ED in 2019 and 2020 were the same, but this group had poorer health outcomes in 2020, with higher stroke severity compared to other groups, suggesting delays in seeking medical care.	African Americans
Abu-Rustum et al. 2021	Online survey USA	Access and availability of health services (obstetrics and gynaecology) Quality of services	Participants expressed concerns about visiting clinics (32.6%) and hospitals (48.1%). Over a quarter of women declared a negative impact on their medical care, but there was no difference based on insurance status. Patients scheduled for obstetric visits were the least satisfied with telemedicine appointments.	Women
Adigwu et al. 2021	Survey USA	Access to paediatric health services	No-show patients were more likely to be Hispanic and to live in a zip code that had a median income below the federal poverty level. Pandemic increases existing inequalities. Fear of COVID-19 means avoiding doctor office and public transport and act as barriers to access.	CALD groups Low SES
Alguwaihes et al. 2021	Online survey Saudi Arabia	Access to health services Mental health	After adjusting for all potential confounders, people with diabetes who had their diabetes visit cancelled by the clinic and who had no means of communication with healthcare providers, were more likely to report depression and anxiety symptoms than people without diabetes. Interruption of care and lack of communication are factor for depression and/or anxiety among people with existing health issues.	People with pre-existing chronic health issues
Al Kasab et al. 2021	Registry study USA	Access to health services Physical health	Evidence shows a reduction in the number of African Americans undergoing cerebrovascular procedure in 2020, while the number of White and Hispanic patients has increased during that time. Drop in surgery risks widening existing racial disparities as African Americans already have higher vascular risk factors and mortality rate for vascular diseases	African Americans
Amornsiripanitch et al. 2021	Retrospective study USA	Access to screening services (mammography)	Minority race/ethnicity, Medicare insurance and advanced age were associated with increased risk of screening mammogram cancellation after the service re-opened from mandated shutdown. Older women missing screening is a new vulnerability and there is a widening of existing vulnerability for low SES and CALD groups.	CALD groups SES Older women
Andersen et al. 2021	Cohort study Denmark	Undertreatment, particularly for vulnerable groups	Evidence shows the COVID-19 lockdown is associated with a reduced incidence for cardiovascular issues among older people (≥70) with lower education. This likely means under-treatment and a widening of inequities.	Older people People with low education
Annadurai et al. 2021	Retrospective study USA	Access to health services (endoscopy)	There was a decline in the proportion of Black patients and Hispanic patients undergoing outpatient endoscopy procedures before and during the first wave of the pandemic. Numbers have not recovered post-first wave. Pandemic is exacerbating already existing disparities in access to outpatient care for racialised groups.	CALD groups Men
Aragona et al. 2020	Retrospective study Italy	Access to mental health services	In a clinic specifically for migrants and low SES clients, service utilisation dropped dramatically after the start of lockdown. Follow-up adherence also dropped from 30% in 2017-19 to 17.5% in 2020.	Migrants and asylum seekers Low SES
Aragona et al. 2022	Survey Italy	Mental health	Worsening mental state was significantly associated with unemployment, lack of visa and treatment discontinuation for migrants and low SES groups. COVID-19 specific fears are low in this cohort.	Migrants and asylum seekers Low SES
Arnault et al. 2021	Survey European countries	Access to healthcare Unmet needs	Economic vulnerability is associated with adverse effects on accessing healthcare and rising unmet needs during the pandemic – the impact is worse for people who are both economically vulnerable and already ill.	People with pre-existing health conditions Older people Economically vulnerable
Baggio et al. 2021	Prospective single-centre study (Outpatients) Geneva, Switzerland	Relationship between forgoing health care and sociodemographic factors	Epidemics might increase health disparities and inequitable access to health care. 38.5% of vulnerable patients forwent health care because of the pandemic. Forgoing health care was more frequent for younger patients, women, patients with a low level of education and patients with a chronic disease (p <.001). Decrease in routine management of patients might have important and unpredictable adverse health consequences. Avoiding delayed health care is crucial.	Younger patients Women, patients with a low level of education, socially vulnerable patients (including migrants) and patients with a chronic disease

* Some of the key findings are directly extracted from the studies' abstracts

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Baptist et al. 2020	Surveys (patients and physicians) USA	Access to health services and primary care Physical health	Minority individuals with asthma are more affected (directly and indirectly) by COVID-19. They have worse asthma control and more difficulties accessing care during the pandemic, than other groups. They are less likely to have a primary care physician, have more trouble affording asthma medications due to COVID-19 (20.5 % vs 12.8% for white patients), and more likely to have lost health insurance because of COVID-19. 25% of physicians surveyed found it more challenging to care for Black individuals with asthma during COVID-19. Socioeconomic status and institutional racism, rather than health seeking behaviours, were found to shape disparities.	Minority groups Low SES
Barbosa-Leiker et al. 2021	Mixed methods USA	Physical and mental health Diet and nutrition Income and employment Control and social support	Evidence of greater stress induced by the COVID-19 pandemic, greater financial problems and less social support, in perinatal women of racial and ethnic minority and lower-income status. Women with lower incomes were also less likely to engage in healthy stress-coping behaviours compared to women with higher incomes.	CALD groups Low SES
Barboza et al. 2021	Qualitative study (interviews with service providers) Sweden	Physical and mental health and wellbeing Control Access to resources and social services	Families with already limited social support, experienced restricted access to resources because of further pandemic-induced social isolation and limited delivery of services (e.g., home visits). This feeds into lack of control, worry and stress, and worsened mental and physical health for parents and children.	Parents and children from CALD groups and/or low SES
Basile Ibrahim et al. 2021	Survey USA	Quality of perinatal healthcare Control and autonomy	Black, Indigenous and People of Colour (BIPOC) birthing people from were 42% less likely to experience high-quality perinatal care than their White counterparts; instead they experienced lesser autonomy and respect during the first wave of the pandemic.	Ethnic minorities
Benjamen et al. 2021	Mixed methods Canada	Access to health and social services Physical and mental health	Evidence shows refugees experienced decreased access to health care services and decreased access to community resources and social supports (including childcare, language classes and resettlement services). Fear of exposure, lack of information on available services and perceived lack of services were the most common barriers.	Refugees

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Benvenuto et al. 2021	Descriptive analysis USA	Availability and changes to health services Transplant waitlist	In areas with high COVID-19 incidence, lung transplant volume decreased much more than the national average. There was also a greater decrease in organ availability in areas of high prevalence, probably caused by low available resources (intensive care beds, ventilators, testing) or change of behaviour. However, there were no significant impacts on waitlists compared with the same period in the preceding five years.	People waiting for organ transplants
Borson et al. 2021	Retrospective study USA	Access and availability of diagnostic services Dementia	Detection of dementia among older people dropped early in first year of the pandemic, but recovered. No racial or ethnic group differences were identified in the diagnostic of dementia and Alzheimer.	Older people
Branley-Bell and Talbot 2020	Mixed methods UK	Psycho-social wellbeing Physical activity Control and autonomy Access to healthcare services	People suffering from eating disorders experienced reduced availability and access to healthcare services, with significant adverse consequences. Reports of 'being prematurely discharged from inpatient units, having treatment suspended or remaining on a waiting list for treatment, and receiving limited post-diagnostic support'. Closure of day services, discrepancies in service provision and advice, and inappropriate remote monitoring methods also caused harm. Other COVID-19 induced disruptions with negative consequences on mental health included: disruption to living situation, increased social isolation and reduced access to usual support networks, changes to physical activity, disruption to routine and perceived control.	People with pre-existing mental health issues (eating disorders)
Brimicombe et al. 2021	Mixed methods UK	Physical and mental health and wellbeing Access and availability of health services	Cancellations of routine care and difficulties in accessing medical support contributed to some participants deteriorating physically, including reports of hospitalizations. The majority of participants reported that fear of COVID-19 and disruptions to their medical care had adversely impacted their mental health. Feeling medically supported during the pandemic was correlated with mental health and wellbeing.	People with pre-existing chronic disease
Cabona et al. 2021	Online survey Italy	Access to health services (rehabilitation) Mental health	Rehabilitation therapy suspension is associated with greater odds of severe anxiety for people with amyotrophic lateral sclerosis. Other predictors included female gender, greater motor impairment and more aggressive disease course.	People with pre-existing chronic disease

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Casassa et al. 2021	Survey USA	Access to health services Mental health	5% of participants reported stopping or reducing anti-seizure medications because of communication issues with doctors, access or cost. 40% of patients with epilepsy devices reported concern about cancelled/limited doctor's visits. 47% reported higher anxiety during COVID-19 and fear of hospitalization (at 53%).	People with epilepsy
Chaabane et al. 2021	Rapid systematic review 10 empirical studies reviewed High income countries	Access and availability of services (child and family health) Physical and mental health Diet and nutrition	COVID-19-related school closure saw a significant decline in the number of hospital admissions and paediatric ED visits. Children and young people lost access to school-based healthcare services, specialized disability and nutrition programs. Lack of support and resources for remote learning reported among poorer families and children with disabilities, with potential for widening inequities. School closure also contributed to increased anxiety and loneliness in young people and lesser physical activity, with predicted increase of Body Mass Index and childhood obesity prevalence depending on duration.	Children Low SES Disability
R. C. Chen et al. 2021	Retrospective study USA	Access to cancer screening services (breast, colorectal, prostate)	Screening for all three cancers declined sharply between March and May of 2020 compared with 2019 (in April, breast, −90.8%; colorectal, −79.3%; prostate, −63.4%), and saw near complete recovery by July 2020 for breast and prostate cancers. The largest screening decline was observed in individuals in the highest SES index quartile, leading to a narrowing in the disparity in cancer screening by SES in 2020. Remaining estimated screening deficit of 9.4 million associated with pandemic. Telehealth is associated with higher screening rate.	Older people Low SES
Y. S. Chen et al. 2021	Survey USA	Access to healthcare services Mental health	After controlling for other variables, delay in oncology care for women cancer patients from low SES, increased the odds of experiencing anxiety four-fold (socioeconomic status is the most significant factor, not racial background).	Women cancer patients from low SES
Y. T. Chen et al. 2021	Survey USA	Access to health services (HIV services and services for LGBTQI+ people)	Most participants reported similar or easier access to PrEP and anti-retroviral therapy (ART) access during the pandemic (83.3% and 78.2%, respectively). But this left 20% of people living with HIV reporting harder access to ART. Other pandemic stressors interfered with access to healthcare, including loss of health insurance and travel-related financial burden.	Black men who have sex with men (MSM) Black trans women People living with HIV

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Chmielewska et al. 2021	Systematic review 40 studies Low and high-income settings	Antenatal and maternal services and outcomes Mental health	Evidence shows a decrease in preterm birth in high-income countries and higher rates of maternal depression (associated with low-income and resources too). No overall significant effects were identified for other outcomes, like diabetes, or modes of delivery.	Women
Clawson et al. 2021	Survey USA	Access to healthcare Other social determinants of health	BIPOC families have experienced significantly greater resource losses, healthcare access difficulties and discrimination during the pandemic Families with children with asthma (BIPOC and white) have experienced differential impacts during the pandemic and report lower healthcare access than healthy groups. BIPOC families with children with asthma experienced the most negative impacts of COVID-19 (difficulty paying bills, food, income loss and more difficulty accessing healthcare) relative to other study groups.	Ethnic minorities Children with pre-existing chronic illness
Coley and Baum 2021	Survey USA	Access and availability of services Mental health	Prevalence rates of anxiety and depression were six times higher in 2020 than early 2019, but prevalence of mental health treatment has not increased in the same proportion. Unmet need for mental health counselling was highest among ethnic minorities (16% vs 10% for white people), young adults (18%) and women (13% vs 8% men). Female and single parents reported higher prevalence of anxiety/ depression and higher service receipt, but still experienced a high prevalence of unmet counselling need.	Women Single parents Ethnic minorities Young people
Croxford et al. 2021	Survey England and Northern Ireland	Access to HIV and hepatitis testing, and drug and alcohol services	One in five people who inject drugs reported difficulties in accessing HIV and hepatitis testing, and one in four reported difficulties in accessing equipment for safer injecting. Difficulties accessing equipment and treatment is worse for people outside London. 35% reported more difficulties accessing drug and alcohol services.	People who inject drugs People outside metropolitan areas
Dassieu et al. 2021	Mixed methods Canada	Access to health care services, and psychosocial support	Participants from low SES and minorities reported more challenges in accessing pain relief, health care services and psychosocial support.	People living with chronic pain Minority groups Low SES

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
DeGroff et al. 2021	Survey USA	Access to cancer screening (cervical and breast cancer)	In a service designed for low income/non-insured women, greatest declines in cancer screening were among American Indian/ Alaskan Native women for breast cancer screening, and Asian Pacific Islander women for cervical cancer screening. Test volume began to recover towards the five-year average, but discrepancies remained with testing for women in rural areas not recovering.	Women from low SES Indigenous women and women from minority groups with low SES Women from low SES living in rural areas
Diaz et al. 2021	Narrative review	Access and availability of healthcare	People with psychiatric illnesses faced barriers to care during the pandemic. Ethnic minorities and sexual/gender minorities faced compounded issues of access and discrimination/stigma. Limited availability and access led to worsened mental health outcomes.	People with pre-existing mental health issues Ethnic minorities LGBTIQ+ people
Di Gessa et al. 2021	Synthesis of 12 longitudinal studies with data collected before and during COVID-19 UK	Access to health services	People experiencing psychological distress pre-pandemic were more likely to experience healthcare and economic disruptions, and clusters of disruptions across multiple domains (loss of employment/income and housing) during the pandemic. They also had 24% greater odds of missed appointments and procedures, and 33% greater odds of interruptions to prescriptions or medication access.	people with pre-existing mental health issues (more often women, people with low education and minorities)
Di Lorenzo et al. 2021	Observational study Italy	Access to emergency psychiatric services Mental health	Urgent psychiatric consultations decreased, except for the most clinically and socially vulnerable people (i.e., people already being treated by psychiatric and other health services, residents in psychiatric facilities and non-Italians).	People with pre-existing mental health issues Minority groups Migrants
Edmonds and Flahault 2021	Scoping review 102 studies	Access to healthcare	Refugees in Canada faced barriers to healthcare, lower economic support and safety net, barriers to education, lower social support, and issues with border crossing, all of which can have a compounding effect in terms of health outcomes.	Refugees
Farewell et al. 2020	Mixed methods USA	Access to perinatal care Mental health Control	Uncertainty surrounding perinatal care (appointment, birthing, hospital visit) and risk exposure caused stress and anxiety for pregnant women and recent parents.	Women

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Farmer and Hopcraft 2021	Retrospective analysis Australia	Access to paediatric dental services	Government-subsidised paediatric dental care for disadvantaged children saw a sharp decline in 2020 because of COVID-19 restrictions. Dental service provision had still not returned to normal levels across Australia by September 2020. Likely impacts of delayed dental care on oral health will be long lasting for children from low SES who already experienced higher levels of dental disease and were disadvantage in accessing dental care pre-pandemic.	Children and young people from lower SES
Federman et al. 2021	Qualitative study (interviews with service users) USA	Access to home-based services and food at home	Black participants were more likely than White and Hispanic participants to report disruptions in accessing medical care (50.0% vs. 14.3% vs. 27.3%, respectively) as well as food preparation and medication taking.	Ethnic minorities
Fedewa et al. 2021	Retrospective study USA	Access to cancer screening (breast cancer)	Community health clinics with a higher proportion of Black patients experienced sharper declines in screening rate in the first wave of the pandemic.	African Americans Low SES
Flores et al. 2021	Retrospective study USA	Access to healthcare services for children (diagnostic services)	Likelihood of missed appointments was higher among Black children, children covered by Medicaid, uninsured children and children from disadvantaged postcodes.	Ethnic minorities Low SES
Garcia et al. 2021	Qualitative study (interviews with service providers) USA	Access to social services (IPV services)	Specialised IPV services to non-English speaking populations highlighted long-standing language accessibility barriers which worsened during the pandemic because of digitisation, and poor communication. Referrals to services increased during the pandemic. Advocacy for clients and liaison with other agencies is more prevalent. Lack of capacities and resources is an ongoing problem.	CALD groups Children and families Women experiencing IPV
George, Danila, et al. 2021	Retrospective study USA	Access to health services (rheumatology)	Older age, being female, Black, or Hispanic ethnicity, lower socioeconomic status, and rural residence (long way to clinic) were associated with a greater likelihood of cancelling visits.	People with chronic illness Ethnic minorities Low SES People living in rural areas
George, Banerjee, et al. 2021	Survey USA	Access to health services Physical health	Pandemic induced changes to patient behaviours. Avoidance of doctor's office visits, laboratory testing and other testing was reported by 56.6%, 42.3%, and 36.0% of participants respectively. Medication stopping not recommended by doctor, was more common in participants from lower SES and in participants who avoided consultations.	People with chronic illness Low SES

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Giebel et al. 2021	Qualitative study (interviews with service users) UK	Access to social support services (people with dementia and carers) Physical and mental health	Access to services during the pandemic primarily hinged on the carer's proactiveness, creating inequalities in social support services. Most services closed during lockdowns, increasing burden on carers. Negative health impacts on people with dementia from disrupted routine was acute. Digital divide was a problem for carers and the people they looked after. Flow on effects of disruptions were significant for carers who left employment or moved house. During lockdowns, carers were often not included in priority access for food and shopping.	People with dementia Carers Older people
Gillard et al. 2021	Qualitative study (interviews with service users) UK	Access to mental health care Quality and appropriateness of service Mental health and wellbeing	Reductions or severe disruptions to mental healthcare (discontinuity of care, difficulty getting treatment, medication) created negative impacts. Most participants noted lower quality of care when it continued. Uncertainty/lack of control over changes to care can exacerbate mental health issues. People from ethnic minorities experienced more anxiety connected to pandemic stigma and racism, and some participants said, 'services were not culturally competent'.	People with mental health issues Ethnic minorities
Glenister et al. 2021	Survey Australia	Access to health services Primary care Diet and nutrition	In rural areas, compared with women without children, for women living with children, there was a net increase in consumption of unhealthy food and alcohol, and a net decrease in health-seeking behaviour.	Rural women and families
Gonzalez-Touya et al. 2021	Survey European countries	Access to health services	Very few countries in the survey showed significant income-related inequalities in unmet healthcare needs (i.e., postponed, rescheduled or denied treatments and medical appointments). Barriers to healthcare need ongoing monitoring.	Disadvantaged older people
Hamilton et al. 2021	Retrospective study Northern Ireland	Access to health services (pathological cancer diagnostic services and screening)	Diagnoses of lung, prostate and gynaecological malignancies remained much below pre-pandemic levels in late 2020. Men and the 50–59-year-old group, also lagged behind other demographics in terms of returning to expected numbers of diagnoses.	Older men Men Women
Hawke et al. 2021	Survey USA	Access to health services (mental health, drug and alcohol) Mental health	Transgender and gender-diverse youth reported more unmet needs for mental healthcare and substance use services, and less social support compared to cisgender youth during the pandemic.	Transgender and gender-diverse people Young people

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Jesus et al. 2021	Scoping review 85 studies reviewed	Access and availability of services (disability focus) Physical and mental health	Lockdown related measures were associated with: disrupted access to healthcare and support services; reduced physical activity leading to health and functional decline; social isolation and loneliness. Children with disabilities were disproportionally affected by school closures. The psychological consequences of disrupted routines, activities and support were significant. There were flow-on effects (burden, stress) for family and care.	People living with disability Children living disability Carers
John et al. 2021	Qualitative study (interviews with service users) Scotland	Access to perinatal care	Participants reported compounded impacts of communication issues, racism and pandemic-induced barriers to accessing healthcare, and social isolation negatively impacting maternity care and outcomes.	Ethnic minority women
Jones et al. 2021	Survey UK	Access to health services (mental health and gender-affirming services)	Social distancing measures raised social and help-seeking challenges leading to poorer mental health outcomes among participants. Lack of social support, negative interpersonal relationships, unsupportive environments and the inability to access mental health support and gender-affirming interventions were all factors that were associated with poor mental health.	Trans and gender diverse youth
Kaelen et al. 2021	Qualitative study (interviews and focus groups with health workers and clients) Belgium	Quality of care in RACF Mental health and wellbeing	Because of COVID-19 restrictions, RACF residents experienced losses of social interaction, autonomy and recreational activities that deprived them of their basic psychological needs. This had a very significant impact on mental well-being, expressed in feeling depressed, anxious and frustrated, as well as decreased meaning and quality of life. Staff felt unprepared for the challenges posed by the pandemic.	Aged care residents
Kavanagh et al. 2021	Survey UK	Access to health services Mental health and wellbeing	People living with disability were more likely to experience psychological distress and to report being lonely, compared to non-disabled people. However, inability to access health care and treatment were similar across both groups.	People living with disability
Kemme et al. 2021	Comparison of waitlist additions, removals and transplantation pre and during the pandemic USA	Access to paediatric liver transplantation	Evidence shows a 30% decrease for white children in overall liver transplantation vs 44% decrease in for non-white children.	Children Ethnic minorities requiring liver transplant

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Kim et al. 2021	Retrospective study USA	Access to timely surgical treatment (benign gallbladder diseases)	At a safety net hospital, referrals to outpatient clinics significantly dropped and the wait time for clinic evaluation doubled to 3.1 months during the first wave of the pandemic in 2020. A higher proportion of patients required emergency procedures.	Low SES People with benign gallbladder disease
Kyle et al. 2021	Retrospective study Scotland	Access to emergency services	There was a significant reduction in emergency department visits for the most frequent attender cohort in a single centre between 2019 and 2020. Top attenders were predominately men with mental health / substance misuse issues.	Men with mental health /substance misuse
Layton et al. 2021	Survey Global (mix of high and lower income settings)	Access to assistive technology	Access to assistive technology for minority groups was negatively impacted by the pandemic and associated restrictions. Multiple inequalities can compound this lack of access, including stigma, inaccessible environments and workplaces, poor access to education and healthcare.	Minority groups Users of assistive technology (people affected by illness, disability or ageing)
Lee et al. 2021	Retrospective study US	Access to health services (urologic care)	African American patients had similar decreases in outpatient visits compared with Asian and White patients, but also slower recoveries back to pre-pandemic levels. Medicare-insured patients had the steepest declines in visits. Patients on Medicaid and Government insurance had the lowest percentage of recovery to baseline.	Men African Americans Low SES
Le et al. 2021	Rapid scoping review 87 peer-reviewed studies and 88 grey literature included	Access to health services (physical, reproductive and mental health)	Evidence suggests restricted access to women's health services (family planning, breast/gynaecologic cancer, sexual health and transgender health), worsening mental health, harassment and stigmatisation at work, and pregnancy specific vulnerabilities for women.	Women
Leff et al. 2021	Retrospective study USA	Access to acute mental health care (paediatric emergency)	There were fewer presentations to paediatric ED for mental health disorders in 2020 compared to 2019, suggesting delays in seeking care. 'Compared to white children, Black children were 0.55 less likely to present with a mental health condition as compared to the pre-pandemic study period'.	Children and young people Black children and young people
Leuchter et al. 2021	Retrospective study USA	Access to health services (hospitals)	Racial disparities in potentially avoidable hospitalisations increased during the COVID-19 pandemic, affecting African Americans the most.	African Americans

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Lin et al. 2021	Retrospective study USA	Access to elective surgery	During the recovery period, patients aged 36-50 and >65years, those speaking languages other than English, those with Medicare or no insurance, unmarried people, and those living >100 miles away, had disproportionately larger decreases in elective surgery access and longer wait times.	Low SES Long distance from health centre Younger people Older people CALD groups
Lopez Segui et al. 2021	Retrospective study Spain	Access to primary health care	Overall, the increase in virtual care appointments did not entirely compensate the decrease in face-to-face visits. Pattern of diagnoses changed, with a reduction in chronic pathologies, respiratory infections, obesity and bodily injuries, but an increase in diagnoses related to socioeconomic and housing problems.	Low SES People with housing issues People with chronic illness
Lowe et al. 2021	Retrospective study USA	Access to Emergency departments	Changing ED utilisation patterns observed during lockdown. People from historically marginalised groups, such as Hispanics, those from lower socioeconomic areas and Medicaid users, presented at disproportionately lower rates and numbers than other groups.	CALD groups Low SES
Luckett et al. 2021	Survey (service providers) Australia	Access to palliative care Quality of care Mental health	Palliative care quality and appropriateness negatively affected by pandemic, with lack of psychosocial support and services for self-management at home, and lack of preparedness and IPAC.	People in palliative care and their families
Lund and Gabrielli 2021	Literature review	Access to specialist health services including paediatric psychologists	The pandemic increased barriers faced by young people with disabilities and created new difficulties in accessing health services, special education and other intervention services, potentially affecting the psychosocial and physical wellbeing of this cohort negatively.	Children and young people living with disabilities
Luo 2021	Survey USA	Access to health services (surgery and dental care) Mental health	Delayed dental care was associated with depression among both middle-aged adults and older adults. Delayed surgery was positively associated with depression among older adults.	People waiting for dental care and surgery Middle-aged and older people
MacConmara et al. 2021	Retrospective study USA	Access to liver transplants	During the initial phase of the pandemic, 'Minorities showed greater reduction in both listing (-14% vs -12% Whites) and transplant (-15% vs -7% Whites), despite a higher median MELD (Model for End-Stage Liver Disease) at transplant (23 vs 20 Whites, P < 0.001). Of candidates with public insurance, Minorities demonstrated an 18.5% decrease in transplants during Period 1 (vs -8% Whites).' Although improvements in disparities in candidate listings, removals and transplants were observed in subsequent periods, the adjusted odds ratio of transplant for Minorities was 0.89 over the entire study period.	Ethnic minorities, especially those with public insurance/low SES

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Maier et al. 2021	Mixed methods USA	Access to sexual and reproductive health	Fourteen states in the USA suspended abortion. Providers noted reductions in service provision for all sexual and reproductive health care, shifts in service utilisation with drops in HIV and STI testing, fewer PrEP referrals, more unmet demand for home birthing services, and widening inequities for rural service users, minorities and LGBTIQ+ people.	Women and pregnant people Ethnic minorities LGBTIQ+ people People living in rural areas
Malinky et al. 2021	Mixed methods USA	Access to sleep apnoea treatment and equipment	The pandemic led to a worsening of access to specialised services and fewer resources available for patients with sleep apnoea from lower SES who did not have insurance.	People with chronic illness Low SES
Marcondes et al. 2021	Retrospective study USA	Access to health services (cancer screening)	No significant improvement or worsening of disparities based on racial/ethnic status for any cancer screening type during first phase of the pandemic. Recovery was uneven, however: rates of breast cancer screening were lower than pre-pandemic levels for Latinx individuals, and lung cancer screening rates were higher than baseline for Latinx, Black or White individuals.	Ethnic minorities Women from ethnic minorities
Masters et al. 2021	Survey USA	Access to mental health care Mental health	Increased symptoms of perinatal depression (81%) and anxiety (89%) observed for people with prenatal history of depression. Changes were positively associated with perceived reduced access/change to mental health care. CALD participants three times more likely to experience pandemic-induced changes to care.	Perinatal women and individuals CALD women
Matenge et al. 2021	Rapid literature review (17 studies included)	Access to primary care	Resource prioritisation caused disruptions to chronic disease management and preventive care. Challenges included telehealth use, disparities in access and difficulties in patient assessment, and PPE shortage.	People with chronic conditions (more often lower SES)
Moreau et al. 2021	Survey of experts and desk review Europe (46 countries or regions)	Access to abortions	During the pandemic, abortions were banned in six countries and suspended in one. 'Surgical abortion was less available in 12 countries/regions, and services were not available or delayed for women with COVID-19 symptoms in eleven. No country expanded its gestational limit for abortion. Altogether, eight countries/regions provided home medical abortion beyond nine weeks and 13 countries/ regions up to nine weeks) Only six countries/ regions offered abortion by telemedicine'.	Women
Muschol and Gissel 2021	Experimental study Germany	Access to outpatient specialists	Access to all healthcare decreased. Inequalities in access, however, remained and were based on patients' insurance status and the regional level of supply.	Uninsured people and people living in areas with fewer health resources

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Myran et al. 2021	Retrospective study Canada	Alcohol-related ED presentations	Decreases in visits were larger for younger compared to older people. Pre-pandemic disparities between urban and rural settings and low and high-income neighbourhoods widened.	Young people Adults with problematic alcohol use Rural settings and low-income neighbourhoods
Neece et al. 2020	Qualitative study (interview with service users) USA	Access to disability support services and other specialised healthcare	Biggest reported challenge was being at home caring for children without essential services. Positive aspects of the pandemic included family time. Concern regarding long-term impacts of the pandemic on children's development, considering the loss of services, education and opportunities for social interaction, is high.	Children and young people living with disability and their family
K. H. Nguyen et al. 2021	Retrospective study USA	Access to treatment for kidney failure	General decline in treatment initiation for kidney failure patients during the first four months of the pandemic, by 30%. Black patients and patients living in places with high prevalence of COVID-19, initiated treatment in worse conditions (significantly worse levels of kidney function) when compared with previous years.	African-Americans People living in areas of high COVID-19 mortality rate
L. H. Nguyen 2021	Retrospective study USA	Access to child welfare report follow up	Close to 200,000 children are estimated to have been missed for prevention services and child abuse investigation in the first ten months of the pandemic.	Vulnerable/at risk children and young people in abusive households
Nordeck et al. 2021		Access to subsidised Buprenorphine Program (opioid use disorder)	The start of the pandemic saw a sharp increase in new enrolments in the program. Revised regulations for Buprenorphine via telehealth, helped maintained access to care.	Primarily, men Black, long-time drug users
Okoro et al. 2021	Survey USA	Access to healthcare (mental health, disability care, chronic care)	Evidence of disproportionately high levels of poor mental health indicators among adults with disabilities, including higher levels of stressors such as access to health care services, difficulty caring for their own (or another's) chronic condition, emotional or physical abuse and insufficient food.	People living with disabilities
Olié et al. 2021	Retrospective study France	Access to emergency care for myocardial infarction (MI) and stroke	There was a general decrease in ED admissions for MI and stroke observed during the lockdown probably caused by fear of COVID-19 and augmented by the lockdown. Regional disparities observed but not correlated to levels of COVID-19 spread.	People with low health literacy or fearful of COVID-19 in non-urban areas
Pacheco et al. 2021	Retrospective study Chile	Access to time sensitive treatment for cardiovascular and oncologic diseases	There was a significant drop in new diagnoses. Greater reduction occurred for women compared to men, particularly marked on myocardial infarction and colorectal cancer.	Women

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Papautsky et al. 2021	Survey USA	Access to healthcare (including dental, preventive and diagnostic)	Demand-side study of healthcare delays (postponement or cancelation). Almost half of the participants reported health care delays, including dental, preventive and diagnostic care. Associated factors included age, gender identity, education and self-reported worry about general health.	Gender diverse people People with low health literacy
Parkes et al. 2021	Qualitative study (interviews with service users and providers) Scotland	Access to housing and mental health support	The pandemic provided an opportunity to provide enhanced service including housing, health and social care, substance use treatment and harm reduction.	People experiencing homelessness and problem substance use.
Paulauskaite et al. 2021	Survey England	Access to health services and information (support and specialised services) Physical and mental health	Concerns were wide ranging among parents: lack of specific information, inability to follow social distancing and isolation rules, school closure and disruption or interruption of health and social care services. Evidence of mental health deterioration for parents and interrupted development/regression in skills for children. Likely long-term negative implications raised for children and parents.	Children with developmental delays and their parents
Picchio et al. 2020	Cross-sectional Survey Spain	Access to harm reduction and drug treatment services	Containment policies presented challenges for marginalised populations. Closed services or reduced opening hours resulted in a reduction in the number of clients accessing harm reduction services (-22%) and needle distribution (-40%) compared to previous years. A greater associated risk of reusing or sharing injecting equipment, overdosing and infectious diseases was found.	People who use drugs
Preis et al. 2020	Survey (Pregnant women) USA	Mental and physical health	Almost 30% of pregnant women reported stress. Greater stress levels were associated with abuse history, chronic illness, income loss, perceived risk of COVID-19, changes to prenatal appointments, high-risk pregnancy and being a woman of colour.	Pregnant women Women of colour Women with high risk pregnancies
Purtle et al. 2021	Survey (Service providers) USA	Access to youth specific mental health services	Most service providers (72%) saw the pandemic as having disproportionately negative mental health impacts on socially disadvantaged youths, and 15% said the pandemic negatively affected service provision and access for young people. Service barriers included access to internet and digital equipment or services that could not be provided virtually.	Socially disadvantaged young people with mental health issues
Rahman et al. 2021	Qualitative study (Interviews with service users)	Access to primary care Mental health Diet and nutrition	Respondents reported decreased, delayed or temporarily suspended access to primary care. Associated challenges included managing diet, access to healthy food, ability to exercise, financial issues, increased stress and fear of contracting COVID-19.	People with chronic illness Low SES Minority groups
Rhodes et al. 2021	Qualitative study (Interviews with service users)	Access to HIV and other health care Mental health	Participants experienced restrictions in needed care (such as dental) and increased stress, anxiety and isolation in the context of COVID-19. Interruptions in HIV care and access to medication were not reported, but maintaining adherence to medication was more challenging.	Racially/ ethnically diverse minorities Gay, bisexual and other men who have sex with men (MSM)
L. Roberts et al. 2021	Qualitative study (Interviews with service users) Wales	Access to psycho-social support	The study found stark disparity in young people's experiences, with some reassured by support responses and others feeling neglected and forgotten. The 'massive struggles' faced by some young people reflected immediate difficulties which also have the potential for longer-term impacts.	Young people leaving care
Román et al. 2021	Survey (interviews with patients) Spain	Impact of COVID-19 pandemic on patients with Immune Thrombocytopaenia (ITP) during a COVID-19 outbreak	COVID-19 had a major impact on the psychosocial, occupational and quality of care of patients with ITP. Nearly half of the cohort was considered vulnerable and avoided treatment due to perceived risk of infection. 49.2% of the hospital visits were either cancelled or postponed, 17.2% because of the patients' fear of coming to the centre. Almost all patients reported adherence to the prescribed treatment.	People with compromised immune systems
Russell et al. 2021	Survey (Clients enrolled in OAT [opioid agonist treatment]) Canada	Access to drug treatment services.	Decreases in service capacity resulted in reduced access to harm reduction services, OAT, withdrawal management and treatment services, medical professionals, shelters/ housing and food banks. Increased health issues and risky substance use behaviours included, sharing/re-use of supplies and overdose events. Positive impacts: greater access to OAT take-home 'carries' and prescription deliveries.	People who use psychoactive drugs regularly or opioid treatment
Sanchez et al. 2020	Cross sectional survey USA	Access to HIV-related services for Men who have sex with men (MSM)	Many participants had adverse impacts to general wellbeing, social interactions, money, food, drug use and alcohol consumption. Half had fewer sex partners and most had no change in condom access or use. Some reported challenges in accessing HIV testing, prevention and treatment services. Compared to older MSM, those 15-24 years were more likely to report economic and service impacts.	Young MSM

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Satish et al. 2021	Comparative retrospective survey USA	Access to breast cancer care	Service disruptions were associated with delayed and/or change in breast cancer care (42.6%). Patients who identified as Black or African American, Asian or Other races were more likely to experience a delay and/ or change compared with White patients. Medicaid compared with commercial insurance, was associated with increased odds of a delay and/or change, whereas later breast cancer was associated with decreased odds of a delay and/or change.	Non-white women with newly diagnosed breast cancer Lower SES
Schwartz et al. 2021	Survey USA	Access to health and support services	Individuals with chronic health conditions and disabilities were more likely to experience service disruptions than the general population and may be particularly susceptible to unemployment. On average, 54.0% of service changes were due to discontinuation, including loss of physical therapy, job coaching, community organizations, transportation and peer supports. Other changes included a shift to virtual service delivery and family members taking the role of service providers.	People with chronic health conditions and disabilities
Sifris and Penovic 2021	Qualitative study interview Australia	Access to abortion services	The pandemic and response measures amplified pre-existing barriers (financial barriers to access, geographic barriers to access, and deficiencies in practitioner attitudes, education and training) and generated a disproportionate and intersectional impact on the most marginalised and disempowered women in society.	Women attempting to access abortion services
Smolic et al. 2021	Longitudinal survey data 25 European countries and Israel	Access to healthcare and unmet healthcare needs	Stricter containment and closure policies more commonly limited healthcare access to educated, occupationally active, urban women during the initial outbreak, but older people with chronic health conditions, women and people with low SES were made more vulnerable by this pandemic.	High health care users Women People with pre-existing health issues and low SES
Spain et al. 2021	Survey – descriptive and thematic analysis UK	Access to services Mental health	Uncertainty may be especially difficult for autistic individuals. COVID-19 substantially impacted service provision, causing major disruption or loss of services during the pandemic, and interventions to support reintegration during and post the pandemic.	Autistic individuals and their families
Stephenson et al. 2021	Retrospective cohort study Canada	Primary care visits for a fixed cohort of primary care patients	Compared with the previous year, visitor rates during the pandemic period dropped 34.5%, Visitor rate and visit volume varied based on patient age and sex, but not on socioeconomic status. In this primary care setting, the pandemic appears not to have worsened socioeconomic disparities in access to care.	Primary care patients

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Stevens et al. 2021	A rapid health needs assessment (expert opinion) England	Access to health care and psycho-social services among socially vulnerable groups	The COVID-19 pandemic highlighted the disproportionate impact on socially vulnerable groups and a plethora of unmet needs. 'Accessing and following COVID-19 information and government guidance affected all groups, due to exclusion from digital technology, lack of translated resources, tailored support and adequate housing'. Changed delivery of healthcare services included 'the closure of outreach and drop-in services, remote consultations and online patient registration worsened existing barriers to accessing healthcare.' Financial impacts included costs of health care (a key fear for migrants). Service closures and job losses impacted access to income, education and social support, putting them at higher risk of destitution, isolation, loneliness and deteriorating mental health'.	Socially vulnerable groups Non-English speakers Refugees
Stiles-Shields et al. 2021	Survey USA	Access to services Mental health	Youth with Spina Bifida who identified with a minoritized racial or ethnic identity, experienced greater self-reported impact of the pandemic on their lives. Those with shunt revisions had higher health care needs.	Young people with spina bifida and their parents
Thau et al. 2021	Prospective study – descriptive USA	Access and availability of rehabilitation services	Admission for stroke during the COVID-19 pandemic was associated with a significantly lower probability of being discharged to an inpatient rehabilitation facility (IRF) for non-white patients. This effect persisted despite adjustment for predictors of IRF disposition, including functional disability at discharge.	Minority groups
Topriceanu et al. 2021	Longitudinal survey - five age cohorts UK	Access and availability of health and care services during lockdown	The COVID-19 pandemic appears to have deepened existing health inequalities impacting predominantly Women (OR 1.40), and those with a chronic illness (OR 1.84) experienced significantly more cancellations during lockdown (all $p<0.0001$). Ethnic minorities and those with a chronic illness required a higher number of care hours during the lockdown (both OR=2.00, all $p<0.002$). Socioeconomic position was not associated with cancellation or care hours. Age was not independently associated with either outcome.	Women Ethnic minorities People with chronic illnesses
Totsika et al. 2021	Longitudinal survey - two birth cohorts (20-year-olds and 50s) UK	Access to services	People with an intellectual impairment experienced high levels of social and health inequalities which were impacted more by the pandemic. Self-reported health and impact differences were mostly eliminated after adjustment by gender, ethnicity and poor, suggesting a socio-economic and age gradient of COVID-19 impacts on intellectual impairment.	Lower socio-economic and older people with intellectual impairment

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Verhoeven et al. 2020	Qualitative (interviews with GPs) Belgium	Access, quality and availability of services	GPs felt that acute care was compromised, both by their own changed focus and by fewer patient consultations. Chronic care was mostly postponed, with consequences that will extend after the COVID crisis and that have had a profound impact on psychological and socioeconomic well-being. GPs think that they are at high risk of getting infected. Dropping out and being unable to contribute their part or becoming virus transmitters, were reported to be greater concerns than getting ill themselves.	Vulnerable people People with chronic illnesses GPs
Walker et al. 2021	Retrospective observational study Canada	Access to services (cancer screening and diagnostic)	(-41%) fewer screening tests in 2020 than in 2019. Individuals in the oldest age groups and in lower-income neighbourhoods, and people with a high probability of living on a First Nation reserve, were significantly more likely to experience diagnostic delay following an abnormal breast, cervical or colorectal cancer screening test during the pandemic.	Women Older age groups from lower-income neighbourhoods People living on a First Nation reserve
Wang et al. 2021	Time-series cluster analysis (spatial and temporal analysis of mobile device data) USA	Access to health services Access to transport	Medical visits dropped during the lockdown. The ability to conduct in-person medical visits during the pandemic was unequally distributed. Less advantaged neighbourhoods (with higher percentages of elderly persons, minorities, low-income individuals, and people without vehicle access) had lower visits before and during the pandemic and a slower recovery.	Elderly persons, minorities, low-income individuals, and people without vehicle access
Whaley et al. 2020	Cross-sectional study USA	Changes to health care use	Insured Patients living in zip codes with lower-income or majority racial/ethnic minority populations, experienced smaller reductions in in-person visits but also had lower rates of adoption of telemedicine and 'dramatic reductions in the use of preventive and elective care'.	Racial/ethnic minorities with health insurance
Whipps et al. 2021	Comparative survey USA	Access to perinatal healthcare	Pregnant and postpartum people are a particularly vulnerable subgroup to consider when studying healthcare access. During 'surge' and 'non-surge' pandemic circumstances, marginalized pregnant people continued to fare worse in relation to accessing perinatal healthcare than the general cohort - especially those facing acute financial difficulty and racially minoritised individuals identifying as Black or Indigenous. Delayed or inadequate access to routine care is associated with higher risk for negative outcomes.	Pregnant and postpartum women

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Wilke et al. 2020	Survey, mixed methods (NGOs providing government-mandated residential care, returning children and youth to family) (14 Nations)	Child safety, monitoring and support; rapid return of children and youth in residential care to families	The COVID-19 pandemic necessitated the rapid return of children and youth in residential care to families, without adequate child and family assessment and preparation. All respondents indicated they believed at least some families would be able to remain intact safely with appropriate support. Primary concerns for children and families related to unresolved antecedents to separation, lack of economic capacity, limited monitoring and lack of access to education.	Children and young people at risk of harm/in out of home care
Wilke et al. 2020	Mixed methods (Interviews with providers) (43 countries)	Impact of pandemic on safety of vulnerable children and families, and associated recommendations for response measures	Pandemic related restrictive measures were associated with increased risk factors for vulnerable children in direct care (i.e., residential care, family preservation, foster care, etc.) and families, including not having access to vital services. NGOs experienced government restrictions, decreased financial support and inability to adequately provide services which increased risk factors for children. Increased communication and supportive activities had a positive impact on both NGO staff and the families they served.	Vulnerable children and families
Williams et al. 2021	Qualitative (interview with providers) USA	Access to IPV service and resources	Stay-at-home orders exacerbated external stressors, leading to heightened violence and kept survivors of IPV in close proximity to their abusers. On a system level, the pandemic led to widespread uncertainty, strained resources, amplified inequities, and loss of community. On an individual level, COVID-19 restrictions limited survivors' abilities to access resources and to be safe, and amplified pre-existing inequities, such as limited technology access. Those who did not speak English or were immigrants experienced more difficulty accessing resources due to language and/or cultural barriers.	Women experiencing IPV Migrants in DV situations
G. Wilson et al. 2021	Surveys – Time series New Zealand	Access to medication through general practice	Many found electronic prescribing an efficient and streamlined processes, whereas others had technical barriers and transmission to pharmacies was unreliable with sometimes incompatible systems. There were concerns that vulnerable patients did not have usual access to medication.	Vulnerable populations relying on primary care
H. L. Wilson et al. 2021	cross-sectional survey USA	Access to health services Mental health	Among adults with hearing loss who attended a Tertiary referral centre, hearing loss severity (cochlear implant users) and location of residence (rural residents) presented greater challenges in communication, pandemic preparedness and access to healthcare, including for mental and emotional health.	Adults with severe hearing loss Non-metropolitan residents

First author/ year	Study details	Determinants of health/ area of impact	Key findings*	Population groups
Wong et al. 2021	Community case study professionals Hong Kong	Access to health and social services	Poor families of children with autism and developmental delays were found to be challenged, more than average, in finding daily necessities. Most vulnerable children displayed additional problematic behaviours and emotional problems during the quarantine, with disrupted social and health services. Service providers offered tangible resources and online training/workshops.	Poor families of vulnerable children
Yu 2020	Retrospective time series analysis USA	Access to health services (inpatient care)	ED visits and hospitalization rates decreased significantly with patients living in small metropolitan or rural areas compared to those living in large metropolitan areas. 'Elderly people living in [...] small metropolitan or rural areas were less likely to receive adequate health care than those living in large or medium metropolitan areas during the COVID-19 pandemic'.	Elderly people Non-urban elderly
Zapata et al. 2021	Survey (Service providers) USA	Access and availability of contraception and reproductive services	Discontinuation of key family planning services during the COVID-19 pandemic limited contraception access and impeded reproductive autonomy. Implementing healthcare service delivery strategies that reduced the need for in-person visits (e.g., telehealth for contraception, providing or prescribing ECPs in advance) may have decreased disruptions in care. Some services such as long-acting reversible contraception placement and removal and terminations required in person visits.	Women of reproductive age
Zhao et al. 2021	Cross-sectional study (Survey) USA	Access to cancer treatment Psychosocial wellbeing	Feelings of isolation/stress increased significantly during the pandemic. Scheduled treatments were adversely affected. One-fourth of patients experienced difficulty getting treatment. Patients who were covered by Medicaid, most of whom were Black, were more likely to experience financial challenges.	Women with breast cancer
Zima and Bussing 2021	Mixed-methods: retrospective analysis, observational study and program evaluation USA	Access to child mental health services	An acute and disproportionate change in child and adolescent mental health service use was found. Despite an overall decline in mental health related ED visits (greatest among children of minority race and young children), suicidality remained one of the most frequent drivers of ED use after the onset of the COVID-19 pandemic.	Children of minority race and young children
Zwickl et al. 2021	Cross-sectional survey Australia	Access to health services (gender-affirming surgery)	50% reported experiencing financial strain, 22% had reduced working hours and 22% were unemployed (three times the national rate). 61% experienced clinically significant symptoms of depression. 49% reported thoughts of self-harm or suicide (over three times the national rate) which was more likely if a person experienced cancelation or postponement of gender-affirming surgery, financial strain or felt unsafe or afraid in their household.	Trans and gender-diverse people

2 Changes to work

2.1 Methodology

Searches were run in three databases (PubMed, Embase and CINAHL) on 29/06/2021 using the search terms presented in Table 4. After duplicates were removed, article titles and abstracts were screened using the exclusion criteria presented in Table 5. Additional literature including grey literature, was sourced through conferences, reports and web searches to provide information relevant to the local context during the writing of this report.

Table 4 Search strategy (changes to work)

Focus	Description	Sample of search terms
Population	N/A	
Intervention	Changes to work practices	"work* from home" "(remote OR home OR virtual OR agile OR flexible) work*" unemploy* secondment* commut* telecommut* active travel active transp*
Comparison (or Control)	N/A	
Outcomes	Health equity impacts Health disparity, impacts on vulnerable groups, social determinant of health	health *equit* health disparit* inequalit* "determinant* of health" discrimination marginali*
Context	Upper middle or high income country COVID-19 pandemic	COVID* coronavirus

Table 5 Inclusion and exclusion criteria (changes to work)

Inclusion criteria	Exclusion criteria
· Peer-reviewed literature · Upper middle or high income country setting · Empirical studies, scoping reviews, systematic reviews · Describes a qualitative or quantitative association between COVID-induced changes to work AND a health equity outcome · Published between 2019-2021 · Language: English	· Study protocols, commentaries, editorials, or books/theses · Grey literature (i.e., not peer-reviewed) · No data on association between changes to work and equity outcome · Context is not the COVID-19 pandemic · Focus is COVID-19 treatment or vaccination · Does not have the potential to contribute meaningfully to answering the research question, purpose or objectives. · Lower or upper middle income country or conflict setting

2.2 Results

Figure 2 PRISMA Diagram (changes to work)

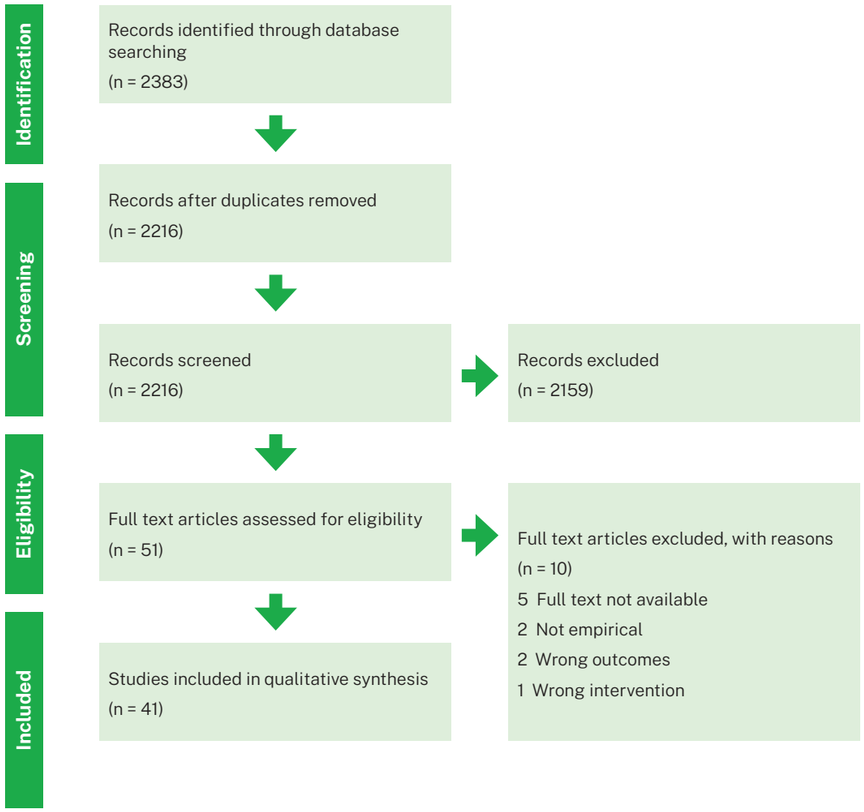

Table 6 Summary of included studies (changes to work)

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Abtahi et al. 2021	Cross-sectional survey Iran	Vulnerability of employees of different occupations; loss of employment and perception of infection risk	Inequality in risk between employees over 50 years old or with low education, as well as occupational transmission of COVID-19, were associated with different susceptibilities.	Older workers Frontline health workers with low education
Abufaraj et al. 2021	Cross-sectional survey Jordan	Gender-based disparities in terms of health indices, mental well-being and economic burden	The pandemic widened the gender gap in autonomy and income. More women were not paid (14%) during the crisis as compared with men (7%). Half of pregnant women were unable to access antenatal care and 79% unable to access contraception.	Women
Adams-Prassl et al. 2020	Two wave cross sectional survey United Kingdom	Factors associated with being furloughed by industry, occupation, gender and age	Women were significantly more likely to be furloughed. Large differences across industries and occupations, associated with: • care responsibilities • no such gender gap among childless workers • younger female workers, less educated workers and workers with alternative work arrangements • change in work practices; more tasks can be performed from home.	Women with children Younger workers workers with alternative work arrangements
Adler and Bhattachary 2021	Observational study USA	Structural racism among frontline service workers Inequities in conditions and stress	Examines the relationship between social determinants of health and COVID-19-related morbidity and mortality among frontline workers. Service workers-including water, sanitation and hygiene staff, and food service workers experienced inequities in conditions and unparalleled levels of distress. Hospitals have used many interventions to improve workers' mental health.	Frontline health workers: low-income earners, migrants and people of colour (including Black, Latinx, Pacific Islander and Asian people)
Aghalari et al. 2021	Descriptive – analytical survey Northern Iran	Evaluation of organisational and social commitments and related factors during the coronavirus pandemic for healthcare workers	Healthcare workers had very positive and high organisational and social commitments, with highly educated workers having more organisational commitments.	Healthcare workers Senior Healthcare workers
Al Ghafri et al. 2020	Qualitative – focus groups Oman	Experiences and perceptions of changes to primary and community health care Medical and public health response socio-cultural and religious reforms, psychological impressions	Primary health care (PHC) shifted from being clinically driven to a public health centered setting. Front line health care worker (HCW) roles shifted from being clinically driven to a public health centered setting. HCWs participated in disease prevention, surveillance and control. The pandemic was linked to unfavourable socio-religious and psychological events.	Front line health care workers and managers
Alahmad et al. 2020	Risk management Framework Kuwait	Risk of COVID -19 infection and stressors on migrant workers: cumulative risk considerations	Migrant workers are one of the most vulnerable subpopulations within the majority of COVID cases as they: (1) are often excluded from protections provided by public policies; (2) frequently take precarious jobs with less pay and longer hours; (3) often work in unsafe working conditions with little occupational safety and health training; and (4) grapple with major cultural and language barriers.	Migrant workers
Alexopoulos et al. 2022	Comparative survey Greece	Mental health of frontline hospital employees vs general community Influence of setting, mental health and working conditions	Anxiety and depression symptoms were more severe in frontline hospital employees compared to backstage employees and community members, and inversely correlated with crisis duration, age and positively with illness avoidance or control over situation.	Frontline hospital employees
Almeida et al. 2020	Observational study with narrative review International	The impact of the COVID-19 pandemic on women's mental health	Women who are pregnant, postpartum, miscarrying or experiencing intimate partner violence are at especially high risk for developing mental health problems during the pandemic. Gender disparities may be accentuated for employed women or single parents, as women are disproportionately responsible for the bulk of domestic tasks, including childcare and eldercare. Social support is a key protective factor. Proactive outreach and enhancement of social supports could lead to prevention, early detection and prompt treatment.	Pregnant, employed women Single parents Carers
Amerio et al. 2020	Cross-sectional survey Italy	Poor housing quality Working performance Mental health	Poor housing conditions may impact physical and mental health and health inequalities during long stay at home periods. Working or studying in small apartments, no views and scarce indoor qualities, was strongly associated with moderate–severe and severe depressive symptoms. The psychological consequences included a worse quality of life with higher severity for anxiety, impulsiveness and sleep symptomatology. Worsening working performance related to WFH, increased the risk of depressive symptoms four-fold.	Students WFH
Bakkeli 2021	Cross-sectional comparative survey Norway	Self-reported health, wellbeing, work situation and income before and during COVID-19 pandemic	Work situation is an important predictor of wellbeing and directly impacts income and life satisfaction. People with poor mental or physical health were more likely to experience worsened work situations; associated with lower life satisfaction. Health-related risks and work-life balance played predominant roles in predicting life satisfaction before the pandemic, while different types of household structures were among the most important predictors of life satisfaction during the pandemic.	People with insecure work Poor health

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Bettencourt-Silva et al. 2020	Google keyword trends – Grey International – English speaking	Social and health concepts potentially impacted by a COVID-19 outbreak Unemployment, transport, work, social support, social exclusion, food insecurity.	Unemployment and food insecurity were the two vulnerability indicators that peaked the most during the start of the pandemic, and also saw their highest five-year peaks in the same period.	Unemployed
Bui et al. 2021	Cross-sectional survey USA	Emotional distress included depression and anxiety symptoms. COVID-19 stressors included current and expected income, housing, health care and food insecurities	Disproportionate negative impact of COVID-19 stressors on emotional distress by age, gender, education, occupation, income and migrant status. Older persons of colour reported higher rates of stressors and emotional distress than their White counterparts.	Over age 55 People of colour
Chen and Krieger 2021	Correlational study USA	Household crowding, poverty, population of colour and confirmed COVID-19 cases	Socioeconomic gradients for infection in the top versus bottom quintile for household crowding.	Ethnic minority Crowded housing Disadvantage
Cheng et al. 2021	Longitudinal survey UK	Mental health of working parents	Deterioration of mental health of working parents is strongly related to increased financial insecurity and time spent on childcare and home schooling compared to working counterparts without children. This burden is not shared equally between men and women, and between richer and poorer households. Women and Poorer households are more substantially affected.	Women Low SES
Lay and Rogus 2021	Cross-sectional survey USA	Health impacts, risk factors, food access and COVID-19 related concerns by race and ethnicity	Minorities are more vulnerable to economic insecurity and health issues. Low-income individuals are more likely to have low-paying jobs with less flexibility, face challenges meeting all their basic needs and experience more concern over their financial circumstances. 36.6% reported being essential workers or working outside of the home during stay-at-home orders. They are more likely to contract COVID-19, report illness of a family member or friend from COVID-19, have pre-existing medical/psychiatric illnesses and are therefore most vulnerable to psychological distress due to COVID-19.	Low-income individuals

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Dickerson et al. 2022	Longitudinal survey UK	Differential impacts of ethnicity and financial insecurity in locationally disadvantaged areas and overcrowded housing Food security and employment	Ethnic minority and financially insecure families had a worse experience during the lockdown across all domains, with the exception of mental health which appeared worse in White British mothers. Open text responses corroborated these findings and highlighted high levels of anxiety and fear about COVID-19	Ethnic minorities and financially insecure families
Donnelly and Farina 2020	Longitudinal cross sectional survey USA	Impacts of income shocks on mental health Employment demographic characteristics	COVID-19 pandemic related job losses or a reduction of work hours, impacted the mental health of the population. Anxiety and depression was higher among those who lost income. Differences by state and different policy contexts influenced the impact.	Women Lower SES
Dragano et al. 2020	Cross-sectional survey Germany	Socioeconomic inequalities in COVID-19 hospitalisation risk employment situation	Regular employment correlates with risk of COVID-19 related hospitalisation. Odds ratio regularly employed, 1.94 (CI 95%: 1.74-2.15); long-term unemployment, 1.29 (0.86-1.94); unemployed, and 1.33 (0.98-1.82) for low-wage employment.	Unemployed insecure work SES
Gonçalves et al. 2021	Cross sectional survey Portugal	Personal and work related burnout factors among nurses and specialisation. Palliative care, self-perceived health status, unit type, weekly hours of work	Gender was found to be a significant factor in patient-related burnout due to role, level of support and managing work and families. COVID-19 increased levels of personal, working and patient burnout were present in the majority of Significant personal and work-related burnout factors found were specialization in palliative care, self-perceived health status, unit type, weekly hours of work, and allocation to COVID-19 units.	Women Nurses
Gottenborg et al. 2021	Group interviews USA	The impact of COVID-19 on changes to roles and responsibilities at work and at home, resources utilised to manage changes and how employers can potentially assist staff	Challenges and disparities experienced during the pandemic disproportionately impacted women personally and professionally. Institutional factors contributed to wellness and burnout. Subthemes included increased professional and personal demands, concern for personal safety, a sense of internal guilt, financial uncertainty, missed professional opportunities and a negative impact on mentoring. Solutions offered included an emphasis on addressing pre-existing inequities, the importance of community and workplace flexibility.	WFH Women

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Ilczak et al. 2021	Cross sectional survey Poland	Level of stress, age and work experience, profession and gender among emergency medical personnel	Stress among emergency medical personnel increased due to new factors that did not previously exist. Predictors of stress included the fear of contracting COVID-19, a decrease in the level of safety while conducting emergency medical procedures, and the marginalisation of treatment for patients not suffering from COVID-19. Being female and working in the nursing profession correlated with stress. Appropriate training, the supply of personal protective equipment and the preparedness of the system to deal with the pandemic outbreak were protective factors.	Women Lower SES workers Nurses
Jesus et al. 2021	Scoping review International	Lockdown-related disparities experienced by people with disabilities, including access to care and employment	Lockdown-related measures disproportionally affected people with disabilities, including: disruption of personal assistance (carers); reduced employment and/or income exacerbating disparities; and digital divide in access to health, education and support services	People with disabilities Carers
Kazakos et al. 2021	Survey UK	Reported air pollution and exposure levels during morning rush hours	Less travel correlated with less production of and exposure to air pollution. Air pollution exposure vary across groups with different socioeconomic status, with a disproportionate positive effect on the areas of the city that are home to more economically deprived communities.	WFH Lower SES locations
Lotta et al. 2021	Survey - Convenience sample Brazil	Inequalities and vulnerabilities within the health workforce	The Brazilian health system was not able to manage and protect health workers. Inequalities and vulnerabilities of the health workforce were exacerbated. A lack of material and institutional support created a scenario in which workers suffered from fear and anxiety, felt unprepared and reported an increase in mental health issues. Impacts were different for each profession.	Health workers
McMahon et al. 2020	Cross-sectional survey Ireland	Work-related well-being of staff working in intellectual disability settings during the COVID-19 pandemic	Personal and work-related burnout, and moderate and mild levels of anxiety and depression, occurred for staff working in disability care across all settings. There were higher rates among those working in isolation with more challenging clients and with lower supports.	Low income Essential workers Women

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Michel et al. 2021	Framework International	Frameworks that explain stressor-strain relationships over time; stress-reaction and adaptation models	Stress-reaction models suggest that stressors, such as heightened job demands due to the pandemic, accumulate over time, and thus, prolonged exposure to these stressors results in both immediate and long-term strain. Conversely, adaptation models suggest that people adapt to stressors over time, such that strains produced by ongoing stressors tend to dissipate. Workers in general exhibited decreasing cognitive weariness and psychological symptoms over time. On-site workers experienced increasing physical fatigue over time. Engaging in recovery behaviours was associated with improvements in cognitive weariness and psychological symptoms for all workers.	Front line workers
Phiri et al. 2021	Count UK	People who died of COVID-19 in UK hospitals	A disproportionate number of BAME physicians and health care workers (19%) died during the pandemic. Nonmedical staff were at the highest risk of psychological distress, while health care professionals from BAME communities were more likely to be infected or die owing to discrimination and inequalities both at the workplace and in society.	Black, Asian, and minority ethnic (BAME) communities
Raine et al. 2020	Cross-sectional analysis (COVID database) USA	Differences in the proportion of workers who were eligible to work from home, and infection rate by race and ethnicity	Racial and ethnic disparities in COVID-19 outcomes were observed. The social dynamics which perpetuated racial, economic and environmental disparity created a system of injustice which sustained health inequality, thereby resulting in disparate susceptibility to infection, morbidity and mortality among marginalised communities.	Racial and ethnic minority groups Essential workers
Ramos et al. 2020	Cross-sectional survey USA	The Impact of COVID-19 on essential food production workers	COVID-19 illuminated an often 'invisible' but essential industry with inequities built into practices, policies and systems that reinforced societal power structures. Many workers are immigrants, refugees or members of other minority groups, and a significant number may lack authorisation to work. These workers may not have access to healthcare and face barriers such as limited English proficiency and low health literacy. This confluence of factors may have increased the risk and impact of COVID-19 on essential workers and their families' lives.	Minority groups Refugees People with limited English proficiency Low health literacy
Roberts et al. 2020	Cross sectional survey USA	Health equity and the COVID-19 risks to essential workers	Essential workers were at greater risk of contracting COVID-19 and were more often low-income persons of colour who reported less social distancing and wearing masks indoors as compared to non-essential workers.	Minority groups Persons of colour Essential workers

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Rojas-Rueda and Morales-Zamora 2021	Review International	Physical activity, mental health, home isolation and access to transport	COVID-19 mitigation strategies resulted in indirect benefits on air quality, traffic noise and traffic incidents. These strategies have had negative impacts on physical activity, mental health, home isolation and access to transport options, among others.	People WFH
Schur et al. 2020	Cross sectional surveys - Regression analysis USA	Workers in lower-paying and lower-skilled jobs	Workers with disabilities are more likely than those without disabilities both to work primarily from home and to be in lower-paying, blue-collar and service jobs. At least some of the employment barriers faced may be lessened by WFH, but the types of jobs held constrain this potential.	People with disabilities Lower paid jobs
Signorelli et al. 2020	Expert opinion -grey Italy	Housing design and changes relating to WFH	Most workforces were unprepared for the WFH challenge. The pandemic could be an opportunity to accelerate the process of promoting healthier, safer and more resilient homes and for improving living conditions, favouring the use of homes that improve the well-being of the occupants, reduce the risk of contagion and allow uses consistent with the UN and WHO Sustainable Development Goals recommendations.	
Smallwood et al. 2020	Survey Australia	Investigates the severity, prevalence, and predictors of moral distress (MD) experienced by Australian healthcare workers	Participants: Nurses (39.4%), doctors (31.1%), allied health staff (16.7%) and other roles (6.7%). MD was associated with resource scarcity (58.3%), wearing PPE (31.7%), limiting their ability to care for patients, exclusion of family going against their values (60.2%) and fear of letting co-workers down if they were infected (55.0%). Personal and workplace predictors: working in certain frontline areas, metropolitan locations, and having prior mental health diagnoses. Impact of MD: increased risk of anxiety, depression, post-traumatic stress disorder, and burnout. Conversely, feeling appreciated by the community protected against these risks in healthcare workers.	Healthcare workers
Solis et al. 2020	Framework USA	Health disparities that emerge in three key components of disease transmission: exposure, susceptibility and disease expression	The global impact of the COVID-19 pandemic has disproportionately affected some communities and populations more than others. Social environments help illuminate disparities in the coronavirus pandemic, including its origins, transmission and susceptibility among people.	Minority groups SES

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Spence et al. 2020	Survey UK	The impact of the COVID-19 lockdown on the physical activity (PA) of adults	Adults who believed they had the physical opportunity and were motivated, were more likely to have maintained or increased their PA during the COVID-19 lockdown. Sedentary-related behaviour for both work and leisure increased substantially during the lockdown and the prevalence of PA was generally substantially lower than UK national surveys prior to the pandemic.	Adults People who work from home
St-Denis 2020	Cross sectional survey Canada	Occupational risks of exposure to COVID-19 using measures of labour force characteristics, job tasks and activities	Women worked in occupations associated with higher-than-average risks of exposure to COVID-19 than men, driven by their overrepresentation in high-risk fields such as health occupations. Parents working in high-risk occupations were forced to make difficult trade-offs in their work and personal lives, with women and minority groups disproportionately affected.	Women Young people Minority groups in low-income occupations
Sterling et al. 2020	Qualitative interviews USA	Experiences of home health care workers	Home health care workers experienced challenges that exacerbated the inequities they faced as a marginalized workforce: the risk of contracting COVID-19, exacerbated by inconsistent delivery of information on what home care workers should do to protect themselves and their clients; inadequate PPE; and a heavy reliance on public transportation. Already a vulnerable workforce, home health care workers faced additional risks to their physical, mental and financial well-being during the COVID-19 pandemic and were forced to make difficult trade-offs in their work and personal lives.	Low income Essential workers Women
Sugg et al. 2020	Cross-sectional cluster analysis USA	COVID-19 outbreaks in nursing homes	COVID-19 outbreaks in nursing homes were related to other geographic-based factors (e.g., community factors such as minority population). Protective factors for COVID-19 transmission were higher proportion of total staffing, access to resources (access to PPE, training, testing), support (orientation, political support) and changes in tasks and in interactions and facility ownership type (e.g., for-profit, not for profit).	People living or working in nursing homes
Xue and McMunn 2021	Longitudinal Study United Kingdom	Gender differences in childcare and housework demands during the COVID-19 lockdown, and association with worsening mental health.	Women spent much more time on unpaid care work than men during lockdown and were more likely to reduce working hours or change employment schedules due to increased time on childcare compared to the father. Gender inequalities in divisions of unpaid care work, including juggling home working with home schooling and childcare as well as extra housework, is likely to have led to poor mental health for people with families and particularly for lone mothers.	Women

3. Virtual care and health equity

3.1. Methodology

A search was conducted in three databases (Medline, EMBASE and CINAHL) on 28/01/21 using the search strategy outlined in Table 7 (both Medical Subject Headings – MESH and free-text keywords were used and adapted for each database). After duplicates were removed, studies were selected using the inclusion/exclusion criteria outlined in Table 8. Relevant grey literatures were also searched for Australian context specific evidence through stakeholder consultation and searching web-based sources.

Table 7 Search strategy (virtual care and health equity)

Focus	Description	Sample of search terms
Population	N/A	
Intervention	Use of virtual care/telehealth	"telemedicine" OR "telemedicine" [MESH term] OR "tele medicine" OR "telehealth" OR "tele health" OR "tele-health" OR "e-health" OR "teletherapy" OR "virtual care" OR "virtual health"
Comparison (or control)	N/A	
Outcomes	Health equity impacts Health disparity, impacts on vulnerable groups, social determinant of health	"disparit*" OR "health equity" [MESH term] OR "health equity" OR "equit*" OR "inequit*" OR "inequalit*" OR "healthcare disparities" [MESH term] OR "health care disparities" OR "health status disparities" [MESH term] OR "health status disparities"
Context	OECD countries	

Table 8 Inclusion and exclusion criteria (virtual care and health equity)

Inclusion criteria	Exclusion criteria
· Studies carried out in OECD countries	· Studies carried outside OECD countries
· Empirical studies	· Commentary/review/opinion pieces
· Studies exploring equity in ambulatory services offered via telemedicine	· Studies not exploring equity in ambulatory services offered via telemedicine
· Published between January 2010 and December 2020	· Studies exploring robotic/tele-surgery
· Language: English	· Published before January 2010
	· Published in language other than English

3.2 Results

Figure 3 PRISMA Diagram (virtual care and health equity)

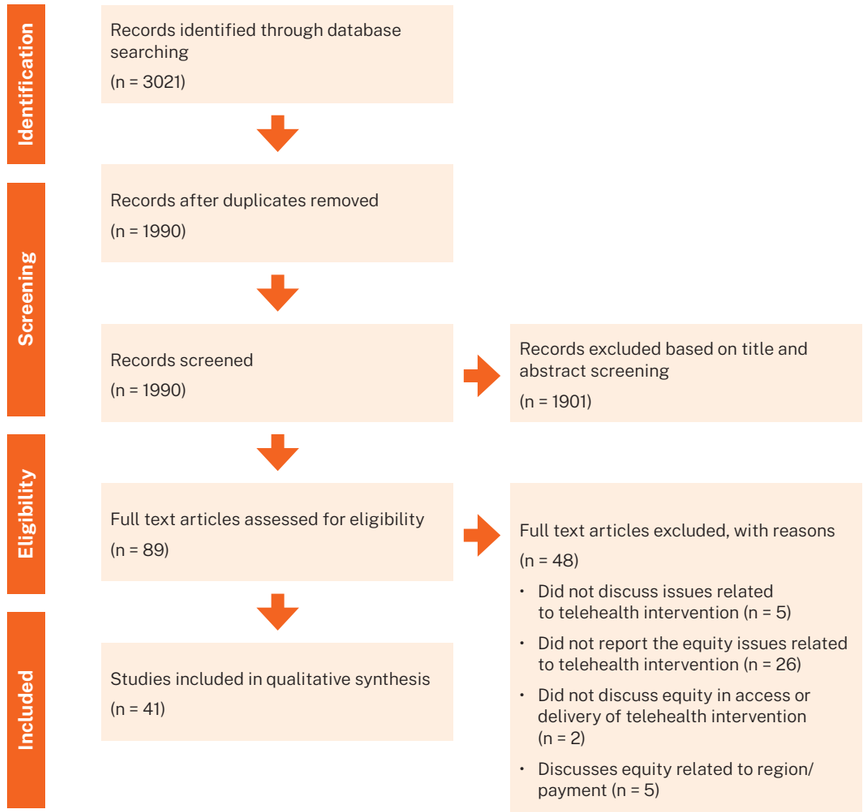

Table 9 Summary of included studies (virtual care and health equity)

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Abel et al. 2018	Retrospective study USA	Access to virtual health services	Ethnic minorities, patients with lower incomes and patients diagnosed with schizophrenia or schizoaffective disorder, were less likely to engage in either virtual care modality (i.e., videoconferencing and/or electronic health portal). Patients who engaged in both virtual care modalities were more likely to be younger, female, more likely to be white and to live in rural areas. This study pointed to socioeconomic, gender based and racial disparities in access to virtual care intervention that need to be addressed to ensure equity.	Veterans with mental health diagnoses Veterans who accessed virtual mental health care via video conferencing and electronic health portal
Alam et al. 2019	Cross-sectional Survey Australia	Access to virtual health services	This study reported on a variety of factors that increase and decrease access to virtual care services in populations living regionally. 78% of participants had access to virtual care services. Participants who reported lower levels of education, low socioeconomic status and living very remotely, were less likely to access virtual care services.	People living in regional areas Low SES
Arighi et al. 2021	Cross-sectional study Italy	Access to virtual health services and eHealth literacy	This study found that issues such as lack of devices (computers, phones or tablets) with internet connection and poor internet connections were the main causes of failed virtual care. Additionally, the presence of a younger caregiver or 'digital native' caregiver for virtual care interactions increased the success of the service. Interestingly, this study did not report that age, gender or education level impacted ability to use virtual care services effectively.	Patients with cognitive impairment
Arora et al. 2013	Survey Canada	Cultural barriers Access to virtual health services	This study showed that virtual care services for patients who are Indigenous or living remotely can be made more equitable if these services can be accessed in a culturally appropriate community-based healthcare clinic.	Aboriginal Canadians taking part in a tele-ophthalmology screening program
Blundell et al. 2020	Retrospective study USA	Access to virtual health services	This study reported its main finding to be the importance of being aware of a patient's communication preferences, particularly for patients whose primary language is not English. The study also suggested that patients being connected via email was an important factor in determining virtual care access.	CALD groups Low SES
Campos-Castillo et al. 2021	Survey USA	Race and ethnicity	This study firstly reports that in March 2020, Black participants were more likely to use virtual care services compared to White participants. This was particularly found in Black participants who reported being fearful of the COVID-19 pandemic. Another important finding from this study related to ensuring that a range of virtual care modalities are available, as this contributes to equitable access.	Ethnic minorities Internet users
Chunara et al. 2021	Cohort study USA	Disparities among people who accessed health services via telemedicine Access to virtual health services	This study provides evidence that shows white patients are more likely to access virtual care services than black patients. This study also shows that English speaking patients are more likely to access virtual care services than non-English speaking patients.	People who accessed health services via telemedicine during the COVID-19 pandemic CALD groups
Darrat et al. 2021	Cohort study USA	Access to virtual health services	This study provides evidence that shows that female patients with good insurance coverage are the most likely demographic to access virtual appointments. Older patients, Black patients, patients with no insurance coverage, patients from low socioeconomic backgrounds and patients who aren't married are less likely to access virtual appointments. When engaging in virtual care, older patients, patients with no insurance coverage and patients from low socioeconomic backgrounds were more likely to access telephone appointments than virtual appointments.	People with pre-existing health conditions Low SES
Eberly et al. 2020	Retrospective cohort study USA	Access to virtual health services	Characteristics associated with engaging in telemedicine modes (video calls and telephone appointments) were examined. This study has provided important and useful information regarding the use of video call appointments compared to the use of telephone appointments, and points out that some demographic groups are more likely to use telephone appointments, where others are more likely to use video call appointments.	People with pre-existing health conditions
Ernsting et al. 2019	Survey Germany	Sociodemographic health behaviours Health literacy/ eHealth literacy	An important finding of this study is that eHealth literacy is essential for use of mobile health apps, and this should be considered in health education strategies and in planning virtual care initiatives. People who are younger, female, have higher levels of education, higher levels of e-Health literacy and who engage in healthy behaviours, are more likely to engage in mobile health apps	People aged 35 and over who have cardiovascular disease and/or diabetes Internet users

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Ferguson et al. 2020	Mixed methods USA	Access to virtual health services	This study showed that in the early phase of the COVID-19 pandemic, veterans who had higher clinical and social needs were more likely to use virtual health services. Another important finding was that older veterans and veterans who lived rurally and were homeless, were less likely to access video appointments.	Veterans
Foley et al. 2020	Mixed methods Australia	eHealth literacy Access to virtual health services	The study found that being older, having low socioeconomic status, being male, being Aboriginal or Torres Strait Islander and having no tertiary education, was negatively associated with access to digital health services. The study also pointed out that trust in digital health services has an important influence on their use.	Older people Low SES Aboriginal and Torres Strait Islander people
Gilson et al. 2020	Retrospective study USA	Access to virtual health services	Firstly, younger patients (aged 0-17) were less likely to attend a virtual appointment. Men were less likely to attend a virtual appointment than women. There was no difference between black and white patients in terms of engaging with virtual appointments. Patients who categorized their race as 'other' were more likely to attend a virtual visit compared to white patients. Patients with insurance were more likely to attend a virtual appointment compared to patients without insurance.	Children Men
Gordon et al. 2018	Survey USA	Access to virtual health services eHealth literacy	About 3/4 of the sample could easily access a device with an internet connection. However, ease of access declined with age and was reported more often in white participants. Nearly all participants reported being able to access the internet at home, and a majority reported being able to access the internet by themselves or with help from someone to research health information on the internet. The participants who responded in this way could also use email for communication with ease. Those aged 65-69 years were more likely to be internet users, as were white and Chinese participants.	Older people
Gordon et al. 2016	Mixed methods USA	Access to virtual health services eHealth literacy	Older patients and ethnically diverse patients are less likely to use the online portal. Ethnically diverse patients are less likely to be able to access digital health services. Most older patients preferred non-digital modalities.	Older people Ethnic minorities

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Guendelman et al. 2017	Mixed methods USA	Health literacy Digital literacy Access to virtual health services	Web-based information search was widespread, while the use of digital health management practices was far less common in the study group. A significant relationship between health search activities and digital-heath management practices. The study demonstrated eHealth literacy is strongly associated with internet search activities, internal orientation (motivation to engage in healthy attitudes, beliefs and behaviour) was more strongly associated with digital health management practices.	Low SES Pregnant women/ mothers
Hansen et al. 2019	Cross-sectional Norway	eHealth literacy	Information though apps, social media and video services may be a better choice when targeting the lower educational group. Be aware of inequalities in eHealth use to design communication strategies to different target groups, particularly that of education level.	People with diabetes
Jaffe et al. 2020	Mixed methods USA	Access to virtual health services	Virtual care should help reduce inequalities in health care access. However, inequalities were observed. Greater outreach, education and infrastructure support are needed for older individuals, those residing in South (higher poverty) and those residing in rural areas.	Ethnic minorities Women People with pre-existing health conditions
Jiang et al. 2020	Retrospective case series USA	Access to virtual health services	Language barriers exist. Language services, increased staff support, longer appointment time and digital education is needed to alleviate barriers to virtual care. It is essential to evaluate, understand and address potential barriers to technology-based platforms for delivering care to prevent further disparities in access to healthcare.	CALD groups
Kemp et al. 2020	Retrospective cohort study USA	Access to virtual health services Unmet needs	E-clinic is a safe and feasible method for providing post-operative care in well-selected patients. Racial disparities still exist in accessing virtual care. Medical complications were the most common reason for the cancellation of an e-clinic visit.	People awaiting post-operative follow-up encounters
Khoong et al. 2020	Survey USA	Access to virtual health services	Diverse low-income patients are interested in video visits and many are able to complete simulated video visits. However, policies and infrastructure development are needed to address gaps in access to broadband or mobile data. This study indicates health care systems/ providers should provide technical assistance to older patients and to those with limited digital literacy.	Women Low SES
Leng et al. 2016	Survey Scotland	Digital literacy	The study summarizes that despite possibilities of video consultation in primary care, its use can be compromised among older adults and people with lower digital skills.	Younger people

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Li et al. 2020	Survey China	Digital literacy	66% of participants were willing to use e-hospitals, while 22% were familiar with e-hospitals. Efforts to increase the adoption of e-hospitals should focus on making target populations accustomed to web-based health care services while maximising ease of use and providing assistance for technological inquiries.	People attending primary health care centres
Mangin et al. 2019	Survey Canada	eHealth Literacy	87% had internet access at home, which decreased significantly with age. Older age groups and those on five or more medications (multimorbidity) were less comfortable using eHealth. Multimorbidity is strongly associated with less interest, less access and less comfort in using eHealth.	Older people
Marrie et al. 2019	Survey USA	eHealth literacy Access to virtual health services	Use of eHealth technologies is common among MS patients and facilitates the exchange of health care information with healthcare providers. Use of mHealth apps is perceived to have health benefits. However, use of eHealth and mHealth technologies varies substantially with sociodemographic factors, such as advanced age, smoking and disability.	People with Multiple Sclerosis Women
Nelson et al. 2016	Survey USA	Health literacy	Low interest/engagement with eHealth interventions were associated with racial/ethnic minorities, older adults and persons with lower health literacy.	People with type 2 diabetes Low SES Ethnic minorities
Pierce et al. 2020	Cross-sectional USA	Access to virtual health services	Virtual care visits were higher among people aged 65 years and above, female and those who were not under private insurance. Virtual care visits were less frequent among those who were residing in rural areas, were black or of another race compared to those who were white.	People who accessed virtual health care services at the onset of the COVID-19 emergency
Potdar et al. 2020	Cross-sectional USA	Digital literacy eHealth literacy	The acceptability of daily mHealth application was significantly higher among relatively educated and younger patients. Participants aged 61 years and older were significantly less likely to utilize daily mHealth application than individuals < 50 yrs.	People with a cancer diagnosis
Rodriguez et al. 2021	Cross-sectional USA	Digital literacy	Older age, non-white background, lack of access to internet, less educational attainment and poor socioeconomic status were significant factors in inadequate accessing to the video visits.	People who attended primary care or specialty practices during COVID-19 emergency (virtual and in-person)
Schifeling et al. 2020	Retrospective study USA	Access to virtual health services	Patients who had video visits were younger, and more likely to have a caregiver present during the visit, compared to patients who had telephone visits. non-white patients, patients who needed an interpreter and Medicaid beneficiaries, were less likely to have video visits than white patients, patients who did not need an interpreter, and non-Medicaid beneficiaries. Presence of caregiver played a positive role in increasing video visits.	Older people People who attended virtual health appointments during the COVID-19 emergency
Severe et al. 2020	Survey USA	Access to virtual mental health services	The study revealed that patients aged ≥44 years were more likely than patients aged 0-44 years to opt for telephone visits compared to video visits. Patient age correlates with the choice of virtual visit type, with older adults more likely to choose telephone visits over video visits.	People who had in-person mental health visits cancelled during the COVID-19 emergency People who attended virtual mental health services
Shaw et al. 2013	Qualitative study (focus groups and semi-structured interviews) Australia	Cultural considerations and access to virtual care services	The participants viewed the intervention favourably as a means of providing information and support in the patient's language. Cultural considerations included assurances of confidentiality, as cancer is not openly discussed within some communities. An initial face-to-face contact was highlighted as the most important factor facilitating participation. The study highlighted the importance of developing a culture sensitive telephone-based supportive care intervention for Arabic and Chinese-speaking cancer patients.	CALD groups Immigrants with cancer
Spooner et al. 2017	Cross-sectional USA	eHealth literacy	Patient online communication with providers can be varied by age, race/ethnicity, education, income and Internet access/behaviours.	Low SES Ethnic minorities Older people
Tam et al. 2020	Cross-sectional USA	eHealth literacy Access to virtual health services	This study identified the importance of health insurance status and family income as a determinant of virtual visit attendance.	People with a cancer diagnosis Low SES
Tong et al. 2020	Qualitative semi-structured interviews USA	Access to virtual health services	Factors associated with low engagement with virtual care services were disinterest (47%), inconvenience (33%), lack of perceived benefit (13%), lack of awareness of diabetes diagnosis (7%) and perceived lack of ability to fully participate in the study (7%).	People with type 2 diabetes Ethnic minorities
Trief et al. 2013	Randomised Controlled Trial (RCT) USA	Racial inequities in access to virtual health services	African-American and Hispanic American participants were less adherent to performing diabetes self-care activities than white participants at all time points despite an individualised and accessible intervention.	Ethnic minorities African-Americans

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Van Veen et al. 2019	Survey USA	Access to technology Digital literacy	The study found that adults were less likely to have access to phone consultations than parents of children, as were males compared to females. Most participants (92%) indicated that they would use an mHealth application.	Low SES Women
Walker et al. 2020	RCT USA	Digital literacy eHealth literacy	The study revealed disparities in use of the inpatient portal in terms of age and race. Patients aged 60–69 and those over age 70, used the inpatient portal less than patients aged 18–29. Moreover, African American patients used the portal less than White patients. Access to technology may not be the only barrier that needs to be addressed to reduce the digital divide in terms of patient portal use. It is also important to address other barriers to reduce the digital divide.	Older people African-Americans People who accessed in-patient portal
Wang et al. 2018	Survey USA	eHealth literacy	Immigrants with higher English-language proficiency were more likely to use eHealth services than were immigrants with lower English-language proficiency. The study concludes that inequity exists in terms of using eHealth services among the immigrants that would require targeted intervention address.	Immigrants
Weber et al. 2020	Cross-sectional USA	Access to virtual health services	The study highlighted racial and age related disparities in access to virtual care services compared to in-person services amid the COVID-19 pandemic.	CALD groups Older people
Wegermann et al. 2020	Retrospective Cohort study USA	Digital literacy	The study revealed that race/ethnicity was associated with increased odds of completion of a telephone visit over a video visit, compared to white participants. Increasing age was associated with higher odds of a phone or incomplete visit (cancelled, no-show, or rescheduled after 30 May 2020).	Ethnic minorities Older people

4 Changes to perinatal care

4.1 Methodology

A search was conducted in two databases (EMBASE and PubMed) on 18/10/2021 (both Medical Subject Headings – MESH and free-text keywords were used and adapted for each database) using the search strategy outlined in Table 10. After duplicates were removed, studies were selected using the inclusion/exclusion criteria outlined in Table 11. Relevant grey literature was accessed using a keyword search [Maternity Care – COVID-19 – Health Equity]. An additional hand search of bibliographies of the selected studies was also conducted for relevant literature.

Table 10 Search strategy (changes to perinatal care)

Focus	Description	Sample of search terms
Population	N/A	
Intervention	COVID-19 induced changes to perinatal care (change in access, availability, appropriateness, quality among others)	"Childbirth education" OR "Prenatal education" [MESH term] OR "Prenatal period" OR "Perinatal care" OR "perinatal care" [MESH term] OR "infant care" [MESH term] "Pregnancy" OR "Intrapartum care" OR "postnatal care" OR "Child and Family Health" [MESH term] OR "maternal health services" [MESH term] "Early Childhood" OR"Breast feeding" OR "Breastfeeding" [MESH term] "Labor" OR "Labor, Obstetrics" [MESH term] OR "Hospital Maternity" [MESH term]"Pregnancy outcome" OR "Father" OR "father-child relation" [MESH term] OR "Family health" OR "Home visit" OR"maternal care"
Comparison (or Control)	N/A	
Outcomes	Health equity impacts Health disparity, impacts on vulnerable groups, social determinant of health	"health equity" OR "Health equity" [MESH term] "health disparity" OR "inequality*" OR "inequit*" OR "health status" OR "social determinants of health" OR "social determinants of health" [MESH term] OR "socioeconomics" OR "ethnic group" OR "migrant" OR "transients and migrants"[MESH term] "Minority Health" [MESH term]
Context	Worldwide COVID-19 pandemic	SARS-CoV-2 OR Coronavirus OR COVID* OR COVID MESH term

Table 11 Inclusion and exclusion criteria (changes to perinatal care)

Inclusion criteria	Exclusion criteria
· Empirical studies · Studies exploring a link between changes to perinatal services related to COVID-19 and health equity impacts. · Published from 2020 · Language: English	· Commentary/review/opinion pieces · Studies that were not health equity focused · Studies not exploring COVID-19 related changes to perinatal services · Animal studies · Published before 2020 · Published in language other than English

4.2 Results

Figure 4 PRISMA Diagram (changes to perinatal care)

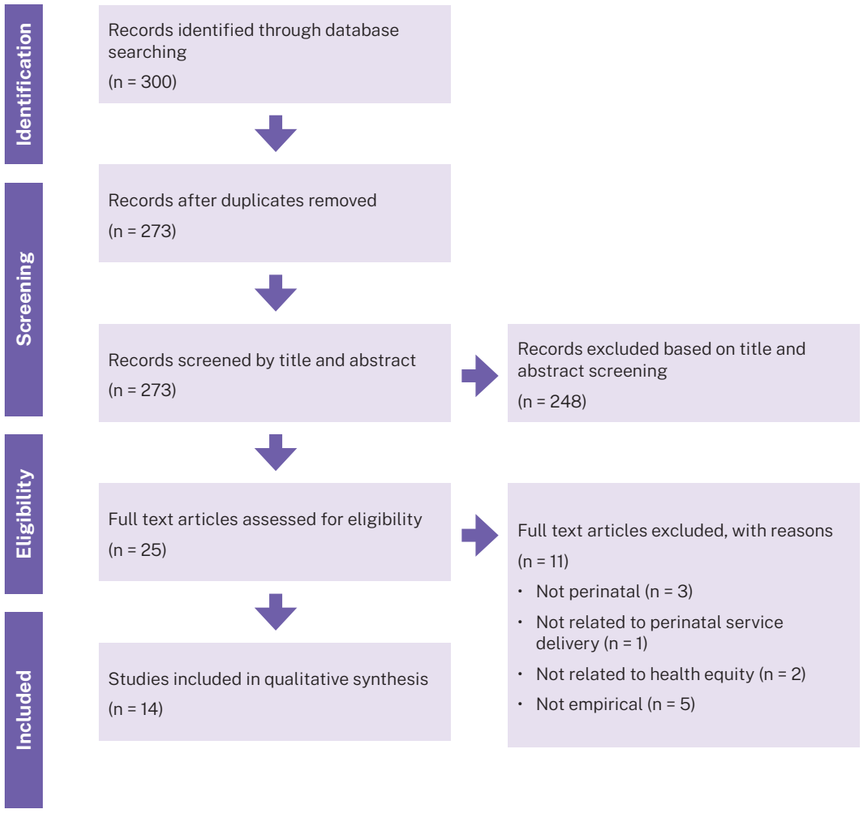

Table 12 Summary of included studies (changes to perinatal care)

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Abu-Rustum et al. 2021	Survey USA	Access to perinatal care Patient satisfaction with perinatal care	Forced adoption of telemedicine as a result of the COVID-19 outbreak led to increased cancellation of perinatal appointments. 32.6% of participants were concerned about visiting the clinic, and 48.1% of participants were concerned about visiting the hospital during the COVID-19 pandemic. 75.2% of participants reported a preference for a combination of in-person visits and virtual visits. Changes to perinatal care services stemming from COVID-19 was perceived to have a negative impact by 26.1% of participants.	Women accessing perinatal care via telemedicine
Ahmed et al. 2021	Clinical data study Bangladesh, Nigeria and South Africa	Access to perinatal care Quality of perinatal care	All three countries shared a decline in utilisation of basic maternal and children's health care services during the COVID-19 emergency. This was attributed to disruption of daily life due to COVID-19 lockdowns, as well as a lack of preparedness among health care workers. Routine health checks were severely reduced and restricted to emergency needs.	Women accessing perinatal care in low-middle income countries
Altman et al. 2021	Qualitative study USA	Visitor policy restrictions Unmet needs Access to adequate perinatal care	Visitor restriction policies during the COVID-19 emergency led to reduced access to advocacy and support networks for BIPOC mothers. Support people in hospital settings are considered to be essential for alleviating concerns for racism and discrimination among BIPOC populations. Visitor restriction policies led to an increase of BIPOC patients opting to make harmful decisions as a way of alleviating the risk of labouring and birthing without their support network.	Black, indigenous and people of colour (BIPOC) families
Altman et al. 2021	Qualitative study USA	Quality of perinatal care Unmet needs	A majority of participants expressed a preference for in-person perinatal care. Virtual telehealth visits were regarded among participants as inadequate to meet their needs, as well as lacking connection to additional support services. Maternal health nurses reported that inconsistencies in COVID-19 policies impacted ability to provide quality perinatal care.	Women accessing perinatal care Maternal health nurses
Asefa et al. 2021	Mixed-methods Global	Quality of perinatal care	17% of included health care workers reported that their ability to provide quality perinatal care declined as a result of COVID-19 restrictions. This perception was higher among HCWs from high-income countries, and those who were midwives or nurses in comparison to obstetricians and gynaecologists.	Maternal and newborn health care workers (HCWs)
Barbosa-Leiker et al. 2021	Mixed-methods USA	Psychological stress	Policy restrictions during the COVID-19 emergency increased financial stressors among expectant mothers. As a result, pregnant mothers were less likely to engage in healthy stress-coping behaviours and were more likely to miss prenatal appointments. Stressors were higher among perinatal women of colour, likely due to decreased access to support networks.	Women of colour Women accessing perinatal care

First author/ year	Study details	Determinants of health/ area of impact	Key findings	Population groups
Barboza et al. 2021	Qualitative study Sweden	Access to perinatal care Quality of perinatal care	This study pointed out that families with lower SES experienced situations in their daily life which led to health inequities. This was explored across three themes: reduced services, communication challenges and disrupted respite.	Low SES
Basile Ibrahim et al. 2021	Mixed-methods USA	Quality of perinatal care	People of color were less likely than their white counterparts to experience high-quality perinatal care during the pandemic in the US. Patients with a midwife provider or who had a home-birth, were more likely to have high-quality care in comparison to those who had an obstetrician provider or gave birth in hospital.	Women accessing perinatal care Women of colour
Chmielewska et al. 2021	Systematic review Global	Quality of perinatal care	Maternal mortality, stillbirth and maternal stress increased in all countries during the COVID-19 pandemic. Incidences of stillbirth was higher among low-middle income countries. This may be a result of lack of preparedness of health care systems among low-middle income countries.	Women accessing perinatal care in high-income countries vs. women from low-income countries
Freeman et al. 2021	Mixed-methods Australia	Access to perinatal care	Participants from socioeconomically disadvantaged backgrounds faced barriers such as access to technology, lower digital literacy and lack of confidence in digital care.	Low SES
Galle et al. 2021	Mixed-methods Global	Access to perinatal care Quality of virtual perinatal care	The provision of virtual perinatal care during the COVID-19 outbreak highlighted a number of barriers to receiving quality care, including digital literacy, language barriers, and distrust of digital care services. The number of in-facility births declined, despite continued advice for expectant mothers to give birth in hospital.	Women accessing perinatal care via telemedicine
Holcomb et al. 2020	Survey USA	Access to perinatal care	Audio-only virtual care was effective for maintaining quality of perinatal care during the COVID-19 emergency. If given the choice, participants reported that they would opt for a mix of virtual and in-person visits moving forward. Audio-only virtual care was preferred over video virtual care.	Women accessing virtual perinatal care
Jensen et al. 2021	Mixed-methods South Africa	Access to perinatal care Rural vs urban populations	This study assessed the impact of the COVID-19 outbreak on routine children's health services. There was a 47% increase in in-facility newborn deaths in May 2020, indicating inequities in maternal and neonatal care services. This was attributed to hospital closures in rural areas due to the diversion of resources.	Children
Limaye et al. 2021	Retrospective study USA	Quality of perinatal care	Women with public health insurance were less likely to access perinatal care services via telehealth in comparison to women with private insurance. As a result, women with public health insurance were shown to have lower quality of perinatal care.	Women accessing perinatal care via telehealth Low SES

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5 Rapid literature review – staff wellbeing and pandemic fatigue

The following rapid literature review has been prepared by the Health Equity Research and Development Unit, a Sydney Local Health District (SLHD) Service in partnership with the Centre for Primary Health Care and Equity at the University of New South Wales.

The below review can be used to support the District when developing policies and procedures in relation to staff fatigue and staff wellbeing, regarding the current and future impacts of the COVID-19 pandemic and associated response.

5.1 Executive summary

Fatigue in the context of the COVID-19 pandemic is defined has having two dimensions:

1 The immediate feelings of tiredness or depletion of physical and mental reserves (most evident in frontline health care workers engaged in the treatment of the virus)

2 The demotivation to remain vigilant and mitigate the negative consequences of living life in the midst of a pandemic (most evident in the general population where the virus impacts on everyday life).

The broader health care sector shoulders the double burden of both dimensions of fatigue, given its dual position in responding to the virus and being citizens upon whom restrictions on everyday life are imposed. However, most literature and recommendations are on either end of the continuum with little attention paid to this dual position.

SLHD has a large and demographically diverse workforce, with employees engaged across a range of professions and work levels spanning managerial, administrative and clinical expertise. While all staff may be vulnerable to pandemic fatigue, this may be experienced differentially according to the capacities and support needs of each work category.

The wider context in which the SLHD now operates is one characterised by uncertainty, unpredictability and a loss of agency or control, and evidence shows the cumulative effects of this context strain both human and non-human resilience. Building and maintaining resilience requires harnessing the capacity for appropriate responses to rapidly changing scenarios with no end point evident. The perception of 'token' responses can be more harmful and lead to more staff disengagement.

Given the multisystemic disturbance caused by the pandemic, a systems-based understanding of resilience is required to take into account the multiple levels and processes under which individuals, workplaces and society respond to these contexts. A strengths-based, rather than deficit-based, approach can draw on and enhance individual, organisational and community assets.

Communication and resilience building strategies should centre on understanding the challenges people face and engaging people in devising responses to those challenges, drawing on the three dimensions of individual motivation, individual capability and contextual opportunity. Manager training on communicating effectively around fatigue has been proven effective.

5.2 Current literature

Pandemic fatigue in the general population is defined by WHO as "demotivation to follow recommended protective behaviours, emerging gradually over time and affected by a number of emotions, experiences and perceptions" (World Health Organisation, 2020; see also Morrison, Parton et al., 2018; Masten and Motti-Stefanidi, 2020). Pandemic fatigue is reported to affect all populations beyond those who have been directly affected by the SARS-CoV-2 virus, given some of the invasive measures that have been implemented by states designed to curb the virus' spread at the level of everyday life, this is defined as a multisystem disaster (Masten and Motti-Stefanidi, 2020). In the general population, pandemic fatigue manifests in an "increasing number of people not sufficiently following recommendations and restrictions, decreasing their effort to keep themselves informed about the pandemic and having lower risk perceptions related to COVID-19" (World Health Organisation, 2020).

Health care workers are disproportionately burdened by pandemic fatigue owing to the dual role that they occupy: as both on the frontline of the rapid and evolving COVID-19 prevention and treatment response, and as citizens of the state upon whom restrictions are imposed (and in some cases, imposed differentially owing to exemptions for essential services). Research has documented how health care workers regularly utilise "surge capacity" in many aspects of their work; that is, a collection of mental and physical adaptive systems that people draw on for short-term survival in acutely stressful situations (Masten and Cicchetti, 2016; Habersaat, Betsch et al., 2020), and this can extend to non-human resources within interconnected systems (Masten and Motti-Stefanidi, 2020). Immediate and long-term effects of pandemic fatigue on health care workers directly involved in the treatment of COVID-19, predominately in tertiary care or hospital settings, include physical and mental fatigue, stress and anxiety, and burnout (Sasangohar, Jones et al., 2020), as well as contributing to what is generally known as compassion fatigue (the perceived inability to provide care) and/or vicarious traumatisation (Alharbi, Jackson et al., 2020; Li, Ge et al., 2020). Literature has documented these effects throughout the numerous pandemics that humans have seen (SARS, MERS, Ebola, influenza A) and, in this respect, COVID-19 fatigue may present no differently among direct frontline health care workers (Preti, Di Mattei et al., 2020).

However, burnout and other forms of fatigue differ between health care workers depending intersectional dynamics; for instance, an evaluation of physicians in cities in Turkey and China revealed that burnout rates were higher among those not directly engaged in treatment of the virus compared to those physicians who were (Dinibutun, 2020; Wu et al., 2020), the argument being that other factors, like personal accomplishment and a sense of value, may intersect to mitigate burnout. These data cannot be considered representative of other locations nor generalisable to all healthcare settings, but they do suggest that there is no uniform or universal experience of pandemic fatigue, and that combatting fatigue draws on psychosocial forms of resilience. Immediate strategies to combat fatigue have emphasised the need for effective and quality sleep (CDC, 2020; Black Dog Institute, 2020), while solutions to longer-term physical and mental fatigue largely rely on resource provision and occupational support (Preti, Di Mattei et al., 2020; Sasangohar, Jones et al., 2020).

Yet, these findings for frontline or directly engaged health care workers are based on a more literal definition of fatigue that excludes more pervasive feelings of demotivation that are implied in the WHO definition among the general population. It should be noted, however, that while these immediate and long-term physical and mental issues are relevant to the Australian setting, much of the data in the literature has been collected from Northern American and European countries. For instance, the guidance WHO has provided is based on behavioural surveys conducted across the European region (World Health Organisation, 2020). Outside of China, European states were some of the first countries to be impacted by COVID-19, however, the response to the pandemic has been experienced and operationalised differently in Australia, and Australia has not seen the same level of community transmission of COVID-19 nor the relative toll on mortality and morbidity. But as the pandemic moves into its 10th month in Australia, the longevity of the wider impacts of the virus will be experienced differently from immediate treatment of COVID-related health issues, such as social isolation, workplace change and other multisystemic factors.

Equally, there is little known about pandemic fatigue on the wider health care sector, especially on those who are not directly on the 'front line' but who are equally engaged in the prevention and management of the virus. It is anticipated that this requires a different strategy for coping with prolonged challenging and/or uncertain scenarios beyond the immediate physical and mental challenges. The wider health care sector then occupies the 'middle ground' between immediate physical and mental fatigue experienced by the frontline health workers, and the demotivational fatigue experienced by the general population. Scenarios affecting all health care workers are increasingly characterised by uncertainty, unpredictability and reduced agency/control, which may be present both within and outside of the health care setting, and thus present additional challenges in managing pandemic fatigue. Literature on general workplace mental wellbeing may also be relevant in this 'middle ground' (Harvey et al., 2014), where primary (preventative among healthy staff) and secondary (proactive to lessen impact on those at risk) interventions are more effective than tertiary (reactive when mental disorder has occurred) support.

SLHD has a large and demographically diverse workforce, with employees engaged across a range of professions and work levels spanning managerial, administrative and clinical expertise (SLHD, 2015). SLHD has been deployed in the efforts to curb the spread of the virus, popularly referred to as "flattening the curve", including testing, contact tracing, quarantining and other preventive strategies (Kenyon, 2020; Thunstrom, Newbold et al., 2020). This has resulted in (re)deployment of non-essential staff, the reallocation of human and material resources, and the suspension of some "business as normal" duties. While all staff may be vulnerable to pandemic fatigue, this may be experienced differentially according to the capacities and support needs of each work category.

Issues that may arise from these changes can include: new and rapid acclimation to workplace change; widened or increased scopes of work that extend or enhance previous individual responsibility or capacity; the quality of meaningful work as it intersects with individual and community values; and perceptions of job insecurity and uncertainty. Crucially, the prolonged nature of the pandemic means that it is difficult to ascertain an end to this period of upheaval. Moreover, strategies to alleviate pandemic fatigue will need to be responsive to the structured nature of the workforce, where some strategies may not be appropriate for senior staff tasked with managerial oversight.

Previous research has also demonstrated that workplace interventions are commonly implemented with little evidence to support their efficacy (Harvey et al., 2014). However, as the 'disaster response' extends over a long period of time, these issues will increasingly intersect with and be influenced by pre-COVID workplace capacity and challenges. For instance, the SLHD results of the NSW Health People Matter Employee Survey 2019, showed high levels of agreement with questions of individual self-sufficiency, personal accomplishment and workgroup collegiality and support, while less agreement with questions of individual impact on wider workplace policy and overall engagement with or responsiveness by managerial leadership (NSW Health, 2019). Responses to pandemic fatigue should keep these pre-COVID facilitators and barriers to staff wellbeing in mind.

Drawing on the framework offered by WHO, which in turn draws on the literature on resilience, the aim is to maintain motivation in disrupted and unpredictable times. As the global pandemic is a multisystem disturbance, a systems-based understanding of resilience is warranted. That is, "resilience is best defined as a systems concept referring to the successful adaptation of a complex dynamic system to threats or disturbances, drawing on distributed capacity through many processes" (Masten and Motti-Stefanidi, 2020). As resilience is distributed across systems and relationships, these can be united in order to mobilise responses to challenges. Thus, resilience should not be viewed as a singular, isolated trait of a person, family or community, but rather as a broader and multifaceted capacity (Masten and Motti-Stefanidi, 2020).

A key component of a systems view of resilience stems from the crucial role of interactions in shaping adaptive function over time, owing to its cascading consequences across individuals, workplaces and communities through a variety of potential processes (Masten and Motti-Stefanidi, 2020). The quality of human relationships and the quality of public service responses to people with problems, have been identified as key components of resilience (Bartley, 2006). This can be extended to take into account differential access to power, knowledge and resources (Nilufar et al., 2018). Previous research on mental health initiatives in the workplace has shown that manager training on how to communicate more effectively to staff around issues of mental disorders, has been demonstrated to be more effective than training managers to identify types of mental health issues (Harvey et al., 2014).

For instance, mitigating pandemic fatigue in individuals relies on three overall factors that need to be in place for any motivational behavioural change to take place: individual motivation (automatic and reflective); individual capability (physical and psychological); and contextual opportunity (social and physical) (World Health Organisation, 2020). While research on the general population has

demonstrated that most people have a high level of knowledge related to COVID-19 protective behaviours, emotions and contextual factors can have a greater impact on behaviours than knowledge (Zarocostas, 2020). In the general population, WHO recommends communication strategies that recognise contextual and emotional factors (as well as being underpinned by the primary aim of imparting public health advice) based on the principles of transparency, fairness, consistency, coordination and predictability (World Health Organisation, 2020).

Moreover, staff wellness strategies can intersect with a strengths-based model of resilience, an approach designed to enhance the existing capacities of individuals, communities and systems, rather than seeking to 'add' or 'fix' already depleted resources. Deriving from social work and specifically case management, operating from a strengths-based practice requires the facilitation of "the discovery and embellishment, exploration, and use of clients' strengths and resources in the service of helping them achieve their goals" (Saleebey, 2010). Central to strengths-based practice is the belief that clients are most successful at achieving their goals when they identify and utilise their strengths, abilities and assets (Rapp, 2006). Applying this practice to the SLHD, suggests that staff have a key role in recognising and utilising the strengths and resources that they can draw on from a multisystemic capacity. For example, a strengths-based approach would look to areas of consistent performance, despite the uncertain or unpredictable circumstances; it asks 'what has been performing well and what is need to ensure that performance is maintained?' Strategies can then be designed to enhance and extend that aspect of performance.

Strategies aiming to reinvigorate public support and that involve understanding people's motivations, then engaging people as part of the solution (World Health Organisation, 2017; Toppenberg-Pejcic, Noyes et al., 2019), will be equally relevant to health care workers. Participatory and inclusive communication strategies should be coupled with the acknowledgment of the hardships that health care workers uniquely experience. Such fatigue resulting from these hardships, can be addressed by enhancing resilience and alleviating difficulties where and when possible, through financial, social, cultural and emotional support, according to the underlying principles of equity and diversity. Empathy, hope and understanding should always take precedence over punishment, shame and blame (Nabi and Myrick, 2019).

5.3 Recommendations

1 Build resilience by engaging a multisystem approach; that is, consider the intersections or cascades between individual, workplace and societal levels, and recognise the capacities and support needs of a diverse and structured workforce.

2 Recognise that longer-term demotivational fatigue may have a bigger impact on staff wellbeing than short term fatigue, and design strategies to address longer-term motivational fatigue.

3 Long-term motivational strategies should recognise the impact of upheaval and the unpredictable nature of the pandemic, and should seek to engage people in developing strategies to respond to these challenges by drawing on a strength-based practice to enhance existing workplace and SLHD assets.

4 Workplace allocation and/or deployment should be based on principles of equity and diversity, as individuals' circumstances are influenced by broader societal challenges as well as their own capacities and relationships. For instance, in periods of rapid and changing redeployment needs, designing roster systems that take into account redeployment, existing individual clinical care priorities and values, and personal circumstances, are favoured.

5 Support ownership and agency within units to set up services in response to the ongoing nature of the pandemic, moving beyond reacting to circumstances as they arise, involve staff in planning for permanent service delivery structures that are agile and proactive in respect to the pandemic, and foster a shift away from 'disaster response' and towards long term stability.

6 Communication strategies should be targeted, tested and include both individual and broader contextual factors to be more effective and adhere to the principles of transparency, fairness, consistency, coordination and predictability.

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Appendix 2

Screening and scoping papers

6 COVID-19 Recovery and Resilience: equity-focused health impact assessment screening report

Prepared by the Health Equity Research and Development Unit

July 2020

Background and context

While the COVID-19 pandemic may adversely affect the health of the population as a whole, evidence suggests that the pandemic affects diverse groups of women and men (and their health) differently. The risks and consequences are disproportionately felt by certain groups, especially those living in situations of vulnerability and those who experience discrimination. We know from past experience (e.g., Christchurch earthquakes, Hazelwood mine fire, recent bushfires) that places and population groups already have differing levels of access to the resources necessary to withstand and recover from sudden, overwhelming threats to their health and wellbeing. It is possible that pre-existing inequities will be reinforced (or enhanced) by responses to the pandemic, and that new inequities in health may arise, in the absence of specific provisions being made within the policies and interventions adopted by the Sydney Local Health District (SLHD). The health sector has a major role to play in working with communities (particularly the communities or population groups who already experience greater risks to health and wellbeing) to adapt and transform its (i.e., the health sector's) structures and services in order to enhance communities' and individuals' resilience, and to improve their health and wellbeing.

Process for selecting the Health Impact Assessment (HIA)

The Health Equity Research Development Unit (HERDU) has been carrying out rapid evidence reviews and equity checks to inform strategies being used by SLHD to address COVID-19 (2-4). A need was identified for a more systematic overview of the potential longer-term equity impacts resulting from COVID-19 and the actions taken in response to the pandemic. An HIA screening process supported the rationale for carrying out an equity-focused HIA (EFHIA) to inform medium to long-term planning and response. A brief outlining the proposal to carry out an EFHIA of the COVID-19 pandemic and response was approved by SLHD Chief Executive.

Decision informed by HIA and decision-making timeline

Our proposal is intended to assist the SLHD (and other responsible agencies) to consider equity, gender, ethnicity and human rights perspectives in responses to the pandemic, in order to prevent the reinforcement and expansion of existing inequalities, by understanding and accounting for the everyday lived realities of different groups that may affect the success of measures. SLHD policies, practices and interventions implemented to reduce the spread of and harms to health from the COVID-19 virus, will have on-going consequences for the wellbeing of the population of the SLHD and the wider region well beyond the current crisis.

The pandemic is expected to last for more than 12 months, and the impacts of the pandemic and the associated responses will be ongoing. There will be different time frames and opportunities to influence different aspects of the pandemic response. The EFHIA will focus on assessing the impacts of the pandemic and the associated pandemic response, in order to develop recommendations to maximise SLHD's strategic response. As such, it will examine the broad response to COVID-19, rather than specifically examining the SLHD response.

As the purpose of the EFHIA is to inform the SLHD's response, the timeframes for influence are dependent on/related to SLHD planning and response processes. Given the nature and magnitude of the impacts of the current pandemic, and the need to plan for similar future events, there is time to carry out an EFHIA to inform the SLHD plans and actions. The EFHIA may be scoped to focus on medium to longer-term areas of impact. This would include considering recovery from the current pandemic and building resilience to future pandemics, as well as preparing for a second or third wave. The EFHIA can be used to effectively inform future responses, as well as other similar emergency situations.

The EFHIA will inform SLHDs COVID-19 recovery plans and future epidemic or pandemic responses, with the aims of assisting the SLHD to:

1 Systematically identify potential health equity impacts of COVID-19 and associated responses, and to identify evidence of effective actions to reduce the likelihood of inequity

2 Work with stakeholders to embed positive, evidence-based actions in the current strategies being developed and implemented by the SLHD

3 Identify evidence of systemic actions that can be taken by the health sector to protect vulnerable populations from pandemics and other ongoing threats to health into the future.

The EFHIA can also be used by SLHD and other stakeholders to influence the COVID-19 related response. For example, through submissions, advocacy and media.

Screening template: SLHD COVID-19 Recovery and Resilience EFHIA

Screening criteria	Response and supporting rationale
1 Provide a description of the project/plan/policy/proposal. Are there any contextual factors to be considered? What are the aims and key objectives of the project/plan/policy/proposal? What are the assumptions embedded in or underpinning the project/plan/policy/proposal?	The COVID-19 pandemic impacts on SLHD. COVID-19 has direct impacts on health through people being infected. Some of these impacts may have equity implications (sensitivity, exposure, adaptive capacity). In addition, actions taken in response to COVID-19 also have impacts on health and health equity. Key assumptions: Some population groups are more vulnerable than others (increased exposure, increased sensitivity to poor health outcomes, lower capacity to mitigate and avoid risk). Restricting movement will reduce exposure and therefore reduce spread. The unintended harms caused by actions taken to reduce COVID-19 are outweighed by the benefits. Examples of documents and responses that may be examined through the EFHIA process are: 1 The NSW Government Department of Health's COVID-19 Restrictions on Gathering and Movement Order 2020 under the Public Health Act 2010 (referred to in this report as the Order). The major contents of the policy include the details of restrictions of movements by activity, restrictions on gatherings by size and location, the closure of premises and the obligation on maintaining social distancing for premises remaining open. 2 SLHD policies, practices and interventions implemented to reduce the spread of and harms to health from the COVID-19 virus 3 Additional activities, e.g., built environment responses, economic programs, etc.
2 Has the project, plan or policy been proposed? A final decision about whether to adopt the proposal has not been made, so is there sufficient time to conduct an analysis before the decision is made?	The pandemic is expected to last for more than 12 months and the impacts of the pandemic and the associated responses will be ongoing. There will be different time frames and opportunities to influence different aspects of the pandemic response. The EFHIA will focus on assessing the impacts of the pandemic and the pandemic response, in order to develop recommendations to maximise SLHD's strategic response. As such, it will examine the broad response to COVID-19, rather than examining the SLHD response. As the purpose of the EFHIA is to inform the SLHD's response, the timeframes for influence are dependent on/related to SLHD planning and response processes. There is time to carry out an EFHIA to inform the ongoing plans and actions of SLHD. The EFHIA may be scoped to focus on medium to longer-term areas of impact. This would include considering recovery from the current pandemic and building resilience to future pandemics, as well as preparing for a second or third wave. It can be used to effectively inform future responses, as well as other similar emergency situations. e.g., Gathering and Movement Order 2020 under the Public Health Act 2010 has been enacted and has a sunset clause 29th June. The Order may be extended beyond that date. There is limited opportunity to influence the Order. Although SLHD could have an advocacy role in recommending amendments/changes to the ongoing implementation of the Act.

Screening criteria	Response and supporting rationale
3 Does the decision have the potential to affect, positively or negatively, environmental or social determinants of health that impact health outcomes of a population? 4 Does the decision have the potential to affect, positively or negatively, determinants of health equity? 5 Are there potential unintended health impacts?	• The COVID-19 response may have potentially significant unintended impacts on health equity, Potential impacts will be present immediately and continue in the short to medium-term at minimum. Some impacts, such as financial impacts, may continue into the longer term. • The Order is public health driven, but is only focused on control of spread of infectious disease, while also creating clear and significant change to multiple determinants of health and health equity. • The Order significantly impacts SLHD population.
6 Are those health (equity) impacts likely to be considered without the EFHIA?	SLHD response has had a strong equity focus, for example through focusing on homelessness, targeting screening to areas of locational disadvantage. The longer-term unintended equity impacts are currently unknown/unclear. By considering/identifying these longer term impacts, they will be considered earlier than perhaps otherwise. This will enable the SLHD to understand future likely impacts and address these pre-emptively and strategically.
7 Briefly describe the community (or communities) who will be affected by the decision to be made. Is there the potential for different sub-groups within the community to be more adversely affected than others?	Yes – significant current examples: • **Older people** – highest direct risk of severe COVID-19, more likely to live alone, less likely to use online communications, at risk of social isolation • **Young people** – affected by disrupted education at critical time; in longer term most at risk of poor employment and associated health outcomes in economic downturn • **Women** – more likely to be carers, likely to lose income if need to provide childcare during school closures, potential for increase in family violence for some • **People of East Asian ethnicity** – may be at increased risk of discrimination and harassment because the pandemic is associated with China • **People with mental health problems** – may be at greater risk from social isolation • **People who use substances or in recovery** – risk of relapse or withdrawal • **People with a disability** – affected by disrupted support services • **People with reduced communication abilities** (e.g., learning disabilities, limited literacy or English language ability) – may not receive key governmental communications • **Homeless people** – may be unable to self-isolate or affected by disrupted support services • **People in criminal justice system** – difficulty of isolation in prison setting, loss of contact with family • **Undocumented migrants, asylum seekers and refugees** – may have no access to or be reluctant to engage with health services • **Workers on precarious contracts or self-employed** – high risk of adverse effects from loss of work and no income • **People on low income** – effects will be particularly severe as they already have poorer health and are more likely to be in insecure work without financial reserves • **People in institutions** (care homes, special needs facilities, prisons, migrant detention centres, cruise liners) – as these institutions may act as amplifiers • **People living in locationally disadvantaged communities**.

Screening criteria	Response and supporting rationale
8 Are there evidence, expertise and/or research methods available to analyse health impacts associated with the decision being considered?	Yes-SLHD has HERDU with specialist HIA and equity related research skills. Also public health expertise within SLHD. Research methods-yes-potentially qualitative through focus groups surveys of potentially affected communities and key informants. Some impacts may be able to be modelled quantitatively. Emerging literature of the current pandemic plus literature from previous pandemics and other related events will also be examined.
9 Are decision-makers and/or those stakeholders who have the capacity to influence decision-makers likely to use EFHIA findings and recommendations to inform or influence the decision-making process?	Relevant stakeholders and decision makers will be engaged throughout the process, through inclusion in the Advisory Group. They will be consulted on priority focus areas and engaged in the recommendation-making process.
10 What are the potential impacts of the EFHIA process (e.g., building relationships/partnerships, empowering community members, demonstrating how health can be incorporated into decision making)?	All of these. Enhance SLHD response.

Table 13 Screening template determinants of health

		Impacts of the response			
Determinants of health	**Impacts of the disease (SARS-CoV-2)**	**Public health response**	**Urban development response**	**Economic response**	**Education response**
Education		Closure of schools/other learning institutes		Free childcare	Increased opportunity to gain qualifications in relevant industries at a reduced rate No NAPLAN Not all kids able to learn at home/additional responsibilities for parent(s)

Determinants of health	Impacts of the disease (SARS-CoV-2)	Impacts of the response: Public health response	Impacts of the response: Urban development response	Impacts of the response: Economic response	Impacts of the response: Education response
Employment/ income	Health risks of employment if frontline worker	Job/income losses due to mandated closures of certain industries or lessened demand (general or sector specific) Safety working from home/ employer responsibilities Flexible working from home – increased flexibility Loss of income while waiting for test results – fear of testing		Increased benefits (e.g., Job Seeker/ Job Keeper) which may not be long-term Free childcare Early access to superannuation (lower-income in retirement) Potential for more work/less money -wage levels stagnating or decreasing	Increased opportunity to gain qualifications in relevant industries at a reduced rate
Early life	Kawasaki disease	Closure of early learning facilities/support		Free childcare	Cohort missed out on school readiness assessment (check?)
Social inclusion/ capital/ interpersonal	Discrimination against people of Asian origin/ health care workers	Increased isolation for some Connection through online Reduced feelings of control			
Crime	Increased risk of infection in justice system	Family violence? Profiling by police Patterns of crime Access to legal support? Access to information about regulations Reduced freedom of movement			
Housing	Increased risk of infection in boarding houses/ shelters	Work from home -different role of home (potentially long-term)	Emergency accommodation (e.g. Arncliffe Estate)		

Determinants of health	Impacts of the disease (SARS-CoV-2)	Impacts of the response: Public health response	Impacts of the response: Urban development response	Impacts of the response: Economic response	Impacts of the response: Education response
Residential environment		Reductions in motor vehicle traffic Temporary improvement in air quality (although potential increase in pollutant exposure e.g., through increased outdoor exercise) Decreased traffic may have resulted in increased speeding ->? Increased pedestrian and cycling injuries Reduced accessibility for people without private transport			
Leisure activities, green spaces		Closure of some public spaces e.g., playgrounds, gyms -need for alternatives (e.g., increased walking and cycling for leisure/fitness)	Reduced speed limits Changed leisure spaces e.g., Centennial Park closed to cars (now reversed)		
Diet and nutrition, access to healthy food	Actual or perceived food shortages	School meals Meals for people experiencing homelessness			
Tobacco, alcohol, other drugs, gambling		Potentially lower access to rehabilitation/ pharmacotherapy Increased use		Increased expenditure	
Availability of health and social services		Switch to telehealth Non-urgent elective surgery postponed Less preventive care Reduction in people accessing health care (e.g., reduced ED presentations) Services that may not have survived shut down (?) Difficult to identify but important if there are changes in services and accessibility		Is telehealth subsidied for all types of consultations or some missing out?	
Quality of health and social services		Privacy issues with telehealth/technology Accessibility issues Lower use of preventive care			

7 Steering Committee terms of reference

COVID-19 Recovery and Resilience: Equity Focused Health Impact Assessment (EFHIA) Steering Committee

Terms of reference

Governance

Reports to SLHD Chief Executive.

Reports to SLHD Board as required.

Goal

To carry out an Equity Focused Health Impact Assessment (EFHIA) on the medium to long term impacts of the COVID-19 pandemic and associated response.

Objectives

1 To systematically identify potential health equity impacts of COVID-19 and the associated response on the health of different population groups in the SLHD.

2 Identify evidence of systemic actions that can be taken by the health sector to protect vulnerable populations from pandemics and ongoing threats to health into the future.

3 Work with stakeholders to embed positive, evidence-based actions in the current pandemic and strategies being developed and implemented by the SLHD.

Scope

The project scope will be determined in consultation with SLHD and community stakeholders. Criteria to be considered when determining the scope of the EFHIA include:

1 Potentially significant health equity impact over the medium to longer-term.

2 Relevant to SLHD area (geographic scope, priority populations and workforce).

3 Areas where SLHD can take action either directly, through the services provided by the district, or indirectly, through partnership and advocacy with other stakeholders.

4 Impacts on mental, physical and social wellbeing in relation to:

a Differences in availability and access to quality health and social services

b Differences in modifiable medical and behavioural risks (e.g., smoking, family violence)

c Changes in material living conditions (e.g., environment, economic determinants)

d Changes in community wellbeing.

Activities

An intermediate EFHIA will be conducted over 6-8 months.

This can include:

- A literature review.
- Population profile focusing on target population groups.
- Development of a matrix to assess health impacts for identified target groups.
- Draft assessments populating the matrix, compiled by the Project Team.
- An EFHIA workshop, comprising members of the project team to finalise assessments populating the matrix grid.
- Evidence will come from available EFHIAs, local, regional and national data and information sources.

Deliverables

A final report of key health issues (positive and modifiable) with recommendations.

Steering committee role

The Committee has been constituted to provide expert advice at key points in the COVID-19 Recovery and Resilience Equity Focused Health Impact Assessment, to ensure that the EFHIA is progressing in such a way that it can achieve the identified outcomes.

The Steering Group will:

1 Oversee the conduct and progress of the EFHIA

2 Advise on priority health equity issues and their potential impact

3 Advise on evidence to be included in the EFHIA

4 Feedback research findings and other relevant information to inform recommendations and practice translation.

All members of the Committee agree to:

- Support the outcomes and success of the study as best as possible.
- Actively engage to requests for advice, including attendance and discussion at any convened meetings, and review of minutes, papers and other documentation.
- Provide guidance on EFHIA activities.
- Provide advice on the language and framing used in communication.
- Provide expert domain advice in relation to relevant research areas and activities.
- Provide guidance on implementation of recommendations arising from the EFHIA and additional funding opportunities.
- Provide written comment on circulated documents within the requested timeframe.
- Agree to treat any sensitive and private information discussed in absolute confidence.

Members

Membership will include:

- Chief Executive (Dr Teresa Anderson AM)
- SLHD Board Member (TBA)
- Executive Director, Clinical Services Integration and Population Health (Lou-Anne Blunden)
- Director, HERDU (A/Professor Fiona Haigh)
- Director Mental Health Services SLHD (Dr Andrew McDonald)
- Director, Planning (Dr Pam Garrett)
- Director, Aboriginal Health (George Long)
- Director Public Health, SLHD (Dr Leena Gupta)
- General Manager, Population Health (Renee Moreton)
- General Manager, Community Health (Paula Caffrey)
- General Manager, Drug Health Services (Judy Pearson)
- General Manager, RPA Virtual (Miranda Shaw)
- General Manager, Canterbury Hospital (Michael Morris)
- General Manager, Concord Repatriation General Hospital (Kiel Harvey)
- General Manager, Royal Prince Alfred Hospital (Nobby Alcala)
- General Manager, Sydney Dental Hospital and Oral Health Services (Dr Jason Cheng)
- General Manager, Balmain Hospital (Gregory Nolan)
- Clinical Director Aged Care, Rehabilitation and Chronic Care (Dr John Cullen)
- Disaster Manager, SLHD (Sven Nilsson)
- Disability Inclusion and Strategy Manager, SLHD (James Everingham)
- Director, Diversity Programs and Strategy, Population Health (Barbara Luisi)
- Consumer Representatives (TBA)
- HERDU Team Representatives
- Additional guests co-opted as necessary - depending on scope.

Chairpersons

- Executive Director Clinical Services Integration and Population Health, SLHD or Delegate
- Director, Health Equity Research and Development Unit (HERDU)

Secretariat

HERDU

Minutes

Meeting agenda and minutes will be circulated one week prior to meeting.

Reports to SLHD Board Meeting Papers.

Quorum

A minimum (50% +1)

Meeting frequency

At key stages of EFHIA (Scoping, Assessment, Reporting, Evaluation), to be reviewed once EFHIA progresses. Advice may be sought individually or collectively, as per the relevant issue.

Mode of delivery: Virtual / Teleconference.

Resources

The EFHIA will be coordinated by HERDU, no additional financial resources are allocated.

Principles

Equity Focused Health Impact Assessment (EFHIA) is underpinned by an explicit value system. Decisions by the Steering Committee are based on the following principles:

- The health and wellbeing of the residents and staff of SLHD is our priority.
- We utilise a broad understanding of health defined in the context of the wider determinants of health.
- Equitable – through a presumption in favour of achieving health equity. Inequities are differences in health status which are unnecessary, avoidable, unfair and unjust.
- Democratic – emphasising the rights of people to participate in major decisions that affect their lives and, through EFHIA, enabling people to actively participate and contribute to decision making processes.
- Value – will be placed on all sources of information including information from available literature, data, community consultation and by interviews.
- Transparent – including the documenting of the process and findings.
- Respecting – different opinions and working together resolve differences in views.
- Shared ownership – The EFHIA should be jointly owned by the decision-makers, the investigators, the affected community and stakeholders.

Information and data sharing

Sources of data to characterize current conditions and estimate potential health equity impacts will be identified through existing literature, stakeholder input, expert opinion, and the advisory group.

Information and data sharing between agencies will occur in the spirit of goodwill where practical and is at the discretion of each agency. Any requests for sensitivity or privacy are to be respected.

Production and publication of findings and outputs

The EFHIA report will be made publicly available.

Conflict and the inability to achieve consensus

Firstly, any decisions should be based on the values. After negotiation between Steering Committee members, if an agreement cannot be reached the Committee can agree to omit the area of contention form the EFHIA with a note explaining the rational for exclusion made in the final report.

Changes to the terms of reference

Will be by consensus, if required.

8 Scoping review

Methodology

Method

Study selection

Databases searched

Searches were run in three databases (Ovid MEDLINE(R) and Epub Ahead of Print, Embase and CINAHL) on 06/07/2020.

Search terms

Search terms were adapted for each database. An example of the Medline search strategy for the initial search is as follows:

1	Coronavirus/
2	Coronavirus Infections/
3	COVID-19.mp.
4	1 or 2 or 3
5	Health Status Disparities/
6	Healthcare Disparities/
7	Health Equity/
8	Socioeconomic Factors/
9	Health Services Accessibility/
10	Vulnerable Populations/
11	Poverty/
12	“Social Determinants of Health”/
13	deprivation.mp.
14	equit*.mp.
15	Inequit*.mp.
16	inequalit*.mp.
17	precari*.mp.
18	disadvantage*.mp.
19	disparit*
20	Human Rights/
21	5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20
22	4 and 21
23	limit 22 to English language

Study inclusion criteria

After removing the duplicate citations, the remaining results were screened for inclusion based on the following criteria:

Inclusion criteria

Topic	Discusses equity (or related) impacts of COVID-19 (disease or responses to disease)
Study type	Empirical
Setting	High or upper-middle income countries (based on World Bank classifications at https://datahelpdesk.worldbank.org/knowledgebase/articles/906519)
Language	English

Studies were excluded if they did not meet the above criteria, or if they were hypothetical (i.e., predicting the percentage of population at risk of COVID based on levels of pre-existing chronic disease in the population). The screening was conducted using the software platform COVIDence, in a two-stage process. During the first stage, the title and abstract for each study were reviewed by one reviewer (LD).
For quality assurance, a 10% random sample of excluded studies were reviewed by a second reviewer (FH or CS) to ensure that decisions about exclusion had been made correctly. Studies that were classified as ýes’ or ‘maybe’ in the first round moved through to the next stage (full text screening). In this stage, the full text for each citation was reviewed by two reviewers (LD and LE). Any differences in decisions were resolved through discussion with a third member of the group (FH).

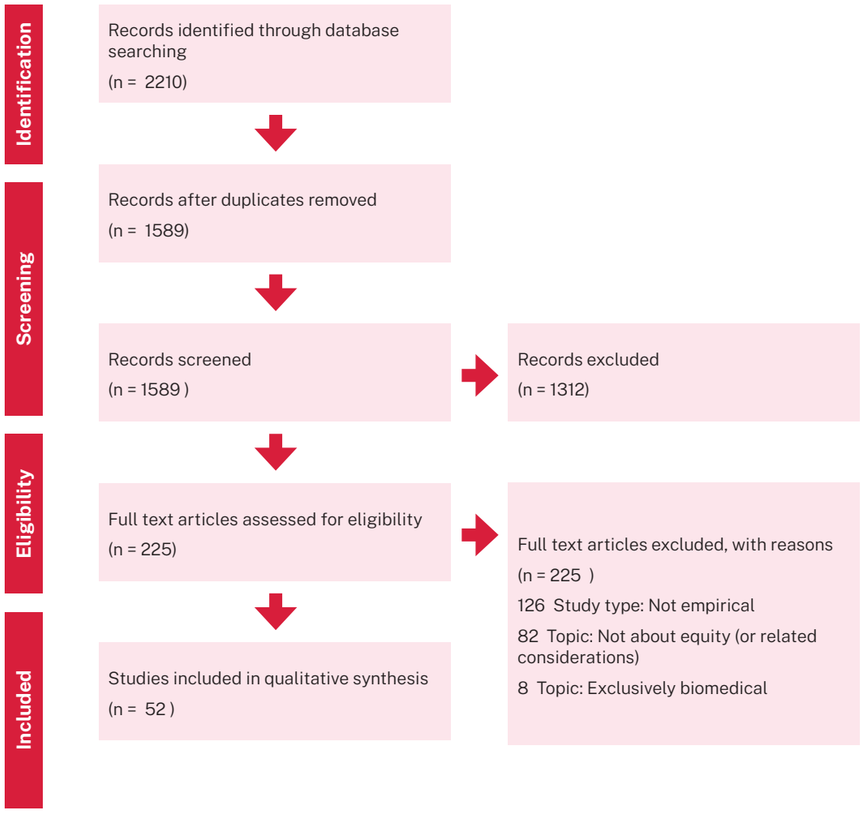
Data extraction

A comprehensive, fit-for-purpose data extraction template was designed and piloted by the research team. Data extraction was conducted by SG, NH and LE.

Data analysis

The completed data extraction was reviewed by FH with each entry was re-reviewed and categorised under two main themes: vulnerable people and places, and types of equity impacts.

Figure 5 PRISMA Diagram (scoping review)



Results

The literature review search process identified 52 articles of relevance.

Descriptive overview

Descriptive characteristics of the included studies are shown in Table 14. More detailed information about each study is shown in Table 15

Table 14 Descriptive summary (scoping review)

Continent (country)	Study design (no of publication)	No of participants (min-max)	Target populations
North America USA Canada	Case study (2) Cross-sectional study (5) Cross-sectional survey (4) Ecological (11) Prospective cohort study (1) Retrospective cohort study (6) Systematic review (1)	35 – 5,834,543	Adults with obesity Adult residents of United States; adults with an encounter with the health system; homeless adults, adults with COVID-19; adult residents of New York African American communities Adults hospitalised due to COVID-19 Nursing home residents; people living with HIV Latino Hispanic patients; States of the United States Criminal justice involved women Child users of paediatric services United States veterans Men who have sex with men; subway users in New York City Adults living with chronic conditions Low-income residents of the United States Adolescent health service users
South America Brazil	Cross-sectional survey (1) Ecological (1)	3318 – 16,440	Adult residents of Ceará Brazil municipalities.
Europe England UK Norway, Italy Serbia	Ecological (3) Cross-sectional survey (5) Prospective cohort (4) Longitudinal cohort (1)	131 – 431,051	Black, Asian and minority ethnic groups in the UK Adult residents of England Adult residents of Serbia Adolescents in Oslo, Norway Italian general practitioners Italian municipalities; COVID-19 positive adult residents of England or the UK.
Asia China	Cross-sectional survey (4) Ecological (1)	765 – 1,691	Adult residents of China Adult residents of Hong Kong Health care workers in China.
Australia/ Oceania	Mixed methods – ecological and cross-sectional survey (1)	3318	Australian mental health service users

Table 15 Summary of included studies (scoping review)

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Ahmed 2020 China	Assess the mental health status of Chinese people.	Cross sectional survey	Residents of China	1074 individuals	Results suggest much higher rate of anxiety, depression, alcohol consumptions and lower mental well-being among Chinese people due to COVID-19 outbreak and their confinement in their home as the first-line response to the epidemic or public health emergency.
Aldridge 2020 UK	Investigate risk of infection and death for Black, Asian and minority Ethnic (BAME) groups in the UK, adjusted for age and geographic region.	Ecological	Black, Asian and minority Ethnic (BAME) groups in the UK	16,272 deaths	Several BAME groups (Black African, Black Caribbean, Pakistani, Bangladeshi and Indian) have higher risk of death (standardized mortality ratios).
Almandoz 2020 USA	Explore the health implications of COVID-19 among a sample of adults with obesity.	Cross sectional survey	Adults with obesity	123 individuals	COVID-19 is having a substantial impact on the health of patients with obesity regardless of infection status.
Alobuia 2020 USA	To determine whether racial disparities exist in the levels of knowledge, attitudes and practices (KAPs) related to COVID-19.	Cross-sectional survey	Adult residents of USA	1216 individuals	Racial and socioeconomic disparity exists in the levels of KAPs related to COVID-19.
Alsan 2020 USA	Determine the association of sociodemographic characteristics with reported incidence, knowledge and behaviour regarding COVID-19 among US adults.	Cross sectional survey	Adult residents of USA	5198 individuals	Knowledge - African American respondents, men and younger people, the very same groups that report higher COVID-19 exposure, had less accurate knowledge than white respondents, women and older individuals. Behaviour – African Americans, men and younger individuals were more likely to leave their homes.
Amerio 2020 Italy	Assess the impact of COVID-19 pandemic on mental health.	Cross-sectional survey	Italian general practitioners	131 individuals	Mental health - No significant links between gender and mental health impacts
Ashby 2020 USA	Examine the impact of COVID on patronage to unhealthy eating establishments in populations with obesity.	Ecological	Populations with obesity	17,234,452 observations from 138,989 establishments	COVID-19 pandemic is exacerbating issues related to healthy eating
Azar 2020 USA	To characterize tested and confirmed COVID-19 cases by key sociodemographic and clinical characteristics, including self-reported race and ethnicity.	Retrospective cohort study	Adults with at least one encounter with health system	14,036 individuals	Overall 66% hospitalized patients age 60ys+. Among African American patients, 52% hospitalized vs 25.7% white patients, and higher proportion transferred to ICU (24.6 vs 10.7%). Greater proportion male than female hospitalized and transferred to ICU. Overall African Americans with C-19 lived in ZIP code with lower income. Disparities may be associated with more advanced/severe comorbidities, barriers to timely access to care or the view that delaying care most sensible option. Reflecting possible prior negative experiences, financial needs in relation to employment.
Baggett 2020 USA	Describe characteristics and outcomes of a multi-agency response in Boston.	Case study	Homeless and marginally housed adults	1297 individuals	Surveillance activities suggested that about 10% of Boston's estimated homeless adult population contracted COVID-19 during a 4-week period. A community health center for people experiencing homelessness, working in close partnership with municipal leaders, public health agencies and homeless service providers, rapidly deployed a COVID-19 care model that has reached a substantial number of people in the target population.
Batty 2020 England	Examine the association of a range of psychosocial factors with hospitalisation for COVID-19.	Prospective cohort study	Adult residents of England	43,1051 individuals	Disadvantaged levels of several psychosocial characteristics (education, income, area deprivation, mental health and cognitive function) were related to an elevated risk of hospitalisations with COVID-19 in most of the analyses conducted.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Batty 2020 England	Examine the association of a range of psychosocial factors with hospitalisation for COVID-19.	Prospective cohort study	Hospitalised adults with COVID-19 in England	908 individuals	Disadvantaged levels of education, income, area deprivation, mental health and cognitive function were related to an elevated risk of hospitalisation with C-19. Verbal and numerical reasoning were only cognitive factors associated with higher risk of infection. Also replication of risk associated with being male, having ethnic minority background, carry a comorbidity. Mental health problems may compromise ability to take precautions, recognize health deterioration, seek attention, communicate with health professionals. May be association between lower cognition and health literacy – and decision to resort to hospital-based advice.
Bezerra 2020 Brazil	Investigate perceptions of factors that help or hinder social isolation and their relationship with socioeconomic factors.	Cross-sectional survey	Adult residents of Brazil	16,440 individuals	People with lower income and poorer housing conditions more vulnerable to being affected by physical and psychological health problems associated with social isolation.
Bonaccorsi 2020 Italy	Analyse (a) impact of lockdown measures on mobility, and in turn, socioeconomic conditions of Italian citizens, and (b) relationship of impacts with municipal financial capacity (degree of dependence on central government funding), income per capita/income inequality, real estate per capita.	Ecological	Italian municipalities	N/A	Lockdown measures induce a segregation effect: mobility contraction is stronger in municipalities where inequality is higher and income per capita is lower.
Carrion 2020 USA	Investigate role of neighbourhood social disadvantage on ability to socially distance, infections and mortality.	Ecological	Adults with positive COVID-19 tests in the USA	174,614 individuals	A combination of social disadvantage-related variables is associated with increased risk of C-19 infections and mortality. Black and Hispanic/Latinx communities over-represented in high infection risk neighbourhood, in turn associated with reduced ability to socially distance.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Chan 2020 China (Hong Kong)	Examine COVID-19 related knowledge, perception, attitude and behaviour patterns of the urban population	Cross-sectional survey	Adult residents of Hong Kong	765 individuals	The study findings indicated elderly and people with low education attainment had relatively poor knowledge and were less likely to adopt preventive Health-EDRM practices toward COVID-19.
Chen 2020 China	Examine the differences in preventive behaviours of COVID-19 between urban and rural residents.	Cross-sectional survey	Urban and Rural residents	1591 individuals	N/A
Cordes 2020 USA	Investigate testing rates, positive rates and proportion positive in New York city zip codes.	Ecological	Adult residents of New York	177 zip codes	Cluster analysis and the correlation analysis indicate greater burden of COVID-19, particularly in terms of positive test proportion, among socially and economically disadvantaged groups, therefore exposing racial, ethnic and income inequalities regarding the impact of the epidemic. Clusters of low testing had higher proportions of black population, Hispanic population, uninsured, rent above 50% income. Clusters of high proportion of positive tests had lower white pop, higher black pop, lower edu attainment, high prop receiving public assistance.
Cvetkovic 2020 Serbia	Investigate citizen preparedness to prevent transmission of COVID-19.	Cross-sectional survey	Adult residents of Serbia	975 individuals	Some type of disability is the most important predictor of individual preparedness, gender and educational level were sig predictive to adopting precautionary measures. There are major differences in the Serbian public's perception of risks presented by COVID-19 particularly general knowledge re the general threat that COVID-19 presents to both themselves and the community at large, risk perception, risk management and recommended preventive measures.
Cyrus 2020 USA	Investigate/model the impact of density of African American (AA) communities and other social determinants of health on COVID-19 prevalence and death rate by US counties.	Ecological study	African American communities	152 USA counties	Higher AA density more strongly associated with C-19 prevalence and death than age in community. Higher comorbidities suggested as explanatory factor.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
de Lusignan 2020 England	Identify demographic and clinical risk factors for testing positive for COVID-19 within a primary care network.	Cross-sectional study	COVID-19 positive adult residents of England	3802 individuals	Increasing age, male sex, increasing deprivation, urban location and black ethnicity were associated with increased odds of a positive SARS-CoV-2 test. Primary care sentinel network data provide important insights into the epidemiology of SARS-CoV-2.
Eberly 2020 USA	Compare the demographics of patients with completed telemedicine encounters at a large academic health system with those scheduled but did not complete a visit.	Ecological	Adult users of a health service in USA	2940 individuals	In the current COVID-19 era, inequities may be compounded even among patients without COVID in outpatient routine care via inequitable access to telemedical care for female, non–English-speaking, older and poorer patients. Female sex was independently associated with less telemedicine and video use. Non-English language was independently associated with >50% lower telemedicine use. Median household income <$50000 was independently associated with lower video use, which continues to be favoured by current insurance coverage policies.
Guha 2020 USA	Investigate the effect of multiple demographic and socioeconomic factors on a number of cases and COVID-19 deaths in five metropolitan zip codes.	Ecological	Adult residents of New York	442 zip codes	Population density remained the factor most significantly associated with COVID-19 cases. Results highlight the importance of social distancing or lack thereof in poorer neighbourhoods while giving early signals of racial inequalities. Proportion of African American residents, proportion of females, persons per household and population density of the zip code was significantly associated with increased likelihood of positive COVID-19 cases. Proportion of females in zip code associated with increased likelihood COVID-19 mortality.
Kalyanaraman Marcello 2020 USA	Describe characteristics and outcomes of patients tested for and hospitalized with COVID-19 in New York City's public hospital system.	Case series	COVID-19 positive hospitalised adults in New York	22,254 individuals	Male sex, older age and certain chronic diseases were significantly associated with testing positive, hospitalization and death from COVID-19, and racial/ethnic disparities were observed across all outcomes.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Lai 2020 China	Assess the magnitude of mental health outcomes and associated factors among health care workers treating patients exposed to COVID-19 in China.	Cross sectional survey	Health care workers in China	1257 health care workers	Health care workers responding to the spread of COVID-19 reported high rates of symptoms of depression, anxiety, insomnia and distress. Nurses, women, frontline workers and those in Wuhan reported experiencing more severe symptom levels of depression, anxiety, insomnia and distress. Being a woman and having an intermediate professional title were associated with severe symptoms of depression, anxiety and distress.
Lassale 2020 England	Examine the role of socioeconomic, mental health, and pro-inflammatory factors in a community-based sample.	Prospective cohort study	Adult residents of England	340,966 individuals	Ethnic minority groups in England experience a higher risk of COVID-19 hospitalisation. In England, the observed ethnic disparities in hospitalisation for COVID-19 was strong, in particular comparing Black and White individuals, and to a lower extent for Asian individuals too, and not fully explained by an extensive set of factors spanning socioeconomic, lifestyle and inflammatory disease disparities.
Li 2020 USA	Determine the associations of nursing home registered nurse (RN) staffing, overall quality of care and concentration of Medicaid or racial and ethnic minority residents with COVID cases and deaths.	Cross-sectional analysis	Nursing home residents	215 nursing homes	Nursing homes with higher RN staffing and quality ratings have the potential to better control the spread of the novel coronavirus and reduce deaths. Nursing homes caring predominantly for Medicaid or racial and ethnic minority residents tend to have more confirmed cases.
Maciel 2020 Brazil	Analyse the spatial distribution of the incidence of COVID-19 and its correlation with the municipal human development index (MHDI) of the municipalities of Ceará.	Ecological	Adult residents of Ceará, Brazil	184 municipalities	Spatial distribution of the coefficient of incidence of COVID-19 in the municipalities of the state of Ceará shows inequalities in the coefficient of incidence. Weak positive spatial correlations found between coefficient of incidence of COVID and social development (HDI-M) high HDI-M may facilitate the conditions of intense viral circulation, transmission.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Mahajan 2020 USA	Investigate whether communities with a greater proportion of African-Americans and Asian-Americans are experiencing greater C-19 burden.	Ecological	African-American and Asian-American communities	2886 USA counties	The current higher rates of case mortality in African-American communities may be due to underlying comorbidities, including lung disease and heart disease. Community structures may underlie such disparities including access to health care, safe living environments and ability to halt work commitments, socially distance and access testing.
Meyerowitz 2020 USA	To evaluate risk factors, clinical manifestations and outcomes in a large cohort of People Living with HIV.	Retrospective cohort study	People Living with HIV (PLWH)	36 individuals	Almost all PLWH in study had a comorbidity associated with severe disease, highlighting the importance of non-HIV risk factors in this population. The racial disparities and frequent link to congregate settings in PLWH and COVID-19 need to be explored urgently.
Millett 2020 2020 USA	Ecological analysis to assess determinant of risk at county level	Ecological	COVID-19 patients with comorbidities	N/A	1:5 US counties are disproportionately black and they accounted for 5:10 COVID-19 diagnoses and nearly 6:10 COVID-19 deaths nationally. Black Americans often overly represented in jobs that require both travel and regular interaction with the public, increasing exposure risk. Urban areas, disproportionately black counties and >1 person per room/ multigenerational and multifamily households -less social distancing.
Mollalo 2020 USA	Investigate county-level variations of disease incidence across the US.	Ecological	Adult residents of the USA	N/A	The spatial variability of MGWR in different counties can reflect different behaviour of COVID-19 incidence rates in response to the selected explanatory variables. COVID-19 incidence rates – a combination of four variables of median household income, income inequality, percentage of nurse practitioners and percentage of black female population, could explain a relatively high variability of the disease incidence
Niedzwiedz 2020 UK	To investigate the relationship between ethnicity, socioeconomic position and the risk of having confirmed COVID-19.	Cross-sectional survey	Adult residents of England	392,116 individuals	Ethnic minorities higher risk of both being diagnosed and testing positive in a hospital setting. Black and Asian groups to be greatest risk. Socioeconomic disadvantage associated with increased risk of confirmed infection.
Okoh 2020 USA	To assess clinical features and outcomes of Black/African American and Latino Hispanic patients with Coronavirus disease 2019 hospitalized.	Retrospective cohort study	Black/African American and Latino Hispanic patients with COVID-19	416 individuals	Patients admitted with the disease were of an underserved minority population, living in high, densely populated areas with lower median income. Often presentation within the disease phase, associated with a lack of desire to medical attention immediately and may be linked to socioeconomic aspects -due to living from paycheck to paycheck.
Oronce 2020 USA	Explore the association between income inequality and number of COVID-19 cases and deaths.	Ecological	States of the USA	50 States	Higher income inequality experienced higher number of deaths due to COVID-19. Finding informative for policymakers considering additional policies to mitigate the effects of COVID-19 on the most financially vulnerable.
Patel 2020 England	Investigate relationship between race, socioeconomic deprivation and hospitalization for COVID-19.	Ecological	Adults hospitalised with COVID-19 in the UK	418794 individuals	Black and Asian participants at increased risk compared to white participants. Higher Townsend deprivation indices and lower self-reported income associated with substantially higher risk. For black participants, risk remained significant after adjustment for s-e deprivation and household income.
Piscitello 2020 USA	Evaluate publicly available guidelines for ventilator allocation decisions.	Systematic review	States of the USA	44 guidelines	Only 26 States provided guidance on how allocation should occur. Guidance varied differently which might impact on an inequity of allocation of mechanical ventilation during a public health crisis. Some Guidelines appear to discriminate against those with lower socioeconomic status (may have more comorbidities), people with disabilities, those with cognitive deficits etc. Exclusion criteria may also remove equitable access to mechanical ventilators as some population groups automatically excluded (not recorded within the study).

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Price-Haywood 2020 USA	Investigate racial and ethnic rates of hospitalisation when test positive for COVID-19 and in-hospital mortality.	Retrospective cohort study	COVID-positive patients hospitalized during data gathering period	3481 individuals	Racial differences in frequency of C-19 probably multifactorial. May reflect differences in type of jobs that increase exposure risk and higher prevalence of chronic conditions, etc. Black patients not associated with higher mortality when differences in social-demographic factors and clinical characteristics at admission considered. Higher mortality associated with greater burden of existing illness, public insurance, residence in low-income area, and obesity associated with increased odds for hospitalization. Black patients 3x more likely to have Medicaid insurance and 2 x more likely to live in low-income areas. Higher in hospital mortality associated with increasing age, elevated respiratory rate on presentation, elevated levels venous lactate/creatinine or procalcitonin, or low platelet or lymphocyte count.
Raisi-Estabragh 2020 UK	To examine whether the severity of COVID-19 amongst men and Black, Asian and Minority Ethnic (BAME) individuals is explained by cardiometabolic, socioeconomic or behavioural factors.	Prospective cohort study	Men and Black, Asian and Minority Ethnic (BAME) individuals	1326 individuals	Greater risk of severe COVID-19 in BAME populations is not explained by cardiometabolic, socioeconomic or behavioural factors, or by 25(OH)-vitamin D status: study of 1326 cases from the UK Biobank.
Ramaswamy 2020 USA	Investigate how a cohort of criminal justice involved women are navigating COVID-19, chronic illness, homelessness and shelter-in-place orders.	Prospective cohort study	Criminal justice involved women	35 individuals	Despite many barriers to staying clear of COVID-19, most women we talked to were doing the best they could to follow recommendations about staying home, social distancing, handwashing and wearing masks. The women faced several barriers to COVID-19 prevention, namely, lack of control over their circumstances. Issues reported around marginal and stressful housing situations when trying to comply with COVID restrictions. Concerns around managing other health issues were raised.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Rametta 2020 USA	Assess the rapid implementation of child neurology telehealth outpatient care during COVID-19.	Retrospective cohort study	Child users of paediatric specialty care	17,369 encounters	Conversion of outpatient care to telehealth encounters occurred across our patients with a similar distribution of demographic and clinical characteristics compared to pre-pandemic in-person encounters. Access to telemedicine encounters compared to telephone encounters was lower in racial and ethnic minority groups
Rentsch 2020 USA	Compare patterns of testing and test results for COVID-19 and subsequent mortality by race and ethnicity.	Retrospective cohort study	USA veterans	5,834,543 individuals	While individuals from minority backgrounds appeared to experience excess burden of COVID-19, among those infected, there was no observed difference in 30-day mortality by race/ethnicity group. Black race, Hispanic ethnicity and urban residence associated with increased likelihood of positive test. Men more likely to test positive than women, urban more likely than rural.
Sanchez 2020 USA	Investigate COVID-19 impacts on sexual health and behaviours of men who have sex with men.	Cross-sectional survey	Men who have sex with men in the USA	1051 individuals	Disproportionate impact on employment because more reliant on gig economy; trouble/delays accessing sexual health services/ medication because competing COVID-19 demands; changes in sexual and substance behaviour (positive and negative).
Soest 2020 Norway	Examine the impact of closure of schools and social restrictions on life satisfaction and wellbeing among adolescents.	Cross-sectional survey	Adolescents in Oslo, Norway	8116 individuals	COVID-19 restrictions have led to a considerable decline in subjective well-being among adolescents. Strong decline in life satisfaction and other aspects of subjective well-being among boys and girls. Adolescents from families with low socioeconomic status and adolescents with poor grades had an increased risk of poorer life satisfaction both in 2018 and before the COVID-19 restrictions in 2020. The differences by socioeconomic status were considerably reduced during the COVID-19 pandemic, although they remained statistically significant. Those whose parents had become unemployed or laid off also reported lower satisfaction, but this effect was statistically significant only among the boys.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Sy 2020 USA	Investigate the relationship between level of human mobility (subway use), socioeconomic factors and COVID-19 incidence.	Cross-sectional spatial analysis	Subway users in New York City	N/A	All socioeconomic variables associated with % positive tests and rate of tests per 100,000 population. For rate of positive cases per 100,000 population: smaller decreases in subway use associated with lower adjusted median income, larger % working in essential services, larger % health care workers, larger % non white/Hispanic individuals. Smaller decreases in subway use associated with rate of positive cases, but relationship reduced when adjusted for testing and median income. All socioeconomic factors (as above), except % uninsured, associated with increased rate of C-19.
Titov 2020 Australia	Assess the mental health effects of the COVID-19 pandemic.	Mixed methods – ecological and survey	Australian mental health service users	3318 individuals	COVID-19 has resulted in a significant increase in contact with an established Dept of Mental Health Service, but we have not yet detected increases in baseline symptom severity. Patients in the COVID-19 sample were more likely to be female and were less likely to be employed. Changes to routine increased with age, with 24.8% of 18–29-year olds reporting significant changes compared to 37.8% of the over 55-years age group.
Wadhera 2020 USA	Examine population characteristics and hospital bed capacities across the five boroughs and evaluate whether differences in the rates of COVID-19 testing, hospitalisations and deaths.	Ecological	Adult residents of New York	Five boroughs	Other factors, such as underlying comorbid illnesses, occupational exposures, socioeconomic determinants and race-based structural inequities may explain the disparate outcomes among the boroughs. The Bronx = highest proportion of racial/ethnic minorities, the most persons living in poverty and the lowest levels of educational attainment, had higher rates of hospitalization and death related to COVID-19 than the other four boroughs. Rates for hospitalisations and deaths were lowest among residents of the most affluent borough, Manhattan, which is composed of a predominately white population.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Wolf 2020 USA	Determine COVID-19 awareness of C-19, perception of seriousness of its threat, level of worry or concern re contracting virus, whether effecting daily routine or existing plans, how prepared feel to handle outbreak, confidence in federal government response - among older adults with one or more chronic conditions.	Cross-sectional survey	Adults living with chronic conditions in the USA	630 individuals	Study identified concerning demographic and socioeconomic differences in how individuals perceived threat of C-19 and perhaps own ability to take actions to prevent illness. Participants who were black, living below poverty level and having low health literacy were less likely to be worried about C-19, not believe they would become infected, feel less prepared for outbreak. Limited English proficiency, unemployment, poorer health also significant correlates.
Wolfson 2020 USA	Investigate impact of COVID-19 on low-income Americans and any disparities in effects that may be associated with food security status.	Cross-sectional survey	Low-income residents of the USA	1478 individuals	C-19 threatens to greatly exacerbate existing health disparities related to food security status. Food insecure likely to be vulnerable to severe economic and health consequences. Food insecure more likely to be people of colour, with lower social standing, who have less flexible and secure jobs and are more vulnerable to stress and basic needs insecurities. Individuals with low or very low food insecurity were more likely to be no-Hispanic Black or Hispanic, to have children at home and less than a college education, more likely to rent homes, not have health insurance or have Medicaid, more likely to receive support from Supplemental Nutrition Assistance program. For every challenge associated with C-19, food insecure more likely to report dealing with specific challenges (e.g., not having enough food for self and family, pay bills, etc). Gradient of severity of challenge. Low food secure, low income, less likely to have had workplace adjustments for C-19.
Wood 2020 USA	To describe the first 30 days of rapid adolescent telehealth scale-up and assess disparities in visit completion rates.	Cross-sectional study	Adolescent health service users in USA	331 individuals	Rapid telehealth scale-up for adolescent medicine is achievable. No-show rates lower. No impact on patients by age, sex, gender or insurance. Slightly higher rate of completion visit on white patients.

Author, year, country	Aim	Study design	Target population	Number of participants	Main findings
Wright 2020 UK	Explore changing patterns of adversity relating to COVID-19 pandemic by socioeconomic position.	Longitudinal cohort study	Adult residents of the UK	12527 individuals	Clear inequalities in adverse experiences during the lockdown. Measures taken did not go near enough in tackling inequality. Gradient across the adversities included including financial loss and access to food and medication.
Xiong 2020 China	Investigate spatiotemporal patterns and influencing factors of the COVID-19 epidemic.	Ecological	Adult residents of Hubei Province	N/A	Population density played different roles in influencing the epidemic spread at the prefecture and county levels. This was significantly associated with the number of CCC at the county level, but not at the prefecture level, indicating a spatial scale effect to some extent.
Zhang 2020 USA	Investigate the spatial patterns of the COVID-19 epidemic in the US in relation to socioeconomic variables.	Ecological	Adult residents of the USA	2,814 USA counties	Positive correlations between COVID-19 incidence and mortality rates and socioeconomic factors, including population density, proportions of elderly residents, povert, and percentage of population tested.

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9 A supporting document to the COVID-19 EFHIA process

COVID-19 EFHIA Steering Committee
16 March 2021

HIA methodology and process

Health Impact Assessment (HIA) is a structured, evidence-based and solution-focused process to predicting future health consequences – and maximising the positive and minimising the negative health impacts of policy, plans, projects, or programs. HIA is a systematic but flexible process that involves six main steps but is iterative in nature. The purpose of carrying out an HIA is to inform decision making and planning processes.

The steps of a HIA are outlined in the below flowchart and table.

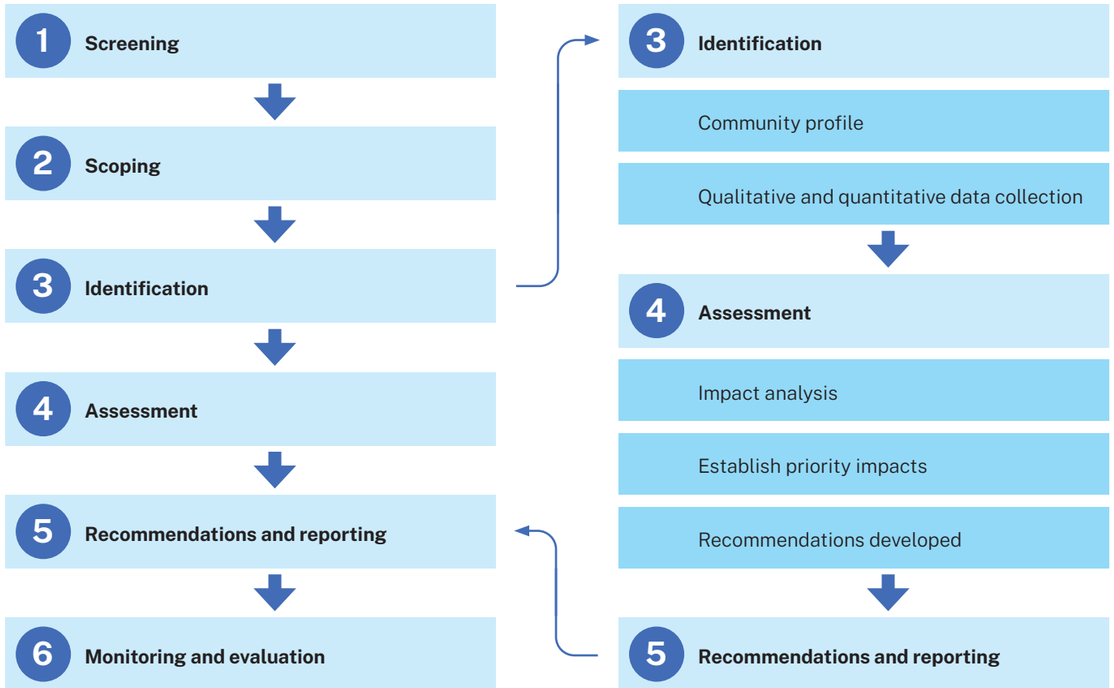

Table 1 HIA steps

Step	Objective	Activity	Outcomes
1 **Screening**	To decide whether a HIA is feasible, timely and would add value to the decision-making process.	The HIA team applied an HIA screening tool to develop an overview of the proposal, the potential health implications and opportunities to influence. Brief requesting CE support to carry out EFHIA. Presentation to SLHD Board.	Decision made to conduct an EFHIA to inform SLHD long-term response to COVID-19 and to prepare for future pandemics.
1a **Equity checks**	To provide timely equity-focused advice to arising and urgent COVID-19 response issues,	Equity checks (separate to the HIA) were carried out on urgent and arising issues to inform SLHD response and planning involving rapid literature reviews, equity checks of emerging plans and recommendations to mitigate equity impacts.	Equity checks carried out on: boarding house response, high rise social housing response planning, family and domestic violence, people experiencing mental illness, staff wellbeing and pandemic fatigue, and vaccination implementation.
2 **Scoping**	To create a plan and timeline for conducting a HIA that defines priority issues, research questions and methods, and participant roles.	Thirteen scoping interviews and four consultation events were held with SLHD staff, community and consumer representatives to identify emerging equity issues, populations groups experiencing disproportionate impacts, and current equity-focused responses. Literature review of international literature supplemented by Australia specific literature review to identify COVID-19 related equity issues. Ongoing responsive equity-focused advice and input into emerging equity issues. Ethics approval to carry out focus groups and surveys with stakeholders and community members. Formation of Steering Committee. Scoping meeting held with the Steering Committee to determine focus of assessment.	Focus areas: 1 The impacts of the spread of COVID-19 on health equity 2 The impacts of changes to health services on health equity 3 The impacts of the changes to work including working from home and flexible work practices on health equity. Focus populations: Four focus groups were identified for the EFHIA: • CALD including new migrants, asylum seekers and refugees • Young people, particularly children and their families • Women • Older people • SLHD staff. In addition, there were other population groups potentially impacted and evidence will be included within the EFHIA where relevant. Focus timeframes: • Medium to long-term impacts of current pandemic • Future pandemics. Geographic focus: SLHD area.
3 **Identification**	Collect evidence to identify potential health impacts.	Baseline profiling of existing conditions and population using available data for SLHD context. Literature reviews focusing on reviews of evidence and literature identified and recommended by SC members and additional subject experts. Literature reviews carried out: • Changes to health services due to COVID-19 and health equity • Changes to the way we work due to COVID-19 and health equity • Changes to perinatal health care due to COVID-19 and health equity • Scoping review COVID-19 and Primary data collected from community members and key stakeholders to understand local context specific issues, how they and their communities' health and wellbeing were potentially affected by focus areas, and potential actions to mitigate health equity impacts.	Local data profile and analysis completed. Qualitative data from 64 key informants and stakeholders collected and analysed. Four Literature reviews completed Evidence collected and summarised in relation to three focus areas.
4 **Assessment**	Synthesise and critically assess the information in order to prioritise health impacts. Provide evidence-based recommendations to mitigate negative and maximize positive health impacts. Make decisions to reach a set of final recommendations for acting on the HIA's findings.	A workshop with SC and other relevant stakeholders to discuss and validate the findings of the assessment and develop recommendations for policy options and response.	Preliminary impact pathways, assessment matrices and evidence summaries developed. Draft recommendations. Validation of impact pathways and assessment matrices. Impact characterisation.
5 **Report on health impacts and recommendations**	To develop the HIA report and communicate findings and recommendations.	A draft report compiled by the HIA team and circulated to the SC for comment before finalisation.	HIA report detailing the methods, findings and recommendations of the HIA. The report to be translated into various communication documents and disseminated to SLHD, Community stakeholders and partners.
6 **Monitoring and evaluation**	To track the impacts of the HIA on the decision-making process and on the decision, the implementation of the decision and the impacts of the decision on health equity.	The HIA team work with SC to develop a plan to monitor the implementation of recommendations, evaluate the impacts of the EFHIA and conduct a process evaluation.	Monitoring and evaluation framework.

We are currently at the scoping stage. At the scoping stage decisions are made about the focus areas and goals for the HIA, ways of working and opportunities to influence decision making processes. This involves making trade-offs in relation to timeframes, resourcing, number of areas of focus, depth of and type of evidence to be gathered. HIAs can range from desktop level (that may take a few hours or days) to comprehensive (involving many months, a wide range of areas of focus and primary data gathering). It is currently proposed that this HIA is an intermediate HIA involving collecting and analysing evidence from community members and key stakeholders through focus groups and interviews, rapid literature reviews of key focus areas and developing a community profile using available health intelligence data.

To inform the scoping process, the Health Equity Research and Development Unit (HERDU) conducted a series of scoping interviews to begin identifying potential key focus areas and population groups. The stakeholders consulted are listed below.

Table 1 Scoping consultation

SLHD Board
SLHD Clinical Quality Council
SLHD RPAH Consumer Council
SLHD Canterbury Consumer Council
SLHD Can Get Health in Canterbury
SLHD Community Health Services
SLHD Carers Program
SLHD Aged Chronic Care, Rehabilitation and Chronic and Ambulatory Care
SLHD General Medicine, General Practice, Endocrinology, and Andrology
SLHD Integrated Care
Health Pathways
SLHD Disability and Inclusion
SLHD Disaster Management and Emergency Operations Centre
SLHD Aboriginal Health
SLHD Living Well Living Longer
SLHD Integration and Partnerships
SLHD Planning
SLHD Population Health
SLHD Diversity Hub
Canterbury Bankstown Council
Settlement Services International
Diabetes NSW
NSW Health Infrastructure

Criteria for focus areas/groups selection

For an intermediate-level HIA, it is recommended that three to seven potential impacts be assessed in detail. In order to decide which areas and population groups to focus on the Steering Committee will need to agree on prioritization criteria.

Criteria to consider:

1 Potentially significant health equity impact over the medium to longer term

2 Relevant to SLHD area (geographic scope, priority populations and workforce)

3. Areas where SLHD can take action either directly, through the services provided by the district, or indirectly, through partnership and advocacy with other stakeholders.

4 Areas where there are knowledge gaps around potential health equity impacts and/or actions that can be taken.

Impact characterisation

In the impact assessment stage of the HIA, health equity impacts will be identified and characterised. Where possible, the following will be assessed and described:

Table 2 Impacts and characteristics

Health impacts	The health determinants affected and the subsequent effect on health outcomes
Direction of change	Health gain (+) or health loss (-)
Likelihood of impact	Definite, probable, possible or speculative based on the strength of the evidence and likelihood of impact
Severity of impact	Minor, moderate, major
Latency	When the impact will occur (short 0-1 year, medium 1-3 years, long term) 3 + years

Summary of key findings from rapid systematic review of empirical evidence in relation to COVID-19 and health equity

The emerging literature demonstrates that the risks and consequences of the COVID-19 pandemic have been disproportionately felt by certain groups, especially those living in situations of vulnerability and those who experience stigma and discrimination. This has been most stark in countries heavily hit by the pandemic showing socioeconomic and ethnic inequalities in both prevalence and mortality. Locations with higher income inequality experienced higher number of deaths due to COVID-19, and worsened outcomes. Existing inequalities including education, economic, locational disadvantage, health status, access to health care have been associated with worse outcomes.

This has been described as a 'syndemic' - "co-occurring synergistic pandemic, which interacts with, and is exacerbated by, chronic health and unequal social conditions". In Australia we have seen how insecure low quality working conditions and crowded housing conditions has resulted in an unequal burden on certain already marginalised population groups.

Specific vulnerabilities identified in empirical literature

Locational disadvantage

A number of studies identified spatial disparities related to intersection of vulnerabilities within a geographic area (relatively high levels of CALD community, low income, poorer housing quality, density, underserved, rent above 50% of income, underlying comorbid illnesses, occupational exposures, and socioeconomic determinants).

Racial and ethnic minority groups/cultural linguistically diverse

Often identified as experiencing higher COVID-19 incidence and also higher mortality. Race based structural inequities identified as a causal factor.

Age

Older people are more likely to have worse outcomes when infected but also in contexts such as aged care facilities higher exposure and limited capacity to take protective action.

Gender

Reports of women experiencing higher impact on mental health, women often experience lack of control over environment, relatively higher exposure through employment, however, men generally experience higher hospitalization and mortality.

Access to services

Some evidence of inequity in relation to access to telehealth e.g. Women, non-English speaking, relatively low median household income racial and ethnic minority groups.

Exposure

Frontline /essential workers, workers needing to rely on public transport, housing density.

Knowledge

Lower levels of education and non-English speaking often identified as having relatively poor knowledge and were less likely to adopt preventive actions.

Summary of key findings from scoping conversations

Scoping conversations were held with SLHD staff, community and consumer representatives to identify emerging equity issues, populations groups experiencing disproportionate impacts, and current equity focused responses.

The main equity issues identified through stakeholder consultation are tabled below.

Table 3 Stakeholder consultation findings

1 Changes to work – for SLHD staff and in SLHD communities

a work from home and flexible work practices

b changes in roles

Working from home and changes to work practices were reported to have a mix of positive and negative impacts. Increased flexibility and work from home options enhanced work life balance for some people including reduced commuting costs and time. Negative impacts identified included loneliness and isolation, and pressures on those with caring responsibilities.

Equity issues identified included:

- Carers and particularly women disproportionately negatively affected by double burden of caring and work responsibilities when working from home.
- Flexible work/work from home is only available to some workers – tendency of benefits to accrue to higher paid employment roles.
- Risks identified around family violence and child neglect due to combination of increased stress and reduced access to services and environments where abuse and neglect may be identified and reported.
- Differences in access to IT/digital infrastructure, quiet appropriate working environment – including financial burden shifting to workers

SLHD staff were identified as being significantly impacted by being part of COVID-19 response. Some staff have experienced high levels of stress, lack of control over work content and hours, uncertainty. Also reports of tensions within some workplaces due to perceived different treatment of staff (flexible work, secondments etc) and also staff members attitudes and response to COVID safe behaviours.

Equity issues identified included:

- Differences in staff access to flexible work/work from home options
- Differences in levels of control over work environment
- Potential stigmatisation of co-workers who are perceived to be behaving inappropriately

2 Social distancing/stay at home orders

Mental health and wellbeing impacts relating to social isolation and stress and anxiety were identified as key issues. There were high levels of concern expressed about people missing out on having issues identified due to isolation.

Equity issues identified included:

- Increased in family violence and child neglect combined with decreased access to services and decreased engagement with services who would normally identify issues (e.g. mandatory reporters, schools, social services, health).
- Impacts on children's ability to learn and develop – disproportionality felt in families with limited access to IT/internet/ quiet spaces/learning opportunities.
- Locational disadvantage – people living in areas of locational disadvantage tend to have less access to high quality greenspace nearby, less access to resources and services (including social infrastructure).
- Unequal burden on women with caring responsibilities and carers in general.
- Particular burden on Aboriginal people unable to participate in culturally specific family gatherings/ceremonies.

3 Access and availability of services

a Health care related

i Reduced outreach, change in modality (telehealth), some services stopped temporarily

ii Detection - Family violence/child protection, child development issues, health issues

b General - NGOs, libraries, community centres, social infrastructure

Major changes to access to services have occurred. Some involving change in modality (e.g. telehealth, reduced outreach) and others involving services temporarily stopping or changing in nature. Stakeholders reported concerns around access to health services and also access more generally to other human services and resources such as social infrastructure.

Equity issues identified included:

- Telehealth – digital divide in terms of access and digital literacy, suitability of telehealth for some types of service delivery.
- Disproportionate effect on – people with existing mental health problems, people who use substances or in recovery, people with reduced communication abilities, CALD communities, older people, people with complex needs.
- Impact on carers through increased caring burden and correspondingly increased burden on some health services due to carers not being able to attend appointments/be with patients in hospital.
- People who have either limited access to services or are 'hidden/below the radar' such as people experiencing homelessness, refugees and asylum seekers, newly vulnerable people (e.g. newly unemployed).
- Locationally disadvantaged communities – with already limited access to services.
- Children-high level of concern in regards to neglect, family violence, missing developmental checks, and educational outcomes. Particular concern in relation to children living in poverty.

4 Stigma/racism/discrimination

Stigma, racism and discrimination was identified as a significant health equity issue.

This includes:

- Reports of increased racism towards people with Asian appearance/descent.
- Stigma in relation to 'at risk' populations including people who are less able to take protective measures including people living in high density crowded/insecure living environments, people in insecure work, people who choose not to take protective actions, older people, and in some cases health and other frontline workers.
- In general, reports of people/groups who already experiences discrimination experiencing increased levels.
- People/groups who have experienced discrimination within health care systems may also underutilise services/experience higher distrust (for example, of vaccination).
- Stigmatization of suspected or actual infected people.

5 Economic changes

The pandemic has had major economic impacts. Some types of work have been particularly affected including, hospitality, tourism, arts, higher education, discretionary retail. Unemployment is associated with a range of negative outcomes including mental health, family violence, child neglect, homelessness, and overcrowding.

Equity impacts identified include:

- People who were already experiencing higher levels of disadvantage including Aboriginal and Torres Strait Islander People, people with disability/long term health conditions, single parents, women, people with low education levels, experiencing poverty, unemployed or underemployed, high levels of existing debt experiencing increased vulnerability.
- Increase in people living in poverty and people experiencing housing stress, and homelessness.
- NGOs/charities experiencing reduced incomes less able to provide services to those most in need.
- International students/ temporary visa holders unable to access supports.
- Newly precarious/newly unemployed/under employed with limited knowledge and experience
- Women disproportionately affected (unlike previous recessions).
- Locationally disadvantaged communities- disproportionately affected potentially further exacerbating disadvantage.

6 COVID-19 differential impacts in relation to exposure, sensitivity and adaptive capacity

There are three main dimensions of vulnerability:

- Exposure (to COVID-19)
- Sensitivity (vulnerability to the effects of COVID-19)
- Adaptive capacity (ability to prepare, adapt to, take protective measures, respond to, or cope with pandemic).

These dimensions are affected by population and place-based characteristics and the wider determinants of health. Characteristics of individual and populations, characteristics of places, for example, where people, live, work, learn and play and also vulnerability at institutional and systemic levels, for example, vulnerable health systems. Different dimensions and types of vulnerability interact and influence each other.

Equity impacts identified include:

- People living in locational disadvantage – less likely to be able to take protective measures, often higher exposure through types of employment and higher density living.
- Cultural and ethnic minority groups/cultural linguistically diverse as experiencing higher COVID-19 incidence and also higher mortality.
- Older people are more likely to have worse outcomes when infected but also in some situations such as aged care facilities higher exposure and limited capacity to take protective action.
- Women experiencing higher impact on mental health also in some cases higher incidence, women often experience lack of control over environment, women experience relatively higher exposure through employment, however, men generally experience higher hospitalization and mortality.
- Frontline/essential workers, workers needing to rely on public transport, housing density.
- Knowledge – lower levels of education and English as a second language speaking often identified as having relatively poor or sometimes inaccurate knowledge and were less likely to adopt preventive actions.

Population groups

SLHD staff

High exposure, stressful work environment, changing roles, having to work outside area of expertise, tension at times between staff in regards to COVID safe behavior and work arrangements.

Older people

Highest direct risk of severe COVID-19, more likely to live alone, less likely to use online communications, at risk of social isolation, may lose independence and feeling of control, stigma and discrimination of older people/ value in society.

Young people particularly children and their families

Affected by disrupted education at critical time; in longer term most at risk of poor employment and associated health outcomes in economic downturn, high levels of concern about increased levels of children experiencing neglect or harm combined with reduced access to services and less likely to be identified as being at risk. Children missing developmental checks (not being identified in settings such as playgroups). Children missing social development, increased stress and anxiety negatively affecting families capacity to parent and manage family life. Access to developmental and educational support reduced and corresponding onus on parents to become therapist/provide support. Reduced respite for parents, carers and other family members. Low income families unable to access technology resources and support.

Women

More likely to be carers, likely to lose income if need to provide childcare during school closures, potential for increase in family violence for some.

Aboriginal people

Unable to take part in culturally specific family gatherings/ceremonies due to restrictions, reduced access to services – especially face to face, food security – particular concern for Aboriginal elders, Aboriginal people who have lost employment, isolated due to movement restrictions.

People with multi-morbidity

Changes in access to services, increased vulnerability to poorer outcomes if infected, view that telephone care not sufficient for all chronic patients, reduction in chronic care presentation during lockdown unclear longer term implications.

CALD communities especially newly arrived migrants

Relatively lower health literacy, potential difficulties accessing and utilizing telehealth, not receiving or accessing information in language, sometimes accessing incorrect information from other sources (e.g. home country), experiencing stigma.

People with low health literacy

Not receiving, accessing, understanding information. Less capacity to take protective action.

People of East Asian ethnicity

Increased risk of discrimination and harassment because the pandemic is associated with China.

People experiencing mental health problems

May be at greater risk from social isolation, reduced access or changes to services, low access to affordably treatment in community,

People who use substances or in recovery

Risk of relapse or withdrawal, reduced access to services

People with a disability

Affected by disrupted support services, access to health services was already harder for people with disability (pre-covid).

People with reduced communication abilities

May not receive key governmental communications.

People experiencing homelessness or insecure accommodation

May be unable to self-isolate or affected by disrupted support services, more likely to experience food insecurity, concern that people may be lost to system.

People in criminal justice system

Difficulty of isolation in prison setting, loss of contact with family.

Undocumented migrants, asylum seekers and refugees

May have limited access to or be reluctant to engage with health services.

Workers on precarious contracts or self-employed

High risk of adverse effects from loss of work and no income.

People on low income

Effects will be particularly severe as already experience poorer health and are more likely to be in insecure work without financial reserves.

People in institutions (care homes, special needs facilities, prisons, migrant detention centres, cruise liners

As these institutions may act as amplifiers.

People living in locationally-disadvantaged/low income communities

Relatively less access to services and/or resources, poorer existing infrastructure, difficulty accessing technology and resources.

LGBTIQ communities

Higher levels of vaccine hesitancy, reduced access to services, stigma and discrimination.

Newly precarious

Newly unemployed, foreign students unable to access services/income.

Insecure work/working poor

Less capacity to take protective measures, more likely to experience negative economic impacts, more likely to experience food insecurity, sudden loss of employment and change in economic security additional stress on families who are also new to navigating and understanding available support systems, may not report issues due to fear of losing job.

People experiencing sexual assault

Reduced services, reduction in outreach, people not reporting potentially due to fear of punitive measures (e.g. if assaulted at illegal party).

Carers

Unable to be with patients during health care/hospital visits, increased burden through reduced respite and increased caring burden through reduction of services, increased isolation, additional burden of supporting patient to access and use telehealth, informal carers often ignored.

People in group or care homes

Increased exposure and less ability to take protective action, increased isolation and loneliness.

10 Background information document

COVID-19 EFHIA Steering Committee Background Information

The Health Equity Research Development Unit (HERDU) is carrying out an equity-focused health impact assessment (EFHIA) to:

a Identify potential health equity impacts of COVID-19 and the associated response on the health of different population groups in the SLHD.

b Identify actions that can be taken to protect marginalised populations from pandemics and ongoing threats to health into the future.

c Work with stakeholders to embed positive, evidence-based actions in the current and strategies being developed and implemented by the SLHD.

We are currently identifying priority areas and communities to focus on. The project scope is being determined in consultation with SLHD and community stakeholders.

COVID-19 EFHIA Steering Committee

The purpose of the Steering Committee is to set the overall direction of the EFHIA, to manage progress, quality and safety, and to ensure delivery within budget, timeline and to the agreed scope.

The first Steering Committee is scheduled for Tuesday 16 March 9 -10am, virtually, and will continue to meet bi-monthly

Background

While the COVID-19 pandemic may affect the health of the population as a whole, we have seen the risks and consequences are disproportionately felt by certain groups, especially those living in situations of vulnerability and those who experience stigma and discrimination.

Policies, practices and interventions implemented to reduce the spread of, and harms to health from the COVID-19 virus will also have on-going consequences for the health and wellbeing of the population of the SLHD, for vulnerable social groups, and the wider region well beyond the current crisis. It is possible that pre-existing inequities will be reinforced (or enhanced) by responses to the pandemic – and that new inequities in health may arise – in the absence of specific provisions being made within the policies and interventions adopted.

The Health Equity Research Development Unit (HERDU) is a partnership between Sydney Local Health District (SLHD) and UNSW Sydney. HERDU's mission is to work in partnership with health services, organisations and communities to identify and reduce existing inequities in health and to prevent inequities in health from arising in the future. Our project will assist the SLHD (and other responsible agencies) to consider health equity in their responses to the pandemic.

Groups likely to experience health equity impacts

Older people – highest direct risk of severe covid-19, more likely to live alone, less likely to use online communications, at risk of social isolation	**Young people** – affected by disrupted education at critical time; in longer term most at risk of poor employment and associated health outcomes in economic downturn	**Women** – more likely to be carers, likely to lose income if need to provide childcare during school closures, potential for increase in family violence for some
People of East Asian ethnicity – may be at increased risk of discrimination and harassment because the pandemic is associated with China	**People with mental health problems** – may be at greater risk from social isolation	**People who use substances or receiving treatment** – risk of relapse or withdrawal
People with a disability – affected by disrupted support services	**People with reduced communication abilities** (e.g., learning disabilities,limited literacy or English language ability) – may not receive key communications	**Homeless people** – may be unable to self-isolate or affected by disrupted support services
People in criminal justice system – difficulty of isolation in prison setting,loss of contact with family	**Undocumented migrants, asylum seekers and refugees, people on limited visas** – may have no access to or be reluctant to engage with health services	**Workers on precarious contracts or self-employed** – high risk of adverse effects from loss of work and no income
People on low income – effects will be particularly severe as they already have poorer health and are more likely to be in insecure work without financial reserves	**People in institutions** (care homes, special needs facilities, prisons, migrant detention centres, cruise liners) – as these institutions may act as amplifiers	**People living in locationally disadvantaged communities**

Goal of the project

To reduce arising health inequities caused by the COVID-19 pandemic.

How will we do this?

By conducting an equity-focused health impact assessment on the medium to long term impacts of the COVID-19 pandemic and associated response.

What do we want to do?

1 Identify potential health equity impacts of COVID-19 and the associated response on the health of different population groups in SLHD.

2 Identify evidence of actions that can be taken to protect marginalised populations from pandemics and ongoing threats to health into the future.

3 Work with stakeholders to embed positive, evidence-based actions in the current and strategies being developed and implemented by SLHD.

What is a Health Impact Assessment (HIA)?

Health Impact Assessment (HIA) is a structured, evidence-based and solution-focused process to predicting future health consequences – and maximising the positive and minimising the negative health impacts of policy, plans, projects, or programs.

What are we doing?

We are currently at the scoping stage of the project. The scoping stage involves deciding what are the priority areas we should focus on when carrying out the Equity Focussed Health Impact Assessment. The project scope is being determined in consultation with Sydney Local Health District and community stakeholders.

Areas of focus could include:

1 Potentially significant health equity impact over the medium to longer term, such as:

- Differences in availability and access to quality health and social services
- Differences in behaviours (e.g., smoking, family violence)
- Changes in living conditions (e.g., urban environment, housing, employment)
- Changes in community relations (e.g. how we interact with each other)

2 Relevant to SLHD area (geographic boundaries and communities)

3 Areas where SLHD can take action, either directly, through the services provided by the district, or indirectly, through partnership and advocacy with other stakeholders.

Community partners

Health Impact Assessment is a process through which evidence (of different kinds), interests, values and meanings are brought into dialogue between relevant stakeholders (decision makers, professionals and community members) in order to understand and anticipate the effects of change (such as a pandemic) on health and health inequalities in a population. HIA offers a way of ensuring that health, as understood by scientific experts, professionals and the people whose lives are affected, is considered in the planning process.

Health Impact Assessments engage stakeholders in identifying and analysing evidence and in deciding on recommended options for change. This can typically involve:

- participation in HIA workshops,
- attending focus groups or interviews,
- participating in the steering group or in advisory capacity for the HIA

Feedback from community members can inform different parts of the process, including:

- Identifying the focus (scope) of the project (this is the stage we are at now)
- Providing evidence about how they and their communities' health and wellbeing are potentially affected by an issue (in this case COIVD-19 and the associated response)
- Identifying actions that could be taken to mitigate negative impacts and enhance positive health impacts.

What do we do with the information provided by community members and other stakeholders?

A Health Impact Assessment is non-compulsory and decision makers are not obliged to act on the findings of the HIA. However, this project is supported by the SLHD Chief Executive and SLHD Board and they will be appraised of the findings and recommendations.

We will feed back information about which aspects have been taken forward and the reasoning behind the decision for those that haven't. The HIA is expected to take approximately six months and decisions in relation to the recommendations may happen over a period of time following the project completion. The report will be made publicly available after it has been approved by the project advisory group and SLHD Board.

We will also provide feedback to participants in the HIA. For example, after a meeting, we will send a summary of what we heard from the group and participants will have the opportunity to comment.

Want more information?

If you would like more information or would like to share your thoughts, HERDU can be contacted via email at SLHD-HERDU@health.nsw.gov.au

NSW GOVERNMENT

Sydney
Local Health District

UNSW SYDNEY

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